



1  
00:00:54,229 --> 00:00:51,750  
this is the discovery of the first

2  
00:00:56,389 --> 00:00:54,239  
transiting circumbinary planet

3  
00:00:58,069 --> 00:00:56,399  
what that means is a circumbinary planet

4  
00:01:00,470 --> 00:00:58,079  
is a planet that goes around two stars

5  
00:01:02,389 --> 00:01:00,480  
at the same time and transit means it

6  
00:01:06,230 --> 00:01:02,399  
moves in front of the stars causing a

7  
00:01:10,310 --> 00:01:08,230  
multiple star systems

8  
00:01:12,390 --> 00:01:10,320  
people looking up at multiple sunsets

9  
00:01:13,830 --> 00:01:12,400  
and so on is a familiar theme from

10  
00:01:15,749 --> 00:01:13,840  
science fiction

11  
00:01:17,590 --> 00:01:15,759  
but this is the first time that it has

12  
00:01:20,630 --> 00:01:17,600  
become science fact

13  
00:01:23,190 --> 00:01:20,640

so in some sense that star wars that

14

00:01:24,070 --> 00:01:23,200

sunset on tattooing that luke skywalker

15

00:01:26,710 --> 00:01:24,080

saw

16

00:01:29,670 --> 00:01:26,720

has become a possibility

17

00:01:33,910 --> 00:01:29,680

in some sense um the galaxy far far away

18

00:01:36,789 --> 00:01:35,590

well this is a very exciting discovery

19

00:01:38,390 --> 00:01:36,799

for me

20

00:01:40,310 --> 00:01:38,400

in part because i've been looking for

21

00:01:41,429 --> 00:01:40,320

circumbinary planets for over two

22

00:01:43,510 --> 00:01:41,439

decades

23

00:01:45,670 --> 00:01:43,520

but it doesn't feel like an ending it

24

00:01:47,510 --> 00:01:45,680

feels like a beginning because what it

25

00:01:49,270 --> 00:01:47,520

has done is opened up a whole new type

26  
00:01:51,749 --> 00:01:49,280  
of planetary system that can form in the

27  
00:01:54,469 --> 00:01:51,759  
galaxy there must be millions of these

28  
00:01:56,069 --> 00:01:54,479  
type of systems in the milky way galaxy

29  
00:01:57,190 --> 00:01:56,079  
there's a great moment in new hope where

30  
00:02:00,950 --> 00:01:57,200  
luke is

31  
00:02:02,870 --> 00:02:00,960  
watching a twin sunset on tatooine

32  
00:02:05,030 --> 00:02:02,880  
it's a it's a great way to show that

33  
00:02:06,870 --> 00:02:05,040  
we're not on earth that it's this exotic

34  
00:02:08,790 --> 00:02:06,880  
environment

35  
00:02:10,790 --> 00:02:08,800  
but that was never really thought to be

36  
00:02:13,030 --> 00:02:10,800  
possible and it's uh

37  
00:02:15,670 --> 00:02:13,040  
exciting to see that science is uh

38  
00:02:21,030 --> 00:02:15,680

caught up with uh with the fantasy that

39

00:02:25,670 --> 00:02:22,710

the reality is often cooler than the

40

00:02:26,949 --> 00:02:25,680

fiction uh that

41

00:02:29,430 --> 00:02:26,959

you know when we see discoveries like

42

00:02:32,470 --> 00:02:29,440

this from kepler we see that that the

43

00:02:35,430 --> 00:02:32,480

universe is really a weird and exotic

44

00:02:38,229 --> 00:02:35,440

place and uh more so than a lot of the

45

00:02:39,670 --> 00:02:38,239

the depictions we make

46

00:02:41,430 --> 00:02:39,680

t-minus ten

47

00:02:42,470 --> 00:02:41,440

nine eight

48

00:02:43,509 --> 00:02:42,480

seven

49

00:02:44,630 --> 00:02:43,519

six

50

00:02:45,670 --> 00:02:44,640

five

51

00:02:46,710 --> 00:02:45,680

four

52

00:02:50,229 --> 00:02:46,720

three

53

00:02:52,949 --> 00:02:50,239

two engine start one zero and liftoff of

54

00:02:55,509 --> 00:02:52,959

the delta ii rocket with kepler on a

55

00:02:57,350 --> 00:02:55,519

search for planets in some way like our

56

00:02:59,110 --> 00:02:57,360

own burning our engine chamber pressures

57

00:03:04,229 --> 00:02:59,120

are building grounded solid motors are