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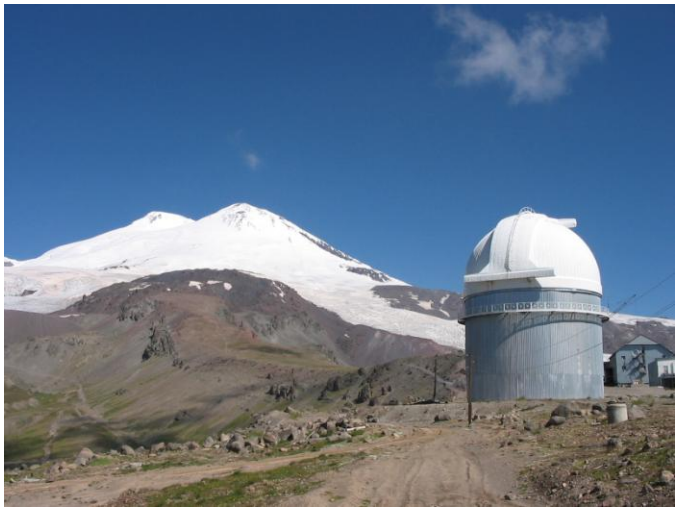
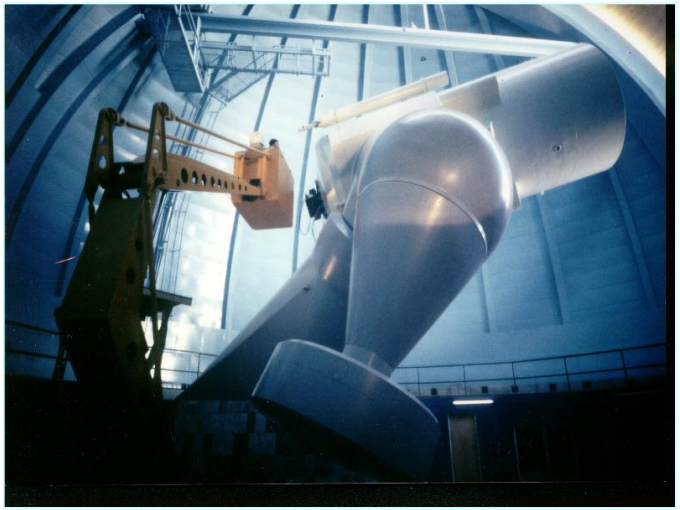
Purpose: develop and use theoretical models of cool dwarfs spectra and atmospheres to better constrain ultra cool objects properties and improve understanding of this objects

I'd like tell you my history in science

2-m telescope on peak Terskol





- Ritchey-Chretien-Coude Telescope. It was produced by Carl Zeiss Jena (Germany**).**
- The main parameters of the telescope Zeiss 2000 to Terskol.

Primary mirror:
- 2000 mm clear opening
- Focal length 5600 mm

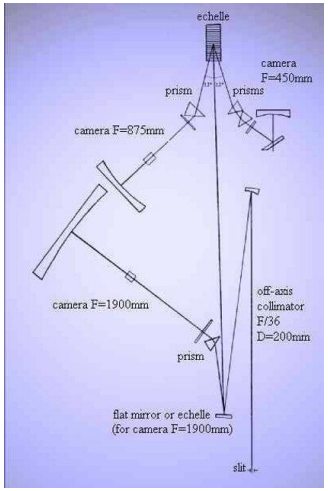
Ritchey-Chrétien:
- Equivalent focal length of 16000 mm
- The field, free of vignetting, D = 330 mm (1.18 °)

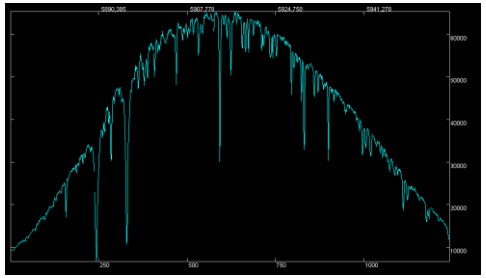
System kude (standard):
- Equivalent focal length of 72000 mm
- The field free of vignetting 5 '

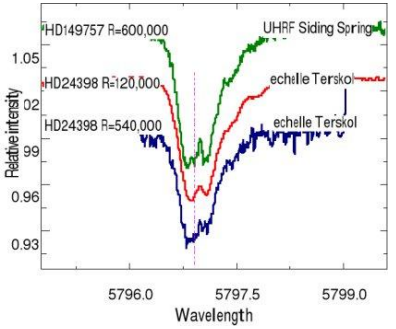
Coude Echelle Spectrograph MAESTRO

- R=45000 and R=120000
- spectral range
  3600-10000 Å
- Limiting magnitude 9-10 mag

  S/N ~100

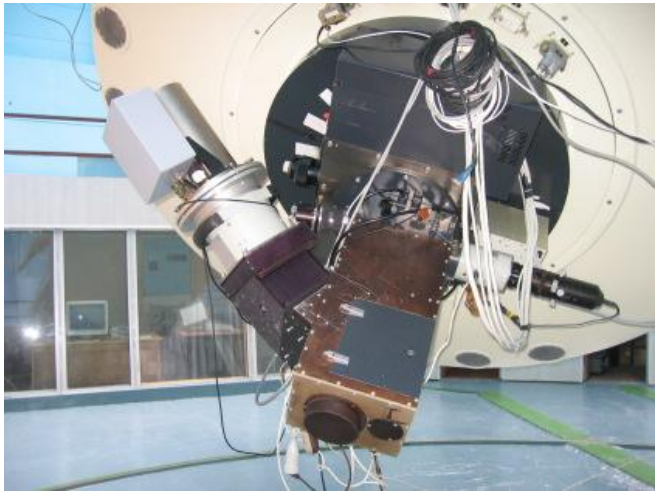


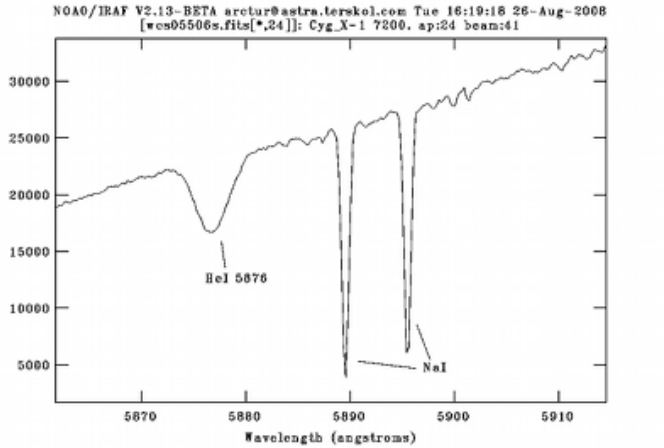


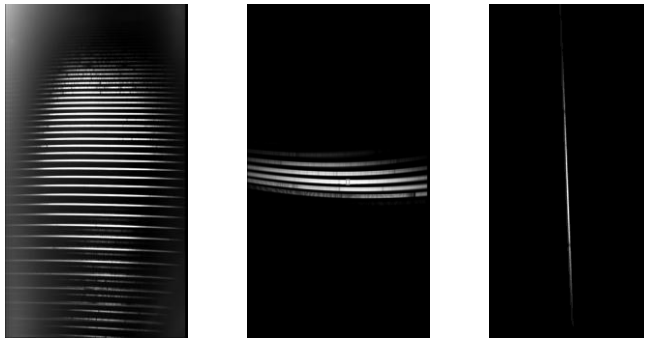


Multi Mode Cassegrain Spectrometer CMMS

Modes	echelle	Quasi echelle	classic 8°	classic 4°
Resolution	13500	3200	1200	600
Limiting Mag. S/N~10 Exp=1^h	~12.5	~14.5	~15	~16



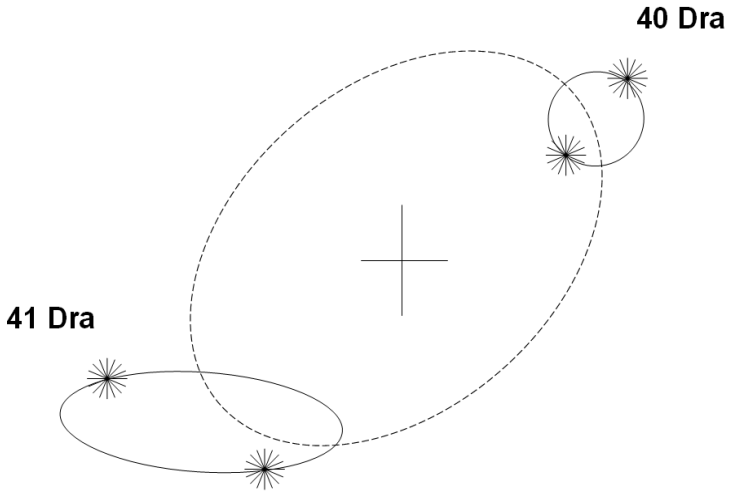




R=13500 R=3200 R=1200

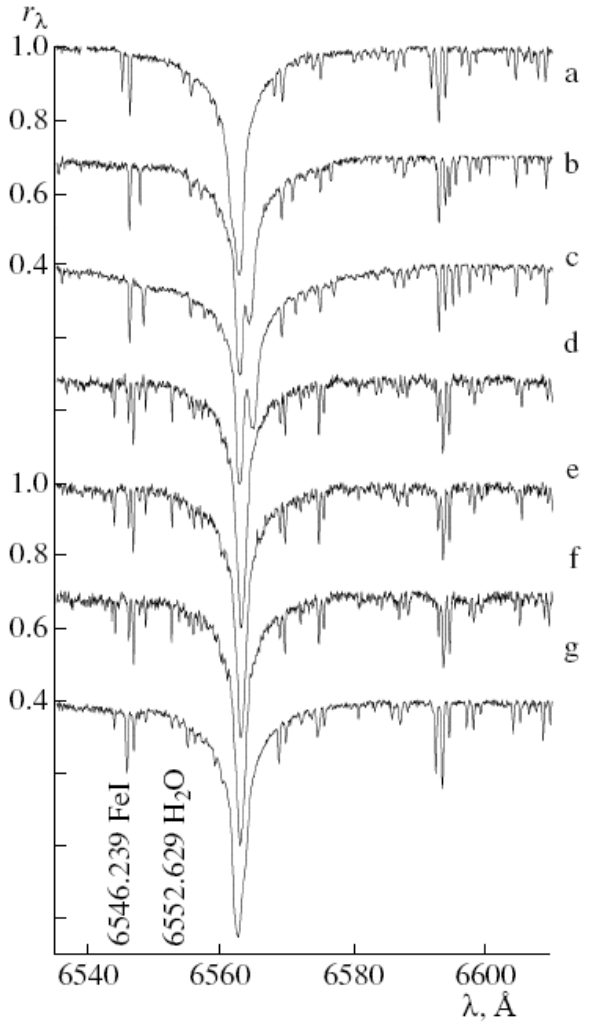
Orbits characteristic of 40 Dra and 41 Dra and parameters of their components

	40 Dra	41 Dra
Parallax (mas)	0.023	0.023
e	0.380	0.9754
P (day) period	10.53	1247.2
Sp. (A)	F5V	F7V
Sp. (B)	F5V	F7V
M(A) ($M_\odot$)	1.32	1.48
M(B) ($M_\odot$)	1.20	1.40
lg g (A)	4.17	4.08
lg g (B)	4.20	4.26
Teff(A), K	6420	6575
Teff(B), K	6300	6600

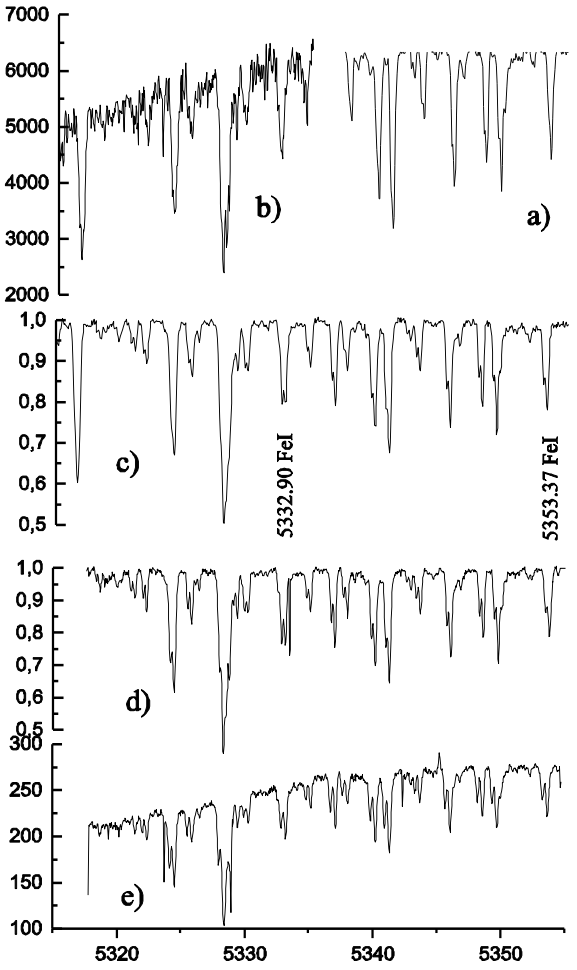


ADS 11061

Observational data for spectroscopic binary 40 Dra and 41 Dra for different phase



40 Dra



41 Dra

Model parameters for components of selected binary stars Sun and Procion A

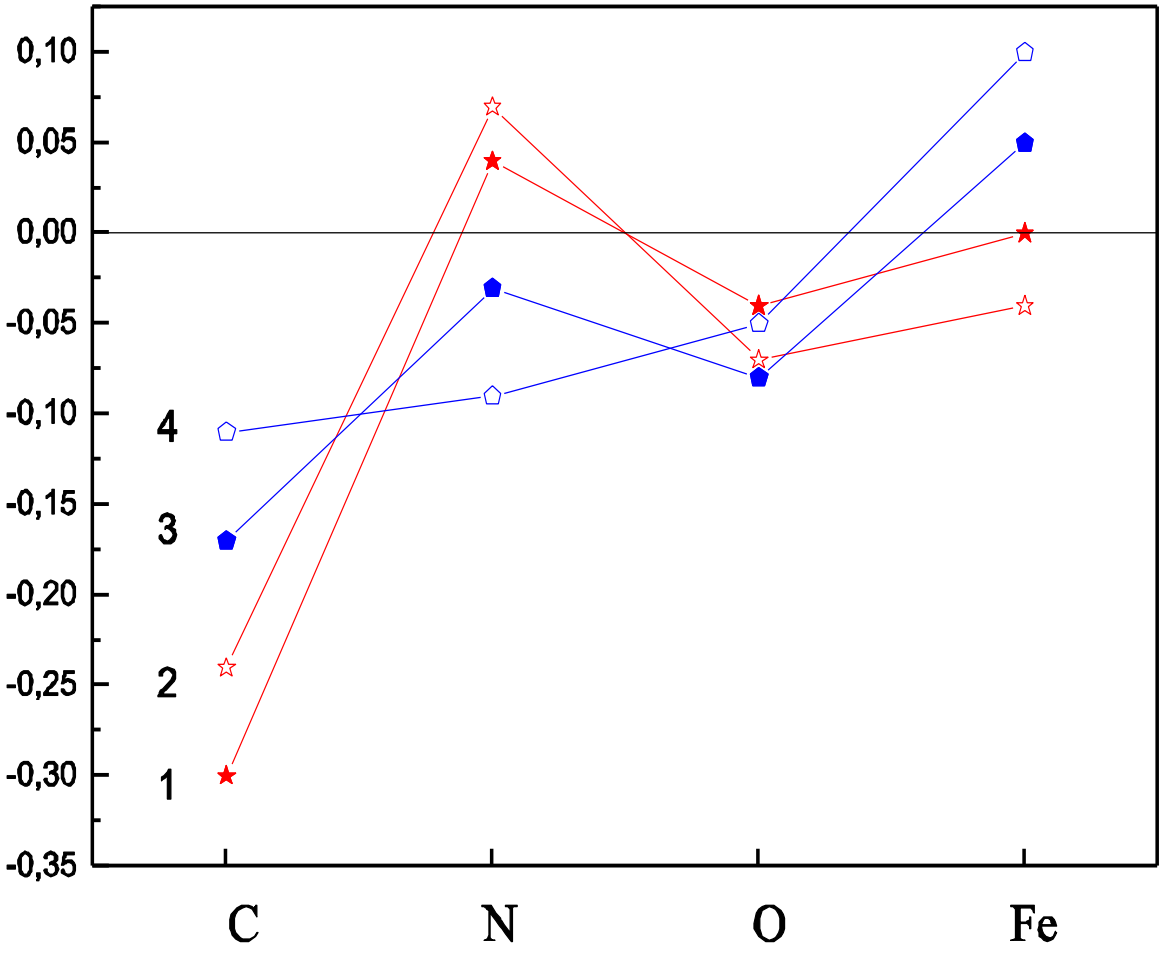
Star	T_{eff}, K	log g	v_t, km/s	Concentration of elements ($\log N_0$)			
				C	N	O	Fe
Sun	5770	4.4	1	8.39	7.78	8.66	7.45
Procion A	6530	3.96	2.2	8.73	8.18	8.86	7.40
41 Dra (A)	6575	4.08	2.15	8.39	8.12	8.77	7.50
41 Dra (B)	6600	4.26	1.70	8.45	8.15	8.74	7.46
40 Dra (A)	6420	4.17	2.6	8.52	8.05	8.73	7.55
40 Dra (B)	6300	4.20	2.6	8.58	7.99	8.76	7.60

Age - $2.5*10^{9}$ yars

$$\Delta\varepsilon = \log N_{*} - \log N_{Solar}$$

1- 40 DraA
2- 40 DraB
3- 41 DraA
4- 41 DraB

$\Delta\varepsilon$



Comparing the composition for ADS 11061

Understanding planet host stars from spectroscopy

MAO will develop and use theoretical models to better constrain cool star properties and improve understanding of cool star atmospheres.

- Develop cool star atmospheric models.
- Measure spectroscopy of cool star hosts over a broad/useful spectral range.
- Fit cool star properties with models, and assess the implications for orbiting planets.

We initiated the scientific program for 2-m Terskole telescope. The main aim of the project is the investigations atmospheric temperature and composition, stellar mass and radius, and the system age of planet host stars.

If you interesting in obtaining observations on 2-m telescope you cold join us.