1
00:00:00,499 --> 00:00:02,201
[■]

2
00:00:02,234 --> 00:00:06,406
Westfield, Illinois.
Home to 601 people.

3
00:00:08,374 --> 00:00:10,476
And one of the largest

4
00:00:10,509 --> 00:00:14,147
privately-owned telescopes
in the world.

5
00:00:15,681 --> 00:00:17,350
We do follow-up observations

6
00:00:17,383 --> 00:00:20,319
with NASA's near-Earth object
observations program.

7
00:00:20,352 --> 00:00:23,923
All night long, I'm
running big telescopes.

8
00:00:24,957 --> 00:00:27,994
One's a 24-inch, a 30-inch,
and a 32-inch.

9
00:00:28,027 --> 00:00:31,431
And then the 50-inch is my...
my biggest telescope.

10
00:00:31,464 --> 00:00:35,101
Having four telescopes
allows me really to do

11
00:00:35,134 --> 00:00:38,771
four times as much work as

the typical observatory

12
00:00:38,804 --> 00:00:40,273
that just has one telescope.

13
00:00:40,306 --> 00:00:42,208
So it is a... a huge advantage.

14
00:00:42,241 --> 00:00:43,810
Bob made 36,000
observations in 2015.

15
00:00:43,843 --> 00:00:45,478
(The most by anyone
in a single year.)

16
00:00:45,511 --> 00:00:47,947
I work on a nightly basis

17
00:00:47,980 --> 00:00:51,851
and I use these telescopes
to look at asteroids.

18
00:00:51,884 --> 00:00:55,221
We do follow-up observations
for the discoveries

19
00:00:55,254 --> 00:00:57,690
that are made by the
large sky surveys.

20
00:00:57,723 --> 00:01:01,661
By looking at these asteroids
and measuring these asteroids

21
00:01:01,694 --> 00:01:04,397
we can determine what their
posssibilities of

22

00:01:04,430 --> 00:01:07,500
actually hitting the Earth
in the future are going to be.

23
00:01:07,533 --> 00:01:10,136
NASA provides coordinates
of specific objects

24
00:01:10,169 --> 00:01:12,505
that they need observations on.

25
00:01:12,538 --> 00:01:15,141
I'm gonna punch in the
coordinates here

26
00:01:15,174 --> 00:01:18,778
and I'm doing this remotely from
inside a control room

27
00:01:18,811 --> 00:01:20,079
[computer keys click]

28
00:01:20,112 --> 00:01:22,215
not at the telescope.

29
00:01:22,248 --> 00:01:25,885
And so we look these objects up
and then use those coordinates

30
00:01:25,918 --> 00:01:27,987
to look at a tiny
piece of the sky

31
00:01:28,020 --> 00:01:29,789
that this object
happens to be in.

32
00:01:29,822 --> 00:01:32,358
And then we follow those objects

33
00:01:32,391 --> 00:01:36,262
and define and refine orbits
for those objects

34
00:01:36,295 --> 00:01:39,065
and reduce the uncertainty of
where it's going to go

35
00:01:39,098 --> 00:01:40,933
in the near future.

36
00:01:40,966 --> 00:01:43,836
I started off as a
volunteer in 2006.

37
00:01:43,869 --> 00:01:46,873
It's just blossomed into a
full-time opportunity

38
00:01:46,906 --> 00:01:50,343
to work for NASA under
their grant program,

39
00:01:50,376 --> 00:01:54,280
where I'm now doing this
every single clear night.

40
00:01:54,313 --> 00:02:00,987
Now we're starting the
observing run for 2017 KK3.

41
00:02:01,020 --> 00:02:04,190
You don't build a telescope
that's this big

42
00:02:04,223 --> 00:02:07,093
without having... being
passionate about what you do.

43

00:02:07,126 --> 00:02:11,030
I'm really driven to be a part
of a program that's important

44
00:02:11,063 --> 00:02:13,299
and has importance
to the future.

45
00:02:13,332 --> 00:02:16,402
And we're not talking about
next year or the year after.

46
00:02:16,435 --> 00:02:17,904
We're talking about
asteroids that could

47
00:02:17,937 --> 00:02:20,439
potentially hit the Earth
100 years from now.

48
00:02:20,472 --> 00:02:22,942
And the work we do today
may make a difference

49
00:02:22,975 --> 00:02:24,877
100 years from now.

50
00:02:24,910 --> 00:02:28,681
[■]

51
00:02:29,415 --> 00:02:30,216
NASA Jet Propulsion Laboratory