
ASTRO
BIOLOGY
& WEBB
NASA

1
00:00:09,589 --> 00:00:06,950
[Music]

2
00:00:11,270 --> 00:00:09,599
nasa missions like kepler and also tess

3
00:00:13,830 --> 00:00:11,280
the transiting exoplanet survey

4
00:00:16,310 --> 00:00:13,840
satellite have really revolutionized our

5
00:00:18,630 --> 00:00:16,320
understanding of exoplanet demographics

6
00:00:20,950 --> 00:00:18,640
they've told us some basic but also

7
00:00:24,150 --> 00:00:20,960
really important planetary properties

8
00:00:26,630 --> 00:00:24,160
like planets sizes how far away these

9
00:00:29,029 --> 00:00:26,640
planets are from their stars how common

10
00:00:31,189 --> 00:00:29,039
planets of different types are but we

11
00:00:33,590 --> 00:00:31,199
want to take the next step now and know

12
00:00:35,830 --> 00:00:33,600
more about these planets not just as you

13
00:00:37,750 --> 00:00:35,840

know distant point sources but as actual

14
00:00:39,830 --> 00:00:37,760
places comparable to the worlds of our

15
00:00:41,590 --> 00:00:39,840
solar system so james webb is going to

16
00:00:43,590 --> 00:00:41,600
help us to take that next step by

17
00:00:45,990 --> 00:00:43,600
actually characterizing the atmospheres

18
00:00:47,510 --> 00:00:46,000
of exoplanets it's going to be able to

19
00:00:49,270 --> 00:00:47,520
measure the composition of these

20
00:00:51,910 --> 00:00:49,280
atmospheres and we've already been able

21
00:00:54,630 --> 00:00:51,920
to do this a little bit for the largest

22
00:00:56,950 --> 00:00:54,640
you know jupiter-sized puffy exoplanets

23
00:00:59,670 --> 00:00:56,960
with large atmospheres but we haven't

24
00:01:01,510 --> 00:00:59,680
been able to do this for small planets

25
00:01:04,229 --> 00:01:01,520
about the size of earth and with thin

26
00:01:06,630 --> 00:01:04,239
atmospheres so we really need a powerful

27
00:01:09,190 --> 00:01:06,640
and capable mission like james webb to

28
00:01:12,230 --> 00:01:09,200
be able to make those really sensitive

29
00:01:15,200 --> 00:01:12,240
measurements to tell us what earth-sized

30
00:01:21,250 --> 00:01:15,210
exoplanets are truly like