

VARIABLE STAR NOTES

by

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Below are notes on the peculiarities, behavior and activity of some of the more prominent variables* in our observing program, for 1974. The major part of these notes has been published in the Journal of the Royal Astronomical Society of Canada (RASC) 1975, Vol. 69, Nos. 2 and 3 under the same title of "Variable Star Notes". These notes will appear in the first number of each volume of our Journal from now on, as well as in the Journal of the RASC, so that it can reach our members as well as professional astronomers.

M: 001032 S Scl. The brightest maximum recorded by the AAVSO of 5.5 magnitude was observed by D. Overbeek and P. Madden in late October, following six maxima of about 7 magnitude between 1968 and 1974.

M: 001726 T And. A faint maximum of 10.0 magnitude early in March, followed the faintest and widest minimum of mid-October 1973. This was followed by 8.5 mag max in early Dec.

Z: 005840 RX And. Varied between 10.6 and 14.0 with intervals of 10 to 25 days.

M: 010940 U And. A fainter maximum of 10.2 magnitude in late August followed the 9.0 max of September 1973.

M: 011208 S Psc. An 11.1 mag maximum was observed in early October. The preceding max of mid-August 1973 was 9.6.

UG: 012031 TY Psc. Four maxima observed at JD 2063, 12.4; 2264, 13.5; 2333, 12.0; 2363, 12.6.

UG: 012457 KU Cas. The following maxima were observed: 2094, 13.9; 2329, 15.3; 2360, 14.7.

Z: 013050 KT Per. Variations between 11.6 and 15.5 with intervals from 12 to 16 days until September, and 18 to 24 days for the rest of the year.

UG: 013937 AR And. Nine maxima observed by Scovil, Mayer, Ford and Lowder at 2070, 12.8; 2097, 12.6; 2117, 12.1; 2249, 13.2; 2275, 12.0; 2317, 11.6; 2337, 13.3; 2369, 12.4; 2413, 11.5.

UG: 020356 UV Per. One well observed, broad max at 2120, 12.2.

Z: 020657a TZ Per. Varied between 12.3 and 14.7 until March; the range decreased to about 1 mag until August and it varied between 12.1 and 14.3 for the rest of the year.

M: 021143a W And. An 8.5 mag maximum in early October followed the 7.0 max of September 1973.

M: 021403 o Cet. The 416th maximum of Mira was a bright one at 3.0 magnitude on April 4, just before the end of its observing season.

SR: 021558 S Per. Varied between magnitudes 10 and 11 in 1973. In 1974 it started to decline from about 10 to 11.7. It stayed around 11.5 until June when it began to brighten. It reached 8.8 mag by the end of the year.

*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 type; SR = Semiregular; UG = U Geminae type; Z = Z Camelopardalis type; Z And = Z Andromedae type (Symbiotic).

M: 023133 R Tri. A 6.5 mag maximum in mid-August, followed the 6.5 max of mid-November 1973, which was preceded by the brightest max of 5.5 the end of February 1973.

N: 030046 Nova Per 1974. Discovered spectroscopically at its post maximum stage by N. Sandulek of Warner and Swasey Observatory, on November 9 at 11.0 photographic magnitude. Patrol plates of Harvard Observatory indicated the outburst in late September at 8.0 mag (I.A.U. Circular no. 2722). Since discovery until the end of the year, it faded very little if any. Visual observations are scattered between 10.3 and 11.2.

N: 032443 GK Per (Nova 1901). Fluctuated between 12.8 and 13.5 during the year.

M: 042309 S Tau. A brighter maximum of 10.0 mag in early September followed the 11.5 mag max of August 30, 1973.

M: 043274 X Cam. Three maxima of decreasing brightness were observed: 7.7 in early February, 8.2 in mid-July and 8.5 the end of November.

M: 050953 R Aur. A stillstand of about 10.0 magnitude in January and February was followed by a 7.5 mag max at the end of May.

RCB: 054319 SU Tau. It was at 15.0 the beginning of the year and fluctuated between 14.3 and 16.1 until mid-April. At the end of its observing season in May, Scovil observed it fainter than 13.8 on 2175. When it was observable again in August, Peltier reported it at 15.0 on 2284. It fluctuated between 15.2 and 15.8 until the end of September. On 2325 Mayer caught it on the rise at 14.4. It brightened to about 11 by mid-December and started to fade again by the end of the year when it was 11.3.

Z: 054705 CN Ori. Varied between 11.6 and 14.5 with intervals from 7 to 16 days.

M: 054920a U Ori. A fainter maximum of 6.9 in mid-August followed the very bright one of 4.8 magnitude in late July 1973.

UG: 060547 SS Aur. Following outbursts were observed: broad max at 2070, 11.0; 2134, 11.3; 2273, 11.0; 2324, 11.7; and another broad max at 2384, 11.0.

UG: 061115 CZ Ori. Ten maxima on: 2063, 11.9; 2089, 12.1; 2109, 12.4; 2133, 11.7; 2162, 12.7; 2296, 11.9; 2325, 12.7; 2345, 12.2; 2374, 11.6 and 2404, 12.5.

UG: 064128 IR Gem. Following maxima were observed: 2097, 11.5; 2361, 11.0; 2399, 11.1.

SR: 065208a X Mon. This semiregular variable continues to show periodicity of 156 days.

M: 070772 R Vol. A brighter maximum of 10.0 magnitude in mid-August followed the 11.3 maximum of late May 1973.

UG: 071628 AW Gem. Two well observed maxima on 2162, 12.9 and 2362, 13.2.

M: 072820b Z Pup. The end of November this variable had a 15.3 mag minimum, its faintest minimum recorded by the AAVSO.

UG: 074922 U Gem. One narrow maximum on 2346, 9.5.

UG: 080362 SU UMa. A very active year with twenty-four well observed and three unconfirmed maxima of single observations at; 2061, 12.2; 2071, 12.4; 2078, 12.6; 2087, 12.2; 2099, 12.0; 2109, 12.1; 2117, 12.4; 2127, 12.1; 2137, 12.5 and 2145, 12.2 (one estimate for each by Annal); 2154, 12.4; 2162, 12.5; 2170, 12.5; 2181, 12.1; 2191, 12.0; 2200, 12.0; 2217, 12.3; 2239, 12.3; 2276, 12.5; 2310, 13.1 (one observation by Annal); 2333, 12.0; 2345, 12.1; 2356, 12.5; 2366, 12.0; 2376, 11.9; 2389, 12.1; 2398m 12.2.

UG: 080428 YZ Cnc. A very active year with seventeen well observed and five unconfirmed maxima: 2061, 12.1; 2073, 11.7; 2079, 12.8; 2090, 12.2; 2097, 12.2 (one observation by Scovil); 2103, 12.0; 2117, 11.8; 2124, 11.7; 2131, 11.8; 2140, 11.9; 2148, 11.5; 2157, 10.5; 2181, 12.0; 2187, 12.4; 2201, 12.0 and 2211, 11.8 (single observation for each by Mayer); 2315, 12.1 (single observation by Annal); 2344, 12.3; 2364, 12.0; 2378, 11.9 (single observation by Scovil); 2386, 11.8; 2401, 12.0. The broad maximum on 2157 was brighter than 12 mag for 8 days.

Z: 081473 Z Cam. Active until mid-November with twelve observed maxima ranging from 10.1 to 14.0, with intervals from 20 to 33 days; was at stillstand at about 11.5 from late November until the end of the year.

Z: 085518 SY Cnc. Observations ranged from 10.8 to 13.8 with intervals from 22 to 28 days.

UG: 094512 X Leo. Eleven well observed and two unconfirmed maxima on: 2052, 12.0; 2082, 12.1; 2100, 11.9; 2132, 12.0; 2154, 12.0; 2175, 12.5; 2186, 12.1; 2212, 12.7 (one observation by T. Cragg); 2218, 12.0 (one estimate by R.J. Smith); 2340, 12.1; 2360, 12.5; 2374, 12.0; 2392, 12.1.

UG: 095968 CH UMa. 200 days following its 1973 outburst at 1860, 12.4; a brighter maximum was observed on 2060, 10.9. Stayed at maximum for two days and started to decline sharply. It reached 15.0 by 2080 and fluctuated between 14.0 and 15.8.

UG: 114003 TW Vir. The following nine outbursts observed: 2099, 12.6; 2131, 12.0; 2154, 12.0; 2178, 12.0; 2205, 12.0; 2222, 11.9; 2245, 12.0; 2269, 12.0; 2372, 12.4.

M: 121418 R Crv. The faintest maximum of 8.7 mag since the 9.2 max of January 1956 was observed in mid-April. The preceding max was bright at 7.0 in May 1973.

QSO: 122402 3C-273 Vir. Observations ranged between 12.3 and 13.0 during the year.

M: 123160 T UMa. A normal maximum of 7.6 mag was observed in mid-August. The two preceding maxima were of 7.9 and 6.8 mag in March and November of 1973, respectively. The minimum at 12.0 in August 1973, preceding the 6.8 max was the brightest minimum recorded by the AAVSO for this variable. The mean minimum magnitude is 12.9.

SR: 131546 V CVn. Resumed periodicity the end of 1971. Since then it has been varying regularly, favoring a period between 175 and 180 days, and with continuously increasing amplitude from 0.5 to 1.5 magnitude. The mean range is from 6.8 to 8.8.

SR: 133633 T Cen. Quite regular since 1969, is becoming irregular with a decrease in amplitude to about half a mag.

SR: 142539 V Boo. Continues to have a range of 1.5 magnitude. A broad maximum has a strong suggestion of a double max at 8.4 and 8.0 magnitudes about 75 days apart. The following minimum at the end of September is narrow and sharp.

M: 145254 Y Lup. A faint maximum of 10.6 was observed in late September by D. Overbeek, A. Morrisby and C. Jenkins for this southern variable. The preceding max in mid-August 1973 was 8.6 magnitude.

M: 160825 VV Her. A maximum of 11.1 mag in mid-July followed the faint 12.1 max of late July 1973.

M: 162816 S Oph. A brighter max of about 9.5 in mid-July followed the two faint maxima in mid-August 1972 and early April 1973 both around 10.5.

Z: 164025 AH Her. Variation between 10.8 and 14.6 with 15 to 35 day intervals.

M: 171401 Z Oph. The last three maxima of increasing brightness were: the flat and broad 9.5, mid-August 1972; 8.7, mid-July 1973 and normal max of 8.1, mid-June 1974.

N: 174218 Nova Sgr 1974. Discovered photographically on October 6 by Y. Kuwano in Japan at magnitude 9.0. Visual observations indicate a slow decline from 9.2 to 9.8 until the end of October and fluctuations between 9.2 and 10.2 until mid-November.

NR: 174406 RS Oph. Showed a very slow decline from 11.3 to 11.8 the first half of the year, and fluctuated between 11.5 and 12.5 until the end of October. Between November 7 and 17, L. Peltier, C. Hurless and P. Kirby observed it around 10.5.

N(E): 180445 DQ Her (Nova 1934). Observations scattered between 14.0 and 14.7.

M: 180531 T Her. Two maxima following the 7.4 max of mid-November 1973 were observed: 8.6, April 27 and 8.7, October 9. The minimum in between, at the end of July was a very deep one of 13.7.

UG: 180514 UZ Ser. Six well observed and two unconfirmed maxima of single observations at: 2131, 12.1 (one estimate by G. Freeth of New Zealand); 2159, 12.8 (one estimate by A. Bueno); 2219, 13.1; 2240, 12.9; 2252, 13.2; 2275, 13.2; 2299, 12.7; 2334, 12.8.

M: 181103a RY Oph. Two maxima of increasing brightness were observed: 9.0, beginning of June; 7.5, end of October.

N: 182502 FH Ser (Nova 1970). Observations scattered between 12.9 and 14.1.

Z And?: 182529 V1017 Sgr. Appears to have leveled off at about 14th magnitude.

RCB? SR?: 183423 V348 Sgr. On February 24, V. Matchett of Australia caught it at 12.0; P. Mahnkey observed it at 11.8, March 6. It stayed at max until April 20, then dropped to 15.2 by the beginning of July and fluctuated between 15 and 15.5 for the rest of the year.

N: 184008 V368 Sct (Nova 1970). Fluctuated between 13.5 and 14.7.

UG: 184137 AY Lyr. Eight well observed and one unconfirmed maxima on: 2122, 13.3 (single observation by Annal); broad max at 2161, 12.5; 2210, 13.2; 2248, 13.1; 2271, 13.0; 2308, 13.1; 2328, 13.4; 2348, 13.1; 2372, 12.0.

N: 184300 V603 Aql (Nova 1918). Scattered observations between 11.0 and 11.7.

UG: 184826 CY Lyr. The following fourteen well observed, five unconfirmed maxima on: 2067, 13.2 (one estimate by Scovil); 2096, 13.2 (one estimate by Mayer); 2106, 13.5; and 2119, 13.0 (single estimate for each by Scovil); 2162, 13.1; 2175, 13.0; 2194, 13.4; 2215, 13.0; 2229, 13.1; 2253, 13.0; 2264, 13.4; 2282, 12.8; 2300, 13.6; 2313, 13.2; 2325, 13.3; 2338, 13.2; 2372, 13.2; 2399, 13.2; 2412, 13.8 (one observation by Mayer).

M: 190818 RX Sgr. A brighter 9.0 max in the beginning of May, followed the 10.1 mag max of late May 1973.

RCB: 191033 RY Sgr. In February it was at 6.5 mag. Observations fluctuated between 6.0 and 7.2 for the rest of the year.

M: 194048 RT Cyg. Two maxima of increasing brightness observed: 8.0 mag in mid-March, and 6.9 beginning of September.

Z And: 194635 CI Cyg. A very slow decline from 9.9 to 11.0 during the year.

UG: 195109 UU Aql. Two well observed maxima on: 2244, 11.3 and 2338, 11.4.

Z: 195377 AB Dra. Varied irregularly between 11.5 and 14.8.

NL(E): 201520 V Sge. Was about 12.4 in February, it gradually brightened to about 10.5 by June and stayed around 11 until mid-August, when it started to decline about one and a half magnitudes by early September. It fluctuated between 11.5 and 12.9 until mid-November when it started to brighten again. It reached 10.5 by the end of the year.

M: 203611 Y Del. A very faint maximum of 12.5 was observed in mid-June. Normal maximum is 9.9 mag.

N: 203718 HR Del (Nova 1967). Nearly constant at about 11.

I: 205543 V1057 Cyg. A very slow decline from 10.3 to 10.7 during the year.

SR: 213244 W Cyg. Varied between 5.7 and 7.2 during the year.

UG: 213843 SS Cyg. A very active year with ten outbursts on: 2064, 8.5; 2114, 8.2; 2146, 8.5; 2174, 8.7; 2223, 8.6; 2273, 8.5; 2305, 8.6; 2341, 8.5; 2373, 8.7; 2404, 8.8. The mean interval between outbursts for the year was 38.43 days, and since discovery 49.83 days. Of the ten observed maxima, five are of B, four of A, and one of C class. During minima the variable fluctuated between magnitudes 11 and 12.

I?: 215841 BL Lac. Scattered observations between 14.7 and 15.7.

UG: 220912 RU Peg. Following the outburst first observed by Peltier on 2046, 10.6, three increasingly broad and bright maxima on; 2202, 10.7; 2278, 10.0; 2374, 9.7.

M: 222129 RV Peg. Three maxima of increasing brightness observed since 1971: 12.8, Nov. 1971; 12.1, Dec. 1972; 11.5, January 1974. All are several magnitudes fainter than the normal maximum of 9.9.

M: 235350 R Cas. A 6.9 max was observed in mid-September, which followed the bright maximum of 5.5 in July 1973.

The observations of the stars above have been the contribution of the AAVSO observers. To make the data more complete a few observations from the members of the Royal Astronomical Society of New Zealand, as reported in the AAVSO Circular, have also been included. Some observations on SS Cygni have been the contribution of the members of the Astronomisk Selskab, courtesy of Ole Klitting, and Werkgroep Verandelijke Sterren, courtesy of Kapteyn Astronomical Laboratory Report 26. Heartfelt thanks to all our contributors for their valuable astronomical data.

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Errata:

JAAVSO Vol. 3, No. 2.

P. 91, Observing initials for M.J. Taylor were printed TRY should be TYR.

p. 90, Total observations for SDA D. Sharpe was printed 105, should be 204.

Total observations for SHS S. B. Sharpe was printed 2671, should be 2572.

P. 89, Total observations for T. Brown was printed 1128, should be 128.