



BEST UFO CASES - EUROPE

BY
ILLOBRAND VON LUDWIGER

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Illobrand von Ludwiger

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Preface to the PDF version of *Best UFO Cases - Europe*

In 1996 I received an invitation to come to Las Vegas to speak to members of the *National Institute for Discovery Science (NIDS)* about our research at *MUFON-CES (Central European Section)* on the UFO phenomenon and on the theory of the German physicist Burkhard Heim, in which Harold Puthoff, John Alexander and Dean Radin were particularly interested. The founder of *NIDS*, Robert Bigelow, was considering a collaboration with our group. He asked me which of our activities he could support financially.

We did not have to pay for the radar data, as they were given to us free of charge by a military air traffic controller. The hypnosis regressions on abductees were done by two of our members (a doctor and a psychiatrist) out of personal interest. One of our members carried out the image analysis in addition to his normal daily work. Our professors did not charge any money for the extensive theoretical work. Only seldom were field investigations carried out, for example when exceptional cases such as close encounters, UFO landing sites or encounters with UFO occupants had to be examined. Our members were reimbursed for travel and accommodation expenses from the association's funds. The field investigations, however, were so rare, that no external financial aid was required. The printing costs for our irregularly published reports were also paid from the association's funds. One thing we really lacked, however, was the financing of the rent of an office and a study, in which we could place a library, the microfiche with a corresponding reading device and copy machine and the files containing hundreds of radar plots. In Belgium, SOBEPS was financed by a millionaire to maintain such a workspace, with enough space for a secretary and telephones to communicate with the authorities and witnesses and to receive the press.

When I suggested to Robert Bigelow that he could finance a workspace for us, he refused, as he was convinced that a research group would have such premises anyway and would not need to have them financed by someone outside the group. We then agreed that I should write a report on the best UFO cases in Europe, which he wanted to finance.

I worked on a manuscript and waited several months for a letter from *NIDS* with the contract. At my request, John Alexander informed me that Mr. Bigelow had also commissioned a Russian author to write a manuscript for him about UFO sightings in Russia. This meant that I could not mention any cases from our exclusive documents (about 800 pages), which we had received from Russia in 1980 as confidential Samizdat Manuscripts, since the Russian author would probably include them in his report.

In 1995, the three major UFO organizations *CUFOS*, *MUFON* and *FUFOR* had already reported on the best cases in England, France, Russia, Belgium and Scandinavia under the title *Unidentified Flying Objects Briefing Document - The Best Available Evidence* (Don Berliner, Marie Galbraith and Antonio Huneus). Therefore I limited myself to presenting only new and previously unpublished sightings - and therefore the title of the book should actually have been

'Best UFO Cases - Germany'.

Bob Bigelow was so disappointed with the Russian author's manuscript that he did not want to finance any more reports by other authors. John Alexander, however, succeeded in convincing him that I would certainly deliver a more reliable report and that the contract should be concluded as agreed orally. In the text of the contract the original title remained, but the content of the book now only referred to the best UFO sightings in Germany.

In 1997 I visited Jacques Vallée in San Francisco to discuss the contents of the manuscript with him. I received valuable advice from him on how the text could be supplemented. Jacques Vallée wrote a very good preface to the manuscript, which Bob Bigelow also sent to John F. Schuessler, Bruce Maccabee and Richard F. Haines. He also requested a foreword from them, which is rather unusual. As a result, Jacques Vallée understandably withdrew his foreword.

The book *Best UFO Cases - Europe* was published by *NIDS* in Las Vegas in 1998. Richard Haines wrote a review of the book in the *Journal of Scientific Exploration*, 2000, Vol. 14, No. 1, pp. 121-124.

In Germany, the book was published under the title *Unidentifizierte Flugobjekte über Europa* (Munich: Herbig, 1999) with some modifications of text passages already published in other German language reports. In contrast to the American version, the German edition contains a catalogue with 240 sketches of UFO sightings reported to *MUFON-CES* in the German-speaking area. For each case the location, date, time, duration, object size and distance as well as a reliability index of the sighting is given.

Regarding the 'Nagora photos', for example, the German edition provides the exact shape of the object to be seen in the photos. These photos can be viewed in the English edition on page 89. In 1997 Richard Haines visited us here in Germany. During this visit he also met the photographer Rudi Nagora, who handed the twelve original photos over to him. Dick Haines processed the photos with a 3D program from *NASA* and discovered that the object had not been a disk (or hubcap, as the skeptics claimed), but a flattened triangle.



**One of the twelve photos analyzed in 1997 by Richard Haines (left of Rudi Nagora).
The shape of the UFO is that of a rounded triangle, as some of the photos show.**

Since members of our *MUFON-CES* group only learned of a UFO sighting near Reutte, Austria, in 1999, the photos of a golden 'English steel helmet', which three witnesses had observed from their hotel room on August 30, 1994, are not included in the English version. One of the photos can be seen here:



One of two photos taken on August 30, 1994 from above the river Lech near Reutte in Austria.

I was the director of *MUFON-CES* until its 40th anniversary in 2014 and have published twelve *MUFON-CES* reports.

In 2014 I founded the *Interdisciplinary Society for the Analysis of Anomalous Phenomena* (*Interdisziplinäre Gesellschaft zur Analyse anomaler Phänomene* - IGAAP), whose activities are more scientifically oriented than they were at *MUFON-CES*. The focus of *IGAAP* is to analyze such UFO reports, where the unknown objects show electromagnetic and gravitational interactions (EMG effects) with their environment. Up to now (in 2020) we have collected about 1,700 EMG cases in our database. They serve as a basis for statistical evaluations and for the development of theoretical models about possible propulsion systems of UFOs. UFOs generate their own gravitational fields, which should not be possible according to *GRT* (*General Relativity Theory*). Nevertheless, within the framework of the *GRT*, it must be attempted to find explanations on how the generation of artificial gravitational fields could be feasible. In this respect, to us the 6-dimensional Structure Theory by the physicist Burkhard Heim (it provides a uniform spectrum of the ground states of elementary particles), as well as its theoretical extension by Walter Dröscher and Jochem Häuser, seems to be the most promising solution.

In comparison to the book *Best UFO Cases - Europe* and the German version *Unidentifizierte Flugobjekte über Europa*, there are new considerations today on how interstellar travel could be

made possible without great energy expenditure. This involves a kind of 'spatial relocation' other than the actual movement through space, namely a kind of 'projection' using 5- and 6-dimensional realms of the world as well as structural resonances - similar to the apports known from parapsychology. In such a model both time travel and interstellar travel are possible. In the future, physical experiments will determine whether our considerations are correct.

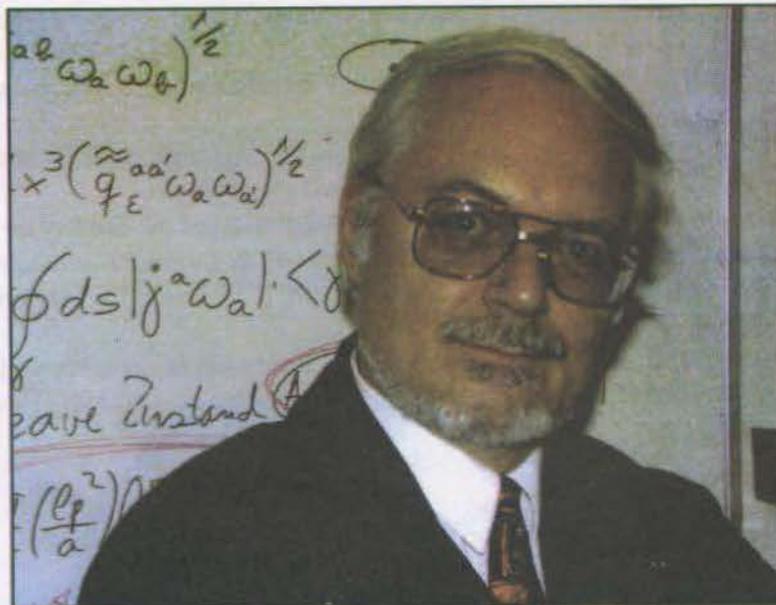
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About the Author

Illobrand von Ludwiger



Illobrand von Ludwiger was born in 1937, in Stettin (former Germany). His father, the physicist Herbert von Ludwiger worked with Hermann Oberth and Wernher von Braun in Berlin on rocket experiments in the thirties. I. von Ludwiger attended school since 1944 and passed the Abitur exam in 1955 from the high school in Stendal, East-Germany. From 1958 to 1964 he was a student at the Universities of Hamburg and Erlangen-Nuernberg, where he studied mathematics, physics, chemistry, philosophy, and astronomy. From 1962 to 1964 he was employed at the Astronomical Observatory of Bamberg and achieved his diploma degree. Since 1964 he is employed as a systems analyst at the aero and spaceflight company *Boelkow*, now *Daimler-Benz Aerospace AG - DASA*, in Ottobrunn near Munich.

Von Ludwiger performed work on various projects: In 1966 he was a member of the ELDO-team in Woomera, Australia (*European Launcher Development Organization*), launching ELDO-rockets. He developed computer programs for automatic failure detection in satellites, programs for collision avoidance in air traffic and programs for guidance and control for cruise missiles. For many years he was project manager and responsible for the simulation of the traffic for new transportation systems. From 1970 to 1975 he worked on a doctoral thesis about "*A vector-tensor theory of gravitation with Lyra's curvature tensor*" at the University of Goettingen. Because of the death of Professor Lyra, this thesis has not been finished. For his company he has analyzed physical applications of the unified geometric quantum field theory of Burkhard Heim. During the last years he was working on high-tech protecting and deception systems for weapon systems.

In 1974 he founded a scientific society for investigating unidentified flying objects, called *Mutual UFO Network - Central European Section* (since 1996 named: *Society for the Scientific Exploration of Anomalous Atmospheric and Radar-Phenomena, MUFON-CES, Inc.*). von Ludwiger is author and editor of many books, papers, and a CD-ROM on the UFO topic, and award winner of the *Hedri Award* in 1990, at the University of Bern, Switzerland.

Illobrand von Ludwiger lives with his daughter Corinna (11) in Feldkirchen-Westerham, near Munich.

PREFACE

This book was developed by Illobrand Von Ludwiger under the auspices of the National Institute for Discovery Science (NIDS). The intent was to present hard, credible material about anomalous aerial phenomena observed and reported in Central Europe but using cases that are, with few exceptions, not well-known in the United States.

The author was given great latitude in the development of this book, including responsibility for translation from German to English. While NIDS staff gave considerable thought into further editing the manuscript, in the end it was decided to stay with the original version as submitted. We were concerned that any attempt to edit the manuscript for better grammar might detract from the technical accuracy or meaning of the author. Therefore, despite grammatical challenges, we determined the information was significantly important to publish this book.

We believe this book will be a useful tool for investigators of aerial phenomena around the world. It certainly provides credence to the fact that UFO's are not localized to the United States. The radar cases clearly indicate that UFO's are indeed captured on sensor systems that do not rely on visual acumen or human psychology. As the reader will learn, the European researchers, all technically qualified scientists, have gone to extensive lengths to prove that simple, known possibilities for causing these traces have been examined and rejected for cogent reasons.

All the cases presented were selected by the author and his staff. While NIDS was provided with supporting material, we cannot vouch for the authenticity of any given case. However, we do believe this work, taken in its entirety, represents a reasonably accurate picture of the state of aerial phenomena in Central Europe. We further believe this is a global phenomenon—one worthy of serious scientific investigation.

About the National Institute for Discovery Science

The National Institute for Discovery Science (NIDS) is a private, non-profit, research organization with headquarters in Las Vegas, Nevada. NIDS does not accept unsolicited proposals, but does sponsor research into selected areas of phenomenology. We are dedicated to applying accepted scientific standards to research projects that are innovative and sometimes controversial. A world-class, multidisciplinary Science Advisory Board supports us in our efforts. For more information about NIDS and to read about research into related areas, please visit our web site at www.accessnv.com/nids.

FOREWORD

By John F. Schuessler

The book you are about to read is an exceptional account of physical evidence associated with UFO reports. It focuses on European UFO events, with supporting information from other parts of the globe. It is a wake-up call for scientists who are seriously interested in the process of discovery.

After more than fifty years of highly strange, but credible UFO sightings that cannot be explained by conventional means, people throughout the world are convinced that something truly mysterious is going on. People of all ages and backgrounds are familiar with UFO reports and many of them have had personal sightings. At the same time many scientists, without any personal involvement in UFO investigations or research, tend to accept the unproved claim that all UFO reports are the result of hoaxes, ball lightning, misidentified natural phenomena, or secret aircraft. As one might expect, such claims tend to drive a wedge between the general public and the official scientific community.

A part of the problem lies in the fact that an anti-UFO attitude in the scientific community has been shaped by tabloid journalism. Bizarre stories based on far-out claims and front page photographs of the wife of the President of the United States holding an alien baby in her arms are good for a chuckle; but they do nothing good for the process of scientific inquiry. Such stories have driven the scientific community to the belief that the only scientific payoff to be found in UFO reports is in the area of psychology and perception, not the physical sciences.

As each new UFO incident is exposed, it is easy to forget the fifty-year heritage of UFO investigations, where highly qualified private and government investigators and scientists have meticulously documented millions of hours of work in this intriguing field. Because their work has not been embraced by the scientific community, no central repository for this worldwide database exists where new scientists can access and evaluate this wealth of information in the light of emerging, novel, and unconventional theories. Hence, UFOs are still as mysterious as ever.

Fortunately, during this last decade of the twentieth century, a number of organizations and researchers have been amassing the historical UFO information and documenting it for re-presentation to the scientific community. Key to this effort is the National Institute for Discovery Science (NIDS), the Society for Scientific Exploration (SSE), the Mutual UFO Network (MUFON), the Center for UFO Studies (CUFOS), the Fund for UFO Research (FUFOR) and other fine organizations.

One of the special researchers involved in this effort is Illobrand von Ludwiger. Von Ludwiger accepted the difficult task of assembling key parts of the European UFO database into one document that describes the "best evidence" of UFO activity in Europe. His work is especially valuable because it provides data showing a level of UFO activity comparable to what has been going on over the United States, South America, Australia, Japan and other parts of the world.

Von Ludwiger has the scientific background necessary to piece together a credible picture of what has been going on. His work begins with description of several very old UFO cases to show the long-term nature of the UFO problem. Some of these incidents involved well-documented military and civilian aircraft UFO encounters.

His description of the various UFO shapes - disk, oval, cigar, and star - is well illustrated by drawings and photographs taken from earlier investigations. He devotes a whole section to triangular-shaped UFOs and dwells at length on the 1989 through 1991 wave of sightings over Belgium. The unusual objects were seen by as many as 100 people at a time. Witnesses to the events made a total of 3,500 reports.

Physical scientists may be interested in the reports of structured objects, after-effects left on the ground where a UFO was sighted, electromagnetic interference caused by a UFO, and effects on the witnesses while observing UFOs.

And if all this information is not enough to whet scientific appetites, von Ludwiger has extensively documented radar and radar-visual UFO cases. He quite plausibly wipes away to often used excuse for UFOs sighted on radar as being weather anomalies and clearly explains how you can tell the difference between solid targets and ghosts in the machine.

For those individuals willing to entertain novel and unconventional theories, von Ludwiger presents a nice summary of the various hypotheses making the rounds today about the origin of UFOs. His section on data catalogues and statistical analyses nicely complements the information presented throughout the book and provides food for thought while contemplating the hypothesis section.

Illobrand von Ludwiger combines all of the better attributes of scientist, investigator and researcher in bringing us this excellent view of the European UFO situation. He concludes the book by profusely referencing every section of the book to source documentation so the reader may go to the source. I hope this is just the beginning and we will be seeing similar documentation of UFO activity from other parts of the world in the near future.

John F. Schuessler
Littleton, Colorado
August 1998

FOREWORD

By Bruce Maccabee

I don't recall when I first met Illobrand von Ludwiger. It was possibly at a symposium of the Center for UFO Studies many years ago. However, I won't forget my meeting with him in Richmond, Virginia at the 1993 MUFON symposium. He said he was compiling a book for which several authors would provide chapters on the various UFO-related subjects. He wanted me to do the history chapter.

Me? A physicist write the history chapter? What made him think I could write history? (Of course, any good UFO investigator has to be in some sense a historian because the history of any sighting has to be compiled before the analysis can begin.)

I suppose I mumbled an "OK" and was pondering the consequences of saying yes when he asked if I would allow myself to be interviewed by a TV crew he had along with him. I said "Sure" and he sat me down in a chair. Then, with cameras running, he said something like this: "Now, please tell us the history of UFOs. You have about five minutes."

UFO history in 5 minutes! Now THAT was a good test for a historian! Of course I had to skip over approximately 99.99% of the history but apparently I convinced him I could do it because several months later I got a contract from a book company for a 70-page contribution on the worldwide history of UFOs. Since the book would be published in Germany I had to be certain to include some German sightings. It was while I was researching the history of German and European sightings that I first learned about some of the fantastic sightings you will find discussed here. I presume you, dear reader, will be as amazed as I was.

That book was finally published, but it was a bust. Only 1,000 copies were printed and the authors never got paid for their contributions. (I did get several copies but I couldn't read any of the chapters - including my own - since they were all in German.) Not one to give up easily, Illobrand has decided to publish his work in English we are lucky that he did. It is a veritable smorgasbord for the scientific ufologist.

This is a book about well-researched nighttime sightings, daytime sightings, far, near, visual, radar, and photographic sightings, most of which will be unfamiliar to readers outside Europe.

Illobrand von Ludwiger is a top UFO researcher in Europe and a member of the Mutual UFO Network - Central European Section (MUFON-CES). He reports in this book results of the investigations by himself and other scientific researchers into cases in Germany and the surrounding countries. He briefly covers reports of unusual phenomena going back several hundred years and then jumps to the foo fighter reports of WWII. During daylight bombing missions American pilots often reported shiny disc objects that flew around their planes, while at night they saw what appeared to be glowing spheres, which they assumed were secret weapons of the Nazi's. Orange spheres were reported (and are still being reported throughout the world). These objects often followed aircraft for many miles, but they never actually harmed the aircraft. Von Ludwiger reports on a German sighting after an allied air attack. A German officer checked his radar set after the bombers were out of sight and detected a stationary object 38-km away. Suddenly it moved toward him at a high rate. A powerful telescope boresighted with the radar (i.e., pointed in the same direction) showed a "glittery silvery object which was not a known aircraft."

Apparently there was a rumor that the German intelligence had set up a special group called U 13 to investigate sightings of unknown aircraft. According to von Ludwiger, another researcher, Adolf Schneider, tried to locate records of such a group in government archives but was unable to

do so. However, a Russian researcher stated that he was aware of records of German wartime research into unidentified objects, records that had been captured by the Russians after the war and were in somewhere Moscow.

Confusing the issue of foo fighter sightings is the fact that the Germans launched fluorescent balloons to cause allied bomber flights to break apart thereby allowing the German fighters to attack more easily. But, of course, these balloons could not follow aircraft for many miles and so could have accounted for the most impressive of the foo fighter accounts.

Von Ludwiger points out that, since the "foo fighters" were not weapons, "one must expect their appearance at all times," including the present day. He then goes on to present what could be called a modern foo fighter report from November, 1992 involving military aircraft over Swiss airspace and several other sightings from Europe. Of course, comparable sightings have been reported all over the world over the last 50 years.

According to von Ludwiger the German aerodynamic research included the development of a small, remotely controlled disc shaped craft intended to disrupt allied communications. There were also plans and prototypes of large-scale circular craft that were calculated to have high performance capabilities (rapid take off, high speed, long range). These were the source of much worry by the U.S. Air Force Intelligence and U. S. Army counterintelligence after the flying saucer sightings in the U.S.A. during June, July and August of 1947. The intelligence services knew that in the waning days of WWII the Russians had captured several of the top German aerodynamics researchers and also some of the secret facilities where radically new aircraft were being developed. Hence there was a fear that the Soviets had managed to develop the German circular craft ideas into working fighter aircraft or bombers that had capabilities beyond those of our own fixed wing jet aircraft. These German plans for disc craft have also given rise to the generally disbelieved "Nazi UFO" theories that have circulated through the UFO community since the 1950's.

Following a brief discussion of the "ghost rockets" over Sweden in 1946 and the beginning of the summer, 1947, sighting flap in the USA, von Ludwiger presents brief descriptions of some of the impressive sightings in Europe over the last 50 years along with official statements by military and government officials about UFOs. Most of these cases will be familiar to well read ufologists.

Not as well known are the five well-researched and highly credible cases that von Ludwiger uses to illustrate the various shapes of UFOs seen over Germany. There is also a chapter on triangular UFO sightings, which concentrates on the Belgian wave of some 3,500 sightings between November 1989 and April 1991 but also presents other similar sightings over the years. Von Ludwiger also discusses the first such sighting in MUFON-CES files a sighting that occurred in April 1945. The witness was a German soldier in a trench facing the Russian front when a triangular object flew from west to east over the German army. The only sound was a whistling of wind as it went overhead. It was apparently believed to be a secret weapon of "der Fuhrer."

The chapter on sightings of occupants - aliens - includes a long section on the famous Langenargen case (February, 1977) of two men who had a sighting very early one morning. The object was a very bright light over the neighborhood. It was seen by several other witnesses at varying distances. One of the men recalled seeing an alien creature and he panicked (possible missing time here) and broke a window in the front door of a stranger's house in order to enter the house to get away from the creature. The investigation by police and others was immediate and the MUFON-CES investigation lasted several years, including psychiatric evaluation and hypnotic regression. There was no evidence of a hoax but rather considerable evidence that something strange happened.

Von Ludwiger presents the analysis of a piece of metal found on a road in Sweden in November 1956. The two witnesses saw a bright, elliptical object moving along off to the side of the road. Suddenly it changed direction and moved toward the road ahead of them, hovered and then landed. The car engine stopped and the headlights went out just as the object moved toward the road so the car stopped before reaching the object. Some minutes later it departed at high speed. The car worked perfectly afterward. The witnesses inspected the road where the object had landed and found a small piece of shiny "rock" that was too hot to handle. The rock was actually a piece of machined metal. It was analyzed and found to be mostly tungsten with 4% cobalt and trace amounts of other metals. It could have been made on earth, but no one has identified a potential source.

Three photographic cases are discussed in detail. Of particular interest is the Griefswald case because there were numerous witnesses and videotapes were obtained from widely separated locations thereby allowing for triangulation and estimates of light emitting power.

Illobrand's chapter on radar sightings is the best I've seen anywhere. He presents actual radar data on numerous unexplained radar targets in military and civilian airspace. He could only do this with the cooperation of several MUFON - CES members who are experienced in radar control. They decided to try to identify all radar tracks over several periods of time (hours) during recent years. They discovered numerous tracks that could not be identified. Of particular importance are the characteristics of the unidentified tracks: they are recorded at the same location simultaneously by various radar stations operating with different frequencies, they appear suddenly in the area and vanish suddenly, they remain visible for many minutes to hours, they are uncorrelated with respect to season, day, month, geographical location or weather and the tracks are not consistent with normal aircraft tracks in that they disappear and reappear, have a jerky movement, alternately hovering and moving and they often have considerable variations in altitude. (One would wish similar analyses could be carried out in other countries such as the USA.) One particularly interesting track is of an object that descended at high speed from an altitude of about 22 km (about 14 miles) at a supersonic speed of 3,350 km/hr (2080 mph or nearly Mach 3) to an altitude of about 1 mile before being removed from the radar because it was not following a normal airplane track!

The governmental authorities in charge of the radar stations have formulated rules, which specifically direct that unidentified tracks be purged from the radar displays and that no records be kept. However, UFOs won't be ignored so easily. On September 18, 1997 the chief of Swiss military Air Traffic Control and another man saw a huge triangular object with lights in a "V" shape. When he checked with his superiors he was advised to forget about it.

Illobrand ends his book with an excellent discussion of the competing theories that have been proposed to explain true UFO (TRUFO) sightings. These are sightings that are not explained as misidentifications of known phenomena, delusions or hoaxes, i.e., these are sightings that remain unexplained after investigation. Some theories are based on the idea that the UFOs are not real objects in our 3-D world (psychological, paranormal, tectonic strain, psychic projection theories), some that the UFOs are real objects but are explainable in terms of known or earthly phenomena (earth lights, ball lightning) and some assume they are real in some sense but "unearthly" (time travelers, parallel universes with occasional travel between, interdimensional, "projector" (which is a multi-dimensional theory) and extraterrestrial). He points out that the heavyweight of TRUFO theories is the Extra-Terrestrial Hypothesis (ETH) and the others are contenders for the throne. His own idea is an interesting combination of time travel and ETH facilitated by a future understanding of the multi-dimensional aspects of the universe and how to make use of those aspects. To put it in

brief, UFO sightings are caused by visits to our time by our great, great, great,..... grandchildren who occupy earth and other planets and are returning for reasons which we, in the present generations, will not be told. Hence Illobrand predicts that the real intent of UFOs will remain a mystery for the foreseeable future.

Bruce Maccabee
August 1998

FOREWORD

By Richard Haines

Although traditional science represents one rigorous and well-defined approach to the discovery of natural truth, it may not be able to deal effectively with phenomena associated with so-called unidentified flying objects (UFO's). With this thought Dr. Illobrand von Ludwiger begins his treatment of "Best UFO Cases-Europe" and I find myself in agreement with him for a number of reasons which I want to discuss below. For in these reasons we discover a subtle but powerful force at work which keeps traditional science moving forward with little incentive to explore side trips such as UFO phenomena.

First, the very great breadth and complexity of these phenomena seem to overlap many different traditional academic areas at the same time. They do not fit neatly into any one scholarly discipline in particular. This is obvious by reading the table of contents of this book written by my colleague and friend, Illobrand. He presents evidence which clearly falls within such fields as physics and chemistry, experimental, clinical, and social psychology, sociology, history, anthropology, electrical engineering, and cosmology, to name but a few. Complicating this picture further is the fact that some UFO evidence appears to be psychic ("paranormal") in nature, a field of study that almost no one in mainstream science is yet willing to discuss openly. Even if one wanted to, no single university department would be capable of owning the whole UFO "turf".

So who within the field of science will own this body of evidence when, one day, someone makes the necessary breakthroughs and the evidence finally is understood for what it really is?

Second, there is still little agreement concerning what constitutes valid UFO evidence in the first place. Petty bickering, albeit kept mostly within the confines of the ranks of ufologists (one who studies UFO evidence), and ineptly and incompletely collected data often displays weak, anecdotal, contradictory data to scientists, engineers, and technologists who might otherwise become interested in it. Facts surrounding UFO phenomena are indeed "shaky" as Sturrock (pg. 226, 1198) suggests. Happily, this book presents this evidence with greater rigor than usual and should capture the interest of many professionals. This is particularly true for Illobrand's treatment (Chapter 3) of the famous Belgian wave of sightings which began in earnest in November, 1989 and involved police, scientists, air force pilots, civilian eye witnesses (and others) along with positive radar contact.

To me, valid UFO evidence includes both eye witness testimony and/or data from sensing apparatus data (magnetometers, radar, charge-coupled devices, cameras, gravitometers, etc.) of a phenomenon which remains unexplained after those qualified to study the data have exhausted all reasonable avenues of inquiry.

Third, most UFO phenomena are relatively short-lived, typically lasting from seconds to minutes. While more difficult for science to cope with, very brief events are not impossible to capture and study as the striking photographs of the sun's green-flash phenomenon at sunset have demonstrated, to mention but one example. The field of applied physics also provides examples where extremely brief phenomena - in the nanosecond range - are successfully captured on costly and exotic recording instruments.

As some of the cases presented in this book make clear, some short-lived UFO evidence has been collected and analyzed.

Fourth, most UFO phenomena seem to occur at unexpected times and places. This is not to say they occur at random, for we have not yet studied enough cases to be certain there aren't subtle yet repeatable patterns in time and space. But for all practical purposes the existing data appear to be randomly distributed; traditional science is not very good at studying unexpected events because the scientist can't get his equipment set up in time to capture the often visually bizarre luminous displays. Perhaps it is more the unexpected nature of most UFO phenomena than their brevity that makes them difficult to study. Nevertheless, high quality data is collected and analyzed on occasion, as is demonstrated in this book. This was also clearly shown during a special flight of the British-French Concorde supersonic transport airplane on June 30, 1973 research during a total eclipse of the sun (Anon., 1974). The flight was dedicated to space and atmospheric research. As the shadow of the moon swept rapidly across the North African (Sahara) Desert, the needle-nosed jet flew eastward within the moon's shadow. Numerous prominent astrophysicists and others were on board to collect data. Suddenly someone on board sighted a totally unexpected orange-red, flattened disc-shaped object against the dark space/sky background. It remained visible long enough for almost everyone to see it. A professional photographer, Jean Begot, obtained a startlingly clear color photograph of the intriguing self-luminous phenomenon.

What was almost as interesting as the photograph were the public statements made by various scientists on the airplane concerning this aerial object. Some of these comments bordered on the ludicrous; for example, one scientist allegedly proclaimed that this phenomenon had never happened before, will never occur again, and has no scientific value! With this type of closed mind-set how will anything new ever be investigated? Such silly pronouncements can only bring ridicule upon science and scientists.

Still another encounter of the personal kind occurred to me which lends further support to the view that scientists tend to be extremely conservative, even to the exclusion of what may turn out to be valid and valuable data.

From September 29th to October 4th, 1997, I had the distinct pleasure of taking part in a workshop to consider physical evidence related to UFO reports. This meeting was held at the Pocantico Conference Center, Tarrytown, New York and is partially described elsewhere (Sturrock, 1998). Dr. von Ludwiger was also present as one of the eight investigators. The experiences of some of us investigators clearly illustrate the difficulties faced in presenting bonefide UFO data to others who possess little or no previous background in the subject. While acknowledged experts in their own fields (including aerospace medicine, astronomy, bioelectromagnetics, electrical engineering, and earth and planetary science), a number of the scientific review panel members at this workshop had great difficulty in seeing what most of the rest of us had been looking at for many years. Here is one example of this.

I presented a technical analysis of a high quality photographic image, showing an anomalous aerial disc (Haines, 1987). While acknowledging that photographic evidence "can contribute to a better understanding of the UFO phenomenon if the evidence has sufficiently strong credentials that the possibility of a hoax can be ruled out," the panel went on to remark, following my presentation, that "This case is instructive in showing what detailed analysis of a photograph can be made using modern analytical equipment,

but it suffers from the severe drawback that there is no witness testimony to accompany the photograph...". (Ibid., pg. 188; also cf. Appendix 2, item b)

It is true that this photograph was not taken because someone first saw something unusual in the daytime sky. It was taken because there was a beautiful scene to capture on film. The alleged UFO image was noticed only later when the color prints were returned from the drug store. Thus, while being impressed with my research concerning, among various other things, an assessment of the credibility of the photographer, i.e., that the young couple very likely did not take part in a deliberate hoax just as they claimed, the panel disregarded the photograph as valid evidence primarily because no one present actually saw the small, stationary object that was hovering in the sky. Nevertheless, the published proceedings of this workshop state, "...the fact is that physical scientists cannot get involved in the UFO problem unless there is physical evidence. The purpose of this workshop was to assess whether or not there is any such evidence." (Ibid., pg. 185) I felt that a high quality color photograph constituted physical evidence.

Does the existence of any phenomena, however novel, depend on eyewitness testimony? Of course not!

Apparently, this panel thought that greater scientific value should be attached to photographs of phenomena that are taken deliberately than photos that happen to "capture" an event by chance. If this should turn out to be a valid position then atmospheric physicists should think seriously about discarding all photographs – taken automatically – of lightning bolts and balls, "blue-jets," "red sprites," "short-lived elves," and other rare, but nonetheless scientifically important luminous phenomena because no one was present to see them. And, astronomers should overlook strange image plane details that sometimes turn up unexpectedly on satellite-based imagery. This sounds as if the panelists were saying, in effect, "unless I see something for myself I won't believe it."

Some panelists at the SSE workshop were also concerned that a film defect or blemish may have been introduced during processing of the Vancouver Island photograph which I presented. Of course, this explanation is reasonable and can be raised in regard to virtually every photograph taken since the camera was invented, suspect or not. Yet to suggest that a natural film blemish or other structural defect might explain this particular UFO image simply does not fit the facts. For instance, this image: (1) was symmetrical, (2) possessed three-dimensionality, (3) possessed multiple colors, (4) reflected sunlight in a manner consistent with polished metal, (5) was relatively large (many millimeters across), and (6) possessed a definite shadow structure that was in proper alignment with the sun's position in the sky at that time. The argument that a film defect or blemish could account for all six of these image characteristics is not very reasonable. The only other processing-related explanation for this particular image is that an elaborate and costly hoax was carried out in a photographic laboratory for some reason. Of course this possibility goes to the motive for hoaxing such a thing which is far beyond the scope of this foreword. My concern here lies more with the nature of the response of scientists in general to alleged UFO images than it does to the SSE workshop panel's responses in this specific instance.

In a second presentation to the workshop panel I reviewed an instance of some unexpected and unknown type of transient electro-magnetic interference with the auto-pilot system of a DC-10 airplane in-flight (specifically its heading mode of operation). This flight mode is controlled by the output of one of two independent, gyro-suspended,

magnetic compasses. During this high altitude encounter, all three on-board compasses pointed in different directions only while an intense, white, round light source was visible off the left side of the jumbo jet. The compasses all returned to their normal and consistent orientation soon after it departed. Consult Sturrock (1998, Pp. 197-199) for more details.

The workshop panel concluded that the evidence for postulating interference from the angularly large UFO was "interesting" but, "in the absence of corroborative data from flight recorders and other mechanical or electrical recording equipment, the evidence presented must be regarded as anecdotal." In other words, the personal eye-witness reports made by the two highly trained and experienced commercial pilots was to be considered only as anecdotal, or at least down-played, because there wasn't any space- and time-correlated physical data available. It is interesting to me that this was just the opposite requirement the panel had raised in regard to the Vancouver Island photo case. With regard to the DC-10 incident, the panel considered the electro-magnetic interference evidence to be "...far from sufficient to establish any actual physical linkage between the reported luminous phenomenon and the airplane's flight deviation." (Pg. 199)

In neither UFO case discussed above was it possible to call into service the usual laboratory controls, experimental design, and pre-calibrated measurement equipment we all would have preferred. But, as this book by von Ludwiger amply demonstrates, credible UFO evidence does exist. And it exists in numerous domains and in reasonably great quantity. And it is also true that some scientists of positive repute have given serious thought to UFO evidence, as the SSE workshop has also shown.

Yet scientists are no different from anyone else. They need their intellect, education and financial support in order to pursue their intellectual endeavors. And they also need a degree of safety and security. In order to provide them this perceived security they sometimes erect subtle, invisible, yet strong "walls" around their discipline. These walls act mainly to keep others out who do not possess the proper credentials. Behaving remarkably like an organized religion, "science" functions as a semi-closed social system. It is mainly this aspect of science that I believe has prevented it from facing the UFO enigma directly. It is not that science cannot face the available evidence, it will not! Whatever is foreign to existing science is to be kept outside the wall, or at least ignored. So, when certain UFO phenomena are discovered which are unpredictable, transient, bizarre, and seem to violate current laws of physics, these characteristics appear to make the phenomena more threatening to some scientists. Certainly, disciplinary boundaries may be useful to hide behind but they also keep those who stay inside prisoners to some extent. They are the ones who should remember that genuine science does not avoid any piece of evidence, however bizarre, simply because it can't be fit neatly into one's existing cognitive framework.

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September 4, 1998

1. Early Reports About Unusual Phenomena Over Europe

1.1 Historical Cases From France, Germany And England (16th To 18th Centuries)

The most essential questions in the investigation of unidentified flying objects are:

1. Are there really sometimes appearances in the sky which cannot be reduced to known physical phenomena, and
2. If so, have these inexplicable phenomena been seen all the time, or is this a relatively new phenomenon?

The first question simultaneously is the question whether UFO's are a matter of science or not. Science does not like to be confronted by new phenomena which could transgress the bounds of their world view, if they happen seldom and remain single events only. A new phenomenon must prove its existence in a suitable statistical frequency, and it must be reproducible under well-controlled conditions. Phenomena which cannot be localized and predicted don't exist. Only if there is a theory which can forecast their probability, are statements about their existence possible (for example for earthquakes and meteorites). This restriction is necessary to limit uncertainties in the predictions about the behavior of the course of natural events. Science is a way to discover truth and well-founded interconnections in physical, biological, mental and sociological events. It is not an ideology but a method of drawing conclusions.

The characteristics of the unidentified flying objects are so unbelievable and strange that at first glance their suitable investigation would require a lot of money. Only if the goal of investigation would be to reduce the phenomena to generally believable ones would the financial budget be sufficient for research. Such attempts have been made (Menzel & Boyd 1963, Condon 1969, Klass 1974, Oberg 1982). But the critical reader realized that the explanations by the skeptics have to change the real happenings so that what the witnesses have recorded is in general not consistent with the modified facts, which are the basis of the explanation. That is possible, since each witness might have a shift of perception, and this allegation is a legitimate scientific-theoretical possibility to treat the record in a scientific way.

Therefore, a database is required with cases which are gained by automatic measuring devices, and which do not allow skeptics to modify the stated events. Such devices are cameras, radar devices and magnetic sensors, for instance. If these instruments are not available, the investigator has to prove the reliability of the witnesses and the possibility that the witness could have mistaken known phenomena for inexplicable ones. Therefore, the field investigator must be as well educated in the areas of astronomy, meteorology, and military flight devices as in psychology.

There are many cases of UFO sightings in which these requirements are met, and for which no reasonable explanation can be given. So the UFO phenomenon is a scientific problem. Since the phenomenon of UFO's is so complex and multi layered, only a unification of scientific and military organizations of many countries can solve this enigma, since one has to investigate the activities of these objects simultaneously all over the world.

Perhaps a half-century of public discussion about UFO's is not long enough for a political decision to set up an international investigation program. Maybe the pressure from the public, who likes to know what the phenomena are, on politicians is as yet too weak for the political leaders to see a need for any effort to solve the UFO mystery. That situation can rapidly change, as the wave of sightings in Belgium has shown, and the UFO problem will be no longer be a purely scientific, if at all, but also a political problem.

The question as to whether unknown objects have also been seen in earlier centuries is essential for an understanding to judge the future behavior of the UFO occupants. A search for historical UFO cases in the literature has to answer the following questions:

1. Are there reliable reports of unknown objects in the sky which also today are not identifiable by natural appearances?
2. Were the same forms and similar characteristics of unknown objects reported in earlier times?
3. Can we discover a pattern or an evaluation of the behavior of the objects?

One has to prove the kind of perception, the manner of representation as well as the number of the informants, beginning with the witness and ending with the writer. Very frequently the people described an appearance in the sky not only in the way in which they had seen it, but added forms and apparitions to it which gave the phenomenon a meaning because all phenomena which could be assigned to a religious meaning were judged by the scholarly circles as credible. For instance, in the Middle Ages people believed that the rainbow had the meaning of a sign of God, to remind us of the Flood. In the innocent appearance of light beams and changing light curtains of the aurora borealis one imagined seeing fighting knights. And the painters of the time drew the reported phenomenon not as it had been seen but with forms of its alleged meaning. Paranormal projections and apparitions, whether real or only subjectively real, are frequently reported as historical events. Therefore, one has to be very careful in the interpretation of the published eye-witness' reports from medieval times (Brand 1977).

A critical look through the literature from the 16th and 17th centuries shows that in European countries, objects were seen in the sky several times which had the same characteristics as today's UFO reports.

In the *Himmels- und Naturerscheinungen in Einblattgedrucken des 15. bis 18. Jahrhunderts* (Celestial and natural appearances in singleprints of the 15th to 18th centuries) W. Hess (1911) a report by Nostradamus was quoted on an unidentified flying object which was seen in Salon, Province, France, on February 1, 1554, in a time period of 7-8 p.m. by many people. (Figure 1.1.1)

"... A big fire came from the east and moved to the west. This fire... in the form of a burning rod or torch, was brightly shining. Flames jumped from it, like glowing iron, worked by a smith. Sparks, shining like silver, of unequal length would be thrown up, like the street of Jacob in the sky, called galaxy. Rapidly as an arrow, and with a loud rustle and patter, and as if leaves and trees were moved to and fro by a violent storm, it flew past. It lasted nearly 20 minutes, when we could see it over the area of Arla, also called stony road. There it turned around to the south and flew far away to the sea. The fiery line it made maintained its fiery color for a long time and threw long sparkles like the flash falling from sky... Where it passed by at a low altitude it had burned all to powder...Its size in the sky has been estimated to about 200 meters.."

The duration of the observation and the changing of the flight path exclude the assumption that the object may have been a meteor or a fireball. A similar report in our century came from Asmara in Ethiopia. On August 7, 1970, the citizens of the village Saladare (14 km away from Asmara) heard a loud noise at 10:30 p.m. About 150 meters away from the village, a red glowing ball flew by. On its path it threw over trees, burned grass (without flame) and on some locations melted the asphalt on the road. It hovered for a few seconds over a spot, then returned the way it came. Some of the witnesses later described the object like a "fiery tree trunk" (which sounds like "burning rod").

Thereafter, the object started its attack against the 3-km-distant village Saladare. It got through 50-cm-thick walls of houses. About 50 buildings were destroyed one after the other by this noisy object. Eight people were injured. A child died of its injuries (Hynek & Vallée 1975, p.160).

The phenomena in 1554 and in 1970 were obviously of the same nature.

Erasmus Francisci (1680) writes about an "air vision" which was seen on April 8th, 1665, in the city of Stralsund. Several fishermen reported having seen at about 2 p.m. that from the north over the sea in the sky a big swarm of starling birds flew which changed to battle ships. These ships were fighting one against the other. A lot of smoke developed. All the time new ships appeared, small and big ones, and the battle lasted for a few hours. Such a kind of mass suggestion was frequent in the medieval age and has nothing in common with the perception of unknown flying objects, since whole settings were seen in suggestions which

could be assigned to a definitive meaning. The extraordinary signs were taken at the time as a divine warning.

After the vision had vanished, the scenario changed. Francisci writes:

"After a while out of the sky came a flat round form, like a plate, looking like the big hat of a man... Its color was that of the rising moon, and it hovered right over the St. Nicolai Church. There it remained stationary till the evening. The fishermen, worried to death, didn't want to look further at the spectacle and buried their faces in their huts. On the following days they fell sick with trembling all over and pain in head and limbs. Many scholarly people thought a lot about that." (Figure 1.1.2)

And the *Berliner Ordinari- und Postzeitungen* No. 65 wrote on April 4th, 1665 about the vision of the fishermen from Stralsund (Buchner 1926):

"...One of these fishermen had been sick on his feet. All of the citizens who have observed this are reliable. Yesterday, Herr Colonel von der Wegck and Doctor Gessman interrogated two of the 6 fishermen. May God change this miracle for the best."

What the fishermen saw was a plate with a dome (man's hat) orange in color (like the rising moon) which hovered motionless for a long time and acted on the witnesses as if they became sick from strong radiation. This is the description of a classical UFO as is frequently met with in our days. Erasmus Francisci hesitated to believe this account, because he could not find a suitable meaning:

"I read that at that time in the usual printed newspaper. But, to tell the truth, I didn't believe in that story, and I thought the fishermen had fished that out of the air or from a deceived imagination..."

Francisci, nevertheless, reported this account because in the meantime, between 1665 to 1680 several battles took place between the Swedish and the Prussians, and the spectacle could be given the meaning of a sign for an imminent war. Francisci states (p.625):

"...After the sea was colored with so much blood after that time, the affair now seems to me believable. What the disk-like thing would like to say to the good city shouldn't be so hard to quest, if one remembers how in 1670 the tower of the St. Nicolai Church was destroyed during wartime..."

Today a phenomenon must be measured by an instrument to be accepted as real. In the Middle Ages a phenomenon was thought to be real when it could be interpreted as a meaningful sign. Only the astronomers in the 18th centuries chose the language of science which we use also in our times. Therefore, reports of astronomers on unidentified objects are essential. On December 5th, 1737, the astronomer Thomas Short from Sheffield observed

"the apparition of a dark red cloud, below which was a luminous body which emitted intense beams of light. It was not all like the aurora borealis, for the light beams moved slowly for a while, then stopped. Suddenly it became so hot that I could take off my shirt even though I was out of doors. This meteor was observed over Kilkenny, Ireland, where it seemed like a great ball of fire. It was reported that it shook the entire island and that the whole sky seemed to burst into flames." (Bougard 1987)

This object moved to Romania within 24 hours. In a manuscript account is recorded that

"on the afternoon of Saint Nicholas' Day there appeared in the west a great sign in the sky, blood-red and very large. It stayed in place for two hours, then separated into two parts which then rejoined, and the object disappeared towards the west" (Manuscris Românesc 2343 folio 3-4).

These selected examples show that people in earlier centuries observed the same objects, which we now call UFO's. Physiological effects on the witnesses, light beams acting like "solid light", separating into two parts and the rejoining were also reported. But the frequency of these sightings is low in comparison with other than unexplained natural phenomena (ball lights, meteorites, will-o'-the-wisps, St. Elmo's fire, etc.). The main intention of these objects at that time and today seems to be to fly or hover in the air. Only since the 60s of our century are we discovering another unbelievable aim of the intelligence behind these objects. The behavior of the UFO phenomena shows an evolution. From time to time they seem to demonstrate their presence in special countries (France: 1954, New York State: 1984, Belgium: 1990). At that times waves of sightings as well as objects flying at a low altitude with many multi-colored lights appear, leaving the

impression that people should perceive them. In the time periods between such sighting flaps, it seems that the unknown objects want to remain undetected.

1.2 Foo Fighters and Miracle Weapons

Inexplicable appearances in the sky were seen all over the world from time to time. Such reports among other strange observations have collected by Charles Fort (1919). These events were counted among the many celestial phenomena, and no scientist made efforts to investigate them. That situation remained until military aircraft encountered these objects during the battles during World War Two in the air. Suddenly these small flying spheres and disks must have been taken very seriously since they were thought to be secret weapons of the enemy. The American Air Force pilots at the time nicknamed them "Kraut Fireballs" or "Foo Fighters" (after a maxim by a cartoon character named Smokey Stover, who was fond of saying: "Where there's foo there's fire"). This latter term survived.

During a U.S. Air Force bomber raid on the German industrial complex at Schweinfurt, Mission 115, on October 14th, 1943, the aircraft encountered strange objects in the air. The former SECRET report reads:

"As the bombers of the 384th Group swung into the final bomb run, the fighter attacks fell off. This point is vital, and pilots were queried extensively, as were other crew members, as to the position at that time of the German fighter planes. Every man interrogated was firm in his statement that 'at the time there were no enemy aircraft above'. At this moment the pilots and top turret gunners, as well as several crewmen in the perspex noses of the bombers, reported a cluster of disks in the path of the 384's formation and closing with the bombers. The startled exclamations focused attention on the phenomenon, and the crews talked back and forth, discussing and confirming the astonishing sight before them.

"The disks in the cluster were agreed upon as being silver colored, about one inch thick and three inches in diameter. They were easily seen, gliding down in a very uniform cluster. "And then the 'impossible' happened. B-17 Number 026 closed rapidly with a cluster of disks; the pilot attempted to evade an imminent collision, but was unsuccessful in his maneuver. He reported at the intelligence debriefing that his right wing went directly through a cluster with absolutely no effect on engines or plane surface. It could be heard that one of the objects struck the tail section of the bomber, but no explosion or other effect followed.

"...Also observed were two other A/C flying through silver disks with no apparent damage. Observed disks and debris two other times but could not determine where it came from.

"No further information on this baffling incident has been uncovered, with the exception that such disks were observed by pilots and crew members on missions prior to, and after, Mission 115 of October 14, 1943" (Caidin 1960).

Toward the end of 1944 the Foo Fighters wave picked up again. On November 23, 1944, at 10 p.m. Lieut. Stiller, pilot in the U.S. 415th Night-Fighter Squadron based at Dijon, France, took off for a routine mission over the Visage mountains. The area radar had detected no enemy presence in the area. The sky was clear. Near Strasbourg the Intelligence Officer, Lieut. F. Ringwald, observed towards the west a linear formation of eight to ten fireballs flying at great speed. The formation vanished and appeared at another place. The pilots made no report (Chamberlin 1945).

When Lieuts. Giblin and Cleary on November 27, 1944 were on a mission south of Mannheim, they saw over the city of Speyer an enormous luminous orange sphere moving at about 400 km/h, scarcely 500 m above their aircraft.

A luminous orange-yellow disk about 3 m in diameter was observed by USAF Major Leet, over Klagenfurt, Austria. It kept a distance of about 50 m, and followed the B-17 almost all the way back from a bombing run on November 24, 1944. The sphere seemed to follow the maneuvers of the aircraft for 45 minutes (Leet 1979).

Two other bomber pilots of 415 Fighter Group were flying on December 22, 1944, over Hagenau, Germany, at an altitude of 3,000 m when the pilot at 6 p.m. reported:

"Two very bright lights have left the ground and are headed towards us. Right now they are following us." The two orange spheres stayed in the aircraft's wake for about 2 minutes, then they abandoned the aircraft and disappeared. The same two pilots had another similar encounter two nights later.

On January 2, 1945, *The New York Times* for the first time was permitted to publish the following about these observations:

"(From a U.S. Night-Fighter Base in France):

On December 13th, 1944, newspapermen were told that the Germans had thrown silvery balls into the air against day raiders. Pilots then reported that they had seen these balls, both individually and in clusters, during forays over the Rhine. Now, it seems, the Nazis have thrown something new into the night skies over Germany. It is the weird, mysterious "Foo Fighter" balls which race alongside the wings of Beafighters flying intruder missions over Germany. Pilots have been encountering this eerie weapon for more than a month in their night flights. No one apparently knows what this sky weapon is. The balls of fire appear suddenly and accompany the planes for miles. They seem to be radio-controlled from the ground, so official intelligence reports reveal.

"There are three kinds of these lights we call 'Foo Fighters,' said Lieutenant Donald Meiers, of Chicago. 'One is a red ball which appears off our wing tips and flies along with us. No 2 is a vertical row of three balls of fire, flying in front of us. No 3 is a group of about fifteen lights which appear in the distance, like a Christmas tree up in the air, and flicker on and off.

"The pilots of this night-fighter squadron, in operation since September, 1934, find these fiery balls the weirdest thing they have yet met. They are convinced that these "Foo Fighters" are designed to be a psychological weapon, as well as military; although it is not the nature of the balls to attack a plane...

"A 'Foo Fighter' picked me up recently, at 700 ft., and chased me 20 miles down the valley of the Rhine," says Meiers. 'I turned to starboard, and two balls of fire turned with me. We were going at 260 miles an hour, and the balls were keeping right up with us. On another occasion, when a 'Foo Fighter' picked us up, I dived at 360 miles an hour. It kept right off our wing tips for a while, and then zoomed up into the sky. When I first saw the things off my wing tips, I had the horrible thought that a German, on the ground, was ready to press a button, and explode them. But they don't explode, or attack us. They just seem to follow us, like wills-o'-the-wisp!"

The Japanese and the Germans also saw these strange objects and didn't know how they could be explained.

In October 1943 during the major air offensive against the city of Kassel, the German Air force officer Robert Visarius was detached to the defense ground radar group near Kassel. He worked on the FuMG radar device (*Flak-Umwertgeraet 'Malsi'*). After an air attack, when the bombers of the Allied Forces were out of sight, Air Force Major Visarius checked the radar device. By chance he detected an object about 38 km away. First it was motionless, then it moved with terrible speed in his direction. On the axes of the radar device a powerful telescope was mounted, and Major Visarius observed through it a glittery silvery object which was not a known aircraft, since the distance now was 18 km, at which altitude no airplane at that time could fly. Although his companions saw this object too, nobody else witnessed the incident, and Major Visarius was laughed at (Visarius 1958).

A strange object was observed on December 18, 1943, flying over the German cities of Hamburg, Wittenberg and Neustrelitz. At 11.15 a.m. two Focke-Wulf 190 aircraft from the Hamburg base were sent to scramble. The pilots noticed a cylindrical object with a pointed nose like a rocket. The object vanished at high speed (Durrant 1970).

There is the rumor that the Germans had set up a special committee, called U 13, whose task it was to investigate the unknown flight objects. The French journalist Henry Durrant stated that he got former secret material from the British Intelligence Service. MUFON-CES member Adolf Schneider could not get a confirmation for that from the Study Group for Military Research (*Arbeitskreis fuer Wehrforschung*) in Stuttgart, and from the Federal Military Archives (*Bundesmilitaerarchiv*) in Freiburg. No knowledge of this special agency was had by the former Generals of the German Air Force Galland and Kamhuber.

The Commander of the Air Fleet 5 in Norway/North Finland and general manager for jet aircraft since February 1945 to the end of the war, and leader of development of the Heinkel jet HE-162, Carl Francke, as well as the former General Engineer of the German Air Force, Wolfram Eisenlohr, could not remember having heard anything about "U 13." The Deputy Commander of the Allied Air Forces in Central Europe until June 1976, General Wehnelt, didn't know about that agency (Schneider 1979).

The rocket scientist (a former colleague of I. von Ludwiger's father, who worked together with him and W. von Braun and H. Oberth at the rocket site in Berlin-Reinickendorf in the early thirties) and former Consultant in Department VI of Counter-Intelligence headed by Colonel Schellenberg, Rudolf Engel, confirmed the existence of a special office 13, but was not informed about its task (Engel 1979). Eventually, Professor Walter from Stuttgart, who in wartime collaborated with the chief of Counter-Intelligence, Admiral Canaris, knew Professor Georg Kamper, who founded the special group U 13. Walter confirmed that the members of U 13 had to investigate the enemy's new or strange weapon technology (Schneider 1979).

The physicist Dr. Sergej Kusionow in 1990 told MUFON-CES members in 1990 at a conference in Heidelberg that he has knowledge of German investigation reports concerning unknown flying objects, which are stored in Moscow, and which the Red Army had captured in WW II. Till now it was not yet possible to get the material back to German researchers.

It may be quite possible, that some of the observed luminous balls were indeed German secret weapons.

The Germans, for instance, released fluorescent balloons of different sizes into the air with the intention of producing trouble between the pilots of the night fighters. They were to make the fighters leave their formation, so that the German fighters could get into it more easily.

The rocket scientist Rolf Engel remembered another project: A Professor Ortmann, scientific advisor in the Reichs Air Ministry (*Reichsluftfahrt-Ministerium*) had the idea to send remote controlled missiles into a bomber group. The missiles should explode there and expel a special chemical substance, which should remove oxygen from the engines and produce damage by corroding the aircraft engines. It did not function. But a side effect was that after the explosion at high altitudes the chemicals generate an airglow.

In Spring 1945, the Research Center of the Air Force (*Forschungszentrum der Luftwaffe*), in the city of Oberammergau, Bavaria, carried out extensive investigations into electrical devices. Unmanned aerial vehicles should carry apparatus, which could influence the ignition systems of aircraft engines up to a distance of 30 meters, by radiating strong electromagnetic pulses. The range should be expanded 3 or 4 times. But the end of the war put an end to further investigations.

As a by-product of these studies, the Aircraft Factories (*Flugzeugwerke*) in Wiener Neustadt, Austria, as well as the Research Institute (*Forschungsanstalt*) in Oberpfaffenhofen, Bavaria, developed a small remote controlled aircraft. It was the intention to disturb the radio of the allied forces' night fighters. The flight object was driven by a flat and round turbo-jet engine. In flight, the engine generated an enormous halo from luminous flames, which gave the device the name "Fireball" (*Feuerball*). After takeoff the object was guided by radio near hostile aircraft. An automatic navigation system controlled by infrared sensors, which tracked the hot exhaust fumes, should track the aircraft.

The fiery halo around the object, which was produced by a special chemical admixture to the propellants, which could ionize the air at high altitudes, generated considerable jamming. Special Klystron tubes transmitted strong electromagnetic pulses, which had very disturbing effect. The clystron tubes were developed by the Research Institute of the German Reich's Post-Office (*Forschungsanstalt der Deutschen Reichspost*) in the city of Aach near Radolfzell, Germany.

A person who was present during the first launch of the "Fireball" remembered the flight characteristics exactly: "At day-time the thing looked like a luminous gyro which rotates about its own axis. At nighttime the "Fireball" was comparable with a burning sphere (Vesco 1974).

There were secret projects on so-called miracle weapons, which were flying disks. One of the projects was launched in 1941 and was developed by the German engineers Rudolph Schriever and Otto Habermohl according to a construction concept developed by Andreas Epp. This disk, 8 m in diameter, worked with rotating blades. It was developed starting in 1943 in the Skoda-Letow factories near Prague. It was to rise rapidly vertically and fly into high altitudes to engage bombers. The disk was called Retaliation Weapon (*Vergeltungs-Waffe*) V-3.

Another project, a disk 42 m in diameter, and driven by 12 turbine engines of type BMW 028, and adjustable jets, was developed by Dr. Richard Miethe and the Italian engineer Bellonzo in the cities Breslau, Dresden and at the Cesko-Morava company in Prague. That device was to fly over long distances and should eventually reach New York. It was given the name Retaliation Weapon V-7.

The Habermohl/Schriever basic model consisted of a semi-spherical cockpit with a flat rotating ring consisting of 12 adjustable rotor blades.

On March 14, 1944, at 6:30 a.m. a prototype of the Schriever/Habermohl disk was ready for a test flight. The test pilot Joachim Roehlike reached an altitude of 800 meters with the disk in one minute. This device was a super sonic helicopter. In horizontal flight it reached a final speed of 2,200 km/h (Betzl 1991).

In its first test flight it reached an altitude of about 20,000 meters. At the second climb it achieved 24,000 meters.

The jets of the V-7 developed a thrust of about 2,800 kilopounds. It must be launched aimed from a ramp. The disk was tested in Peenemunde, where the retaliation weapons V-1 and V-2 were also tested (Coppetti 1979). At the end of the year 1944, Miethe and Bellonco attached one of the V-7 disks-prototype under a bomber and flew it to the peninsula of Spitzbergen. From there it was to fly back remote controlled to Germany. Because of a mechanical malfunction in the steering of the engine, the disk crashed at Spitzbergen (Betzl 1991).

Only three of the V-3 flying disks could be produced by the end of war. Two of them were destroyed by the Germans themselves, and one of them and the design engineers fell into the hands of the Soviet Army (Lusar 1962).

The additional equipment with weapons made the flying disk heavy, and control of the landing procedure was difficult. (This is one of the main reasons why the currently developed flying disks also not used willingly by pilots).

It is not probable that the Allied Air Forces had ever encountered one of these disk in the air. Therefore, they don't count among the Foo Fighters observed.

In the CIA-sponsored Robertson panel meeting, convened in January 1953 to review Air Force UFO data, reference to the Foo Fighters was made. In the record one reads:

"Foo Fighters were believed to be electrostatic (similar to St. Elmo's fire) or electromagnetic phenomena, or possibly light reflections from ice crystals in the air, but their exact cause or nature was never defined. Both (physicist) HP Robertson and (physicist and fellow panel member) Luis Altares had been concerned in the investigation of these phenomena, but David T. Griggs (Professor of Geophysics at the University of California at Los Angeles) is believed to have been the most knowledgeable person on this subject. If the term 'flying saucer' had been popular in 1943-1945, these objects would have been labeled thus" (Durant 1953).

Since most Foo Fighters were not secret weapons, one must expect their appearance at all times. These objects should continue to be observed by pilots. That is indeed the case. But only a few pilots report their sightings. Dr. Richard Haines now has collected about 3,500 cases with UFO sightings reported by pilots from all over the world.

The military airspace controller Mr. H., who is a member of MUFON-CES, in November 1992 witnessed the encounter of military aircraft with unidentified spheres in the Swiss airspace. He was controlling the radar screen and simultaneously heard the conversations of the pilots who observed these objects in their vicinity. During a period of several days, bright luminous spheres were observed by aircraft crews at daytime near the flight course A-9. The spheres glimmered like soap bubbles. These objects appeared suddenly and vanished, to appear again at another place. Sometimes it seemed as if an object would divide into two parts and join again after a few minutes. It was observed that the spheres sometimes or in a certain situation pushed out "something" which had an effect on radar visibility like chaff.

For the pilots this was not a surprising sight as their conversation proves:

"Again just one of these funny hovering spheres in our airspace with which nobody knows how to do something meaningful."

The Swiss military pilots are not allowed to take photographs. The witnesses without evidence of the incident refused to make an official report. These objects maneuvered with enormous climbing and sinking

speed up to a lower altitude of 3,000 m. The distance to the aircraft was estimated at 5 to 10 kilometers (Haas 1995).

Pilots of civilian airplanes likewise observe the spheres. Dr. Richard Haines in the spring of 1997, during a meeting in Stanford gave us documents about a pilots sighting case by two American pilots flying over Germany in 1978 near the city of Stuttgart at an altitude of about 11,000 m. High up in the blue sky ahead of them hovered two bright spheres close together. Soon a third object, shaped like Saturn and coming from the east flew near the two hovering spheres. When it had passed both, one of them started to move in an easterly direction with a high velocity. One of the spheres remained at the same location and passed out of sight when the frame of the cockpit window slowly covered it.

A German flying instructor, who is also a member of MUFON-CES, and his trainee on July 30, 1991, was flying at 9:30 a.m. (GMT) at about 8,500 ft. near the city of Cloppenburg (North Germany) when they observed three metallic-looking spheres in a vertical row. Quickly the flying trainee took his camera and made a photo just when the middle sphere began to shine brightly and flew away. Moments later the other two spheres also flew in a curve up into the sky (Figure 1.2.1). A computer enhancement shows that the middle object left three luminous trails when it accelerated. This photo confirms an observation made by the radar controller Petrozian at Mehrabad Airport on September 19, 1976 in Teheran, when two fighter pilots unsuccessfully tried to scramble an unknown object which had bright shining and flashing lights at its 4 corners in different colors. Another object, moving near ground level, has been described by the flight controller in just the same form as the second object seen near Cloppenburg (Figure 1.2.2 a and Figure 1.2.2 b). (One of the Iranian fighter pilots, Mr. Jaffari-Saghani, in the spring of 1997 informed us personally about his encounter with the UFO which in 1976 shot a luminous sphere at his Phantom fighter, and which he could not get "locked-on" for defending himself.

1.3 Ghost Rockets Over Europe

Soon after the end of the World War II, rumors of new weapons circulated in the news columns. Especially in Sweden, eyewitnesses recorded that they had seen cigar-shaped, silently flying metallic objects. Nobody could say where they came from and what they were. A characteristic of these "ghost rockets" was that they all came from the direction of the USSR. German progress in missile technology led to people fearing that the Soviets also have developed weapons which could bear nuclear bombs. During the War, 5 German V-1s and one V-2 had fallen on Swedish territory between 1943 and 1944. Since the Swedes had investigated samples from these rockets, they knew a little about rocket technology.

In May 1946, low flying rocket-like objects were recorded from all parts of the country. At nighttime the rockets were luminous objects. About 1,500 reports of sightings had been secretly collected, as was discovered when in 1984 the Swedish Government opened its files about "ghost rockets." The official statistics counted 997 ghost-rocket reports for 1946 alone.

On June 12, 1946 the Swedish Defense Staff ordered reports to be collected by all military and civilian defense units. 30 reports had reached the Defense Staff by July 9th. But on that day some 250 sightings were carefully logged by the Staff. Probably a daytime meteor polluted the collection of accounts. Nevertheless, many eyewitnesses described spindle-shaped objects flying low and slowly, with little or no sound.

The Swedish press on July 10th published that in all Sweden in the previous 24 hours spherical and cigar-shaped, blue-greenish luminous objects with a small jet flame had been seen. The Commander-in-Chief set up a special investigation committee. The general suspicion was that Soviet rockets were involved. The work of this committee remained secret until May 1983.

According to the *Svenska Dagbladet* of August 12, 1946, between 9 and 10 p.m. hundreds of persons saw "glowing bombs" which flew from south to north, giving off a brilliant blue-white light. Sometimes two of the objects were seen flying together, and some witnesses reported that smaller silver "balls" were emitted from the larger objects, which were variously described as "cylinders" and torpedoes "with a white nose" and "fire-spurting tail."

A correspondent for the *Christian Science Monitor* stated on August 22nd that not only were the locations of the ghost rocket sightings being censored, but also the publication of reports themselves. A day

later the British Foreign Office admitted that British radar experts had been to Sweden to investigate the ghost rockets and that they had returned to submit secret reports as to the origin of the strange flying objects.

In many cases witnesses reported seeing the objects crash on land and in water (Liljegren 1986). But nothing was ever found, except mundane objects.

By December 1, 1946 the special committee had held 15 sessions. On December 23rd, the Swedish Commander-in-Chief received the final report from the committee. The report reads:

"Despite the extensive efforts which have been carried out with all available means, there is no actual proof that rocket projectiles have been tested over Sweden. The committee has therefore been forced to decide that the investigation has been unsuccessful and that it is useless to continue this activity in its present form and with the present limited resources. Even if the main part of the reports can be referred to as celestial phenomena, the committee cannot dismiss certain facts as being purely public imagination. From knowledge of German activity on the Baltic coast during the war and developments later on, one cannot deny the implications of the reports which have been received through various sources" (Liljegren 1985).

In 1986, the former Secretary of Sweden's Defense Staff Committee, Air Engineer Eric Malmberg stated in an interview on the "ghost rockets":

"I would like to say that everyone on the committee, as well as the chairman himself, was sure that the phenomena observed didn't originate from the Soviet Union. Nothing pointed to that solution.

"On the other hand, if the observations are correct, many details suggest that it was some kind of a cruise missile that was fired at Sweden. But nobody had that kind of sophisticated technology in 1946" (Liljegren 1989).

However, Sweden was not the only country which got visits from ghost rockets. They were seen in Norway, Finland, Switzerland, Belgium and Ireland. Norway notified the press on August 31, 1946, that in the future all rocket-sighting data were to be sent to the Intelligence Department of the Norwegian High Command. Any discussion of the ghost rockets in Norwegian newspapers was banned (Gross 1974).

During the night of September 1, 1946, ghost rockets had been seen in all parts of Greece, particularly in Macedonia and Salonika. On September 11th, ghost rockets appeared in Srinagar, India, and during the week of September 14 -21, 1946, they were reported over Portugal. In some cases the witnesses observed not rockets, but disks (Clark 1992).

In February 1948 the ghost rockets returned to Europe. The *London Times* on February 25th reported that according to "Scandinavian visitors to this country", rockets emitting a bluish-green flame, "almost invariably seen at 9:30 a.m." and traveling at speeds estimated to be between 4500 and 6750 mph, had been observed at various heights, everywhere from just above treetop level to 25,000 ft. The sightings ended in March, 1948. But at various times similar objects would continue to be reported around the world, in spite of the fact that unknown objects in general now were reported to have the shape of disks or flying saucers.

For example: In the summer of 1948, a woman then 28-years-old, with her child encountered a cigar-shaped object not far from the city of Kitzingen, Germany. It was in the late afternoon when the woman was walking over the fields, and she suddenly saw quite near, about 50 meters away, at an altitude of no more than 20 meters, a flying cigar, whose end was cut off. This object was about 20 m long and flew very slowly and absolutely noiselessly. From the end came a short fiery jet flame (1/5 of the object's length). Its color was dark-brown and metallic. The witness could trace the object, which flew straight away through the valley below. The witness said that she was annoyed at the American Army, stationed in Germany, "because they were shooting their rockets over our country" (v.Ludwiger 1995).

When in June 1947 Kenneth Arnold saw 9 flying objects which moved "like saucers which were thrown over the water surface", the ghost rockets soon were forgotten. Because of the publication of "Flying Saucer" sightings by Ray Palmer, who kept the subject alive through his magazines and books during the long periods of public disinterest, flying saucers have been the synonym for unidentified flying objects (UFO's), and Ray Palmer has in fact been the father of modern ufology.

The famous Arnold sighting followed several observations of flying disks in the United States. In April 1947, a meteorologist tracking a balloon instead found himself observing a saucer-shaped object. A silvery

object was said to have dropped from the sky and disintegrated over Washington State on May 5th. A similar object was seen on May 18th in Virginia and later over Colorado desert. On June 12th a chain of flying objects was seen from Weiser, Idaho, and two days later the pilot Rankin observed a formation composed of ten disks.

Kenneth Arnold, by chance, was the one to get the press interested. His sighting of nine silvery shining objects near Mount Rainer on June 24, 1947 marks the beginning of the modern UFO era. Once Arnold's experience had become public property, a host of witnesses came forward with their stories, as shown by Ted Bloecher's study of 1947 UFO reports - on July 4, 1947, silvery disks were seen at many places during daytime. In Portland, Oregon, 5 disks were seen at high noon by dozens of citizens and police officers, ascending and descending, circling around and flying to and fro. In Hauser Lake, Idaho, at least 200 eyewitnesses observed a flying disk in the evening for about 30 minutes which maneuvered in the sky and eventually vanished vertically up into the sky. In Twin Falls, Idaho, about 60 people saw three groups of disks, each of more than 35 plates, which flew in a V-formation. In a time period from June to the end of July, 850 sightings of unknown origin were seen in the United States alone (Bloecher 1967). This number may have been at least double, if the press reports from small towns would also have been collected, writes Bloecher. This assumption has been confirmed by the works of Loren Gross (1988).

The UFO situation in the United States is widely known. Therefore, we restrict ourselves to European UFO sighting cases, and especially reports from Germany.

1.4 Some of the Most Impressive UFO Cases from European Countries

The greatest wave of UFO sightings in Europe happened in the fall of 1954. Years later, Aimé Michel collected all of the available press reports from big and small towns in France and gave an overview of the events in his book *Flying Saucers and the Straight Line Mystery* (1960). Only then did the alarming proportions which the wave had assumed become apparent.

From the beginning of August 1954 to September 10th, unidentified objects were seen in the sky every day. Then the number of reports increased from day to day and culminated on October 3rd, when more than 50 independent accounts of UFO's were registered by the press over the whole of France. The number of sightings started to decrease on October 20th, and at the end of November 1954 only a few inexplicable flying objects were recorded. These objects had mainly the form of spheres, cigars and disks. Several of these objects landed near witnesses, and sometimes occupants were also observed. The witnesses were reliable persons, among them pilots, military personal and policemen (Figure 1.4.1 and 1.4.2).

The French Department of Defense set up a General Staff Committee in the Ministère des Armées (Ministry of Defense) for the purpose of collecting and studying the many reports. This department was based at the headquarters of the French Air Force's Department of Research (*Sunday Dispatch*, October 3rd, 1954, London).

Michel made no field investigations himself, he only derived the accounts from press clippings with all their questionable accuracy. But Michel attempted to discern a pattern in UFO sightings, although it eventually proved to lack much substance. He showed that sightings in a 24-hour period were arranged in alignments and geometrical structures in a way which chance would not account for. However, he emphasized that networks centered on points where cigar-shaped objects had been seen. Several locations of sightings lay on a geographical line connecting the cities of Bayonne and Vichy - called the BAVIC line.

Michel's conclusions were criticized mainly by the astrophysicist Prof. Donald Menzel (1964, 1965), who stated that the calculation of the probability of such a distribution occurred by chance. J and J. Vallée (1966) started an investigation program to solve the question as to how likely it is that "alignments" similar to the ones noted could be found from a complete by random set of observations. They checked the original reports one by one. The task was to compute the alignments exactly, to verify that the points were indeed situated on the lines. The alignments were assumed to be local sections of large geodetic circles. Great difficulties derived from the incomplete nature of the reports received (concerning the location or the phenomenon itself). The Vallées included the sightings most commonly quoted in the specialized works on the subject and even a number of old sightings. They used 500 cases which were collected in 1962 in a catalog. (In 1963-1964, more than 3,000 sightings were developed. This collection of cases was given to the Condon committee at the Colorado University in 1968).

It turns out that quite a few lines were verified with a similar precision as for the BAVIC-Line, but it was confirmed that straight lines exist.

The accumulation of more and more information ought to show up the structure of alignments more precisely. But in France, the lines cross countless sighting points. This raises the question as to whether the part played by chance in the formation on the networks has not perhaps been radically underestimated.

The Vallées simulated the alignment networks by generating points at random on a surface representing France. Statistical laws governing the generation of the network showed that the percentage of isolated observations rapidly approached zero, when the number of points increased. No general conclusion as to the non-existence of certain alignments can be drawn based on Vallée's investigations. The great majority of alignments, if not all, must be attributed to pure chance.

Other UFO researchers later found out (Verga 1984, Sournaux 1975/76) that one sighting (Ussel) was shown to be 4.3 km away from BAVIC, and two of the cases had not occurred on the specified date. Reduced in this way, the BAVIC coincidence fell within the limits of chance.

Nevertheless, some observations - not nine, as supposed, on September 24th on the BAVIC line, but six, came in succession from places which definitely could be connected by a straight line (Figs. 1 and 2). Such findings reinforced the hypothesis that the unknown objects constitute an intelligent phenomenon existing in its own right. It was the discovery of these patterns which converted some scientists and led them to do UFO research.

Only with the possibility of monitoring the behavior of UFO's by radar plots overall do we now know that UFO flight paths which show long straight lines are the exception.

In consequence of the sighting wave, the French public and specially the French military are more open-minded to the UFO phenomenon than in any other country in the world. For example, General Lieutenant Max Chassin, who rose to the rank of Commanding General of the French Air Forces, Central Europe (NATO), in 1958 wrote an important preface to Aimé Michel's book (Michel 1958).

Following a wave of sightings in the latter part of 1973 and early 1974, France's Minister of Defense, Monsieur Robert Galley, said in an interview with Jean-Claude Bourret, broadcast on *France-Inter* on February 21, 1974:

"I must say that if your listeners could see for themselves the mass of reports coming in from the airborne gendarmerie, from the mobile gendarmerie, and from the gendarmerie charged with the job of conducting investigations, all of which reports are being forwarded by us to the CNES (National Center for Space Studies), then they would see that it is all pretty disturbing" (Creighton 1971).

The Gendarmerie Nationale takes the UFO's extremely seriously. They are part of the French Armed Forces and as such accountable exclusively to the highly centralized powers. The gendarmerie have been ordered to collect and investigate all available UFO reports and send reports and possible material to GEPAN in Toulouse. The *Groupe d'Études Phénomènes Aérospatiaux Non Identifiés* (GEPAN) was established in 1977 under the auspices of the *Centre Nationale d'Études Spatiales* (CNES) - France's equivalent of the American space agency NASA. GEPAN, now called SEPRA (*Service d'Expertise des Phénomènes de Rentrées Atmosphériques*), has received a military status under the military direction of DERT (*Direction des Recherches et Études Techniques*).

This French agency is investigating UFO's. But this does not mean that their work is to be published. The editor of *Lumières Dans la Nuit*, Fernand Lagarde, found that his requests for information and documents from official sources were blocked at every stage, just like elsewhere in the world (Lagarde 1982). The reason may be that GEPAN is only a collecting point but not a research institute. Dr. Jean-Pierre Petit, the former director of the National Center for Scientific Research, was told by the head of GEPAN, Jean-Jacques Velasco in 1983: "We are collecting UFO reports, but we don't know what to do with them. Once a case has been investigated, we publish a note on it, and that is that. We have no scientific structure behind GEPAN" (Creighton 1984).

Although the investigations by the French agency are not open to the public, France is the only country in Europe in which the government has shown an official interest in the UFO phenomenon.

The Defense Ministers of other European countries were also convinced that a problem exists. The Defense Minister of the time, Earl Alexander of Turin, told Desmond Leslie in 1954 (Leslie 1963):

"This problem has intrigued me for a long time...There are of course many phenomena in this world which are not explained and it is possible to say that the orthodox scientist is the last person to accept that something new (or old) may exist which cannot be explained in accordance with his understanding of natural laws."

It is very probable that the Defense Minister knew about the report which - like many accounts on similar events - was sent to the Air Ministry by Flight Lieutenant Saladin, of No. 604, County Middlesex Squadron, Royal Auxiliary Air Force.

Saladin took off from his base at RAF North Weald in Essex at 4.15 p.m., in a Meteor Mk8. When he was at about 5,000 meters he saw a whole nest of contrails at 10-12,000 meters over North Foreland. Lt. Saladin reported:

"Through the middle of the trails I saw three objects which I thought were airplanes, but they weren't trailing. They came down through the middle of that towards Southend and then headed towards me. When they got to within a certain distance two of them went off to my port side - one gold and one silver - and the third object came straight towards me and close to within a few hundred yards, almost filling the windscreen (!), then it went off toward my port side. I tried to turn round to follow, but it had gone. It was saucer-shaped with a bun on top and a bun underneath, and was silvery and metallic. There were no portholes, flames, or anything" (Good 1987).

Regrettably Saladin had insufficient time to trigger the camera-gun button to take photographs. No comment was given by the War Office.

Perhaps the most impressive UFO case on record which has been detected visually as well as by many radar stations, is the Lakenheath/Bentwaters case in England. That happened in August, 1956. Only in January 1969, was the case taken off the secret list when the USAF-sponsored scientific study of UFO's, headed by Condon, published its findings (Condon 1969). The team of investigators concluded that

"this is the most puzzling and unusual case in the radar-visual files. The apparently rational, intelligent behavior of the UFO suggests a mechanical device of unknown origin as the most probable explanation." But it quickly stated: "However, in view of the inevitable fallibility of witnesses, more conventional explanations of this report cannot be entirely ruled out."

The visual sighting was made by RAF and U.S. Air Force personnel, and it was simultaneously tracked by three different ground-based radars at RAF/USAF Bentwaters and Lakenheath, Suffolk, as well as on airborne radar. The objects, or at least one object, were seen from the ground and in the air.

The events occurred over a six-hour period between 9:30 p.m. on August 13th and 3:30 a.m. on August 14, 1956. Five separate incidents were reported, at various times involving six ground radar sets and one airborne interception radar. Four incidents involved Ground Controlled Approach (GCA) radar at Bentwaters USAF base. A fifth involved coastal air defense and Ground Controlled Interception (GCI) radars at Neatishead, Norfolk (RAF), Air Traffic Control (ATC) radar and GCA radar at RAF/USAF Lakenheath, in addition to AI radar aboard an RAF interceptor. Witnesses were about 20 radar personnel with up to nine air-visual and ground-visual observers.

At 9:30 p.m., Bentwaters GCA radar detected a single high-speed unknown target. Simultaneously, 15 slow-moving targets crossed the scope in a different direction, and appeared to merge on the display, "they appeared to converge into one very large object, according to the size of the blip on the scope, which seemed to be several times larger than a B-36 aircraft," then moved off-scope.

Another single high-speed target was observed five minutes later to cross the scope, 90 km in just 16 seconds (19,000 km/h). About an hour later a further single high-speed target crossed the scope on a heading the same as the previous target. The control tower personnel and the crew of a transport aircraft on a landing approach observed a bright light over the field.

Bentwaters GCA alerted Lakenheath, requesting confirmation of any unknown targets. At this time, ground observers at Lakenheath independently reported a luminous object approaching the field at a low altitude, which stopped, and then moved away. Two similar objects were observed which approached one another and then moved away. 20-25 miles SW of the field, the ATC radar detected a stationary target. ATC Center and GCA scopes show that the target began to move at a speed of 400 -600 mph after a few minutes and stopped again suddenly about 20 miles NNW of the field.

The responsible AF Commanders eventually gave the order to scramble two RAF interceptors. Neatishead GCI had been alerted and could also see the target on their scopes as the first two deHavilland Venom NF2a nightfighters from RAF Waterbeach approached Lakenheath under their control, at 11:30 p.m. The RAF Fighter Controller on duty at RAF Neatishead, F.H.C. Wimbledon, remembered:

"...After being vectored onto the trail of the object by my Interception Controller, the pilot called out, 'Contact', then a short time later, 'Judy', which meant the Navigator had the target fairly and squarely on his own radar screen and needed no further help from the ground. He continued to close on the target, but after a few seconds, and in the space of one or two sweeps of our scopes, the object appeared behind our fighter. Our pilot called out, 'Lost Contact, more help,' and he was told the target was now behind him and he was given fresh instructions.

I then scrambled a second Venom which was vectored towards the area, but before it arrived on the scene the target had disappeared from our scopes, and although we continued to keep a careful watch, it was not seen by us."

No convincing explanation could be found. However, commentators tried to solve the mystery by regarding the Perseid meteor shower as responsible. But astronomer J.A. Hynek's 1956 evaluation as consultant to the Blue Book noted this statement and rejected the Perseid hypothesis as "highly unlikely" (Hynek 1978). After that, Phil Klass explained the case by a typical anomalous propagation of radar waves in the atmosphere compounded with equipment failure and observer error (Klass 1974). However, radar specialist Martin Lawrence Sough disproved all of Klass's arguments (Sough 1987), and according to official U.S. Air Force reports, the sightings could not be explained by radar malfunction or by unusual weather conditions (Holt 1956).

The Under-Secretary of State at the Ministry of Defense at that time, Ralph Noyes, revealed to Timothy Good (1987) that gun-camera film had been taken by one of the Venom pilots, and that he was shown this at Whitehall, together with a number of other film clips taken by aircrew.

The British Ministry of Defense never commented on this case. The Secretary of State for Air at the time, George Ward, asked by Desmond Leslie why the Government gives no information about unidentified flying objects, made it clear that if he and other members of the Government were to admit the existence of flying saucers without evidence that the general public could actually touch, they would consider that the Government had gone barmy and lose their faith in them.

That is the general point of view in the Ministries of Defense in all of the European countries. There is no cover-up of discoveries concerning UFO's, but a general uncertainty about the phenomenon. In 1967, a spokesman from the MoD explained the Ministry's position on the subject, assuring the researchers that all UFO reports were treated seriously by the MoD, but that its interest was limited solely to aspects relating to defense; consequently there was no department, scientist or other person in the MoD exclusively devoted to the UFO question. He added that no person from the Ministry ever made on-the-spot inquiries or field investigations when UFO's were reported, owing to lack of manpower and financial resources (Stanway/Pace 1972).

The military leaders of Europe regrettably get no support from scientists. The majority of scientists reject the UFO's because they simply do not fit into a current scientific framework. The French astrophysicist Dr. Pierre Guérin explained:

"In science there is no proof of any phenomenon if no scientific model for it exists. The observation of the facts is not the actual fact! We have the testimonial proof, but not the scientific proof. Scientists are not only embarrassed by UFO's; they're furious because they don't understand them. There is no possibility of explaining them in three-dimensional space-time physics "(Good 1987, p.133).

Cases in which military personnel are involved - like the Lakenheath case - are classified. In Europe there is no "Freedom of Information Act." However, in every case where USAF personnel together with members of European (NATO) Forces observed UFO's, the reports may be published with the help of FOIA requests by American citizens.

For example, a glowing disk on July 1, 1977, hovered over the NATO base at Aviano, north-east Italy for about an hour. Italian and American soldiers were witnesses. At 3:00 a.m. a peculiar large bright light appeared in the 'Victor Alert Zone', where 2 military aircraft were based, at an altitude of about 100 m. It

resembled a spinning top revolving about its own axis. The object was about 50 m in diameter and had a dome on top, changing color from white to green and then red. A noise like a swarm of bees could be heard by many military personnel. This object caused a massive power blackout.

The night watchman, Signor Benito Manfré observed the phenomenon one and a half km away, when his dog started to bark incessantly. He went out to the veranda and noticed that the NATO base was in total darkness. Only a "mass" of stationary light low down over a certain spot on the base was seen.

After five minutes the bright object slowly moved away from the 'Victor Alert Zone' and then noiselessly climbed away beyond the mountains near Aviano. A few seconds after the object had vanished the base's lights came on again. Once the object left the base, the dog stopped barking. NATO headquarters was informed. The military debunked the incident. But the American soldier, James Blake, made the story public (Chiumiento 1984).

In March 1978, the Italian Ministry of Defense released a file containing details of 6 unclassified reports by military personnel in 1977. The Aviano case was not included.

The Spanish Air Force's General Castro in 1976 explained (ABC 1976) that he believes in the existence of UFO's, and he also believes that the reason governments do not publicly acknowledge this reality is not due to fear on their part, but rather to a sense of misgiving in the face of an intangible fact about which they are being asked to venture an opinion.

The general was partly responsible for the Air Ministry releasing its files on UFO's in 1976 to Jose Bernitez, a reporter with *La Gaceta del Norte*, who had been invited to Madrid by the Air Ministry. On October 20, 1976, in an office of an Air Force Lieutenant-General who was Chief of Staff, the journalist was handed a file of 78 folio pages containing documentation on 12 of the best cases, as well as photographic material including film taken by Spanish Air Force pilots, which had hitherto been kept secret. (Creighton 1977). Jose Benitez published these reports in 1977. The sensationalized publication produced negative impressions in the Air Force and the Army. In future, any possible declassification had to be agreed at the highest level of the Spanish Army, the Joint Chiefs of Staffs.

In 1988, Ballester-Olmos and Joan Plana joined forces to design a large-scale research project devoted to analyzing the UFO problem and the Armed Forces. Their program encompasses not only the Air Force but the Army, Navy, Civil Guard, Civil Aviation, and Police. They received a collection of 300 UFO reports from all military sources.

On April 14, 1992, the Chief of the Air Force Staff attended a meeting of the Joint Chiefs of the Staffs at which Lt. General Ramon Fernandez Sequeiros was going to recommend that UFO files be declassified. That meant, in future every single case would be analyzed by intelligence officers in order to determine if its dissemination might cause any threat to national security. If not, its declassification would be proposed to the Chief of the Air Force Staff for approval and public disclosure (Ballester-Olmos 1993/95).

An UFO was observed by civilian and military pilots in Spain in 1979, which was the most dramatic air encounter with one or two UFO's.

During the night of November 11, 1979, a super Caravelle of the TEA Company was on its flight from Salzburg in Austria to Tenerife. The airline had 109 passengers on board, most of them German and Austrian tourists. Flight Captain Francisco Lerdo de Tejada stated in an interview to Juan Jose Benitez:

"A few minutes before 11:00 p.m. we got a call from Air Contro Barcelona. They asked us to switch over to 121.5 megacycles, which is an emergency frequency. When we made contact, all we got was the noise of a transmitter, though we were unable to identify what it was all about. It was the moment, or a few seconds later, that we saw the red lights.. Two very powerful, red lights. They were heading towards us at 9 o'clock of our position... The two lights seemed to be set at the two extremities. All of the movements of the two lights were perfectly coordinated, just as if it were one single device we were dealing with. The speed at which they came at us was staggering. I have never seen anything like that speed.. The two lights, in line, came up to us on a bearing of 250°... When we saw them first, they were about 10 miles away. Then they made towards us, and then were literally 'playing with us' at not much under half a mile or so. The object was moving upwards and downwards at will, all round us, and performing movements that it would be quite impossible for any conventional machine to execute... What sort of aircraft flies at that sort of speed? What sort of aircraft takes up a position less than half a mile from my jet liner and then sets about 'playing games' with me?"

The size of the object was approximately the same as a jumbo jet. The airline pilot said that its approach speed was such that he was obliged to make a 'break' turning the aircraft sharply to avoid collision.

A newspaper reported that an elderly male passenger collapsed when he saw the object zigzagging across the night sky towards the plane. Captain Tejada said: "The situation finally got so serious that we decided to call Manises and request permission to make an emergency landing."

Shortly before midnight the plane touched down at Valencia in a very steep curve. The UFO was still visible over the airport buildings, and had been seen by ground personnel, air traffic controllers and the Airport Director. A number of radar echoes were registered in the area where the airliner was flying. Five minutes after the airliner had landed, the Spanish Air Defense Command HQ ordered two Mirage F1 jets to take off on an intercept mission from Los Llanos Air Base, near Albacete. One of the pilots reported to Sr. Benitez that when they came close to the object one of the planes was subjected to a number of sudden close approaches (Benitez 1979).

Perhaps the same object appeared again exactly one year later, on November 11, 1980, in north-east Spain but a few hours earlier. At least six Spanish airliners reported sighting the object. One of the Iberia pilots, Commandante Ramos, describes his sighting:

"When we were about 108 miles from Barcelona VOR (VHF Omirange) 'it' appeared. We supposed a plane was coming straight at us...It was like a sphere, or rather, like an enormous soap bubble... colored a very bright green on its surface, it crossed our course and when we dived it made off towards the south. It was then that we saw it was emitting other lights... When it passed close to us we also saw a second ball - or whatever - close to the big one, but much smaller in size.. Another plane came in on the radio...it was a Transeuropa (flight 1474). And he also asked Barcelona if there was 'green traffic' on his flight route. Then I talked to the Transeuropa plane and told him what had just happened to me."

While their Boeing 727 was still on the ground, the crew of Iberia flight 1831 sighted the UFO, and when the captain signaled to it by flashing his landing lights the object immediately 'went out' and disappeared. Other witnesses at Barcelona Airport said that the UFO 'buzzed' the runway and then shot up into the sky (Benitez 1980).

In 1980 another famous UFO incident happened near Ipswich in Suffolk, England, about which the British ex-Ministry of Defense official Ralph Noyes expressed his feelings with these words: "The RAF Woodbridge case of December 1980 strikes me as one of the most interesting and important of recent years, anyway in this country" (Noyes 1985).

In June 1983, a formerly secret document was released to Robert Todd of the *Citizens Against UFO Secrecy* (CAUS) group in the United States, under the provisions of the Freedom of Information Act. According to the letter of release, "the Air Force file copy has been properly disposed of in accordance with Air Force regulations. Fortunately, through diligent inquiry and the gracious consent of Her Majesty's Government, the British Ministry of Defense and the Royal Air Force, the U.S. Air Force has provided a copy for you" (Bent 1983)

This document confirmed what was known from reports of civilian witnesses and rumors from military personnel (Randles 1981/82). During the night of December 27, 1980, a UFO landing is alleged to have occurred in Rendlesham Forest, just outside the perimeter of RAF/USAF Woodbridge, near Ipswich. No reasonable information about the case had been given by the MoD. Therefore, the official report to the MoD written by Lieutenant Colonel (now Colonel) Charles Halt, US Air Force Deputy Base Commander at Woodbridge at that time, is the most impressive evidence of these events.

Squadron Leader Donald Moreland, British Commander at the adjoining RAF/USAF base at Bentwaters, sent Halt's report to the Ministry of Defense. Asked by Dot Street and Brenda Butler (co-authors with Jenny Randles of *Sky Crash*, 1984), Moreland knew nothing about this incident.

Halt's letter from January 13, 1981, reads as follows:

"Early in the morning of Dec 27, 1980 (approximately 03:00 a.m.), two USAF security police patrolmen saw unusual lights outside the back gate at RAF Woodbridge. Thinking an aircraft might have crashed or been forced down, they requested permission to go outside the gate to investigate. The on-duty flight chief responded and allowed three patrolmen to proceed on foot. The individuals reported seeing a strange glowing object in the forest. The object was described as being metallic in appearance and triangular in shape, approximately two to three meters across the base and approximately two meters

high. It illuminated the entire forest with a white light. The object itself had a pulsing red light on top and a bank(s) of blue lights underneath. The object was hovering or on legs. As the patrolmen approached the object, it maneuvered through the trees and disappeared. At this time the animals on a nearby farm went into a frenzy. The object was briefly sighted approximately an hour later near the back gate..."

"Later in the night a red sun-like light was seen through the trees. It moved about and pulsed. At one point it appeared to throw off glowing particles and then broke into 5 separate white objects and then disappeared. Immediately thereafter, three star-like objects were noticed in the sky, two objects to the north and one to the south, all of which were about 10° off the horizon. The objects moved rapidly in sharp angular movements and displayed red, green and blue lights. The objects to the north appeared to be elliptical through an 8-12 power lens. They then turned in full circles. The objects to the north remained in the sky for an hour or more. The object to the south was visible for two or three hours and beamed down a stream of light from time to time. Numerous individuals, including the undersigned, witnessed the activities ..."

A radar operator at RAF Watton in Norfolk reported to an investigator that an 'uncorrelated target' was picked up on their radar sets on the night of December 27th, but had been lost about fifty miles south - in the vicinity of Rendlesham Forest where the target dove below the radar horizon.

In 1986 Timothy Good spoke with Colonel Halt, who at that time was based with the 485th Tactical Missile Wing. He denied that any movie film had been taken of the UFO. In answer to the question whether any occupants had been seen, Colonel Hart stated:

"There is only one individual who talks about that, and I can't speak for him. I can't disprove what he says, but I can't corroborate it either.... There are a lot of things that are not in my memo, but there was no response from the Ministry of Defense so I didn't go any further with them" (Good 1987).

In an interview which he gave to the TV program *Unsolved Mysteries* in 1991, Colonel Halt reported that the beams of light coming down from an object also pointed towards the weapon storage (Halt 1991).

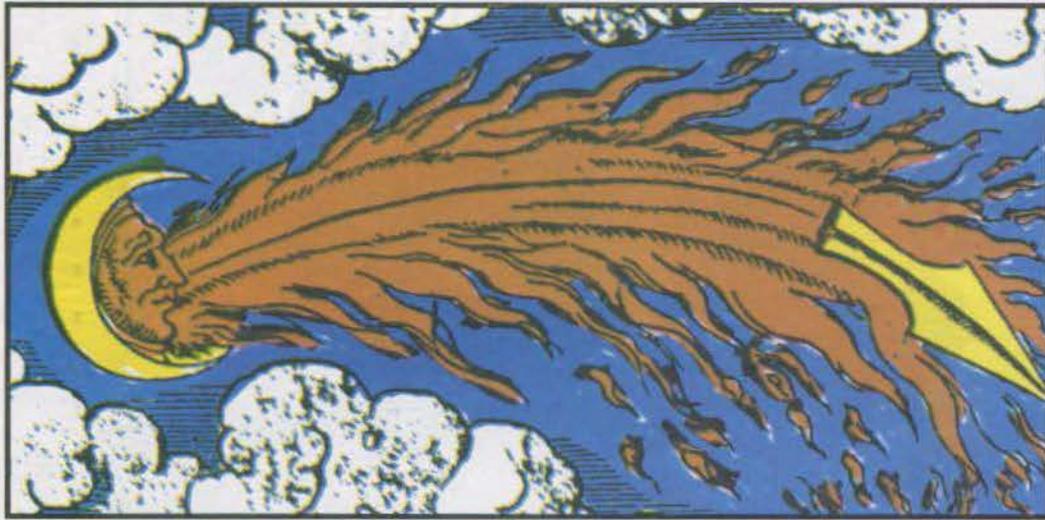
Halt himself made an audio tape recording when he led a second patrol into the forest on December 29, 1980. The tape describes their efforts to carry on radioactive radiation readings at the landing spot. Nick Pope, head of the MoD Secretariat Air Staff (AS2) office, undertook a re-examination of the incident in 1995. He also discussed with radiation experts the value of about 0.1 milliroentgen of beta/gamma readings, measured at the time by Col. Halt's patrol. Scientists with the Defense Radiological Protection Service, which is a unit attached to the Institute of Naval Medicine near Gosport, Hampshire, told him that the levels of radiation reported in Col. Halt's memo were ten times what they should be in that area compared to their background samples (Pope 1995).

That case had been discussed in the House of Lords as well as in the House of Commons, and looked into by the Senator of Nebraska, James Exon. The different British Ministers of Defense since that time always gave the same statement about that case, that is, that there had been something unusual in the woods, but that the event did not concern defense affairs. One has to wait whether sometimes it will come out that the incident was a kind of psychological warfare which made the soldiers to "see things".

In Germany, UFO cases concerning Air Defense are classified. There are rumors that in the seventies unidentified objects were registered on radar which came from the Soviet Union in westerly direction. NATO was alerted, and many aircraft were ordered to scramble. After the fall of the Wall, East-German radar controllers confirmed this incident. The East German officers were annoyed about the "Soviet Friends" who had not informed them of the forthcoming attack on the West by the Russians. When the unknown targets flew over Poland, they suddenly turned to north and disappeared over Sweden (Mehner 1994).

In 1983, only one of the three greatest German politicians took UFO's seriously in public. When asked what he thought of UFO's, Franz-Joseph Strauss, then government head of Bavaria and former Minister of Defense, now deceased, answered: "I am still generally distrustful of UFO observations. Personally, I think that UFO's are meteorological phenomena like fireballs or ball lightning." And he stated that the civilian and military research institutes should investigate the phenomenon jointly, and that this would certainly be successful (Habeck 1997).

**Ein Erschrecklich vnd Wunderbarlich zeychen/so am
Sambstag für Judica den zehenden tag Martij zwischen sieben vnd acht vhrn
in der Stadt Salons in Frantcreyck/von vielen leuten gesehen worden.**



**Dem Durchleuchtigen Hochgebomen vnd Großmechtigen Herrn Herrn Clodio/Brauen von
Tende/Rittern des ordens Regenten/vnnd des Königes in der Prouinz Stathalern/Entbeter Michael
De Noſtre Dame/ſein vnuerthener gchoſamer Diener/ſeinen gruſ/vnd alle wolſart.**

Gnediger Herr/Nach beſehener muſterung/ſo geweſen am erſten tag Februarij dieſes 1554 jats/iſt allhie zu Salon ein ſehr erſchrecklich/vnd entſeglichſ geſicht am 10 Martij vngeuchlich zwischen 7 vnd 8 vhrn gegen dem abend geſehen worden/welchs/meins erachtens / biß gen Marſilium geracht hat / Dan es auch zu Sanct Chamas bey nabend dem Meer geſehen worden/alſo das bey dem Morin/welcher dieſelbe zeyt nabend dem erſten vnterreyt geweſen/ ein groſß Fwer vom Auffgang kommen iſt/vnd ſich gegen dem Vidergang hat gewendet. Dieſes Fwer ſehr groſß / vnd aller maſſen wie ein groſſe brennende ſtangen oder ſackel geſtalt/hat einen wunderbarlichen ſchein von ſich geben/vnd dauon ſelen die Flammen geſpinnungen/wie von einem glühenden Eysen/das der Schmide arbeytet / Vnd hat ſolch Fwer viel funden in die höhe/glinzende wie das Silber/vnruſſiger leng auffgeworffen / gleich der Jacob ſtraſſen am Himmel / Galaxia genant / ſehr geſchwind wie ein pfeyl/mit einem groſſen rauschen vnd praſſeln/welchs die Poeten inmensum fragorem nennen / vnnd gleicher geſtalt wie die bletter vnd bawne von einem gewaltigen Winde hin vnd wieder getrieben/für vber gelauffen. War lang/vnd biß in 20 minuten gewehret/biß wir es geſehen/gehend vber die gegent Arla/ſünſten den ſteinigen weg genant / da hat es ſich gewendet gegen Witrage/hoch ins Meer/ vnnd der Fwerige ſtreime den es machet/behielt lange zeyt ſeine Fwerige farbe / vnd warff gerings vmb ſich die fwerigen funden / wie der pliz / ſo vom Himmel fellet. Dieſes geſicht iſt viel erſchrecklicher geweſen / dan das es menſchliche zung möcht außſprechen/oder beſchrieben werden/Vnd mich bedunckte das es von einem Berge iſſeyt Aiy/ſance Wilkum genant herkäme/Aber den 14 dieſes Monats/bin ich nach Aiy erfordert worden / daſelbſt bey vielen Bürgern ſleißige nachfrag gehabt/ob ſolch geſichte auch geſehen/aber alda nichts erfahren / Sonder von dannen erſt bey zweyen meylen iſt es erſchienen/vnd der Herr derſelben ort hat es ſelbs geſehen/ vnd begeret das ich ſein genaueter alda ſein/ſolchs auch ſehen vnd außlegen möchte. Zwen tag/nach dem man ſeiner acht genommen/iſt der Balbirer von Sanct Chamas zu mir kommen/ vnnd angezeygt/das er vnd andere Bürger daſelbſt auch geſehen/vnd es geſtalt geweſen in form eines halben bogens/ vnd gewehret hab biß zu dem Spaniſchen Meer/Vnd wo es nider/wie es in der höhe geweſen / hette es alles vorbient vnd zu puluer verzeret/do es für vber gangen. Dan am Himmel vnd in der weyren / iſt es bey einem Piſaniſchen lauff oder ſtadio biert geweſen/dauon für vnd für das Fwer geſpürte vnd gefallen. Vnd ſouil ich dauon iudiciren kan/nach gelegenbeyt dieſer gegent vnnd Climatis/iſt es new vnd ſehr frembd zuhören/vnd wer viel beſſer/ das es nicht erſchienen. Dan dieſes geſicht oder Comet ein gewiſſe anzeygung gibt/das dieſer yegent der Prouenz vnd andern Flocken am Meer/ein vnuerhoffter vñ vnuerſchener vnfall begegnet ſol/durch Krieg/Fwer/Hunger/Peſtilenz oder andere frembde Kranckheyten/oder ſonſt von frembden Nationen beſchwert vnd vnuerdruckt werden. Dieſes zeychen haben mehr dan tauſent menſchen geſehen / vnd bin daſſelbig zuuerzeychenen gebeten worden/vnd Ewrer Herrligkhey zu zuſchreiben / ſo es / meins erachtens ſelbs geſehen/vnd gehört/wie es beſehen iſt/Vnd bitte Iheſum vnſern Herren das er E. W. Ehr/ lang leben vnd wolſart reichlich mehien vnd erweytern wölle. Datum in Frantcreyck zu Salon in der Prouenz 10 Martij/Anno 1554.

Ewre Herrligkhey

Unterthener vnd
gchoſamer Diener

Michael De Noſtre Dame.

Aus Françoſiſcher Sprach Transferirt / vnd Gedruckt zu Nürnberg bey M. Joachim Keller.

Fig. 1.1.1: Nostradamus reported that on February 1st, 1554, in Salon in the Provence, France, hundreds of witnesses observed a big “ bright burning rod or torch in the sky which changed its flight path (Hess 1919)



Fig. 1.1.2: Six fishermen in Stralsund after observing a mirage with ships then discover an object like a “man’s hat” hovering above the Nicolai Church, on April 8th, 1665 (Francisci 1680).

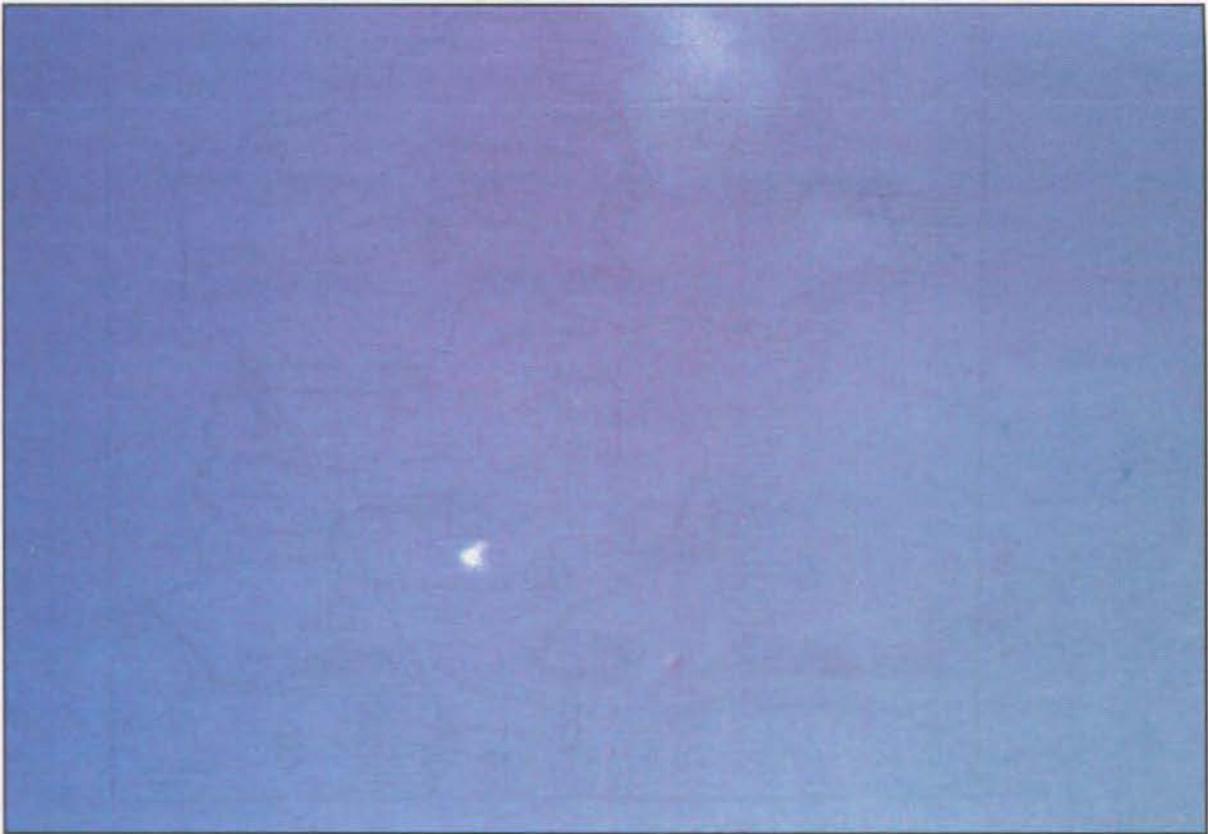


Fig. 1.2.1: Photo taken on July 30, 1991, near Cloppenburg, Germany, at about 8,500 ft. by a German flying instructor showing three unknown flying spheres. The middle one is just starting to move left and changing its spherical form.



(a)

Fig. 1.2.2: Comparison between the observed and photographed object within a group of three spheres near Cloppenburg, Germany, in 1991 (a)

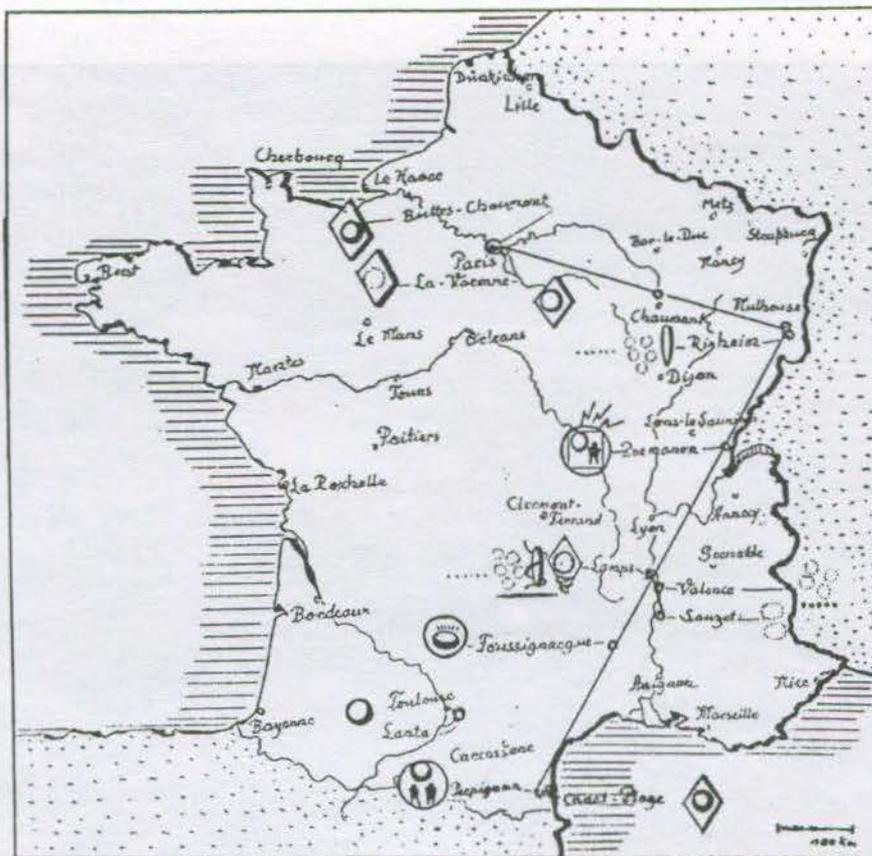


Fig. 1.3.1: Unidentified objects observed on September 27th, 1954, over France (Drawing by Aimé Michel)

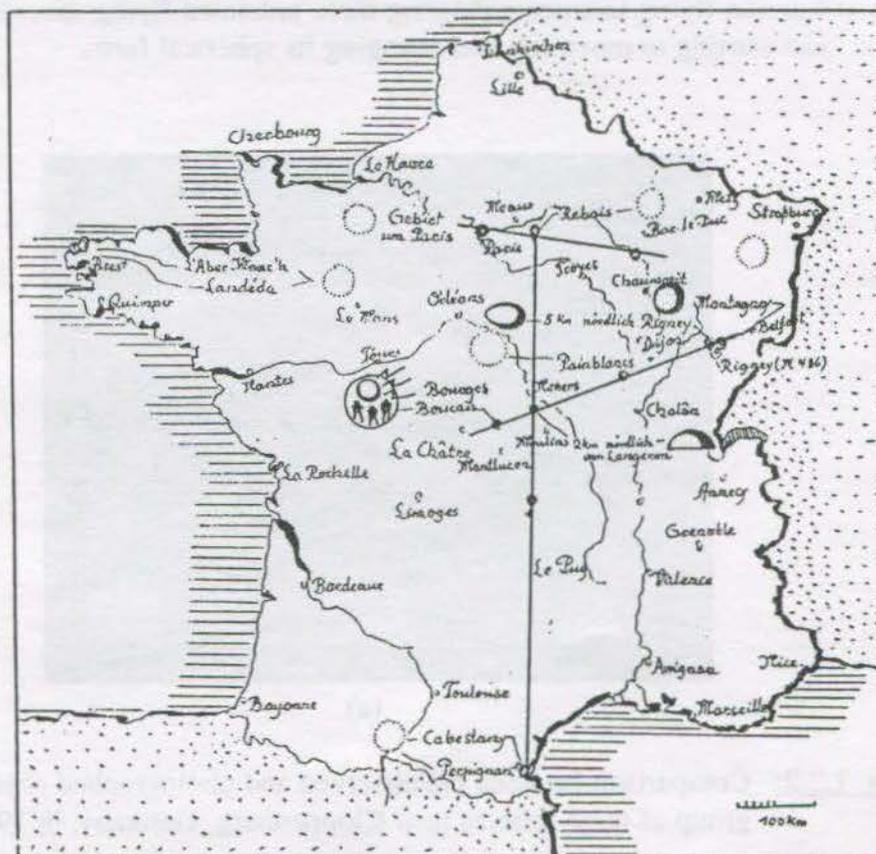


Fig. 1.3.2: Drawing by A. Michel with UFOs, seen on September 29th, 1954.

2 Different Shapes of UFOs Seen Over Germany

Since UFOs are a worldwide phenomenon the same shapes of UFOs are observed in Germany as well as in other countries. As a result of a book by Rutledge (1981) all UFO observations are divided into two phenomenological classes:

- A) Objects of metallic appearance and construction and,
- B) Objects consisting of luminous zones without physical structures (nocturnal lights).

Class A objects appear to be guided by intelligent beings. However, since the occupants of these objects do not discuss their origin with us, we can only deduce it, as far as possible, from the observed behavior of UFOs and from investigations of their physical traces.

A classification of the most frequently observed objects consist of 10 shapes:

1. Sphere
2. Saturn shape
3. Hemisphere
4. Oval shape
5. Cigar shape
6. Domed disc
7. Triangle or boomerang
8. Geometrical shape
9. Unusual shape
10. Formation

In this chapter some examples of sighting reports will be given. We have only chosen cases from Germany, which were investigated by MUFON-CES. Most of these cases have not yet been reported in the English speaking literature.

The degree of confidence one can have in the credibility of a case investigation can be characterized by a reliability index (Olsen 1966). The meaning of the variables in this index is given in Appendix A. That index enables foreign investigators to estimate the trustworthiness of an individual case; since the interviewer usually is the only person in contact with the witness and thus able to estimate his credibility. Characterizations of a case by a reliability index is somewhat of an oversimplification. But, we shall use it nevertheless, since several hundred investigations have already been evaluated in this manner. We have not yet discovered a better characterization of UFO reports.

The following cases all have a very high degree of credibility. A more detailed description of these cases was given in various MUFON-CES reports. Ten (10) of which were written in German (see Appendix B).

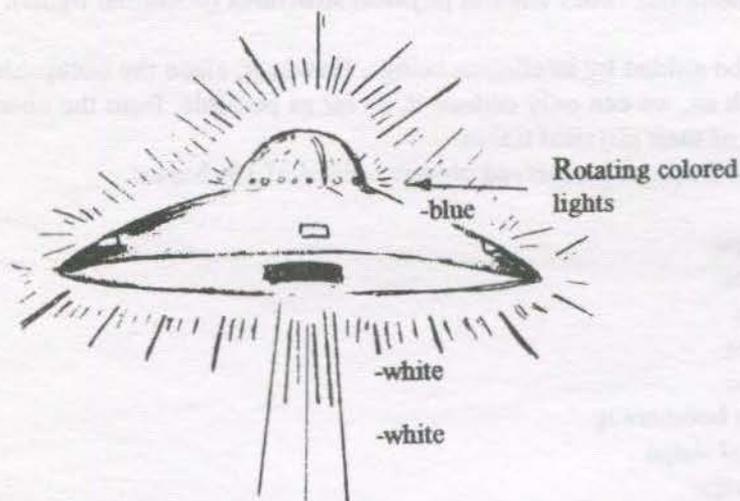
2.1 Disk-Shaped Object With Dome on Top Over Messel Near Frankfurt

On March 13, 1982, several 15-17 year olds were on their way to a discotheque in the town of Messel, 20 km south of the city of Frankfurt. At approximately 9:10 p.m. they observed three groups of lights consisting of four round lights flashing in different colors. Each group formed a square of 1.5° diameter at an altitude of about 30°. The first formation moved slowly and then stopped to hover in the air. The second formation displayed a slow movement as well; but the third group flew very fast over these formations and disappeared. After a few seconds the other formations moved away too. At that time the teenagers went into the discotheque.

At about 9:30 p.m. they were called out by friends to see something strange in the sky. A few minutes later all of them observed a bright blue flash coming from the sky like a spotlight. Soon after that, a steel blue luminous disk with a dome on top appeared over the woods about 600 meters from where they were standing. It slowly approached the witnesses at very low altitude, a distance of about 100 meters. Its diameter was about 10 meters wide. The dome was divided into several multi-colored segments. Inside the dome, something rotated like a "beacon". On the edge of the dome the colors yellow, green and red

appeared, one after the other. Near the edge of the disc were four square white lights arranged at equal distance from each other. On the bottom of the disc a bluish-white light radiated in non-regular intervals, creating a cone-like shape. After a few seconds the disc started to move in spiral curves down to the ground; it stopped for a moment before it flew away at a steep upward angle. The excited teenagers immediately called the police. When the police officers arrived the disk could no longer be seen, but several unusual lights over the woods were observed by the police officers, too. (MUFON-CES Report No.9, 1983)

Because of the many reliable witnesses the reliability index for the case is $p = 99.99\%$



2.2 Egg-Shaped Object Over the Hochries Mountain Near the City of Rosenheim

Mr. L., the proprietor of an Alpine lodge on Hochries mountain (1569 meters) in Germany, was looking through a panoramic window at the snow-covered landscape. He was there with the caretaker of the lodge at 8:30 p.m. on December 10, 1973. At a distance of about 8 km they could see the mountain Weitlahner Kopf (1611 m). On the top of this mountain they noticed a red light. Curiously both men took out their binoculars (10 x 50). They wanted to verify whether or not the light came from the cockpit of a helicopter.

At about 8:50 p.m. Mr. L. fired a red flare signal rocket in the direction of the unidentified object. His intent was to indicate to the pilot, which may have been in trouble, that he was seen by members of the mountain rescue service. Soon after, the object started to shine in a much brighter red color and rose-up slowly in the air. After 4-5 minutes it hovered about 200 meters over the top of the mountain. Suddenly it moved in the direction of the Hochries-lodge. When it was only 2 km away it stopped in mid-air. The witnesses now recognized that the object was egg-shaped and not a helicopter as they had expected. Its upper part resembled a transparent cockpit. Colored lights rotated around the external rim and around the lower part of the object. The "egg" had a height of about 10 meters and flew absolutely soundless. The rotating lights were comparable with a light show in a discotheque, randomly flashing on and off without a pattern. From top to bottom the colors of the lights were red, green, blue and white.

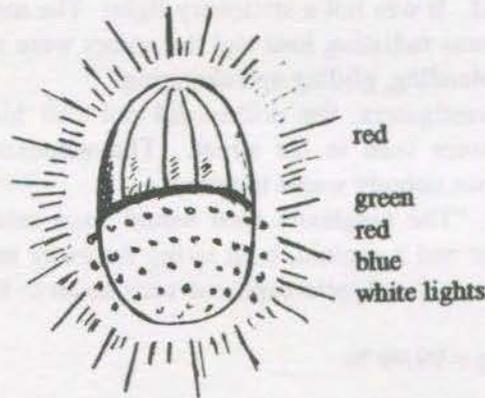
"The lights ran counter-clockwise, from left to right, without any apparent system and not simultaneously," said Mr. L. "At first one light appeared, then came the next one and so on. It looked as if fluorescent tubes were running around and flashing in several different positions."

After several minutes the object flew toward Klausenberg mountain (Austria) and hovered about 30 meters over the top. It then changed its course and moved closed to a nearby Alpine lodge where it stopped for a long time. Mr. L. via his radio-transmitter informed not only the proprietor of the Klausner-lodge, who

was observing the strange object as well, but also the mountain rescue services in Bavaria, Austria and Czechoslovakia.

The object hovered motionless, only flashing its colored lights. Since nothing was happening Mr. L fired another signal rocket in its direction trying to get it to move again. Shortly thereafter the object began to rise up vertically, first slowly, but then very rapid until it was out of view. (MUFON-CES Report No.1, 1975)

The reliability index for that case was calculated to $p = 95\%$.



2.3 Cigar-Shaped Objects Over Jemgum

Jemgum is a small village in the northeast corner of Germany. The village is located a few kilometers from the Netherlands border. On March 7, 1977, a 16 year old student, standing in front of his parents house, observed a bright spot in the sky. As he watched, a small square object separated from the spot. He observed it gliding slowly towards the ground. After he went and got his binoculars (10 x 50) he realized the small object, which moved downward at a 30° angle against the horizon, was connected to a bigger object by only a thin bluish-white ray of light.

The big object was cigar-shaped and surrounded by an orange-colored halo. Seen through his binoculars, this object filled 4/5 of his field-of-view. It appeared reflective, almost glaring. Through the middle of the object ran a wide-band which was a bit darker and consisted of several colors changing rapidly (orange, yellow, green, blue and sometimes red).

The student's 8 year old brother called his attention to another, smaller object with the same form coming from the south. The second object moved very quickly in the direction of the first object and suddenly stopped. Excited, the boy ran into the kitchen to get his mother. Mrs. S. went outside and observed the two objects together with her children. The second object hovered at a 20° angle. In a southerly direction they recognized a third object with the same shape, hovering motionless in the sky off in the distance. The third object was only visible for approximately 5 minutes. Mrs. S. called her husband - a medical doctor and chemist - so he too could observe the objects they had seen through their binoculars. Dr. S. came out of his doctor's office; he also observed the objects through his binoculars.

Another ray of light came out of the second object, apparently guiding another smaller object toward the ground, at the same angle as the first one. The roofs of nearby houses blocked the view to the location where the light rays touched the ground. Investigations showed the possibility, that the rays could have come into contact with 350 volt power lines, which run in the area where the beams appeared to have pointed.

Several minutes after the first object let down the small satellite, a second much brighter and broader beam started to come out of the object and moved slowly parallel to the thin ray in the direction of the

hidden satellite - like the antennas of a snail. After it made its way down $\frac{3}{4}$ of the way, the beam stopped moving. It seemed to wait for the small luminous satellite, which slowly came up again. Mrs. S. remembers: "I guess it runs on light".

When the satellite nearly reached the end of the bright beam, the beam was drawn into the big cigar-shaped object followed by the satellite. After that a fog-like luminous aura formed a dome around the first big object. Soon after that the shape of the object changed into a round one. Witnesses got the impression that the object had turned on its axes directly in their line-of-view. The in and out movement of the satellites from both objects lasted about 10 minutes. After the second object finished exactly the same maneuver as the first, both objects remained visible for another 30 minutes. (Figure 2.3)

Mrs. S. said: "Everything was shimmering. As if the object itself was glowing...It's hard to describe. The object appeared red-hot and vibrated. It was not a stationary light! The movements appeared as if one would look into a blast furnace, as if it was radiating heat and the colors were shining out of the heat. The light was very irregular. All the colors blending, gliding and changing".

As so often observed by UFO investigators, the doctor did not call his neighbors to witness the appearance, although several peoples were seen in the street. The witnesses feel embarrassed to call attention to a phenomenon which existence nobody wants to accept.

Dr. S. later explained his behavior: "The neighbors then would have said that the doctor is crazy"! Therefore, he preferred to call a druggist and a captain, both living far away and asked them whether they also saw the strange objects. They did, but the objects appeared very small to them. (MUFON-CES Report No.4, 1978)

The reliability index for this case is $p = 99.99\%$

2.4 Star-Shaped Objects Over the City of Ingolstadt

Star-shaped objects had not been reported before they appeared for the first time in September 1979. They were observed for several nights over the city of Ingolstadt. Since that time members of MUFON-CES have interviewed several flight controllers, a dozen police officers and numerous other witnesses. They have also analyzed photographs and radar recordings that were made on film.

On September 16, 1979, at about 9:30 p.m., a TV technician, Mr. Y. arrived at his home. He lives in the suburbs just outside of the city of Ingolstadt. A neighbor called his attention to three bright lights in the sky. These three large (15 meters) objects hovered at an altitude of about 200 meters, approximately one kilometer away from his house. Their surface seemed to consist of metal, "like silver foil". The objects were surrounded by a bright light with white to yellow-greenish color.

After a short period of time, one of the objects flew toward a big cubic shaped billboard. The name of the car company "AUDI" is displayed on all 4 sides. The cube is about 450 meters away from Mr. Y's home. The luminous object stopped about 70 meters above the cube. Witnesses recognized that the object had 5 points. Two of them pointed upwards, two pointed downwards and one pointed in flight direction. Red lights flashed around the points. After one minute the star shaped object flew back to the two waiting objects, forming a chain. This chain of lights then flew toward the billboard, in only 5 seconds, after which they continued in the direction of the city Eichstaett (about 25 km away from Ingolstadt). Mr. Y's observation lasted about five minutes. He called the police station in Ingolstadt-west as soon as the objects disappeared. The police had already received 6 or 7 additional calls from other eyewitnesses that same evening.

At 9:45 p.m. the police officers in Eichstaett observed the objects, and at 9:53 p.m. police officers in Gunzenhausen (60 km north-east of Ingolstadt) also reported their sightings. Six minutes later police officers in Weissenburg (about 40 km north east from Ingolstadt) observed two strange lights at a high altitude. Eventually, at 10:01 p.m. the headquarters of the state police in Munich (70 km south of Ingolstadt) was informed of the sightings.

The two police officers who had interviewed Mr. Y. were driving in their patrol car north of Ingolstadt. At 11:02 p.m. they encountered a 5-pointed luminous object which hovered at an altitude of 20° , approximately 2 km away. The object appeared to be the same size as the moon. It had a yellowish color and continuously showed flashing lights. One of the police officers Mr. F. later said: "I was amazed. I didn't believe in the whole mumbo jumbo. But suddenly that thing was there!"

The sharp points shone in a bright orange-red color in non-regular intervals. Meanwhile the interior of the object continuously radiated as bright as floodlights. The witness got the impression, that the edges shimmered. The driver tried to find a better position for an unobstructed observation and got only a short glimpse of the appearance. Officer F., however, noticed that some light source on the edges of the object moved around with a frequency of about 3 Hz. This caused the shimmering of the edges and the flashing of the points.

The object could be observed for about 10-15 seconds. When the patrol car reached a location from where the witnesses had an unobstructed view, the object had already vanished.

At 11:22 p.m. two other police officers saw two luminous objects in Schwabach (10 km south of Nuremberg, and 70 km north of Ingolstadt*).

Two days later, on September 9, 1979, the pointed objects were again in that area. At about 8:30 p.m. witnesses in the city of Nuremberg observed an 8-pointed object flying at an altitude of about 1300 meters in a southerly direction.

One hour later an oval object flashing red lights and dancing up and down was seen near Ingolstadt. Police officers from Ingolstadt again informed the state police headquarters in Munich. They in turn called the Federal Office for Air Traffic Control (BSF) in Munich-Riem and ordered the flight controllers to have a look for "UFO-related shapes over the area Ingolstadt".

Flight controller H. had a Cessna 414 on his radar screen which was located 30 km north of the city Ingolstadt. He asked the pilot to look for any unusual lights in the sky. The Cessna had departed at 8:30 p.m. from the Munich Airport and was on the way to Brussels. Aboard were the owner of the airplane, Mr. K., and the female pilot. The airplane flew at an altitude of 3600 meters. At first, the pilot could not see anything unusual.

Approximately 30 seconds after the call from the flight controller, she informed the tower in Munich-Riem, that she could now see several lights rising up from the ground in flight direction. Soon thereafter she reported very excited that 4 or 5 very bright lights were flying toward her. They each had 6 points and were yellow-green in color.

The pilot was very disturbed when she described that the objects were in front of her cockpit. They held the same speed and altitude, then changed position from right to left so fast that she could hardly keep up describing what was happening. She got the impression that the lights were "playing" with the Cessna. Sometimes several objects were out in front, and the next moment they flew behind the plane, and at one point they circled all around the airplane. (Figure 2.4)

As fast as the bright objects appeared, they disappeared again after about 30 seconds. The two passengers were so distraught that they had to make a stopover at the Frankfurt Airport. From there the owner called flight control in Munich to confirm everything that his pilot had reported. He explained that he didn't believe in UFO's, but these observed objects were totally unexplainable for him.

The communications between the pilot and Air Traffic Control Munich was overheard by the military flight control at Furstenfeldbruck Airport. A police officer who overheard the conversation, later told his colleagues in Ingolstadt that the witness account sounded like the sound track of a science-fiction movie.

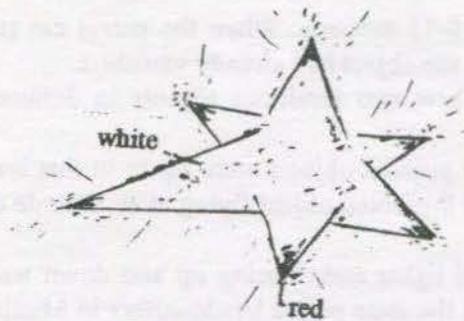
The search and rescue helicopter "Pirol 203" which was requested by the police from the German Federal Border Protection, arrived in the area of Ingolstadt at 11:03 p.m. The pilot circled over Ingolstadt until 11:21 p.m. without discovering any unusual lights in the air.

Subsequently, the statement for the press, radio and TV, made by the Bavarian Ministry of the Interior on September 9, 1979, read as follows:

"Because of the unusual weather condition at the time in the area of Ingolstadt it came to mirages which were caused by the anti-aircraft fire from the military training area Hohenfels, and in some cases also by civilian aircraft's (document 315/79)".

For many reasons this "explanation" is pure nonsense. But, it is quite understandable, that the administrative body must offer some explanation to satisfy the growing public interest. During its investigations the MUFON-CES members found out how busy the members of the police force and the Air Traffic Control are during their normal activities. They don't want to deal with additional stress and strain caused by real or alleged UFO sighting reports. If the administrative bodies try to explain away such phenomena, it may not always be because of a "cover-up", but perhaps to avoid obstruction of the

heavy load of routine work by something that they can't do anything about anyway. The same reason also be true for the employees of the Air Force in the USA and in Russia. (MUFON-CES Report No.8, The reliability index for the Ingolstadt case is $p = 99.99\%$)



2.5 The Plauen Case

One of the characteristics of the UFO phenomena appears to be the fact that most sightings occur at night in rural areas when nobody seems to be aware of unusual things in the sky. They seem to appear in the sky when most people are at home in front of their television. Nobody really seems to expect UFO's between high-rises in the inner city limits. But this is exactly what happened on Saturday evening on May 21, 1994, in the city of Plauen. The city of Plauen is located about 250 km east of Frankfurt and has a population of about 100,000 people. The 39-year-old postal worker Mrs. H. was watching TV by herself in her first-floor apartment, which is part of a high-rise community near the city center. Her daughter was out for the evening enjoying the local discotheque.

After her movie ended at about 11 p.m., Mrs. H went to her balcony from where she has an unobstructed view of the road and the disco. It was getting late and she was looking out for her daughter. As she stepped outside she noticed a bright light about 5 m to her right in front of the balcony. She realized that the light surrounded a small 9-year-old oak-tree like an aura. The little tree was surrounded by other small trees, but none of the other trees were illuminated and it was also the only one that was swaying back and forth in the wind. Mrs. H. felt the strong wind and was surprised that only the illuminated tree was moving with the wind. The other trees were not affected, but this one was touching the ground at times and seemed to have a terrible struggle against the wind. Mrs. H, looking for the source of the wind, suddenly spotted a bi-luminous object approximately 100 meters away, hovering at an altitude of about 30 meters just above the building. It looked to her like two Frisbees stuck together, turning in opposite directions. The bottom part had small, dark squares that looked like windows under which a circle of white lights rotated in a clockwise direction. The top of the object had a circle of white lights as well, but these were turning counterclockwise. (Figure 2.5.1)

After about one minute the wind stopped blowing, the light around the tree disappeared and the tree went back to its usual upright position.

The object appeared to be about 10 m in diameter; it suddenly moved to the left and disappeared behind one of the other buildings. One moment later the object came back around the same corner and moved in front of the building, only to disappear behind the building on the right. Mrs. H. ran into the street so that she could follow the object. She observed the object vanish a few hundred meters away, above some other apartment buildings. Mrs. H. noticed that other people in the street had been watching the object as well as about five couples who were standing on their balconies. She did not talk to any of the other people because: "I really don't believe in those kind of things." Mrs. H. estimated that the whole incident took about 6 minutes.

At about 11.15 p.m. the telephone woke Mrs. Martina S. who was already asleep together with her 4-year-old daughter in their 11th floor apartment. Her friend Mrs. A., who lived in the same building on the

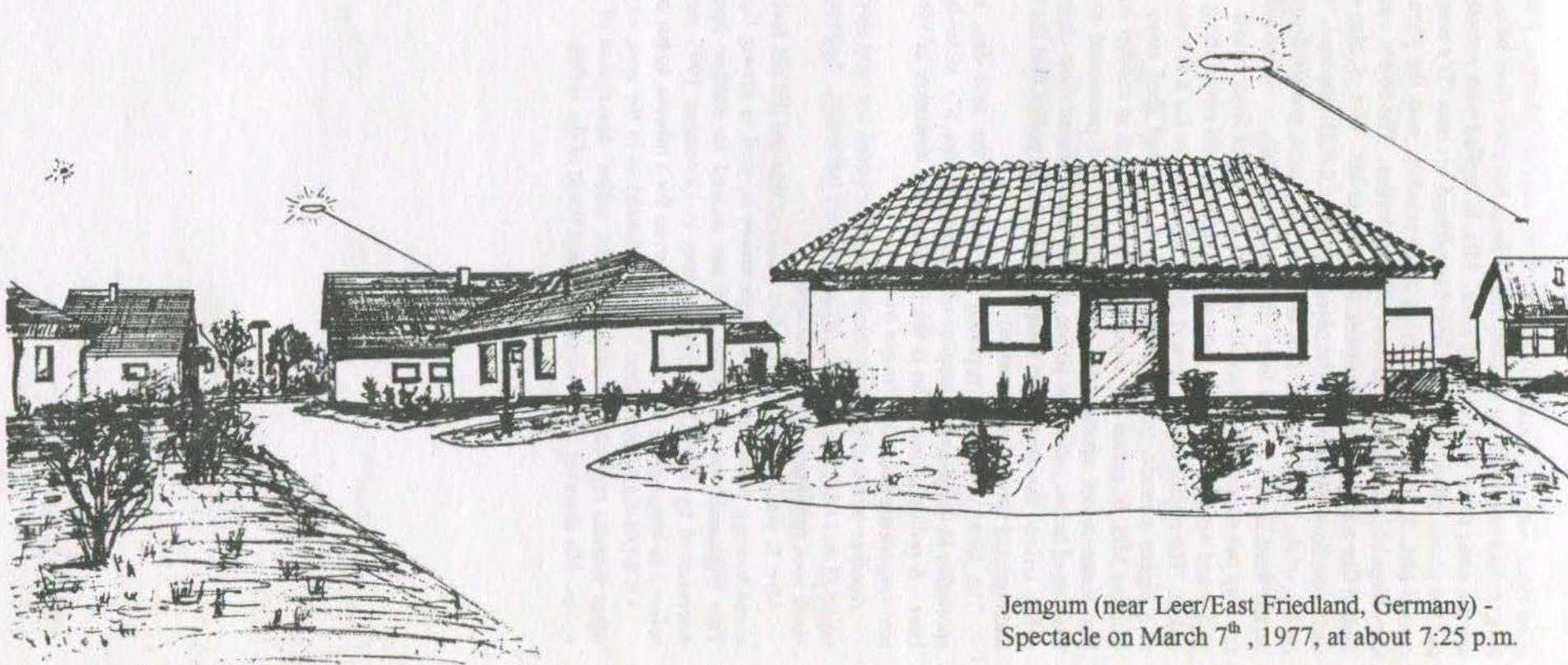
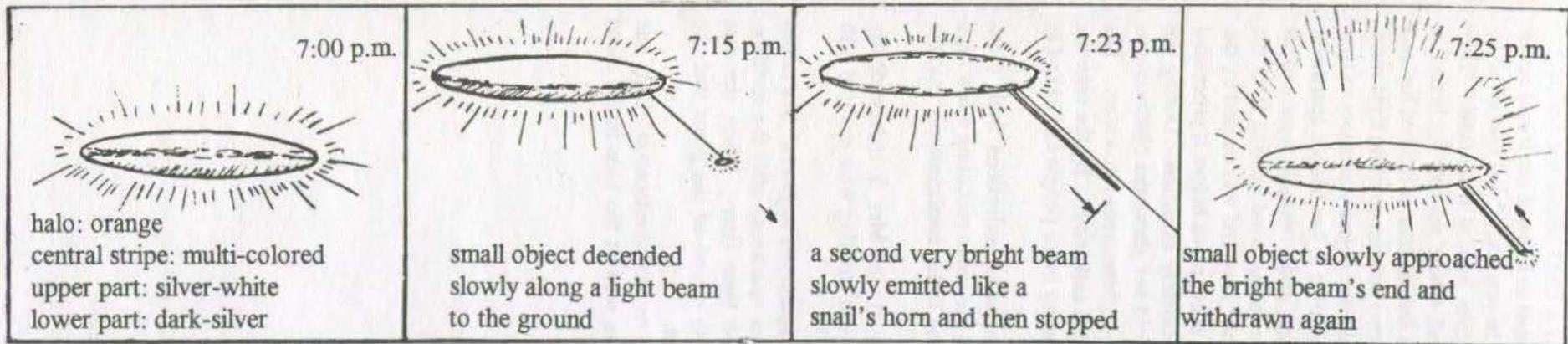
third floor, was very excited on the phone, saying "Martina, I think there is a UFO above our building." Mrs. A. had observed the unusual object from her third-floor balcony and wanted to know if her friend could see the same thing from the top floor. Mrs. S. replied with something like "Are you crazy" and was about to put the phone down when she heard her friend exclaim "It's coming back again, look at it yourself." This caused Mrs. S. to walk to the living-room window, with the phone in her hand, where she saw for herself a very large object hovering in front of her window. The object was only about five meters in front of her and looked like a shiny, silver metallic structure to her. Mrs. S. also noticed the two counter-rotating light rings and some dark windows on the object. (Figure 2.5.2) She said: "It seemed like the object was about to land on top, of the building." Mrs. S. dropped the phone, got her daughter and ran down to her friends apartment on the third floor. After a little while they carefully went towards the balcony, and eventually ventured all the way out onto the balcony, to observe the object from below. They felt a strong wind coming from the object and noticed that there was a hole in the cloud cover above it, which they assumed was caused by the object. The object moved up and down like a yo-yo for a few minutes in the same place before it proceeded to a higher altitude, where it tilted on its axis and sped away in a north-easterly direction. During the incident Mrs. S. called her sister-in-law, who lived in another suburb, and told her about the observations. Her sister-in-law spotted the lights as well and proceeded to capture the phenomena on video. The frightened ladies called the police as well and reported their observations to the authorities. By the time the police arrived the object had disappeared, but the police told the ladies that many other people had called in and reported similar observations.

The local newspaper reported the incident the next day, but explained it as reflections from disco spotlights in the clouds. Because of this report, Mrs. S.'s sister-in-law erased the video recording a few days later. A police officer who is the husband of a coworker of Mrs. S., told the ladies confidentially that the newspapers explanation was not true.

Another interesting observation was discovered the next day. Both Mrs. H. and Mrs. S. independently reported that both had laundry drying on their balconies. Apparently all items of clothing were covered with black soot and had to be washed again.

Mrs. S. was so disturbed by this incident that she did not feel safe in her apartment anymore. She talked about hearing footsteps and strange noises as well as seeing lights inside her apartment after the incident. This frightened her so much that she moved to another apartment some time later. When she was interviewed by MUFON-CES members in December 1995 she was still so scared of the place that she refused to accompany the interviewer, even for a minute, to her old apartment.

MUFON-CES distributed 500 questionnaires in the area, as a follow-up to the investigation. Only one other witness replied. He confirmed the ladies' description of the object as well as the hole in the cloud cover. His drawing of the object matched those of the ladies.



Jemgum (near Leer/East Friedland, Germany) - Spectacle on March 7th, 1977, at about 7:25 p.m.

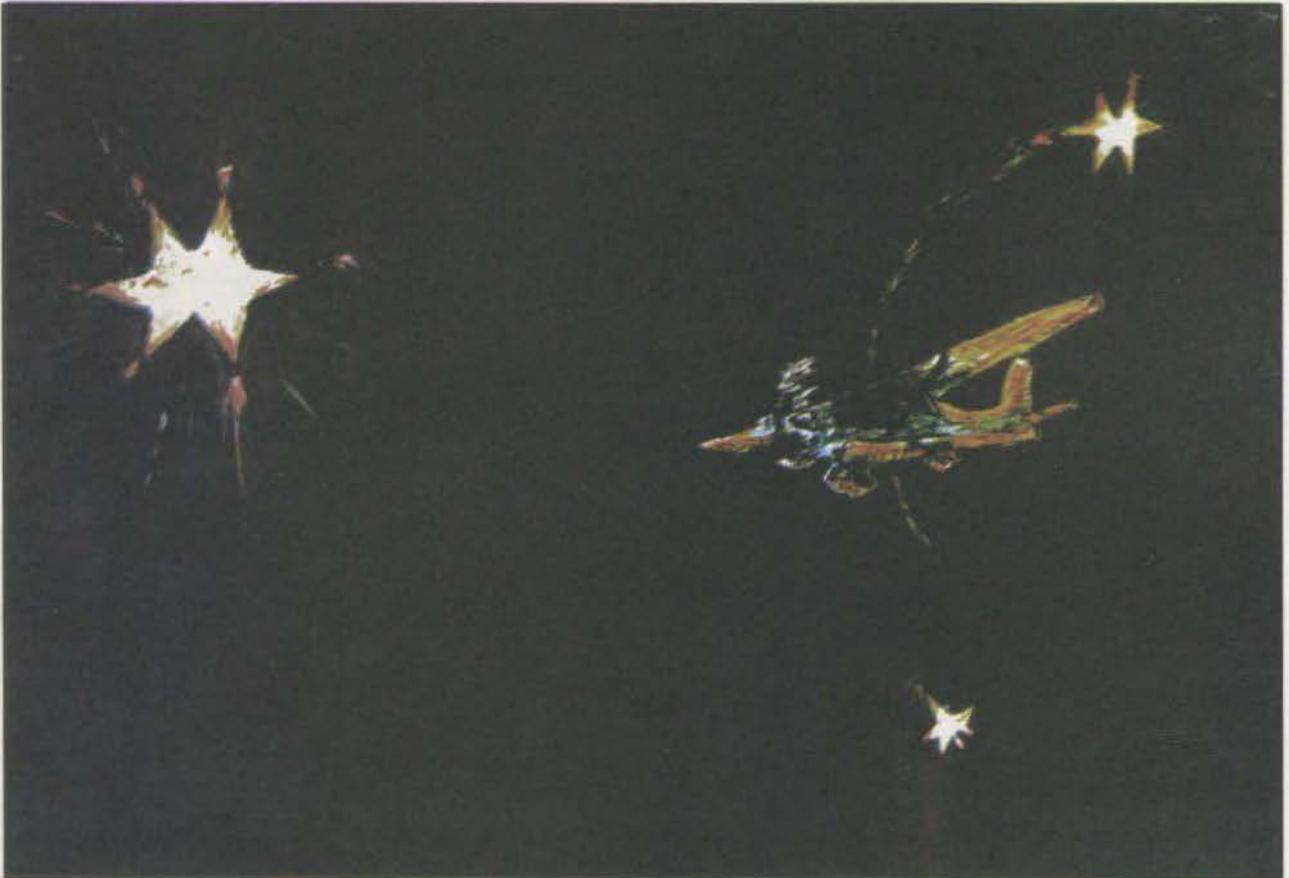


Fig. 2.4: Three star-shaped objects were “playing games” with a Chessna on Sept. 9th, 1979, at 11:21 p.m. in the area of Ingolstadt

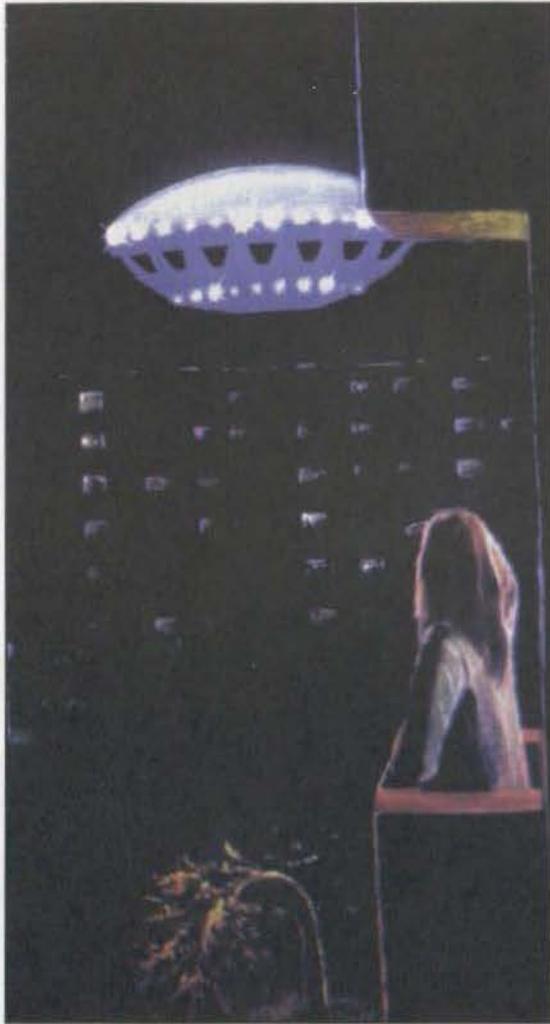


Fig. 2.5.1: Unknown object over the city of Plauen as it was observed on May 21st, 1994, at about 11:00 p.m., when the witness saw a small oak-tree being shaken by a strange force

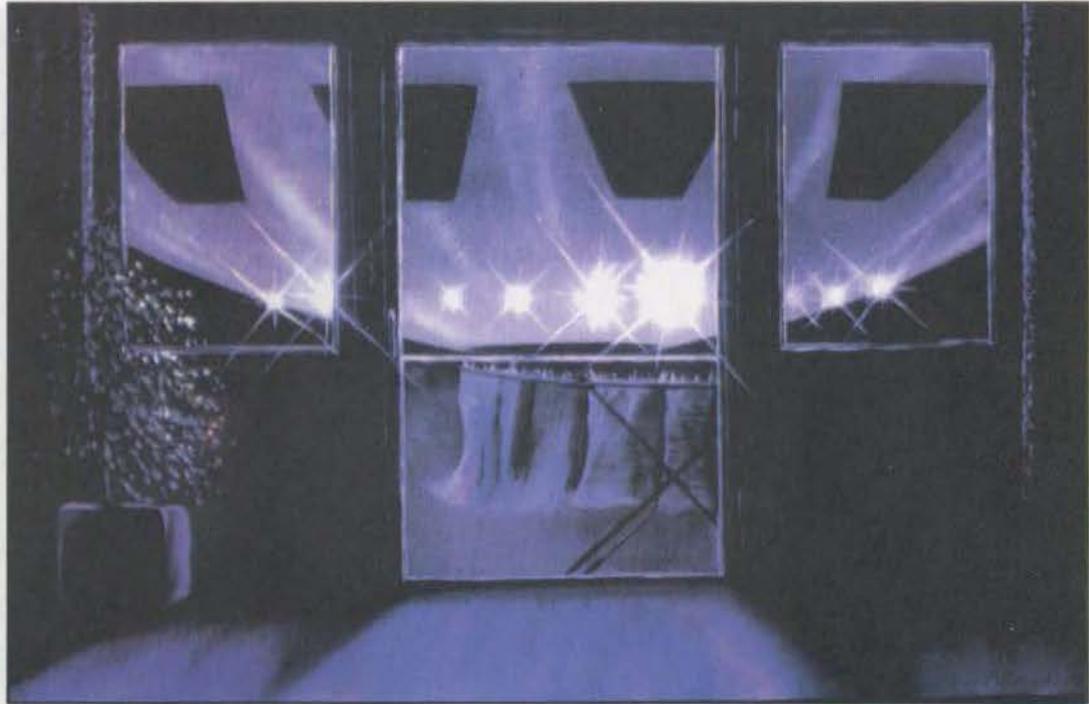


Fig. 2.5.1: Unknown object hovering just behind the living room window in an 11th floor apartment. Drawing carried out from information given by the witness, which encountered the craft about 5 meters away.

3. Triangular Objects Over Europe

Only about 10% of all UFO sightings are reported to the news-media or to scientific organizations interested in the phenomena. The reason seems to be that average citizens fear ridicule and ignorance about modern technology. Many people think that flying objects seem unusual then, might very well be technological innovations that relevant scientists could identify without a problem. Many witnesses thought that the big triangular objects, which they observed moving silently through the air, were kites, ultra lights or some newly developed airplane. This changed when reports of similar objects appeared in the news-media, where it became clear that no-one could identify these large silent triangular objects. The news-media reported some of the sightings extensively, because of 145 independent UFO sightings, which were reported to the police on November 29, 1989 in a rural area of Belgium. Nobody could seriously believe so many witnesses had imagined suddenly a new kind of flying object, with the same shape all at the same time.

This November day marks the beginning of the "Belgian Flap". It started at about 5:20 p.m., when two local police officers responded to several calls from local residents. As the officers traveled along a rural road they noticed a large (60 m diameter) illuminated spot in a pasture next to the road. They discovered that the light came from three very strong spotlights on a triangular object hovering above the ground at an altitude of about 120 meters. It looked like a triangle with cut off edges and a base length of about 30 meters, a height of approximately 20 meters and about 6 meters wide. The base of the object seemed very smooth. Light came from three round spotlights that were situated close to the corners of the craft. Centered on the bottom of the craft was a small red light, rotating like a light on a fire truck. Witnesses reported seeing the red light flashing once or twice per second. This light detached some time later from the object and moved around independently.

After a few minutes the police officers noticed the object began moving slowly. Silently it paralleled the road with a speed of about 50 km per hour. Suddenly the object stopped, turned around, and moved in the opposite direction towards the city of Eupen. The object was seen by different witnesses as it flew above various houses and close to City Hall (Meessen 1994). Other witnesses described seeing a dome on top of the structure with square windows which were illuminated from the inside.

The officers tried to get an identification of the craft from their headquarters while they pursued the object. After a while the object stopped over a large water reservoir (Gileppe-Dam). Police officers observed from about 4 km away as the object started some strange maneuvers; a thin red beam was projected in two directions for a few hundred meters. At the end of these beams red spheres were visible after the beams faded away. These spheres appeared to be drawn towards the object and started to circle around the object before they faded away. This occurrence repeated itself several times.

At 6:45 p.m. another object appeared from a wooded area. The second object looked like the first object. It flew at a steep angle - straight up in the air - until it came to a stop at an altitude of a hundred meters. Both objects started to move away at about 7:23 p.m. Police reportedly observed the object for over two hours.

Reports about these triangular objects were received by authorities from more than 70 individuals. Already in the morning of November 29th at 10:30 an aluminum colored triangle was observed by an Army Major from a distance of about 2 km. This was the only occurrence where these triangular objects were observed during the day. Many of these silent triangular objects were observed in Belgium during the following month, but all of them occurred reportedly at night. This "wave" of UFO sightings lasted until May 1991. Many different objects have been observed since then, but never again with the frequency and amount of witnesses. Between November 1989 and April 1991 about 3,500 UFO sightings were reported in Belgium, some of them witnessed by more than 100 people. About 2,000 individuals were interviewed by members of the *Société Belge d'Etude des Phénomènes Spatiaux* (SOBEPS) a private research organization with headquarters in Brussels. Members of SOBEPS received more than 900 reports in which witnesses observed objects in close proximity (300 m or less). The physicist Prof. Brenning thinks that of all the Belgians who have informed SOBEPS of sightings, only 300 or 100 are completely testable. The rest of the

reports, he says, are probably "socio-psychological contaminations" - delusions or tall tales (*Wall Street Journal*, Princeton, N.J., Oct. 10, 1990).

At first glance, these triangular objects seem to have nothing in common with classical UFO's such as discs or spheres. Therefore one has to look for an explanation based on recent secret flight machines. Perhaps there are airborne surveillance antenna platforms within the interior of gas-filled airships, as proposed by William M. Miller (Miller 1990). Maybe these not very heavy airships, bearing sensors, are unmanned and under remote control and feature a still secret electrostatic or magneto-hydro-dynamic propulsion. Since these airships generally should not be seen, they only maneuver at night-time. Therefore, their hull is black in color. If this explanation holds, then the structures of the triangular type observed should be nearly the same in all observations, and the sometimes reported inexplicable movements of a small red light around the triangular object remain to be explained.

But, many different types of objects were observed during this "Wave". A wide variety of triangular shapes could be seen. Some with pointed edges and some with round edges. Others were flat and thin; and then again a few appeared to be huge. Some of these objects had a lot of little lights and others sported very strong spotlights. Other shapes were reported as well; discs, spheres, diamond shaped, boomerangs and square shapes. Most of the objects didn't emit any noise but some reportedly produced a humming sound. There were a few exceptions; those objects which made so much noise that they caused some buildings to vibrate. SOBEPS published two large volumes about the Belgian UFO "Wave" (SOBEPS 1991, 1994).

Not only did the shapes of these objects appear to be different from classical UFO's, but also their behavior seemed to be unusual. There were no electromagnetic or gravitational traces observed or any other physiological interactions noticed. There were no landings observed and no one reported seeing any occupants in connection with the triangular shaped crafts. Many of these objects seemed to seek the attention of witnesses. Similar to the objects that appeared in the Hudson Valley, New York, in 1983 and 1984 where the objects hovered directly above major highways (Hynek, Imbrogno & Pratt 1986).

Thirty videos of these objects were examined, but most of the images only show lights without the structure being apparent against the night sky. However, the evening of April 7, 1990 a very good still photograph was taken of a triangular object from a distance of about 150 meters in the town of Petit Rechain. The photo was analyzed at a military science institute (Ecole Royal Militaire, Brussels). The analyses revealed that the three separate lights consisted of a multitude of small but very intense lights, and that the object was emitting weak radiation levels (Meessen 1995, p. 322).

The night of March 30-31, 1990, hundreds of citizens observed unknown lights in the sky. These were registered on radar. At 10:50 p.m. the Gendarmery informed the radar station at Glons about 3 lights forming an equilateral triangle. At 11:49 p.m. the NATO facility Semmerzake also detected an unknown target. Two F-16 fighters were ordered to investigate; at 12:05 a.m. the jets took off from Beurechain.

On several occasions the aircraft reported brief radar contact. But the pilots could not detect the objects visually.

"Each time the pilots were able to secure a lock on one of the targets for a few seconds, a drastic change in the behavior of the detected targets occurred. Their speed changed in a moment from 150 to 970 knots (170 to 1100 mph) and from 9,000 to 5,000 feet, returning then to 11,000 feet, just to change again moving close to ground level". (Lambrechts 1990)

The computerized F-16 radar-tapes were analyzed by the Electronic War Center (EWC) of the Air Force in 1992 by Prof. Meessen. The simplest explanation is that the indicated movements of the targets were data processing quirks. The computer receives signals of the targets positions. The program expects signals to form a chain of increasing points, because airplanes move linear from point of departure to the point of destination. If a target would stop or move backward - which no airplane can do - the algorithm computes incorrect velocities and accelerations of the target. The recorded UFO's probably hovered in the air or swung around in a small area and were not moving the way the computer indicated.

Because of public pressure, a cooperation unique in UFO history between military and non-military scientists, came about. Members of SOBEPS were invited to take part in surveillance flights of the Belgian Air Force. Special clearances were obtained with the help of the Minister of Defense Guy Coeme and the Chief of Staff General W. de Brouwer. Gen. de Brouwer set-up a Special Task Force Unit to work closely with the Gendarmery. On June 22, 1990, he presented radar traces of UFO's to the press. These were

recorded by military planes, as well as, from ground radar units. General de Brouwer explained: "Our defense system is powerless against these crafts...!" Professor Meessen received excerpts of military radar recordings on magnetic tape from the radar station in Zaventem for further analyses. He also received 30 floppy discs with radar recordings from the military radar station Semmerzake, as well as, access to the records of the NATO radar station in Glons. Meessen found that most of the radar traces were caused by meteorological and other known phenomena. Very few radar traces were caused by UFO's, obviously because of their stealthy shape and their low altitude.

All serious researchers realized in 1990 that the triangular objects, observed by thousands of individuals in Belgium, could not be Ultra-Lights, Awacs-planes or Stealth Fighters. Even the newly elected Minister of Defense, Leo Delcroix, explained in a letter to French researcher Renaud Marhic in 1993 "The nature and origin of the phenomenon remain unknown". After a massive amount of public pressure, the Belgian Ministers of Interior, Defense and Information came together for a meeting to access the UFO situation.

The opposition party took the view that this conference was nonsense and a waste of time and tax money. Eventually, the Belgian Europe-representative and Minister of Culture in Wallonia, Mr. Di Rupo, brought this case of air space violation in his country to the European Parliament. On January 25, 1991, the president of the European Parliament directed the *Committee for Energy, Research and Technology* to investigate the violations. The Italian representative of the *Party of Democratic Socialism*, the famous physicist Prof. Tullio Regge, took on the assignment. He investigated carefully for three years and filed three petitions to the European Parliament. In a 13 page report he made the proposal that the *European Committee for Energy, Research and Technology* should create a *European Center for UFO Observations* in cooperation with the European Armed Forces. The representatives in Strasbourg argued for three years about arrangement and financing of such a center which should be installed in the city of Toulouse, where the *Centre Nationale d'Etudes Spatiales* (National Center for Space Studies) is located.

Regge explained that about 60% of all UFO sightings can be explained by natural appearances. But the remaining cases display "strong uncertainties". 4% of the cases are excellent reports with contents that are not explainable by conventional means. But this discovery is no evidence for the existence of extra-terrestrials. In many cases they seem to be "rare meteorological phenomena".

Seven times Regge's applications were discussed in Parliament. The proposal for a resolution "for the creation of a European Center for UFO Observations" reads:

- a) Considering the fact that for several years citizens report observations of unexplainable phenomena in the sky over several European countries,
- b) considering the fact that in the last months reliable people, scientists and military employees witnessed unexplainable phenomena connected with "UFO's" (unknown flying objects),
- c) considering the fact of the great number of witness reports from several countries of the European Community referring to the night of November 5-6, 1990,
- d) considering the fact that a part of the public is worried about the frequency of these phenomena, the commission suggests:
 1. to create a *European Center for the Observations of UFO's* within a short time; it further proposes
 2. this European Center for the Observation of UFO's will collect all of the reported observations by the European citizens and the (military and scientific) institutes and organize scientific observation campaigns; and it proposes
 3. that the Center will be administered by a commission as well as by a standing committee consisting of experts from the 12 member states.

The application has been refused by the majority of the socialist members of the European parliament. This recommendation, which was signed by 13 members of the commission under the chairmanship of the representatives Desama, Adam and de Gaulle, has been withdrawn. Because of the election of the European Parliament in June 1994 all applications previously not handled, were practically "given up".

In a letter of September 13, 1993, the representative Otto von Habsburg wrote that it is a real pity that the European Parliament is incapable of treating such far-reaching questions in a reasonable way.

The German press wrote about Tullio Regge as the "UFOlogist from Turino" (*Die Zeit*, Jan. 28, 1994). The journalists obviously didn't know, that Regge is one of the leading particle physicists in the world. Since the Italians knew him all, the Italian representatives supported Regges application. The Spaniards also supported it at first, but later followed the majority of the European countries in their rejection of this application. The Belgian representative refused that application too, because Di Rupo in 1994 was no longer a member of the European Parliament, and the new representative came from the opposition party!

Prof. Regge consulted with the Air Force Departments of the European countries to give him information about possible registered unidentified flying objects. The Italian Air Force was very communicative. The French Air Force wanted to cooperate in the investigation of UFO's through its research organization SEPRA (*Service d'Expertise des Phénomènes de Rentrées Atmosphériques*) in Toulouse. The Spanish Air Force explained that UFO data would fall under military secrets. The German Air Force only answered that it was not the right contact office (Reger 1994).

Professor Regge sees the danger of disregarding of the phenomenon not in overlooking a possible threat by a "danger from out of space", but by the public turning away from science in general - because science doesn't look at phenomena of public interest. The real dangers are "badly informed people with a vivid fantasy and politicians which are not familiar with the real problems", said Tillio Regge.

The public got the impression that the appearance of triangular and square objects was limited to Belgium. This came from the intensive research that was done by the organization SOBEPs with more than 70 researchers, that interviewed many witnesses and wrote a documentation with about 1700 pages. SOBEPs is well of with private sponsors, it has offices with a secretary and even a library. SOBEPs got attention through public relation TV -specials. Members were able to put a lot of time and effort into their investigations. Therefore, only few UFO sightings escaped the investigators.

In other countries UFO-society can not afford offices and a secretary. The witnesses don't know where to report a UFO observation. The triangular objects may have appeared over other European countries as much as in Belgium. But observations were not reported since there are no known central collection points for such reports. In Germany UFO reports came to the knowledge of interested UFO researcher only years after the actual sightings. One can estimate that in Belgium about 90% of all near encounters have been reported to SOBEPs, which means about 100 to 300 in the years 1989 and 1990, according to Prof. Brenning. Based on experiences of MUFON-CES members only 5% to 10% of the encounters in Germany are reported. In 1989 and 1990 MUFON-CES received 16 reports of UFO sightings, with 7 cases in which witnesses had seen triangular forms. Since this number is only 5% to 10% of the real activity, one can estimate, that in Germany 150 to 300 observations were made but in general were not reported. That means, that the strange objects were active in nearly the same order of magnitude in Germany as well as in Belgium.

A witness wrote to MUFON-CES that he remembered a UFO-observation only when a TV documentary showed triangular unknown flying objects over Belgium. He thought what he had observed many years ago must have been a kind of aircraft. It was in April 1945. The witness was a soldier detached to the defense of the city of Berlin. A group of German soldiers were waiting in trenches for the Russian Army on this sunny morning. Someone called: "Aircraft from the west". Everybody turned around and saw a gray metallic flying triangle without any national emblem, cabin, window or any extension which flew at low altitude slowly in an easterly direction. The only sound the soldiers could hear was the whistling of wind when the object moved overhead. One of the German officers called: "The miracle-weapon from the Führer." This case is the first unidentified triangular object in the files of MUFON-CES.

Skeptics who are not familiar with the different kinds of reported unknown objects may think that triangular objects are a new type of UFO. That is not true. The difference is unidentified flying triangles starting in 1989 show bright light beams and coming closer to the ground than in the years before. A short look in the data collection of the Air Force Project Blue Book shows that in 1949 a flying triangle was seen by a biologist and pilot, on July 30, in Nampa, Idaho, at 10:12 a.m. The very thin pinkish-bluish object disappeared suddenly (Blue Book Files; National Archives Washington, microfiche reel No.88).

In January 1956 in Hungary, four triangular objects were observed for 6 minutes circulating slowly around a common center (Blue Book Files, National Archives Washington, microfiche reel No. 24).

Two hours before the famous appearance in Petrosavodsk in the former USSR took place, on September 20, 1977, the Aeroflot airplane No. SU 558 coming from Singapore, flying to Moscow, at about 2:30 a.m. was north of the Lake of Aral, when some passengers remarked a bright luminosity below the clouds. Every

time when the clouds were removed there appeared an orange-white luminous triangle, 30 to 40 m in size. the object flew faster than the airplane and soon flew out of sight. (Samizdat reports collected by Felix Ziegel, given to MUFON-CES at 1980, cited in MUFON-CES report No.8, 1981).

The former President of the Soyuz UFO Center in Moscow, the cosmonaut General Pavel Popovich, reported in an interview (Hueeus 1997) that he also has observed a flying triangle in 1978, when he flew from Washington to Moscow in an altitude of 10,200 m with a speed of 950 km/h. Both, passengers and crew saw it passing the airplane with about 1,500 km/h on a parallel course. In these earlier cases the triangles were mainly observed in high altitudes. In 1989 triangular objects came closer to the witnesses.

By chance on August 31, 1989 two witnesses were able to see a flying triangle months before the "wave" moved over Belgium. A biologist and a lawyer were visiting the Astronomical Observatory of the city of Munich. About 10:00 p.m. they stood with other visitors on the roof of the observatory, looking at the sky and waiting to take a look through the telescope. Against the dark sky they both suddenly observed a black triangular form, about 30 m long and 20 m wide, in an estimated altitude of 50 meters, about 100 meters away. In a few seconds it soundless flew by. At the corners there were visible weak illuminated spots. Had the witnesses not looked directly at the object they would have never seen it.

On February 2, 1990 a soundless flying triangle was observed near Hamburg, by the amateur astronomer Gutschke when he looked at the sky to observe the stars at 1:15 a.m. The 70 meters long triangle was surrounded by a luminous dust. In the three corners there were pinkish luminous rings. The altitude was approximately 300 meters. In about 8 seconds the triangle moved from the zenith to the horizon, in the direction of the city of Hamburg, where it vanished in the dust. (Figure 3. 1)

In general the central blinking lights reportedly have a red color. But there are exceptions, too. Several people in a suburb of Koblenz were only 50 meters away from a triangle, on February 21, 1990, at 6:30 p.m. The triangle hovered for about 10 minutes at an altitude of about 25 meters. The witnesses could observe that the bottom was constructed from several metallic plates which were hold together by nuts and bolts. In the three corners there were yellow-white lights, and in the center was a big blue light. No sound was heard.

Reports on similar flying triangles came from the cities Landau, Bad Berleburg, Ottobrunn, Münster, Tubingen, Bochow, Halle, Ulm Braunschweig, Landsberg and Kehlheim.

In Kehlheim a triangle shaped object was seen for about 5 minutes on November 5, 1990, at 5:25 p.m. The object seemed to have a row of jet engines on its base since luminous jet streams came out from the edge. 90 minutes later mass sightings happened in France and Germany. At 7:05 p.m. a Russian space station made its reentry in France and Germany. Many thousand observers reported that they had seen a bright appearance in the sky. Before and after the reentry big boomerangs with lights and spotlights were observed flying below the clouds. These objects were obviously not the lights of the re-entry.

Of special interest are sightings made by experts, like pilots. The German flight instructor Mr. D. with more than 30 years flying experience, was on vacation on the isle of Corsica. On September 7, 1994 at about 10:15 p.m. he was walking on the beach near the city of Bravone when he observed a big triangular object approaching from the sea at an altitude of about 8000 meters. Its base had a length of about 80 meters, and it was 40 meters in height. The triangle was black. In its corners there were big yellow-white lights. In the center of the object flashed a small red light. The flying instructor who observed the object through a pair of binoculars said, that he knows all the different types of aircraft. But, he could not identify this object. What impressed him most was how the triangle maneuvered. When it reached the beach it turned in a 90° angle to south, not tilting in the curve - as all aircraft must do, to reduce the centrifugal force - but rotating in the flying plane. After that it flew silently with a velocity of about 450 knots parallel to the beach. On the upper part on the back of the object Mr. D. could see two small white flashing lights (Figure 3.2).

Sometimes the triangular objects don't have weather spotlights nor a central flashing light, but only small lights on the edge that can only be seen close up. Such a flying triangle was observed by three members of a family in the city of Neu Anspach on a cold September evening in 1994. The witnesses first heard a heavy drone, that was so loud that the house was shaking. When the three looked out of the window they observed at an altitude of only about 40 meters a huge black triangle with a base length of about 50 meters. It flew straight with a velocity of no more than 50 km/h. Only on the back were two small lights. Two small lights could also be seen on the bottom. The object moved toward the city center. Many

people must have heard or seen this object. But, up to now no report was received from any other witnesses from Neu Anspach (Figure 3.3).

An example of an object with a square form is the sighting from the city of Leopoldshoefe. The main witness, Mr. Becker, saw the object in the morning of December 1, 1994, at 8:30 a.m. when he went shopping. At an altitude of about 70 meters a flat square, with red, orange, violet and green lights on the bottom slowly approached. At first it looked a little like a slowly flying airplane (60 km/h). But when it flew overhead, Mr. Becker observed a square form, about 10 meters long with a small dome on top. The object made no sound and vanished behind the houses within two minutes (Figure 3.4).

In all of the mentioned cases the reliability of the witnesses was high. Even three members of MUFON-CES encountered triangular objects. Mr. Rohner, for instance, observed a luminous triangle in August 1995 when he was on vacation in the city of Turino, Italy. Mr. Schall saw in November 1996 together with his son, three luminous triangles in the sky in the city of Landsberg. (The third MUFON-CES member is the earlier mentioned flight instructor, Mr. D.). No administrative body in Germany has any interest to investigate and explain these flying objects.

The same day when Mr. Rohner in the city of Turino observed a triangular object, a couple in Germany also saw a triangular object twice in the night of August 5, 1995, over the city of Dortmund. What makes the story interesting is the fact, that probably this object transported and put down somewhere a kind of container (if it was the same object in both observations).

A 35 year old man and his girlfriend were standing on a roof terrace of a 5-stage house to look at the stars. At about 10:55 p.m. the sky above brightened up, and the witnesses saw a huge triangular object with 8 to 10 circular yellow-orange radiators. Its size was about 20 meters in length and in width. The diameter of the radiators was about 1 meter. The object was moving in an altitude of 150 to 200 meters and emitted a sound like that of a transformer. It came from north and flew south, and changed its course abruptly to south-westerly direction.

Below the triangle hand a "hollow body" 3 to 4 meters long and 2 to 3 meters deep. The duration of observation may have been 10 seconds, when the object vanished behind the houses of the city (Figure 3.5).

Ten minutes later this or another triangular object appeared about 1,000 meters in the west in the same altitude as in the first observation flying to north. This time the "container" was absent. Its course was that of a sine curve moving from right to left. Suddenly, the object erected steeply and stopped in the air. From it now a chain of lights hang down (Figure 3.6). During some seconds one after another of the lights went out and the object could no longer be seen.

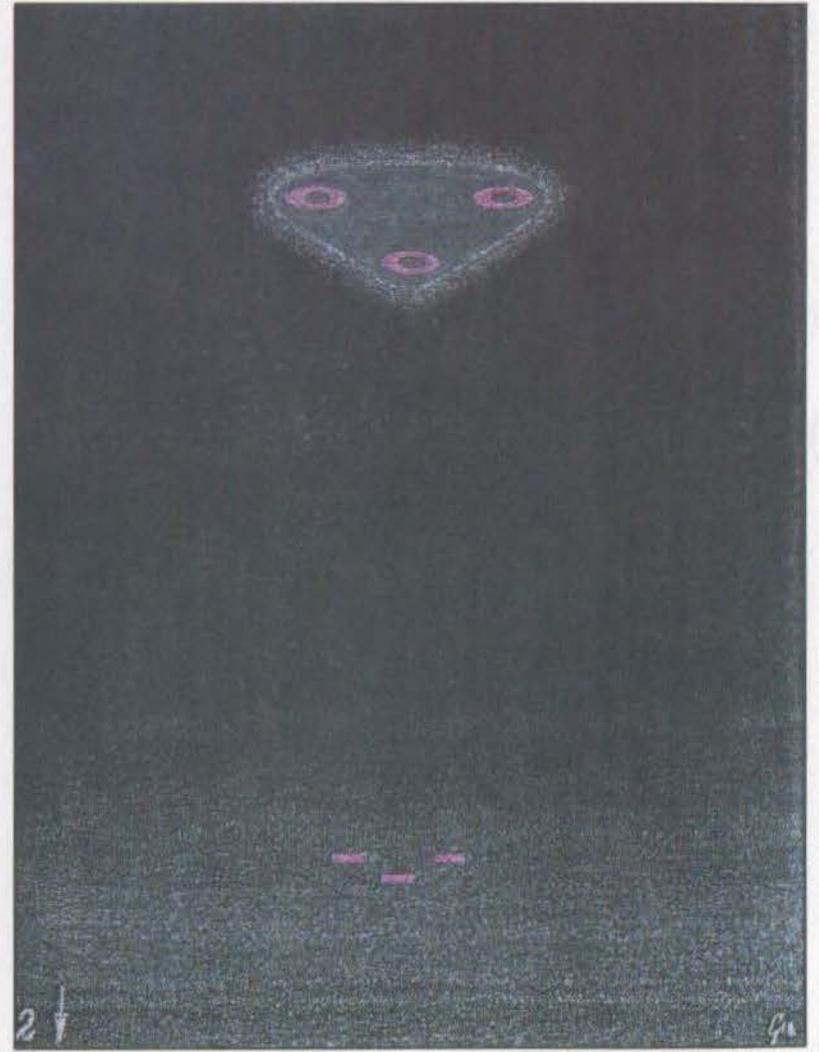
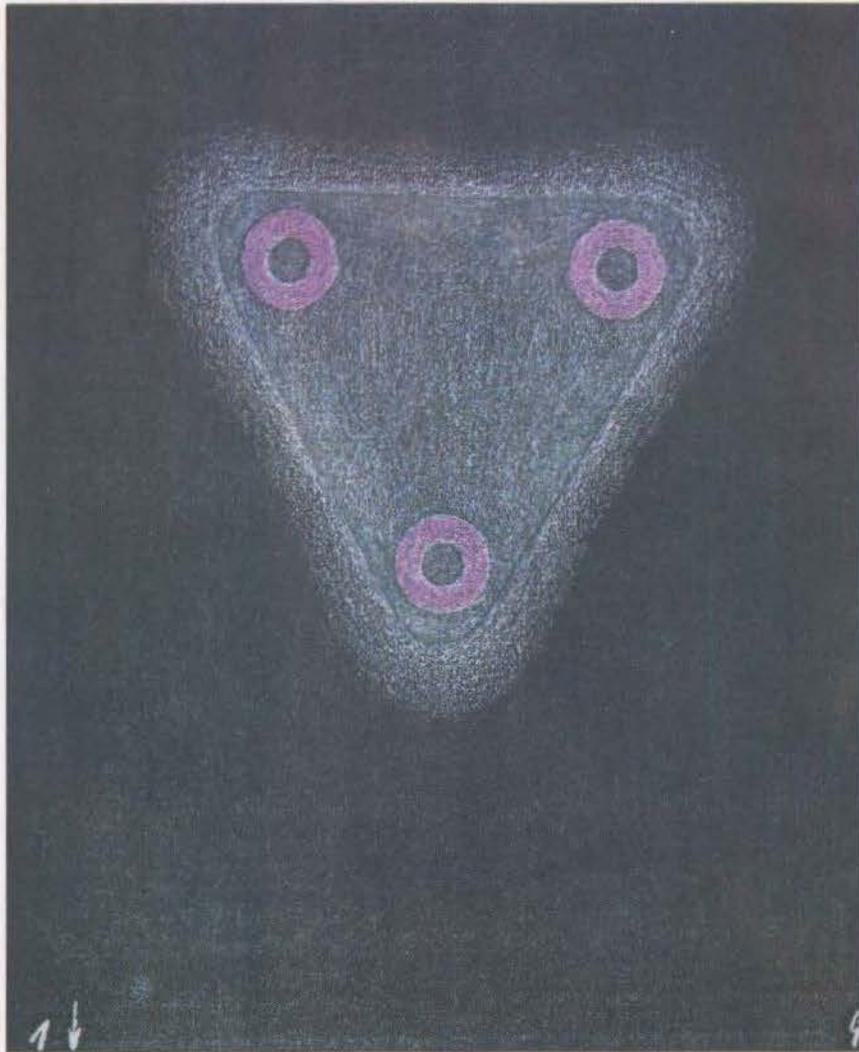


Fig. 3.1: Triangular object observed on Feb. 2nd, 1990, at about 1:15 a.m. near Hamburg by an astronomer

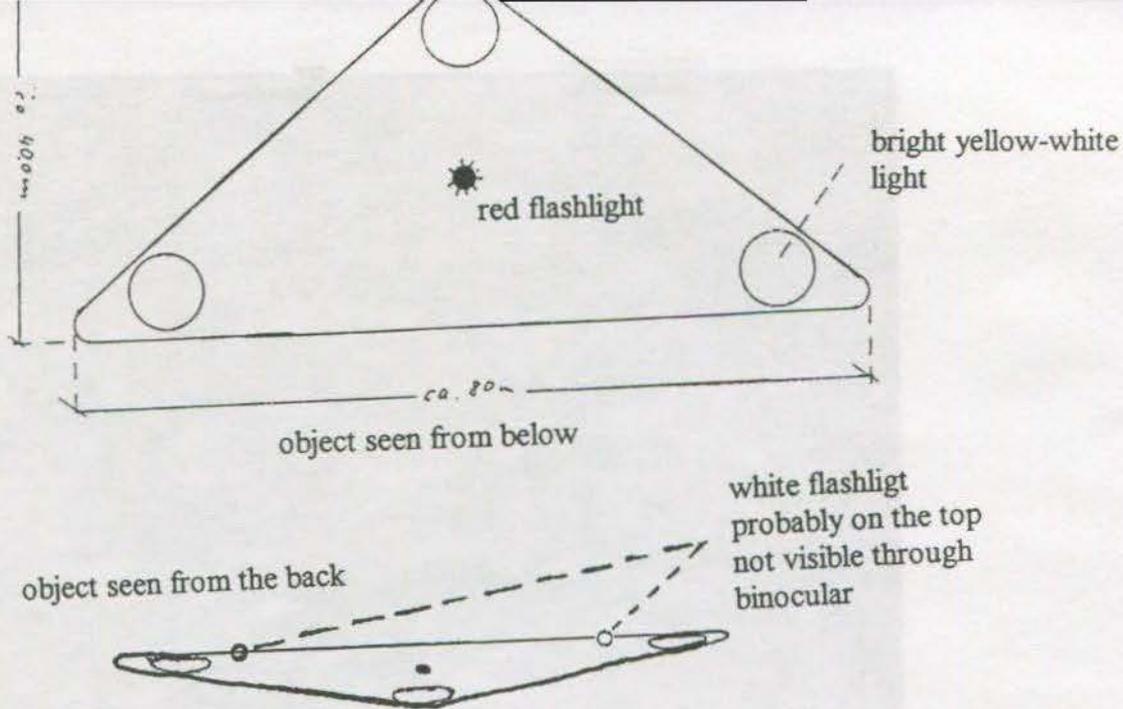


Fig. 3.2: Drawing of the triangular object which a pilot observed on Sept. 7th, 1994, at 10:15 p.m. on the Isle of Corsica

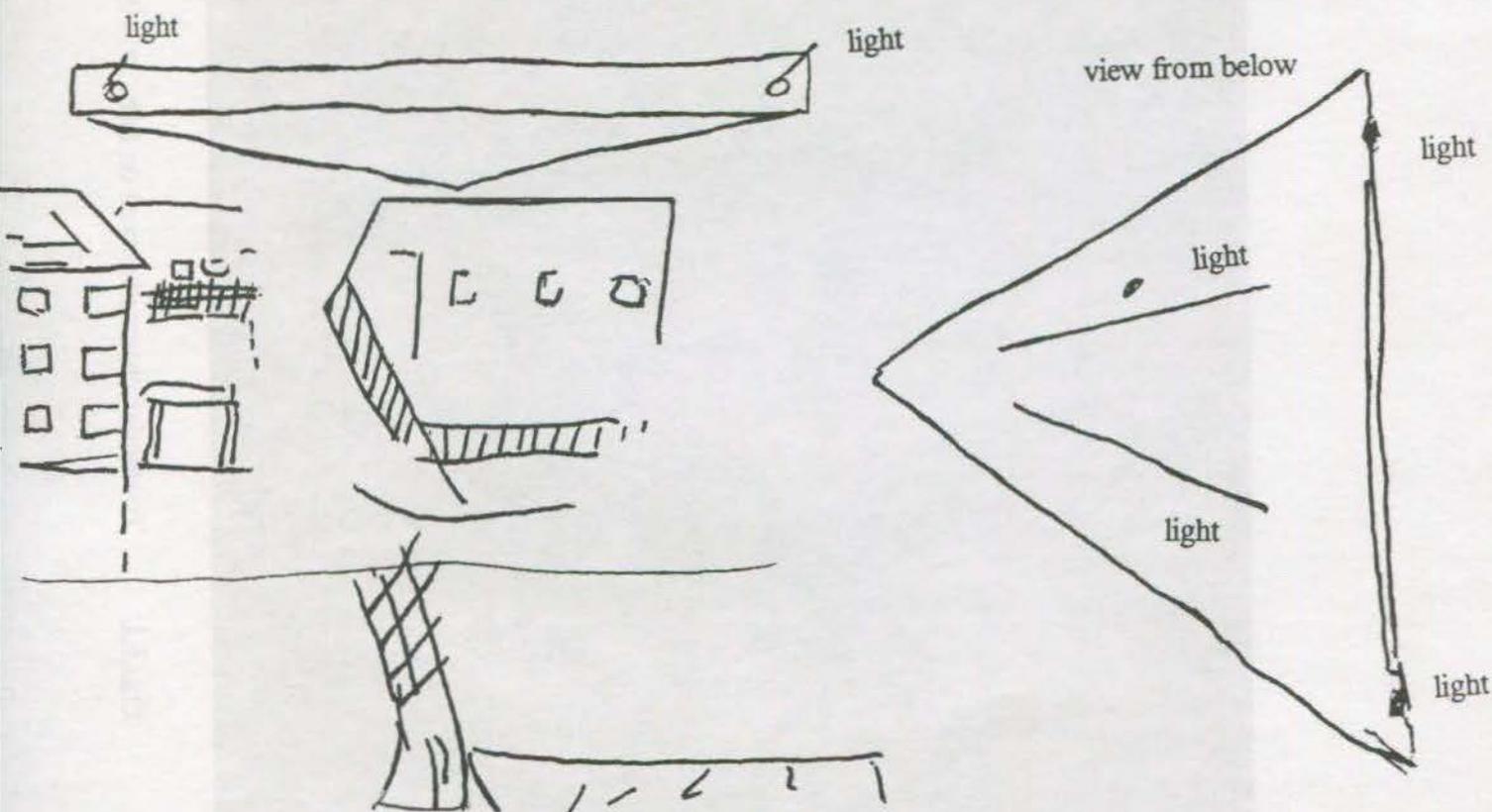
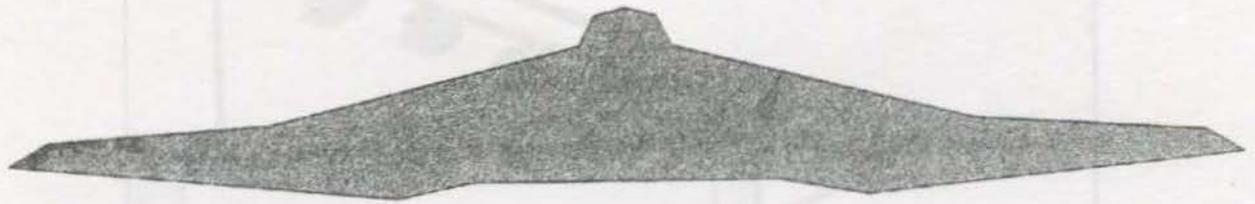


Fig. 3.3: Triangular object slowly moving at a low altitude on an evening in September 1994, in Neu Anspach



View during approaching flight

Side length about
80 to 100 meters,
velocity about 60 km/h

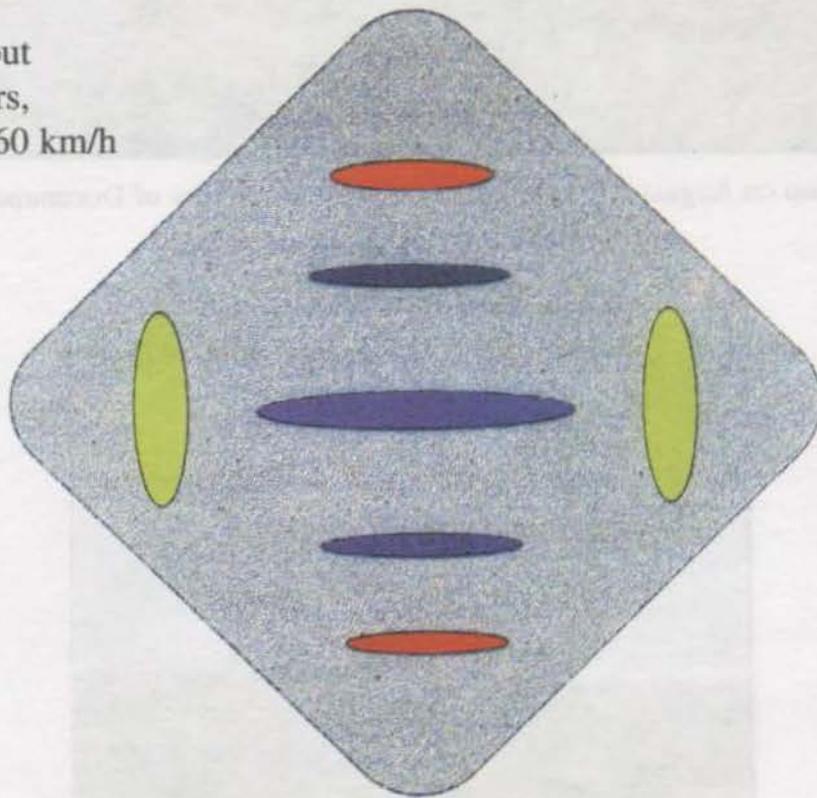


Fig. 3.4: Noiseless flying object seen at an altitude of 50 to 80 meters, on December 1st, 1994, from 8:29 to 8:31 a.m., over Leopoldshoehe near Hannover (view from below)

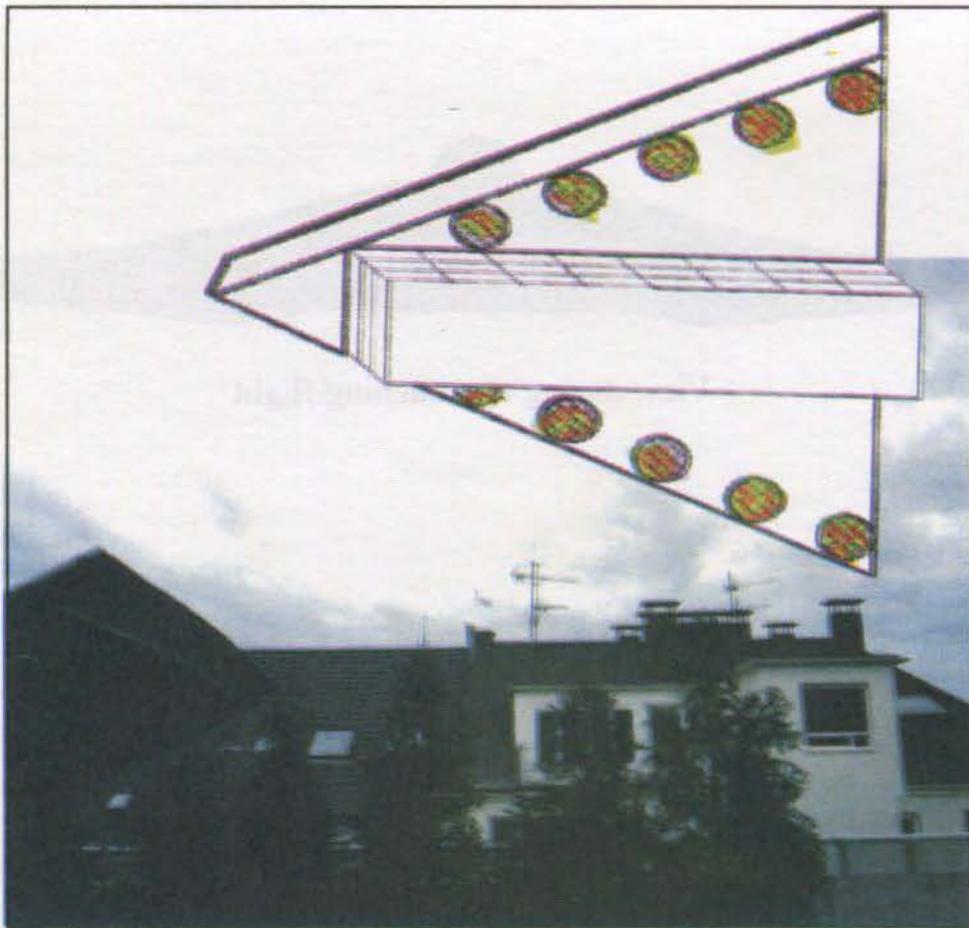


Fig. 5: Observation on August 5th, 1995, at 10:55 p.m., in the city of Dortmund by two witnesses



Fig. 6: Object without “container” hovering motionless for some seconds, at 11:05 p.m.

4 The Appearance of Objects With a Complex Structure at Different Locations

Some unidentified flying objects appear to have a very complex structure. These can rarely be remembered by witnesses if they are asked to make a drawing of the object they have seen. These complex structured objects do not appear frequently. Therefore, reports of unusually constructed objects, observed in different countries, are for critical investigators most convincing accounts. Many independent witnesses do not know that what they have seen has also been observed by other people, in other parts of the world. Confirmation of complex structured objects - by various witnesses worldwide - account more for the physical reality of an object, than those who have been observed in the same location. For example:

The most famous sightings of unknown objects were in the South of France (Basses-Pyrénées) in 1952. On October 17, 1952 while dozens of witnesses watched in amazement, a whitish cylinder moved slowly across the clear blue sky at a 45° angle. Trailing behind - out of the top of a chimney-like cylinder - came a long plume of bluish-white smoke. Clustered in front and behind the cylinder were pairs of rotating red spheres, each with a "small yellow central bulge". Approximately 30 objects reflected in the sunlight and flew in what appeared to be a zigzag course. When the distance between the Saturn-like objects expanded, a whitish stream appeared like an electrical flash. This maneuver apparently prompted the spheres to return to their previous formation and tilt into a flight direction. At the time, this group of objects were thousands of meters apart. The shape of a single object could only be seen through binoculars.

From the objects, and even more from the cloud of smoke, a large amount of white filaments fell to the ground. These filaments looked like spider webs and were collected by the witnesses. When they pressed the substance together it's consistency was gelatinous; after a short period of time it evaporated into thin air while they held it in their hands.

The same appearance was reported at 4:00 p.m. on October 27, 1952 - 10 days later - about 200 km away from Oloron, in Gaillac, Tarn. An estimated 100 witnesses observed a white cylinder surrounded by many pairs of Saturn-like red balls. In this case the objects were only 3-400 meters away. Again, a spider-web like substance called "angel's-hair" fell onto roofs, trees and roads. It too was collected until the substance once again disappeared into thin air. The observation lasted for only a few minutes.

No one witnessed any of these formations during the period of October 17 to 27, as well as in later years.

Then in 1984 a very large boomerang-shaped flying object was seen by thousands of witnesses in Hudson Valley, New York. That object flew and hovered at a low altitude over highways, stopping the traffic, and acted in a manner as if it wanted to be seen by numerous people. Its size was about 100 meters across. On the forefront of the metallic looking boomerang were many colored lights. In its center there were two big red lights. There seemed to be a focal point behind the boomerang with many thin and weak light beams. Near this "focal point" witnesses described having seen two red shining spots. (Figure 4.1a)

Such an object certainly is not the kind of object, one would think of, if one heard about a sighting of a Flying Saucer or a UFO.

Residence in the city of Magdeburg never read about the Hudson Valley sightings. The very same boomerang-shaped object appeared on September 18, 1993, at about 9:30 p.m. when it was observed by 15 people—in two independent groups at different locations. Again this object was described as 100 meters long, having the form of an anchor, mushroom or boomerang with a luminous tail. The object had several rows of lights. Curved light beams seemed to be focused behind the boomerang. Two red shining round lights were described as being located near the "focal point". The object flew for a few minutes, very slowly and majestically, at a low altitude, silently over the roofs of the suburbs of Magdeburg. These objects have never been seen there since that time. A comparison of drawings made by witnesses in Hudson Valley, New York and those in Germany show the same identifying characteristics of these objects. (Figure 4.1b)

Unusual shaped objects have been seen at different places all over the world. Sometimes witnesses describe seeing occupants behind a large panoramic window. Its form is more of a flat cylinder, with a diameter of about 10 meters. The front of the cylinder consists of a bright shining panoramic window. On the left and right sides it has two colored lights. There are also 2 lights next to each other on the back of the object.

Another object was seen flying over the city of Heidelberg, Germany on November 14, 1980, at 6:30 p.m. by two students. As they watched, it silently hovered over the athletic field. After a few minutes it slowly approached the witnesses; who could not hear any sound coming from the craft. On the left side it had a bluish-green light, on the right side it had a red one. The object was surrounded by very small yellow lights. There were two lights very close to each other on the back. For about 10 minutes it hovered above the students, before it disappeared in a southerly direction. The observation was reported to the US Army Base at Heidelberg (BUFORA Bulletin, May 1982; UFO-Nachrichten, No. 275, July 1982). (Figure 4.3 a)

Two police officers in Puerto Rico in 1990 took several photos of an object with this form, which Jorge Martin sent to MUFON-CES for analysis. (Figure 4.2 a and Figure 4.2 b).

Mrs. Melitta Walter was sitting in her living room on November 9, 1992 at 8:30 p.m., in the city of Magdeburg. All of a sudden she heard a very deep humming sound coming from outside her house. When she looked out the window she observed a bright shining craft slowly flying over the roof. It was only about 50 meters away and about 20 meters altitude. The witness could recognize several humanoid forms moving behind a big illuminated window. She reported the object as a flat cylinder with position lights on the left, right and on the back. Within a minute the object vanished behind the wall of her house. The observation only lasted about one minute. (Figure 4.3 a)

A flat cylinder with position lights gave the object the look like a luminous banana. The same description of a craft was given by Barney and Betty Hill, of Portsmouth, NH, in 1961. They encountered a flat cylinder shaped object with a large illuminated window, behind which several human like entities were seen. Again, the witnesses described lights on the left and right side. The fact, that exactly the same shape of UFO's were later seen in other countries - by people which had never seen or heard about Barney and Betty Hill - speaks for the reality of the abduction-story which the Hills told to Dr. Simon under hypnosis. (Figure 4.3 b)

As far as we know, no one has yet investigated whether or not occupants of these complex shaped UFO's, have themselves a different look and/or different intentions.

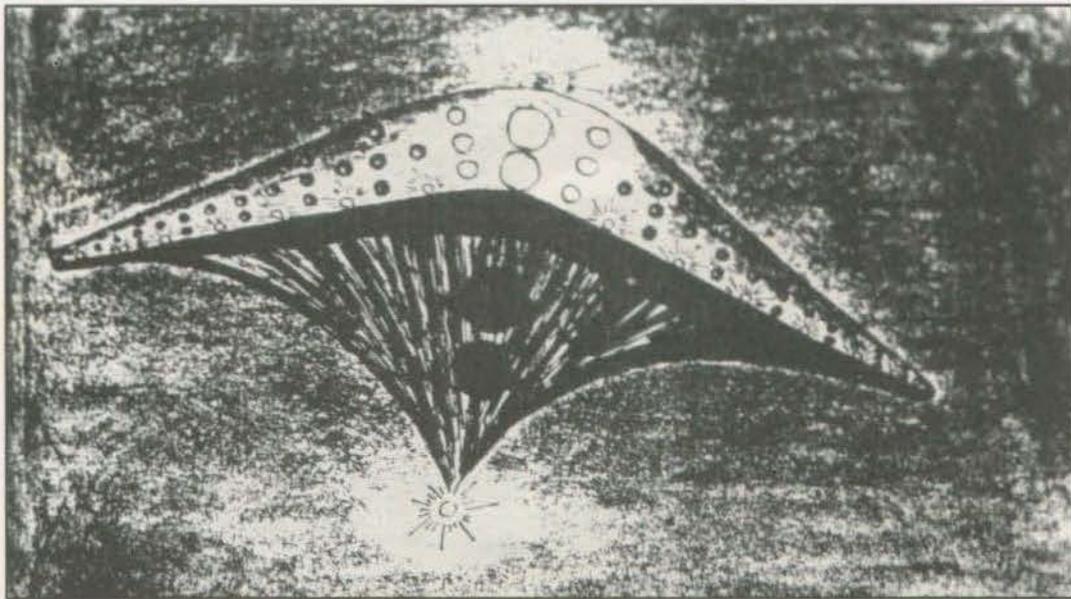


Fig. 4.1a: Slowly flying "boomerang" observed in 1984 in Hudson Valley, New York

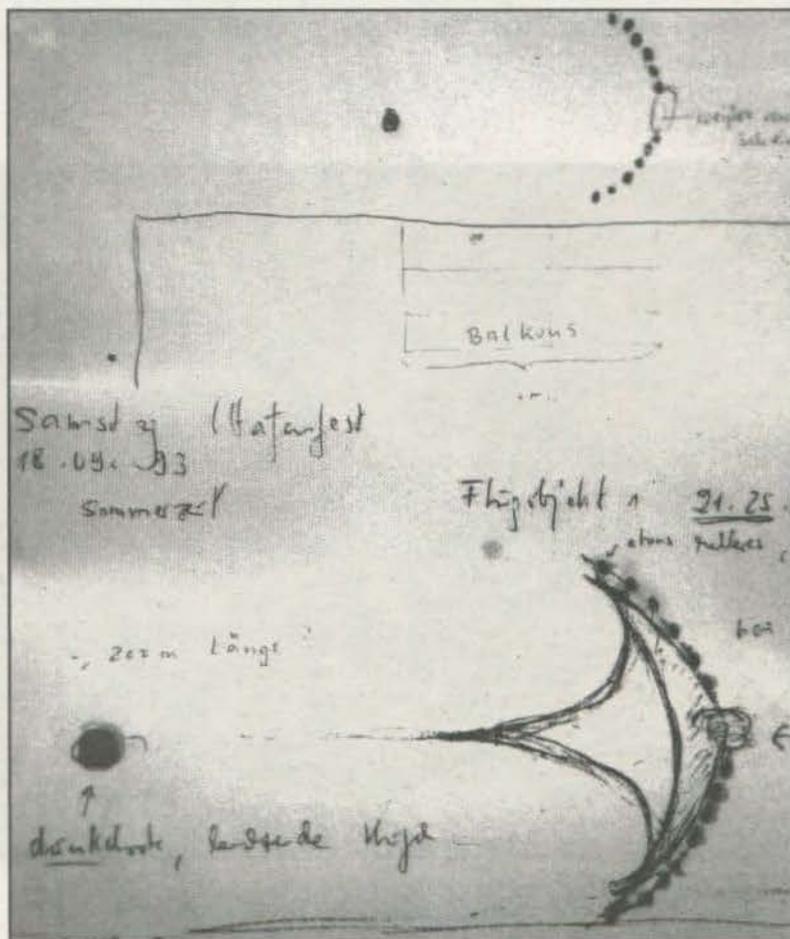


Fig. 4.1b: Same object like in the Hudson Valley was seen on September 18th, 1993, in the city of Magdeburg



Fig. 4.2a: A flat cylinder-shaped object was photographed by two policemen in 1990 in Puerto Rico. This object had a big illuminated window (side view).



Fig. 4.2b: The cylinder-shaped object seen from below

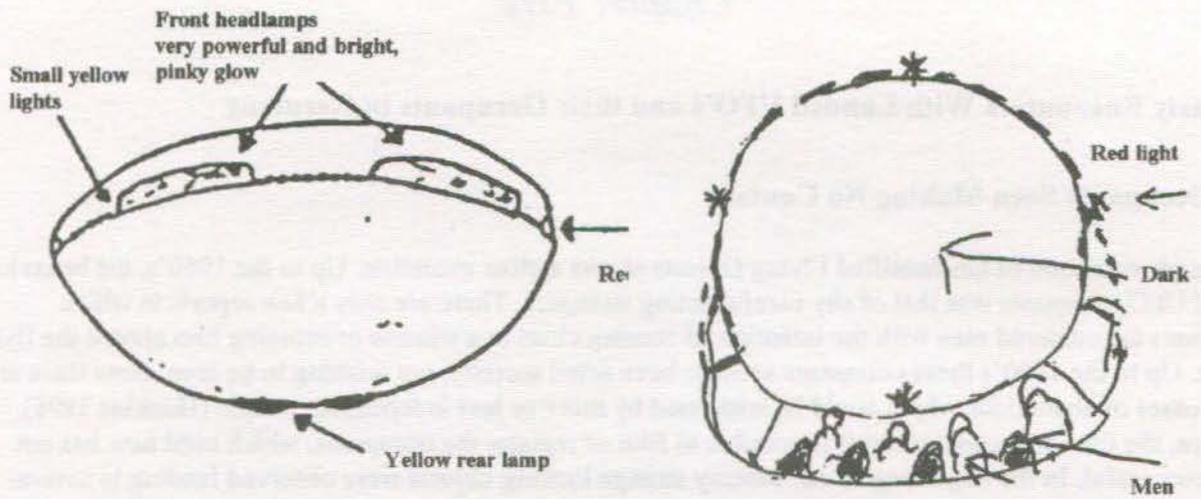
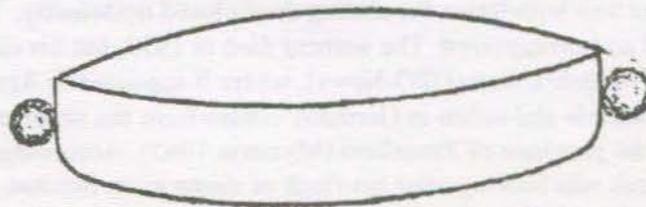
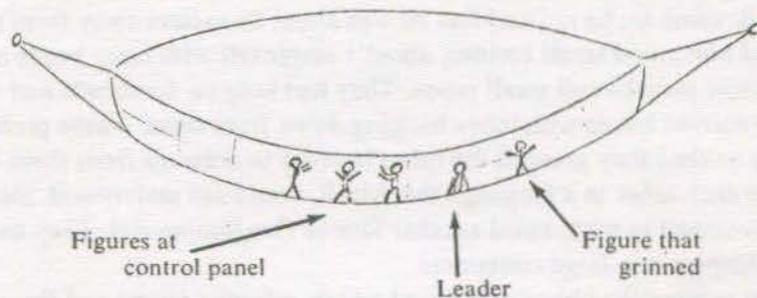


Fig. 4.3a: same object was observed in 1980 in Heidelberg, and in 1992 in Magdeburg.



UFO as seen by Betty Hill in first encounter
From sketch by Betty Hill



UFO as seen by Barney Hill showing figures, "fins," and red lights. From sketch by Barney Hill.

Fig. 4.3b: Obviously this type of UFO in 1961 had encountered Barney and Betty Hill

5. Early Encounters With Landed UFO's and their Occupants in Germany

5.1 Occupants Seen Making No Contact

The phenomenon of Unidentified Flying Objects shows a clear evolution. Up to the 1960's, the behavior of UFO occupants was that of shy careful acting strangers. There are only a few reports in which occupants encountered men with the intention of coming close to a witness or bringing him aboard the flying object. Up to the 1990's these occupants seem to have acted secretly, not wishing to be seen. Now there are some cases of abductions which could be witnessed by more or less independent people (Hopkins 1996). Perhaps, the time will come when it is possible to film or register the occupants, which until now has not been successful. In the beginning of our century strange looking objects were observed landing in several countries.

The first observation of a flying object and its occupants in Germany which has come to our attention dates from the year 1914. In May or June of that year Mr. Gustav Herwaeger, who worked in a bakery on the outskirts of Hamburg, had gone outside at 4:00 in the morning when he observed a cigar-shaped object a short distance away, hovering close to the ground. It was illuminated from within and was surrounded by a halo of light.

A series of illuminated windows were arranged along its rim. Four or five little "humans", at the most 1.20 m tall, all of them wearing the same kind of suit, stood next to the spaceship and entered it by means of a ladder. After the ladder was withdrawn the sliding door closed noiselessly. The object rose vertically without making a sound and disappeared. The witness died in 1933, but his children submitted the report to the publisher of the *UFO-Nachrichten* (UFO-News), where it appeared in April, 1962, issue No.68.

The first case of a possible abduction in Germany comes from the shepherd and forest inspector Ernst-August R. of Hemer in the province of Sauerland (Mysteria 1985). According to the report, one day in summer, 1948, the witness was looking after his flock of sheep in an isolated grassy area in the woods. All of a sudden the sheep scattered in panic. Mr. R. heard a rushing sound and saw an object, 30 m long and about 3 m high emerge in front of him from what looked like an "artificial fog". The object landed on the grass.

After a few moments of puzzlement, waiting for things to happen, the shepherd slowly approached the object and touched its smooth, metallic surface. Instantly a strong electric shock knocked him to the ground, where he lay unconscious for some time.

When Ernst-August R. came to, he noticed that he was about 80 meters away from the point where he had collapsed. All around him stood small entities, about 1 meter tall with large heads and big, slanting, almond-shaped eyes, narrow mouths and small noses. They had bulging foreheads and short, stubby hair. In front of their chests they carried boxes with tubes hanging down from them. These probably were oxygen containers, for from time to time they grasped the tubes in order to draw air from them for breathing. They gesticulated and spoke to each other in a language that Mr. R. could not understand. Next to the object 80 m away, which was still enveloped in mist, stood another four or five humanoids. They examined the soil or the grass and collected samples into large containers.

Finally, all the beings entered the object. It emitted a high, whining sound and flew rapidly away in a southerly direction. The time was 10:40 a.m., but to the shepherd it felt as if no more than 30 minutes had elapsed.

In the place where the craft had landed he discovered 6 to 8 round spots of burnt grass in a line, 2-4 meters apart, and about a meter in diameter. An acquaintance, who passed the site later on, expressed the opinion that the shepherd had set up fire places. For several days Mr. R. suffered from pains in his face when he exposed it to the sun, as if suffering from sunburn.

In the Spring of 1952 a 48 year old former Army Major Oskar Lincke was riding with his 11 years old daughter Gabriele on his motorbike near Meiningen in the late afternoon through the woods when suddenly they got a flat tire. The location was about 7 km on the east side of the German Border to West-Germany.

When he tried to push the motorbike to the next village his daughter discovered about 150 meters away some animals or children moving quickly around a strange object. Oskar Lincke walked alone to the spot. When he was only 60 meters away he recognized two little men, about 1.50 m tall, clothed in a silvery suit. Each of them wore a light on their chests which went on and off in a regular interval. Next to them stood a big disc, 15-20 meters in diameter.

When his daughter Gabriele called to her father, the two humanoids realized that they were observed. They started to run to a small cone-shaped tower which came down from the bottom of the disc and disappeared in it. Soon the outermost rim started to glow bluish-green. The rim had two rows of holes. These holes had a size of about 30 cm and were about 45 cm apart from each other. The disk slowly rose up letting the tower appear like the stem of a mushroom. The rim began to rotate. The color changed to red. Mr. Lincke could hear a weak humming sound. Then the tower was pulled in while the disk hovered in the air. Then the sound changed to a whistling sound "like a flying grenade," and the tower rose slowly up, then accelerated and rapidly flew away. (Sievers 1955)

The witnesses ran to the location where the tower had touched the ground and found the grass there pressed. Oskar Lincke had heard or read nothing about "Flying Saucers" up to that time. When he and his family fled to West-Berlin he talked to the American Authorities and gave evidence of his experience in lieu of an oath to the CIA officials. The pertinent document is now available due the FOIA law.

MUFON-CES members could not find the Linke family, but interviewed a friend of Mr. Linke who said that Oskar Lincke had seemed to be another man after his experience. He was very excited and in the eyes of his friend Mr. Lincke had spoken the absolute truth.

Six years after the shepherd near the village Hemer encountered the UFO and its occupants another cylindrical craft landed only 50 km exactly north of Hemer. On the night of October 10, 1954, while sightings in France had reached a peak, Willi Hohl, a 42 year old movie projectionist from the city of Muenster, was in the vicinity of Rinckerode (near Muenster) on his way home from a late performance on that Sunday-night, when he noted a brilliant light in an adjacent field. Approaching it to within 60 m he observed a cigar-shaped craft hovering about 1.50 m above ground, surrounded by a blue glow. Four humanoid figures, about 1.20 m tall or smaller, were busying themselves underneath. They wore rubber-like dresses and worked in complete silence. Mr. Hoge observed the scene for about 10 minutes, but did not dare to approach closer. The entities had thin legs, broad chests, and oversized heads.

The humanoids re-entered the object by means of a ladder. The craft tilted to one side and shot upwards at an angle. A few seconds later it had assumed the shape of a bright disc (Basler Nachrichten 1954).

It turned out that a few hours earlier a car near Cuisy (Seine-et-Marne) had apparently been brought to a halt by just such an illuminated yellow-orange cigar-shaped object (Michel 1958 a). At about 8:30 p.m. three occupants of a car driving down a country road near Briatexte (Tarn) in France, saw two small beings crossing the highway (route N-631) and running towards a glowing red disc on the ground. A short time later the disc lifted off into the sky and disappeared within seconds (Michel 1958 b).

None of the witnesses knew of the experiences of the others. It is very unlikely that the observations are the product of pure imagination, because the vehicles all had the same shape and the entities did not conform to the description of UFO occupants as handsome humans with long hair then in vogue. Furthermore, the sightings took place within a small area (Rinckerode - Hemer) and at about the same time (8:30 p.m. on Sept. 10th and on the morning of October 10, 1954).

Today, in retrospect, we realize on the basis of statistical material gathered in the meantime that the observation made by the shepherd Ernst-August R. in 1948 agrees with descriptions received in subsequent decades from all parts of the world. (The "oxygen container" may have been needed for safety reasons during the first years of UFO landings, until the atmosphere was more fully examined).

It has been claimed by skeptics that observations of landed craft with nearby occupants have purely psychological origins such as hallucinations.

If UFO observations were induced by press reports the sightings would be evenly distributed all over. Actually, however, straight flight paths of objects in several cases have been pursued over many dozens of kilometers. In contrast, hallucinations or misinterpretations certainly do not spread out along straight geographical lines.

As witnessed, for example, in France during October, 1954, at the time of flaps not only objects of class A are seen moving along straight geographical lines, but alleged landings and observations of small occupants also occur at points along such lines (on Sept. 27 and 29, 1954; Michel 1958).

The statistical probability that 5 observations of the flight path of a strange object accidentally lie on a straight line is 1.4×10^{-6} . In 1957 Aimé Michel, studying news clippings from 1954, discovered some paths defined by 6 observations along a nearly straight line.

The probability P that out of a total of n observations, m accidentally lie on a (nearly) straight line (i.e. are "orthotonic") is 1.2×10^{-8} . This result can be derived from the expression

$$P(m, n) = \binom{n-1}{m-2} p^{m-2} (1-p)^{n-m}$$

where p is the ratio of the orthotonic surface to the total possible surface. In Aimé Michel's case $n = m = 6$ and $p = 1.5^\circ/211^\circ = 0.007$.

The conclusion, therefore, is that observations of strange objects made from points along orthotonic lines most likely are not hallucinations, even when they include reports of UFO occupants.

In contrast to meteors or airplanes, most UFO's do not follow a long continuous flight path. Generally, they only move through relatively short distances and then disappear from sight or from radar screens.

Today occupants of unidentified flying objects do not flee when they are observed. On the contrary, most often the witnesses will be confronted with beings which do not talk to the witnesses, but act according to their own agenda. A well investigated example is the Langenargen-case.

5.2 The Langenargen/Lake Constance Case

5.2.1 *Shining Objects over Lake Constance*

In the night from 23 to 24 February 1977 the weather around Lake Constance was murky: the sky was largely overcast, and a weak breeze was blowing from east. The waxing moon had already set by midnight. In the early morning hours, 27-year-old Lothar Schaefer drove the 52-year Rudi Grutsch (now deceased) home in his green Citroen 2CV. The two had been together that evening in Langenargen, leaving the Magg Bar, near the train station, at about 2 a.m. A few minutes later they arrived at the Waldeck Café parking lot.

The town of Langenargen, with over 5,000 residents, is located on the northeast shore of Lake Constance and has been from time immemorial a beloved and heavily visited recreation center. Bierkeller-Waldeck, lying 2 km to the north of the town center, and focus point of the UFO incidents of 24 February, sheltered an air observation stand during the Second World War. (Figure 5.2.1 and Figure 5.2.2)

While Grutsch was getting out of the car, Schaefer, who remained in the car, saw something shining in the sky and called it to Grutsch's attention. He observed lights, which were still pretty far away, but shining brightly. Between the tall spruce trees in front of the parking lot, and the gable of the Waldeck Café, the witnesses could see two bright points of light approaching in a straight line from Switzerland over Lake Constance. Grutsch, who claims to have flown 33 missions with the JU52 during World War II, and who was afterwards deployed as a paratrooper in the Africa Offensive, estimated the height of the objects to be about 1,000 meters.

One minute later Schaefer also climbed out of the car. Rudi Grutsch was so blinded by the dazzling brilliance of bluish-white light coming from four circular "searchlights" on the front parts of the objects that he had to shield his eyes with his hand. Grutsch, who wears glasses (+0.9/+0.75 diopter) and does not hear well, could not make out any further details. Lothar Scharfler believed he could see oval contours standing out weakly against the dark background.

Grutsch was disconcerted: "I've never seen anything like it before." Both objects approached rapidly, until they were about 500 m away. They then remained motionless for about 5 minutes, the lights sweeping the immediate area. Each of the objects appeared to be larger than a Sikorsky S-58 helicopter.

Both witnesses were overwhelmed by the intense brilliance of the objects. "A thousand halogen lamps would've been but a candle flame in comparison," Grutsch later stated. Schaefer described the beams as "whiter than sunlight," comparable to the flashlight of a camera.

Schaeffler, who was stationed at a helicopter unit in the German Army in Laupheim, began to wonder: "Alouette choppers don't carry such bright lights. These objects here emit a high-pitched whistling tone. Chopper noise would have shaken the entire neighborhood awake. As an electrician, he is of the opinion that in order to produce that kind of brilliant light one would have to have install an entire power plant up there.

The objects hovered in the sky without a sound for about two minutes, then they slowly drifted towards each other, until they appeared to touch. Suddenly "the things just disappeared, as though turned off." Grutsch looked automatically at his watch. It was exactly 2:10 a.m.

Unfortunately, it will always be questionable whether or not the witness Grutsch was inebriated, since he would not allow himself to undergo any psychological testing in the course of the investigation.

Schaeffler admits drinking a total of "4 or 5 glasses of wine" in the Magg Bar (later verified by the police in a blood-alcohol test: < 0.03% meaning he was relatively sober).

5.2.2 The Objects Over the Waldeck Café

Rudi Grutsch said good-bye to Lothar Schaeffler shortly after 2:30 a.m. He entered the house to go upstairs, and when he looked out of the ground floor window he saw the unknown flying objects suddenly appear again. This time they come from the northeast and appeared to be quite close. Grutsch estimated their distance to be 150 m and their altitude at about 50 to 60 m. Once again there were two times four lights, which lit up the backyard and neighboring houses as bright as day. The innkeeper went closer to the window, approaching the closed window to within half-a-meter, when he suddenly found himself unable to go any further.

In the meantime the intense brilliant objects came closer. Rudi Grutsch noticed Schaeffler was still running around outside, first ducking to the right behind the nearby bushes facing the kitchen, which protrudes from the rest of the house, then standing up again and fleeing around the far corner of the kitchen to the other half of the house. Unable to call out to Schaeffler, Grutsch then claimed to have seen an indistinct shadow - shaped like a small barrel swaying to and fro before the built-on kitchen, i.e. directly in the path of Schaeffler's flight.

Asked for the duration of these events during a further questioning on April 6, Grutsch admitted: "I had lost all sense of time. To me it was just too long." After about two or three minutes - he can't remember exactly - the objects began once again to approach one another, as in the first sighting. This time, though, the two innermost lights appeared to fuse, then disappear. The remaining lights continued to drift closer together, until they merged and disappeared.

Unfortunately, Schaeffler was unable to verify this spectacle later on, having been unable to look directly at the lights because of their terrific brightness. Grutsch recalled: "First it was eight, then six, then four, then two lights, and finally one. The last light even appeared to get bigger. The fusion process proceeded in jumps or jerks." Immediately thereafter Grutsch heard cries for help, and the sound of breaking glass. He was now able to move again, and hurried to the upstairs window in the hope that he would be able to see more from there, but outside everything was bathed in darkness. He remained standing in front of the window for a while longer before going into the bedroom, shaking all over. Mrs. Grutsch, by now awakened by the noise Schaeffler was making outside, thought a burglar was trying to break into the house. The next-door neighbor, Mrs. Burkhart, has no telephone, and called to her from an open window to call the police station at once. At first she also suspected a burglary. Mrs. Grutsch then called the police station in Friedrichshafen. Upon perceiving her agitated husband, who repeatedly whispers that he has just experienced something too impossible to believe, she didn't press him, but instead dressed quickly, intending to run over to her neighbors.

5.2.3 Strange Beings Appear Suddenly

Meanwhile Lothar Schaeffler has experienced a time of terror. Shortly after the sudden disappearance of the objects, just as was about to climb into his car, he also saw the light flare up in the sky once again. This time there was only one object, but very near. The enormous size of the object instilled in him an overwhelming fear. He wanted to follow Grutsch into the house, running first to the south entrance, then to the north, but all the doors were locked.

The object emitted an extremely high-pitched, piercing, but not loud, tone of constant intensity. Lothar Schaefer ran along the kitchen wall and threw himself to the ground between small bushes in front of the backyard fence. The light kept coming closer. Later on Schaefer estimated the distance at 50 to 80 m and about 18 m above ground. By now the entire area was lit up so blinding bright that Schaefer didn't even feel secure in this hiding place and proceeded to run to the rear entrance of the Burkart's house.

There Schaefer suddenly heard a short whistling sound, "from very high to low frequencies," felt a slight draft of air, and - as though conjured out of nothing - suddenly two strange, alien looking beings stood there directly behind him.

The figures were no more than about 1.30 m and 1.1 m tall, respectively. The beings had a somewhat human-looking body, although their long arms reached almost to below their knees. Conspicuous were also their oddly cramped fingers, reminiscent of those of spastic children. Other than a kind of frill around the neck - somewhat like a harlequin - with some 6-7 light green "star-like serration" Schaefer could not make out any further articles of clothing. Their skin appeared to be somewhat lighter than human skin. Their hairless heads were completely round, as were their clearly defined mouths. Nose and ears could not be seen, neither did they appear to have necks. The strange figures rocked their torsos slowly back and forth. At the same time their eyes - "like the Chinese, slanted, but not as narrow" and "big like cows' eyes" - stared unflinchingly at Schaefer, now paralyzed with fear. The larger being stood about 1 m away from the witness, whereas the smaller one was at a 90° arc to the left. (Figure 5.2.3)

Schaefer recalls: "I stared at them, and they stared at me, and then I simply went nuts." Although the figures made no gestures signifying aggressive intentions, Schaefer flew into a state of panic. He threw himself against the Burkart's door and cried for help, but the door was locked. In his desperation he impulsively broke the upper middle pane of glass, unlocked the door from the inside, fell on the floor, and didn't look around him anymore. By the time the house tenants arrived everything had disappeared - the beings, as well as the lights.

Mr. and Mrs. Burkart, the Grutsch's next-door neighbors, later reported that someone repeatedly rang the door bell for about 15 minutes, beginning around 3:30 a.m. Finally, cries and appeals for help were to be heard, along with the noise made by the breaking of the door glass. Only then did Mrs. Burkart get out of bed, although she was hesitant to run to the door to see who was there. Everything remained quiet for about 5-8 minutes. Then, from her roof window, Mr. Burkart cautiously called over to the Grutsch's neighboring window: "Mrs. Grutsch! Someone was trying to break in. Call the police."

In Friedrichshafen, Police Sergeant Krueger answered the phone and immediately notifies the nearest patrol car.

After a while Mr. and Mrs. Burkart ventured slowly down the stairs and found Lothar Schaefer lying prostrate on the hallway floor, his hand bleeding. Upon seeing them Schaefer called out in his Swabian dialect, "they're flyin' around up yonder", and excitedly points to the sky. The Burkharts, who did not notice anything out of the ordinary, believed Schaefer - a complete stranger to them - to be either drunk or mentally unbalanced, and suspected he had been involved in a fight, as Schaefer had blood smeared all over his face from his bleeding hand. The police arrive within a few minutes, but suspected right away that this did not look like a burglary attempt.

Toward 4 a.m. the police took Schaefer to the Friedrichshafen Hospital, where his hand, cut open on two fingers by the glass shards, was bandaged. The policemen at first believed Schaefer was suffering from hallucinations brought on by an alcohol delirium, but began to wonder when the blood-alcohol test showed only 0.03%. (They were amazed that several scientists bothered to take the witness' story seriously, due to the general lack of serious information concerning the UFO phenomenon). Towards 5 a.m. they called the witness's mother, who had understandably been worried about the whereabouts of her son, trying to calm her. Lothar Schaefer finally arrived home toward 6 a.m.

5.2.4 Further Witnesses

The following day Schaepler informed his colleagues of his experiences. He was sick and unable to work. His friend and colleague Wolfram Nafts from the telecommunications unit talked him into reporting the incident to the press as a means of perhaps locating further witnesses. Although Grutsch and Schaepler foresaw that mocking and derisory comments would come from many of their friends and neighbors in the future, they agreed to follow this suggestion. Thus a short notice appeared in the *Bildzeitung* from 2 March 77:

UFO's OVER LAKE CONSTANCE: SEEN BY 8 WITNESSES

Langenargen (Lake Constance), 2nd March 1977. Neither the German Federal Railways employee Schaepler ("I drank four beers at the most"), nor the innkeeper Rudi Grutsch, nor even Mr. Zirn, want to claim to have drunk too much that night on Lake Constance when the UFO's came. It was last week, Thursday, two o'clock in the morning, as Mr. Schaepler came out of his favorite bar in Langenargen: "Suddenly a shrill howling and brilliant searchlight beams. From a height of about 50 m two shapes dove towards me with a deafening noise. I screamed for help and ran away." Mr. Schaepler was so scared that he jumped in his fear through a pane of glass. Innkeeper Grutsch verifies: "The parking lot in front of my bar was lit up as bright as day by the dazzling light". Five other neighbors also claimed to have seen and heard the two UFO's.

Lothar Schaepler described their experience in more detail to the *Schwaebische Zeitung* (Friedrichshafen) on March 4th, wherein it was stated:

To the question whether he had also noticed the shapes of any occupants in the strange object, Mr. Schaepler declined to reply: "That point I wish to discuss with experts only".

As a result scientists at MUFON-CES were quietly able to seek verification of the experiences of the witnesses, undisturbed by publicity and sensationalism.

In the course of the following days further people came to the Waldeck Café, also claiming that they had observed strange things during the night in question. Two of these additional witnesses were interviewed by MUFON members. A third witness described his experiences over the telephone.

Within 100 m of the Waldeck Café, in a northeasterly direction, lives the Brielmaier family, on Buchenstrasse. While her husband was peacefully sleeping in the early morning hours of February 24th, Mrs. Brielmaier (65 years old) took a bath, long after midnight. Shortly after she lay down in bed and heard a loud whistling noise in the sky. Upon hearing someone yelling, Mrs. Brielmaier opened the bedroom curtains next to her bed, and had an unobstructed view in the direction of the kindergarten and Waldeck Café. The sky to the left of the Grutsch's and Burkhart's semi-detached house was lit up brightly.

Mrs. Brielmaier was unable to understand why none of the residents east of the Waldeck Café had not heard or seen any traces of the objects. She herself claims to have heard cries, and shortly afterwards, the jingling of glass shards. Directly after that the coloring in the sky disappeared. The entire spectacle might have lasted for two minutes at the most, although she could not be sure.

Another witness, Karl Brugger, lives in Endringer Manor, 1.4 km from Bierkeller-Waldeck, shortly before Oberdorf. Farmer Brugger suddenly woke up in the middle of the night and thought at first he had overslept because it was as bright as day outside, in the direction of Bierkeller. He then looked out of the window: "It looked as if the police had set up a warning light, like the ones you see on the Autobahn after there's been an accident. It was extremely bright, brighter than the floodlights in a soccer stadium. It looked like a brilliantly lit searchlight, but considerably brighter. Taking a quick look at the clock on the night table I saw that both hands were already past midnight."

Brugger did not notice the exact time. The size of the light had been difficult to judge, but he thought perhaps it might have been half of the full moon in diameter, which yields, at a distance of 1.4 km, a size of about 17 m for the object.

A supplementary report came from Friedrichshafen (10 km north of Bierkeller-Waldeck). Wolfram Nafts, Lothar Schaepler's friend and colleague, heard from a railway-man, who he knows only by the first name, and who shortly thereafter moved to Ulm, that his wife had also seen a bright spectacle in the sky on

the night of Ash Wednesday. Together with a colleague, she was driving on the way back home from Oberteuringen to Friedrichshafen. When the two women saw the mysterious bright lights in the sky in the direction of Langenargen, they became alarmed and stopped over at a sports club which was still open to wait until the light disappeared. As so often happens in such cases, they made no attempt to call the spectacle to the attention of others, for fear of being laughed at.

The Radio and Direction Finding Southern Headquarters of the 72nd Corps Regiment is located about one kilometer to the northwest of the Waldeck Café, in Schwedi. Captain Kotz verified that during the time in question no unusual observations or interference on radar were noted, and that no tape recordings had been made.

Fritz Meier, editor of the *Schwaebische Zeitung*, in Friedrichshafen, arrived at the same negative result. He received his information from the nearest German Army radar station, in Kempten, and through a Swiss colleague in the Air Traffic Control Center in Zurich.

Seven years later it turned out that an unidentified flying object had indeed been detected by the military. Apparently the object (or the objects) had come direct from Italy. As reported in the *Muenchner Merkur* on November 11, 1980 - based on information supplied by the SAD Rome Agency - the Italian Defense Ministry had made public that in the night from 23 to 24 February, 1977, a UFO followed an Italian Air Force fighter for 23 minutes. The object was surrounded by a very bright halo of light. During the chase the plane and the object had covered a distance of some 375 km. Only after a 270° turn over the Po Valley did the object disappear.

5.2.5 After-Effects

Lothar Schaeffler's friend and co-worker, Wolfram Nafts, reported that Schaeffler came to work the day after his experience looking deathly pale. He behaved absentmindedly and vomited several times. During the next few days he had to be repeatedly spoken to before he reacted. While driving he would also at times be "somewhere else". Occasionally "he turned off for minutes at a time". Half a year later he still acted as though he were another person. He was no longer as jolly as he once was, having become quiet, and was still occasionally absentminded. While mountain climbing he was always freezing, which had never been the case before. The first few weeks after the UFO encounter Schaeffler suffered from insomnia and nightmares. He let a lamp burn at night due to anxiety. At times he would awaken exactly between 2 and 3 o'clock in the morning, having earlier slept soundly through the night.

Two days after the UFO encounter he suddenly broke out in a sweat while sleeping in the early evening, and was literally soaked to the skin. Before this he had never experienced such a thing. Two weeks later he developed a stomach ulcer, his doctor sent him sick for three weeks to a rehabilitation.

What bewildered Schaeffler above all else, and what he had no way of explaining, was the course of time during the encounter. According to Rudi Grutsch the encounter must have taken place some time between 2:10 a.m. and shortly after 2:30 a.m. Nevertheless, it was not until an hour later that the Burkhart family claimed to have heard the ringing of their door bell, and only after a further lapse of a quarter of an hour, the breaking of the glass. Schaeffler therefore assumed there were still further fragments of the actual happening slumbering in his subconscious, which could, perhaps, be brought to light in a hypnotic regression. Just how deeply Schaeffler's experience had really shocked him would only become apparent in the course of the investigations by MUFON-CES psychologists. (Figure 5.2.4)

Rudi Grutsch was also, at least for a few days, totally confused. Shortly after the sighting he was "a nervous wreck", and ran around for three days "as though in a fever". On the third day following the occurrence he began to have hallucinations. Since Mr. Grutsch refused to have anything to do with any psychological tests which might have confirmed his credibility, we have to assume that Grutsch, on the night in question, was no longer sober enough to fully grasp all the details. His reliability is therefore rated by MUFON-CES at only 50%.

5.2.6 Physical Investigations

During a supplementary examination of the sighting area by MUFON-CES physicists with a Geiger counter on April 6 - six weeks after the UFO incident - no increased level of radioactivity could be registered. (The

professor of physics, Dr. Walter Schiebeler, had already searched for traces with a Geiger counter on March 6th, also without alarming results).

An examination of the metal posts of the fence with a magnetic compass showed no indication of possible magnetization.

No physical traces were found. Contrary to similar reports, Schaefer did not have the feeling, in spite of the intensive light radiation, that the air temperature during the nearest approach had increased noticeably.

The physicist Dr. Irene Saenger-Bredt - widow of the well-known German rocket scientist Eugen Saenger - also investigated the case for her own since she lived not far away from that area.

5.2.7 Psychological Investigations

On September 12, 1977, Mr. von Ludwiger was called by the primary witness's doctor and asked for assistance in her treatment. Schaefer had become addicted to pills. When Dr. Z. investigated the cause of this addiction she was unable to explain how her patient could suddenly develop a stomach ulcer. He had noticed that he was always able to sleep well after taking a medication. Upon our urging, Schaefer underwent psychotherapeutic treatment and has now overcome his anxiety, as well as his addiction to pills.

The physiological and psychological after-effects of the UFO encounter on the witness exactly fit the scenario of a CE case.

Since the unusual light on February 24, 1977, was observed by six independent witnesses from several different locations, the phenomenon existed objectively and appears to be real. But the reality of the observation of the two shapes experienced by Lothar Schaefer is questionable.

A psychological test of the main witness should at first clarify the general reliability (mental health, lie index, etc.) to find out whether a comprehensive investigation would be worthwhile. For that, the personality inventory according to the MMPI test (Minnesota Multiphasic Personality Inventory) was used, which has been translated and changed by the University of Saarbruecken for German patients (Hathaway & McKinley 1963). This test is standardized and empirically constructed. Therefore the test can be considered reliable. It is designed to open unconscious conflicts and to replace a certain degree of psychiatric diagnosis (Davidson & Neale 1974).

From the reply of several questions, typical clinical interpretations can be made, for instance, on the inclination to lie, to alcoholism, to paranoia, depressions, hysteria and to schizophrenia.

Three months after his experience Lothar Schaefer underwent this MMPI test. Without going into details on the single results it should be mentioned that the assessment of the personality inventory for Mr. Schaefer by a professional psychologist proved that the lie index and all of the other values which would lead to the conclusion of an abnormal personality were as slow as normal.

The origin of an initial experience cannot be found by the MMPI test but in a test which investigates the visual channel. The characteristic features in the quality of the visual experience and the processing of the experience must be investigated separately. The suitable test for this procedure is the so-called Rorschach test. The figures or structures of several standardized blots of ink images have to be interpreted by the subject. The process of interpretation is suitable to open unconscious processes and motivations as well as the persons perspective of themselves (Mischel 1968). Investigators can reach a certain degree of agreement between answers and symptoms (Goldfried, Sticker & Weiner 1971). On the other side, the statements about all the aspects of a personality are frequently incorrect (Nunnally 1967). Only the treatment and analysis of the test by a psychologist with long experience in that methodology guarantees fairly reliable statements about the personality of the person asked.

Three psychological examinations were performed on the witness. The first took place in 1977, the second in 1980, and the third on June 16, 1989.

The tester and analyst of the Rorschach test on Mr. Schaefer in all of the cases was the experienced psychologist Siegfried Streubel (former member of the Max Planck Institute, Munich, now employee at DASA, Ottobrunn).

The first test showed that the index of reality, which in general has a maximum value of 8 was determined to a value of 6. That means that this value was close to the optimal value for the index of reality. In his testimonial concerning the credibility of the witness Schaefer Mr. Streubel wrote among other things: "...The behavior of answers (comments) is strongly inferenced with complexes of experience which disturb

and partly inhibits him in the flow of thinking and the process of communication. The complexes of experience are so massive that the patient suffers from them. Other experiences do not exist which could explain the problems that the patient is experiencing in connection with the UFO sighting.

From the psychological strain of experience expressed in the tests, one can assume that this is in connection with his claimed UFO sighting, which he really has experienced and has not made it all up.

This patient's symptoms of fear were the most serious that Mr. Streubel has ever found with witnesses with an oppressive experience of shock.

Based on the psychological examination, the reliability factor of the primary witness could be shown to amount to 90%. His statement that there were 2 figures which suddenly appeared can be considered, with 90%, in any event as "to some extent reliable", even if the event is considered subjectively.

5.2.8 Regressive Hypnosis Sessions

The interviews produced contradictions concerning the appearance, or presence of the light phenomenon. The time given for its disappearance toward 3:35 a.m. is definite. If the proprietor of the Magg Bar closed his doors precisely at 2 a.m., this would coincide with the time given by Grutsch, who together with Schaeffler observed the lights for the first time at the Bierkeller 10 minutes later. The sighting was supposed to have lasted only about 5 minutes. After this Schaeffler went to his car. The second encounter with the objects, in his opinion, was also supposed to have lasted only about 5 minutes. The question remains open, which especially troubled the witness Schaeffler, how the contents of a full hour's experience could have disappeared from his memory, and just what really happened to him during this time. (The simpler explanation for the missing hour is naturally that the Magg Bar did not close until 3 a.m., and that Grutsch had "miscalculated" by an hour when he looked at his watch).

Since Lothar Schaeffler wants "to know the truth by any means," members of MUFON-CES made the proposal to search for more details in his experience with the help of a hypnotherapist.

Above all else, questioning under hypnosis had as its goal the establishment of clarity concerning the length of the individual episodes on February 24th. With UFO witnesses the hypno-therapist was faced with the difficult task, on the one hand, the need to break through a possible traumatic blockade, and on the other hand, to prevent the subject's merely confabulating an experience because he was in a state of amnesia during the time in question. In "UFO abduction cases" one has to distinguish between those in which the witness first under hypnosis reports an encounter with strange beings, and those where the witness already has a clear idea of the beings before hypnosis.

The later case pertains to Schaeffler's encounter. It is therefore certain that the appearance of the figures which the witness claims to have seen were not first "invented" during hypnosis.

Through the mediation of the famous parapsychologist Professor Hans Bender (Freiburg), Professor Claus Bick, director of the Pfaelzer Fels Sanatorium in Dahn, agreed to question Schaeffler under hypnosis. As secretary of the International Union of Hypnotherapists, and experienced to that date in nearly 1,000 hypnotherapy treatments, Professor Bick was well aware of the danger of the conscious or unconscious influence of the hypnotist on the responses of the subject under hypnosis. Because of this Professor Bick did not want to know the details of the report before the sittings.

In the first session on June 12, 1977, Professor Bick obtained the course of the events on February 24th, asked catch questions and prepared Schaeffler for the hypnosis to follow. Among other things, Schaeffler related that he had not yet read anything about the UFO phenomena, except a few newsletter reports.

To the question as to what he feared the most, the witness answered that it would disturb him very much if others considered him "not altogether quite there."

In the second sitting Schaeffler was placed in a state of deep hypnosis. An attempt was to be made to call forth the possibly repressed experiences. (Figure 5.2.5)

During the conversation it came out that Schaeffler probably was probably inside the object, but he lost his consciousness and could not remember any more details at the time. The only new experience which he discovered in that session was his feeling that was lifted away from the ground:

Bick: "Do you have the feeling that you were inside (the object)?"

Schaeffler: "I was away from the ground, that's the feeling I had."

Bick: "You were not on the ground, where were you?"

Schaeffler: "Away from the ground, I don't know. I only know that the object was getting brighter. And afterwards I was on the ground again and those two were standing next to me again."

The regressive hypnosis succeeded in bringing several forgotten details in the description of the beings to light (nose, number of fingers, mouth movements), although the other experiences still remained hidden. In our first interview Schaeffler was of the opinion he had seen the beings for only 5 seconds. Under hypnosis he estimated the length of the confrontation at 5 minutes.

A further regressive hypnosis questioning would have increased the danger of confabulation, due to the reasons mentioned above. The witness was therefore advised to try to remember the events without being influenced by others, by noting as many of his dreams as possible. Further event contents were to be searched for at a later date through a dream analysis.

5.2.9 Evaluation of the Same Case by a Psychiatrist

The UFO report and the examination of the primary witness Lothar Schaeffler were discussed with Dr. med. H. Bjarsch, Chief Medical Advisor and specialist for neurology and psychiatry at the Tegel Clinic in Berlin. Dr. Bjarsch was especially concerned over the time of occurrence of the incident. It was a night after Fasching - the big German festival - and any psychiatrist hearing of a description of "little beings" would be led to suspect alcoholic delusions.

According to Brarsch, a psychotic tendency would already have to be indicated, contrary to the view of other psychiatrists like Prof. Ziolk, University of Berlin, for instance, in whose assessment hallucinations under the influence of shock could also occur, unrelated to psychoses. Both agree that hallucinations cannot be induced through fear alone.

The combination "bright flying object and strange figure" does not represent the usual hallucination. Since this combination apparently has been observed worldwide one could think of a new collective archetype, but his conclusion would go too far, according to Dr. Bjarsch.

Whether the hallucination or the projection of the dwarves was caused by shock, and if so, whether intentionally or unintentionally, and whether the picture of the figures was random or was induced and controlled in this form by something in the bright object, the psychiatrist could not determine.

In any event the figures could not have approached the witness as normal physical beings because of the 2 m high fence. These beings must be "projected" in some form or fashion, whether they were induced by the witness psychically or from the object in some way.

In any case it would be misleading to speak of a new archetype in the Jungian sense (Jung 1958), since the reported form of the observed UFO occupants does not come from a single circle of culture but from different societies (for example African aborigines, European and Siberian people). In the literature one can find many reports concerning figures such as those observed in Langenargen, the bald head, hands with 4 webbed fingers and a round mouth (Bullard 1987, 1939, 1991, Stringfield 1980). Images of alien beings as they were printed in the news-media since the publication of the books written by Budd Hopkins (1981, 1987) were not known in 1977 in Germany. How could the witness know the general picture of the reported UFO occupants if they were not real?

5.2.10 A Man-in Black Appears

Although Lothar Schaeffler was no longer the same uncomplicated person he was before this encounter, within a year he had managed to resume his normal day-to-day life once again and talked to others only occasionally about his sighting in February.

In July 1980 a colleague of Mr. Schaeffler's called and asked MUFON-CES for advice, because of nervousness Schaeffler was not able to speak with us himself.

It was then asked if it was usual that witnesses of a CEIII encounter were sometimes threatened by mysterious men. Schaeffler had just fainted once again, and in falling had injured his hand on a broken bottle. The act of becoming unconscious led Schaeffler back to the threat by a man who had told him something bad would happen if he ever again talked about his sighting, which he had just done.

Hoping to be able to calm Schaeffler, Mr. Streubel and Mr. von Ludwig visited his mother and learned how his present state of bad nerves had started. One evening in September 1978 (toward 9 p.m.) Lothar Schaeffler was walking home from the direction of Lake Constance. On the empty street with one-family

houses a bicyclist coming from behind drew even with Schaefer and spoke to him. He was supposed to have said that Schaefer should never again talk about his experience, otherwise something would happen to him.

At first Lothar Schaefer did not take the man, who wore a long black coat or cape and a black, broad-brimmed seaman's slouch hat, seriously. Then suddenly he was very frightened: ten meters in front of him the bicycle and the rider literally dissolved into nothing!

Several weeks later Schaefer began falling over in a faint (the beginning of epilepsy, as predicted by the psychologist Streubel). Schaefer believed that the bicyclist's threats would be fulfilled, whose presence he constantly believed to feel. His nervousness increased to such an extent he was finally afraid to go out of the house by himself.

In the spring of 1980 Schaefer once again encountered the mysterious man in the long black coat as he was walking along the street in the evening. The man approached him from behind (this time without a bicycle), repeated the same threat, and then disappeared by dissolving into nothing, as in the first encounter.

Mr. Streubel examined Schaefer, and calmed him down by telling him his fainting attacks were a normal sickness which followed what he had experienced, and that "these men" would "latch on" to insecure victims, such as himself, wanting to harm them. He, Schaefer, should simply laugh at the man if he met him again. The man could not harm him physically in any case. After this Schaefer clearly felt better because someone had looked into his case and taken it seriously.

It has also happened in other countries that a scientist who questions UFO witnesses must frequently also serve as a "healer" (Westrum 1977, Gotlib 1995/96). The sociology professor, Ron Westrum, writes that a closer encounter generally causes a mental shock, and that the conflict between experience and the sense of reality is even capable of inducing paranormal events. The continuous preoccupation with the unusual experiences and the exclusion from the social life of society mutually strengthen each other, so that many witnesses of close encounters can become sick long after the event.

A psychic projection might be one explanation for the MIB case. Schaefer had been unable to remember - even during regressive hypnosis - what happened between 2:30 to 3:20 a.m. on the morning of his experience. His subconscious searched in vain for the "lost events" in his memory, where they had not been stored. Finally the unconscious manifested itself in the form of the bicyclist in order to tell the conscious there were no further repressed experiences, or that they could not be retrieved in conversation.

Schaefer did not recognize this phantom image as a psychic projection, nor were other witnesses present during his confrontation with it. By redirecting his fear due to the time loss to the phantom image, the possibility of getting rid of his dread of the forgotten events arises.

That Schaefer actually had had an experience which lastingly damaged him psychically was shown by an extensive psychological examination.

MUFON-CES scientists came to the conclusion that MIB reports should be more seriously examined by psychiatrists to help the witness, if necessary, out of severe depressions.

Supplementing this is a special evaluation by the psychologist Streubel who has visited Schaefer in 1980 and 1989 (Streubel 1993). (Figure 5.2.6) Each time a psychological examination of Lothar Schaefer has carried out. Mr. Schaefer got married in the meantime. Mr. Streubel observed: "The epileptic attacks are weaker and occur more rarely than previously. The medical treatment which we recommended years ago has in the meantime been carried out. Since the EEG measurements made by Dr. H. in July, 1988, the recommended medicine for this therapy has no longer been required. During the last few months no epileptic attack has occurred. His fear of darkness is still present."

In 1991 MUFON-CES has paid the treatment of Schaefer by a psychotherapist. There was a need to continue the treatment. Today, in 1996, the witness is in good health again and has lost his fears as a consequence of autogenic training.



Fig. 5.2.1: Langenargen on Lake Constance



Fig. 5.2.2: Bierkeller-Waldeck with the Waldeck Café

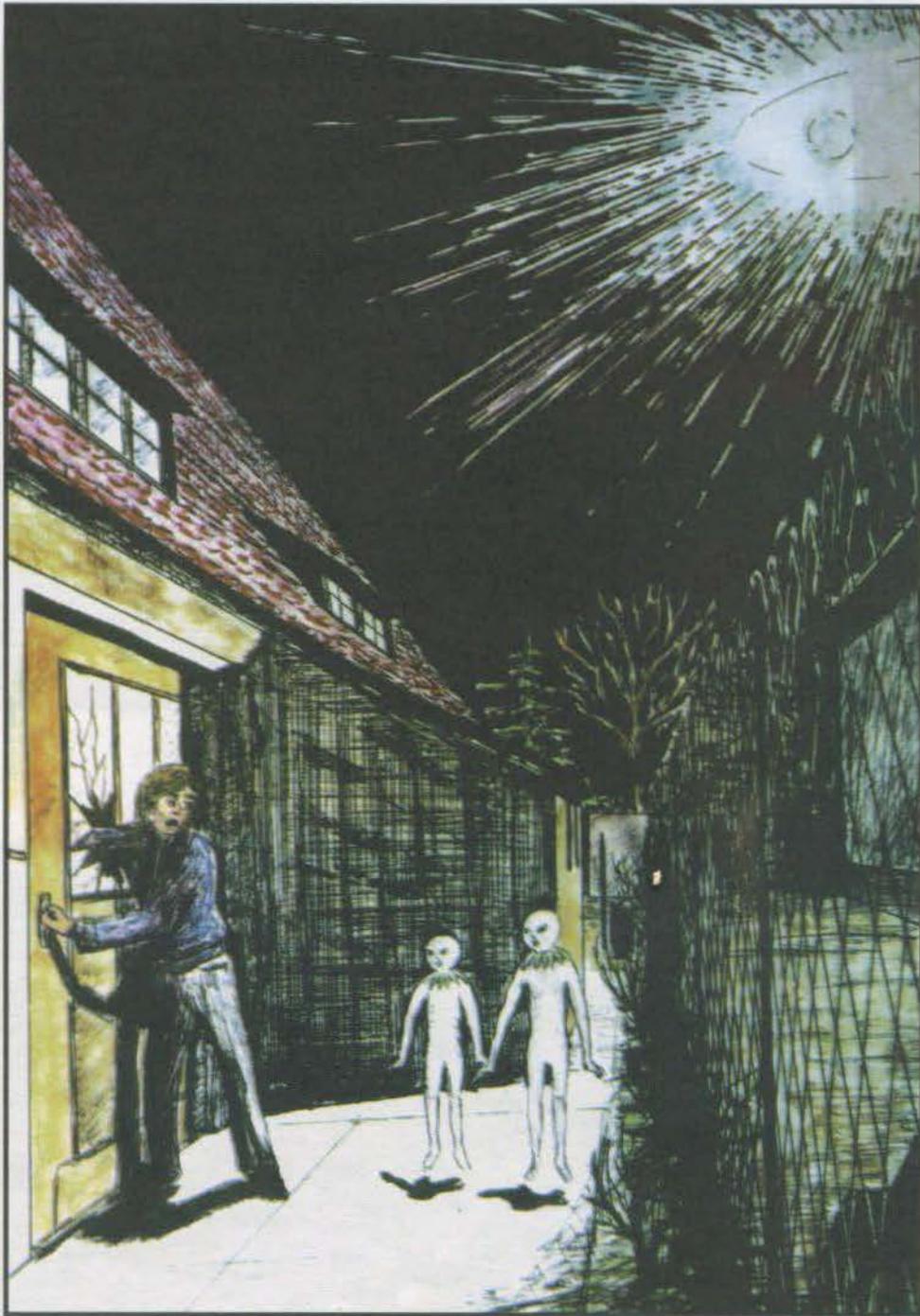
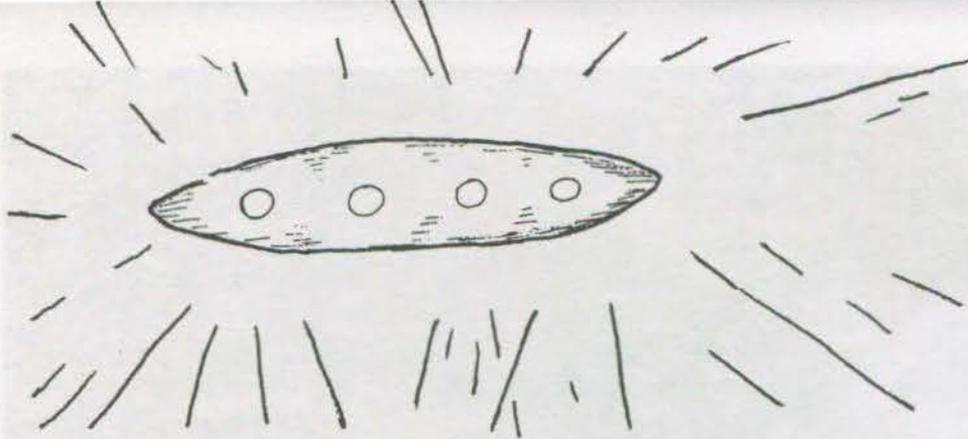
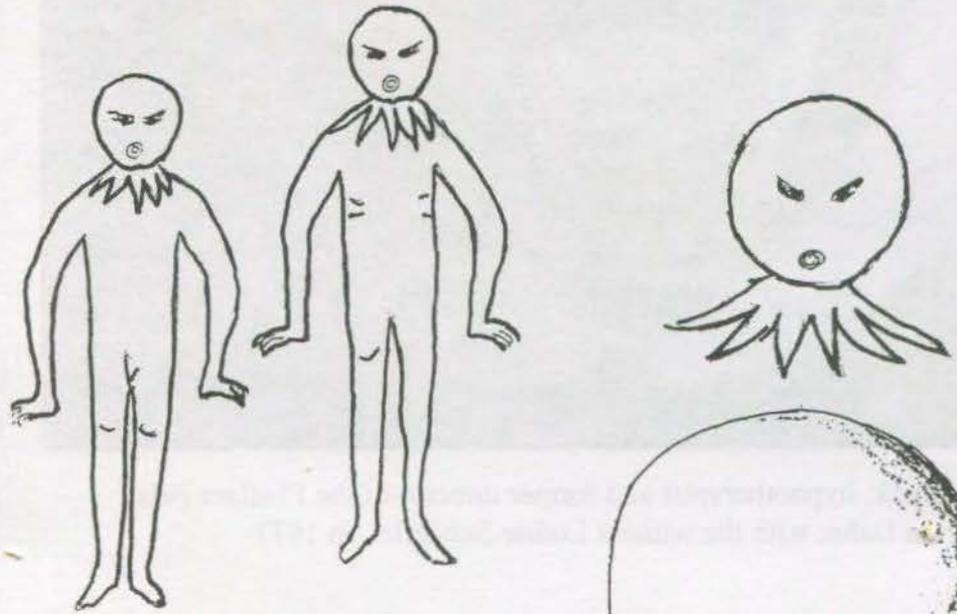


Fig. 5.2.3: Lothar Schaefer in his desperation attempted to unlock the door when two alien-looking beings stood beside him.



One of the bright objects



Drawn in 1977 by I. v. Ludwiger and confirmed by the witness



Drawn in 1989 by von Ludwiger after the witness selected a picture from a collection of several "ET faces"

J. Brand

Fig. 5.2.4.: Drawings by the interviewers according to the descriptions given by the witness



Fig. 5.2.5: Prof. Claus Bick, hypnotherapist and former director of the Pfaelzer Fels Sanatorium in Dahn, with the witness Lothar Schaefer, in 1977



Fig. 5.2.6: Lothar Schaefer, Siegfried Streubel and Illobrand von Ludwiger in Langenargen in June 1989

6 UFO Left Metallic Piece in Sweden

Walter Stender first learned about the occurrence and the interesting metal object found at Vaddö in 1974. He decided to investigate whether this incident would be suitable for finding material proof for the reality of UFO's. Many difficulties were to be expected. Partially because such a long time had passed and because of limited possibilities of bringing about effective connections between Stockholm and Munich.

Most of the information was derived from press reports. In addition, there were written statements from two witnesses. Finally, the results of many telephone conversations, which at times, were translated by friends in Malmö. After a good contact was established every question was answered in a clear and precise manner. Therefore giving the impression that all statements were based on truth. Written requests were rare exceptions because men who are used to manual labor typically do not like to sit down to write.

The following is a list of the available materials used as reference:

1. Report from J. Lindeberg, Magazine "SE", 1972 probably based upon statements from Stig Ekberg.
2. Report from Lars-Olof Berglund, AFTONBLADENT, May 19th, 1974, statements from Stig Ekberg.
3. Report from Anders Plam Magazine SAXON, April 21-27, 1980, statements from Stig Ekberg.
4. Report from Christer Nordin, Magazine UFO-Sverige-Aktuellt, Nr. 1, 1980 statement from Stig Ekberg and Harry Sjöberg.
5. Tape recording from Christer Nordin recorded, on/or around Summer 1979, during a visit with Stig Ekberg and Harry Sjöberg at the place of the occurrence. This recording is the basis for the material (4) above mentioned.
6. Report from Thorvald Berthelsen, UFO-Sverige-Aktuellt, Nr. 3, 1980, about an examination of the metal objects.
7. Report from Institute for Metal Research, Stockholm, September 1980, about an examination of the metal objects. This is the basis for the material (6) above mentioned.
8. Personal memory summary Harry Sjöberg, probably from the early 1960s, about his experience together with Ekberg.
9. Telephone transcripts from conversations with Ekberg and Sjöberg.
10. A great amount of written and verbal information which the author got from individuals and institutions during his investigations.

Ekberg - as the owner of the metal object - for a long time was the only informant for the press. In the fall of 1979 he fell seriously ill, at that time he was no longer willing to be the spokesperson. Afterward there was only the connection with Sjöberg, who until then, refused to be in the limelight.

Stig Ekberg and Harry Sjöberg, both residents of Stockholm, were building a house on the Isle of Vaddö, located about 90 km N of Stockholm. In the evening of Sunday, November 11, 1956, after spending the weekend with their families, the two carpenters were driving back to the building site on the Island. Ekberg was driving his Ford V8 Pickup with Sjöberg sitting on the passenger side. The truck was running well, it was still new with only 20.000 km on the clock.

They were already on the Isle of Vaddö, traveling in a northerly direction, when Sjöberg noticed a very bright flying object, approaching from the right, against the clear night sky. Making Ekberg aware of the object they both watched as it flew in front of them, about 1 km, at an altitude of about 100 m. Suddenly the object made a sharp turn towards them and started slowly gliding down. It seemed to rock back and forth until it came to a stop in the middle of the road, about a 100 m in front of them. Sjöberg remembered that the object turned at the point in the sky where the moon was standing at the time of the incident. This was about 10 p.m. Central European Time.

The shape of the object appeared to be an elliptical flattened sphere. It was illuminating the surrounding landscape with such a tremendous amount of light, that even a barn, a half kilometer away, was visible as though the sun were shining. The witnesses noticed that the object was brighter during flight than after landing, and both were surprised that they were not blinded by the bright unusual light.

Just after the object turned and started to descend, Ekberg noticed that his engine started to sputter and died. At the same time the headlights went out. The vehicle came to a stop before the object landed. The witnesses stayed in the car initially talking about what the unusual flying object in front of them could be. Ekberg thought perhaps it could be some sort of secret air force machinery. Sjöberg on the other hand believed that it was some kind of ball lightning phenomena.

The object had dull coloring that appeared to be steel gray in the middle. On top and underneath it appeared to be yellow, while it turned into red-orange, towards the front and the back. The object appeared to stand about 1 meter above the ground. But, no landing gear or supports could be observed, because the space between the object and the road was covered with fog or smoke. Under the middle of the object the light seemed to be very intense like a fire or a very strong light.

The elliptical outline of the object appeared to glimmer - like a road in the desert sun. No distinct characteristics could be observed, but it seemed to slowly turn on a vertical axis from left to right every 20 seconds.

The object was totally silent, in flight and on the ground. Ekberg noticed an uncomfortable atmospheric change, especially after they stepped out of their vehicle. The air seemed to lack oxygen and breathing was difficult. It smelled like ozone and smoldering insulation. Sjöberg did not think much of this at the time, he thought it was just the change from the city air that was different.

Both remembered that the object was wider than the road, which was about 5 meters wide. They approximated the size of the object to be about 8 meters wide and 3 meters high.

After about 10 minutes on the ground, the light of the object intensified and it lifted off the ground. It moved to the left and up about 10 meters before it made a sudden turn and accelerated amazingly fast, flying away in the direction where it came from.

The Find at the Landing Site

Ekberg took his flashlight after the object disappeared to the east, opened the hood of his truck and checked the wiring. Nothing seemed out of place, so he asked Sjöberg to try the starter. Surprisingly, the vehicle started right up and idled normally. Also, the headlights came on without any problem. It appeared that everything was back to normal.

Ekberg was in a hurry to continue their journey, but Sjöberg insisted on stopping at the landing site. Sjöberg got out of the truck with a flashlight. He noticed segments of the tall grass next to the road had been pushed down on both sides. This induced Ekberg to get out of the truck as well. They both started to look around for more evidence.

In the middle of the landing circle, which was marked by the flattened grass, Ekberg saw what appeared to be a shiny rock on the dusty road. He picked up the shimmering object. The object was so hot he had to toss it back and forth between his hands to keep from burning himself. The shiny rock turned out to be a three sided piece of metal, approximately the size of a matchbox. Because of the unusual heavy weight, Ekberg decided to keep the piece and placed it in the glove compartment of his truck before continuing their journey back to their building site.

After being ridiculed by some friends and family, Ekberg and Sjöberg decided not to discuss their experiences any longer.

Ekberg was working the following summer on a boat in Stockholm, when he met a gentleman who turned out to be a Metallurgist. Ekberg remembering he had the metal object in his car decided to retrieve it from his glove box. He wanted to find out exactly what it might be made of. The man believed it might possibly be platinum. He recommended to Ekberg, that it should be analyzed in a laboratory because of its possible monetary value.

After several unsuccessful attempts in Stockholm, the metal piece was eventually taken to a company in Hälsingborg. This company concluded after specific tests that the material was not platinum. The object showed no effects from mechanical, chemical or thermal tests. But, it was split into three pieces when it was subjected to ultrasound. The three pieces were returned to Ekberg.

A few years later, he was in a bookstore and overheard a customer asking for UFO-literature. He realized during a conversation on the subject that it was a UFO he had encountered on the Isle of Vaddö. The other customer turned out to be a member of a UFO organization in Stockholm. Ekberg agreed to another examination of the metal object.

Ekberg was introduced to Sven Schalin during the first contact with the UFO organization. Schalin was in charge of laboratories at the SAAB Airline manufacturing company, as well as, a member of the UFO organization. This initial introduction led to a variety of tests on the metal object. In part, through the initiative and mediation of the UFO organization Tests were run in various laboratories in Sweden and even in Denmark.

The first test was done by Schalin himself in his laboratories at SAAB. A few days after returning the pieces to Ekberg, Schalin came to visit him again, only this time accompanied by a high-ranking officer of the US Air Force. Schalin translated for the American, who asked if he could loan one of the pieces to the US Air Force for further testing. The Air Force officer promised to return the piece together with a written report of the test-results. Ekberg loaned one of the pieces to the American but never got it back.

This incident made Ekberg cautious, he put the most interesting of the two remaining pieces into a safety deposit box. He only loaned the second piece to people who agreed to take out a 50.000 Swedish Crown insurance policy for collateral. Most of the subsequent tests were initiated by the UFO organization. Ekberg remained mostly passive during the investigative process.

The Metal Object

Although the first few tests left room for discussions and speculations, later investigations, from some of the best laboratories and universities, concluded with certainty that the object consisted of pulverized wolfram (tungsten) carbide and cobalt. All industrial countries have companies which produce such hard metals and the manufacturing methodology is in principle the same everywhere. The mixed components are placed into a mold and with moderate heat, very high pressure is applied. Right angled edges on the formed pieces can not be avoided, because the pressure is applied through a piston into the mold. The pieces at this point can still be worked on with files, while after the final sinter process with about 1500 degrees Celsius, the material reaches such hardness that only diamond tools can be used to apply a final touch.

The following institutions tested and analyzed the metal object:

Höganäs AB, Hälsingborg, Sweden

This was the place where the first tests were conducted and where the original piece was split into three parts through ultra sound waves.

Max-Planck-Institute for Metal Research, Stuttgart, Germany
Pulvermetallurgig Laboratory, Prof. Dr. Gunter Petzow

Metallwerk Plansee, Reute, Tirol, Austria
Dr. Wolfgang Schedler, Director Hard Metal Division

Oxelösund Järnverk AB, Oxelösund, Sweden
Stanford University, California, Institute for Plasma Research, USA
Prof. Peter A. Sturrock, Space Science and Astrophysics

Svenska Aeroplan AB (SAAB), Linköping, Sweden
Ingenier Sven Schalin

Swedish Federal Research Institute (FOA), Stockholm, Sweden
Technical University Munich, Munich, Germany
Dr. Ing. H. Meisel, Dipl. Ing. Bausch, Dipl. Ing. Stadler

University of California, Berkeley, California, USA
College of Engineering, Professor James A. Harder

University of Kansas, Space Technology Center, Kansas, USA
Dr. Edward J. Zeller

The authorities above concluded that the object consisted of approximately 94.86 % W, 4.09 % Co, 0.59 % Zr, 0.28 % Fe, 0.06 % Ti, 0.05 Zn, 0.04 % Cr, 0.03 % Cu, with a specific weight of 14.836 and a hardness of about 1650, which is about 100 units higher than normal. The kernel size was described as remarkably

small for the time of manufacturing. The overall quality of the material was outstanding, but not unusual for the early 1950s.

The main question in all these tests was whether or not the object was man-made. After it was established that the material could very well have been manufactured in any of the industrial countries other questions remained, namely: What was this material used for? Could the signs of wear and tear point towards the use of this material? Who made the mold? In all subsequent investigations none of these questions have been answered to date.

Unless someone comes forward to identify the metal object as a product of a certain company and describes its usage, one must assume that the piece of metal came from or fell from the luminous unidentified flying object that was observed by the two men before they discovered it.

Wear Marks of the Edges

Typical grooves are shown in this drawing. Marked a....l. Groove a is the largest one. Originally located at the edge or rim, resp., it encroaches deep on the plane surface B, causing a local displacement of the boundary line.

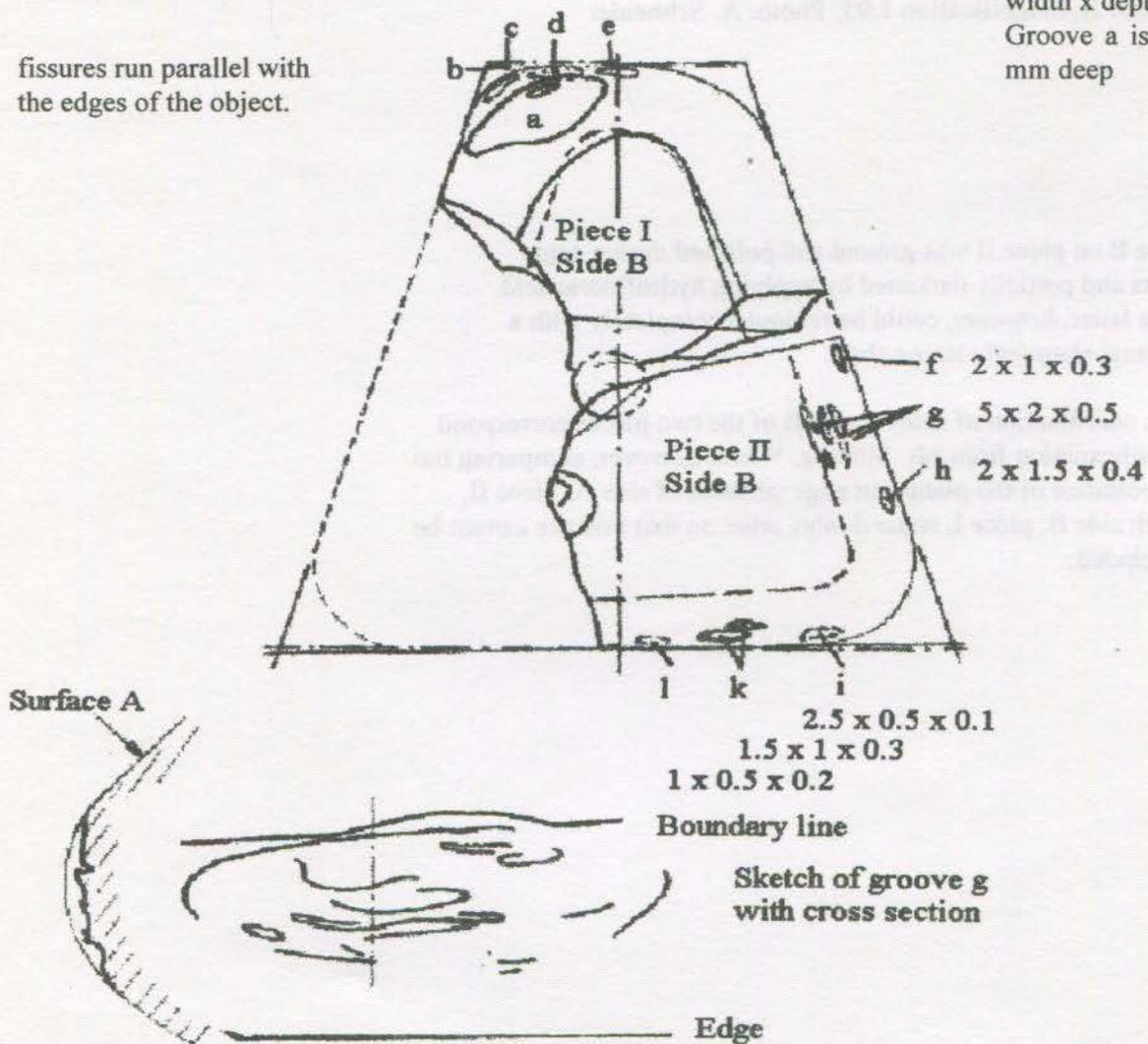
All other grooves are only located at the rim surface, most of them close to the upper side B. Exceptions are grooves d, g, i, and l, which are closer to the lower surface A.

Nothing is known about wear marks on the lost piece III. Apart from this fact, the location of the grooves on all known sides of the circumference indicates an influence of some forces on all sides of the object, except the plane surfaces.

The bottom of most grooves is quite smooth. Slightly fissured are d and k, and a in the lower R.H. region. Strongly fissured is g, as shown in a sketch (scale is not correct!)

fissures run parallel with the edges of the object.

Approximate groove sizes, mm, length x width x depth.
Groove a is about 3 mm deep



Wear Grooves of Piece I. Photos: Technische Universitaet Muenchen

- a) Grooves b and e clearly, groove a faintly visible. Magnification 4.4
- b) Clearly visible groove a with the small groove c inside. Magnification 3.2
- c) Top view. Groove a on L.H., groove e in foreground. Grinding test mark at bottom center. Magnification 4.0
- d) Side view from R.H., groove d on R.H., groove e on L.H. Grinding test mark on top. Magnification 4.0

Pane View of Pieces I and II, magnified

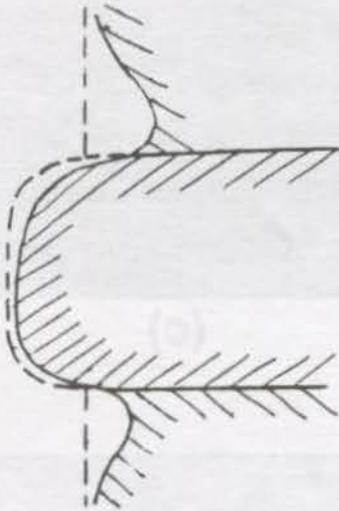
- e) Side A: He damage to the L.H. edge comes from a test cut
Piece I, magnification 2.5; Photo: Stanford University
- g) Piece II, magnification 1.9; Photo: A. Schneider
- h) Side B: Piece I, magnification 2.8; Photo: Stanford University
- i) Piece II, magnification 1.95; Photo: A. Schneider

Note 1: Side B on piece II was ground and polished during some tests and partially darkened by applying hydrofluoric acid. The latter, however, could be removed completely with a normal chemical cleaner fluid.

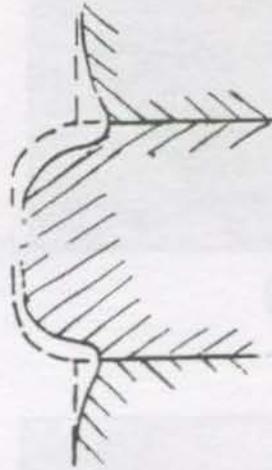
Note 2: The coordination of sides A and B of the two pieces correspond to information from Mr. Sjöberg. When, however, comparing the appearance of the plane and edge surfaces of side A, piece II, with side B, piece I, some doubts arise, so that mistake cannot be excluded.

How to explain the observed wear

a) Object hard,
blocks soft, as
usual

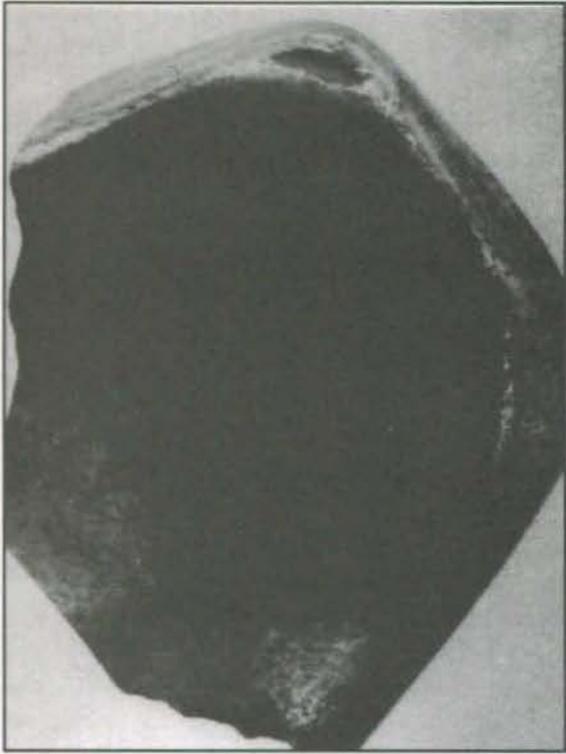


b) Object blocks
hard

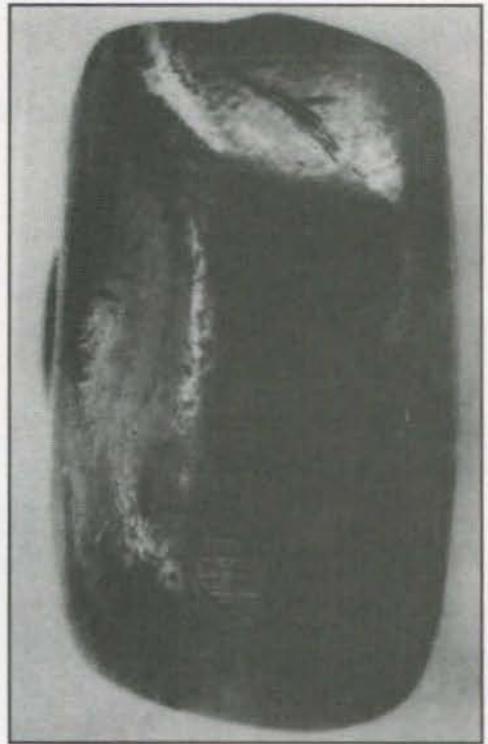


c) An assumed model of the clamped and encased object (approximately full-scale), exposed to a high-speed gas stream of very high temperature, which may cause wear of the observed type





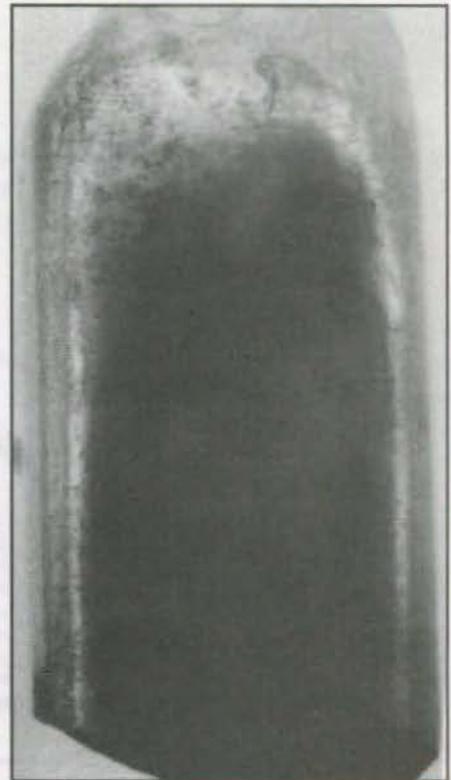
(a)



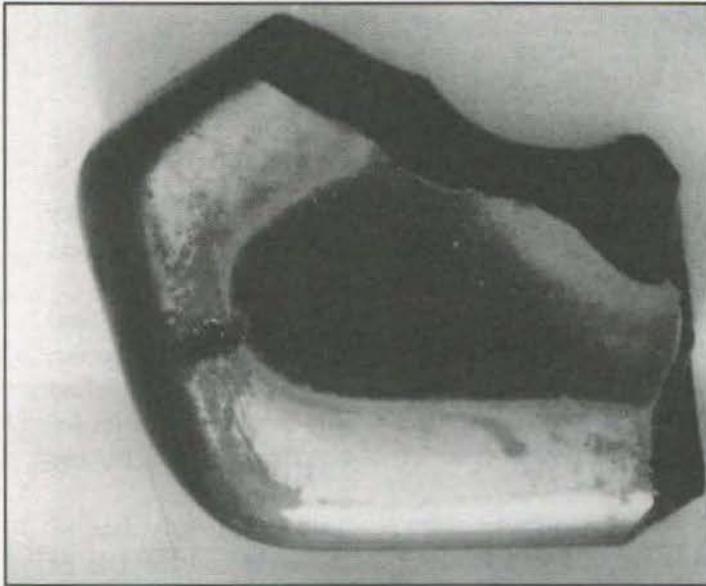
(c)



(b)



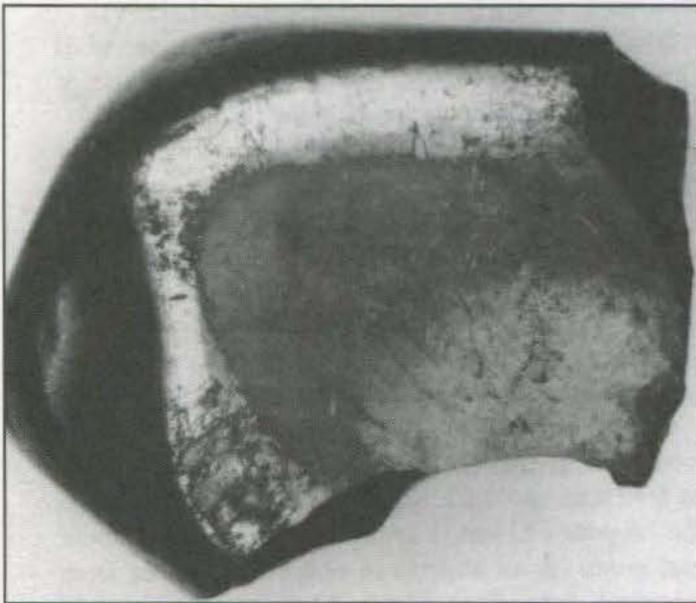
(d)



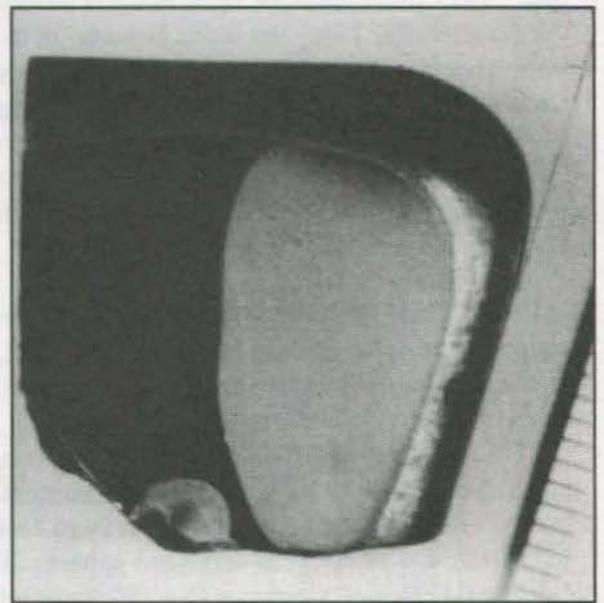
(e)



(g)



(f)



(h)

7 Photographic Evidence

7.1 "Greifswald Lights"

On August 24, 1990, many independent witnesses observed formations of luminous spheres in the sky near the city of Greifswald, located close to the coast of the Baltic Sea. Many eyewitness reports backed up by videos and photographs make this case one of the best documented sightings in Europe.

Although the degree of strangeness in this case is not very high, no scientific explanation has been found to date. Some skeptics have tried to reduce the characteristics of this phenomenon to known one. But, so far, no one has successfully explained all the data observed and documented. The skeptics seem to be satisfied with any possible explanation. But from a scientific point of view a possibility is only the starting point for gathering evidence and the search for confirmation. In the "Greifswald case" no convincing evidence for any hypothesis could be found.

Many sightings of what appeared to be groups of luminous spheres were reported in the early days of August 1990 from the coast of the Baltic Sea between the cities of Rostock, Greifswald and the Isle of Ruegen and Usedom. These lights displayed unusual behavior contrary to airplanes, balloons, luminous ammunition and atmospheric phenomena. The movements of these lights appeared inconsistent with known objects, their acceleration seemed too rapid and abrupt.

Mr. Gerald Schwab, a tourist from Berlin, described his observations to a German newspaper. He stated that: "They stood there for three minutes before they accelerated rapidly forward" (*Bild**, Aug. 31, 1990).

On Aug. 24, 1990, the lights hovered in the sky north-east of Greifswald for a relatively long period of time. Hundreds of tourists and local residents from Greifswald, Rostock, the Isle of Ruegen, the Isle of Usedom and Neubrandenburg observed, photographed and filmed the phenomena. (Figure 7.1.1).

The information contained in the reports from many witnesses was confirmed by many video films and photographs. These are considered as measuring protocols in a scientific sense. Even if the individual protocols were not taken under scientific conditions, they were done well enough for further scientific analyses.

The MUFON-CES photo-analysis team received six videos and 11 photographs from different individuals and interviewed more than a dozen witnesses personally. None of the people interviewed had observed the phenomenon from the beginning, neither could anyone remember the exact starting time for their individual observations. However, several of the cameras used indicate a time code which is displayed on the movie.

This allowed us to conclude that the phenomena consisted of two groups of luminous spheres which hovered nearly motionless for about 30 minutes between 8:30 p.m. and 9:00 p.m. over the Pommernian Sea ($14^{\circ}10'$ eastern longitude, $54^{\circ}25'$ northern latitude). The brighter and closer group (at an altitude of about 13°) formed a circle of 6 luminous spheres. The second group (at an altitude of about 20° as seen from Greifswald) formed the shape of a "Y" (later referred to as the Y-formation) (Figure 7.1.2).

One group of witnesses consisted of 40 schoolboys and teachers who viewed the objects from a distance of about 30 km. The boys were spending their vacation in Mukran on the Isle of Ruegen. They observed that the objects in the Y-formation were not stationary but performed individual movements within the group. One of the boys confirmed that some smaller objects had moved back and forth between the two groups of lights.

At the time of the phenomenon, the sun was located 8° below the horizon and illuminated the lower clouds. The moon was still about 90° below the horizon. The German Weather Service in Rostock reported that approximately $5/8$ of the sky was covered with a formation of high, fleecy clouds in round, white or grayish, partly shaded masses, as well as a formation of gray or bluish sheet like clouds at a minimum altitude of 2,500 meters. There was a light east north-east wind, and the temperature was about 60° F.

Ludmilla Ivanova, a medical doctor, and her husband, project engineer Nicolai Ivanov, filmed the objects from their third-floor balcony with an Orion video camera (LP 11.7 mm/s, Fuji Super HG EF-30, VHS-PAL).

Mrs. Vinogradova, living with her husband Valery in the same house on the second floor, was alerted by the noisy children in the street. She said it sounded as if they were observing something very unusual. Through the window she saw about 50 people looking at the sky. She noticed two luminous groups of lights in the sky and proceeded to call her husband, who works as a translator. He took a photo at the moment when two objects joined a formation of three lights that were already present (Camera: Zenith-E; Lens: Industar 50 mm; film: SweMA-G5Gost, 18° DIN). This group of objects later formed a ring of 7 luminous spheres (Figure 7.1.3). The ring-shaped group disappeared after being clearly visible for a few minutes.

The other group, higher up and further away, was not clearly visible at the beginning. As the ring-shaped group disappeared, the Y-formation became focused and clear. At first there were only 4 objects in this group, forming a cross. Then 2 more came shooting toward it and a little while later another object appeared between the upper lights. Ludmilla Ivanova filmed for about 4 minutes, but the group was still visible for another 15 minutes. The objects seemed to rotate about their axes (Figure 7.1.4).

Both formations were observed from Trassenheide around 8:40 p.m. by Mr. Rainer Ladwig, who was walking on the beach with his family when he spotted the lights. He went to get his camera (Yashica, 300-fold optics) and managed to take a few pictures with automatic exposure at one second. These images are blurred, but Mr. Ladwig also took a picture without the automatic feature (Figure 7.1.3).

The exposure time was too short to get a bright enough photo. However, this under-exposed photo turned out to be very good, i.e. the best, for a computer analysis. The lights in this photo that Mr. Ladwig's shots are not bright, but they show a structured contrast (Figure 7.1.5).

Another photo that Mr. Ladwig took that night captured a reflection of the lights in the water (Figure 7.1.6). Therefore it could not have been a mirage. Witnesses who viewed the lights from Trassenheide reported that the Y-formation appeared to be as bright as the full moon. He lights were clearly visible even from the 100 km distant Neubrandenburg. Therefore the lights could not have been hot-air balloons.

Mr. Luchterhand, who lives in Berlin, was driving with his family about 6 km south of Greifswald's nuclear power plant when he spotted the lights. He stopped his car and filmed the formations with his father-in-law's video camera (Canon, 8-fold zoom). Their distance to the Y-formation was about 25 km. At about 8:45 p.m. the lights in the ring-shaped formation, which seemed to rotate slowly in a clockwise direction, faded away. Some interesting comments from the witnesses were also recorded on the video. For example, one can hear Mr. Luchterhand exclaim: "I don't believe in UFO's and such nonsense, but I have never seen anything like this in my whole life."

On October 24, 1994, one of the two major TV networks in Germany, the ARD, transmitted a documentary with the title: "UFO's - They Do Exist." This broadcast, which was based on the book "The Status of UFO Research" by I. von Ludwiger, included a report about the Greifswald sightings. After the broadcast more people contacted MUFON-CES and reported their observations of the light formations.

Mr. and Mrs. Groeschel provided a 15-minute video of the lights. They witnessed the phenomena while they were staying in the village of Uckeritz on the Isle of Usedom. It can clearly be seen in the video that the Y-formation drifted with the wind (15 km/h) toward Peenemuende. Peenemuende was the former production facility for V-2 rockets, and at the time a Russian military base. Since this video camera was very light-sensitive, the cloud background in the movie is sufficiently bright and clear to reveal minor details. This enabled us to rule out a few possible explanations. The lights could not have been caused by luminous ammunition or light bombs, because they all burn only between 3 minutes and a maximum of 10 minutes and they would have parachutes attached to them, which would have shown up on this video (Figure 7.1.7).

Five photos were submitted for photo analysis by the pilot Gerald Drape. He took the photos of the objects north of Greifswald. He wrote that he was very impressed when the smaller objects approached the Y-formation, with what he estimated as supersonic velocity, and came to a dead stop when they reached the formation. Drape noted: "Because of their specific flight movements one must conclude that these objects flew under intelligent control."

In February 1995, the photo analysis team received a 6th video recording of the lights from Mr. Stoffers. He filmed the phenomena from Zinnowitz on the Isle of Ruegen, which was only about 10 km from the

lights. On his film luminous clouds are visible between the light spheres, they look like pyrotechnic smoke (Figure 7.1.8).

Some of the witnesses reported that at about 8:47 p.m. They observed a sudden flash of light about 100 m away from the Y-group but at approximately the same altitude. This could be observed on the videos made by Dr. Ivanova and Mr. Luchterhand. The flash looks like an explosion of a surface-to-air missile, but no explosive sound was reported by the witnesses interviewed. The diameter of the flash on the film is four times larger than that of the brightest of the lights, and it diminished during 1/8 of a second to nothing (Figure 7.1.9).

One possible explanation could be that perhaps the former East German National People's Army fired at the objects. They were reportedly holding military maneuvers at the time in the region. Subsequent inquiries could not discover a responsible party. Lieutenant Colonel Berger, the former commander of the NVA Air Force, declared that the Soviets had closed all those military installations and were no longer active in the area.

At about 9:00 p.m. the objects faded away one after the other, like luminous ammunition would (Figure 7.1.10). However, after a few minutes, the Y-formation suddenly reappeared somewhat to the north-east of the first location with nearly the same shape and seemingly brighter and bigger to the witnesses on the Isle of Ruegen. The reappearance was noticed by witnesses on Ruegen and in Neubrandenburg, which is about 100 km away. No videos were submitted which show the second appearance of the objects. He reappearance lasted for about one or two minutes, according to the witnesses, before it disappeared.

The size of the objects can be estimated by triangulation. From the data obtained, two items could be utilized to calculate the distance: The line of sight from Greifswald and from Posetitz on the Isle of Ruegen. It was concluded from this that the Y-formation was about 30 km from Greifswald. It hovered at an altitude of 6,500 m from the lowest sphere to the highest one. From the video recordings it appears that the size of the luminous spots is about 1/20 to 1/10 of the size of the whole formation. Taking the smallest extension of one of the light spots on a very highly underexposed photo (taken by Mr. Ladwig), i.e. 1/20 of the group of lights, then an estimated value of 12 ± 2 m results for the diameter of a sphere.

Computer enhancement and contrast increase reveal that the edges of the spots are darker than their middle. This shows that each spot consists of exact rings having the same brightness. Therefore the objects were definitely spheres (Figure 7.1.5d).

A rough estimation of the energy or power that the lights radiated was carried out by comparing the lights with the power with which the full moon brightens the landscape at night-time. From a distance of 14 km (Trassenheide) the Y-group seemed to be as bright as the full moon, according to Mr. Ladwig. If the spectral distribution is equal to that of the moon, then the square distance law for the lightning power of the moon with 0.318 lux (corresponding to 1.8×10^{-3} watts/m²) yields an estimated radiated light power (L) of:

$$L = (4\pi) \cdot 1.8 \cdot 10^{-3} \cdot (14000)^2 = 4.43 \text{ Mwatts}$$

Another estimation was derived from photographs that included houses with lights. The lights appear to have the same brightness as one of the objects in the sky. In one of the photographs, Valery Vinogradov captured lamps shining in several living rooms in an apartment house 150 m away. The brightness of the electrical light bulbs serves the purpose of comparison, since these have nearly the same relative brightness as the objects in that picture. Supposing that a light bulb and one of the luminous spheres on the photo have exactly the same brightness, and supposing that one of the lamps is equipped with 75-watt bulbs, then the light gain is about 8% and the radiation power (E) is about 6 watts. If the light bulb appears as bright as one of the objects, then the radiation power (E) of one of the objects in the sky 30 km away would be approximately:

$$E = \frac{6 \cdot (30000)^2}{150^2} \approx 0.24 \text{ Mwatts}$$

That is in the same order of magnitude as in the first estimation. A 100,000-watt floodlight bulb generates $2.5 \cdot 10^5$ lm.

The illumination stream produced by the Y-group of lights (B) seemed as bright as moonlight:

$$B = 0.18 \cdot (14000)^2 \approx 623 \cdot 10^5 \text{ lm}$$

In comparison: Films and photos taken with a light stream of 20,000 lm when a 650 watt bulb is used. The group of objects had 25 times more energy. Similar observations of objects with this brightness have been recorded by other researchers (Vallée 1990).

The identification of the "Greifswald objects" is difficult because of the following details, which were seen by several independent witnesses:

- For a short time the light from the objects was extinguished. The dark objects moved to another location and switched their lights on again.
- From Mukran on the Isle of Ruegen, Mr. Mirack noticed in the vicinity of the 2 formations a halo of "many small white sparkling lights, like a firework."
- Objects repeatedly flew away from the formation, hovering at a distance for a while, returning to the formation and stopping abruptly in their original position. Seen from Mukran, the incident appeared as follows: The ring-shaped formation had luminous spheres flying in and out at irregular intervals. Mr. Minack wrote: "They sometimes seemed as large as the lights in the formation, or even brighter, and moved very fast. Since the formation emitted light balls downward, the exchange looked like a Ping-Pong game."

Smaller spheres flew in and out of the Y-formation when it stood alone in the sky. This was also witnessed by Mrs. Vinogradova in Greifswald.

Mr. Ladwig in Trassenheide, on the Isle of Usedom, observed that spheres were leaving the Y-group to both sides as well as downward. They flew about 10° away then hovered for several minutes. After that they flew back to the formation. The arrival of these objects was filmed two times by Mr. Luchterhand (Figure 7.1.11).

His video shows smaller lights approaching the Y-group. Every time the lights became invisible on the movie, they could only be seen by the eyewitnesses.

The spheres on the movies seem to be flying with an arc velocity of $0.5^\circ/\text{sec}$, which would correspond to approximately the speed of sound. It is not clear whether the objects accelerate before they enter the formation. The witnesses reported that they came to a sudden stop upon arrival in the formation (Figure 7.1.12).

- According to the newspaper *Bild*, on Aug 31, 1990, the radar screens of the NVA had not received any signal. But the former Colonel of the NVA, Mr. Mann, who was responsible for the technical installation of weapon devices, informed Mr. von Ludwiger that he heard that this appearance had been "captured."
- The former Chief Commander of the NVA Air Force, Lieutenant Colonel Berger, did not know about the incident. He confirmed, however, that the burning duration of luminous ammunition is far less than 20 minutes and he mentioned that neither the Russians nor the NVA had such long-burning ammunition.
- The German Air Defense Office also confirmed that such long-burning luminous ammunition is not yet available.
- At the time of the incident the pediatrician, Doctor Lueder-Stock from Rostock was nearby on his ship in the Baltic Sea when he spotted the objects. He thought that the lights were fired from Navy ships. The skeptics took these assumptions for the final explanation. In an interview with Mr. von Ludwiger, Dr. Lueder-Stock admitted that he never saw any ships, because of the darkness, but he believes that this is the explanation.
- Although the bigger TV stations in Germany transmitted reports of these appearances, no responsible party could be discovered.
- Organized skeptics believe that the company *Silbermuhle* produced long-burning luminous ammunition for the NVA. In a written statement by employees of that company, which is now integrated in the firm *NICO* (near Hamburg), it is stated, that the burning time of luminous ammunition was limited to about 10 minutes at that time.

- The German Weather Service in Greifswald did not detect any unusual appearances on radar.
- In May 1995 Dr. Aschascha, former commander of a Soviet submarine ruled out the possibility, in a talk with Mr. von Ludwiger, that the Russian Navy possesses luminous ammunition which burns longer than 10 minutes. He stated that the ignition of 14 of such expensive long-burning luminous bodies by Russians - if available - must be excluded.

There must have been several hundred witnesses. All of the witnesses interviewed reported seeing many nearby who were looking at the sky, and observing the phenomena as well.

A similar group of objects was seen over Mrzezyno near Kolberg, Poland, between 10:30 p.m. and 10:45 p.m. on June 22, 1993. Mr. J. Ksrodski successfully filmed these lights for about 5 minutes (Sony CCD F-385 E, 8 mm) from the balcony of his house in a south-east direction. Again, 10 to 12 luminous objects hovered nearly motionless in the sky. Three smaller lights were circling the formation. The video, which was sent to MUFON-CES for investigation, only shows one of the smaller objects moving down from the group very slowly (Fig. 7.1.14).

Since the cameraman did not hold his camera steady, the objects had to be centered, frame by frame, in order to render the objects in the image motionless and to observe any movements of the group members. Again, as in Greifswald, the formation rotated in clock-wise direction about the vertical axis of the figure. The objects vanished slowly as in the Greifswald case.

After the transmission of the above-mentioned TV documentation, Mr. and Mrs. Bode reported to Mr. von Ludwiger that they had both observed a similar appearance on August 13, 1994. They were on vacation in Pissuri near Limassol on Cyprus when they saw a formation like the one in Greifswald. During the night a formation of 7 lights stood motionless in the sky. A sphere left the formation "as quickly as an arrow, so that one could only see a bright line." The sphere stopped for a moment in an arc length of 20°, then flew back at the same speed, remaining in the formation. The light ball flew up, to the right and to the left. The witnesses said that the smaller objects looked like billiard balls, exchanging impulses with the formation before they flew out.

The characteristics of the phenomena make it impossible to explain the appearance by military maneuvers. If the smaller objects were ammunition flying to the bright objects acting as a target, then the smaller objects would have exploded inside this group or flown through it. No one can explain, how one can stop a body in the air to zero speed without losing height. Until today nobody has come forward and claimed being the creator of these phenomena. Although different possibilities were considered, not one of them could account for all the different details reported, and nobody has been able to reproduce light formations like those observed near Greifswald.

From the six video movies it is in principle possible through a computer enhancement to obtain 3-dimensional representations of the objects and their movements. But this work requires a lot of time and money. Therefore such work remains to be done in future.

In 1997, MUFON-CES got a video movie taken on May 23, 1993 (three years later than the famous "Greifswald Sighting") from the island of Usedom by members of the family Domroese from Leipzig, which were at their vacation to that time. Again, two groups of light balls were hovering over the sea. And again, smaller light balls could be seen which flew in and out of the larger objects. (Figure 7.1.15) But this time the appearance could be seen for about 2 or 2.5 hours excluding the hypothesis that the lights could be explained by common luminous ammunition (which can burn only for about 15 minutes).

7.2 The Six Photos of a UFO taken by Guiseppe Lucifora

On June 19, 1987 Guiseppe Lucifora, who lives in Solingen, Germany, had been in Cosimo, Sicily. He wanted to take pictures of the construction work on his house with his Polaroid camera. Far away he saw a slow moving object in the sky which was not a balloon or an airplane. Lucifora looked through his camera taking pictures of the unknown object. When the object came closer, Lucifora followed it through the viewfinder. He began to take five more pictures during a 2-3 minute period - without taking the camera from his eyes. Suddenly the object disappeared behind the roof of a house. Lucifora could no longer see the object or hear any sounds.

Mr. Lucifora sent his film to the POLAROID company in Offenbach, Germany. POLAROID found no defects of any kind on the 600 ASA/29 DIN film he had sent to them for their review.

In the Spring of 1993 MUFON-CES obtained the photos for analysis. Professor Manfred Kage, chief of the *Institute for Scientific Photography*, Weissenstein, stated, that the object must have been a big one, since the ratio of the blurred outline to the diameter of the object edge was of such magnitude; suggesting it must have been a large object at a great distance. A small object (< 1 m) not as far away would have had a clearer edge.

A computer analysis made by Rolf-Dieter Klein shows that the color shift in picture No. 4 is consistent with the environment; as viewed in the original Polaroid picture. The center of the object is darker than the sky, so double exposure is excluded. Also, lighting is consistent with the sun's position. The distribution of shadows on the object surface shows that the object is big in contrast to smaller ones. Picture No. 4 was then run through a high pass filter. While being in contrast it shows only scratches but no supporting string or wire. Regrettably, no shadow of the object could be found in any of the pictures. That sets a minimum diameter of 5 meters. (Figure 7.2)

Mr. Lucifora asked several military administrative bodies in Sicily and Germany for an explanation. Unfortunately he was unsuccessful. He believed it could have been a remote guided unmanned aerial vehicle of some kind.

The photo analysts discovered, that all the single views of the object, hovering in different positions in the air, were consistent with movement in a plan area. That is a fact which nobody can fake by throwing an object in the air and taking pictures of it.

7.3 The Famous Nagora Photos

Today any photograph can be generated or manipulated with the aid of computer processing. Any picture of any phenomenon can look like a photo of a real event. Therefore, the earnestness of a photo can no longer be confirmed by analyses alone. At best, one can look for traces of a manipulation or for inconsistencies between the stated observation and the contents of the image. Photo analyst's cannot attest to the authenticity, but only to the consistency of the image with the reported observations.

Most of the pictures with unexplainable objects show simple lights or luminous patterns in the air. Metallic looking objects can be seen in some photographs taken during the day. In several cases disc-like objects look like hub caps being tossed into the air. Therefore, skeptics claim that there are no real big objects, but only models of seeming big objects, thrown into the air by frauds (Webner 1982).

Rudi Nagora and his wife Hildegard were on an extended vacation in the area of Steiermark, Austria in the spring of 1971. On the last day of a 14 day vacation, they were driving in the surrounding area south of the village of St. Lorenzen. Located about 50 km southwest of the city of Graz. The countryside here is hilly and sparsely populated.

It was on May 23, 1971, a sunny day, when Mr. Nagora decided to stop his car on the top of a mountain to take some pictures of the area. The time was about 12:30 p.m. Mrs. Nagora who was expecting, remained in the car. After taking a few steps, he heard a humming sound in the air. The hum seemed to come from the direction of the sun. A bit dazzled Mr. Nagora saw a rapidly moving flying disc. It stopped in mid-flight, hovering for a while, then jumped to another location to hover there and so on. The disc made movements around a vertical axes when it hovered. After a few seconds the saucer "jumped" with a high speed to another position where it rotated like a spinning top. Mr. Nagora took several photographs of the object which reportedly was a silver-metallic saucer 12-15 meters in diameter.

Excitedly Mr. Nagora ran around the meadow, to get the object in the field-of-view of his camera. The camera was a simple *Agfa-Klick-I-box*, in which each picture had to be advanced manually until the picture was ready for the next shot. During the winding of the film the disc sometimes seemed to vanished behind the clouds or behind his back. Sometimes the object seemed to jump away when Mr. Nagora pressed the shutter release. He thought, that he frequently may have photographed thin air. Actually, the object is visible in all the photographs taken that day. In some images the object shows a motion blur consistent with the object's fast acceleration. After Nagora used all the pictures on the film, the object approached the ground and seemed to land. After hovering near the ground for 7-10 minutes, the disc suddenly accelerated vertically into the clouds and disappeared within 2-3 seconds. (Figure 7.3.1 and Figure 7.3.2)

The color-film used, was a *Agfa-color-CN-17* film with 12 exposures. The lens of the camera was a Meniskus 1:11/72.5 mm. The *Agfa-Company* found out that the time of exposure was 1/50 seconds.

Several people who were taking a walk, as well as some workers who were fixing the road, also observed the flying object. Mr. and Mrs. Nagora talked with them about the sighting. But, unfortunately the names and addresses of these witnesses were not recorded. Later attempts to find the witnesses of this sighting were unsuccessful.

Nobody wanted to believe that Mr. Nagoras photographs were authentic. Mr. Nagora, who is musician by trade, has been called a liar by skeptics, after he showed the 12 pictures that he had taken. They were too good and far too many.

Eventually on January 21, 1972, Mr. and Mrs. Nagora made a declaration in lieu of an oath, in which they confirmed that the photographs show a large object approximately 12-15 meters diameter, which they observed flying in the sky in Steiermark on May 23, 1971.

A teacher and member of MUFON-CES said that he would vouch for the honesty of his former student Rudi Nagora. In the early seventies Mr. and Mrs. Nagora both took a lie detector test and passed successfully. The investigators were convinced of the Nagoras' honesty.

Only in 1994 the photo analysis team of MUFON-CES received the original negatives for analyses, which were held by a private researcher, Mr. Geigenthaler, until his death. One can see, that the pictures on the film are coherent. In at least two photos the cloud pattern are very similar and the positions of the disc is just about in the same location.

To throw a hub cap two times in the air to get these two pictures next to each other would not be possible. The diameter of the object is nearly the same in all photos, and the disc never shows an inclination steeper than a 45° angle. If the disc had been thrown, a steeper angle could hardly have been prevented.

Mr. Nagora never tried to make money with his images.

Now the concerning camera and negatives are under investigation by Dr. Richard Haines, Palo Alto.

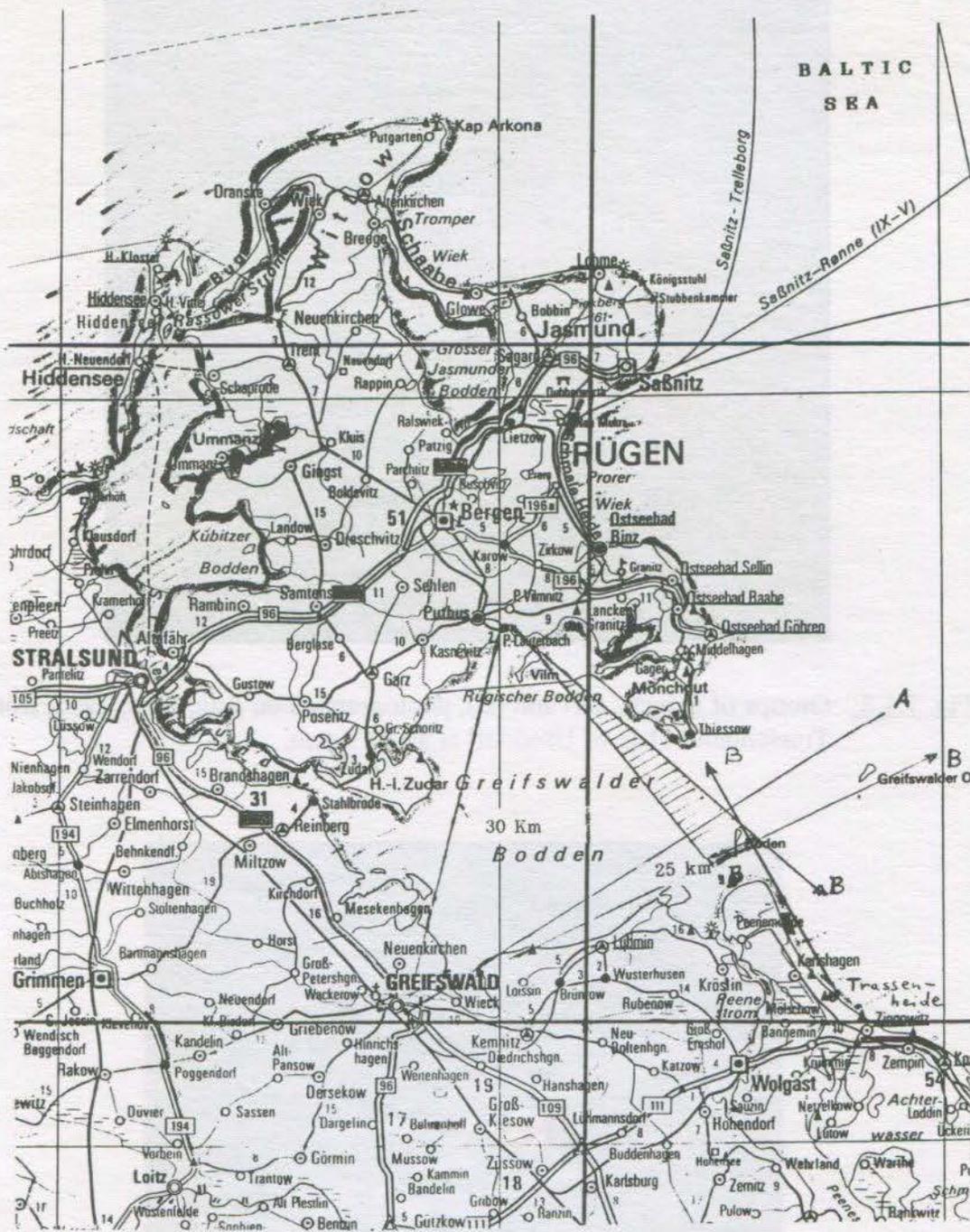


Fig. 7.1.1: Map of Greifswald and surroundings



Fig. 7.1.2: Groups of objects, (A) and (B), photographed on Aug. 24th, 1990, from Trassenheide (Isle of Usedom) at about 9 p.m.



Fig. 7.1.3: Plots of 6 luminous objects in group (A), video filmed by Dr. Ivanova and reproduced from a TV screen



Fig. 7.1.4a: Configuration of 7 objects in group (B) filmed by Mr. Stoffers. A smaller object hovers in the group.



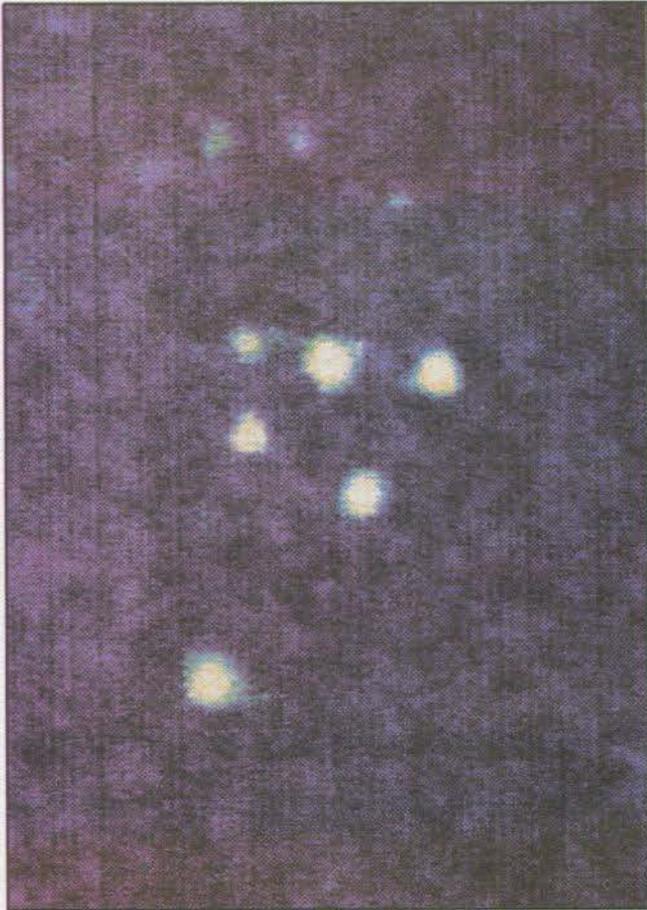
Fig. 7.1.4b: Another view of the object group (B), reproduced from the TV screen



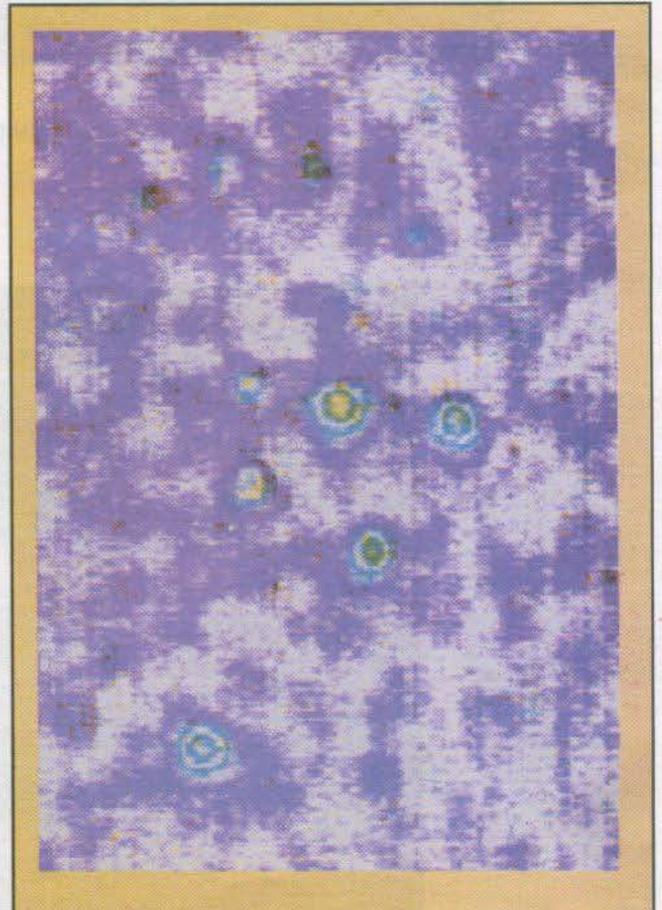
(a)



(b)



(c)



(d)

Fig. 7.1.5: a) underexposed photo taken by Mr. Ladwig,
b) localization of the objects by computer processing,
c) contrast enhanced image of the Greifswald objects,
d) levels of same intensity identify the objects to be spheres



Fig. 7.1.6: Free-hand photograph of group (B) taken at about 9:30 p.m.
The light is reflected in the sea



Fig. 7.1.7: Image of a luminous ammunition hanging on a parachute



Fig. 7.1.8: Objects of the group (B) seem to be connected by a luminous cloud



Fig. 7.1.6: A flash in the near of group (B) was filmed by two independent witnesses

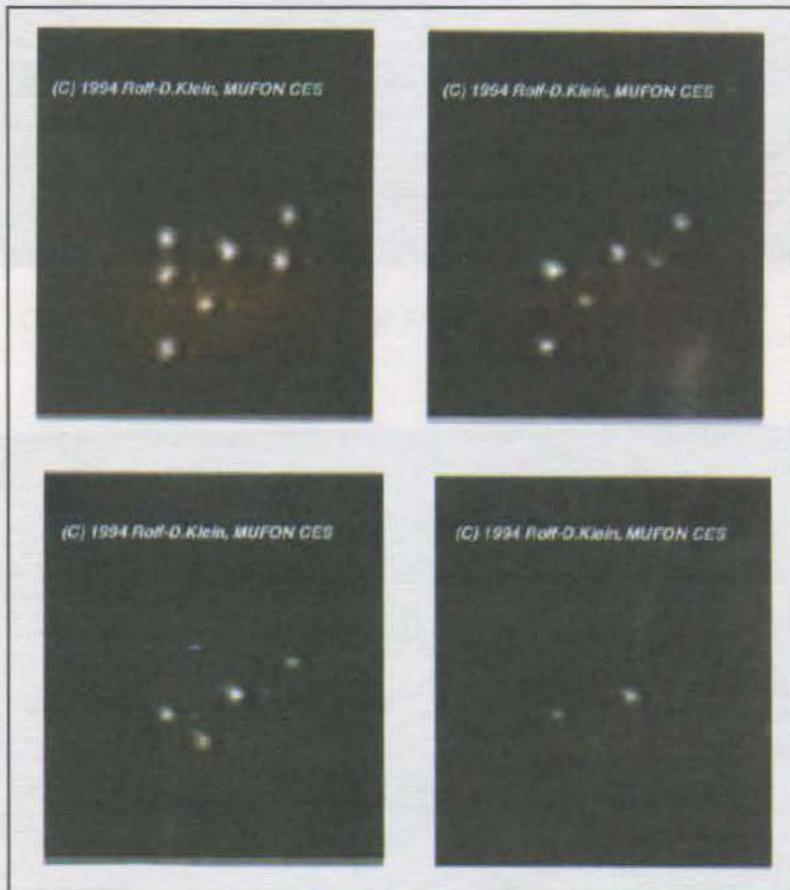


Fig. 7.1.10: Pictures showing the vanishing of the object

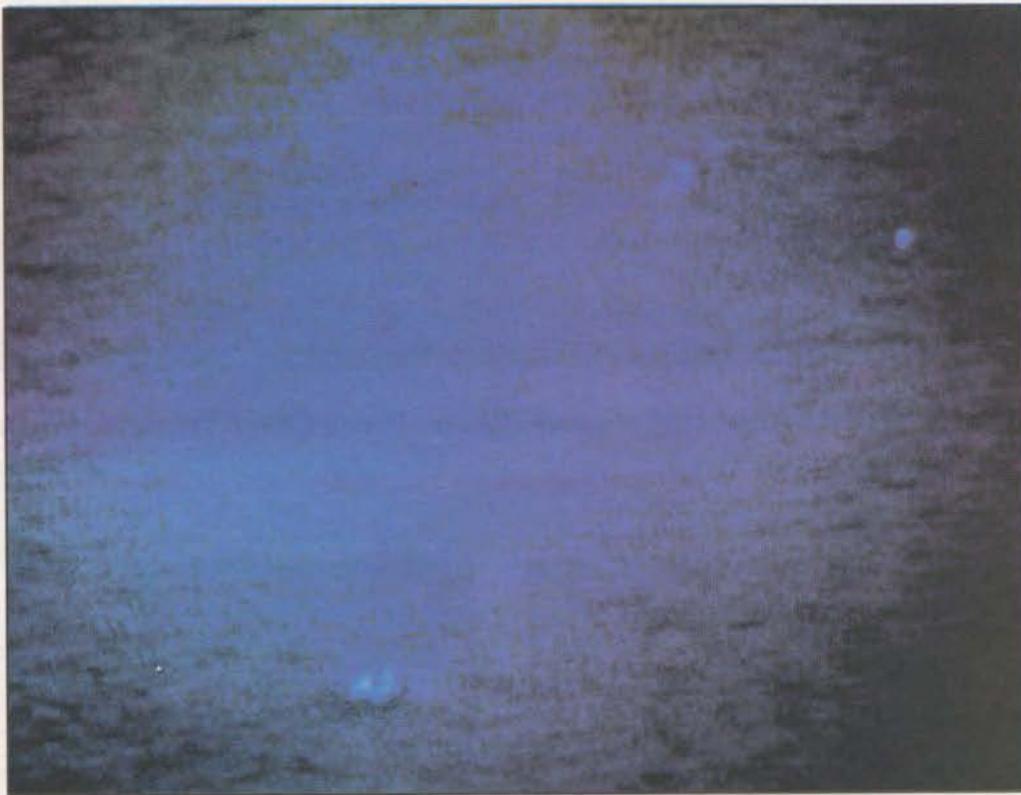


Fig. 7.1.11: A small object approached object group (B)

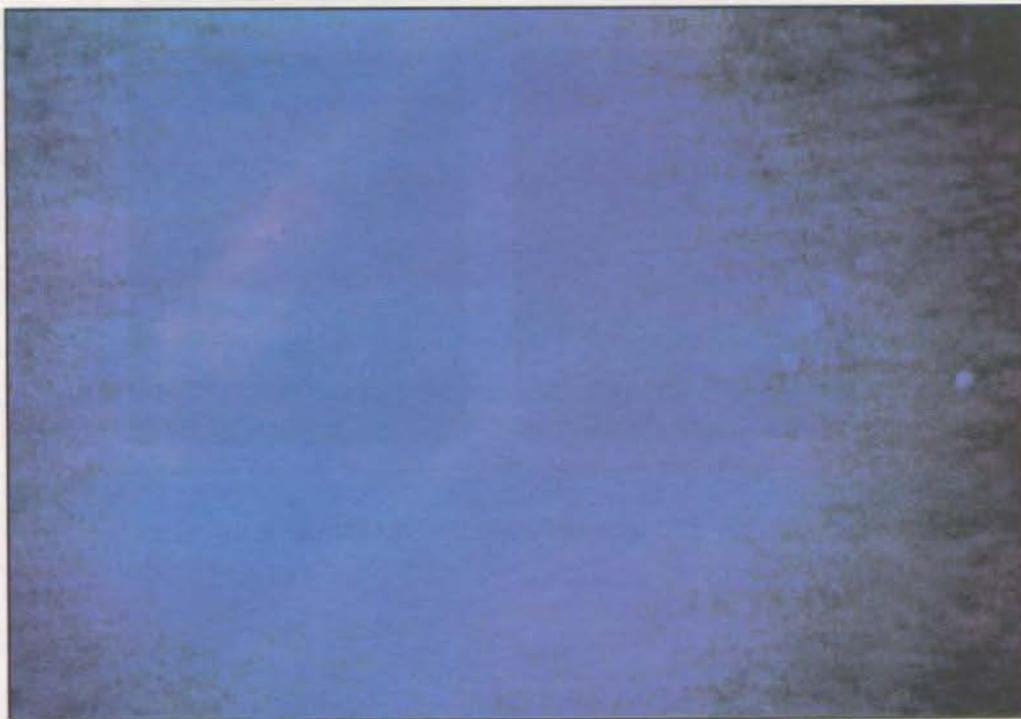


Fig. 7.1.12: The same situation like in Fig. 11 about one second later



Fig. 7.1.13: left = Plot with motion blur due to a long expositin time (Mr. Ladwig)
right = partly removed (by Mr. Klein)

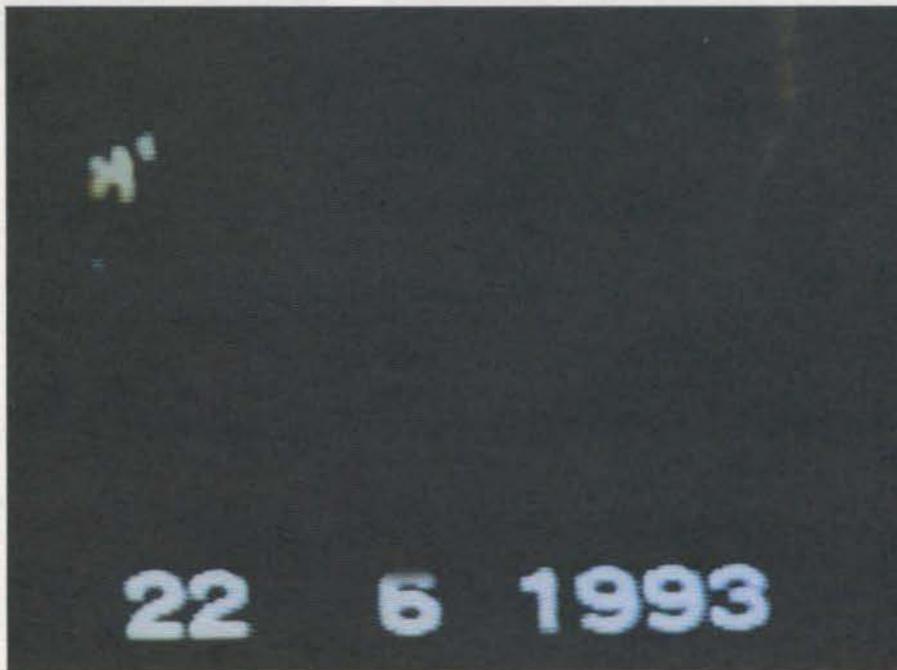
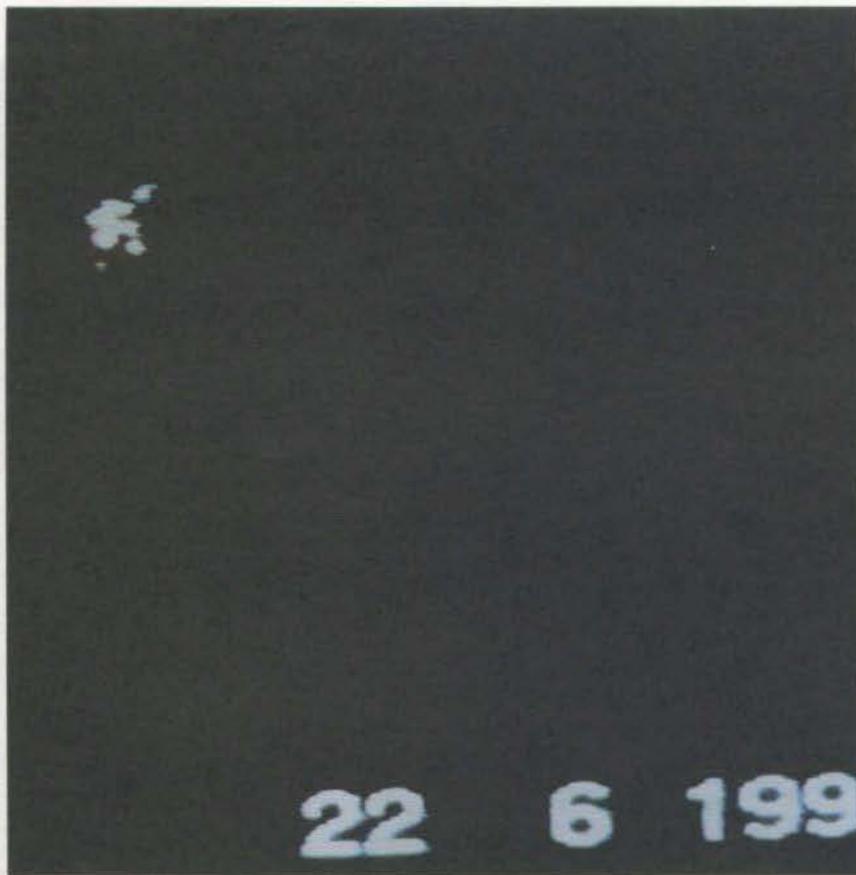


Fig. 7.1.14: Similar group of unknown objects observed and filmed on June 22nd, 1993, near the city of Kolberg, Poland

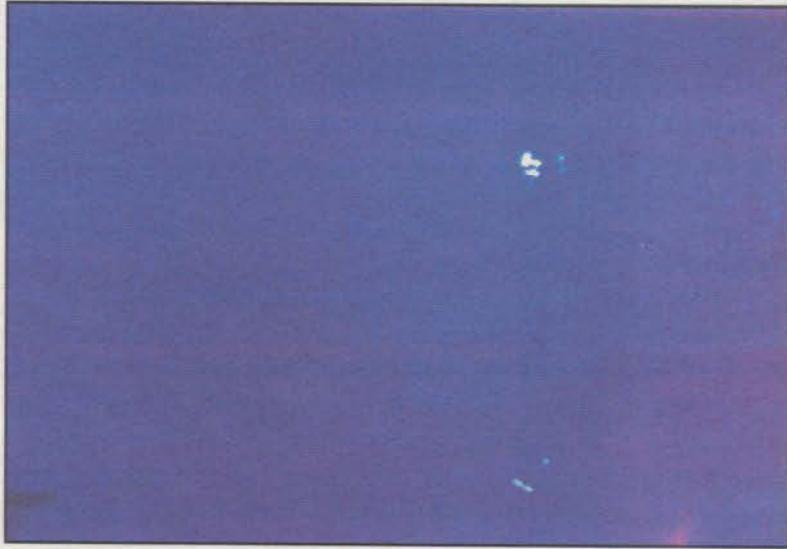


Fig. 7.1.15: Two groups of objects, photographed on May 23rd, 1993, from Isle of Usedom, which were visible between 7:30 to 10:00 p.m.



Enlargement

Photo #4



Photo #6

Fig. 7.2.1: Two of the 6 pictures of an unidentified flying object Guiseppe Lucifora took on June 19th, 1987, at 2:30 p.m. in Cosmo, Sicily



Fig. 7.3.1: Photo No. 9 of the Nagora photo series which was taken on May 23rd, 1971, in the Steiermark, Austria



Fig. 7.3.2: Photo No. 10 of the Nagora series which shows the disk very clearly

Chapter Eight

8 Traces of Unidentified Flying Objects on Military Radar Devices over Central Europe

8.1 The Present Treatment of Unidentifiable Objects by Air Defense Systems

In science, the question of whether or not a phenomenon exists is decided experimentally. In the case of Unidentified Flying Objects, scientists have not yet defined or developed a suitable measuring instrument for solving the basic question of whether there are occasional non-identifiable or not yet appropriately identified flying objects in our airspace. This phenomenon appears only for a short period of time at a non-predictable location. This purported characteristic has to be confirmed by measurements in order to verify the very existence of the phenomena.

Individual photos or movies taken by chance (usually of extremely poor quality) and reports by laymen are at best indications of what needs to be investigated and how experiments for scientific confirmation must be performed. But in spite of the large quantity they do not suffice as valid evidence.

The right measuring instrument for tracking unidentified flying objects must be a system of sensors that scans a large region over a long period of time. Such a system of surveillance exists in each high-technology nation in the form of military airspace surveillance.

With a system of radar devices, all movements of physical objects are detectable in space and time, and the optical shape of each object can be determined by movie cameras which are connected, for instance, to a follow-up radar.

In Belgium and in Switzerland, members of the *Society for the Scientific Investigation of Anomalous Atmospheric and Radar Phenomena* - MUFON Central European Society, Inc.- with tacit permission from their superiors - were able to use such radar surveillance systems in some cases to investigate unidentified objects and could then evaluate the tracks registered by these systems.

In Germany, Austria, Belgium, and Switzerland it is not mandatory to notify authorities when unidentified flying objects are observed. They are designated as "disturbances" which threaten neither the safety of civilian or military air traffic.

Nor is there any overt international cooperation in Europe to clarify these "disturbances". Direct observations are made purely by chance. At present, it is not possible to influence the adjustments of the devices for online investigations. Since an analysis of these unidentified flight traces has not been ordered, no such analysis exists, and therefore no secrecy attached to such data. The spokesmen of the various military airspace surveillance systems are being absolutely truthful when they assert: "We have no record of any unidentified flying objects", since such flight tracks are not considered relevant and no such data are preserved.

8.2 Failures in the Analysis of Radar Images

Analyses of these "disturbances" were only performed when image analysts with decades of experience finally wanted to know what the suppressed phenomenon was all about, and when in Belgium the pressure of the public on military air defense had grown so strong that the military leadership began to release some of the radar data for scientific analysis by civilian scientists (Meessen 1991). A first analysis resulted in the conclusion that, in addition to the known flying objects and disturbance echoes, there were also protocols of unidentifiable radar echoes originating from physical sources as yet unknown. This material proves that there is a great need for explanation and for research into these flight traces which up to now have been unidentifiable for specialists.

The first radar devices used for tracking airplanes showed all of the objects from which radar waves were reflected on a big, round radar screen. Such primary radar images were so confusing that flight surveillance by the controllers could not be performed without problems. (Figure 8.1)

To keep the screen free from such undesirable echoes (ground clutter, swarms of birds and insects, rain clouds, corner reflections of cars and so on), nowadays all signals from several scans are stored in a

computer and filtered by various programs before they are displayed on the screen. Only objects which move at a certain velocity are displayed (Moving Target Indicator, MTI).

Civilian air traffic control works with secondary radar. That radar triggers the transmitter or "transponder", carried by airplanes and balloons, to transmit specific (secondary) pulses of the same frequency and pulse duration. Normally, the following data are modulated on the carrier pulse: Individual code = identification of the airplane and altitude information (mode C). Distance and azimuth are registered by radar echoes. The airplanes are displayed as small semicircles with flight vectors. Primary echo symbols projected on the plane show only the location of the echo, with all errors appearing as small squares (Figure 8.2).

Of course, in case of crisis, military targets do not disclose their identity by transponders. Therefore, the altitude of the targets must be determined by height finders, in other words altitude radar. The radar system of military air surveillance is 3-dimensional radar, whereas civilian flight radar is only 2-dimensional radar which requires their transponder information from the targets for their complete localization.

Objects without transponders can be tracked only when they are near enough and when they are at such high altitudes that they are above the radar horizon caused by the curvature of the Earth's surface, so that they can be hit by the radar beam. All of these unidentified flying objects will be provided to military air traffic control, where altitude and identity of the unknown airplanes will be determined, should the occasion arise.

Only a few years ago, print-outs from the radar computer on the radar traffic situation became possible. The information can be monitored or printed out as plots of a special segment of a region at a certain time with a variable duration of recording showing the altitude and identity of each single flying object designated as civilian, military, or unknown.

In day-time, the density of air traffic over Central Europe is so high that about 400 airplanes have to be handled by the system simultaneously. During night-time, civil air traffic is drastically reduced because of the night flight prohibition (Figure 8.3 and Figure 8.4).

The military operation centers of each country receive 2-D primary and secondary information from various civilian radar stations and 3 D-primary information from military radar stations. All these data are used to develop and store a synthetic airspace situation picture. This airspace picture system can be analyzed later. After 2 or 3 days, all stored data concerning the airspace will be supplanted by newer data. Each week all radar devices are harmonized.

When flying objects without a transponder are tracked, a flight path is calculated from 3 position points. From the flight path, an approximate area of the object's expected future location is extrapolated. If the object is not found there in the next radar scan, the approximate area of expected location is enlarged. If after the new scan the object is again not found within the area of the expected location, possibly located elsewhere and therefore on a flight path which is interpreted as "impossible", tracking is abandoned (for instance, see van Keuk 1971, von Ludwig 1972). The computer program will not track flight paths that deviate from those of airplanes, which fly in straight lines or smooth curves and do not accelerate abruptly.

The instructions for analyzing computer representations of flight paths explicitly state:

"Flight paths which do not correspond to expectations are to be removed from the system immediately."

When such "impossible flying objects" do appear in the airspace under surveillance they are shown in a graphic image as points or a cloud of points plotted against a flexible period of time, since the registration of their flight paths on radar may be intermittently discontinued, depending on the motion of the objects.

During daily operating procedures, such points or short tracks are interpreted as disturbances and ignored. Every employee of military airspace control is familiar with them. But nobody can satisfactorily explain what they are. They are considered to be radar or the computer program mistakes or some kind of atmospheric phenomenon. They are not reported because of fear of being reproached by colleagues and superiors for insufficient working knowledge of the radar system.

Our experts are quite familiar with disturbances of known origin (for instance, see Skolnik 1970, van Brunt 1978, 1982):

- Interference which occurs when a radar station or a satellite transmitter by chance beam into another one. These monitored disturbances are easy to recognize (as paths appearing to show fast movement away from a common center). They can be cancelled by changing the frequency (Figure 8.5).

- During special weather conditions, “thermal cells” can occur in a cloudless atmosphere and can reflect radar beams (so called angles).
- When air masses of different temperature become adjacent (air layer inversions), whirls develop in which reflecting particles (e.g. metal dust) may accumulate. Movements in the direction of the receiver will appear to take place.
- At industrial sites where hot slag is periodically dumped into water, rising bubbles of steam containing metallic dust can produce a radar signal that appears to come from a hovering helicopter, because the metallic dust remains in place (Figure 8. 6).
- So called “fruits” will be generated if transponders are simultaneously queried by more than one secondary radar system. The transponders will generate false displays due to pulse combinations.
- Anomalous propagation (AP) of radar rays can occur during special weather conditions in which the radar ray is deflected by refracting or inversion air layers so that objects on the ground are reflected which normally are invisible on radar. During the night of October 19th to 20th, 1995, accumulations of radar echoes appeared over most of the Swiss mountains in the east which have an altitude of more than 1,100 meters (Figure 8.7).

The MUFON-CES radar team obtained about half of the registered plots with strange traces, i.e. 200 plots from 130 days, during the time period November 1992 to September 1996. Analyzing all of the plots with unexplained traces would require a full-time job for a person with military clearance. Therefore, in many cases the analyst wishes to have a more detailed time resolution or different scale of representation, which could not be done for time reasons. In no case has a weather record been commissioned for the relevant time for the region in which the usual radar echoes appeared, since such a protocol prepared by a Meteorological Agency would cost nearly \$90.

In long-time representations over 6 hours (usually between 11:30 p.m. and 5:30 a.m.), the plots in many cases (73) show “clouds of echo points” in a special location. In some of these cases, shorter time representations (1 hour or 30 minutes) and zoomed regions are also available. In these images, the hits or echo points are joined by a line, providing a trace of an unknown object. In other cases the echo points are not connected. As mentioned, these single elements of a point accumulation may be produced by a ray tracing through atmospheric layers of different temperatures and humidity, which can generate effects of a vertical gradient of refraction. In this case, echoes of the Mountain tops are reflected.

The anomalous flight paths we are considering here are something different.

8.3 The Synthetic Display of Air Traffic Control in the Central European Airspace

With the cessation of a military threat from the East, several European countries also loosened their regulations for secrecy. In 1992, the Spanish Air Force gave civilian researcher Vincente Ballester-Olmos 35 files containing 42 reports on unidentified flying objects (most of these, however, Ballester-Olmos (1995) was able to identify as natural phenomena).

In 1993, the chiefs of Swiss Military Air Traffic Control (ATC) tolerated that radar image analysts give some of the recorded inexplicable flight tracks to civilian researchers for analysis. One of the employees with decades of experience in the analysis of radar images began by taking a closer look at the previously ignored “traces of disturbance.” Because of the heavy air traffic during day-time, he restricted his analysis to the plots during night-time. The area scanned by radar covered about 600 km from north to south and about 700 km from east to west, up to an altitude of 100,000 ft. The synthetic representation of the airspace situation is carried out by 2 civilian and 3 military radar systems as well as by 5 radar stations specialized in the detection of low-flying objects.

8.4 Characteristics of Unidentifiable Radar Traces

Unidentifiable radar tracks have the following characteristics:

- They are recorded at the same location simultaneously by various radar stations operating with different frequencies;
- they appear suddenly in the area scanned and vanish suddenly;
- they generally remain “visible” on radar for several minutes, sometimes even for hours;
- no regularities of any kind, whether by season of the year or day or by weather conditions or geographical positions, are detectable,
- there are various kinds of unidentifiable tracks:
 - a) patterns of flight different from those of airplanes, airships and balloons (Figure 8.8);
 - b) massive appearance of many short-lived echoes in geographically limited areas (8.9),
 - c) reappearing repeatedly (Figure 8.10);
 - d) Track showing a jerky movement and then hovering (Figure 8.11);
 - e) Flight paths with very big variations in altitude (Figure 8.12; 8.13; 8.14a).

Altitude charts with similar traces were registered in other countries as well by military radar devices on the ground or airborne radar. For example, Janine and Jacques Vallée mention the tracking of an unknown object by French military radar on December 2, 1954, in Ceuta, Morocco (J. & J. Vallée 1966). A fighter aircraft was in visual contact with the object at the same time. The flight pattern is that of the patterns registered by Swiss military airspace surveillance (Figure 8.14 b).

Meessen (1994) also shows flight characteristics of objects in 3-dimensional diagrams which follow the same pattern (Figure 8.14c).

8.5 Chaotic Flight Paths

Frequently there are accumulations of short flight tracks. If the echoes originated from physical objects, then this kind of image would mean that the objects rose and fell and flew back and forth. The number of short tracks increases with time and decreases again. A high time resolution shows that the echoes form complex interconnected tracks. There are numerous instances of short tracks repeatedly reconstructed by the radar computer, for example the flight path of an object on Sept. 19, 1995, from 5:00 to 6:00 p.m. near Lake Constance (Figure 8.15).

(In the representation of the flight paths each cross means a “hit”, i.e. a hit during each rotation of the radar antenna. The time between 2 crosses is 12 seconds. Each minute is marked by a little square).

These accumulations in general do not appear in the airspace used by civilian planes, but in regions outside them (Figure 8.16).

If unidentified objects are detected in air corridors, civilian air traffic control re-routes civilian airplanes around that region (Figure 8.17 and Figure 8.18).

Statistical analysis of the data shows that in the Central European surveillance space unidentifiable tracks appear on military radar screens nearly every fourth or fifth night (Figure 8.19).

No day of the week is special. In any one year there are as many unidentifiable echoes as in any other year (during the period from 1994 to 1996).

Some of the flight patterns of the unidentifiable objects are so bizarre that they cannot be attributed to any natural phenomenon or known aircraft (Figure 8.20 and Figure 8.21).

8.6 Flight Traces Which Show Intelligent Behavior

Occasionally objects approach the earth with 3- to 4-fold supersonic velocity from an altitude of more than 100,000 ft. They do not move in straight lines like meteorites, but change their angle of altitude several times. On March 8th, 1995, a strange object was detected, coming from a high altitude in the region of Nimes, France, then flying off to the German border at a velocity of 3 Mach (Figure 8.22). (A former fighter pilot explained to me in the spring of 1996 in Las Vegas that a military jet could not maintain the registered

velocity so near to the ground without being destroyed. Another example is the flight of an unknown object which descended from an altitude of 30,000 meters and split into two parts (Figure 8.23).

During the process of identifying an unknown flying object traveling in a straight line at 210 km/h on June 18, 1993, the object suddenly made a right-angle turn and accelerated to supersonic velocity. The radar computer eliminates tracks which show a velocity of more than 4 Mach, because no known jet and missile can exceed that velocity today. Therefore, the trace of that unknown object was probably lost (Figure 8.24).

Some objects seem to have a distinct affinity for logistic installations. They appear over nuclear power plants, big current transformer stations and transmitter stations (Figure 8.25 and Figure 8.26).

Unidentified objects hover in the vicinity of radar installations and participate in air battle maneuvers. Radar plots show that unidentifiable objects flying near radar stations keep to a distance of about 10 km. On January 24, 1995, at least three objects flew around the radar station situated on the 3,700-m high Mount Balmhorn, dancing up and down in strange patterns (Figure 8.27, Figure 8.28 and Figure 8.29).

The movements of the single objects can be seen on a 3-dimensional computer animation. In this computer animation one can see how their movements differ from those of common airplanes. These objects flew at altitudes from 3,700 m up to 10,000m on a circle around the top of Balmhorn (Figure 8.30 and Figure 8.31). From these curves we calculated the flight parameters and came to the conclusion that during these flights there were lateral accelerations of up to 12 g lasting several seconds (Figure 8.32 and Figure 8.33). Therefore these objects could not have been manned airplanes. The use of any new unmanned aircraft, however, has to be announced to the military ATC, especially when air battle maneuvers are carried out at the same time.

Radar stations are also situated on top of the 2,100-m high Mount Pilatus. They, too, were surrounded by strange flying objects on May 18th and Dec 21, 1995, again which in a radius of about 10 km (Figure 8.34).

During the night of May 29 to 30, 1996, strange echoes slowly moved over one of the 4 NATO airspace early warning systems in Europe at the NATO base in Meßstetten (Wurttemberg) (Figure 8.35, Figure 8.36 and Figure 8.37).

Since the unknown disturbance occurred not only over Meßstetten but also at other locations to the east, this echo could not have originated from any experiment conducted by this NATO base itself. Furthermore, it was not the first time that a strange radar signal had been registered over Meßstetten. Pilots from the military air bases in Manching (Bavaria) and Meßstetten told us that over the last 10 or 15 years they no longer pursued unidentified flying objects because of the frustrating fact that these objects always moved away and could never be reached by their jets.

Several visual observations confirm that unidentified radar disturbances, at least in these cases, are solid physical objects. Unfortunately, the probability of visual confirmation is inversely proportional to the probability of good radar observations. For a good visual observation, flying objects must have an altitude of less than 300 m. but at these altitudes the objects are below the radar horizon. Therefore, very few good radar-plus-visual reports of unidentified flying objects exist.

It would be ideal if an unknown object were to come so close to a radar station that operators of military radar monitoring could see it from their workplace during working time.

This actually happened on June 5, 1996, to the radar operators in Dubendorf, Switzerland. Around 2:30 p.m., 6 employees with Swiss Military Air Surveillance (controllers and image analysts) observed from the building of the military ATC at Klothen, at a distance of only about 1700 m, a big silvery disk rotating and wobbling in the air at an altitude of 2,200 to 1300 m. It moved from east to west and back and eventually shot away with a high acceleration (Figure 8.38).

This radar track, provided by 3 radar devices, confirms the statements of the witnesses. In this case a Class-A object (classification by Rutledge, 1981) was observed, i.e. a structured metallic apparatus. Class-B objects, manifesting themselves as balls of light, were observed as well, both visually and by radar. On October 2, 1995, at 7:30 a.m., a radar operator with the Swiss ACC observed some strange lights on the way to his office in Dubendorf, over Mount Säntis which could not have been airplane lights. The analysis of radar images of this region showed that from 4 a.m. on many unidentified echoes were registered, which vanished at about 8 a.m. (Figure 8.39).

These are some examples of why it is imperative for experimental UFO research to utilize radar installations. Working on our own, at nobody's request and without financial means, members of the radar team of the *Society for the Scientific Investigation of Anomalous Atmospheric and Radar Phenomenon* -

MUFON CES, Inc. - have so far only been able to make analyses afterwards. Thoroughly scientific experimental UFO research should be in a position to carry out online analyses.

Whatever the traces of these unidentified flying objects may be, these objects are real, and there is an urgent need for research and for achieving clarity. Unfortunately, politics and science so far lack the courage and the will to seriously tackle the UFO phenomenon, which has been so ignominiously discredited by the news media. Opening up the possibility of solid scientific investigation is clearly not a scientific problem but primarily a purely political issue.

Some conclusions derived from results of the analyses of radar traces by the MUFON-CES radar team, are that there are strong indications that the irregular traces on the plots are radar echoes of class-B UFO's (structure-less spheres of light if seen visually). Traces which show a distinct flight path seem to be echoes of class-A UFO's (i.e. metallic objects). An accurate study of these different phenomena and their possible interconnection could possibly lead to a solution of the enigma, as to whether the light balls have an existence of their own or whether they are sensors of some kind emitted by the class-A UFO's. In any case, only from the study of the behavior of the UFO's can one learn something about their origin (extraterrestrial or from the future), since beings from a different origin would show other intents, which could be read from radar plots.

Since there is no hope that members of military air surveillance will investigate these peculiarities, civilian radar specialists in Germany are planning to operate their own private radar devices if permission from the German administrative body can be obtained.

There have been other private projects which used radar devices. A full-time UFO monitoring facility was set up near Austin, Texas, in 1978, called *Project Starlight International* (Stanford 1978). In the Hessdalen Valley, near Trondheim, Norway, a short-term monitoring project was undertaken in January and February 1984 following a dramatic increase in the incidence of reports from this area. *Project Hessdalen* was set up in cooperation between UFO Norge, UFO Sverige, Foreningen for psychobiophysics and Finnish researchers. They were able to borrow technical equipment from the Universities of Oslo and Bergen, including an Atlas 2000 radar, a seismograph, a fluxgate magnetometer, a spectrum analyzer, infrared viewers, Geiger counters, and different kinds of camera. The investigation attracted the cooperation of the Norwegian Defense Research Establishment.

36 radar tracking incidents were recorded over a five-week period. One target, which was simultaneously observed visually and filmed as a continuous light source, reportedly gave points on the radar only on alternate sweeps, an oddity for which no immediate explanation suggests itself. The data have yet to be fully understood (Strand 1984).

8.7 Chief of Military Radar Surveillance Observed Triangular Object

Thoroughly scientific experimental UFO research should be in a position to carry out online analyses. In that case it would be possible to make decisions about the origin of strange traces picked up on radar on-line. For example, the controllers should inform special observers which live in the region where the strange signal comes from so that these could take a look at the sky and check whether a visual confirmation can be made. The echoes than very probably would be generated by anomalous atmospherically refraction if no physical object could be observed.

Regrettably, the military is not commissioned to do this, and interested civilian scientists get no permission to look into military protocols or, even better, to use the air surveillance system to carry out the above mentioned procedure.

Since October 1996 - when the fact was made public, by indiscretion, that there are unidentified traces on radar plots - it is no longer possible "for national security reason" as the chief of the Swiss military air surveillance claimed, to get any radar plots of the kind mentioned from the Swiss military ATC. The radar controllers and image analysts were ordered not to discuss about strange radar traces or unidentified flying objects during working time. All of the strange echoes shall be handled as atmospheric phenomena without any meaning either for the military nor for civilian scientists or the public in general.

Then on September 18, 1997, at 9.25 p.m. it happened that the chief of Swiss military ATC with a friend when walking out of Dubendorf near Zurich encountered a huge triangular object, which flew very low in a parallel course. The witnesses estimated the size to be about 50 meters in diameter. The triangle was black in

color or translucent with two rows of 5 or 6 small yellowish lights giving the impression of a luminous "V". The witnesses saw the object for only 2 seconds, but they were deeply impressed.

When he talked about this incident all but one radar controllers were laughing at him since in their view the object must have been an ultra-light or a stealth-bomber, which the chief had not been able to identify. When he tried to get permission by his superiors, leaders of the Swiss Air Force, to ask the NATO headquarters whether new American airplanes had been tested in that concerning area, he was advised to forget about the incident and not to talk anymore about it to anyone. The strange object had moved in so low altitude that it left no trace on radar plots. Since nobody believed them the two witnesses now are wondering whether they had been victims of a hallucination.

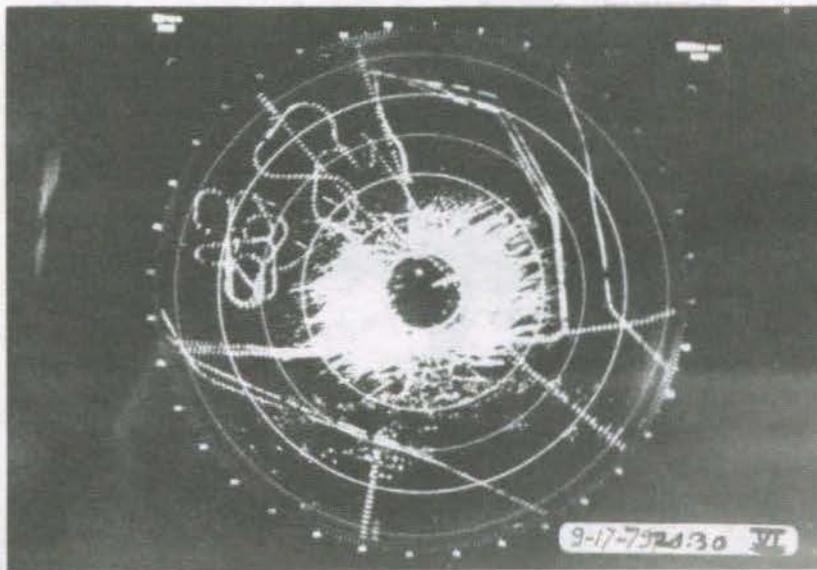


Fig. 8.1: Primary radar image from the former Airport Munich-Riem
 Two consecutive circles are of 30 km apart
 Exposure time 15 minutes (Sept. 17th, 1979, 9:15 to 9:30 p.m.)
 Center: Airport Munich-Riem, Germany
 Straight dotted lines: civilian airplanes
 Curved dotted lines: military airplanes
 Dots in the lower part: reflections of the alps
 Dense traces up to a radius of 60 km: reflections from swarms of birds

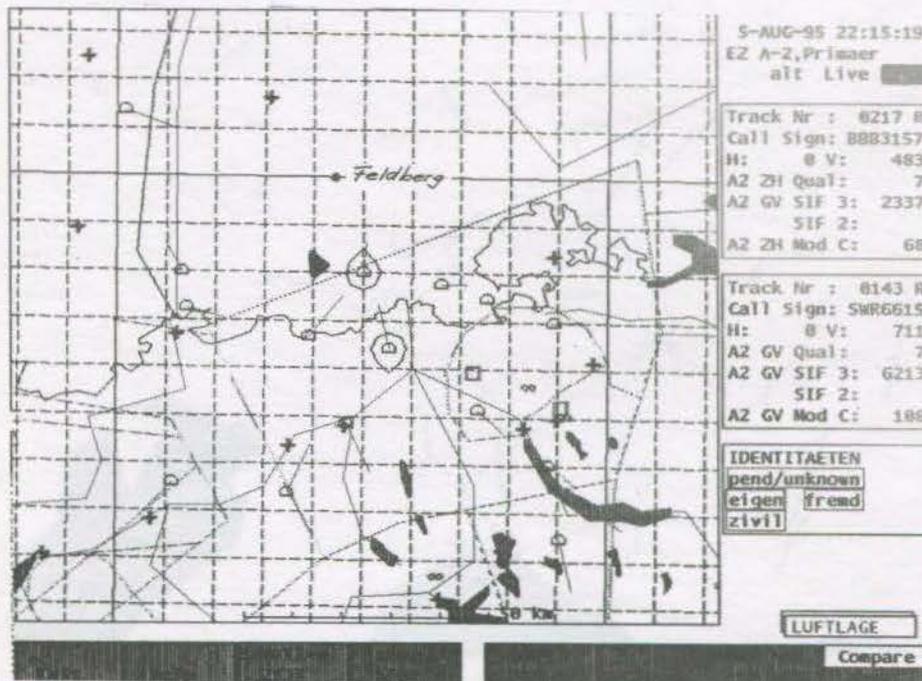


Fig. 8.2: Secondary radar display: Location adjoining of the countries of France, Germany and Switzerland
 Displayed are borderlines, lakes and airplanes. Airplanes are displayed as small semi-circles with flight vectors. Primary echo symbols projected on the plane showing only the location of the echo with all errors appear as small squares.
 On the right: transponder information from two airplanes

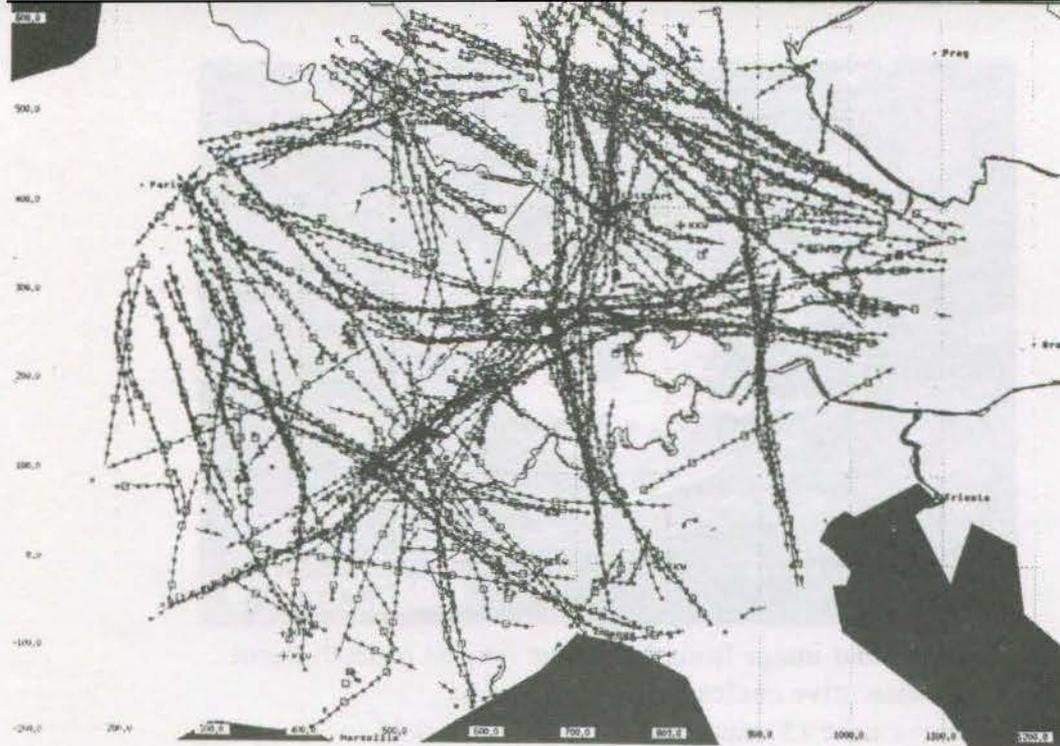


Fig. 8.3: Density of day-time civilian air traffic over Central Europe
 Example: Nov. 11th, 1995, 11:30 to 12:00 a.m.

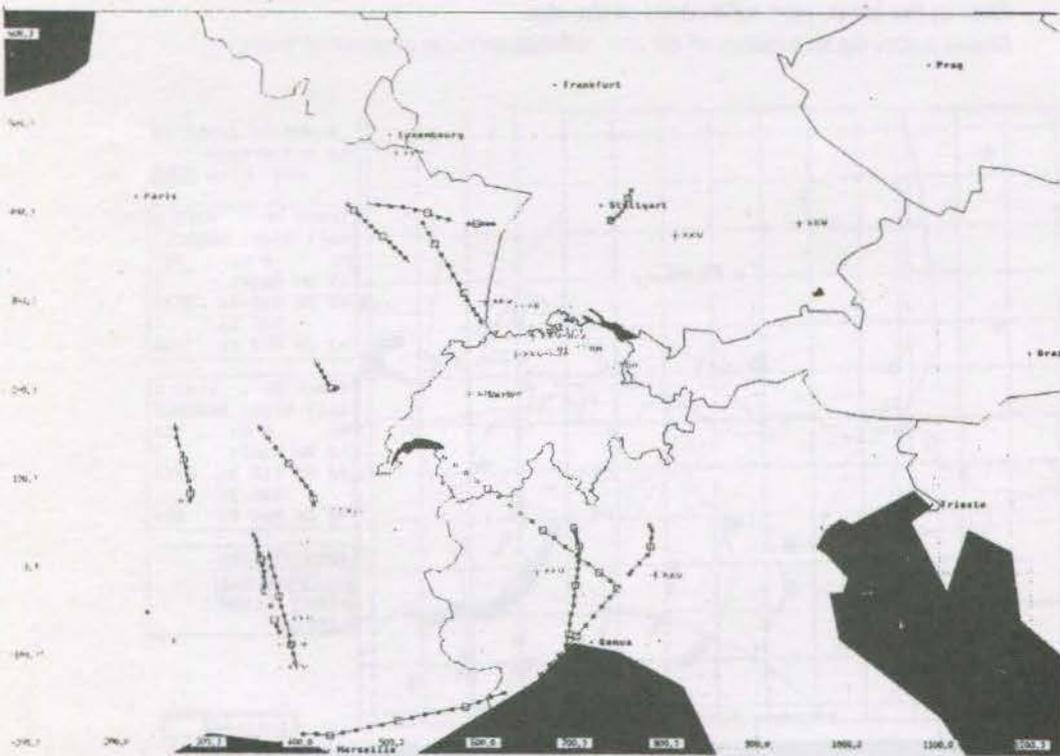


Fig. 8.4: Density of night-time civilian air traffic
 Example: Nov. 8th, 1995, 2:00 to 3:00 a.m.

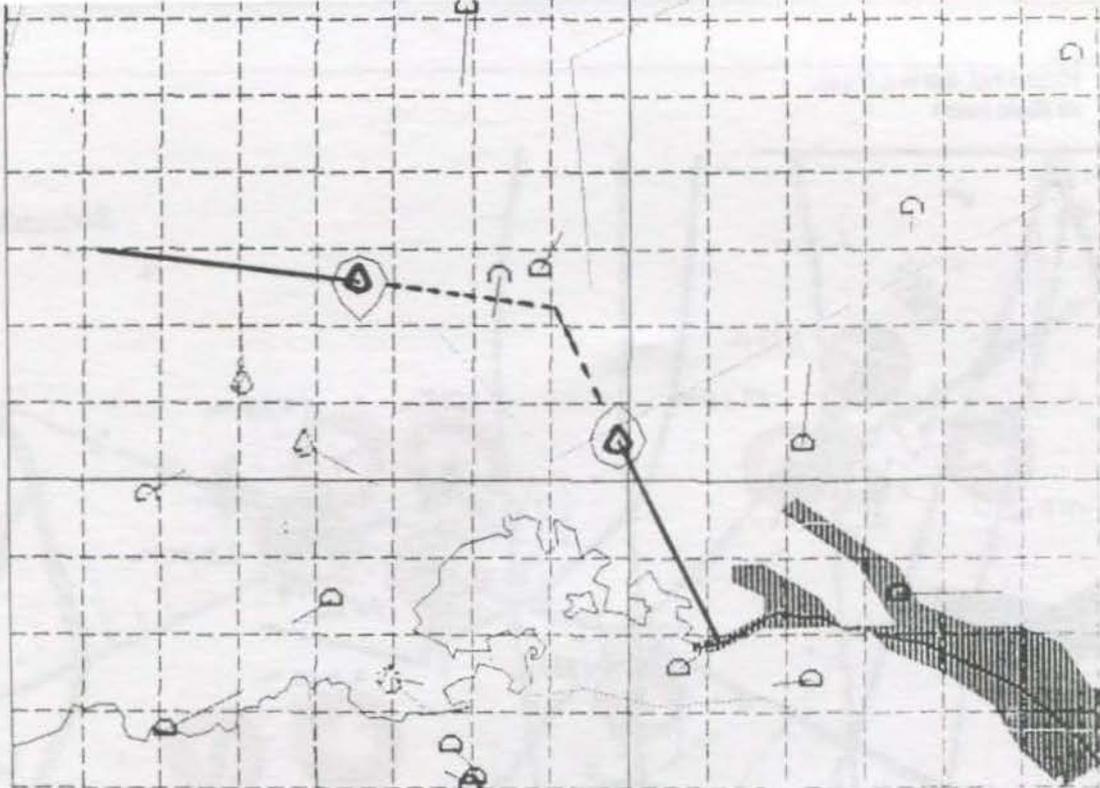


Fig. 8.5: Example of the display of interferences
Very fast flight paths at low altitudes. Frequently running from a common center.

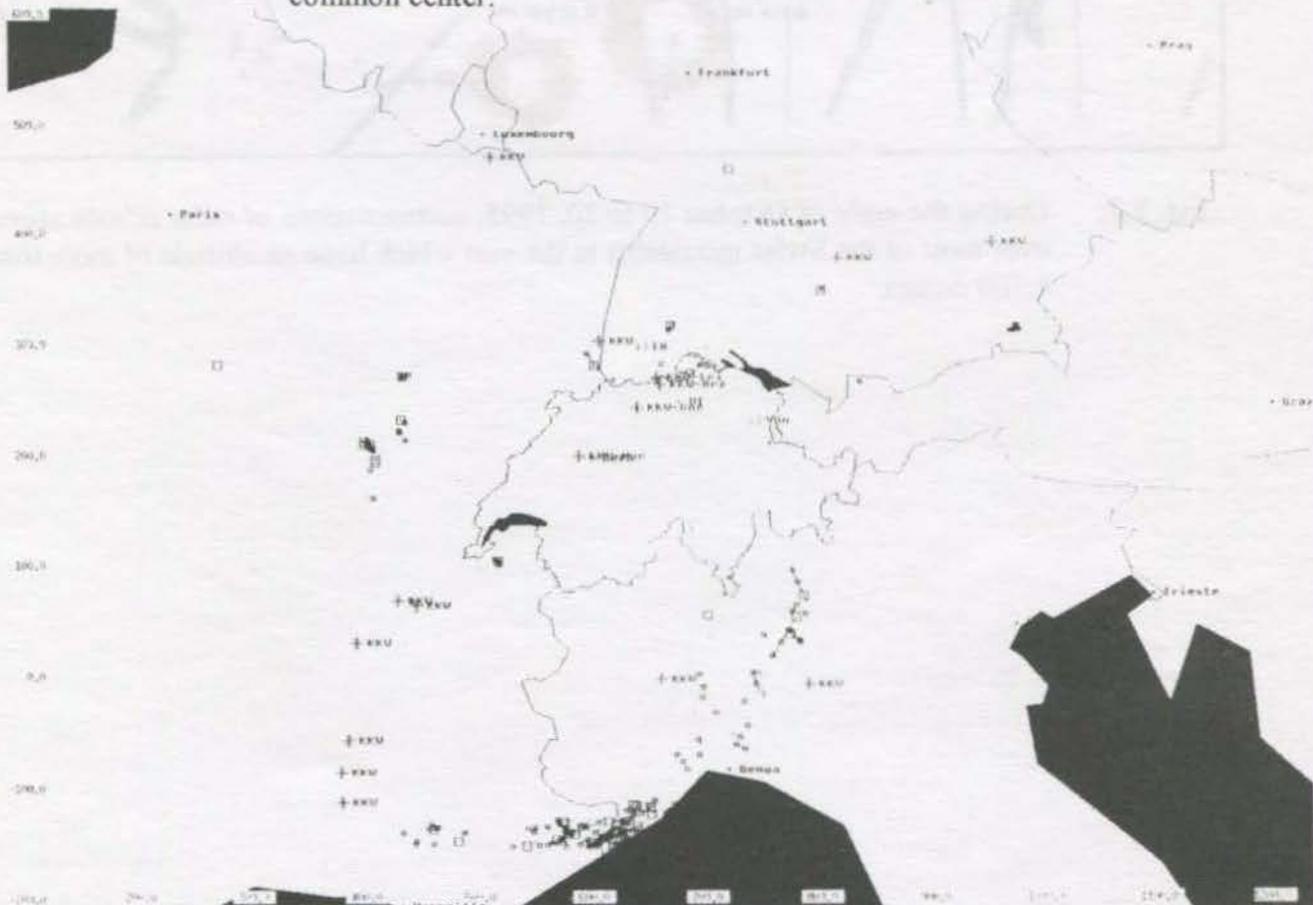


Fig. 8.6: Example for known "unidentified" radar targets: Ground reflexions in France; coastal air traffic on the Riviera, Italy; airplanes taking off before the switch-on of transponders in Switzerland (KKW: nuclear power plants)

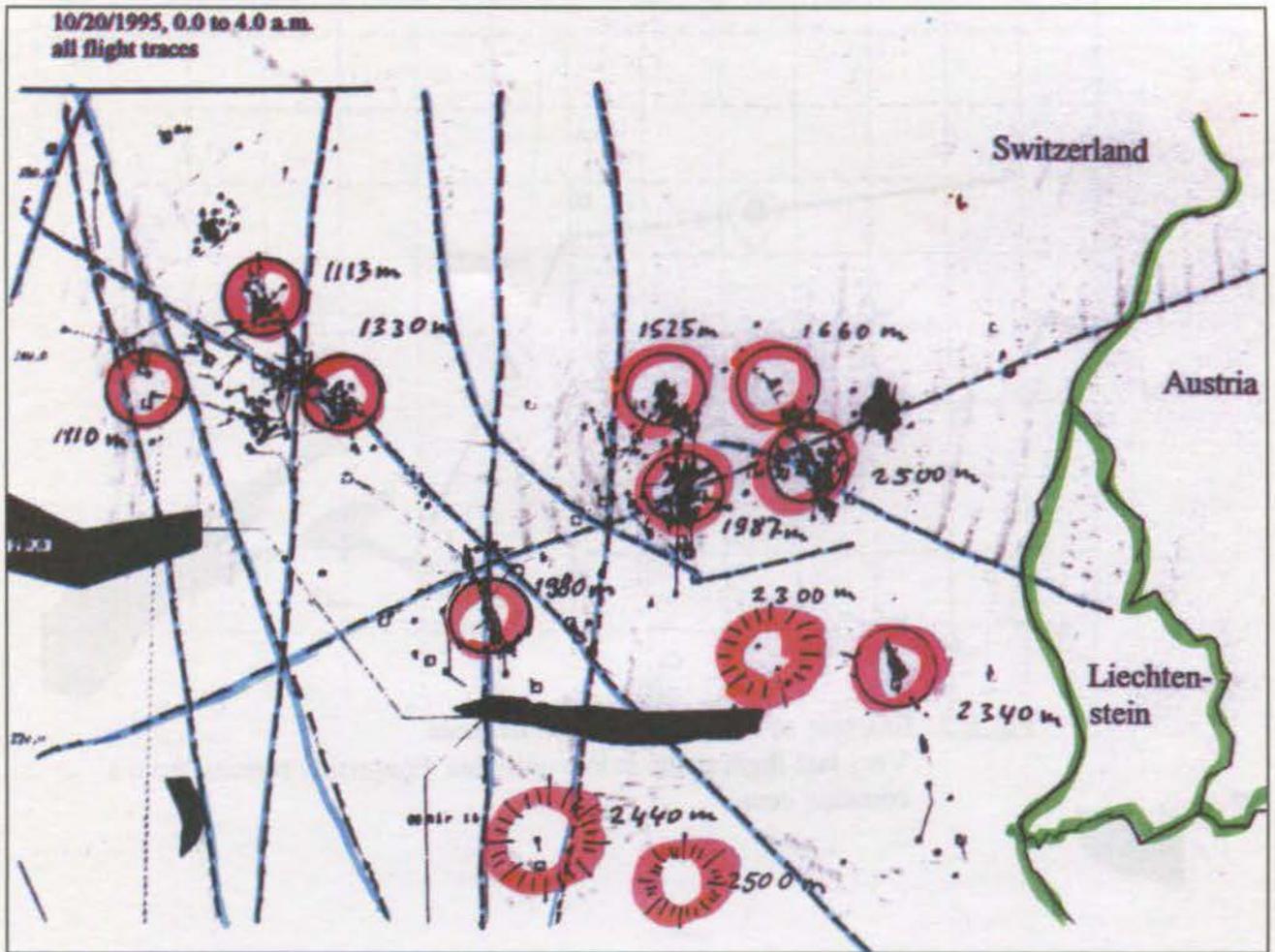


Fig. 8.7: During the night of October 19 to 20, 1995, accumulations of radar echoes appeared over most of the Swiss mountains in the east which have an altitude of more than 1,100 meters.

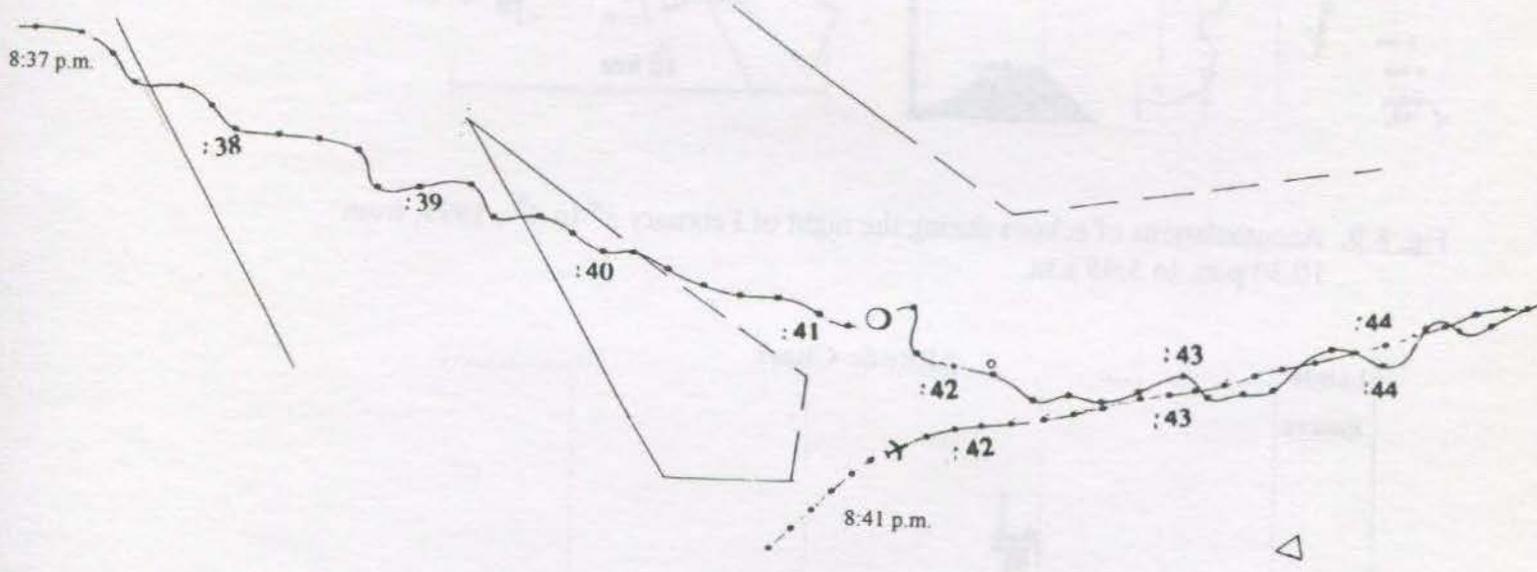


Fig. 8.8: Traces of an unknown object, flying around an airplane, observed on radar on March 18th, 1990, near Charleroi, Belgium (Meessen 1995)

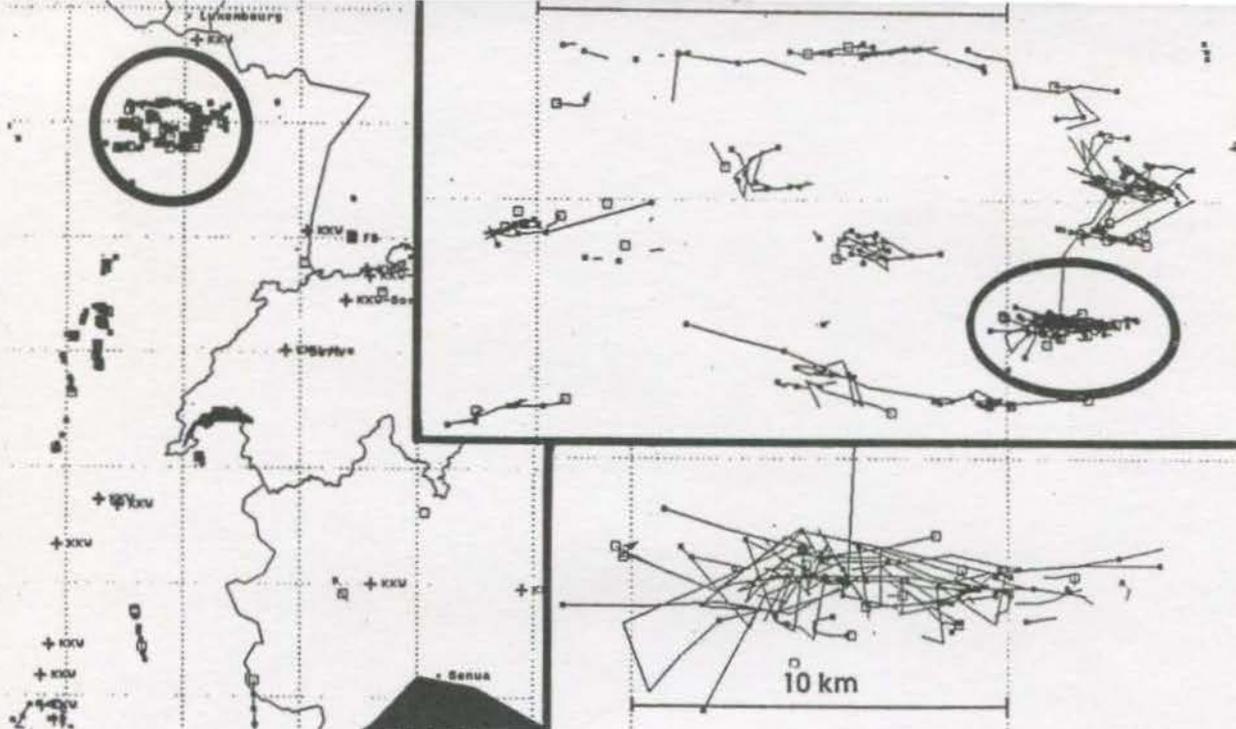


Fig. 8.9: Accumulations of echoes during the night of February 3rd to 4th, 1995, from 10:30 p.m. to 5:45 a.m.

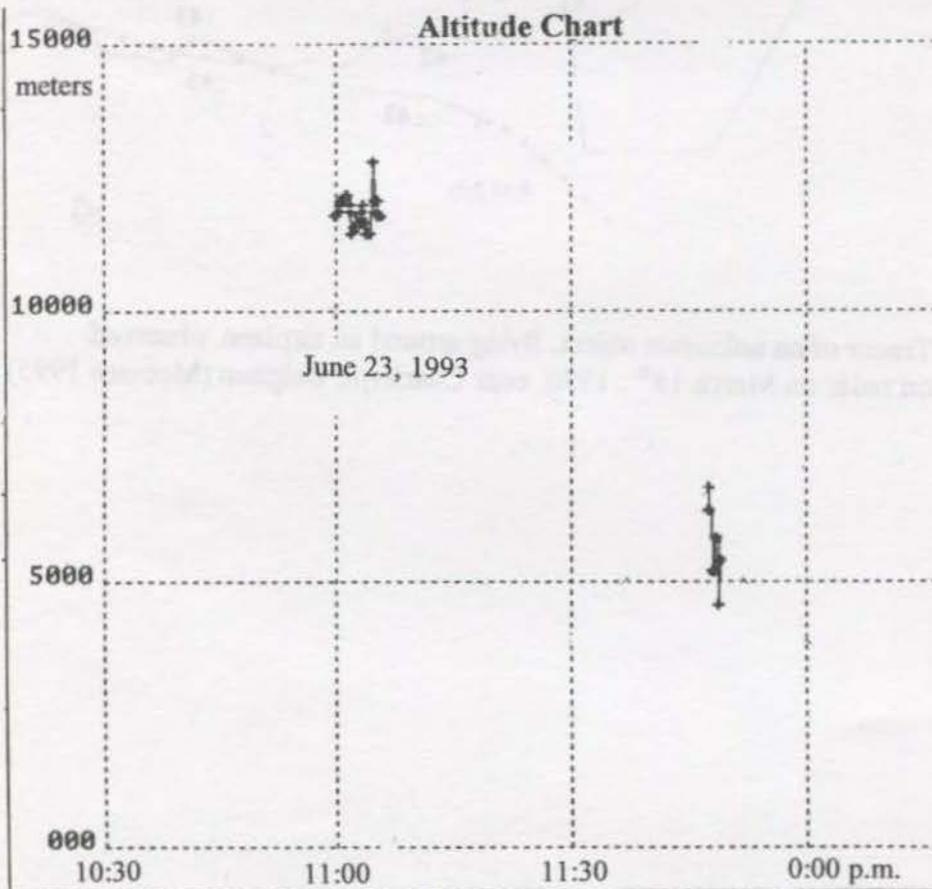


Fig. 8.10: Unknown object hovers 5 minutes at one spot, then vanishes and appears again 35 minutes later at a lower altitude, on June 6th, 1993.

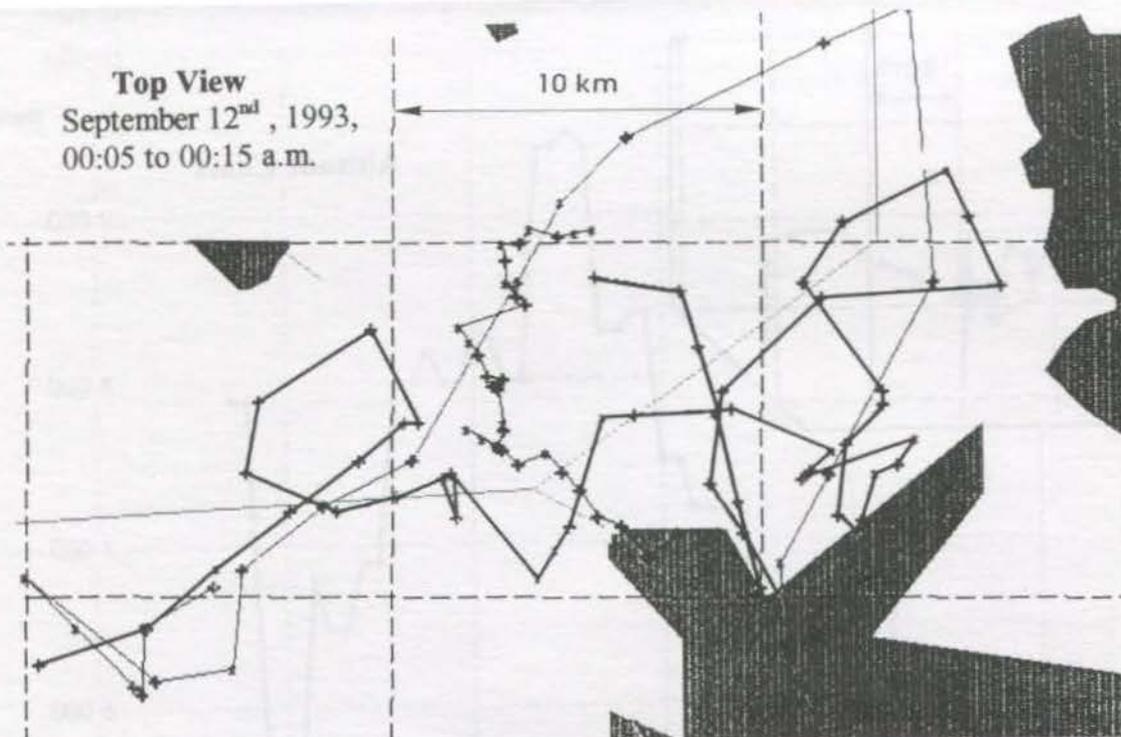


Fig. 8.11: Anormal traces of three unidentified flying objects, on Sept. 12nd, 1993, between 00:05 and 00:15 p.m.

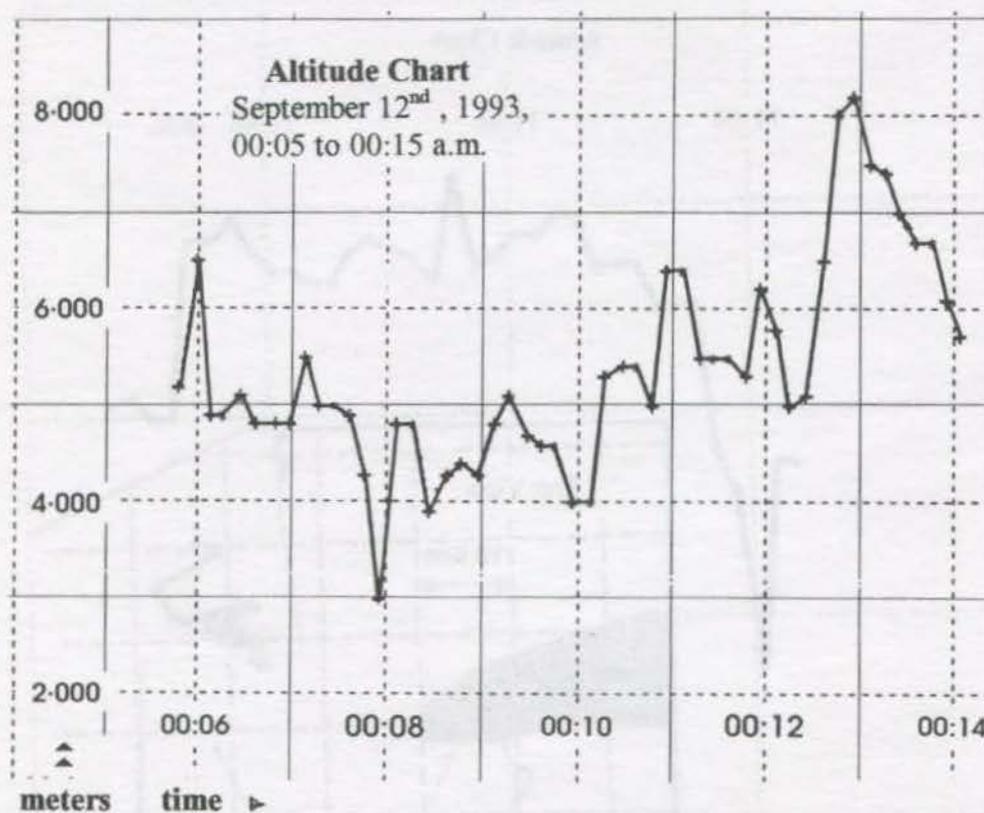


Fig. 8.12: Extreme altitude changes of a strange object, on Sept. 12nd, 1993, 00:05 to 00:15 p.m.

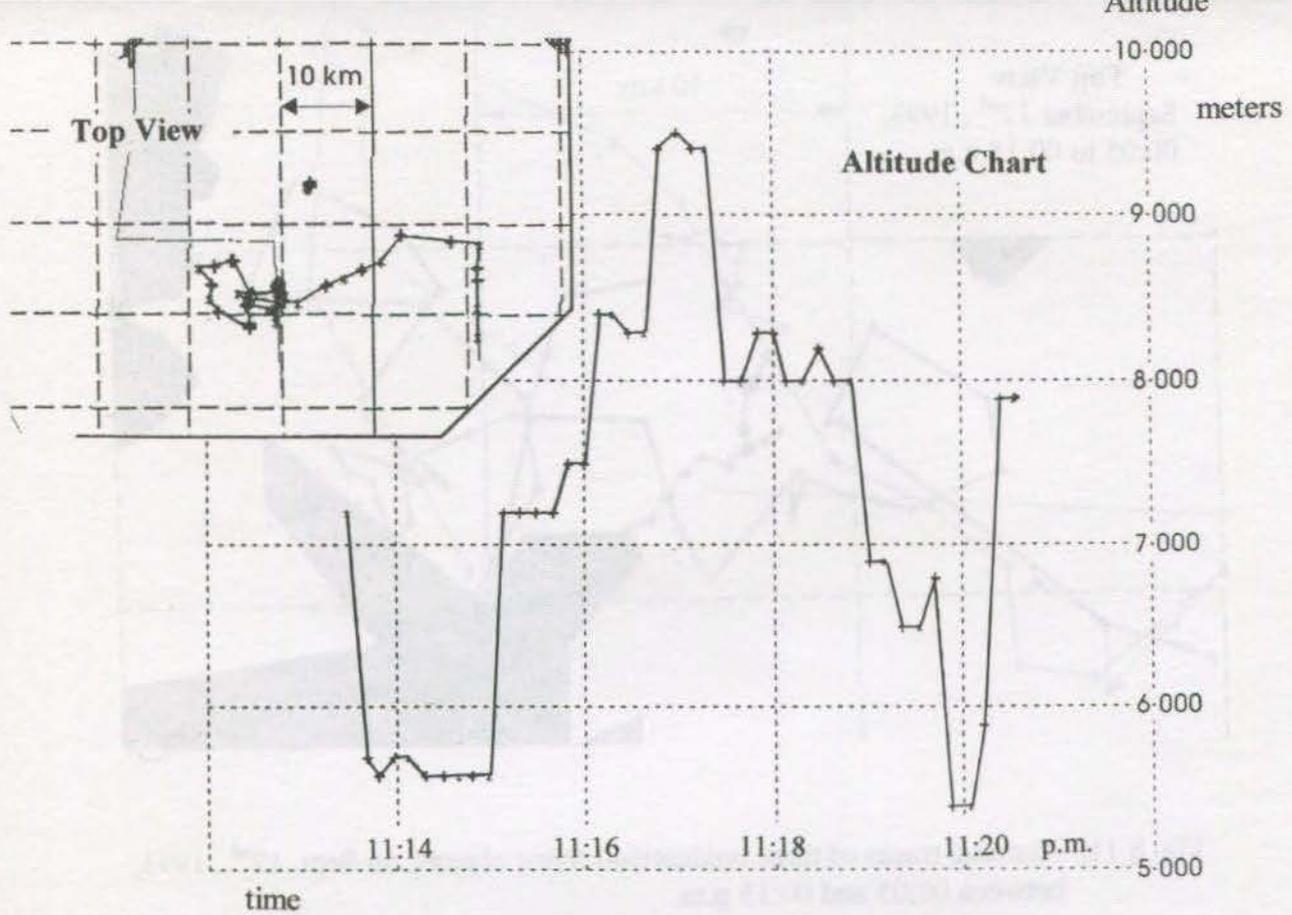


Fig. 8.13: Extreme altitude changes of an object on June 13th, 1993, 11:14 p.m. to 11:20 p.m.

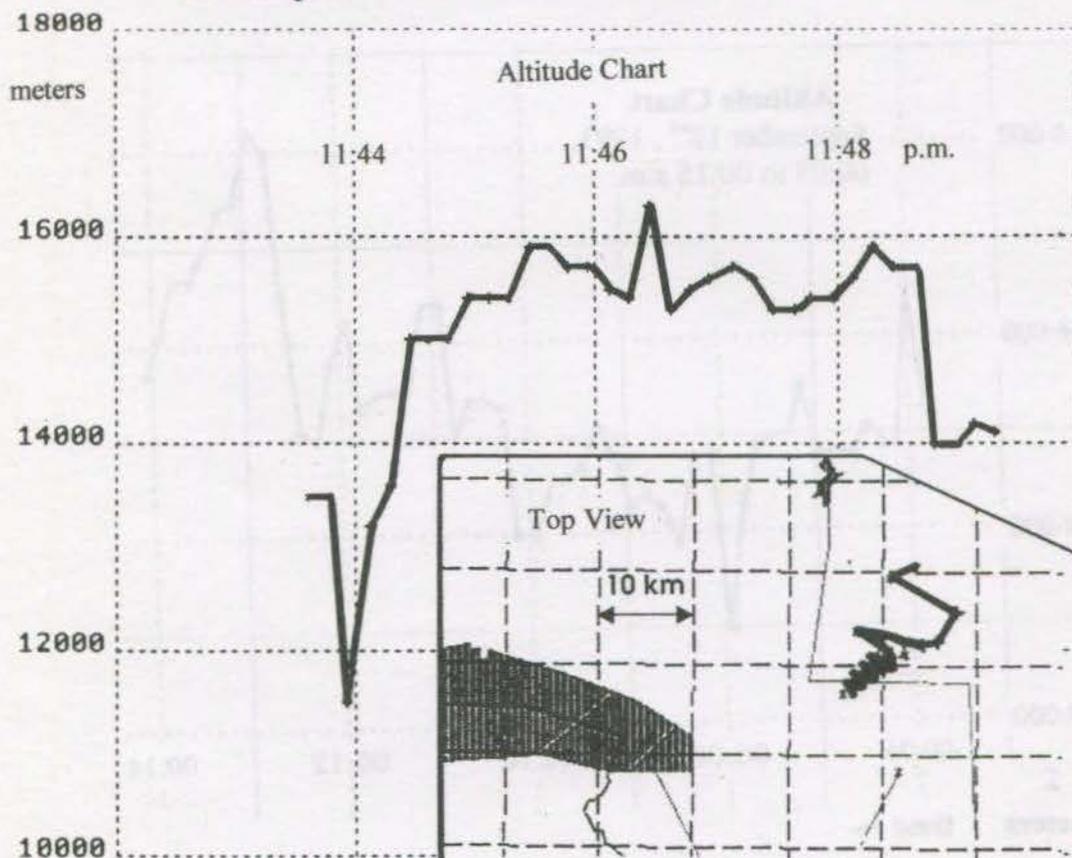


Fig. 8.14: Strange flight paths of an object with extreme altitude change, on June 13th, 1993, between 11:44 and 11:49 p.m.

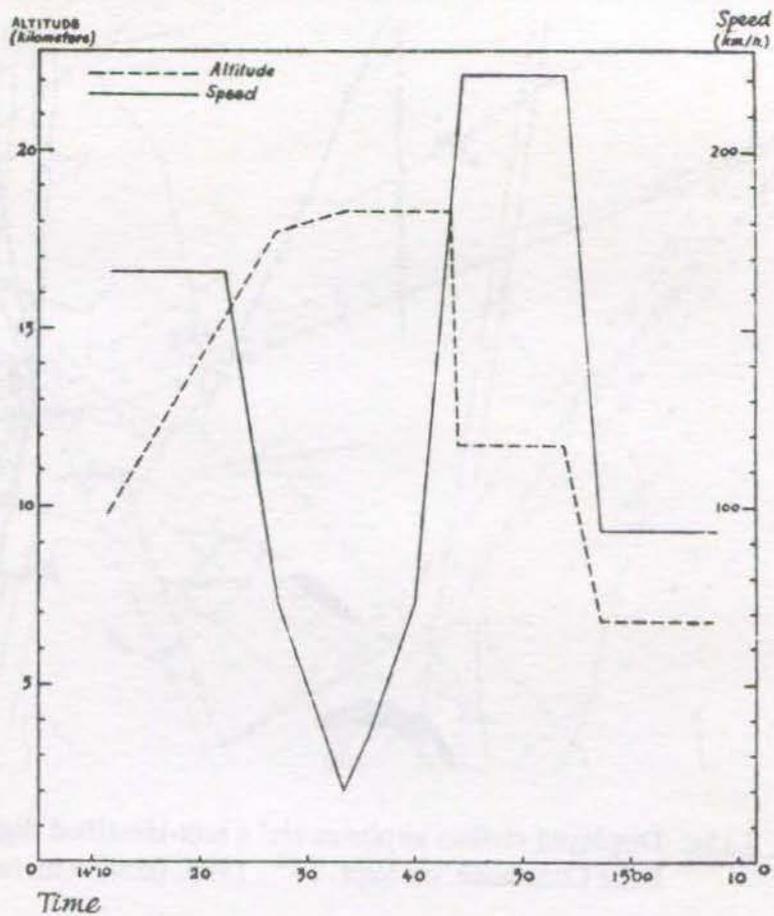


Fig. 8.14b: Altitude and speed record of an unknown object tracked by radar and observed by French military pilots on December 2, 1954, in Ceuta, Morocco (Vallée 1966, p. 187).

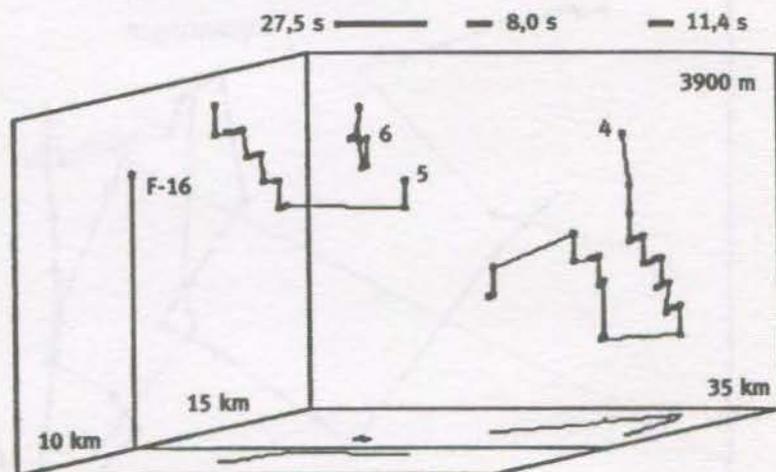


Fig. 8.14c: 3-dimensional representation of traces of three unidentified objects tracked by the onboard radar of a Belgian F-16 fighter on March 31, 1990 at 0:29 a.m. near Brussels. Object (4) changed its speed from 370 to 570 to 25 km/h (duration of lock-on: 11.4 s), object (5) changed its speed from 760 to 1,150 km/h, and object (6) changed its speed from 740 to 670 km/h (time between lock-on and break-lock: 8 s) (Meessen 1994, p. 537).

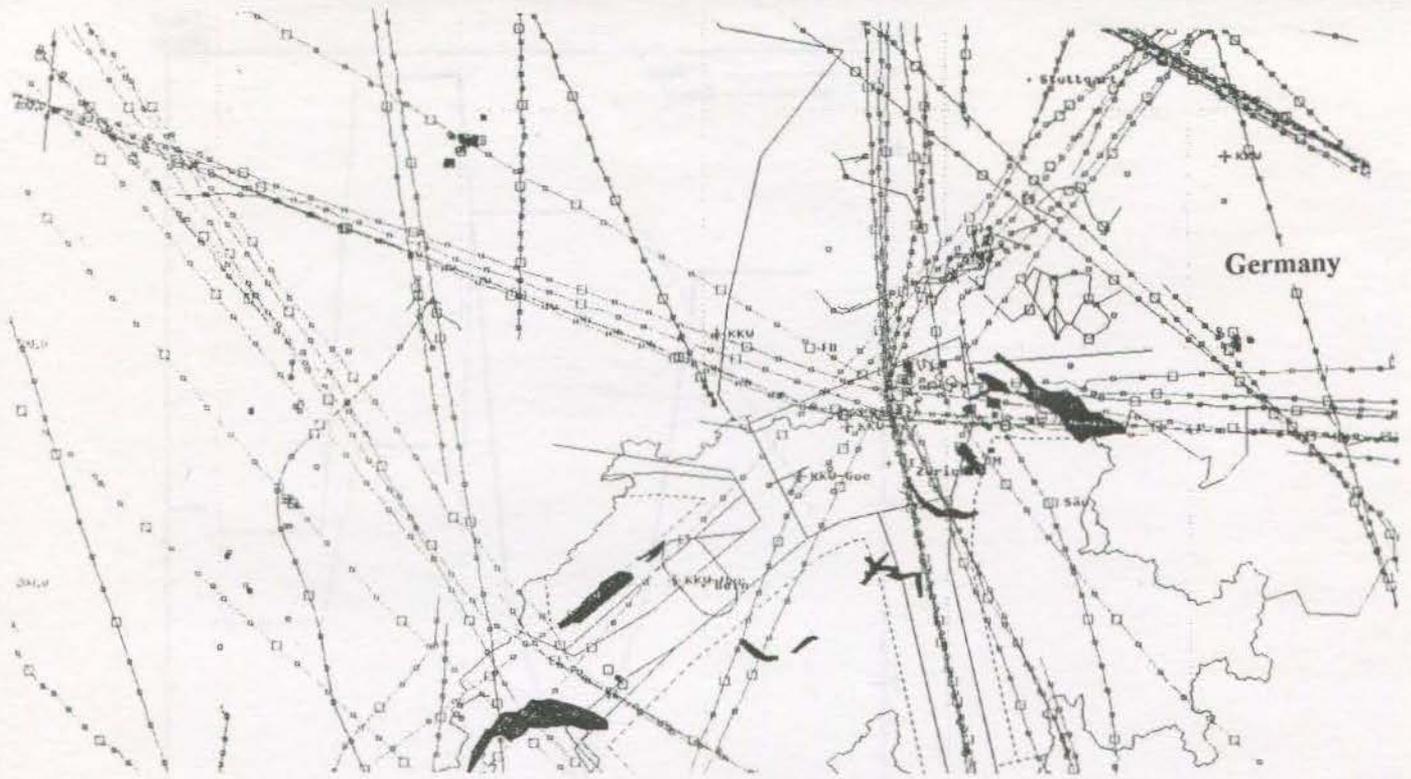


Fig. 8.15a: Displayed civilian airplanes and a non-identified flight path to the north of Lake Constance, on Sept. 19th, 1995, 05:00 a.m. to 06:00 a.m.

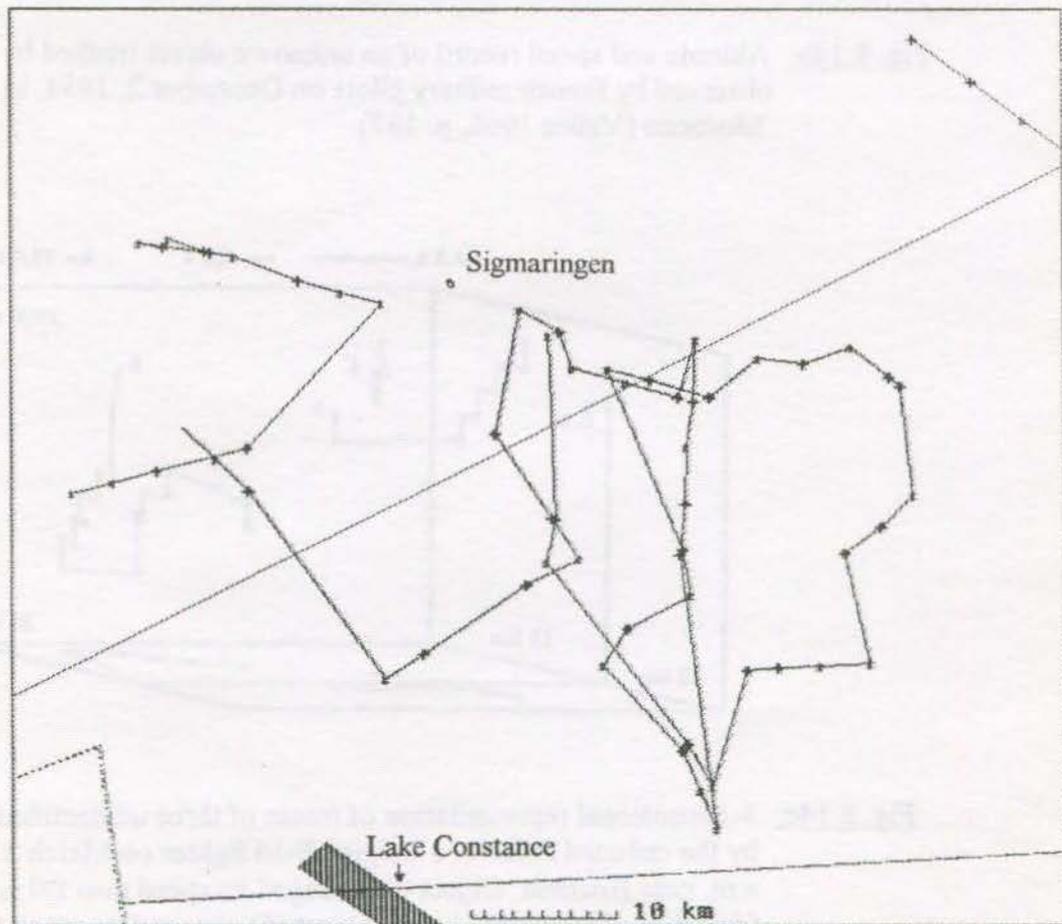


Fig. 8.15b: Blow-up of the former radar plot

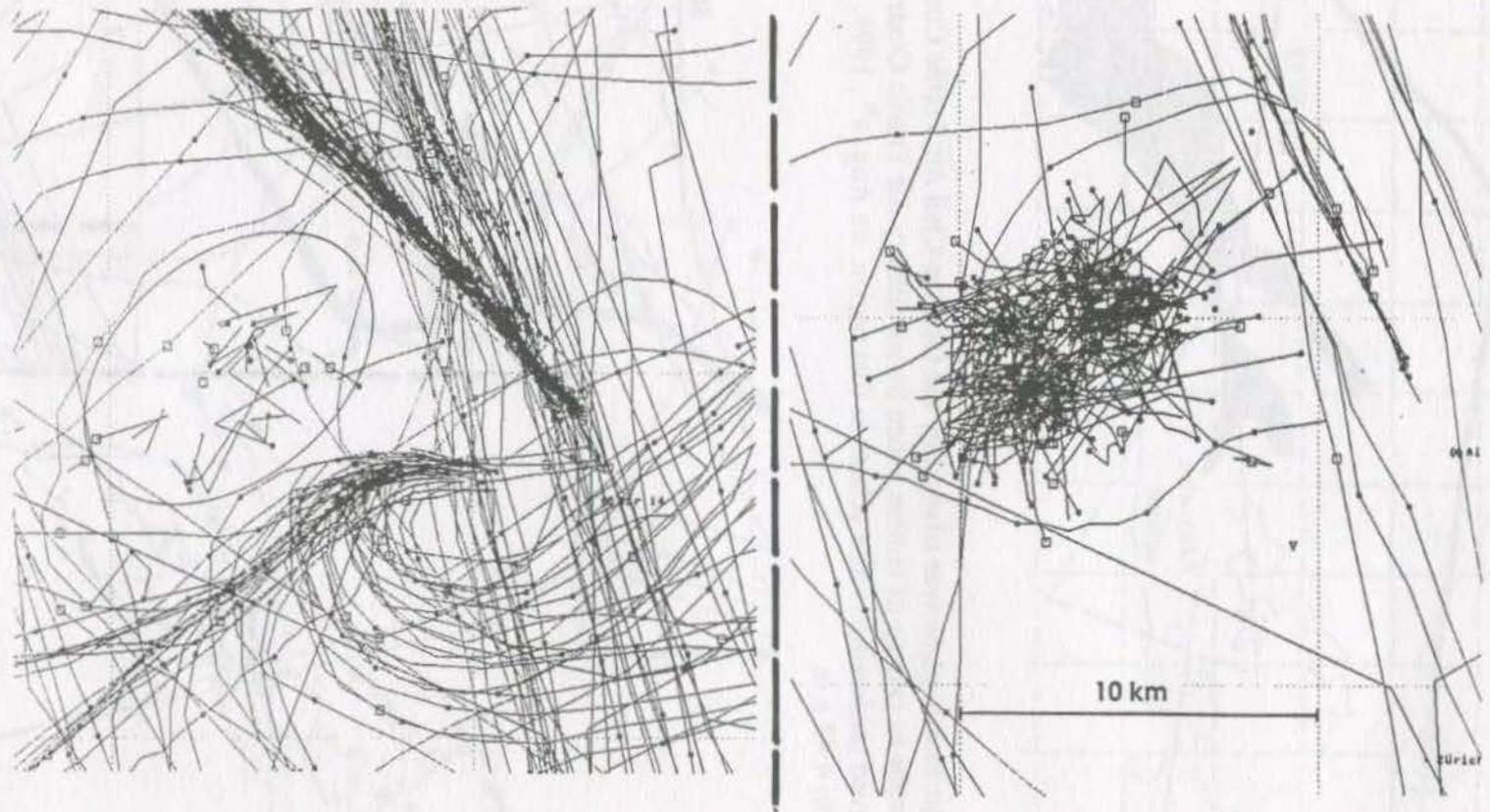


Fig. 8.16: Accumulations near the Zurich Airport, on April 17th, 1995, from 7:00 to 10:30 p.m. and from 10:30 p.m. to 5:45 a.m. (All flight patterns displayed).

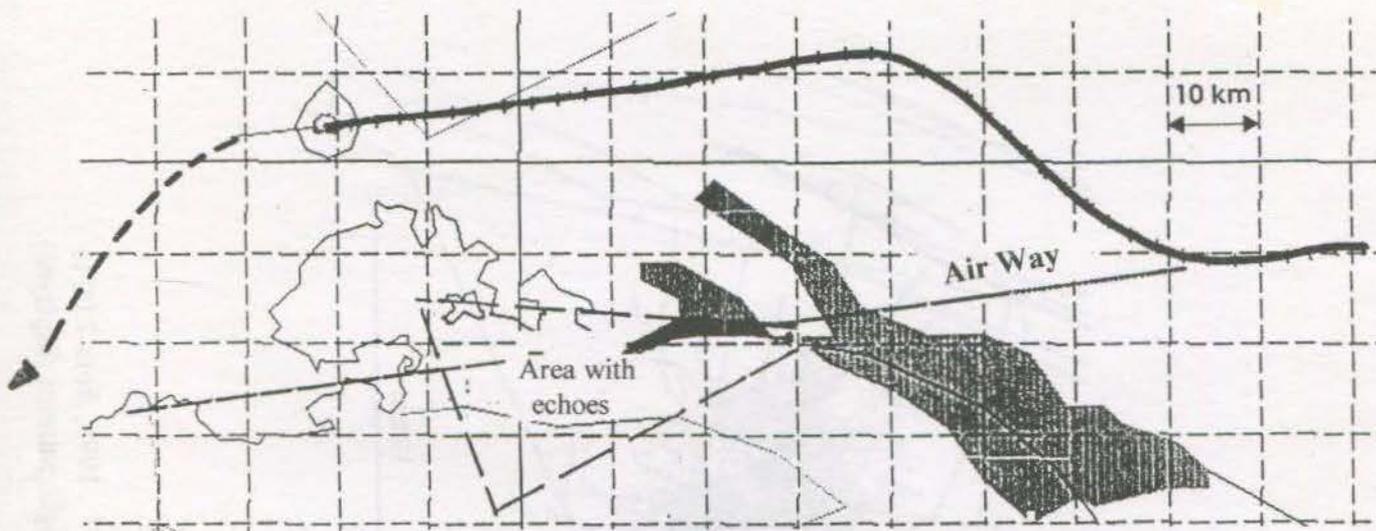


Fig. 8.17: An Air France plane was advised by the German Civil Air Traffic Control Karlsruhe to change its course, when Swiss military Air Traffic Control observed unidentified radar echoes in that region, on Aug. 4th, 1993, from 4:30 to 4:43 a.m.

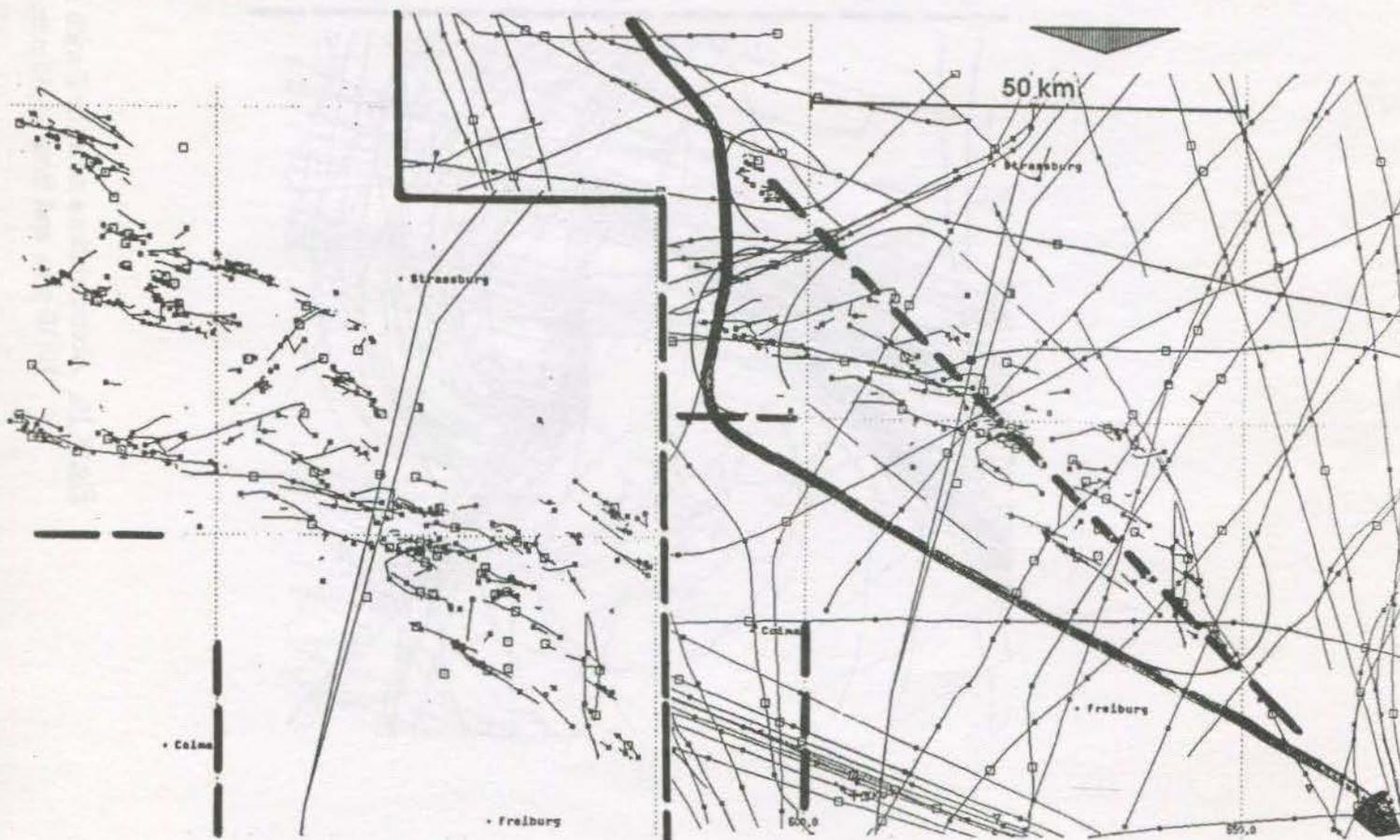


Fig. 8.18: Another example which shows evading maneuvers of an airplane in the region of Freiburg, Germany, on June 21st, 1995, from 7 to 10:30 p.m.

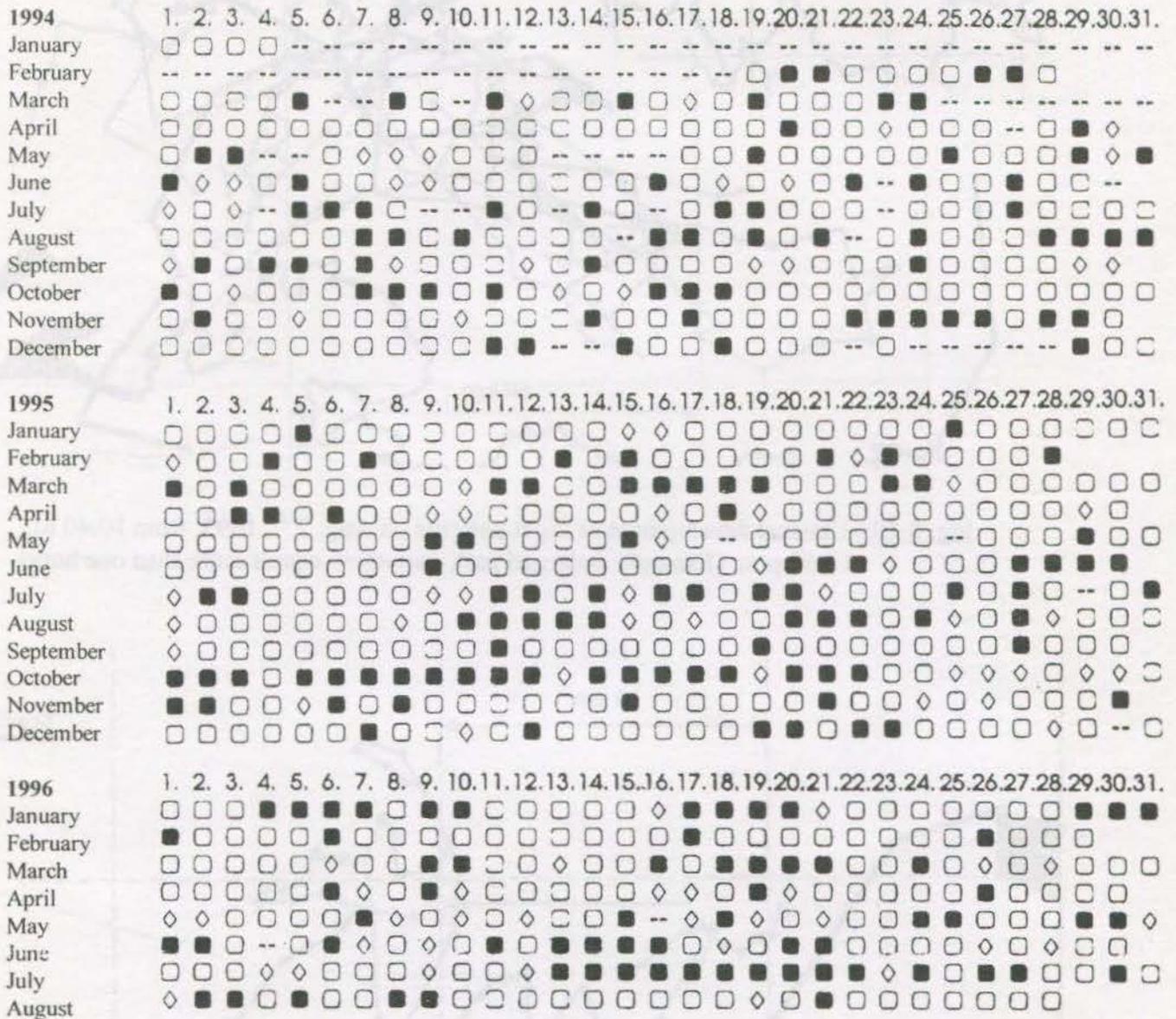


Fig. 8.19: Frequency of occurrence of unidentified echoes in the Central European surveillance area. In this representation, a black square means an anomalous phenomenon, a lozenge means questionable recording, and the white square describes a normal day without irregularities.

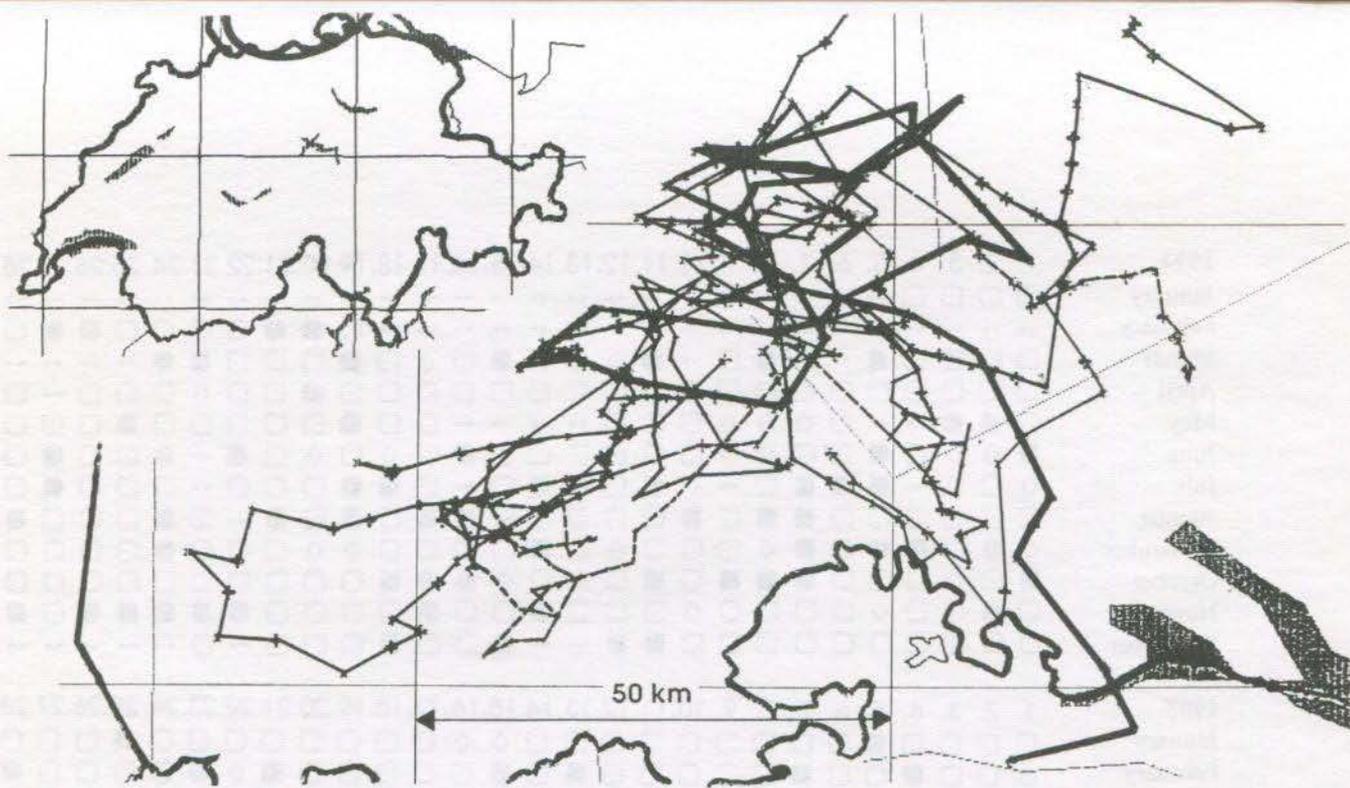


Fig. 8.20: Unusual development of flight patterns on Aug. 2nd, 1993, from 10:40 to 11:50 p.m. (Example: enlarged part, derivation equals more than one hour).

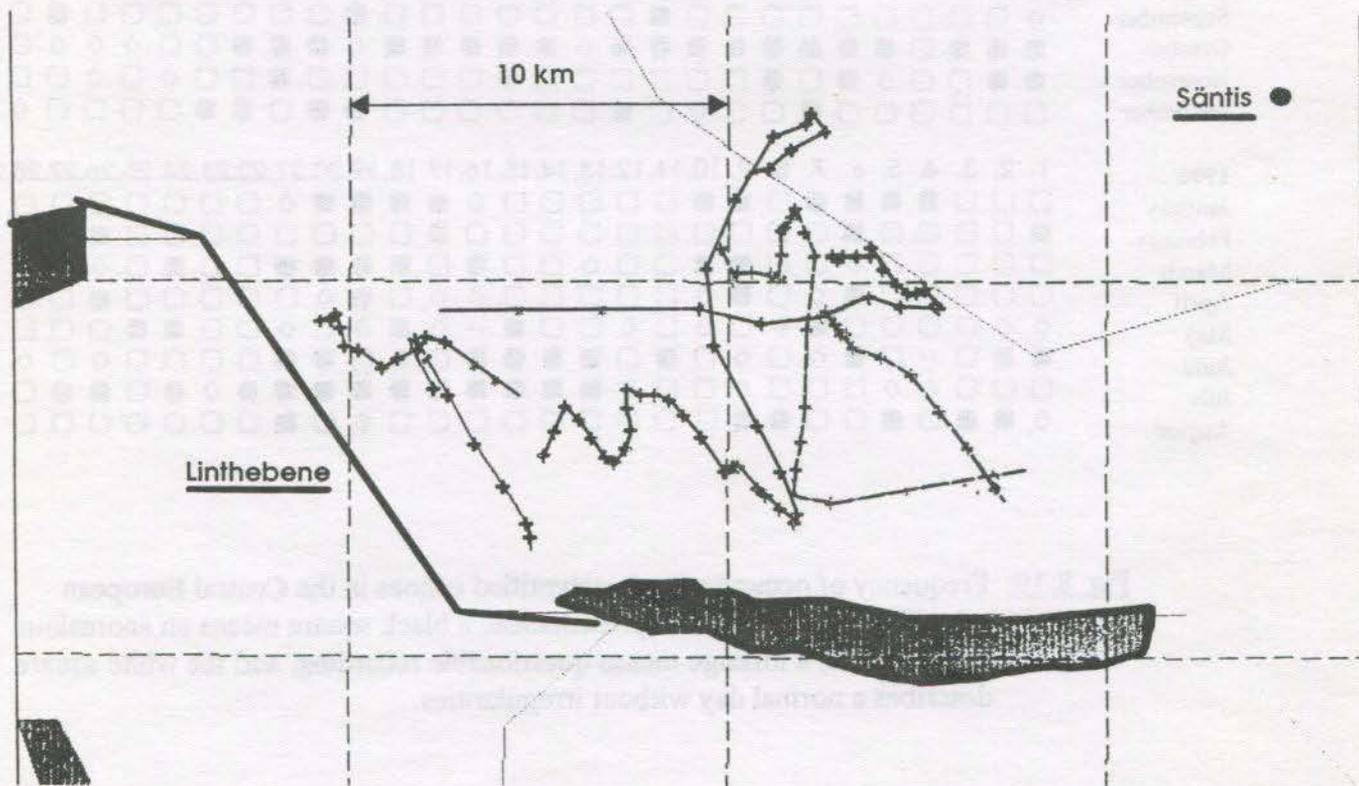


Fig. 8.21: Unusual flight-pattern development of three unknown objects in the vicinity of a logistical installation, during the night of Aug. 5th to 6th, 1993, from 11:15 p.m. to 3:30 a.m. (Displayed: 2:25 a.m. to 2:40 a.m.)

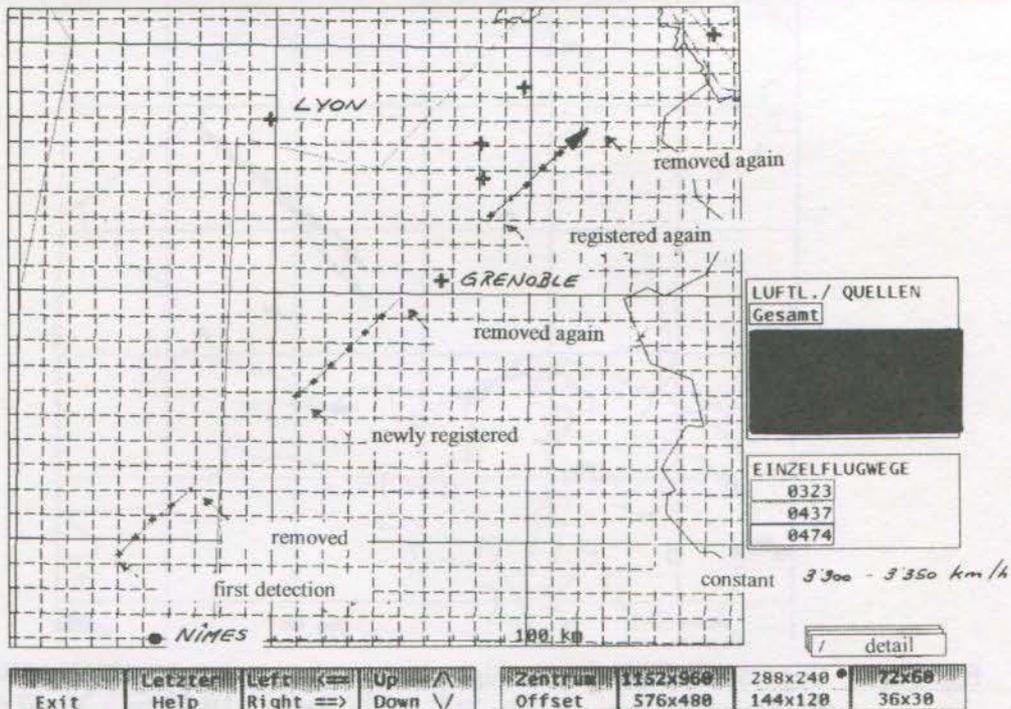


Fig. 8.22a: Supersonic flight from a high altitude, on March 8th, 1995, from 10:25:20 to 10:29:30 a.m., over France (top view)

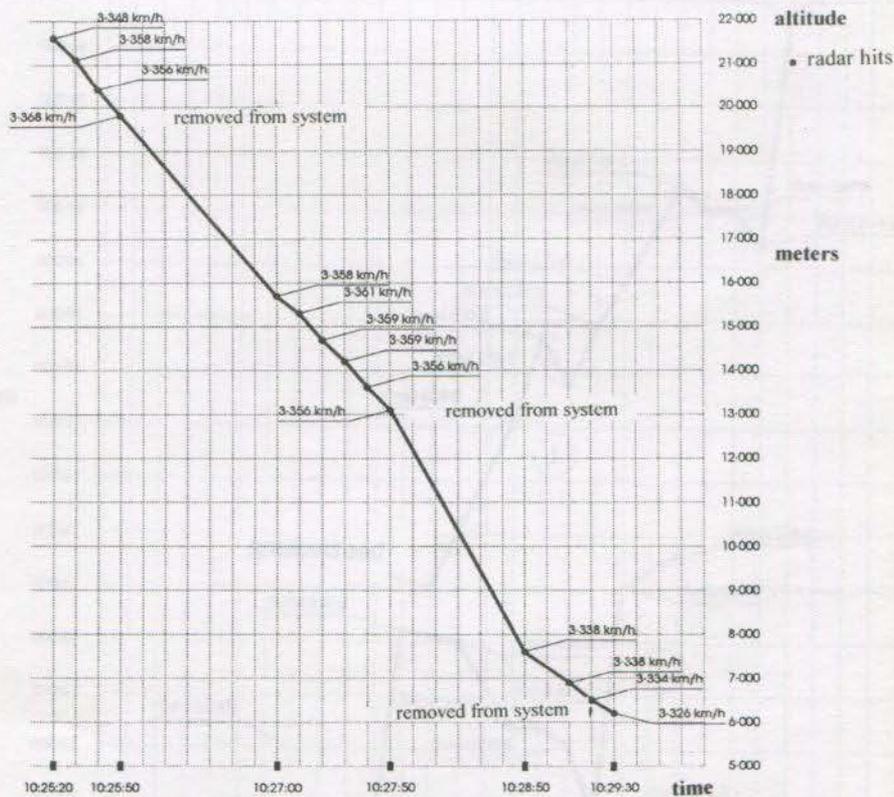


Fig. 8.22b: Altitude chart of the supersonic flight, on March 8th, 1995, from 10:25 to 10:29 a.m.

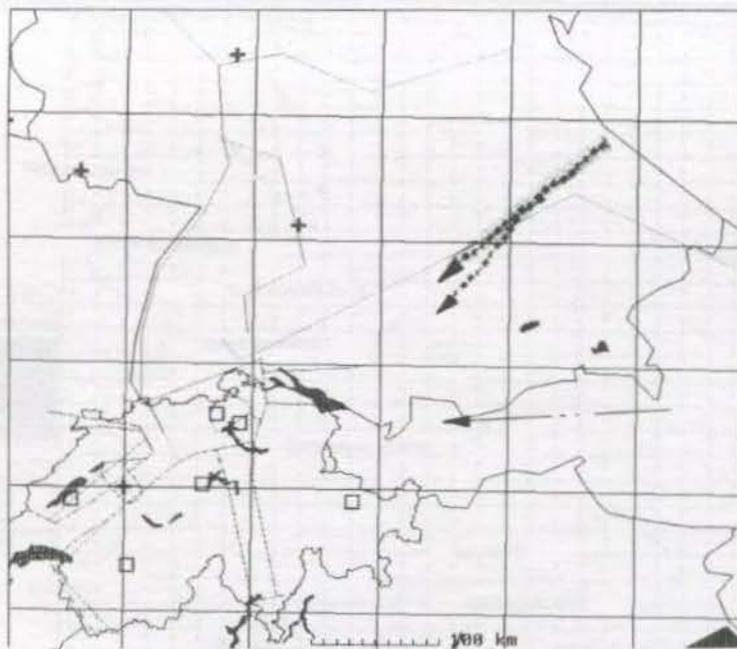


Fig. 8.23a: Supersonic flight from a high altitude of an unknown object coming from the Czech border, on Feb. 21st, 1995, from 8:19:30 to 8:22:40 p.m., over Germany (top view).

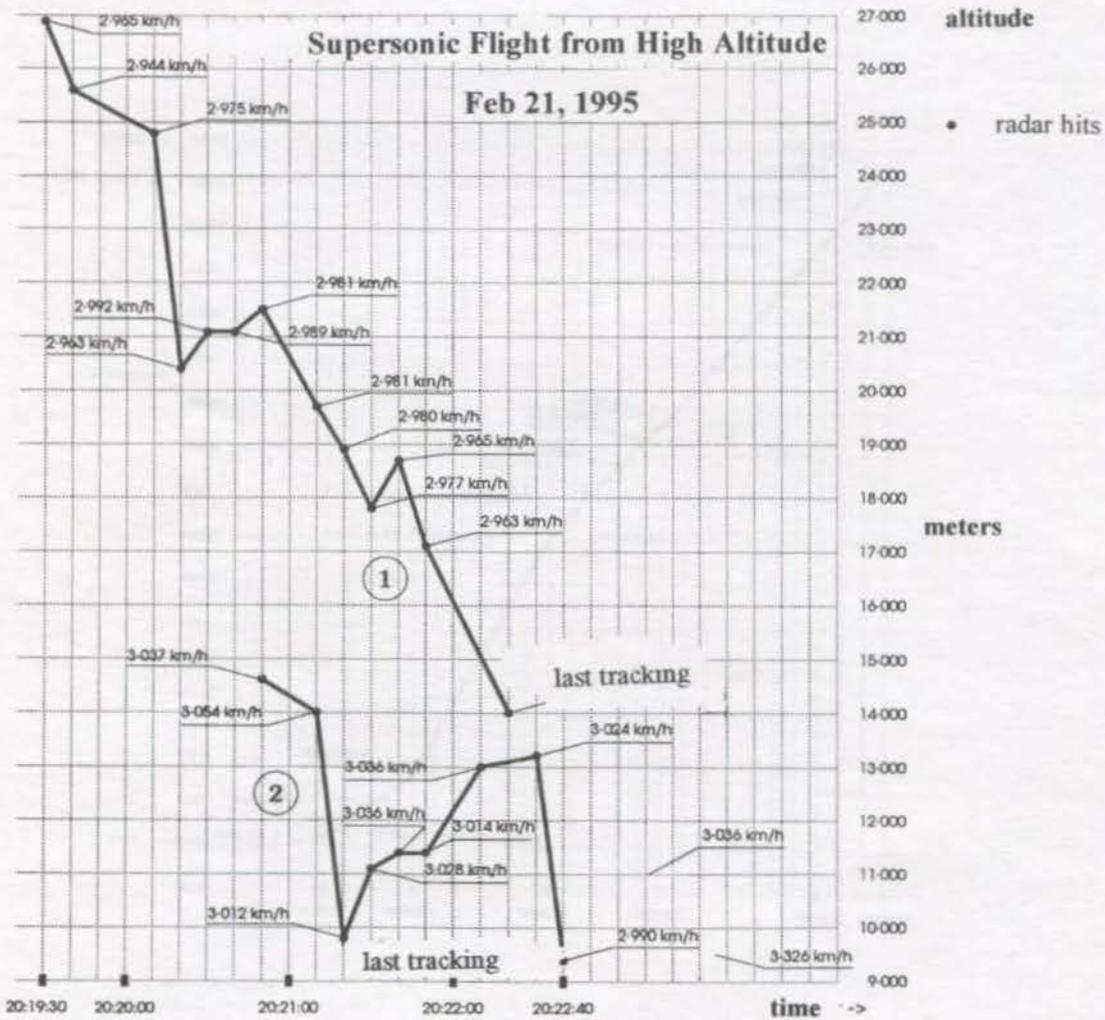


Fig. 8.23b: Altitude chart of the supersonic flight, on March 8th, 1995, over Germany.

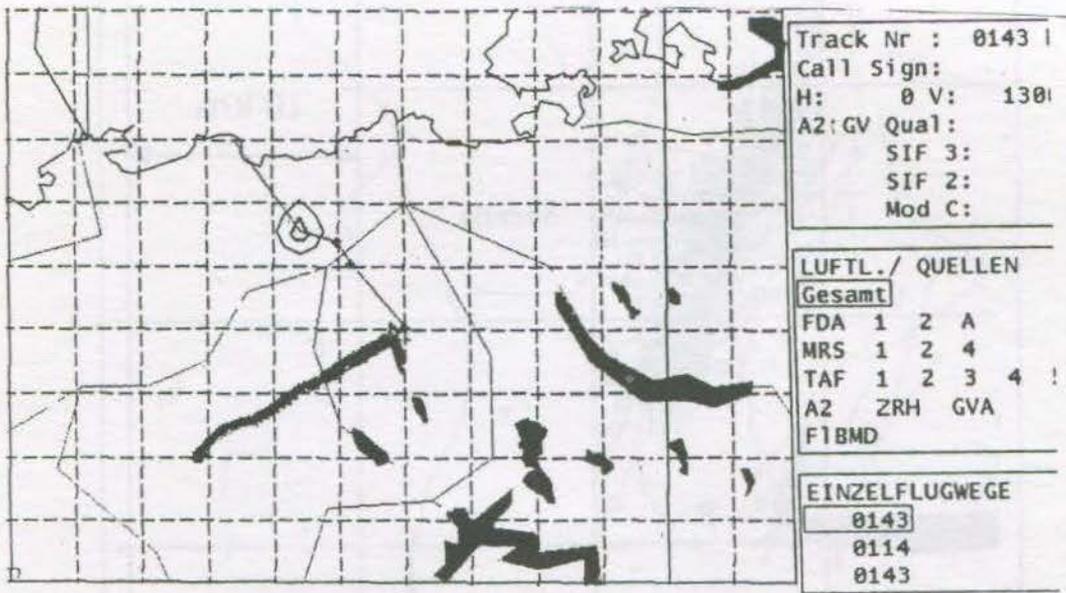


Fig. 8.24: Anomalous change of heading with extreme acceleration. Acceleration within 30 seconds from 210 km/h to supersonic speed, simultaneous change of heading by 90°, on June 18th, 1993, at 2:00 a.m.

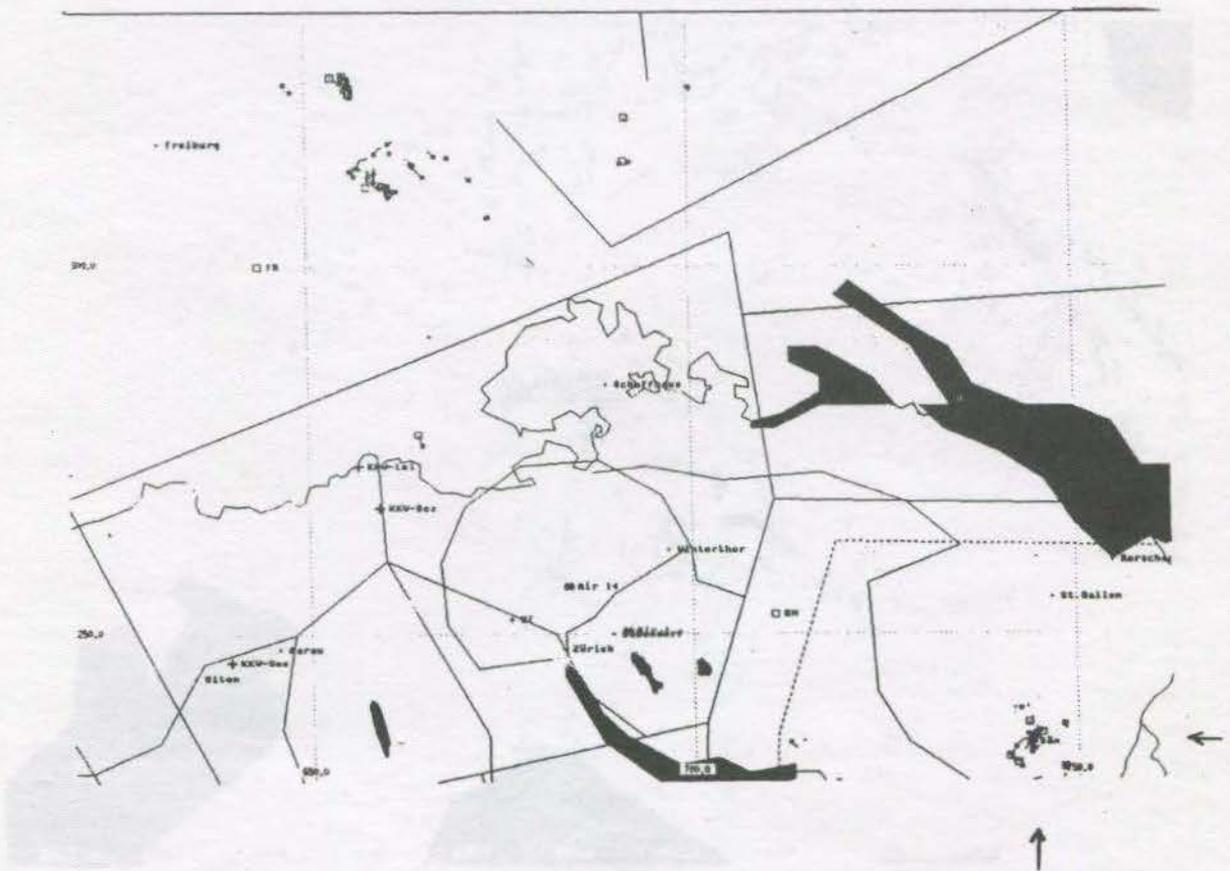


Fig. 8.25: Accumulation of strange objects near Mount Saentis in the vicinity of military installations (on the bottom right).

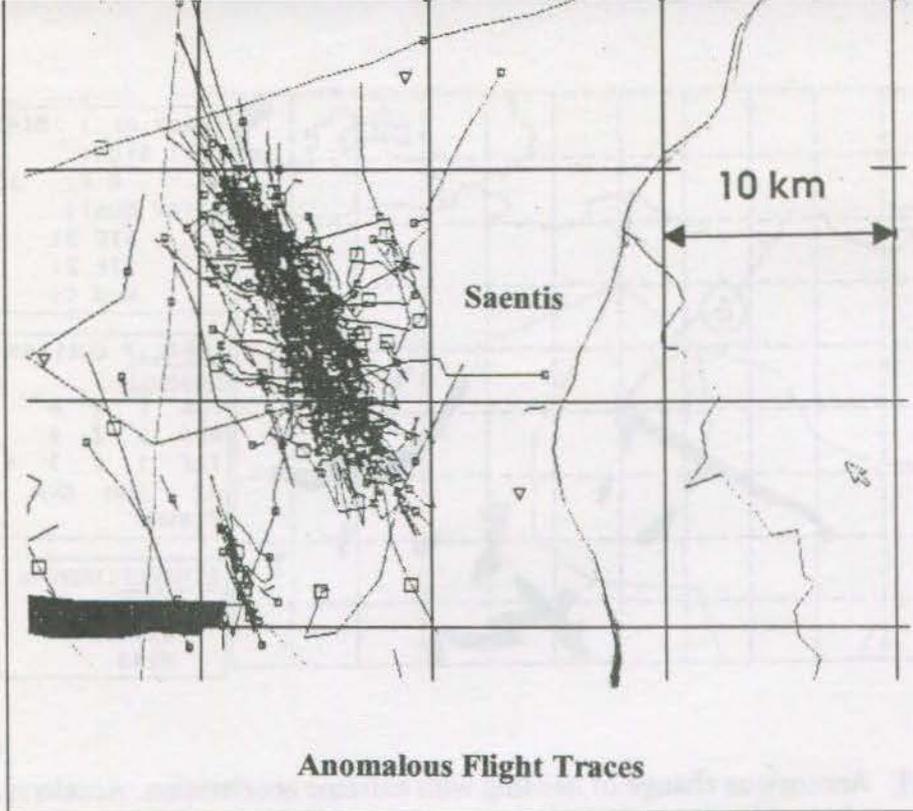


Fig. 8.26: Blow-up of the accumulation of strange objects near Mount Saentis.

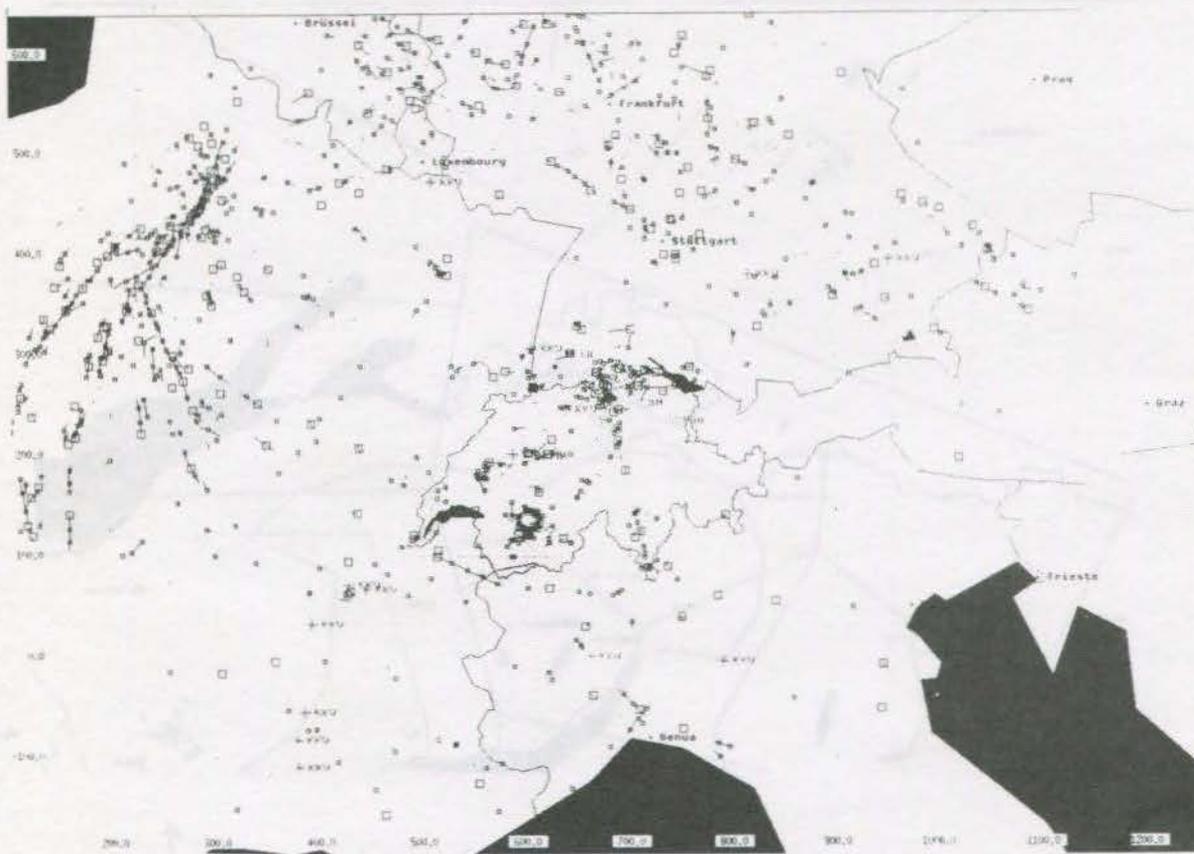


Fig. 8.27: Not identified objects on Jan. 24th, 1995, between 7 and 10:30 p.m. in the Central European area.

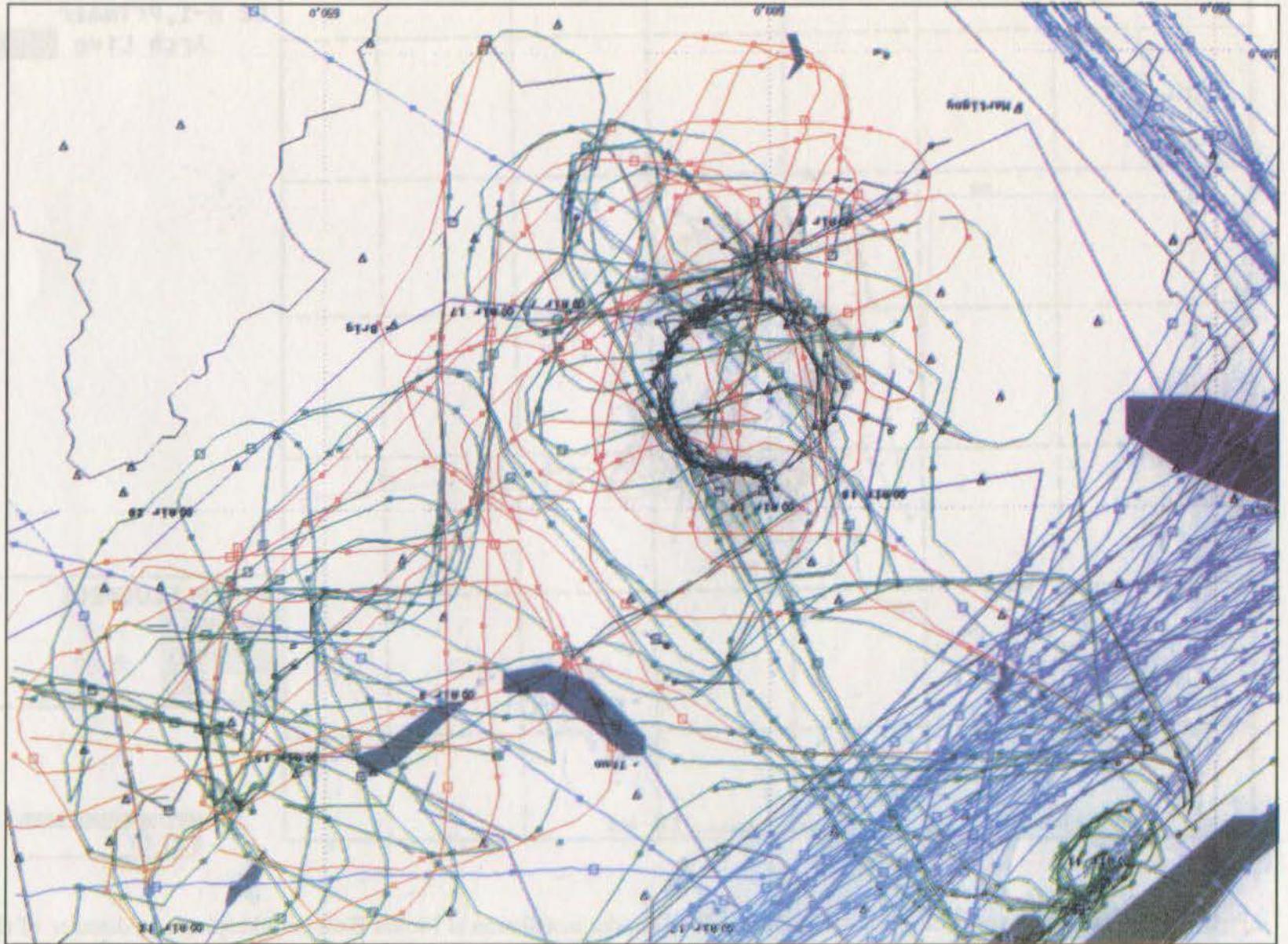


Fig. 8.28: Unknown objects (black) involved in a military maneuver (red and green paths) on Jan. 24th, 1995, around Mount Balmhorn. Civilian air traffic: blue, (displayed: 6:20 to 8:45)

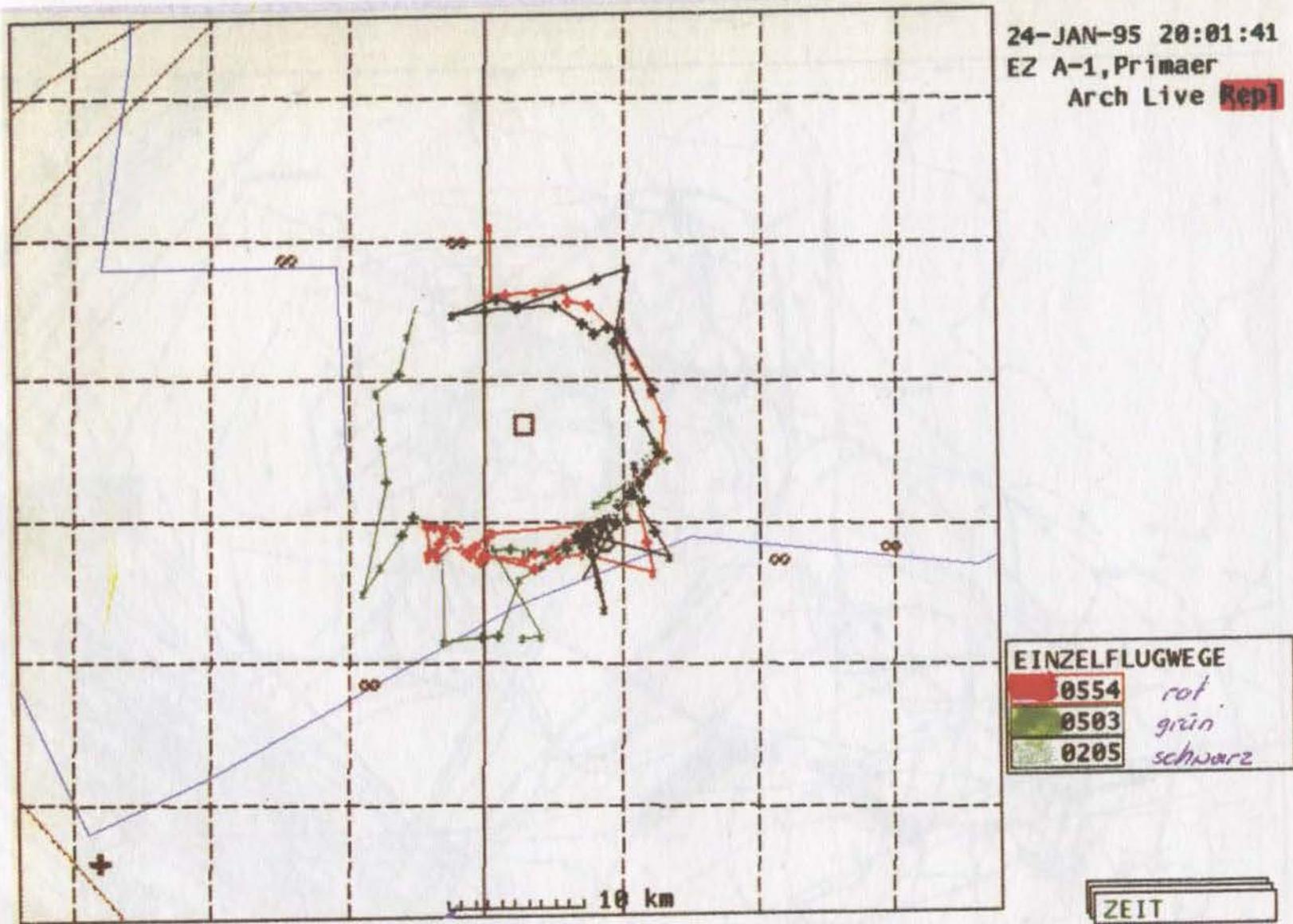


Fig.8.29: Three of the unknown objects circling around a radar installation at Mount Balmhorn keeping to a distance of about 10 km

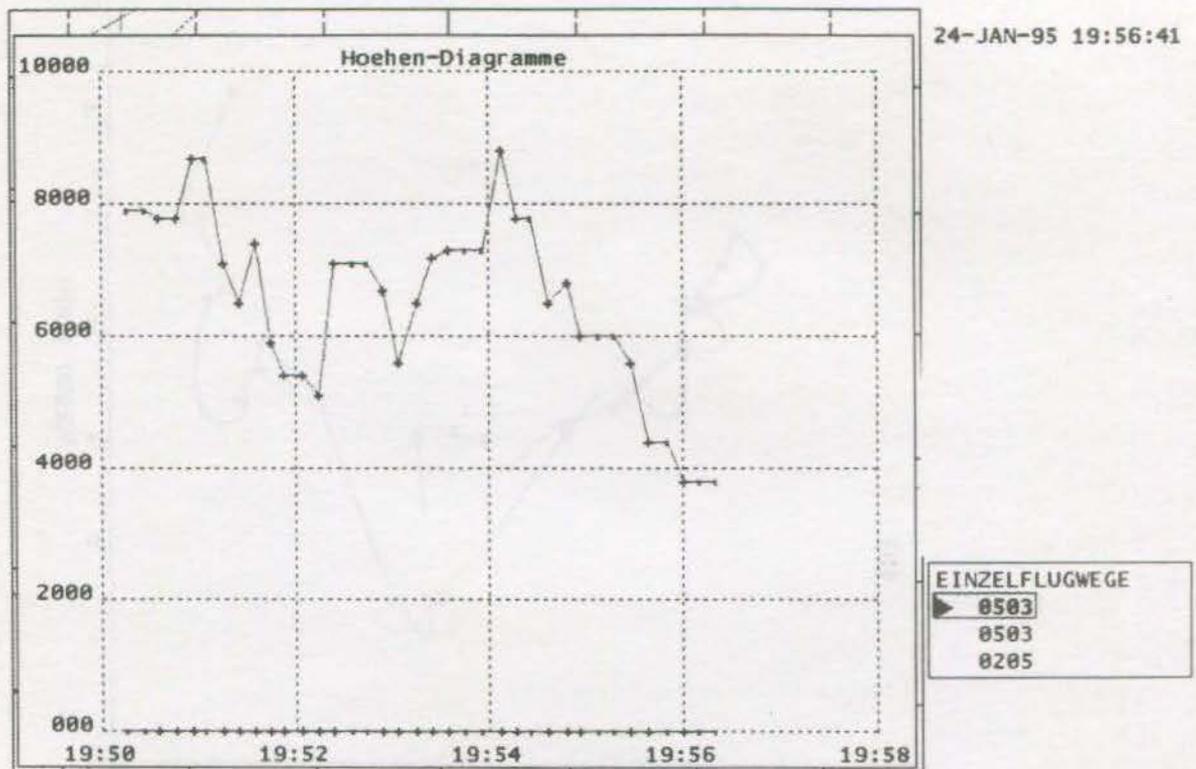


Fig. 8.30: Altitude chart of one of the unidentified objects (No. 503) on Jan 24th, 1995, near Mount Blamhorn

UNKNOWN RADAR ECHOES
 on January 24, 1995, Balmhorn (3700 m) Montblanc

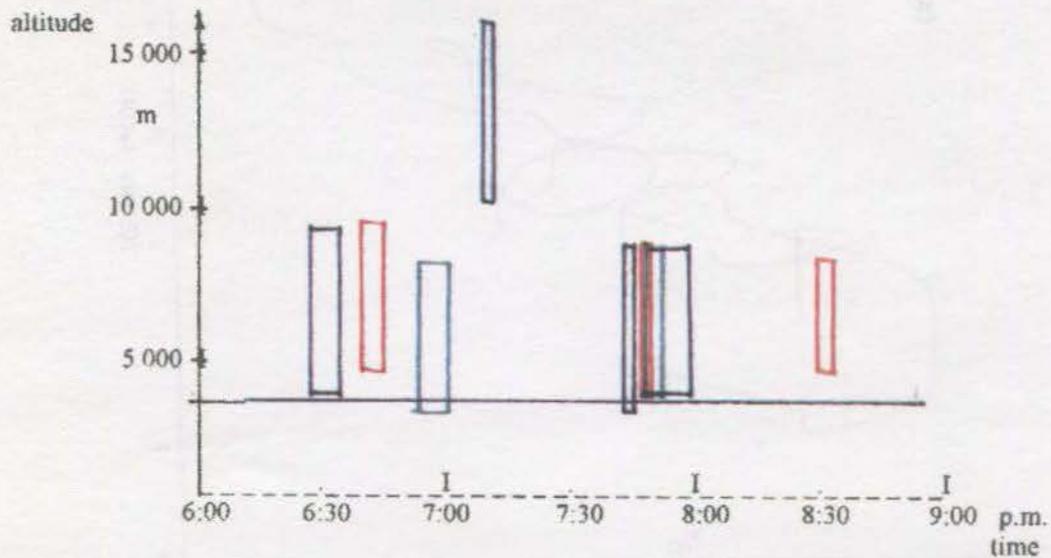


Fig. 8.31: Duration of occurrence and area of altitude of the three unknown objects, on Jan. 24th, 1995, from 6:00 to 8:40 p.m.

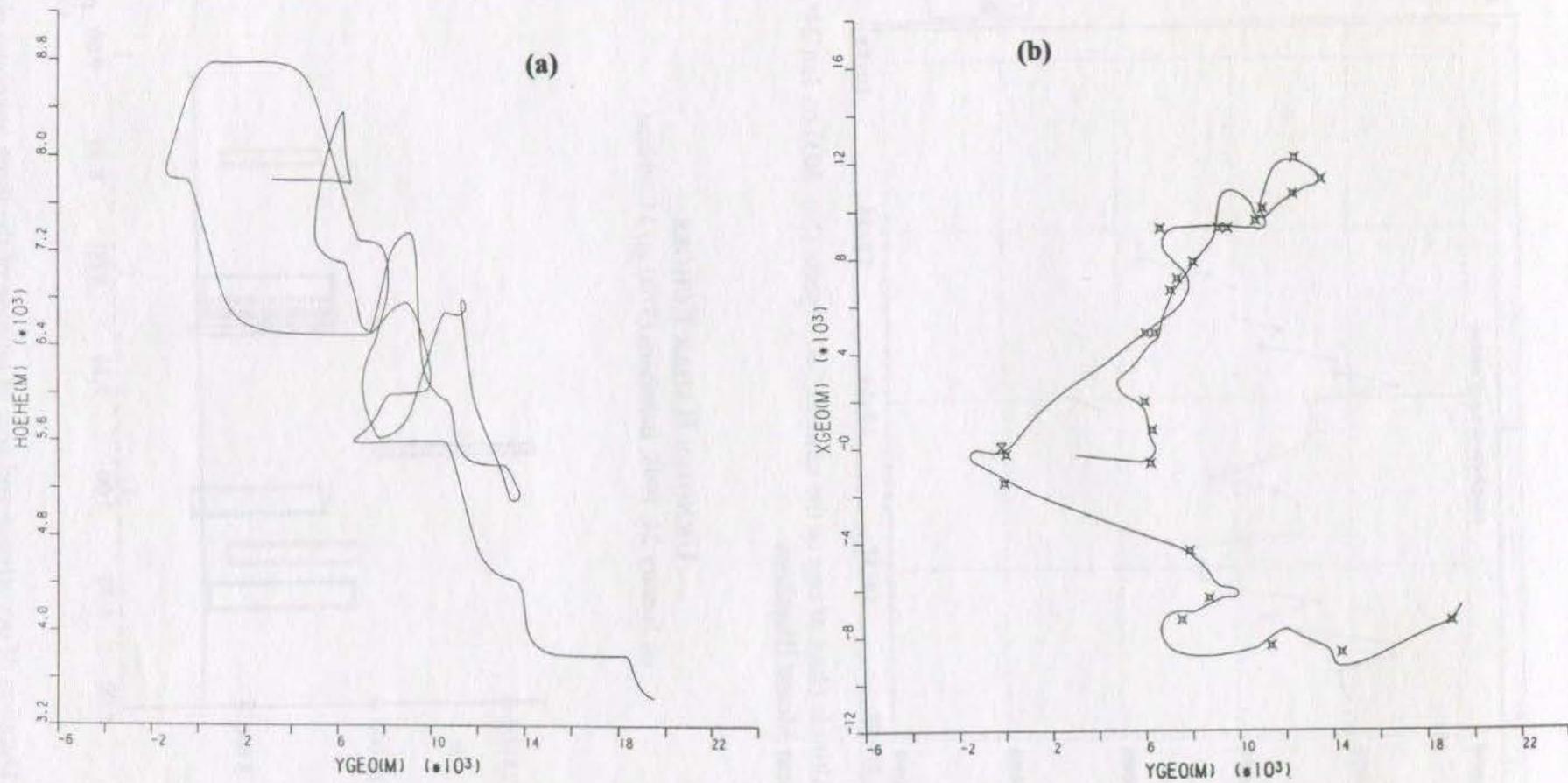


Fig. 8.32: Spline curves laid through the position points measured by radar
 a) altitude versus length Y
 b) projected in the X - Y plane

18:32:03
 18:32:14
 18:32:24
 18:32:54
 18:33:15
 18:33:25
 18:33:44
 18:33:55
 18:34:16
 18:34:26
 18:34:35
 18:35:04
 18:35:25
 18:35:45
 18:36:05
 18:36:14
 18:36:24
 18:36:44
 18:36:55
 18:37:04
 18:37:43
 18:38:02
 18:38:13
 18:38:21
 18:38:31
 18:38:51
 18:39:01
 18:39:11
 18:39:31
 18:39:39
 18:39:49
 18:40:10

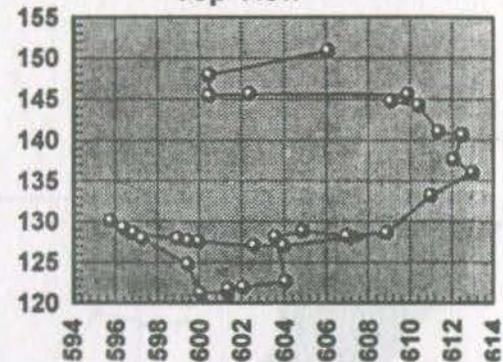


MUFON-CES

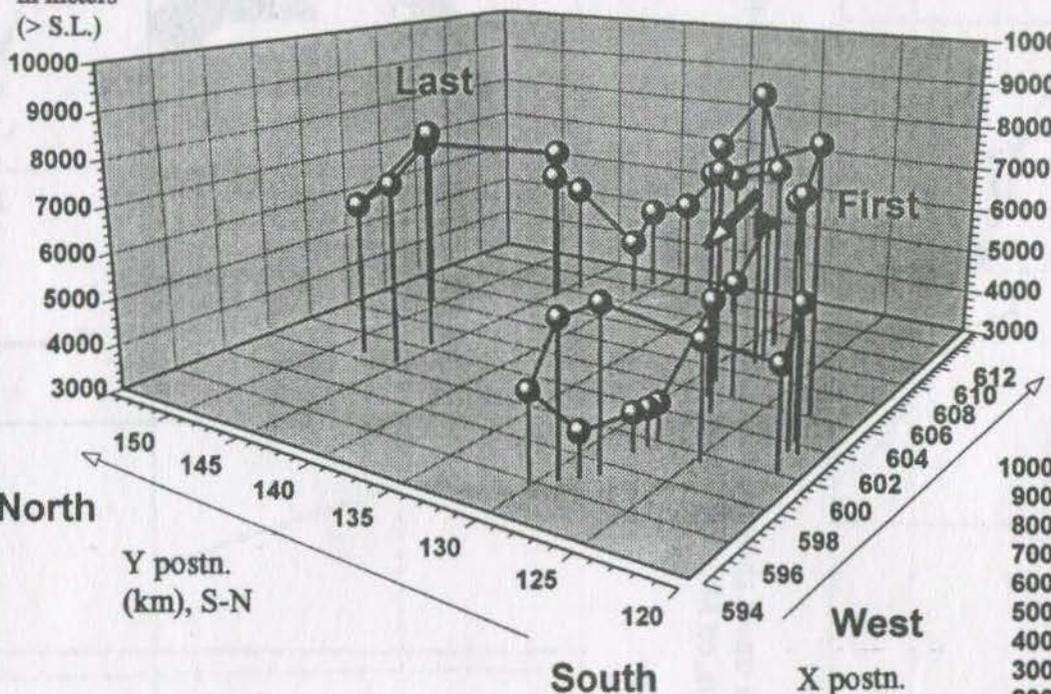
Date: 24.01.1995

Track: T065 Trackpoints: 33

Top View



altitudes
 in meters
 (> S.L.)



altitudes
 in meters
 (> S.L.)

East

Side View

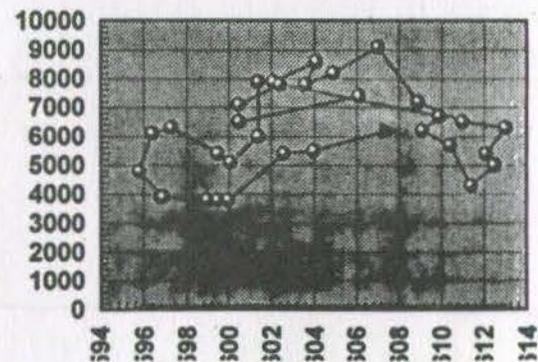


Fig. 8.33: 3-dimensional view of one of the unknown objects' movement, on Jan. 24th, 1995, from 6:32:03 to 6:40:10 p.m.

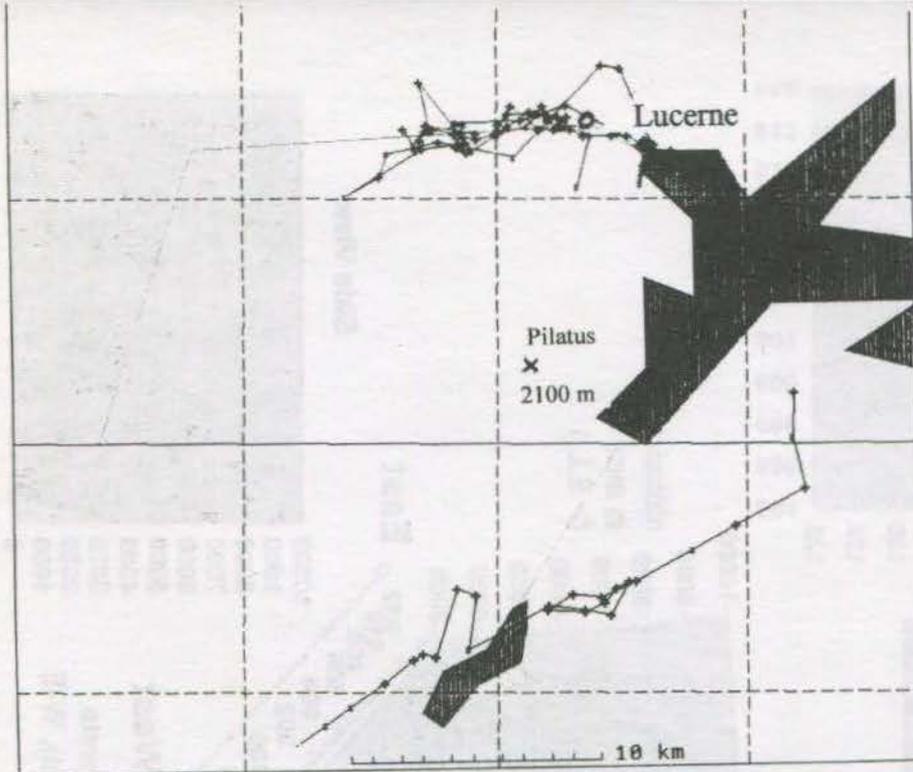


Fig. 8.34a: Flight traces always about 10 km away from a rada installation on Mount Pilatus, on May 18th, 1994, at 9:13 p.m.

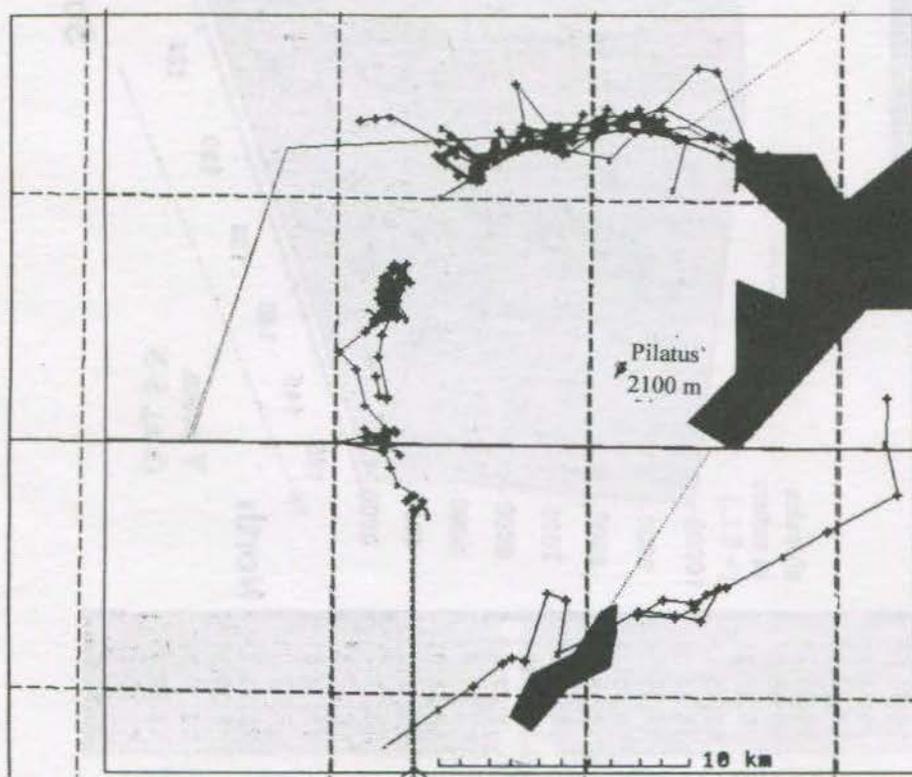


Fig. 8.34b: A different object is seen on the same day slightly later at the same distance from Mount Pilatus (displayed from 9:13:41 to 10:26:21 p.m.).

30.5.1996 02:00 bis 04:00 Uhr
nicht identifizierte Flugwege
inkl. Zivile

30.05.96

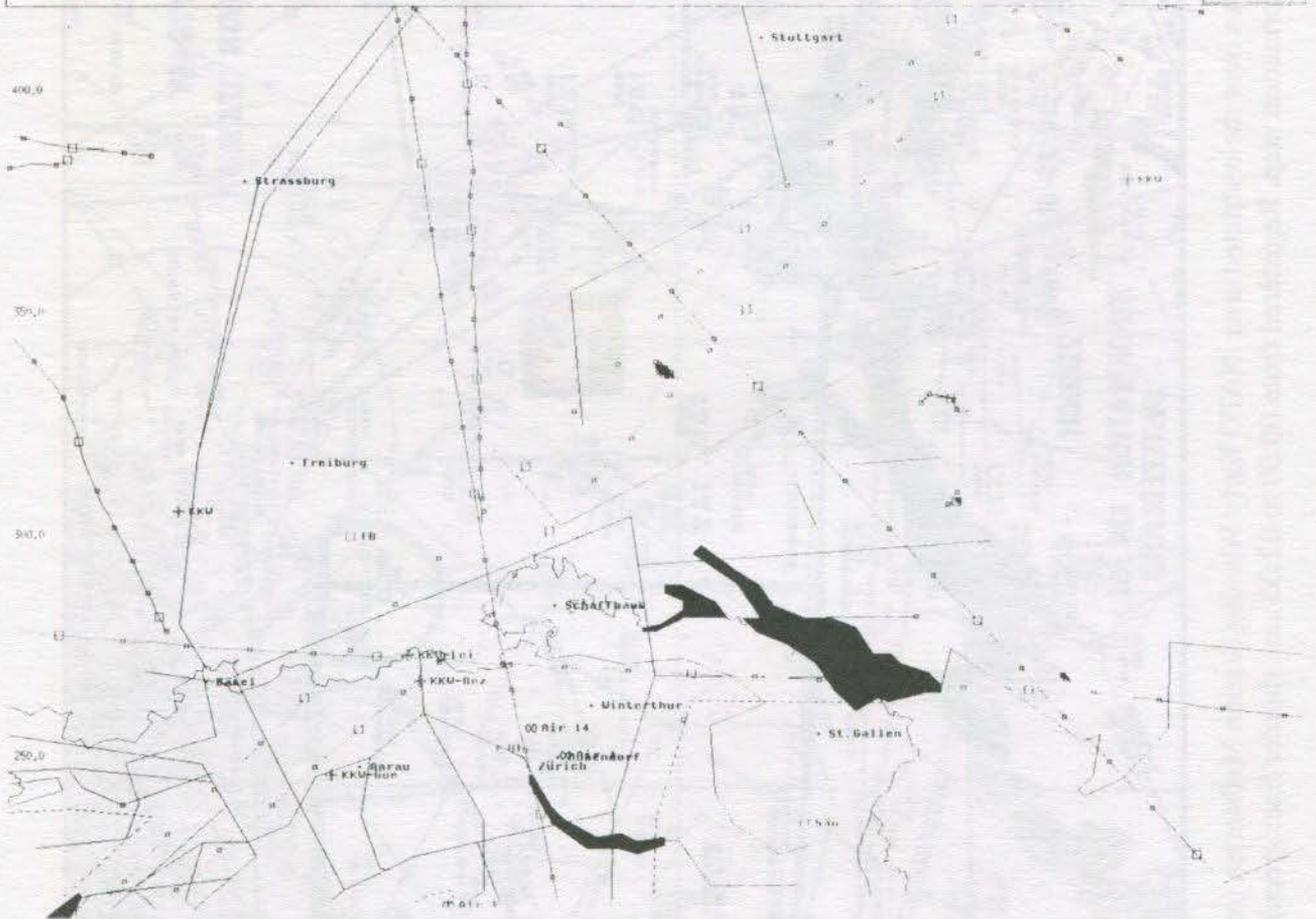


Fig. 8.35: Strange accumulations of echoes over the village of Meßstetten, on May 25th, 1996, registered as hovering for 7 hours (displayed from 2:00 to 4:00 a.m.).

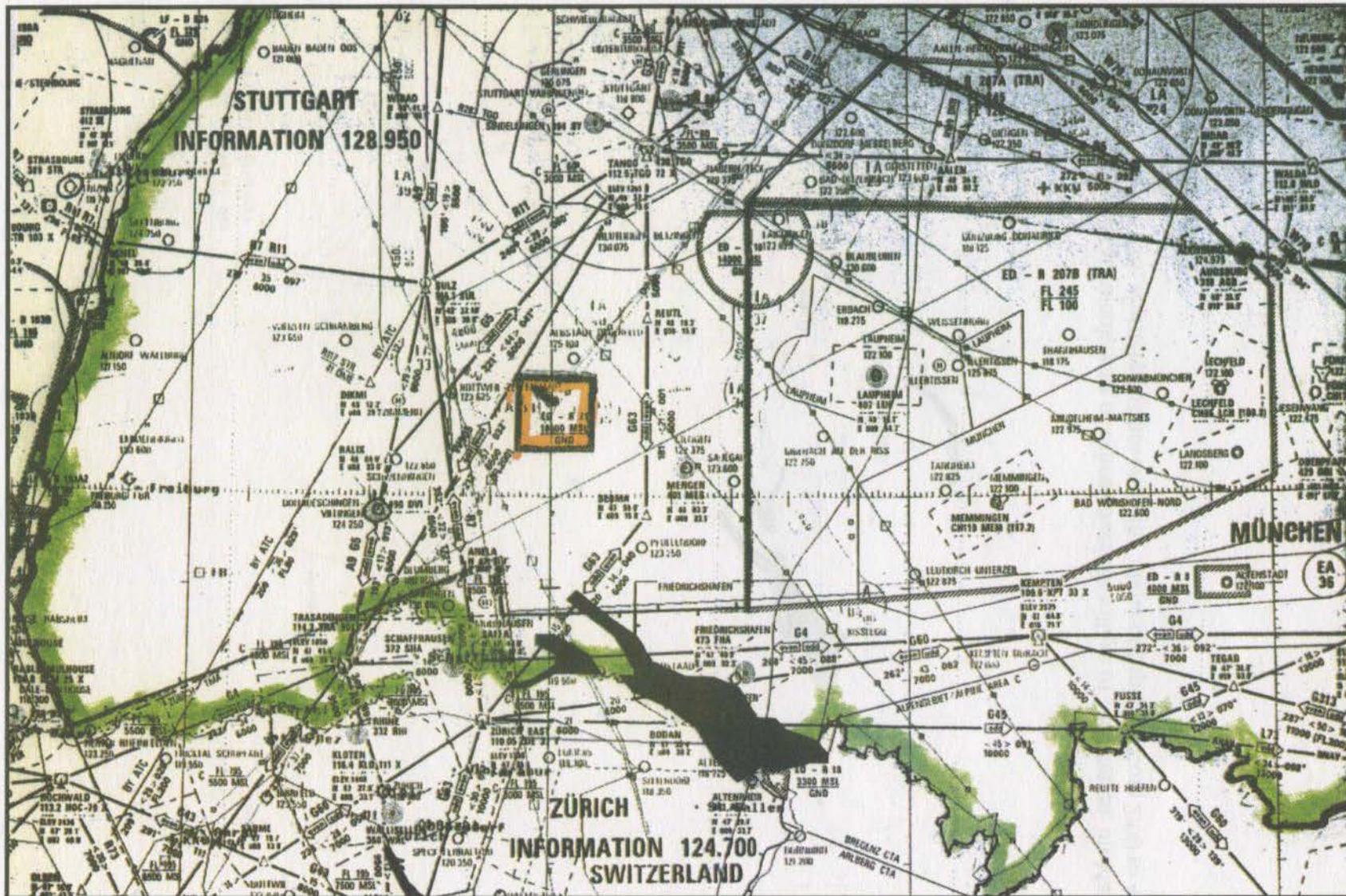


Fig. 8.36: Unusual echoes over the restricted area: NATO Early Warning Station Meßstetten (red), on May 5th, 1996, displayed in a flight information map. Registered from 00:00 to 02:00 a.m. (border line: green)

30.5.1996 00:00 bis 06:00 Uhr
nicht identifizierte Flugwege
größtmögliche Darstellung |

30.05.96

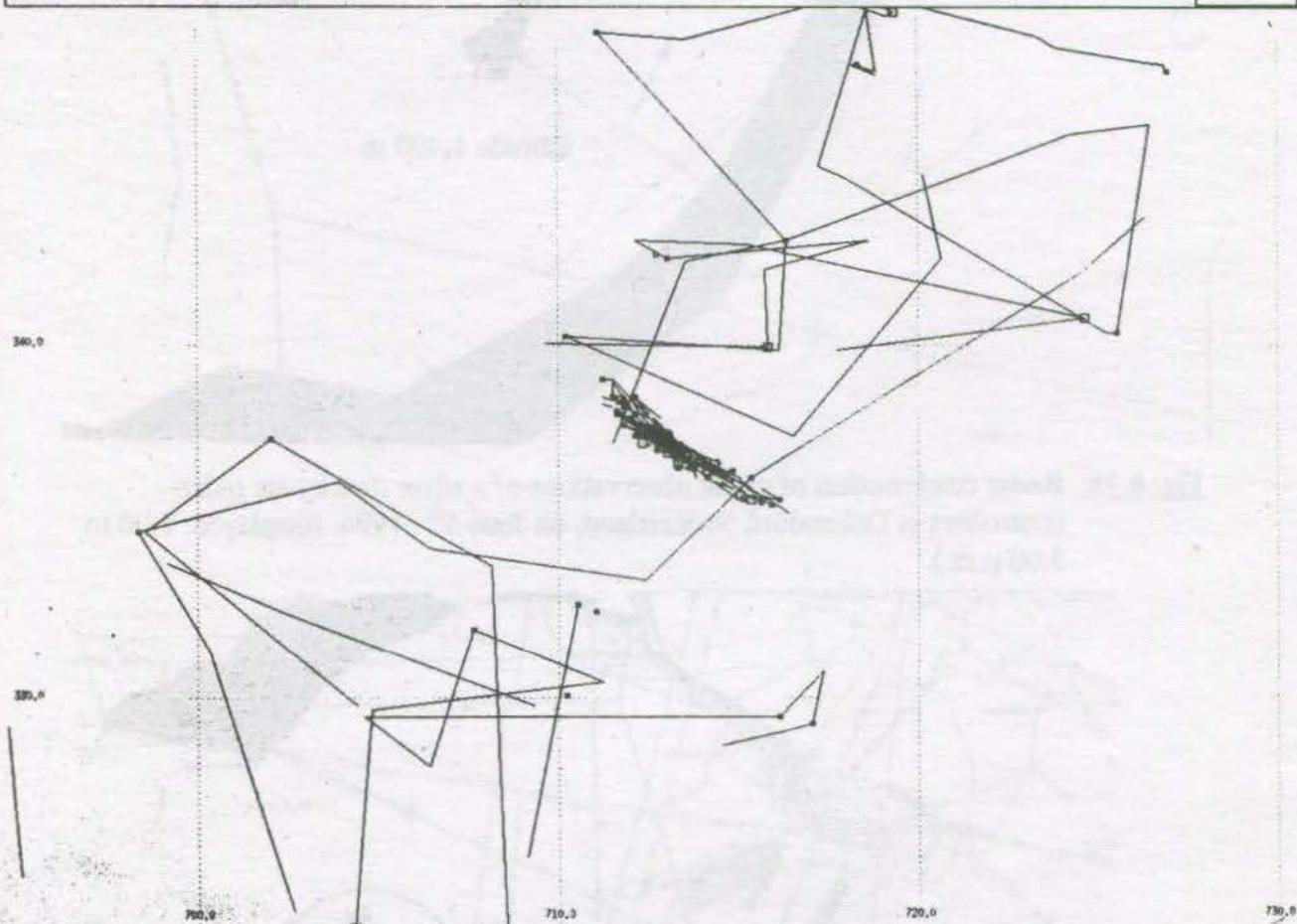


Fig. 8.37: Blow-up of flight movements of the unidentified object over the restricted area, on May 5th, 1996, from 00:00 to 6:00 a.m.

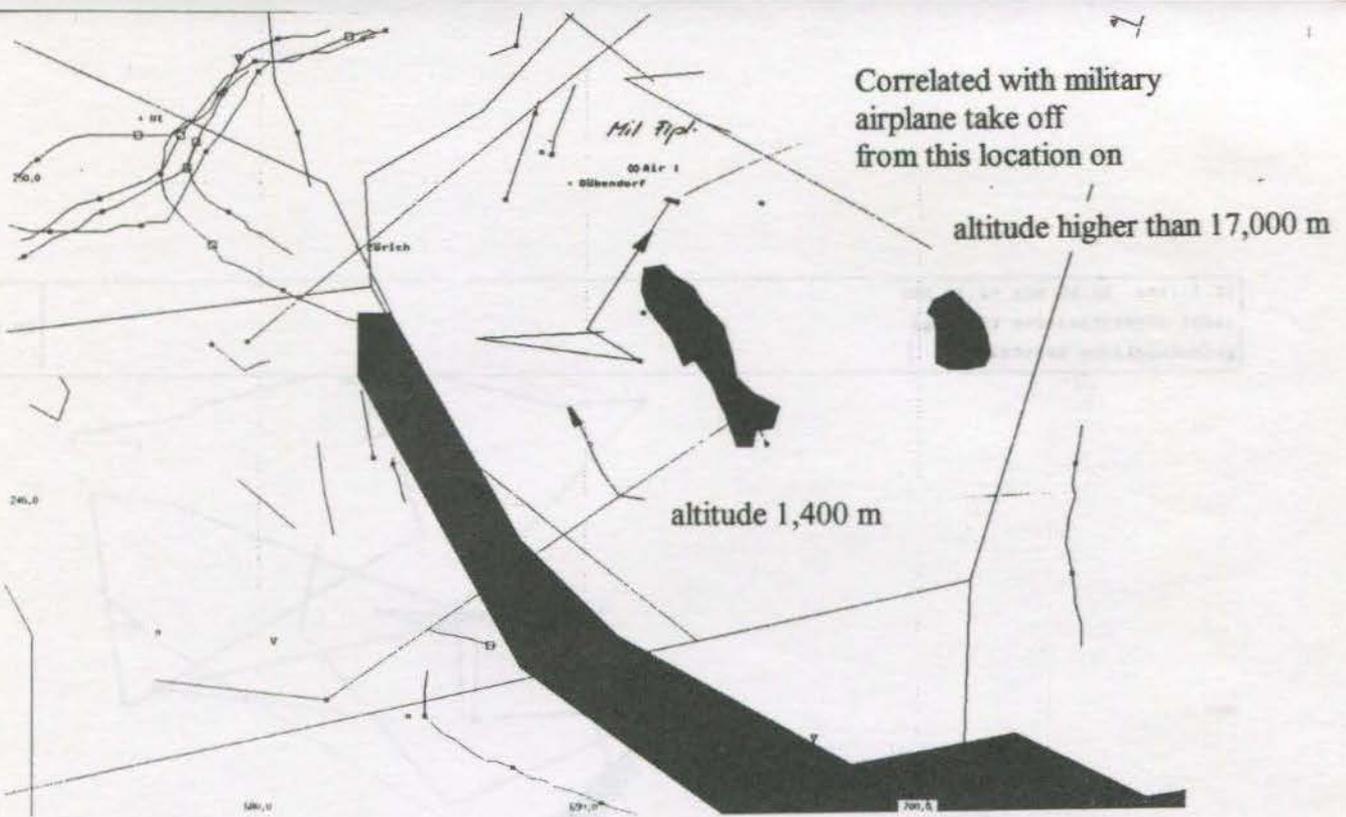


Fig. 8.38: Radar confirmation of visual observations of a silver disk by six radar controllers at Dubendorf, Switzerland, on June 5th, 1996. (displayed: 2:00 to 3:00 p.m.).

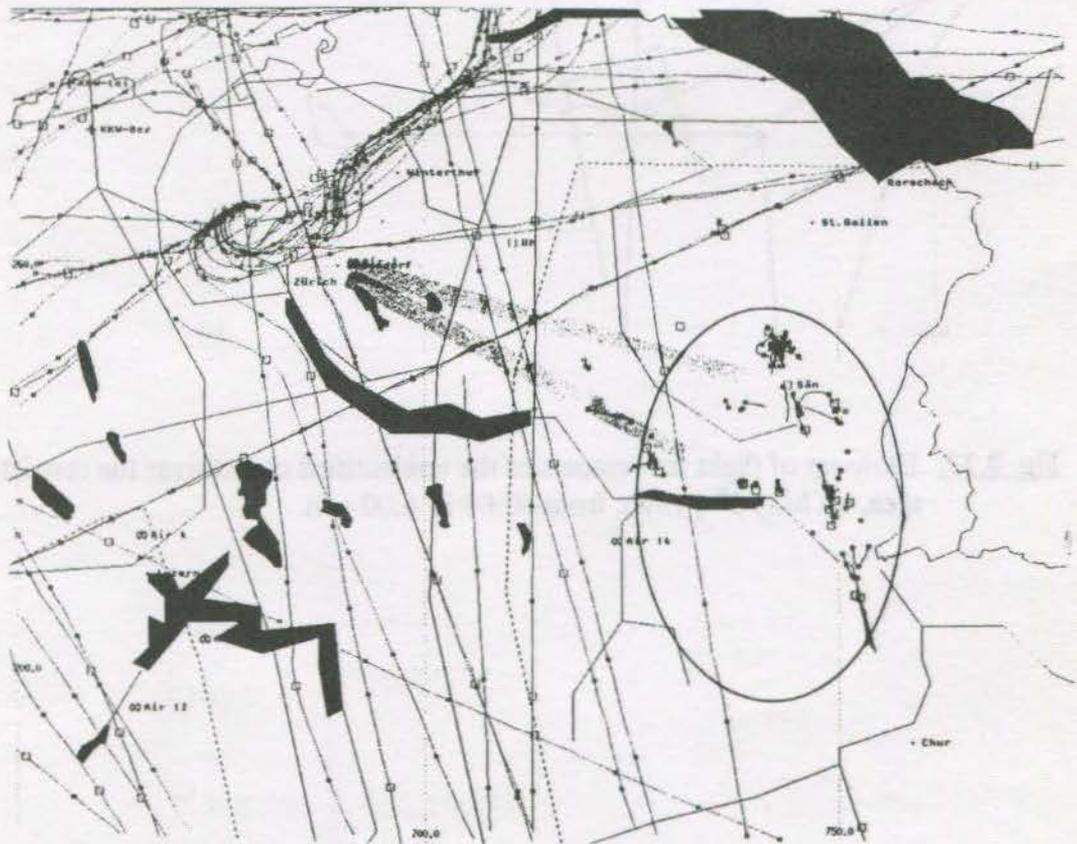


Fig. 8.39: Radar confirmation of visual observation of luminous balls by one radar controller, on Oct. 2nd, 1995, from about 4 to 8:30 a.m. (displayed: 7:00 to 8:00 a.m.).

9 Developments and Use of Highly Sensitive Magnetic Field Detectors

The association of UFO's and magnetism has come about because of circumstances observed in a relatively small number of UFO reports.

Some reports describe the spinning of compasses in the presence of unknown flying objects. The day Kenneth Arnold made his famous report about 9 crescent-shaped objects which flew like "saucers skipping over the water surface" in the sky above Mt. Rainier, on June 24, 1947, Fred Johnson from Portland, Oregon, observed over the Cascade Mountains 5 to 6 metallic-looking flat disks about 300 m above ground with a diameter of about 10 meters. As Mr. Johnson turned his telescope in the direction of the objects he noticed that the compass needle of his telescope deflected erratically to the left and to the right as long as the objects circled around him for 45 to 60 seconds. (Bloecher 1967)

Similar observations have been made in the meantime by pilots, scientists and others (Bray 1967, Edwards 1966, Falla 1979, Fouréré 1967, Gourley 1977, Keyhoe 1970 & 1973, NICAP 1965, Skylook 1975, Story 1980, Zeidmann 1979). If a strong magnetic field causes the compass needle to deviate either way from magnetic north, then the needle can serve as a switch to trigger an alarm signal.

Already in 1955, a simple compass-needle detector alerted the presence of a strange flying object. Mr. Millican from Robertstown noticed a white-blue object flying a zigzag movement in the surroundings of his home on December 27, 1955 at 10:15 p.m. (Miller 1957).

A magnetic detector with an electronic amplification - called GEOS - was developed and distributed in 1966 by Monsieur Perrinjaquet in Switzerland. With his, and similar devices, some UFO's have been detected (Creighton 1966, Fiquet/Ruchon 1979, Hendry 1978, Schneider 1981).

Lagarde (1974) estimated that worldwide there were about one thousand magnetic field detectors deployed at that time, whose primary use was the detection of UFO's.

The French UFO society "*Lumières dans la Nuit*" (LDLN) installed a network of magnetic detectors in 1963 to detect and observe UFO's. In 1965 only about 100 such devices were in use, but already in 1969, 430 detectors were in use throughout the country. During 1968 and 1969 about 3% of the reported 332 visually observed UFO's were discovered by people with the help of a magnetic field detector. However, in 88% of the alerts, no physical object could be observed near the location of the detectors. (Zan 1979) In every case where a UFO was detected and observed, the objects were within 1 km of the eyewitnesses.

The physicist Claude Poher made a statistical analysis from registered changes of the earth's magnetic field between October 1st and October 18, 1954, which were measured by the geomagnetic station in Chambon-la-Fôret, 30 km north east of Orléan.

Unfortunately, most of the reported UFO's were 40 km away from this station at that time, and Poher hoped to find some peaks in the recordings that were generated by the strong magnetic fields of the UFO's. There were indeed some peaks in the vertical component of the magnetic field H_z , which were correlated with the UFO sightings (correlation factor = 0.58 for H_z).

Since the signals were very weak - about 10 nT (nano Tesla)* - this analysis was not very convincing for some physicists (Hendry 1979). The noise level of the devices is about 1 nT, and disturbing impulses of all kinds are in the order of magnitude of about 10 nT.

Assuming that the source for the magnetic field around a UFO is a dipole field, the cubic law of extension would apply. A detection of 10 nT from a source 40 km away would require a magnetic field strength of about 0.8 million Gauss (or 80 Tesla), 20 m away from the source.

The high magnetic field strength is compatible with other measurements on UFO's. For example, the chemist W. A. Webb observed for 5 minutes a UFO on May 5, 1955, at 10:00 a.m. in Yuma, Arizona.

He saw several concentric black rings around the object, but he could not see the black rings when he took off his eyeglasses. This effect can only be explained by the *Faraday effect*: Polarized light rays, such as the background light of the sky, which go through a strong magnetic field, will be rotated in their plane of polarization. Since Dr. Webb wore eyeglasses with polarized glasses, the light of the sky produced the dark rings observed through the glasses. The diameters of the dark rings corresponded with a magnetic field strength of about 10^6 Gauss (Harder 1968).

Scientists with the Argentinian Navy on Deception Island, Antarctica, recorded a disturbance of the geomagnetic field with their variometer of about 300 nT, when a strange flying object was observed at a distance of about 6 km, on July 3, 1965 (Lorenzen 1969, p.245).

Some scientists were not impressed, because several 100 nT are normal variations of the geomagnetic field, and the genuine time of correlation with the visual registration could not be confirmed.

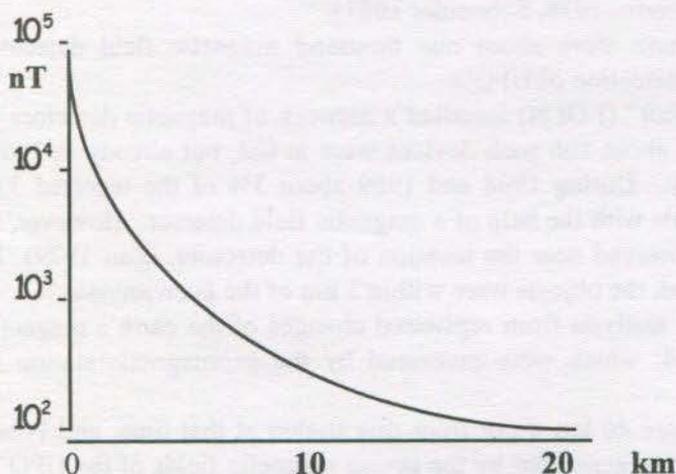
Eruptions of sun spots, magnetic storms and magnetic fields of industrial electrical installations can all produce about 100 nT (Ollier 1974). Tornados, for instance, at a distance of 10 km, generate 15 nT (Condon 1970, p.793). Therefore, the maximum sensitivity of a magnetic detector causes the problem of hypersensitivity, which annoyingly triggers the alarm through natural fluctuations in the Earth's magnetic field, or by disturbances near the instrument. A detector has to be adjusted to settings that could be expected from a UFO. The threshold for an alarm signal has to be higher than 50 nT, and only steep impulses with a certain difference from the foregoing values should trigger an alarm if the same rise of the magnetic field strength is registered in two of three separate channels, independently.

Assuming that some of the UFO's are the sources of strong magnetic fields, one can hope to find a strange object somewhere in the vicinity of the instrument. Based in the experience of some cases where the magnetic field strength of a UFO was measured, the detector should give an alarm if a UFO is less than 20 km away.

* $1 \text{ nT} = 1 \gamma = 10^{-9} \text{ Tesla} = 10^{-5} \text{ Gauss}$

Earth's magnetic field has the value: $0.5 \text{ Gauss} = 50,000 \text{ nT}$

Magnetic Field Strength



Distance of a UFO with a magnetic field of about 1 million Gauss

The magnetic field detector, which was developed by MUFON-CES members (W. Stelzig and H. Lentz), is able to measure the magnetic field in three dimensions. The "Fluxgate" magnetometer consists of a three-directional sensor, an amplifier and a laptop computer. (Figure 9.1)

Alternating magnetic fields (AC fields) can be measured with a simple coil (with or without a ferromagnetic core), and a simple circuit which consists of an amplifier and a rectifier to obtain the magnitude of the magnetic field.

Static magnetic fields (DC fields) or slow by changing fields cannot be measured with simple coils because no current is induced. However, these fields can be measured by rotating the coil or by changing the magnetic permeability of the core, which directly affects the magnetic flux inside the coil.

Rotating a coil requires some mechanical efforts, but the magnetic permeability of a ferromagnetic core can be changed by driving the core into magnetic saturation by an external by applied magnetic field. The only problem is, the field used to saturate the core must not affect the magnetic field to be measured.

Technical data of the magnetometer:

- type: Fluxgate, 3-axis
- physical dimensions, device: 11 , 6 , 17 cm
- physical dimensions, sensor: 8 , 8 , 11 cm
- operating voltage: 12...15 V DC, 250 mA
- Interface: RS232 serial interface
- sensor cable: 6-wire shielded cable, up to 30 m
- range: +/- 100,000 nT
- bandwidth: 0.3 Hz at -3 dB hardware filter plus digital software filter
- noise: +/- 1 nT RMS
- measurements rate: 2 Hz per channel

Software:

- DOS application with built-in multitasking features
- graphical display
- alarm function for rapid changes
- data is stored on disk in a special compressed format (approx. 500 kB per day)
- export of data in ASCII format
- support DCF77 radio-controlled clock for time synchronization
software requirements: DOS 3.3 or above (will NOT run under WINDOWS, OS/2 or other multitasking systems)
- hardware requirements: 80386 or above, >20 MHz
640 kB RAM
VGA card, standard 640x480/16 colors mode
hard disk for data storage
RS232 serial interface (COM1)
printer interface (LPT1) for DCF77 clock (optional)

Two of the Fluxgate magnetometers have been working since August 1995 simultaneously, about 10 m apart near the city of Stuttgart. If a field change of more than 50 nT rises rapidly on two channels in a device, an alarm is activated. Since these meters were deployed on average 1 impulse per day has been displayed. Until now the two devices sometimes simultaneously gave an alarm, but no visual object has been observed yet. (Figure 9.2 and Figure 9.3)

It is planned to install these detectors in regions where UFO's have frequently been detected by radar and where a meteorological observatory is available (for instance, Feldberg in the Black Forest), because the employees of the observatories can control these instruments.

Simultaneously, an automatic recording instrument for optical surveillance of the monitored area is under development. (Figure 9.4 and Figure 9.5) This will enable us to secure correlation's between the registered magnetic fields and the visual observations associated with the unknown flying objects. Fish-eye optics will be utilized for aerial surveillance and a scanner which allows one to recognize the direction from which the light enters the sensor. Two cameras mounted on a swivel tripod will automatically turn to the direction from which the impulse is received. Known bright objects will be canceled through further processing. The recording will be controlled by a PC with frame-grabber or a video-capture board. Frame-grabber permit making savings, nevertheless ensuring good-quality single frames. Video-capture boards require a lot of effort in programming and, by data compressing, artefacts could arise which make it difficult to analyze the data.

The MUFON-CES field investigation team is investigating the possibility of using a frame-grabber combined with a remote-controlled tracking camera and video recorder. The advantage of simultaneous recording of optical and magnetic signals is the automatic registration and the recording of possible UFO's for scientists who do UFO research in their spare time.

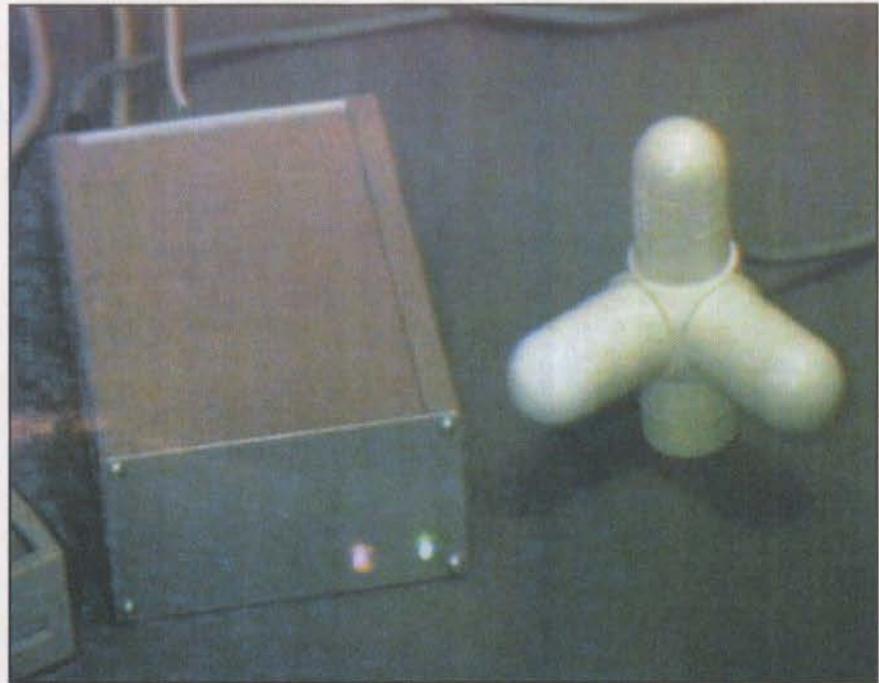
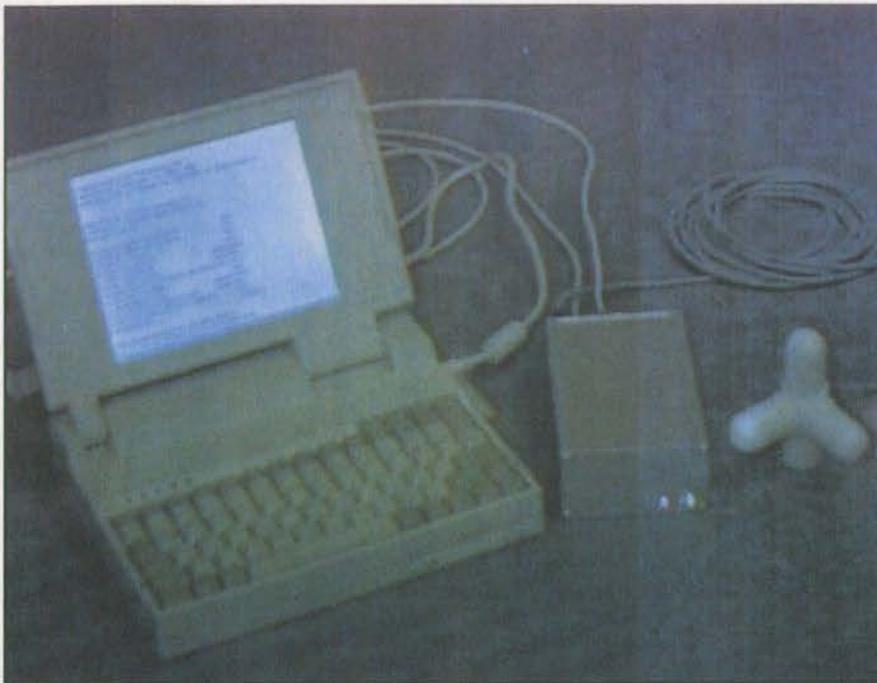
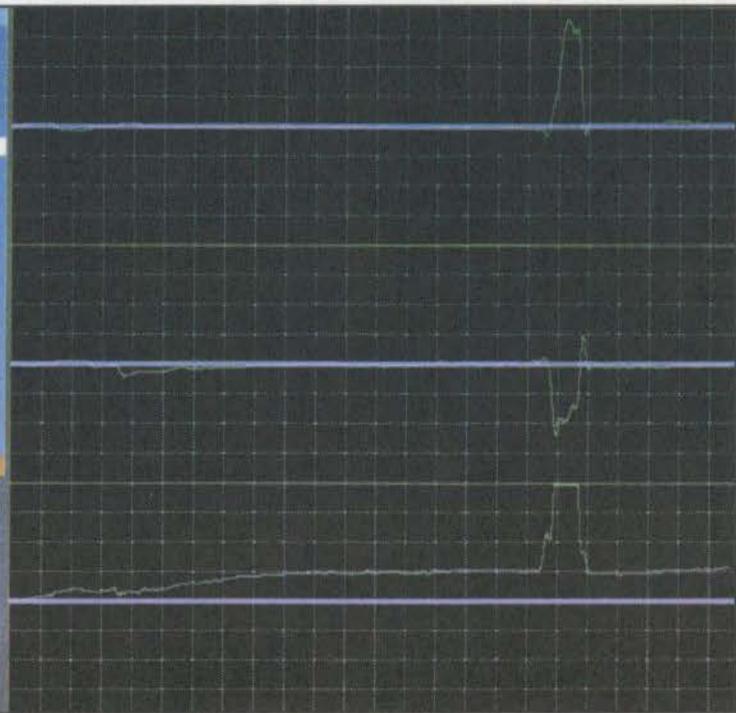


Fig. 9.1: Fluxgate magnetometer consisting of amplifier, sensor and laptop computer



```

Display Menu
Display XZ
Display XY
Display X
Display Y
Display Z
10 sec / div.
30 sec / div.
1 min / div.
5 min / div.
30 min / div.
60 min / div.
50 nT / div.
100 nT / div.
500 nT / div.
1000 nT / div.
5000 nT / div.
10000 nT / div.
To Main Menu
Xref: 797 nT
Yref: -14370 nT
Zref: -37607 nT
Xc: 801 nT
Yc: 14207 nT
Zc: 37550 nT
Alarm: 100 nT
    
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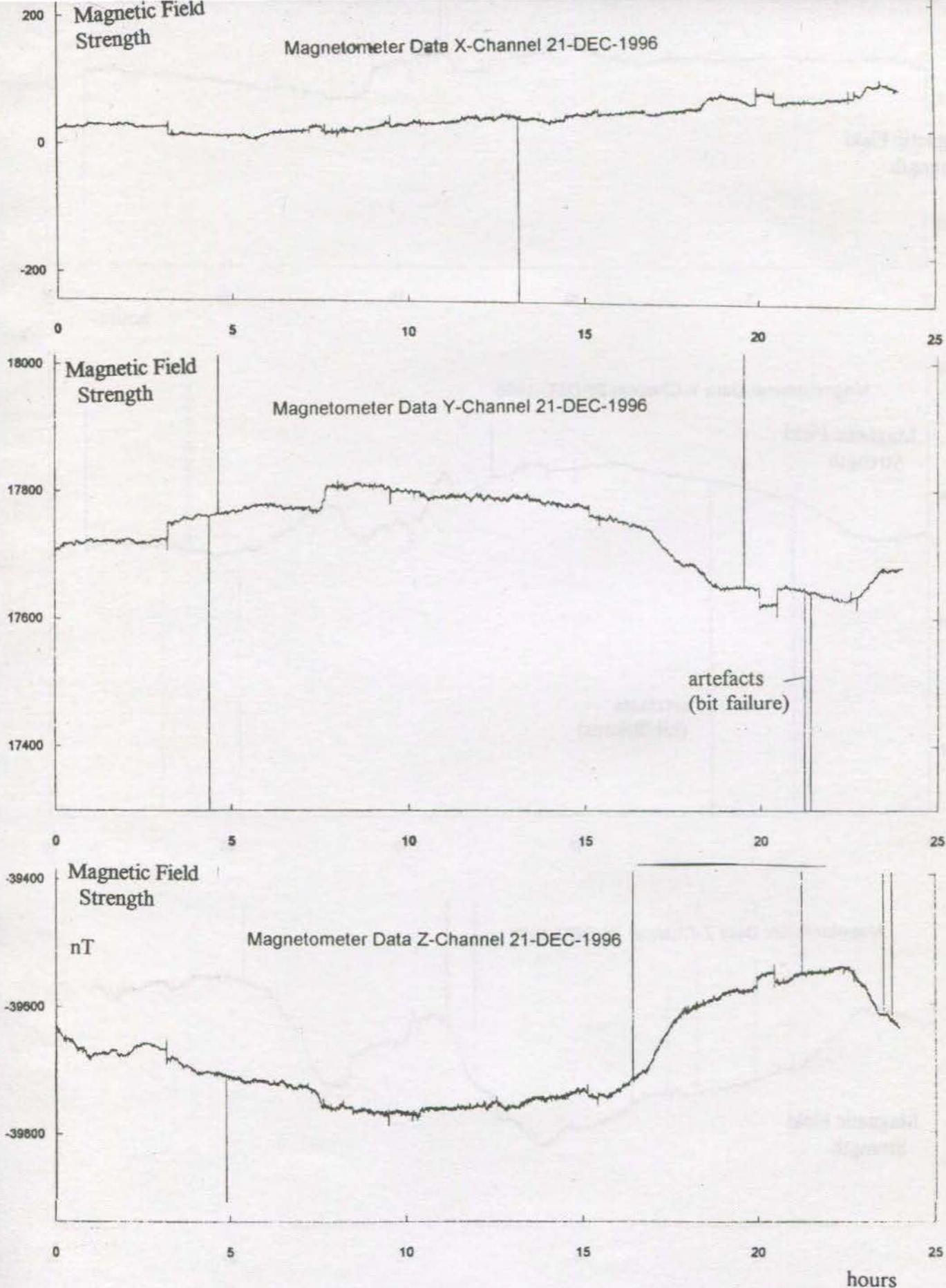


Fig. 9.2: Magnetic field strength in 3 spatial directions (x, y, z) measured during 24 hours on December 21st, 1996

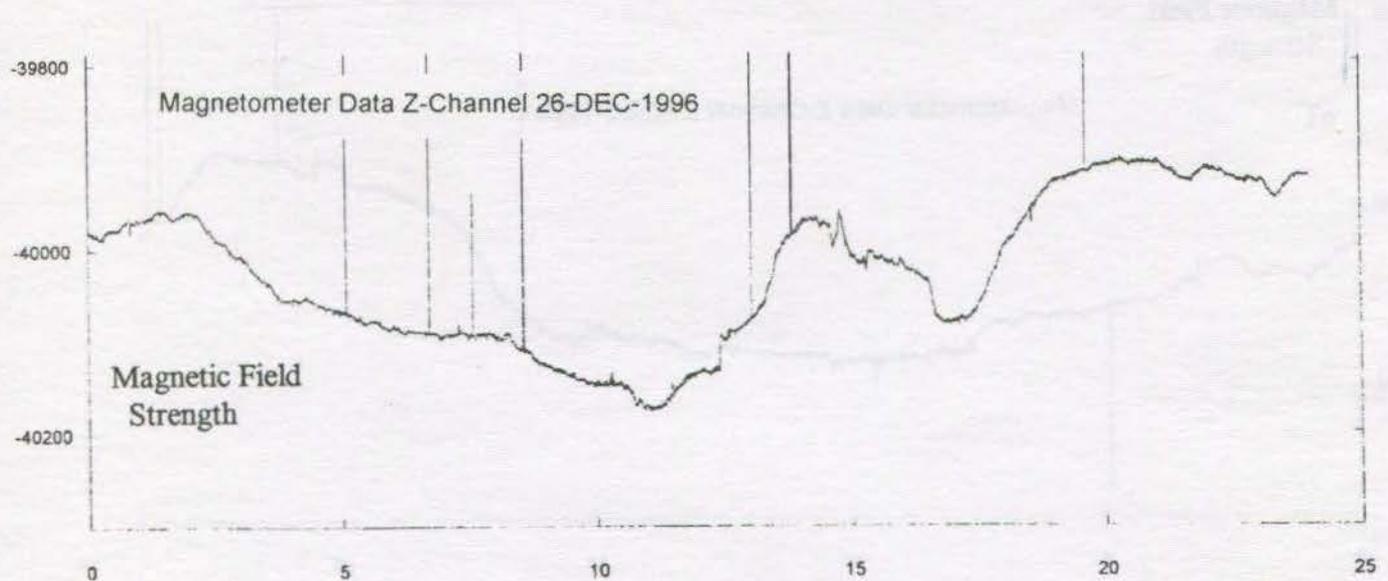
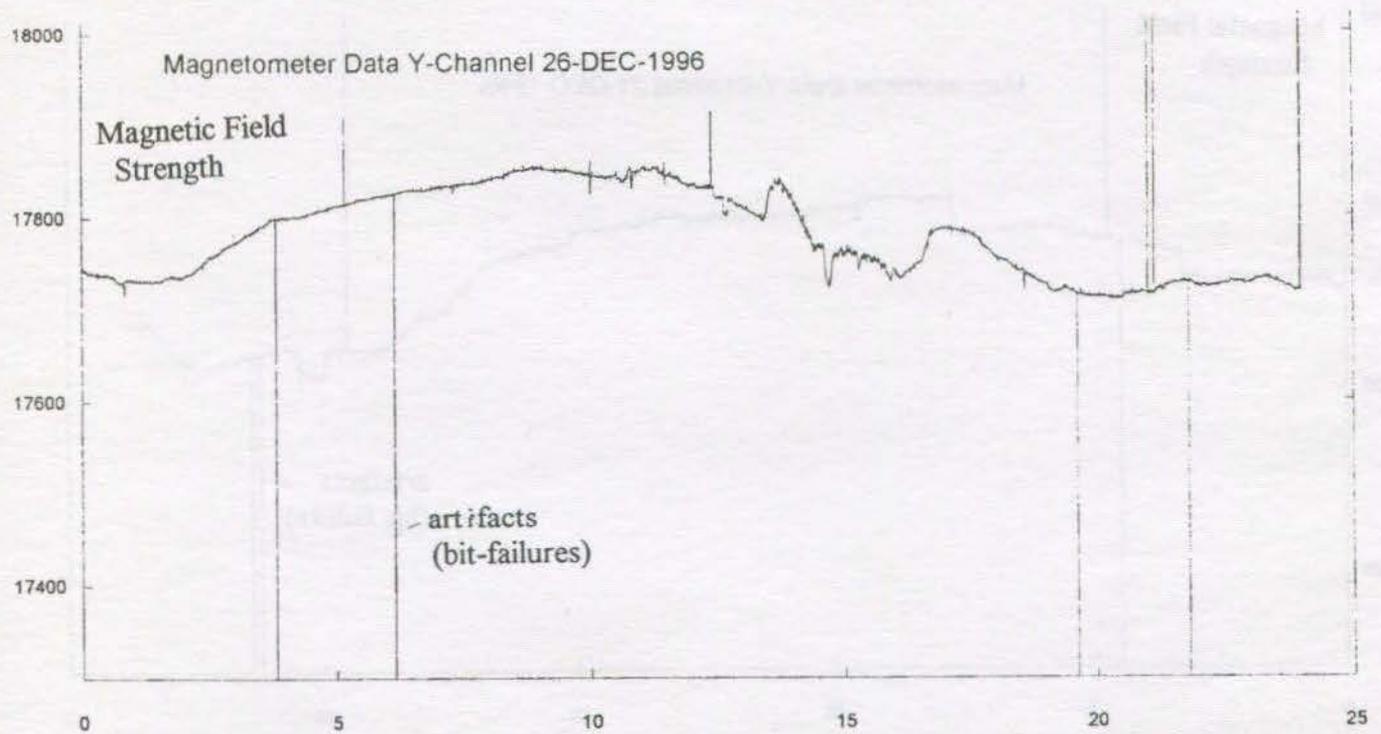
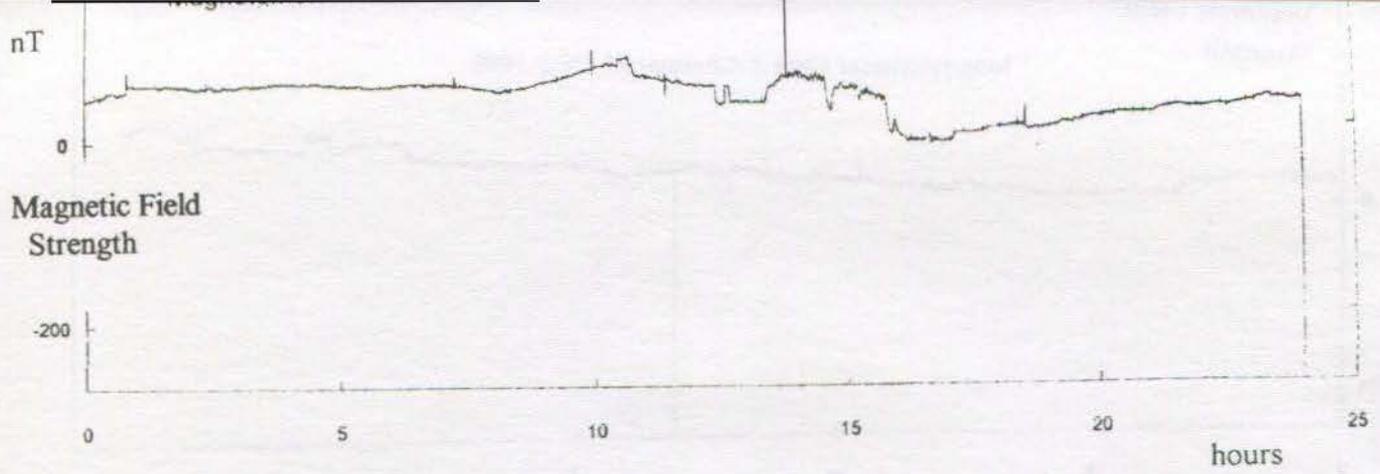


Fig. 9.3 Magnetic field strength in 3 spatial directions (x, y, z) measured during 24 hours on December 26th, 1996



Fig. 9.4: Front view of an optical platform with different video cameras, developed by members of MUFON-CES, 1997

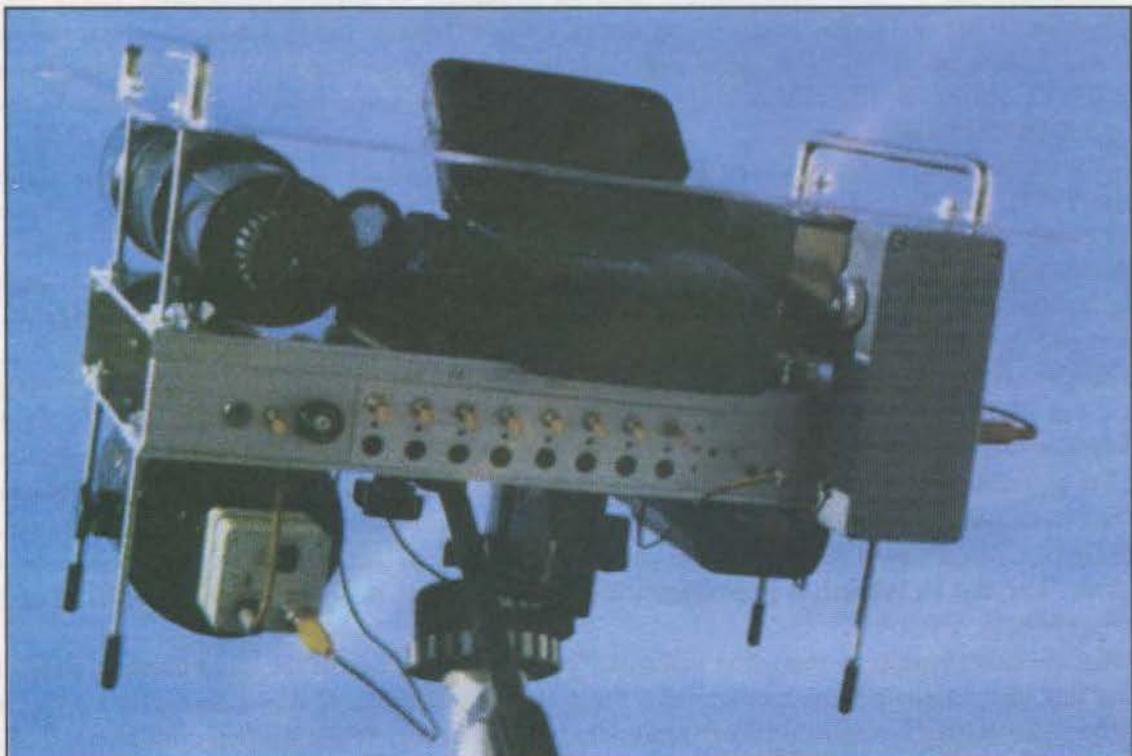


Fig. 9.4: Rear view of the optical platform for taking movies in the dark and at daylight of objects in different distances

10 Physical Interactions Of UFO's On Their Surroundings

10.1 Data Catalogues and Statistical Analyses

If there were officially sponsored research of the UFO phenomena, scientists first of all had to collect as many as possible of the available reports of UFO sightings from books, news papers, journals and other sources. However, since UFO research so far can be carried out only in the spare free time of the interested scientists only a few data catalogues containing special characteristics of that phenomenon have been drawn up or have been published on which the private working researchers are interested.

Since the available data collections are not complete and in some way not very systematic they are not sufficiently for a real scientific investigation in some way. A future sponsored UFO research probably will set up better catalogues.

Well-known are the data catalogue of the Project Blue Book of the Air Force with about 13,000 reports of UFO's in the broader sense, and 600 to 700 reports of UFO's in the stricter sense (Berliner 1976), and the catalogue UFOCAT, first set up by Dr. Saunders at the Colorado University, which now contains more than 100,000 reports of UFO's (i.b.s.) (Merritt 1980). Since in these catalogues identifiable and unidentifiable cases are mixed up they are not suitable for scientific research. In the meantime there are many special data collections from which a scientist can get information on all aspects of the UFO phenomenon. Some of the most essential catalogues with the number of items and year of drawing up are mentioned in Tab.1.

A scientist can inform himself about UFO reports with the highest quality (Smith 1995), about reports coming from astronomers (Sturrock 1977) and from pilots (Haines 1995). There are collections on non-falsifiable UFO photographs (Spaulding), on radar observations (Brauser 1979, Haase 1996) and on the observed shapes of UFO's (Haines 1976, Schneider 1980). Several catalogues contain collections with special characteristics of UFO appearances, such as extremely brightness (Schneider 1983), solid light beams (Bucher 1979) or "angles hair" falling out of UFO's (Manak 1994). Cases in which the witnesses reported interactions of UFO's of any kind with their surroundings are important for answering the question whether UFO's are physically real or only subjectively real, as some uninformed skeptics believe. The actions out from UFO's are various:

There were registered disturbances of electrical devices and of motors of any kind (Lore 1960, Rodeghier 1981), mechanical actions on objects and living beings, heat, coolness, strong magnetic and electrical fields as well as radiation (Schneider 1981 and 1983). Special catalogues contain cases with an UFO-related unusual behavior of animals (Schneider 1983) and human physiological effects (Schuessler 1996, Schneider 1978). These mentioned data collections are the basis for developing theories of a UFO propulsion and therefore indirectly also for the explanation of their origin.

The intents of the UFO occupants can be estimated from the behavior of the objects. The catalogues on UFO landings (Phillips 1985), and on the appearance of the occupants (Bowen 1966, Vallée 1969, Buehler 1975, Ballester-Olmos 1976, Webb 1976, Moravec 1980), therefore, are very important for the researchers.

Reports by witnesses of an abduction are very difficult to judge, since the objectivity of the incident in general can not easily be established and in most cases it can find out only under hypnosis regression. But, since the UFO occupants probably can change the perception faculty of the witnesses one is not sure whether real facts anyway can be related. It is problematical to conclude on the objectivity of details of abductions from statistical data.

A statistical examination of abduction narrative "consistency" is one of the most important objectives in evaluating this phenomenon. In abduction cases there are many aspects of statistical inference that underlie conflicts between subjective and statistical assessments of "chance". When dealing with human behavior, *a priori* probability cannot always be determined from the number of response alone (Appelle 1996). Interpreting the results of the database of abduction claims as proof of real happenings is by no means necessary even if the results were unquestionably beyond chance.

There's a lack of collected reports on abductions which were confirmed by measurements of radar and/or photo and movie protocols to prove the physical reality of abductions by UFO's. Cases in which an abduction could be independently witnessed (Walton 1978, Hopkins 1996, Basterfield 1995) are very convincing but they are in no way a scientific evidence.

Unfortunately there are no data collections on correlation between UFO-related actions and UFO shapes. Therefore, for instance, one can not know which kind of interactions are coming from a special type of UFO (i.e. which object type emanates solid lights or dangerous radiation and which objects are surrounded by strong magnetic fields?). One can also not say which type of object is occupied by which type of beings. Triangular objects don't carry any occupants, don't seem to land (one known exception, see Aschacha 1995) and seem to be invisible on radar (because of their stealthy shape). But the statistical material is not yet sufficient for any statements.

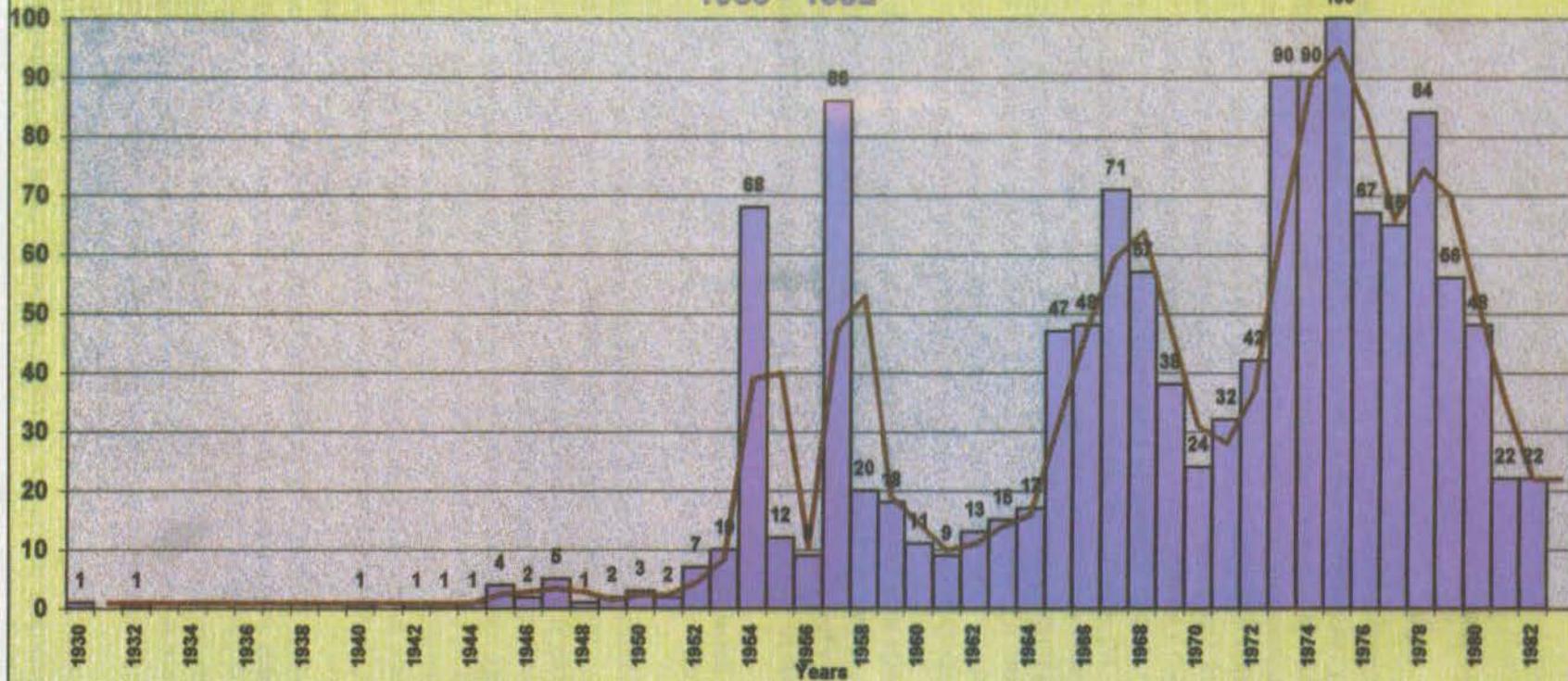
Since the main stream science don't know paranormal phenomena databases on UFO-related paranormal actions will not taken for scientific analyses. But reality is not ever what science accepts as real. As a first step a scientist should be concerned with the core of the UFO phenomenon, and that consists of physical interactions (Brand 1975). Since these effects hardly are pretended by the strange intelligence in the UFO's the database on their physical effects can be considered as hard facts. Therefore, MUFON-CES members set their effort in creating a database with electromagnetic and gravitational (EMG) effects. The coding came after a concept by Luis Schoenherr (1974) with the name CODAP (Computer Documentation of Anomalous Phenomena). The last items were carried out in 1983 (Schneider 1983). An up-dating is planned by MUFON-CES members. (At the moment shapes of UFO's are constructed in a 3-dimensional form in a PC for each report from Germany).

An analysis of EMG-cases from that database, for example, leads to the conclusion, that for the development of any theory about the UFO propulsion the following characteristics must be taken into consideration:

1. electromagnetic interference (i.e. car stops and disturbances of electrical installations)
2. mechanical effects (i.e. levitation of objects in the surroundings of UFO's)
3. physiological effects (i.e. paralysis, sunburn prickling sensation)
4. cold effects (if they will not be overlapped by secondary heat effects)

Point 4 means that theoretical formulations like a magneto-hydrodynamic-device (MHD) as a possible propulsion for UFO's is not sufficient for many types of UFO's. In today's physics there is no way for explaining a generation of cold by physical fields or radiation. To our knowledge the only theory which predicts such an appearance of cold is the unified field theory by Burkhard Heim (see Chapter 11). In this theory cold arises if matter will interact with gravitational waves. In contrast to interactions with electromagnetic radiation which leads to an increase of entropy (as well as temperature and disorder) gravitational interactions should lead to a decrease of entropy and an increase of order and a dropping of temperature. The fact that in the surrounding of a UFO only seldom a cooling effect was registered but more frequently enormous heat probably is a consequence of the secondary produced radiation of microwaves. If gravitational waves would be emitted by the surface of an unknown object, they must have the form of saw tooth's or pulses, because only such shocks could ionized the surrounding air and can stipulate the atoms to shine as bright as is observed (Beck 1977). Simultaneous the free electrons swing with the frequency of the gravitational wave and generate by their swinging in step microwaves. These microwave radiation produces a temperature which effect is higher than that of the gravitational radiation.

Number of EMG Cases 1930 - 1982

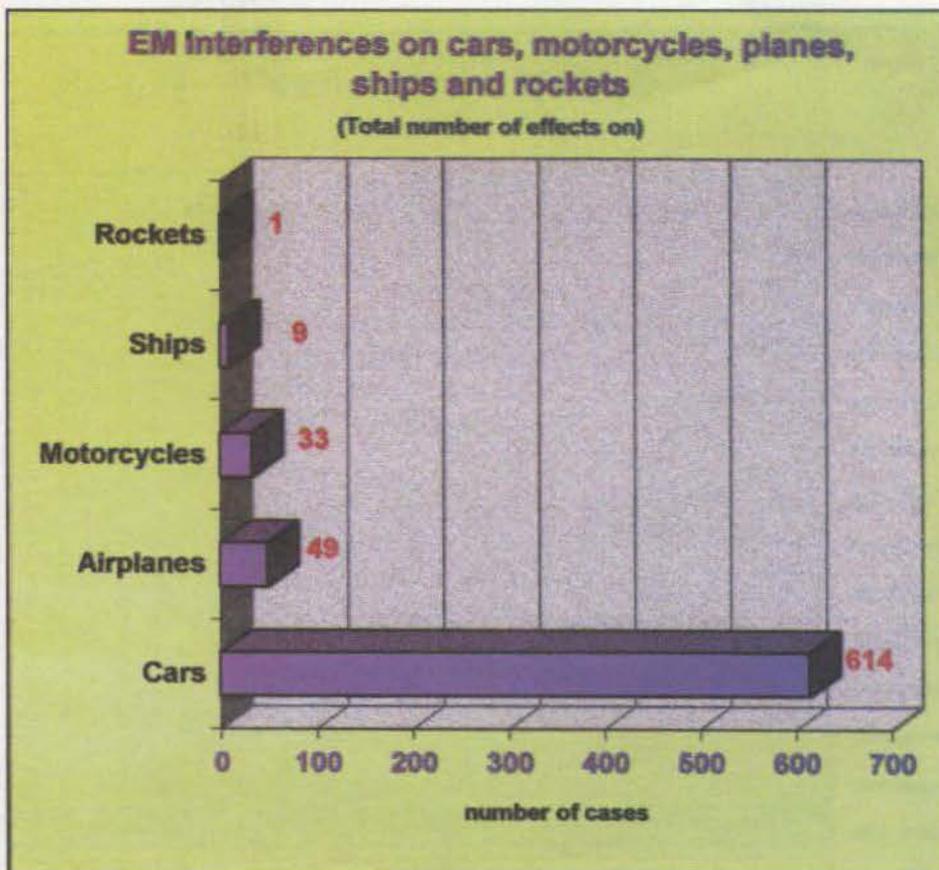


Catalogue of 1319 UFO Cases

where electromagnetic and gravity effects were recorded.

The reports span 52 years from 1930 to 1982

They are coded according to CODAP II and have been compiled by Adolf Schneider



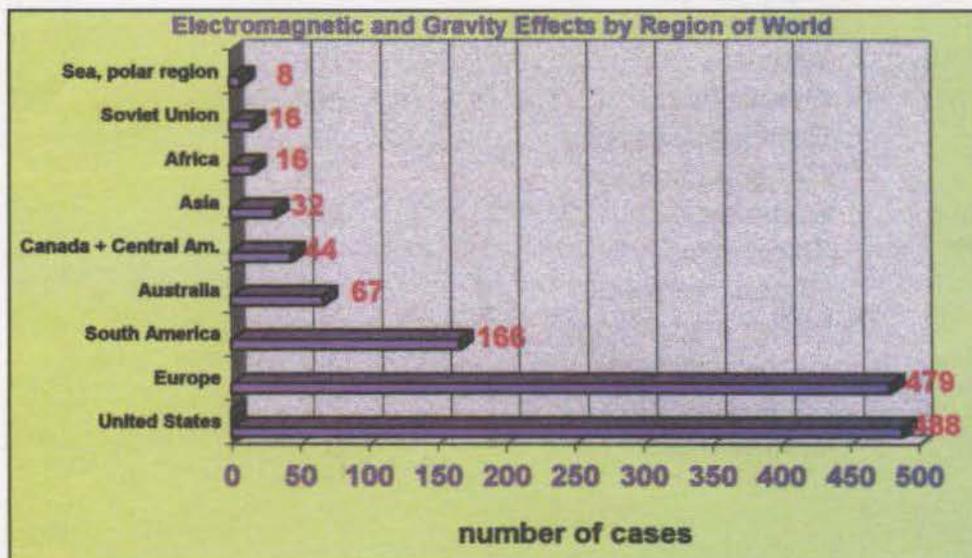
Total number of effects on

number of cases

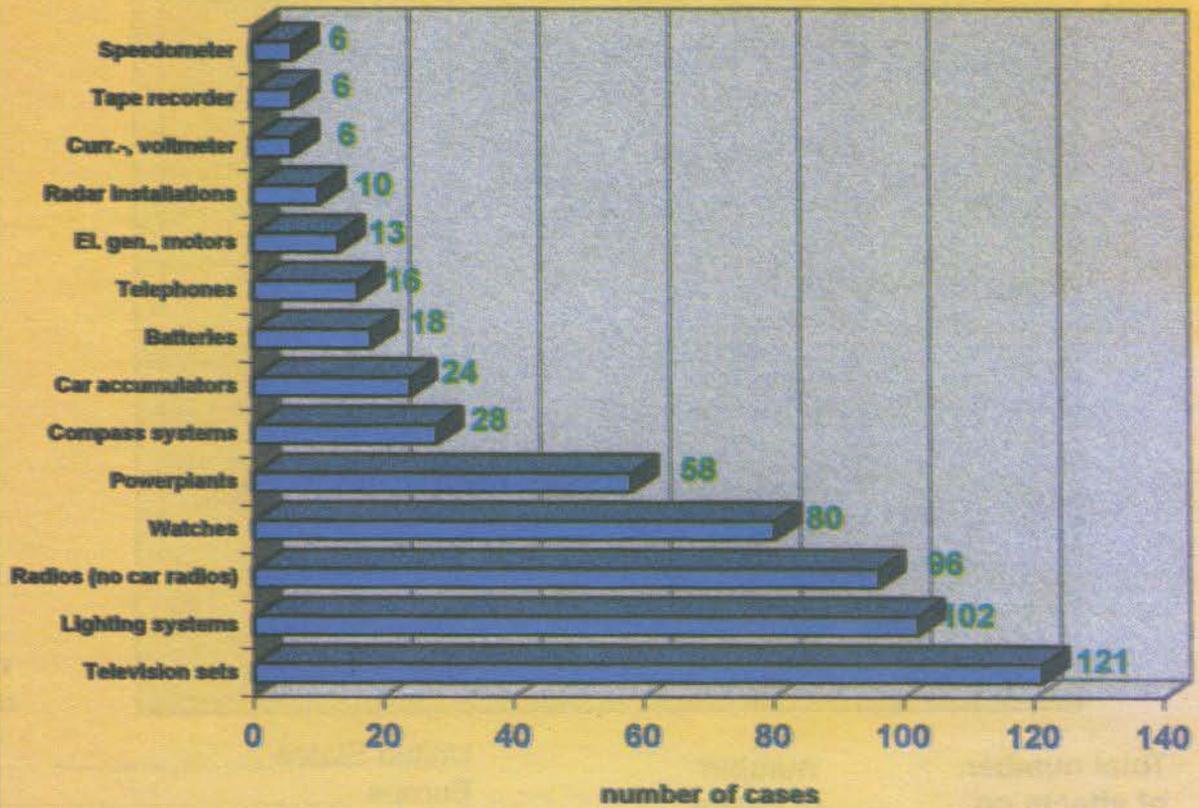
Cars	614
Airplanes	49
Motorcycles	33
Ships	9
Rockets	1

United States	488
Europe	479
South America	166
Australia	67
Canada + Central Am.	44
Asia	32
Africa	16
Soviet Union	16
Sea, Polar Region	8

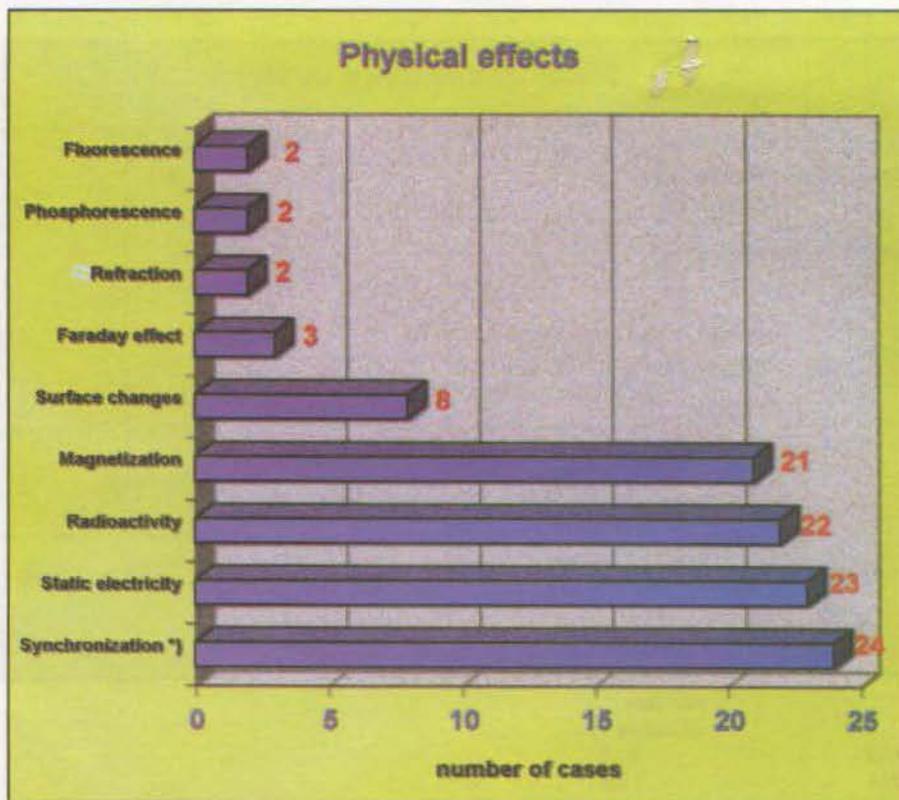
number of cases



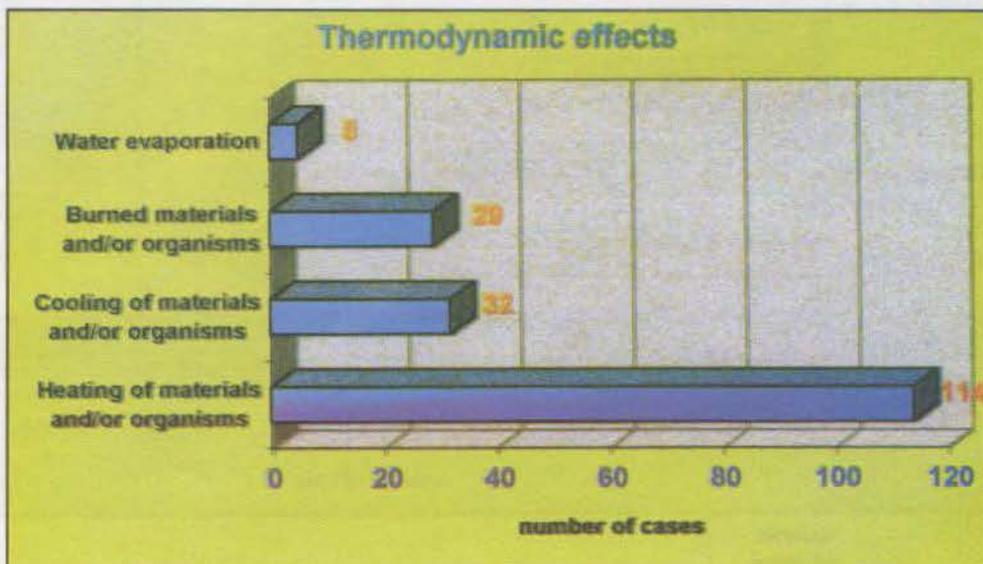
General Interferences

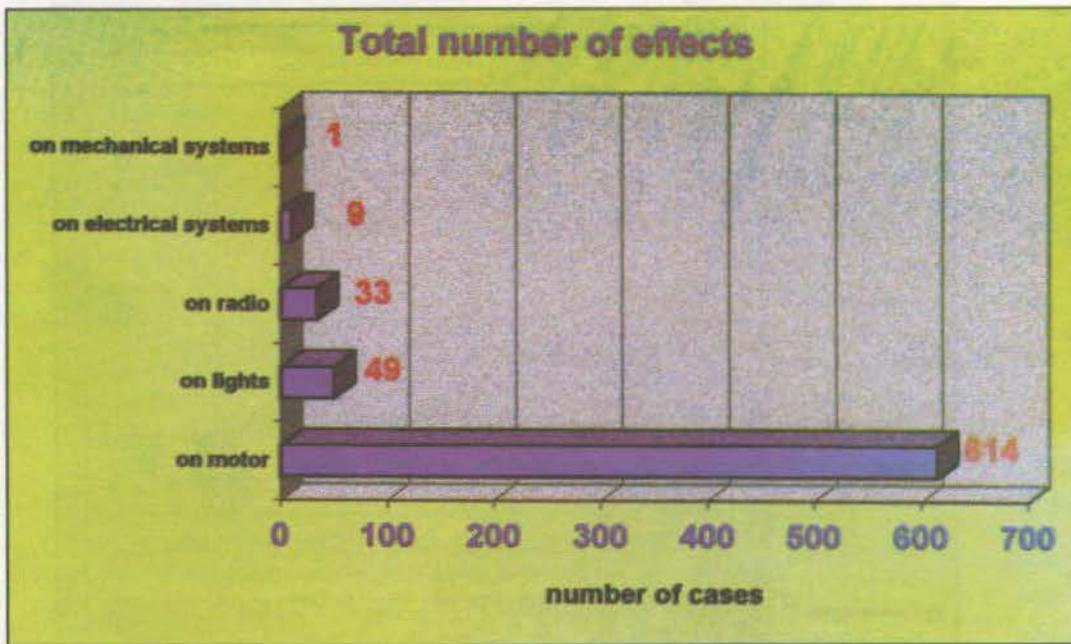


	number of cases
Television sets	121
Lighting systems	102
Radios (no car radios)	96
Watches	80
Powerplants	58
Compass systems	28
Car accumulators	24
Batteries	18
Telephones	16
El. gen., motors	13
Radar Installations	10
Curr., voltmeter	6
Tape recorder	6
Speedometer	6

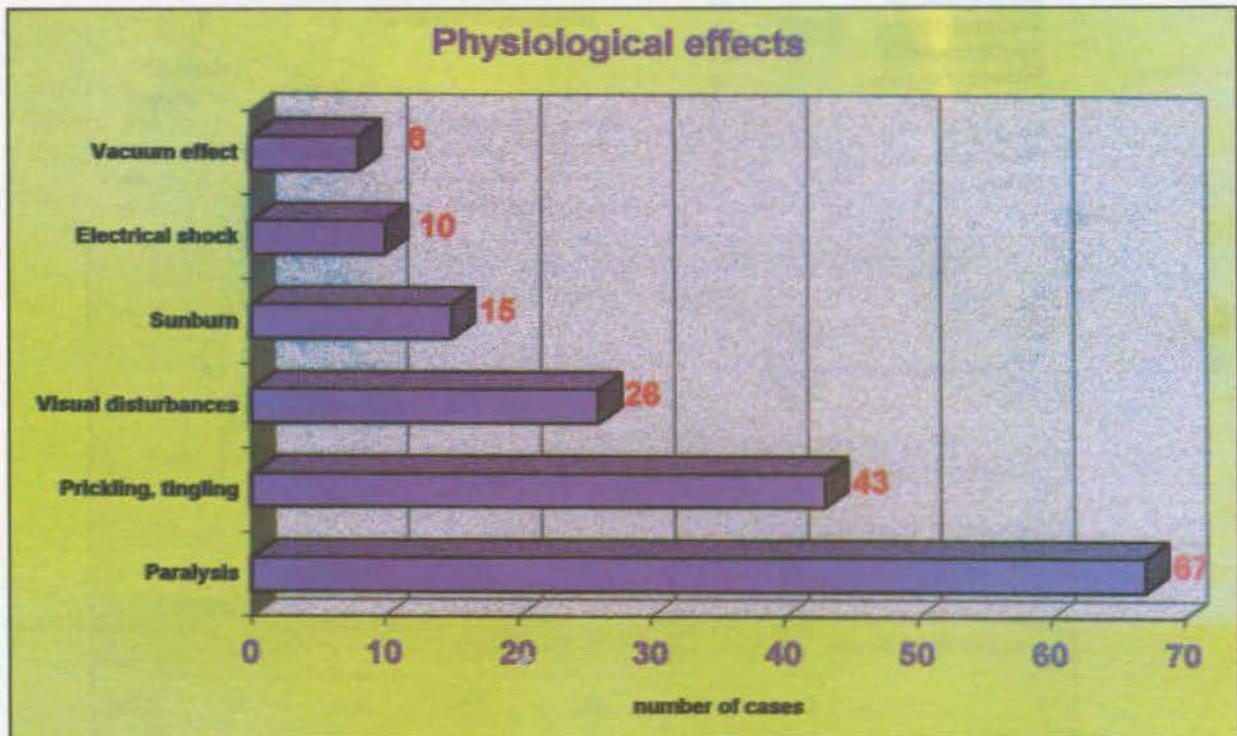


Synchronization *)	number of cases	24	*) that means, for example, changes to the behavior of electrical devices synchronously with variations of the brightness of the UFO	
Static electricity	23			
Radioactivity	22			
Magnetization	21			
Surface changes	8			
Faraday effect	3			
Refraction	2			
Phosphorescence	2			
Fluorescence	2			
			number of cases	
			Heating of materials and/or organisms	114
			Cooling of materials and/or organisms	32
			Burned materials and/or organisms	29
			Water evaporation	5



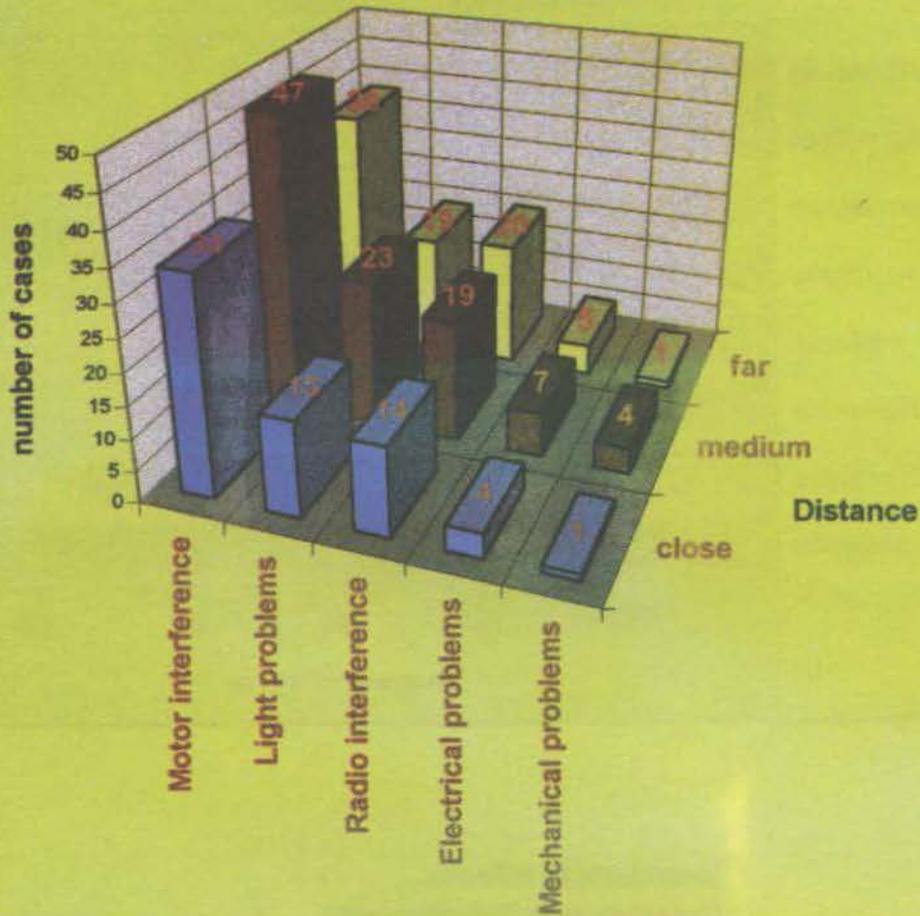


	number of cases
on motor	614
on lights	49
on radio	33
on electrical systems	9
on mechanical systems	1



	number of cases
Paralysis	67
Prickling, tingling	43
Visual disturbances	26
Sunburn	15
Electrical shock	10
Vacuum effect	8

The effects of distance due to EM-interference on motorized vehicles



The effects of distance due to EM-interference on motorized vehicles

Category 1: Close

refers to distances less than 30 m

Category 2: Medium

refers to distances from 30 to 120 m

Category 3: Far

refers to distances beyond 120 m

Reference: Donald A. Johnson

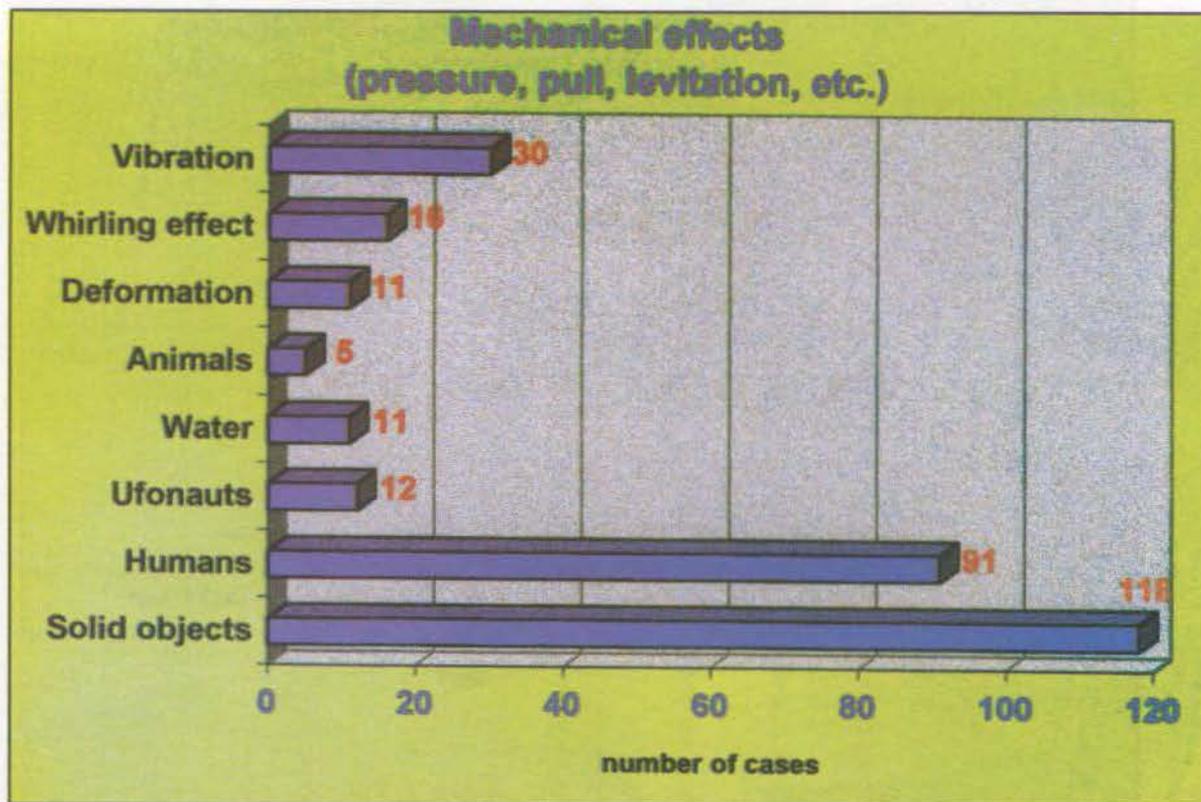
The effects of position and distance in UFO ignition-interference cases

Published by:

Journal for UFO Studies Vol. III 1983

Motor interference
 Light problems
 Radio interference
 Electrical problems
 Mechanical problems

	close	medium	far
Motor interference	34	47	38
Light problems	15	23	19
Radio interference	14	19	20
Electrical problems	4	7	5
Mechanical problems	1	4	1



Mechanical effects (pressure, pull, levitation, etc.)

	number of cases
Solid objects	118
Humans	91
Ufonauts	12
Water	11
Animals	5
Deformation	11
Whirling effect	16
Vibration	30

UFO Data Catalogues

UFO Data Collections	Author (Source)	Project	Number of items	Year of publication	Update planned ?	
<u>General Observations</u>						
	Davidson	(54)	Battelle M.I.	4000	1956	no
	Berliner	(6)	Blue Book	600	1976	no
	Merritt	(28)	UFOCAT	>100,000	1981	?
(CE-I)	Gross	(16)	1943-47	109	1974	no
	Liljegren	(53)	SCANCAT	1700	1987	?
	Phillips	(33)	1947	850	1967	no
	Gross	(17)	1947-50		March 1990	no
	Gross	(18)	1950-52		Dec. 1990	no
	Ohlsen	(32)	UFOIRC	160	1966	?
	Vallée, J. & J.	(56)	BAVIC	500	1966	no
	Gindilis, etc.	(15)	USSR	416	1980	no
	Ferrughelli	(4)	1986-94	1955	1994	yes
	Hall	(23)	NICAP	640	1964	no
	Winkler	(50)	astro/meteo	575	1984	no
	Brand (v.L.)	(7)	17 th -19 th centuries	16	1977	no
	Hatch	(55)	*U*	15,000	1997	yes
<u>Special Observations</u>						
Richest cases	Smith	(43)	UNICAT	850	1995	yes
1954 flap in France	Michél	(29)	1954	>370	1958	no
Extremely bright objects	Schneider	(39)	MUFON-CES	85	1983	no
Groups of objects	Haines	(22)	Formations	230	1994	yes
Sightings by astronomers	Sturrock	(46)	SUIPR-618R	65	1977	no
Sightings by pilots	Haines	(20)	Pilots	>3500	1995	yes
<u>Registrations</u>						
Photographs	Spaulding	(44)	GSW	>600	1978	yes
Radar plots	Brauser	(10)	MUFON-CES	>20	1979	no
	Haas	(20)	MUFON-CES	>100	1996	no
<u>Special Characteristics</u>						
UFO shapes	Haines	(21)	UFO shapes	>300	1976	?
	Schneider	(37)	MUFON-CES	448	1980	no
	v.Ludwiger	(26)	MUFON-CES	170	1996	yes
Solid lights	Bucher	(11)	MUFON-CES	150	1979	no
Angel's hair	Manak	(27)	UAPA	65	1994	?
<u>Actions of UFO's (CE-II)</u>						
Electromagnetic effects	Lore	(25)	NICAP	82	1969	no
	Schneider	(40)	MUFON-CES	1319	1983	yes
	Rodeghier	(35)	Car interferences	140	1981	?
Physiological effects	Schneider	(38)	MUFON-CES	170	1978	no
Medical injury cases	Schuessler	(42)	Injury cases	400	1996	yes
UFO healings	Dennett	(52)	Healing cases	105	1996	?
Unusual animal behavior	Schneider	(38)	MUFON-CES	552	1983	no

UFO Data Catalogues

UFO Data Collections planned ?	Author (Source)	Project	Number	Year of	Update of items	publication
<u>Landing Cases</u>						
(CE-III)	Phillips	(34) Traces	2677	1985		no
	Vallée	(47) Landings	923	1969		no
<u>UFO Occupants</u>						
(CE-III)	Ballester-O.	(3) CE III-cases		200	1976	no
	Bowen	(7) Occupants		300	1966	no
	Webb	(49) Humanoids		66	1976	no
	Moravec	(30) Humanoids		72	1980	no
	Buehler	(12) Humanoids		40	1975	no
<u>Abductions (CE-IV)</u>						
USA	Bullard (13)	Abductions	252	1987		?
USA	Wright (51)	Transcription	>300	1955		yes
Other countries	Brand (9)	Hypno-therapists	85	1967		no
<u>Paranormal UFO Effects</u>						
(CE-V)	Moravec	(31) PSIUFOCAT	88	1982		?
	Haines (57)	CE-V-Cases	230	1997		yes

10.2 Two Electromagnetic Interferences With The Same Car, In Denmark

The police officer Evald Hansen Maarup had a UFO observation that was widely reported by the Danish press and in the journals of foreign UFO organizations. On August 13, 1970, Mr. Maarup was driving home and had just turned off the main road onto a secondary road near Hadersley, Denmark. At 10:50 p.m. he had been driving about 10 km when his police car was suddenly surrounded by a bright bluish-white light. The car engine stopped, the lights of the car and the dashboard lights went out as well. The bright neon-like light of the object was so dazzling that officer Maarup could not see anything. He shielded his eyes with his arm to protect them against the light. When he reached for the microphone and tried to call the station, Maarup noticed that the radio was just as dead as all of the other electrical parts of his car. Not a sound could be heard.

Inside the car the temperature was increasing and it became pleasantly hot. After a while the conical light started rising. Its diameter at the bottom was about 4-5 meters. Officer Maarup stepped out of the car and could see that the light cone ended at the bottom of a big gray disc about 10 m in diameter, which was hovering about 20 m above his car. The object had 2 domes on the underside, about 1.5 m in diameter. After a few seconds the light beam was drawn into the object, like a solid light. It took about 5 minutes for the light to be drawn up into the hole with a diameter of almost one meter. The object started moving vertically into the air and vanished in a few seconds.

When the object moved away, all lights in the car came on again. The car started normally and the officer got in touch with his station to report to his colleagues what he had experienced.

Before Mr. Maarup stepped out of the car he took three pictures with the fastened camera of the patrol car. When his film had been developed the next day, and officer Maarup saw that he had captured an image, he took it to Skrydstrup Air Force base. The story got out because a colleague of officer Maarup informed the press. By the following evening Mr. Maarup was being questioned both by the military and by journalists.

It was announced that the photographs had been passed on to Defense Command at Vedbaek. The first 3 pictures indicate a spot of light while the other showed the illuminated road. Air Force Major Hellden of the Flyvertakisk Kommando (= Air Tactical Command), stated that what Maarup had seen was the landing light of a T-33 jet trainer. The press officer of the Air Force, Major Brons-Hausen, stated:

The Air Force does not recognize the existence of unidentified flying objects. But on the other hand, over the years we have received a number of observation reports in which we were not able to say what was seen. We have the greatest confidence in the police officer. He is a trained observer, and we do not seek in any way to dismiss this kind of observation. We are looking for an explanation, and already we can say for sure that no Air Force aircraft was responsible.

The Air Force investigation was finally closed on November 6, 1970, in inconclusive fashion. Though it could not explain what it was, it was confident it had nothing to do with UFO's! (UFO-NYT 1970, 1974; FSR 1970).

About a month after the sighting, according to a newspaper, a young woman told at a UFO meeting, that her husband, an Air Force radar operator, had been on duty the night of the sighting, and that a UFO had been tracked that night over a very long period of time.

Officer Maarup had learned a lesson: "One thing my sighting taught me; to keep my mouth shut. No way would I want to go through that brainwashing again. Can you imagine what it's like, telling the same story over and over again, answering questions from journalists and military investigators who than change your story to suit their book..."

But unbelievable and unexpected as it is, officer Maarup had the same encounter in the same place nearly on the same day, August 14, at the same time, at 10:50 p.m., three years later (1973)!

Again he was driving in a patrol car. About 6 km north of Haderley he turned east along a secondary road when he became aware of an intense light over the field north of the road. The light beam from the air lighted up a herd of cattle, and a couple of horses, and moved swiftly to the road. Mr. Maarup was bringing his car to a stop. The light approached slanting from the north. The object tilted about 45° and staged in front of the car in a slanting position. When the car was caught in the light the car lights went out. The object

tilted 45° to the opposite direction. Officer Maarup took 4 photos with his automatic camera. But unfortunately all show only a spot of light, no details.

Maarup could see that the steel-gray object was 15 m in diameter and had 3 large domes protruding from the bottom. As the object tilted he saw a low domed superstructure with rectangular brightly lit up windows all the way around.

The object gave a whistling sound "like a strong gust of wind in trees" as it disappeared at enormous speed. The entire sighting lasted about 5 minutes.

Would the object demonstrate to a witness that it can jump over a period of time nearly in the same place? Or did the occupants of this object make a jump in time, three years further, not knowing that the same witness was coming on the same road?

10.3 Physical Effects After A UFO Landing In Trans-En-Provence, France

To illustrate the meaning of an EMG-case, also called "close encounter of the second kind" (CE-II), two of the best investigated cases are described below.

A case with analyzed physical traces which is perhaps the most significant investigation ever undertaken of a single UFO report, happened on January 8, 1981, near the village Trans-en-Provence, 3 km south of Draguignan. This case has been investigated by France's official UFO-investigation agency: Study Group for Unidentified Aerospace Phenomena GEPAN (Group d'Etudes des Phénomènes Aérospatiaux Non Identifiés) in Toulouse. This organization is a section of the Centre National d'Etudes Spatiales (CNES), the French equivalent of America's NASA. Eighteen full investigations have been conducted, each published in a monograph titled *Technical Note*, resulting in three cases for which no explanation could be found. The last *Technical Note* appeared in 1983. The most impressive and evidential case was the landing-case at Trans-en-Provence (Technical Note No.16, CNES, 1983).

The old farmer, Renato Nicolai, was working around 5 p.m. in his garden near the village of Trans-en-Provence. His house is located closed to several other ones near a wooded hill on the edge of a valley. When he heard an unusual whistling sound, he looked up and saw an object just above the pine trees. While the object came down, Mr. Nicolai was about 30 m away. When the object came to rest on the ground Mr. Nicolai could clearly see its form:

The ship was in the form of two saucers upside down, one against the other. It must have been just about 1.5 meters high. It was the color of lead. The ship had a border or type of brace around its circumference... Under the machine I saw two kinds of round pieces as it was lifting off... There were also two other circles which looked like trapdoors. Two legs, or support columns, extended about 20 cm below the body of the object...

The object was about 3 m in diameters. It lifted off after about 30-40 seconds on the ground, still emitting a slight whistling sound. After reaching a point just above the trees, the object departed at high speed towards the forest of Trans, in a northwesterly direction. Mr. Nicolai remembered:

When the device lifted off I saw four openings below...The device kicked off a little dust when it left the ground... When I went to the spot I noticed a circle, about 2 m in diameter. At certain places along the circumference of the circle were traces like abrasions.

Mrs. Nicolai and his neighbors advised the witness to call the Gendarmerie. Mr. Nicolai thought, that the object "was probably a military device, there are some nearby." The day after the sighting the Gendarmerie from Draguignan came to investigate. The officers took soil samples, both from within the circles and outside of it, the latter intended to serve as a control.

On January 12th members of the GEPAN learned of the incident and conducted its own on-site inquiries the following months. Their investigators concluded Nicolai was telling the truth. They also discovered that the term "UFO" meant nothing to him.

The soil samples were analyzed at the SNEAP laboratory in Boussens, as well as at Toulouse University, Metz University, the *Laboratoire d'Analyses Physiques* based in Pau and in the Ranguel laboratory. GEPAN concluded (Velasco 1990):

We were able to show in a quantitative fashion that a large-size event had indeed occurred, triggering mechanical deformations, heating, and perhaps even the depositing of trace materials. Possible

interpretations (shock, friction) remain too vague for us to conclude that they absolutely verify the testimony of the witness.

Samples of plants were taken to a leading specialist in plant traumatology, botanist and mathematician Professor Michael Bounias of the *Institut National de la Recherche Agronomique*, in Avignon. Initial study of the samples suggested interesting effects on the plant life. Michael Bounias conducted an extensive investigation over the next two years. The results were published in a 65 page paper by GEPAN (CNES 1983).

Bounias got plant samples of a wild strain of alfalfa, *Medicago minima*, which were found inside, on the trace, and throughout the surrounding area of landing. Four days after the UFO-observation, the first samples were collected by the local police. Some on the border of the trace, and another at a point about 20 m away, to be used as a control sample. On February 17th, 1981, 40 days after the sighting, the trace was still visible, and GEPAN took a new series of eight samples of vegetation. A last batch of samples were then collected two years later, in February 1983.

The results can be summarized as follows:

1. The chlorophyll pigment in the leaf samples was weakened from 30 % to 50 %.
2. The most striking differences appear in photosynthetic pigments, which exhibit the largest susceptibility to the phenomenon. The level of photosynthetic pigments decreased in all samples collected on Jan. 12th and Feb. 17, 1981 near the epicenter.
3. The young leaves "withstood the most serious losses, evolving toward the content and composition characteristics of old leaves." The leaves had aged in some way.

Bounias (1990) wrote:

Since no direct evidence of traumatism by contact (such as burning, charring, or visible damage on leaves) could be found, and some of the major alterations occurred in the samples situated nearer the epicenter (of the landing place), this may suggest the hypothesis that the observed effects are due to an energy source whose effects would decrease as a reverse function of distance (i.e., a radioactive source)...Since chemical sources could hardly explain such a strong remaining effect after almost two months, the hypothesis of a wavy radioactive source remains the more likely, since electromagnetic impulses are able to generate delayed responses.

It was speculated that the ring-like traces which were found on the ground were not left by the unknown object but were produced by the wheels of a tractor maneuvering on the site. Such drilling work should have involved the use of substances like cement in powder form as well as baryte, batonite, and a lubricating product called "foramousse" which could also have affected the plants. Therefore Bounias, Vallée and others reopened the investigation in 1988. Soil samples taken at the surface and below the surface in 1981 were re-analyzed.

It was found that the surface sample only differed from the depth sample in the presence of biological material (plants and insects) on the surface. None of the compounds (such as cement) cited as possible causes for the changes noted in the plants were found in the soil by careful microscopic and physical analysis (Vallée 1990)

The member of CNES, Jean-Jacques Velasco (1990), stated:

"These analyses led to the conclusion that a significant physical phenomenon had indeed interacted with the environment at the site, producing abrasions, thermal impact and unexplained effects on plants."

The group director of GEPAN, Alain Esterle, remarked (Clark 1990):

"For the first time we have found a combination of factors which induce us to accept that something similar to what the eyewitness has described actually did take place there."

But the government organization *Societe d'Enquete et de Recherche sur les Phenomenes Aeronautiques Non-Identifies* (SERPA) was not convinced by these investigations. Its members tried to find evidence that the investigators used wrong methods or drew false conclusions (Figuet 1995). Bounias and Vallée proposed that the critique should be made public in a scientific journal such as the *Journal of Scientific Exploration* as

a forum. But since 1995 no member from SERPA put forward any reasonable argumentation against the results of the investigations by Bounias and Vallée in any scientific journal.

No-one can totally exclude the possibility of an application of a new military Unmanned Aerial Vehicle (UAV), which either came from the military base of the Americans in Dragignan or from the French military testing ground in Canjouères (about 20 km north of Trans-en-Provence).

But this explanation is highly unlikely, since to date UAVs are not soundless, like the object in Trans-en-Provence. The only known possibility which experts know concerning the construction of UAVs is the application of rotor blades or propellers and wings in small bodies, as small as 10 cm up to 8 m (wing-to-wing). Other constructions were so untypical in 1981 that an object of this type would have had to be tested completely in a military test area, but not in the uncontrolled landscape.

It should be mentioned that the investigation, which required a two year analysis, was very expensive. Private UFO organizations could hardly pay for an investigation like this one, which was done by GEPAN. But, there is another report from a biologist who investigated living organisms on landing places. Professor Simakow from Moscow reported (1995) that he had investigated ten spots in Russia where UFO landings had been observed. The landing area was divided into a chequered pattern. He took a soil sample from each of the 20 x 20 cm² squares. In each single probe the number of living bacteria was counted. Juri Simakow found in every landing area a typical pattern - in spiral form - soil bacteria were nearly reduced to zero. These patterns were also visible in probes which were taken 10 years later (Simakow 1995).

Similar looking objects like the one in Trans-en-Provence, with a diameter of 2-3 m, have frequently been observed. For example, on August 4, 1996, Illobrand von Ludwiger was called by a pilot via radio transmitter at 6:12 p.m. The pilot reported that he was in the Taunus region and had just observed together with his wife a small metallic shimmering round object, flying only 3 meters above the pine trees in a easterly direction. The object was 1.5 to 2 m in diameter and not more than 250 meters away. It slowly descended with a constant speed of about 50 km/h and disappeared in a valley. One minute later it appeared again in the west. It was still moving at the same speed. After a few seconds it rose up vertically and vanished into the clouds at an altitude of about 5000 ft. No sound was heard and no intention of the object could be detected. (Figure 10.3)

11 Hypotheses About The Origin Of UFO's

11.1 General Remarks

Ever since the first appearance in modern times of "flying saucers" in the skies above Mt. Rainer the question of their origin has been a subject of debate for the general public and UFO researchers alike. The strange maneuvers performed by UFO's in the air at high speeds soon made it evident that a conventional explanation would not do justice to the phenomenon. Almost from the beginning, doubts were felt by some about a terrestrial origin of these craft. Others considered the possibility of their being secret weapons, since technical developments for military purposes tend to be ahead of civilian efforts. But in this case, the gap between flight characteristics of UFO's and commercial craft performance was - and still is - so great that it seemed impossible to have bridged it.

As time went, on the number of UFO observations increased a great deal and many new details became known. Today, the spectrum of observation covers a wide variety of phenomena like lights in the sky, daylight disks, landings, UFO occupants, depressions in the ground, scorched vegetation and other landing marks, strong magnetic fields in the vicinity of UFO's and, more recently, hundreds of thoroughly investigated abductions.

One may think that the complexity of the phenomenon, which so obviously violates established scientific concepts, would have discouraged authors from trying to develop theories explaining where UFO's come from. Actually, though, the opposite is the case. There is no shortage whatever of ideas attempting to explain the origin of UFO's. Several of them will be presented below. Of necessity, a selection had to be made out of a large number of hypotheses that have been proposed over the years. The ones selected in this chapter are based on what seem to be reasonable assumptions. A fair amount of thought and effort has been invested in each one of them.

Despite their number, no single theory has won general acceptance. All hypotheses either raise a number of new questions, or else involve postulates which are not or cannot be proven. UFO's clearly exceed our scientific and technological possibilities. Since the origin of UFO's and their capability of getting here are no doubt related in some measure to their technology it is not surprising that we have difficulty finding satisfactory answers to the question of where they come from.

11.2 The Extraterrestrial Hypothesis

Of all theories, the extraterrestrial hypothesis (ETH) enjoys the greatest popularity (Swords 1989, Pyrite 1978). It states that UFO's are visitants from other planets belonging to far distant sun-like stars somewhere in our Milky Way system or in another galaxy, reaching us by means of spaceships. The ETH is attractive for a number of reasons:

Computer simulations indicate that planetary systems condensing out of primordial gas clouds surrounding central sun-like stars often show the same distribution of sizes and distances as the planets of our own solar system. For this reason, earth-like planets revolving about sun-like stars may be relatively abundant in most galaxies. If it is assumed that life inevitably develops on planets offering conditions like those on earth some 4 billion years ago, then most galaxies will be populated by many civilizations more advanced than our own.

Today there is little doubt in scientific circles that extraterrestrial societies exist (Ashpole 1989, Swords 1989). The large-scale SETI experiment (Search for Extraterrestrial Intelligence) is designed to catch some bits of interstellar conversation (Morrison, Billingham & Wolf 1977). The ETH, therefore, has the advantage of having some of its basic tenets conform to mainstream science.

The drawback of the ETH is its inability to explain how UFO's manage to travel the immense interstellar distances separating their home planets from ours, and to do so in large numbers.

The limiting factor with interstellar travel is not so much the speed of light as the interstellar gas. Long before a UFO approaches light velocity, bombardment by interstellar hydrogen and other atoms will raise its

temperature to the melting point. In addition, friction with the interstellar gas will brake its speed just as the atmosphere brakes reentering satellites. From this point of view, the disk shape of most UFO's is particularly unsuited for high-speed travel, except in the unlikely event that UFO's choose to fly sideways. On the other hand, travel at velocities much below that of light will be too slow, requiring many years to travel the average interplanetary distances. The relativistic time dilatation would shorten the time of flight as felt by the UFO occupants, but it, unfortunately, becomes effective only close to the speed of light. At that speed the UFO is likely to be heated to incandescence, quite apart from the enormous amount of energy required for accelerating to relativistic velocities.

There seem to be too many obstacles that hinder of traversing interstellar distances within a reasonable time. Yet the large number of UFO's observed clearly points to an easy mode of travel, involving little effort and no great loss of time. One way of accomplishing this would be to travel in a non-physical state. This is the topic of Section 9. All in all, comfortable interstellar travel seems impossible within the framework of present-day science and technology as we know it.

11.3 Psychological and Paranormal Theories

While the ETH currently is the champion among UFO theories, an entirely different interpretation of the same phenomenon is a close second. This refers to the fact that the human observer always is the intermediary between the appearance of a UFO and the information about the observation received by outsiders. The human psyche is a strange and wonderful thing, and it is entirely possible that UFO sightings in reality reflect the imagination of unsettled or confused minds. This has led to the proposal of a psychological and paranormal theory as an alternative explanation for the UFO phenomenon (M. Moravec 1987, Evans 1984).

Aberrations of the human mind range over a wide spectrum of symptoms. The most common reaction to a UFO sighting is fear and sometimes curiosity. Fear, anxiety, stress, and other strong emotions may impair a witness's judgment. If the sighting occurred long ago, the witness may add details that did not actually exist at the time of the encounter.

UFO witnesses may be assumed to constitute a representative cross-section of the population. Consequently, the great majority of them are mentally healthy and well balanced, and only a small fraction may not be. One of the many possible psychic disturbances is paranoid schizophrenia, leading to delusions, hallucinations, bizarre associations, and other symptoms.

Mental disturbances can take many forms: persons suffering from altered states of consciousness may hallucinate anything, from seeing flashes of light to experiencing abductions. Under the influence of an amnesia, a person may wander about aimlessly in a state of confusion. In severe cases some individuals may even settle in far distant places, where they may lead a normal life without realizing that they are far from home. Many people hear sounds and see images in a semiconscious state between wakefulness and sleep. Auto-hypnosis may lead to the experience of elaborate visions of UFO's where none exist. In a psychopathological state, a strong belief in UFO's usually enhances the probability of perceiving a phenomenon which will wrongly be interpreted as UFO.

These and other purely psychological processes may simulate the appearance of UFO's and their occupants. However, since most witnesses are perfectly normal and sightings in general are witnessed by more than one person (by 2.4 witnesses on average), what they observe cannot be due to an unbalanced imagination. There is no objection to the hypothesis that some UFO's are purely psychological phenomena, but there are objections to the contention that *all* UFO's have a psychological origin. The strongest argument against this hypothesis are the frequent physical traces left behind by UFO's and the scars exhibited by abducts.

A somewhat different approach to the problem is the suggestion that UFO's are fundamentally paranormal phenomena, seen mostly by psychic persons. Some UFO characteristics are indeed reminiscent of paranormal occurrences: UFO's can change shape or materialize and dematerialize, beings float through closed windows and doors, sometimes carrying an unfortunate abductee with them. They can effect sudden healing, communicate via telepathy, and perform other inexplicable feats. A paranormal component is no doubt present in many encounters with UFO's, but since we are unfamiliar with the origin of UFO's, the

suggestion that the latter are an inherently paranormal phenomenon is equivalent to saying that we do not know what UFO's are and where they come from.

What seems to be more likely is the assumption that paranormal components play an important role in the wide spectrum of UFO appearances.

11.4 Psychic Projection

Jerome Clark and Loren Coleman (1975) based their theory of psychic projections on the concept of the collective subconscious introduced by Carl Gustav Jung. While the latter thought of it as an all-pervading immaterial quantity, the two authors went one step further and assumed the psychic energy stored in the collective subconscious to be capable of projecting physical structures into our world. In the past these took the form of fairies, elves, dwarfs, poltergeists, etc., but in modern times they have become UFO's and UFO occupants. This would make UFO's a terrestrial phenomenon and would explain the large number of observations presenting such an obstacle to belief in the ETH (Clark 1990).

Just like several of the preceding and following theories, the psychic projection hypothesis can neither be proven nor disproved. But it seems strange that psychic projections should be so numerous and that they seem to be restricted to UFO's. Why are there no psychic projections of cars, television sets, computers, etc., which are much more prominent in everyone's subconscious mind? Moreover, UFO's display intelligent behavior. Psychic projections may be expected to behave in a much more haphazard manner, just like poltergeists, which act in a random way and without any discernible logic (Moser 1950).

What triggers the projection in the first place? Most witnesses are completely taken by surprise by a sighting, while UFO researchers, who think a great deal about UFO's and would love to see one, usually don't. If UFO's were psychic projections, would it not be much more likely that UFO's are sighted by those who hope most fervently to see one? Thus, possible examples of physical projections are the much photographed appearances of Virgin Mary in the 60's over the Coptic church of Zeitun near Cairo and the luminous phenomena seen on the occasion of the religious festivals in Wales in 1905. These occurrences were probably triggered by the faithful expectation of the witnesses.

The problems mentioned above are not solved by the theory. Nevertheless, it is an interesting attempt to bring into accord the paradoxical behavior of UFO's, the physical traces, and the large number of observations.

11.5 The Tectonic Strain Theory (TST)

Many tectonic formations in the lithosphere under the continents are known to be under conditions of strain due to displacements in the earth's mantle, to the slow shrinking of the earth, and to other causes. Occasionally the strain in a given area is relieved by an earthquake, after which it builds up again over a period of years.

Michael Persinger (1990) had the idea of investigating correlations between UFO observations and anomalous luminous phenomena (ALP) on the one hand, and natural processes known to release large amounts of energy such as tornados, earthquakes, etc., on the other. He found that observations of UFO's and ALP showed moderate correlations with the energy liberated in earthquakes, provided the latter occurred months to years earlier or later in a location up to hundreds of kilometers away from the earthquake epicenter. UFO data were taken from Saunders' UFOCAT (Saunders 1975, Merritt 1980) and other sources.

These long-distance, time-shifted correlations could best be explained by associating anomalous lights and UFO's with tectonic strain underneath the observation sites. The reason is that long before the occurrence of an earthquake the energy later to be released is stored in strained rock formations surrounding the epicenter and extending out to distances of many kilometers. Strong strains exist over areas measuring 20-50 km in radius. Beyond this distance the strain becomes weaker.

The basic mechanism translating tectonic strain into a glowing mass of light in air is not clearly understood, but it is thought to be related to strain-induced electric fields. These may be due to piezoelectricity, microfissures in the rocks, or mechanical friction between rock layers. If he is far away from an ALP the observer merely sees a light in the sky, but closer up he notes some structure and imagines he sees a UFO. When still closer, the strong radiation field begins to stimulate the electrically sensitive temporal lobe of the observer, who then imagines seeing all the phenomena associated with UFO's, such as

landings, entities, abductions, and even paranormal events unrelated to UFO's. As a clinical psychologist, Persinger is well qualified to discuss all aspects of the aberrant human mind.

In summary, the TST explains all manifestations of UFO's as pure imagination, triggered by the exposure to strong fields emanating from balls of light floating in air, which in turn are induced by electric fields originating in deep rock layers and caused by tectonic strain.

Despite vigorous promotion of the theory in some 30 publications by Persinger and collaborators, the TST has had rough sailing. This may be due to the fact that a single-cause theory drawing sweeping conclusions about a phenomenon as complex and diversified as UFO's does not sound credible. However, there are more substantial objections to the theory.

UFOCAT is known to list raw data, and it is not known how many IFOs are contained in it. Hence the TST is based on correlations between a mixture of IFOs and UFO's, and a simple mathematical formula relating energy release in earthquakes to their strength on the Richter scale. There are so many intermediate steps between the two sets of data, including some that are not well understood, that the reliability of the correlations is questionable, especially since correlations should never be used to prove a cause-and-effect relation. Another question is why UFO's are not observed closer to earthquake epicenters, where strain in rock beds is much stronger than far away (Rutkowski 1990).

A serious drawback is the unclear nature of the fields alleged to produce the luminous phenomena and the destabilizing influence of the latter on the human mind. The three possible tectonic origins of possible fields mentioned above all cause electric charges to appear on the surfaces of crystalline rock inclusions, giving rise to electric fields. However, since the rocks are electrically neutral to begin with, positive and negative charges always add up to zero on the average, resulting in zero field strength some distance away. Heterogeneous effects may result in the generation of weak fields, but since all this occurs at depths of several kilometers, the effects are hardly expected to be discernible on the surface. Even if fields should appear, they would be added to the usual atmospheric fields, which can become quite strong before thunderstorms. Since electric fields produced by tectonic strain, if they exist, have existed long enough for people to have adapted to them and any exposure to such fields should leave our minds entirely unaffected. During thunderstorms we do not experience any alteration of normal brain functions either.

It is not known how electrostatic fields emerging from the ground manage to create luminous volumes in the air. Plasmas are very difficult to produce and only have a lifetime of microseconds. Moreover, plasmas emit only light and heat. They are not surrounded by a strong electric field for the simple reason that they are electrically neutral when viewed from the outside. This makes it very difficult to imagine how anomalous lights can have any influence on our thought processes. Moreover, cars are excellent Faraday cages into which electric fields cannot penetrate. Yet a large number of UFO observations and even abductions have been reported by car passengers. Even if we accept the idea that exterior fields are able to trigger hallucinatory images in a person's mind, it is difficult to believe that a random field can lead to an ordered, coherent train of thoughts during an abduction lasting for about an hour, and it is even harder to believe that it leads to exactly the *same* thoughts in thousands of abductees worldwide, down to the very last details, some of which have not even been published. The same reservations can, of course, be made relative to the psychological hypothesis of Section 3.

It is also hard to believe that fields alone should be able to produce depressions in the ground of landing pads, large scorched areas underneath landed UFO's, strong magnetic fields, radar echoes, interference with the electrical circuitry of cars, multiple abductions, or anomalous scar tissue and other marks on abductees. Finally, hundreds of interviews conducted by Randle and Schmitt (1991) and Friedman and Berliner (1992) in connection with the Roswell Incident make it seem very likely that a UFO crashed near Corona, NM, on July 4, 1947 (Randle & Schmitt 1994) and is now in the possession of the US Air Force. A single such case, if true, is sufficient to demonstrate that the UFO phenomenon has a nuts-and-bolts component.

It is, of course, always easier to criticize than to invent a new, coherent theory. All of Persinger's correlation analyses are based on data available to everyone. The natural thing to do, if the validity of his correlations is doubted, is to perform an independent analysis involving more reliable data and carried out by someone not "correlated" with Persinger. The ufological community so far has failed to do so.

11.6 The Earth Light Hypothesis

This theory, suggested by Paul Devereux (1989), is often lumped together with Persinger's Tectonic Strain Theory, although it definitely has a right to existence of its own. Its claims are far more modest than those of the TST and refer essentially to one phenomenon only: The appearance of luminous globes in air, which Devereux calls *earth lights*.

The theory is based on a large number of contemporary and historical accounts of terrain-related lights, observed in certain geographical areas in Britain and elsewhere in the world (Strand 1985, Brueske 1988). Some of these lights, appearing time and again in the same locality, have been known for generations, and a few have even found their way into mythology. Lights emerging from the ground have often been shown to mark the presence of mineral deposits or of old mines.

Earth lights range from a few centimeters to several meters in diameter, the most frequent size being about half a meter. Most balls of light are white or orange in color, the white lights often having a reddish core. Lights emerging from the ground or from old mine shafts tend to go out quickly or to hover for a while. Only few rise to great heights. On touching the ground they usually extinguish. Many of them are seen over bodies of water, power lines, or cave entrances. Reports also indicate that some lights display what may be termed "intelligent" behavior, seemingly responding to an observer's thoughts (Rutledge 1981). If this is true, it would indicate the action of a field whose nature is not simply electromagnetic.

Devereux feels that the TST is a plausible explanation for at least some of the observed lights, since they typically correlate with tectonic faults, some types of rock, mines, quarries, etc. But he also feels that there may be other, less evident causes as well.

The Earth Light hypothesis is not so much a theory as a carefully researched compilation of a great many observations. While some of these may be misinterpretations of an unknown nature, most UFO's have been and still are being seen at night as lights in the sky, and many of them display exactly the characteristics of the lights described by Devereux. In contrast to the TST, Devereux tries to explain the so-called class-B UFO's. It is not his intention to explain more substantial manifestations of UFO's (class-A UFO's) like landings, depressions in the soil, entities, or abductions, but only light phenomena associated with some UFO sightings (class-B UFO's).

11.7 Parallel Universes

Science fiction writers were the first to introduce this hypothesis in their stories long before the advent of UFO's. The concept seems to have stimulated the imagination of readers so that it was applied to explain the origin of UFO's when the latter made their appearance. Briefly, the theory contends that UFO's are not visitors from planets in our own universe but from another universe existing parallel to ours.

Before passing judgement on the merits of this hypothesis it would be useful to define just what precisely a "parallel" universe is. To illustrate this, imagine the world to be 2-dimensional. A very large sheet of paper is an example of such a 2-dimensional "universe". Let us further assume that we are 2-dimensional beings living on the sheet. Being 2-dimensional means that our senses are unable to register anything occurring in the third dimension. A parallel universe then would be a second sheet of paper parallel to the first one and separated from it by some distance in the vertical direction. This "parallel universe" fulfills two conditions: It is displaced in a direction perpendicular to the two dimensions of the sheets, and the 2-dimensional inhabitants of the first sheet have no way of realizing the existence of the second sheet. However, if the 2-dimensional beings on the second sheet are very intelligent, they might surmise the presence of a third dimension, and ultimately they might even devise a vehicle able to transport them down to the first sheet. There they would be greeted as UFO's coming from a parallel universe!

Fortunately, we are 3-dimensional, as life would be dull in only two dimensions, but from a 3-dimensional point of view things become more complicated. This time a parallel universe has to be separated from ours by a coordinate perpendicular to the 3 familiar dimensions, and again we must be unaware of its existence as a coordinate. One possibility would be a genuine 4th dimension. But on what basis does our brain pick only 3 out of 4 equivalent dimensions? Furthermore, it can be shown that more than 3 genuine spatial dimensions measurable with yardsticks cannot exist. Four and more spatial

dimensions would lead to planetary and electronic orbits in the form of logarithmic spirals and not to the experimentally established elliptical orbits.

Another possibility would be time which, according to relativity, is the 4th dimension perpendicular to the others. It is not a spatial dimension, since it cannot be measured with yardsticks. At present we are unable to travel either into the past or into the future, and so time would be a parallel universe. Time travel will be discussed in Section 10.

Finally, one could postulate the existence of a 5th dimension and of still higher ones, all of which would not be genuine. To our senses they would not appear as dimensions at all but as something altogether different, just as time is conceived by us as something different from length, width, or depth. In Heim's higher dimensional unified field theory (Heim 1984, 1989; Droescher & Heim 1996; Beck & v.Ludwiger 1993), for example, the 5th dimension measures the degree of a structure's organization, and a parallel universe could be separated from us by a large distance along that coordinate. Unfortunately, all material objects are relatively simply organized and are therefore located low down on the organizational scale. For this reason parallel universes high up on the organizational coordinate cannot contain material objects like UFO's.

Evidently, the theory of a parallel universe as the origin of UFO's is beset by difficulties. In any case one may wonder why it should be easier to reach us from a parallel universe than from our own, assuming that the two are structured on essentially similar lines.

11.8 The Interdimensional Theory

This interesting hypothesis was proposed by Jacques Vallée (1988) in his book "Dimensions". For many centuries there have been reports of fairies, elves, fawns, nymphs, ghosts, dwarfs, etc., whose conduct was strange, but not necessarily in contradiction to the naive level of belief characteristic of the times. In our sophisticated society these beliefs are no longer popular and, as if realizing this, the phenomenon has changed first to airships and now to UFO's. And indeed, some UFO's are reported to behave in a very strange fashion. Some of them appear or vanish suddenly, others shrink or grow larger, and occasionally they divide into two or more craft, or several of them merge into one. These certainly are not the characteristics of a nuts-and-bolts device. In addition, Vallée arrives at an exceedingly large number of UFO visits by extrapolating the number of cases in his files to observations worldwide. He contends that these facts, plus the many hundreds of abductions that seem to make no sense, argue against the assumption of UFO's being visitors from distant planets (Vallée 1990b).

In order to explain the bizarre events, Vallée invokes the existence of higher dimensions beyond those of space and time. This higher dimensional universe (hyperspace) consists not of time-dependent physical objects but as a series of informational events, whose progress suggests the passage of time. Our minds are able to retrieve the information as it unfolds in hyperspace, and this retrieved information manifests itself to our minds in the form of physical objects and events taking place all around us. UFO's are able to manipulate information so that they may appear to us either as solid flying machines or as wondrous devices behaving in a ghost-like fashion reminiscent of fairy-tales.

Vallée writes (1992, pp. 420/421):

"A new computer analysis of historical trends, compiled in the mid-seventies, led me to plot a striking graph of 'waves' of activity that was anything but periodic. Fred Beckman and Dr. Price-Williams (of UCLA) pointed out that it resembled a schedule of reinforcement typical of a learning or training process: the phenomenon was more akin to a control system than to an exploratory task force of alien travelers..."

"...My own speculation is that UFO's operate in a multi-dimensional reality of which spacetime is a subset. In that sense I do not completely reject the idea of an extraterrestrial origin: but I believe that the form of intelligence the phenomenon represents could coexist with us on Earth just as easily as it could originate on another planet in our universe, or in a parallel universe."

In such a theory UFO's, residing in higher dimensions, need not come from distant planets, although there is no rule against it. It is much more probable that they materialize from a terrestrial environment, since the higher dimensions are all around us. They share this feature with the Gentry and with paranormal events, to which Vallée feels they are related.

The theory has earned its author fierce criticism from a number of researchers who believe that UFO's are sturdy material objects able to travel physically through space, and that abductions are real occurrences and not paranormal ones.

Actually, though, the theory is a remarkable, intuitive approach to a problem whose solution cannot be fitted into today's mainstream physical science. There is no mathematical theory to back it up, but Vallée follows Hawking's theory of parallel universes, each connected to the other by an infinite series of wormholes. A travel between these wormholes (by tunneling) is possible but extremely unlikely (Kaku 1994). Vallée's theory contains some elements also present in Heim's mathematical higher dimensional theory discussed in Section 9. In its present form, Vallée's hypothesis should be regarded as a worthwhile attempt to advance a unifying explanation for phenomena as seemingly divergent as fairies and UFO's. But the mathematical foundation has already to be developed.

11.9 The Projector Theory

The projector theory (v.Ludwiger 1979, 1984; Beck & v.Ludwiger 1993), developed by the author is based on the second, so-called *transcendental* part of Heim's unified quantum theory of matter and gravitation (Heim 1980, 1990), dealing with events in dimensions beyond the 4th (time). *)

The higher dimensions are known as *transdimensions*. The 5th coordinate, as mentioned in Section 7, has an organizational or informational character. This permits a *qualitative* evaluation of the significance of an information or of a structure in addition to its quantitative description in space and time. A highly organized object, in particular a living being containing information of high significance, occupies a fairly high level on the organizational scale relative to non-living matter. The highest level among all material structures is occupied by man. Only immaterial objects can exist on still higher plains. Heim shows that information can be exchanged between higher and lower levels by way of gravitational waves. Impinging on a material object, gravitational waves do not increase either the temperature or the degree of disorder inherent in the structure (this is called an "entropy increase"). Instead, they withdraw heat from the object, leading to an increase in the degree of order ("entropy decrease"). If the information carried by them is of the right type, the waves can modify the probability of existence of an object in a specified location, so that the object can either shift its position or dematerialize and rematerialize.

A theory involving more than the usual 4 dimensions requires a considerable revision of physics. The higher dimensions enter into the mathematical description of all material structures, in particular into those of elementary particles. In this sense all objects can be said to extend into the transdimensions.

According to the projector theory, the first step a UFO wishing to land on a foreign planet has to take is to generate an artificial pattern in the transdimensions of a planetary surface by means of an appropriate modulation of gravitational waves. This pattern should more or less match the natural pattern formed by the extensions into the transdimensions of the actual planetary surface on which the UFO intends to land. The two similar patterns will then generate a structural resonance bridge across which information can travel between planets. Transdimensions are superimposed upon our 3-dimensional world because they are not spatial dimensions, so that there is no true distance between two points in higher dimensions.

*) The basic idea of Heim's theory is that the gravitation field (Christoffel symbols) is a real force (in Einsteinian theory it is a pseudo-force). The Newtonian law undergoes a modification, which has effects on far distant objects (> 50 million light-years). Heim works with a Cartesian geometry (Einstein with a Riemannian). Heim's theory is defined in 6 dimensions (Einstein's in 4). In his theory there are 3 different metrics building up 4 basic partial structures (in Einstein's General Relativity Theory only one metric forms all of the detectable structures). The geometry in Heim's theory is quantized. The basic geometrical elements are small areas ("metrons") of the order of the square of the Planck length. Heim's field equations only contain geometrical terms (in the General Relativity Theory geometrical terms - divergence of the tensor of curvature, are coupled with a phenomenological term, the divergence of the energy-momentum-density tensor. Consequently, in the GRT there must have been a "big bang", since whenever a geometrical structure exists, a space, there also must be energy or matter.) In Heim's theory there are no divergences and no "big bang". It proposes long evolution and dynamics of pure quantum geometry in an expanding empty space. Heim postulates that after a very long period of time, matter and energy are expended into space isotropically. All of the interaction constants obtained their values when they came into being from space and time. The calculated values of all of the interaction constants, masses of elementary particles and resonances in Heim's theory are in good correspondence with measured values. (Heim 1984, 1989; Droescher & Heim 1996).

The concept of "distance" between two points in the transdimensions denotes the difference in organization of the objects located at those points, not their physical separation. Two similar planets may be far apart, but their transdimensional patterns are superimposed upon each other.

Next the UFO dematerializes by generating gravity waves which, upon passing through the craft and its crew, are modulated with full information about their structural details. In this form, the information can cross the resonance bridge in an instant and without having to travel through ordinary space. Near the surface of the target the UFO materialized again with use of gravitational waves. This process is the inversion of that which has led to the dematerialization.

A more detailed account of the projector theory is contained in the cited literature. There is no proof of its correctness, but its utilization of quite a number of concepts appearing in Heim's theory (which is not UFO-related) raises it above pure speculation. It accounts for the sudden appearance and disappearance of UFO's and for their seemingly effortless way of traversing interstellar distances. The technology needed for its realization is, of course, completely unknown, as long as one cannot generate gravitational waves, but a technologically far advanced society may be expected to have developed it.

11.10 Time Travel

Another theory whose origin goes back to the day of science fiction is that of time travel (Parker 1991). It contends that in a few hundreds or thousands of years mankind will have learned to build time machines able to carry it back into the past.

This idea had also already been mentioned by Janine and Jacques Vallée. In 1966 they were comparing cases from history which reported similar objects which are also observed today. If the gigantic cigar-shaped, cloud-like objects which frequently are reported really are "motherships" from which the smaller ones emerge, then the "luminous spheres emerging from a shining cylinder" that were reported at Augermanland in 1752 tie in automatically with this, argument. The Vallées speculate (Vallée 1966, p.182):

"If this is true, then what we have been seeing since 1946 is merely a recrudescence of phenomena as old as our civilization. Then why hasn't the technology of the 'visitors' evolved in the course of the centuries? Should we assume that they are time travelers?"

And in 1992 Vallée writes about this idea (Vallée, 1992, p.433):

"Cosmology now recognizes the possibility, indeed the inevitability, of multiple universes with more than four dimensions. Communication and travel within our own universe are no longer thought to be absolutely constrained by the speed of light and a constant arrow of time. Even travel into the past may be considered without necessarily creating insurmountable paradoxes."

Since the mechanism of natural selection will long ago have ceased to be operative, the genetic stock will have degenerated, leaving the earth's inhabitants in a physical state endangering their survival (Johnson 1993, Davenport 1992). According to the time travel theory, UFO's are visitors from our own future carrying out the task of rejuvenating their genetic stock by interbreeding with humans. This seems to be borne out by the fact that the grey entities so prominent in abductions have fragile but humanoid bodies. In order to minimize the effect any manipulation of their past is bound to have on their own future environment, they endeavor to have as little contact with us as possible. This restraint of UFO occupants to communicate with us has indeed been a puzzle for a long time.

A great deal of UFO-unrelated research on the possibility of time travel has been carried out, since it is a problem of particular interest both in relativity theory and quantum mechanics (H. Moravec 1993). It turns out that the solution either depends on impractical assumptions, or else relies on physical processes not likely to be realized in nature (Gribbin 1979).

Goedel, for example, demonstrated that a universe rotating fast enough would distort space and time sufficiently to allow reaching one's destination before departing. However, the universe shows no sign of rotating. Similarly, Kerr and Newman showed that a very fast spinning may cause a spaceship to return before it started. It is not likely, though, that time travel depends on such clumsy mechanisms.

Several possibilities of sending signals into the past have been explored by means of quantum mechanics. Any signal sent back in time will oscillate back and forth between transmitter and receiver, continuously moderating both of them until an equilibrium is reached, which is what we observe. This

equilibrium may adjust itself in such a manner that it precludes information reaching the past, but an appropriate manipulation of the signal might circumvent this restriction. This, of course, is speculation and in any case very far from physical time travel.

A remarkable and illuminating series of experiments has been reported by Schmidt (1987, 1993). It is well known that psychically gifted people are able to influence the random sequence of "heads" and "tails" of a flipped coin in the sense that one of the two is thrown more often than the other. In the experiments the throws were simulated by a computer, and results were stored on disks as well as in the computer memory. In addition, they were printed out and immediately inserted into envelopes and sealed before anyone had a chance to look at them.

Months later a test person concentrated on *retroactively* influencing the results. The sealed envelopes were then opened and as a check the stored information was printed out as well. Results plainly showed the randomness of the data to have indeed been influenced in the direction aimed at by the test person. Schmidt does not interpret this result as a modification of the past, but rather as a precognition of the past for events due to occur in the future. But the experiment may equally well be interpreted as indicating a genuine possibility of influencing the past, provided this does not lead to even the slightest modification of the future! Not even the knowledge of a change is allowed.

Some evidence exists in favor of time travel: Corporal Armando Valdes in Chile grew a 5-day beard within an absence of only 20 minutes (Bender 1977, Huneeus 1987). This may indicate that for him time progressed much faster temporarily than it did on earth, implying that he traveled into the future. When heading back into the present he must have passed through the same time intervals in the reverse direction, so that for 5 days he led a double existence. On his way back into the present he must, in principle, have been able to observe himself on his way into the future and vice versa.

Other evidence of the reality of time travel are hundreds of cases in which witnesses observed UFO occupants built like perfectly normal persons, speaking terrestrial languages (Brown 1965, Benitez 1978, Heiden 1982, Keel 1970, Lorenzen 1967 pp. 109 and 123, Vallée 1990), wearing glasses (Randle 1989), eating terrestrial vegetable food (Vallée 1969), and sometimes explicitly identifying themselves as visitors from our future world (Keel 1970 p. 199-200, Fowler 1990). Occasionally they even asked what year we have (Lorenzen 1967 p. 126, Keel 1970 p. 126 and 184, Keel 1975). Unfortunately, utterances by UFO occupants are notoriously unreliable and should be regarded with extreme caution. Instead of seeing people from our own future, witnesses are much more likely to have seen perfectly normal terrestrial individuals cooperating with alien UFO occupants (for example Hopkins 1996 p. 112).

Anthropologists anticipate the looks of man in the distant future to be similar to that of the grey entities (Miller 1981). Just as the human skull resembles that of a chimpanzee embryo, so the head of the future human may look like that of present-day embryos. The large head of the greys could never pass through their narrow pelvis, so that birth must take place in an incubator, bearing out the reports by abductees of embryos observed in transparent vessels (Jacobs 1992). This has led Michael Swords (1985) to assume that the future embryonic development in an incubator will free the genetic potential from the restriction of a narrow birth channel. Thus, oxygen may be supplied to the embryo during a longer period of time, enabling it to develop a much larger skull. At the same time sex organs will shrivel, as they are no longer needed because reproduction will be accomplished by cloning. All this may indicate that the grey entities are visitors from our own future.

The computer scientist Hans Moravec believes that a few decades from now computers wired like neuronic networks and built into human robots will have an intelligence far exceeding our own. He even feels that they will develop a consciousness and will themselves steadily and independently improve their progeny (H. Moravec 1988). If this somewhat risky forecast is true, the small grey companions of human UFO occupants might be the predicted robots. However, reading the numerous abduction accounts one does not get the impression of the grey entities being particularly intelligent, measured by our own standards.

On the other hand, the morphology of living beings probably has developed along similar lines in the entire universe. For this reason, the assumption that the greys belong to a far advanced civilization is as applicable to the present inhabitants of a distant, older planet, as it is to the future inhabitants of our own.

An additional argument against the time travel hypothesis is that the weak body of the grey visitors, carrying a disproportionately large head, is poorly adapted to life on earth with its strong gravitation. Furthermore, abductees have gained the impression that the greys need neither food nor air and possess no

reproductive organs, so that they might be biological robots. It is indeed improbable that mankind will voluntarily maneuver itself into an asexual condition, and that it will also dispense with eating and drinking.

We are not even certain that the future exists in a concrete form. After all, we may be at the forefront of time already. The future may have a potential existence, but not a real one. Our sense of time is generated by impulses in our consciousness which is faced by a multitude of potential events out of which it chooses a certain one and transforms it into reality. Stephen Hawking (1996) writes, that many think that UFO's may be an evidence for visits of extraterrestrials, since extraterrestrials only then could travel to Earth in a reasonable time if they would move by superluminality, thinks that time travel is not possible "by the fact that we have not been invaded by hordes of tourists from the future."

One of the main arguments against travel into the past is its violation of causality. If a person travels back in time and shoots his own grandfather before he has had any children, he could not have been born and hence could not have traveled back to kill his grandfather. But if his grandfather was not shot, then his grandson was born and could shoot him, etc. etc. Clearly, this causal loop never ends. Nevertheless, Deutsch (1991) has shown that general relativity permits time travel avoiding this paradox: As soon as the past is modified by, say, shooting a person, a new universe branches off. The old one continues to exist unchanged, while the new one contains the modification and unfolds accordingly. The traveler who caused the modification is confined to the new universe and will never be able to return to the exact future from which he came. This theoretical solution does not violate causality, but no one knows if nature allows multiple universes to exist.

How in principle it is possible to travel into the past has been calculated by Kip Thorne (1993). If there were wormholes which join different universes it should be possible to let a probe pass through this channel from one universe to another. But wormholes are very small and unstable, and time slows down in a wormhole, coming to a complete stop at the center.

Thorne and his colleagues found a solution to Einstein's field equations in which a space traveler would not be torn apart by the tidal effects of the intensive gravitational field (Morris, Thorne & Yurtsever 1988). The wormhole is stable and does not suddenly close up in the middle of the trip. The time it takes for a round trip would be measured in days. The maximum gravitational forces would not exceed 1 g. The wormhole is permanently open. In the center of the wormhole there must be an "exotic" form of matter that has unusual properties, which has yet to be developed. However, if it were possible to produce objects with "negative energies" (an energy content less than the vacuum), then one might be able to generate exotic configurations of space and time in which time is bent into a circle. One way is to consider the quantum theory, which can create negative energy from the vacuum state.

In such a case one has to widen the walls of the wormhole by applying the Casimir effect, which Henrik Casimir discovered in 1948 and M.J. Sparnaay observed in 1958 in laboratory tests. (It is a fact that two electrically unloaded plates in a vacuum are thrown together with a pressure which is inversely proportional to the 4th power of the distance between the plates). For the moment this is only a theoretical possibility. But no-one knows whether in the future men will discover new kinds of experimental means to travel to the past.

If UFO occupants really want to prevent altering their own world as a result of changing ours, then it is much too late already. The fact that thousands of articles and tens of thousands of books have been printed about the topic, the existence of large UFO societies in many parts of the world, UFO crashes and the possible recovery of their crews, and abductions that have traumatized an unknown but large number of abductees have already affected our generation and will continue to do so in many generations to follow.

On the other hand, all over the world witnesses who have had sightings of special interest or who have taken pictures and movies or are in possession of metal fragments have been visited immediately afterwards by strangely dressed men, usually wearing black. Although no one knew of the event except the witnesses themselves, the "men in black" threatened them and insisted on the evidence being handed over to them. In every case they demanded that the witnesses talk to no one about their sightings. Thoroughly investigated cases have been reported in 1958 from El Salvador (Vallée 1969 p. 273), in 1965 from Texas (Lorenzen 1969), and in 1966 from Mexico (Clark 1979).

Nevertheless, these attempts at suppressing information, some of which have not even been successful, since otherwise we would not know about them, are not even remotely sufficient to eliminate the impressions left since 1947 in the minds of hundreds of millions of individuals as a result of UFO

appearances. The fact that UFO crews avoid contact with us may be due to their desire to prevent a cultural shock resulting from a clash between their own advanced culture and ours.

Resumé:

The author who has studied the subject for 40 years currently believes that the answer to the question of the origin of UFO's must be taken from their characteristics, as contradictory as they seem to be:

UFO's don't exist!

No astronomer will discover any place in the near future where the UFO's stay at home base. As long as UFO's don't appear in our airspace, they are by no detectable, that means they don't exist.

The UFO occupants come from other planets!

Frequently witnesses have observed that the occupants wore helmets or oxygen masks to protect themselves against the Earth's atmosphere. Sometimes they were collecting plant samples, which seemed to be unknown to them.

The UFO occupants come from our own planet!

Frequently beings are observed which have no difficulties in breathing and walking without any problems in the Earth's gravitational field. The occupants are not interested in the investigation of minerals, plants, animals and men and their culture, as if these beings know all about us.

Over the past 50 years witnesses have sighted more than 10,000 different UFO types. Only in a few exceptions have strange flying objects been observed which had the same structure. The feasibility of planets which have the same living conditions as on Earth are very small in our galaxy. It would be improbable that during our period of time inhabitants from more than one distant solar system would visit the earth. Otherwise, the many different types of vehicles observed do not seem to originate from one planet alone.

The fact that the UFO occupants are very human-like speaks for the Earth as their home planet. Sometimes their appearance doesn't differ from that of a European, and witnesses will have heard that these occupants also spoke in earthly languages to each other. That would be understandable if the UFO occupants were to come from a time that is still to come. In that case they must avoid any close contact to the people who are born in a different time period, because all actions could influence future events and therefore undesired reactions to the chain of events for the occupants. Therefore, conversations with an exchange of information between the participants, as we expect them, are excluded.

In a few centuries ahead of our time robots will definitely exist which are indistinguishable from living beings. They will resemble small humans, and will not only be more intelligent than humans but will also develop a different kind of consciousness from men. (Because experiences of other robots can be taken over by any robot via chips, the consciousness is more of a mystical nature). These robots will be sent to neighboring planets, to the Moon and perhaps to different solar systems. They need no organic food but only electricity, and they do not breathe. Their skin will be produced so that it can resist very low as well as high temperatures.

These robots are so intelligent that they will improve the production of their own kind. Maybe these beings have only a few emotions but have a very high capability for abstract thinking and problem-solving. All of the insoluble problems of our times will be solved by them one after another. For example: the practice of time travel, the technical means for generating paranormal effects, achieving eternal life, changing consciousness to a mystical one, staying in the realm of death simultaneously with the realm of the living, having the capability to change the laws of physics,.....

Since the men of the far future will definitely know how to treat the laws of physics, they are capable of traveling to their own past and also into our present time. Therefore, UFO's seem to be vehicles of men from Earth but living in future times, and simultaneously are inhabitants of other planets which will be occupied in future by earth-made robots which then will come home to planet Earth at any time period, sometimes alone, and sometimes with humans to whom they belong like children to their respected ancestors.

Since the occupants come from different centuries in the future, their intentions as to what to do on Earth are different, too. Some occupants only want to be in the environment of a living, ecologically still intact world. Perhaps they are so sensitive as to feel the whole ecosystem like we feel the harmony of a great symphony. Therefore, they only fly in the atmosphere without making a landing. Other occupants perhaps

want to get genetic material, since that of future men may be degenerated. These occupants will perhaps breed new creatures.

All the UFO occupants know the history of mankind. To hide from observers, they therefore choose such flight objects for their visits in different historical times, which are expected by the observers to come from inventors or from military factories: When controllable airships were expected to fly in the near future, around the turn of the 20th century UFO's frequently had the form of airships or Zeppelins. During World War II, luminous "candles" were used as markers for the bombers. The UFO's frequently had the shape of luminous spheres. After the War, in 1946, the occupants of UFO's sent objects in the form of rockets, previously used by the Germans. In the 1990's of our century, some UFO's imitated the triangular shape of a U.S. stealth bomber. Cigar-shaped objects with wings which looked like aircraft have been reported. This UFO mimicry is possible for a culture which knows in advance, from the study of history, what kind of flying object has to be constructed.

If this interpretation of the UFO's behavior is correct, then the reaction of the leading world politicians and their military makes sense. The general public cannot yet understand the possibility that their own grandchildren and intelligent robots will come from another time, and that there is no exchange of any information between UFO occupants and world leaders, and that there is no hope that we will get sponsorship from them. Any officially financed UFO research would be a waste of time and money, since the UFO occupants would not give permission to get knowledge of any kind, to avoid time paradoxes (for instance, an inventor can not learn from a future technology how to construct a device which will be used in future).

One prediction for the future on the behavior of UFO's is: More and more different types of UFO's will be seen flying through busy streets and over sports grounds. They will be observed more frequently than ever, but they will be not perceived. And the UFO phenomenon, therefore, will for a long time remain as unsolved as 50 years earlier.

Appendix A Reliability Index According to Olsen

Olsen (1966) proposed that all UFO reports should be given a reliability index so that foreign scientists might know how believable the individual cases are, since the interviewer is generally the only one to experience the witness personally, and thus is able to make an estimation of his trustworthiness. The definition of the reliability factor, p_r , might be considered to apply to this definition.

Among witnesses with a witness unreliability factor, p_u , the reliability factor for the report, p_i , with reliability factor for the conducting of an investigation p_r of a, $k =$ first, second, third, etc.-hand report, is

$$p_r = \left(1 - \prod_{m=1}^u p_m \right) \cdot p_i \cdot 2^{(1-k)}$$

The factor p_r allows investigators to sort out those reports which appear "too unbelievable", i.e. $p_r < 50\%$. Values of 90% are considered "to some extent reliable", values over 95% as "reliable", and values of more than 98% as "very reliable"

The unreliability factors for the witnesses in Langenargen, for example, were estimated as follows, according to the interviewer's impression:

$p_1^{(1)}$: Mr. L. Schaefer: 0.1

$p_2^{(1)}$: Mr. R. Grutsch: 0.5 1st hand information:

$p_3^{(1)}$: Mr. K. Brugger: 0.3 $k_1 = 1$

$p_4^{(1)}$: Mrs. Brielmayer: 0.3

$p_1^{(2)}$: Railwayman's wife 0.5 2nd hand information:

$p_2^{(2)}$: her colleague: 0.5 $k_2 = 2$

The reliability that the brilliant, unidentifiable lights in the sky hovered over the spot in question is ($p_i = 1$):

$$p_r = \left[1 - 2^{1-k_1} \cdot \prod_{m=1}^4 p_m^{(1)} \left(2^{1-k_2} \cdot \prod p_m^{(2)} \right) \right] = 99.94\%$$

or, respectively (without the 2nd -hand witness statements), $p_r = 99.55\%$ that the bright light or lights hovered very close to the ground.

Appendix B Goals and Activities of MUFON-CES

The Mutual UFO Network - Central European Section (MUFON-CES) founded in 1974, has recently been incorporated as the *Society for Scientific Investigation of Anomalous Atmospherically and Radar Phenomena - MUFON-CES, Inc.* Members of the society are open-minded in regard to the origin of Unidentified Flying Objects. However, members are convinced that UFO's represent real objects which cannot be identified. The society consists of about 80 active members in Germany, Switzerland, and Austria. Membership is by invitation only and is terminated if active participation drops below a certain level.

Condition for membership are: academic education, specific knowledge or other specific qualifications which could be helpful in the investigation of the phenomenon. MUFON-CES does not publish a periodical. Information is distributed through confidential newsletters within the society. MUFON-CES publications do appear in the form of MUFON-CES Reports every three or four years.

The members have so far concentrated their efforts on investigating of the physical aspects of the phenomenon and to a lesser degree on the psychological reactions of witnesses. This does not mean, however, that MUFON-CES has neglected the latter: a number of reliable studies have been conducted concerning data evaluation and credibility analysis of witnesses.

Papers presented at the annual meetings are worked out in detail, and most of them are published in the form of Conference Reports. Each volume contains between 200 and 500 pages. So far, MUFON-CES has published a total of 11 volumes with more than 3,500 pages written by 24 authors. The first ten volumes were published in German, and Vol. 11 was written in English, and is still available to date.

Scientists with MUFON-CES, Inc. are working on a private basis in the following task groups:

1) Image- and Movie-Analysis Team

The members are professional photo analysts and computer scientists, for instance from the European Space Agency. Until 1997, 130 photographs and 25 videos of Unidentified Flying Objects "in the broader sense" were analyzed by the members of this team. Only 20 % of these cases remained unidentified (see diagrams).

2) Radar-Image Analysis Team

Members are producers and controllers of military radar devices as well as pilots. Efforts are being made to correlate visual observations with unknown radar traces registered by military airspace control. This is a difficult task as, contrary to ground observers, radar devices react more sensitively to objects at higher altitudes. An abduction case would gain some credibility if it could be confirmed by a recording of a strange object on radar and/or a photograph from one of the devices of the German Meteor Network.

3) Field-Investigation Team

The members of this team interview witnesses, develop measuring instruments (magnetic field detectors, for example) and observe the skies with different optical instruments on a regular basis. (Figure B-1)

Over the last 22 years, interviews have been conducted with about 100 witnesses of UFO's in the stricter sense. There are two phenomenological different classes of objects:

- A) Metallic and structured physical objects which can obviously manipulate gravity. It is not known who pilots these objects.
- B) Structureless luminous phenomena which have been observed for several minutes and up to one hour at a time. Their source of energy is unknown. In Germany there are locations from where one can observe objects of class B more often than elsewhere: in the region of Odenwald, near Kiel, in the Black Forest and near Salzuflen.

4. Psychology Team

Members are psychologists, psychiatrists, and Hypnotherapists. They treat people with traumatic experiences in cases with close encounters of UFO's. More than twenty cases have been investigated by members of this team. MUFON-CES members cannot conclude that the UFO occupants are exclusively extraterrestrial. Various other possibilities are considered as well.

5. Theory Team

Members of this team include Professors of mathematics and theoretical physics from various universities as well as physicists from the aerospace industry. They attempt to explain observations which cannot be understood within the framework of current field theories. From a purely astrophysical point of view, the extraterrestrial hypothesis cannot be excluded. Scientists of the theory team are investigating different possibilities which could explain the phenomena observed. The statistical evaluation of the physical interactions of UFO's with their surroundings indicates the existence of a new or unknown physical field which has caused strange effects on micro-organisms, plants and humans as well as levitation and lowering of temperature. This could mean the UFO phenomenon displays characteristics of a future technology.

6. Data Processing Team

Computer specialists and physicists are developing a database for cases in which UFO's have shown interactions with their surroundings (by 1996: more than 1,300 cases). Members of this team have so far studied about 20% of the 140,000 pages of reports from the US Air Force Project BLUE BOOK, as well as about 600 pages of sighting reports from the former Soviet Union, and hundreds of previously classified reports from US intelligence services.

The members of this team analyzed the phenomenological spectrum of sightings and reached the conclusion that a solid object, interacting physically with its surroundings, is at the core of the UFO phenomenon. Luminous phenomena like ball lightning, will-o'-the wisps, and paranormal light effects on the one hand, and CE-IV experiences (abduction cases) and psychological projections according to C.G. Jung on the other are borderline cases which should be attributed to UFO's only after thorough investigation. Accordingly, MUFON-CES has focused its efforts on the physical aspects of the phenomenon and less on the psychological reaction of witnesses.

Theoretical studies were carried out for the purpose of finding answers to questions such as:

- What physical mechanism can lead to the extreme brightness in the air surrounding UFO's? (1977, 1983)
- Is it possible for laser or particle beams to produce solid light? (1978)
- Does today's physics allow the generation of antigravity? (1975, 1983)
- How is it theoretically possible for solid objects to appear and disappear? (1978)
- Which physical theories permit the relocation of objects between widely separated points? (1978)
- Are the UFO occupants robots from our own future? (1991)

One consequence of our investigations was that we did indeed discover a unified field theory of matter and gravitation, able to provide at least a qualitative answer to these questions. This implies that from an astrophysical viewpoint the extraterrestrial hypothesis is the easiest explanation of the origin of UFO's. But from another point of view, analyzing the primary behavior of the UFO's and their occupants only, the best hypothesis is that of time travelers.

MUFON-CES also tried to find answers to problems of historical interest:

- Can one find a technical interpretation of the "battles in the sky" mentioned in old Indian manuscripts? (1996)
- Do Sumerian writings really contain reports of extraterrestrial visitors? (1992)
- Are UFO's shown in illustrations of medieval single leaf printings? (1977)
- How frequent were UFO sightings in Germany in the 17th, 18th and 19th centuries? (1976, 1983)
- Who were the "Foo Fighters" of World War II? (1978)

These investigations showed that objects, whose characteristics were similar to those of today's unidentified light phenomena, were already observed in the 17th century (1976). The reports on sightings of class-B objects are more frequent, and class-A objects are fewer in number than those of will-o'-the-wisps and paranormal light phenomena.

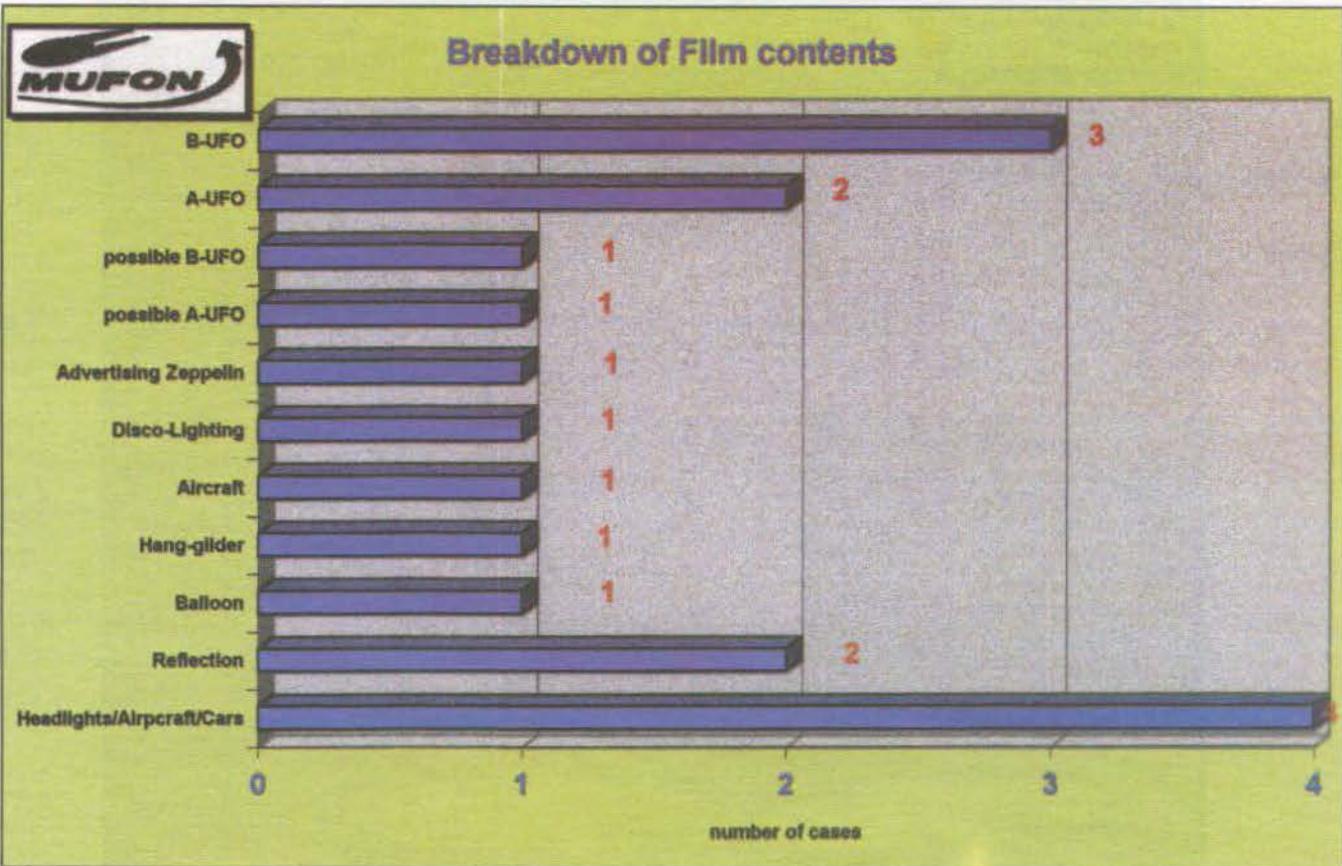
Members of the data processing team who analyzed the Blue Book material in 1981 came to the conclusion that the reports were clearly distorted. All documents are characterized by lack of carefulness, lack of familiarity with scientific methodology, and by improper application of statistics. The number of case histories remaining unevaluated due to allegedly insufficient information is five times as great as the number of objects claimed to be unidentifiable. The material is well suited to not confirming any hypothesis.

In 1980, MUFON-CES secured about 600 pages of Russian Samisdat material about UFO sightings and theories, including full names and addresses of witnesses. The most interesting reports were translated into German and published in MUFON-CES Report No. 8 (1981). The documentation shows that EM cases, CE III events, and abduction cases occurred in the former USSR, too. In contrast to witnesses in the West, Russians seemed to be less concerned about ridicule than about being questioned by the secret police. It might be mentioned that the Petrozavosk sighting in 1977 cannot be interpreted as a rocket launched at about that time in Plesetsk, 125 miles away, as James Oberg has contended, because the phenomenon was observed for about 5 minutes under low cloud cover.

In a medical study, physiological and psychological effects of UFO radiation were compared to those of electromagnetic irradiation. Statistical methods for electronic data analysis were developed and suggestions were made for an automatic registration of UFO's (1981, 1996). A number of reliability studies were concerned with data evaluation and the credibility of witnesses. The following topics were investigated:

- The value of psychological tests for obtaining objective statements from witnesses
- Photo analysis methods to discover fraudulent material (1976, 1991, 1995)
- Possibilities and limitations of hypnotic regression as a source of information
- New methods to assess the reliability of witnesses
- The psychological effects of a culture shock initiated by sudden contacts, as demonstrated by the example of the Melanesians and Tasdays.

MUFON-CES has emphasized the application of scientific methodology in its investigations. Criticism by skeptics is, in general, psychologically motivated and not the product of scientific considerations. A procedure may be termed unscientific if the methodology employed is wrong, but not merely because it is applied to "strange" phenomena, such as UFO's.

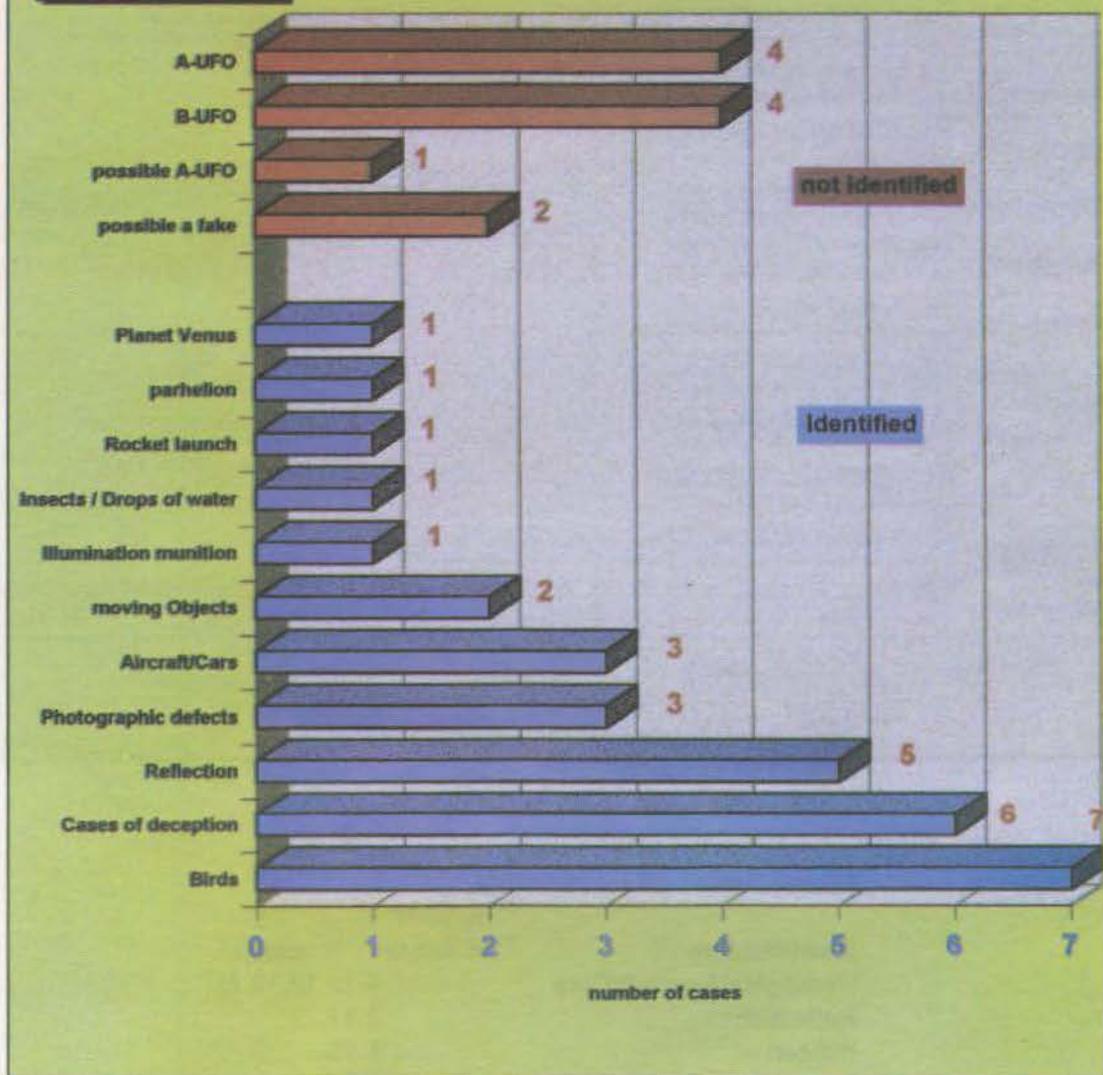


Breakdown of Film contents

Identification	number of cases	cases
Headlights/Airpcraft/Cars	4	12,13,19,24
Reflection	2	17,22
Balloon	1	15
Hang-glider	1	18
Aircraft	1	23
Disco-Lighting	1	21
Advertising Zeppelin	1	20
possible A-UFO	1	16
possible B-UFO	1	14
A-UFO	2	9,1
B-UFO	3	(1-6),7,8



Breakdown of Photographic contents



Breakdown of Photographic contents

Identification	number of cases	cases
Birds	7	3-9
Cases of deception	6	23-28
Reflection	5	10,11,12,15,18,19
Photographic defects	3	13,14,16
Aircraft/Cars	3	1-2,35
moving Objects	2	17,20
Illumination munition	1	22
Insects / Drops of water	1	21
Rocket launch	1	33
parhelion	1	32
Planet Venus	1	36
possible a fake	2	29,30
possible A-UFO	1	31
B-UFO	4	36,37,38,41
A-UFO	4	39,40,42,43



Fig. B-1: Members of the Field Investigation Team preparing instruments for the investigation of unusual lights, reported during August 1995 near Stuttgart

MUFON-CES Reports

- 1, 1975:**Die Erforschung unbekannter Flugobjekte** - Versuch einer wissenschaftlichen Auseinandersetzung mit dem UFO-Phaenomen, 6 articles, 103 pages
- 2, 1976:**Ungewoehnliche Gravitationsphaenomene** - Empirische Erfassung und theoretische Untersuchungen beobachteter Schwerkraft-Stoerungen im atmosphaerischen Umfeld unidentifizierbarer Flugkoerper, 6 articles, 221 pages
- 3, 1977:**Unerklaerliche Himmelserscheinungen aus aelterer und neuerer Zeit** - Berichte mit Analysen und Verfahren zur Beurteilung historischer Quellen, fotografischer Aufnahmen und statistischer Aussagen, 7 articles, 317 pages
- 4, 1978:**Strahlenwirkungen in der Umgebung von UFO's** - Zeugenvernehmungen, Fotoanalysen und Untersuchungen der Schaedigungen durch unerklaerliche Lichterscheinungen sowie ueber deren moeglichen Strahlungsmechanismus, 6 articles, 370 pages
- 5, 1979:**Zur Frage der Tatsaechlichkeit von Kontakten zu Ausserirdischen in Altertum und Vorzeit** - Ein neuer Weg zur Beweisfuehrung anhand eines Vergleichsverfahrens zur Psychologie ploetzlicher Kontakte sowie altindischer Schriften ueber Luft- und Raumfahrt; (only author: Lutz Gentes), 94 pages
- 6, 1979 **Ungewoehnliche eigenschaften nichtidentifizierbarere Lichterscheinungen** -Untersuchungen ueber "Foo Fighters" im 2. Weltkrieg sowie ueber "Solid Lights" und ueber Radar-Registrierungen unidentifizierbarer Objekte; Ansaetze zu einer einheitlichen Theorie unidentifizierbarer Lichter aufgrund der Heimschen einheitlichen Quantenfeldtheorie; 6 articles, 360 pages
- 7, 1981:**Automatische Registrierung unbekannter Flugobjecte** - Private und militaerische Projekte; erste Analysen physikalischer Wirkungen aufgrund gelungener instrumenteller Aufzeichnungen, (only author: Adolf Schneider), 270 pages
- 8, 1981:**Offizielle Untersuchungsberichte der Russen und der Amerikaner ueber unidentifizierbare Himmelserscheinungen** - US Air Force Project BLUE BOOK Material: Berichtsmanuskripte aus der USSR und polizeiliche UFO-Ermittlungen in Bayern; 6 articles, 400 pages
- 9, 1983:**Seltsame Flugobjekte und die Einheit der Physik** - UFO-Sichtungen in Deutschland; Berichte der US-Geheimdienste und -Astronomen; Vorschlaege zur Datenverarbeitung: Antigravitation in der Elementarteilchen-Physik; 9 articles, 460 pages
- 10, 1989: **Unerwünschte Entdeckungen im Luftraum** - UFO-Massensichtungen 1983-84; freigegebene US-Geheimdienst Dokumente; Wissenschafts-Journalismus und das UFO-Thema; Analysen der Zeugenglaubwuerdigkeit und Echtheit von Fotos; Einsatz von Hypnose bei UFO-Abductionen; 14 articles, 512 pages
- 11, 1993: **Interdisciplinary UFO Research** - Analysis of Photos and Video Film and of Abduction Cases in Germany; The Generation of Antigravity; in English, 9 articles, 293 pages

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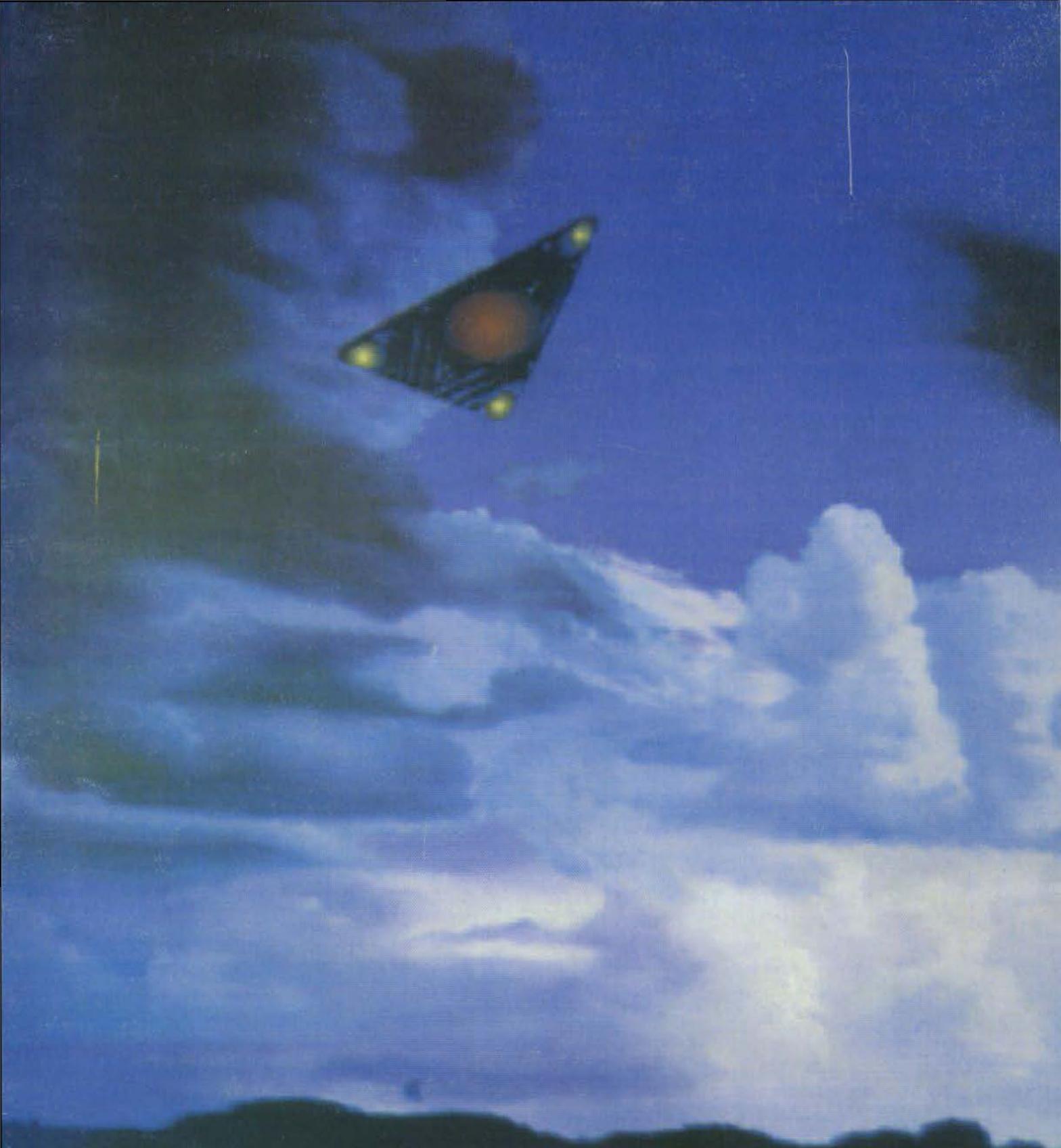
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