1
00:00:09,910 --> 00:00:07,670
tess the transiting exoplanet survey

2
00:00:12,310 --> 00:00:09,920
satellite has completed its survey of

3
00:00:17,590 --> 00:00:12,320
the southern sky

4
00:00:20,870 --> 00:00:17,600
into 13 sectors and its four cameras

5
00:00:22,710 --> 00:00:20,880
monitored each sector for nearly a month

6
00:00:24,790 --> 00:00:22,720
tess was watching for the slight dips in

7
00:00:27,349 --> 00:00:24,800
starlight as distant planets passed in

8
00:00:29,029 --> 00:00:27,359
front of their host stars but it also

9
00:00:31,429 --> 00:00:29,039
caught other transient events like

10
00:00:33,430 --> 00:00:31,439
comets and supernovae in addition to

11
00:00:35,670 --> 00:00:33,440
building a beautiful panoramic picture

12
00:00:37,990 --> 00:00:35,680
of the sky

13
00:00:41,750 --> 00:00:38,000

the bright band on the left is the milky

14
00:00:44,069 --> 00:00:41,760
way our home galaxy viewed edge on

15
00:00:46,630 --> 00:00:44,079
zooming into the mosaic it's clear how

16
00:00:47,830 --> 00:00:46,640
much detail and how many stars tess has

17
00:00:49,910 --> 00:00:47,840
captured

18
00:00:52,150 --> 00:00:49,920
at the center is the continuous viewing

19
00:00:54,420 --> 00:00:52,160
zone where the view of one test camera

20
00:00:56,069 --> 00:00:54,430
overlaps all 13 sectors

21
00:00:58,630 --> 00:00:56,079
[Music]

22
00:01:02,389 --> 00:00:58,640
within it is the large magellanic cloud

23
00:01:04,549 --> 00:01:02,399
one of the closest galaxies to our own

24
00:01:07,109 --> 00:01:04,559
a little farther out is the more distant

25
00:01:10,070 --> 00:01:07,119
small magellanic cloud flanked by a ball

26
00:01:15,270 --> 00:01:10,080
of stars the bright globular cluster ngc

27
00:01:20,149 --> 00:01:17,350
silhouetted by the band of the milky way

28
00:01:22,630 --> 00:01:20,159
is the colsack nebula an obscuring cloud

29
00:01:25,990 --> 00:01:22,640
of dust in the constellation crux also

30
00:01:28,230 --> 00:01:26,000
known as the southern cross

31
00:01:31,109 --> 00:01:28,240
the mosaic also contains many notable

32
00:01:33,270 --> 00:01:31,119
stars such as alpha centauri one of our

33
00:01:34,990 --> 00:01:33,280
closest neighboring systems and among

34
00:01:37,670 --> 00:01:35,000
the brightest stars in the sky

35
00:01:39,990 --> 00:01:37,680
[Music]

36
00:01:41,690 --> 00:01:40,000
fomalhaut which hosts one of the first

37
00:01:44,149 --> 00:01:41,700
directly imaged planets

38
00:01:46,310 --> 00:01:44,159

[Music]

39
00:01:47,749 --> 00:01:46,320
sirius the brightest star in the night

40
00:01:50,310 --> 00:01:47,759
sky

41
00:01:51,830 --> 00:01:50,320
and beetlejuice a red supergiant star

42
00:01:55,990 --> 00:01:51,840
that marks one shoulder of the

43
00:02:00,709 --> 00:01:58,550
the orion nebula a vast nursery where

44
00:02:07,590 --> 00:02:00,719
stars are born was imaged in great

45
00:02:12,869 --> 00:02:10,389
this isn't a cosmic object at all

46
00:02:15,670 --> 00:02:12,879
it's actually a reflection of rigel the

47
00:02:17,750 --> 00:02:15,680
bright star marking one of orion's feet

48
00:02:22,869 --> 00:02:17,760
and it's caused by light scattering off

49
00:02:27,270 --> 00:02:25,270
tessa's confirmed exoplanet discoveries

50
00:02:28,000 --> 00:02:27,280
are currently distributed all around the

51
00:02:29,190 --> 00:02:28,010
southern sky

52
00:02:30,869 --> 00:02:29,200
[Music]

53
00:02:32,949 --> 00:02:30,879
many of these discoveries are actually

54
00:02:33,960 --> 00:02:32,959
multi-planet systems and several are

55
00:02:37,589 --> 00:02:33,970
earth-sized

56
00:02:41,910 --> 00:02:39,830
many more candidate exoplanets await

57
00:02:43,830 --> 00:02:41,920
confirmation

58
00:02:45,910 --> 00:02:43,840
it's easy to see which sectors were

59
00:02:47,910 --> 00:02:45,920
among the first because astronomers have

60
00:02:51,830 --> 00:02:47,920
had more time to study them and find

61
00:02:53,270 --> 00:02:51,840
potential transits eventually candidate

62
00:02:56,000 --> 00:02:53,280
and confirmed planets will be

63
00:02:57,430 --> 00:02:56,010

distributed more evenly around the sky

64
00:02:59,350 --> 00:02:57,440
[Music]

65
00:03:01,350 --> 00:02:59,360
tess has now turned around and is

66
00:03:03,270 --> 00:03:01,360
observing the northern sky using the

67
00:03:05,589 --> 00:03:03,280
same strategy

68
00:03:07,589 --> 00:03:05,599
as it does astronomers will continue to

69
00:03:09,670 --> 00:03:07,599
sift through roughly 20 terabytes of

70
00:03:12,949 --> 00:03:09,680
data from the southern hemisphere as

71
00:03:16,309 --> 00:03:12,959
well as the new incoming information

72
00:03:19,030 --> 00:03:16,319
eventually hundreds or even thousands of