

MEAN PLACES OF STARS, J 2017.5
 FOR JULY 2^d.375 TERRESTRIAL TIME
 (The Annual Variations are for the middle of the year)

Cat. No. FK5	BS =HR No.	Star	Mag.	Spec- tral Type	Right Ascension			Annual Variation	Annual Proper motion	Declination			Annual Variation	Annual Proper motion
					h	m	s			°	'	"		
1	15	α Andromedae*	2.06	B9 II	0	09	17.8	3.116	(0.0001)	+29	11	13.19	+19.86	(0.001)
2	21	β Cassiopeiae*	2.27	F2 IV	0	10	07.4	3.243	+685	+59	14	46.44	19.84	-181
3	25	ε Phoenicis	3.88	K0 III	0	10	17.7	3.026	+118	-45	39	03.54	19.84	-181
7	39	γ Pegasi*	2.83	B2 IV	0	14	08.4	3.098	+2	+15	16	50.71	19.99	-12
9	74	ι Ceti	3.56	K1.5 III	0	20	19.2	3.056	-9	-8	43	37.35	19.93	-36
11	98	β Hydri	2.80	G0V	0	26	38.8	3.060	+6642	-77	09	21.29	20.23	+324
12	99	α Phoenicis	2.39	K0.5 III b	0	27	08.7	2.950	+183	-42	12	40.36	+19.51	-396
17	153	ζ Cassiopeiae	3.66	B2 IV	0	37	57.4	3.381	+22	+53	59	34.83	19.76	-9
20	165	δ Andromedae	3.27	K3 III	0	40	16.1	3.226	+106	+30	57	23.29	19.64	-92
21	168	α Cassiopeiae*	2.23	K0- IIIa	0	41	30.7	3.447	+64	+56	37	59.04	19.68	-32
22	188	β Ceti*	2.04	K0III	0	44	28.0	3.008	+164	-17	53	26.96	19.70	+32
33	269	μ Andromedae	3.87	A5 V	0	57	43.9	3.354	+130	+38	35	38.03	19.44	+33
32	264	γ Cassiopeiae*	2.47	B0 IVpe	0	57	46.7	3.675	+36	+60	48	39.95	+19.40	-5
35	280	α Sculptoris	4.31	B7IIIp	0	59	26.9	2.885	+17	-29	15	47.65	19.37	+4
40	334	η Ceti	3.45	K1 III	1	09	28.2	3.019	+147	-10	05	23.64	18.99	-138
42	337	β Andromedae*	2.06	M0III	1	10	43.1	3.382	+146	+35	42	46.36	18.98	-114
1033	361	ζ Piscium*	5.24	A7IV	1	14	38.9	3.143	+97	+7	40	02.71	18.93	-56
47	402	θ Ceti	3.60	K0 III	1	24	53.9	3.001	-53	-8	05	36.92	18.46	-218
48	403	δ Cassiopeiae	2.68	A5 III-IVv	1	26	58.6	3.984	+400	+60	19	32.18	+18.56	-51
49	429	γ Phoenicis	3.41	Mo- IIIa	1	29	07.4	2.598	-13	-43	13	44.54	18.34	-208
1044	440	δ Phoenicis	3.95	G9 III	1	31	58.7	2.490	+144	-48	58	56.04	18.60	+151
50	437	η Piscium	3.62	G7 IIa	1	32	25.4	3.222	+19	+15	26	07.60	18.43	-6
54	472	α Eridani*	0.46	B6Vep	1	38	21.8	2.226	+117	-57	08	53.65	18.19	-35
52	464	51 Andromedae	3.57	K3 III	1	39	04.6	3.719	+65	+48	42	58.38	18.08	-113
59	509	τ Ceti	3.50	G8.5 V	1	44	52.9	2.789	-1190	-15	50	44.97	+18.84	+858
62	539	ζ Ceti	3.73	K0 III	1	52	19.5	2.964	+28	-10	14	57.12	17.64	-39
64	544	α Trianguli	3.41	F5III	1	54	05.1	3.439	+9	+29	39	48.25	17.37	-235
66	553	β Arietis*	2.64	A5 V	1	55	36.6	3.329	+68	+20	53	34.28	17.43	-111
63	542	ε Cassiopeiae	3.38	B3III	1	55	40.4	4.391	+48	+63	45	19.40	17.52	-21
68	566	χ Eridani	3.70	G8IV	1	56	38.3	2.329	+730	-51	31	20.34	17.79	+291
72	591	α Hydri	2.86	F0IV	1	59	19.3	1.889	+369	-61	29	06.49	+17.41	+26
71	585	ν Ceti	4.00	F7III	2	00	49.8	2.827	+97	-20	59	37.20	17.30	-24
70	580	50 Cassiopeiae	3.98	A2V	2	04	57.9	5.264	-99	+72	30	17.56	17.16	+22
73	603	γ Andromed.* p	2.26	K3- IIB	2	04	58.9	3.712	+40	+42	24	46.38	17.08	-52
74	617	α Arietis*	2.00	K2 III	2	08	09.8	3.398	+138	+23	32	39.78	16.84	-148
75	622	β Trianguli	3.00	A5 III	2	10	35.5	3.593	+122	+35	04	09.29	16.83	-40
82	674	φ Eridani	3.56	B8IV- V	2	17	08.1	2.142	+102	-51	25	54.43	+16.53	-27
79	664	γ Trianguli	4.01	A1Vnn	2	18	21.6	3.589	+38	+33	55	38.31	16.45	-51
91	779	δ Ceti	4.07	B2 IV	2	40	22.7	3.072	+9	-0	15	13.90	+15.33	-4

* No. 1 : *Alpheratz*, Uttara Bhadrpada - 2
 No. 2 : *Caph*
 No. 7 : *Algenib*, Uttara Bhadrpada - 1
 No. 21 : *Schedar* . Mag. 2.1 to 2.6
 No. 22 : *Deneb Kaitos or Diphda*
 No. 32 : *Cih* . Mag. 1.6 to 3.2

No. 42 : *Mirach*
 No. 1033 : *Revati*
 No. 54 : *Achernar*
 No. 66 : *Sheratan*, Asvini
 No. 73 : *Almach*, Mag. f. 5.1
 No. 74 : *Hamal*

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					h	m	s			°	'	"		
1075	794	τ Eridani	4.11	K0III	2	41	21.5	2.367	(0.0001) +120	-39	46	52.41	+15.24	(0.001) -32
94	801	35 Arietis	4.66	B3 V	2	44	29.0	3.539	+6	+27	46	50.21	15.09	-12
101	841	β Fornacis	4.46	G8 5 IIIb	2	49	49.4	2.512	+71	-32	19	59.53	14.94	+155
100	838	41 Arietis*	3.63	B8 Vn	2	51	01.1	3.549	+50	+27	19	53.83	14.60	-118
99	834	η Persei	3.76	K3Ib	2	51	59.2	4.426	+20	+55	58	00.76	14.64	-14
907	424	α Ursae Mins.*	2.02	F7:Ib-Iiv	2	53	35.8	82.734	+2121	+89	20	16.70	14.54	-19
103	854	τ Persei	3.95	G4 III+	2	55	30.6	4.297	0	+52	49	58.34	+14.44	-5
104	874	η Eridani	3.89	K1 III	2	57	17.0	2.936	+53	-8	49	45.85	14.12	-220
106	897	θ Eridani* p	3.25	A3 IV-V	2	58	55.5	2.276	-39	-40	14	07.10	14.26	+19
1085	919	τ' Eridani	4.09	A3IV- V	3	03	09.8	2.647	-105	-23	33	23.94	13.92	-54
107	911	α Ceti*	2.53	M1.5 IIIa	3	03	11.8	3.144	-6	+4	09	26.60	13.89	-78
108	915	γ Persei	2.93	G8 III+	3	06	04.5	4.389	0	+53	34	25.27	13.79	-5
109	921	ρ Persei*	3.39	M4 II	3	06	18.3	3.870	+111	+38	54	24.88	+13.67	-106
111	936	β Persei*	2.12	B8V	3	09	18.9	3.930	+3	+41	01	18.78	13.58	-1
120	1017	α Persei*	1.79	F5 Iab	3	25	34.9	4.319	+25	+49	55	19.50	12.48	-25
121	1030	ο Tauri	3.60	G6 III	3	25	45.4	3.238	-45	+9	05	21.70	12.41	-78
123	1038	ξ Tauri	3.74	B9 Vn	3	28	07.2	3.261	+40	+9	47	33.41	12.29	-39
127	1084	ε Eridani	3.73	K2 Vk	3	33	45.4	2.832	-658	-9	23	59.90	11.96	+22
135	1136	δ Eridani	3.54	B1III-IV	3	44	05.3	2.880	-61	-9	42	18.66	+11.95	+745
131	1122	δ Persei	3.01	B5 III	3	44	10.7	4.302	+28	+47	50	31.41	11.16	-34
141	1175	β Reticuli	3.85	K2 III	3	44	25.5	0.772	+490	-64	45	08.01	11.25	+75
136	1142	17 Tauri	3.70	B6 IIIe	3	45	55.1	3.577	+14	+24	10	01.56	11.02	-46
134	1135	ν Persei	3.77	F5 Iab	3	46	23.3	4.101	-13	+42	37	56.52	11.03	-2
146	1208	γ Hydri	3.24	M2 III	3	46	59.2	-0.858	+116	-74	11	06.11	11.10	+114
139	1165	η Tauri*	2.87	B7 III	3	48	31.7	3.580	+14	+24	09	28.60	+10.83	-46
142	1178	27 Tauri	3.63	B8 III	3	50	12.4	3.581	+13	+24	06	20.28	10.71	-47
144	1203	ζ Persei	2.85	B1 Ib	3	55	14.2	3.788	+4	+31	56	03.20	10.37	-10
149	1231	γ Eridani	2.95	M 1 IIIb	3	58	50.8	2.803	+42	-13	27	35.22	10.00	-111
147	1220	ε Persei	2.89	B 0.5 V+	3	59	02.0	4.047	+16	+40	03	33.69	10.07	-26
148	1228	ξ Persei	4.04	O 7.5 IIIe	4	00	06.3	3.911	+2	+35	50	23.58	10.01	0
150	1239	λ Tauri	3.47v	B3 V+	4	01	39.1	3.333	-4	+12	32	18.85	+9.88	-12
151	1251	ν Tauri	3.91	A0.5 Va	4	04	05.4	3.199	+3	+6	02	11.97	9.71	-3
152	1273	48 Persei	4.04	B3 Ve	4	09	56.3	4.382	+20	+47	45	27.46	9.23	-31
155	1326	α Horologii	3.86	K2 III	4	14	35.0	1.992	+41	-42	15	07.56	8.69	-209
156	1336	α Reticuli	3.35	G8II-III	4	14	39.3	0.788	+65	-62	25	49.30	8.94	+45
159	1346	γ Tauri	3.65	K0III	4	20	47.5	3.423	+80	+15	40	06.79	8.38	-25
162	1373	δ Tauri	3.76	K0III	4	23	56.8	3.469	+75	+17	34	55.91	+8.13	-30
1121	1393	43 Eridani	3.96	K4 III	4	24	41.7	2.257	+56	-33	58	37.73	8.15	+50
164	1409	ε Tauri	3.54	G9.5 III	4	29	38.5	3.513	+76	+19	13	04.25	7.66	-38
171	1465	α Doradus	3.27	A0III _s	4	34	22.6	1.304	+60	-55	00	34.00	7.31	-4
170	1464	ν ^c Eridani	3.82	G8IIIa	4	36	13.9	2.336	-35	-30	31	38.79	+7.15	-12

* No. 907 : (Nb) : *Polaris*, *Dhruva*
 No. 100 : *Bharani*
 No. 106 : *Acamar*.
 No. 107 : *Menkar*
 No. 109 : *Mag. 3.3 to 4.0.*

No. 111 : *Algol*, *Mag. 2.1 to 3.4.*
 No. 120 : *Mirphak*.
 No. 139 : *Alcyone*, *Krittika*.

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					h	m	s			°	'	"			
168	1457	α Tauri*	0.85	K5III	4	36	55.6	3.451	(0.0001)	+44	+16	32	35.16	+6.92	(0.001)
172	1481	53 Eridani	3.87	K1III	4	38	59.0	2.751		-52	-14	16	14.86	6.78	-155
1129	1502	α Caeli	4.45	F2 V	4	41	07.6	1.937		-126	-41	49	52.32	6.69	-77
1134	1543	π ' Orionis	3.19	F6 V	4	50	47.5	3.263		+313	+6	59	25.74	5.97	+11
179	1552	π ' Orionis	3.69	B2 III+	4	52	08.4	3.201		-1	+5	38	01.35	5.85	+1
180	1567	π ' Orionis	3.72	B3 III+	4	55	09.9	3.131		0	+2	28	04.91	5.59	+0
178	1542	α Camelopardi	4.29	O9.5 I ae	4	55	48.1	6.010		-1	+66	22	11.99	+5.55	+6
181	1577	ι Aurigae	2.69	K3 II	4	58	08.2	3.918		+3	+33	11	31.99	5.33	-18
183	1605	ϵ Aurigae*	2.99V	A8 Iab	5	03	13.7	4.319		-1	+43	50	50.69	4.91	-4
1137	1612	ζ Aurigae	3.75	K4Ib-II+	5	03	42.3	4.207		+8	+41	05	58.76	4.85	-22
182	1603	β Camelopardi	4.03	G1Ib-II	5	04	58.9	5.365		-9	+60	27	56.32	4.75	-16
186	1654	ϵ Leporis	3.19	K4 III	5	06	12.2	2.543		+18	-22	20	54.96	4.59	-74
185	1641	η Aurigae	3.17	B3 V	5	07	44.7	4.220		+26	+41	15	23.17	+4.46	-68
188	1666	β Eridani*	2.79	A3III	5	08	42.7	2.953		-63	-5	03	54.16	4.37	-81
1144	1702	μ Leporis	3.31	B9IV	5	13	43.1	2.698		+30	-16	11	09.49	3.99	-26
194	1713	β Orionis*	0.12	B8 Iab	5	15	22.8	2.887		0	-8	10	57.52	3.88	-1
193	1708	α Aurigae*	0.08	G5IIIe+	5	17	59.1	4.444		+72	+46	00	50.38	3.23	-425
195	1735	τ Orionis	3.60	B5 III	5	18	27.4	2.917		-10	-6	49	36.13	3.60	-8
1147	1765	22 Orionis	4.73	B2IV-V	5	22	39.4	3.067		0	-0	21	59.51	+3.25	-1
201	1790	γ Orionis*	1.64	B2 III	5	26	04.2	3.222		-6	+6	21	50.94	2.94	-14
202	1791	β Tauri*	1.65	B7 III	5	27	24.0	3.799		+17	+28	37	14.17	2.67	-175
204	1829	β Leporis	2.84	G5 II	5	28	59.8	2.573		-3	-20	44	47.77	2.61	-89
214	1953	γ Mensae	5.19	K2 III	5	31	11.9	-2.342		+319	-76	19	39.27	2.79	+282
206	1852	δ Orionis*	2.23	O9.5 II+	5	32	54.1	3.069		+1	-0	17	14.86	2.36	-2
207	1865	α Leporis*	2.58	F0 Ib	5	33	30.2	2.649		+1	-17	48	39.17	+2.31	+2
212	1922	β Doradus	3.76v	F6Ia	5	33	46.7	0.528		+3	-62	28	43.17	2.30	+9
(GC)	1879	λ Orionis*	3.54	O8 III	5	36	06.2	3.308		-1	+9	56	40.18	2.08	-2
209	1899	ι Orionis	2.77	O9 III	5	36	17.4	2.938		0	-5	53	58.72	2.07	+1
210	1903	ϵ Orionis*	1.70	B0 Iab	5	37	06.1	3.048		+1	-1	11	31.40	2.00	-2
211	1910	ζ Tauri	3.00	B2IV	5	38	41.5	3.590		0	+21	09	06.05	1.84	-21
215	1956	α Columbae*	2.64	B7 IVe	5	40	17.0	2.176		+5	-34	03	56.85	+1.70	-26
1154	2015	δ Doradus	4.35	A7V	5	44	48.3	0.114		-49	-65	43	44.55	1.34	+8
217	1983	γ Leporis	3.60	F6 V	5	45	11.6	2.503		-212	-22	26	37.58	0.92	-369
219	1998	ζ Leporis	3.55	A2 IV-V(n)	5	47	45.0	2.721		-11	-14	48	59.78	1.07	-1
220	2004	κ Orionis*	2.06	B0Iab	5	48	35.2	2.848		+1	-9	39	52.70	1.00	-2
223	2040	β Columbae	3.12	K1 IIICN+I	5	51	34.7	2.119		+49	-35	45	45.81	1.14	+401
222	2035	δ Leporis	3.81	K1IVFe	5	52	04.5	2.582		+161	-20	52	43.54	+0.04	-649
224	2061	α Orionis*	0.5	M2Iab	5	56	07.2	3.251		+17	+7	24	32.17	+0.35	+9

* No. 168 : *Aldebaran, Rohini*
 No. 183 : *Mag. 2.9 to 3.8.*
 No. 188 : *Cursa .*
 No. 194 : *Rigel.*
 No. 193 : *Capella , Brahmahridaya.*
 No. 201 : *Bellatrix.*
 No. 202 : *El Nath , Agni.*
 No. 206 : *Mintaka .*

No. 207 : *Arneb .*
 No. GC : *Mrgasiras .*
 No. 210 : *Alnilam.*
 No. 215 : *Phakt .*
 No. 220 : *Saiph .*
 No. 224 : *Betelgeuse , Mag. 0.4 to 1.3 Ardra.*

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226	2085	η Leporis	3.71	F2 V	5	57	12.2	2.735	(0.0001)	-28	-14	09	56.54	+0.38	+139
229	2120	η Columbae	3.96	K0III	5	59	41.0	1.839		+20	-42	48	54.19	+0.01	-14
227	2088	β Aurigae*	1.90	A2IV+	6	00	48.8	4.404		-54	+44	56	50.52	-0.07	0
225	2077	δ Aurigae*	3.72	K0 III	6	00	58.1	4.943		+92	+54	17	02.38	0.21	-126
1163	2134	ι Geminorum	4.16	G5III	6	05	11.1	3.649		-6	+23	15	39.29	0.55	-100
1168	2219	κ Aurigae	4.35	G8.5IIIb	6	16	29.6	3.823		-57	+29	29	24.00	1.70	-262
240	2282	ζ Canis Maj.	3.02	B2.5V	6	20	59.1	2.306		+7	-30	04	19.77	-1.83	+3
243	2294	β Canis Maj.*	1.98	B1 II/III	6	23	28.2	2.644		-4	-17	57	56.64	2.05	0
241	2286	μ Geminorum	2.88	M3 III	6	24	01.1	3.630		+39	+22	30	10.96	2.21	-111
245	2326	α Carinae*	-0.72	F0II	6	24	20.5	1.333		+25	-52	42	21.02	2.10	+21
244	2298	8ε Monocerotis	4.44	A5 IV	6	24	41.7	3.181		-12	+4	34	57.42	2.14	+11
1173	2343	ν Geminorum	4.15	B6 IIIe	6	30	00.1	3.562		-5	+20	11	58.32	2.63	-14
252	2451	ν Puppis	3.17	B8 III	6	38	17.8	1.838		+2	-43	12	43.54	-3.34	-6
251	2421	γ Geminorum*	1.93	A0 IV	6	38	43.4	3.465		+29	+16	22	58.48	3.41	-42
254	2473	ε Geminorum	2.98	G8 Ib	6	45	00.5	3.689		-4	+25	06	44.04	3.92	-13
257	2491	α Canis Maj* cg	-1.46	A1V	6	45	55.1	2.643		-386	-16	44	28.30	5.19	-1204
256	2484	ξ Geminorum	3.36	F5 IV	6	46	16.3	3.367		-79	+12	52	31.07	4.21	-191
262	2550	α Pictoris	3.27	A8VmkA6	6	48	22.2	0.613		-96	-61	57	37.57	3.93	+269
263	2553	τ Puppis	2.93	K1 III	6	50	22.2	1.490		+38	-50	38	10.09	-4.44	-70
1180	2538	κ Canis Maj.	3.96	B1.5IVe	6	50	29.7	2.243		-5	-32	31	46.70	4.38	+4
261	2540	θ Geminorum	3.60	A3III	6	53	56.5	3.949		-2	+33	56	18.66	4.72	-48
268	2618	ε Canis Maj.*	1.50	B2 Iab	6	59	18.8	2.360		+3	-28	59	48.71	5.13	+3
1183	2646	σ Canis Maj.	3.47	M1.5Iab	7	02	25.0	2.392		-4	-27	57	39.20	5.39	+5
270	2653	ο ⁺ Canis Maj.	3.02	B3 Ia	7	03	45.3	2.507		-3	-23	51	35.69	5.50	+3
269	2650	ζ Geminorum*	3.79v	G0Ibv	7	05	08.7	3.555		-6	+20	32	35.39	-5.62	0
1189	2736	γ ⁺ Volantis	3.78	K0III	7	08	35.6	-0.531		+47	-70	31	38.01	5.80	+106
273	2693	δ Canis Maj.	1.86	F8 Iab	7	09	06.2	2.441		-2	-26	25	19.11	5.95	+4
1187	2714	22δ Monocerotis	4.15	A2V	7	12	45.5	3.064		-1	-0	31	22.73	6.25	+5
281	2803	δ Volantis	3.98	F6II	7	16	49.0	-0.047		-12	-67	59	21.33	6.59	+5
278	2773	π Puppis	2.70	K3Ib	7	17	45.7	2.121		-8	-37	07	47.30	6.67	+4
277	2763	λ Geminorum	3.58	A3V	7	19	05.9	3.445		-33	+16	30	26.73	-6.82	-37
279	2777	δ Geminorum	3.53	F0 IV	7	21	10.0	3.578		-19	+21	56	55.19	6.96	-12
283	2827	η Canis Maj.	2.45	B5 Ia	7	24	47.3	2.375		-3	-29	20	17.47	7.24	+5
282	2821	ι Geminorum	3.79	G9 IIIb	7	26	48.7	3.719		-93	+27	45	42.55	7.50	-86
285	2845	β Canis Min.*	2.90	B8Ve	7	28	05.9	3.251		-35	+8	15	09.97	7.55	-38
1194	2878	ρ Puppis	3.25	K5 III	7	29	47.2	1.905		-50	-43	20	15.55	7.46	+187
287	2891	α Gemino.* cg	1.95	A2Vm	7	35	42.9	3.820		-135	+31	50	55.32	-8.23	-98
291	2943	α C. Min.* cg	0.38	F5 IV-V	7	40	13.0	3.137		-477	+5	10	44.27	9.51	-1022
297	3024	ζ Volantis	3.95	K0III	7	41	35.7	-0.781		+67	-72	38	52.13	-8.58	+18

* No. 225 : Prajapati.
 No. 227 : Menkalinam .
 No. 243 : Mirzam.
 No. 245 : Canopus , Agastya.
 No. 251 : Alhena .

No. 257 : Sirius , Lubdhaka Mag. - 1.46.
 No. 268 : Adhara.
 No. 269 : Mekkuda Mag. 3.7 to 4.1.
 No. 285 : Gomeisa.
 No. 287 : Castor , Punarvasu-2, Mag. 1.95 & 2.
 No. 291 : Procyon , Mag. 0.38 & 11.3.

MEAN PLACES OF STARS, J 2017.5
 FOR JULY 2^d.375 TERRESTRIAL TIME
 (The Annual Variations are for the middle of the year)

Cat. No. FK5	BS =HR No.	Star	Mag.	Spec- tral Type	Right Ascension			Annual Variation	Annual Proper motion	Declination			Annual Variation	Annual Proper motion	
					h	m	s			°	'	"			"
293	2970	26α Monocerotis	3.93	G9 III	7	42	05.0	2.867	(0.0001)	-49	-9	35	35.06	-8.65	-19
294	2985	κ Geminorum	3.57	G8 III	7	45	30.1	3.615		-24	+24	21	16.71	8.96	-52
295	2990	β Geminorum*	1.14	K0IIIb	7	46	23.1	3.663		-474	+27	58	57.17	9.02	-45
1204	3045	ξ Puppis	3.34	G6 Ia	7	50	01.8	2.525		-2	-24	54	16.84	9.26	-2
301	3080	213 G. Puppis	3.73	K1/2II+	7	52	49.2	2.064		-8	-40	37	18.41	9.47	+3
303	3117	χ Carinae	3.47	B3IVp	7	57	13.4	1.524		-32	-53	01	47.45	9.79	+21
306	3165	ζ Puppis	2.25	O4If(m)p	8	04	12.0	2.111		-24	-40	03	11.93	-10.33	+12
308	3185	ρ Puppis	2.81	F6IIp	8	08	17.4	2.557		-61	-24	21	20.35	10.59	+49
309	3207	γ Velorum	1.78	WC8+O7.5	8	10	04.3	1.850		-4	-47	23	20.01	10.77	+6
312	3249	β Cancri	3.52	K 3:IIIv	8	17	27.8	3.250		-30	+9	07	49.66	11.36	-49
315	3307	ε Carinae	1.86	K2III	8	22	52.3	1.225		-35	-59	33	58.79	11.69	+14
319	3347	β Volantis	3.77	K2 III	8	25	55.3	0.634		-60	-66	11	44.16	12.07	-155
316	3314	Br 1197 Hydrae	3.90	A0V	8	26	32.1	2.997		-44	-3	57	52.30	-11.98	-23
317	3323	ο Ursae Maj.	3.36	G5 III	8	31	42.3	4.932		-182	+60	39	28.87	12.43	-107
321	3366	η Cancri	5.33	K3 III	8	33	43.1	3.461		-34	+20	22	49.99	12.50	-43
1223	3410	δ Hydrae	4.16	A1Vnn	8	38	34.9	3.172		-44	+5	38	30.08	12.79	-7
1224	3418	σ Hydrae	4.44	K1 III	8	39	40.3	3.133		-12	+3	16	44.12	12.88	-18
1227	3447	ο Velorum	3.62	B3 IV	8	40	47.7	1.719		-24	-52	59	04.85	12.92	+20
1226	3445	53 G. Velorum	3.84	F3 Ia	8	41	12.5	1.994		0	-46	42	42.05	-12.96	+3
1228	3449	γ Cancri	4.66	A1IV	8	44	17.8	3.463		-76	+21	24	15.97	13.21	-39
327	3468	α Pyxidis	3.68	B1.5 III	8	44	17.8	2.414		-9	-33	15	00.88	13.16	+11
326	3461	δ Cancri*	3.94	K0 III	8	45	40.6	3.401		-13	+18	05	19.99	13.49	-228
(329)	3482	ε Hydrae* m	3.38	G5III	8	47	42.0	3.170		-155	+6	21	13.19	13.43	-40
328	3475	ι Cancri	4.02	G8Iab	8	47	45.2	3.617		-19	+28	41	41.13	13.44	-42
336	3571	108 G. Carinae	3.84	B8.5II	8	55	26.6	1.355		-28	-60	42	42.87	-13.85	+38
334	3547	ζ Hydrae	3.11	G9 II-III	8	56	19.1	3.167		-66	+5	52	40.65	13.93	+15
337	3572	α Cancri*	4.25	A5 m	8	59	26.6	3.275		+23	+11	47	20.36	14.17	-31
335	3569	ι Ursae Maj.	3.14	A7 V	9	00	23.9	4.077		-443	+47	58	18.34	14.42	-226
342	3614	97 G. Velorum	3.75	K2 III	9	04	45.6	2.073		-44	-47	10	05.00	14.48	-13
341	3594	κ Ursae Maj.	3.60	A1Vn	9	04	48.8	4.067		-32	+47	05	10.07	14.52	-54
345	3634	λ Velorum	2.21	K4 Ib-II	9	08	38.5	2.211		-17	-43	30	14.01	-14.68	+13
1239	3627	ξ Cancri	5.14	G9 III	9	10	21.7	3.439		+1	+21	58	25.20	14.79	+5
348	3685	β Carinae	1.68	A2IV	9	13	23.1	0.632		-311	-69	47	22.02	14.87	+108
347	3665	θ Hydrae	3.88	B9.5 V	9	15	16.4	3.118		+86	+2	14	22.28	15.39	-310
351	3699	ι Carinae	2.25	A8 Ib	9	17	33.5	1.605		-26	-59	20	56.94	15.21	+8
352	3705	α Lyncis	3.13	K7 III	9	22	07.0	3.637		-179	+34	19	03.28	15.45	+19
1243	3718	θ Pyxidis	4.72	M0 III	9	22	16.1	2.660		-8	-26	02	26.34	-15.49	-8
353	3734	κ Velorum*	2.50	B2 IV-V	9	22	39.4	1.861		-10	-55	05	09.45	15.49	+9
354	3748	α Hydrae*	1.98	K3 II-III	9	28	26.8	2.948		-9	-8	44	06.98	15.78	+33
361	3803	N Velorum	3.13	K5 III	9	31	45.3	1.826		-39	-57	06	43.43	15.99	+4
355	3757	23 Ursae Maj.	3.67	F0 IV	9	32	53.4	4.660		+160	+62	59	02.89	16.03	+27
358	3775	θ Ursae Maj.	3.17	F7V	9	34	01.1	3.975		-1024	+51	35	47.67	-16.64	-530

* No. 295 : *Pollux*, Punarvasu-1.
 No. 326 : *Pusya*.
 No. 329 : *Aslesa*.

No. 337 : *Acubens*. (*Aslesa*).
 No. 353 : *Markeb*.
 No. 354 : *Alphard*.

MEAN PLACES OF STARS, J 2017.5
 FOR JULY 2^d.375 TERRESTRIAL TIME
 (The Annual Variations are for the middle of the year)

Cat. No. FK5	BS =HR No.	Star	Mag.	Spec- tral Type	Right Ascension			Annual Variation	Annual Proper motion	Declination			Annual Variation	Annual Proper motion
					h	m	s	s	^s (0.0001)	°	'	"	"	"
1250	3845	ι Hydrae	3.91	K2.5 III	9	40	45.0	3.062	+32	-1	13	23.07	-16.52	-64
364	3849	κ Hydrae	5.06	B4IV/V	9	41	08.7	2.878	-19	-14	24	44.69	16.49	-20
365	3852	ο Leonis	3.52	F5I+	9	42	05.0	3.196	-96	+9	48	42.93	16.56	-37
367	3873	ε Leonis	2.98	G1 II	9	46	50.5	3.394	-34	+23	41	34.25	16.76	-11
368	3888	ν Ursae Maj.	3.80	F2 IV	9	52	13.2	4.212	-379	+58	57	19.67	17.16	-151
371	3905	μ Leonis	3.88	K2 III	9	53	45.3	3.399	-160	+25	55	25.48	17.13	-56
375	3940	φ Velorum	3.54	B5 Ib	9	57	28.7	2.114	-12	-54	39	05.67	-17.24	+3
1261	3970	ν ^c Hydrae	4.60	B8 V	10	05	58.6	2.924	-25	-13	09	00.45	17.59	+18
379	3975	η Leonis	3.52	A0 Ib	10	08	17.1	3.263	-1	+16	40	35.98	17.71	0
380	3982	α Leonis*	1.35	B7 V	10	09	18.1	3.189	-169	+11	52	51.72	17.74	+7
381	3994	λ Hydrae	3.61	K0IIIcN+1	10	11	26.5	2.927	-138	-12	26	28.09	17.92	-88
385	4037	ω Carinae	3.32	B8 IIIe	10	14	09.1	1.421	-76	-70	07	30.30	17.94	+7
382	4023	191 G. Velorum	3.85	A2 Va	10	15	28.4	2.528	-131	-42	12	33.19	-17.95	+45
384	4031	ζ Leonis	3.44	F0 III	10	17	39.6	3.325	+13	+23	19	46.11	18.08	-7
1264	4050	187 G. Carinae	3.40	K3 II a	10	17	40.2	2.013	-34	-61	25	12.46	18.07	+5
383	4033	λ Ursae Maj.	3.45	A2 IV	10	18	08.7	3.593	-149	+42	49	34.83	18.13	-38
1268	4080	204 G. Velorum	4.83	K1 III	10	23	04.8	2.584	-20	-41	44	18.84	18.22	+56
386	4069	μ Ursae Maj.	3.05	M0 III	10	23	21.9	3.550	-72	+41	24	39.17	18.25	+35
391	4102	I Carinae	4.00	F3 V	10	24	44.2	1.174	-52	-74	07	15.03	-18.36	-26
389	4094	μ Hydrae	3.81	K4 III	10	26	56.3	2.906	-89	-16	55	34.22	18.49	-80
392	4104	α Antliae	4.25	K4 III	10	27	57.3	2.754	-58	-31	09	26.52	18.44	+11
393	4114	196 G. Carinae	3.82	F2 II	10	28	31.5	2.215	-17	-58	49	45.09	18.47	0
1270	4116	δ Sextantis	5.21	B9.5 V	10	30	22.0	3.047	-32	-2	49	45.08	18.54	-14
397	4140	203 G. Carinae	3.32	B4 Vne	10	32	39.0	2.147	-27	-61	46	32.56	18.59	+9
396	4133	ρ Leonis	3.85	B1 Iab	10	33	43.9	3.155	-4	+9	12	57.69	-18.64	-3
401	4174	γ Chamaeleontis	4.11	M0 III	10	35	39.7	0.656	-143	-78	41	54.93	18.69	+14
406	4199	θ Carinae	2.76	B0Vp	10	43	35.1	2.156	-35	-64	29	11.18	18.93	+10
411	4234	δ ^c Chamaeleontis	4.45	B2.5 IV	10	45	55.4	0.483	-200	-80	37	57.06	19.00	+8
410	4232	ν Hydrae	3.11	K0/K1 III	10	50	29.4	2.965	+66	-16	17	08.29	18.93	+200
412	4247	46 Leonis Min.	3.83	K0 III V	10	54	17.2	3.338	+70	+34	07	12.45	19.50	-279
1283	4287	α Crateris	4.08	K1 III	11	00	37.7	2.929	-323	-18	23	32.24	-19.24	+130
416	4295	β Ursae Maj.*	2.37	A1 V	11	02	53.2	3.579	+99	+56	17	17.55	19.39	+34
417	4301	α Ursae Maj.*	1.80	K0 Iab	11	04	47.6	3.649	-167	+61	39	21.62	19.53	-66
1289	4337	260 G. Carinae	3.91	G0 Iab	11	09	20.6	2.585	-9	-59	04	12.33	19.55	0
420	4335	ψ Ursae Maj.	3.01	K1 III	11	10	38.5	3.349	-60	+44	24	11.64	19.61	-28
422	4357	δ Leonis*	2.56	A4 V	11	15	02.2	3.182	+101	+20	25	39.16	19.79	-130
423	4359	θ Leonis*	3.34	A2 V	11	15	09.4	3.142	-42	+15	20	01.07	-19.74	-79
425	4377	ν Ursae Maj.	3.48	K3 III	11	19	25.2	3.226	-20	+32	59	54.80	19.70	+28
426	4382	δ Crateris	3.56	K0 III	11	20	13.0	3.006	-84	-14	52	24.55	19.53	+208
433	4434	λ Draconis	3.84	M0 III	11	32	25.5	3.491	-73	+69	14	03.47	19.91	-17
434	4450	ξ Hydrae	3.54	G7 III	11	33	52.0	2.964	-162	-31	57	16.59	19.95	-39
436	4467	λ Centauri	3.13	B9 III	11	36	35.8	2.801	-61	-63	07	00.26	-19.94	-5

* No. 380 : *Regulus* , Magha.
 No. 416 : *Merak* , Pulaha.

No. 417 : *Dubhe* , Kratu.
 No. 422 : *Zosma* , Purva Phalguni-1.
 No. 423 : *Purva Phalguni-2*.

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 FOR JULY 2^d.375 TERRESTRIAL TIME
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Cat. No. FK5	BS =HR No.	Star	Mag.	Spec- tral Type	Right Ascension			Annual Variation	Annual Proper motion	Declination			Annual Variation	Annual Proper motion
					h	m	s			°	'	"		
442	4520	λ Muscae	3.64	A7 V	11	46	26.6	2.873	-174	-66	49	32.91	-19.97	+37
441	4518	χ Ursae Maj.	3.71	K0.5 IIIb	11	46	58.1	3.145	-136	+47	40	56.27	19.98	+30
1304	4527	93 Leonis*	4.53v	A7V+	11	48	53.2	3.088	-106	+20	07	17.76	20.02	-3
444	4534	β Leonis*	2.14	A3 V	11	49	57.1	3.056	-342	+14	28	26.98	20.14	-114
445	4540	β Virginis	3.61	F9 V	11	51	36.4	3.126	+495	+1	39	57.64	20.30	-271
447	4554	γ Ursae Maj.*	2.44	A0 Ve	11	54	44.6	3.128	+107	+53	35	50.71	20.02	+12
452	4621	δ Centauri	2.60	B2 IV ne	12	09	16.4	3.138	-36	-50	49	11.36	-20.03	-8
453	4630	ε Corvi	3.00	K2III	12	11	01.7	3.097	-51	-22	43	01.29	20.00	+13
455	4656	δ Crucis	2.80	B2 IV	12	16	05.0	3.225	-53	-58	50	46.18	20.00	-9
456	4660	δ Ursae Maj.*	3.31	A3 V	12	16	17.1	2.942	+127	+56	56	07.68	19.98	+9
457	4662	γ Corvi*	2.59	B8III	12	16	42.5	3.095	-112	-17	38	20.42	19.97	+23
459	4674	β Chamaeleontis	4.26	B5 Vn	12	19	24.5	3.662	-174	-79	24	33.17	19.95	+17
460	4689	η Virginis	3.89	A2 IV+	12	20	48.1	3.073	-42	-0	45	50.19	-19.98	-18
462	4730	α Crucis*A	1.33	B0.5 IV	12	27	35.0	3.388	-53	-63	11	45.08	19.91	-12
465	4757	δ Corvi*	2.95	A0IV(m)kB	12	30	46.3	3.114	-146	-16	36	45.66	20.00	-138
468	4763	γ Crucis	1.63v	M3.5 III	12	32	08.8	3.368	+29	-57	12	39.48	20.11	-262
469	4773	γ Muscae	3.87	B5V	12	33	32.0	3.670	-126	-72	13	45.79	19.83	-2
472	4787	κ Draconis	3.87v	B6IIIp	12	34	13.2	2.527	-113	+69	41	30.90	19.81	+12
471	4786	β Corvi	2.65	G5 II	12	35	18.6	3.165	+2	-23	29	35.95	-19.86	-54
474	4798	α Muscae	2.69	B2 IV-V	12	38	14.7	3.651	-90	-69	13	54.17	19.78	-13
475	4813	χ Virginis	4.66	K2 III	12	40	09.1	3.103	-51	-8	05	30.16	19.76	-25
1326	4828	ρ Virginis	4.88	A0 V	12	42	46.2	3.037	+57	+10	08	21.78	19.78	-90
481	4853	β Crucis	1.25	B0.5 IV	12	48	45.3	3.553	-63	-59	47	02.70	19.60	-14
483	4905	ε Ursae Maj.*	1.77	A0p	12	54	47.7	2.622	+132	+55	51	54.47	19.48	-6
484	4910	δ Virginis*	3.38	M3III	12	56	29.1	3.025	-313	+3	18	09.50	-19.49	-54
485	4915	α CVn sq*	2.90	A0spe	12	56	50.6	2.797	-198	+38	13	27.04	19.37	+56
488	4932	ε Virginis*	2.83	G8 III	13	03	02.9	2.987	-185	+10	51	55.49	19.27	+20
487	4923	δ Muscae	3.62	K2 III	13	03	30.0	4.231	+543	-71	38	33.85	19.30	-21
492	4983	β Com	4.26	G0 V	13	12	41.3	2.795	-604	+27	47	23.38	18.16	+881
495	5020	γ Hydrae	3.00	G8 III	13	19	52.6	3.276	+47	-23	15	48.34	18.88	-45
496	5028	ι Centauri	2.75	A15hA3nA3	13	21	35.2	3.395	-284	-36	48	14.83	-18.87	-86
497	5054	ζ Ursae Maj.*pr	2.27	A2V	13	24	37.6	2.405	+141	+54	50	03.74	18.71	-20
498	5056	α Virginis*	0.98	B1 III-IV+	13	26	07.0	3.170	-28	-11	15	07.73	18.67	-28
501	5107	ζ Virginis	3.37	A3V	13	35	35.2	3.063	-190	-0	41	05.61	18.28	+42
504	5132	ε Centauri	2.30	B1 III	13	41	00.4	3.844	-32	-53	33	16.86	18.14	-17
509	5191	η Ursae Maj.*	1.86	B3 V	13	48	13.7	2.358	-125	+49	13	35.17	17.86	-11
508	5193	μ Centauri	3.04	B2Vmpe	13	50	40.7	3.643	-21	-42	33	36.89	-17.77	-20
513	5235	η Bootis	2.68	G0 IV	13	55	31.1	2.857	-44	+18	18	38.02	17.91	-358
512	5231	ζ Centauri	2.55	B2.5 IV	13	56	38.4	3.777	-56	-47	22	25.56	-17.54	-42

* No. 1304 : Uttara Phalguni-2.
 No. 444 : Denebola, Uttara Phalguni-1.
 No. 447 : Phecda or Phad, Pulastya.
 No. 456 : Megrez, Atri.
 No. 457 : Minkar.
 No. 462 : Acrux.
 No. 465 : Algorel, Hasta.

No. 483 : Alioth, Angira.
 No. 484 : Minelauva.
 No. 485 : 12 Canum Venaticorum, Mag. p 2.9
 No. 488 : Vindemiatrix.
 No. 497 : Mizar, Vasista. Mag. f. 4.0.
 No. 498 : Spica, Citra.
 No. 509 : Alkaid, Benetnasch, Marichi.

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 (The Annual Variations are for the middle of the year)

Cat. No. FK5	BS =HR No.	Star	Mag.	Spec- tral Type	Right Ascension			Annual Variation	Annual Proper motion	Declination			Annual Variation	Annual Proper motion
					h	m	s	s	^s (0.0001)	°	'	"	"	"
521	5291	α Draconis*	3.65	A0 III	14	04	51.8	1.629	-84	+64	17	33.22	-17.12	+18
518	5267	β Centauri*	0.61	B1 III	14	05	04.4	4.295	-43	-60	27	23.42	17.15	-19
519	5287	π Hydrae	3.27	K1III-IV	14	07	22.4	3.434	+33	-26	45	57.31	17.16	-139
520	5288	θ Centauri	2.06	K0 III	14	07	43.1	3.554	-429	-36	27	19.20	17.53	-520
523	5315	κ Virginis	4.19	K2.5 III	14	13	49.9	3.210	+6	-10	21	16.00	16.58	+140
526	5340	α Bootis*	-0.04	K1.5 III	14	16	27.6	2.739	-770	+19	05	31.01	18.59	-2000
525	5338	ι Virginis	4.08	F7IV	14	16	56.1	3.155	-2	-6	04	59.97	-17.00	-432
1371	5359	λ Virginis	4.52	A1V	14	20	03.6	3.258	-11	-13	27	03.14	16.38	+30
531	5404	θ Bootis	4.05	F7 V	14	25	47.5	2.042	-253	+51	46	13.41	16.52	-398
534	5429	ρ Bootis	3.58	K3 III	14	32	35.0	2.585	-77	+30	17	43.01	15.64	+119
535	5435	γ Bootis	3.03	A7 III	14	32	46.9	2.415	-97	+38	13	56.44	15.60	+153
537	5440	η Centauri	2.31	B1.5 IVne	14	36	37.5	3.838	-31	-42	14	01.51	15.58	-35
538	5460	α Centauri* cg	0.01	G +	14	40	48.0	4.126	-4995	-60	54	23.74	-14.61	+693
541	5469	α Lupi	2.30	B1.5 III	14	43	06.1	4.024	-21	-47	27	44.01	15.20	-18
539	5463	α Circini	3.19	7VpSrCrE	14	43	56.5	4.929	-302	-65	03	00.06	15.36	-232
545	5487	μ Virginis	3.88	F2 V	14	43	59.1	3.171	+73	-5	44	00.27	15.44	-316
544	5485	371 G.Cen	4.05	K5 III	14	44	44.0	3.692	-52	-35	14	53.03	15.26	-180
547	5511	109 Virginis	3.72	A0 V	14	47	08.1	3.039	-76	+1	49	11.71	14.97	-27
542	5470	α Apodis	3.83	K2.5 III	14	50	06.9	7.769	-41	-79	07	01.07	-14.79	-16
550	5563	β Ursae Min.*	2.08	K4 III	14	50	40.3	-0.108	-76	+74	05	02.10	14.72	+12
548	5531	α Librae*	2.75	2HA5MA4I	14	51	51.0	3.331	-73	-16	06	48.77	14.73	-67
552	5571	β Lupi	2.68	B2 III	14	59	41.1	3.958	-32	-43	12	12.06	14.23	-39
553	5576	κ Centauri	3.13	B2 IV	15	00	18.4	3.931	-17	-42	10	24.10	14.18	-24
555	5602	β Bootis	3.50	G8 IIIa	15	02	36.3	2.261	-36	+40	19	20.07	14.04	-28
556	5603	σ Librae	3.29	M3/M4III	15	05	05.9	3.527	-54	-25	20	58.87	-13.90	-43
559	5652	ι Librae*	4.54	B9IV pSc	15	13	13.3	3.433	-25	-19	51	24.81	13.37	-39
558	5649	ζ Lupi	3.41	G7 III	15	13	33.1	4.349	-122	-52	09	52.29	13.38	-73
563	5681	δ Bootis	3.47	G8 III	15	16	12.5	2.421	+69	+33	15	01.07	13.25	-112
564	5685	β Librae*	2.61	B8 IV	15	17	57.1	3.238	-65	-9	26	47.27	13.04	-19
560	5671	γ Tr. Austrini	2.89	A1 IV	15	20	34.1	5.698	-132	-68	44	32.69	12.88	-31
569	5735	γ Ursae Min.	3.05	A 3 Iab	15	20	42.8	-0.045	-40	+71	46	18.24	-12.81	+20
1402	5695	δ Lupi	3.22	B1.5 IV	15	22	31.6	3.963	-13	-40	42	35.01	12.74	-26
566	5705	ϕ ' Lupi	3.56	K5 III	15	22	55.3	3.828	-74	-36	19	25.18	12.77	-84
571	5744	ι Draconis	3.29	K2 III	15	25	19.3	1.344	-12	+58	54	18.75	12.51	+17
572	5747	β Cr. Borealis	3.68	F0p	15	28	33.1	2.476	-137	+29	02	46.39	12.21	+86
578	5793	α Cr.Borealis*	2.23	A0 V	15	35	25.8	2.543	+91	+26	39	24.07	11.91	-88
577	5787	γ Librae	3.91	K0III	15	36	30.5	3.367	+45	-14	50	48.38	-11.74	+9
579	5794	ν Librae	3.58	K5 III	15	38	05.4	3.658	-7	-28	11	30.34	11.63	+3
1413	5838	κ Librae	4.74	K5III	15	42	57.5	3.469	-26	-19	44	03.77	11.39	-103
582	5854	α Serpentis*	2.65	K2 III b	15	45	07.9	2.960	+92	+6	22	17.89	-11.08	+47

* No. 518 : *Agena* .
 No. 521 : *Thuban* .
 No. 526 : *Arcturus* , *Svati* .
 No. 538 : *Rigil Kentaurus* Mag. 0.33 & 1.70.
 No. 548 : *Zuben el Genubi* , *Visakha* .

No. 550 : *Kochab* .
 No. 559 : *Visakha* .
 No. 564 : *Zuben es Chamali* .
 No. 578 : *Margarita* , *Alphecca* .
 No. 582 : *Unukalhal* .

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Cat. No. FK5	BS =HR No.	Star	Mag.	Spec- tral Type	Right Ascension			Annual Variation	Annual Proper motion	Declination			Annual Variation	Annual Proper motion
					h	m	s			°	'	"		
583	5867	β Serpentis	3.67	A3V	15	46	59.8	2.773	+46	+15	22	04.94	-11.03	-45
585	5881	μ Serpentis	3.53	A0 V	15	50	32.1	3.138	-57	-3	28	57.58	10.75	-24
588	5892	ε Serpentis	3.71	A2 m	15	51	41.4	2.996	+86	+4	25	34.11	10.58	+63
589	5897	β Tr.Australis	2.85	F1V	15	56	42.0	5.346	-283	-63	28	58.09	10.67	-398
591	5933	γ Serpentis	3.85	F6 V	15	57	15.8	2.776	+217	+15	36	19.94	11.51	-1281
592	5944	π Scorpii	2.89	B1 V+	15	59	54.8	3.643	-8	-26	09	47.38	10.05	-26
594	5953	δ Scorpii*	2.32	B0.2 Ive	16	01	22.3	3.559	-8	-22	40	12.67	-9.94	-22
597	5984	β Scorpii*pr	2.62	B0.5 V	16	06	27.5	3.499	-4	-19	51	07.27	9.55	-19
603	6056	δ Ophiuchi	2.74	M0.5 III	16	15	15.9	3.151	-29	-3	44	17.45	8.99	-143
605	6075	ε Ophiuchi	3.24	G9.5 IIIb	16	19	14.9	3.181	+57	-4	44	02.18	8.49	+41
608	6092	τ Herculis	3.89	B5 IV	16	20	16.1	1.808	-11	+46	16	20.69	8.41	+40
607	6084	σ Scorpii	2.89	B1 III	16	22	15.3	3.658	-8	-25	38	00.37	8.31	-21
609	6095	γ Herculis	3.75	B9 III	16	22	41.6	2.650	-33	+19	06	46.93	-8.21	+43
613	6117	ω Herculis	4.57	B9 p	16	26	13.5	2.773	+30	+13	59	38.60	8.03	-59
616	6134	α Scorpii* cg	0.96	M1.5 Iab-b	16	30	29.0	3.690	-7	-26	28	09.81	7.65	-20
618	6148	β Herculis	2.77	G7 III a	16	30	58.4	2.582	-70	+21	27	08.93	7.61	-15
611	6102	γ Apodis	3.89	G8III	16	36	11.3	9.409	-452	-78	55	58.36	7.24	-77
620	6165	τ Scorpii	2.82	B0.2 V	16	36	58.5	3.746	-6	-28	15	03.19	7.12	-22
622	6175	ζ Ophiuchi	2.56	O9V	16	38	07.5	3.310	+9	-10	36	04.44	-6.98	+26
626	6220	η Herculis	3.53	G7 .5IIIb	16	43	29.8	2.060	+32	+38	53	23.51	6.65	-82
625	6217	α Tr. Austr.*	1.92	K2 II-III	16	50	31.9	6.410	+26	-69	03	26.47	6.02	-34
1438	6243	20 Ophiuchi	4.65	F7 V	16	50	48.2	3.325	+65	-10	48	45.53	6.05	-93
1435	6229	η Arae	3.76	K5 III	16	51	18.3	5.211	+49	-59	04	14.30	5.95	-28
628	6241	ε Scorpii	2.29	K1 III	16	51	18.0	3.898	-493	-34	19	24.60	6.17	-257
1439	6247	μ' Scorpii	3.08v	B1.5Vp+	16	53	03.6	4.077	-9	-38	04	33.04	-5.80	-25
633	6299	κ Ophiuchi	3.20	K2 III	16	58	29.9	2.844	-197	+9	20	56.30	5.32	-11
631	6285	ζ Arae	3.13	K3III	17	00	04.4	4.988	-23	-56	00	56.89	5.22	-36
634	6324	ε Herculis	3.92	A0 V	17	00	57.6	2.298	-36	+30	54	05.73	5.08	+28
635	6355	60 Herculis	4.91	A4 IV	17	06	11.4	2.786	+35	+12	43	04.66	4.67	-10
639	6396	ζ Draconis	3.17	B6 III	17	08	50.4	0.187	-33	+65	41	35.48	4.41	+22
638	6380	η Scorpii	3.33	F5IV	17	13	24.6	4.309	+23	-43	15	37.76	-4.33	-287
643	6418	π Herculis	3.16	K3 Ib	17	15	39.5	2.093	-22	+36	47	25.17	3.85	+4
641	6410	δ Herculis	3.14	A3IV	17	15	45.1	2.467	-15	+24	49	10.58	4.00	-157
644	6453	θ Ophiuchi	3.27	B2 IV	17	23	05.2	3.690	-3	-25	00	55.66	3.23	-20
645	6461	β Arae	2.85	K3 Ib-II	17	26	45.5	5.001	-10	-55	32	39.85	2.92	-25
1457	6486	44 Ophiuchi	4.17	A5hA9mFII	17	27	26.4	3.669	0	-24	11	23.64	2.95	-116
653	6536	β Draconis	2.79	G2Iab	17	30	49.7	1.360	-17	+52	17	20.55	-2.53	+15
649	6508	v Scorpii	2.69	B2 IV	17	31	57.3	4.086	-1	-37	18	29.29	2.48	-31
648	6500	δ Arae	3.62	B8 Vn	17	32	40.9	5.431	-80	-60	41	46.29	2.48	-96
651	6510	α Arae	2.95	B2 Vne	17	33	11.8	4.647	-32	-49	53	17.47	2.41	-70
652	6527	λ Scorpii*	1.63	B2 IV+	17	34	47.9	4.080	-1	-37	06	53.63	2.23	-29
656	6556	α Ophiuchi*	2.08	A5 III	17	35	44.9	2.788	+82	+12	32	54.52	-2.34	-226

* No. 594 : *Dschubba*, Anuradha
 No. 597 : *Graffias*, Mag. 2.9, 5.1
 No. 616 : *Antares*, Jyestha, Mag. 0.9 to 1.8.

No. 625 : *Atria*.
 No. 652 : *Schaula*, Mula.
 No. 656 : *Ras Alhague*.

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					h	m	s			°	'	"		
654	6553	θ Scorp̄ii	1.87	F1 II	17	38	34.7	4.317	(0.0001) +14	-43	00	25.94	-1.87	(0.001) -2
658	6561	ξ Serp̄entis	3.54	A9IIIpSr	17	38	35.4	3.439	-29	-15	24	29.28	1.93	-58
663	6588	ι Herc̄ulis	3.80	B3 IV	17	39	57.6	1.697	-5	+45	59	51.97	1.74	+5
660	6580	κ Scorp̄ii	2.41	B1.5 III	17	43	42.0	4.155	-5	-39	02	14.41	1.45	-27
665	6603	β Ophīuchi	2.77	K2 III	17	44	20.3	2.966	-27	+4	33	40.44	1.21	+159
667	6623	μ Herc̄ulis	3.42	G5IV	17	47	08.7	2.351	-233	+27	42	41.01	1.88	-752
661	6582	η Pav̄onis	3.62	K2II	17	47	27.2	5.899	-21	-64	43	47.24	-1.15	-54
668	6629	γ Ophīuchi	3.75	A0 V	17	48	46.3	3.011	-15	+2	42	07.05	1.06	-74
666	6615	ι ¹ Scorp̄ii	3.03	F2 Iae	17	48	48.6	4.200	0	-40	07	55.56	0.99	-8
669	6630	G Scorp̄ii	3.21	K2 III	17	51	03.0	4.087	+41	-37	02	49.88	0.75	+33
671	6688	ξ Dracon̄is	3.75	K2 III	17	53	49.9	1.040	+114	+56	52	13.29	0.46	+80
672	6695	θ Herc̄ulis	3.86	K1 IIaCn+	17	56	51.2	2.060	+4	+37	14	56.74	0.27	+6
676	6705	γ Dracon̄is*	2.23	K5 III	17	57	00.8	1.396	-8	+51	29	14.99	-0.28	-19
674	6703	ξ Herc̄ulis	3.70	G8 III	17	58	26.7	2.334	+64	+29	14	49.26	0.15	-17
673	6698	ν Ophīuchi	3.34	G 9 III	17	59	59.4	3.305	-4	-9	46	27.88	-0.12	-116
677	6714	67 Ophīuchi	3.97	B5 Ib	18	01	31.3	3.007	+1	+2	55	55.11	+0.12	-8
679	6746	γ Sagitt̄arii	2.99	K1III	18	06	56.0	3.855	-41	-30	25	20.18	0.42	-185
1471	6743	θ Arae	3.66	B2 Ib	18	07	59.6	4.671	-10	-50	05	18.63	0.68	-14
680	6771	72 Ophīuchi	3.73	A4IVs	18	08	10.8	2.846	-41	+9	34	03.15	+0.79	+80
681	6779	ο Herc̄ulis	3.83	B9.5V	18	08	13.5	2.342	+1	+28	45	57.24	0.73	+10
682	6812	μ Sagitt̄arii	3.86	B2III	18	14	48.6	3.589	+1	-21	03	09.92	1.30	+1
683	6832	η Sagitt̄arii	3.11	M3.5 III	18	18	48.7	4.059	-106	-36	45	17.22	1.48	-167
695	6927	χ Dracon̄is	3.57	F7 V	18	20	44.4	-1.088	+1199	+72	44	24.19	1.46	-347
687	6859	δ Sagitt̄arii*	2.70	K3IIIa	18	22	06.9	3.840	+27	-29	49	08.87	1.90	-28
688	6869	η Serp̄entis	3.26	K0 III-IV	18	22	13.0	3.106	-364	-2	53	34.75	+1.24	-701
690	6895	109 Herc̄ulis	3.84	K2 III	18	24	26.7	2.559	+141	+21	46	43.62	1.89	-242
689	6879	ε Sagitt̄arii*	1.85	B9.5III	18	25	20.0	3.981	-31	-34	22	29.09	2.09	-124
691	6897	α Telescop̄ii	3.51	B3 IV	18	28	16.2	4.445	-15	-45	57	25.20	2.41	-54
692	6913	λ Sagitt̄arii	2.81	K0IV	18	29	03.0	3.702	-32	-25	24	37.87	2.35	-185
697	6951	θ Coron̄ae Aust.	4.64	G8 III	18	34	45.1	4.280	+28	-42	17	53.44	3.01	-22
1482	6973	α Scuti	3.85	K3 III	18	36	09.6	3.265	-10	-8	13	49.70	+2.84	-312
699	7001	α Lyr̄ae*	0.03	A0 V	18	37	31.9	2.033	+172	+38	48	02.91	3.55	+287
1487	7039	φ Sagitt̄arii	3.17	B8 III	18	46	44.9	3.745	+40	-26	58	16.58	4.06	0
1489	7063	β Scuti	4.22	G4 IIa	18	48	06.2	3.183	-3	-4	43	40.27	4.16	-16
705	7106	β Lyr̄ae*	3.45	B7 Ve+	18	50	43.6	2.217	+3	+33	23	02.11	4.40	-3
706	7121	σ Sagitt̄arii*	2.02	B2V	18	56	21.0	3.716	+10	-26	16	24.61	4.82	-54
710	7150	ξ ^c Sagitt̄arii	3.51	G9II/III	18	58	46.4	3.576	+24	-21	04	55.98	+5.07	-12
713	7178	γ Lyr̄ae	3.24	B9 III	18	59	35.9	2.246	-2	+32	42	52.16	5.16	+2
712	7176	ε Aquil̄ae	4.02	K1 III	19	00	25.0	2.724	-35	+15	05	35.33	5.15	-73
716	7235	ζ Aquil̄ae	2.99	A0 Vn	19	06	12.9	2.758	-3	+13	53	26.09	5.61	-96
717	7236	λ Aquil̄ae	3.44	B9Vn	19	07	10.6	3.183	-11	-4	51	18.05	5.70	-90
1496	7234	τ Sagitt̄arii	3.32	K1III	19	08	01.9	3.740	-40	-27	38	36.16	+5.61	-251

No. 676 : *Eltanin*.No. 687 : *Purvasadha-1*.No. 689 : *Kaus Australis*, *Purvasadha-2*.No. 699 : *Vega*, *Abhijit*.No. 705 : *Sheliak* Mag. 3.3 to 4.3.No. 706 : *Nunki*, *Uttarasadha*.

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					h	m	s			°	'	"		
720	7264	π Sagittarii	2.89	F2 II/III	19	10	48.2	3.564	0	-20	59	39.79	+6.06	-35
723	7310	δ Draconis	3.07	G9 III	19	12	33.3	-0.003	+164	+67	41	32.38	6.33	+93
726	7328	κ Cygni	3.77	G9 III	19	17	30.4	1.385	+66	+53	24	04.81	6.77	+125
730	7377	δ Aquilae	3.36	F0IV	19	26	22.8	3.024	+171	+3	09	03.07	7.46	+83
1508	7405	α Vulpeculae	4.44	M0III	19	29	26.0	2.498	-92	+24	42	04.71	7.52	-106
733	7420	ι Cygni	3.79	A5V	19	30	08.8	1.511	+22	+51	46	03.66	7.81	+130
732	7417	β Cygni* <i>p</i>	3.08	K3II+	19	31	25.7	2.421	+2	+27	59	50.54	+7.78	-2
1513	7488	β Sagittae	4.37	G8III a	19	41	50.1	2.695	+7	+17	31	03.41	8.58	-32
741	7525	γ Aquilae	2.72	K3 II	19	47	05.5	2.852	+12	+10	39	25.16	9.03	-2
743	7536	δ Sagittae	3.82	M2 II+	19	48	10.1	2.676	+5	+18	34	42.41	9.12	+8
745	7557	α Aquilae*	0.77	A7 V	19	51	38.2	2.926	+363	+8	54	56.39	9.77	+387
746	7570	η Aquilae	3.90V.	F6Iab	19	53	21.8	3.054	+7	+1	03	06.15	9.51	-7
749	7602	β Aquilae*	3.71	G9.5IV	19	56	10.4	2.946	+33	+6	27	05.56	+9.25	-482
752	7635	γ Sagittae	3.47	M0 III	19	59	32.1	2.669	+46	+19	32	26.44	10.01	+24
751	7623	θ ' Sagittarii	4.37	B3 IV	20	00	52.3	3.891	+5	-35	13	39.42	10.06	-26
754	7665	δ Pavonis	3.56	G8 IV	20	10	25.6	5.819	+1997	-66	08	07.31	9.67	-1127
756	7710	θ Aquilae	3.23	B9.5 III+	20	12	12.4	3.093	+26	-0	46	06.51	10.94	+4
757	7735	31 σ Cygni	3.79	K2II+	20	14	11.0	1.890	+4	+46	47	42.38	11.08	+3
761	7754	α Capricorni*	3.57	G8.5III-IV	20	19	01.4	3.323	+44	-12	29	22.02	+11.43	+4
762	7776	β Capricorni	3.08	K0:II:+	20	21	59.6	3.364	+29	-14	43	29.91	11.64	+2
765	7796	γ Cygni	2.20	F8 I ab	20	22	51.4	2.155	+4	+40	18	48.50	11.70	0
764	7790	α Pavonis	1.94	B2IV	20	27	01.3	4.704	+8	-56	40	38.90	11.90	-89
768	7852	ϵ Delphini	4.03	B6 III	20	34	02.9	2.866	+9	+11	21	49.33	12.46	-22
(771)	7882	β Delphini*m	3.63	F5 IV	20	38	22.2	2.814	+81	+14	39	24.53	12.73	-48
769	7869	α Indi	3.11	K0 III-IV	20	38	47.5	4.192	+52	-47	13	44.94	+12.87	+66
774	7906	α Delphini*	3.77	B9 IV	20	40	27.1	2.787	+46	+15	58	28.76	12.91	-2
777	7924	α Cygni*	1.25	A2 Iae	20	42	01.7	2.047	+3	+45	20	36.82	13.02	+2
778	7928	δ Delphini	4.43	A7IIIp	20	44	16.6	2.801	-13	+15	08	17.62	13.12	-43
783	7957	η Cephei	3.43	K0 IV	20	45	38.6	1.210	+120	+61	54	25.76	14.08	+819
775	7913	β Pavonis	3.42	A7III	20	46	30.8	5.326	-76	-66	08	19.13	13.32	+11
780	7949	ϵ Cygni	2.46	K0 III	20	46	55.2	2.430	+286	+34	02	11.72	+13.67	+328
1541	7948	γ Delphini sq	4.27	K1 IV	20	47	28.2	2.784	-22	+16	11	17.61	13.18	-197
781	7950	ϵ Aquarii	3.77	A1.5V	20	48	37.3	3.242	+24	-9	25	50.48	13.42	-34
1547	7990	μ Aquarii	4.73	A3m	20	53	35.8	3.231	+30	-8	54	60.00	13.74	-30
785	7986	β Indi	3.65	K1 II	20	56	09.9	4.638	+21	-58	23	12.39	13.91	-26
1550	8039	γ Microscopii	4.67	G6III	21	02	21.6	3.664	-2	-32	11	17.86	14.32	+5
792	8079	ξ Cygni	3.72	K4.5 Ib-II	21	05	34.1	2.186	+8	+43	59	53.93	+14.51	+1
797	8115	ζ Cygni	3.20	G8III	21	13	40.9	2.557	+1	+30	17	58.07	14.94	-56
800	8131	α Equulei	3.92	G0III+	21	16	41.9	2.998	+39	+5	19	15.69	15.08	-88
803	8162	α Cephei*	2.44	A7IV	21	18	59.8	1.427	+218	+62	39	36.43	15.35	+50
806	8204	ζ Capricorni	3.74	G4 Ibp	21	27	39.8	3.414	+1	-22	20	04.80	+15.80	+23

* No. 732 : *Albireo* ., Mag. *f.* 5.4.
 No. 745 : *Altair* , *Sravana* .
 No. 749 : *Alshain* .
 No. 761 : *Giedi* or *Algedi* .

No. 771 : *Rotanev* , *Dhanistha-1* .
 No. 774 : *Saulocin* , *Dhanistha-2* .
 No. 777 : *Deneb* .
 No. 803 : *Alderamin* .

MEAN PLACES OF STARS, J 2017.5
 FOR JULY 2^d.375 TERRESTRIAL TIME
 (The Annual Variations are for the middle of the year)

Cat. No. FK5	BS =HR No.	Star	Mag.	Spec- tral Type	Right Ascension			Annual Variation	Annual Proper motion	Declination			Annual Variation	Annual Proper motion
					h	m	s			°	'	"		
809	8238	β Cephei	3.23	B2 IIIev	21	28	52.7	0.748	+21	+70	38	15.83	+15.85	+7
808	8232	β Aquarii*	2.91	G0 Ib	21	32	28.7	3.154	+14	-5	29	36.26	16.02	-8
1569	8264	ξ Aquarii	4.69	A7 V	21	38	40.9	3.189	+78	-7	46	29.91	16.33	-25
812	8278	γ Capricorni	3.68	A7 mp	21	41	03.5	3.315	+132	-16	34	57.00	16.45	-23
810	8254	ν Octantis	3.76	K1 III	21	43	21.5	6.421	+140	-77	18	38.97	16.34	-240
815	8308	ε Pegasi*	2.34	K2 Ib	21	45	02.7	2.947	+21	+9	57	21.22	16.67	-1
819	8322	δ Capricorni	2.87	A5hF0mF2I	21	48	00.3	3.303	+183	-16	02	49.70	+16.51	-296
822	8353	γ Gruis	3.01	B8III	21	54	59.0	3.612	+86	-37	16	54.56	17.11	-21
827	8414	α Aquarii*	2.96	G2 Ib	22	06	40.9	3.079	+13	-0	14	03.23	17.63	-10
831	8430	ι Pegasi	3.76	F5 V	22	07	49.6	2.799	+220	+25	25	52.03	17.71	+25
829	8425	α Gruis*	1.74	B6V	22	09	19.7	3.750	+126	-46	52	31.99	17.60	-151
834	8450	θ Pegasi	3.53	A1Va	22	11	05.0	3.026	+185	+6	17	04.30	17.85	+27
836	8465	ζ Cephei	3.35	K1.5 Iab	22	11	27.9	2.091	+19	+58	17	16.50	+17.84	+4
841	8502	α Tucanae	2.86	K3 III	22	19	41.2	4.053	-96	-60	10	18.06	18.11	-43
842	8518	γ Aquarii	3.84	A0V	22	22	33.6	3.097	+88	-1	17	55.09	18.26	+7
846	8556	δ' Gruis	3.97	G7III	22	30	18.5	3.560	+26	-43	24	20.31	18.52	-5
848	8585	α Lacertae	3.77	A1 V	22	32	01.0	2.485	+144	+50	22	22.37	18.60	+19
849	8592	ν Aquarii	5.20	F7 V	22	35	38.9	3.272	+158	-20	37	05.08	18.55	-144
850	8597	η Aquarii	4.02	B9 IV-V:n	22	36	15.3	3.082	+61	-0	01	36.65	+18.66	-56
855	8634	ζ Pegasi	3.40	B8V	22	42	20.1	2.995	+55	+10	55	23.20	18.89	-12
856	8636	β Gruis	2.10	M5 III	22	43	42.3	3.553	+133	-46	47	33.61	18.93	-8
857	8650	η Pegasi	2.94	G2II-III+	22	43	49.5	2.822	+11	+30	18	47.42	18.92	-25
860	8675	ε Gruis	3.49	A2IVnSB2	22	49	36.2	3.590	+115	-51	13	27.91	19.03	-71
863	8694	ι Cephei	3.52	K0III	22	50	18.5	2.153	-108	+66	17	33.83	19.00	-125
861	8679	τ Aquarii	4.01	K5III	22	50	31.0	3.170	-8	-13	29	59.58	+19.09	-38
862	8684	μ Pegasi	3.48	G8 III	22	50	51.0	2.903	+108	+24	41	39.68	19.09	-42
864	8698	λ Aquarii*	3.74	M2 III	22	53	31.6	3.126	+8	-7	29	10.06	19.24	+37
866	8709	δ Aquarii	3.27	A3 V	22	55	34.6	3.177	-28	-15	43	38.62	19.23	-25
867	8728	α PsA*	1.16	A4 V	22	58	36.9	3.301	+255	-29	31	44.94	19.16	-165
869	8762	ο Andromedae	3.62	B6III pe+	23	02	43.8	2.775	+20	+42	25	13.08	19.41	-6
870	8775	β Pegasi*	2.42	M2.5 II-III	23	04	37.5	2.918	+143	+28	10	40.90	+19.60	+137
871	8781	α Pegasi*	2.49	B9III	23	05	38.0	2.994	+44	+15	17	58.92	19.44	-42
873	8812	88 Aquarii	3.66	K1III	23	10	22.6	3.190	+40	-21	04	37.68	19.60	+31
878	8852	γ Piscium	3.69	G9 III	23	18	04.4	3.112	+509	+3	22	41.24	19.72	+17
890	8961	λ Andromedae	3.82v	G8 III	23	38	25.6	2.958	+157	+46	33	11.19	19.53	-421
893	8974	γ Cephei	3.21	K1 IV	23	40	04.8	2.521	-212	+77	43	48.82	20.12	+151
902	9072	ω Piscium	4.01	F4V	0	00	12.7	3.086	+103	+6	57	36.55	+19.93	-115

BS = Bright Star Catalogue HR = Harvard Revised Catalogue FK5 = Fifth Fundamental Catalogue

* **No. 808 : Sadalsuud.**
No. 815 : Enif. Mag. 0.7 to 3.5.
No. 827 : Sadalmelik.
No. 829 : Al Nair.

No. 864 : Satabhisaj.
No. 867 : Fomalhaut.
No. 870 : Scheat, Purva Bhadrpada-2.
No. 871 : Markab, Purva Bhadrpada-1.