



HOW DID YOU HELP ASTRONOMERS CREATE A STUNNING SPACE PHOTO?

Video transcript: How astronomers combined your photos

PROFESSOR CHRIS LINTOTT:

How can hundreds of different images taken by different telescopes and different cameras with varying exposures – all be combined to make one extraordinary image?

The answer is by using a very clever set of software.

- *Image of the Pleiades Star Cluster V2 by Callum Hayton*
- *Image of a starry sky by Charlotte Graham*
- *Image of the Horsehead Nebula by Steve Richards*
- *Image of the Tarantula Nebula by Rolf Wahl Olsen*
- *Image of the Milky Way by Iulian Mircea*
- *Image of the Double Cluster by Oleg Bryzgalov*

Let's start with one pretty good – but let's be honest, not award-winning – image.

- *Image of Orion by Callum Hayton*

And the first thing to do is to find out which part of the night sky this image shows.

The computer software picks out all the stars in the image, and checks their patterns against an index of thousands of known stars in the galaxy to find a match.

Now, this image can be combined with others of the same patch of night sky.

- *Image of Orion behind a tree foreground by Jonathan Howell*
- *Image of Orion against a black starry background by Ken Lord*
- *Image of Orion's belt with the Horsehead Nebula and Orion Nebula by Doug German*

The software scans the first image and analyses the brightness of every pixel, picking out the useful information.

It then finds where each pixel on this image appears in another image, and another, and another. And we can start to build up a composite picture made up of all of the different images.

For Stargazing 2015, we combined hundreds of images to create this incredible final portrait of Orion.

Contributor images courtesy of the BBC Stargazing Live and The Sky At Night Flickr group:
<http://www.flickr.com/groups/bbcskyatnight>