

SECOND SUPPLEMENT TO CATALOGUE OF VARIABLE STARS.

THE Bibliography of Variable Stars, begun by Professor W. M. Reed and continued to the present time by Miss A. J. Cannon, now comprises about thirty-five thousand cards. From it a Provisional Catalogue of Variable Stars was prepared by Miss Cannon, and published in these Annals, 48, No. III. A supplement to this work, containing the variable stars discovered during the year 1903, was published in H. C. O. Circular, No. 77. The original plan provided for the issue of similar annual supplements, and every five years a revised catalogue containing all known variable stars. The very large number of variables discovered at this Observatory has rendered necessary a change in this plan. During 1904, 410 variables were discovered by Miss Leavitt, and announced in Circulars Nos. 78, 79, 82, 86, 88, 90, and 91. But little is yet known of these objects, beyond what is there published. It does not seem best to reprint them until additional facts, which are now being collected, have been learned regarding them. The Supplementary Catalogue given in Table I has accordingly been prepared by Miss Cannon, in nearly the same form as the previous catalogues. It contains all the variables known to have been discovered during the year 1904, with the exception of those in nebulous regions, mentioned above. As the date of discovery is 1904 throughout this table, the column giving it in previous tables has here been omitted.

It will be seen that of the 283 stars to which provisional designations were given in 1904, by the Committee of the Gesellschaft, only 90 are included in Table I. Ten were omitted because they had already been included in the Provisional Catalogue or the First Supplement, while 183 of those to which numbers were assigned were discovered here in nebulous regions, and are referred to in Table III, with the exception of 12, in Circular No. 78, Table II, which are not yet confirmed. The number of known variable stars was increased by 503 in 1904, and 431 of these were found photographically at Harvard.

TABLE I.
SECOND SUPPLEMENT TO CATALOGUE OF VARIABLE STARS.

Des.	Prov. Des.	Name.	DM.	R. A. 1900.	Dec. 1900.	Max.	Min.	Period.	Epoch.	Class.	Sp.	Discoverer.
				<i>h. m.</i>	<i>° ' "</i>			<i>d.</i>				
001855	190.1904	— Cassiopeiae	49	0 18.0	+55 15	7.1	8.5	..	....	IV?	..	Tass
004132	189.1904	— Androm.	..	41.9	+32 9	10	<12	..	....	II	..	Williams
010102	156.1904	Z Ceti	..	1 1.6	- 2 1	9	12	212.5	2416723	II	..	Luther
010564	186.1904	— Cassiopeiae	127	5.1	+64 29	..	..	..	....	S	A	Barr
020448	17.1904	RV Androm.	616	2 4.6	+48 28	8.5	10.5	182	2416509	II	..	Williams
021556	16.1904	RS Persei	583	15.3	+56 39	8	10	..	....	..	..	Ceraski
022150	1.1904	RR Persei	557	21.7	+50 49	9	<13	517?	2399339	II	..	Ceraski
025867	6.1904	— Cassiopeiae	244	58.8	+67 11	..	..	..	....	..	..	Ceraski
031646	155.1904	RT Persei	740	3 16.7	+46 12	9.5	11.5	0.8 +	2416741	V	..	Ceraski
032339	187.1904	— Persei	797	23.9	+39 19	9.3	11.5	161.7	2416743	II	..	Williams
043208	279.1904	— Tauri	..	4 32.8	+ 8 9	9	<12	..	....	II?	Md	Fleming
045823	2.1904	RT Tauri	..	58.2	+23 30	9.3	10.3	..	....	..	..	Millosevich
052504	280.1904	— Orionis	949	5 25.1	+ 4 7	..	..	..	....	..	K 5 M	Fleming
052906b	51.1904	— Orionis	..	29.7	- 6 10	13.4	14.5	..	....	..	..	I. Roberts
053005g	93.1904	— Orionis	..	30.0	- 5 8	..	..	..	....	..	..	I. Roberts
053004b	62.1904	— Orionis	..	30.2	- 4 32	12.2	14.6	..	....	..	..	I. Roberts
053005x	178.1904	— Orionis	..	30.3	- 5 28	12.4	13.3	..	....	..	..	Parkhurst
053005y	179.1904	— Orionis	..	30.3	- 5 28	14.4	15.2	..	....	..	..	Parkhurst
053005z	180.1904	— Orionis	..	30.4	- 5 28	15.2	16.5	..	....	..	..	Parkhurst
053005aa	181.1904	— Orionis	..	30.4	- 5 26	14.0	16.6	..	....	..	..	Parkhurst
053005ab	182.1904	— Orionis	..	30.4	- 5 27	11.9	16.1	..	....	..	..	Parkhurst
053005h	8.1904	— Orionis	..	30.9	- 5 20	11.5	<15	..	....	..	..	Wolf
053005f	77.1904	— Orionis	..	30.9	- 5 54	14.1	14.8	..	....	..	..	I. Roberts
053205a	168.1904	— Orionis	..	32.1	- 5 28	..	..	..	....	..	..	I. Roberts
053201	11.1904	X Orionis	..	32.6	- 1 50	11.0	<14	146	2411774	II	..	Wolf
053205b	169.1904	— Orionis	..	32.6	- 5 16	..	..	..	....	..	..	I. Roberts
055020	9.1904	— Orionis	..	50.0	+20 9	9.9	10.7	R	....	..	..	Luther
055646	157.1904	RS Aurigae	1089	56.4	+46 16	9.2	10.5	..	....	..	..	Ceraski
060443	133.1904	RR Aurigae	..	6 4.8	+43 11	..	..	..	....	..	Md	Fleming
062742	21.1904	— Aurigae	1571	27.6	+42 34	..	..	..	....	..	N	Fleming
064018	12.1904	RT Gemin.	..	40.7	+18 44	10.0	<15.5	..	....	..	..	Wolf
070205	10.1904	RS Monocer.	..	7 2.2	+ 5 9	9	10.5	..	....	..	..	Anderson
071124	141.1904	RV Gemin.	..	11.9	+24 6	10.5	<15	..	....	..	..	Wolf
072121	15.1904	RU Gemin.	..	21.0	+21 38	12.1	14	R	....	V?	..	Bohlin
074205	22.1904	— Can. Min.	..	42.8	+ 5 44	..	..	..	....	..	..	Wells
075820	3.1904	Y Cancri	..	58.6	+20 25	12	14	..	....	..	..	Wolf
081473	183.1904	Z Camelop.	..	8 14.1	+73 26	10	13	180.5	2414313	II	..	(Greenwich)
094735	19.1904	S Leonis Min.	..	9 47.8	+35 24	8.5	11	284	2413699	II	Md	Anderson
101112	13.1904	— Leonis	..	10 11.8	+12 53	12	..	..	....	..	..	Wolf
115158	25.1904	Z Ursae Maj.	1346	11 51.3	+58 26	..	..	..	....	..	Md	King
123556	134.1904	Y Ursae Maj.	1615	12 35.8	+56 24	8	9	..	....	..	Mc 5 d	Fleming
131373	.. .	— Muscae	1134	13 13.5	-73 55	..	..	..	....	..	..	Wells
133119	28.1904	— Virginis	3640	31.0	-19 5	..	..	..	....	..	..	Fleming
141467	113.1904	U Ursae Min.	..	14 14.9	+67 10	8.5	12	..	....	..	..	Ceraski
144342	135.1904	RY Centauri	..	43.3	-42 5	..	..	..	....	..	Md	Fleming
171145	29.1904	— Arae	11383	17 11.6	-45 52	..	..	..	....	..	N	Wells

Des.	Prov. Des.	Name.	DM.	R. A. 1900.	Dec. 1900.	Max.	Min.	Period.	Epoch.	Class.	Sp.	Discoverer.
172809	18.1904	RU Ophiuchi	3414	<i>h. m.</i> 17 28.1	<i>° ' "</i> + 9 30	9	12	<i>d.</i> ..	....	..	..	Ceraski
172907	136.1904	RV Ophiuchi	3404	29.8	+ 7 19	9	12	..	....	V	A	Fleming
175007	158.1904	RW Ophiuchi	..	50.5	+ 7 51	10	12.5	745?	2414868	II	..	Ceraski
181115	165.1904	V Serpentis	4905	18 11.1	-15 33	9.5	11.1	3.4+	2410002	V	A	Leavitt
181631	281.1904	- Lyrae	..	16.7	+31 41	..	..	..	....	..	Md	Fleming
182224	162.1904	SV Herculis	..	22.3	+24 58	9.5	<13	202	2412676	II	..	Pickering
184017	139.1904	- Sagittarii	..	40.0	-17 24	12.2	<14.5	..	....	..	..	Wolf
184062	188.1904	- Draconis	..	40.9	+62 34	9.3	12	..	....	V?	..	Ceraski
184212	140.1904	V Scuti	..	42.5	-12 14	11.5	<14.5	255	2413000	II	..	Dugan
190643	109.1904	ST Lyrae	..	19 6.6	+43 29	10	13	..	....	..	..	Ceraski
190819b	282.1904	- Sagittarii	..	8.5	-19 0	12.7	13.7	..	....	..	..	Breslin
191331	137.1904	SW Sagittarii	16579	13.4	-31 54	9.2	11.7	289	2410060	II	Md	Fleming
193310	111.1904	- Aquilae	..	33.7	+10 22	13.0	<15	..	....	..	..	Wolf
193410	112.1904	- Aquilae	..	34.2	+10 17	11.2	12.7	..	....	..	..	Wolf
194080	184.1904	- Draconis	..	40.6	+80 42	..	..	..	....	S	..	(Greenwich)
195326	161.1904	X Vulpeculae	3741	53.3	+26 17	9.5	10.5	..	....	IV?	..	Ceraski
200041	154.1904	WW Cygni	3595	20 0.6	+41 18	9.3	12.5	3.3+	2416722	V	..	Ceraski
200158	14.1904	- Cygni	..	1.3	+58 40	10.7	11.6	R	....	IV	..	Ceraski
200525	5.1904	W Vulpeculae	4126	5.9	+25 59	9	10	Irr?	....	III?	..	Ceraski
200949	283.1904	- Cygni	3225	9.8	+49 9	..	..	..	....	..	Mc 5 d	Fleming
201250	31.1904	- Telescopii	12918	12.9	-50 8	..	..	..	....	..	N	Wells
203223	143.1904	- Vulpeculae	..	32.0	+23 31	11.2	13.2	..	....	..	..	Wolf
203226	4.1904	V Vulpeculae	..	32.3	+26 15	8.0	9.7	75.3	2416486	IV	..	Williams
203222	144.1904	- Vulpeculae	..	32.3	+22 33	10.8	<15	..	....	..	..	Wolf
203225	145.1904	- Vulpeculae	..	32.7	+25 58	12.0	15	..	....	..	..	Wolf
203422	146.1904	- Vulpeculae	4137	34.5	+22 54	10.3	10.8	..	....	IV	..	Götz
203423	147.1904	- Vulpeculae	..	34.9	+23 9	10.3	14	..	....	..	..	Wolf
203526	148.1904	- Vulpeculae	..	35.3	+26 55	11.9	14.0	..	....	..	..	Wolf
203726	149.1904	- Vulpeculae	..	37.4	+26 57	12.0	13.5	..	....	..	..	Wolf
205126	150.1904	- Vulpeculae	..	51.6	+26 18	11.0	<15	..	....	..	..	Wolf
205223	151.1904	- Vulpeculae	..	52.3	+23 12	11.9	<15	..	....	..	..	Wolf
205327	152.1904	- Vulpeculae	..	53.1	+27 28	9.9	11.2	..	....	..	..	Wolf
205325	153.1904	- Vulpeculae	..	53.4	+25 7	12.3	13.5	..	....	..	..	Wolf
211741	138.1904	V Microscopii	..	21 17.5	-41 7	..	..	..	....	..	Md	Fleming
214464	185.1904	- Cephei	..	44.2	+64 9	10	12.5	..	....	..	..	Ceraski
214443	164.1904	WY Cygni	..	44.7	+43 46	9	12.5	R	....	II	..	Ceraski
214742	7.1904	VZ Cygni	4233	47.7	+42 40	8.2	9.2	..	....	IV	..	Ceraski
220337	163.1904	W Lacertae	..	22 3.2	+37 15	9.5	<12.5	285	2415246	II	..	Ceraski
220912	142.1904	RU Pegasi	..	9.2	+12 12	9.5	12.2	..	....	..	..	Graff
222129	159.1904	RV Pegasi	..	21.0	+29 58	9	<11	..	....	II	Md	Williams
223462	86.1903	T Tucanae	6358	34.0	-62 4	8.0	<13.9	250.6	2415150	II	..	(Cape)
224455	110.1904	V Lacertae	2815	44.6	+55 48	8.5	9.5	..	....	IV?	..	Ceraski
230552	166.1904	- Androm.	3375	23 5.1	+52 31	8.7	9.4	..	....	..	..	Graff
230752	167.1904	- Androm.	3386	7.0	+52 21	8.9	9.6	122	2416652	..	..	Graff
233261	108.1904	RS Cassiop.	2847	32.6	+61 53	9	11	..	....	..	..	Ceraski
234153	160.1904	RT Cassiop.	..	41.4	+53 57	10	<12	..	....	..	..	Ceraski

REMARKS.

001855. This is star "e" in the Harvard sequence of comparison stars for the variable, T Cassiopeiae. See Annals, **37**, 4.
020448. The elements are for minima.
021556. In the cluster, N. G. C. 884.
025867. May be of the Algol type, or irregular. Ceraski.
031646. Times of minima, 1904, September 17, $5^h 45^m$ G. M. T., + $20^h 23^m 11^s$ E. The variation takes place in 2.5 hours. Ceraski.
032339. The elements are for minima.
045823. This star is not in the Bonn Durchmusterung, but is No. 1625 in the Catalog Astron. Gesell. X, magnitude 9.3.
052504. The spectrum is peculiar, and shows a bright line of slightly shorter wave length than H δ .
- 053205b. Only slight variation so far observed.
055020. This is star "q" in the Harvard sequence of comparison stars for U Orionis. See Annals, **37**, 156. Daniel's observations do not agree with Luther's period of 41.4 days. Variation may be irregular.
072121. Period 338 or 169 days. Time during which the light varies probably less than 28 days. Bohlin.
094735. Variability was found independently by means of its spectrum by Mrs. Fleming, in January, 1905. Six chart plates show a variation of at least two magnitudes. They also show that the star was brighter than + $35^\circ 2072$, magnitude 9.2, on May 19, 1896, and on December 4, 1904. The observations agree fairly well with the provisional elements given in the table.
123556. Suspected by Espin.
131373. Suspected by Kapteyn.
181631. Published in Circular No. 92 as in the constellation Hercules, which was changed to Lyra in the Astron. Nach. **167**, 183. The constellation is Hercules according to the Uranometria Nova, Plate V, and Lyra according to Plate VI. According to Heis, it is in Lyra, but only a tenth of a millimetre from the boundary line.
- 190819b. This star was measured on 45 plates, extending from 1889 to 1904. Period probably irregular. On 257 other plates of the region, the star was too faint to appear.
191331. This is the following of two close stars in the same declination.
200041. Times of minima, 1904, August 29, $12^h 38^m$, G. M. T., + $3^d 7^h 37^m.9$ E. Blajko.
200158. Light curve similar to stars of the cluster type. Period about $3^d.2$. Ceraski.
200526. Suspected by Espin.
203226. The light curve appears to be like that of β Lyrae. Williams.
214443. Period about 10.5 months. Ceraski.
220912. The southern component of a close double star.

Elements have been derived by Miss Cannon for ten known variables, from observations of the Harvard photographs made mainly by Miss S. E. Breslin. The designation, name, period, and epoch are given in Table II.

TABLE II.
ELEMENTS OF KNOWN VARIABLES.

Des.	Name.	Period.	Epoch.	Des.	Name.	Period.	Epoch.
002546	T Phoenicis	282	2410124	125057	- Crucis	377	2410279
051247	- Pictoris	$200 \pm$	2410004	150850	W Lupi	236	2410203
092048	- Velorum	421	2410403	165636	RT Scorpii	444	2410120
103370	RZ Carinae	272	2410126	171843	SW Scorpii	260	2410151
103361	RX Carinae	334	2410147	172586	S Octantis	258	2410189

The Harvard collection of photographs has proved a fruitful source for the discovery of variable stars. The total number so far announced, including seven discovered visually, is over eleven hundred. As more than eight hundred others,

as yet unpublished, have been discovered during the last few weeks, it is probable that this number will be greatly increased. A convenient designation for these objects is much to be desired. That described in the Harvard Annals, 48, 93, has proved exceedingly useful here, and is in daily use by the Harvard observers of variable stars. The chief objections which have been raised to this notation are that six figures cannot be retained in the memory, and that, even if so retained, they cannot be used for setting a telescope with a larger aperture than two inches. While it is difficult to remember six disconnected figures, this is not the case if the figures are grouped, as is shown in daily life in numbers of telephones and of houses, in large cities. The designation 194632, of the variable star χ Cygni, should be read, nineteen, forty-six, thirty-two, north; not one, nine, four, six, three, two. The figures indicate that the position is in R. A. $19^h 46^m$, Dec. $+32^\circ$ (1900). Faint stars cannot be safely identified by positions alone, however exact. In practise here, with a six inch telescope, variables are often found with certainty from a recollection of these designations and the configurations. Like any other notation dependent on position, this is not well adapted to the case of variables in clusters, or where many objects are very near together. It is believed that a current number preceded by the letter H will prove convenient in designating all the variables discovered at this Observatory. In assigning these numbers, the variables found here and contained in the Provisional Catalogue of Variable Stars, published in these Annals, 48, 96, were first arranged according to the year of discovery, or announcement, and those in each year, in the order of right ascension. The numbers 1 to 196 are assigned to these stars, as is shown in Table III. The positions of 527 variables in clusters, nearly all discovered by Professor Bailey, are given in the Annals, 38, 237, published in 1901. The numbers 197 to 723 are assigned to these stars. Numbers 724 to 727 are given to the stars published in the Annals, 48, 122. Numbers 728 to 738 are assigned to stars discovered in 1903, and published in Harvard Circulars, Nos. 76 and 77. The later numbers are assigned to the variables in the order in which they have been announced in the Harvard Circulars, as is shown in Table III. The stars H 196 and H 727 have been interchanged, in order to render the dates continuous. The first column gives the number which, preceded by the letter H, will serve to identify the object. The designation described in Vol. 48, 93, is given in the second column, the usual name of the star, or the means of identifying it, is given in the third column. For stars in clusters, the number of the cluster in the New General Catalogue of Dreyer is given, followed by the number of the variable in Volume 38. In general, the numbers of the first and last variable in each cluster are given, as the other

numbers can be found by a simple addition. The number of each variable in the Orion Nebula is given, since those found by other observers are omitted in Table III. For the corresponding later circulars only the first and last variables are given. The year of discovery or announcement is given in the fourth column. The fifth column gives the name of the discoverer: B, denoting S. I. Bailey; Bo, G. P. Bond; Br,

TABLE III.

DESIGNATIONS OF VARIABLE STARS DISCOVERED AT HARVARD.

II.	Des.	Name.	Y.	Dis.	II.	Des.	Name.	Y.	Dis.
1	053005 a	T Orionis	1863	Bo.	35	194604	X Aquilae	1894	F
2	075612	U Puppis	1881	P	36	194659	S Pavonis	"	F
3	163172	R Ursae Minoris	"	P	37	203429	R Microscopii	"	F
4	121948	S Centauri	1889	F	38	001862	S Tucanae	1895	F
5	015254	U Persei	1890	F	39	031401	X Ceti	"	W
6	015556	V Persei	"	F	40	035124	T Eridani	"	F
7	023133	R Trianguli	"	F	41	044349	R Pictoris	"	F
8	043738	R Caeli	"	F	42	050022	T Leporis	"	F
9	164844	RS Scorpii	"	F	43	050848	S Pictoris	"	F
10	194048	RT Cygni	"	F	44	074241	W Puppis	"	F
11	201139	RT Sagittarii	"	F	45	090425	W Cancri	"	F
12	033362	U Camelopardali	1891	F	46	093707	R Sextantis	"	W
13	195142	RU Sagittarii	"	F	47	110361	RS Carinae	"	F
14	204104	W Aquarii	"	F	48	114441	X Centauri	"	F
15	204318	V Delphini	"	F	49	115058	W Centauri	"	F
16	222439	S Lacertae	"	F	50	133431	Z Centauri	"	F
17	025050	R Horologii	1892	F	51	141549	T Lupi	"	W
18	055686	R Octantis	"	F	52	142529	Y Centauri	"	F
19	142205	RS Virginis	"	F	53	152714	RU Librae	"	F
20	151822	RS Librae	"	F	54	153378	S Ursae Minoris	"	F
21	172586	S Octantis	"	F	55	170833	RW Scorpii	"	F
22	194929	RR Sagittarii	"	F	56	173543	RU Scorpii	"	F
23	235265	R Tucanae	"	E	57	182133	RV Sagittarii	"	F
24	054629	R Columbae	1893	F	58	195308	RS Aquilae	"	F
25	152250	Nova Normae	"	F	59	200747	R Telescopii	"	F
26	165636	RT Scorpii	"	F	60	203317	W Delphini	"	W
27	180363	R Pavonis	"	F	61	204954	S Indi	"	F
28	001032	S Sculptoris	1894	F	62	205782	T Octantis	"	F
29	095458	RR Carinae	"	F	63	214247	R Gruis	"	F
30	101058	Z Carinae	"	F	64	215605	V Pegasi	"	F
31	122854	U Centauri	"	F	65	221321	X Aquarii	"	F
32	144646	S Lupi	"	F	66	235357	S Phoenicis	"	F
33	165030	RR Scorpii	"	F	67	000339	V Sculptoris	1896	F
34	171401	Z Ophiuchi	"	F	68	022260	S Horologii	"	F

II.	Des.	Name.	Y.	Dis.	II.	Des.	Name.	Y.	Dis.
69	051533	T Columbae	1896	F	114	160210	U Serpentis	1898	F
70	070109	V Canis Minoris	"	F	115	165454	T Arae	"	W
71	074305	- Canis Minoris	"	F	116	173457	V Pavonis	"	W
72	094622	Y Hydrae	"	W	117	174162	W Pavonis	"	F
73	111661	RS Centauri	"	F	118	174551	U Arae	"	F
74	122657	U Crucis	"	F	119	183838	- Coronae Austr.	"	F
75	125705	R T Virginis	"	F	120	193732	TT Cygni	"	W
76	145971	S Apodis	"	F	121	200360	X Pavonis	"	F
77	150619	Librae	"	P	122	202240	U Microscopii	"	F
78	183437	U Coronae Austr.	"	F	123	210116	RS Capricorni	"	F
79	190819a	RW Sagittarii	"	F	124	210714	- Aquarii	"	F
80	190818	RX Sagittarii	"	F	125	211345	T Indi	"	W
81	193972	T Pavonis	"	F	126	221608	- Aquarii	"	F
82	202128	T Microscopii	"	F	127	235048	RS Andromedae	"	F
83	204763	U Pavonis	"	F	128	235855	Y Cassiopeiae	"	F
84	213843	SS Cygni	"	W	129	185613	Nova Sagittarii	1899	F
85	221938	T Gruis	"	F	130	191500	Nova Aquilae	1900	F
86	221948	S Gruis	"	F	131	021071	- Hydri	1901	F
87	230330	Y Sculptoris	"	F	132	022669	- Hydri	"	F
88	234716	Z Aquarii	"	F	133	023723	- Ceti	"	F
89	002546	T Phoenicis	1897	F	134	024154	- Horologii	"	F
90	051869	S Doradus	"	F	135	034601	- Eridani	"	F
91	133155	RV Centauri	"	F	136	070135	- Puppis	"	F
92	200844	RZ Sagittarii	"	F	137	070311	- Canis Majoris	"	F
93	005475	- Tucanae	1898	F	138	072046	- Lyncis	"	F
94	033555	- Reticuli	"	F	139	081908	- Hydrae	"	F
95	035916	V Eridani	"	F	140	082476	R Chamaeleontis	"	F
96	040725	W Eridani	"	F	141	083409	RV Hydrae	"	F
97	051247	- Pictoris	"	F	142	091868	RW Carinae	"	F
98	062808	Z Monocerotis	"	F	143	095141	X Velorum	"	W
99	065208	X Monocerotis	"	F	144	103039	U Antliae	"	W
100	072211	- Puppis	"	F	145	103361	RX Carinae	"	P
101	080138	RT Puppis	"	W	146	110254	RW Centauri	"	W
102	080322	RU Puppis	"	W	147	121508	- Virginis	"	F
103	082405	RT Hydrae	"	F	148	130656	- Centauri	"	W
104	083350	X Ursae Majoris	"	F	149	130802	- Virginis	"	F
105	091365	RU Carinae	"	F	150	132477	- Chamaeleontis	"	F
106	100860	U Ursae Majoris	"	F	151	133618	RY Virginis	"	W
107	104058	RT Carinae	"	W	152	141647	- Lupi	"	F
108	115905	RX Virginis	"	F	153	145253	V Lupi	"	F
109	120206	RW Virginis	"	F	154	150850	W Lupi	"	P
110	131561	- Centauri	"	F	155	152057	R Circini	"	F
111	140113	Z Boötis	"	W	156	160248	V Normae	"	F
112	143017	RV Librae	"	Le	157	160952	W Normae	"	F
113	150469	- Triang. Austr.	"	W	158	161450	- Normae	"	F

II.	Des.	Name.	Y.	Dis.	H.	Des.	Name.	Y.	Dis.
159	161751	X Normae	1901	F	355	132046	N. G. C. 5139, 132	1901	B
160	163967	V Triang. Austr.	"	F	356	133728	" 5272, 1	"	B
161	171843	SW Scorpil	"	F	492	"	" " 137	"	B
162	173535	- Scorpil	"	F	493	151302	" 5904, 1	"	B
163	174035	SX Scorpil	"	F	584	"	" " 92	"	B
164	174406	RS Ophiuchi	"	F	585	161122d	" 6093, 1	"	B
165	174748	V Arae	"	F	586	"	" " 2	"	B
166	174949	W Arae	"	F	587	163836	" 6205, 1	"	B
167	175839	W Coronae Austr.	"	F	588	"	" " 2	"	B
168	180245	X Coronae Austr.	"	F	589	165429	" 6266, 1	"	B
169	180742	Y Coronae Austr.	"	F	614	"	" " 26	"	B
170	181315	- Serpenti	"	F	615	173253	" 6397, 1	"	B
171	181949	T Telescopil	"	F	616	"	" " 2	"	B
172	182345	- Coronae Austr.	"	F	617	181824	" 6626, 1	"	B
173	182416	SS Sagittarii	"	F	625	"	" " 9	"	B
174	185008	T Scuti	"	F	626	183023	" 6656, 1	"	B
175	185512	ST Sagittarii	"	F	641	"	" " 16	"	B
176	185722	SU Sagittarii	"	F	642	185236	" 6723, 1	"	B
177	190048	- Telescopil	"	F	657	"	" " 16	"	B
178	190049	U Telescopil	"	F	658	193331	" 6809, 1	"	B
179	191050	V Telescopil	"	F	659	"	" " 2	"	B
180	192242	RR Lyrae	"	F	660	212511	" 7078, 1	"	B
181	192816	- Sagittarii	"	W	710	"	" " 51	"	B
182	194041	- Sagittarii	"	F	711	212801	" 7089, 1	"	B
183	194350	W Telescopil	"	F	720	"	" " 10	"	B
184	200027	- Sagittarii	"	F	721	213423	" 7099, 1	"	B
185	201152	X Telescopil	"	F	723	"	" " 3	"	B
186	201251	Y Telescopil	"	F	724	092048	- Velorum	1902	F
187	213542	UU Cygni	"	C	725	103270	RZ Carinae	"	F
188	220585	- Octanti	"	F	726	125057	- Crucis	"	F
189	221722	RT Aquarii	"	F	727	215543	UZ Cygni	"	F
190	222029	T Piscis Austr.	"	F	728	054615c	RU Tauri	1903	F
191	225914	RW Pegasi	"	P	729	062742	- Aurigae	"	F
192	231917	RU Aquarii	"	F	730	074205	- Canis Minoris	"	W
193	232848	Z Andromedae	"	F	731	115158	- Ursae Majoris	"	K
194	234956	ρ Cassiopeiae	"	W	732	130756	- Centauri	"	Br.
195	235525	Z Pegasi	"	F	733	133119	- Virginis	"	F
196	205840	- Cygni	"	D	734	171145	- Arae	"	W
197	001972	N. G. C. 104, 1	"	B	735	183728	- Lyrae	"	F
204	"	" " 8	"	B	736	201250	- Telescopil	"	W
205	005871	" 362, 1	"	B	737	201316	- Capricorni	"	F
218	"	" " 14	"	B	738	231110	- Pegasi	"	F
219	052024	" 1904, 1	"	B	739	052705b	Circular 78, I, 1	1904	L
223	"	" " 5	"	B	740	052805b	" " 2	"	L
224	132046	" 5139, 1	"	B	741	052804b	" " 4	"	L

H.	Des.	Name.	Y.	Dis.	H.	Des.	Name.	Y.	Dis.
742	052804c	Circular 78, I, 5	1904	L	787	053206a	Circular 78, I, 67	1904	L
743	052805c	" " 6	"	L	788	053307b	" " 68	"	L
744	052806a	" " 7	"	L	789	053506b	" " 70	"	L
745	052806b	" " 8	"	L	790	052406	Circular 79, I, 1	"	L
746	052905a	" " 9	"	L	791	052504	" " 2	"	L
747	052906c	" " 11	"	L	792	052705c	" " 3	"	L
748	052905b	" " 12	"	L	793	052702	" " 4	"	L
749	052905c	" " 13	"	L	794	053005w	" " 5	"	L
750	052904c	" " 14	"	L	795	053006d	" " 6	"	L
751	052905d	" " 15	"	L	796	053206b	" " 7	"	L
752	052905e	" " 17	"	L	797	053302a	" " 8	"	L
753	052904d	" " 18	"	L	798	053302b	" " 9	"	L
754	052905f	" " 20	"	L	799	...	" " 10	"	L
755	052905g	" " 21	"	L	807	...	" " 18	"	L
756	052905h	" " 22	"	L	808	...	" " 19	"	P
757	052905i	" " 23	"	L	809	...	" II, 1	"	L
758	052906d	" " 24	"	L	865	...	" " 57	"	L
759	053005i	" " 27	"	L	866	060443	RR Aurigae	"	F
760	053006c	" " 28	"	L	867	123556	Y Ursae Majoris	"	F
761	053005j	" " 29	"	L	868	144342	RY Centauri	"	F
762	053004c	" " 30	"	L	869	172907	RV Ophiuchi	"	F
763	053005k	" " 31	"	L	870	191331	SW Sagittarii	"	F
764	053005l	" " 33	"	L	871	211741	V Microscopii	"	F
765	053005m	" " 36	"	L	872	...	Circular 82, I, 1	"	L
766	053005n	" " 37	"	L	976	...	" " 105	"	F
767	053005o	" " 38	"	L	977	...	" " 106	"	F
768	053004d	" " 39	"	L	1023	...	" " 152	"	L
769	053004e	" " 40	"	L	1024	052805d	Circular 86, II, 76	"	L
770	053005p	" " 42	"	L	1025	052905j	" " 77	"	L
771	053005q	" " 43	"	L	1026	052905k	" " 78	"	L
772	053005r	" " 44	"	L	1027	052905l	" " 79	"	L
773	053004f	" " 45	"	L	1028	052905m	" " 80	"	L
774	053005s	" " 48	"	L	1029	052905n	" " 81	"	L
775	053005t	" " 49	"	L	1030	052905o	" " 82	"	L
776	053005u	" " 50	"	L	1031	052905p	" " 83	"	L
777	053005v	" " 51	"	L	1032	052905q	" " 84	"	L
778	053105c	" " 55	"	L	1033	053006e	" " 86	"	L
779	053106c	" " 56	"	L	1034	053106i	" " 88	"	L
780	053104b	" " 58	"	L	1035	053106j	" " 89	"	L
781	053106d	" " 60	"	L	1036	053105e	" " 90	"	L
782	053106e	" " 61	"	L	1037	182224	SV Herculis	"	P
783	053106f	" " 62	"	L	1038	181115	V Serpentis	"	L
784	053106g	" " 64	"	L	1039	...	Circular 90, I, 1	"	L
785	053105d	" " 65	"	L	1110	...	" " 72	"	L
786	053106h	" " 66	"	L	1111	...	Circular 90, II, 1	"	L

H.	Des.	Name.	Y.	Dis.	H.	Des.	Name.	Y.	Dis.
1143	...	Circular 90, II, 33	1904	L	1166	000451	— Cassiopeiae	1905	F
1144	...	Circular 91, 1	"	L	1167	001249	— Cassiopeiae	"	F
1159	...	" " 16	"	L	1168	020257	— Eridani	"	F
1160	043208	— Tauri	"	F	1169	123459	— Ursae Majoris	"	F
1161	052504	— Orionis	"	F	1170	125705b	— Virginis	"	F
1162	181631	— Lyrae	"	F	1171	144646b	— Lupi	"	F
1163	190819b	— Sagittarii	"	Br.	1172	215122	— Pegasi	"	F
1164	200949	— Cygni	"	F	1173	224625	— Piscis Austr.	"	F
1165	131373	— Muscae	"	W					

S. E. Breslin; C. H. R. Colson; D. J. A. Dunne; F. W. P. Fleming; K. E. S. King; L. H. S. Leavitt; Le. E. F. Leland; P. E. C. Pickering; and W. L. D. Wells. As examples of this notation, H 1 will denote T Orionis; H 197, Variable No. 1, in the Cluster N. G. C. 104, whose position is given in the Annals, 38, 237, as $36''.8$ following, and $112''.6$ south, of the centre of the cluster. The second variable in this cluster will be denoted as H 198, and the fifth, as H 201. The first variable in the Large Magellanic Cloud, given in Table I of Circular No. 82, is H 872, and the forty-first is H 912.

The number in the first column of Table III may not be exactly equal to the total number first discovered here. It is always possible that a record may be found that one of these objects has previously been discovered elsewhere. In the case of visual observations, at least twelve stars, announced by other astronomers, have been found to be probably constant in light, although the final designations of variables have been assigned to them, as shown in the Annals, 48, 121. This is less likely to occur in the variables found here by photography, since each is confirmed by a second observer, using a number of photographs. Numbers were assigned to 2 stars in N. G. C. 104, to 4 stars in N. G. C. 5139, to 5 stars in N. G. C. 5272, and to 7 stars in N. G. C. 5904, whose variability has not yet been confirmed. To prevent confusion and possibility of error it appeared safer to retain these numbers. To offset these causes which might render the number too large, many stars have been omitted, like the twelve in Table II of Circular No. 78, which, though almost certainly variable, have so far been shown to change only by a small amount.

The designations given in the second column, for stars in clusters, are those corresponding to the centre of the cluster, as otherwise they might be affected by slight errors in the absolute positions. To prevent confusion, the designations have been omitted for the first and last stars in Circulars Nos. 79, 82, 90, and 91, since they would not furnish the designations of the intermediate stars, all of which may be found from the original tables.