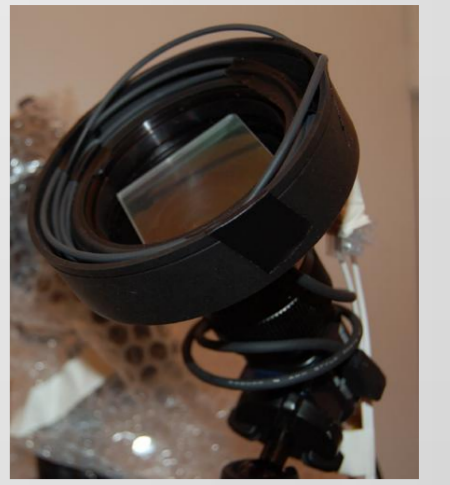
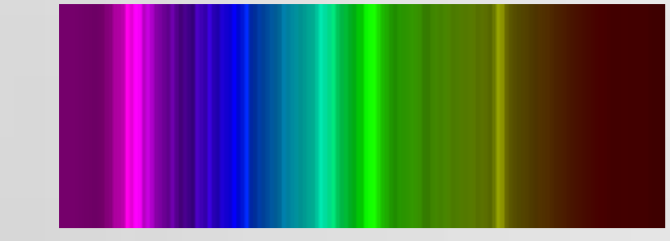


Video Meteor Spectroscopy

Kilwinning Spectroscopic Survey for *Meteors*

Bill Ward. email: bill_meteor@yahoo.com

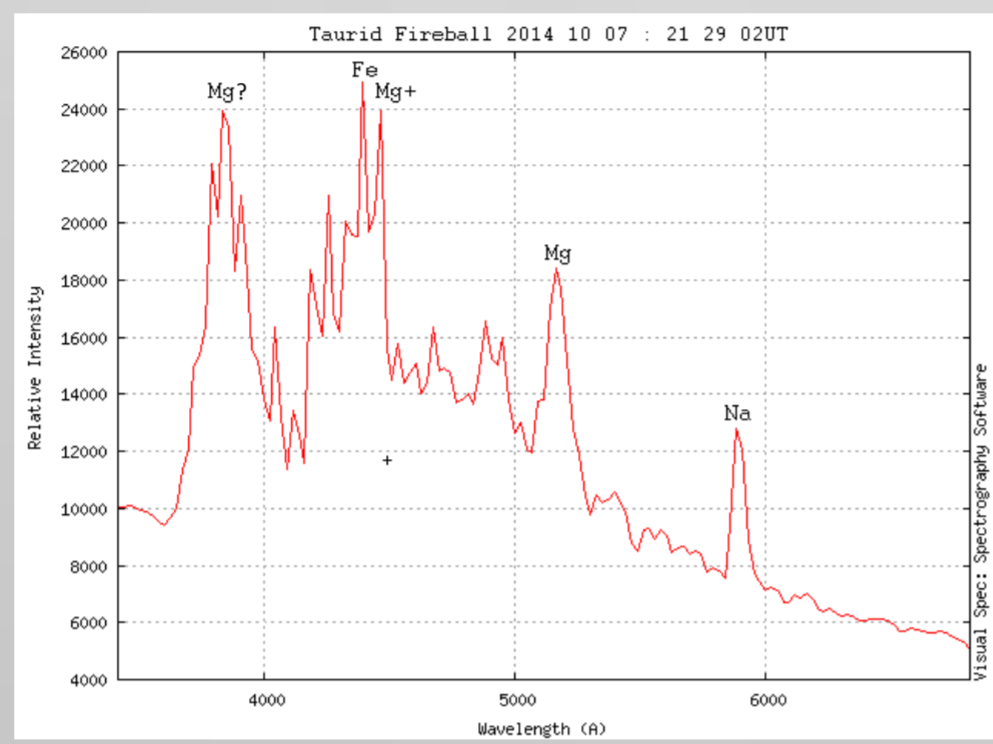


The KiSSMe project is an ongoing program to secure video meteor spectra on a routine basis year round. In the long term this may identify if there are any discernible compositional groupings amongst sporadic meteors/fireballs.

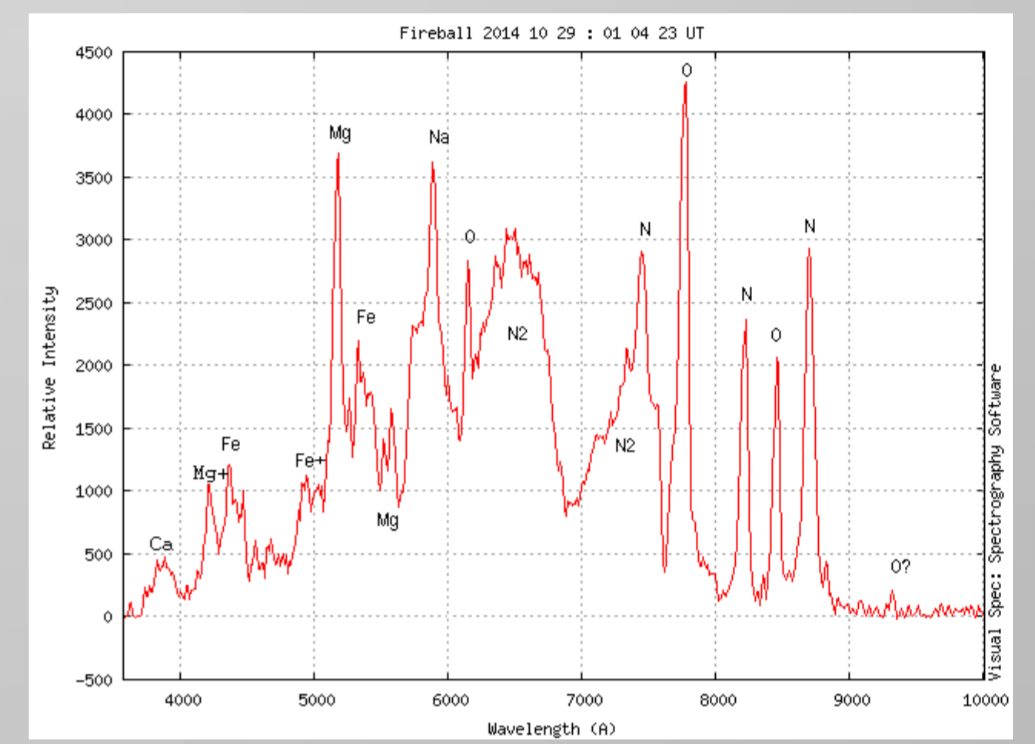
Currently three WATEC cameras are in use for spectroscopy (2 x 902H2 Ultimate and 1 x 910HX/RC). Each carries a 12mm f0.8 lens fitted with a 600 groove/mm transmission grating. The dispersion of this configuration is approximately 1.2nm/pixel. A further two WATEC cameras are used for general observing (1 x 902H2 Ultimate and 1 x 910HX/RC). Each is fitted with a 3.5 – 8mm f1 lens. Tests are currently underway with a QHY5II-M USB video camera to try and obtain HD images/spectra.

From April 2014 to April 2015, 105 video meteor spectra were captured in 714 hours of observing. Examples of spectra generated by bright meteors are shown here.

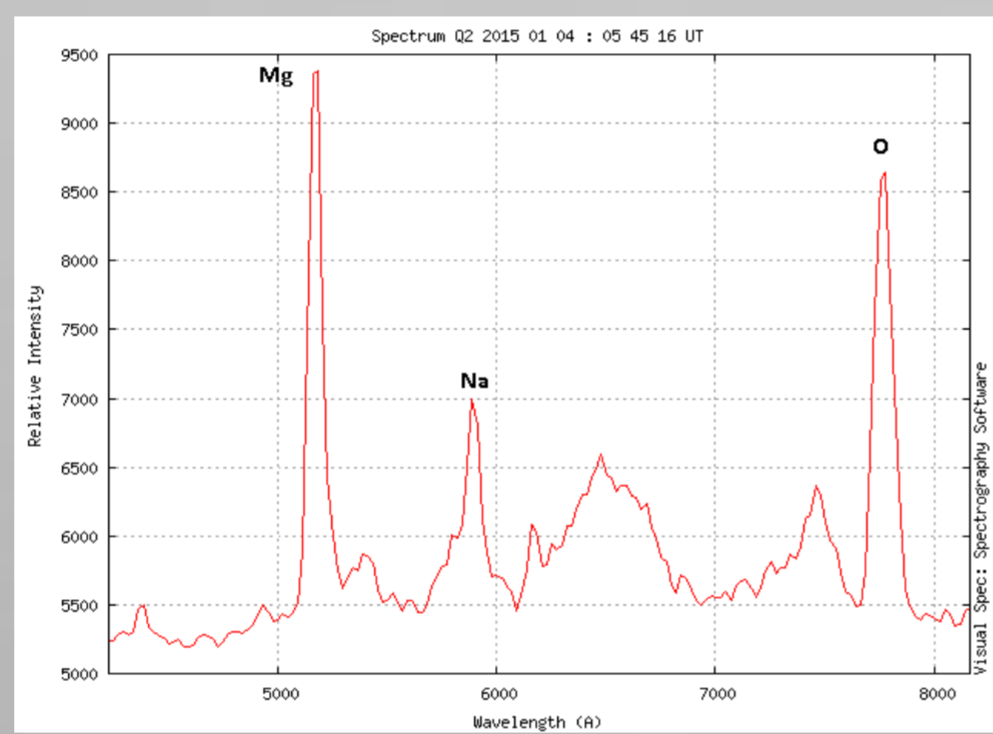
Taurid Fireball. 2014 10 07 : 21 29 02UT



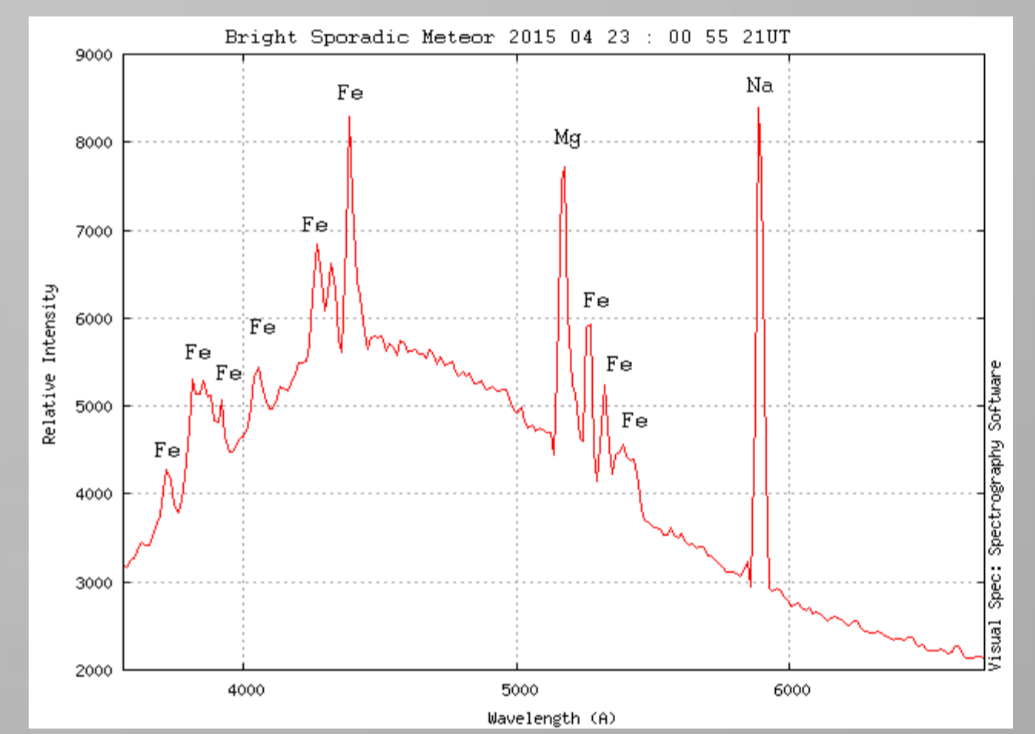
Sporadic Fireball. 2014 10 29 : 01 04 23UT



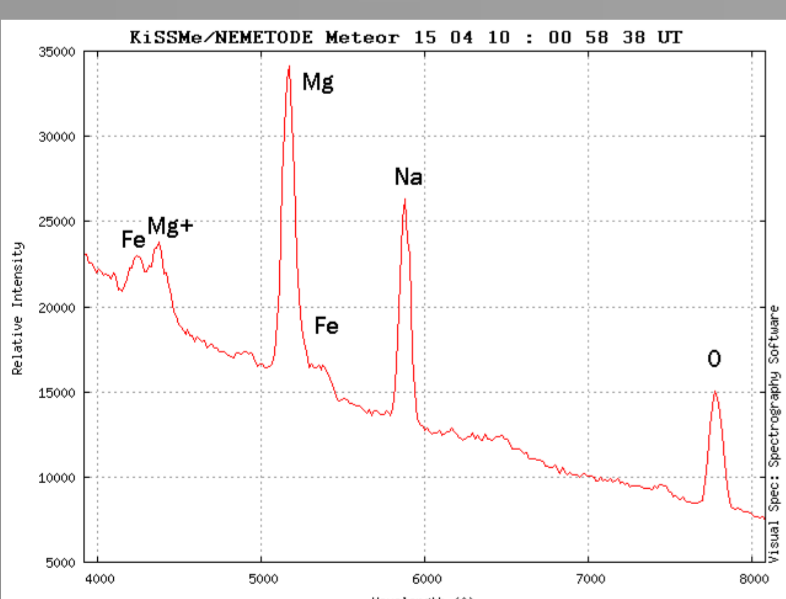
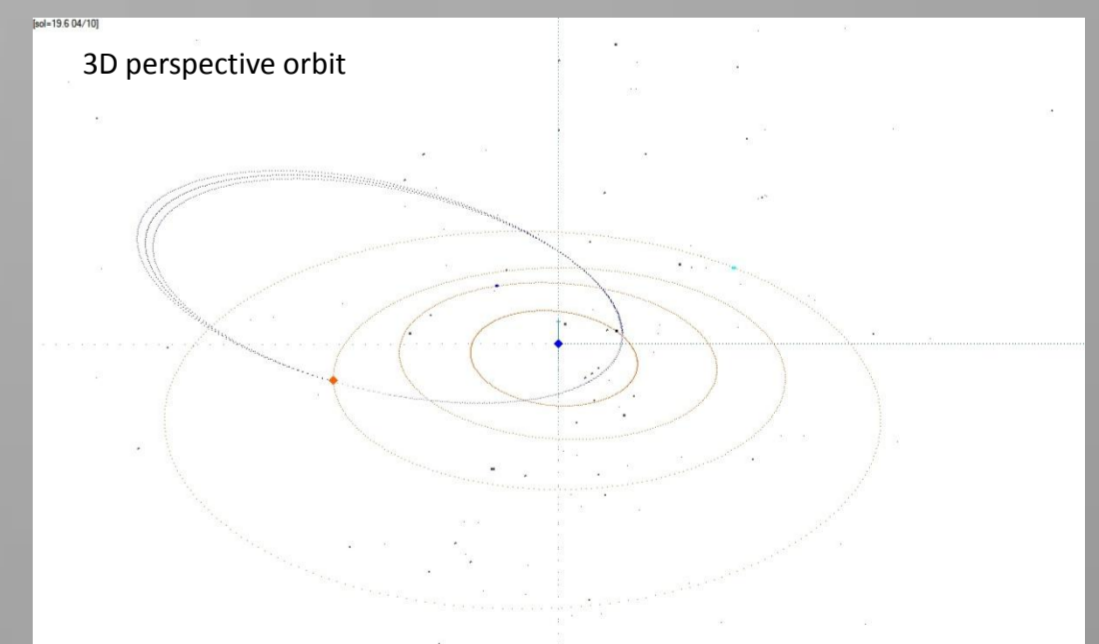
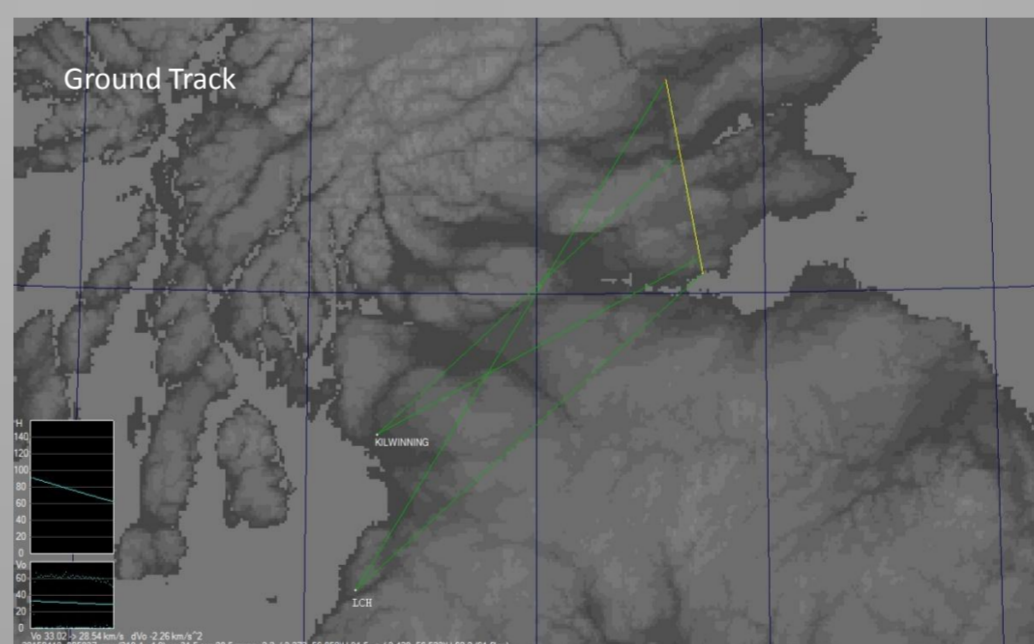
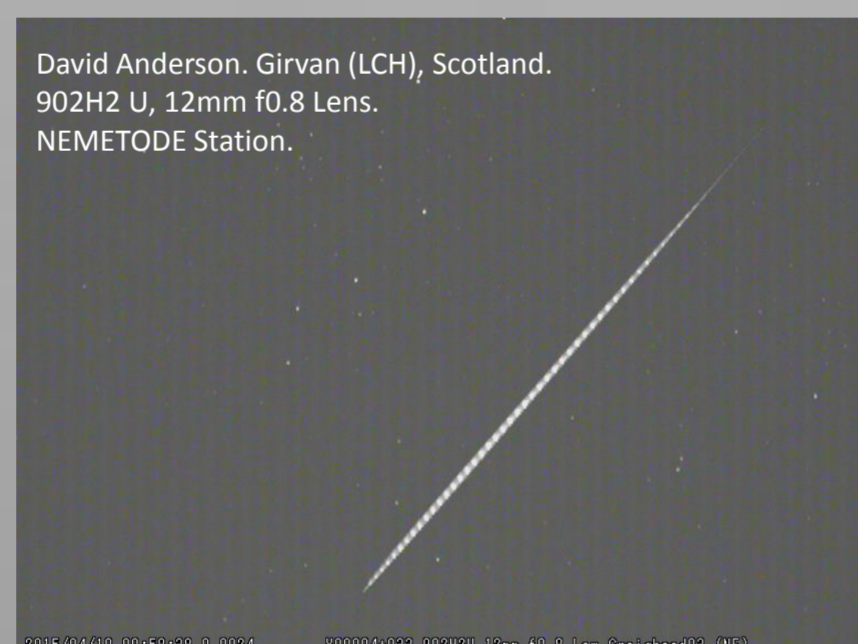
Quadrantid Meteor. 2015 01 04 : 05 45 16UT



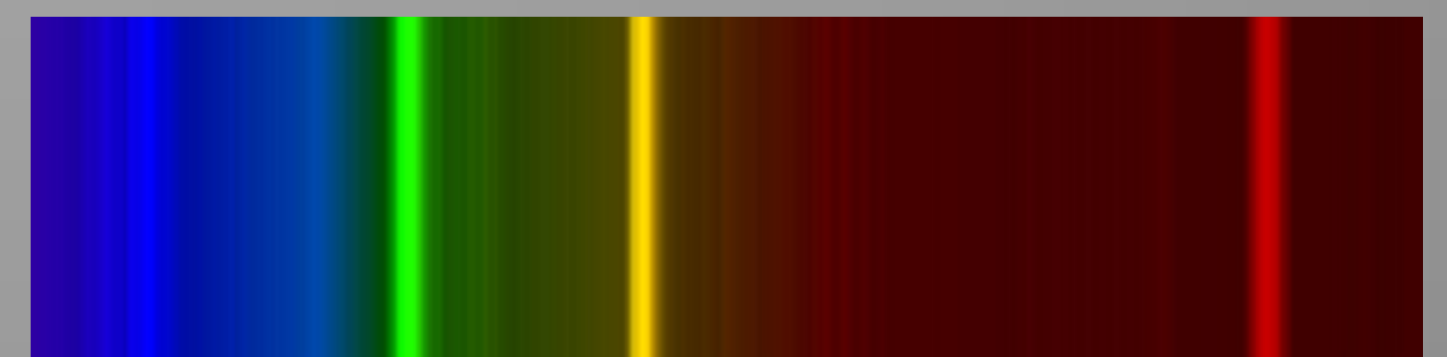
Sporadic Meteor. 2015 04 23 : 00 55 21UT



Working with members of the Network for Meteor Triangulation and Orbit Determination (NEMETODE) (1), simultaneous spectroscopic and orbit determination observations have been undertaken. This has resulted in the first such combined observation made from the UK.



The spectrum shows strong emission from magnesium, sodium, oxygen and iron. The meteor was determined to have had an orbital aphelion within the asteroid belt.



Colour synthetic version of spectrum 2015 04 10 : 00 58 37UT

(1) NEMETODE Group. <http://www.nemetode.org>

