VARIABLE STAR NOTES

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Peculiarities, behavior, and activity of some of the more prominent variables* for 1976 are given in the notes below, which are in three parts. Part I summarizes the behavior of the different types of stars except U Geminorum variables. Part II lists the dates and brightness of the outbursts of some prominent U Gem stars in our observing program, and Part III is a list of variables in the Notes in order of constellation.

SS Cygni has been included in both Parts I and II due to the special interest of amateur and professional astronomers. Activities stated in the Notes are for 1976, unless otherwise indicated. AAVSO light curve of SS Cygni using the new format of computer plotting of individual observations accompanies the Notes.

PART I

PECULIARITIES IN AAVSO LIGHT CURVES IN 1976

000451 SS Cas. (M). Three bright maxima: $9^m.5$ on January 20, $9^m.0$ on June 20, and $9^m.2$ on November 7 were observed following the faint maximum of $10^m.1$ of September, 1975.

001032 S Scl. (M). On October 27 a bright maximum of magnitude 6.2 was observed following the $7^m.0$ maximum in October, 1975.

001726 T And. (M). The brightest maximum since the $8^m.0$ maximum of 1967, was observed on June 30 at $7^m.9$, which followed the $9^m.3$ maximum of 1975.

004047 U Cas. (M). A bright $8^m.2$ maximum on 3 July followed the $9^m.1$ maximum of 4 October, 1975.

004132 RW And. (M). An $8^m.1$ maximum in October followed the the $10^m.2$ maximum of August, 1975.

005840 RX And. (Z). It varied between $10^m.6$ and $13^m.9$ with 10 to 15 day intervals between maxima until November. Then its amplitude decreased to 1.5 magnitudes and the interval of variation shortened to 6 to 9 days. At the beginning of December, it resumed variability between $10^m.9$ and $13^m.4$ with 12 days between the last two maxima of the year.

010940 U And. (M). A $9^m.6$ maximum was observed at the end of July following the two faint maxima of $10^m.2$ and $10^m.8$ of 1974 and 1975, respectively.

013050 KT Per. (Z). Varied from $11^m.5$ to $15^m.5$ with intervals between 25 and 31 days. There were twelve outbursts.

020657a TZ Per. (Z). Varied between $12^m.6$ and $13^m.9$ until mid-July when it entered into a stillstand for about four months. From mid-November until the end of the year the variation was from $12^m.8$ to $14^m.2$.

02124 R Ari. (M). Two bright maxima in mid-February and mid-August at $8^m.0$ and $8^m.2$, respectively, followed the $9^m.0$ maximum of mid-August, 1975.

021403 o Cet. (M). After a long minimum in October, 1975, where the variable was fainter than $9^m.0$ for about 90 days,

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*Key to variable types in the Notes:

I = Irregular, associated with Nebulae; M = Mira Ceti type; N = Nova; NL = Nova-like; NR = Recurrent Nova; QSO = Quasar; RCB = R Coronae Borealis; S Dor = S Doradus; SR = Semiregular; UG = U Geminorum; Z = Z Camelopardalis; Z And = Z Andromedae (Symbiotic).

the 418th maximum was observed on February 12 at magnitude 4.6. The following minimum was $9^m.1$ on September 10. The magnitude for maximum and minimum is given as $3^m.4$ and $9^m.3$, respectively, in the General Catalog of Variable Stars (GCVS).

021558 S Per. (SR). This semiregular variable faded from $8^m.8$ in the beginning of 1975 to $11^m.8$ by April, 1976. It reached minimum at about $12^m.0$ in mid-April, 700 days after the minimum of May, 1974. It then started to brighten in May and continued to brighten the rest of the year. It reached $9^m.7$ by the end of November. In the Third Supplement to the third edition of GCVS, this member of h and χ Persei cluster is reported to have two oscillations which are superimposed, with periods of 825 and 940 days.

030046 V400 Per. (Nova 1974). (N). It was $13^m.5$ in the beginning of the year. It faded very slowly, reaching $14^m.0$ by the end of March. J. Bortle reported it to be fainter than $14^m.0$ on 22 September. Observers with large aperture telescopes are urged to monitor this nova.

032443 GK Per. (Nova 1901). (N). It fluctuated between $12^m.9$ and $13^m.5$ during the year, with a very short (a few days) and small scale brightening to $12^m.6$ in the middle of November.

040053 XX Cam. (RCB). This R Coronae Borealis star was at maximum, at mean magnitude 7.4 during the year.

043274 X Cam. (M). Another bright minimum at $11^m.9$ was observed on April 16 between two maxima, both of $8^m.0$ on 23 January and 17 June. The following minimum was $12^m.8$ on September 5.

043322 VY Tau. (I). This T Tauri type nebular variable with outbursts, like SS Cygni, with one to several years apart varied between $13^m.2$ and $14^m.2$ during the year.

053326 RR Tau. (I). This nebular variable had another active year. In the beginning of January it was $13^m.5$ when it started to brighten, with fluctuations, reaching about $11^m.0$ by February. It fluctuated between $10^m.5$ and $11^m.7$ until April and then it started to fade, reaching $13^m.4$ by late April. It was at minimum until the end of that month, when it started to brighten again. L. Peltier reported it at $12^m.0$ on May 4, and at its next visibility season he had it at $11^m.0$ on July 31. It fluctuated between $10^m.4$ and $11^m.7$ until the end of the year.

054319 SU Tau. (RCB). It started the year at about $10^m.7$; it reached average magnitude 10 by February and then fluctuated between $9^m.4$ and $10^m.4$ until May. At its next visibility season in August it had faded to minimum. L. Peltier, C. Hurless and E. Mayer observed it between $14^m.9$ and $15^m.7$ through November. The minimum was continuing at the end of the year.

054705 CN Ori. (Z). The brightness ranged from $11^m.9$ to $14^m.7$ with 14 to 22 day intervals between maxima.

060450 X Aur. (M). A bright minimum of magnitude 11.9 was observed in the beginning of April following a maximum of magnitude 8.5 at the end of January. The previous minimum of November, 1975 was $12^m.9$.

061700 V606 Mon (Nova 1975). (N). This interesting nova was about $13^m.0$ in the beginning of the year. It varied between $12^m.8$ and $13^m.2$ until mid-March, then J. Bortle and R. Ariail observed it fading, reaching $14^m.1$ by the end of March. J. Bortle observed it fainter than 14^m in the beginning of May. It was too faint to be observed by A.A.V.S.O. observers the rest of the year. Observers should be cautioned in identifying this variable, due to a very close star of about 14^m, nearby. D. Ya. Martynov at Sternberg Astronomical Institute reports the following photographic observations by S. Y. Shugarov: March 29, 15.7; 31, 15.9; April 1, 16.1; 2, 16.5;

3, 16.9; 4, 17.2; plus a visual magnitude April 23, 17.5 (IAU Circular 2953).

081473 Z Cam. (Z). This variable, prototype of its kind, was at the peak of an outburst when the year began. It was active between January and mid-June undergoing eight outbursts with intervals from 20 to 32 days between maxima and varying between $10^m.2$ and $13^m.9$. From mid-June until the end of the year it was at a standstill with a mean magnitude of $11^m.5$.

085518 SY Cnc. (Z). Varied between $10^m.4$ and $13^m.8$ with intervals of 24 to 30 days between outbursts.

094211 R Leo. (M). A long, flattop maximum of $6^m.0$ was observed during May and the first half of June.

104814 W Leo. (M). Following two faint maxima, both of about magnitude 10.5, in January, 1974, and February, 1975, a bright, $9^m.2$ maximum was observed at the end of February, 1976.

122402 3C-273 Vir. (QSO). Observations ranged from $12^m.5$ to $12^m.9$.

122532 T CVn. (M). A bright minimum of $11^m.3$ in mid-April was followed by a $10^m.1$ maximum in August. The mean magnitudes for maximum and minimum given in the GCVS are $9^m.6$ and $11^m.9$, respectively.

123307 R Vir. (M). A bright minimum of $10^m.7$ was observed on April 6 between two maxima of brightness $6^m.8$ and $6^m.7$ on January 23 and June 19, respectively. The preceding minimum of November, 1975 was also bright, at $10^m.7$. The mean maximum and minimum magnitudes in the GCVS are $6^m.9$ and $11^m.5$.

124238 U CVn. (M). A $9^m.0$ maximum in mid-February followed the $11^m.2$ maximum of 1975, which was the faintest recorded maximum since 1969 when A.A.V.S.O. observations started on this variable.

131546 V CVn. (SR). It continues its periodicity, favoring a period of 191 days, as given in the GCVS. Two maxima were observed, $7^m.0$ at the end of January and $6^m.8$ in early August.

132262 RR UMa. (M). This variable, soon to be added to our regular observing program, had a maximum at $9^m.0$ in mid-June following the two faint maxima of $10^m.1$ and $9^m.8$ in March and November, 1975, respectively.

142539 V Boo. (SR). A sharp maximum was observed in mid-July at $7^m.7$ and was followed by a long standstill. This semiregular variable was at $8^m.7$ from the end of August until mid-November. It then gradually faded, reaching $9^m.5$ by the end of the year.

143227 R Boo. (M). A bright $6^m.8$ maximum on July 3 followed the $7^m.7$ maximum of November, 1975.

150605 Y Lib. (M). A faint maximum of $9^m.3$, observed at the end of May, followed the $8^m.5$ maximum of August, 1975.

154428 R CrB. (RCB). In the beginning of the year it was at $9^m.0$, recovering from a November, 1975 minimum. It reached $8^m.1$ by mid-January, 1976, faded to $8^m.5$, and then continued to brighten again, reaching $6^m.3$ by late March, and the maximum brightness of 6^m by late May. It stayed at maximum the rest of the year.

154615 R Ser. (M). The last three maxima have been of decreasing brightness: September, 1974, $5^m.9$; September, 1975, $6^m.4$; and September, 1976, $7^m.7$.

155526 T CrB. (NR). Observations scattered between $9^m.6$ and $10^m.4$ with the mean of the observations at 10^m.

160118 R Her. (M). A faint maximum of $9^m.5$ on March 22 followed the bright $8^m.0$ maximum of 28 April, 1975.

164025 AH Her. (Z). Varied between $10^m.8$ and $15^m.0$ with 17 to 31 day intervals between outbursts.

174406 RS Oph. (NR). It had a slow overall decline in brightness from $10^m.5$ in January to $11^m.5$ by mid-June. It then started to rise slowly, reaching mean magnitude 10.3 by August and abruptly fading to 11^m within fifteen days. It stayed at mean magnitude 10.8 with observations varying from $10^m.4$ to $11^m.6$ until the end of November.

180222 VX Sgr. (SR). This semiregular variable reached minimum in February, and then slowly brightened during the rest of the year, reaching $8^m.2$ by mid-November.

180445 DQ Her. (Nova 1934). (N). Scattered observations between $14^m.2$ and $14^m.8$.

18065 W Dra. (M). A $10^m.2$ maximum in mid-August followed the faintest recorded maximum for this variable at $11^m.3$ in 1975.

180666 X Dra. (M). The last three maxima observed have been of increasing brightness: $12^m.3$ on 27 November, 1974; $11^m.8$ on 7 August, 1975; $10^m.9$ on 13 April, 1976.

182502 FH Ser. (Nova 1970). (N). E. Mayer observed it at $14^m.7$ on May 4 and $15^m.0$ on August 15. Observers with large aperture telescopes are urged to follow this nova.

182529 V1017 Sgr. (Z And?). This possible Z And type, varied between $14^m.5$ and $14^m.7$, according to T. Cragg.

184300 V603 Aql. (Nova 1918) (N). Nearly constant at mean magnitude 11.4 with observations scattered between $11^m.0$ and $11^m.8$.

185007 V373 Sct. (Nova 1975). (N). It slowly declined from $12^m.0$ to $14^m.5$ through the year. Observers with large aperture telescopes are urged to monitor this nova.

185213 V446 Her. (Nova 1960). (N). R. Kolman reported it at $14^m.8$ in July. This nova also needs better coverage by observers with large aperture telescopes.

191033 RY Sgr. (RCB). It was at maximum, varying between $6^m.1$ and $6^m.5$ until May, when it faded to $7^m.4$; by the end of May, it was at maximum, and it stayed at maximum fluctuating between $5^m.9$ and $6^m.6$ the rest of the year.

192420 NQ Vul (Nova 1976). (N). It was discovered visually by G.E.D. Alcock in England on October 21 at magnitude 6.5. It faded to $7^m.5$ by the end of October with significant short term (minutes) oscillations of about 1^m in amplitude. It then brightened to 6^m in three days and then showed an abrupt decline in brightness on the evening of November 2-3, reaching 8^m. It gradually brightened to $7^m.5$ and then started to fade again. By December 25 it was $9^m.5$, when it showed another sharp decline, reaching $11^m.0$ by the end of the year. Fluctuations (within minutes and days) have been a significant feature of this nova.

193449 R Cyg. (M). The maximum observed on May 6 at $9^m.0$ was the faintest maximum since the $9^m.5$ one of 1944. It was preceded by a long minimum where the variable was fainter than 13^m for about 160 days. This minimum, which was observed on November 12, 1975 at $14^m.0$, followed the brightest recorded maximum for this variable observed in February, 1975 at $6^m.2$.

194048 RT Cyg. (M). Another pair of maxima increasing in brightness was observed in April 8 at $7^m.8$ and October 18 at $7^m.4$.

194635 CI Cyg. (Z And.). This interesting symbiotic star was at maximum at $9^m.3$ in the beginning of the year. It stayed at maximum until mid-May and then it started to fade very slowly, reaching $10^m.2$ by the end of the year.

194632 χ Cyg. (M). A $5^m.5$ maximum in the beginning of July followed the $4^m.4$ maximum of late May, 1975.

195377 AB Dra. (Z). Variations between $11^m.5$ and $14^m.6$ with 14 to 30 day intervals between maxima.

195656 RR Tel. (NL). Scattered observations between $9^m.5$ and $10^m.7$.

201437 P Cyg. (S Dor). This interesting variable had scattered observations between $4^m.7$ and $5^m.1$.

201520 V Sge. (NL). This unique variable had an active year, starting it at $11^m.3$. It brightened to $10^m.3$ on January 6, according to C. Sullivan. On January 31, J. Bauer reported it at $11^m.8$. It stayed around 12^m until mid-February and slowly brightened, reaching $10^m.5$ by the beginning of April. It then slowly faded to $11^m.6$ by May and fluctuated between $11^m.7$ and $10^m.5$ until mid-June; it again faded to $12^m.5$ by the end of June. It brightened to $10^m.5$ in July; faded with fluctuations to $11^m.5$ by the end of August. It then again brightened to $10^m.5$ by mid-September and oscillated between $10^m.7$ and $11^m.8$ the rest of the year. R. Adams reported "real flickering" between November 17 and 21.

203718 HR Del. (Nova 1967). (N). A very slow overall decline from mean brightness $11^m.4$ to $11^m.6$ throughout the year.

204016 T Del. (M). A $9^m.0$ maximum on 24 June followed the fainter $9^m.8$ maximum of August, 1975.

205543 Vl057 Cyg. (I). This T Tauri variable, associated with the North American Nebula, had a sudden rise of brightness from 16 to 10 photographic magnitude in 1969. When it was placed on our observing program in 1971 it was at visual magnitude of 9.8. Since then, it has been fading very slowly. It was at mean magnitude of 10.9 at the end of 1976.

210868 T Cep. (M). A $6^m.4$ maximum in July followed the brighter $5^m.8$ maximum of June, 1975.

210847 Vl500 Cyg. (Nova 1975). (N). This remarkable nova with an amplitude of 19^m when it had its outburst last year, had reached 10^m in its decline in the beginning of the year. It continued its slow rate of decline throughout the year, reaching about 12^m at the end of the year.

210812 R Equ. (M). A faint, 10^m maximum was observed on May 22 following the $9^m.1$ maximum of September 4, 1975.

213843 SS Cyg. (UG). This year a record high of 4360 observations have been recorded on SS Cygni. This total includes the 3522 observations by observers of A.A.V.S.O.; 319 by eight members of Astronomisk Selskab, kindly made available for us by Ole Klinting; 48 by five members of Variable Star Section of the Netherlands Association of Astronomy and Meteorology (Report 30, Kapteyn Astronomical Laboratory); and 409 by members of the Variable Star Section of the Scandinavian Union of Amateur AStronomers (Report 1976, 1 and 2). All outbursts were very well observed and there were only 6 nights throughout the year with no observations. SS Cygni underwent eight maxima in 1976. At the end of the year SS Cygni underwent its 591st outburst. Each maximum has been numbered consecutively since its discovery in 1896 by L.D. Wells of Harvard Observatory. All outbursts of this year were of Class A which is characterized by a very rapid rise to maximum. The numerical subdivisions within each class stand for the widths of the maxima. The mean interval between outbursts of the year was 45.96 days and the mean interval for the 591 outbursts since discovery is 49.55 days. The accompanying light curve is a computer plot of all the observations of SS Cygni for 1976. Data is plotted Julian Date versus magnitude, with each dot representing one observation. This light curve has been prepared for publication by Robert S. Hill using the plotting program written by Richard Strazdas.

215717 U Agr. (RCB?). This interesting variable started to fade at the end of August. It faded about 3^m in 3 months. It was fainter than $14^m.5$ in mid-December.

215841 BL Lac. (QSO). This compact extragalactic (?) source had observations varying between $14^m.1$ - $14^m.8$.

PART II

OUTBURSTS OF U GEMINORUM VARIABLES

DATE OF OUTBURSTS 2440000+	Magn.	Comments
012031 TY Psc		
2819	12.3	
2954	12.5	
3069	11.1	broad, brighter than $12^m.5$ for 11 days
3116	12.9	One obs. by C. Scovil
012457 KU Cas		
3017	12.9	
3116	13.0	
013937 AR And		
2795	12.7	
2819	12.8	
2844	12.0	
3026	11.1	broad, brighter than 12^m for 5 days
3054	12.9	
3077	12.0	
3102	11.5	broad, brighter than 12^m for 6 days
3129	11.7	
060547 SS Aur		
2810	10.7	broad, brighter than 11^m for 6 days
2876	10.9	
2929	10.9	
2983	11.2	
3035	10.8	
3081	10.7	broad, brighter than $11^m.5$ for 8 days
3140	10.8	
061115 CZ Ori		
2781	11.9	
2806	12.3	
2823	12.3	
2844	12.3	
2872	11.5	
3043	11.7	
3100	12.0	
3134	11.9	
064128 LR Gem		
2823	12.3	single obs. by E. Mayer
2837	11.7	
2858	11.5	
2886	11.5	
3020	11.3	
3083	11.8	
071628 AW Gem		
2868	12.7	well observed
074922 U Gem		
2837	9.3	brighter than 10^m for 3 days
3055	9.6	"
080362 SU UMa		
2806	12.2	
2838	12.3	
2854	12.0	
2877	12.0	
2896	11.7	
2923	11.9	
2938	12.6	one obs. by T. Cragg
2996	12.1	
3040	11.2	broad, brighter than $13^m.0$ for 12 days
3061	12.6	
3085	12.8	
3107	11.7	
3124	12.4	
3143	12.4	
080428 YZ Cnc		
2784	11.6	
2798	12.1	
2806	12.0	
2813	11.8	
2827	11.8	
2834	12.0	
2842	12.5	
2858	11.6	
2870	10.5	broad, brighter than $12^m.0$ for 10 days

DATE OF OUT-BURST 2440000+	Magn.	Comments
YZ Cnc, continued		
2885	12.2	
2891	12.1	
2897	12.1	
2906	12.4	
2922	12.3	
2929	12.0	single obs. by P. Steffey
3059	12.4	suspected by R. Annal
3069	12.1	single obs. by R. Annal
3076	12.1	
3083	12.1	
3095	12.3	
3104	12.2	
3111	11.7	
3128	11.6	
3139	10.6	broad, brighter than $12^m.0$ for 6 days
094512 X Leo		
2797	12.0	
2820	12.2	
2833	12.0	
2849	12.0	
2864	12.1	
2876	12.1	
2888	12.3	
2901	12.0	
2916	12.0	broad, brighter than $13^m.0$ for 7 days
2932	12.8	single obs. by B. Szegedi
2944	12.9	one obs. by R. Annal
2952	12.0	one obs. by R. Thomas
2978	12.1	single obs. by N. Taylor of RASNZ, VSS
3053	12.0	
3069	12.3	one obs. by R. Annal
3083	12.1	
3103	12.6	
3116	12.7	
3131	12.0	broad, brighter than $13^m.0$ for 7 days
095968 CH UMa		
2889	10.7	brighter than $12^m.0$ for 10 days

DATE OF OUT-BURST 2440000+	Magn.	Comments
114003 TW Vir		
2801	13.5	single obs. by T. Wilson
2832	11.2	
2865	12.0	
2888	12.2	
2914	13.0	by N. Taylor, A. Jones of RASNZ, VSS
2952	12.5	N. Taylor, O. Hull of RASNZ, VSS
2982	13.3	single obs. by N. Taylor
3103	12.6	
3129	12.4	
180514 UZ Ser		
2866	13.5	one obs. by D. Overbeek
2903	13.6	single obs. by D. Overbeek
2936	13.0	
2948	13.2	single obs. by D. Overbeek
2984	13.6	
3013	12.8	
3034	13.4	
3044	13.4	
3069	13.4	
184137 AY Lyr		
2779	12.5	broad, brighter than $13^m.5$ for 9 days
2811	13.5	single obs. by R. Annal
2899	13.2	
2925	13.2	
2942	13.1	
2965	13.0	
2984	12.6	broad, brighter than $13^m.5$ for 12 days
3012	13.3	
3039	13.6	one obs. by A.C. Montague
3048	13.3	
3074	13.0	
3108	13.0	

DATE OF OUT-BURST 2440000+	Magn.	Comments
184826 CY Lyr		
2811	13.8	
2845	12.5	
2873	13.1	
2898	13.2	broad, brighter than 14^m for 5 days
2916	13.2	
2933	13.0	
2945	13.8	
2958	12.8	broad, brighter than 14^m for 7 days
2974	13.4	
2987	13.0	
3002	13.3	
3019	12.8	broad, brighter than 14^m for 6 days
3040	13.8	
3056	13.2	
3072	12.9	broad, brighter than 14^m for 8 days
CY Lyr, continued		
3091	13.3	
3103	13.3	
3120	13.3	
195109 UU Aql		
2921	11.2	
2973	12.0	
3027	11.6	
3081	11.8	
220912 RU Peg		
2790	10.1	
2874	10.1	reported by T. Wilson
3032	10.2	broad, brighter than 11^m for 10 days

PART III

LISTS OF STARS MENTIONED ABOVE IN ORDER OF CONSTELLATION

Name	Design.	Name	Design.	Name	Design.
T And	001726	RT Cyg	194048	CN Ori	154705
U And	010940	CI Cyg	194635	CZ Ori	061115
RW And	004132	V1057 Cyg	205543	RU Peg	220912
RX And	005840	V1500 Cyg	210847	S Per	021558
AR And	013937	χ Cyg	194632	TZ Per	020657a
UU Aql	195109	P Cyg	201437	GK Per	032443
V603 Aql	184300	T Del	204016	KT Per	013050
R Ari	021024	HR Del	203718	V400 Per	030046
X Aur	060450	W Dra	180565	TY Psc	012031
SS Aur	060547	X Dra	180666	V Sge	201520
R Boo	143227	AB Dra	195377	RY Sgr	191033
V Boo	142539	R Equ	210812	VX Sgr	180222
X Cam	043274	U Gem	074922	V1017 Sgr	182529
Z Cam	081473	AW Gem	071628	S Scl	001032
XX Cam	040053	IR Gem	064128	V373 Sct	185007
SY Cnc	085518	R Her	160118	R Ser	154615
YZ Cnc	080428	AH Her	164025	UZ Ser	180514
T CVn	122532	DQ Her	180445	FH Ser	182502
U CVn	124238	V446 Her	185213	RR Tau	053326
V CVn	131546	BL Lac	215841	SU Tau	054319
U Cas	004047	R Leo	094211	VY Tau	043322
SS Cas	000451	W Leo	104814	RR Tel	195656
KU Cas	012457	X Leo	094512	RR UMa	132263
T Cep	210868	Y Lib	150605	SU UMa	080362
o Cet	021403	AY Lyr	184137	CH UMA	095068
R CrB	154428a	CY Lyr	184826	R Vir	123307
T CrB	155526	V616 Mon	061700	TW Vir	114003
R Cyg	193449	RS Oph	174406	3C-273 Vir	122402
				NQ Vul	192420

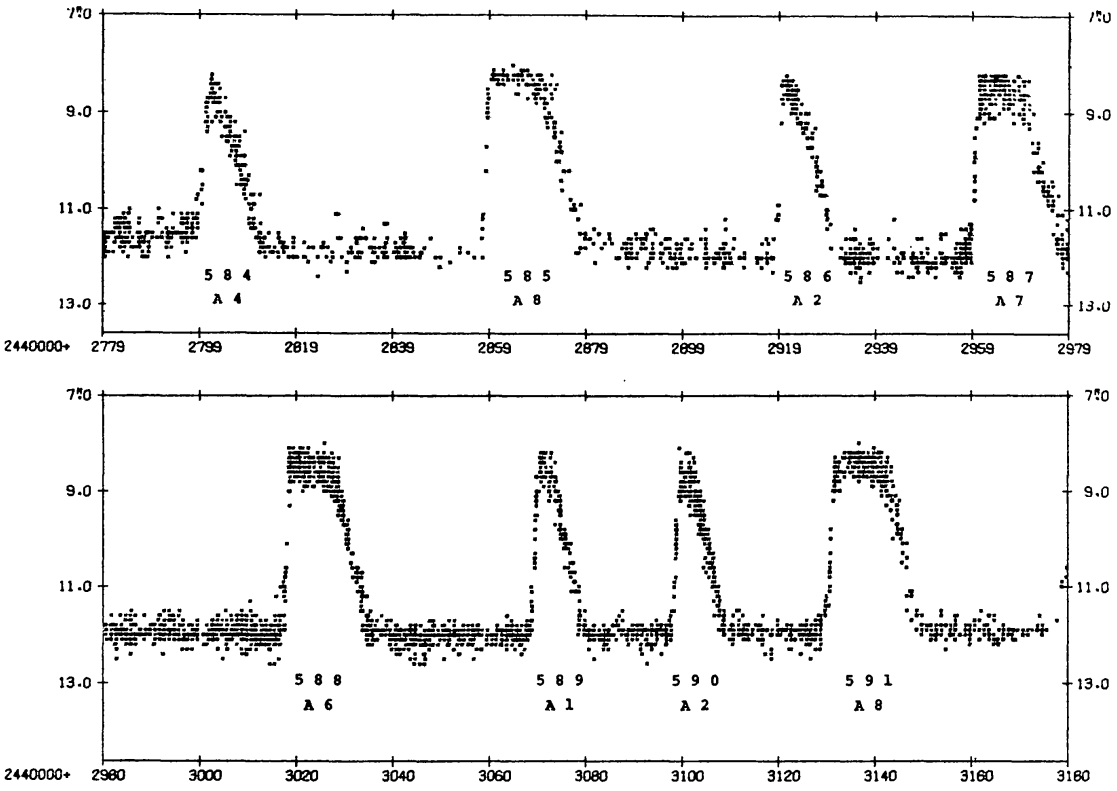

Figure 1. Computer plotted AAVSO light curve of SS Cygni for 1976. Each dot represents one observation.

The observations for the stars given above have been the contributions of AAVSO members and observers which include some members of the Albireo Amateur Astronomy Club of Hungary, the Astronomical Society of South Africa, the Japanese Astronomical Study Association, Variable Star Section of B.A.A. of New South Wales of Australia, Werkgroep Variable Stars of Belgium, Astronomisk Selskab, and M. Duruy of the Association Francaise d'Observateurs d'Etoiles Variables. Some observations of outbursts made by members of the Variable Star Section of the Royal Astronomical Society of New Zealand and reported in AAVSO Circular have also been included to make the data more complete. Many thanks to all our contributors for their valuable astronomical data.