

Observations of Asteroids and of the Comet II. 1862,
made with the Equatoreal of the U. S. Naval Observatory Washington, by *J. Ferguson* and *A. Hall*.
Communicated by *Capt. Gilliss*.

In these comparisons $\Delta\alpha$ and $\Delta\delta$ express the measured differences in right-ascension and declination. — α and δ are the true places corrected for refraction and parallax, excepting in the cases of (74) and Feronia, corrected for refraction only. — The observations made by Mr. *Hall* are indicated by *h* in the column of dates.

		E c h o .					
	M. T. Wash.	Nr. of Comp.	Comp. Star	$\Delta\alpha$	$\Delta\delta$	α	δ
1862 April 17	8 ^h 48 ^m 45 ^s	8	Weisse XI. 261	+1 ^m 0 ^s 03	— 5' 27 ^{''} 02	11 ^h 17 ^m 9 ^s 89	+3° 49' 19 ^{''} 19
May 21	10 27 30	4	BAC. 3917	+0 29,15	+10 38,20	11 24 50,42	3 59 44,79
“ 22	9 57 44	20	“ —	+1 6,65	+ 7 53,44	11 25 27,92	3 56 58,93
E u p h r o s y u e . (31) — *							
April 17	10 17 48	4	Weisse XII. 461	—1 45,37	— 0 57,99	12 26 26,96	+13 40 43,85
“ 23	9 40 17	22	— “ 345	+0 11,51	+ 4 24,07	12 21 32,99	13 10 44,64
“ 29	9 5 25	14	— “ 261	+0 35,38	— 5 25,99	12 17 20,49	12 35 25,78
E u t e r p e . (27) — *							
April 23	10 50 12	5	Weisse XIII. 304	—1 4,60	— 3 31,32	13 18 33,84	—5 28 41,78
May 9	9 23 23	5	— “ 131	—2 13,52	+17 3,95	13 6 44,30	4 39 25,09
M a s s a l i a . (20) — *							
May 24	10 18 23	11	BAC. 5264	—1 50,87	—14 57,61	15 45 15,09	—19 13 16,81
“ 27	9 11 3	22	AC. 14904	+1 26,32	— 4 11,00	15 42 20,56	19 3 24,57
“ 28	9 3 23	24	“ —	+0 28,57	+ 0 52,39	15 41 22,91	19 0 5,72
“ 29	10 3 53	20	“ —	—0 31,18	— 2 34,33	15 40 23,15	18 56 38,64
H e b e . (6) — *							
June 9	10 24 00	14	Weisse XVI. 637	—0 5,01	— 2 44,75	16 33 37,25	+0 4 25,04
“ 12	9 49 4	21	— “ 562	+0 33,62	—14 29,50	16 30 47,11	—0 0 14,77
“ “	9 47 2	4	— “ 637	—2 54,43	— 7 22,62	16 30 47,80	—0 0 12,69
“ 13	9 55 5	20	— “ 562	—0 22,52	—16 33,84	16 29 50,99	—0 2 18,27
P r o s e r p i n e . (26) — *							
June 16	11 16 40	14	A Ophiuchi (seq.)	+1 26,32	— 6 32,51	17 8 22,79	—26 30 14,31
“ 18	10 25 6	22	— “ —	—0 26,15	— 6 24,14	17 6 30,28	26 30 6,03
“ 21	9 41 21	11	AC. 16420	+0 37,63	+ 2 0,51	17 3 45,15	26 29 33,67
“ 25	12 20 53	10	“ 16352	+0 2,27	+10 59,43	17 0 9,18	26 28 3,15
“ 26	9 52 40	14	“ 16352	—0 42,08	+11 23,68	16 59 24,71	—26 27 38,93
L a e t i t i a . (39) — *							
June 27	11 22 30	20	Weisse XVIII. 1449	—1 8,50	— 8 56,29	18 56 12,68	—9 0 5,42
“ 30	10 39 44	14	— “ 1294	+2 4,15	+ 1 38,19	18 53 42,81	9 7 11,84
July 3	9 50 28	14	— “ 1294	—0 28,89	— 6 55,42	18 51 9,65	9 15 45,58
“ 5	10 46 12	21	— “ 1219	+0 49,23	+11 17,41	18 49 24,58	—9 22 29,16
C o m e t I I . 1862. ☾ — *							
July 21	10 51 46	6	A.Z. 80. 176	—0 59,22	— 5 5,09	5 28 31,50	+68 42 29,31
“ 25	10 8 54	4	“ 80. 167	+13 18,07	— 1 33,84	5 36 29,59	70 14 29,66
“ “	10 43 34	10	“ 89. 41	+4 33,88	+ 3 25,65	5 36 33,80	70 15 12,12
“ 27	9 28 15	20	“ 89. 42	+5 12,39	— 7 39,37	5 41 26,65	71 6 28,76
“ 28	9 58 39	20	“ 89. 49	+1 46,33	+ 3 17,43	5 44 23,72	71 35 21,96
“ 29	8 56 4	18	“ 89. 62	—4 20,94	—14 47,71	5 47 22,42	72 3 30,62
“ 30	9 22 51	20	“ 89. 60	+1 2,53	— 0 54,90	5 50 56,38	72 35 3,29
Aug. 1	9 14 58	26	* 116 W.	+1 8,78	+ 6 23,72	5 59 11,76	73 41 14,25
“ “	9 55 4	2	A.Z. 89. 80	—9 6,01	+12 38,90	5 59 22,51	73 42 11,88
“ 4	9 52 30	20	“ 170. 112	—3 12,42	—14 8,80	6 16 30,72	+75 34 18,89

Comet II. 1862.

			Nr. of			$\Delta\alpha$		$\Delta\delta$		α		δ	
M. T. Wash.			Comp.	Comp. Star									
1862	Aug.	5	9 ^h 16 ^m 45 ^s	20	A.Z. 170. 111	+4 ^m 59 ^s 02	-14' 13" 53	6 ^h 24 ^m 0 ^s 15	+76° 13' 14" 72				
		6	9 4 5	20	170. 130	+1 30,41	+12 5,15	6 32 58,07	76 56 3,66				
		7	8 48 45	20	79. 10	+2 20,64	-7 23,24	6 43 33,59	77 39 32,85				
<i>h</i>		8	8 52 18	10	79. 37	-7 46,25	-5 32,92	6 56 30,49	78 24 36,77				
<i>h</i>		9	8 43 39	12	79. 38	+4 47,75	+1 57,73	7 12 22,85	79 10 12,45				
			9 21 52	8	79. 39	+1 8,78	+13 55,69	7 12 41,22	79 11 30,55				
<i>h</i>		11	9 16 59	8	Carrington 1186	-7 28,19	-17 52,30	7 57 22,73	80 39 46,68				
<i>h</i>				8	1187	-7 32,47	-15 54,18	7 57 23,17	80 39 48,30				
		13	9 15 31	8	1338	+2 23,65	-4 31,25	9 6 59,07	81 46 41,95				
			9 56 8	2	1338	+3 39,92	-3 47,50	9 8 14,48	81 47 26,29				
				2	1381	-8 56,66	-8 18,59	9 8 12,14	81 47 27,04				
		15	8 52 58	15	1611	-1 5,41	+6 57,77	10 43 2,51	81 54 6,15				
			9 11 12	1	1611	-0 13,85	+6 38,66	10 43 55,15	81 53 46,61				
		16	9 4 24	15	1741	+1 43,07	-0 24,17	11 35 6,65	81 20 18,30				
		19	8 37 48	14	A.Z. 197. 132	+2 46,33	-10 13,31	13 37 14,17	77 7 32,93				
<i>h</i>		25	8 48 1	14	* 117 W.	-4 24,77	+7 54,53	15 12 15,45	55 57 16,18				
<i>h</i>		26	8 9 54	10	A.Z. 1. 70	-1 13,08	+2 9,62	15 20 14,02	51 7 3,33				
			8 45 3	6	1. 70	-1 3,33	-5 22,14	15 20 23,86	50 59 32,27				
<i>h</i>		28	8 14 49	20	Radcliffe 3416	+1 27,66	-9 00,17	15 32 39,22	40 6 41,14				
<i>h</i>		29	8 54 58	10	Anon.	-1 28	+3 2,00	15 37	34 15				
<i>h</i>	Sept.	2	8 19 48	10	Weisse XV. 1057	-4 1,57	-7 54,37	15 52 13,25	11 13 13,58				
		3	8 9 50	10	1086	-2 41,30	-15 56,53	15 54 55,43	6 7 56,30				
<i>h</i>		4	9 38 44	12	1080	-0 0,18	+2 41,15	15 57 31,53					
<i>h</i>			9 41 15	6	1080		+2 41,15		+1 6 19,88				
		5	8 39 38	10	Weisse XVI. 20	-3 1,72	+3 26,65	15 59 39,63	-3 2 28,23				
		7	8 26 58	6	111	-3 29,65	+13 23,77	16 3 32,96	-10 31 48,27				
<i>h</i>		8	7 36 12	12	38	-1 48,74	-1 30,05	16 5 12,66	-13 39 4,93				

Ausonia. (63) - *

Aug. 7	9 59 19	8	BAC. 7918	+0 53,30	-6 4,39	22 36 42,76	-10 55 4,60
" 8	10 0 58	14	"	+0 2,51	-7 50,14	22 35 51,98	10 56 50,35
" 15	9 53 58	14	Weisse XXII. 619	-0 33,88	-12 19,52	22 29 26,58	11 10 54,18
" 16	10 18 32	13	" 602	-0 57,88	-13 27,46	22 28 28,22	11 13 1,20
" 26	10 22 43	14	" 346	+1 5,57	+15 23,73	22 18 20,84	-11 35 21,36

Egeria. (13) - *

Sept. 19	10 31 22	13	AC. 23126	+0 39,32	-0 18,46	23 49 24,68	-23 44 10,72
" 21	10 6 39	20	" 23120	-0 15,72	+1 14,03	23 47 21,72	-23 46 12,24
" 23	10 25 2	15	" 23120	-2 21,07	+0 5,21	23 45 15,33	-23 47 21,31

Pomona. (32) - *

<i>h</i> Sept. 26	8 57 4	5	Weisse O. 453	-2 6,09	-2 29,79	0 25 10,24	+7 53 30,91
<i>h</i> 28	8 40 49	6	" 375	-0 2,80		0 23 25,75	
<i>h</i> "	8 41 19	6	" 375		-5 40,38		+7 39 48,67
<i>h</i> 30	7 51 40	6	" 358	-0 27,38		0 21 53,87	
<i>h</i> "	7 50 8	6	" 358		+4 24,30		+7 23 50,80

Galatea. (74) - *

Oct. 2	7 58 47	11	21 Piscium	-0 18,83		23 42 9,17	
<i>h</i> "	7 57 26	12	"		-4 16,96		+0 14 49,94
" 3	7 59 7	12	"	-0 54,04	-11 17,86	23 41 33,97	+0 7 48,81

(75) - *

Sept. 29	10 17 15	13	Lalande 3344	-0 30,49	+11 49,39	1 42 15,00	+13 51 55,22
Oct. 3	9 12 19	9	Weisse I. 721	-1 38,58	+1 2,26	1 38 53,85	13 47 20,55
" 5	10 18 21	6	* 118 W.	+0 34,71	+1 7,84	1 37 1,82	13 45 53,83
" 31	8 20 3	5	Weisse I. 188	+0 41,62	-9 24,39	1 13 43,64	12 53 36,43
Nov. 2	8 30 48	6	"	-0 41,26	-13 44,92	1 12 20,74	+12 49 16,47

Feronia.

	M. T. Wash.	Nr. of Comp.	Comp. Star	$\Delta\alpha$	$\Delta\delta$	α	δ
1862 Oct. 17	9 ^h 38 ^m 20 ^s	4	Lalande 205	-0 ^m 47 ^s 31	+ 6' 36" 19	0 ^h 8 ^m 9 ^s 39	+3 ^o 36' 12" 34
" 18	8 40 50	14	— : —	-1 21,49	- 1 8,41	0 7 35,20	3 28 27,02
" 21	8 19 27	5	Weisse O. 51	+1 52,32	17 7,17	0 5 57,84	3 5 16,47
" 23	9 13 53	10	— : 90	-1 5,38	+12 28,37	0 5 0,31	2 50 33,18
" 27	8 40 25	5	Weisse XXIII. 1250	+2 4,56	-15 54,40	0 3 26,83	+2 25 1,93

Mean places for 1860,0 of Comparison-Stars:

	Mag.	α	Authority	δ	Authority
Weisse XI. 261	9,5	11 ^h 16 ^m 0 ^s 86	Weisse Cat.	+ 3 ^o 55' 40" 75	Weisse Cat.
BAC. 3917	7	11 24 12,30	B.A.Cat.	+ 3 49 58,96	B. A. Cat.
Weisse XII. 461	9	12 28 3,20	Weisse Cat.	+13 42 37,55	Weisse Cat.
— 345	9	12 21 12,37	— : —	+13 7 15,68	— : —
— 261	9	12 16 36,11	— : —	+12 41 47,05	— : —
Weisse XIII. 304	8,5	13 19 29,03	— : —	- 5 34 17,42	— : —
— 131*)	8	13 8 48,42	— : —	- 4 55 34,81	— : —
BAC. 5264	7	15 46 52,27	B.A.Cat.	-18 57 54,85	B. A. Cat.
AC. 14904	9	15 40 43,58	Argelander-Oeltzen	-18 58 42,34	Argelander-Oeltzen
Weisse XVI. 637	9	16 33 32,46	Weisse and Bond	+ 0 7 27,38	Weisse and Bond
— 562	9	16 30 3,73	— : —	+ 0 14 34,13	— : —
A Ophiuchi (seq.)	6	17 6 44,58	Argel.-Oeltz.	-26 23 32,84	Argel. - Oeltz.
AC. 16420	7,5	17 2 55,68	— : —	-26 31 24,69	— : —
" 16352	9	16 59 54,87	— : —	26 38 53,10	— : —
Weisse XVIII. 1449	8	18 57 10,60	Weisse Cat.	- 8 51 29,13	Weisse Cat.
— 1294	9	18 51 27,98	— : —	- 9 9 9,30	— : —
— 1219	9	18 48 24,63	— : —	- 9 34 5,99	— : —
AZ. 80. 176	8,5	5 29 15,15	Argel. - Oeltz.	+68 47 32,00	Argel. - Oeltz.
— 167	8	5 22 54,96	— : —	+70 15 59,63	— : —
AZ. 89. 41	9	5 31 43,59	— : —	+70 11 43 81	— : —
— 42 †)	7	5 35 57,05	— : —	+71 14 7,65	— : —
— 49	9	5 42 20,10	— : —	+71 32 3,96	— : —
— 62	9	5 51 25,36	— : —	+72 18 21,83	— : —
— 60	8	5 49 36,08	— : —	+72 35 59,81	— : —
* 116 W.	9	5 57 44,23	Washington. Transit	+73 34 52,88	Wash. Equatoreal
AZ. 89. 80	8	6 8 10,22	Argel. - Oeltz.	+73 29 36,65	Argel. - Oeltz.
" 170. 112	8	6 19 23,09	— : —	+75 48 36,57	— : —
" 111	9	6 18 40,16	— : —	+76 27 36,96	— : —
" 130	9	6 31 6,46	— : —	+76 44 7,30	— : —
" 79. 10	9	6 40 50,55	— : —	+77 47 8,64	— : —
" 37	7	7 3 53,94	— : —	+78 30 26,18	— : —
" 38	9	7 7 11,42	— : —	+79 8 31,59	— : —
" 39	8	7 11 9,71	Carrington Cat.	+78 57 51,17	Carrington Cat.
Carrington 1186	10	8 4 27,54	— : —	+80 58 6,44	— : —
" 1187	10	8 4 31,70	— : —	+80 56 9,82	— : —
" 1338	10	9 4 13,71	— : —	+81 51 47,72	— : —
" 1381	4,5	9 16 49,00	— : —	+81 56 22,39	— : —
" 1611	10,3	10 43 55,74	— : —	+81 47 50,23	— : —
" 1741	9,5	11 33 14,32	— : —	+81 21 26,21	— : —

*) This star is probably Lalande 24610. — The α in Weisse being 12 seconds in excess.

†) This star is 6159 of Oeltzens Cat. — The declination as there given is 10 seconds in excess.

	Mag.	α	Authority	δ	Authority
AZ. 197. 132	8,5	13 34 25,23	Argel. - Oeltz.	+77° 18' 24" 83	Argel. - Oeltz.
* 117 W.	9	15 16 34,24	Wash. Equatovel	+55 49 39,92	Wash. Equatovel
AZ. 1. 70	7,5	15 21 20,61	Argel. - Oeltz.	+51 5 11,80	Argel. - Oeltz.
Radcliffe 3416	6,9	15 31 4,14	Radcliffe Cat.	+40 15 56,20	Radcliffe Cat.
Anon.	9	15 39		+34 13	
Weisse XV. 1057	9	15 56 5,51	Weisse Cat.	+11 21 15,42	Weisse Cat.
— 1086	8	15 57 27,19	— : —	+ 6 24 1,11	— : —
— 1080	7	15 57 21,67	— : —	+ 1 3 47,27	— : —
Weisse XVI. 20	5	16 2 31,20	— : —	— 3 5 46,20	— : —
— 111	8	16 6 52,05	— : —	—10 18 12,91	— : —
— 38	7,5	16 3 13,41	— : —	—13 37 22,52	— : —
BAC. 7918	7	22 35 39,19	Rümker Cat.	—10 50 7,76	Rümker Cat.
Weisse XX. 619	8	22 29 49,98	— : —	—10 58 42,09	— : —
— 602	8	22 29 15,58	— : —	—11 0 41,30	— : —
— 346	8	22 17 4,50	Weisse Cat.	—11 51 53,19	Weisse Cat.
AC. 23126	9	23 48 34,62	Argel. - Oeltz.	—23 45 5,30	Argel. - Oeltz.
: 23120	9	23 47 25,63	— : —	—23 48 39,25	— : —
Weisse O. 453	9	0 27 5,76	Weisse Cat.	+ 7 54 49,21	Weisse Cat.
— 375	8,5	0 23 17,97	: —	+ 7 44 17,33	: —
— 358	9	0 22 10,66	: —	+ 7 20 14,15	: —
21 Piscium	5	23 42 17,45	Bonds Zones	+ 0 17 54,82	Bonds Zones
3344 Lalande	8	1 42 34,36	Paris. Annals Obs.	+13 39 3,85	Paris. Annals Obs.
Weisse I. 721	9	1 40 21,24	Weisse Cat.	+13 53 57,06	Weisse Cat.
* 118 W.	9,3	1 36 15,92	Wash. Equat.	+13 43 43,01	Wash. Equat.
Weisse I. 188	9	1 12 50,79	Weisse Cat.	+13 1 53,78	Weisse Cat.
Lalande 205	8	0 8 45,96	Lalande Cat.	+ 3 28 25,28	Lalande Cat.
Weisse O. 51	8	0 3 54,83	Weisse Cat.	+ 3 21 13,87	Weisse Cat.
90	8	0 5 54,98	— : —	+ 2 36 54,41	— : —
Weisse XXIII. 1250	8,5	0 1 11,60	— : —	+ 2 39 46,67	— : —

Washington, 1862 Dec. 20.

Observations of Asia (67), taken with the Equatoreal of the Liverpool Observatory.

1862	Greenwich Mean Time	AR (67)	$\log \frac{p}{P}$	N. P. D. (67)	$\log \frac{q}{P}$	Star of comp.
Dec. 10	9 ^h 50 ^m 43 ^s .4	3 ^h 34 ^m 14 ^s .84	—7,829	77° 6' 15" 2	—9,8114	BAC. 1241
: :	10 20 37,7	3 34 13,76	—7,154	77 6 19,4	—9,8104	— —
: :	10 50 32,0	3 34 12,51	+7,592	77 6 23,2	—9,8105	— —
: 11	10 23 55,2	3 33 28,76		77 9 15,0	—9,8108	— —
: :	10 53 49,7	3 33 27,42	+7,727	77 9 17,5	—9,8114	— —
: 17	9 56 20,9	3 29 30,02		77 24 1,3	—9,8130	— 1087
: :	10 11 18,4	3 29 29,39	+7,426	77 24 2,3	—9,8130	— —
: :	10 26 16,2	3 29 29,02	+7,726	77 24 4,1	—9,8136	— —

The observations are corrected for refraction. The corrections to be applied for parallax in time and arc are represented by p and q . P is the equatoreal horizontal parallax.

The following are the assumed mean places of the stars of comparison for 1862 January 0:

	AR	NPD	Authority
BAC. 1241	3 ^h 53 2 ^m 34 ^s	—77° 54' 9" 45	Greenwich Observations
— 1087	3 23 15,49	—77 32 20,39	— —

John Hartnup.