

Application for Advanced Binocular Double Star Program by:

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Tulsa OK 74119

918-606-9041

All observations made at Tulsa 36 N., 96 W. All observations made with Garrett 20 x 80 binoculars mounted on a pan head tripod

STF 3053 Cassiopea observed November 11 2014 at 3:10 UT seeing 3 transparency 2. Pair tight but split orange primary greenish blue secondary PA equals 70

HJ1968 Cetus observed November 7, 2014 at 3:50 UT seeing 2 transparency 3 blank field around it seems secondary has a little lower PA than listed

STF 39 AB- C Cetus observed November 7, 2014 at 0:55 UT seeing equals two transparency equals three fairly easy split no colors noticed PA around 50

H5 17 Andromeda A.k.a. pi observed November 7, 2014 at 1:00 UT seeing 2 transparency 3 nicely split bluish white and blue

HJ 1992 in sculptor November 7, 2014 at 3:40 UT S= 2 C= 3 easy lonely in field PA about 250

STF 47 Andromeda observed November 11, 2014 at 4:00 UT C = 3 S= 2 Nice uneven double PA around 200

STF 60 Cassiopea observed November 11, 2014 at 1:15 UT C=3 S=2 Eta is a nice Golden Star I saw a hint of a secondary but cannot be sure at the correct PA

ES 940 Cassiopea November 11, 2014 at 1:25 UT C = 3 S = 2 last inline of four stars secondary with averted vision only at PA around 0

STF 90 Pisces November 10, 2014 635 UT C = 3 S = 2 in a nice triangle of stars seen well both yellow PA about 90 a.k.a. 77 Pisces

STF 100 Pisces same date same conditions 645 UT also known as zeta Beautiful yellow and slightly orange pair just split PA about 60

HJ 2028 Cassiopea November 11, 2014 C = 3S = 2 215 UT yellow and blue split well PA around 200 CR 463 cluster nearby

S 397 Cassiopea also known as 35 Cas. Seen same date and conditions 225 UT in a triangle with other why doubles this one is white and faint secondary is slightly orange PA about 350

S 398 in Pisces November 10, 2014 230 UT C = 3S = 2 white and slightly blue wide PA a little more than 90

HJ 2052 in Cetus November 10, 2014 at 2:40 UT C = 3 S = 2 nice and wide fairly even magnitude PA about 110

STF 136 in Pisces November 10, 2014 at 2:35UTC = 3S = 2 beautiful tight double near mu just split PA about 60

STF 231 in Cetus November 10, 2014 300 UT same conditions nice colorful double primary yellow and secondary white PA around 215

STF 239 in Triangulum November 11, 2014 C = 3S = 2 235 UT both yellow and a nice field about a half magnitude Δm PA around 215

STF 274 in Cetus November 10, 2014 C = 3S = 2 335UT very tight no steady gap but two distinct blobs of about the same magnitude PA around 200

HJ 3511 in Cetus November 10th 2014 same conditions 325 UT very difficult just oblong - can't get a gap more than a magnitudes difference PA around 100

STF 307 a.k.a. Eta Perseus October 25, 2014 11:05 UT C = 2S = 2 beautiful golden yellow and greenish white double. Comes probably eight magnitude seen well PA over 280

STF 331 Perseus same date same conditions both whitish
challenging in binoculars PA around 90 when I started astronomy
this was a good double for small telescope

STF 401 in Taurus November 11, 2014 250 UT C = 3 S= 2 not
labeled on drawing it's between STT 54 and STF 519. close in
magnitude slightly blue and whitish PA ~ 270 seen as it rises

STT 54 in Camelopardalis same date same conditions 245 UT not
too hard to see the faint one due north, no colors noticed it is
the southern one of the wide pair the northern one of the wide
pair is also a wide pair that's not listed

STF 396 in Camelopardalis same date same conditions 325 UT
slight Blue and white colors nice pair in cool field PA 230

STF 519 and S 445 in Perseus seen together in same field on
November 11, 2014 305UT C= 3S = 2 STF 519 much closer and nicer
pair in a nice field PA near 0

S445 much wider but closer in magnitude and slightly more west
than north comparatively no bold colors in either pair

STF 533 Perseus same date same conditions at 3:15 UT third in
line near a bright star PA near 60 nice split but not too wide
no colors

STF 576 in Eridanus November 14, 2014 6:00 UT C = 3 S= 2 very
close did not get the clean split PA around 130 for me

BU 1236 Eridanus soon after same night same conditions much
easier yellow orange and white two magnitudes difference PA
around 330

SHJ 49 ABC in Orion same date and conditions about 645 UT nice
triple close bright pair splits well PA 310 faint 10th Mag to E.
seen with the averted vision

STF 627 in Orion same night same conditions 635 UT Close with an
image wide gap blue and blue PA about 270 nice yellow orange
field star to East

S 463 Orion same night same conditions 705 UT seven and 10 magnitude secondary was edge of vision looked 30° less PA than wider double in field which was about 60 (7.5 and eighth mag on those)

STF 630 A - BC Orion same night same conditions 715 UT slight yellow primary and bluish secondary pretty tight but split PA around 40 bright field star was gold

STF688 record not found

STF 681 and Auriga November 11, 2014 514 UT C = 3, S = 2 close but split with a large difference in magnitude pa 180 Capella in field see sketch

STF 855 in Orion November 14, 2014 655 UT very nice double split well and then on extending same PA about 110 is 10 magnitude comes yellow-white and white for colors

STF 872 in Auriga same night and conditions close tight double both blue no complete gap PA around 225

S 518 in Canis Minor seen on October 16, 2014 1105 UT C = 2S = 2, not easy to split but seen both yellow PA 90

STF 914 in Monoceros same day same conditions seem soon after at 11:15 UT not as easy to split with the seventh and 9.5 magnitude no color PA around 300

SHJ 70 a.k.a. 15 Gemini observed November 14, 2014 at 7:25 UT C=3S = 2 orange and yellow another very wide pair infield see sketch PA around 200

STT 146 in Monoceros October 27, 2014 1115 UT C=2 S = 2 difficult to see 10th mag PA 135 revisit

SHJ 73 a.k.a. nu 1 Canis Major November 19, 2014 at 10:45 UT C = 2 S = 2 pretty hard split but image width gap more than one magnitude difference seems due West PA 270

H 5 65 ABCD 17 Canis Major same date same conditions at 10:55 UT quite a nice quadruple star difficult to pick out the faint ones at first but all 3 seen

STF 1065 in Lynx A.k.a. 20 seen November 29 2014 at 11:15 UT C = 2, S = 2. Tight pair of 7th magnitude stars in wide nice field both white PA about 250

STF 1090 ABC in Gemini same date same conditions, 1125 UT nice triple with two dim stars like a dim double next to a bright 7 magnitude star. Surrounding fields full of wide doubles

H N 19 in Puppis observed November 20, 2014 at 10:50 UT C = 2 S=2 very nice Close pair six magnitude PA 110

H 3 27 A.k.a. Kappa 1 Puppis observed same day same conditions 1105 UT very similar to last pair but brighter and not quite as tight; gap seen here PA around 310 also both yellow

STF 1122 in Camelopardalis observed on November 30, 2014 at 9:10 UT C = 2, S = 4 just a dent in a pair of whites - cannot say for sure I saw it. Meanwhile, nice white pair yellow and blue nearby at 8h01m +63

HJ4046 in Puppis observed same day same conditions 1115 UT yellow primary and blue secondary PA around 90 nice field star

STF 1255 in hydra observed November 29, 2014 at 11:30 UT, C = 2, S = 3 nice little uneven double PA~ 30 in a nice field with satellite passing through

STF 1258 in Ursa Major on November 30, 2014 at 9:20 UT, C = 2, S = 4. Very slight hint of secondary NW., but can't say I split it

HJ4166A - BC in Pyxis observed November 25, 2014 at 11:30 UT C = 3 S = 2 difficult split magnitude difference 0.5 PA 160 no color noticed

STF 1347 in hydra observed November 29, 2014 at 11:30 5UT, C = 3, S=2. Both yellow nice little split one magnitude difference PA equals 315

SHJ110 AC in hydra observed November 29, 2014 at 11:50 UT. C=3, S = 2. Easy split six and seventh magnitude PA was 270

STF 1415 in Ursa Major observed November 30, 2014 at 900UT. C = 3, S = 4. Nice nearly even pair PA 170

HJ 4305 in hydra attempted November 29, 2014 at 1150 UT looks like it is non-single in the north-south direction.

STF 1616 in Virgo same date same conditions at 12:20 UT split and very nice seventh and 9 mag with PA near 300 in a nice field of a triangle

STF 1625 in Camelopardalis observed November 19, 2014 at 2:50 UT C = 2 S = 2 both yellow very tight no gap seen PA approximately 200

STF 1627 in Virgo observed November 20, 2014 at 12:10 UT C = 2 S=2. Nearly even, nice pair PA 190. Noticed a flashing geosynchronous satellite nearby.

STF 1677 in Virgo observed November 20, 2014 at 12:20 UT C = 2 S=2. Not easy, 1 mag difference. PA=0

STF 1821 a.k.a. Kappa Bootes observed October 16, 2014 at 11:15 UT C =2 S = 2 fairly easy split in a nice field to magnitude difference PA~ 230

H5 38 in Corona Borealis observed October 16, 2014 same conditions at 11:20 UT just split 10th magnitude very difficult to see north of main star

H5 127 in Hercules same date and conditions 11:25 UT white and light greenish blue easy split 2 magnitude difference PA 300

ENG 59 in Ophiuchus seen October 21, 2014 C = 3 S = 2 0:55UT very difficult with 10 magnitude secondary very far away at PA of 60

SHJ 247 in Serpens same date same conditions 110 UT very difficult also with ninth mag secondary much closer at PA 30

HJ4964 in Serpens on October 24, 2014 105 UT, C = 3, S = 2 very difficult to see 10th magnitude secondary wide to Southwest at PA 225

STF 2202 in Ophiuchus on October 21, 2014 at 1:25 UT, C = 3, S = 2 also known as 61, nice nearly even pair cleanly split pa equals 90

STF 2278 ABC in Draco on November 8, 2014 205UT, C = 3, S = 2 beautiful triple all split and seen well both comes to East PA near 40

STF 2280 a.k.a. 100 Hercules observed October 21, 2014 at 1:35UT, C = 3, S = 2 perfectly even pair six magnitude North south so PA equal 0 or 180

SHJ263 in Sagittarius observed on October 24, 2014 at 1:35 UT C=3, S= 2 Western one of the pair of doubles here; difficult wide but secondary is ninth magnitude PA near zero

SHJ264 in Sagittarius observed same date same conditions and practically the same time as it is in the same field not as difficult though much closer

STT 356 in Lyra observed October 21, 2014 at 2:35 UT C= 2 S = 2 Second in a line four field stars not too easy but split dim secondary at PA equals 300

STF 2417 in Serpens A.k.a. Theta observed same night same conditions at 150 UT classic nearly perfect pair with slight difference in magnitude and both white PA around one hundred

STF 2470 in Lyra same night same conditions at 2:25 UT nice pair split but not too easy 1.5 magnitude difference PA due West

STF 2474 in Lyra seen with STF 2470 and almost a carbon copy of it forming another double double in the constellation this one a little closer and magnitude but similar separation and PA

STF 2549ACD in Draco November 8, 2014 445 UT C =3 S = 2
surprising triple with dim comes in middle in a line to the west
yellow white and blue colors (subtle)

STF2562 in Aquila October 21, 2014 at 2:55UT C=2, S = 2 split
well no colors noticed nearly due West

STF 2578 in Cygnus November 8 2014 455 UT C = 3S = 2, slightly
blue and white just split PA 120

STF 2646 in Aquila October 21, 2014 at 3:10 UT C = 2, S = 2,
difficult split 1.5 magnitude difference PA 45

STF 2690 A- BC In Delphinus same date and conditions at 3:20 UT
not too easy to split but nearly equal PA almost 270

S763 in Capricornus same date and conditions at 3:25 UT nice
split one magnitude difference PA 290

STF 2769 in Vulpecula seen November 8, 2014 at 4:20 C=3, S=2
Blue and slightly blue about one magnitude difference PA equals
310

STF 2787 in Aquarius October 21, 2014 at 3:50 5UT C = 3, S = 2
Nice pair no colors PA about 15

STF 2809 in Aquarius same date and conditions 355 UT six
magnitude with dim companion at about 160

STF 2816 ACD in Cepheus Nice central star with two dims around
it pretty close PA 120 and zero mu Cephei in field

HO 465 in Pegasus November 10, 2014 at 5:10 at UT C=2, S=2 looks
different to me seems to be eighth magnitudes with less than one
difference PA equal 60 or 210 see sketch

STF 2840 in Cepheus October 21, 2014 at 4:15 UT C =3, S=2 Nice
bright pair about a magnitude difference in a line of three PA
equals 200

STF 2873 in CEPHEUS November 10, 2014 at 6:15 UT C = 2, S= 2
split with an image wide gap slightly blue and yellow beautiful
and a fine field

HJ1735 ABD in Lacerta November 10, 2014 at 5:55 UT. Wide double
with a 10th magnitude inserted nearby. PA from brightest as
listed at 110 and 286 see sketch; there are fields nearby with
clusters and this field has a beautiful group of three with
colors - blue red and light yellow.

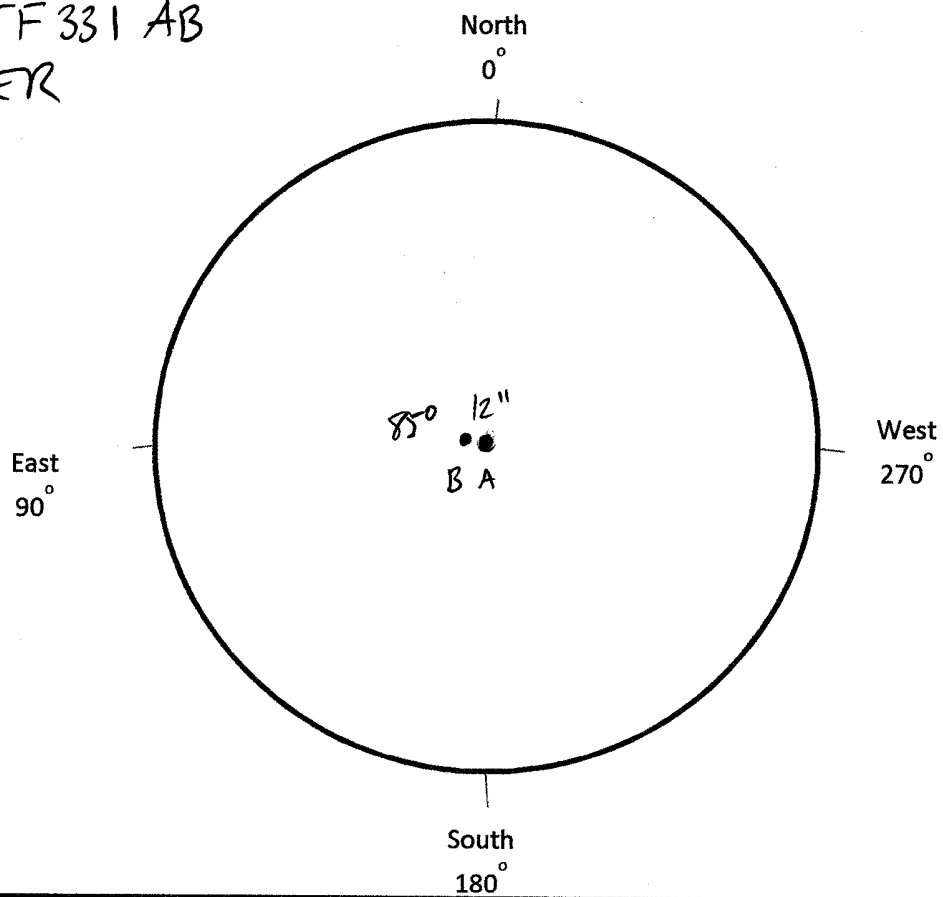
HJ 5355 ABC in Aquarius on October 21, 2014 425 UT C= 3, S =2.
Wide but interesting triple seventh eighth and ninth magnitudes
1 due W. 1 due N.

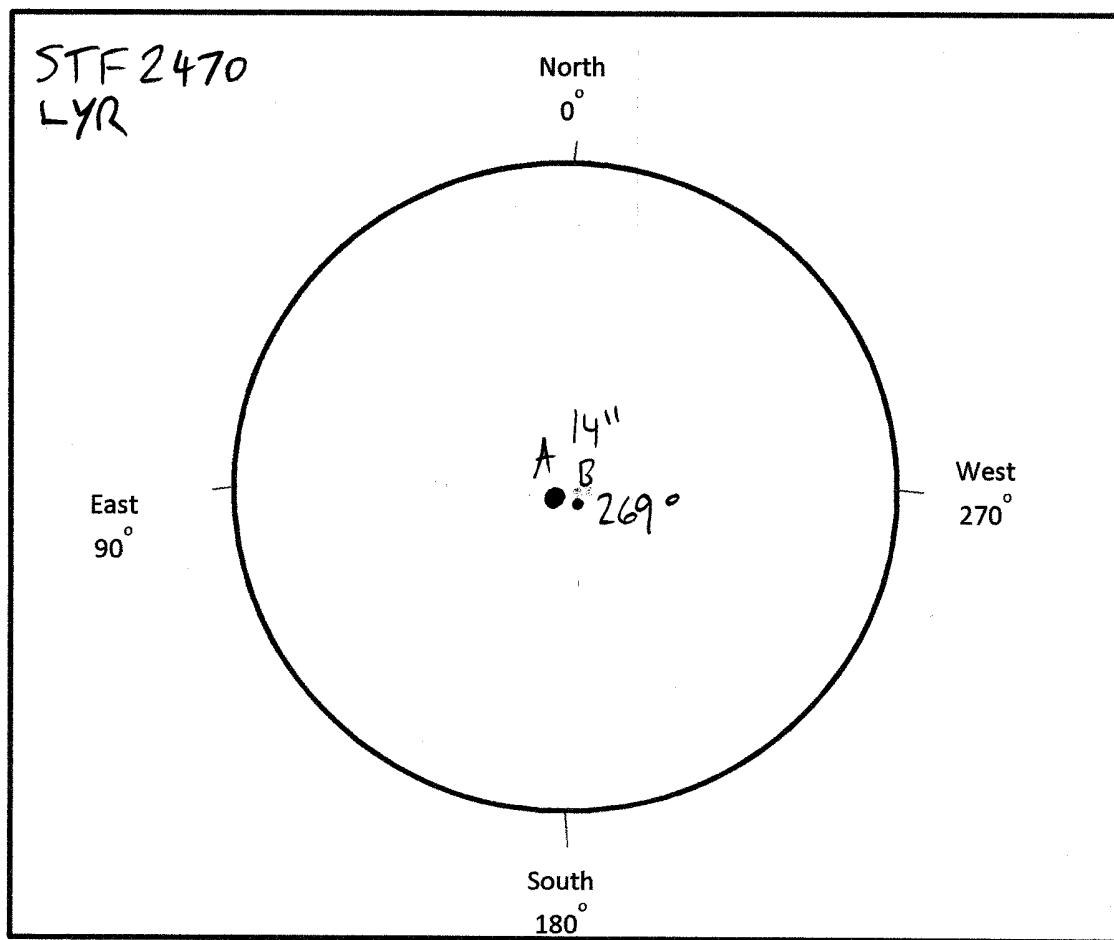
BU 1144 A- BC a.k.a. Eta Pegasus November 10, 2014 at 5:15 UT C
=3, S =2 famous star Enif quite gold in color with a
10th magnitude white companion at PA 330 very hard to see edge
of vision

STF 2985 in Andromeda November 10, 2014 at 7:05 UT same
conditions. Nice pair no color noticed PA equals 260 in a very
nice field see sketch

STF 2993 AB and S826C in Aquarius on October 16, 2014 at 1:15 UT
C = 3, S equals 2 STF star is a nice wide triple white yellow
and reddish. Bright Star in field has a companion they are
golden and white

STF 331 AB
PER

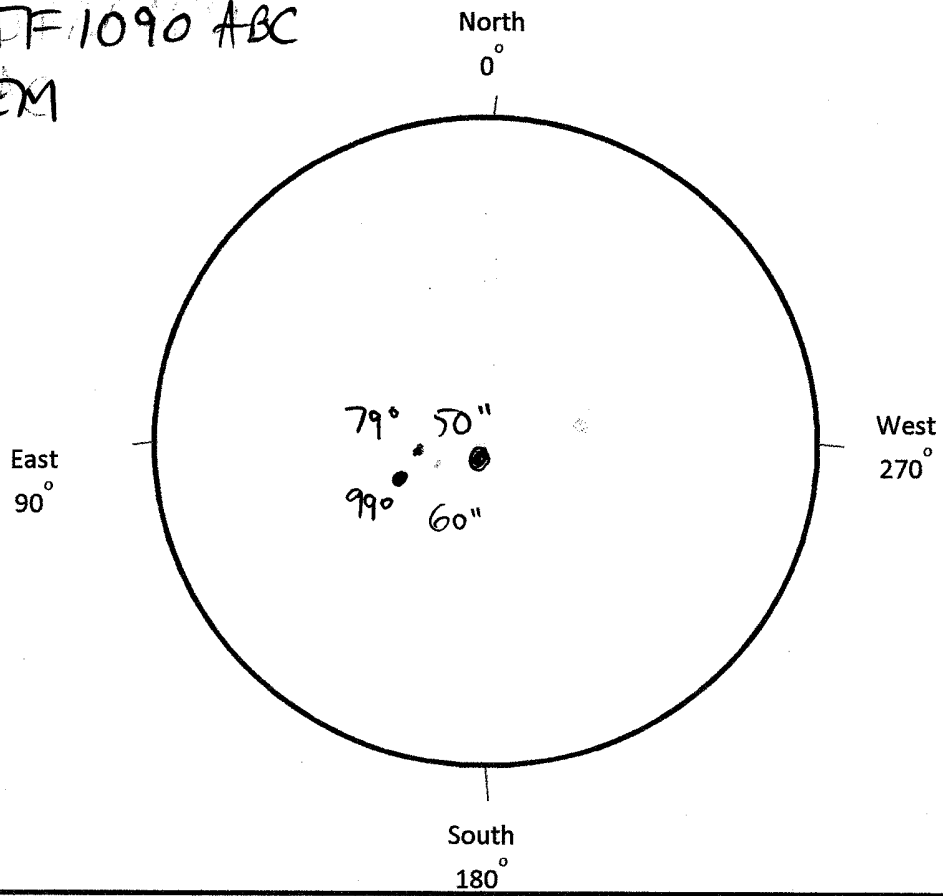




STF
2474
AB

A B 16" 262°

STF 1090 ABC
GEM













NIGHTS AFTER SUBMIT!

OBJECT			NOTES
•	DATE 12/6/14	TIME 6:05 UT	STF 604B (γ Cas) Galilei sl. b. Very difficult but seen
	POWER 20	SEEING II C=III	
	INSTRUMENT: 20X80	TYPE F/ Binos	
•	DATE	TIME 6:15 UT	STF 688 En SO CLOSE 290m STF 692 (Or1) 848.5 35" 4"
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
•	DATE	TIME 6:30	STF 146 (Mon) COOL FLIP
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
•	DATE	TIME 6:40	BVP 111 + ARNC (Cnc) 0.7 WIDE TRIPLE 0.2
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
•	DATE	TIME 6:45	STF 1258 (UMA) wow! split but only 1/2 146 PERFECT
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
•	DATE	TIME 6:55	STF 1321 (Polaris) y's (UMA) - 1WG
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
•	DATE	TIME 7:00	STF 1122 (Cam) & ANOTHER!
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	

ADDITIONAL BINOC PBL STARS

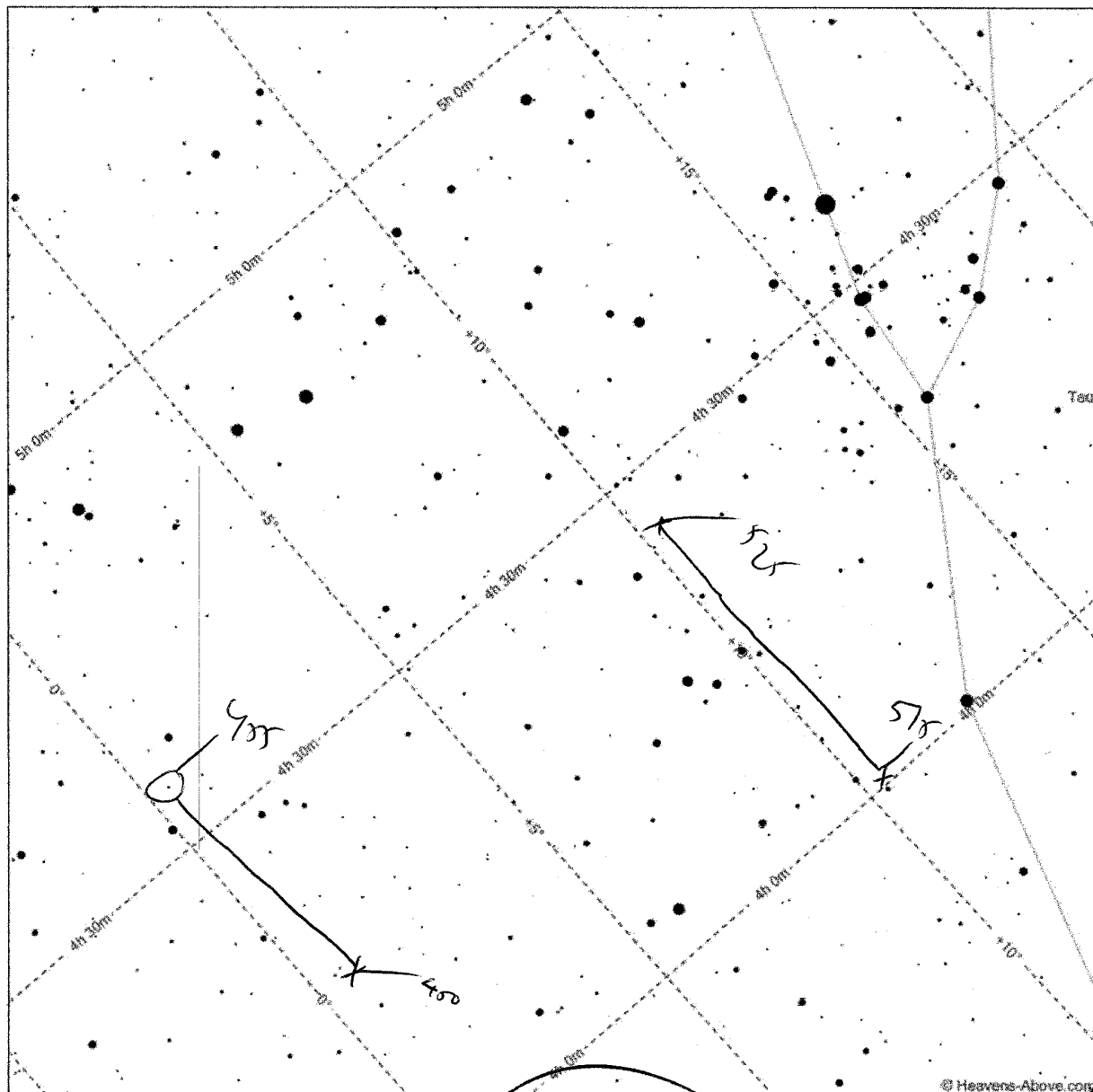
OBJECT	NOTES		
.	DATE 9/21/14	TIME 1:55 UT	sl 48 sl 6, <u>nice</u> dbl & rest field NOT ADV - ALT LIST K Her
	POWER 20	SEEING II	
	INSTRUMENT: 20x80	TYPE F/ 8.5	
..	DATE	TIME 2:00	Oser slb-W's STF 2417 RPTD AS 10/21/14
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
. <	DATE	TIME 2:10	57 Aq1 slb-W & b - w/gold to S NOT ADV - ALT LIST
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
.	DATE	TIME 2:30	Psi' Psc W's NOT ADV - ALT LIST
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
.	DATE	TIME 2:40	o Cap sl 48 sl 6 NOT ADV - ALT LIST
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
. <	DATE 10/15/14	TIME 4:30 UT	STF 39 AB-C (Cet) REPORTED AS 11/7/14 ← to east y2 b-g
	POWER 20	SEEING II / C=II	
	INSTRUMENT:	TYPE F/ BWO	
.	DATE	TIME 4:40 UT	STF 2787 2102 +2 G+W NOT ADV - HAPPEN ON
	POWER	SEEING	
	INSTRUMENT:	TYPE F/ ↓	
. . .	DATE	TIME 4:50 UT	STF 2787 (AQR) RPTD AS sl 48 sl 6 10/21/14
	POWER	SEEING ↓	
	INSTRUMENT:	TYPE F/ ↓	
. m	DATE	TIME 5:00 UT	STF 2809 (AQR) sl 6 sl 6
	POWER	SEEING ↓	
	INSTRUMENT:	TYPE F/ ↓	
. . .	DATE	TIME 5:10 UT	HJ5355 ABC (AQR) ↓
	POWER	SEEING ↓	
	INSTRUMENT:	TYPE F/ ↓	

OBJECT	NOTES		
	DATE 14/11/14	TIME	STF 227818 (Orz) CONFIRMED
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STF 3053 (Cas) 02 g to <u>here</u>
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STF 60 (Cas) η - golden w/ hint of sec(?)
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	ES 940 (Cas) sec = Ar only
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	HJ 2028 (Cas) Cr 463 nearby Y 8 b
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	S 397 (Cas) NB orangeish
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STF 239 (Tri) Y's
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STF 54 (Cam)
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	sl Blw 10' d as STF 396 Cam
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STF 579 & 5445 (Per)
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	

OBJECT	NOTES		
	DATE	TIME	
	POWER	SEEING	STF 533 (Per)
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STF 47 (And)
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STF 207 (Gaw)
	POWER	SEEING	Wow! 14y blue
	INSTRUMENT:	TYPE F/	161-161
	DATE	TIME	STF 681 (Arr)
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE 11/14/14	TIME 6:00	STF 576 (BRI)
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	BU 1236 (ORI)
	POWER	SEEING	BAJION!
	INSTRUMENT:	TYPE F/	408W
	DATE	TIME	STF 627
	POWER	SEEING	1Wg B-6
	INSTRUMENT:	TYPE F/	4-0 to 8
	DATE	TIME	SHJ 49 ABC
	POWER	SEEING	B/W/W
	INSTRUMENT:	TYPE F/	
	DATE	TIME	SY 63 (ORI) 7-10 (RW)
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	< 7.528 60'
	DATE	TIME	STF 630 A-BC
	POWER	SEEING	1722 bfr = gold-y
	INSTRUMENT:	TYPE F/	

(5)

OBJECT	NOTES		
	DATE	TIME	STF 955 A2C 7/1/14
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STF 872 B's fite
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STH 70 (18 Gen) O6y rice note other
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STF 146 (Man) check
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE 11/19/14	TIME 2:50 UT	STF 1625 (can) Y's - very fite no 9v PA ~ 200
	POWER 20	SEEING II / C = II	
	INSTRUMENT: 20x80	TYPE F/	
	DATE 11/25/14	TIME 11:30	Hard 160° DM = .5 H) A-B No color 4166 (Pyx)
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE 11/29/14	TIME 11:15	20 Lyn
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME 11:25	STF 1090 ABC (Gen)
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STF 1255 (Hya)
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	STF 1347 (Hya) Y's
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	



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10025P

11/19/14

ABDS

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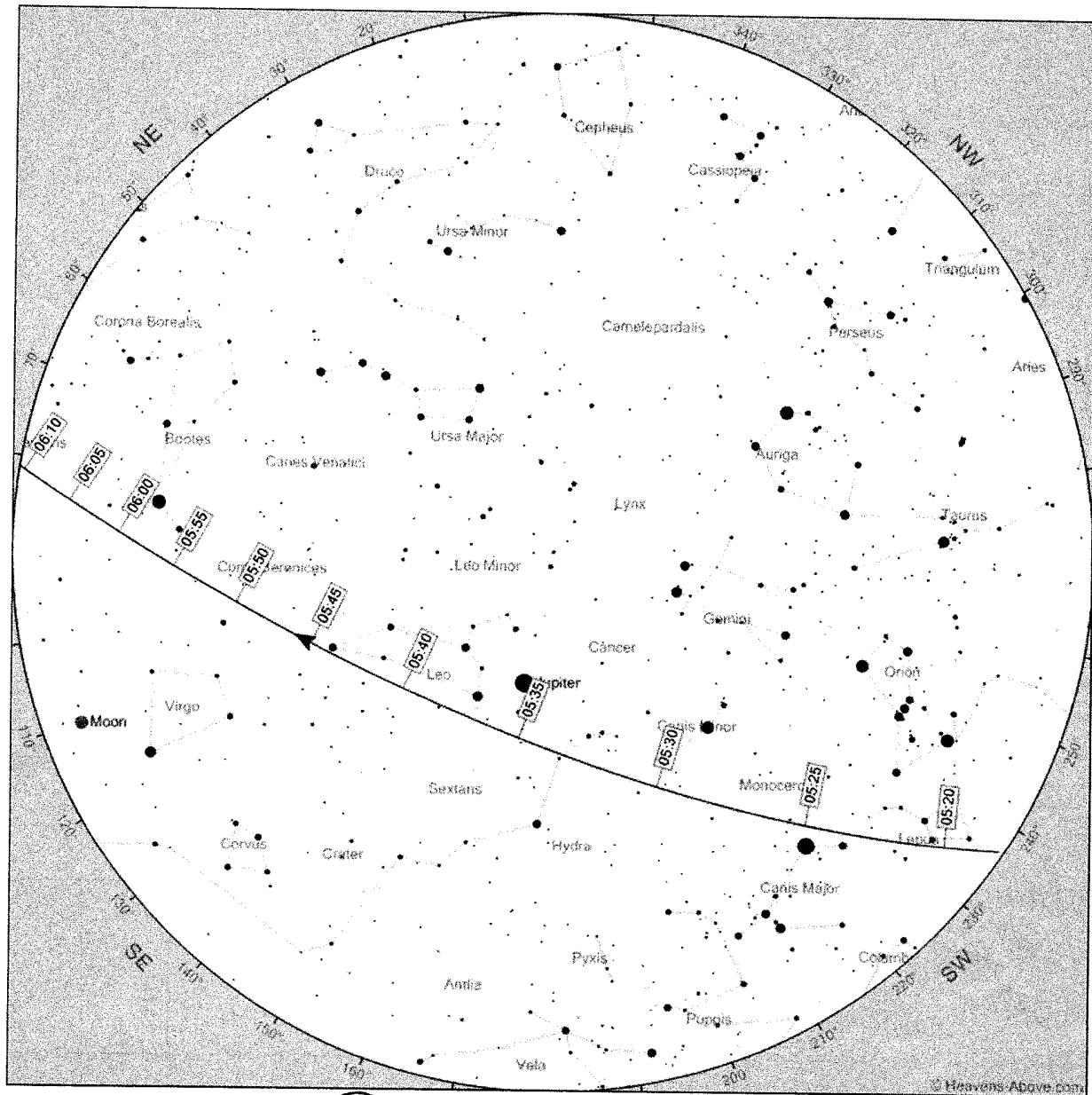
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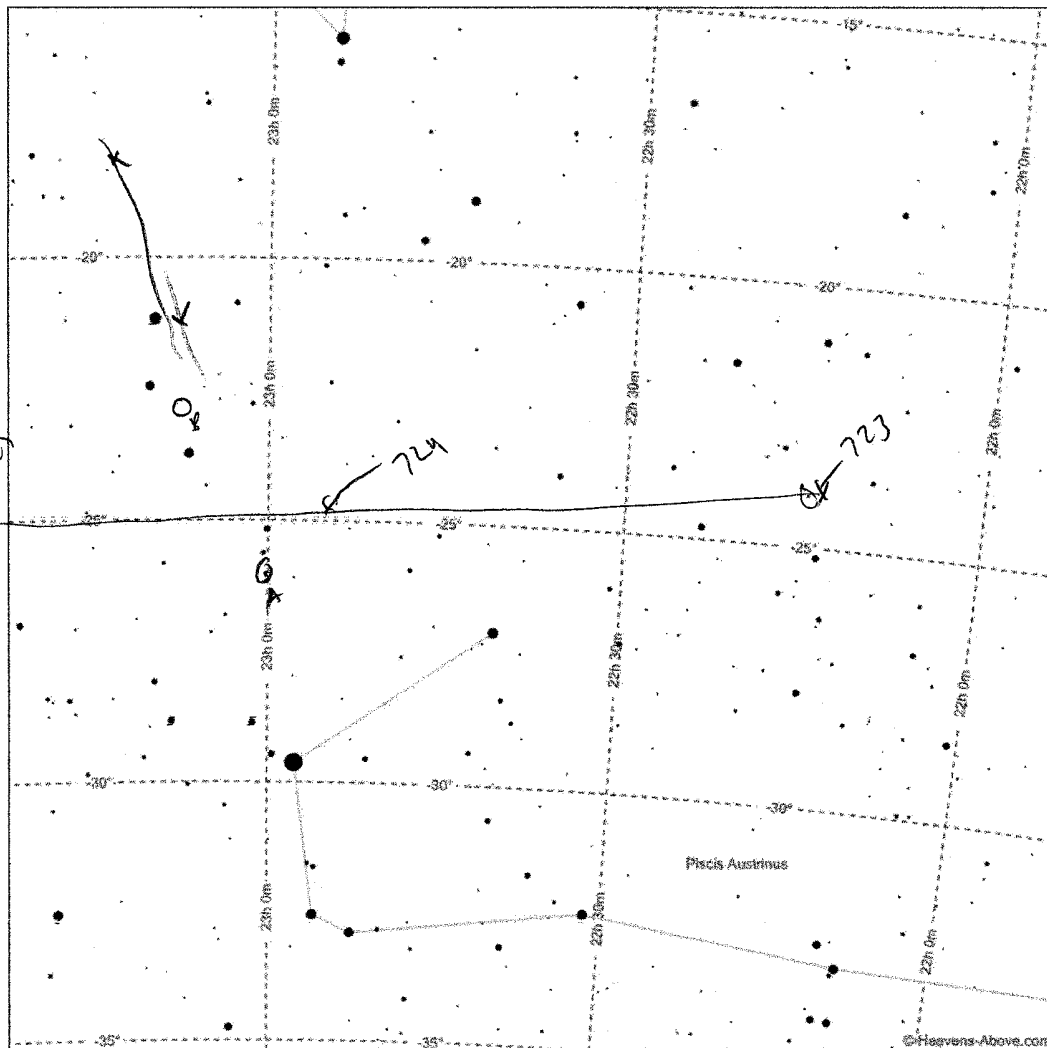
60
 40
 25
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GO BACK

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④

OBJECT	NOTES		
.	DATE 11/29/14	TIME 11:50	SHS 110 AC (Hya)
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
..	DATE //	TIME 11:55	H) 4305 (Hya) Not split - loose, not - split ID N-S
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
:	DATE //	TIME 12:20	STF 1616 (Vir) Close the nize ts Δ
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
→	DATE //	TIME 11:20	(20 Lyn) Split, 1WG, 225° PA Δm=1.5
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	
	DATE	TIME	
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	INSTRUMENT:	TYPE F/	



11/18/19
DBS
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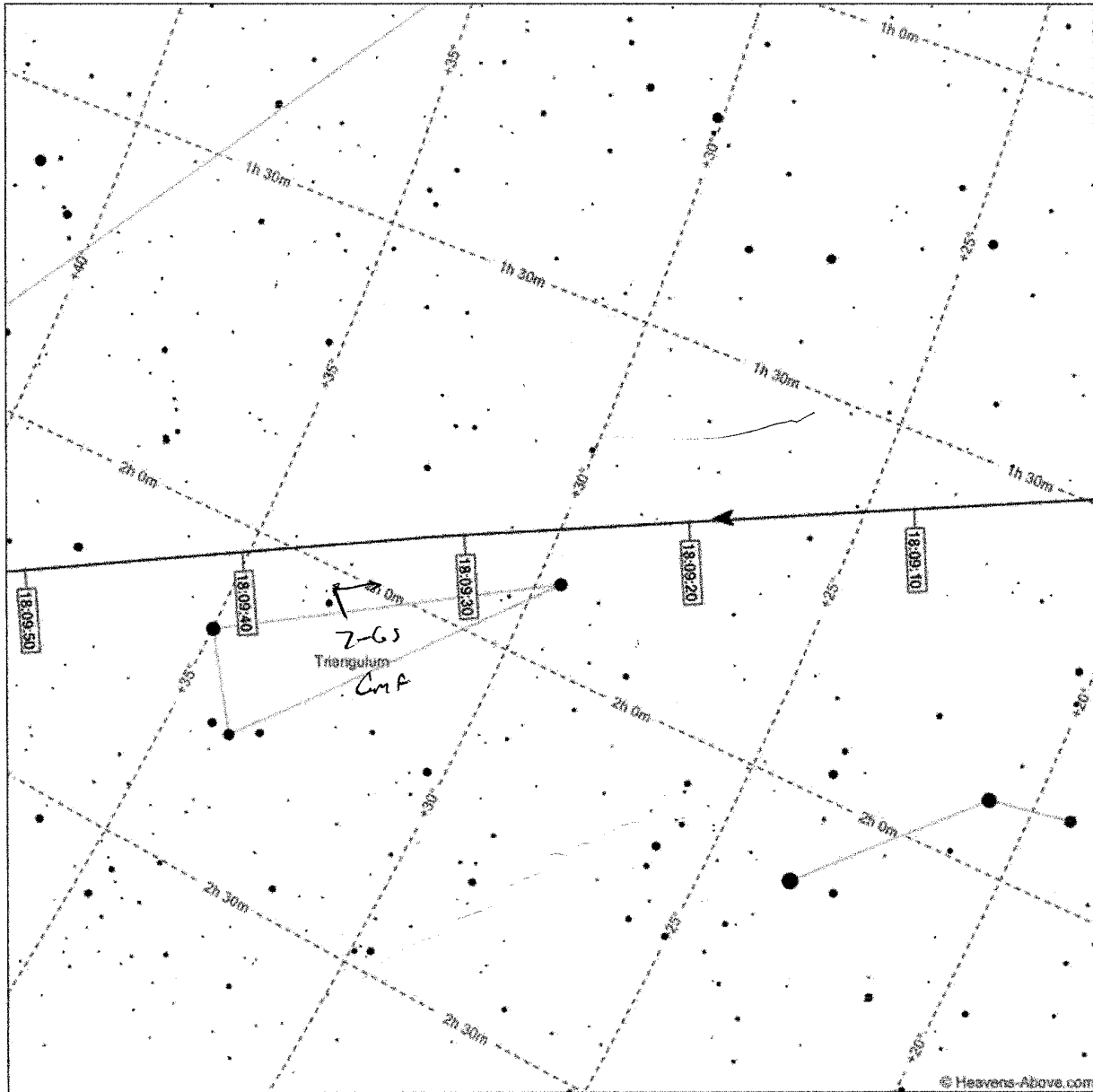
3177 20562 43 w 20894k 33862 37143/4p

99224 Unknown 140607

7	11	24	26	55	205	354	20.0	108	9	359	53	428	2.1	87	2143	3.7
10779	Intlst	4A6	Rk	78	35B	20	M	2.0	ElDy	2	Dr	-1				
1	50	47	135	6.5	3602	7	14.2	2.2	4170							
1	55	35	119	6.6	2833	8	26.2	1.0	3694							
32389	Rascom	1	A5	Rk	07	63C	20	M	3.5	ElDy	3	Dr	0			
8	15	21	172	8.3	2235	0	16.1	-32.5	3543							
8	20	25	155	8.3	2991	1	25.5	-24.4	4261							
36593	Arabsat	5B	Rk	10	25B	10	M	2.5	ElDy	3	Dr	-1				
8	50	46	156	7.5	4842	1	25.1	-5.5	5522							
8	55	43	141	7.3	4414	2	12.1	-3.8	5164							
74201	SO	74201				**	4.0	ElDy	26	Dr	0					
7	23	29	189	7.4	1172	22	14.6	-24.1	1855							
7	24	29	179	7.4	1268	22	53.3	-24.8	1986							
7	25	29	171	7.5	1370	23	26.9	-25.1	2148							

0
30°
120°
V
17
40
40

MM Smyrna
N/I



4-6 to
 75
 20562
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 NA
 Ho
 11/18/14

ADVANCED DOUBLE STARS (AFTER AWARD)

OBJECT	NOTES		
↑N •	DATE 12/26/14	TIME 5:15	SF638 (Ori) perfect pair - image with gap
	POWER 20	SEEING II C=III	
	INSTRUMENT: 20x80's	TYPE F/	
↑N: • • 8	DATE 2/20/15	TIME 4:30 UT	Σ1255AB (Hya) B+W almost clean sep
	POWER 20	SEEING II C=II	
	INSTRUMENT: 20x80	TYPE F/	
↑N •	DATE ↓	TIME 4:45	Σ1347 (Hya) Easily separated 2xw's
	POWER ↓	SEEING ↓	
	INSTRUMENT: ↓	TYPE F/ ↓	
↑N •	DATE ↓	TIME 5:50	24 Com 2x4's
	POWER ↓	SEEING ↓	
	INSTRUMENT: ↓	TYPE F/ ↓	
↑N • • •	DATE ↓	TIME 6:10	Σ1685AB (Com) very sep.
	POWER ↓	SEEING ↓	
	INSTRUMENT: ↓	TYPE F/ ↓	
↑N •	DATE ↓	TIME 6:20	Σ1627 (Vir) W&sl. b
	POWER ↓	SEEING ↓	
	INSTRUMENT: ↓	TYPE F/ ↓	
↑N • •	DATE 5/1/15	TIME 4:00	Σ1962 (U3) Wow! 1W6
	POWER 20	SEEING III	
	INSTRUMENT: 20x80	TYPE F/	
• •	DATE 6/7/15	TIME 6:15	Nrce, close Ann 4 P24 (Lup)
	POWER 20	SEEING II	
	INSTRUMENT: 20x80	TYPE F/	
• • ←	DATE 6/9/15	TIME 3:50	HJ 4964 difficult PA now 240° 0 primary
	POWER 20	SEEING II	
	INSTRUMENT: 20x80	TYPE F/	
• •	DATE	TIME	P24 (Lup) revert, PA=225°
	POWER	SEEING	
	INSTRUMENT:	TYPE F/	