

# Le nouveau télescope de mission T50 au Pic du Midi

Association AT60

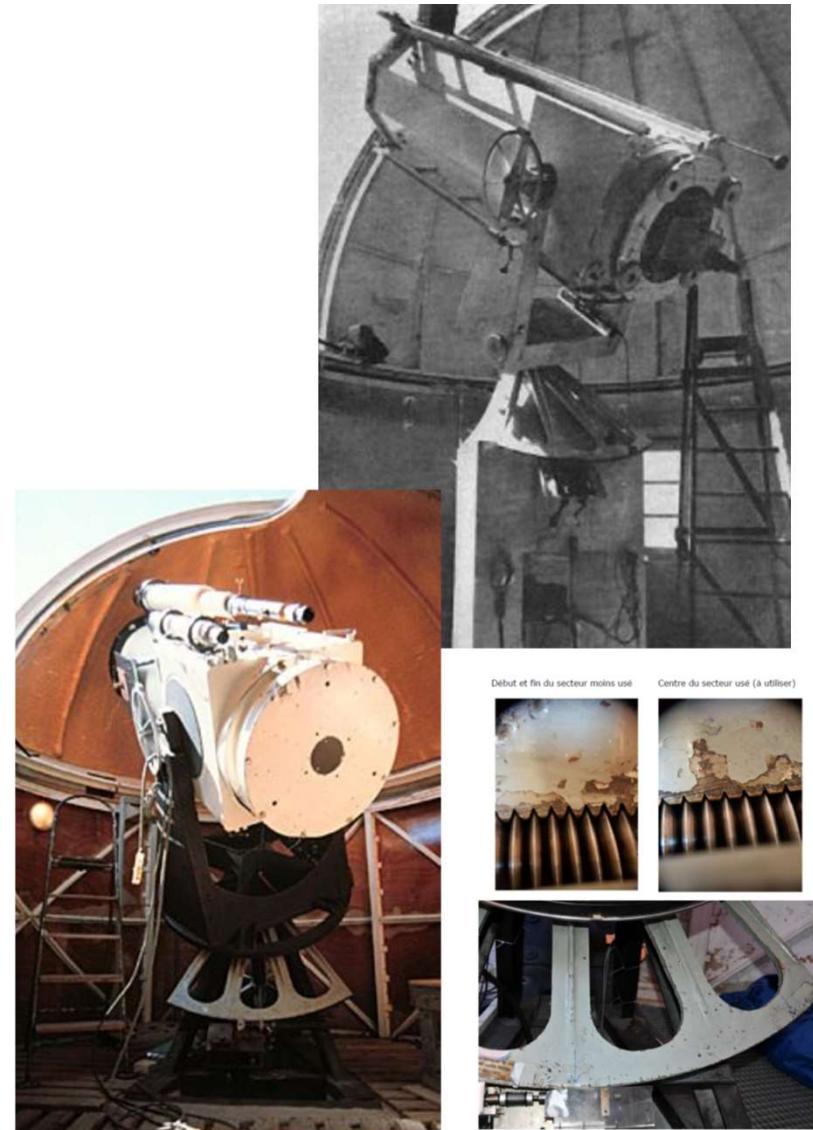
Arnaud Leroy, Jean-Philippe Nougayrède

Ecole de Photométrie, Toulouse 05/07/2025



# Rappel historique

- Le T60 date de 1910 – don à l'observatoire en 1946 par Marcel Gentili
- Utilisation pro jusqu'à la construction du TBL 2m
- 1982 – Jean-Paul Zahn met à disposition le télescope aux amateurs
- L'association AT60 est créée en 1985
- Pic 2000 – Rénovation du Pic du Midi, ouverture touristique, renaissance de l'AT60 en 2002
- 2019 – vieillissement mécanique...
- Fin 2020 – projet de l'Observatoire Midi Pyrénées (OMP) de remplacement du T60
- Mars 2021 – Fonds réunis



# Le T60 à la retraite



Photo: Patrick MULLER

Septembre 2021

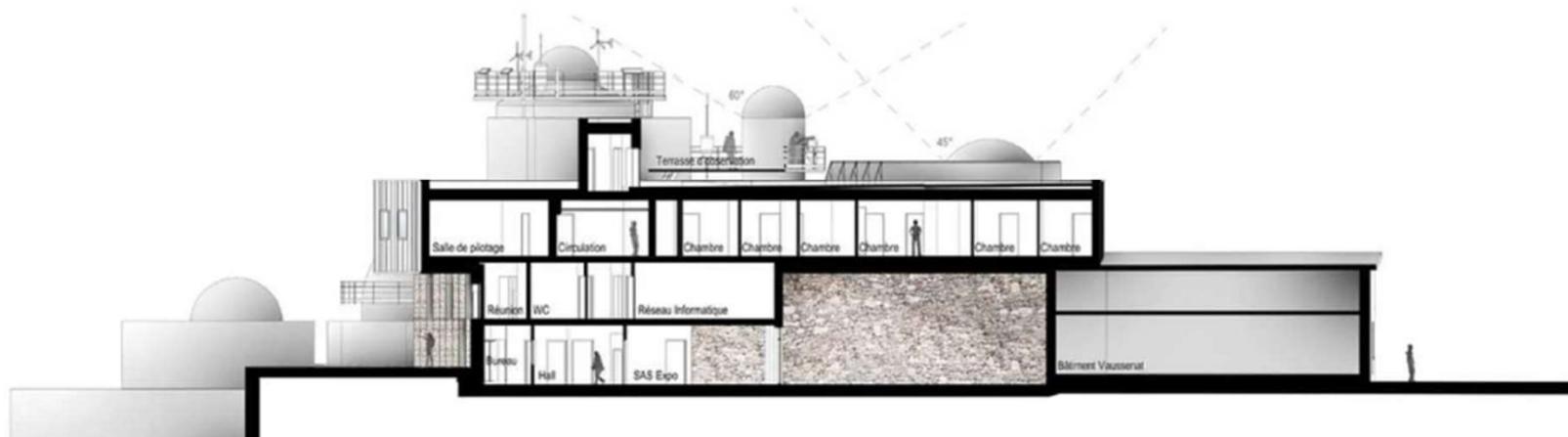
<https://www.cieletespace.fr/actualites/le-t60-du-pic-du-midi-part-au-musee-apres-une-vie-epique>



Toujours au sommet, en  
attente d'une mise en valeur  
Optiques démontées et  
stockées à Tarbes

# Un nouveau bâtiment...

Salle de contrôle d'où tous les instruments seront pilotés  
30 couchages, salle de réunion  
Un nouveau télescope sur la plateforme ?

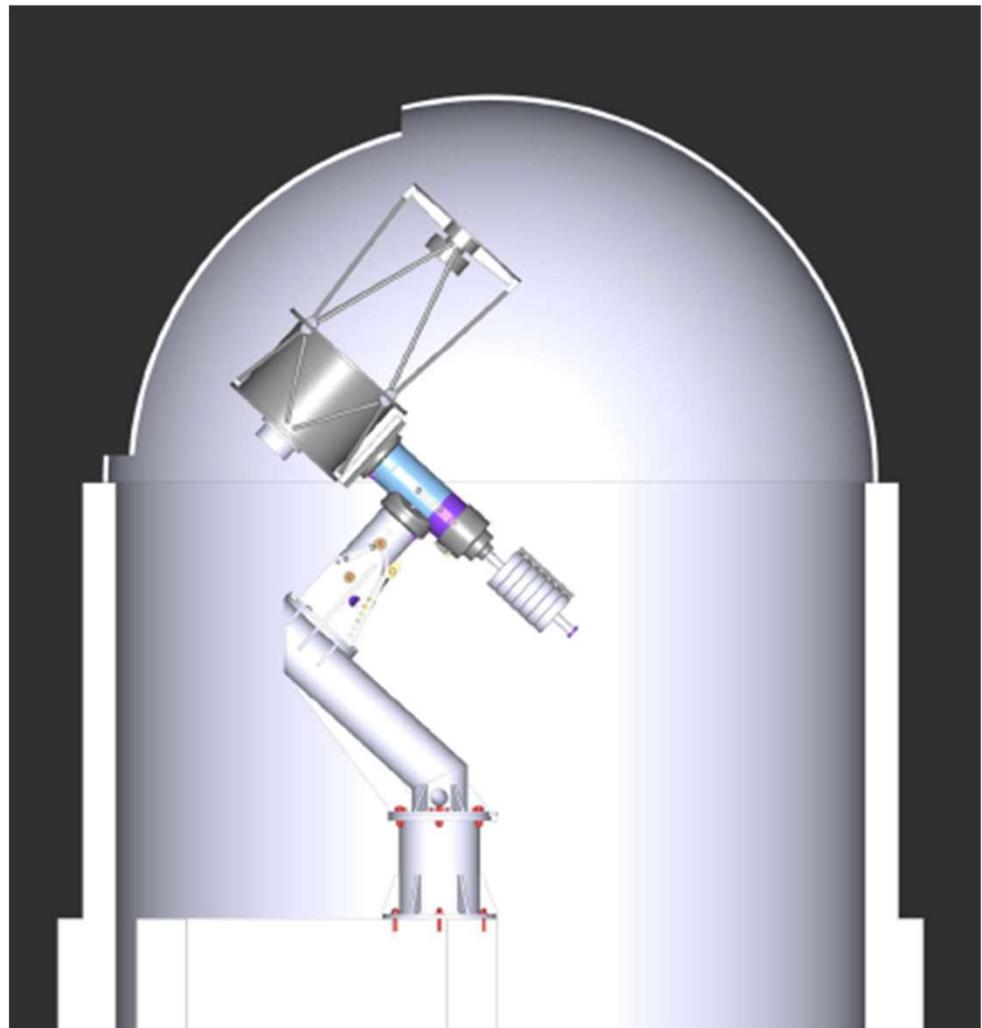


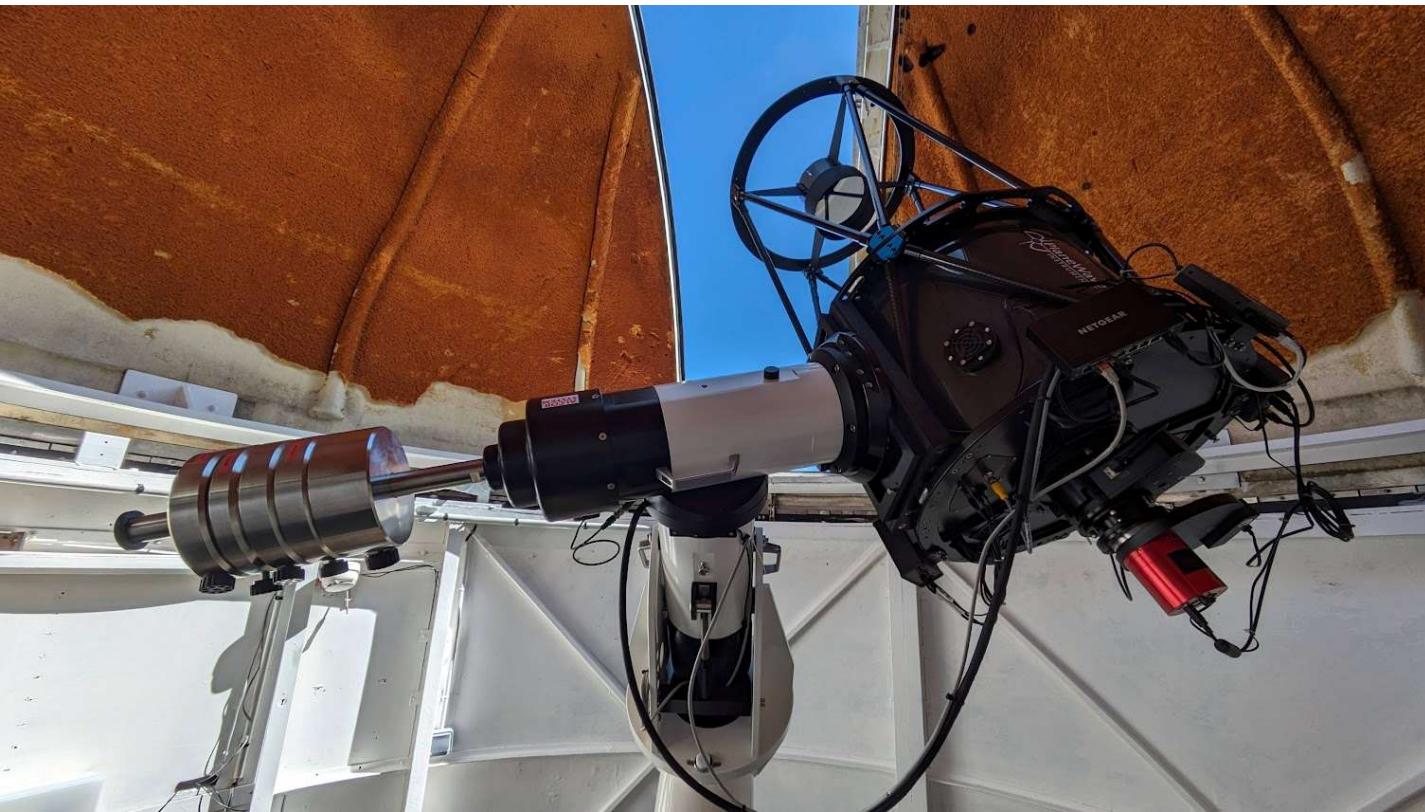
# ...et un nouveau T~~60~~ 50

- CDK (*Corrected Dall Kirkham*)  
508mm + réducteur de focale f/d 4,5
- Monture Alcor Nova 120 direct drive
- Pied pour éviter les retournements  
mériadiens
- Caméra ZWO 6200MM
- Champ 0,9x0,6° résolution 0,34''/pix
- Filtres CH4, H-alpha et  
photométriques RAPAS  
(<https://rapas.imcce.fr/>)

Mise en service 12/2021

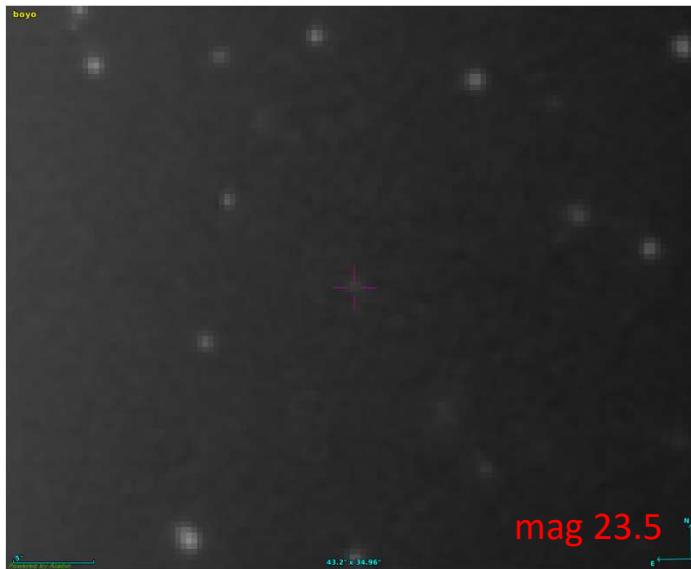
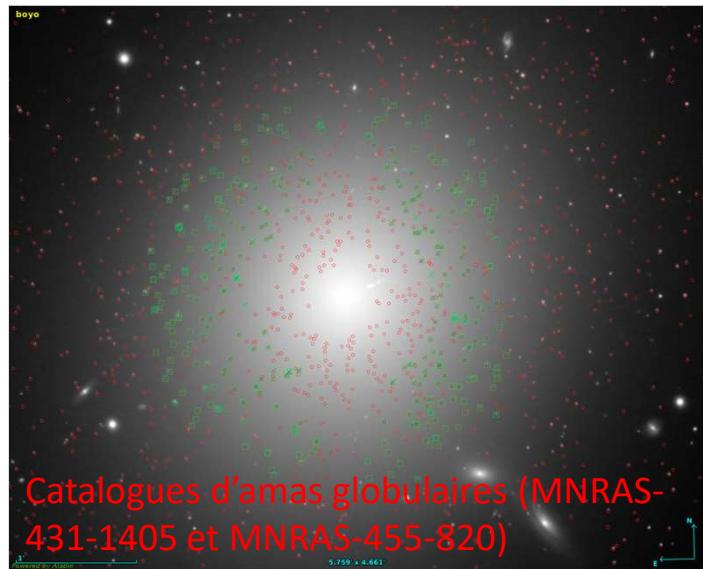
<https://www.univ-tlse3.fr/la-formation/observatoire-du-pic-du-midi-un-nouveau-telescope-dedie-a-la-formation-universitaire>





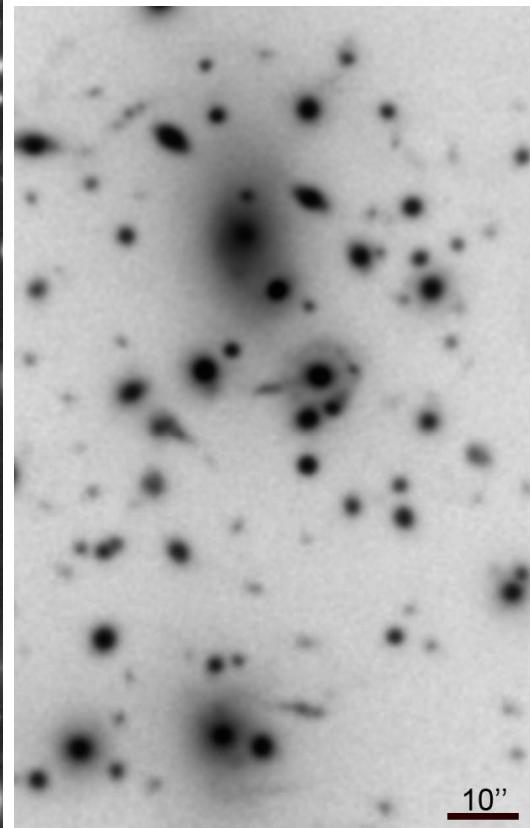
Magnitude limite atteinte en 15 min de poses cumulées entre mag 22 et 22.5  
(Hadrien Dupuis, mars 2023)

Détection d'amas globulaires de M87,  
mag 23.5 en 30 min de poses cumulées  
seeing 1.1-1.5'' (Avril 2024)

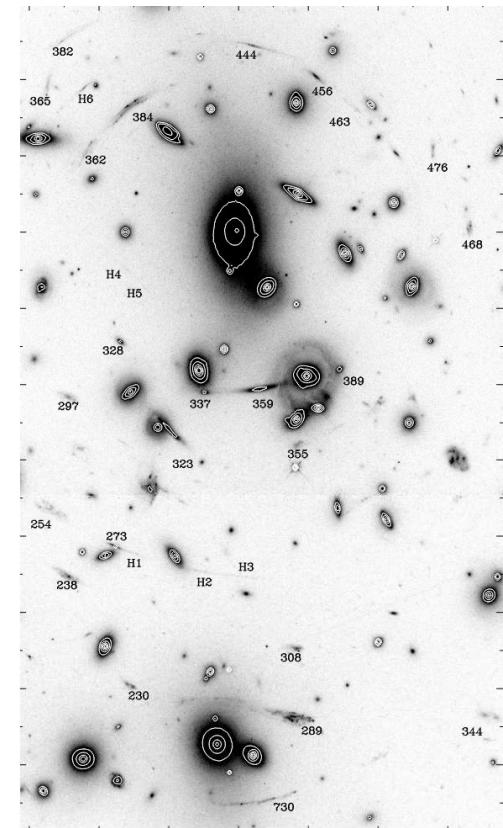




Détection des arcs gravitationnels de l'amas Abell 2218 (Avril 2024)



T50 Pic du Midi



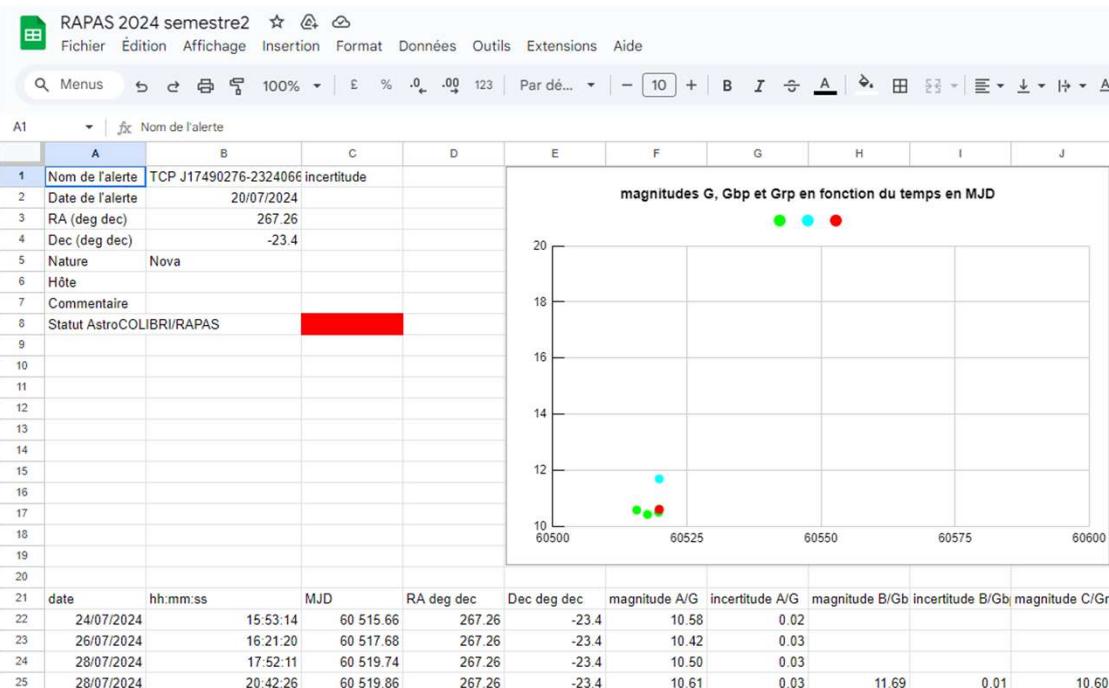
# Exemples d'observations & résultats scientifiques

Un T50 déjà productif !

- Etudes d'étoiles variables , notamment IT Her (L.Corp – M.Castets)
- Des courbes de rotation d'astéroïdes
- Des transits d'exoplanètes
- Réponse à des alertes - ex: la Nova TCP J17490276-2324066
- Mesure de supernovæ et de phénomènes transitaires

# Suivi d'alertes RAPAS

TCP J17490276-2324066, juillet 2024

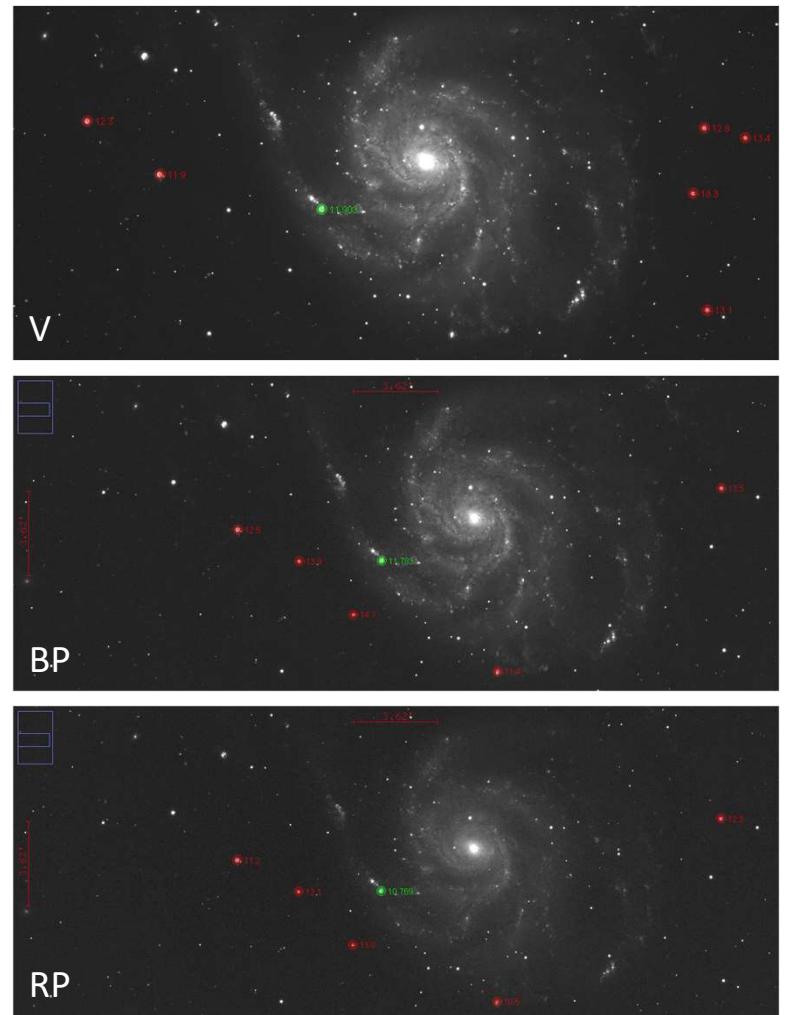


# Mesures de supernovæ

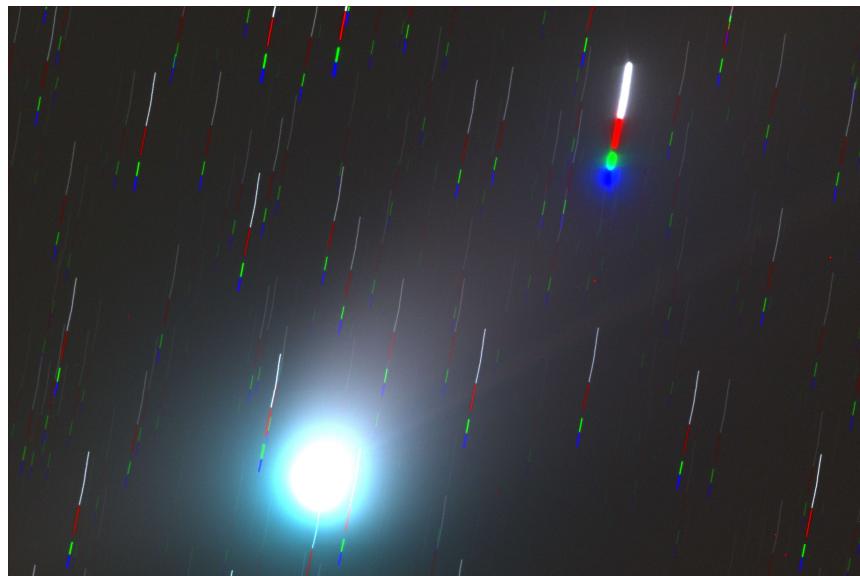
SN2023 dzc, mars 2023



SN2023 ixf dans Messier 101, juin 2023

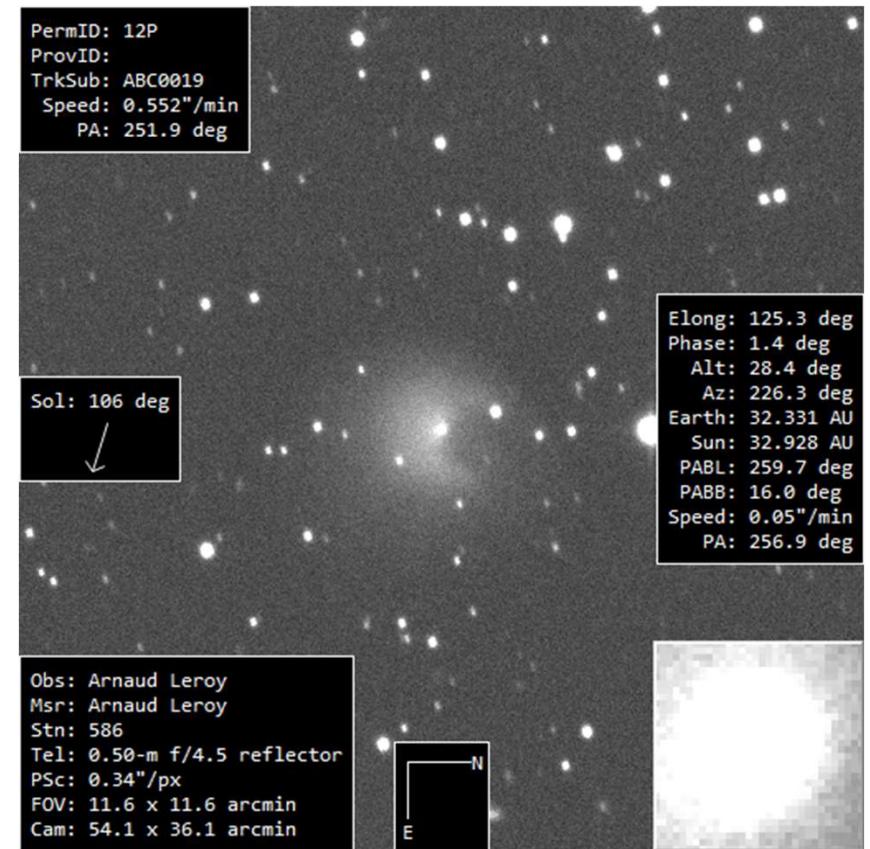


# Mesures de comètes



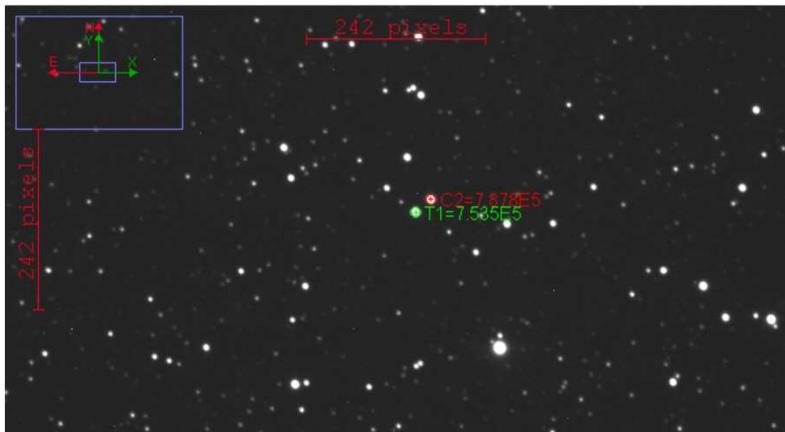
MPC report

```
COD 586
CON Arnaud Leroy
OBS Arnaud Leroy
MEA Arnaud Leroy
TEL 0.50-m f/4.5 reflector + CMOS
NUM 3
ACK MPCReport file updated 2023.08.09 13:47:58
NET ATLAS2
0012P KB2023 08 04.95825 17 54 16.34 +55 22 48.5 16.7 V 586
0012P KB2023 08 04.96167 17 54 16.03 +55 22 47.6 16.7 V 586
0012P KB2023 08 04.96483 17 54 15.74 +55 22 46.9 16.7 V 586
```

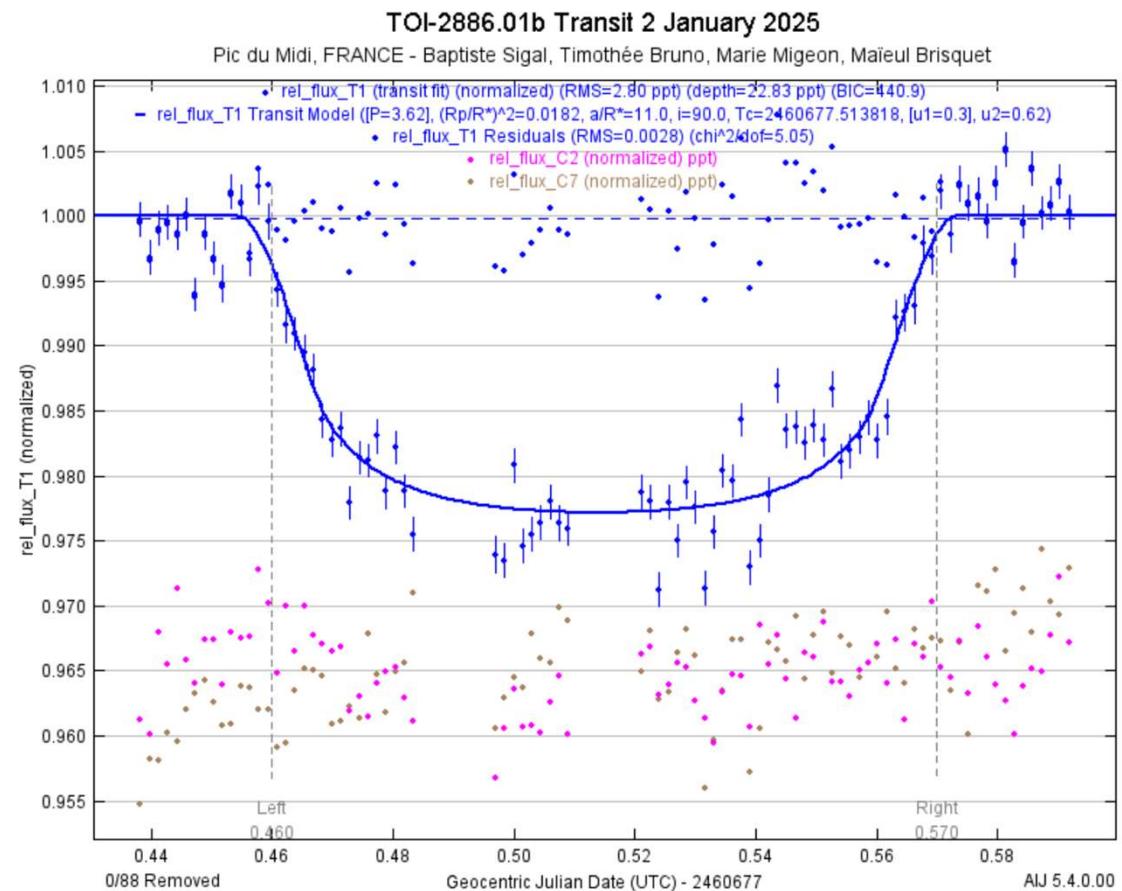


<https://lesia.obspm.fr/comets/lib/display-obs1.php?Num=27360>

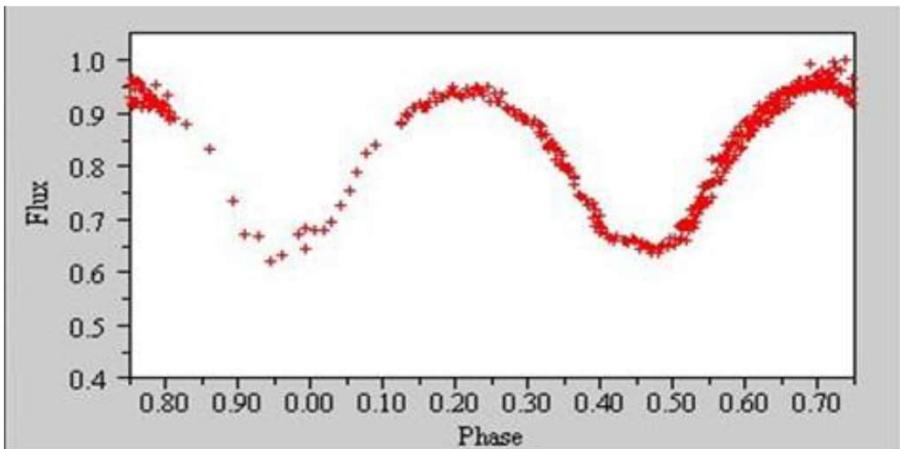
# Transits d'exoplanètes



Timothée Bruno, Maïeul Brisquet, Marie Migeon, Baptiste Sigal, janvier 2025



# Etudes d'étoiles variables : IT Her



## IT Her, A MISCLASSIFIED ECLIPSING BINARY

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### ABSTRACT

Here we describe the collaboration between 2 amateur astronomers located on two different continents, one in Europe (France) and the other on the American continent (Canada-Quebec) to observe and analyze the star IT HER. This collaboration started in 2021, the advantage is that observations can be done continuously and can cover a period of twelve consecutive hours. The observed star required more attention because the references did not agree with the observations. Here we reveal the result of our observations, discoveries and findings.

### 1. INTRODUCTION

The first step was to collect as much documentation on each star in order to establish a file and compare the already existing literature with our observations. Then we also agreed that once the good weather arrived, observing would be the priority and that later, during the cold season, the work of

ranging from A8 to F7 and an absolute magnitude approaching 0.6 to 0.7.5.

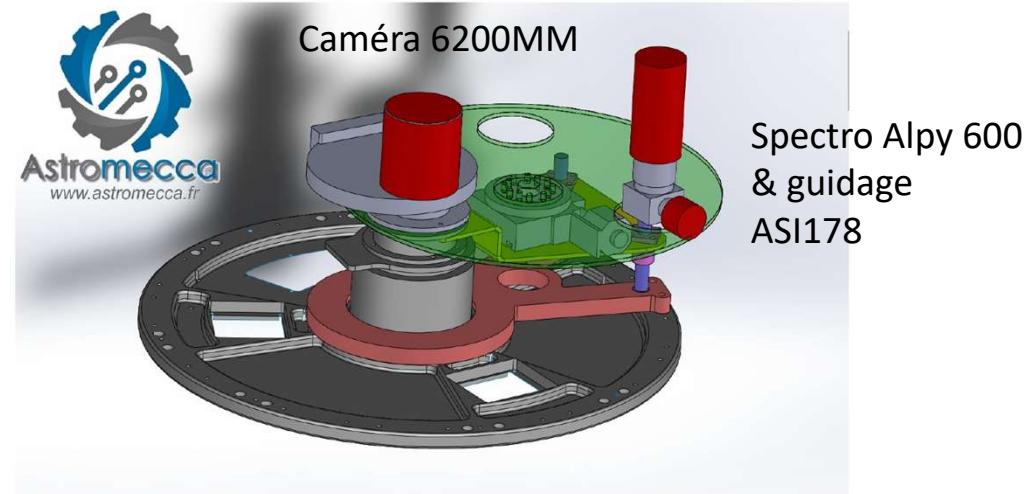
Their mass is about half the Sun and they are rich in helium. They climbed the branch of the Red Giants, displayed the helium flash, then reached the Horizontal Branch. There, they have reaches the zone of instability where they undergo pulsations. From their position in the instability band of the HR

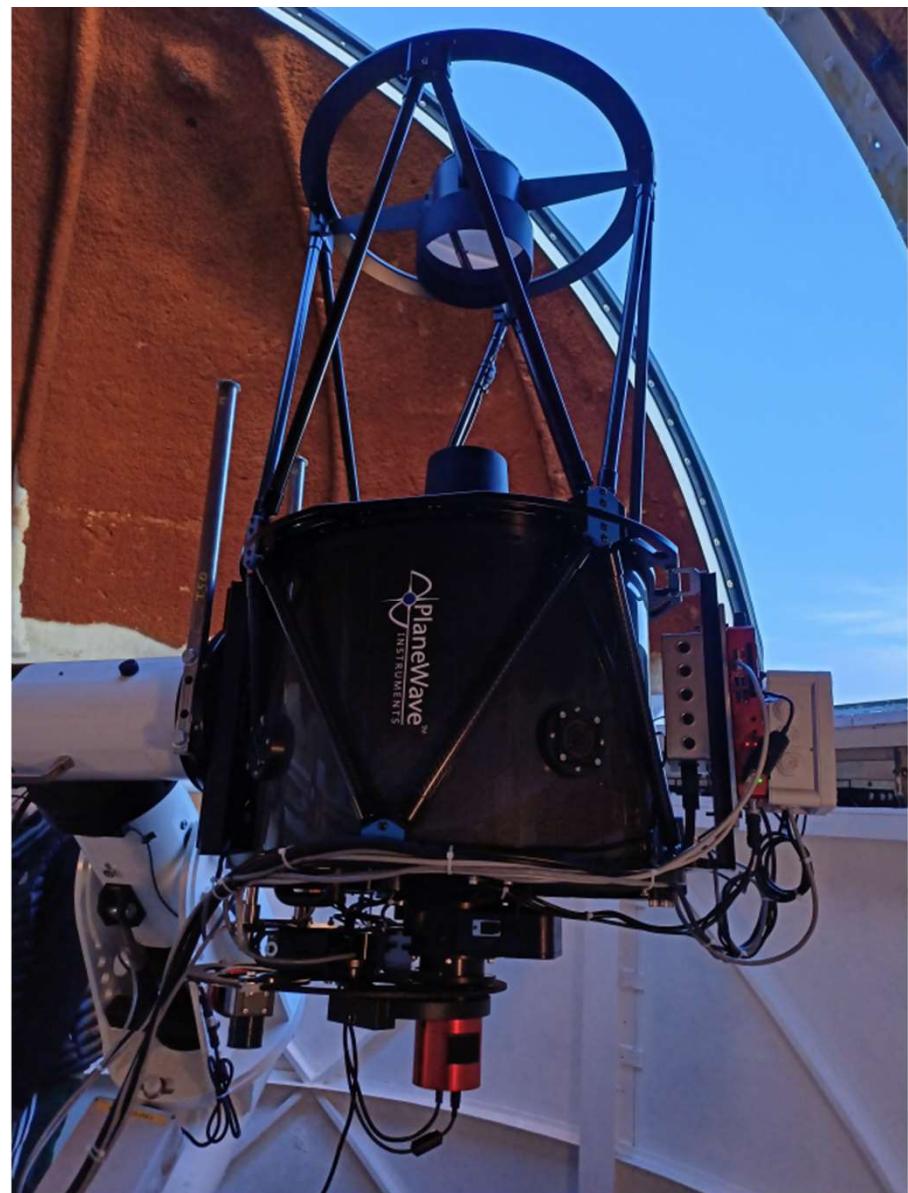
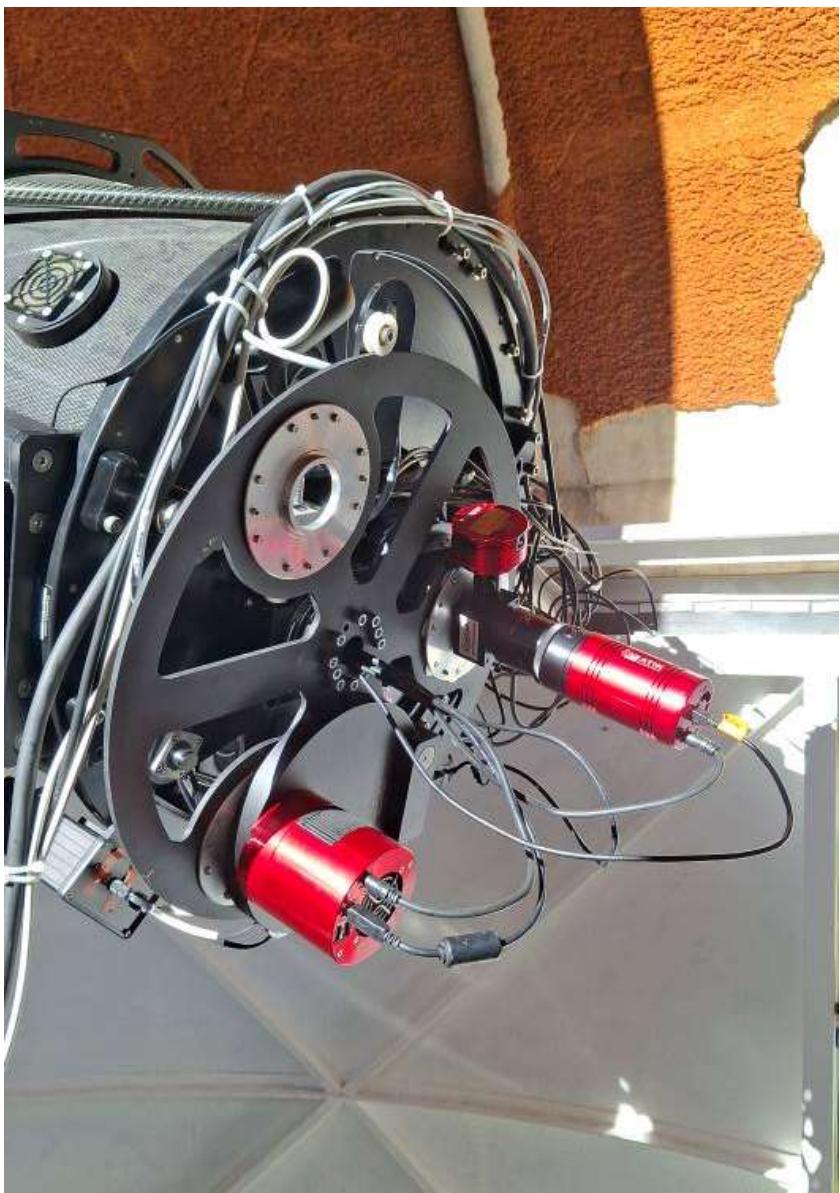
Symposium SAS En Californie : (Page77)  
[https://socastrosci.org/wp-content/uploads/2024/06/2024-Proceedings\\_Ver1.3c.pdf](https://socastrosci.org/wp-content/uploads/2024/06/2024-Proceedings_Ver1.3c.pdf)

# Breaking niouzes !

## T50.2 Installation d'une bonnette multi-instrument & nouveau PC de pilotage

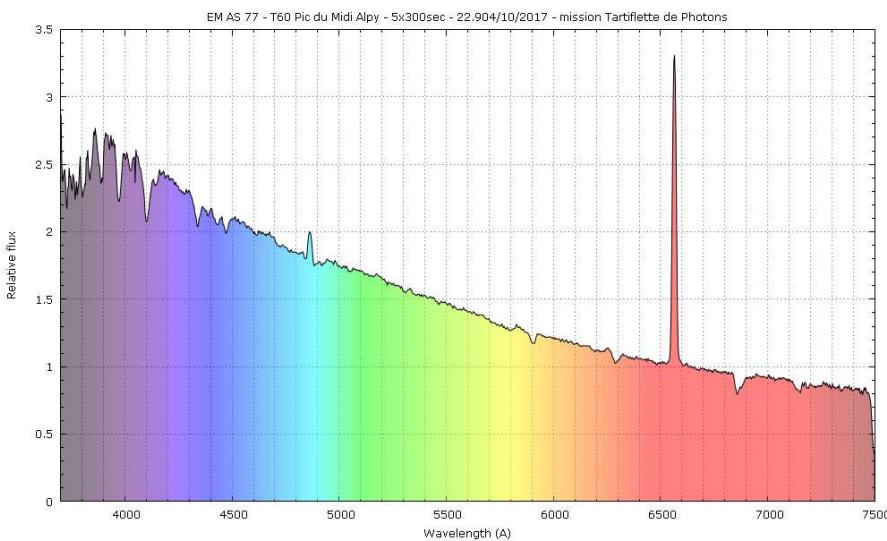
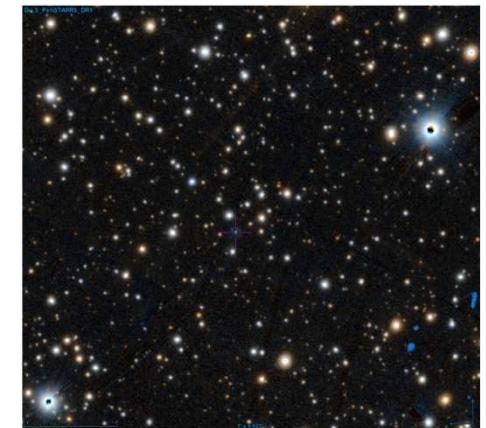
- Antoine Cailleau & Kevin Baures (Astromecca), Alain Klotz (IRAP) conception & test (2022)
- Financement OMP
- Installation mai 2025



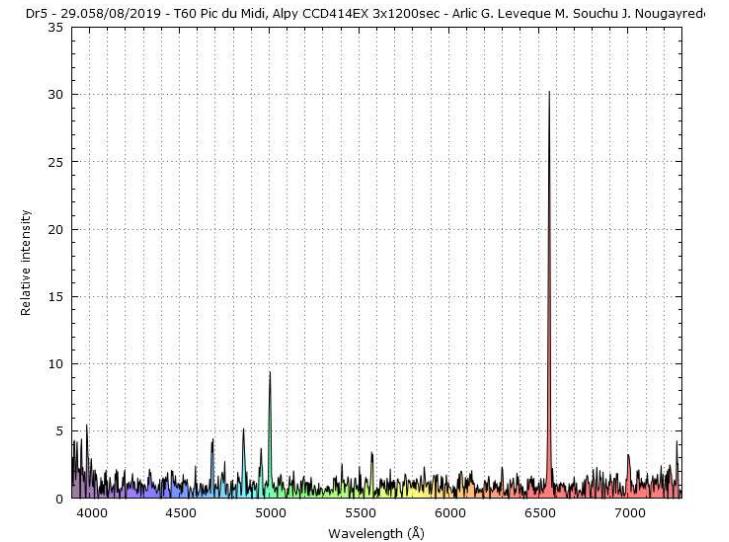


# Exemples d'observations spectrographiques avec le T60

Suivi au long court d'étoiles Be  
Confirmation de nébuleuses planétaires

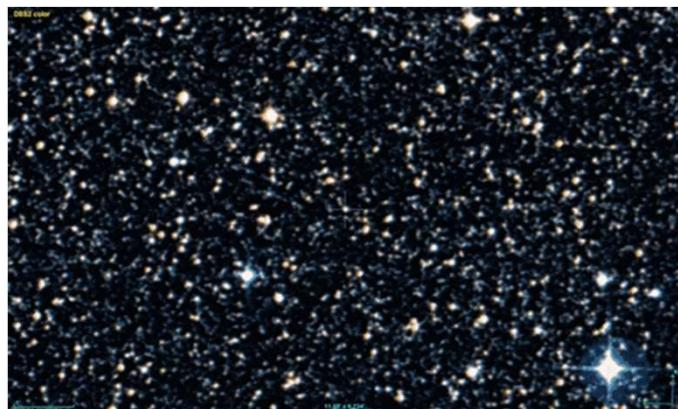


Réseau spectro amateur ARAS <http://arasbeam.free.fr/>  
Obs. Paris Meudon, Coralie Neiner <http://basebe.obspm.fr/>



Quentin Parker, Hong Kong/Strasbourg PN base  
Pascal Le Du <https://planetarynebulae.net>

# Nova récurrente V3890 dans le Sagittaire (2019)

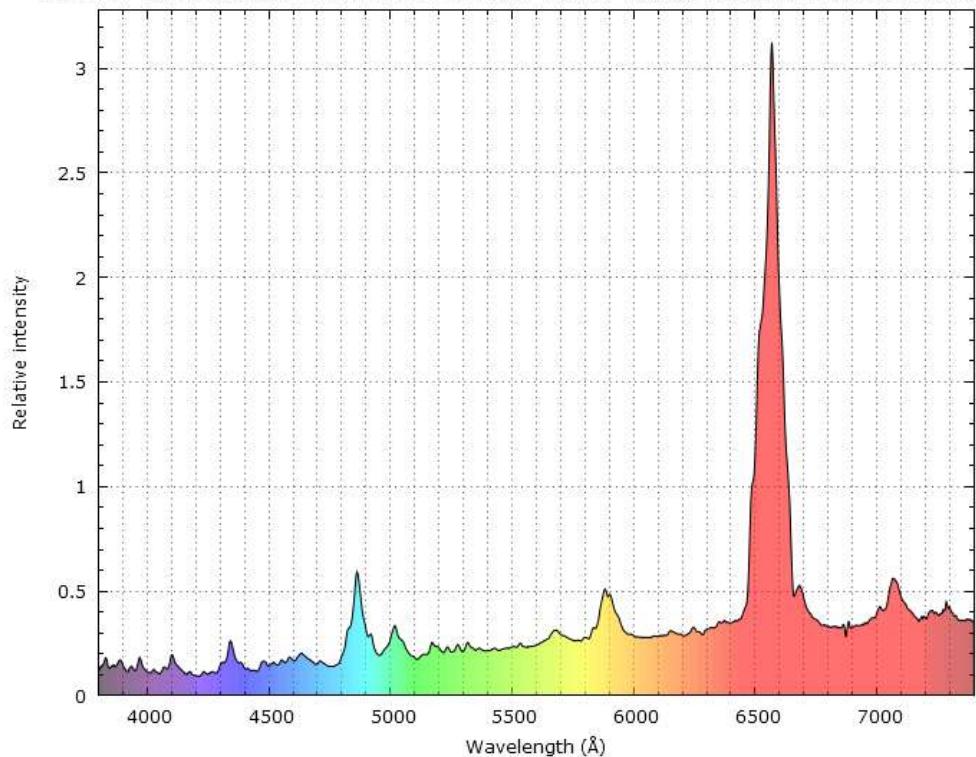


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Continuing optical spectroscopic observations by the ARAS Group of the symbiotic-like recurrent nova V3890 Sgr

ATel #13108; **Forrest Sims, Terry Bohlsen, Paolo Cazzato, Pavol A. Dubovski, Joao Guarro Flo, Olivier Garde, Paul Luckas, Umberto Sollecchia, G. Arlic, M. Leveque, J. Souchu, JP. Nougayrede \*ARAS Group**  
on 14 Sep 2019; 04:30 UT  
Distributed as an Instant Email Notice Novae  
Credential Certification: S. N. Shore ([shore@df.unipi.it](mailto:shore@df.unipi.it))

V3890 Sgr - 30.846/08/2019 - Alpy 600 T60 Pic du Midi - 12x90s - Arlic G, Leveque M, Souchu J, Nougayrede



<https://www.astronomerstelegram.org/?read=13108> (Steve Shore)

[http://www.astrosurf.com/aras/Aras\\_DataBase/DataBase.htm](http://www.astrosurf.com/aras/Aras_DataBase/DataBase.htm) (François Tessier)

# Comment monter en mission au T50 ?

- Missions de 2-4 personnes
- Durée 1 semaine ou 1 long weekend
- Logement & restauration dans les quartiers scientifiques
- Demande de temps pour chaque quadrimestre
- Attribution & planning géré pour l'instant par l'association AT60
- Demandes de l'OMP prioritaires, formations d'étudiants en master.  
Temps partagé pro/am = 50/50 (60/40 en pratique)
- Requis : formation aux règles de vie au sommet et utilisation du T50

<http://www.astrosurf.com/t60/> (old but gold)

<https://association-t60.fr/> (nouveau site en construction)