Observations of Gaia Sources with TUG Telescopes

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Abstract

Three telescopes (**RTT150**, **T100**, **T60**) of TÜBİTAK National Observatory (**TUG**) actively participate in follow-up observations of Gaia sources.

Some samples of Gaia observations in TUG are presented.

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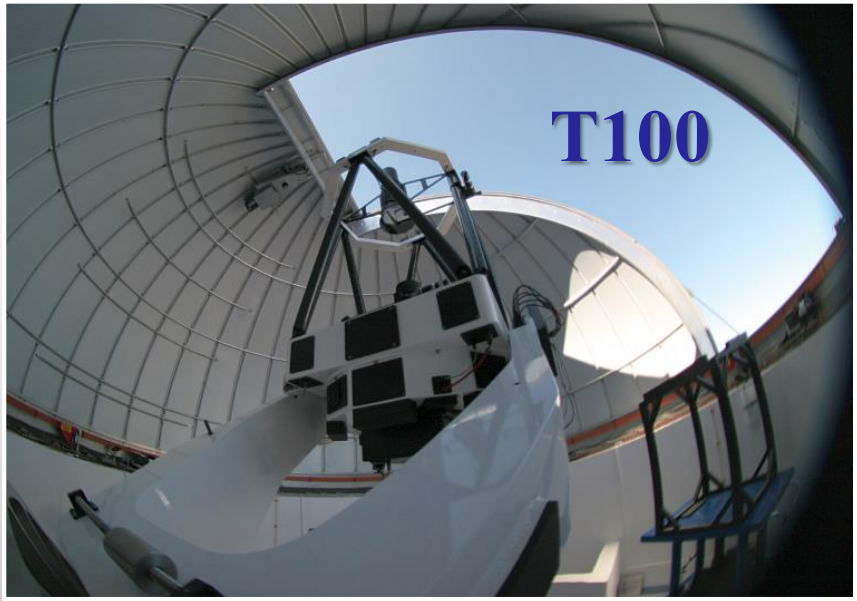
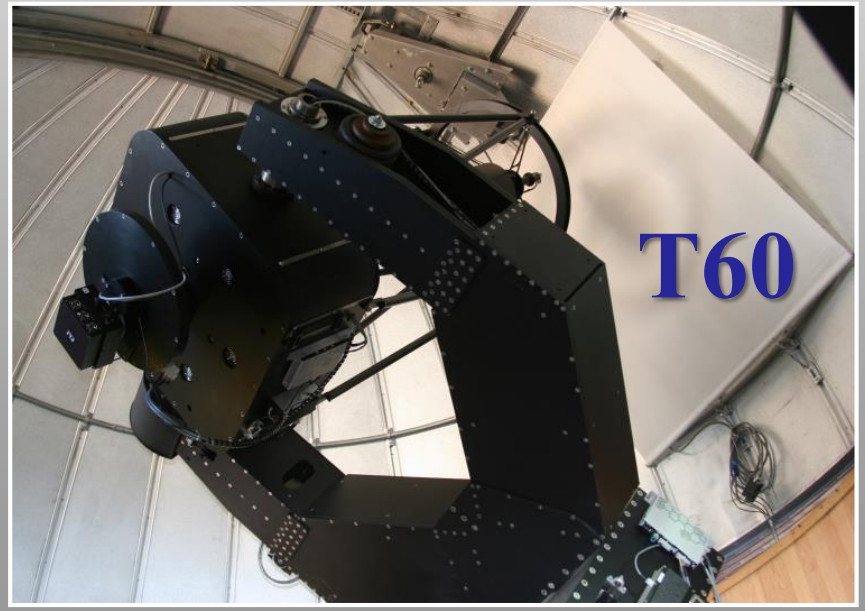
Telescopes



RTT150



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Observations

More than 80 different Gaia sources have been observed with TUG telescopes.

The data also includes spectra for 16 sources among them.

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Observations

Gaia14	Gaia15	Gaia16		
RTT150				
aae	abg	acz	aye	
aaf	abh	adh	bgq	
aan	abi	afz		
aat	aeh	aga		
ack	aeo	ahk		
acq	afz	ahx		
adh		akb		
adm		amd		
adn		apa		
T100				
aae	aaf	aaf	agx	apu
aaf	aal	aam	agz	arp
aan	aan	abh	ahi	asd
aan	abg	abk	ahk	asm
aat	acp	abv	aht	avm
abg	adb	act	ahu	avr
adk	adf	ada	ahx	aye
adn	adl	adb	aka	bnz
	aeo	adc	akg	bza
	aey	adh	akk	
	afd	ado	alf	
	aff	adq	alz	
	afz	adt	amd	
	agi	aeb	apa	
T60				
aae	aan	abv	agl	aht
aaf	abg	acz	ags	ahx
aat	abh	adb	agx	aii
abg	abx	adh	ahh	akd
adn	adf	aeb	ahi	amd
	afz	afh	ahk	apa
	age	aga	ahl	aye

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Log of Gaia16aye

Source : Gaia16aye

Class : ULENS

Frame : 139 photometrical frames
+ daily spectra near maximum

Telescope: T100, T60 and RTT150 together with Kazan State University (KSU) and Russian Academy of Sciences (IKI)

Date : 2016 September 25,26,27,28,30
October 1,3,5,8,15,24,25,27,29
November 4,5,6,8,10-26
December 2

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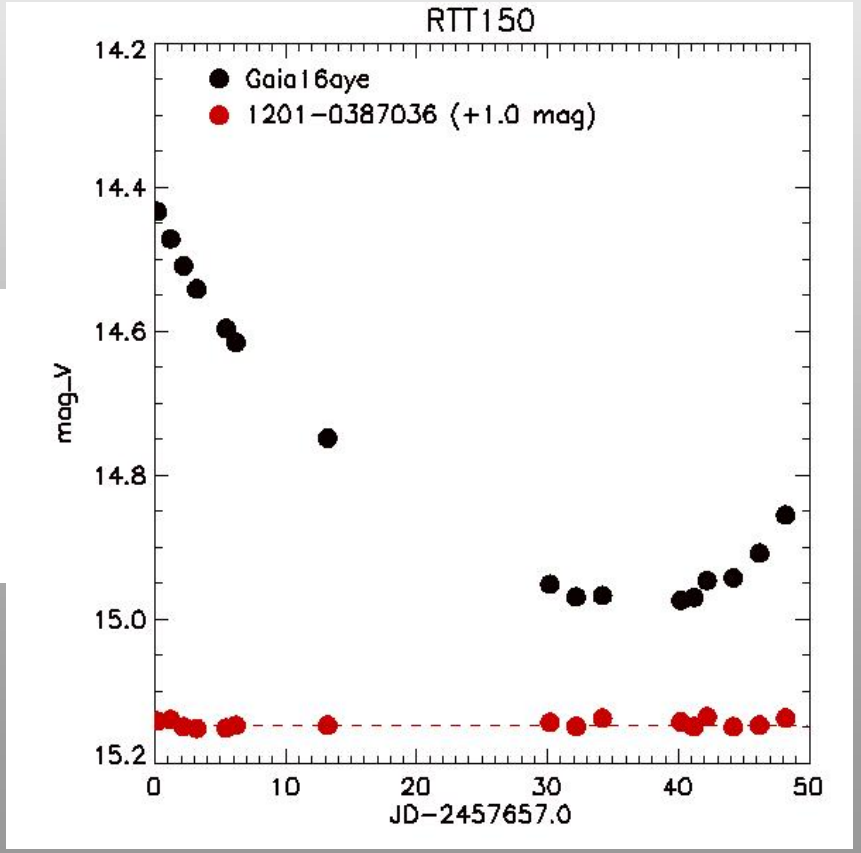
Gaia16aye

Last brightening of the Gaia16aye binary microlensing event was detected in November 12th with RTT150 telescope (Atel #9753)

RTT-150 detected the new brightening of the Gaia16aye binary microlensing system

ATel #9753; *I. Khamitov (TUG, Antalya; KFU, Kazan), I. Bikmaev (KFU, AST, Kazan), R. Burenin (IKI, Moscow), S. Grebenev (IKI, Moscow), A. Tkachenko (IKI, Moscow), E. Irtuganov (KFU, AST, Kazan), S. Melnikov (KFU, AST, Kazan), N. Sakhibullin (KFU, AST, Kazan), M. Pavlinsky (IKI, Moscow), R. Sunyaev (IKI, Moscow), H. Esenoglu (TUG, Antalya), D. Koseoglu (TUG, Antalya), V. Bakis (Akdeniz Uni, Antalya), E. Sipahi (Ege Uni, Izmir)*
*on **12 Nov 2016; 23:12 UT***
Distributed as an Instant Email Notice Transients
Credential Certification: Sergei Grebenev (sergei@hea.iki.rssi.ru)



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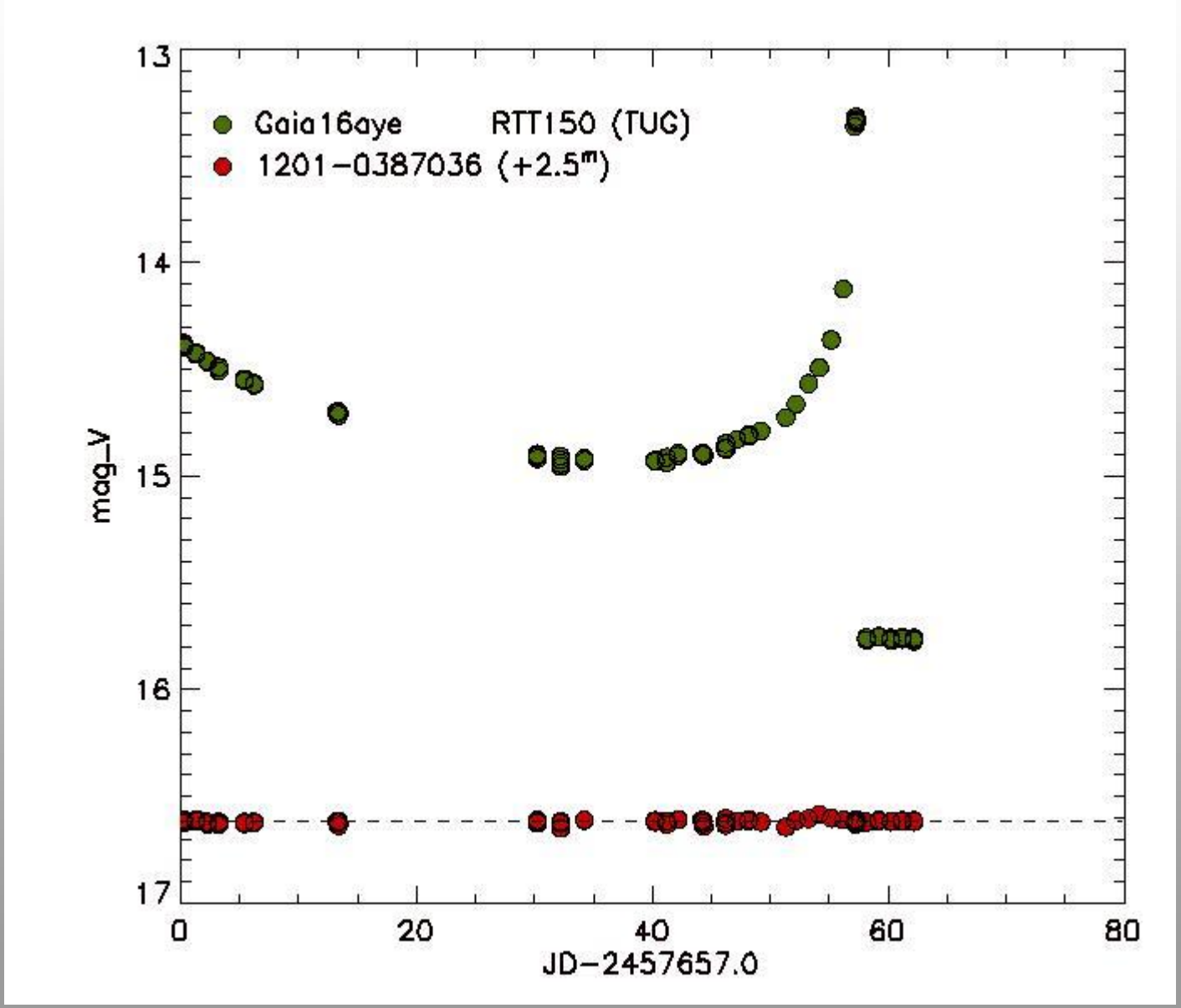
Gaia16aye



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Gaia16aye

TUG telescopes performed both its spectral and photometric observations including maximum brightness in November 21st (Atel #9780)

Detection of the 4th caustic crossing in the Gaia16aye binary microlensing system

ATel #9780; *I. Khamitov (TUG, Antalya; KFU, Kazan), I. Bikmaev (KFU, AST, Kazan), R. Burenin (IKI, Moscow), S. Grebenev (IKI), M. Tanriver (Erciyes Univ.), A. Avci (Erciyes Univ.), S. Kaynar (TUG), D. Gumus (Ankara Univ.), M. Kocak (TUG), T. Ãzisik (TUG), M. Dindar (TUG), H. Esenoglu (TUG; Istanbul Univ.), H. Kirbiyik (TUG), O. Okuyan (TUG), T. Saygac (Istanbul Univ.), A. Semena (IKI), A. Tkachenko (IKI), E. Irtuganov (KFU, AST), S. Melnikov (KFU, AST), M. Pavlinsky (IKI), N. Sakhibullin (KFU, AST), R. Sunyaev (IKI)*
*on **22 Nov 2016; 08:52 UT***
Credential Certification: Sergei Grebenev (sergei@hea.iki.rssi.ru)

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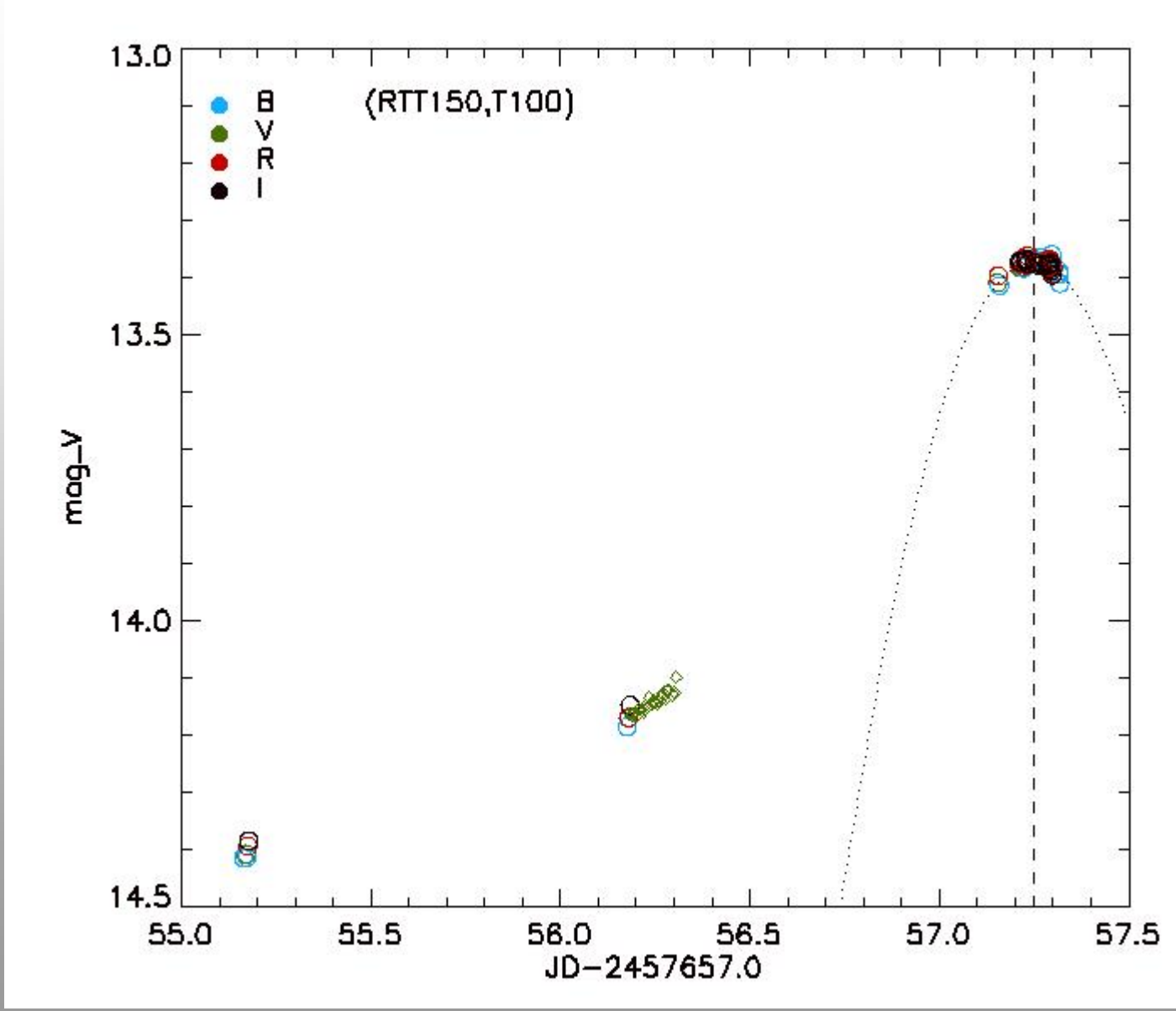
Gaia16aye's maximum brightness in November 21st



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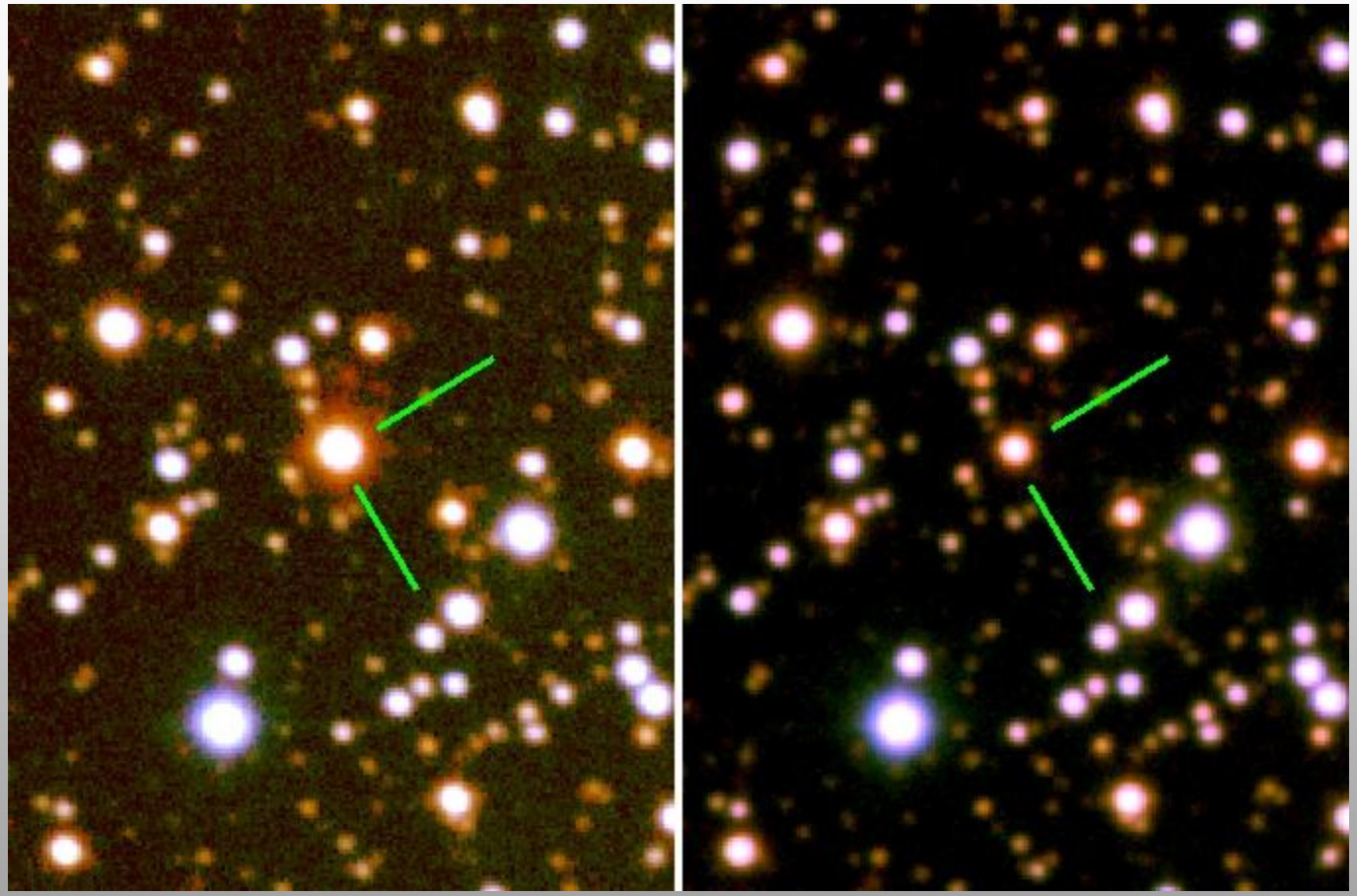
Gaia16aye's pictures with RTT150 in caustic and after



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Log of Gaia14aat

Source : Gaia14aat

Class : CV

Frame : 2770+spectrum

Telescope: RTT150, T100, T60

Date : 2015 November 10,11,12,13,17,22
December 6,9
2016 February 3
August 1-3

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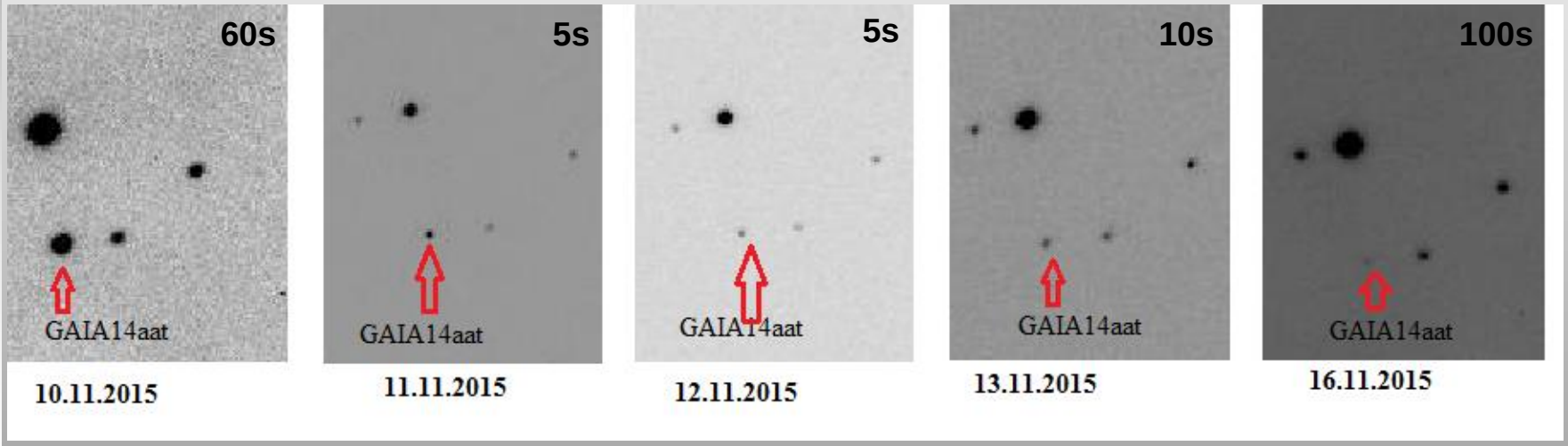
Gaia14aat

Flux variations of **Gaia14aat** were found in range of 1.38 mag for 8 days with T100 telescope



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Observations of Gaia14aat

Mean magnitudes in clear filter

Date	Magnitude
20151110	15.329
11	15.823
12	16.617
13	17.443
16	18.406
22	18.399
20151206	19.262
09	18.019

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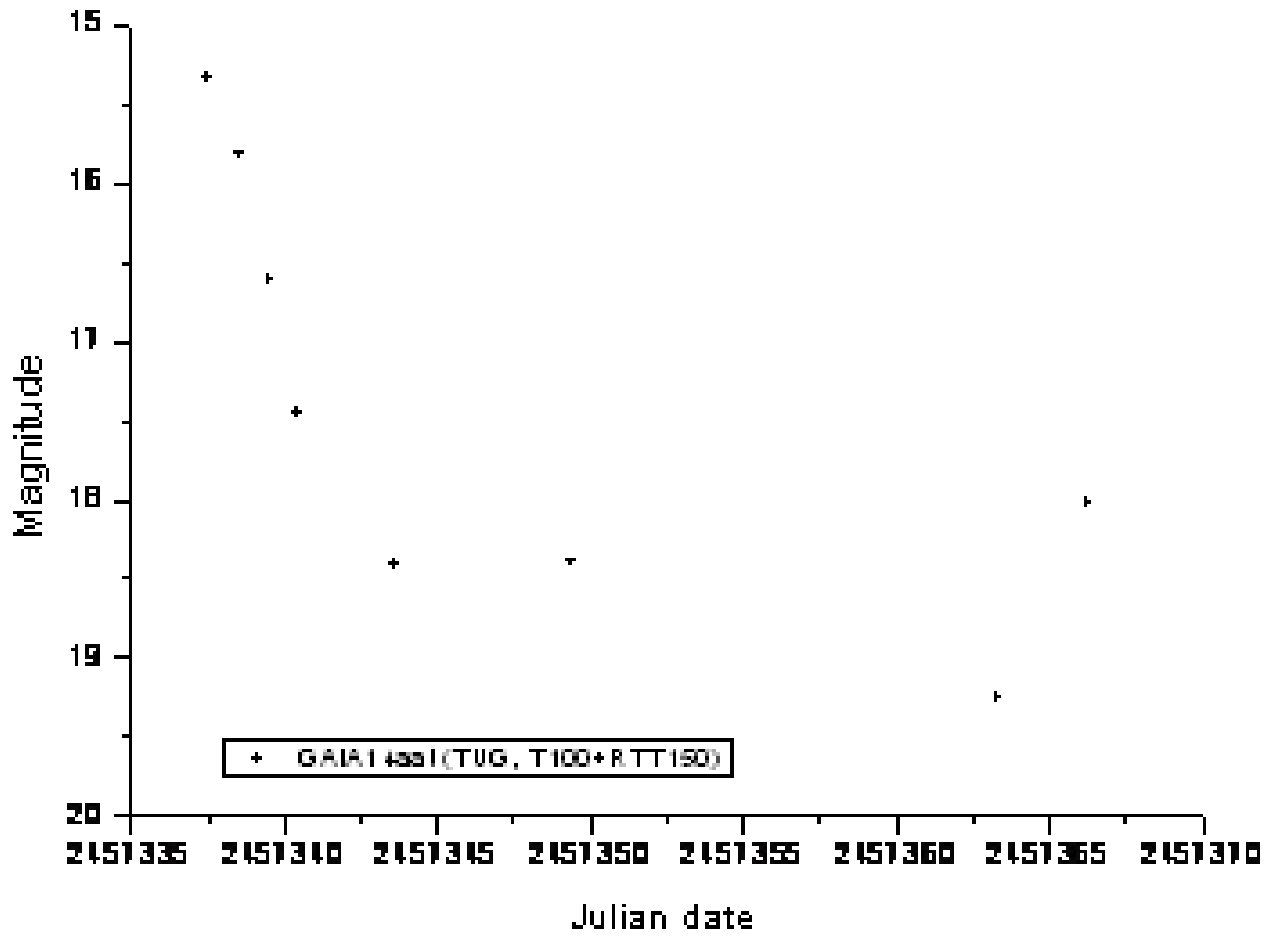
Light curve of Gaia14aat

The magnitude changes at between 10.11-09.12.2015



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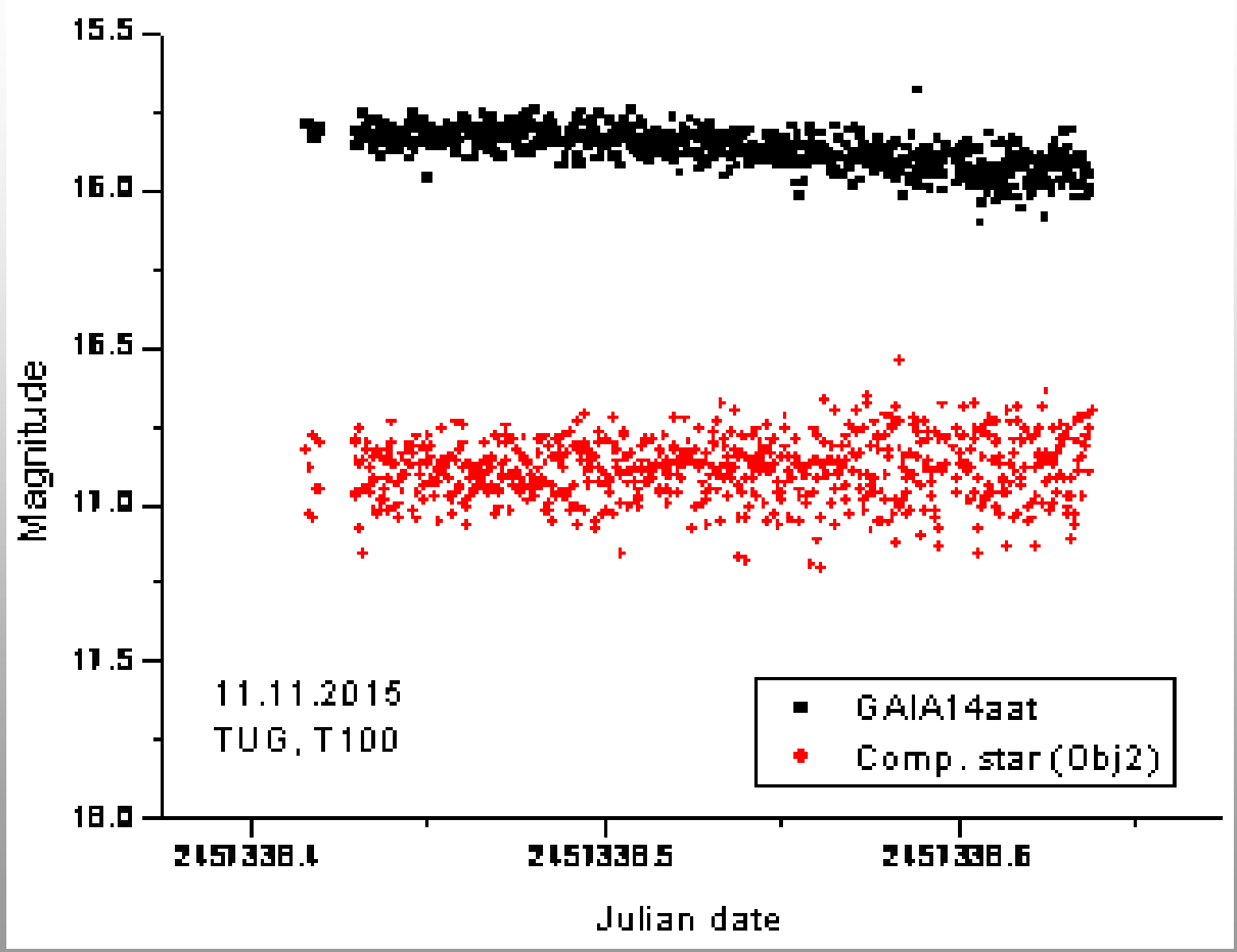
Light curve of Gaia14aat



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Conclusion

1. Many variable stars have been observed among Gaia sources discovered in the years 2014-2016 that may be candidate cataclysmic variables (CVs).

2. Our TUG observations at this stage involve photometry and spectroscopy to do the identification of the ~80 sources

3. First preliminary result of our observations of Gaia14aat showed a dwarf nova outburst with a change amplitude of 1.38 mag

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Conclusion

4. Gaia16aye's last brightening up and maximum brightness were detected in November 12 and 21, respectively

5. The study of Gaia14aat, 16aye and other Gaia objects of the project will be continued.

6. It will be also used the Gaia experience for observations of optical counterparts of X-ray sources from SRG (Spectrum Roentgen Gamma astrophysical observatory) which is expected to be launched at the end of 2017.

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Thank you