

# Five Previously Unreported Double Stars in Orion

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**Abstract:** We report the discovery of five previously unreported double stars in Orion. In all cases the stars are significantly brighter when observed using an R or I filter than the more usual V filter. This might explain why previous observers have overlooked them.

## Introduction

These five new pairs were discovered serendipitously during our systematic search for new variable stars in the constellation of Orion. In view of the relatively small percentage of the sky surveyed so far it seems likely that there are many bright (<10.00) and close (< 10 arcsec) double stars still not in the standard catalogues.

## Methodology

1 - The first set of values for each new discovery is based on data taken with the 1.3m Two Micro All Sky Survey (2MASS) telescopes as published within the 2MASS All-Sky Catalog of Point Sources (Cutri+2003)

2 - The second set of values was obtained using a Takahashi Epsilon 250mm F/3.8 astrograph and an

NAME	RA+DEC	Mag	Mag	SEP	PA	EPOCH	#
MNHV1	04534+0452	8.77	9.89	9.67	51.92	2000.063	1
MNHV1	04534+0452	8.77	9.89	9.40	51.65	2005.978	5
MNHV2	05465+0515	8.73	9.99	8.86	237.97	1999.774	1
MNHV2	05465+0515	8.73	9.99	8.72	238.22	2005.978	5
MNHV3	06016+0737	8.54	9.66	9.48	20.91	1999.716	1
MNHV3	06016+0737	8.54	9.66	9.20	21.02	2005.978	5
MNHV4	06107+0528	8.08	9.99	9.50	124.79	1999.894	1
MNHV4	06107+0528	8.08	9.99	9.53	124.46	2005.978	5
MNHV5	06214+1706	8.74	9.70	9.36	334.55	1999.962	1
MNHV5	06214+1706	8.74	9.70	9.32	334.99	2005.978	5

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ST-8XE CCD camera operated remotely in New Mexico under the auspices of the Remote Astronomical Society.

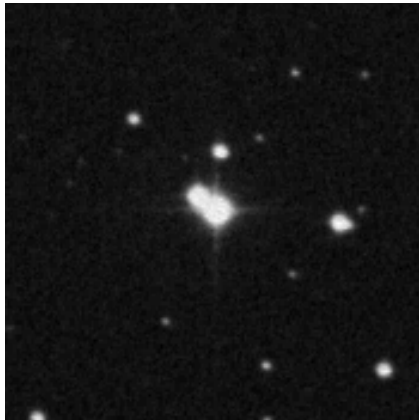
(<http://www.ras-observatory.org/ras/front.htm>)

3 - Quoted magnitudes are 2MASS J band (1.25  $\mu$ m) values

Unfortunately, the available proper motion data

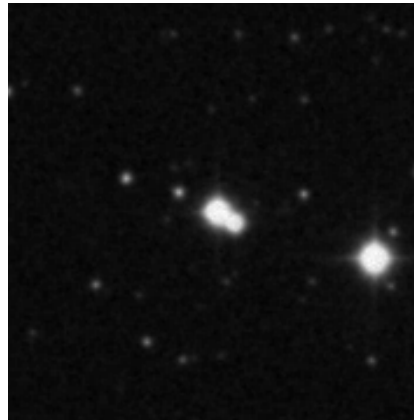
for these pairs is inconclusive. Clearly, the data need to be available for both components of the pair and the value needs to be significantly larger than any error for firm conclusions to be drawn. This is not the case with these five pairs.

Images of the stars below are from the Digitized Sky Survey.



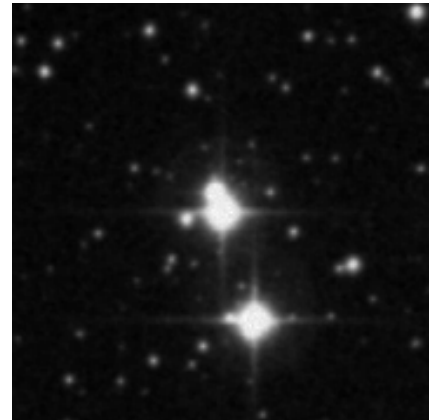
MNHV1

04h 53m 25.96s +04d 51m 51.66s  
 2MASS J-H = 0.50 and 0.62  
 2MASS B Mag = 11.58 and 11.10  
 2MASS R Mag = 10.71 and 9.6



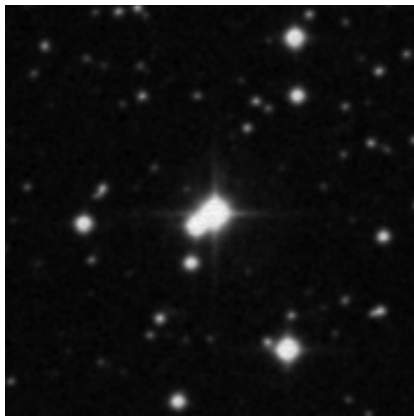
MNHV2

05h 46m 32.28s +05d 14m 37.31s  
 2MASS J-H = 0.67 and 0.83  
 2MASS B Mag = 12.66 and ?  
 2MASS R Mag = 11.18 and ?



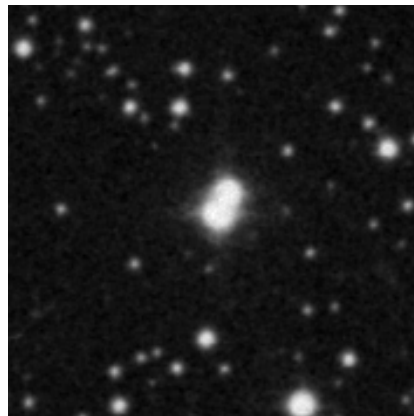
MNHV3

06 h 01m 33.25s +07d 36m 37.90s  
 2MASS J-H = 0.03 and 0.54  
 2MASS B Mag = 9.04 and ?  
 2MASS R Mag = 8.95 and ?



MNHV4

06h 10m 40.43s +05d28m 08.8s  
 2MASS J-H = 0.60 and 0.54  
 2MASS B Mag = 11.37 and ?  
 2MASS R Mag = 10.25 and ?



MNHV5

06h 21m 26.41s +17d 06m 05.76s  
 2MASS J-H = 0.17 and 0.40  
 2MASS B Mag = 10.28 and 9.74  
 2MASS R Mag = 9.60 and 8.70

*Martin Nicholson is a retired teacher and Fellow of the Royal Astronomical Society of London. Hannah Varley is currently on maternity leave, but normally earns her living as a research scientist in Dublin, Ireland.*

*The co-authors do the vast majority of their observing over the internet using facilities provided by the Remote Astronomical Society in Mahill, New Mexico, USA.*