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MICROMETRICAL MEASURES OF DOUBLE STARS,

MADE AT THE LICK OBSERVATORY,

By E. E. BARNARD.

The following measures of double stars were made with the 36-inch at the request of Mr. Burnham. Several of the stars were also observed at the request of Dr. See.

In several cases, the star has been observed on one night only. It has been thought best to print these, though it is to be regretted that more observations were not obtained of them.

In several cases it has been possible to measure the angle when the distance could not be measured. This is indicated by a blank in the distance column.

No magnitudes have been assigned to the known stars.

The position of the stars refer to the epoch 1880, which is that employed by Mr. Burnham in all his work.

β 232.

$\alpha = 0^h\ 43^m\ 38^s$; $\delta = +49°\ 59'$

A and *B*

	°	″
1892.845	319.7	0.62

γ *Cassiopeae* = β 1028.

$\alpha = 0^h\ 48^m\ 50^s$; $\delta = +60°\ 1'$

A and *B*

1894.763	254.2	2.04
.766	252.7	2.24
.802	254.2	2.38
1894.78	253.7	2.22

β 1099 = B.A.C. 255.

$\alpha = 0^h\ 49^m\ 33^s$; $\delta = +59°\ 43'$

1894.706	291.8	. .
.711	290.6	0.10
.725	288.1	0.09
.763	287.3	0.08
1894.72	289.5	0.09

ϕ *Andromedae.* = $O\Sigma$ 515.

$\alpha = 1^h\ 2^m\ 30^s$; $\delta = +46°\ 36'$

1894.633	61.4	0.16
.882	63.4	0.22
1894.76	62.4	0.19

Very difficult.

DM. 3°184 (New).

$\alpha = 1^h\ 12^m\ 40^s$; $\delta = +4°\ 1'$

1894.556	10.9	1.36

This is a new pair found while observing *Mars*. It is given as $8^M.3$ in DM.

$O\Sigma$ 31.

$\alpha = 1^h\ 26^m\ 59^s$; $\delta = +7°\ 36'$

	°	″
1894.840	79.4	4.23
.843	79.2	4.08
1894.84	79.3	4.15

48 *Cassiopeae* = β 513.

$\alpha = 1^h\ 52^m\ 7^s$; $\delta = +70°\ 19'$

1893.000	316.6	0.65
.942	327.8	0.66
1893.47	322.2	0.65

γ *Andromedae* = $O\Sigma$ 38.

$\alpha = 1^h\ 56^m\ 32^s$; $\delta = +41°\ 45'$

B and *C*

1893.709	124.0	0.15
.824	122.8	0.10
.942	118.5	0.16
1893.82	121.8	0.14
1894.553	122.8	0.14
.556	121.5	0.14
.573	120.4	0.17
1894.56	121.6	0.15
1895.556	117.1	0.16
.589	120.1	0.18
.592	117.6	0.20
.608	117.6	0.21
.744	120.4	0.17
1895.62	118.6	0.18

The small star was noted to be south following.

$-$*Arietis*, 307, = β 306.

$\alpha = 2^h\ 36^m\ 52^s$; $\delta = +25°\ 8'$

	°	″
1892.840	18.5	3.10
.845	19.2	3.10
.859	18.9	3.12
1892.85	18.9	3.11

20 *Persei* = β 520.

$\alpha = 2^h\ 46^m\ 9^s$; $\delta = +37°\ 51'$

A and *B*

1893.058*		
1895.703	77°.9	less than 0″.10
.744†		

* Possibly elongated preceding and following.

† Elongation uncertain.

$O\Sigma$ 62.

$\alpha = 3^h\ 38^m\ 10^s$; $\delta = +64°\ 23'$

1895.668	100.2	0.24
.671	101.1	0.24
1895.67	100.6	0.24

β 536.

$\alpha = 3^h\ 39^m\ 8^s$; $\delta = +23°\ 49'$

1892 and 1893 examined carefully. No elongation, especially 1893 Sept. 17, when with first-class seeing and certainly identified it was perfectly round with the highest powers.

α *Tauri* = β 1031.

$\alpha = 4^h\ 29^m\ 2^s$; $\delta = +16°\ 16'$

C and *D*

	°	″
1892.802	276.0	2.15
.807	279.5	2.10
.824	277.9	2.09
1892.82	277.8	2.11

β 883.

$\alpha = 4^h\ 44^m\ 33^s$; $\delta = +10°\ 52'$

A and *B*

1894.649	173.5	0.20
.668	176.8	0.20
.671	178.7	0.16
1894.66	176.3	0.19

β 552.

$\alpha = 4^h\ 45^m\ 3^s$; $\delta = +13°\ 27'$

1894.879	179.9	0.37
.882	174.2	0.44
1894.88	177.0	0.40

26 *Aurigae* = β 1240.

$\alpha = 5^h\ 30^m\ 56^s$; $\delta = +30°\ 25'$

A and *B*

1892.824	352.6	0.23
.843	354.2	0.21
.862	355.8	0.23
1892.84	354.2	0.22
1893.942	342.5	0.16

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Procyon.

$\alpha = 7^h\ 33^m\ 1^s$; $\delta = +5°\ 32'$

	°	″
1894.151	337.4	54.52
.153	336.9	54.15
.189	337.5	54.33
.192	337.2	54.39
1894.17	337.2	54.35
1894.802	337.5	54.89
.804	337.6	55.13
.807	337.5	55.14
1894.80	337.5	55.05

9 *Argus* = β 101.

$\alpha = 7^h\ 46^m\ 13^s$; $\delta = -13°\ 35'$

1893.920	278.9	0.52
.939	285.8	0.40
.961	281.6	0.40
1894.153	282.8	0.37
.189	280.8	0.48
.192	282.4	0.42
.824	287.5	0.61
.840	288.2	0.64
.843	287.5	. .
.859	289.4	0.57
.862	283.7	0.71
1894.37	284.1	0.51
1895.170	285.0	0.58
.186	286.1	0.53
.225	285.0	0.62
.244	283.5	0.66
.285	287.6	0.54
1895.22	285.4	0.58

β 581.

$\alpha = 7^h\ 57^m\ 44^s$; $\delta = +12°\ 38'$

1893.920*	85.2	. .
.945†	86.9	0.55
1893.93	86.0	0.55

* Seeing very bad.
† Seeing very fine.

On December 3, there is a note, "A very faint nebula 3′ ±preceding."

ζ *Cancri* and β 1243.

$\alpha = 8^h\ 5^m\ 20^s$; $\delta = +18°\ 1'$

Difference of Declination.

1894.151	103.78
.153	103.93
.189	103.87
.192	103.80
1894.17	103.845
1895.093	103.84
.096	104.00
.128	103.77
1895.10	103.870

These measures are corrected for refraction.
β 1243 is north following.

β 1243.

$\alpha = 8^h\ 7^m\ 19^s$; $\delta = +18°\ 2'$

	°	″
1894.151	342.8	1.40
.153	343.7	1.36
1894.15	343.2	1.38

ο *Ursae Majoris* = β 1067.

$\alpha = 8^h\ 20^m\ 17^s$; $\delta = +61°\ 7'$

1895.093	195.5	7.27
.096	193.3	7.03
1895.09	194.4	7.15

The companion has the same proper motion as the large star.

ω *Leonis* = Σ 1356.

$\alpha = 9^h\ 22^m\ 2^s$; $\delta = +9°\ 35'$

1894.862	106.9	0.94
.879	107.1	0.94
.882	108.2	0.96
1894.87	107.4	0.95

α *Ursae Majoris* = β 1077.

$\alpha = 10^h\ 56^m\ 19^s$, $\delta = +62°\ 24'$

1893.055	310.2	1.10
.928	307.7	0.97
1893.49	308.9	1.03

OΣ 234.

$\alpha = 11^h\ 24^m\ 20^s$; $\delta = +41°\ 57'$

1894.821	120.8	0.20
.824	121.0	0.19
.840	123.4	0.24
1894.83	121.7	0.21

β 603 = B.A.C. 3992.

$\alpha = 11^h\ 42^m\ 28^s$; $\delta = +14°\ 57'$

1894.843	324.3	1.27
.859	325.1	1.05
1894.85	324.7	1.16

Σ 3123.

$\alpha = 12^h\ 0^m\ 0^s$; $\delta = +69°\ 22'$

A and *B*

1895.093	5.6	0.26
.096	13.6	0.30
.131	13.7	0.35
.170	14.6	0.35
.186	14.9	0.28
.225	11.8	0.25
1895.15	12.2	0.30

A B and *C* (new star)

1895.096	312.8	2.91
.148	310.5	2.78
.170	312.8	2.94
1895.10	312.0	2.88

The star *C* was discovered February 5, 1895. It is about 16ᴍ.

OΣ 256.

$\alpha = 12^h\ 50^m\ 17^s$; $\delta = -0°\ 18'$

	°	″
1894.879	72.3	1.05
.882	68.6	0.83
1894.88	70.4	0.94

DM. 16°2448 (New).

$\alpha = 12^h\ 56^m\ 31^s$; $\delta = +16°\ 12'$

	°	″	ᴍ	ᴍ
1895.302	41.3	2.97	9.5	9.5

25 *Canum Venat.* = Σ 1768.

$\alpha = 13^h\ 32^m\ 7^s$; $\delta = +36°\ 54'$

1895.093	132.5	1.39
.096	133.3	1.26
.131	131.9	1.40
.170	135.5	1.06
.186	136.6	0.97
.225	130.3	1.22
.266	128.0	1.34
.285	132.3	1.03
1895.18	132.5	1.18

β 612.

$\alpha = 13^h\ 33^m\ 40^s$; $\delta = +11°\ 21'$

1894.057	202.9	0.33
.074	202.8	0.28
.153	207.6	0.30
.189	208.8	0.39
1894.12	207.4	0.32

γ *Coronae Borealis* = Σ 1967.

$\alpha = 15^h\ 37^m\ 42^s$; $\delta = +26°\ 41'$

1894.534	122.2	. .
.553	122.6	0.56
.573	121.2	0.63
.575	120.1	0.63
.592	120.3	0.59
1895.473	122.3	0.66
.608	118.1	0.54
.666	127.0	0.75
.668	124.5	0.59
1895.03	122.0	0.62

ε *Coronae Borealis* = A.G.C. 7

$\alpha = 15^h\ 52^m\ 37^s$; $\delta = +27°\ 14'$

1895.666	350.2	1.91
.668	349.5	2.01
1895.67	349.8	1.96

ζ *Herculis* = Σ 2084.

$\alpha = 16^h\ 36^m\ 47^s$; $\delta = +31°\ 49'$

1894.496	47.2	1.28
.499	42.7	1.30
.515	41.6	1.15
1894.50	43.8	1.24

Δ 15.

$\alpha = 16^h\ 40^m\ 12^s$; $\delta = +43°\ 42'$

	°	″
1895.244	339.4	0.63
.266	338.9	0.50
.282	340.6	0.63
1895.26	339.6	0.59

Σ 2106.

$\alpha = 16^h\ 45^m\ 24^s$; $\delta = +9°\ 37'$

1895.302	311.1	0.38
.304	312.0	0.36
1895.30	311.5	0.37

— *Herculis*, 167, = Σ 2107.

$\alpha = 16^h\ 47^m\ 5^s$; $\delta = +28°\ 52'$

1895.329	300.9	. .
.266	301.4	0.35
.282	288.9	0.37
.285	293.8	0.37
1895.29	296.2	0.36

μ *Draconis* = β 1088.

$\alpha = 17^h\ 2^m\ 51^s$; $\delta = +54°\ 38'$

B and *C*

1895.263	190.7	12.46
.268	191.6	12.22
.304	190.0	12.39
1895.28	190.8	12.36

α *Herculis.*

$\alpha = 17^h\ 9^m\ 10^s$; $\delta = +14°\ 32'$

A and *B* (Σ 2140)

1895.455	114.6	5.02

A and *C* (A. G. Clark)

1895.455	334.4	23.53

β 416.

$\alpha = 17^h\ 10^m\ 47^s$; $\delta = -34°\ 51'$

A and *B*

1894.307	336.0	1.38
.610	336.5	1.26
.613	334.0	1.27
.633	332.5	1.42
.649	333.6	1.29
1894.56	334.5	1.30

A and *C*

1894.613	129.4	30.01

Σ 2145.

$\alpha = 17^h\ 11^m\ 47^s$; $\delta = +26°\ 43'$

A and *B*

1892.802*	49.9	0.4 ±
.807	50.2	0.40
.838	49.0	0.43
1892.81	49.7	0.41

* Distance estimated.

This star was discovered by H. C. Wilson at Carleton College Observatory with the 16-in. Brashear Refractor.

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OΣ 327.

$\alpha = 17^h\ 11^m\ 53^s$; $\delta = +56°\ 16'$

	°	″
1895.342	130.5	0.31
.362	135.1	0.27
1895.35	132.8	0.29

26 *Draconis* = β 962.

$\alpha = 17^h\ 33^m\ 44^s$; $\delta = +61°\ 48'$

1894.189	102.7	0.58

μ *Herculis* = A.C. 7.

$\alpha = 17^h\ 41^m\ 47^s$; $\delta = +27°\ 48'$

B and *C*

1894.189	36.6	1.44
.192	38.3	1.46
.227	38.1	1.51
.269	38.0	1.37
.288	41.6	1.39
.307	39.5	1.03
.323	38.0	1.50
.383	38.8	1.20
.403	40.8	0.73
.479	40.4	1.40
.496	44.8	1.38
.499	42.5	1.38
.515	42.5	1.44
.649	43.4	1.24
1894.37	40.2	1.32

Small Double Star (New)

$8^M.5$–10^M.

$\alpha = 17^h\ 45^m$; $\delta = +23°\ 50'\pm$

1895.359	239.5	1.26

99 *Herculis* = A.C. 15.

$\alpha = 18^h\ 2^m\ 28^s$; $\delta = +30°\ 33'$

1895.381	310.9	0.97
.416	307.2	1.12
.419	315.9	0.90
.438	308.2	1.18
.458	307.3	1.07
.668	307.7	1.02
1895.46	309.5	1.04

Double Star in Nebula.

$\alpha = 18^h\ 2^m\ 37^s$; $\delta = -24°\ 8'$

A and *B* (New) 10^M–12^M

1894.592	186.3	5.08
.594	183.9	5.10
1894.59	185.1	5.09

A and *C* (H. 5026) 10^M–13^M

1894.592	140.0	34.13
.594	140.0	34.17
1894.59	140.0	34.15

HERSCHEL gives estimated angle of A.C. = 130°±, but no distance or magnitudes, with note. "Coarse double in a neb." There are no other measures.

β 133 $8^M.5$–$8^M.5$.

$\alpha = 18^h\ 20^m\ 15^s$; $\delta = -26°\ 42'$

	°	″
1895.458	260.5	2.10

L 34422 (New) $9^M.0$–$9^M.5$.

$\alpha = 18^h\ 29^m\ 47^s$; $\delta = -12°\ 5'$

1895.627	130.6	0.24
.630	132.3	0.25
.666	127.9	0.22
1895.64	130.3	0.24

The magnitude in S.DM. is $8^M.2$.

Professor AITKEN has measured this star with the 36-inch at L.O. Following are his measures which he has kindly communicated to me.

	°	″	M	M
1898.430	120.4	0.34	9.0	9.5
.482	125.3	0.34	8.5	9.5
.506	124.9	0.27	8.5	9.5
1898.473	123.5	0.32	8.7	9.5

There is possibly a slight retrograde motion.

— *Draconis* 205, = β 971.

$\alpha = 18^h\ 44^m\ 24^s$; $\delta = +49°\ 18'$

1894.610*

.613†

* Single.

† Single. Slight suspicion of elongation s.p. Seeing fine. Examined with 520, 1000, 1500 and 2600.

ζ *Sagittarii.*

$\alpha = 18^h\ 55^m\ 0^s$; $\delta = -30°\ 3'$

1895.610	190.3	0.11
.630	196.9	0.15
1895.62	193.6	0.13

H.N. 126 = B.A.C. 6504.

$\alpha = 18^h\ 57^m\ 10^s$; $\delta = -21°\ 43'$

1895.589	332.5	0.37
.592	335.1	0.34
.608	332.4	0.38
.610	331.4	0.31
.627	331.4	0.30
.630	326.8	0.40
1895.61	331.6	0.35

ξ *Aquilae* = β 287.

$\alpha = 18^h\ 59^m\ 54^s$; $\delta = +13°\ 41'$

1894.383	57.0	6.18

β^1 *Capricorni.*

$\alpha = 20^h\ 14^m\ 2^s$; $\delta = -15°\ 10'$

1892.515	100.2	1.15
.518	101.5	1.17
.586*	102.9	. .
1892.687	104.6	1.21

β^1 *Capricorni.* — Cont.

$\alpha = 20^h\ 14^m\ 2^s$; $\delta = -15°\ 10'$

	°	″
1893.652	100.9	1.05
.655	107.3	1.24
.671	102.4	1.19
1894.383†	104.0	. .
.499	100.0	0.84
1893.35	102.6	1.12

* Position-angle with 12-inch.

† Too poorly seen for distance.

This star was discovered by me with the 6-inch of the Vanderbilt University in 1883 through a peculiarity in its disappearance at occultation by the moon.

The only other measures are

1884.59*	105.8	0.85
1886.72†	109.6	0.83
1888.66‡	105.9	0.84
1891.60§	108.0	0.91

* β 3 nights. †HOUGH 2 nights.
‡ β 4 nights. § β 3 nights.

β *Delphini* = β 151.

$\alpha = 20^h\ 31^m\ 55^s$; $\delta = +14°\ 11'$

A and *B*

1892.865	338.0	0.55
.879	337.3	0.43
1892.87	337.6	0.49
1893.652	340.9	0.49
.655	342.5	0.62
.709	340.8	0.50
.728	344.1	0.59
.766	342.8	0.61
1893.70	342.2	0.56
1894.342	344.4	0.51
.441	347.6	0.70
.499	347.3	0.48
.515	346.9	0.52
.534	343.0	0.68
.537	349.6	0.51
.553	346.2	0.52
.633	345.7	0.57
1894.51	346.3	0.56
1895.342	347.7	0.87
.419	353.8	0.73
.455	348.0	0.84
.473	352.0	0.57
.493	349.9	0.60
.722	347.2	0.49
1895.48	349.7	0.68

4 *Aquarii* = Σ 2729.

$\alpha = 20^h\ 45^m\ 4^s$; $\delta = -6°\ 4'$

1895.473	192.4	0.27
.493	192.1	0.29
.512	194.4	0.32
.515	192.4	0.25
.531	194.7	0.27
.589	191.9	0.27
.610	192.0	0.24
1895.53	192.8	0.27

DM. 3°4467 (New).

$\alpha = 20^h\ 52^m\ 14^s$; $\delta = +3°\ 29'$

	°	″
1891.818	84.2	1.31

Discovered and measured with the 12-inch.

δ *Equulei* = *OΣ* 535.

$\alpha = 21^h\ 8^m\ 38^s$; $\delta = +9°\ 31'$

A and *B*

1893.862	18.7	0.20
.865	21.5	0.20
1893.86	20.1	0.20

τ *Cygni* = A.G.C. 13.

$\alpha = 21^h\ 10^m\ 0^s$; $\delta = +37°\ 32'$

1894.725	345.5	0.76
.766	339.0	0.77
.782	342.6	1.02
.785	347.0	0.68
.804	347.9	0.67
1894.77	344.4	0.78

β 1140.

$\alpha = 21^h\ 14^m\ 1^s$; $\delta = +58°\ 6'$

1893.788	275.1	4.63
.824	273.2	4.17
1893.80	274.1	4.40

A photograph with the WILLARD lens, 1893 Oct. 13, shows this star to be involved in rather strong nebulosity.

β 838.

$\alpha = 21^h\ 14^m\ 51^s$; $\delta = +2°\ 37'$

1894.575	101.1	1.82

Σ 2790.

$\alpha = 21^h\ 15^m\ 55^s$; $\delta = +58°\ 7'$

A and *B*

1893.788	42.7	4.39
.824	43.0	4.52
1893.80	42.8	4.45

A and *C* (New) 15^M.

1893.830*	183.1	15.35
1898.722	183.6	15.72
.740	182.9	16.30
1898.73	183.2	16.01

* Single setting of wires.

The last two measures were made with the 40-inch.

24 *Aquarii* = β 1212.

$\alpha = 21^h\ 33^m\ 20^s$; $\delta = -0°\ 36'$

1894.612	265.2	0.54
.654	264.4	0.55
.668	266.4	0.47
.671	261.8	0.48
.689	263.8	0.53
.706	265.5	0.48
1895.744	266.0	0.51
1894.82	264.7	0.52

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κ Pegasi = β 989.

α = 21h 39m 12s ; δ = +25° 6′

	A and B °	″
1892.	131.0	0.20
1893.709	131.7	0.23
.824	123.4	0.17
1893.76	127.5	0.20
1894.342	116.9	. .
.499	117.4	0.22
.515	120.0	0.19
.534	117.4	0.16
.537	118.1	0.20
.553	117.0	0.19
.556	116.1	0.19
1894.50	117.6	0.19
1895.433	111.3	0.19
.608	106.6	0.19
.610	105.3	0.18
.647	107.5	0.16
.666	108.3	0.16
.668	107.7	0.18
1895.60	107.8	0.18
	A B and C	
1895.436	300.8	12.13
.438	301.0	12.13
.512	300.6	12.40
.515	300.3	12.21
.649	301.7	12.35
.725	300.8	12.18
.742	302.4	12.48
.744	301.2	12.36
1895.60	301.1	12.28

η Pegasi = β 1144.

α = 22h 37m 23s ; δ = +29° 36′

	B and C	
1893.011	79.3	0.22
.655	83.2	0.31
.731	83.0	0.50
.824	82.9	0.21
.865	82.2	0.31
1894.556	80.4	0.30
.573	82.8	0.48
.575	86.9	0.47
1895.744	80.2	0.20
1894.06	82.3	0.33

β 382 = B.A.C. 7983.

α = 22h 48m 18s ; δ = +44° 7′

	A and B	
1892.880	220.3	1.00
.884	225.5	0.94
1893.731	225.3	1.10
.766	225.7	1.12
1894.610	225.1	0.93
.613	219.4	0.94

β 382 = B.A.C. 7983.—Cont.

α = 22h 48m 18s ; δ = +44° 7′

	A and B °	″
1894.630	225.7	1.09
.633	220.9	0.92
1893.97	226.0	1.00

OΣ 536.

α = 22h 52m 29s ; δ = +8° 43′

1893.728	341.0	0.25
.731	344.5	0.30
.865	350.6	0.22
1893.77	345.4	0.26
1894.862	344.7	0.20
.879	344.5	0.20
.882	347.8	0.23
1894.87	345.7	0.21

2 *Piscium* (New).

α = 22h 53m 18s ; δ = +0° 19′

1894.594	92.3	3.78
.602	95.2	3.94
.725	95.4	3.77
.785	92.6	3.64
.802	92.9	4.06
1895.668	89.8	4.02
1894.86	93.0	3.87

This star was discovered by me with the 12-inch of Lick Observatory in 1889.

The following observations have been obtained with the 40-inch of the Yerkes Observatory.

1898.662	94.4	3.76
.668	91.0	3.61
.673	93.8	3.51
1898.67	93.1	3.63

Mr. BURNHAM's measures for this object are

1889.57*	93.6	3.81
1891.59†	92.6	3.27

*3 nights. †4 nights.

There seems to be no certain change in the small star, which is 13M. It has the same proper motion as 2 *Piscium*.

Ψ^1 *Aquarii* = β 1220.

α = 23h 9m 35s ; δ = −9° 44′

	B and C	
1894.613	102.1	0.20
.649	98.3	0.26
.668	105.0	0.25
.671	90.2	0.34
.706	99.7	0.36
1894.66	99.1	0.28

β 79.

α = 23h 11m 24s ; δ = −2° 10′

	A and B °	″
1894.649	91.1	1.10
.668	89.9	0.86
.671	91.4	1.10
.706	90.4	0.99
1894.67	90.7	1.01
	A and C (New) 16½M	
1894.668	157.5	15.95
.671	157.2	16.04
1894.67	157.3	16.00

72 *Pegasi* = β 720.

α = 23h 28m 0s ; δ = +30° 40′

1893.922	152.7	0.46
1894.359	154.4	0.36
.362	153.6	0.34
.610	154.4	0.36
.613	153.6	0.34
.649	153.6	0.37
1894.42	153.8	0.37

85 *Pegasi* = β 733.

α = 23h 55m 5s ; δ = +26° 27′

	A and B	
1892.879	165.4	0.73
1893.917	173.6	0.92
.920	172.8	0.96
.942	175.6	0.77
1893.92	174.0	0.88
1894.499	180.3	0.86
.515	177.2	0.80
.534	178.0	0.87
.553	181.7	0.93
.556	175.8	0.75
1894.53	178.6	0.84
1895.473	188.6	0.75
.589	189.1	1.03
.592	191.4	0.83
.608	193.0	0.84
.610	188.9	0.81
.630	186.4	. .
.666	189.9	0.68
.668	191.6	0.87
.703	188.0	0.96
.742	193.7	0.73
.744	194.9	0.77
1895.64	190.5	0.83

The following have been selected from a few double stars found here with the 40-inch, and are given now as possibly being of some interest.

β *Andromedae* 14M.

α = 1h 3m 1s ; δ = +34° 59′

	°	″
1897.649	186.1	28.42
.723	186.2	28.40
.726	186.8	28.55
1898.566	185.8	28.31
.569	185.5	28.29
1898.05	186.1	28.39

γ *Andromedae* 15M.

α = 1h 56m 32s ; δ = +41° 45′

1898.668	244.4	27.78
.740	244.9	28.10
1898.704	244.6	27.94

Capella 16M.

α = 5h 7m 50s ; δ = +45° 52′

1898.610	22.6	. .
.662	23.4	46.92
.665	22.3	46.46
.668	22.3	46.50
1898.51	22.6	46.63

DM. +32°3773 9M–9M.5.

α = 20h 13m 18s ; δ = +32° 49′

	A and B	
1897.682	197.1	0.26
1898.668	201.0	0.25
.670	201.7	0.27
1898.34	199.9	0.26
	A B and C 13M	
1897.682	257.4	. .
.690	260.8	2.91
.731	257.4	2.93
1898.673	256.7	2.87
.720	257.5	2.64
.722	258.9	2.74
1898.20	258.1	2.82

This star is near and preceding *OΣ* 405, which was also seen.

Professor AITKEN has secured the following measures with the 36-inch:

	A and B 8M.1–8M.4.	
1898.40*	198.4	0.31
	A B and C	
1898.40†	158.4	2.88

*3 Nights. †3 Nights.

Yerkes Observatory, Williams Bay, Wis., 1898 *Sept.* 27.

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