
IRAS

1
00:01:41,200 --> 00:00:59,410
you

2
00:01:45,680 --> 00:01:43,790
how do we go from from the Big Bang

3
00:01:47,930 --> 00:01:45,690
that's really when you think about it

4
00:01:49,610 --> 00:01:47,940
very strange situation the universe

5
00:01:51,110 --> 00:01:49,620
being very hot and dense and expanding

6
00:01:52,520 --> 00:01:51,120
and filling and turning out full of

7
00:01:54,560 --> 00:01:52,530
galaxies and planets and stars and

8
00:01:56,930 --> 00:01:54,570
eventually life you know how do we get

9
00:01:59,090 --> 00:01:56,940
there how did that happen well something

10
00:02:00,950 --> 00:01:59,100
crazy went along to make it happen

11
00:02:03,560 --> 00:02:00,960
because our simple models aren't working

12
00:02:06,320 --> 00:02:03,570
right now we're missing a step it's like

13
00:02:08,000 --> 00:02:06,330

a missing link and we give to find the

14
00:02:10,040 --> 00:02:08,010
the fossils back there in the early

15
00:02:12,440 --> 00:02:10,050
erase the missing link that will get us

16
00:02:18,660 --> 00:02:12,450
from the uniform universe to the

17
00:04:36,750 --> 00:02:51,290
you

18
00:04:41,290 --> 00:04:39,040
one of the really unique things about

19
00:04:44,050 --> 00:04:41,300
Kobe is that it's a scientific

20
00:04:46,060 --> 00:04:44,060
experiment from the very beginning it's

21
00:04:48,190 --> 00:04:46,070
like taking the instruments in your

22
00:04:50,730 --> 00:04:48,200
laboratory or instruments that we flew

23
00:04:55,030 --> 00:04:50,740
on balloons or in rockets years ago and

24
00:04:58,060 --> 00:04:55,040
putting those into a satellite package

25
00:05:04,320 --> 00:04:58,070
and essentially moving your laboratory

26
00:05:07,690 --> 00:05:04,330
in the space Kobe is attacking a problem

27
00:05:12,400 --> 00:05:07,700
for which it is very hard to get any

28
00:05:14,020 --> 00:05:12,410
good observations in fact it's

29
00:05:16,600 --> 00:05:14,030
dreadfully hard to get good

30
00:05:19,390 --> 00:05:16,610
observational cause of cosmological data

31
00:05:21,970 --> 00:05:19,400
and if Kobe is specially designed so

32
00:05:25,000 --> 00:05:21,980
that all the things that might screw up

33
00:05:27,070 --> 00:05:25,010
the data or perturb it are you know

34
00:05:30,160 --> 00:05:27,080
let's put in an orbit which is shielded

35
00:05:32,710 --> 00:05:30,170
from the Sun very carefully it's kept

36
00:05:35,020 --> 00:05:32,720
cold and a lot of things have been done

37
00:05:37,290 --> 00:05:35,030
so that you don't have to correct so

38
00:05:41,340 --> 00:05:37,300

much and you can trust the data better

39
00:05:44,380 --> 00:05:41,350
so the public the cosmological

40
00:05:48,490 --> 00:05:44,390
information that comes from this we hope

41
00:07:19,570 --> 00:05:48,500
will be definitive and will not you will

42
00:07:23,300 --> 00:07:21,439
when we look at the cosmic background

43
00:07:24,770 --> 00:07:23,310
radiation we're actually looking at the

44
00:07:27,020 --> 00:07:24,780
dominant form of energy in the whole

45
00:07:29,839 --> 00:07:27,030
universe this radiation fills the whole

46
00:07:31,429 --> 00:07:29,849
sky comes from every direction and so it

47
00:07:33,290 --> 00:07:31,439
adds up to be a hundred times as much

48
00:07:35,570 --> 00:07:33,300
energy as comes from all the stars all

49
00:07:37,309 --> 00:07:35,580
the galaxies all the sun's all the

50
00:07:40,189 --> 00:07:37,319
planets that people can see with their

51
00:07:43,279 --> 00:07:40,199
own eyes a hundred times as much as that

52
00:07:45,050 --> 00:07:43,289
so it's very important to realize we're

53
00:07:46,519 --> 00:07:45,060
looking at the dominant energy of the

54
00:07:48,469 --> 00:07:46,529
whole universe this is the remnant of

55
00:09:24,890 --> 00:07:48,479
the Big Bang itself that we're studying

56
00:09:30,270 --> 00:09:27,930
coby gives us the opportunity to go look

57
00:09:32,400 --> 00:09:30,280
in detail at some of the major

58
00:09:35,430 --> 00:09:32,410
predictions of the big bang theory and

59
00:09:38,820 --> 00:09:35,440
the hope is that those details will

60
00:09:59,820 --> 00:09:38,830
either verify or collapse that whole

61
00:09:59,830 --> 00:10:35,710
you

62
00:10:40,940 --> 00:10:38,450
if we are successful in subtracting out

63
00:10:45,170 --> 00:10:40,950

the foreground radiations and definitely

64
00:10:47,840 --> 00:10:45,180
identifying a residual cosmic glow which

65
00:10:50,930 --> 00:10:47,850
can be interpreted as the cumulative

66
00:10:54,250 --> 00:10:50,940
emission of first generations of stars

67
00:10:57,020 --> 00:10:54,260
and galaxies this is in and of itself a

68
00:10:59,420 --> 00:10:57,030
most exciting discovery this gives us

69
00:11:01,040 --> 00:10:59,430
direct evidence of an epoch in cosmic

70
00:11:12,360 --> 00:11:01,050
history that has not directly been

71
00:11:16,330 --> 00:11:15,280
what the Kobe will tell us at the end of

72
00:11:19,360 --> 00:11:16,340
the mission and after our

73
00:11:21,820 --> 00:11:19,370
interpretations are done is how we got

74
00:11:24,160 --> 00:11:21,830
here how the galaxies were formed from

75
00:11:27,160 --> 00:11:24,170
whatever was there before the Kobe

76
00:11:31,990 --> 00:11:27,170
mission is worth every ounce of effort

77
00:11:33,820 --> 00:11:32,000
we've put into it cosmology as you can

78
00:11:37,510 --> 00:11:33,830
understand is a very difficult problem

79
00:11:41,310 --> 00:11:37,520
to study objectively we are given very

80
00:11:45,250 --> 00:11:41,320
few fossils on the beach if you will

81
00:11:48,700 --> 00:11:45,260
those few that are present and

82
00:11:51,550 --> 00:11:48,710
accessible still to us at this time 15

83
00:11:57,220 --> 00:11:51,560
billion years or so after the primeval