ARAS Eruptive Stars Group
New Information Letter no. 1

October 10, 2025

Contents

Observers in July-September 2025

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Symbiotic Stars observed in July-September 2025

T CrB (75), V1413 Aql (32), CH Cyg (10), AG Dra (6), AG Peg (6), BF Cyg (5), V443 Her (5), Z And (5), CI Cyg (4), AR Pav (3), V399 Pav (3), RS Oph (2), RW Hya (2), RR Tel (2), R Aqr (2), IV Vir (2), LT Del (2), EG And (2), AX Per (1), AR Pav (1), AG Peg (1), EF AQl (1), RRTel (1), PU Vul (1), HM SGE (1), Hen 4-204 (1), DQ Ser (1), DT Psc (1), StHA 190 (1), StHA 154 (1), V1329 Cyg (1), V1016 Cyg (1), V2204 Oph (1), V426 Sge (1), V503 Her (1), V934 Her (1), WY Vel (1)

Novae observed in July-September 2025

Nova Lup 2025 (95), PNV Vel 2025 (39), Nova Ser 2025 (25), Nova Oph 2025 (7), Nova Sgr 2025d (3), Nova Cen 2025 (2)

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ARAS Eruptive Stars Database:
https://aras-database.github.io/database/index.html

1 Symbiotic Stars

1.1 High Priority Targets: 1. T CrB 2. V1413 Aql

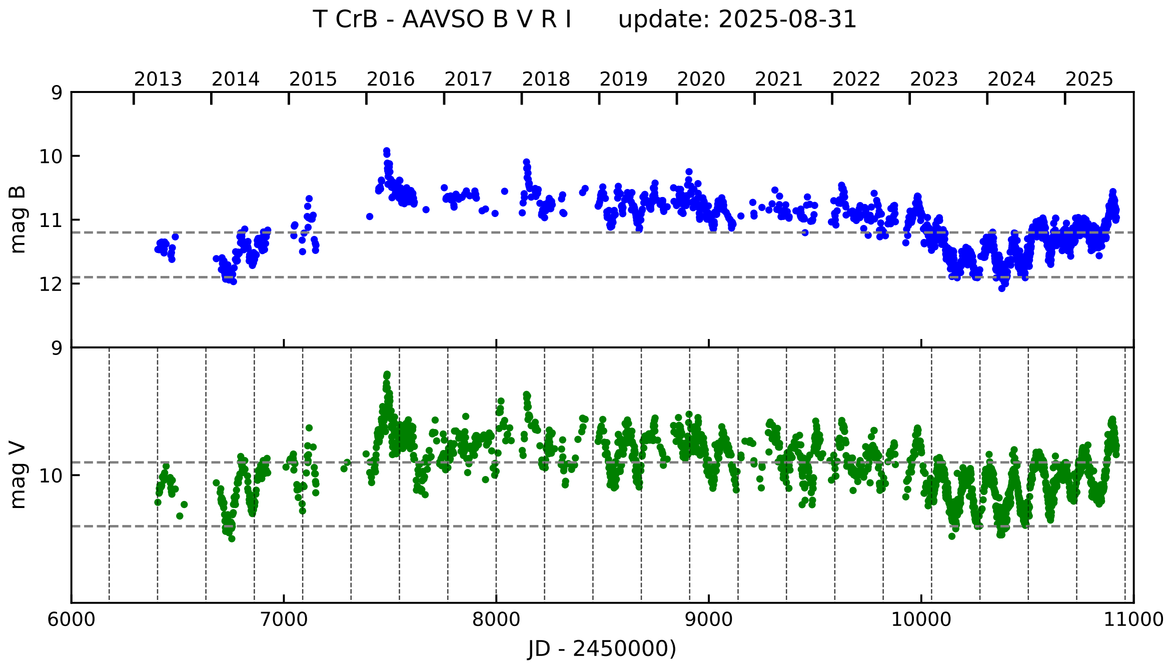

Fig. 1: B and V magnitude since 2012 from AAVSO database. selected date and 1 day median

T CrB

T CrB is currently in high state, showing strong emission lines (Balmer, He I, He II, [O III]).

The recurrent symbiotic nova T CrB (1786?,1866,1946) is in the situation where a nova nova event may append at any time. The numerous predictions have clearly failed because they do not rely on an understanding of the physics of novae. For a comprehension of T CrB behaviour and more generally recurrent novae, see T CrB and recurrent symbiotic novae `https://youtu.be/ta3kWqc5Oes` (Zoom session with Steve Shore).

The equivalent width (EW) of Hα is not the best measure (notably due to the significant variations on the flux of the continuum) but allows a comparison of the activity with historical values. The EW (Fig. 4) is at the level of the end of the very high phase detected in April 2023 around JD 2460000 with the sudden disappearance of high ionized lines, notably He II 4686 $\mathring{A}$. After a very low stage (JD[1] 180+ to 400+), during which only faint Balmer lines, were detected,the activity increased irregularly until we detected a short flare of ionization in November 2024 (**2025RNAAS...9...32T**), followed by a fast and deep decrease. A new flare was detected in January.

Observing

The goal is to document the activity of the system until the nova outburst. Due to the fast variability and the major interest of the object, the target is one spectrum by day.

- Low resolution spectra (R > 500) allow the measure of the main emission lines (Hα, Hβ, He II 5686 Åfor ALPY 600, and He I 5876 Åwith well tuned LISA . The flux calibration

[1] 180+ must be read as 2460180, i.e. 2460000 + 180 days

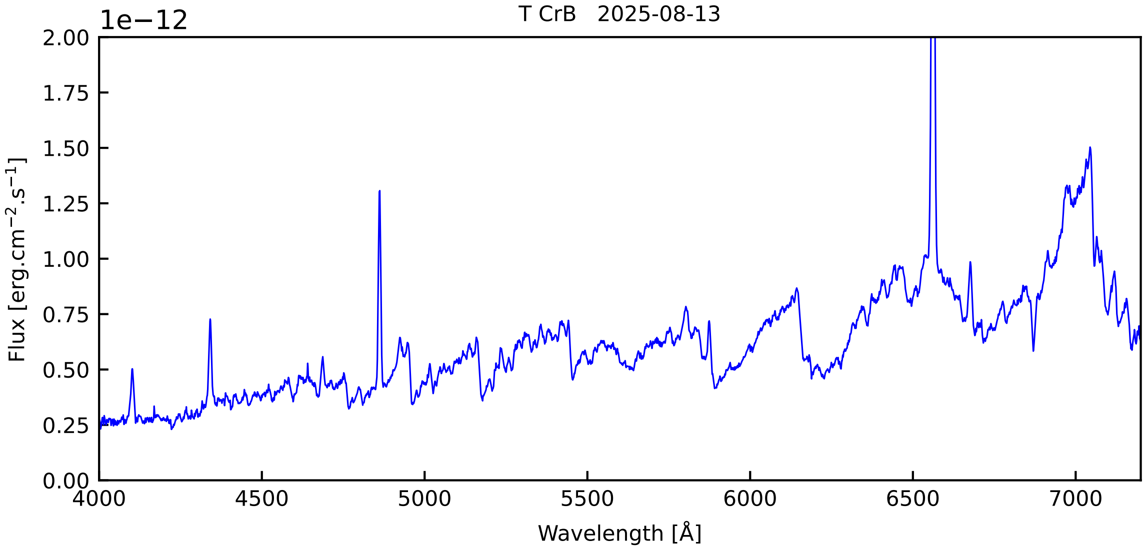

Fig. 2: Spectrum secured by David Townbridge using a DADOS-200 (R = 900). He II and He I lines appears clearly.

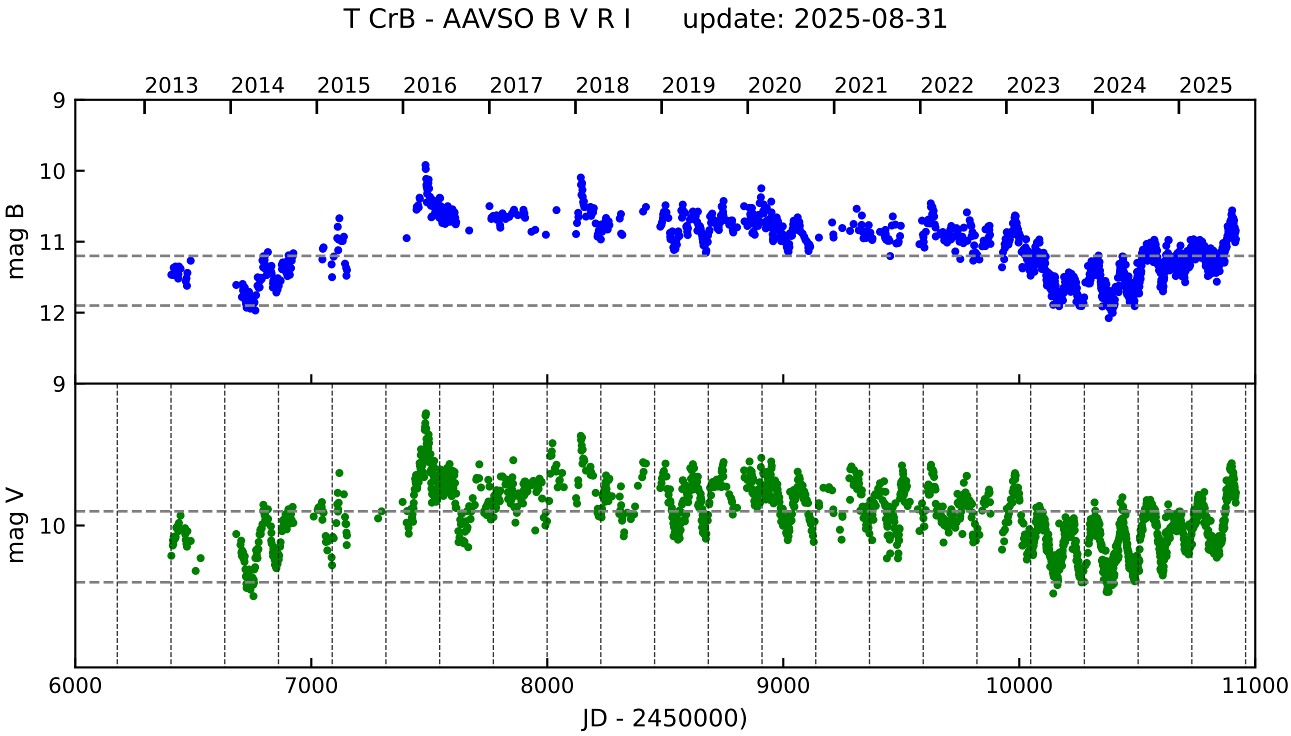

Fig. 3: T CrB Aql B and V magnitude since 2012 from AAVSO database. selected data and 1 day median. The vertical dotted lines in V panel marks the times of minima , inferior conjunction of the red giant

produces a significant improvement, allowing the computation of the flux of the lines. The method is producing a V band photometry in parallel of the spectroscopy (strong flickering can produce a significant variation of the luminosity. For that purpose, magnitude obtained in the public photometric databases is not accepted. The flux calibration can be easily obtained using ISIS (C. Buil). *Note: the flux calibration is of interest only if the atmospheric and instrumental correction is accurate.*

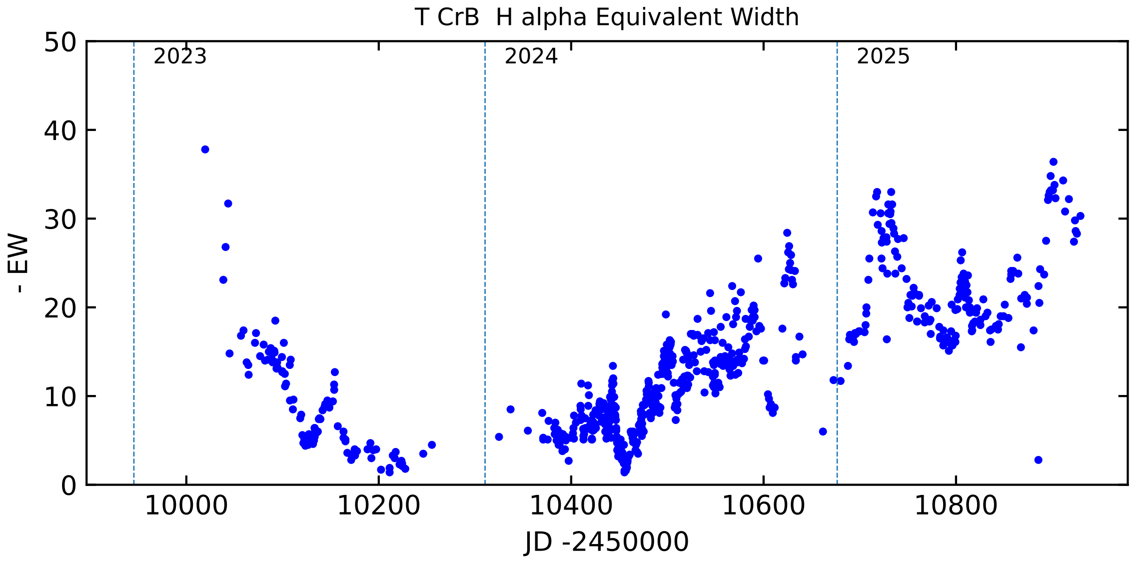

Fig. 4: T CrB Equivalent width of Hα since 2023, April

- UVEX allows the exploration of the very interesting near UV. This range will be of high interest during the fore-coming nova event.
- Spectra of short wavelength range at higher resolution (for example Lhires III) are welcome. H alpha profile produces interesting information in the continuation of the pumlished historical behaviour. H beta and He II range is very interesting, producing the ratio Hβ/He II 4686 Åa proxi of the temperature of the hot component which includes the accretion layer between the disk and the white dwarf.
- If the SNR is sufficient, time series of Hα is interesting with exposures from 300 (or less if possible!) to 900 seconds. The SNR on the continuum should be > 20.
- Echelle spectra are very welcome (!).

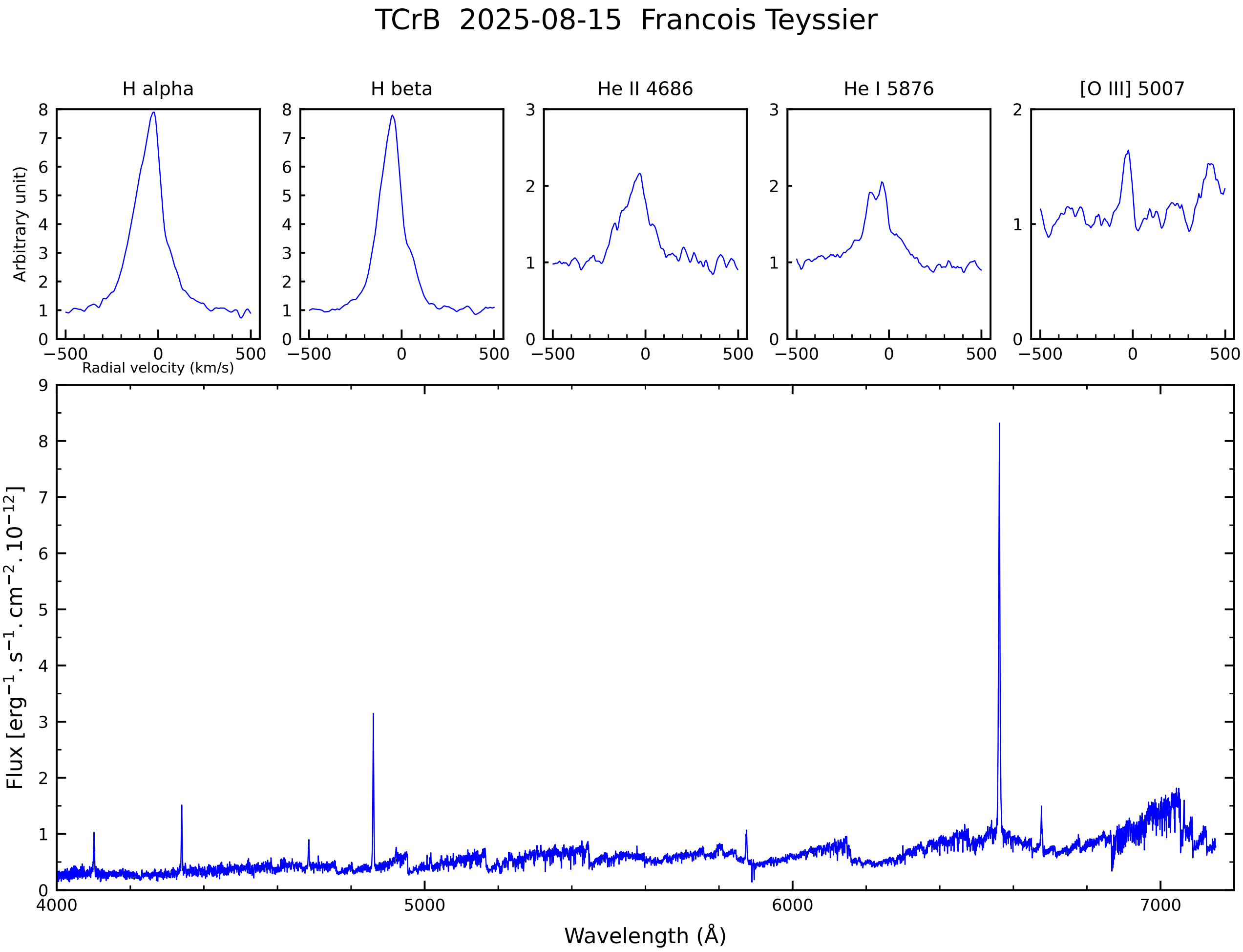

Fig. 5: Recent echelle (R=9000) spectrum

V1413 Aql: outburst and eclipse

V1413 Aql (shell burning powered) is currently in symbiotic outburst Fig. 7 at the same level as that observed in 2020. The phase plot Fig. 11 shows clearly the outburst which is very similar to the one observed in 2020. The expansion of the accreted layer and its cooling following the perfect gas low provokes respectively: 1. increase of the luminosity 2. decrease of the ionisation state.

In Fig. 6, we compare two low resolution spectra respectively in quiescence and outburst. The coverage is insufficient to compare the spectra at the same orbital phase which is the recommended way for an accurate comparison (textit{we need more data!). One can note the global increase of the continuum, the disappearance of high ionized lines He I and He II, the appearance of low ionized lines, essentially Fe II and other neutral single ionized metal lines in emission.

The profile of the lines during the outburst (see Fig. 8) consists of a broad and asymmetric component, with a rounded top especially in its blue part. This is what is expected for a line formed in the accelerating zone of a wind. The asymmetry of the component can result from the asymmetry of the forming zone and/or opacity effects. It is surmounted by a narrower component profoundly affected by a strong P-Cygni profile. The global view is: the outburst provokes the formation of a strong, non symmetric wind in the vicinity of the white dwarf (broad component), the symbiotic nebula remains partially ionized (formation of the narrow emission component and its strong absorption.

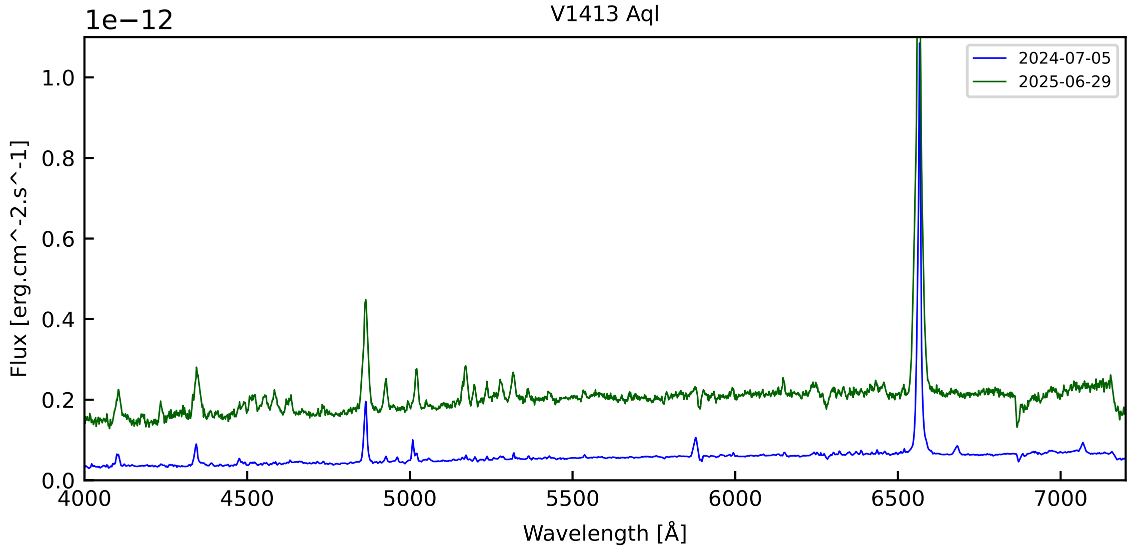

Fig. 6: V1413 Aql Comparison of the spectra during quiescence and outburst. Spectra secured with a LISA R = 1000 by F. Sims. The orbital phase are respectively

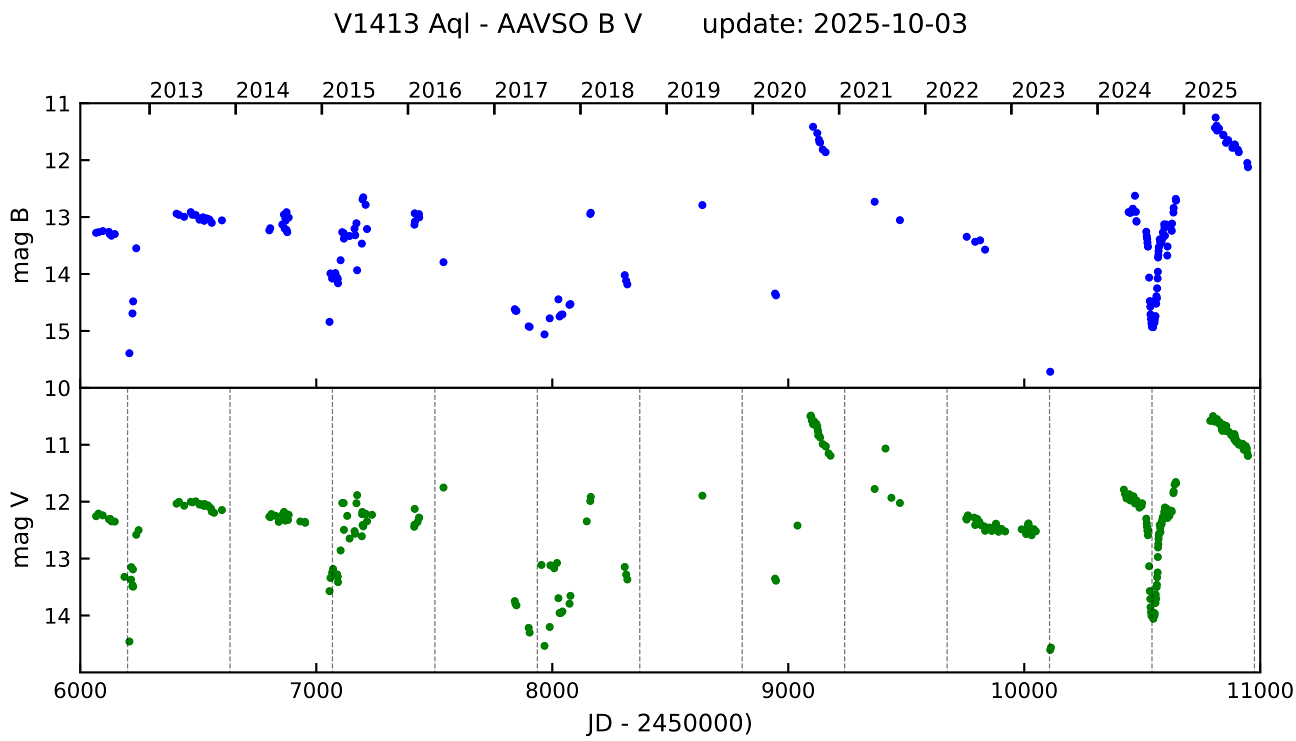

Fig. 7: V1413 Aql B and V magnitude since 2012 from AAVSO database. selected data and 1 day median. The dash lines in V panel marks the times of eclipses

According to ephemeris[2], the maximum of the next eclipse will occur on 2025-10-26.

It offers a good opportunity to monitor the eclipse during high state et compare it will the previous one (2024-08-28) observed during low state. A high cadency monitoring is strongly encouraged until the solar conjunction: 1 spectrum every 3 days for each resolution (LISA, echelle, H alpha) is recommended . For setups with narrow wavelength range, prefer the zone 4640-5030.

[2] P=434.1 JD0=2446650, Munari(1992), still accurate

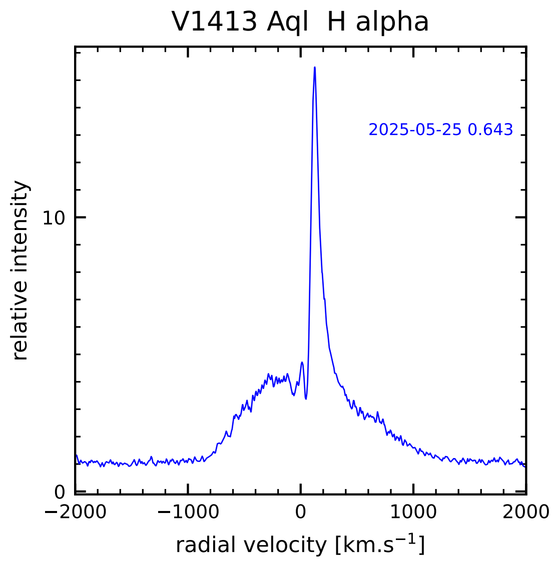

Fig. 8: Hα during the outburst

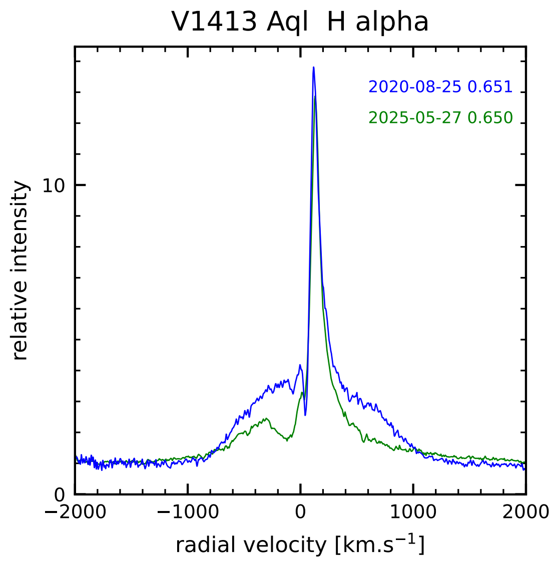

Fig. 9: Hα during the 2025 (green) and 2020 (blue) outbursts

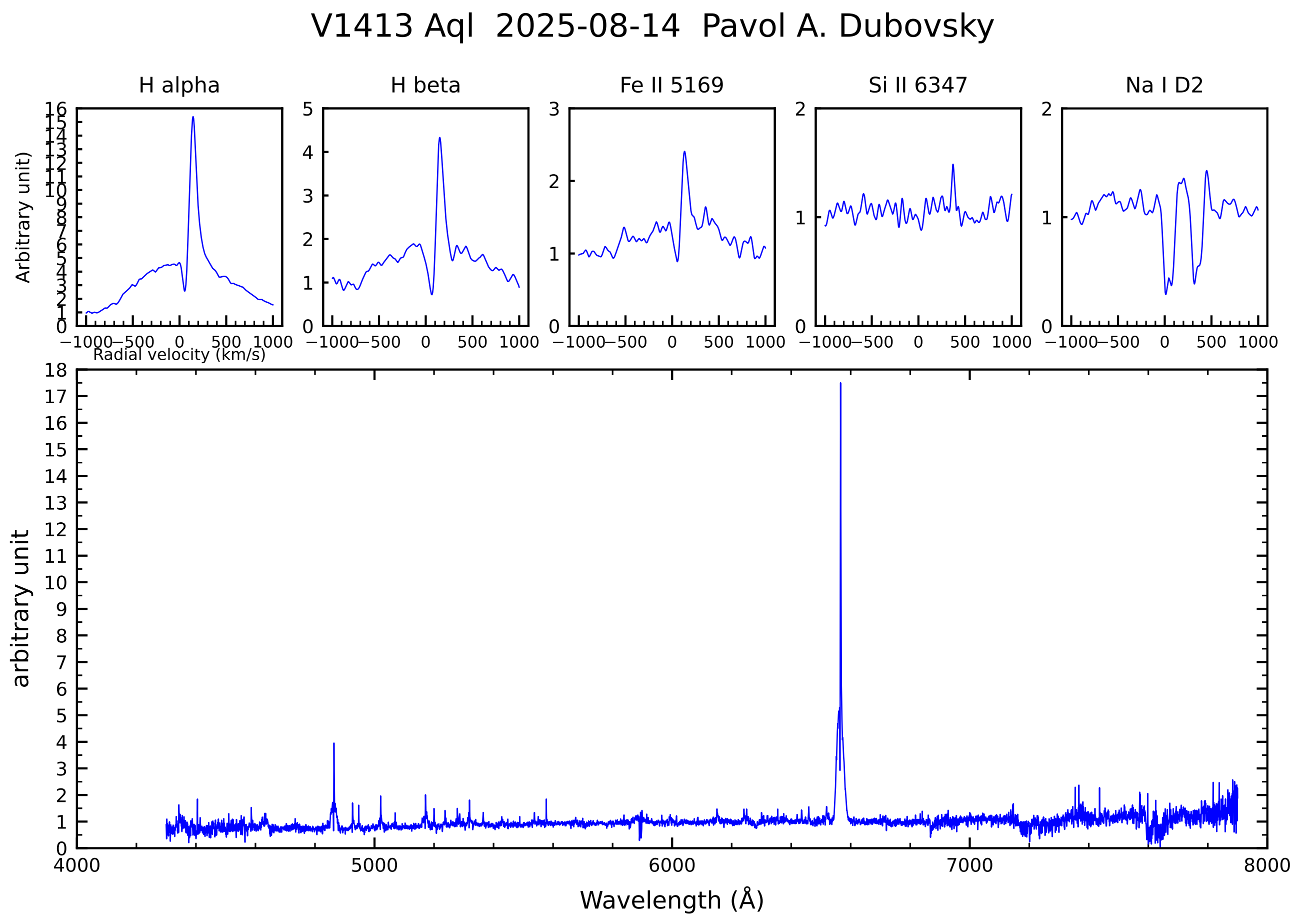

Fig. 10: V1413 Aql echelle spectrum obtained by Pavol A. Dubovsky

1.2 Targets of high interest

Note: This section is under construction and will be gradually improved in future issues.

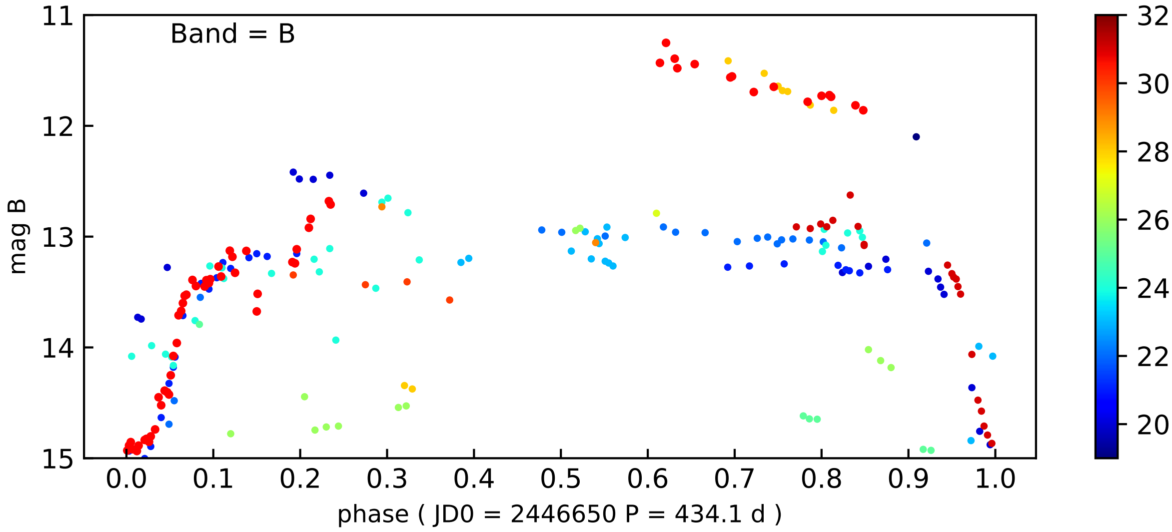

Fig. 11: V1413 Aql B magnitude according to phase. The current cycle (32) is shown in red, large dots; it is very similar to cycle 28.

Spring-Summer Targets

Get the last spectra of the observing season in order to reduce the seasonal gap.

- **V443 Her** V443 Her is a classical steady burning symbiotic star. This binary system consists of a normal M5 giant (1.4 - 2.5 M, T = 3300 K, L = 1500 - 1800 L and an accreting white dwarf (0.42 - 0.7 $M_\odot$, T = 80 000 K, L = 80 000 $M_\odot$, orbiting in 598 days under an inclination of ≈ 20.

- **YY Her**

Summer Targets

- **CH Cyg** CH Cygni was classified as a classical single red giant until the begining of the '60s when its symbiotic nature appeared suddenly with the emergence of a rich emission lines spectrum. It consists of a massive (M = 2.0-2.2 M⊙) M5-7 III red giant and a white dwarf whose luminosity is low (0.3 to 10 L⊙ depending of the studies).
- **CI Cyg**
- **BF Cyg**
- **V1016 Cyg**
- **StHa 190**
- **LT Del**
- **PU Vul**
- **V1329 Cyg**
- **R Aqr**
- **RR Tel**

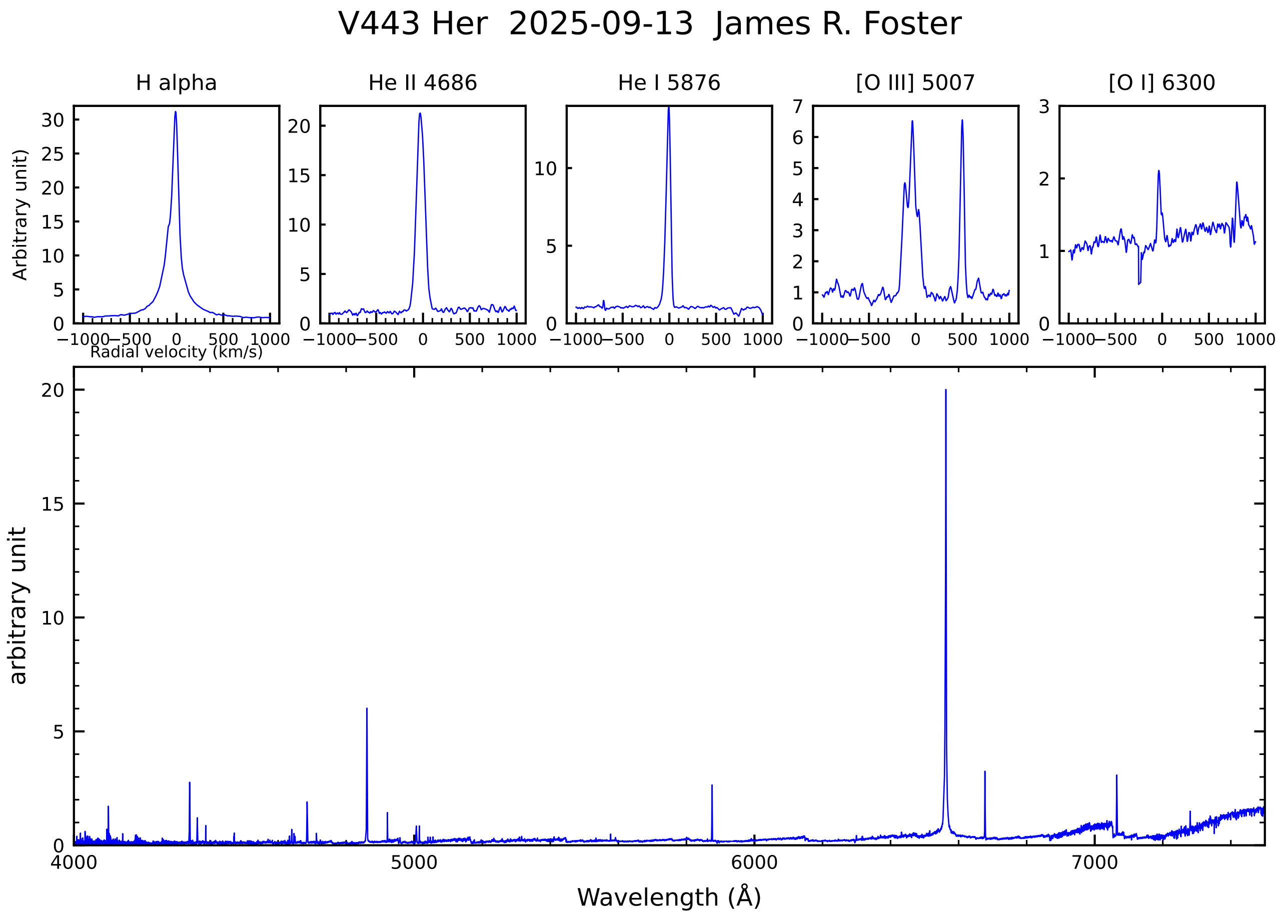

Fig. 12: V443 Her Spectrum secured by James Foster with his new eShel spectroscope

Circumpolar Targets

- **AG Dra**, yellow symbiotic star: orbital variations, before the next cycle of outburst.
- **SU Lyn**.
- **AR Pav**
- **V399 Pav** V339 Pav is a shell burning symbiotic comprising a bright hot component (L = 70 - 8700 L$\odot$ T = 90000-160000 K from various sources) and a M5-5.5 III red giant orbiting in 559 $\pm$ 27 days. The emission line spectrum in the visible range comprise H I, He I, He II, [O III]. The highest ionization detected in our spectra is [Fe VI] 5176 $\AA$ (99 eV) Fig. 14.
- **SY Mus**
- **RT Cru**
- **CN Cha**

Autumn Targets

- **AG Peg**
- **Z And**

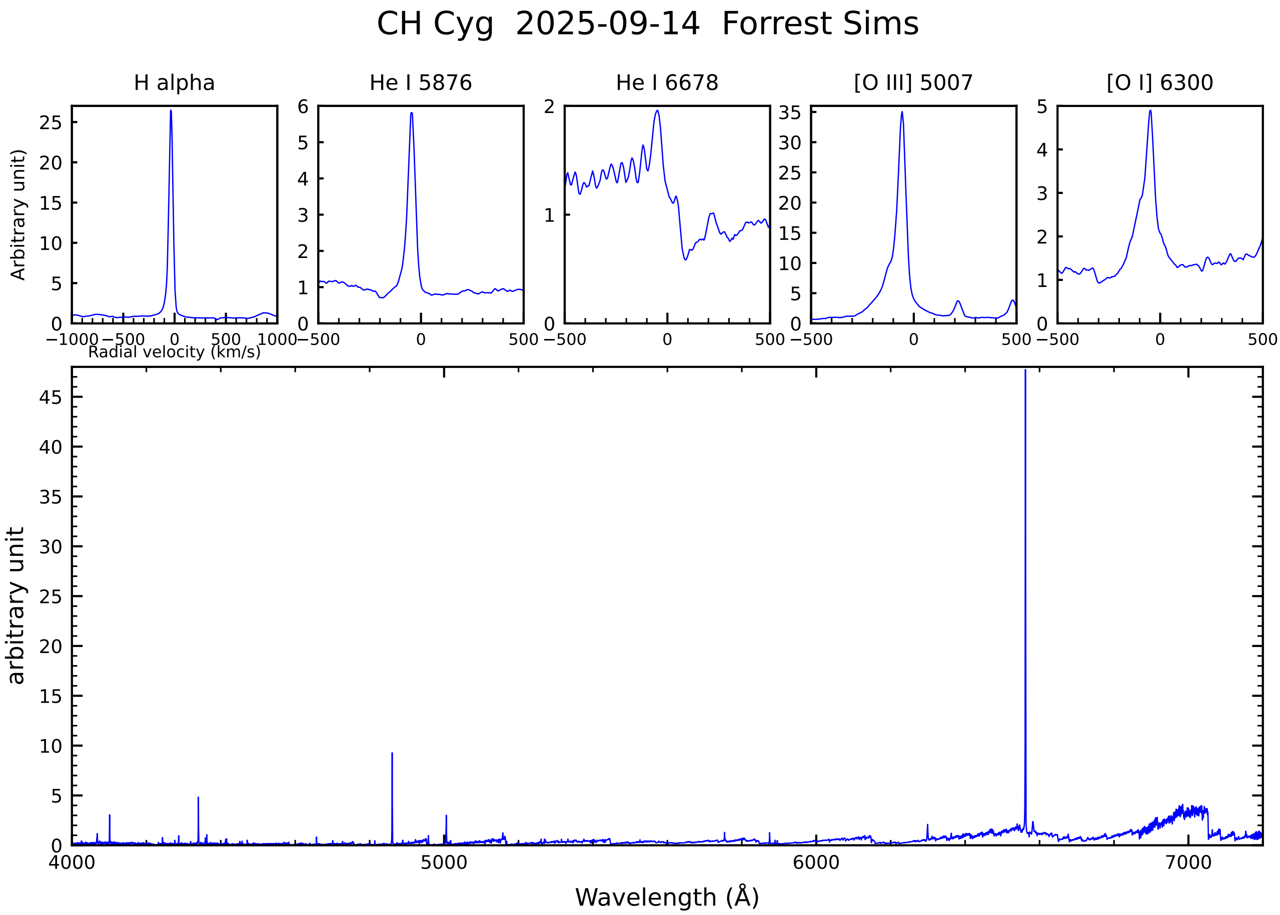

Fig. 13: CH Cyg spectrum secured by Forrest Sims with his new NOUT2 (R = 9000) spectroscope

- **EG And**
- **AX Per**

In the morning sky

The goal is to reduce the seasonal gap

- **V694 Mon = MWC 560**
- **BX Mon**
- **ZZ CMi**
- **UV Aur**
- **NQ Gem**
- **WV Vel**

1.3 Other targets

The above selection is just a proposal, a selection of targets according to their interest (subjective!) and luminosity. Observers are encouraged to extend this list depending on their own interest and the capabilities of their setup.

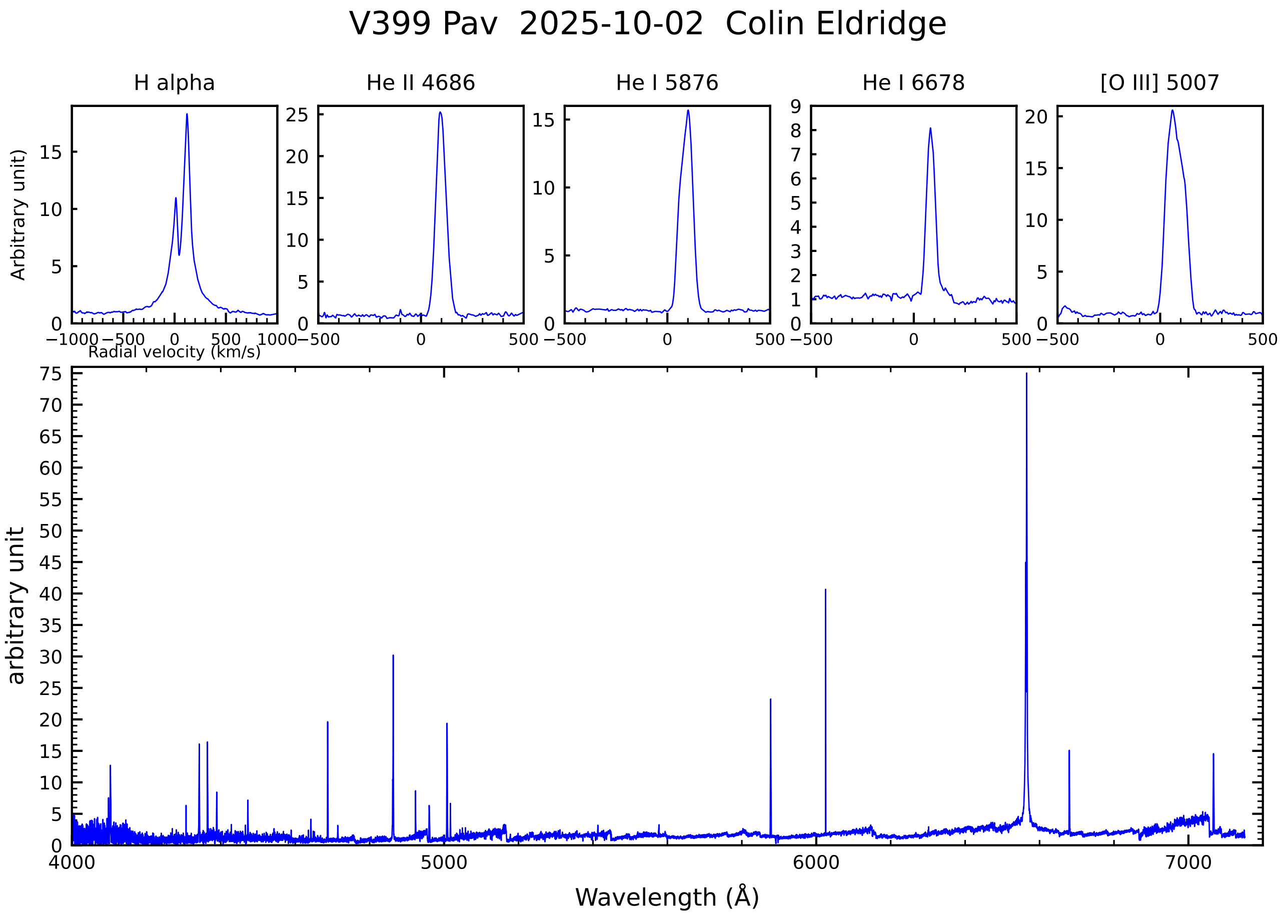

Fig. 14: V399 Pav Spectrum secured by Colin Elridge with an eShel spectroscope

1.4 Photometry

Tables 1 & 2 show the photometry of symbiotic stars from AAVSO database from 2013 to now. Vmed, Vmin, Vmax are respectively the median, minimum, maximum observed. Vlast is the last magnitude acquired, Dlast being the number of days of this acquisition from now.The tables are sorted by Vlast.

Table 1: Photometry of bright symbiotic stars from AAVSO Update: 23-09-2025

Obj	RA	DEC	Vmed	Vmin	Vmax	Vlast	Dlast
SS Lep	06 04 59.13	-16 29 03.97	5.1	4.5	7.9	5.0	188.5
BD Cam	03 42 09.33	+63 13 00.46	5.2	5.0	5.4	5.1	269.5
CQ Dra	12 30 06.67	+69 12 03.99	5.0	4.6	7.6	5.7	152.5
V1261 Ori	05 22 18.65	-08 39 58.05	6.9	6.5	9.5	7.0	196.5
V934 Her	17 06 34.51	+23 58 18.65	7.6	7.6	7.6	7.6	124.5
V694 Mon	07 25 51.28	-07 44 08.08	9.4	7.7	13.0	8.1	0.5
NQ Gem	07 31 54.52	+24 30 12.54	8.0	7.0	9.6	8.1	147.5
R Aqr	23 43 49.46	-15 17 04.18	10.4	5.8	13.0	8.2	0.5
CH Cyg	19 24 33.07	+50 14 29.06	7.6	2.8	14.6	8.3	0.5
WY Vel	09 21 59.13	-52 33 51.65	8.4	6.2	13.7	8.4	93.5
SU Lyn	06 42 55.14	+55 28 27.23	8.5	7.8	9.3	8.4	1.5
AG Peg	21 51 01.97	+12 37 32.12	8.7	6.2	13.2	8.7	1.5
RW Hya	13 34 18.13	-25 22 48.89	9.3	8.4	9.7	8.9	459.5
omi Cet	02 19 20.79	-02 58 39.50	5.5	0.3	12.5	9.0	0.5
Y Gem	07 41 08.52	+20 25 44.33	9.4	5.7	11.0	9.2	139.5
AG Dra	16 01 41.01	+66 48 10.13	9.8	7.9	13.0	9.4	0.5
BX Mon	07 25 22.76	-03 35 50.64	9.6	8.9	12.6	9.6	0.5
ZZ CMi	07 24 14.00	+08 53 51.80	9.8	9.2	10.7	9.9	160.5
T CrB	15 59 30.16	+25 55 12.61	10.0	1.3	12.8	10.0	0.1
TX CVn	12 44 42.06	+36 45 50.62	10.0	8.7	11.5	10.0	2.5
CN Cha	10 59 57.62	-79 57 01.06	10.1	9.2	10.3	10.3	1074.5
UV Aur	05 21 48.91	+32 30 40.18	9.6	6.2	11.1	10.3	1.5
ER Del	20 42 46.50	+08 41 13.54	10.3	7.4	12.5	10.3	286.5
IV Vir	14 16 34.29	-21 45 50.04	10.7	10.6	10.7	10.7	105.5
StHA 190	21 41 44.89	+02 43 54.41	10.4	10.2	10.9	10.7	399.5
V417 CMa	06 59 11.30	-29 02 05.15	10.6	10.6	10.7	10.7	1779.5
CL Sco	16 54 51.97	-30 37 18.26	12.6	10.5	13.6	10.8	686.5
CI Cyg	19 50 11.83	+35 41 03.00	11.1	4.7	12.3	10.9	0.5
BF Cyg	19 23 53.50	+29 40 29.17	10.2	8.3	14.4	11.0	2.5
V919 Sgr	19 03 45.12	-16 59 55.38	11.2	10.1	13.5	11.0	302.5
V1413 Aql	19 03 46.84	+16 26 16.97	12.1	10.3	74.3	11.1	0.5
RS Oph	17 50 13.16	-06 42 28.48	11.0	0.5	14.6	11.2	0.5
AX Per	01 36 22.70	+54 15 02.41	11.5	9.5	14.7	11.3	1.5
SY Mus	11 32 10.00	-65 25 11.46	10.9	10.3	11.9	11.4	159.5
V2905 Sgr	18 17 20.27	-28 09 49.11	12.5	11.2	13.1	11.4	691.5
Z And	23 33 39.96	+48 49 05.97	10.3	8.0	14.1	11.4	0.5
RR Tel	20 04 18.54	-55 43 33.15	11.8	10.7	12.1	11.4	686.5
V443 Her	18 22 07.85	+23 27 19.93	11.5	1.5	12.5	11.5	0.5
V1044 Cen	13 16 01.37	-37 00 10.77	11.3	11.0	12.1	11.5	2059.5
DD Mic	21 00 06.36	-42 38 44.94	11.6	11.6	11.7	11.6	0.5
FG Ser	18 15 07.10	-00 18 52.28	12.1	11.3	17.7	11.6	11.5
AR Pav	18 15 23.88	-66 04 42.93	11.4	9.2	12.7	11.7	0.5
V399 Pav	19 42 25.38	-68 07 35.34	11.5	11.2	12.1	11.7	658.5
Hen 3-1768	19 59 48.42	-82 52 37.49	11.6	10.1	11.8	11.7	2653.5
StHA 149	18 18 55.87	+27 26 27.73	12.0	11.8	12.3	11.8	430.5

Table 2: Photometry of bright symbiotic stars from AAVSO Update: 23-09-2025

Obj	RA	DEC	Vmed	Vmin	Vmax	Vlast	Dlast
V1016 Cyg	19 57 05.02	+39 49 36.09	11.3	10.2	13.7	11.9	1.5
V3804 Sgr	18 21 28.78	-31 32 04.56	11.0	10.6	12.1	12.0	1832.5
MWC 960	18 47 55.81	-20 05 50.98	12.2	12.2	12.2	12.2	2619.5
RT Cru	12 34 53.74	-64 33 56.10	12.2	8.5	14.8	12.2	0.5
V627 Cas	22 57 40.97	+58 49 12.56	12.2	11.6	13.0	12.3	1.5
StHA 180	20 39 20.61	-05 17 16.33	12.5	12.5	12.6	12.5	1843.5
QW Sge	19 45 49.55	+18 36 47.66	12.5	10.4	14.5	12.6	26.5
GH Gem	07 04 12.77	+12 03 34.24	12.7	11.4	14.3	12.6	204.5
StHA 32	04 37 45.63	-01 19 11.90	12.8	12.4	12.8	12.7	215.5
EF Aql	19 51 51.72	-05 48 16.71	15.5	12.8	16.0	12.8	2507.5
PU Vul	20 21 13.31	+21 34 18.69	12.7	10.7	13.9	12.8	1.5
V426 Sge	19 54 42.95	+17 22 12.58	11.8	10.5	15.2	12.8	2.5
V455 Sco	17 07 21.73	-34 05 14.43	13.8	12.8	14.2	12.8	1956.5
Hen 3-1341	17 08 36.57	-17 26 30.41	11.9	11.0	12.9	12.9	1249.5
YY Her	18 14 34.19	+20 59 21.19	13.0	10.9	14.2	12.9	1.5
FN Sgr	18 53 54.77	-18 59 40.66	12.8	10.9	13.8	12.9	3.5
StHA 154	18 43 27.92	+19 30 05.45	13.0	12.8	13.0	12.9	124.5
HM Sge	19 41 57.08	+16 44 39.86	12.3	11.5	13.3	13.0	0.5
V503 Her	17 36 40.46	+23 18 11.67	12.6	11.9	13.8	13.0	84.5
V471 Per	01 58 49.66	+52 53 48.46	13.0	12.9	13.2	13.0	253.5
TCP J18224935-2408280	18 22 49.35	-24 08 28.0	13.1	13.1	13.1	13.1	1501.5
V407 Cyg	21 02 09.82	+45 46 32.74	13.2	10.8	18.2	13.2	349.5
LT Del	20 35 57.24	+20 11 27.50	13.2	7.8	13.5	13.2	78.5
V335 Vul	19 23 14.15	+24 27 39.66	12.4	9.5	13.5	13.3	1762.5
WRAY 15-157	08 06 34.87	-28 32 01.22	13.4	13.3	13.4	13.4	4596.5
WRAY 15-157	08 06 34.87	-28 32 01.22	13.4	13.3	13.4	13.4	4596.5
V4018 Sgr	18 25 26.84	-28 35 57.49	11.8	10.1	13.8	13.5	1832.5
Hen 3-1342	17 08 54.97	-23 23 36.50	13.5	13.5	13.5	13.5	4595.5
CM Aql	19 03 35.14	-03 03 15.36	14.5	12.0	15.0	13.6	8.5
Hen 3-1591	18 07 32.01	-25 53 43.32	13.4	12.7	13.9	13.6	1832.5
StHA 169	19 49 57.59	+46 15 20.54	13.8	12.0	14.3	13.6	300.5
AS 210	16 51 20.41	-26 00 26.70	12.8	11.5	13.8	13.6	3612.5
HK Sco	16 54 41.03	-30 23 06.88	13.8	13.0	14.2	13.7	1586.5
NSV 11776	19 09 56	-02 47.7	13.7	13.7	13.7	13.7	441.5
RX Pup	08 14 12.30	-41 42 29.08	14.2	11.2	15.0	13.8	155.5
RX Pup	08 14 12.30	-41 42 29.08	14.2	11.2	15.0	13.8	155.5
SS73 141	18 12 11.34	-33 10 42.49	13.6	13.0	14.2	13.8	1398.5
StHA 63	07 58 05.87	-07 43 55.57	13.8	13.7	13.9	13.8	157.5
DQ Ser	18 44 39.62	+05 02 49.08	14.1	13.7	15.9	13.8	347.5
AS 270	18 05 33.73	-20 20 38.08	13.6	11.4	14.8	13.9	1097.5
V1329 Cyg	20 51 01.23	+35 34 54.11	13.7	12.1	14.9	14.0	1.5
V4074 Sgr	18 16 05.53	-30 51 13.50	14.5	14.0	15.0	14.0	4106.5
WRAY 15-1167	14 03 18.64	-58 09 34.92	13.8	13.3	14.2	14.1	1091.5
StHA 164	19 28 41.64	-06 03 51.79	14.3	14.3	14.4	14.4	435.5
V2204 Oph	18 26 01.92	+11 55 09.58	14.4	14.3	18.2	14.5	11.5

2 Selected spectra of symbiotic stars

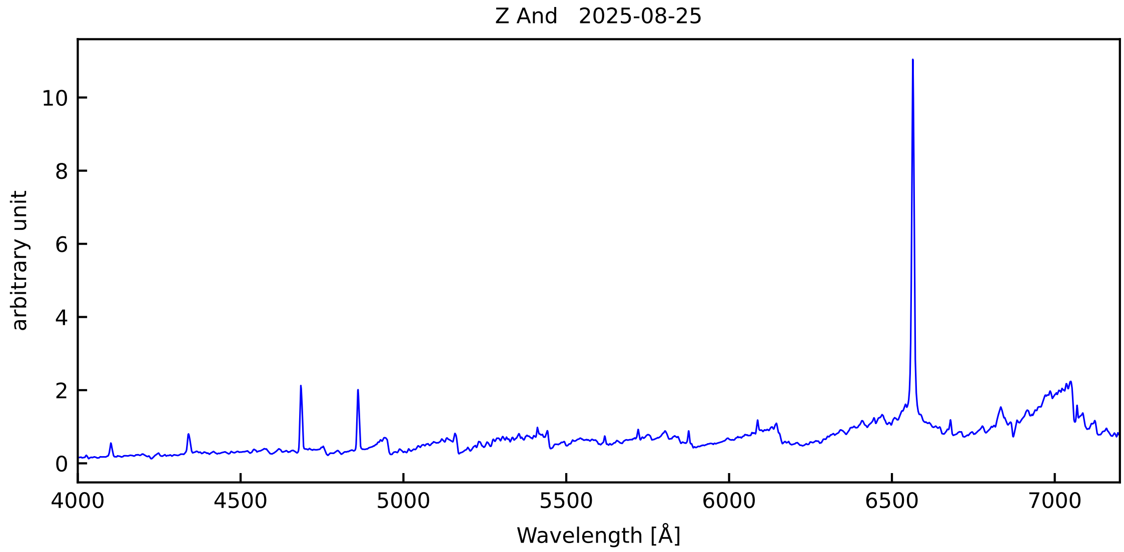

Fig. 15: Z And Spectrum secured by Guillaume Bertrand with a UVEX300 spectroscope

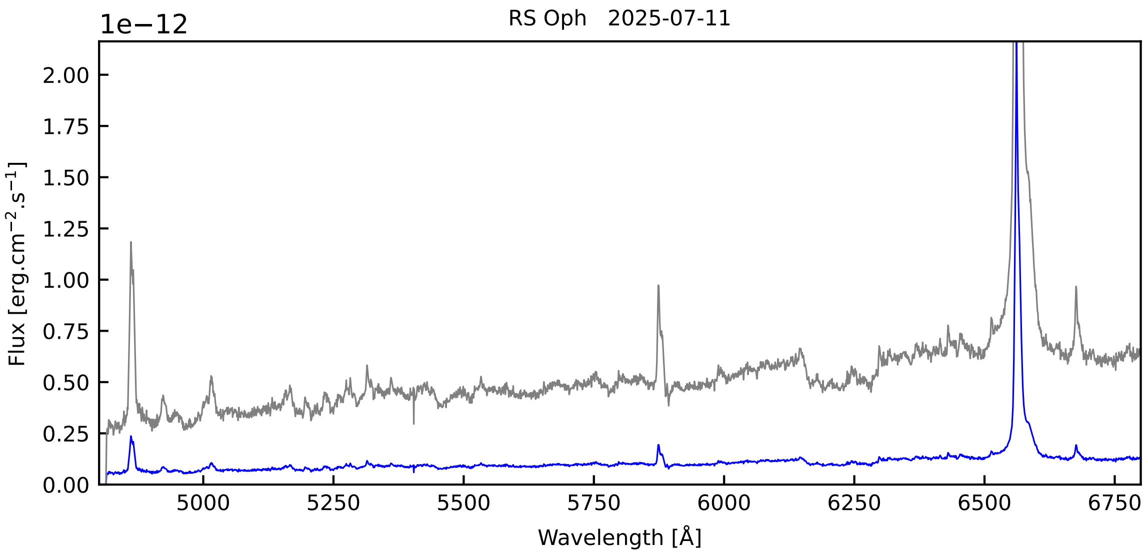

Fig. 16: RS Oph Spectrum secured by David Cujedo with a UVEX600 spectroscope

3 Novae

Four novae were observed this summer. Two other ones exploded late September (Nova Cen 2025 and Nova Sgr 2025d) and will be described in the next issue.

3.1 Nova Lup 2025 = V462 Lup

Nova Lup 2025 (V462 Lupi) was discovered on June 12, 2025, by the All-Sky Automated Survey for SuperNovae (ASAS-SN) at magnitude sloan-g 8.7 (ATel 17237). It was classified as a classical nova on June 14, 2025 by Y. Tampo (ATel 17228). The nova brightened to magnitude 5.5–5.7 by June 18–20, 2025.

Multi-wavelength observations soon followed. Fermi-LAT detected ¿100 MeV gamma-ray emission between June 25–26, 2025 (ATel 17249). Swift-XRT confirmed soft X-ray emission on 2025-08-22 during follow-up (ATel 17353). Archival optical data from GOTO-South also revealed a pre-eruption brightening on May 23, 2025, weeks before discovery (ATel 17237). //

The first spectrum is typical of a classical nova very near the maximum visible luminosity: blue continuum, Balmer lines (H α and H β in faint emission with a deep P Cygni profile. The lower members of H I are seen only in absorption. Number of neutral and single ionized metal lines (especially Fe II) appear in absorption, Fe II (42) multiplet being the only one to show faint emission.
Contrary to what is stated in the ATel 17228, there is no trace of He I. The ionization state at this stage of the nova is too low. He I will appear when the remaining envelope has retracted sufficiently: its temperature will have to reach approximately 25,000 K to ionize the helium. He I lines appear around day 50, see in fig. 12 (up, right) the appearance of He I 5876 with a very low signal at day 54, becomin obvious at day 57 .

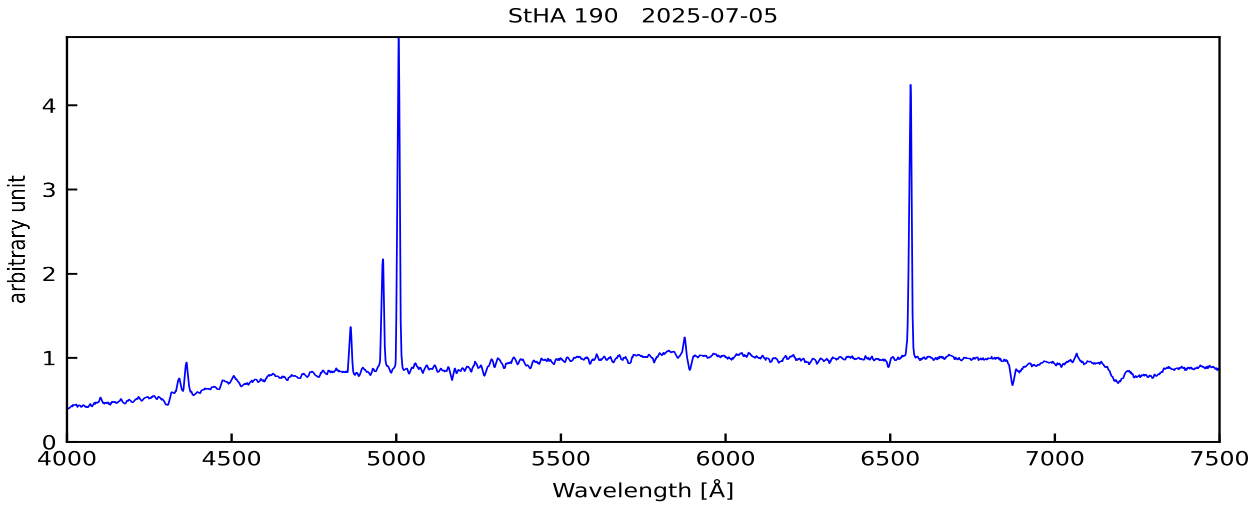

Fig. 17: StHA 190 Spectrum secured by Xavier Dupont with a UVEX300 spectroscope

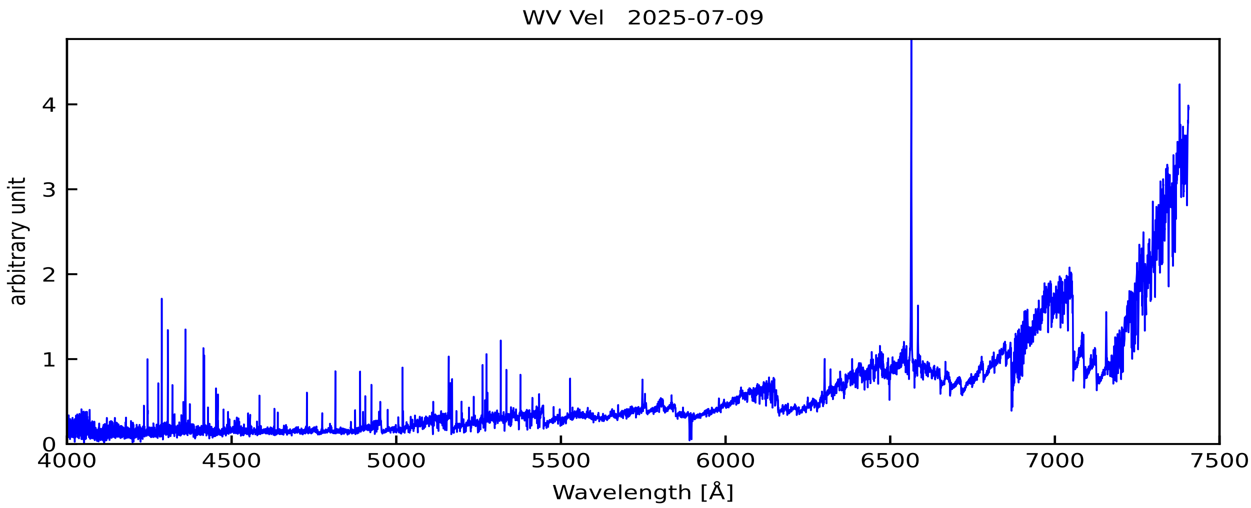

Fig. 18: WV Vel Spectrum secured by Colin Elridge with an eShel (R = 11000) spectroscope

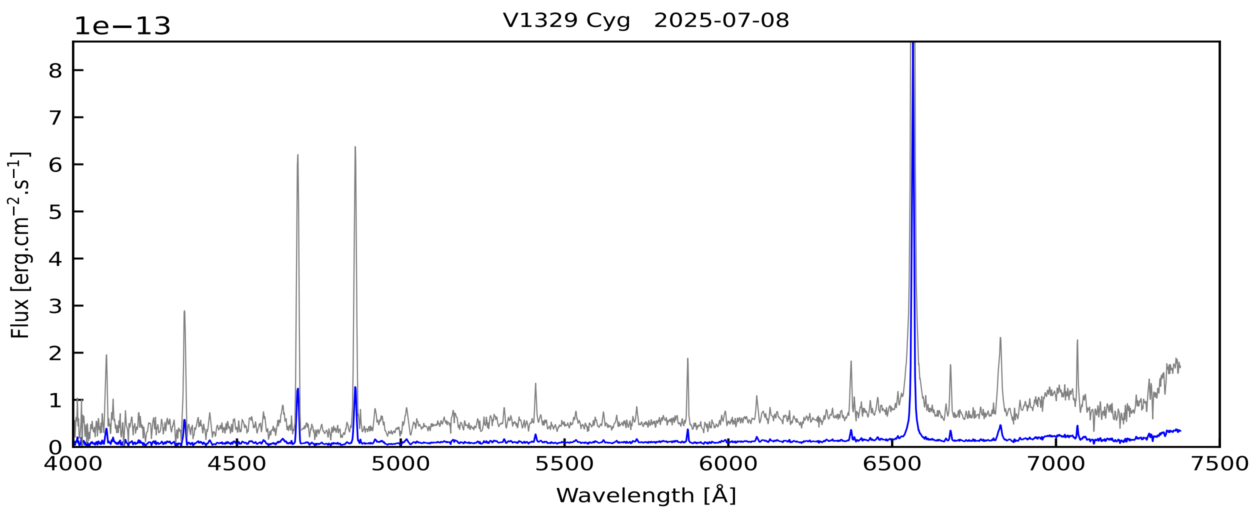

Fig. 19: V1329 Cyg Spectrum secured by David Boyd with a LISA (R = 1000) spectroscope

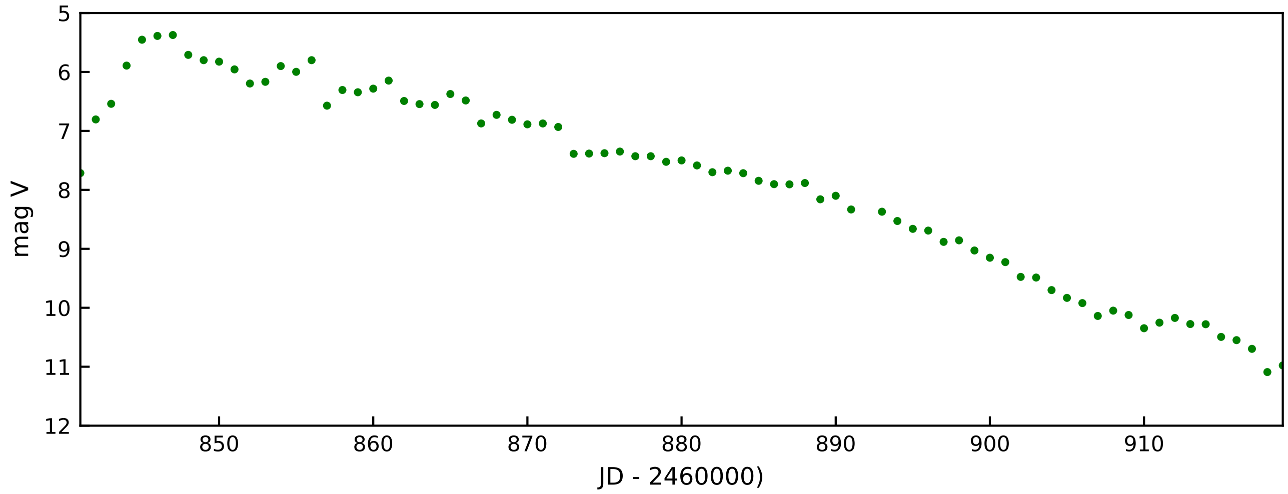

Fig. 20: Nova Lup 2025 V magnitude from AAVSO database. selected data and 1 day median.

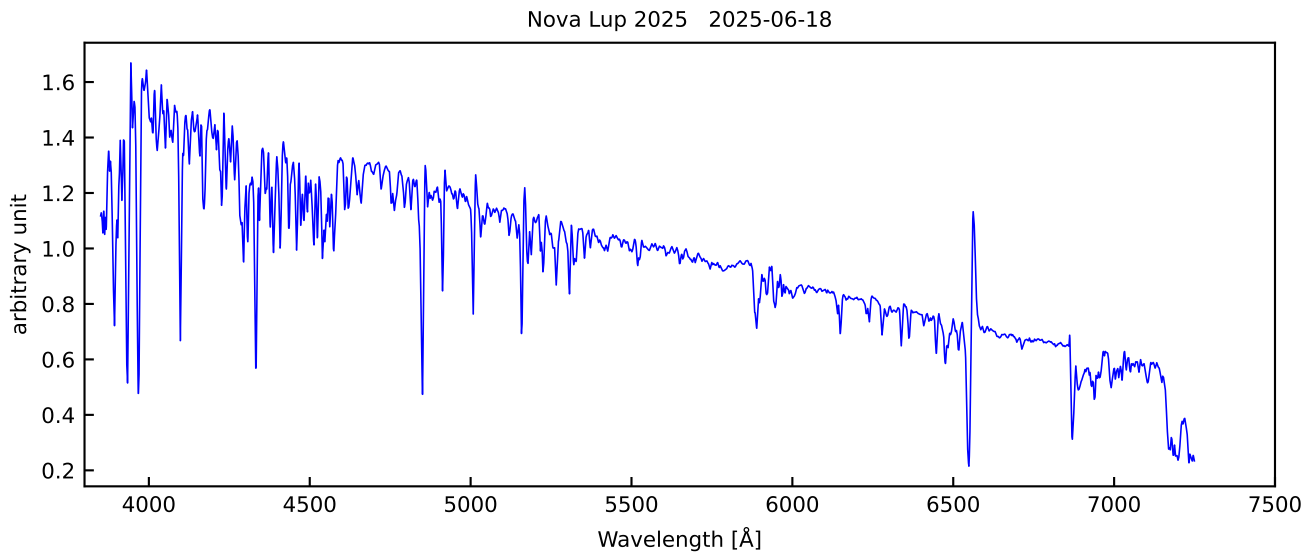

Fig. 21: Nova Lup 2025 First spectrum in the database, obtained by Keitk Shank on 2025-06-18 with a LISA at R = 1000

Tools: table lines in novae near maximum luminosity.

133 spectra in the database, including 55 echelle spectra
`https://aras-database.github.io/database/novalup2025.html`

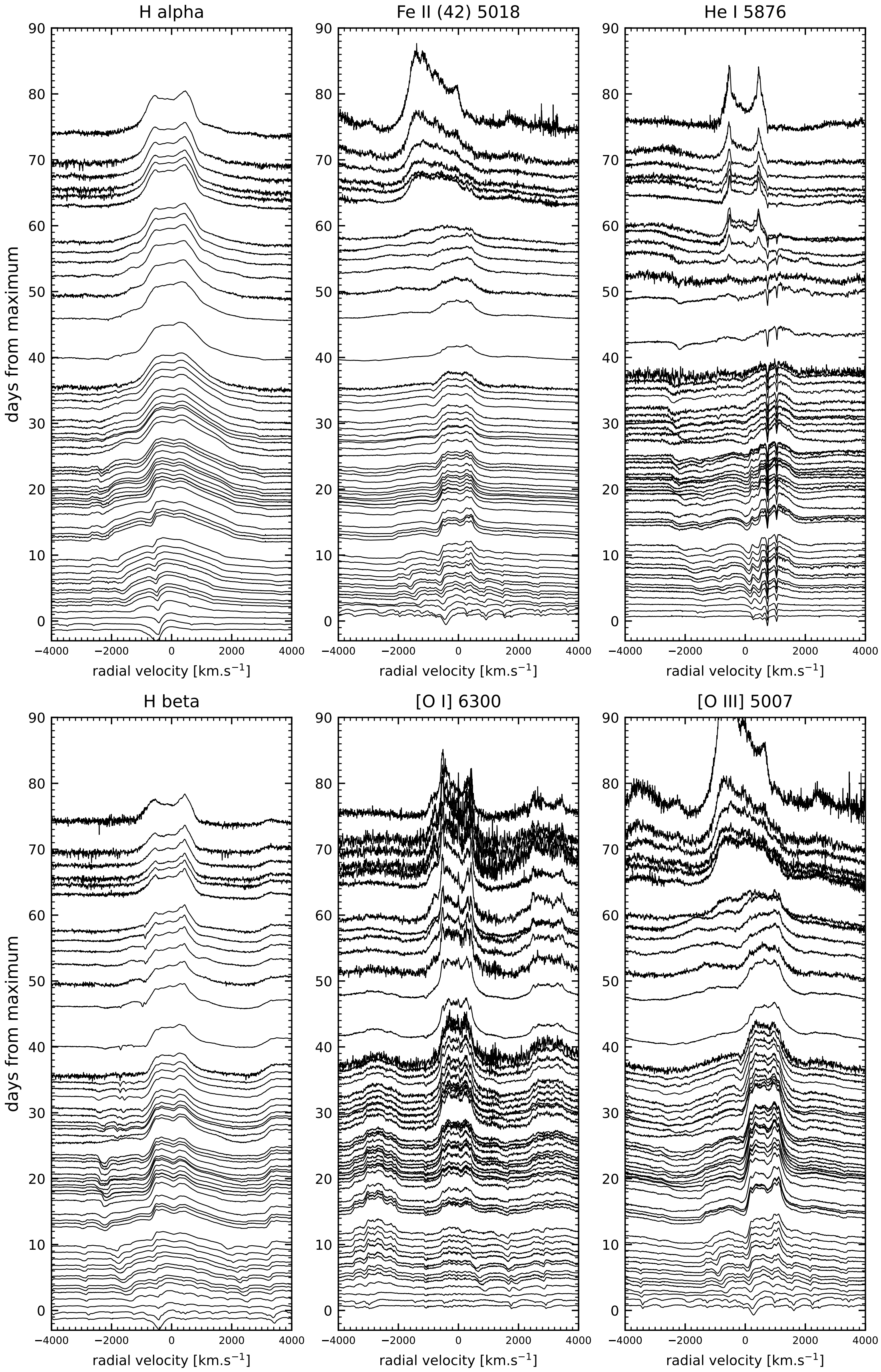

Fig. 22: Nova Lup 2025 Selected lines profiles from echelle spectra. Hα and Hβ in logarithmic scale. The fluxes are multiplied by a factor 3 and shifted by the number of days from maximum.

3.2 Nova Vel 2025 = V572 Vel

Nova Vel 2025 (V572 Vel) was discovered independently by John Seach and Andrew Pearce in Australia on June 25, 2025, at a magnitude of 5.7 (CBET 5574). The nova quickly brightened to mag 4.8 by June 27, 2025. It was classified as a classical nova on June 30, 2025 by ARAS team (ATel 17256). γ rays is significantly detected on 2025-06-27 with F(E 100 MeV) = (6.4+/-2.0) x $10^{-}7phcm^{-}2s^{-}1(ATel17252)$.

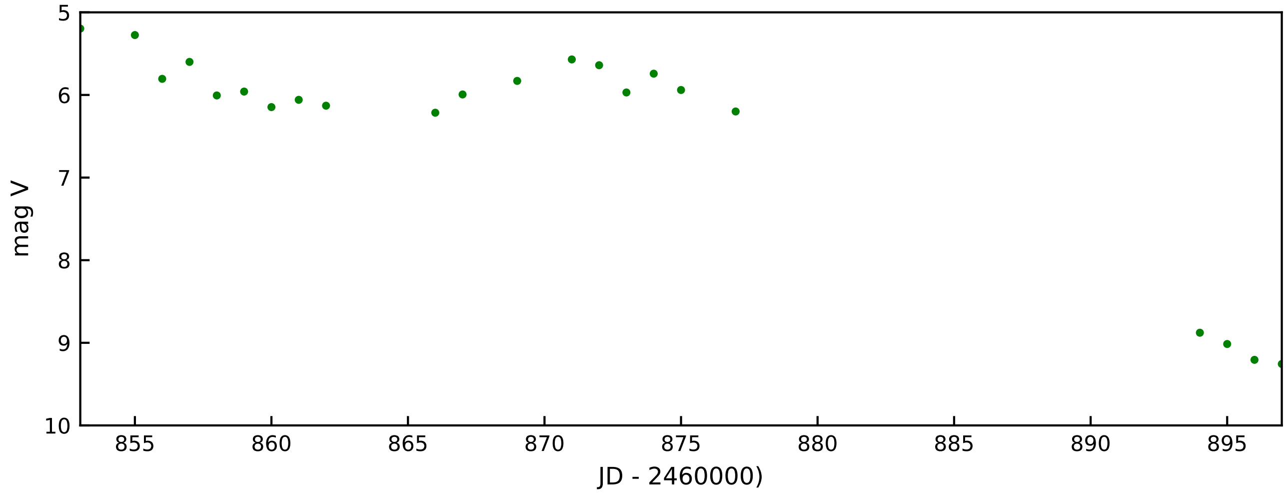

Fig. 23: Nova Vel 2025 V magnitude from AAVSO database. selected data and 1 day median.

The light curve shows a plateau of a duration of ≈ 20 days

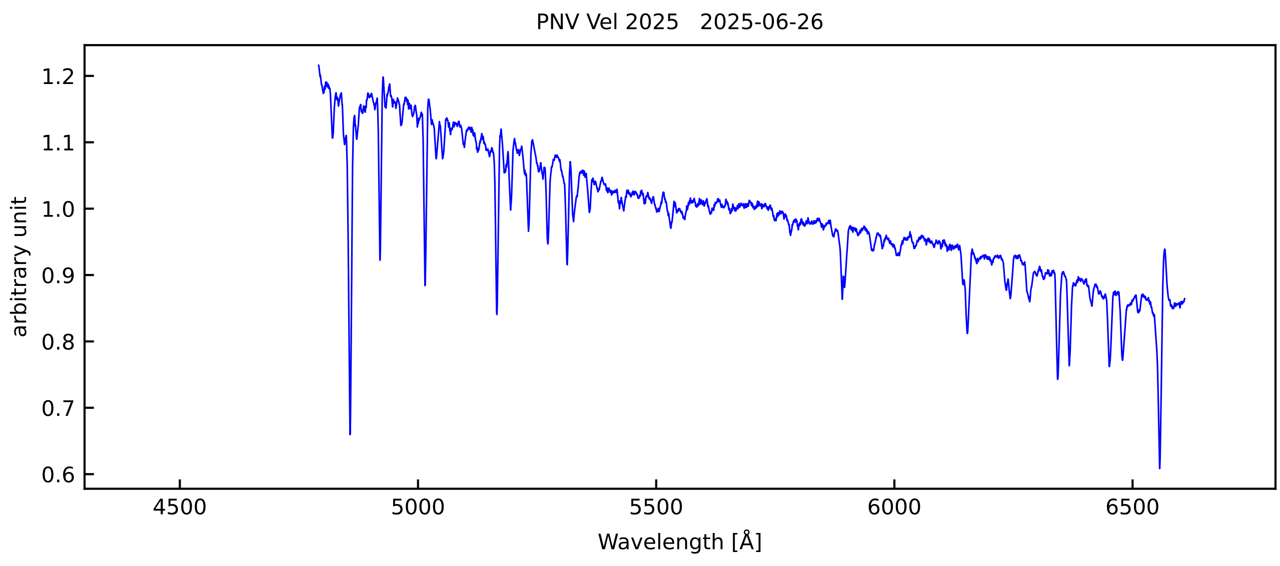

Fig. 24: Nova Vel 2025 First spectrum in the database, obtained by Peter Velez on 2025-06-18 with a LISA at R = 1000

The first spectra obtained during the first day after the discovery were atypical of a nova near maximum luminosity. We waited until 2025-06-30 to publish an ATel identifying the transient as a nova under the title **"... Not obviously a classical nova"**.
... The interstellar Na I D and Ca II H and K lines have V_LSR ≈ +37 km/s. A weak (≈ 10 %) absorption trough appears on e.g., Na I D2, Ca II K, Si II 6347 at V_Hel ≈ -250 km/s, the

same as a 40 % absorption feature on Hα (for which the 20% emission extends to +440 km/s). All Balmer lines to Hϵ have the same absorption component. The neutral and singly ionized metals and Balmer lines all show the same absorption component. The velocity increased to -300 km/s on MJD 60854 with an increase in the complexity of the absorption spectrum. Na I D1 and D2 showed narrow (100 km/s) absorption components at vrad $\approx$ -320 km/s, Hα showed a 60% absorption at -280 km/s with only a 10% emission feature. The Halpha profile displayed an abrupt, dramatic change on MJD 60855, showing an emission component at 1.5 times the continuum extending from about -1200 km/s to +2700 km/s but with absorption (now only to the continuum level) at -280 km/s. The absorption profile also remained unchanged despite the intense emission. The Hβ and Hγ profiles were extremely complex, with overlapping metallic absorption on the red wing but the same absorption component at -300 km/s and a new feature at around -1200 km/s. The Na I D line now showed an 10% emission component extending to about +1500 km/s. Si II 6347/70, Ca II K, and Fe II 5018 lines displayed two discrete absorption components at -1200 km/s like the Balmer lines and a weaker one at -400 km/s with no emission component. There was no evidence of He I, C II, or either [O I] 6300/64 or [Ca II] 7291/7321, or any forbidden metal line transitions. There appear to be two distinct regions, one whose physical properties resemble a classical shell star or supergiant and the other, at high velocity, is a rapidly evolving emission line region that may be orthogonal to the absorber, perhaps as in the merger system V1309 Sco. We note that the strong emission lines only appeared between Jun 28.4 and Jun 28.9, one day after the significant Fermi detection (ATel17252).

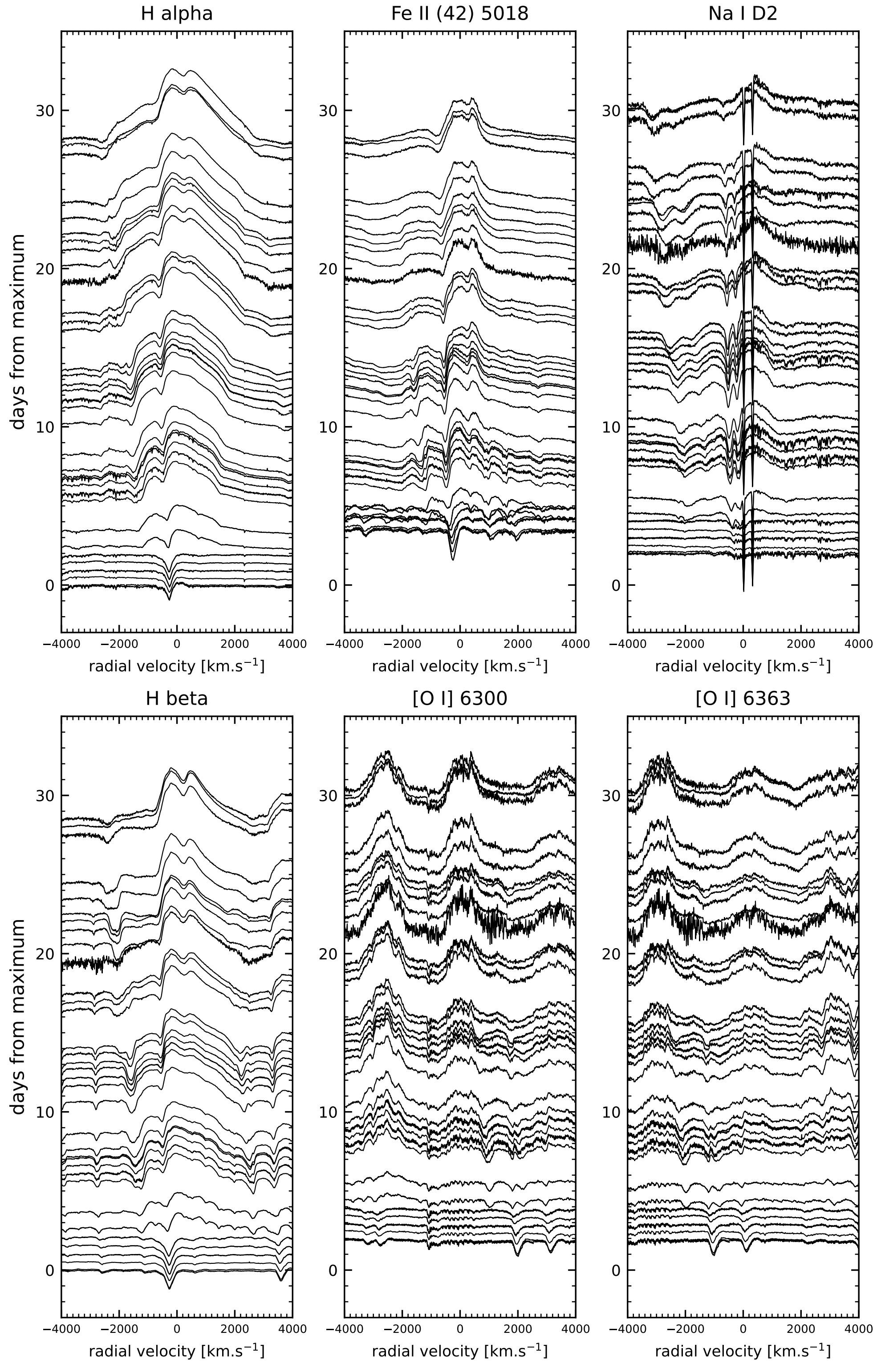

Fig. 25: Nova Lup 2025 Selected lines profiles from echelle spectra. Hα and Hβ in logarithmic scale. The fluxes are multiplied by a factor 3 and shifted by the number of days from maximum.

3.3 Nova Ser 2025 = V691 Ser

Nova Ser 2025 (V691 Ser) was discovered on July 17, 2025, by K. Sokolovsky, S. Korotkiy, and V. Belousov during the New Milky Way survey, at an unfiltered magnitude of about 12.0 (ATel 17373). Spectroscopy obtained shortly after discovery showed Fe II emission lines with P Cygni profiles, leading to its classification as a classical Fe II nova before maximum light (ATel

17374).

The pseudo continuum is strongly reddened, the slope being positive toward red range. Despite the low luminosity, the team was able to monitor the outburst until magnitude.

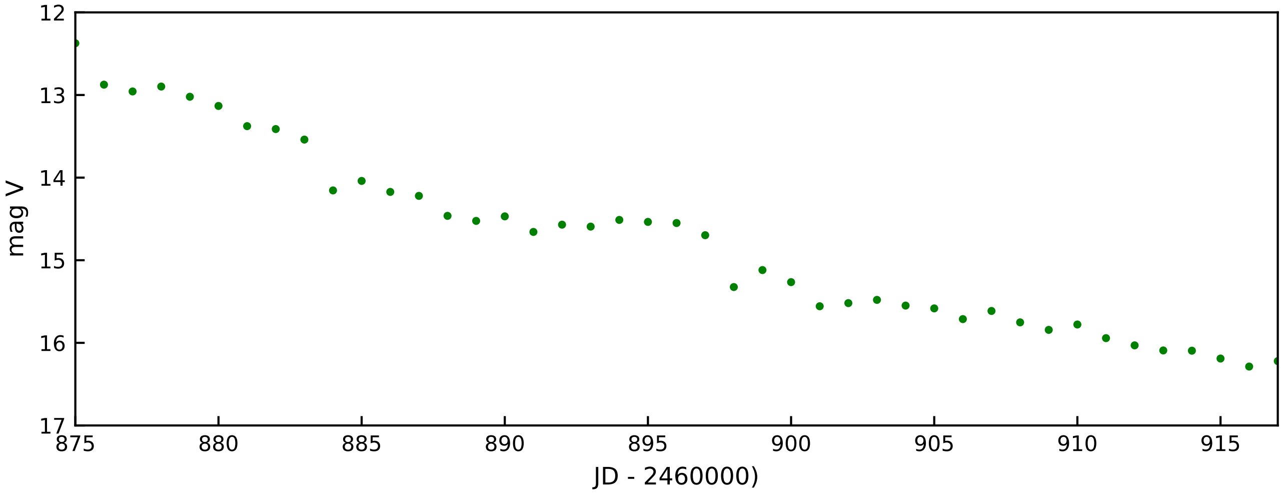

Fig. 26: Nova Ser 2025 V magnitude from AAVSO database. selected data and 1 day median.

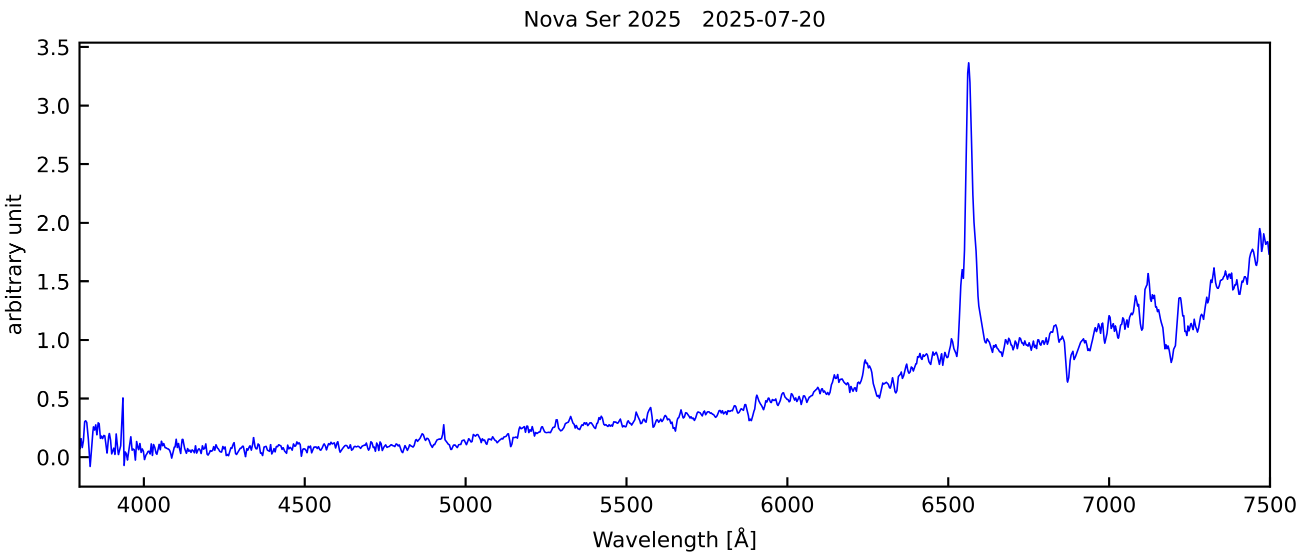

Fig. 27: Nova Ser 2025 First spectrum in the database by Christophe Boussin.

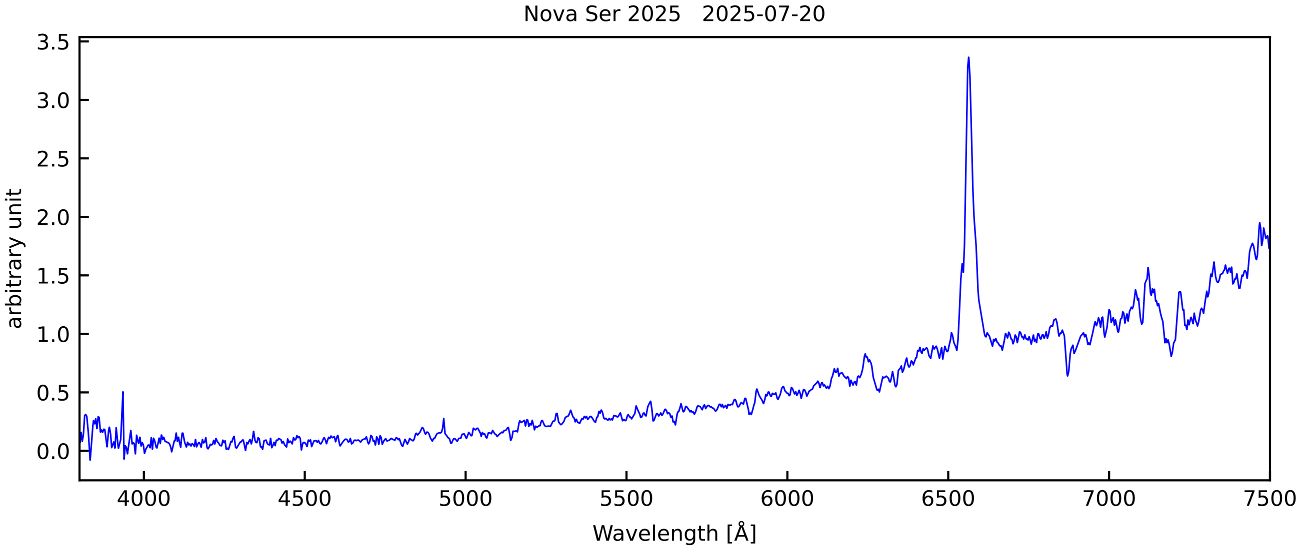

Fig. 28: Nova Ser 2025 Flux calibrated spectrum obtained by Guillaume Bertrand

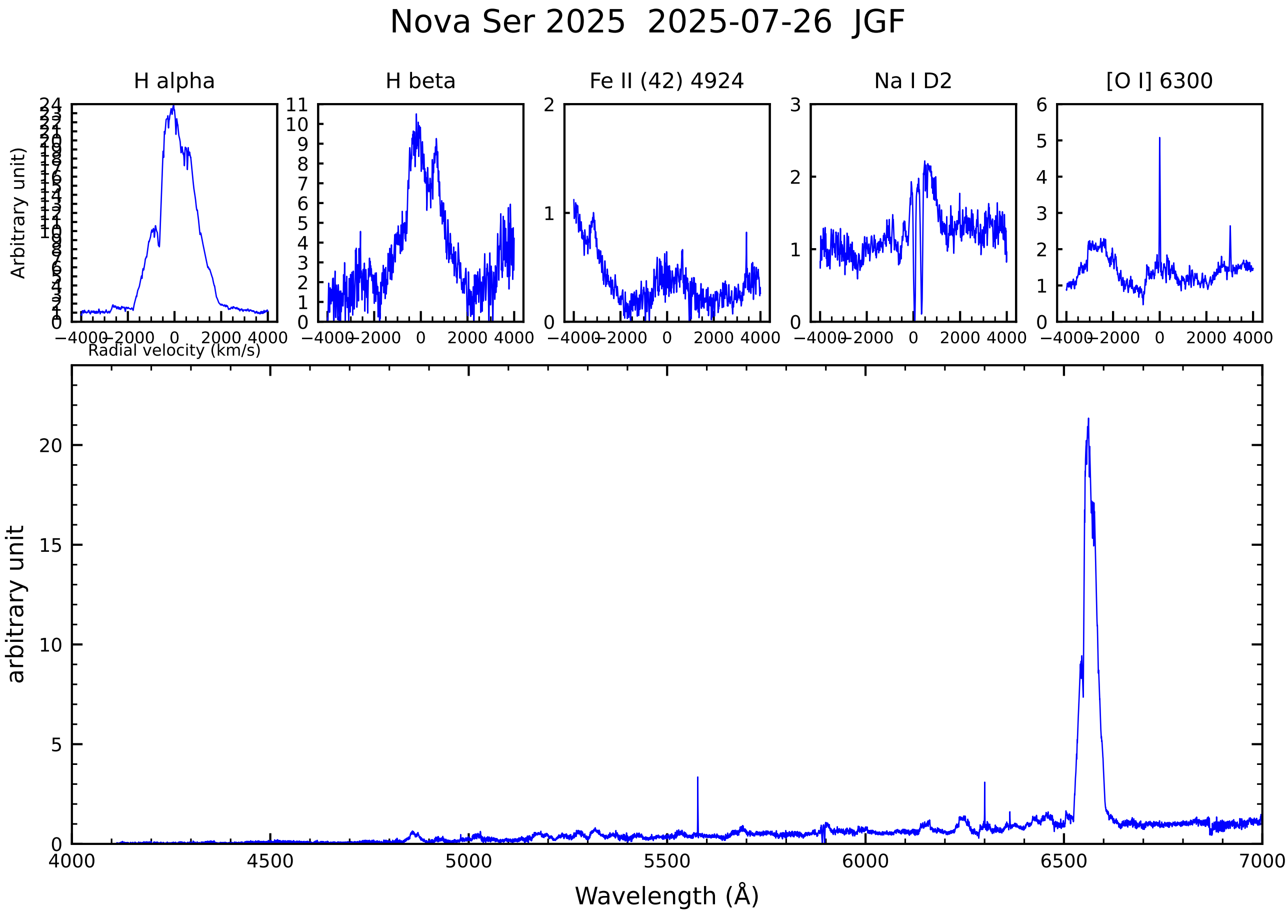

Fig. 29: Nova Ser 2025 Echelle spectrum secured by Joan Guarro Flo with its home made spectrograph NOUT. The narrow line [O I] is telluric

3.4 Nova Oph 2025 = V4371 Oph

Nova Oph 2025 (V4371 Oph) was discovered by T. Kojima (Japan) on September 5, 2025, at magnitude ≈ 12.5 (unfiltered), and announced as TCP J17301230-2753488. Its position is RA 17:30:12.30, Dec 27:53:48.8 (J2000). Spectroscopy obtained on September 6, 2025, confirmed

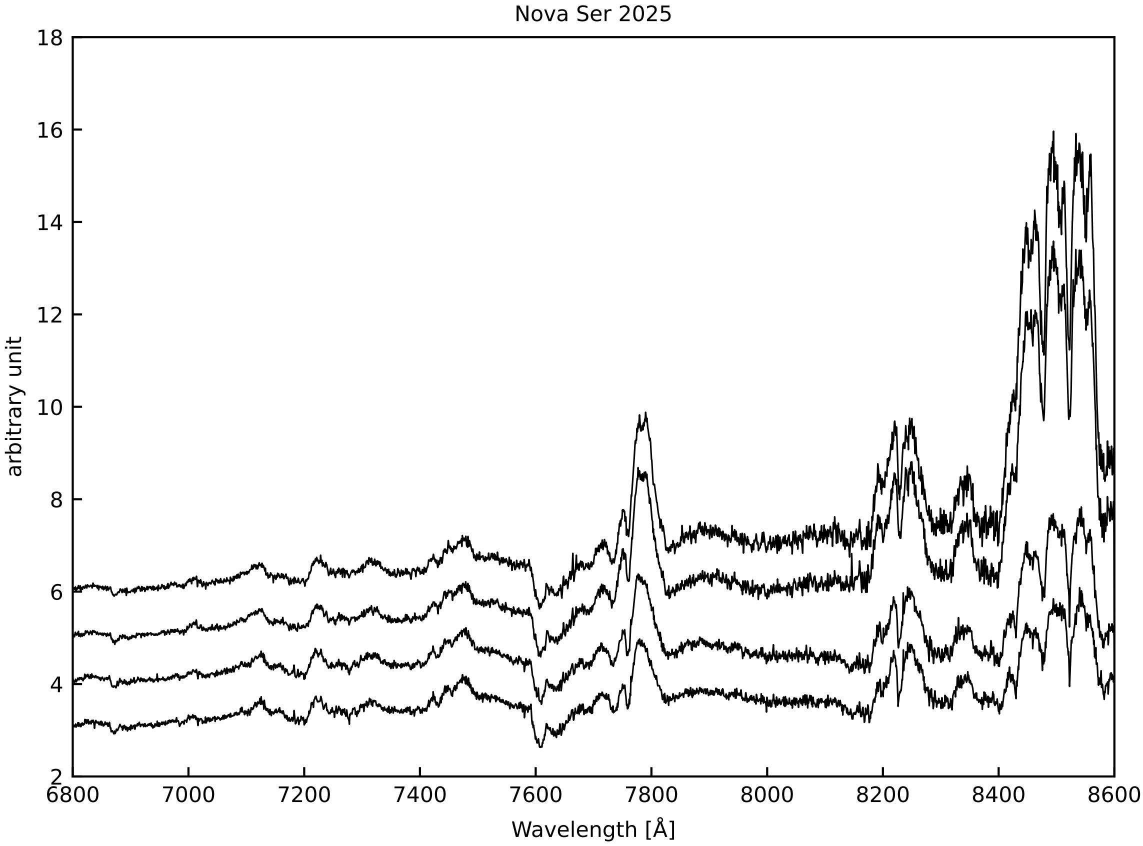

Fig. 30: Nova Ser 2025 The near IR range from spectra obtained by David Cujedo.

nova features with strong emission lines on a highly reddened continuum (ATel 17492).

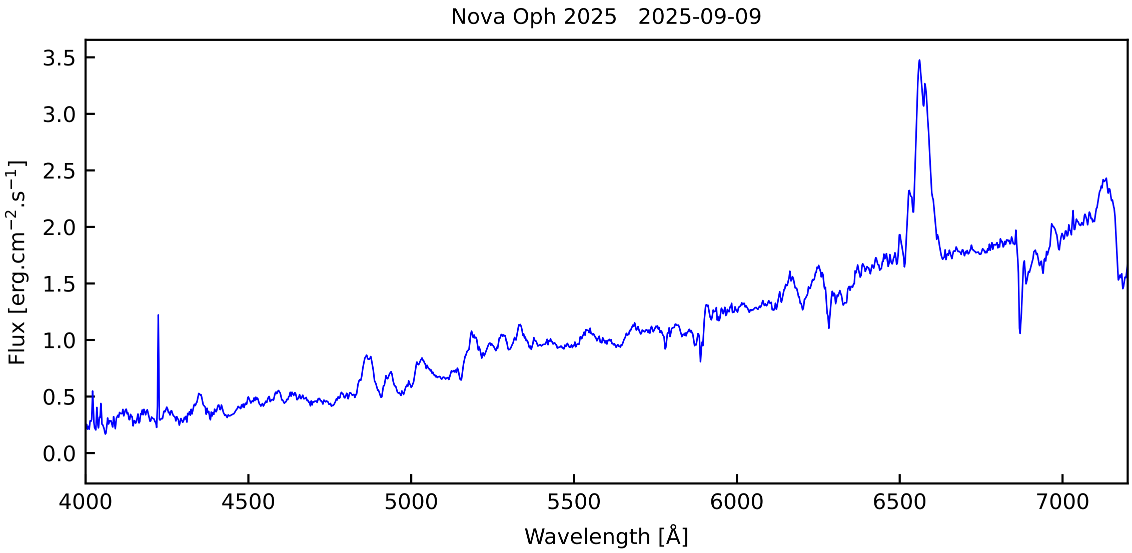

Fig. 31: Nova Oph 2025 Keith Shank LISA R = 1000.

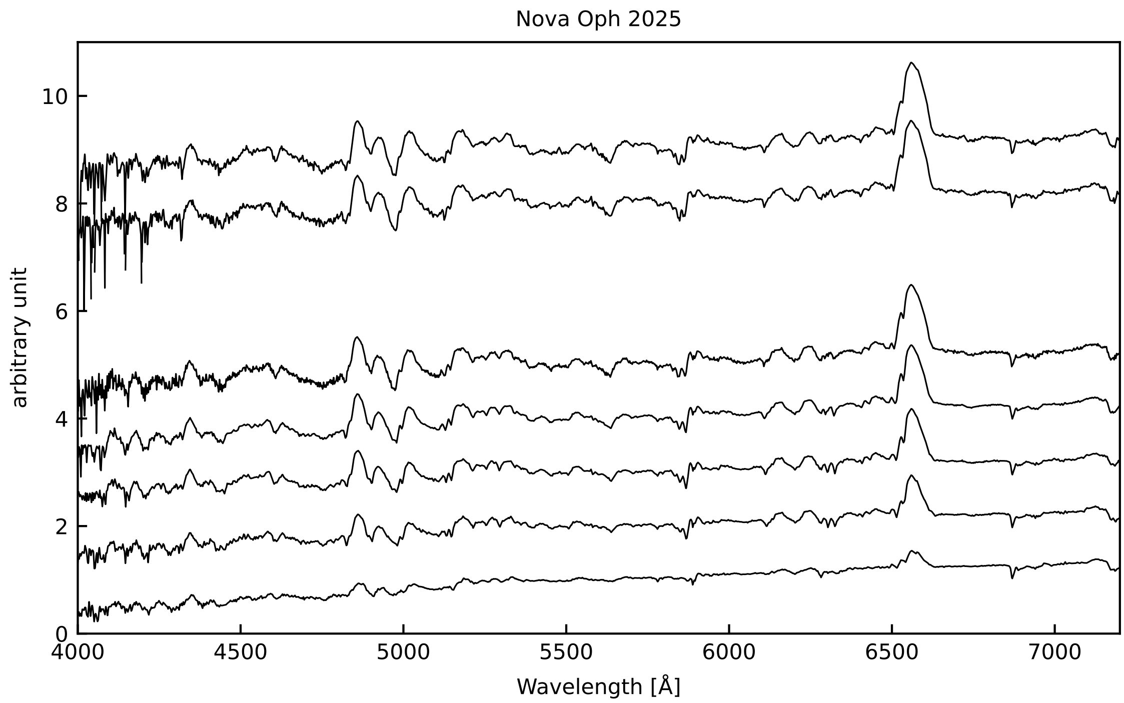

Fig. 32: Nova Oph 2025 Keith Shank DADOS-200 R = 900. Spectroscopic developement. Spectra normalized at $\lambda = 5500$ $\AA$. Logarithmic scale

3.5 Novae in nebular phase

Novae in nebular phase are often abandoned. Of course, they are not very bright and the evolution appears very monotonous. but they can hide surprises. Thus Nova Cas 2021 showed variations of the utmost importance for understanding the physics of novae when the remaining envelope contracts to return to the state of degenerate matter on the surface of the white dwarf. The Figure 33 was presented during the Small Telescope Conference III Tatranska Lomnica in 2023 (see: ARAS Eruptive Stars monitoring 2024).

The long term monitoring allowed to detect precisely "the" sudden appearance of the very high ionized lines of [Fe VII] thanks to the excellent data produced by Pavol A. Dubovsky. In fact, the behaviour of the ejecta in nebular phase lighted up by the X-ray radiation was more complex, showing variations at short time scale. This will be the subject of a publication produced by Steve Shore and his team, and in particular Remo Di Giacomo. Steve will summarize the study in the next issue.

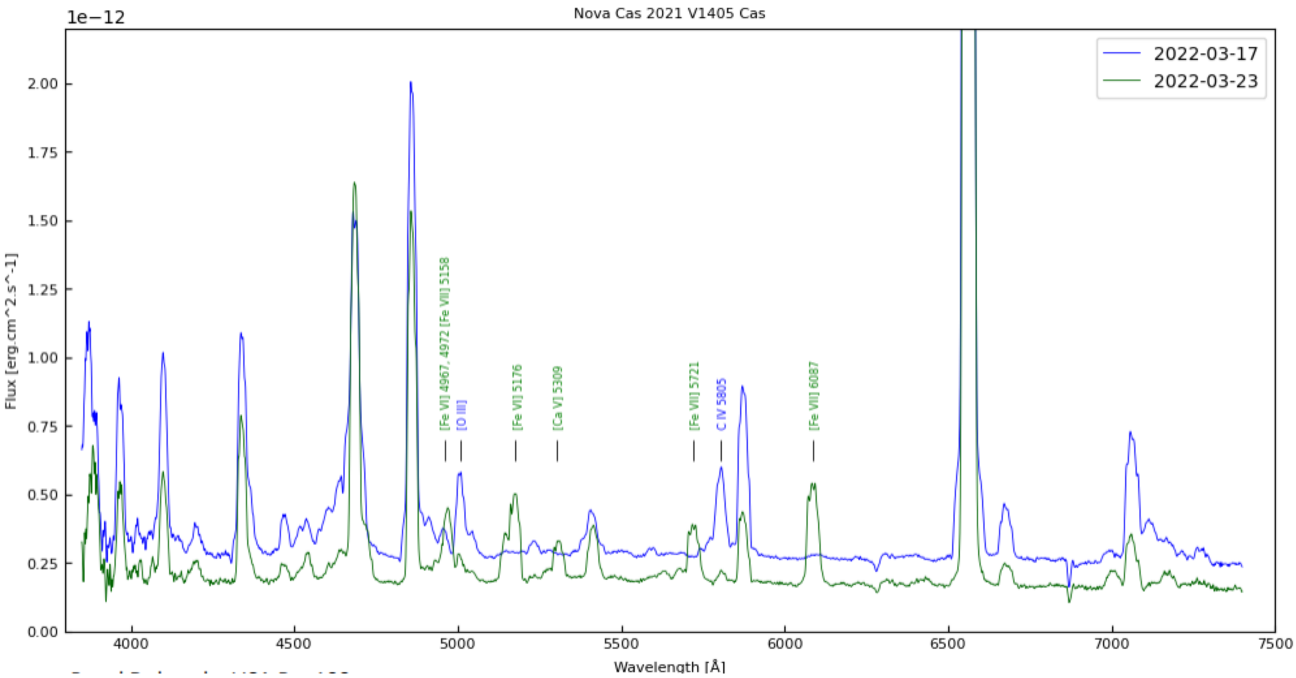

Fig. 33: Nova Cas 2021 = V1405 Cas Series of spectra secured by P. Dubovsky with a LISA (R = 1000)

4 Tools

4.1 Eclipsing bright symbiotic stars

#	Star name	Orb. period (days)	Conj. RG(JD)
1	AX Per	682.1	2451134.3
2	V1261 Ori	638.24	2453215
3	BX Mon	1259	2449530
4	SY Mus	624.36	2451580.5
5	RW Hya	370.4	2445071.6
6	FG Ser	649	2448491
7	AR Pav	604.46	2448139
8	V1413 Aql	434.1	2446650
9	BF Cyg	757.2	2451584.4
10	CH Cyg	5689.2	2445681
11	CI Cyg	853.8	2450426.4
12	DD Mic	1434	2449917

Table 3: Dates of the next eclipses of bright (mag $<$ 12) symbiotic stars

This table make use of the New Online Database of Symbiotic Variables Merc, J., Gális, R., Wolf, M. (2019)

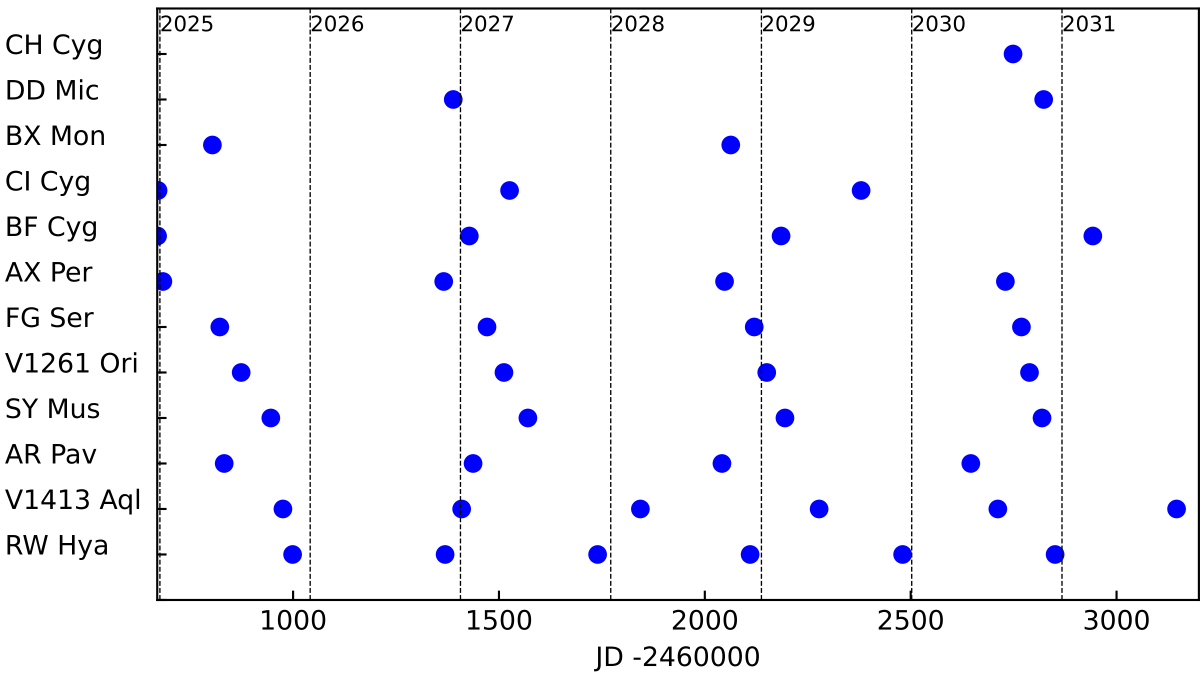

Fig. 34: Ephemeris of bright (mag $<$ 12) symbiotic stars

Line	**Wavelenth**
H I	3835.39
H I	3889.06
Al II (1)	3900.68
Ca II	3933.66
Ca II	3968.47
H I	3969.51
H I	4101.74
Fe II (28)	4178.85
Fe II (27)	4233.16
Fe II (28)	4296.57
Fe II (27)	4303.17
H I	4340.47
Fe II (27)	4351.76
Fe II (27)	4385.38
Mg II (4)	4481.13
Fe II (37)	4491.4
Fe II (38)	4508.28
Fe II (37)	4515.33
Fe II (38)	4549.19
Fe II (37)	4555.89
Fe II (38)	4583.83
Fe II (37)	4629.33
Al II (2)	4663.05
H I	4860.68
Fe II (42)	4923.92
Fe II (42)	5018.44
Fe II (42)	5169.03
Fe II (49)	5197.57
Fe II (49)	5234.62
Fe II (48)	5264.8
Fe II (49)	5276.00
Fe II (41)	5284.1

Line	**Wavelenth**
Fe II	5316.61
Fe II (48)	5362.97
Fe II	5425.25
Mg I (9)	5528.4
Fe II (55)	5534.84
Na I (6)	5686.21
Si II (4)	5957.56
Si II (4)	5978.93
Fe II (46)	5991.37
Fe II (74)	6247.56
Si II (2)	6347.11
Si II (2)	6371.37
Fe II (74)	6417.45
Fe II (74)	6456.38
H I	6562.82
O I (21)	7001.92
Al II (21)	7471.41
O I (55)	7477.23
Fe II (73)	7711.72
O I (1)	7773.48
Mg II (8)	7896.37
O I (34)	8226.9
C I (10)	8335.14
O I (4)	8446.25
Ca II (2)	8542.09
H I	8598.39
Al II (4)	8640.7
Ca II (2)	8662.14
H I	8750.47
Mg I (7)	8806.76
Mg II (1)	9218.25
H I	9229.05

4.2 A list of lines for slow novae near the maximum luminosity

5 Publications using ARAS spectra in 2024-2025

What determines the γ-ray luminosities of classical novae?
Craig, Peter, Aydi, Elias, Chomiuk, Laura, Stone, Ashley, Strader, Jay, Chong, Atticus, Li, Kwan-Lok, Fan, Jhih-Ling, Bahramian, Arash, Buckley, David A. H., Izzo, Luca, Kawash, Adam, Metzger, Brian D., Mukai, Koji, Linford, Justin D., Orio, Marina, Sokoloski, J. L., Sokolovsky, Kirill V., Tremou, Evangelia, Walter, Frederick M., Guarro Flo, Joan, Boussin, Christophe, Charbonnel, Stéphane, Garde, Olivier, Belyakov, Konstantin, Monard, Libert A. G., Hambsch, Franz-Josef, Thomas, Neil
arXiv e-prints 2025/08/1
https://ui.adsabs.harvard.edu/abs/2025arXiv250815900C

Optical spectroscopy of V572 Vel: Not obviously a classical nova
Shore, Steve ; Garde, Olivier ; Charbonnel, Stephane ; Mulato, Lionel ; Le Dû, Pascal ; Petit, Thomas ; Luckas, Paul ; Teyssier, Francois ; Velez, Peter
The Astronomer's Telegram, No. 17256
`2025ATel17256....1S`

A new way to find symbiotic stars: accretion disc detection with continuum survey photometry

Lucy, A. B., Sokoloski, J. L., Luna, G. J. M., Mukai, K., Nuñez, N. E., Buckley, D. A. H., Breytenbach, H., Paul, B., Potter, S. B., Manick, R., Howell, D. A., Wolf, C., Onken, C. A.
Monthly Notices of the Royal Astronomical Society 2025/08/1
https://ui.adsabs.harvard.edu/abs/2025MNRAS.tmp.1310L

We acknowledge contributed spectral observations from ARAS observers (Teyssier 2019), including Terry Bohlsen, Forrest Sims, Fran Campos, Christophe Boussin, James R. Foster, Colin Eldridge, A. Garcia, Pascal Le Du, and Bertand Guegan.

Spectroscopic and photometric insights into the early evolution of Nova V6594 Sgr
Pandey, Ruchi, Srivastava, Mudit K., Maiti, Arijit, Kumar, Vipin, Munari, Ulisse, Dallaporta, S., Vagnozzi, A., Banerjee, Dipankar P. K., Joshi, Vishal, Cazzato, Paolo,
Includes a spectrum of our colleague Paolo Cazzato
Monthly Notices of the Royal Astronomical Society 2025/07/1
https://ui.adsabs.harvard.edu/abs/2025MNRAS.540.3549P

Spectral evolution of the narrow emission-line components in optical during the 2022 nova eruption of U Scorpii
Muraoka, Katsuki, Kojiguchi, Naoto, Ito, Junpei, Nogami, Daisaku, Kato, Taichi, Tampo, Yusuke, Taguchi, Kenta, Isogai, Keisuke, Leduc, Arthur, Barker, Hamish, Bohlsen, Terry, Bruzzone, Raul, Sims, Forrest, Foster, James, Fujii, Mitsugu, Shank, Keith, Dubovsky, Pavol A., Cazzato, Paolo, Charbonnel, Stéphane, Garde, Olivier, Le Dù, Pascal, Mulato, Lionel, Petit, Thomas,
Publications of the Astronomical Society of Japan 2025/05/1
https://ui.adsabs.harvard.edu/abs/2025PASJ..tmp...53M

Revisiting the classics: on the optical colours of novae as standard crayons
Craig, Peter, Aydi, Elias, Chomiuk, Laura, Strader, Jay, Stone, Ashley, Sokolovsky, Kirill V., Mukai, Koji, Kawash, Adam, Flo, Joan Guarro, Boussin, Christophe, Charbonnel, Stéphane, Garde, Olivier,

Monthly Notices of the Royal Astronomical Society 2025/04/1
https://ui.adsabs.harvard.edu/abs/2025MNRAS.538.2339C

Symbiotic Stars in the Era of Modern Ground- and Space-Based Surveys
Merc, Jaroslav,
Galaxies 2025/04/1
https://ui.adsabs.harvard.edu/abs/2025Galax..13...49M

Spectroscopic study of the quiescent stages in between the 2006 and 2021 outbursts of RS Ophiuchi
Habtie, Gesesew R., Das, Ramkrishna,
Monthly Notices of the Royal Astronomical Society 2025/02/1
https://ui.adsabs.harvard.edu/abs/2025MNRAS.537.2046H
We are thankful to David Boyd, Pavol A. Dubovsky, Christian Buil, Joan Guarro Flo, Tim Lester, [...]for their valuable spectroscopic observations.

Y Gem, a symbiotic star outshone by its asymptotic giant branch primary component
Guerrero, M. A., Vasquez-Torres, D. A., RodrÃguez-GonzÃ¡lez, J. B., Toalà¡, J. A., Ortiz, R.,
Astronomy and Astrophysics 2025/01/1
https://ui.adsabs.harvard.edu/abs/2025A&A...693A.203G

T CrB: Detection of a Short Flare in 2024 November Teyssier, F., Shore, S. N., Sims, F., Leadbeater, R., Flo, J. Guarro, Shank, K., Bertrand, E., Foster, J. R. Research Notes of the AAS, Volume 9, Issue 2, id.32 https://ui.adsabs.harvard.edu/abs/2025RNAAS...9...32T

Y Gem, a symbiotic star outshone by its asymptotic giant branch primary component
Guerrero, M. A., Vasquez-Torres, D. A., Rodriguez-Gonzàlez, J. B., Toalà¡, J. A., Ortiz, R.,
Astronomy and Astrophysics 2025/01/1
https://ui.adsabs.harvard.edu/abs/2025A&A...693A.203G
Using a spectrum secured by François Teyssier
The impact of periastron passage on the X-ray and optical properties of the Symbiotic System R Aquarii
Vasquez-Torres, D. A., Toalà, J. A., Sacchi, A., Guerrero, M. A., Tejeda, E., Karovska, M., , R. Montez, Jr.,
Monthly Notices of the Royal Astronomical Society 2024/12/1
https://ui.adsabs.harvard.edu/abs/2024MNRAS.535.2724V

Common Envelopes, Gamma Rays, and Sudden Spectral Changes of Novae
Williams, Robert, Ryan, Russell, Rudy, Richard,
The Astrophysical Journal 2024/11/1
https://ui.adsabs.harvard.edu/abs/2024ApJ...975..191W

ARAS eruptive stars monitoring
Teyssier, F., Sims, F.,
Contributions of the Astronomical Observatory Skalnate Pleso 2024/02/1
https://ui.adsabs.harvard.edu/abs/2024CoSka..54b.107T

Revisiting the classics: on the evolutionary origin of the 'Fe II' and 'He/N' spectral classes of novae
Aydi, E., Chomiuk, L., Strader, J., Sokolovsky, K. V., Williams, R. E., Buckley, D. A. H.,

Ederoclite, A., Izzo, L., Kyer, R., Linford, J. D., Kniazev, A., Metzger, B. D., Mikolajewska, J., Molaro, P., Molina, I., Mukai, K., Munari, U., Orio, M., Panurach, T., Shappee, B. J., Shen, K. J., Sokoloski, J. L., Urquhart, R., Walter, F. M.,
Monthly Notices of the Royal Astronomical Society 2024/01/1
https://ui.adsabs.harvard.edu/abs/2024MNRAS.527.9303A

Study of the fastest classical nova, V1674 Her: photoionization and morpho-kinemetic model analysis
Habtie, Gesesew R., Das, Ramkrishna, Pandey, Ruchi, Ashok, N. M., Dubovsky, Pavol A.,
Monthly Notices of the Royal Astronomical Society 2024/01/1
https://ui.adsabs.harvard.edu/abs/2024MNRAS.527.1405H