

## MULTICOLOUR MEASURES OF MIRA STARS WITH DUAL MAXIMA

*Objectives: Determining the colour changes and light curves for a complete cycle of selected Mira and Semi-Regular stars which show - or may show - two discrete maxima during each cycle. Other similar stars with distinct and regular bumps on the light curves are include, as well as one star in the middle of a long term period change.*

### EQUIPMENT AND FILTERS:

The skeleton against which the colour measures will be fitted will comprise standard visual observations. Colour systems will include UBV, VRI and JH.

### OBSERVING REQUIREMENTS:

We wish to obtain the following measures each cycle:

Visual	100 per star, or about one each 5 days.
UBV	50 per star, about each 10 days
VRI	ditto
JH	ditto

A slight oversupply of measures around each maximum would probably be useful so that we can evaluate the suitability of this scale. There is probably value in making colour measures each 5 days at maximum and near the subsidiary maxima or hump.

### TIME FRAME OF PROJECT:

As most of the target stars have periods of between 400 and 600 days this project will extend to 31 December, 2011. Progressive results will be published in the Quarterly Newsletters. Two of the stars, BH Crucis and R Centauri, seem in an active evolutionary state and might well be followed after that. They certainly should be reobserved using colour photometry at a further ten year interval.

### TARGET STARS:

There are thirteen stars on the preliminary target list. These may be changed if they appear after several months' measures to be unsuitable. This list appears below.

Star	R.A.	Dec.	Max	Min	Period	Type	B°
V415 Velorum	10 03 30	-46 49.2	9.6	11.8	410~	Mira	
BH Crucis	12 16 17	-56 17.2	6.5	9.8	530:	Mira	6.25
R Centauri	14 16 34	-59 54.8	5.8	9.0	500:	Mira	1.21
R Normae	15 35 57	-49 30.5	6.4	12.0	507	Mira	5.08
BX Carinae	10 52 06	-62 29.0	11.7	13.8	427	SRa	-2.74
TT Centauri	13 19 35	-60 46.7	9.0	13.4	462	Mira	1.90
UZ Circini	14 20 52	-67 30.8	9.0	14.0	538	Mira	-6.12
BN Scorpii	17 54 10	-34 20.4	9.7	<15.0	616	Mira	-4.33
FK Puppis	08 07 19	-36 08.3	8.0	9.5	502	SR	-1.78
CK Carinae	10 24 25	-60 11.5	7.2	8.2	525	SRc	-2.36
CL Carinae	10 54 00	-61 05.6	8.0	9.0	513	SRc	-1.39
R Hydrae	13 26 58	-23 01.4	3.5	10.9	389	Mira	38.75
R Aquilae	19 06 22	+08 13.8	6.0	10.2	284.2	Mira	0.45

### PUBLICATION OF RESULTS:

Initial results will appear in 2011 if appropriate. in a recognised journal. All observers making reasonable contributions will be coauthors.