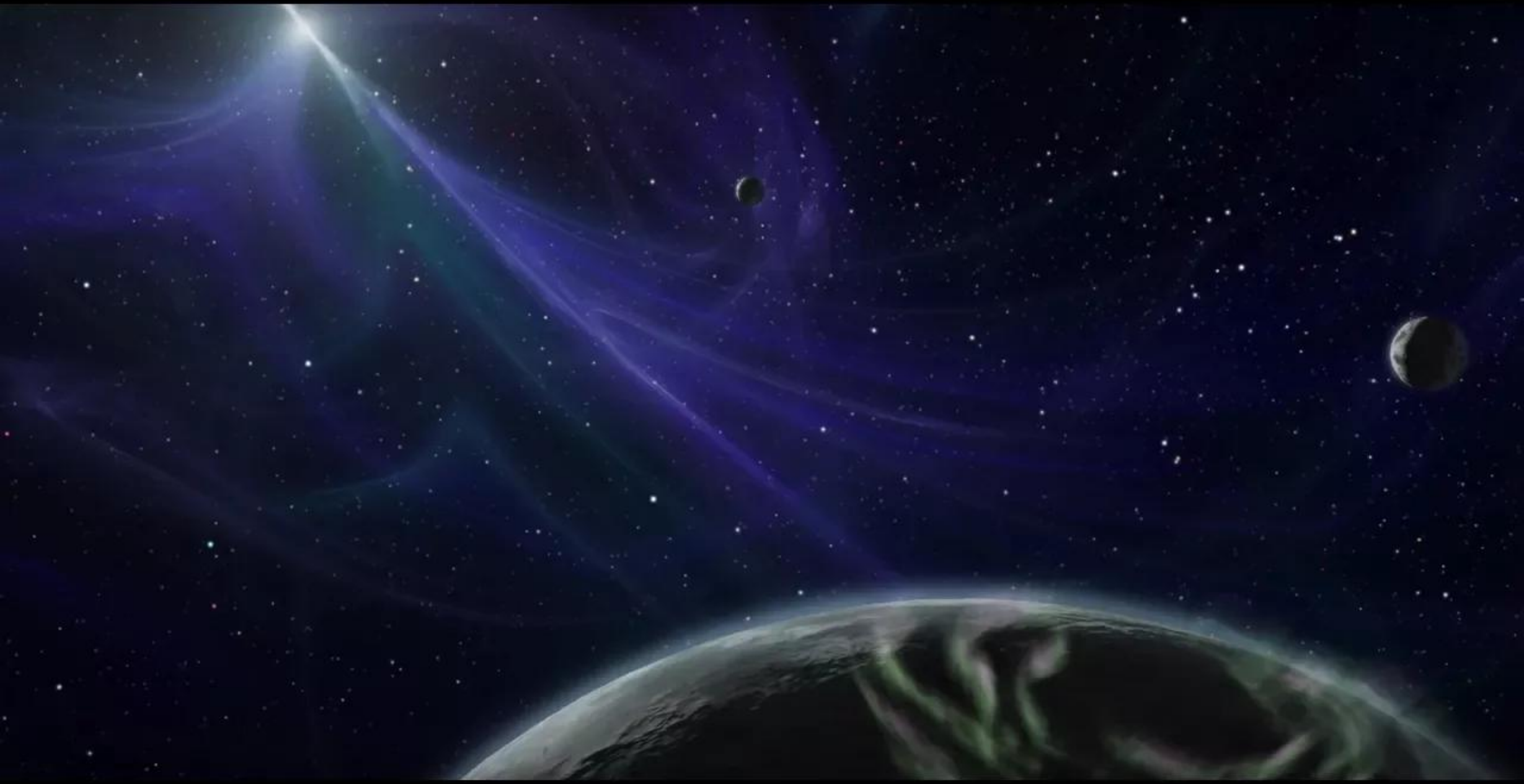

1
00:00:00,200 --> 00:00:02,035
■

2
00:00:02,068 --> 00:00:04,737
>> Tim Pyle: Our artist concepts
are going to be the public face

3
00:00:04,770 --> 00:00:07,306
for some of these objects, and
there's a lot of responsibility

4
00:00:07,339 --> 00:00:09,709
that comes with that.

5
00:00:09,742 --> 00:00:12,311
I'm Robert Hurt, I'm the
visualization scientist

6
00:00:12,344 --> 00:00:14,580
at IPAC, which is a
science and data center

7
00:00:14,613 --> 00:00:17,717
for astrophysics and planetary
science at Caltech.

8
00:00:17,750 --> 00:00:18,651
My name is Tim Pyle,

9
00:00:18,684 --> 00:00:20,653
I'm a multimedia
producer at IPAC.

10
00:00:20,686 --> 00:00:22,322
I work with Robert.

11
00:00:23,422 --> 00:00:26,659
>> Hurt:We've done illustrations
of regions where stars form

12
00:00:26,692 --> 00:00:29,162
and cores, the stellar
remnants after a star

13
00:00:29,195 --> 00:00:31,664
like our sun dies leaving a
white dwarf.

14
00:00:31,697 --> 00:00:33,399
A neutron star that's
left at the core

15
00:00:33,432 --> 00:00:34,667
of a supernova explosion.

16
00:00:34,700 --> 00:00:37,904
Super massive black holes that
sit in the cores of galaxies.

17
00:00:37,937 --> 00:00:39,705
>> Pyle: Show the rocky
planets, gas giants,

18
00:00:39,738 --> 00:00:41,908
brown dwarfs, cool stars.

19
00:00:41,941 --> 00:00:43,876
>> Hurt: With TRAPPIST-1, I was
immediately thinking,

20
00:00:43,909 --> 00:00:46,079
"This is going to be the
most significant thing

21
00:00:46,112 --> 00:00:47,647
that has come out of
the Spitzer mission."

22

00:00:47,680 --> 00:00:49,348
It's going to be the
result that I think

23
00:00:49,381 --> 00:00:52,351
Spitzer will really be
remembered for.

24
00:00:52,384 --> 00:00:53,853
The properties that
we come away with,

25
00:00:53,886 --> 00:00:55,788
from this kind
of observation

26
00:00:55,821 --> 00:00:58,524
include the diameter of the
planet, its orbital period,

27
00:00:58,557 --> 00:01:00,059
>> Pyle: whether it's likely to
be tidally locked

28
00:01:00,092 --> 00:01:01,727
which will say
something about

29
00:01:01,760 --> 00:01:03,496
what the planet
probably looks like.

30
00:01:03,529 --> 00:01:05,164
>> Hurt: If it's less dense
than the Earth,

31
00:01:05,197 --> 00:01:07,433
it might have more volatiles
like water on it,

32

00:01:07,466 --> 00:01:09,602
which is why a two
of the TRAPPIST planets

33
00:01:09,635 --> 00:01:10,670
were shown
as water worlds.

34
00:01:10,703 --> 00:01:12,071
If it has a higher
density than Earth,

35
00:01:12,104 --> 00:01:14,040
then it's probably a
little more rocky.

36
00:01:14,073 --> 00:01:15,475
>> Pyle: By doing these
artist concepts

37
00:01:15,508 --> 00:01:17,110
we are actually getting
across the point that

38
00:01:17,143 --> 00:01:19,946
no, these aren't just
“we know there's a planet ther”"

39
00:01:19,979 --> 00:01:22,615
and that's the extent
of our information about it.

40
00:01:22,648 --> 00:01:23,950
All of these
decisions are made

41
00:01:23,983 --> 00:01:25,852
in conjunction with
the scientists.

42

00:01:26,852 --> 00:01:30,056
>> Hurt: I got my PhD in
astrophysics from UCLA.

43
00:01:30,089 --> 00:01:33,326
>> Pyle: I'm an artist with a
Hollywood background.

44
00:01:33,359 --> 00:01:35,862
>> Hurt: A lot of times I'm
very focused on you know

45
00:01:35,895 --> 00:01:38,364
the science bullet points that
I'm trying to get across.

46
00:01:38,397 --> 00:01:41,767
We, we kind of cover each
other's blind spots a bit.

47
00:01:41,800 --> 00:01:44,070
If you go back and you look at
the whole history of space art,

48
00:01:44,103 --> 00:01:46,672
and science-based
illustration, for ya know

49
00:01:46,705 --> 00:01:48,541
reaching back many,
many decades

50
00:01:48,574 --> 00:01:50,676
you have a
visual history,

51
00:01:50,709 --> 00:01:53,813
a visual record of our
evolving understanding.

52

00:01:53,846 --> 00:01:55,948
The art is as much
historical record of

53
00:01:55,981 --> 00:01:57,917
our changing understanding
of the universe