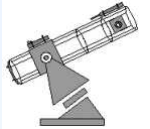


# Faulkes Telescope North Observations of Hickson Groups of Interacting Galaxies

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## Abstract

One of a number of observing projects being conducted by the Faulkes Telescope Project (with schools and amateur astronomical societies) is based on a series of interacting galaxy groups known as the *Hickson Groups*. These were originally catalogued in the 1980s Canadian astronomer Paul Hickson, who has published images of 100 of these objects in his '*Atlas of Compact Groups of Galaxies*'. His website (<http://www.astro.ubc.ca/people/hickson/basic.html>) details some of the research that he has conducted on these groups, and provides basic data on many of the galaxies. The 100 targets are well spread across the Northern sky, so there are always a few that are visible from FT North, whatever time of night or year that it is used. Two of the Hickson Groups will be familiar to many amateur astronomers - they are Stephan's Quintet (Hickson 92) and Seyfert's Sextet (Hickson 79).

The eventual goal is to produce a multi-colour (UBVRI), online version of the atlas using schools/societies data, and, in collaboration with Australian schools and astronomers, a southern hemisphere equivalent.

## The Hickson Groups

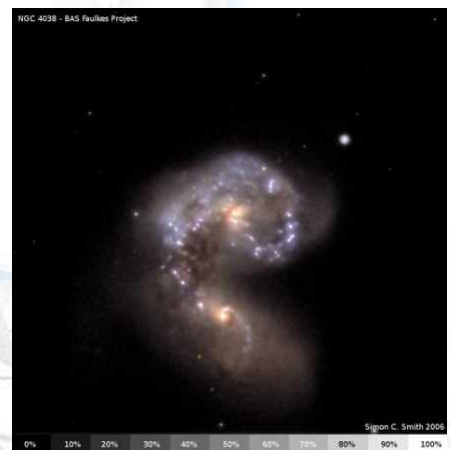
The initial reason to study these galaxies was to examine their redshifts as a clue to galactic evolution - it has been proposed by some astronomers that all galaxies were once members of tightly-bound galaxy groups.

A spin-off of this is the suggestion that galaxies' gravitational interactions are related to the search for dark matter. Hickson groups are lucrative hunting grounds for dwarf galaxies, a type of small, seemingly insignificant galaxy that is becoming tied in with the hunt for dark matter.

Many of these galaxies have never previously been imaged in colour. Images taken with typical exposure times of 180-240 seconds are processed by combining BVR FITS files through packages such as Photoshop.

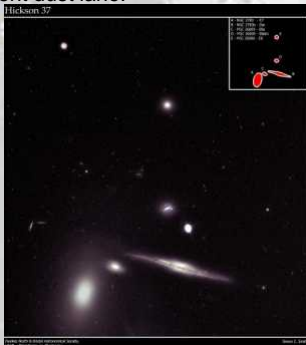
We will produce multi-colour images of as many of these galaxies as possible, in a similar manner to the way that amateur astronomers image the Messier objects.

One advantage of the Hickson Groups is that they will fit into just one or two FT images (FT field of view 4.6'x 4.6'), and offer a selection of galaxy types in any one grouping. From an educational perspective, they represent the effects of gravity on a galactic scale.



The Antennae Galaxy, imaged by Bristol Astronomical Society (FTN)

The image of **Hickson 37**, obtained by members of Bristol AS, shows the level of detail achievable, especially on the edge-on spiral galaxy towards the bottom of the image with its prominent dust lane.



The FT Hickson Group project is just one example of how schools or societies can contribute towards "real science" through collaboration. Supported by professionals, schools students and amateur astronomers are able to obtain useful data that scientists can use to aid their research – and the schools get some great images!

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The image of **Hickson 40** has been produced by astro-photographer Nik Szymanek and shows an S0 lenticular galaxy at the bottom of the image, along with a massive elliptical galaxy towards the centre and 3 spiral galaxies.

