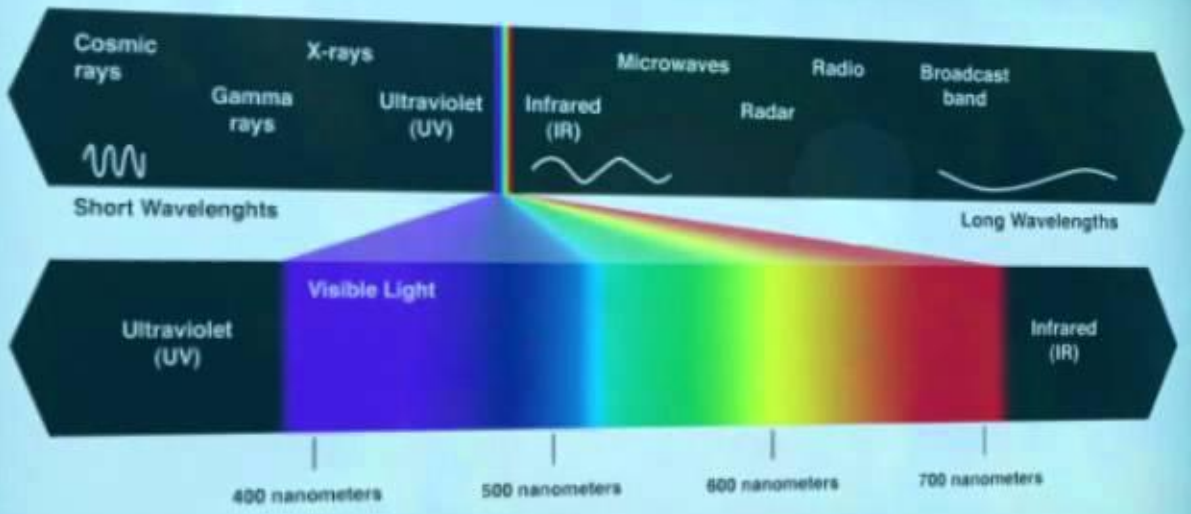

VIIRS specs:

- Mass: 275kg
- 3000km swath
- multi-band imaging
- day-night cloud imagery
- rotating telescope
- 18.4cm aperture

1
00:00:00,020 --> 00:00:04,180
Intro music.

2
00:00:04,200 --> 00:00:08,360
Narrator: Lands, oceans, and
atmosphere...

3
00:00:08,380 --> 00:00:12,530
THESE are the constantly
changing elements of the
Earth's system.

4
00:00:12,550 --> 00:00:16,700
While scientists know that
these elements are connected;

5
00:00:16,720 --> 00:00:20,910
it is still unclear HOW a small
change in one element

6
00:00:20,930 --> 00:00:25,100
could affect the others. The
solution?...

7
00:00:25,120 --> 00:00:29,230
REMOTE SENSING...flying
extremely precise instruments in

8
00:00:29,250 --> 00:00:33,350
space that orbit the Earth and
collect continuous global
measurements

9
00:00:33,370 --> 00:00:37,470
over long periods of time.

10
00:00:37,490 --> 00:00:41,580
For over a decade NASA's
Earth-observing satellites have

11
00:00:41,600 --> 00:00:45,670
delivered critical climate
data. Scientists need this data

12
00:00:45,690 --> 00:00:49,730
to understand how and why our
planet changes over time.

13
00:00:49,750 --> 00:00:53,850
It also helps them make better
predictions of future climate
patterns.

14
00:00:53,870 --> 00:00:57,940
Now, NASA is ready to launch a
new sensor

15
00:00:57,960 --> 00:01:01,950
technology: The
Visible/Infrared Imager
Radiometer Suite

16
00:01:01,970 --> 00:01:06,130
or VIIRS. This sensor will fly
on NASA's next generation

17
00:01:06,150 --> 00:01:10,300
Earth-monitoring satellite: The
NPOESS Preparatory Project or
NPP.

18
00:01:10,320 --> 00:01:14,440
VIIRS is a continuation of

19
00:01:14,460 --> 00:01:18,620
the MODIS instrument flown on
NASA's Aqua and Terra
satellites.

20
00:01:18,640 --> 00:01:22,820

Justice: From my perspective VIIRS is the most important instrument on NPP because it provides

21
00:01:22,840 --> 00:01:26,990
continuity to MODIS and MODIS has become an extremely important instrument form global

22
00:01:27,010 --> 00:01:31,150
monitoring. I think it's one of the success stories of the NASA program

23
00:01:31,170 --> 00:01:35,240
and we are hoping that VIIRS will be the same.

24
00:01:35,260 --> 00:01:39,320
Narrator: With multi-channel imaging capabilities, VIIRS will deliver

25
00:01:39,340 --> 00:01:43,420
environmental data products faster than its predecessors.

26
00:01:43,440 --> 00:01:47,490
These products include visible and infrared imaging of hurricanes,

27
00:01:47,510 --> 00:01:51,660
forest fires, volcanoes, sea surface temperature, ocean-color,

28
00:01:51,680 --> 00:01:55,690
and atmosphere aerosols. VIIRS will continue

29
00:01:55,710 --> 00:01:59,710
adding to the decades of
existing data records, helping
scientists

30
00:01:59,730 --> 00:02:03,850
unravel the mysteries of
climate change. Justice: The

31
00:02:03,870 --> 00:02:08,040
VIIRS instrument is a
scientific measurement tool;
it's an

32
00:02:08,060 --> 00:02:12,220
instrument that has calibrated
measurements of the land
surface and it converts those

33
00:02:12,240 --> 00:02:16,400
into digital numbers that are
then down linked to a ground
station.

34
00:02:16,420 --> 00:02:20,540
We would take those
observations and then we would
use those to

35
00:02:20,560 --> 00:02:24,720
provide input to models we are
developing that

36
00:02:24,740 --> 00:02:28,910
simulate the processes of the
land and to try then to see

37
00:02:28,930 --> 00:02:33,050
what happens if those
parameters change.

38
00:02:33,070 --> 00:02:37,190
Narrator: Scientists use these
models to increase

39
00:02:37,210 --> 00:02:41,300
their understanding of the
complex interaction between the
Earth system's elements

40
00:02:41,320 --> 00:02:45,470
and then make improved global
climate predictions.

41
00:02:45,490 --> 00:02:49,550
Chris Justice: "I think the
critical thing about the NPP
VIIRS

42
00:02:49,570 --> 00:02:53,760
instrument is that we will get
long-term data records

43
00:02:53,780 --> 00:02:57,840
and I think if you want to
monitor how the Earth's surface
is changing we need consistent

44
00:02:57,860 --> 00:03:01,900
data records and I think this
is why this is so important for
NASA science,

45
00:03:01,920 --> 00:03:05,950
and it is also important for me
personally. I can understand
how we are

46
00:03:05,970 --> 00:03:10,130
responding to climate change
and how climate change is

affecting the Earth's surface.

47
00:03:10,150 --> 00:03:14,290
Ending music.