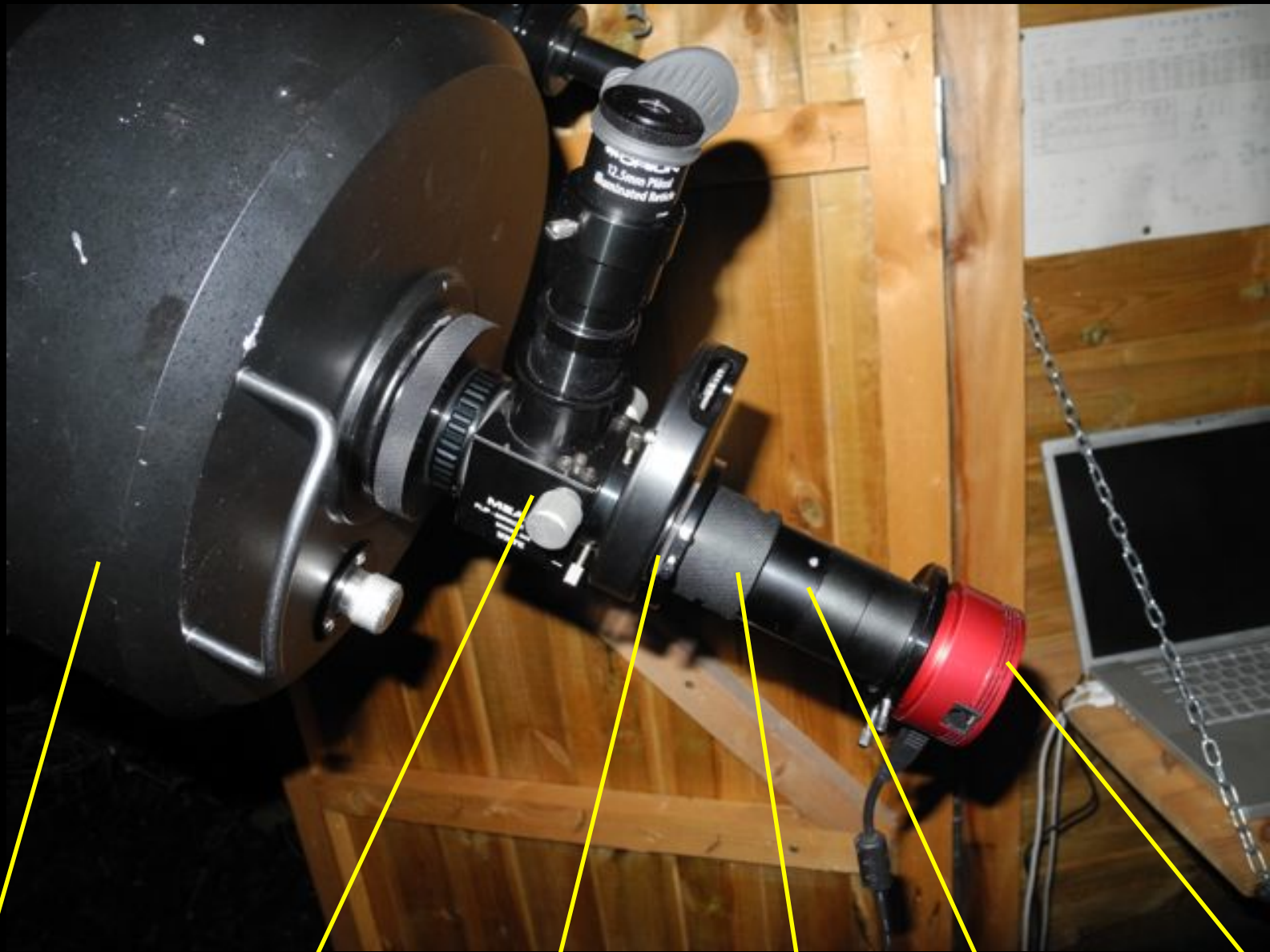


# Speckle interferometry of visual double stars test with the ASI290MM camera

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CII

Flip-mirror

Filter wheel

ADC  
(not used here)

Barlow 2x

Camera

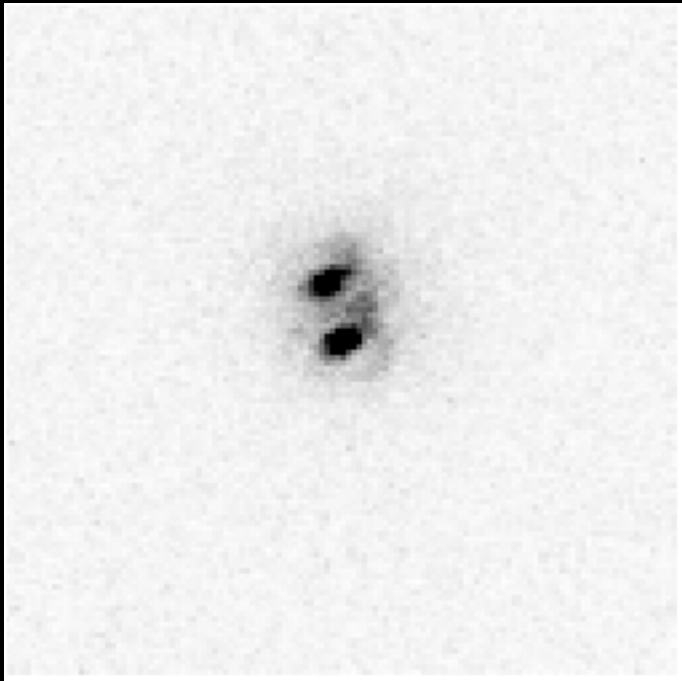
# Experimental conditions

- 2016-04-18 - 22h-1h30 UTC
- CII @ F/D=21 (E=0.10148"/pixel)
- L (R) filter
- ADC present but set to 0 (no calibration available)
- Seeing=4/10, Transparency=3/5
- Acquisition : FireCapture : gain=550/600, exp=15-50ms
- Pre-processing : Reduc v5.0 (cropping + dark subtraction)
- Processing : Speckle Toolbox (no deconvolution) and Reduc

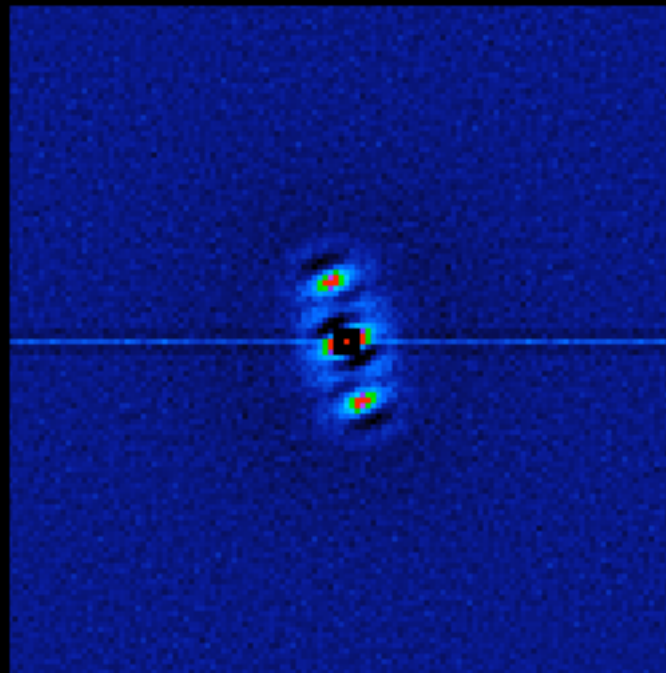
STF1613

WDS (2015) :  $m_1=9.29$   $m_2=9.36$   $\theta=11^\circ$   $\rho=1.1''$

Exp=15ms  $h=79^\circ$



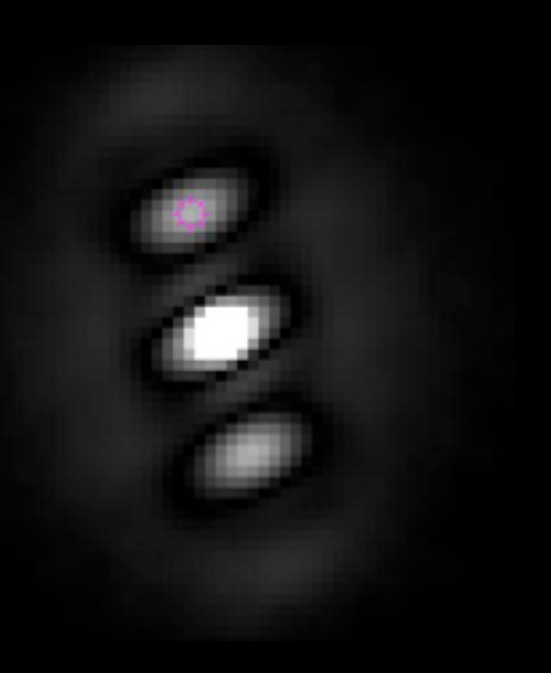
Lucky stacking  
(13/1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*

$\theta_o=6.1^\circ$   $\rho_o=1.15''$



Auto-correlation  
(1500 images)

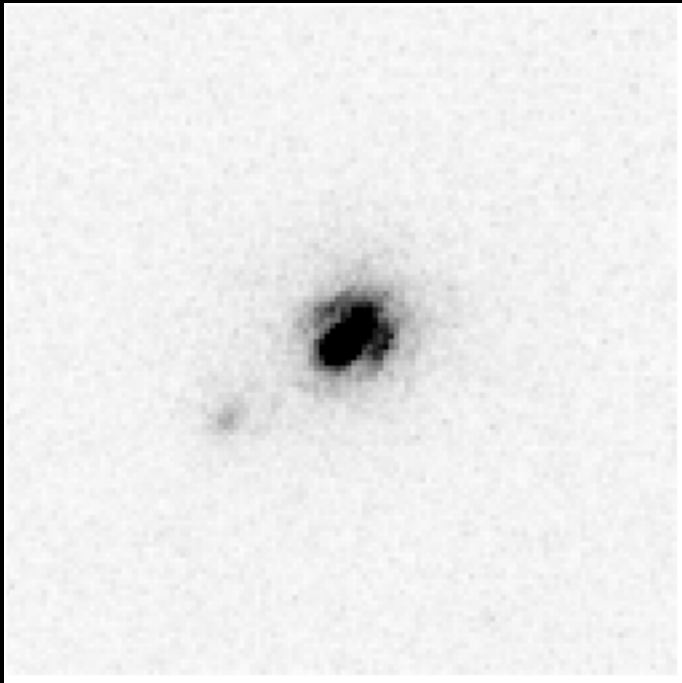
*SpeckleToolbox*

$\theta_o=6.5^\circ$   $\rho_o=1.17''$

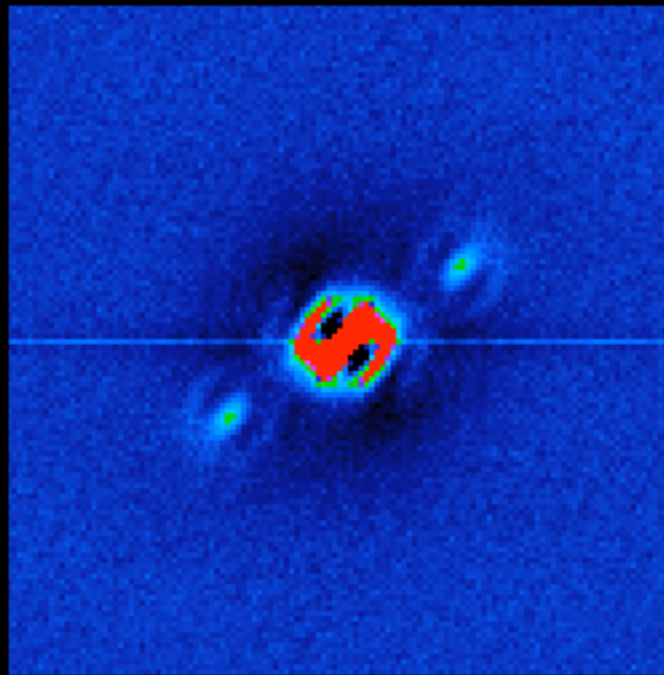
HU 570

WDS (2010) : m1=9.2 m2=11.81  $\theta=114^\circ$   $\rho=2.6''$

Exp=40ms h=65°



Lucky stacking  
(15/1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*



Auto-correlation  
(1500 images)

*SpeckleToolbox*

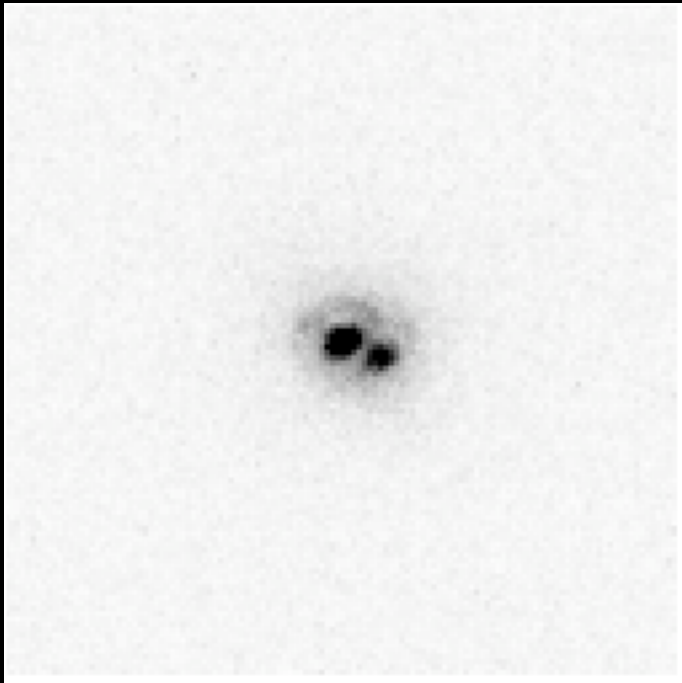
$\theta_o=115.4^\circ$   $\rho_o=2.63''$

$\theta_o=115.4^\circ$   $\rho_o=2.63''$

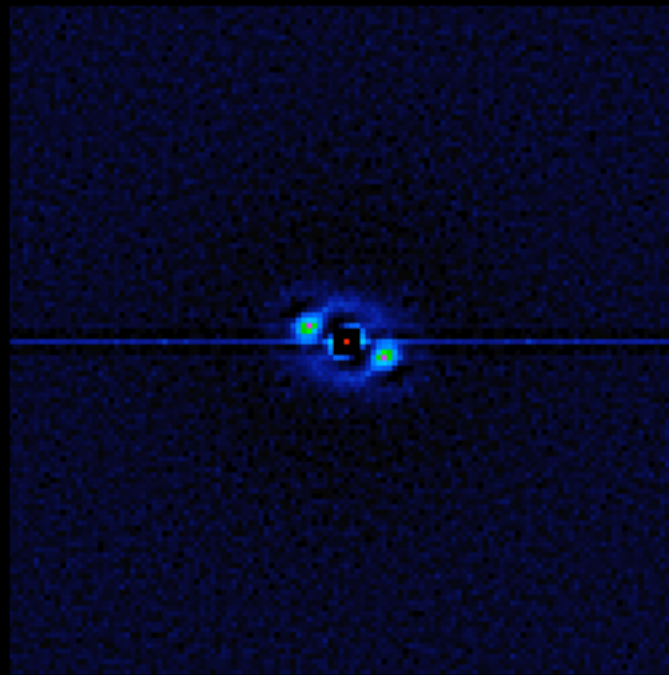
A 1630

WDS (2010) :  $m_1=10.06$   $m_2=10.56$   $\theta=246^\circ$   $\rho=0.8''$

Exp=30ms  $h=86^\circ$



Lucky stacking  
(20/1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*

$\theta_o=245^\circ$   $\rho_o=0.78''$



Auto-correlation  
(1500 images)

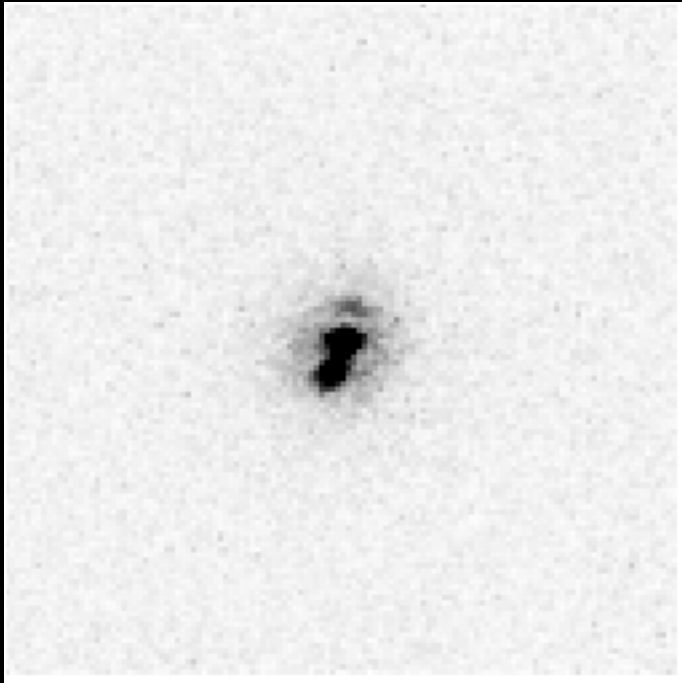
*SpeckleToolbox*

$\theta_o=244.8^\circ$   $\rho_o=0.83''$

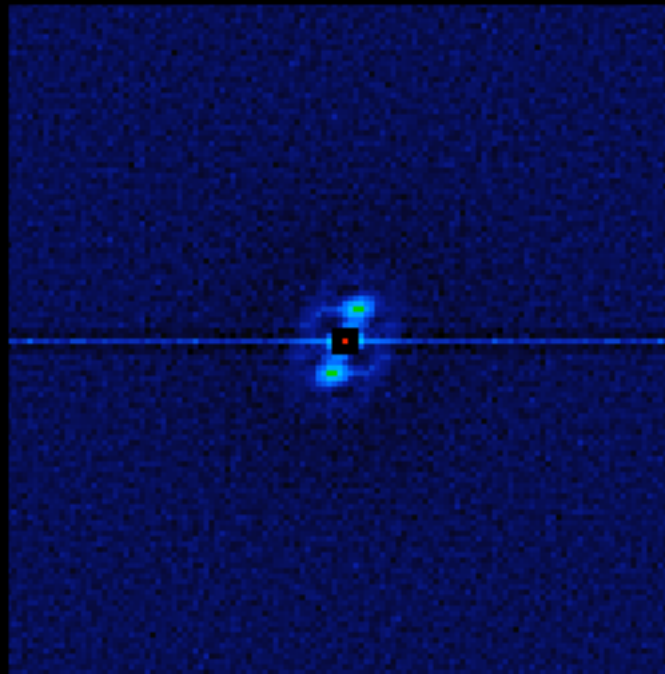
A 1367

WDS (2010) :  $m_1=10.87$   $m_2=11.01$   $\theta=154^\circ$   $\rho=0.6''$

Exp=40ms  $h=80^\circ$

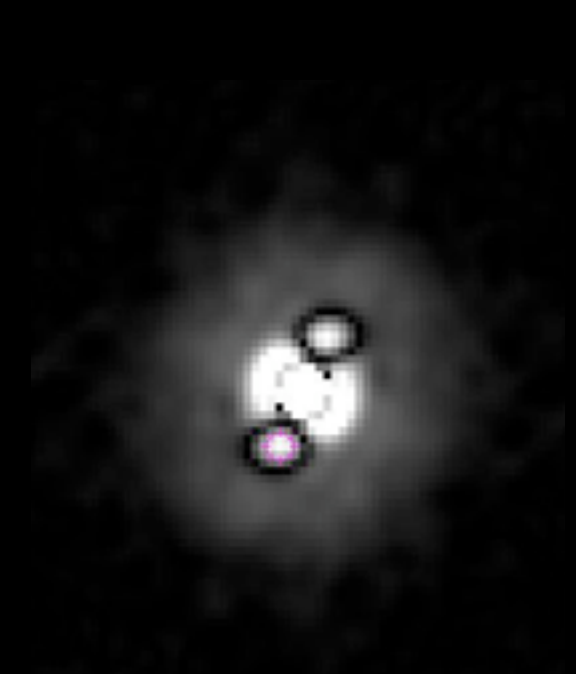


Lucky stacking  
(12/1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*



Auto-correlation  
(1500 images)

*SpeckleToolbox*

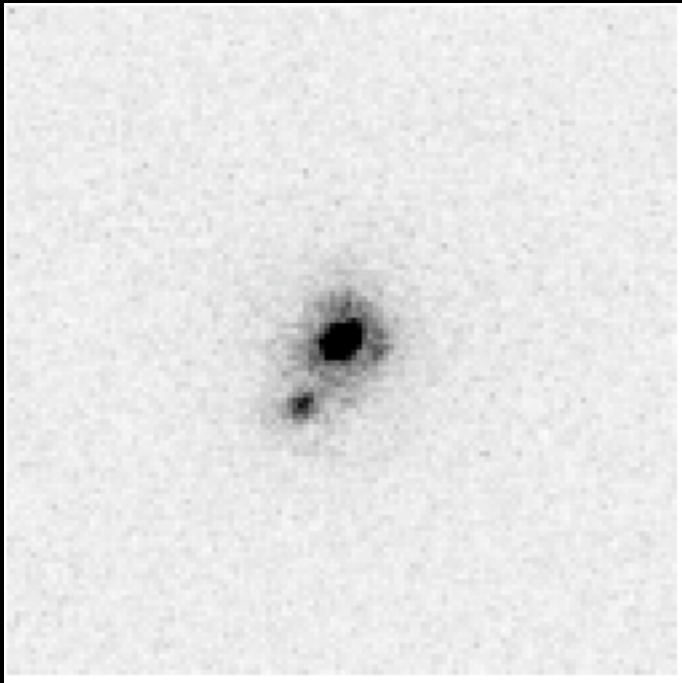
$\theta_o=155.5^\circ$   $\rho_o=0.62''$

$\theta_o=151.6^\circ$   $\rho_o=0.77''$

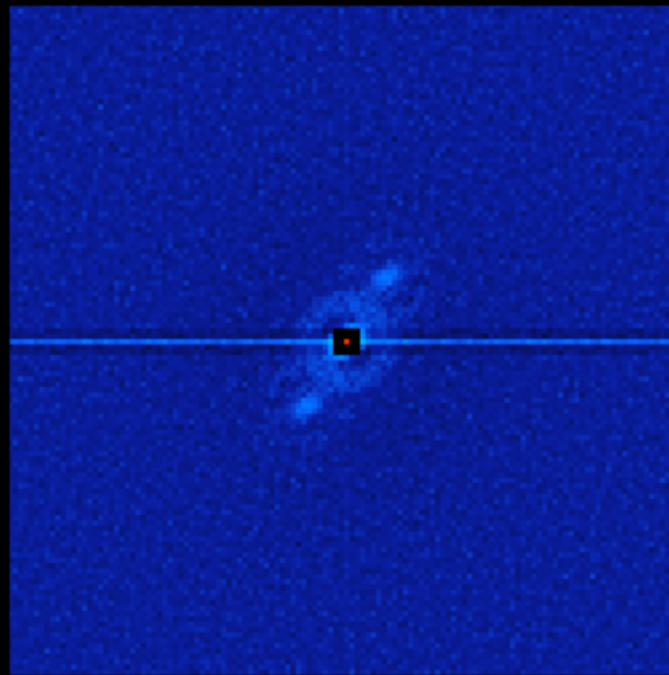
COU 972

WDS (2010) : m1=10.78 m2=12.01  $\theta=143^\circ$   $\rho=1.5''$

Exp=50ms h=79°

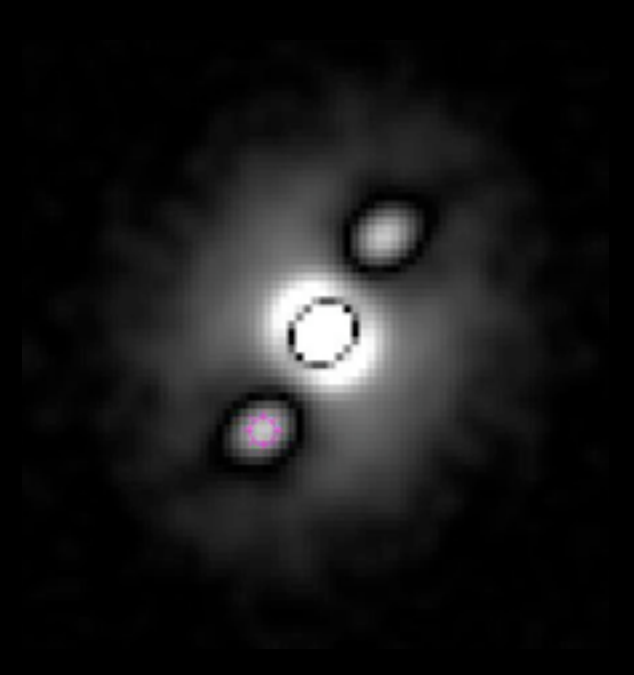


Lucky stacking  
(25/1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*



Auto-correlation  
(1500 images)

*SpeckleToolbox*

$\theta_o=144.3^\circ$   $\rho_o=1.44''$

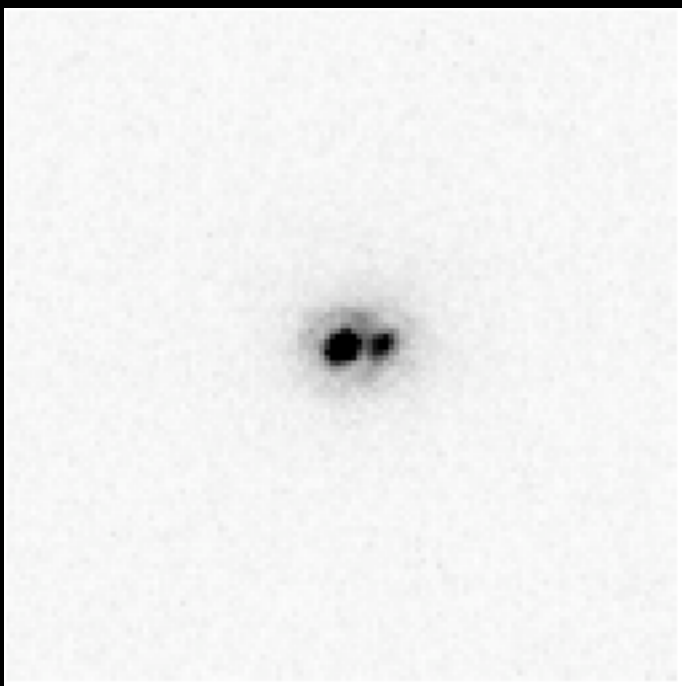
$\theta_o=142.8^\circ$   $\rho_o=1.48''$



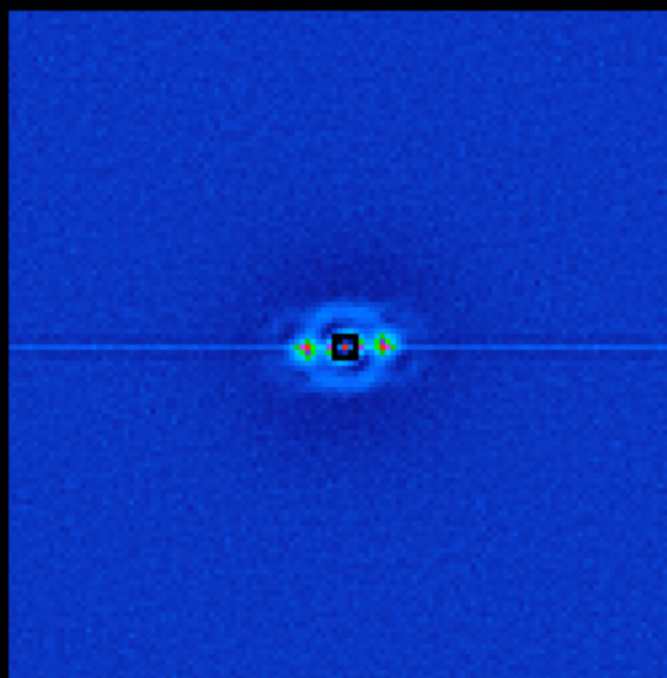
COU1916

WDS (2010) :  $m_1=10.61$   $m_2=10.82$   $\theta=268^\circ$   $\rho=0.7''$

Exp=40ms  $h=87^\circ$



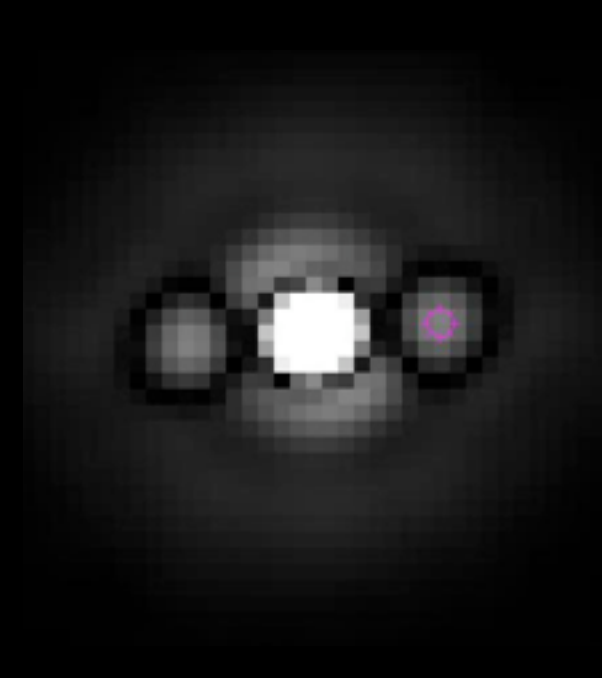
Lucky stacking  
(20/1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*

$\theta_o=268.9^\circ$   $\rho_o=0.72''$



Auto-correlation  
(1500 images)

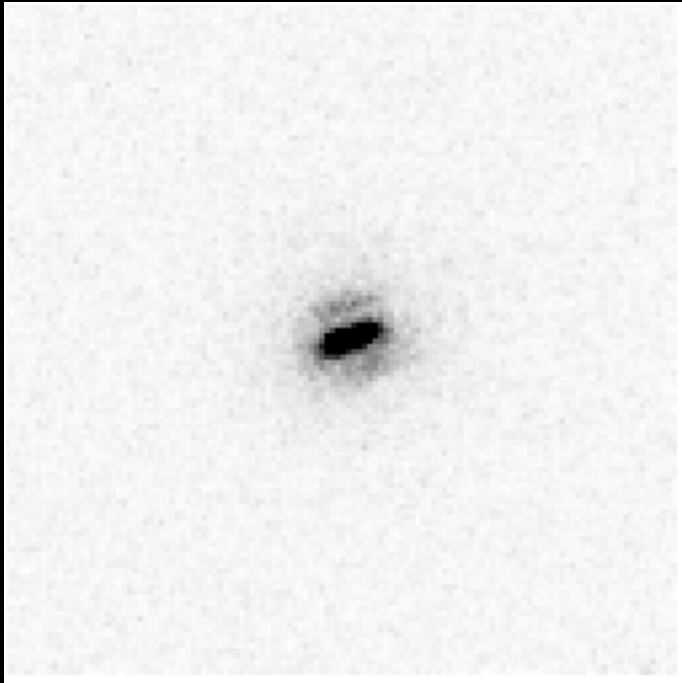
*SpeckleToolbox*

$\theta_o=269.4^\circ$   $\rho_o=0.81''$

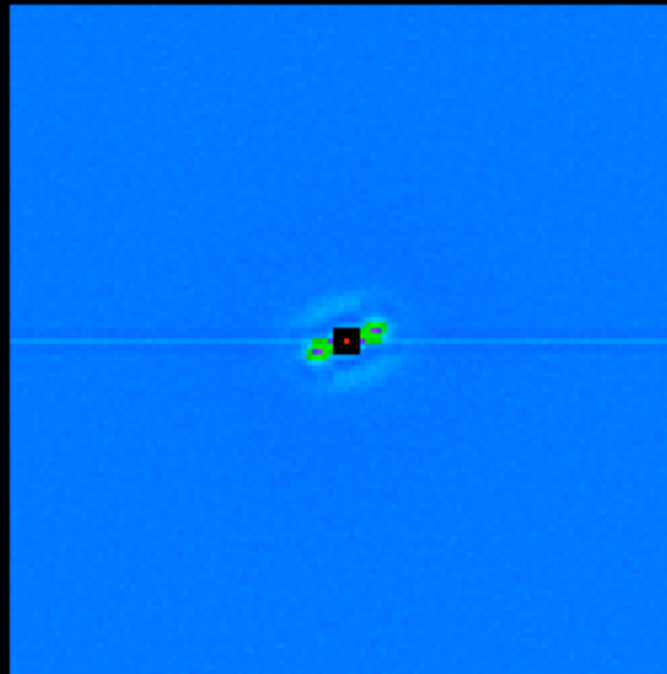
HU 147

WDS (2010) : m1=10.28 m2=10.30  $\theta=285^\circ$   $\rho=0.6''$

Exp=40ms h=82°



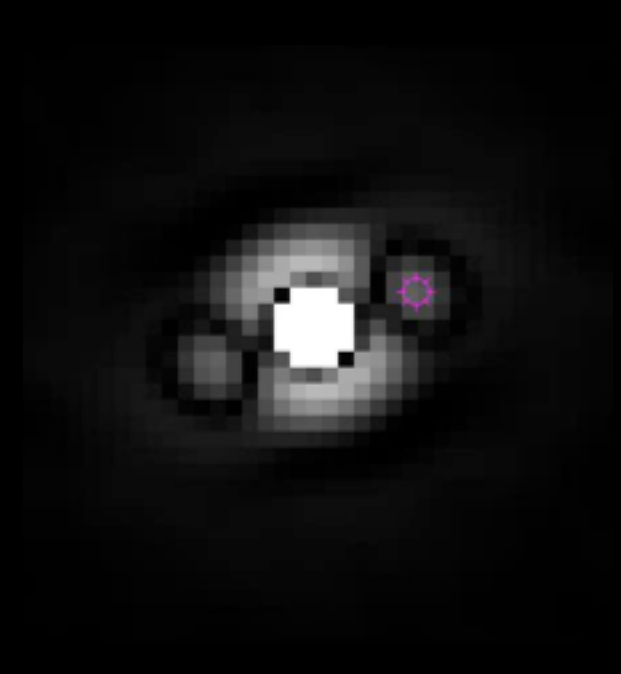
Lucky stacking  
(10/1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*

$\theta_o=286.6^\circ$   $\rho_o=0.58''$



Auto-correlation  
(1500 images)

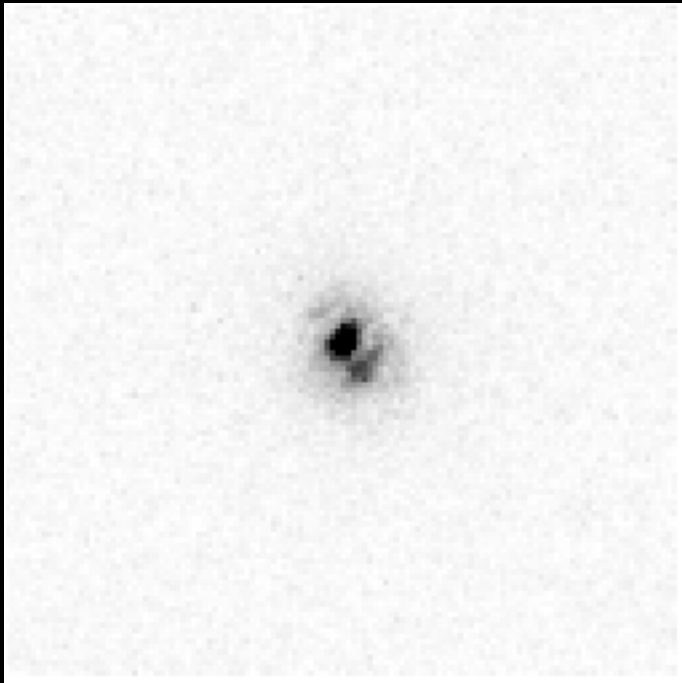
*SpeckleToolbox*

$\theta_o=284.7^\circ$   $\rho_o=0.69''$

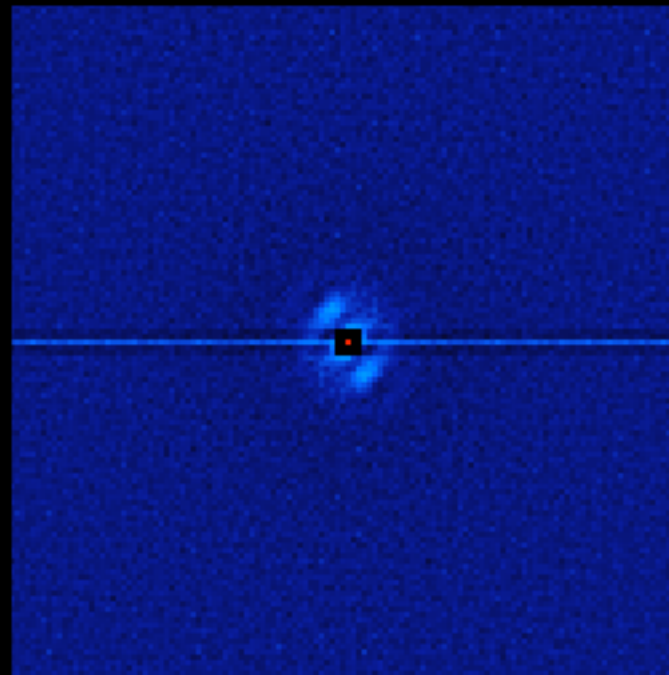
COU 99

WDS (2008) : m1=11 m2=11.5  $\theta=208^\circ$   $\rho=0.7''$

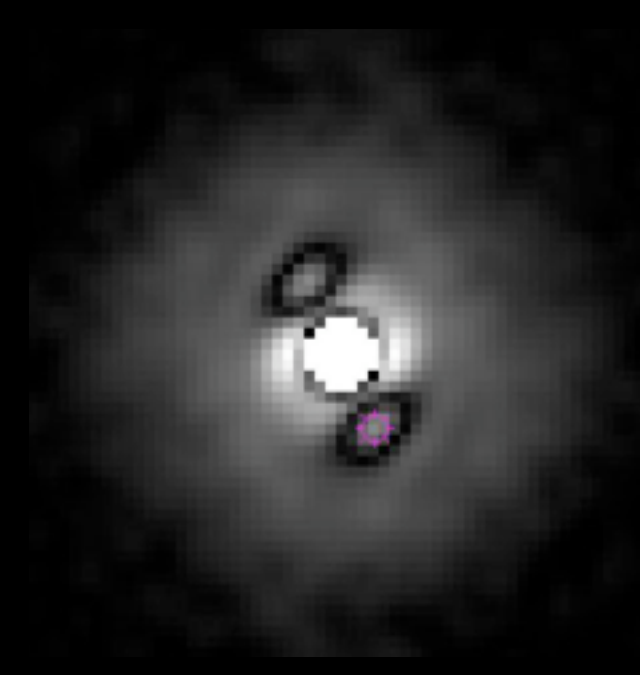
Exp=40ms h=66°



Lucky stacking  
(10/1500 images)



Auto-correlation  
(1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*

*SpeckleToolbox*

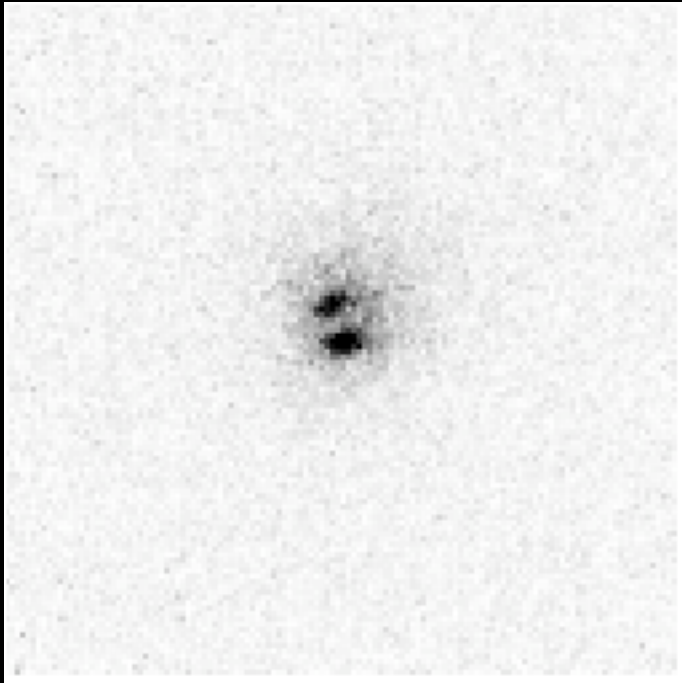
$\theta_o=205.6^\circ$   $\rho_o=0.66''$

$\theta_o=199.4^\circ$   $\rho_o=0.78''$

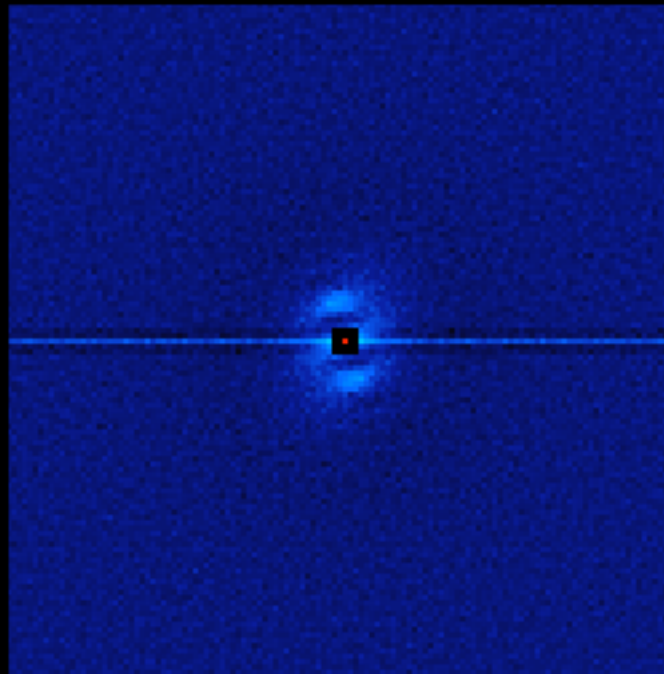
POP 119

WDS (2000) :  $m_1=10.62$   $m_2=10.62$   $\theta=0^\circ$   $\rho=0.7''$

Exp=40ms  $h=83^\circ$

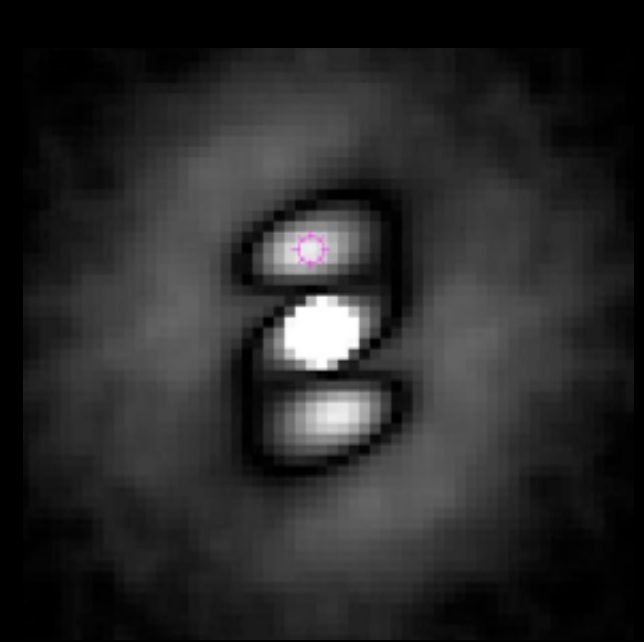


Lucky stacking  
(7/1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*



Auto-correlation  
(1500 images)

*SpeckleToolbox*

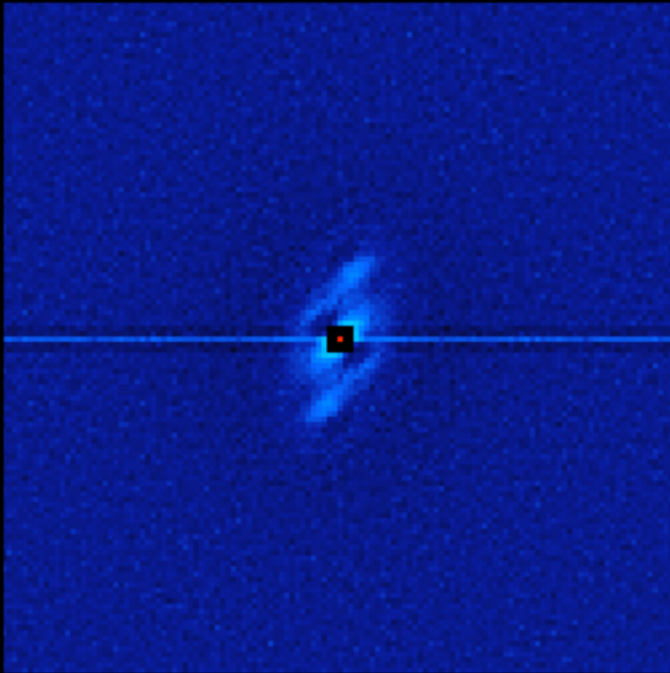
$\theta_o=7.5^\circ$   $\rho_o=0.74''$

$\theta_o=0.1^\circ$   $\rho_o=0.80''$

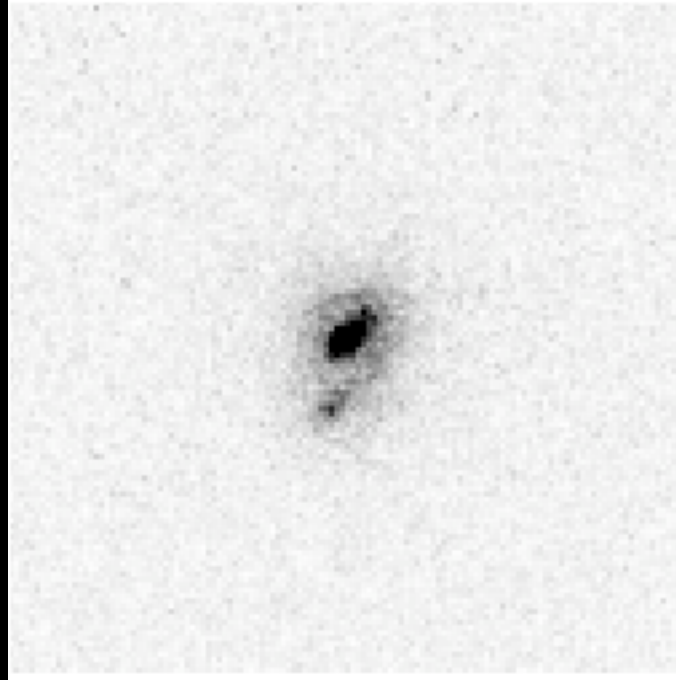
HU 569

WDS (2010) : m1=10.12 m2=11.26  $\theta=161^\circ$   $\rho=1.3''$

Exp=40ms h=65°

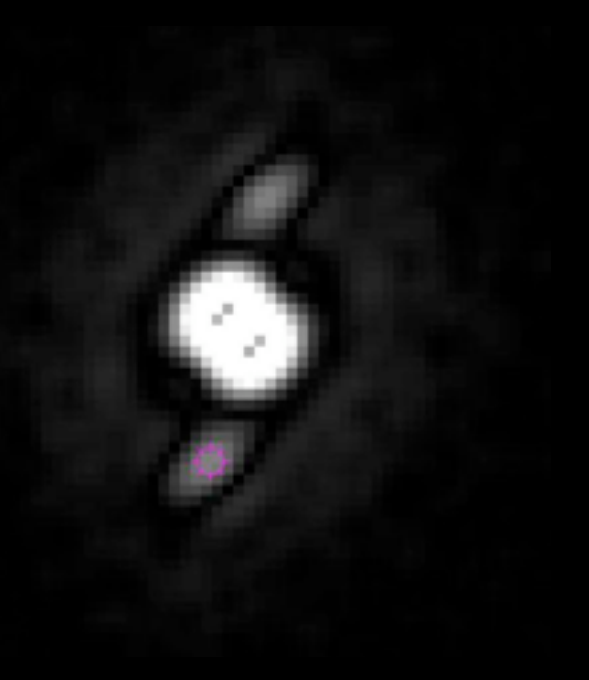


Lucky stacking  
(10/1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*



Auto-correlation  
(1500 images)

*SpeckleToolbox*

$\theta_o=161.6^\circ$   $\rho_o=1.19''$

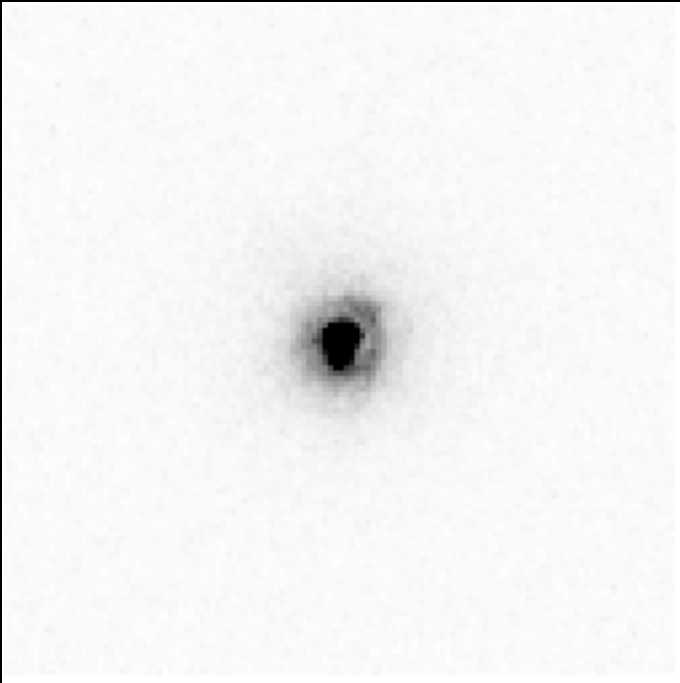
$\theta_o=160.1^\circ$   $\rho_o=1.26''$

COU1443

WDS (2010) :  $m_1=8.67$   $m_2=10.33$   $\theta=172^\circ$   $\rho=0.5''$

$\Delta M=1.7$

Exp=40ms  $h=85^\circ$



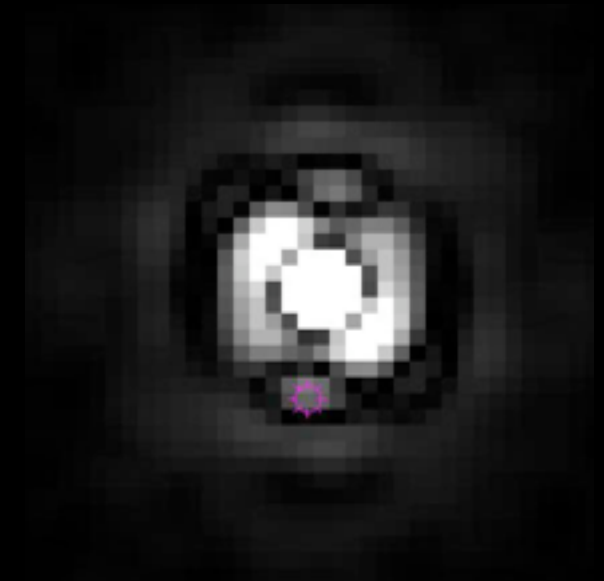
Lucky stacking  
(15/1500 images)

*REDUC 5.0*

$\theta_o=169.8^\circ$   $\rho_o=0.59''$



(1500 images)



Auto-correlation  
(1500 images)

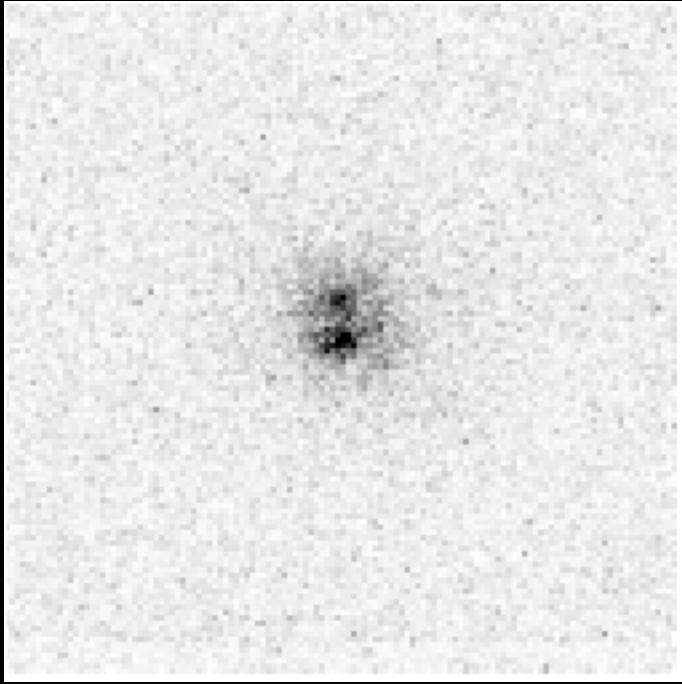
*SpeckleToolbox*

$\theta_o=167.6^\circ$   $\rho_o=0.71''$

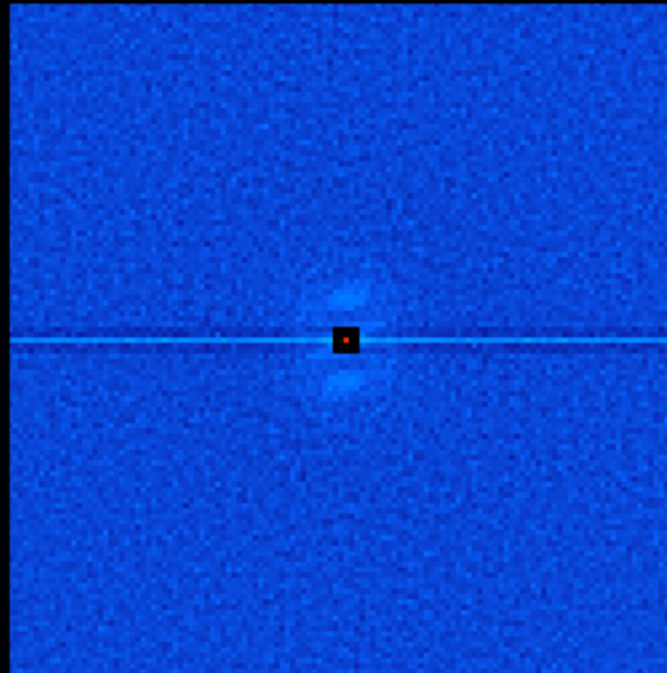
COU1425

WDS (2010) :  $m_1=10.93$   $m_2=11.13$   $\theta=348^\circ$   $\rho=0.8''$

Exp=40ms  $h=78^\circ$

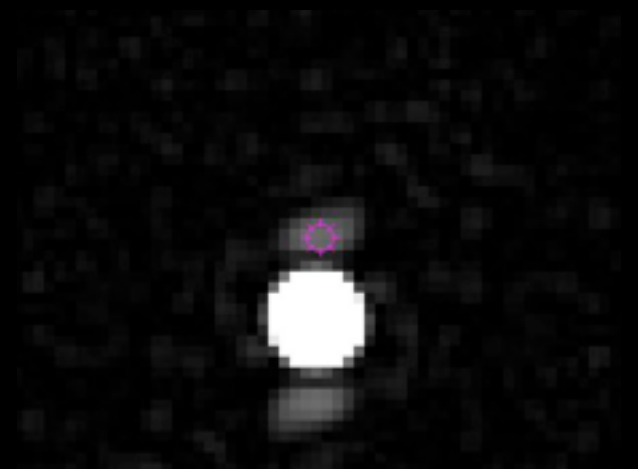


Lucky stacking  
(6/1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*



Auto-correlation  
(1500 images)

*SpeckleToolbox*

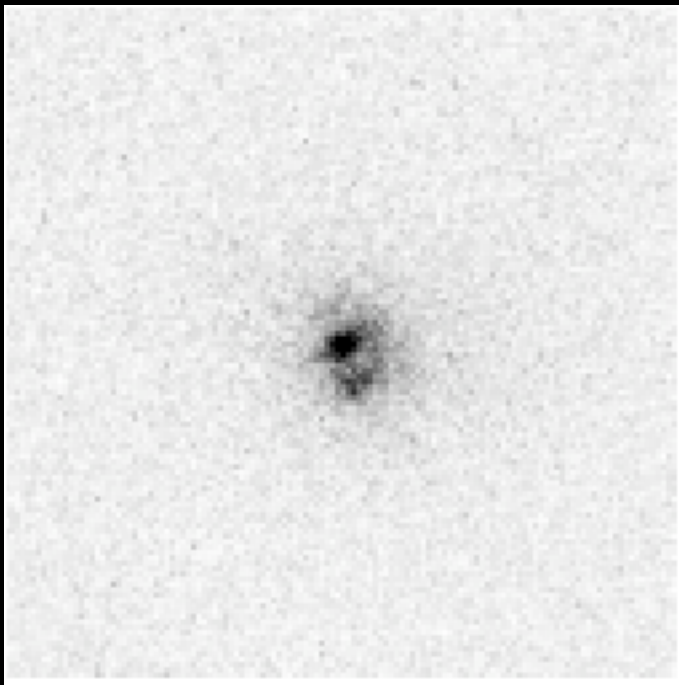
$\theta_o=345.7^\circ$   $\rho_o=0.77''$

$\theta_o=345.8^\circ$   $\rho_o=0.86''$

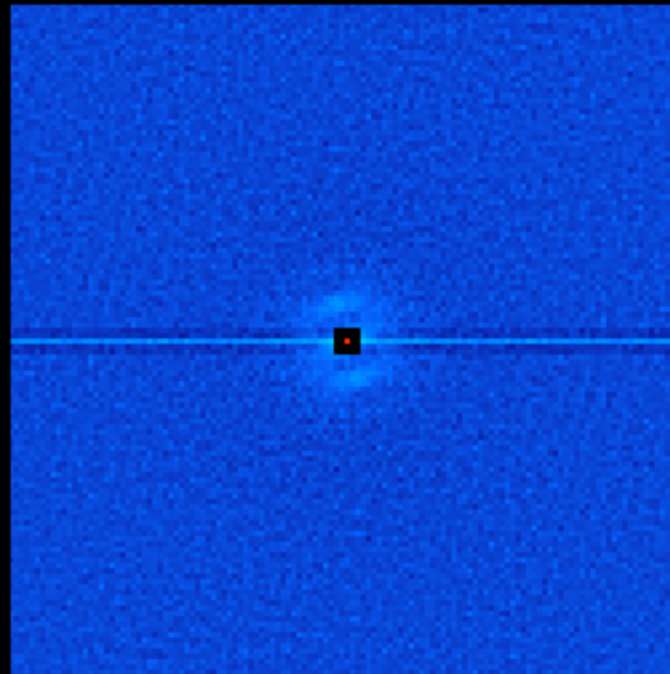
HU 1260

WDS (2010) :  $m_1=10.69$   $m_2=11.15$   $\theta=186^\circ$   $\rho=0.7''$

Exp=40ms  $h=79^\circ$



Lucky stacking  
(10/1500 images)



Auto-correlation  
(1500 images)

*REDUC 5.0*



Auto-correlation  
(1500 images)

*SpeckleToolbox*

$\theta_o=184.9^\circ$   $\rho_o=0.69''$

$\theta_o=188.2^\circ$   $\rho_o=0.72''$

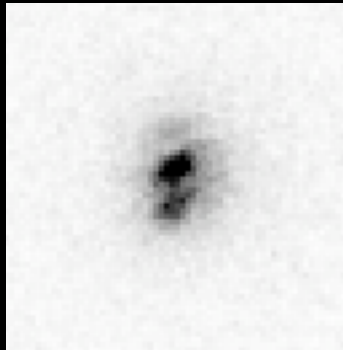


A 2163

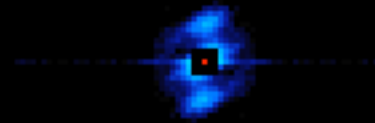
WDS (2010) : m1=10.27 m2=10.39  $\theta=171^\circ$   $\rho=0.7''$

Exp=40ms h=65°

L  
filter

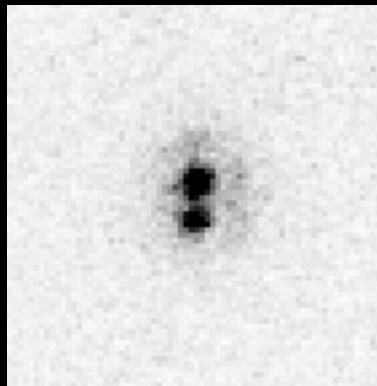


$\theta_o=168.9^\circ$   $\rho_o=0.68''$

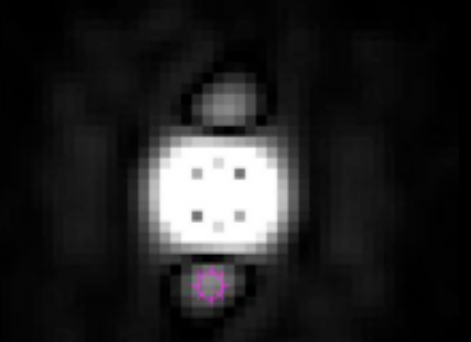
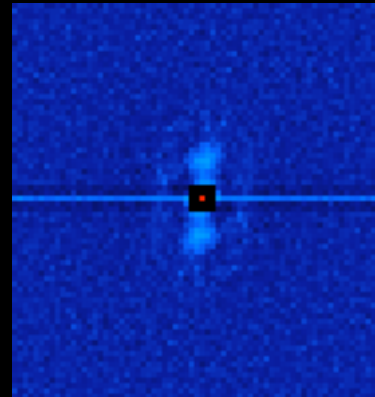


$\theta_o=163.3^\circ$   $\rho_o=0.83''$

R  
filter



$\theta_o=169.3^\circ$   $\rho_o=0.68''$



$\theta_o=167.0^\circ$   $\rho_o=0.85''$

Lucky stacking  
(10/1500 images)

Auto-correlation  
(1500 images)

Auto-correlation  
(1500 images)

*REDUC 5.0*

*SpeckleToolbox*