
HUBBLE SCIENCE
PLANETARY MISSIONS
Fossils of our Solar System

1
00:00:00,090 --> 00:00:07,849
[Music]

2
00:00:12,350 --> 00:00:10,070
I'm the project scientist on The Lucy

3
00:00:15,470 --> 00:00:12,360
Mission and we have benefited greatly

4
00:00:20,150 --> 00:00:15,480
from Hubble four three Lucy launched on

5
00:00:24,050 --> 00:00:20,160
October 16 2021 liftoff Atlas 5 takes

6
00:00:29,509 --> 00:00:26,029
it's been 11 and a half year Mission

7
00:00:31,250 --> 00:00:29,519
because we are going relatively far from

8
00:00:33,290 --> 00:00:31,260
the earth we're visiting both the

9
00:00:34,970 --> 00:00:33,300
leading and trailing group of the Trojan

10
00:00:37,430 --> 00:00:34,980
asteroids they've never been explored

11
00:00:39,470 --> 00:00:37,440
before with the spacecraft they are in

12
00:00:41,930 --> 00:00:39,480
the same orbit around the Sun as Jupiter

13
00:00:44,450 --> 00:00:41,940

but they're trailing Jupiter or leading

14
00:00:46,430 --> 00:00:44,460
it by about 60 degrees so they stay

15
00:00:48,470 --> 00:00:46,440
almost the same distance from Jupiter as

16
00:00:50,869 --> 00:00:48,480
they are from the Sun and they're there

17
00:00:52,170 --> 00:00:50,879
because it's sort of a gravitational fly

18
00:00:53,510 --> 00:00:52,180
trap

19
00:00:55,610 --> 00:00:53,520
[Music]

20
00:00:58,549 --> 00:00:55,620
we began in this intensive surgery

21
00:01:01,369 --> 00:00:58,559
Hubble around the Lucy targets once we

22
00:01:03,590 --> 00:01:01,379
knew the Lucy mission was going it's a

23
00:01:05,870 --> 00:01:03,600
difficult observation it requires going

24
00:01:07,910 --> 00:01:05,880
very very deep with Hubble and even then

25
00:01:09,830 --> 00:01:07,920
it was right at the barely at the edge

26
00:01:13,130 --> 00:01:09,840
of what Hubble could do

27
00:01:14,990 --> 00:01:13,140
we did find the satellite of one of our

28
00:01:16,670 --> 00:01:15,000
targets as an asteroid named derivities

29
00:01:18,770 --> 00:01:16,680
and it has a tiny satellite that we

30
00:01:20,929 --> 00:01:18,780
named Keta that was found directly with

31
00:01:25,070 --> 00:01:20,939
Hubble

32
00:01:28,429 --> 00:01:25,080
we took our cue for that search from the

33
00:01:31,310 --> 00:01:28,439
New Horizons mission to Pluto oh both

34
00:01:33,850 --> 00:01:31,320
did that by finding four satellites two

35
00:01:36,830 --> 00:01:33,860
Nicks and Hydra were found in

36
00:01:39,289 --> 00:01:36,840
2005 and then the next couple were found

37
00:01:41,270 --> 00:01:39,299
years later when they realized the

38
00:01:43,550 --> 00:01:41,280

orbital configuration of Nixon Hydra

39
00:01:45,710 --> 00:01:43,560
looked like there might be more and that

40
00:01:48,950 --> 00:01:45,720
really enabled a lot of science because

41
00:01:50,749 --> 00:01:48,960
we were able to plan ahead and make

42
00:01:54,710 --> 00:01:50,759
observations with the New Horizons

43
00:01:58,969 --> 00:01:57,109
now that we know that there are these

44
00:02:01,190 --> 00:01:58,979
satellites around two of the Lucy

45
00:02:04,310 --> 00:02:01,200
targets we'll be able to plan ahead and

46
00:02:06,109 --> 00:02:04,320
utilize that knowledge to get images and

47
00:02:07,969 --> 00:02:06,119
more information about those targets

48
00:02:11,110 --> 00:02:07,979
when we fly by

49
00:02:17,510 --> 00:02:14,690
good at doing is the kind of observation