Halo

HD
HD 9202 1 29 06 +14 54 6.2 Variable
M6

8910 φ* 1 26 38 +15 52 7.96-11.13

-362 -205

CPD-45° 197   1 30 15   -48 58   11.6 (12)

1 30 28.3   -48 56 23   (1986.5)

+32 38 9.8 [illegible] IB

Morning

* [illegible] -1 [illegible] 1 [illegible] 86

Wait Ⓧ ⊕ [illegible]   10.19 -039 1349 -659 7 Jan 86

223171 Ⓥ ⓐ

427
384

* 10.12 -425 1666 -684 11 Jan 86
* 10.13 -420 1676 -682 9 Jan 86
* 10.14 -435 1687 -644 12 Jan 86

10.13 -033 1326 -653 ③
689 611 250
(117) ([illegible])

(1985.5) 01 30 53.3 -65 11.44 ~3

9477 1 30 35 -65 13 7.19 68/140 IV
-65°135

~~V~~ Y

7.24 -175 1031 -471 27Oct83
7.25 -182 1013 -476 8Oct85

very wk line ✓✓

RI

6.89 +0.252 30Oct83
6.88 +0.285 29Oct83
6.88 +0.287 ⑧

1 -0.5 I 51 7.0-9.5 1″.5

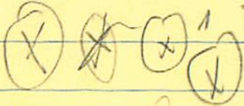
9733 1 33 30 -45 425 6.60^{+90} G8 II

(1985.5) 01 34 40.8 -13 29 21

7.5

-14.299 1 34 25 -13 29 60

9782



1 34 45.8 -13 27 02 (1986.5)

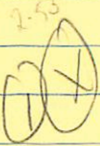
1104

7.18 3.65 201 347 1 #

311 273

7.18 -728 1193 -494 2.288 9 Jan 86

.246 2441



2.53

7.19 -347 906 -446 2.161 10Oct85

7.18 -351 905 -460 2.157 9Oct86

7.18 -339 893 -440 2.149 9 Jan 86

7.18 -346 901 -449 2.150

226 55′ (1985.5) 01 34 45.0 −48 00 17

CPD 1 34 30 −48 02 150 10.0

−48.185′

ⓧ ⓧⓧ

NO 10.17 −239 957 −530 10 Oct 85
10.19 −252 960 −544 9 Oct 85

184
163

9780 Aug 1 34 50 +17 20 59 A5

(+8) 5.95 -560 923 -18 2.292

(√)

Eggen 5.95 +136 194 905 2.346

Gr +145 193 847 2.777

915

159 210 522

✓ ✓

10?
1501 182
36

9569 1 30 05 −75 21.5 8.56 150 III

pm 150 h/r

−58 484

8.96 −067 1118 −341 3 Jan 76

8.98 −063 +1145 ~~−429~~ 11 Dec 75

8.85 −081 +1152 −352 31 Oct 75

8.99 −060 +1102 −339 17 Nov 75

8.94 −063 +1085 −300 24 Nov 75

8.97 −064 +1120 −345 ⑤

−353
−353

10 56
2117 759
1124 25 65

1759
824
2585

8.53 +0.415 18 Oct 75

8.59 +0.39

9810 2403h 2. 1 31 10 −29 03

852 +349 1540 −454 26 Jan 80

1458 220 455

749 +0.815 25 Jan 80

32 Kapteyn's Star

9566 1 32 00 -47 22 9.5 A5 IV/V

-4776

+72

9.72 -485 853 -145 2.216 7 Sep 83

9.69 -493 884 -166 2.205 18 Aug 83

9.60 -476 856 -159 2.209 3 Sep 83

9.66 -487 853 -152 2.218 24 Sep 83

Again

9.66 -490 850 -153 2.212 03:40 26 Oct 83

9.65 -492 868 -148 2.208 05:15 21 Oct 83

var?

9.56 -483 855 -151 2.218 07:35 26 Oct 83

9.56 -488 853 -144 2.214 06:20 3 Oct 83

-486 859 -152 2.21 ±006

Hryniw 1 35 10 -30 00 5.49+33 P2[illegible]

[illegible]

[illegible] [illegible] 5.70 -504 914 -167 2.249 27 Oct 83

yes

5.70 195 186 252 2.745 1 [illegible]
5.49 207 177 912 2.730 Go
215 166 237 2.730 Go
5.70 +205 +176 734 2.235

2.730 Go

9619 1 32 38 -44 00 7.6 100/1 V

+40 187

Tu

7.84 -220 1046 -502 10 Oct 83

7.83 -227 1053 -508 11 Oct 83

$\overline{7.84}$ $\overline{-222}$ $\overline{1050}$ $\overline{-505}$ (2)

+0182 +0497

491^{1973} 311 403

(158) (305) 7.44 +0.250 2 Jan 84

? (7.60 +0.283 9 Jan 84)

Rd

9986 1 36 35 +11 58.5 6.88 63 (IV?)

(V)

(X) 6.77 -308 911 -442 2.128 27 Oct 83

6.76 -309 917 -459 2.129 3 Nov 83

(X) 6.81 -306 932 -459 2.126 4 Nov 83

6.78 -308 920 -453 2.128 ③

(X)

6.75 401 191 456 2.6000

400 (311) (3 76)

310 350

UV Lat

3337 70
364 64
375
390

34

+3310 +585 BPM
+3270 +565 π

LPT 144/5 1 36.4 −15 N 3364 +142 Δ
3151 +453 D) π

AB dmle +29.0 10.00 +1.70 Slot

G372-61

0.375

W150"

√J (+) (NBN) (RT) 866+83

100 15 1 36 55 +24 26.5

? 0 ? check 53

8.60 -195 +1253 -472 1nov75

8.58 -191 +1076 -449 84 24nov75

8.65 -188 +1044 -414 25nov75

8.61 -193 +1058 -424

-451

[illegible]

9.41* -527 +378 ~~350~~ 459 ③

9.35 +0.28 26nov75

9.40 +0.275 30nov75

9.38 +0.28

·218 ·9

+4°247 1 37 50 +5 02 8.9 G0

(1057)

X (X) (X)

31 24

9.16 -299 957 -437 2.123 27Oct83

9.14 -291 941 -452 2.131 3Nov83

9.16 -284 933 -435 2.129 4Nov83

9.15 -291 943 -441 2.128 ③

1242

418 213 464 2.6000

(337) (385)

400 310 350 246

uv Cet 1 37 50 −18 03.5

V t-2

LHS 9 AB 12.00 +5.49

[illegible]

x 12.00 +1.321

RI

Dyali ✓ ✓

8.34+56-10

10607   1 40 30 -67 48   Durtam

R = 516
R₅ = 33

Gp (dm) 22" 212°

2Stdn +382 +127 +220

~~*8.33 +358 +124 +314~~ ③

8.34 [illegible] +362 ②

8.33 -346 +837 -500 13 Oct 75
8.33 -352 +848 -503 19 Aug 75
~~8.34 -263 +731 -443~~ 25 Aug X

8.33 -349 +940 ~~-502~~ -544

8.33 + 358 +124 1283 328

③

212° 22" 13.5 mt π 363.2

HD 10607 01 40 23 -67 50 8.31 +0.56

See w2 stars

(21): Arcturus Group

8.15	+0.235	14 Oct 73			
8.16	+0.20	18 Sept 69	8.31	+0.58	-0.12 2 Oct 69
8.08	+0.25	19 nov 1968	8.37	+0.54	-0.08
8.15	+0.23	18 "	8.34	+0.56	-0.10
8.31	+0.225	19 Dec 1968			
8.16	~~+0.2225~~				
	~~+0.23~~				

22874 12.51 +1.16 +1.02

D

11.84 +0.545 4 Jan 74

11.76 +0.515 14 Oct 73

26
78 9
75 4
3.64

11.90 +53
11.72
10.7
6.7

10262 1 39 35 +8 395 669 F2

WXH

WD

6.35 -446 875 -332 2.189 1Oct83
6.36 -437 871 -365 2.201 30Nov83
6.37 -424 871 -325 2.185 29Dec83
6.36 -430 871 -327 2.187 ②

814
272 146 587 2671
228 533

✓ ✓ ✓ 21 30 65

10513 ✓ 40 06 -45 34 9.24+70+22

1 More

9.30 +0.69 +0.26 Cape

9.09 +0.255 1Dec71
9.13 +0.25 3Dec71
9.13 +0.245 4Dec71
9.12 +0.25

9.32 -258 845 -355 5Dec76
9.34 -274 925 -398 24 " "
9.35 -311 953 -405 28
9.31 -257 939 -399 0 Jan 77
9.33 -263 930 -399

9.33 448 201 512 1741 ④

47°26.6 1 41 30 +8 27.5 .207 8.0 8.8 Q5

10503

ⓧⓧⓧ

9.15 -304 926 -402 2.135 27 Oct 83

9.13 -295 912 -407 2.128 3 Nov 83

9.14 -292 912 -417 2.132 4 Nov 83

9.14 -297 916 -408 2.132 ③

1082✓ 1 45 10 +04 26 8.4 G0

Ⓧ Ⓧ 8.78-375 888-438 2.156 27Oct83

8.74 -370 875 -450 2.147 8Nov83

Ⓑ 8.76-372 881 -444 2.151 ②

Yes

+72°94 01 4~~5~~ 25 +73 22 9.94 +41 -21

Gmb, 831 Pap

6245-3 ✓

chck

9.56 - 389 784 - 517 2.153 6 Oct 80

ob 9.57 - 394 807 - 541 2160 7

9.56 - 392 796 2.156

71

x 70

18 898 ~~e~~
-440 219 1 45 10 Apr -44 01 89 G3V
074 0781
025

(60")

8.20 -310 917 -523 2.113 27 Dec 83
825 304 898 -518 2.116 26 Dec 83 (36")
8.23 -307 908 -520 2.114

(NU)

402 180 387 2.583
(300) (307)

352 340

424

✓ ✓ [illegible] 1 C ✓

10785 1 44 03 -16 00

8.48 +0.61 +07 ④
8.30 +205 ②
8.30 +17 3 [illegible] !

-16.301

388

2.19
165
240

2.60

8.55 -322 985 -479 5 Dec 76
8.53 -331 894 -467 7 " "
8.54 -326 890 -473 ②

✓

2B ✓

+1 RX

2.133 9 Dec 79
2.137 8 "
2.135

2.608

833 +0.197 18 Dec 79
8.45 +0.225 13 Dec 76
8.37 +0.205 24 Dec 70
— +0.205 27 " "
841 +0.21 ③
835 +0.201 ③

11038 47 +081 +040 [illegible] "2 ?

~~9.77~~ 1 ~~45.7~~ 10 -22 19.5 ~~89~~ F5

220297

224001

X X

9.48 -358 863 -508 2.138 3NOV83
9.49 -354 871 -514 2.131 4NOV83
9.48 -356 867 -511 2.134 ②

1112 Hg 1 49 26 -41 36 20 68 5

1112

(H)

247 184 487 2411

7.1 5 -307 912 -423 2.137 75 ff

27 3428

wd

✓ '' .42

CFS 5003 81 24 1 48 05 -49 57.5 12.4

383

w08

$\Pi_t =$

RI ✓ ✓

10.57 +0.456 29 out 83

10.58 +0.453 30 out 83

10.58 +0.454

1 49 15 Fg

11226 1 49 45 -06 48 708

70307 1 49 34.4 -06 46 11 (1986.5)

[illegible] x x [illegible]

*7.08 -747 1190 -481 2.295 9 feet

7.12 -738 1183 -476 2.292 10 feet

7.10 -742 1187 -478 2.293

7.10 -353 887 -418 2.153

7.10 353 161 453 2.630

267 42.2

49 50 ✓

11379 dy 1 ~~80~~ ~~20~~ -31 00 7.26 F54

205 216
064 084
-3.25 +3.8

223 438
324 257 407 +4.0

W

NO

X

305 132 499 2.637

7.21 -344 856 -412 ✓ 2.159 75/83

7.21 -347 853 -342 ✓ 2.165 27 Oct 83

X 7.21 -348 854 -402 2.162 ②

Done

11332 1 49 30 -47 55 6.14 ±40 1'0 II

EJ80 E034 5E3 064
2866 4289 024

11397

8.71 +0.229 18Dec79
8.67 +0.234 26Oct82
8.68 +0.224 27Oct82
8.69 +0.230 ③

8.56 -281 913 -587 2.097 24Oct82
~~8.57 -283 904 -540~~ 2.115 9Dec79
2.114 8Dec77
8.57 -283 904 -540 28Aug75
8.55 -305 924 -603 7Sept76
8.55 -279 917 -605 2.099 25Oct82

8.56 -287 915 -546 2.106 ④

.83 92 G

GL 2290

LFT 168

1 51 50 -22 32

~~1 50.4 -22 41~~

8.09 +689 9 Jan 84
7.90 +678 2 21 84

892 +141 +127 ①

802 +0.685 ③

~~8.09 +0.689 9 Jan 84~~
+0 mm +15

-23 0693

HD11507

G 272-114

+0.598 +0.07

1.8

-22.7

0.25

+15 X

~~+18.3~~

+25

+077 13

Varmd ud +35 to -26

45
25

CFS 514 1 ✓ 51 25 ✓ -41 42 13.6 h- m

COD -42 1454

RI N ✓ 475 155

ROU 445
0.23
+2.05
0.524
1.40

11.05 +0.358 24Oct83
11.09 +0.355 30Oct83
11.09 +0.357

11537 My 1 51 35 -38 50.5 8.05 A7V

X X

8.06 -537 929 -84 2.290 24 Sep 83
8.02 -546 926 -66 2.282 10 Oct 83
8.04 -540 928 -075 2.286 ②

yes

8 57
050

8565 8323
2414 4515

175 140
075

11588 1 55 50 44 55 8.5 PL#

450303

Ⓚ Ⓙ

8.82	-394	886	-457	2.168	10Oct 83
8.81	-399	887	-443	2.167	11Oct83
8.82	-396	886	-450	2.166 ②	

(1985.5) 01 56 02.4 +15 57 49

+15°280 1 55 45 +15 57 9.0G5

GC 2340

(9.85 -297 943 -465 2.107) 31 Dec 83

9.81 -266 938 -491 2.114 2 Jan 84

9.80 -278 924 -447 2.120 8 Jan 84

paper 9.80 -292 947 -477 2088 9 Oct 85

X 9.81 -283 934 -470 2.106 ④

1 54 52 -60 28 21

13058 (1985.5) 01 56 07.9 -60 18 01 r = 8.60

1 55 50 -60 20 15 SV

-60.147

$\pi_2 = 0.055$ 1.52

yes 1

.55 0.422 comm

8.58	-38	1347	-641	10 Jan 86
8.62	-53	1329	-642	7 Jan 85
8.58	-43	1310	-620	1 Oct 85
8.57	-40	1297	-645	9 Oct 85
8.59	-43	1320	-643 ④	

R = 8.00

I 7.58

7.02

7.3 5.52 16.52

* 8.58 -432 1647 -666 10 Jan 86

(1985.5) 01 57 11.7 −28 55 05

12068

−29.664

1 56 55.5 −28 56.5 G3 V .8.0

1 57 16.5 −28 54 (1986.5) 3.5

13.5 (41) ← spun

* 8.24 ~~−676~~ 1232 −511 2.268 9 Jan 86

8.24 −677 1236 −507 2.271 10 "

1249

8.25 433 217 351

(342) (264)

8.26 ~~−280~~ 924 ~~−464~~ 2.124 10 Oct 85

8.27 −288 929 −486 2.124 9 Oct

8.24 −286 934 −476 2.130 9 Jan 86

8.27 −287 938 −469 2.136 10 Jan 86

8.26 −285 932 −474 2.131 ④

(V) (X) (X) (X)

(X) (X)

2 more

11-75

Vtell 8.26 425 202 435 2.604

(330) (350)