



\*\*\*\*\*  
 \*  
 \* V A R I A B I L I A \*  
 \* ===== \*  
 \* nummer 38 juli 1993 \*  
 \* \*  
 \* Redaktie: \*  
 \* H. Feijth \*  
 \* Oer de Feart 7 \*  
 \* 9084 BP Goutum \*  
 \* \*  
 \* \*\*\*\*\*

WAARNEMINGSRESULTATEN  
 FEBRUARI-JUNI 1993

In het tijdvak februari-juni 1993 werden door zeven waarnemers 2768 schattingen gedaan. Onderstaande tabel geeft aan hoe de aantallen per maand over de diverse waarnemers verdeeld zijn.

Bovendien zijn achter / de "inner sanctum" schattingen vermeld. Deze hebben betrekking op de positieve schattingen zwakker dan 13.7 alsmede de negatieve schattingen zwakker dan 14.0

	FEB	MRT	APR	MEI	JUN	totaal
R.J. Bouma BMU	47/8	55/2	113/9	52	185	452
G.Comello CMG			236/13	9	30	275
H. Feijth FJH	248/64	441/110	235/9	384/79	347/62	1655
H. v.d. Hil VDH		12				12
J. Holtrop HOL	24	85	66	91	72	338
J. de Jong JOJ				7		7
A.Scholten SAQ		2	6	9	12	29
<b>Totaal</b>	<b>319</b>	<b>595</b>	<b>656</b>	<b>552</b>	<b>646</b>	<b>2768</b>

OBSERVARIA

Het objekt dat de laatste tijd de meeste aandacht trok was de supernova in M81, die op 28 maart door de Spanjaard Federico Garcia Lorca te Lugo ontdekt werd. De supernova is ook door onze werkgroep waargenomen. Zie de lichtkromme elders in dit nummer.

Op 14 mei werd Nova Aquilae fotografisch ontdekt door de Japanner Minoru Yamamoto als een ster van  $m=7.7$ . Een onafhankelijke ontdekking ( ook fotografisch ! ) deed W. Liller in Chili op 13 mei ( helderheid 8.7 ). Kennelijk was deze later aangemeld. Deze nova is goed door de WVS waargenomen, zodat wij een lichtkromme kunnen presenteren. Zie verder in dit nummer. Daar is ook de lichtkromme te vinden van nova V1974 Cygni, die nog goed waarneembaar is en momenteel ( 20 juli ) helderder is dan Nova Aquilae 1993.

De unieke veranderlijke FG Sagittae is al maanden van grootte 12.0 en vertoont geen tekenen van verandering.

R Coronae Borealis is nog steeds onder gunstige omstandigheden net met het blote oog te zien. Met andere woorden, we wachten al lang op een afname in helderheid. Daarentegen heeft zijn collega SU Tauri eind maart een plotse-

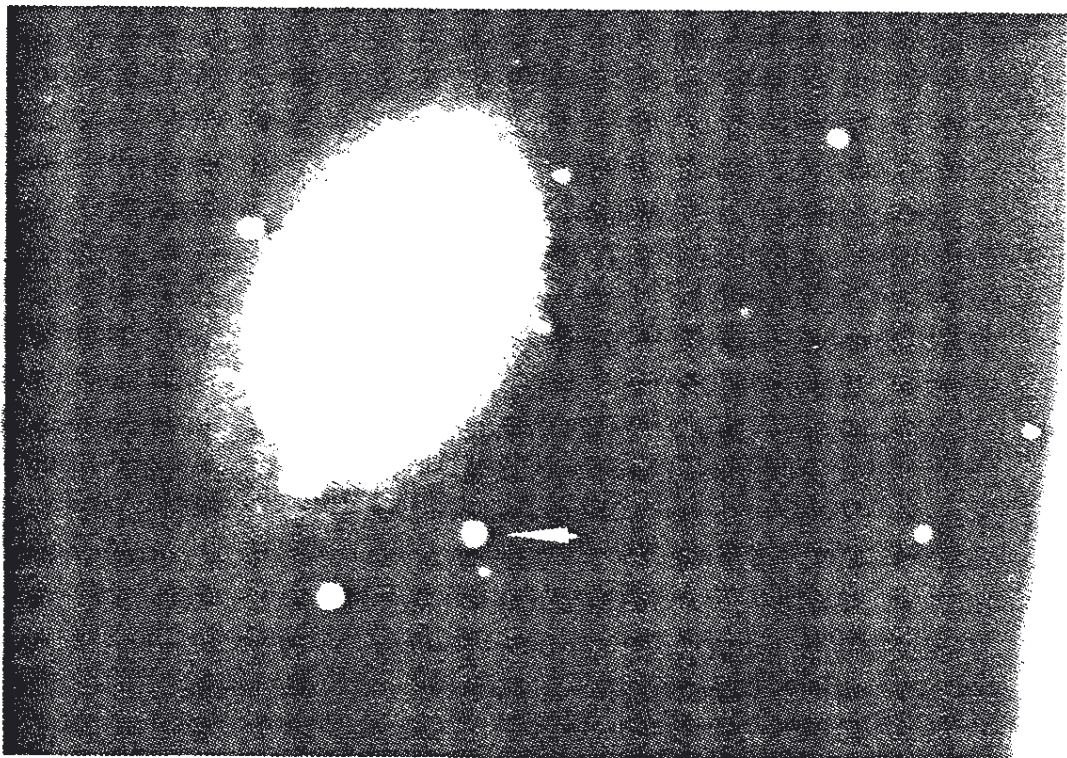
linge afname in helderheid ondergaan. Wij waren nog net in staat de steile afname tot 14.2 in het midden van april mee te nemen. En nu maar hopen dat we straks in augustus deze ster met moeite kunnen schatten !

Gelukkig bleek wat betreft U Geminorum Murphy geen roet in het eten gegooid te hebben. Het maximum ( 9.2 ) in maart werd zeer goed waargenomen. SU Ursae Maioris had eind februari een supermaximum. RU Pegasi is tegenwoordig in het minimum systematisch een paar tienden van grootteklassen helderder. Nog afwijkender is nu het gedrag van SS Cygni die vlak achter elkaar twee 'mini' maxima van 10.5 had. Een extra reden om SS Cyg te schatten ! Z Camelopardalis is nog steeds in stilstand zodat te waarne- men ervan nu een saaie aangelegenheid is. Laten we hopen dat daarin spoedig verandering komt. Gelukkig stelt RX Andromedae in dat opzicht ons niet teleur.

Na een zeer zwak minimum had V Coronae Borealis in mei een maximum van ongeveer 9.7. Dat is even helder als het ooit waargenomen helderste minimum ! Het daarvoor geobserveerde zwakste maximum was 9.0 zodat hier sprake is van een record. Ook W Andromedae stelde niet teleur; het maximum van 9.3 in maart was eveneens een record. Tot dusver was helderheid in het maximum begrepen tussen 6.7 en 9.0. X Camelopardalis had begin mei er normaal maximum van 8.1 na het zwakke minimum van 13.9 in het begin va.. maart.

#### CCD-opname supernova 1993J

In de avond van 4 april 1993 werd door Henk Munsterman te Meppel de volgende CCD-opname gemaakt van de supernova in M81. SN 1993J is met een pijl aangegeven. Gebruikt instrumentarium: C14-teleskoop voorzien van een telecompressor f/5.5 alsmede een ST-6 CCD-camera. Er werd twee minuten belicht. Omstandigheden: helder met wat lichte cirrus met daarbij storend maanlicht. Munsterman deed ook nog een meting van de helderheid met behulp van de bij de ST-6 geleverde software: 11.7.



----- 000451 SS Cas type Mira	169.5 11.5 FJH ----- 003179 Y Cep type Mira	005840 RX And type UGZ	056.29 12.3 FJH 073.31 11.7 FJH 169.47 13.0 FJH -----
041.3 10.5 HOL 041.3 10.6 FJH 049.3 9.7 HOL 067.3 9.6 HOL 074.3 10.2 HOL 098.3 12.6 CMG 168.5 11.6 FJH -----	042.4 14.0 FJH 095.5 10.8 CMG 111.4 10.4 FJH 146.5 10.0 FJH 169.5 10.4 FJH ----- 004047 U Cas type Mira	002.25 10.7 BMU 002.28 11.5 BMU 004.38 10.7 BMU 005.44 10.8 BMU 006.32 11.3 BMU 015.47 11.3 BMU 017.49 11.5 BMU 020.30 13.7 FJH 036.30 11.2 FJH 036.35 11.0 BMU 038.31 10.6 FJH 041.27 11.4 FJH 041.29 11.1 BMU 042.34 11.7 FJH 042.38 11.5 BMU 056.28 11.6 BMU 169.50 14.1 FJH -----	013338 Y And type Mira 020.2 9.9 HOL 047.3 9.4 HOL 049.3 9.0 FJH ----- 014958 X Cas type Mira 097.3 10.8 CMG -----
000928 UW And type Mira	020.3 9.4 FJH 020.3 : 9.0 HOL 041.3 9.5 FJH 046.3 9.6 HOL 049.3 9.5 FJH 067.3 10.4 HOL 073.3 10.8 HOL -----	010621A X Psc type Mira	015254 U Per type Mira 036.4 11.3 HOL 067.3 10.8 HOL 073.3 10.5 HOL 096.3 9.8 CMG -----
041.3 12.5 FJH 168.5 12.9 FJH -----	004132 RW And type Mira	041.3 9.1 FJH -----	015457 V666 Cas type Mira
001046 X And type Mira	041.3 10.4 FJH 169.5 10.8 FJH -----	010940 U And type Mira	020.3 11.9 FJH 041.3 12.0 FJH 064.3 12.7 FJH 097.3 13.1 CMG 169.5 13.3 FJH -----
020.3 11.5 FJH 041.3 11.9 FJH 046.3 12.2 HOL 167.5 14.4 FJH -----	004435 V And type Mira	169.5 12.5 FJH -----	015912 S Ari type Mira
001726 T And type Mira	036.3 12.2 FJH 167.5 11.6 FJH -----	011041A UZ And type Mira	041.3 11.4 FJH -----
150.5 9.2 FJH 168.5 8.7 FJH -----	004533 RR And type Mira	036.3 13.8 FJH -----	020227 Z Tri type Mira
001755 T Cas type Mira	036.3 11.5 FJH -----	011055A VZ Cas type Mira	041.3 11.5 FJH 049.3 11.3 FJH -----
046.3 8.1 HOL 067.3 9.2 HOL 074.3 9.2 HOL 097.3 9.3 CMG 116.5 9.6 FJH 150.5 11.1 FJH 167.5 11.6 FJH -----	004746A RV Cas type Mira	041.3 11.7 FJH 050.3 11.4 FJH 097.3 10.5 CMG 169.5 13.7 FJH -----	020657A TZ Per type UGZ
001838 R And type Mira	020.3 10.5 FJH 041.3 11.3 FJH 046.3 11.7 HOL 049.3 11.9 FJH -----	012746 SX And type Mira	036.31 13.7 FJH 041.32 12.6 FJH 047.34 13.3 FJH 062.33 14.4 FJH 073.32 12.8 FJH -----
020.3 10.7 FJH 020.3 :10.8 HOL 041.3 11.6 FJH 050.3 :11.9 HOL 167.5 <14.8 FJH -----	004958 W Cas type Mira	036.3 :14.0 FJH 150.5 10.4 FJH 168.5 10.3 FJH -----	021024 R Ari type Mira
002725A TU And type Mira	046.3 9.3 HOL 067.3 9.2 HOL 074.3 9.0 HOL 097.3 10.0 CMG 147.5 10.1 BMU 150.5 10.7 FJH -----	013050 KT Per type UGZ	020.3 9.2 FJH
020.3 10.1 FJH 041.3 11.3 FJH		041.32 11.8 FJH 042.37 12.5 FJH 055.29 11.9 FJH	

049.3 10.8 FJH	type Mira	036.4 10.3 FJH	-----
-----		055.3 9.8 FJH	050953 R Aur
021143A W And	020.2 8.2 HOL	067.3 10.0 FJH	type Mira
type Mira	020.3 8.1 FJH	-----	
	047.3 9.0 HOL	043065 T Cam	036.4 8.4 HOL
020.3 11.0 FJH	-----	type Mira	041.5 8.4 FJH
036.4 9.4 HOL	031170 V667 Cas		048.4 8.3 FJH
038.3 9.8 FJH	type Mira	020.3 8.6 FJH	055.4 : 7.4 HOL
049.3 9.3 HOL		046.3 8.1 HOL	056.5 8.0 FJH
050.3 9.4 FJH	020.3 10.1 FJH	048.4 8.4 FJH	059.4 7.9 VDH
061.3 9.1 HOL	047.5 10.9 FJH	055.4 8.0 HOL	066.3 7.2 HOL
073.3 9.7 FJH	056.3 11.2 FJH	056.5 8.6 FJH	073.3 7.3 HOL
074.3 9.5 HOL	-----	069.4 8.9 HOL	073.4 7.6 VDH
169.5 12.1 FJH	032043 Y Per	074.5 9.2 FJH	082.4 7.9 FJH
-----	type Mira	093.3 9.4 HOL	093.3 7.5 HOL
021258 T Per		096.3 9.8 CMG	094.3 8.0 CMG
type SRC	036.4 9.5 HOL	107.4 9.7 HOL	097.4 8.3 BMU
	049.3 9.6 HOL	111.4 10.1 FJH	107.4 8.4 HOL
098.3 8.9 CMG	067.4 9.4 HOL	169.5 12.8 FJH	111.4 8.6 FJH
-----	073.3 9.4 HOL	-----	-----
021281 Z Cep	096.3 9.6 CMG	043208 RX Tau	052036 W Aur
type Mira	-----	type Mira	type Mira
	032335 R Per		
042.4 :15.1 FJH	type Mira	041.4 12.7 FJH	036.5 :14.5 FJH
169.5 11.8 FJH		-----	056.3 14.4 FJH
-----		043274 X Cam	067.3 14.8 FJH
021558 S Per	036.3 13.7 FJH	type Mira	073.3 :15.0 FJH
type SRC	056.3 13.1 FJH		-----
	073.3 11.9 FJH		0524-04 S Ori
020.3 9.6 FJH	-----	020.3 11.3 FJH	type Mira
036.4 8.9 HOL	032443 GK Per	036.4 12.7 FJH	
049.3 9.4 HOL	type Na	042.4 13.0 FJH	095.3 13.0 CMG
056.3 9.4 BMU		049.4 13.4 FJH	-----
064.4 9.5 BMU	041.32 13.0 FJH	055.3 13.9 FJH	052607 BK Ori
067.3 9.3 HOL	062.35 13.1 FJH	062.3 13.4 FJH	type Mira
073.3 9.3 HOL	073.31 13.0 FJH	069.4 12.5 HOL	
075.5 9.5 BMU	-----	070.4 12.4 FJH	041.4 11.1 FJH
093.3 9.3 HOL	040150 FO Per	082.4 10.9 FJH	-----
098.3 9.3 CMG	type UG	093.3 10.0 HOL	053326 RR Tau
098.3 9.6 BMU		096.3 10.0 CMG	type INAS
148.4 9.7 BMU	070.37 13.5 FJH	098.3 9.5 BMU	
-----	-----	111.4 8.1 FJH	096.3 10.7 CMG
022150 RR Per	041916 VX Tau	111.4 8.6 HOL	-----
type Mira	type Mira	113.4 8.2 JOJ	053337 RU Aur
		124.4 8.4 FJH	type Mira
036.3 14.0 FJH	036.4 14.0 FJH	147.4 9.5 FJH	
073.3 14.4 FJH	062.3 :14.2 FJH	-----	
169.5 13.2 FJH	073.3 <14.2 FJH	044617 V Tau	036.3 :15.0 FJH
-----	-----	type Mira	073.3 14.8 FJH
022980 RR Cep	042209 R Tau		-----
type Mira	type Mira	038.3 11.2 FJH	053531 U Aur
		056.3 10.3 FJH	type Mira
041.4 10.7 FJH	036.4 12.9 FJH	067.3 10.0 FJH	
050.3 11.2 FJH	067.3 12.2 FJH	-----	036.5 10.6 FJH
095.5 13.0 CMG	-----	044907 FG Ori	047.3 10.8 FJH
-----	042309 S Tau	type Mira	060.3 11.4 FJH
023133 R Tri	type Mira		070.4 12.1 FJH
		041.4 11.8 FJH	097.3 12.5 CMG

-----  
053538 SZ Aur  
type Mira

036.5 11.4 FJH  
047.3 10.8 FJH  
060.3 10.5 FJH  
096.3 11.1 CMG

-----  
054319 SU Tau  
type RCB

060.4 10.0 FJH  
062.3 9.5 VDH  
067.3 10.0 FJH  
074.3 11.3 FJH  
075.3 11.2 BMU  
075.3 11.5 FJH  
076.3 11.1 CMG  
076.3 11.2 BMU  
076.4 11.8 FJH  
082.3 12.7 FJH  
095.3 14.1 BMU  
095.3 14.2 CMG  
096.3 14.3 BMU  
098.3 14.2 CMG  
098.3 14.3 BMU

-----  
054615A Z Tau  
type Mira

047.3 12.4 FJH  
067.3 12.9 FJH  
098.3 13.0 CMG

-----  
054615C RU Tau  
type Mira

041.3 14.2 FJH  
062.3 14.4 FJH

-----  
054920A U Ori  
type Mira

041.4 9.5 FJH  
060.4 10.5 FJH  
062.3 10.3 VDH  
067.3 10.7 FJH  
075.3 10.8 BMU  
082.3 10.9 FJH  
096.3 11.4 CMG

-----  
054974 V Cam  
type Mira

036.4 13.6 FJH  
047.5 13.3 FJH

062.4 13.0 FJH  
074.3 12.9 FJH  
082.4 12.5 FJH  
096.3 11.2 CMG  
111.4 10.8 FJH  
123.4 9.5 FJH  
147.4 9.7 FJH

-----  
055439 AZ Aur  
type Mira

036.5 12.5 FJH  
048.4 12.0 FJH  
060.3 11.6 FJH  
071.4 11.0 CMG  
101.4 10.2 CMG

-----  
060246 VY Aur  
type Mira

036.3 14.4 FJH  
056.3 13.9 FJH  
067.4 14.1 FJH  
076.4 14.1 FJH

-----  
060443 RR Aur  
type Mira

040.4 13.8 FJH  
056.3 14.2 FJH  
064.3 14.3 FJH

-----  
060450 X Aur  
type Mira

047.4 8.8 HOL  
048.4 8.6 FJH  
055.4 8.7 HOL  
067.4 8.4 HOL  
074.4 8.9 HOL  
093.4 9.3 HOL  
094.3 10.3 CMG  
107.4 10.3 HOL

-----  
060547 SS Aur  
type UGSS

036.33 14.8 FJH  
038.31 14.9 FJH  
040.44 14.9 FJH  
041.34 14.8 FJH  
042.39 14.9 FJH  
046.48 14.9 FJH  
047.35 14.8 FJH  
055.30 10.8 FJH  
055.41 11.0 HOL  
056.32 11.3 FJH

057.33 11.7 FJH  
060.35 13.6 FJH  
062.31 14.7 FJH  
064.34 14.7 FJH  
065.41 14.8 FJH  
067.36 14.8 FJH  
070.36 14.9 FJH

-----  
072.41 14.9 FJH  
073.33 14.9 FJH  
074.34 14.8 FJH  
075.35 15.0 FJH  
076.37 14.9 FJH  
093.33 11.2 FJH  
093.37 11.6 HOL  
098.32 13.9 CMG

-----  
060746A ST Aur  
type Mira

036.5 11.9 FJH  
047.4 11.5 FJH  
055.3 11.2 FJH  
067.4 10.7 FJH  
075.4 10.6 FJH  
093.3 10.9 FJH  
098.3 10.9 CMG  
104.3 11.3 FJH  
111.4 11.6 FJH  
123.4 11.8 FJH

-----  
061115 CZ Ori  
type UGSS

041.34 12.5 FJH  
042.38 12.9 FJH  
062.31<15.0 FJH  
067.34 12.3 FJH  
070.35 12.3 FJH  
073.32 14.5 FJH

-----  
061275 W Cam  
type Mira

097.3 11.0 CMG  
101.4 10.5 HOL  
111.4 9.9 HOL

-----  
061647 V Aur  
type Mira

041.5 10.0 FJH  
048.4 9.7 FJH  
075.4 9.8 FJH  
094.3 10.0 CMG  
098.3 9.7 FJH  
111.4 9.7 FJH

0617-02 V Mon  
type Mira

098.3 11.8 CMG

-----  
061725 ZZ Gem  
type Mira

097.3 9.3 CMG

-----  
061925 VV Gem  
type Mira

036.3 14.0 FJH  
062.3 14.1 FJH  
073.3 14.0 FJH

-----  
061947 GQ Aur  
type Mira

041.5 12.6 FJH  
047.4 :12.5 HOL  
055.3 12.8 FJH  
055.4 :12.3 HOL  
065.4 12.5 HOL  
067.4 12.1 FJH  
073.4 11.6 HOL  
075.4 11.9 FJH  
093.4 11.2 HOL  
104.3 10.8 FJH  
104.4 11.2 HOL  
111.4 10.8 FJH  
111.4 11.3 HOL  
119.4 11.4 HOL  
123.4 11.3 FJH

-----  
062564 RT Cam  
type Mira

096.3 14.4 CMG

-----  
062574 SU Cam  
type Mira

036.4 13.8 FJH  
049.4 13.4 FJH  
062.3 12.8 FJH  
074.3 12.5 FJH  
082.4 12.2 FJH  
111.4 10.4 FJH  
123.4 10.3 FJH  
169.5 12.0 FJH

-----  
063159 U Lyn  
type Mira

036.4 11.6 FJH

046.4 12.1 FJH	048.3 9.3 HOL	055.3 11.3 FJH	046.4 12.4 FJH
055.5 11.8 FJH	062.4 8.9 FJH	060.4 11.5 FJH	055.3 12.4 FJH
064.4 12.2 FJH	075.3 9.0 HOL	075.3 12.0 HOL	064.3 12.5 FJH
072.4 12.3 FJH	095.3 9.6 CMG	082.4 12.3 FJH	074.3 12.1 FJH
082.4 12.8 FJH	-----	095.3 12.5 CMG	095.3 11.0 CMG
096.3 12.6 CMG	064128 IR Gem	104.3 12.6 FJH	104.3 10.7 FJH
104.4 13.0 FJH	type UGSU	-----	-----
111.4 13.1 FJH	036.33:15.5 FJH	070310 R CMi	072811 T CMi
-----	041.34 15.5 FJH	type Mira	type Mira
063308 R Mon	055.31 13.8 FJH	095.5 8.8 CMG	020.3 11.1 FJH
type Ina	056.31 15.2 FJH	-----	036.3 11.8 FJH
097.3 10.7 CMG	067.37 13.4 FJH	071026 WZ Gem	046.4 12.5 FJH
-----	073.33 15.3 FJH	type Mira	055.3 12.6 FJH
063444A AA Aur	-----	020.3 10.0 FJH	064.3 13.0 FJH
type Mira	065111 Y Mon	040.5 10.2 FJH	075.3 13.8 FJH
040.4 9.7 FJH	type Mira	047.4 10.6 FJH	-----
047.4 10.2 HOL	097.3 11.6 CMG	060.4 11.1 FJH	073234 ST Gem
048.4 10.0 FJH	-----	076.4 11.8 FJH	type Mira
055.4 10.0 HOL	065355 R Lyn	096.3 12.0 CMG	020.3 10.2 FJH
056.5 10.1 FJH	type Mira	104.3 12.6 FJH	040.5 11.9 FJH
065.4 10.4 HOL	047.4 10.2 HOL	-----	046.5 12.1 FJH
073.3 10.5 HOL	049.4 10.5 FJH	071713 V Gem	055.3 12.6 FJH
073.3 10.9 FJH	055.4 10.5 HOL	type Mira	065.4 13.2 FJH
093.3 12.3 FJH	064.4 11.0 FJH	020.3 8.7 FJH	075.3 13.7 FJH
093.4 :11.7 HOL	067.4 10.7 HOL	041.5 8.4 FJH	-----
098.3 12.6 CMG	072.4 11.6 FJH	047.4 8.7 FJH	073336 RU Lyn
101.4 12.2 HOL	073.4 10.9 HOL	095.3 10.6 CMG	type Mira
111.4 :12.0 HOL	082.4 11.8 FJH	-----	036.4 14.2 FJH
-----	093.4 11.7 HOL	072141 VX Aur	056.3 12.8 FJH
063558 S Lyn	096.3 11.6 CMG	type Mira	065.4 11.4 FJH
type Mira	104.4 12.1 FJH	040.4 12.7 FJH	075.4 10.3 FJH
036.4 13.6 FJH	107.4 :12.0 HOL	049.4 12.8 FJH	093.3 10.3 FJH
047.4 13.3 FJH	111.4 12.2 FJH	060.4 12.7 FJH	098.3 10.7 CMG
055.5 13.2 FJH	119.4 :12.4 HOL	072.4 12.7 FJH	104.4 11.0 FJH
064.4 13.1 FJH	123.4 12.6 FJH	096.3 12.4 CMG	112.3 11.3 FJH
067.4 12.7 HOL	-----	111.4 11.6 FJH	-----
072.4 13.1 FJH	070109 V CMi	-----	073508 U CMi
073.4 12.9 HOL	type Mira	072506 SV CMi	type Mira
082.4 12.6 FJH	020.3 8.5 FJH	type UGZ	020.3 12.0 FJH
093.4 11.8 HOL	040.5 10.1 FJH	041.35 13.6 FJH	036.3 12.6 FJH
096.3 11.5 CMG	047.4 10.6 FJH	042.38 13.3 FJH	046.4 12.9 FJH
096.3 11.7 BMU	055.3 11.2 FJH	062.32 13.4 FJH	055.3 12.9 FJH
104.4 11.2 FJH	064.3 11.5 FJH	064.34 13.3 FJH	064.3 13.0 FJH
107.4 11.1 HOL	074.3 12.2 FJH	065.40 13.2 FJH	074.3 13.0 FJH
111.4 10.8 FJH	095.3 13.1 CMG	067.35 13.4 FJH	095.3 13.0 CMG
119.4 10.4 HOL	-----	070.36 14.4 FJH	104.3 :13.0 FJH
123.4 10.2 FJH	070122A R Gem	-----	-----
125.4 9.8 BMU	type Mira	072708 S CMi	073723 S Gem
131.4 9.9 HOL	020.3 10.3 FJH	type Mira	type Mira
-----	040.5 10.6 FJH	020.3 12.4 FJH	036.3 14.2 FJH
064030 X Gem	047.4 10.8 FJH	036.3 12.4 FJH	047.4 14.2 FJH
type Mira	048.3 10.6 HOL	-----	055.3 14.0 FJH
047.4 9.2 FJH	-----	-----	-----

070.4	14.0	FJH	069.39	9.2	CMG	082.39	12.7	FJH	104.4	11.4	FJH
082.4	13.5	FJH	070.35	9.1	FJH	104.45	12.8	FJH	111.4	11.5	FJH
095.3	13.0	CMG	070.35	8.9	BMU	111.44	14.2	FJH	-----		
098.4	12.6	BMU	070.45	9.2	CMG	118.45	13.3	FJH	081040	W Lyn	
104.3	12.7	FJH	071.36	9.3	BMU	119.43	12.8	FJH	type Mira		
112.3	11.7	FJH	071.38	9.2	CMG	123.43	13.7	FJH			
-----			071.44	9.4	HOL	125.43	13.7	FJH	036.4	15.0	FJH
074323	T Gem		072.36	9.3	BMU	130.41	13.6	FJH	056.3	12.9	FJH
type Mira			072.38	9.2	CMG	-----			065.4	11.5	FJH
			072.41	9.1	FJH	080428	YZ Cnc		075.4	11.3	FJH
020.3	9.0	FJH	073.31	9.1	FJH	type UGSU			093.3	10.2	FJH
041.4	9.7	FJH	073.39	9.4	BMU				096.3	10.5	CMG
048.4	10.1	FJH	073.42	9.4	HOL	036.34	12.6	FJH	104.4	10.4	FJH
060.4	11.1	FJH	074.32	9.2	FJH	038.49:14.0	FJH		111.4	10.6	FJH
065.5	11.1	HOL	074.44	9.6	BMU	040.48	14.6	FJH	123.4	11.1	FJH
069.5	11.4	HOL	074.44	9.4	HOL	041.35	15.2	FJH	-----		
070.4	11.7	FJH	074.49	9.4	CMG	042.36	14.6	FJH	081112	R Cnc	
082.4	12.6	FJH	075.33	9.7	BMU	046.47	14.6	FJH	type Mira		
095.3	13.2	CMG	075.33	9.6	FJH	047.35	14.7	FJH			
098.4	13.2	BMU	075.40	9.4	HOL	049.40	12.2	FJH	094.3	11.0	CMG
-----			075.49	9.6	CMG	056.32	12.1	FJH	-----		
074922	U Gem		076.31	9.8	CMG	057.34	12.6	FJH	081473	Z Cam	
type UGSS+E			076.33	9.9	BMU	060.37	14.7	FJH	type UGZ		
			076.36	9.8	FJH	062.32	14.5	FJH			
002.25	14.0	BMU	076.40	9.7	HOL	064.34	12.6	FJH	002.25	11.6	BMU
004.38	14.0	BMU	082.36	13.6	FJH	065.41	13.8	FJH	006.32	11.6	BMU
005.45	14.2	BMU	095.36	14.3	BMU	067.36	14.7	FJH	015.47	11.6	BMU
006.34	14.1	BMU	096.37	14.2	BMU	070.38	12.1	FJH	020.33	11.6	FJH
015.47	14.2	BMU	097.39	14.2	BMU	072.41	12.9	FJH	036.34	11.6	FJH
020.33	14.2	FJH	098.32	14.3	BMU	073.32	14.5	FJH	036.35	11.7	BMU
036.32	13.9	FJH	-----			074.34	14.0	FJH	040.48	11.5	FJH
036.35	14.1	BMU	080362	SU UMa		075.34	14.4	FJH	041.29	11.6	BMU
038.31	14.3	FJH	type UGSU			076.38	13.1	FJH	046.36	11.6	FJH
040.43	14.4	FJH				098.32	12.2	CMG	048.41	11.6	FJH
041.30	14.2	BMU	036.35	14.2	FJH	098.33	12.0	BMU	055.29	11.5	FJH
041.35	14.6	FJH	038.50	14.2	FJH	099.34	12.1	BMU	056.31	11.7	BMU
042.35	14.2	FJH	040.44	14.1	FJH	099.37	12.2	CMG	060.46	11.5	FJH
042.40	14.2	BMU	041.36	14.2	FJH	101.36	14.4	CMG	062.42	11.6	FJH
046.49	14.6	FJH	046.36	11.3	FJH	101.40	13.9	BMU	065.41	11.5	FJH
047.35	14.3	FJH	047.32	11.2	FJH	113.38	12.2	FJH	065.43	11.7	BMU
049.41	14.2	FJH	048.50	11.2	FJH	123.41	12.5	BMU	069.39	12.1	CMG
055.31	14.2	FJH	049.41	11.2	FJH	-----			070.37	11.6	FJH
056.30	14.1	FJH	050.41	11.4	FJH	080523	RR Cnc		070.40	11.9	BMU
060.36	14.1	FJH	055.29	11.9	FJH	type Mira			070.45	12.2	CMG
062.32	14.2	FJH	056.29	12.1	FJH				071.37	11.9	BMU
062.40	14.2	BMU	057.34	11.9	FJH	036.3	14.2	FJH	071.38	12.1	CMG
064.34	14.2	FJH	060.46	12.6	FJH	056.3	14.3	FJH	071.41	12.1	HOL
065.38	14.2	CMG	062.42	13.3	FJH	064.3	14.3	FJH	072.38	12.2	CMG
065.41	13.9	FJH	064.43	13.6	FJH	070.4	14.1	FJH	073.40	11.9	BMU
065.42	13.7	CMG	065.41	13.8	FJH	-----			073.45	11.7	HOL
065.43	13.9	BMU	067.47	13.0	FJH	080837	RT Lyn		073.53	11.6	FJH
065.47	13.5	BMU	070.37	13.3	FJH	type Mira			074.38	11.8	HOL
066.28	9.2	BMU	072.42	13.4	FJH				074.44	11.8	BMU
066.28	9.2	CMG	073.53	13.4	FJH	036.4	14.3	FJH	074.49	12.0	CMG
066.46	9.1	CMG	074.42	13.5	FJH	075.4	12.9	FJH	075.47	11.7	BMU
067.33	9.0	BMU	075.46	14.2	FJH	093.3	12.1	FJH	075.49	11.7	CMG
067.34	9.1	FJH	076.37	13.8	FJH	096.3	12.1	CMG	076.45	11.7	HOL

076.54	11.5	BMU			038.51	12.9	FJH	076.4	:14.7	FJH	
082.39	11.6	FJH	036.3	11.5	FJH	040.43	13.3	FJH	-----		
093.48	11.5	FJH	048.4	12.1	FJH	041.36	13.0	FJH	093934	R LMi	
094.41	11.6	BMU	060.4	12.9	FJH	042.38	13.2	FJH	type	Mira	
095.41	11.6	BMU	076.4	13.3	FJH	046.36	13.3	FJH			
095.49	11.6	CMG	096.5	12.8	CMG	047.46	13.4	FJH	036.4	13.3	FJH
096.33	11.7	CMG	-----			049.41	12.8	FJH	047.3	13.6	FJH
096.36	11.6	BMU	081633	T Lyn		056.33	11.4	FJH	056.5	13.4	FJH
097.31	11.8	CMG	type	Mira		060.37	11.5	FJH	064.4	13.3	FJH
097.34	11.7	BMU				062.35	12.0	FJH	065.5	13.2	HOL
098.32	11.7	BMU	049.4	10.7	FJH	064.34	12.3	FJH	073.5	13.3	HOL
099.44	11.5	FJH	065.4	11.3	FJH	065.40	12.7	FJH	075.5	13.1	FJH
101.45	11.7	HOL	075.4	11.4	FJH	067.37	12.8	FJH	093.3	12.9	FJH
104.39	11.5	FJH	093.3	11.5	FJH	070.44	13.2	FJH	094.3	13.0	CMG
107.49	11.7	HOL	096.3	11.4	CMG	072.41	13.4	FJH	101.4	12.3	BMU
107.57	11.5	BMU	104.4	11.8	FJH	074.33	13.5	FJH	111.4	12.3	FJH
111.37	11.5	FJH	111.4	11.8	FJH	075.45	13.5	FJH	118.4	11.9	FJH
111.42	11.7	HOL	-----			076.37	12.9	FJH	123.4	12.0	BMU
113.39	11.5	FJH	083013	UY Cnc		093.35	13.3	FJH	123.4	12.2	HOL
118.40	11.6	FJH	type	Mira		095.49	13.3	CMG	125.4	11.8	FJH
119.42	11.8	HOL				098.32	13.3	CMG	-----		
119.42	11.6	BMU	036.3	14.5	FJH	099.37	13.4	CMG	093952	EQ UMa	
122.39	11.5	FJH	056.3	13.3	FJH	104.39	12.5	FJH	type	UG	
122.47	11.7	HOL	064.3	12.9	FJH	-----					
123.41	11.7	BMU	076.4	12.1	FJH	090425	W Cnc		002.30	12.4	BMU
125.40	11.8	HOL	093.4	11.0	FJH	type	Mira		004.41	12.6	BMU
125.43	11.6	BMU	095.3	11.1	CMG				005.45	13.0	BMU
125.44	11.6	FJH	104.3	10.7	FJH	020.3	8.0	FJH	006.34	13.0	BMU
130.42	11.5	FJH	-----			048.4	8.5	FJH	036.48	14.9	FJH
130.44	11.5	BMU	083019	U Cnc		062.4	9.5	FJH	041.31	13.6	BMU
130.46	11.6	CMG	type	Mira		076.4	10.0	FJH	041.44	13.5	FJH
131.42	11.5	BMU				093.4	10.6	FJH	042.36:	14.5	FJH
131.47	11.6	CMG	036.3	15.1	FJH	095.3	11.0	CMG	047.32	13.0	FJH
138.45	11.6	BMU	062.3	:15.1	FJH	104.3	11.0	FJH	048.51	12.8	FJH
140.44	11.7	HOL	070.4	15.1	FJH	119.4	11.7	FJH	056.29	13.4	BMU
142.42	11.6	BMU	-----			-----			060.46	13.4	FJH
142.42	11.6	HOL	083350	X UMa		093178	Y Dra		062.43	14.0	FJH
144.43	11.6	BMU	type	Mira		type	Mira		064.43	14.3	FJH
145.43	11.6	BMU							065.42	13.2	FJH
146.47	11.7	CMG	036.5	14.4	FJH	041.4	9.0	FJH	065.46	13.2	BMU
147.42	11.6	BMU	062.4	14.7	FJH	048.4	9.2	FJH	067.47	14.5	FJH
148.42	11.5	BMU	076.4	15.2	FJH	065.4	8.4	FJH	070.42	14.5	FJH
150.42	11.6	BMU	-----			074.5	8.8	FJH	072.42	14.5	FJH
161.43	11.5	BMU	084803	S Hya		095.5	9.3	CMG	073.43	13.1	BMU
161.44	11.7	CMG	type	Mira		099.4	9.3	FJH	073.54	13.1	FJH
162.45	11.6	BMU				111.4	10.1	FJH	074.43	13.2	FJH
164.42	11.6	BMU	091.4	12.9	CMG	122.4	10.4	FJH	074.44	13.1	BMU
166.45	11.6	BMU	-----			138.5	11.6	FJH	075.46	14.4	FJH
167.42	11.5	BMU	0850-08	T Hya		169.5	12.8	FJH	076.37	14.6	FJH
167.48	11.6	CMG	type	Mira		-----			094.41	12.5	BMU
168.44	11.5	BMU				093720	RS Leo		095.39	12.5	BMU
168.47	11.6	CMG	095.3	9.9	CMG	type	Mira		096.33	12.9	BMU
169.44	11.4	BMU	-----						097.35	12.9	BMU
169.49	11.5	FJH	085518	SY Cnc		036.4	13.3	FJH	098.3	12.8	CMG
-----			type	UGZ		046.5	13.8	FJH	098.35	12.9	BMU
081617		V Cnc				056.3	14.2	FJH	099.44	13.0	FJH
type		Mira	036.46	12.5	FJH	070.4	14.6	FJH	101.40	13.1	BMU



104.45	13.1	FJH	073.39	13.2	BMU	091.42	11.2	BMU	125.40	12.5	HOL
114.40	13.2	FJH	074.34	14.0	FJH	092.36	10.8	SAQ	125.43	12.7	BMU
118.40	13.3	FJH	074.49	14.1	CMG	093.44	10.7	HOL	130.41	13.0	FJH
118.41	13.2	BMU	075.46	15.2	FJH	093.49	11.4	FJH	130.42	12.5	HOL
123.41	12.6	BMU	095.33	12.6	CMG	094.35	10.6	SAQ	130.46	12.9	CMG
123.43	13.1	FJH	095.39	12.6	BMU	094.5	11.2	CMG	130.48	12.7	BMU
124.44	13.6	FJH	095.49	12.6	CMG	094.50	11.1	BMU	131.42	12.7	SAQ
125.43	14.5	FJH	096.33	12.6	CMG	095.40	11.2	BMU	131.48	12.6	BMU
130.41	13.1	FJH	096.33	12.4	BMU	095.5	11.1	CMG	131.48	12.9	CMG
130.46	13.0	BMU	097.31	12.2	BMU	096.3	11.0	CMG	137.41	12.7	HOL
138.43	12.8	FJH	097.31	12.6	CMG	096.33	11.2	BMU	138.41	12.6	HOL
138.43	12.5	BMU	098.32	12.2	BMU	097.34	11.3	BMU	138.43	12.8	BMU
146.44	12.8	BMU	098.32	12.2	CMG	098.3	11.1	CMG	138.43	13.3	FJH
-----			098.38:11.9	HOL		098.35	11.3	BMU	140.45:12.8	HOL	
094211	R	Leo	099.34	12.2	BMU	098.39	10.9	SAQ	142.43	12.7	BMU
type	Mira		099.37	12.2	CMG	098.42	10.7	HOL	142.43	12.8	HOL
			099.43	12.2	FJH	099.35	11.2	BMU	144.44	12.7	BMU
004.4	9.7	BMU	101.36	12.3	CMG	099.44	11.5	FJH	145.43	12.7	HOL
036.4	10.6	FJH	101.38:12.0	HOL		101.36	10.7	HOL	145.44	12.8	BMU
042.4	10.3	BMU	101.39	12.5	BMU	101.4	11.2	CMG	146.43	12.7	HOL
046.5	10.6	FJH	113.39	12.7	FJH	101.43	11.5	BMU	146.44	12.8	BMU
056.3	10.2	BMU	125.42	12.8	BMU	104.34	11.5	SAQ	146.48	13.3	CMG
056.5	10.4	FJH	-----			104.37	11.7	FJH	147.45	12.9	BMU
064.4	10.1	BMU	094735	S	Lmi	104.52	11.2	HOL	148.42	12.9	SAQ
067.5	10.3	FJH	type	Mira		105.36	11.5	SAQ	148.44	13.0	BMU
070.4	10.1	BMU				105.38	11.1	HOL	148.47	12.9	HOL
075.3	9.7	HOL	020.3	8.9	FJH	105.51	11.4	HOL	150.43	12.9	HOL
082.5	: 9.9	HOL	047.3	10.0	FJH	107.35	11.8	BMU	150.44	13.0	BMU
085.3	9.8	BMU	056.5	10.1	FJH	107.48	11.5	HOL	150.45	13.3	FJH
094.3	9.6	CMG	060.5	10.1	HOL	107.51	11.8	FJH	159.43	13.0	SAQ
094.4	9.6	BMU	064.4	10.4	FJH	108.36	11.9	BMU	161.44	12.9	HOL
098.4	9.5	HOL	065.5	10.2	HOL	108.40	11.5	SAQ	161.45	13.1	BMU
099.3	9.5	BMU	073.5	10.8	HOL	108.49	11.7	HOL	167.42	13.0	SAQ
099.4	9.9	FJH	075.5	10.9	FJH	111.38	12.1	FJH	167.45	13.2	BMU
108.4	9.2	BMU	088.5	11.4	HOL	111.43	12.0	HOL	167.49	13.4	CMG
111.4	9.5	FJH	093.3	11.5	FJH	111.44	12.1	BMU	168.45	13.2	BMU
113.5	9.2	JOJ	094.3	11.8	CMG	112.42	12.1	HOL	169.44	13.1	BMU
118.4	8.9	BMU	111.4	12.8	FJH	112.42	12.2	BMU	-----		
125.4	9.2	FJH	118.4	13.2	FJH	113.39	12.2	FJH	094836	U	Lmi
-----			123.4	13.0	HOL	116.39	12.3	CMG	type	SRa	
094512	X	Leo	125.4	13.3	FJH	116.39	12.6	FJH			
type	UGSS		-----			116.39:12.3	HOL		094.3	11.3	CMG
			094769	SN	93J	116.43	12.2	BMU	-----		
038.50	12.5	FJH	type	SN		118.42	12.1	HOL	095421	V	Leo
040.43	12.2	FJH				118.43	12.4	BMU	type	Mira	
041.33	12.2	BMU	078.64:10.8	BMU		118.43	12.8	FJH			
041.45	12.6	FJH	079.61:11.0	BMU		119.40	12.5	BMU	040.4	9.3	FJH
042.33	12.2	FJH	080.42:11.7	SAQ		119.42	12.7	SAQ	046.5	10.1	FJH
042.37	12.2	BMU	082.35	11.8	SAQ	119.43	12.2	HOL	056.5	10.4	FJH
046.48	13.8	FJH	082.37	12.0	FJH	122.40	12.7	SAQ	067.5	11.1	FJH
047.36	14.8	FJH	082.42	11.3	HOL	122.40	12.8	FJH	075.3	11.9	HOL
070.44	14.9	FJH	082.43	11.7	BMU	122.44	12.2	HOL	093.3	12.9	FJH
071.36	12.5	BMU	085.34	11.9	BMU	123.42	12.7	BMU	094.3	12.9	CMG
071.38	12.5	CMG	086.39	11.7	BMU	123.43	12.2	HOL	097.4	12.8	BMU
072.38	12.6	CMG	086.41	10.9	HOL	123.44	12.9	FJH	098.4	12.7	HOL
072.41	12.8	FJH	088.44	10.8	HOL	124.43	12.7	BMU	099.4	13.0	FJH
073.34	13.1	FJH	091.4	11.0	CMG	124.45	12.2	HOL	118.4	13.3	FJH

125.4	13.5	FJH	112.3	11.5	FJH	099.5	12.4	FJH	049.5	11.6	HOL
-----			119.4	11.6	FJH	107.4	12.8	FJH	056.3	12.3	BMU
095968	CH	Uma	130.4	11.8	FJH	118.4	13.4	FJH	060.4	12.2	FJH
type	UGSS		-----			125.4	13.8	FJH	064.4	12.5	FJH
			110506	S	Leo	-----			069.5	12.6	HOL
064.44	14.7	FJH	type	Mira		1209-05	T	Vir	073.5	12.6	FJH
065.42	14.6	FJH				type	Mira		076.5	12.8	HOL
067.48	14.6	FJH	094.3	10.7	CMG				082.4	12.8	FJH
070.43	14.5	FJH	-----			060.5	:13.6	FJH	093.5	12.8	FJH
072.44	14.5	FJH	113303	T	Leo	065.4	13.3	FJH	095.3	13.0	CMG
073.54	14.5	FJH	type	UG		073.5	12.1	FJH	096.3	13.0	BMU
074.43	14.5	FJH				095.5	10.4	CMG	099.4	13.2	FJH
075.47	14.8	FJH	041.51	14.5	FJH	096.4	10.5	BMU	107.5	12.9	FJH
-----			070.44	15.1	FJH	099.4	10.4	FJH	118.4	12.8	FJH
102900	S	Sex	-----			125.4	9.9	FJH	123.4	12.9	HOL
type	Mira		113772	DO	Dra	-----			124.4	12.6	FJH
			type	UG		1214-18	R	Crv	131.4	:12.7	HOL
094.3	11.7	CMG				type	Mira		140.5	:12.3	HOL
-----			070.43	15.2	FJH				142.4	12.2	FJH
103769	R	UMa	074.44	15.2	FJH	076.3	9.0	CMG	144.5	12.2	BMU
type	Mira		075.47	15.2	FJH	091.4	8.3	CMG	145.4	12.1	HOL
			-----			094.5	8.3	BMU	153.4	11.5	FJH
036.5	12.2	FJH	115158	Z	UMa	-----			161.4	11.2	HOL
047.3	12.7	FJH	type	SRb		122001	SS	Vir	161.5	11.5	BMU
055.5	12.8	FJH				type	Mira		167.5	10.6	BMU
064.4	12.9	FJH	056.3	8.0	BMU				-----		
065.5	13.0	HOL	059.4	7.6	VDH	095.5	9.0	CMG	123307	R	Vir
075.5	13.0	HOL	073.4	7.2	VDH	-----			type	Mira	
082.4	13.0	FJH	095.3	7.1	CMG	122532	T	CVn			
088.5	12.9	HOL	096.3	7.0	BMU	type	Mira		041.4	8.5	FJH
093.5	12.9	FJH	108.4	7.2	BMU				062.4	7.5	FJH
095.3	12.8	CMG	138.4	7.3	BMU	055.4	: 9.7	HOL	074.5	7.7	FJH
096.3	13.1	BMU	147.5	7.7	BMU	060.5	10.0	HOL	093.4	7.9	FJH
104.5	12.8	HOL	161.5	8.0	BMU	069.5	9.9	HOL	095.5	7.9	CMG
111.4	12.4	FJH	167.5	8.1	BMU	088.5	10.2	HOL	107.4	9.5	FJH
112.4	12.7	HOL	-----			095.5	10.2	CMG	118.4	10.3	FJH
122.4	:12.3	HOL	115919	R	Com	102.5	10.2	HOL	142.4	11.2	FJH
123.4	12.2	FJH	type	Mira		111.5	10.1	HOL	150.4	11.3	FJH
123.4	12.6	HOL				122.4	10.1	HOL	-----		
138.5	11.9	HOL	038.5	11.6	FJH	138.5	10.1	HOL	123366	RV	Dra
142.4	11.8	FJH	060.5	11.9	FJH	150.4	10.4	HOL	type	Mira	
145.4	11.7	BMU	072.4	12.0	FJH	161.4	10.2	HOL			
148.5	11.4	HOL	093.4	12.6	FJH	169.4	10.2	HOL	038.5	13.5	FJH
161.4	10.0	HOL	094.5	12.3	CMG	-----			046.5	:14.0	FJH
167.5	8.7	BMU	099.5	12.7	FJH	1228-03	Y	Vir	062.4	:14.5	FJH
169.4	8.8	HOL	118.4	12.8	FJH	type	Mira		119.4	14.0	FJH
-----			125.4	12.9	FJH				130.4	12.7	HOL
104814	W	Leo	150.5	:13.6	FJH	060.5	9.1	FJH	130.4	12.8	FJH
type	Mira		-----			073.5	9.3	FJH	138.5	12.2	HOL
			120012	SU	Vir	095.5	10.4	CMG	142.4	11.7	FJH
036.5	14.4	FJH	type	Mira		104.4	10.5	FJH	146.4	11.7	HOL
047.5	13.7	FJH				125.4	11.7	FJH	153.5	10.9	FJH
060.5	12.4	FJH	041.4	9.8	FJH	-----			161.4	10.5	FJH
067.5	11.7	FJH	060.5	9.9	FJH	123160	T	UMa	165.5	10.6	HOL
093.4	11.2	FJH	072.4	10.9	FJH	type	Mira				
094.3	10.8	CMG	093.4	12.1	FJH						
099.4	11.0	FJH	095.5	12.2	CMG	048.5	11.8	FJH			

-----  
123459 RS UMa  
type Mira

036.5 14.1 FJH  
046.5 13.7 FJH  
060.4 13.4 FJH  
073.5 12.9 FJH  
082.4 12.0 FJH  
093.5 11.1 FJH  
095.3 11.1 CMG  
096.3 10.4 BMU  
099.4 10.0 HOL  
099.4 10.5 FJH  
107.5 9.9 HOL  
108.4 9.4 BMU  
108.4 10.0 FJH  
116.4 9.2 HOL  
122.4 9.1 FJH  
130.4 8.9 HOL  
140.4 9.1 HOL  
142.4 9.5 FJH  
144.5 9.1 BMU  
153.4 10.1 FJH  
161.4 9.4 HOL  
161.4 10.3 FJH  
161.5 10.3 BMU  
167.5 10.8 BMU

-----  
123961 S UMa  
type Mira

036.5 12.0 FJH  
046.5 12.2 FJH  
049.5 11.8 HOL  
055.5 11.7 HOL  
055.5 12.1 FJH  
056.3 11.2 BMU  
064.4 11.7 FJH  
066.4 10.8 VDH  
067.4 10.8 HOL  
073.4 10.6 VDH  
076.5 9.9 HOL  
082.4 9.9 FJH  
095.3 9.1 CMG  
096.3 9.1 BMU  
099.4 8.9 HOL  
107.5 9.0 HOL  
108.4 8.7 BMU  
108.4 8.9 FJH  
116.4 8.7 HOL  
122.4 8.7 FJH  
130.4 8.7 HOL  
140.5 8.5 HOL  
142.4 8.6 FJH  
144.4 8.1 BMU  
161.4 7.8 HOL

161.5 8.0 BMU  
167.5 7.9 BMU

-----  
124204 RU Vir  
type Mira

038.5 13.3 FJH  
062.4 12.1 FJH  
072.4 12.0 FJH  
093.5 11.7 FJH  
095.5 11.8 CMG  
114.4 11.4 FJH  
142.4 11.8 FJH  
150.4 11.5 FJH

-----  
124238 U CVn  
type Mira

038.5 10.9 FJH  
048.5 11.4 FJH  
060.5 11.7 FJH  
072.4 12.0 FJH  
082.4 12.6 FJH  
093.5 12.8 FJH  
095.5 12.3 CMG  
107.4 13.1 FJH  
118.5 13.1 FJH  
130.4 13.6 FJH  
146.4 13.9 FJH

-----  
124606 U Vir  
type Mira

038.5 12.1 FJH  
060.5 10.8 FJH  
074.5 9.6 FJH  
095.5 8.5 CMG  
099.4 8.4 FJH  
124.4 8.7 FJH  
142.4 9.2 FJH

-----  
1322-02 V Vir  
type Mira

095.5 10.9 CMG

-----  
1327-06 S Vir  
type Mira

095.3 12.5 CMG

-----  
133273 T UMi  
type Mira

038.5 14.4 FJH  
062.4 13.2 FJH  
072.4 13.1 FJH

095.5 11.8 CMG  
104.4 11.8 FJH

-----  
113.4 10.7 FJH  
138.5 10.0 FJH  
145.4 9.5 FJH  
161.4 8.9 FJH

-----  
1336-33 T Cen  
type SRa

095.4 6.7 BMU  
097.3 6.7 CMG

-----  
134434 RT CVn  
type Mira

065.4 15.1 FJH  
073.5 14.9 FJH  
093.5 13.4 FJH  
107.4 11.7 FJH  
118.5 11.1 FJH  
130.4 10.9 FJH  
142.4 11.0 FJH  
161.4 11.5 FJH

-----  
134440 R CVn  
type Mira

048.5 10.4 FJH  
075.5 9.0 HOL  
095.5 8.9 CMG  
097.3 8.6 BMU  
102.5 8.5 HOL  
108.4 8.4 FJH  
111.5 8.3 HOL  
113.4 8.4 JOJ  
122.4 7.8 HOL  
138.5 7.3 HOL  
145.5 7.2 BMU  
148.5 7.5 HOL  
161.5 7.3 BMU  
167.5 7.8 HOL  
169.4 7.5 BMU

-----  
140113 Z Boo  
type Mira

036.5 13.7 FJH  
062.5 14.1 FJH  
070.5 14.5 FJH  
098.3 14.5 CMG  
104.4 14.7 FJH  
119.4 14.6 FJH  
130.4 14.5 FJH  
146.4 14.2 FJH  
153.4 14.1 FJH

1405-12 Z Vir  
type Mira

098.3 11.4 CMG  
098.4 11.4 BMU

-----  
141567 U UMi  
type Mira

048.5 10.1 FJH  
056.5 10.0 FJH  
095.5 11.0 CMG  
099.5 11.1 HOL  
107.5 11.5 HOL  
113.4 11.5 FJH  
116.5 :11.7 HOL  
123.5 11.8 HOL  
124.4 11.7 FJH  
138.5 11.4 HOL  
142.4 12.1 FJH  
148.5 11.5 HOL  
161.4 11.8 FJH  
169.4 11.1 HOL

-----  
141954 S Boo  
type Mira

048.5 8.1 FJH  
049.5 7.9 HOL  
055.5 8.1 HOL  
056.5 8.5 FJH  
067.5 8.6 HOL  
074.5 9.2 FJH  
075.5 8.9 HOL  
097.3 9.4 BMU  
099.5 9.5 HOL  
105.5 10.2 HOL  
108.4 10.3 FJH  
116.5 10.5 HOL  
122.4 10.8 FJH  
124.4 11.6 HOL  
130.5 11.7 HOL  
138.4 11.8 HOL  
138.5 11.8 FJH  
142.4 12.2 FJH  
145.4 12.2 FJH  
150.4 12.0 HOL  
150.4 12.4 FJH  
160.4 12.7 FJH  
163.4 12.6 FJH  
167.5 12.8 HOL  
168.5 12.8 BMU

-----  
142205 RS Vir  
type Mira

041.5 9.5 FJH

064.5	10.2	FJH	123.5	13.0	HOL				
075.5	10.9	FJH	125.4	12.8	FJH	094.3	10.4	CMG	154428A R CrB
093.5	11.5	FJH	138.4	12.0	FJH	-----			type RCB
095.5	11.8	CMG	138.5	12.1	HOL	151731	S	CrB	
104.4	12.2	FJH	145.4	11.8	FJH	type	Mira		066.4 5.9 VDH
118.4	12.7	FJH	146.4	11.7	BMU				070.4 5.9 BMU
125.4	13.3	FJH	148.5	11.8	HOL	055.5	10.6	FJH	073.4 5.9 VDH
146.4	13.5	FJH	163.4	11.0	FJH	065.4	11.2	FJH	075.5 5.9 BMU
150.4	13.6	FJH	167.5	10.7	HOL	082.4	11.3	FJH	094.5 6.1 CMG
-----			168.5	10.5	BMU	093.5	11.4	FJH	095.4 5.9 BMU
142539	V	Boo	-----			094.5	11.8	CMG	095.5 6.0 CMG
type	SRA		1434-17	V	Lib	096.4	11.7	BMU	113.4 5.9 JOJ
			type	Mira		099.5	11.9	HOL	138.4 6.0 BMU
066.4	9.0	VDH				104.4	12.0	FJH	145.4 5.9 BMU
075.5	8.9	HOL	097.3	11.5	CMG	107.5	12.1	HOL	161.4 5.9 BMU
095.3	9.1	CMG	-----			111.4	12.2	FJH	162.4 6.0 CMG
097.3	9.0	BMU	144339	RR	Boo	118.4	12.6	FJH	163.5 6.0 CMG
099.5	8.9	HOL	type	Mira		118.4	12.6	HOL	167.4 5.9 BMU
105.5	8.9	HOL				125.4	12.6	FJH	167.5 6.0 CMG
116.5	8.9	HOL	038.5	13.4	FJH	130.5	12.8	HOL	169.4 5.9 BMU
130.5	8.8	HOL	048.5	12.2	FJH	138.4	12.9	FJH	-----
140.5	8.4	HOL	074.5	10.0	FJH	142.4	12.9	HOL	154536 X CrB
161.4	8.4	HOL	095.3	9.6	CMG	145.4	12.9	FJH	type Mira
168.5	8.4	BMU	108.4	10.1	FJH	153.4	12.9	FJH	
-----			122.4	10.6	FJH	167.4	12.2	BMU	038.5 10.8 FJH
142584	R	Cam	142.4	11.7	FJH	167.5	12.5	HOL	055.5 11.5 FJH
type	Mira		145.4	11.8	FJH	-----			065.4 11.9 FJH
			150.4	12.1	FJH	1527-14	RU	Lib	082.4 12.7 FJH
020.3	10.4	FJH	160.4	12.6	FJH	type	Mira		093.5 13.2 FJH
049.4	9.7	FJH	-----						094.5 13.1 CMG
067.5	9.2	FJH	1500-18	RT	Lib	097.3	11.3	CMG	096.4 13.0 BMU
096.3	8.9	CMG	type	Mira		-----			104.4 13.3 FJH
113.4	8.5	FJH				1530-20	X	Lib	111.4 13.5 FJH
130.5	8.7	HOL	097.3	11.8	CMG	type	Mira		118.4 13.6 FJH
140.5	8.9	HOL	-----						125.4 13.6 FJH
147.4	9.8	FJH	1506-05	Y	Lib	097.3	12.1	CMG	138.4 13.5 FJH
148.5	9.6	HOL	type	Mira		-----			145.4 13.5 FJH
167.5	10.6	HOL				153378A	S	UMi	150.5 13.3 HOL
169.4	11.2	BMU	097.3	13.2	CMG	type	Mira		153.4 13.0 FJH
-----			097.4	13.3	BMU				163.4 12.5 FJH
143227	R	Boo	107.5	13.6	FJH	038.5	12.1	FJH	167.4 12.2 BMU
type	Mira		118.5	13.8	FJH	046.5	12.0	FJH	167.5 11.7 HOL
			123.4	14.1	FJH	055.5	11.7	FJH	-----
062.4	10.7	FJH	130.4	14.3	FJH	075.4	11.4	FJH	154615 R Ser
067.5	11.2	HOL	-----			095.5	10.2	CMG	type Mira
073.5	11.4	FJH	151336	RT	Boo	112.5	10.0	HOL	
073.5	11.6	HOL	type	Mira		113.4	9.8	FJH	041.5 7.4 FJH
082.4	11.8	FJH				122.4	9.6	HOL	062.4 7.0 FJH
093.5	12.2	FJH	095.3	12.0	CMG	130.5	10.0	HOL	074.5 6.7 FJH
097.3	12.4	BMU	-----			142.4	9.4	HOL	094.3 6.2 CMG
097.3	12.5	CMG	1515-20	S	Lib	145.4	9.0	FJH	097.4 6.6 BMU
098.3	12.6	CMG	type	Mira		167.5	8.7	HOL	105.5 7.2 HOL
099.5	12.9	HOL				-----			108.4 7.0 FJH
105.5	12.9	HOL	097.3	8.5	CMG	1536-20	U	Lib	118.5 7.5 HOL
107.4	12.5	FJH	-----			type	Mira		131.5 7.9 HOL
114.4	12.8	FJH	151714	S	Ser				142.5 8.4 HOL
118.4	:13.1	HOL	type	Mira		097.3	13.3	CMG	146.4 8.6 FJH

168.5 9.2 BMU  
168.5 9.4 HOL  
169.4 9.4 FJH

-----  
154639 V CrB  
type Mira

038.5 11.9 FJH  
055.5 11.5 FJH  
067.5 11.2 FJH  
074.5 10.9 FJH  
094.5 10.2 CMG  
096.4 10.2 BMU  
099.5 9.6 HOL  
107.5 9.9 HOL  
108.4 9.9 FJH  
118.5 9.5 HOL  
122.4 9.9 FJH  
130.5 9.5 HOL  
142.4 9.6 HOL  
147.4 9.5 FJH  
167.4 9.8 BMU  
168.5 9.9 HOL  
169.5 10.0 FJH

-----  
1550-18 RR Lib  
type Mira

097.3 11.5 CMG  
-----

155229 Z CrB  
type Mira

038.5 9.1 FJH  
055.5 9.9 FJH  
065.4 10.4 FJH  
082.4 11.6 FJH  
093.5 12.5 FJH  
094.5 12.4 CMG  
096.4 12.5 BMU  
104.4 12.9 FJH  
111.4 13.3 FJH  
118.4 13.5 FJH  
125.4 13.8 FJH  
146.4 14.6 FJH  
153.4 :14.7 FJH

-----  
155526 T CrB  
type Nd

065.4 10.5 FJH  
075.5 10.4 BMU  
082.4 10.2 FJH  
096.4 10.5 BMU  
108.4 10.4 FJH  
138.4 10.5 FJH  
145.4 10.6 FJH

146.4 10.5 BMU  
162.4 10.5 BMU  
167.4 10.4 BMU  
169.5 10.4 FJH

-----  
160118 R Her  
type Mira

041.5 14.8 FJH  
062.6 14.9 FJH  
070.5 14.0 FJH  
082.5 13.6 FJH  
093.5 12.7 FJH  
096.3 13.1 CMG  
099.5 12.7 HOL  
104.4 12.4 FJH  
111.5 11.9 HOL  
113.4 11.8 FJH  
118.5 11.7 HOL  
119.4 11.9 FJH  
131.4 11.0 FJH  
131.5 10.3 HOL  
142.5 9.7 HOL  
144.4 9.4 FJH  
167.4 8.5 FJH  
168.5 8.2 HOL  
168.5 8.8 BMU

-----  
160210 U Ser  
type Mira

041.5 10.9 FJH  
062.6 12.4 FJH  
070.5 12.9 FJH  
094.3 13.6 CMG  
104.4 13.5 FJH  
118.4 13.1 FJH  
130.4 12.2 FJH  
131.5 12.3 HOL  
142.5 11.8 HOL  
145.4 11.0 FJH  
169.4 9.9 HOL  
169.4 10.1 FJH

-----  
160625 RU Her  
type Mira

038.5 13.1 FJH  
060.5 13.3 FJH  
065.4 13.4 FJH  
082.5 13.6 FJH  
093.5 13.6 FJH  
096.5 13.3 CMG  
104.4 13.6 FJH  
111.4 13.5 FJH  
118.4 13.5 FJH  
125.4 13.4 FJH

138.4 13.1 FJH  
145.4 13.1 FJH  
163.4 12.0 FJH

-----  
161138 W CrB  
type Mira

055.5 11.9 FJH  
065.4 12.1 FJH  
093.5 13.4 FJH  
094.5 14.0 CMG  
096.4 13.9 BMU  
104.4 13.2 FJH  
111.4 13.4 FJH  
118.4 13.3 FJH  
125.4 13.2 FJH  
138.4 11.9 FJH  
138.5 11.5 HOL  
145.4 11.4 FJH  
150.5 10.3 HOL  
153.4 10.8 FJH  
167.4 9.9 BMU  
168.5 9.6 HOL  
169.5 10.3 FJH

-----  
162119 U Her  
type Mira

041.5 9.2 FJH  
062.5 8.4 FJH  
074.5 8.5 FJH  
082.5 8.7 FJH  
096.3 8.9 CMG  
096.5 9.1 BMU  
099.5 9.1 HOL  
108.4 9.1 FJH  
111.5 9.3 HOL  
118.5 9.4 HOL  
124.4 9.7 FJH  
131.5 9.5 HOL  
142.5 9.7 HOL  
144.4 10.0 FJH  
147.4 10.1 BMU  
162.5 10.3 BMU  
167.4 10.7 FJH  
168.5 11.0 HOL  
169.4 10.6 BMU

-----  
162807A SS Her  
type Mira

096.5 10.0 CMG  
-----  
163137 W Her  
type Mira  
041.5 12.6 FJH

055.5 12.7 FJH  
065.4 13.0 FJH  
082.5 13.4 FJH  
093.5 13.4 FJH  
096.3 13.3 CMG  
096.4 13.4 BMU  
104.4 13.7 FJH  
104.5 13.4 HOL  
118.4 13.4 FJH  
118.5 :13.6 HOL  
123.5 13.3 HOL  
130.4 13.0 FJH  
138.4 13.0 FJH  
138.5 13.3 HOL  
144.4 12.8 FJH  
150.4 12.0 BMU  
150.4 12.9 FJH  
162.5 11.7 BMU  
163.4 11.5 FJH  
168.5 11.7 HOL  
169.4 11.3 BMU

-----  
163266 R Dra  
type Mira

048.5 11.6 FJH  
060.5 12.0 FJH  
070.6 12.3 FJH  
082.6 12.4 FJH  
093.5 12.6 FJH  
095.5 12.4 CMG  
099.5 12.8 HOL  
107.4 12.3 FJH  
111.5 12.2 HOL  
114.4 12.3 FJH  
118.5 11.9 HOL  
122.4 11.9 FJH  
131.4 11.5 HOL  
142.4 11.0 FJH  
145.4 10.2 HOL  
148.4 10.3 FJH  
148.5 10.4 BMU  
169.4 9.0 BMU  
169.4 9.0 HOL

-----  
163414 AS Her  
type Mira

041.5 9.2 FJH  
073.5 10.2 FJH  
082.5 10.5 FJH  
093.5 11.2 FJH  
096.5 11.0 CMG  
108.4 11.6 FJH  
112.5 12.1 FJH  
124.5 12.3 FJH  
131.4 12.7 FJH

138.4	13.1	FJH	150.4	14.3	FJH	096.5	11.7	CMG	096.5	13.6	CMG
150.4	13.6	FJH	160.4	14.5	FJH	-----			104.4	13.7	FJH
167.4	14.0	FJH	-----			171723	RS Her	112.5	13.8	FJH	
-----			165722	SY Her	type Mira			118.4	13.8	FJH	
164012	UV Her		type Mira					130.4	13.7	FJH	
type Mira						041.5	12.4	FJH	138.5	13.5	FJH
			041.5	12.0	FJH	062.5	9.9	FJH	144.4	13.2	FJH
041.5	13.8	FJH	062.5	12.0	FJH	074.5	9.0	FJH	153.5	11.9	FJH
062.6	13.6	FJH	070.5	10.7	FJH	096.4	8.3	BMU	167.4	10.9	FJH
070.5	13.5	FJH	096.4	9.1	BMU	096.5	8.3	CMG	168.5	10.8	BMU
082.5	13.2	FJH	096.5	9.0	CMG	101.6	8.3	HOL	-----		
093.5	12.6	FJH	108.4	8.5	FJH	108.4	7.8	FJH	175523	WY Her	
096.5	12.1	CMG	124.5	8.9	FJH	113.5	7.9	JOJ	type Mira		
104.4	12.1	FJH	144.4	10.8	FJH	118.5	8.2	HOL			
112.5	10.5	FJH	147.4	11.2	BMU	130.5	8.3	HOL	093.5	10.6	FJH
119.4	9.7	FJH	150.4	11.7	FJH	142.5	8.3	HOL	-----		
131.4	9.5	FJH	162.5	12.4	BMU	146.4	8.6	FJH	175654	V Dra	
138.4	9.3	FJH	166.5	12.7	FJH	147.4	8.9	BMU	type Mira		
144.4	9.5	FJH	168.5	12.5	BMU	162.5	9.0	BMU			
153.5	9.6	FJH	-----			168.5	9.4	HOL	041.5	13.7	FJH
-----			1702-15	R Oph	type Mira	169.4	9.5	BMU	062.5	14.1	FJH
164715	S Her		type Mira			-----			070.6	13.7	FJH
type Mira						172809A	RU Oph	082.6	13.7	FJH	
			097.3	8.9	CMG	type Mira			093.5	13.4	FJH
070.5	8.5	FJH	146.4	7.3	BMU			095.5	13.4	CMG	
082.5	8.4	FJH	150.4	7.2	BMU	073.5	12.1	FJH	107.5	12.5	FJH
096.5	9.1	CMG	161.5	7.8	BMU	096.5	10.4	CMG	114.4	12.0	FJH
108.4	10.1	FJH	-----			108.4	9.7	FJH	122.4	11.3	FJH
112.5	10.3	FJH	170217	VY Her		123.5	9.0	FJH	138.5	10.7	FJH
119.4	10.5	FJH	type Mira			146.4	9.6	FJH	148.4	10.4	FJH
131.4	11.4	FJH				167.4	11.3	FJH	-----		
138.4	11.7	FJH	041.5	13.7	FJH	-----			180531	T Her	
144.4	12.0	FJH	062.5	12.5	FJH	1744-06	RS Oph	type Mira			
166.4	12.4	FJH	070.5	12.4	FJH	type Nd			041.5	11.5	FJH
168.5	12.8	HOL	082.5	11.3	FJH			062.5	8.5	FJH	
169.4	12.5	BMU	096.5	10.2	CMG	147.46	12.1	BMU	074.5	7.8	FJH
-----			104.4	10.2	FJH	-----			096.4	7.8	BMU
1652-02	SS Oph		119.4	10.1	FJH	175111	RT Oph	096.5	7.8	CMG	
type Mira			131.4	10.4	FJH	type Mira			099.6	7.8	HOL
			144.4	10.5	FJH			108.4	8.3	FJH	
096.5	14.2	CMG	167.4	11.1	FJH	096.5	10.1	CMG	118.5	8.6	HOL
-----			-----			119.5	9.7	FJH	124.5	9.1	FJH
165631	RV Her		170627A	RT Her	type Mira	131.4	10.2	FJH	131.5	9.3	HOL
type Mira			type Mira			145.4	10.7	FJH	142.5	10.9	HOL
						167.4	11.5	FJH	147.4	11.2	BMU
041.5	10.4	FJH	041.5	12.9	FJH	-----			147.4	11.6	FJH
055.5	9.7	FJH	062.5	13.1	FJH	175458A	T Dra	160.4	12.4	FJH	
065.4	10.2	FJH	070.5	13.6	FJH	type Mira			168.4	12.7	FJH
082.5	10.6	FJH	082.5	13.5	FJH			168.5	12.7	BMU	
093.5	11.1	FJH	097.3	13.7	CMG	095.5	10.3	CMG	168.5	12.7	HOL
096.5	11.1	CMG	104.5	14.4	FJH	-----			-----		
104.4	11.5	FJH	118.4	14.6	FJH	175519	RY Her				
111.4	12.0	FJH	130.4	14.8	FJH	type Mira			180565	W Dra	
118.5	12.4	FJH	-----					type Mira			
130.4	13.1	FJH	171401	Z Oph		062.6	11.9	FJH	041.4	14.3	FJH
138.4	13.7	FJH	type Mira			070.5	12.5	FJH	065.4	:14.7	FJH
144.4	13.7	FJH				082.5	13.1	FJH			



169.5 6.0 CMG	119.5 12.5 FJH	162.5 8.8 BMU	138.5 11.9 FJH
-----	131.5 12.9 FJH	167.4 9.0 BMU	144.5 11.8 FJH
184243 RW Lyr	138.4 12.9 FJH	-----	153.5 11.8 FJH
type Mira	144.5 13.1 FJH	190333 AB Lyr	160.4 12.3 FJH
	153.5 13.6 FJH	type Mira	167.5 12.3 FJH
	168.5 13.8 FJH	-----	-----
070.6 15.4 FJH	-----	070.5 15.5 FJH	190643 ST Lyr
123.5 :15.6 FJH	185132 FF Lyr	119.5 14.2 FJH	type Mira
130.5 15.8 FJH	type Mira	130.6 13.3 FJH	
167.5 <15.8 FJH		138.4 12.6 FJH	070.6 14.5 FJH
-----		144.5 12.1 FJH	123.5 14.8 FJH
184300 V603 Aql	119.5 13.6 FJH	160.4 10.8 FJH	130.5 14.8 FJH
type Na	150.5 13.4 FJH	168.5 10.3 FJH	-----
	160.4 13.8 FJH	-----	190801 N93 Aql
145.4 11.4 BMU	167.5 13.9 FJH	190443 MV Lyr	type N
-----	-----	type NL	
184826 CY Lyr	185634 Z Lyr		130.44 7.4 BMU
type UGSS	type Mira	070.57 12.2 FJH	130.48 7.6 CMG
		082.54 12.2 FJH	130.49 7.1 FJH
062.57 13.2 FJH	062.6 12.7 FJH	096.50 12.2 CMG	131.45 8.2 SAQ
082.53 13.3 FJH	070.5 13.0 FJH	104.47 12.3 FJH	131.47 7.7 BMU
107.54 13.7 FJH	082.5 13.2 FJH	112.49 12.3 FJH	131.48 7.7 CMG
108.52<14.5 FJH	108.5 14.2 FJH	123.50 12.3 FJH	131.50 7.7 FJH
118.44 13.2 FJH	119.5 14.6 FJH	131.45 12.2 FJH	132.59 7.8 BMU
119.47 13.2 FJH	130.5 14.8 FJH	-----	138.44 8.2 BMU
123.44 13.3 FJH	146.5 14.8 FJH	190527 TY Lyr	138.48 8.8 FJH
124.47 13.5 FJH	167.5 14.8 FJH	type Mira	140.45 8.4 BMU
125.44 14.3 FJH	-----		142.44 8.6 BMU
130.45 15.1 FJH	185737 RT Lyr	062.6 10.0 FJH	142.47 8.7 CMG
131.46<15.5 FJH	type Mira	070.5 10.3 FJH	144.45 8.8 BMU
138.50 13.7 FJH		082.5 10.7 FJH	144.47 8.9 FJH
150.42 13.2 FJH	062.4 13.6 FJH	093.5 10.9 FJH	145.46 9.0 BMU
161.43 14.1 FJH	070.6 15.1 FJH	096.5 11.5 CMG	145.48 9.1 FJH
167.49<15.5 FJH	119.5 13.9 FJH	104.5 11.4 FJH	146.43 8.8 SAQ
-----	130.5 13.4 FJH	112.5 12.1 FJH	146.45 9.0 BMU
185032 RX Lyr	144.5 12.8 FJH	123.5 12.7 FJH	146.47 9.1 CMG
type Mira	160.4 12.1 FJH	131.5 12.7 FJH	146.49 9.2 FJH
	168.5 11.6 FJH	138.5 12.9 FJH	147.44 9.2 BMU
062.6 12.3 FJH	-----	144.5 13.3 FJH	147.49 9.3 CMG
070.5 12.2 FJH	185947 WZ Lyr	153.5 13.8 FJH	148.40 9.1 SAQ
082.5 12.1 FJH	type Mira	167.5 14.0 FJH	148.43 9.2 BMU
093.5 12.3 FJH		-----	148.43 9.2 FJH
096.5 12.3 CMG	062.6 13.4 FJH	190529A V Lyr	150.43 9.2 BMU
104.5 12.3 FJH	070.6 12.8 FJH	type Mira	150.53 9.1 SAQ
112.5 12.4 FJH	082.5 10.9 FJH		153.44 9.4 FJH
118.5 12.7 FJH	093.5 10.8 FJH	062.6 13.9 FJH	154.41 9.6 SAQ
130.5 13.4 FJH	104.5 10.8 FJH	070.5 14.1 FJH	159.41 9.7 BMU
145.5 13.7 FJH	112.5 11.2 FJH	123.5 :15.0 FJH	159.42 9.7 SAQ
150.5 14.3 FJH	119.5 11.4 FJH	130.5 15.4 FJH	160.44 9.8 BMU
167.5 14.6 FJH	131.5 11.6 FJH	150.5 <15.1 FJH	161.44 9.8 FJH
-----	142.4 12.2 FJH	167.5 <15.5 FJH	161.44 10.0 BMU
185131 SX Lyr	160.4 13.3 FJH	-----	161.45 10.3 CMG
type Mira	-----	190529B VZ Lyr	162.40 10.3 CMG
	190108 R Aql	type Mira	162.45 10.2 BMU
062.6 13.6 FJH	type Mira		163.52 11.4 CMG
070.5 13.3 FJH		123.5 13.1 FJH	164.42 10.6 BMU
104.5 12.5 FJH	097.3 6.5 CMG	131.5 12.5 FJH	166.45 10.8 FJH
112.5 12.4 FJH	146.4 8.2 BMU		



166.46 10.9 BMU  
 167.40:11.7 SAQ  
 167.42 11.3 BMU  
 167.48 11.5 CMG  
 168.44 11.5 BMU  
 168.48 11.6 CMG  
 168.50 11.7 FJH  
 169.43 11.9 BMU  
 169.47 11.7 CMG

-----  
 190933A RS Lyr  
 type Mira

062.6 11.8 FJH  
 070.5 12.2 FJH  
 082.5 12.9 FJH  
 096.5 13.7 CMG  
 104.5 13.6 FJH  
 112.5 13.7 FJH  
 119.5 14.2 FJH  
 130.5 14.5 FJH  
 150.5 15.2 FJH  
 167.5 15.3 FJH

-----  
 190941 RU Lyr  
 type Mira

062.6 14.1 FJH  
 070.5 13.8 FJH  
 096.5 14.3 CMG  
 104.5 13.5 FJH  
 112.5 13.5 FJH  
 119.5 13.4 FJH  
 131.5 13.4 FJH  
 145.5 13.2 FJH  
 168.4 11.9 FJH

-----  
 190967 U Dra  
 type Mira

041.4 13.6 FJH  
 060.5 13.0 FJH  
 070.6 12.9 FJH  
 082.6 12.4 FJH  
 093.5 11.7 FJH  
 095.5 11.7 CMG  
 111.4 10.8 FJH  
 122.4 10.5 FJH  
 142.4 9.7 FJH  
 148.4 9.4 FJH  
 161.4 9.7 FJH

-----  
 191046 SS Lyr  
 type Mira

070.6 12.6 FJH  
 082.5 12.7 FJH

096.5 13.5 CMG  
 107.5 13.7 FJH  
 119.5 14.1 FJH  
 130.5 14.5 FJH  
 145.5 14.5 FJH  
 167.5 14.6 FJH

-----  
 191517 W Sge  
 type Mira

-----  
 169.5 9.3 HOL

-----  
 191637 U Lyr  
 type Mira

096.5 13.0 CMG  
 112.5 13.1 FJH  
 119.5 13.2 FJH  
 131.5 13.1 FJH  
 144.5 13.2 FJH  
 153.5 13.4 FJH  
 168.5 13.3 FJH

-----  
 191831 AN Lyr  
 type Mira

062.6 10.3 FJH  
 070.5 10.3 FJH  
 082.5 10.3 FJH  
 093.5 10.8 FJH  
 104.5 11.4 FJH  
 112.5 11.6 FJH  
 119.5 12.0 FJH  
 131.5 13.4 FJH  
 146.5 14.3 FJH  
 167.5 14.9 FJH

-----  
 1919-23 N93 Oph  
 type N

107.5 :10.8 BMU

-----  
 192150 CH Cyg  
 type Z And

096.4 8.5 BMU  
 096.5 8.4 CMG  
 140.5 8.0 BMU  
 150.4 8.1 BMU  
 160.4 8.0 BMU  
 167.4 8.2 BMU

-----  
 192201 TU Aql  
 type Mira

-----  
 169.4 8.7 BMU

192928 TY Cyg  
 type Mira

073.5 14.3 FJH  
 107.5 :15.0 FJH  
 119.5 15.1 FJH  
 130.5 15.0 FJH  
 146.5 14.9 FJH  
 161.4 14.5 FJH

-----  
 193311 RT Aql  
 type Mira

108.5 13.7 FJH  
 119.5 13.6 FJH  
 131.5 13.5 FJH  
 138.5 13.5 FJH  
 146.5 12.4 FJH  
 168.5 11.4 FJH

-----  
 193449 R Cyg  
 type Mira

062.6 12.8 FJH  
 070.6 13.2 FJH  
 096.4 13.4 BMU  
 096.5 13.4 CMG  
 107.5 13.7 FJH  
 112.5 13.8 FJH  
 123.5 14.1 FJH  
 130.5 14.0 FJH  
 145.5 14.2 FJH  
 160.5 14.3 FJH

-----  
 193509 RV Aql  
 type Mira

119.5 13.4 FJH  
 131.5 12.8 FJH  
 138.5 12.3 FJH  
 146.5 11.6 FJH  
 168.5 9.7 FJH

-----  
 193954 V369 Cyg  
 type Mira

096.5 12.4 CMG  
 -----  
 194027 YZ Vul  
 type Mira

123.5 :15.2 FJH  
 130.5 <15.5 FJH

-----  
 194048 RT Cyg  
 type Mira

062.6 11.6 FJH  
 096.4 9.2 BMU  
 108.5 8.8 FJH  
 113.5 8.4 JOJ  
 118.5 8.2 HOL  
 140.5 7.0 BMU  
 142.5 6.8 HOL  
 146.4 6.8 FJH  
 150.4 7.1 BMU  
 160.4 7.2 BMU  
 167.4 7.5 BMU

-----  
 194348 TU Cyg  
 type Mira

070.6 14.9 FJH  
 096.4 12.4 BMU  
 096.5 12.6 CMG  
 107.5 12.0 FJH  
 123.5 10.7 FJH  
 145.5 9.5 FJH  
 150.4 9.5 BMU  
 160.4 9.6 BMU  
 160.5 9.5 FJH  
 167.4 9.7 BMU  
 168.4 9.6 FJH

-----  
 194604 X Aql  
 type Mira

123.5 10.6 FJH  
 138.5 11.4 FJH  
 150.5 12.4 FJH  
 161.4 12.7 FJH

-----  
 194632 Chi Cyg  
 type Mira

075.5 5.0 BMU  
 076.3 5.3 CMG  
 095.5 5.1 BMU  
 096.5 5.0 CMG  
 101.4 5.2 BMU  
 107.5 5.4 BMU  
 118.4 5.7 BMU  
 130.4 6.0 BMU  
 138.4 6.3 BMU  
 144.4 6.6 BMU  
 150.4 6.9 BMU  
 160.4 7.5 BMU  
 167.5 7.7 BMU

-----  
 195533 V482 Cyg  
 type RCB

096.5 11.0 BMU  
 096.5 11.3 CMG

107.5 11.1 BMU	200720A ST Sge	096.5 11.4 BMU	070.60 11.0 FJH
118.4 11.0 BMU	type Mira	123.5 11.5 FJH	071.41 11.2 BMU
142.4 10.9 BMU		144.4 11.3 BMU	073.40 11.2 BMU
148.4 10.9 BMU	070.6 12.2 FJH	150.5 11.4 FJH	074.44 11.2 BMU
161.5 11.0 BMU	107.5 10.2 FJH	164.4 11.4 BMU	075.47 11.1 BMU
167.5 11.0 BMU	112.5 10.2 FJH	169.4 11.4 FJH	076.54 11.2 BMU
-----	123.5 10.2 FJH	-----	094.49 11.3 BMU
195551 CM Cyg	138.4 10.5 FJH	201647 U Cyg	095.42 11.3 BMU
type Mira	145.5 10.8 FJH	type Mira	096.43 11.4 BMU
	161.4 11.3 FJH		097.3 11.1 CMG
096.5 13.1 CMG	169.4 11.7 FJH	096.5 9.5 CMG	097.41 11.3 BMU
108.5 12.7 FJH	-----	108.5 9.5 FJH	098.39 11.2 SAQ
119.5 12.6 FJH	200812 RU Aql	145.5 8.5 FJH	098.42 11.3 BMU
145.5 10.5 FJH	type Mira	168.4 7.7 BMU	101.40 11.2 BMU
168.4 9.8 FJH		-----	107.54 11.4 BMU
-----	108.5 12.0 FJH	202343 V503 Cyg	108.50 11.2 FJH
195818 TX Sge	123.5 12.7 FJH	type UGSS	118.41 11.5 BMU
type Mira	131.5 12.7 FJH		119.40 11.5 BMU
	138.5 13.1 FJH	130.55<15.0 FJH	119.43 11.2 SAQ
124.5 13.9 FJH	146.5 13.5 FJH	131.47<15.0 FJH	119.53 11.5 FJH
130.6 14.0 FJH	166.4 14.1 FJH	167.50<15.0 FJH	123.42 11.6 BMU
150.5 <15.0 FJH	-----	-----	123.51 11.7 FJH
167.5 <15.0 FJH	201008 R Del	202509 RY Del	124.43 11.7 BMU
-----	type Mira	type Mira	125.43 11.7 BMU
195849 Z Cyg	123.5 13.6 FJH	123.5 <15.4 FJH	130.44 11.7 BMU
type Mira	130.5 13.4 FJH	130.5 :15.8 FJH	131.42 11.6 BMU
	150.5 13.3 FJH	167.5 <15.5 FJH	131.43 11.3 SAQ
096.5 8.9 CMG	168.5 12.1 FJH	-----	131.47 11.7 CMG
168.4 10.9 BMU	-----	202512 RX Del	131.51 11.8 FJH
-----	201130 SX Cyg	type Mira	138.43 11.8 BMU
200250 BU Cyg	type Mira		138.50 11.9 FJH
type Mira		108.5 12.6 FJH	138.55 11.3 HOL
	096.5 12.2 CMG	119.5 11.3 FJH	140.45 11.8 BMU
-----	108.5 11.9 FJH	131.5 10.9 FJH	142.43 11.9 BMU
200357 S Cyg	119.5 12.3 FJH	138.5 10.8 FJH	144.43 11.9 BMU
type Mira	131.5 12.6 FJH	145.5 10.9 FJH	145.43 11.9 BMU
	145.5 13.0 FJH	168.5 11.0 FJH	145.48 11.8 FJH
124.5 :16.0 FJH	161.4 13.3 FJH	-----	146.44 12.0 BMU
130.5 16.1 FJH	-----	202752V1974 Cyg	147.43 11.9 BMU
167.5 :16.0 FJH	201437B WX Cyg	type N	148.41 11.9 SAQ
-----	type Mira		148.43 12.0 BMU
200720 FG Sge		990.35 10.0 BMU	150.42 11.9 BMU
type uniek	096.5 11.2 CMG	996.27 9.9 BMU	153.48 12.1 FJH
	-----	002.25 10.0 BMU	159.42 12.1 SAQ
070.6 12.2 FJH	201559 CN Cyg	006.32 10.1 BMU	159.44 12.0 BMU
107.5 11.7 FJH	type Mira	036.36 10.6 BMU	160.44 12.1 BMU
112.5 11.6 FJH		041.28 10.5 SAQ	161.44 12.1 BMU
119.5 11.9 FJH	096.5 12.5 CMG	041.30 10.5 BMU	162.45 12.1 BMU
123.5 12.0 FJH	108.5 11.5 FJH	042.33 10.5 FJH	164.42 12.2 BMU
130.5 12.0 FJH	119.5 10.7 FJH	042.38 10.6 BMU	166.46 12.2 BMU
138.4 12.1 FJH	145.5 9.2 FJH	056.28 10.7 BMU	167.40 12.2 SAQ
145.5 12.1 FJH	168.4 9.4 FJH	062.43 11.0 BMU	167.42 12.3 BMU
150.5 12.0 FJH	-----	064.40 11.1 BMU	168.42 12.2 BMU
160.5 12.1 FJH	201621 PU Vul	065.43 11.2 BMU	168.44 12.1 FJH
169.4 12.1 FJH	type NL	066.48 10.8 SAQ	168.54 12.1 HOL
-----		070.45 11.3 BMU	169.44 12.2 BMU

-----	145.5 9.8 FJH		130.5 13.8 FJH
202817 Z Del	168.4 10.4 BMU	130.5 15.1 FJH	150.5 12.3 FJH
type Mira	-----	167.5 13.2 FJH	159.5 11.8 FJH
	203918 ES Del	-----	168.5 11.5 FJH
108.5 11.9 FJH	type Mira	210812 R Equ	-----
119.5 12.1 FJH		type Mira	212610 UU Peg
131.5 12.7 FJH	123.5 13.9 FJH		type Mira
150.5 13.5 FJH	130.5 13.9 FJH	108.5 12.5 FJH	
166.5 14.2 FJH	150.5 13.7 FJH	119.5 11.8 FJH	123.5 14.6 FJH
-----	168.5 13.3 FJH	130.5 11.4 FJH	130.5 14.6 FJH
202954 ST Cyg	-----	138.5 11.0 FJH	166.5 14.0 FJH
type Mira	203937 DR Cyg	150.5 9.9 FJH	-----
	type Mira	168.5 9.7 FJH	213678 S Cep
096.5 12.0 CMG	-----	-----	type Mira
168.4 10.0 BMU	097.3 9.6 CMG	210818 AS Peg	
-----	-----	type Mira	020.3 9.2 FJH
202962 BF Cep	204016 T Del		067.5 8.8 FJH
type Mira	type Mira	123.5 <14.9 FJH	095.5 8.5 CMG
		130.5 15.3 FJH	097.4 8.3 BMU
123.5 14.7 FJH	123.5 15.0 FJH	167.5 :15.5 FJH	099.4 8.3 FJH
169.4 14.0 FJH	130.5 14.8 FJH	-----	108.4 8.3 FJH
-----	150.5 15.0 FJH	210836 DU Cyg	124.4 8.4 FJH
203513 SS Del	-----	type Mira	145.5 8.3 FJH
type Mira	204341 V516 Cyg		148.4 8.1 BMU
	type UGSS	097.3 12.5 CMG	161.5 8.0 BMU
123.5 14.7 FJH	-----	-----	-----
130.5 14.4 FJH	123.51 13.8 FJH	210868 T Cep	213843 SS Cyg
150.5 12.7 FJH	124.48 13.6 FJH	type Mira	type UGSS
168.5 11.7 FJH	130.56<15.5 FJH		
-----	131.49<15.5 FJH	067.5 8.9 FJH	990.35 11.8 BMU
203537 FF Cyg	150.43:14.6 FJH	073.4 9.4 VDH	996.26 12.1 BMU
type Mira	167.50<15.5 FJH	095.5 10.0 CMG	002.24 12.1 BMU
	-----	097.4 9.7 BMU	004.37 12.0 BMU
096.5 12.9 CMG	204846 RZ Cyg	099.4 9.9 FJH	006.31 12.2 BMU
-----	type Mira	108.4 9.9 FJH	036.35 12.2 BMU
203718 HR Del		116.5 10.4 FJH	041.29 12.1 BMU
type Nb	097.3 13.3 CMG	124.4 10.6 FJH	042.33 11.8 FJH
	-----	145.5 10.9 FJH	042.37 11.9 BMU
108.50 12.0 FJH	205017 X Del	148.4 10.8 BMU	056.28 8.3 BMU
168.45 12.0 FJH	type Mira	161.5 10.8 BMU	062.61 8.3 FJH
-----		168.5 10.6 FJH	070.59 10.6 FJH
203816 S Del	108.5 11.4 FJH	169.4 10.6 BMU	076.54 12.0 BMU
type Mira	148.4 9.1 FJH	-----	094.49 12.0 BMU
	161.5 9.5 BMU	211614 X Peg	095.47 12.0 BMU
108.5 8.6 FJH	169.4 9.7 FJH	type Mira	096.47 11.9 BMU
138.5 9.3 FJH	169.4 9.8 BMU		096.52 11.6 CMG
145.5 9.8 FJH	-----	108.6 10.6 FJH	097.47 11.9 BMU
161.5 10.6 BMU	210405 RR Equ	123.5 10.8 FJH	098.32 12.0 CMG
168.5 11.1 FJH	type Mira	130.5 11.5 FJH	098.46 12.0 BMU
169.4 10.7 BMU		138.5 11.9 FJH	101.42 11.9 BMU
-----	123.6 9.9 FJH	150.5 12.3 FJH	107.54 12.0 BMU
203847 V Cyg	138.5 10.5 FJH	159.5 13.1 FJH	118.41 12.1 BMU
type Mira	150.5 11.4 FJH	-----	119.55 11.8 FJH
	168.5 13.0 FJH	212216 TV Peg	123.42 11.3 BMU
096.5 10.2 CMG	-----	type Mira	123.57 11.8 FJH
108.5 9.6 FJH	210612 AN Peg		124.43 11.9 BMU
124.4 9.8 FJH	type Mira	123.5 14.6 FJH	125.43 11.6 BMU

130.44	8.4	BMU	type Mira	150.5	13.2	FJH	150.5	12.3	FJH
130.46	8.8	CMG		167.5	13.5	FJH	166.5	12.6	FJH
130.56	8.6	FJH	096.5 9.4 CMG	-----	-----	-----	-----	-----	-----
131.42	8.4	BMU	119.6 10.0 FJH	222439	S Lac		231839	BU And	
138.42	10.8	BMU	145.5 11.6 FJH	type Mira			type Mira		
140.45	11.8	BMU	166.4 12.2 FJH						
142.42	12.0	BMU	-----	123.6	10.0	FJH	167.5	13.5	FJH
144.43	12.1	BMU	215605 V Peg	146.5	11.9	FJH	-----	-----	-----
145.43	12.1	BMU	type Mira	150.5	12.2	FJH	232144	AL And	
145.48	11.8	FJH		166.5	12.8	FJH	type Mira		
146.43	12.1	BMU	167.5 13.2 FJH	-----	-----	-----	-----	-----	-----
146.47	11.9	CMG	-----	222924	SS Peg		167.5	11.0	FJH
147.42	12.1	BMU	215934 RT Peg	type Mira			-----	-----	-----
148.42	12.2	BMU	type Mira				232543	DX And	
150.42	12.0	BMU		108.6	11.7	FJH	type UGSS		
150.52	11.8	FJH	123.5 :15.0 FJH	123.6	12.3	FJH			
159.44	11.8	BMU	-----	131.5	12.5	FJH	167.53	14.4	FJH
160.44	11.9	BMU	220133B RZ Peg	150.5	12.8	FJH	-----	-----	-----
160.49	11.3	FJH	type Mira	166.4	13.2	FJH	232642	BG And	
161.43	10.9	FJH		-----	-----	-----	type Mira		
161.44	11.0	BMU	108.6 11.5 FJH	223841	R Lac				
161.44	11.4	CMG	119.5 11.4 FJH	type Mira			150.5	11.6	FJH
162.39	11.0	CMG	168.5 8.5 FJH				167.5	12.0	FJH
162.45	11.0	BMU	-----	123.6	10.5	FJH	-----	-----	-----
163.52	10.7	CMG	220412 T Peg	146.5	11.8	FJH	232848	Z And	
164.42	10.5	BMU	type Mira	150.5	12.2	FJH	type Z And		
166.44	10.5	FJH		166.5	13.1	FJH			
166.45	10.3	BMU	130.6 14.4 FJH	-----	-----	-----	020.3	10.7	FJH
167.41	10.3	BMU	159.5 14.5 FJH	225542	SZ And		-----	-----	-----
167.47	10.4	CMG	167.5 14.2 FJH	type Mira			233956	Z Cas	
167.55	10.2	FJH	-----				type Mira		
168.42	10.6	BMU	220714 RS Peg	041.3	11.0	FJH			
168.47	10.5	CMG	type Mira	150.5	14.1	FJH	041.3	13.3	FJH
168.48	10.5	FJH		167.5	14.2	FJH	-----	-----	-----
169.43	10.7	FJH	123.6 14.0 FJH	-----	-----	-----	235053	RR Cas	
169.44	10.8	BMU	130.6 14.0 FJH	225914	RW Peg		type Mira		
169.46	10.9	CMG	159.5 14.8 FJH	type Mira					
-----	-----	-----	167.5 14.8 FJH						
214012		TU Peg	-----	167.5	12.9	FJH	041.3	14.2	FJH
type Mira			220912 RU Peg	-----	-----	-----	098.3	12.3	CMG
			type UGSS	230759	V Cas		167.5	10.7	FJH
				type Mira			-----	-----	-----
123.5	12.0	FJH					235255	WY Cas	
131.5	12.0	FJH	123.56 12.3 FJH				type Mira		
150.5	12.6	FJH	130.54 12.7 FJH	041.3	12.6	FJH			
159.5	12.7	FJH	150.48 12.1 FJH	047.3	12.0	HOL	041.3	12.8	FJH
168.5	13.0	FJH	159.46 12.3 FJH	050.3	12.6	FJH	049.3	12.1	FJH
-----	-----	-----	167.51 12.3 FJH	097.3	9.3	CMG	116.5	9.2	FJH
214024		RR Peg	168.51 12.4 FJH	113.5	9.1	JOJ	168.5	10.5	FJH
type Mira			169.44 12.3 FJH	116.5	9.1	FJH	-----	-----	-----
			169.47 12.4 CMG	145.5	8.2	FJH	235350	R Cas	
			-----	147.5	8.2	BMU	type Mira		
108.5	13.4	FJH	222129 RV Peg	167.5	8.5	BMU			
123.5	14.0	FJH	type Mira	168.5	8.5	FJH	038.3	12.2	FJH
130.5	14.2	FJH		-----	-----	-----	041.3	12.0	HOL
150.5	14.3	FJH	108.6 12.5 FJH	231425	W Peg		049.3	12.1	FJH
166.4	14.6	FJH	119.5 12.6 FJH	type Mira			074.3	11.4	HOL
-----	-----	-----	131.5 12.8 FJH				145.5	10.2	BMU
214443		WY Cyg							

150.5 10.7 FJH  
168.5 9.6 FJH

-----  
235525 Z Peg  
type Mira

020.3 10.3 FJH  
041.3 9.6 FJH  
150.5 11.3 FJH  
167.5 11.8 FJH

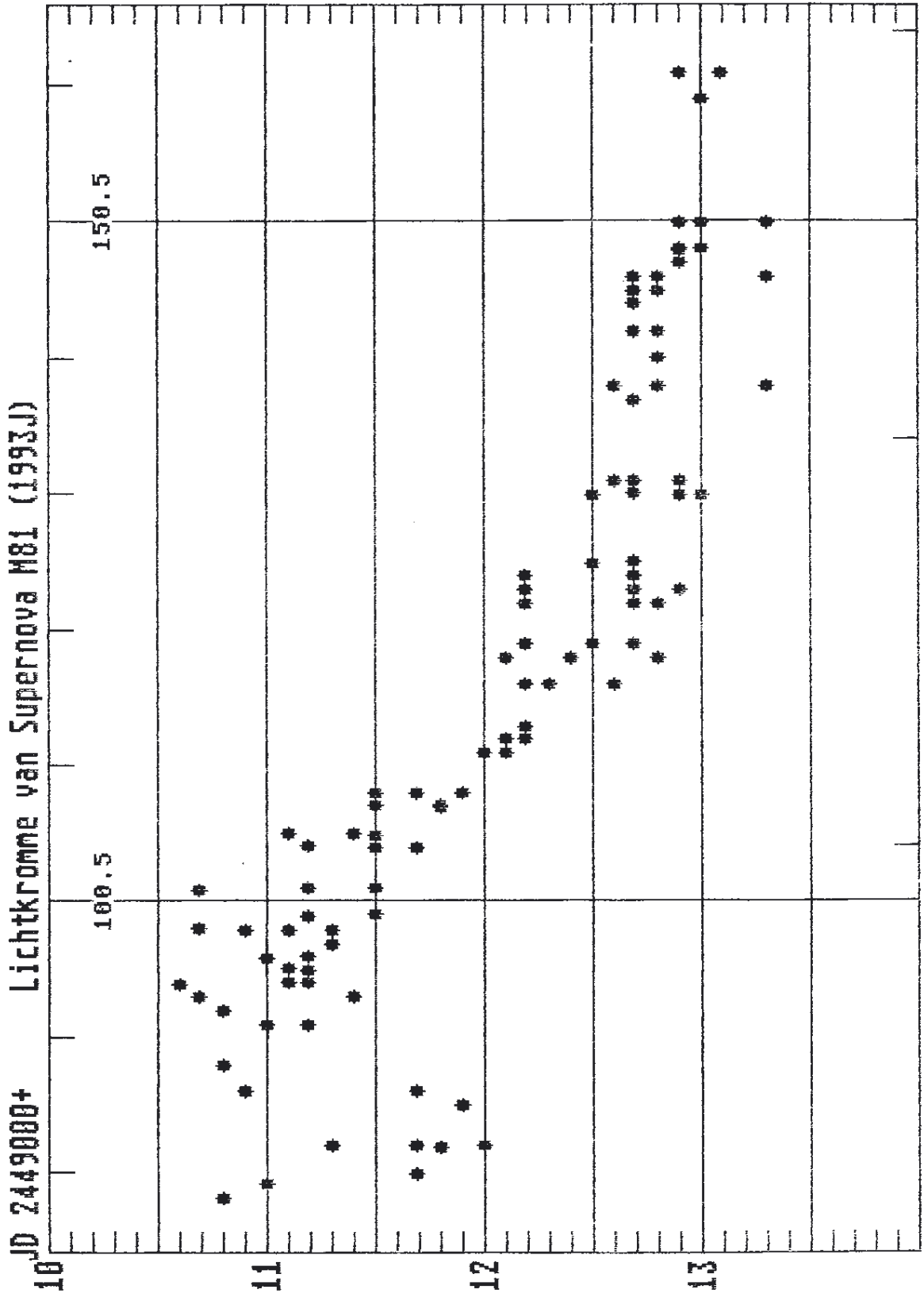
-----  
235855A Y Cas  
type Mira

041.3 11.3 FJH  
049.3 11.5 FJH  
098.3 11.4 CMG  
167.5 13.2 FJH

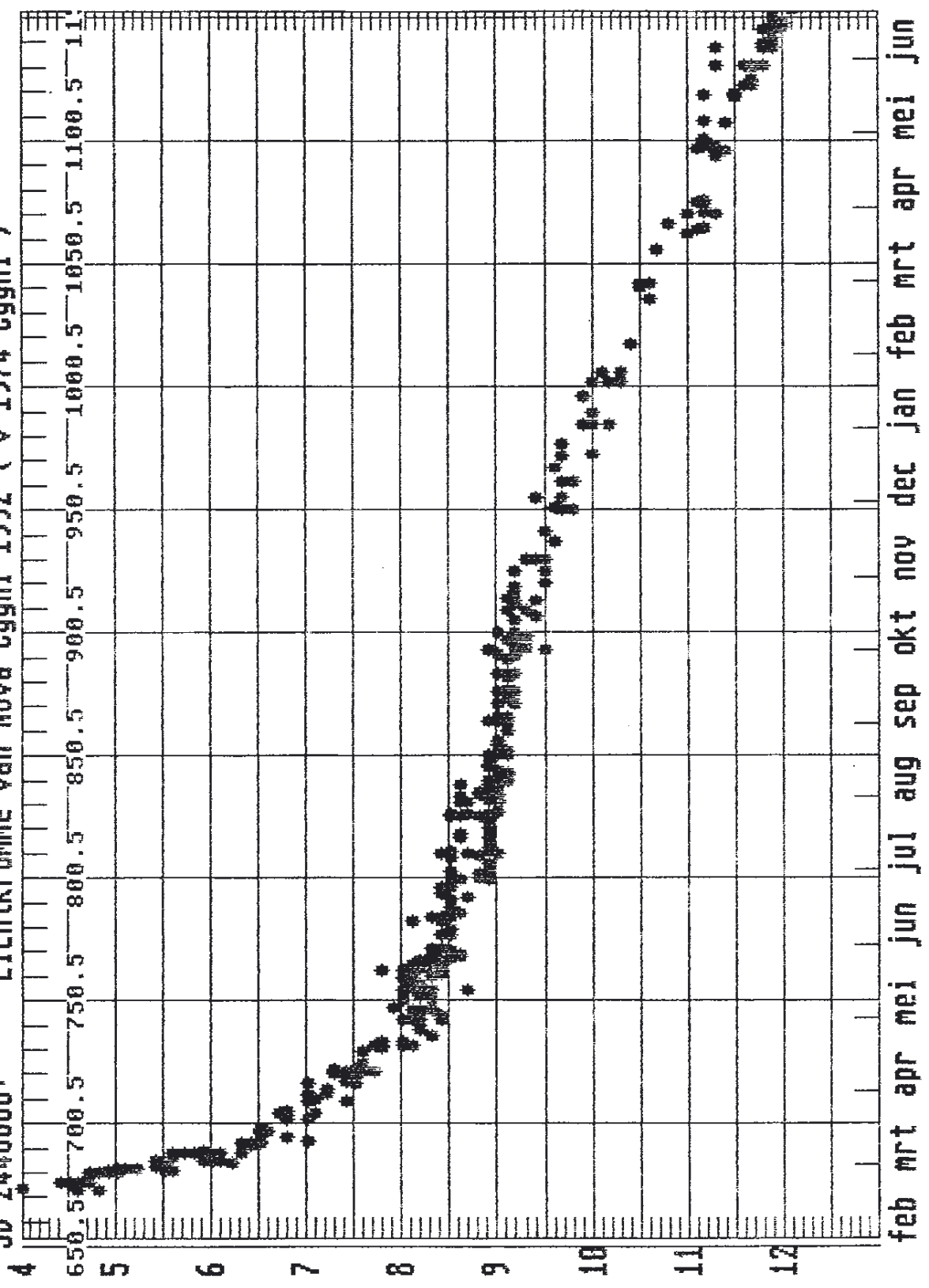
-----  
235939 SV And  
type Mira

146.5 8.8 FJH  
168.5 9.4 FJH

Lichtkromme van Supernova M81 (1993J)



JD 2448000+ Lichtkromme van Nova Cygni 1992 ( V 1974 Cygni )



JD 2449000+      Lichtkromme van Nova Aquilae 1993

