1
00:00:00,000 --> 00:00:02,980
Text: A Titan Discovery

2
00:00:03,160 --> 00:00:06,800
Where else might life exist in
our solar system? That's a

3
00:00:06,807 --> 00:00:11,211
question that NASA scientists
are trying to answer. An

4
00:00:11,211 --> 00:00:15,916
intriguing place we are studying
is Saturn's largest moon, Titan.

5
00:00:15,916 --> 00:00:19,152
It's the only body in the solar
system other than Earth to

6
00:00:19,152 --> 00:00:23,056
feature seas of liquid on its
surface. But that liquid is

7
00:00:23,056 --> 00:00:26,393
methane instead of water. The
cell membranes we have on Earth,

8
00:00:26,393 --> 00:00:32,032
part of our building blocks for
life, could not form here.

9
00:00:32,032 --> 00:00:35,669
Previous computer simulations
investigated which chemicals

10
00:00:35,669 --> 00:00:40,040
could be used to make cell-like
membranes on Titan. It's been

11

00:00:40,040 --> 00:00:44,044
calculated that this molecule,
acrylonitrile, is the best

12
00:00:44,044 --> 00:00:48,148
candidate to form the most
stable membranes. What's

13
00:00:48,148 --> 00:00:51,785
exciting is that our team at
NASA Goddard has now detected

14
00:00:51,785 --> 00:00:54,955
large amounts of this chemical
in Titan's atmosphere, using

15
00:00:54,955 --> 00:00:59,426
spectroscopic data from ALMA,
the Atacama Large Millimeter/sub

16
00:00:59,426 --> 00:01:05,599
millimeter Array, located in
Chile. And since Titan has rain,

17
00:01:05,599 --> 00:01:08,835
a significant amount may be
reaching the surface and ending

18
00:01:08,835 --> 00:01:13,040
up in Titan's vast lakes. More
research is needed, but by

19
00:01:13,040 --> 00:01:16,043
definitively detecting this
astrobiologically relevant

20
00:01:16,043 --> 00:01:19,513
molecule on Titan, we are
another step closer to