

Discovery of Six New Variables: Center $\alpha=23^{\text{h}}58^{\text{m}} \delta=+62^{\circ}37'$

[O. Burkhonov](#)^{#1,2}, [S. Egamberdiev](#)^{#1,3}, [B. Satovskiy](#)^{#4}, [F. Khamrakulov](#)^{#1,2}, [R. Karimov](#)^{#1}, [R. Gaysin](#)^{#1}, [B. Khafizov](#)^{#1}

#1. Astronomical Institute of the Uzbekistan Academy of Sciences, Tashkent, Uzbekistan;

#2. Samarkand State University, Samarkand, Uzbekistan;

#3. National University of Uzbekistan, Tashkent, Uzbekistan;

#4. State Space Corporation "Roscosmos", Moscow, Russia.

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(E-mail for contact: boa@astrin.uz)

#	Name	Other	Coord (J2000)	Type	Max	Min	System	Period	Epoch (JD)	type	Sp	Comment	L.Curve	Find.Chart	Data
1		USNO-B1.0 1524-0451378	23 58 19.525 +62 29 00.97	EA	15.57	15.87	R	2.730	2459471.366	min			mao_v1_ph.png	mao_v1_map.png	mao_v1_dat.txt
2		USNO-B1.0 1526-0460830	23 58 46.987 +62 36 51.50	EA	16.18	16.49	R			min		Comm. 2	mao_v2_lc.png	mao_v2_map.png	mao_v2_dat.txt
3		USNO-B1.0 1528-0467698	23 57 05.425 +62 49 53.84	EA	17.00	17.57	R			min		Comm. 3	mao_v3_lc.png	mao_v3_map.png	mao_v3_dat.txt
4		USNO-B1.0 1526-0458817	23 56 19.567 +62 36 04.59	EA	16.55	16.98	R	5.183	2459464.173	min			mao_v4_ph.png	mao_v4_map.png	mao_v4_dat.txt
5		USNO-B1.0 1526-0460762	23 58 41.428 +62 37 14.88	EA	16.05	16.27	R	1.5154	2459465.116	min			mao_v5_ph.png	mao_v5_map.png	mao_v5_dat.txt
6		USNO-B1.0 1528-0470117	23 59 57.470 +62 49 49.83	DSCT	16.10	16.22	R	0.07823	2459471.329	max			mao_v6_ph.png	mao_v6_map.png	mao_v6_dat.txt

Comments:

2. It was not possible to determine the period because only one minimum was observed. JDmin = 2459465.3624.

3. It was not possible to determine the period because only one minimum was observed. JDmin = 2459511.156.

Remarks:

We present the results of searching for variable stars in a field in Cassiopea with the center $\alpha=23^{\text{h}}58^{\text{m}} \delta=+62^{\circ}37'$ (2000.0) and the field of view of 30'. We did not find any reference to these stars being variable in the available star databases: [GCVS](#) (Samus et al. 2017), [VSX](#), ZTF (Chen et al. 2020), and [ASAS-SN Variable Stars Database](#).

Observations were carried out at the Maidanak Astronomical Observatory of the Astronomical Institute of the Academy of Sciences of the Republic of Uzbekistan (Ehgamberdiev 2018) using the 0.5-meter AMT-1 telescope with Mathis Instruments MI-750/1000 equatorial fork mount equipped with an Apogee Alta U16M (4K×4K) CCD camera. The physical size of a CCD pixel is 9 microns. We used 2×2 binning, which corresponds to 0.907''/pixel, and the field of view of 30.9'×30.9'. The exposure times were 180 seconds in the Bessel R filter. The temperature of the camera was set to -15°C. Calibration images as bias, dark and flat were also obtained for each observational date. Observations were obtained during the period from September 5 to October 30, 2021. The total number of observation nights was 28 during which 2593 images were taken.

All images were processed with master bias, dark, and flat frames using standard [IRAF](#) packages. We rejected low-quality images, and the final sample contained 2514 images. The [VaST](#) (Variability

Search Toolkit) software package (Sokolovsky and Lebedev 2018) was used to search for variable stars.

To derive periods we used [period search tool](#) by Dr. K.V. Sokolovsky who incorporated it in his [VaST](#) package.

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