

No. 44 $L = 255^0$ $b = - 18^0$.

Grosser behofter Fleck mit mehreren Kernen, veränderlich, und mit nachfolgenden kleinen Flecken; eingetreten Juni 17.

No. 45 $L = 258^0$ bis 247^0 $b = - 25^0$.

Zuerst ein kleiner Fleck Juni 17 und 18, dann einige Flecke 19; darauf Juni 20 Bildung einer bedeutenden Gruppe unter beträchtlichen Aenderungen im Laufe dieses Tages und an den folgenden Tagen. Juni 24 und 25 waren die beiden Gruppen No. 44 und 45 so vergrössert dass sie eine einzige dicht mit Flecken besetzte Gruppe bildeten.

No. 47 $L = 233^0$ $b = + 14^0$ u. $+ 21^0$.

Kleine Flecke, nur Juni 24 bis 26 beobachtet.

No. 49 $L = 187^0$ $b = - 17^0$.

Behofter Fleck, auf der Mitte der Sonnenscheibe entstanden; Juli 4 am SW-Rande.

No. 48 $L = 133^0$ $b = - 26^0$.

Fleck, eingetreten Juni 26, von Juli 1 verschwunden.

No. 50 $L = 126^0$ bis 114^0 $b = - 37^0$.

Gruppe von wenigen Flecken.

No. 51 $L = 70^0$ $b = - 20^0$.

Gruppe, entstanden Juli 4; zahlreich Juli 6 bis 9, darauf schnell vermindert.

No. 52 $L = 42^0$ $b = - 22^0$.

Kleiner Fleck, nur Juli 11 beobachtet.

Rotationsperiode 264.

von \swarrow Juli 12 bis \swarrow Aug. 7.

No. 53 $L = 332^0$ $b = - 19^0$.

Kleine Flecke, beobachtet Juli 10 und 12.

Darauf wurde die Sonne fleckenfrei gefunden an den Tagen Juli 13, 14, 15, 16.

No. 54 $L = 284^0$ $b = + 22^0$.

Kleine Flecke, nur Juli 17 beobachtet.

No. 55 $L = 262^0$ $b = + 22^0$.

Gruppe kleiner Flecke, erst Juli 21 im nordwestlichen Quadranten entstanden.

No. 56 $L = 243^0$ bis 227^0 $b = + 21^0$.

Zuerst Juli 17. ein kleiner Fleck, bis Juli 19 noch unbedeutend, darauf schnelle Entwicklung einer zahlreichen Gruppe.

No. 57 $L = 110^0$ $b = + 25^0$.

Kleine Flecke Juli 25—31; verschwunden Aug. 1.

No. 58 $L = 90^0$ $b = + 13^0$.

Kleine Gruppe, nur Juli 28 und 29 beobachtet.

No. 59 $L = 90^0$ $b = + 38^0$.

Kleiner Fleck, nur Aug. 4. im nordw. Quadr. beob.

No. 60 $L = 59^0$ $b = - 16^0$.

Zwei kleine Flecke nahe dem Westrande Aug. 8.

No. 61 $L = 17^0$ bis 3^0 $b = + 12^0$.

Gruppe mit grossem behoften Fleck und anderen behoften Theilen, eingetreten Aug. 1; zuletzt beob. am westlichen Rande Aug. 13.

No. 62 $L = 17^0$ $b = - 22^0$.

Kleine Flecke, beobachtet Aug. 6—8.

Potsdam 1881, April 26.

Prof. Dr. *Spoerer*.

Schreiben des Herrn Professor Edw. C. Pickering an den Herausgeber.

Herewith I send you a list of objects discovered here, and having some peculiarity either of color or of the distribution of light in their spectra. The columns of the list contain successively a number for reference, the designations of the objects, their places for 1880, the general character of their spectra, and additional remarks. In the column of designations, U. A. denotes the Uranometria Argentina, and is followed in each case by the constellation and number of the star in that work. All the stars described in it as red, and visible in this latitude, are in course of spectroscopic examination here, and those which have thus far been noted as remarkable are included in the present list. The other objects in the list were found during an extensive search for interesting stellar or nebulous spectra which is still going on at this Observatory.

Stars having interrupted spectra have been variously classified, but are generally said to be either of Type III or of Type IV. For a satisfactory classification, measures are requisite, and have been undertaken here, which will show the forms of light curve exhibited by interrupted spectra of different kinds. In the present list, the term »Type III« is applied only to continuous spectra divided by several narrow bands, and resembling those of α Herculis and α Orionis. »Type« IV denotes what may be regarded as the normal fourth type. A spectrum thus described consists of a well defined yellow band, a broad green band well defined on the more refrangible side and generally less sharply bounded on the other, and a blue band, in some cases well defined towards the violet. Interrupted spectra which could not be assigned to either class with con-

fidence, or at least without much doubt, have been described in the list by the word »bands« or »bright lines«; when more detail seemed to be desirable, it is added in the column of remarks. Some doubt with regard to the spectrum of a star is indicated by an

interrogation point in the column of spectra.

The list contains thirty-three stars with peculiar spectra, three remarkable only for their redness, and three small planetary nebulae.

Objects remarkable for their colors or spectra, found at the Astronomical Observatory of Harvard College.

No	Designation	R. A., 1880	Decl., 1880	Spectrum	R e m a r k s.
1	U. A., Cetus, 13	0 ^h 2 ^m 25 ^s	— 18° 14' 6"	Type III?	
2	U. A., Cetus, 22	0 8 19	— 8 26.8	Type III	
3	U. A., Cetus, 25	0 8 32	— 19 35.8	Type III	
4	U. A., Pisces, 80	0 14 0	+ 2 22.1	Bands.	Perhaps variable; red.
5	R Piscium	1 24 27	+ 2 15.6	Type IV?	Bands distinct; fine specimen.
6	DM. + 30° 310	1 51 9	+ 30 33.0	Bands.	
7	DM. + 54° 431	1 51 37	+ 54 14.4	Bands.	Broad well marked bands; star red. Found by O. C. Wendell.
8	U. A. Cetus, 196	1 54 8	— 21 24.4	Type III	
9	DM + 56° 724	2 41 18	+ 56 28.9	Bands.	Star red.; bands suspected.
10	DM. + 57° 702	3 2 12	+ 57 26.7	Type IV	Fine specimen.
11	U. A., Fornax, 83	3 14 21	— 24 33.5	Type III	
12	U. A., Eridanus, 127	3 40 22	— 12 28.0	Type III	
13		3 50 53	— 13 57	Bands.	Star δ γ Eridani.
14	U. A., Caelum, 12	4 38 32	— 30 59.3	Type III?	Found by A. Searle.
15	DM. + 6° 810	4 55 20	+ 6 28.4	Bands.	Broad bright band in red., narrow one in green.
16	DM. + 7° 1103	5 56 40	+ 7 37.5		Spectrum continuous, with much red, in contrast with DM. + 7° 1099, when the red is feeble.
17	U. A., Lepus, 91	6 1 53	— 21 48.9	Type III	Red.
18	U. A., Lepus, 92	6 2 29	— 19 19.2	Type III?	Red.
19	U. A., Can. Maj. 161 $\frac{1}{2}$	6 15 30	— 11 45.8	Type III?	
20	U. A., Can. Maj., 38	6 24 58	— 19 8.1	Type III?	
21		6 38 17	+ 3 26.8	Type IV	Very red.; magnitude 11.
22	Lalande 13412	6 49 13	— 23 46.5	Bright lines.	Wave-lengths 545, 486, (F), 467.
23	U. A., Puppis, 73	7 9 53	— 44 26.7	Bands.	
24	U. A., Can. Maj., 147	7 11 46	— 27 40.2	Bands.	Found by A. Searle.
25		7 55 14	— 12 31	Bands.	
26		7 56 34	— 12 42	Type IV	
27	U. A., Puppis, 251	8 1 7	— 33 13.6	Bands.	Found by O. C. Wendell.
28	U. A., Hydra, 58	8 40 21	— 10 34.3	Type III	Found by O. C. Wendell.
29	U. A., Pyxis, 34	8 45 1	— 29 1.0	Type IV	Found by O. C. Wendell.
30	U. A., Antlia, 71	10 29 53	— 38 56.5	Type IV	Red.
31	Oeltzen 17681	18 1 17	— 21 16.0	Bright lines.	Wave-lengths 580, 467.
32	Planetary nebula	18 4 19	— 28 12	Gaseous	
33	"	18 14 23	— 26 53	Gaseous	Faint and small.
34	"	18 25 10	— 25 13	Gaseous	Bright and small.
35	ϵ Sagittarii	19 55 16	— 28 2.7	Type III	
36		20 4 32	+ 35 28	Type IV	Very red.
37		20 4 37	+ 35 33		Color strong red.; spectrum not peculiar.
38		20 6 34	+ 35 44	Type IV	Red.
39		23 52 57	+ 62 13		Red; spectrum not peculiar, found by O. C. Wendell.

Harvard College Observatory, Cambridge, U. S. April 18., 1881.

Edward C. Pickering.