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ON TWO UNSTUDIED LARGE-AMPLITUDE VARIABLES DT Sco AND DV Sco

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Name of the object:
DT Sco = HV 4223 = CoD–26°11583

Equatorial coordinates:	**Equinox:**
R.A.= $16^{\rm h}49^{\rm m}55\overset{\rm s}{.}34$ **DEC.**= $-26°25'26\overset{''}{.}7$	2000

Observatory and telescope:
Crimean Laboratory of Sternberg Astronomical Institute, 40-cm astrograph

Detector:	Photoplate

Filter(s):	None

Transformed to a standard system:	B_{pg}
Standard stars (field) used:	Based upon comparison stars from the US Naval Observatory B1.0 catalog

Date(s) of the observation(s):
JD 2437130–2448454

Availability of the data:
Upon request

Type of variability:	M

Remarks:

The variable star DT Sco (HV 4223) was discovered by I. Woods (Swope, 1928). Variability between $15\overset{m}{.}2$ and fainter than $16\overset{m}{.}5$ pg was announced. Swope (1932) published a low-quality finding chart. No detailed study of the star was ever published. During our work on the new version of the GCVS with improved coordinates (cf. Samus *et al.*, 2002, 2003), we found the star due to its large-amplitude variability on images of digitized surveys available by Internet. The star is bright ($J = 8.548$, $H = 7.655$, $K = 7.189$) in the 2MASS catalog (Cutri *et al.*, 2003). It is definitely CoD–26°11583, though this identification was not suggested earlier either by GCVS or by SIMBAD. We estimated the star on 74 astrograph plates; 2 additional blue-light estimates were made on images from the US Naval Observatory Image and Catalog Archive. The star is beyond doubt a Mira, its magnitude in maximum light is $14\overset{m}{.}1$, whereas in minimum it is $18\overset{m}{.}0$ or fainter. The light elements are: Max = JD2448426 + $227\overset{d}{.}0 \times E$. The finding chart is presented in Fig. 1 (left panel), the light curve is given in Fig. 2.

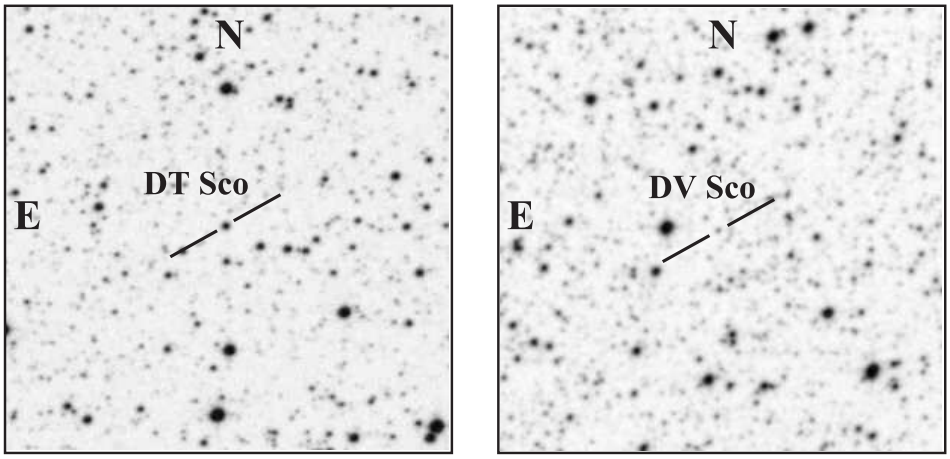

Figure 1. The finding charts for DT Sco (left) and DV Sco (right). Both charts show $5' \times 5'$ DSS-II fields, in red light.

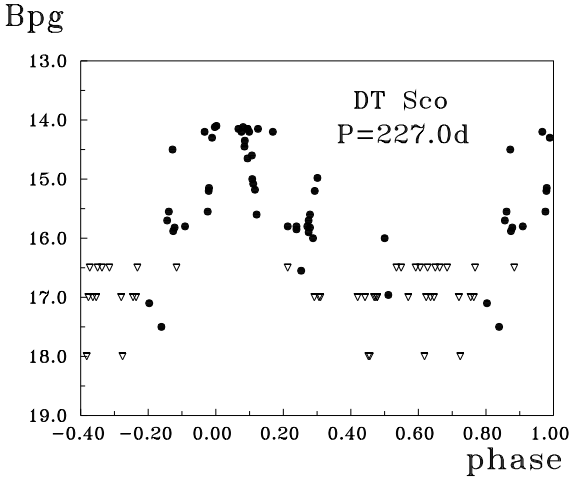

Figure 2. The light curve for DT Sco. The symbol "v" means that the star was fainter than shown.

Name of the object:
DV Sco = HV 4225

Equatorial coordinates:	**Equinox:**
R.A.= $16^{\rm h}50^{\rm m}27\overset{\rm s}{.}88$ **DEC.**= $-28^\circ07'58\overset{''}{.}2$	2000

Observatory and telescope:
Crimean Laboratory of Sternberg Astronomical Institute, 40-cm astrograph

Detector:	Photoplate

Filter(s):	None

Transformed to a standard system:	B_{pg}
Standard stars (field) used:	Based upon comparison stars from the US Naval Observatory B1.0 catalog

Date(s) of the observation(s):
JD 2437109–2448454

Availability of the data:
Upon request

Type of variability:	UG:

Remarks:

The variable star DV Sco (HV 4225) was discovered by Swope (1928). Variability between $14\overset{\rm m}{.}5$ and fainter than $16\overset{\rm m}{.}5$ pg was announced, with a possible period about 28 days. Swope (1932) published a low-quality finding chart. No detailed study of the star was ever published. During our work on the new version of the GCVS with improved coordinates (cf. Samus *et al.*, 2002, 2003), we found the star due to its variability on images of digitized surveys available by Internet. We estimated the star on 85 astrograph plates; 3 additional blue-light estimates were made on images from the US Naval Observatory Image and Catalog Archive. The star is not red, with $J = 14.602$, $H = 14.405$, $K = 14.306$ in the 2MASS catalog (Cutri *et al.*, 2003). Its color index estimated from POSS-I images is $B - R = 0.1$; however, the star was not in quiescence at that time (see Table 1) and could change its brightness during the interval between mid-exposures of POSS-I red and blue plates (about an hour). We do not confirm the 28-day period reported by Swope (1928). DV Sco is most probably a cataclysmic variable (UG type). Its magnitude in maximum is $13\overset{\rm m}{.}8$ B_{pg}; from USNO Archive images, its magnitude in minimum is $18\overset{\rm m}{.}4$ B_{pg} or fainter. We detected 8 outbursts (with only one to four observations per outburst, thus we cannot construct a reliable outburst light curve) making the star brighter than $16\overset{\rm m}{.}0$. The star is also brighter than $16\overset{\rm m}{.}0$ on two of the three blue-light images in the USNO Archive. The 10 brightenings are listed in Table 1, those from the USNO Archive are marked with asterisks after their numbers. The limited material does not permit us to derive the outburst recurrence cycle, but the outbursts seem to be not very rare. The star is brighter than $16^{\rm m}$ on 16 of the 85 astrograph plates (19%), not quite typical of a U Gem variable. It definitely deserves a further detailed study. The finding chart is presented in Fig. 1 (right panel).

Table 1. The 10 detected brightenings of DV Sco

No.	JD24...	B_{pg}	No.	JD24...	B_{pg}
#1*	35956.478	15.8	#7	46240.472	15.3
				46256.371	< 16.2
#2	38940.368	14.9			
			#8	46944.457	15.9
#3*	42268.400	15.4		46945.450	15.2
				46977.348	< 17.2
#4	44430.360	15.7			
	44435.337	< 17.0	#9	47716.335	14.3
				47717.350	14.2
#5	45494.429	< 16.2		47740.342	15.2
	45496.418	16.0			
	45496.450	15.5	#10	48029.435	< 16.7
	45499.411	14.9		48033.444	14.7
	45523.376	< 16.2		48034.466	14.1
				48035.408	14.2
#6	45876.361	< 16.2		48037.393	13.8
	45884.373	14.2			

Acknowledgements:

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