1
00:00:00,000 --> 00:00:04,000
With all

2
00:00:04,000 --> 00:00:08,000
that man has yet to learn about the world beyond his own,

3
00:00:08,000 --> 00:00:12,000
much that he now knows can be traced back to a polish astronomer

4
00:00:12,000 --> 00:00:16,000
born 500 years ago. His name

5
00:00:16,000 --> 00:00:20,000
Nicolas Copernicus, the father of modern astronomy,

6
00:00:20,000 --> 00:00:24,000
who formulated the concept that the moon and Earth revolve around the sun,

7
00:00:24,000 --> 00:00:28,000
rather than vice versa.

8
00:00:28,000 --> 00:00:32,000
Nearly five centuries later, his name has been

9
00:00:32,000 --> 00:00:36,000
memorialized in a new space telescope designed by

10
00:00:36,000 --> 00:00:40,000
scientists at Princeton University in the United States and University College

11
00:00:40,000 --> 00:00:44,000
in London. The Princeton contribution was a large

12
00:00:44,000 --> 00:00:48,000
reflecting telescope for detecting invisible ultraviolet radiation.

13
00:00:48,000 --> 00:00:52,000

University College designed a new

14
00:00:52,000 --> 00:00:56,000
system for monitoring sources of X-ray energy in outer space.

15
00:01:04,000 --> 00:01:00,000
music

16
00:01:04,000 --> 00:01:08,000
Orbiting Astronomical Observatory Copernicus was launched from Cape Kennedy in Florida,

17
00:01:08,000 --> 00:01:12,000
on August 21st, 1972.

18
00:01:12,000 --> 00:01:16,000
Enclosed in a tip of an Atlas Centaur rocket, it was the largest and most complex

19
00:01:16,000 --> 00:01:20,000
unmanned spacecraft ever sent into orbit from the United States.

20
00:01:20,000 --> 00:01:24,000
Scientists and dignitaries from Poland and England attended

21
00:01:24,000 --> 00:01:28,000
the night time launch.

22
00:01:28,000 --> 00:01:32,000
music

23
00:01:32,000 --> 00:01:36,000
From the Earth an astronomer can see millions of

24
00:01:36,000 --> 00:01:40,000
lightyears away, but only in the range of visible light.

25
00:01:40,000 --> 00:01:44,000
Cut off from him by Earth’s atmosphere, are the ultraviolet,

26
00:01:44,000 --> 00:01:48,000
infrared, gamma and X-rays, containing

27
00:01:48,000 --> 00:01:52,000
secrets of how the Universe was born in the darkest reaches of time

28
00:01:52,000 --> 00:01:56,000
and space. Five hundred

29
00:01:56,000 --> 00:02:00,000
miles above the atmosphere, conditions are ideal for probing

30
00:02:00,000 --> 00:02:04,000
these mysteries. That is where Copernicus is now on full-time

31
00:02:04,000 --> 00:02:08,000
duty using its solar panels for electric power

32
00:02:08,000 --> 00:02:12,000
to find and lock on to many stars, and dust between the stars,

33
00:02:12,000 --> 00:02:16,000
where stars are born.

34
00:02:16,000 --> 00:02:20,000
Ground stations around the world receive transmissions from Copernicus

35
00:02:20,000 --> 00:02:24,000
and relay them to the United States. Astronomers everywhere are pleased

36
00:02:24,000 --> 00:02:28,000
with the early results. Material needed to form new stars

37
00:02:28,000 --> 00:02:32,000
has been found where none was thought to exist.

38
00:02:32,000 --> 00:02:36,000

At least one star system is rotating at a speed that

39
00:02:36,000 --> 00:02:40,000
increases almost daily. Other early observations remain to be

40
00:02:40,000 --> 00:02:44,000
interpreted as the eye of the new Copernicus

41
00:02:44,000 --> 00:02:48,000
continues its studies of invisible clues to the creation of the Universe.

42
00:02:48,000 --> 00:02:52,000
music

43
00:02:52,000 --> 00:02:56,000
Produced and Written

44
00:02:56,000 --> 00:03:00,000
by Robert Foster

45
00:03:00,000 --> 00:03:04,000
film editor Dominick Ruggiero