



SCIENCE IN A MINUTE^{ISH}

THE ART OF SPITZER



Handwritten notes and symbols in the top right corner, including a star and some illegible scribbles.

1
00:00:00,600 --> 00:00:02,569
[upbeat music]

2
00:00:05,205 --> 00:00:06,773
[Narrator] The Spitzer
Space Telescope

3
00:00:06,773 --> 00:00:09,409
has blown us away with
incredible imagery

4
00:00:09,409 --> 00:00:11,044
over the last 16 years.

5
00:00:11,044 --> 00:00:14,280
However, getting these
images is much more difficult

6
00:00:14,280 --> 00:00:15,548
than you may think.

7
00:00:15,548 --> 00:00:17,917
Spacecraft images
are not photographs,

8
00:00:17,917 --> 00:00:20,253
but pictorial
presentations of data.

9
00:00:20,253 --> 00:00:21,988
Satellite systems measure light

10
00:00:21,988 --> 00:00:24,524
at different bands of the
electromagnetic spectrum.

11
00:00:24,524 --> 00:00:27,527
In Spitzer's case,
it's the infrared.

12

00:00:27,527 --> 00:00:30,296

This is raw data
processed from Spitzer.

13

00:00:30,296 --> 00:00:32,399

To analyze this
flood of numbers,

14

00:00:32,399 --> 00:00:35,769

scientists rely on computers,
not only to do calculations,

15

00:00:35,769 --> 00:00:38,304

but also to change
data into images,

16

00:00:38,304 --> 00:00:40,974

similar to the process
our digital cameras use

17

00:00:40,974 --> 00:00:42,909

to get that perfect picture.

18

00:00:42,909 --> 00:00:44,210

Even with the computer,

19

00:00:44,210 --> 00:00:46,713

scientists go through
a painstaking process

20

00:00:46,713 --> 00:00:49,582

to make sure the images
are technically correct,

21

00:00:49,582 --> 00:00:53,286

so the raw data gets
turned into this.

22

00:00:53,286 --> 00:00:56,322

Spitzer's infrared images
are not true color images.

23

00:00:56,322 --> 00:00:59,225

Since we can't see infrared
wavelengths with our eyes,

24

00:00:59,225 --> 00:01:01,361

scientists pick
representative colors

25

00:01:01,361 --> 00:01:04,464

to show the infrared light
detected by the telescope.

26

00:01:04,464 --> 00:01:06,900

Computer-aided data
collection and processing

27

00:01:06,900 --> 00:01:10,470

is essential, but the
scientists truly bring the data

28

00:01:10,470 --> 00:01:15,008

into a visual piece of art that
we can enjoy and understand.