



Infrared Light
Messier 81 galaxy

1
00:00:01,034 --> 00:00:02,468
15 Years in Space:
Spitzer Space Telescope

2
00:00:05,004 --> 00:00:07,006
Mike Werner: We had no
conception at all that we'd be

3
00:00:07,039 --> 00:00:11,611
doing this for 15 years as
successfully as we have been.

4
00:00:11,644 --> 00:00:13,613
Launched into a solar orbit
on Aug. 25, 2003,

5
00:00:13,646 --> 00:00:15,615
Spitzer has gone far beyond its
required 2.5-year lifetime.

6
00:00:16,783 --> 00:00:19,419
Lisa Storrie-Lombardi: We are
beyond where we thought

7
00:00:19,452 --> 00:00:22,121
we would be, beyond the
engineering limits

8
00:00:22,154 --> 00:00:23,823
that this was planned with...

9
00:00:23,856 --> 00:00:28,161
and yet it still works, and it
still works really well.

10
00:00:29,261 --> 00:00:31,230
Observing in infrared light,

11
00:00:31,263 --> 00:00:33,166

which is invisible
to the human eye,

12

00:00:33,199 --> 00:00:36,502

Spitzer sees hidden
features of the universe.

13

00:00:38,604 --> 00:00:41,107

Sean Carey: I think an
interesting thing about Spitzer

14

00:00:41,140 --> 00:00:45,078

is that because we've been able
to operate it for so long,

15

00:00:45,111 --> 00:00:48,381

we've started to do science that
Spitzer wasn't designed to do.

16

00:00:50,116 --> 00:00:52,085

We didn't design Spitzer
to do exoplanets at all.

17

00:00:53,986 --> 00:00:57,390

Werner: Probably our biggest
single result from Spitzer

18

00:00:57,423 --> 00:01:00,660

has been the study of what's
called the TRAPPIST-1 system.

19

00:01:00,693 --> 00:01:04,297

TRAPPIST-1 is an ultra-cool red
dwarf star 40 light years away.

20

00:01:05,898 --> 00:01:08,301

TRAPPIST-1 has more
Earth-size planets

21

00:01:08,334 --> 00:01:10,403

than any other known
planetary system.

22

00:01:11,604 --> 00:01:13,172

Carey: Now, after continued
study, we know more about

23

00:01:13,205 --> 00:01:16,542

the TRAPPIST-1 system than any
other planetary system...

24

00:01:16,575 --> 00:01:18,044

other than the one
that we're in, right?

25

00:01:18,077 --> 00:01:20,346

And I think that's
really amazing.

26

00:01:21,480 --> 00:01:22,715

Werner: Another highlight of
Spitzer, and one which

27

00:01:22,748 --> 00:01:26,719

was certainly totally unexpected
by any of the scientists

28

00:01:26,752 --> 00:01:28,888

who had been working on the
development of Spitzer,

29

00:01:28,921 --> 00:01:32,191

was our ability to map out the
distribution of stars

30

00:01:32,224 --> 00:01:34,127

throughout our Milky Way galaxy.

31

00:01:35,395 --> 00:01:37,230

Storrie-Lombardi: And we now

have this absolutely beautiful

32

00:01:37,263 --> 00:01:42,568
map of the entire 360 degrees
of the Milky Way galaxy.

33

00:01:43,869 --> 00:01:47,406
I love just watching the movie
of the whole galaxy going past.

34

00:01:47,439 --> 00:01:49,075
[■]

35

00:01:53,546 --> 00:01:56,516
Werner: We've created a
tremendous scientific instrument

36

00:01:56,549 --> 00:01:59,619
which will produce
a fantastic legacy

37

00:01:59,652 --> 00:02:01,354
that people will use
for generations.

38

00:02:01,387 --> 00:02:03,422
Storrie-Lombardi: And everybody
who works on the mission

39

00:02:03,455 --> 00:02:06,392
understands that that's what
we're here to do...

40

00:02:06,425 --> 00:02:09,862
is maximize the science
return from the observatory.

41

00:02:11,130 --> 00:02:13,199
The spacecraft is currently
scheduled to continue operations

42

00:02:13,232 --> 00:02:15,168
into November 2019.

43

00:02:17,369 --> 00:02:20,106
Future infrared observatories
will build upon

44

00:02:20,139 --> 00:02:22,275
the legacy of Spitzer.

45

00:02:23,876 --> 00:02:26,846
NASA Jet Propulsion Laboratory