C/2001 Q4 (NEAT) OBSERVING CAMPAIGN

Since early May 2004 comet C/2001 Q4 (NEAT) will be observable from the Norhtern hemisphere.

A special observing campaign has been planned for this comet. Our goal will be to get high quality photometric data, and Afrho measurements, obtained with proper filters.

The guidelines of the program are as follow:

NARROWBAND PHOTOMETRY

The use of interference filters can help in obtaining better data selecting passbands with negligible gas contamination and where we can assume that nearly all the light detected is reflected sunlight.
Among commercial filters the one centered at 647 nm (FWHM 10 nm) was already tested in several past comets and proved to be a good solution. The use of this filter is **HIGHLY RACCOMANDED** for C/2001 Q4.

Observing technique will be slightly different than usual as interference filters work at best with a parallel beam of incident light along the filter axis (perpendiculat to the filter surface). Placing a filter, just before the focus, in the convergent beam of a telescope do not match the ideal sytuation. As a consequence the filter passband became larger as the focal ratio (F/D) decrease. Fast optical systems (F/D< 4) are not indicated for these filters. Slower optical systems can be accepted (expecially with F/D>6) as will introduce quite small changes in the passband.
An alternative for small lenses can be to place the filters in front of the objective.
Furthermore the filter passband also changes (shifts) moving toward the edges of the field.

For these reasons is higly raccomanded **TO PUT THE COMET AND THE REFERENCE STARS ALWAYS IN THE CENTER OF THE FIELD**. In this way we'll be sure to use the filter at best. Of course separate images will be taken for the comet and the reference stars.

We suggest to take sequences of images as follow:
- reference star (for instance 5 shots)
- comet (10-20 shots)
- reference star (again 5 shots)
- ...and so on.

A first set of selected reference stars is enclosed below.

The number of shots and time exposure must be planned considering the useful observing time (in early May the comet will be very close to the horizon with little useful time for observing) and trying to get the highest possible signal to noise ratio.

Toward mid May, when the useful observing time will increase, the use of other filters (both narrowband that wideband) can be considered.

Observers who do not have the 647 nm filter are **highly encouraged to use R and I (Cousins) filters or R (Gunn) filter**.
Unfiltered images on a bright comet like C/2001 Q4 are expected to be of little meaning.

The 647 filter can be purchased in the 24.15 mm diameter from several optical dealers (for instance Edmund Industrial Optics) for approximately 100 Euros.
Other narrowband filters have been selected both for continuum and for coma and tail emissions.
Observers interested in receiving further details about these filters are invited to contact us.