



1
00:00:05,510 --> 00:00:02,929
what are we have here is another PHA

2
00:00:07,369 --> 00:00:05,520
take a look at the Palermo hmm my guess

3
00:00:09,140 --> 00:00:07,379
is that this body is an ottoman do we

4
00:00:19,580 --> 00:00:09,150
have a size got to be in the 300 meter

5
00:00:22,010 --> 00:00:19,590
range let's get on this you can think of

6
00:00:24,980 --> 00:00:22,020
the near-earth object program office is

7
00:00:27,500 --> 00:00:24,990
sort of a CSI unit we discover these

8
00:00:28,910 --> 00:00:27,510
objects we try and determine what

9
00:00:32,930 --> 00:00:28,920
they're made of where they're going and

10
00:00:35,720 --> 00:00:32,940
just how dangerous they might be in

11
00:00:39,020 --> 00:00:35,730
December of four one of the new

12
00:00:41,690 --> 00:00:39,030
discoveries was an asteroid that later

13
00:00:44,150 --> 00:00:41,700

became known as Apophis it's an object

14

00:00:45,889 --> 00:00:44,160

about 270 meters long that's going to

15

00:00:49,389 --> 00:00:45,899

make an extremely close approach to the

16

00:00:52,610 --> 00:00:49,399

earth on April 13th Friday at the 13th

17

00:00:54,680 --> 00:00:52,620

2029 this object isn't a source for

18

00:00:55,849 --> 00:00:54,690

concern now but back then it had us

19

00:00:58,549 --> 00:00:55,859

worried

20

00:01:01,369 --> 00:00:58,559

so this is a representation of the earth

21

00:01:04,939 --> 00:01:01,379

and the orbit of the moon and the

22

00:01:07,940 --> 00:01:04,949

uncertainty region of Apophis all of the

23

00:01:10,280 --> 00:01:07,950

points on this line are possible

24

00:01:12,350 --> 00:01:10,290

locations for Apophis and any one of

25

00:01:13,999 --> 00:01:12,360

these dots could be the actual asteroid

26

00:01:16,910 --> 00:01:14,009

all of the numbers that we were seeing

27

00:01:19,700 --> 00:01:16,920

were well beyond what we had seen before

28

00:01:22,580 --> 00:01:19,710

and the threat level as a result was

29

00:01:25,340 --> 00:01:22,590

elevated the impact probability for a

30

00:01:27,980 --> 00:01:25,350

collision with the earth in 2029 reached

31

00:01:30,980 --> 00:01:27,990

the three percent level three chances

32

00:01:33,499 --> 00:01:30,990

out of 100 that it would hit when we saw

33

00:01:37,249 --> 00:01:33,509

the impact probability rising we put out

34

00:01:39,230 --> 00:01:37,259

calls for others to look on their in

35

00:01:41,719 --> 00:01:39,240

their archives for images of this

36

00:01:44,300 --> 00:01:41,729

asteroid that previous dates when we got

37

00:01:46,010 --> 00:01:44,310

additional observations from the optical

38

00:01:48,680 --> 00:01:46,020

telescopes and when we got additional

39

00:01:52,969 --> 00:01:48,690

radar data the threat level went to zero

40

00:01:58,920 --> 00:01:52,979

in 2029 and only remove left a slight

41

00:02:03,950 --> 00:02:01,140

there is a possibility that after it

42

00:02:06,750 --> 00:02:03,960

goes by the earth it may pass in a small

43

00:02:09,719 --> 00:02:06,760

doorway or keyhole I call it and be

44

00:02:11,880 --> 00:02:09,729

deflected by the earth's gravity into an

45

00:02:14,280 --> 00:02:11,890

orbit that would be about seven sixths

46

00:02:17,550 --> 00:02:14,290

of a year the earth would go around the

47

00:02:19,260 --> 00:02:17,560

Sun seven times the asteroid would go

48

00:02:20,940 --> 00:02:19,270

around the Sun six times and they would

49

00:02:24,449 --> 00:02:20,950

meet up at the same place at the same

50

00:02:26,490 --> 00:02:24,459

time on April 13th 2036 it will be

51
00:02:28,980 --> 00:02:26,500
important to look at this asteroid in

52
00:02:32,550 --> 00:02:28,990
the year 2013 we hope to see it with

53
00:02:34,530 --> 00:02:32,560
radar and then hopefully we will confirm

54
00:02:36,750 --> 00:02:34,540
that the asteroid will not pass through

55
00:02:40,229 --> 00:02:36,760
that keyhole that should allow us enough

56
00:02:42,449 --> 00:02:40,239
time if we unfortunately see that it is

57
00:02:44,190 --> 00:02:42,459
going to the keyhole perhaps to mount

58
00:02:46,470 --> 00:02:44,200
some sort of mission to the asteroid to

59
00:02:49,449 --> 00:02:46,480
deflect it and all we have to do then is

60
00:02:52,369 --> 00:02:49,459
deflected away from that keyhole

61
00:02:54,710 --> 00:02:52,379
we don't let down our guard not even for

62
00:02:56,180 --> 00:02:54,720
a day it's our job to monitor the inner

63
00:02:58,009 --> 00:02:56,190

solar systems and make sure that none of