

# KIC 006922690

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006922690-01	OBS	No	0.970031	131.746654	206.7	5.991	14.8	14.1	3.98	7542	5.86	72260.84
006922690-02	OBS	No	0.970057	132.226200	230.6	2.756	17.2	18.5	3.98	7542	6.26	72258.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006922690-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
006922690-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

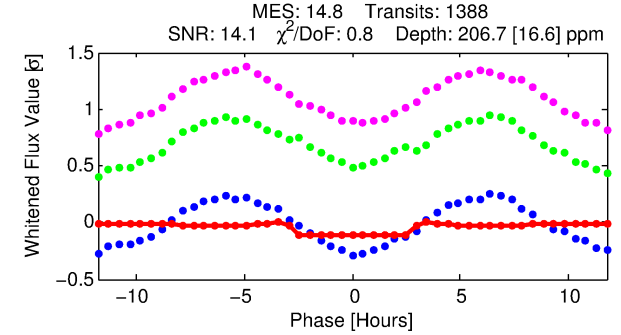
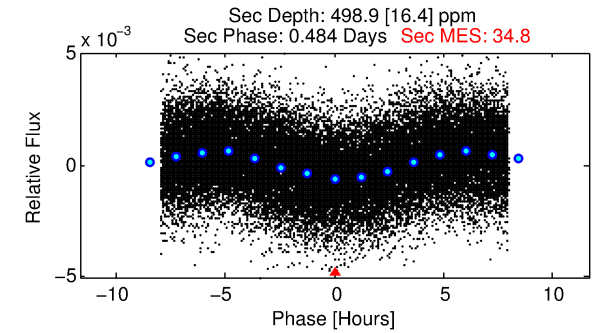
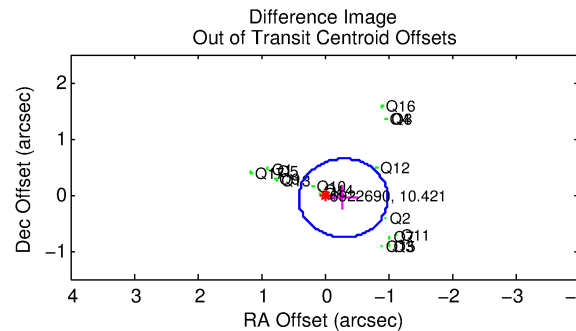
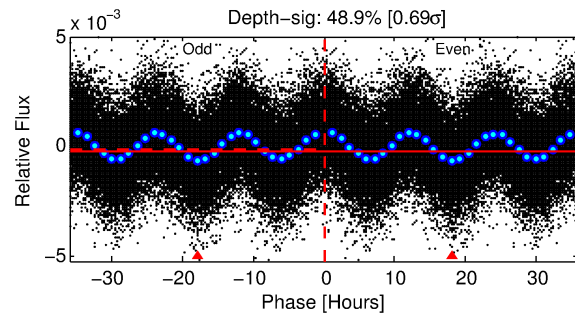
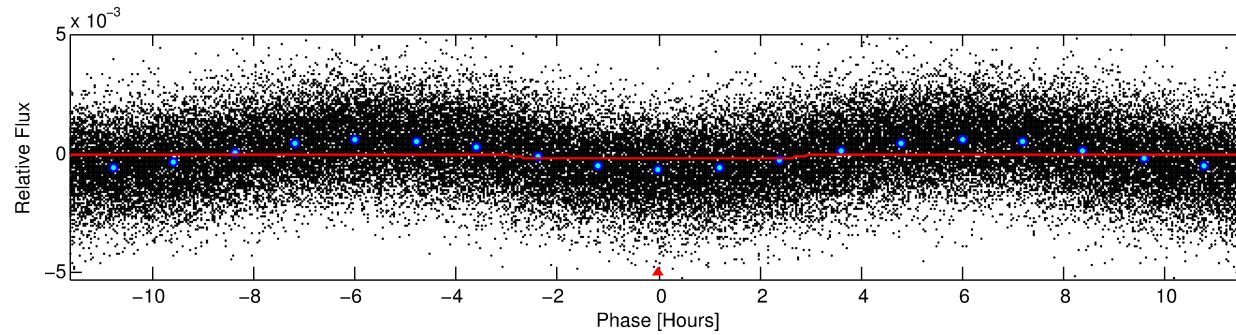
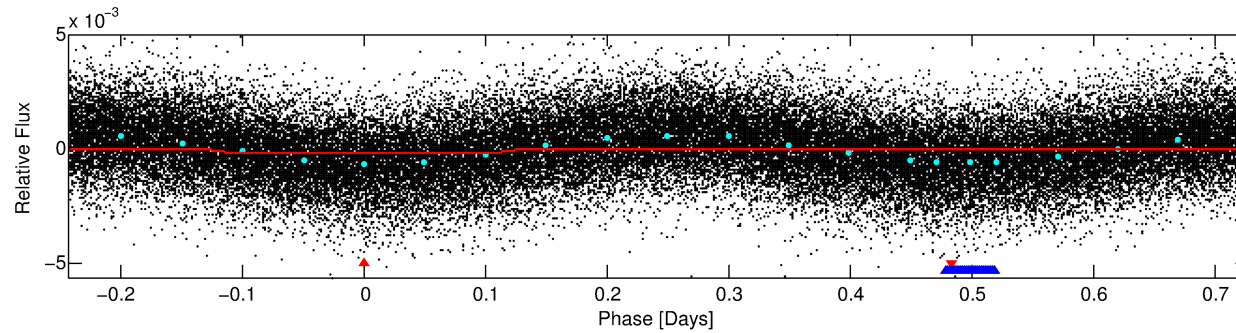
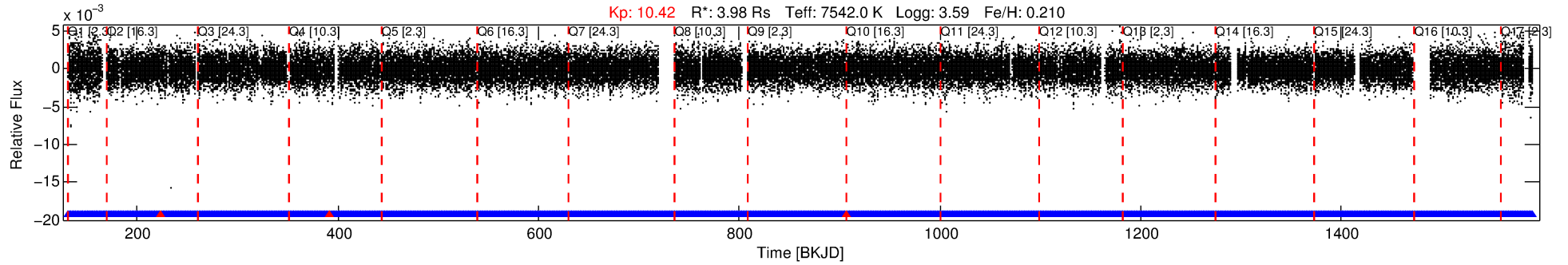
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006922690-01

No Significant Match Found

# DV One-Page Summary

KIC: 6922690 Candidate: 1 of 2 Period: 0.970 d



## DV Fit Results:

Period = 0.97003 [0.00001] d  
Epoch = 131.7467 [0.0027] BKJD  
Rp/R\* = 0.0135 [0.0083]  
a/R\* = 1.35 [2.15]  
b = 0.39 [7.79]  
Seff = 72260.84 [59302.42]  
Teff = 4181 [858] K  
Rp = 5.86 [4.76] Re  
a = 0.0252 [0.0127] AU  
Ag = 5.08 [7.46] [0.55 $\sigma$ ]  
Teffp = 9704 [3021] K [1.76 $\sigma$ ]

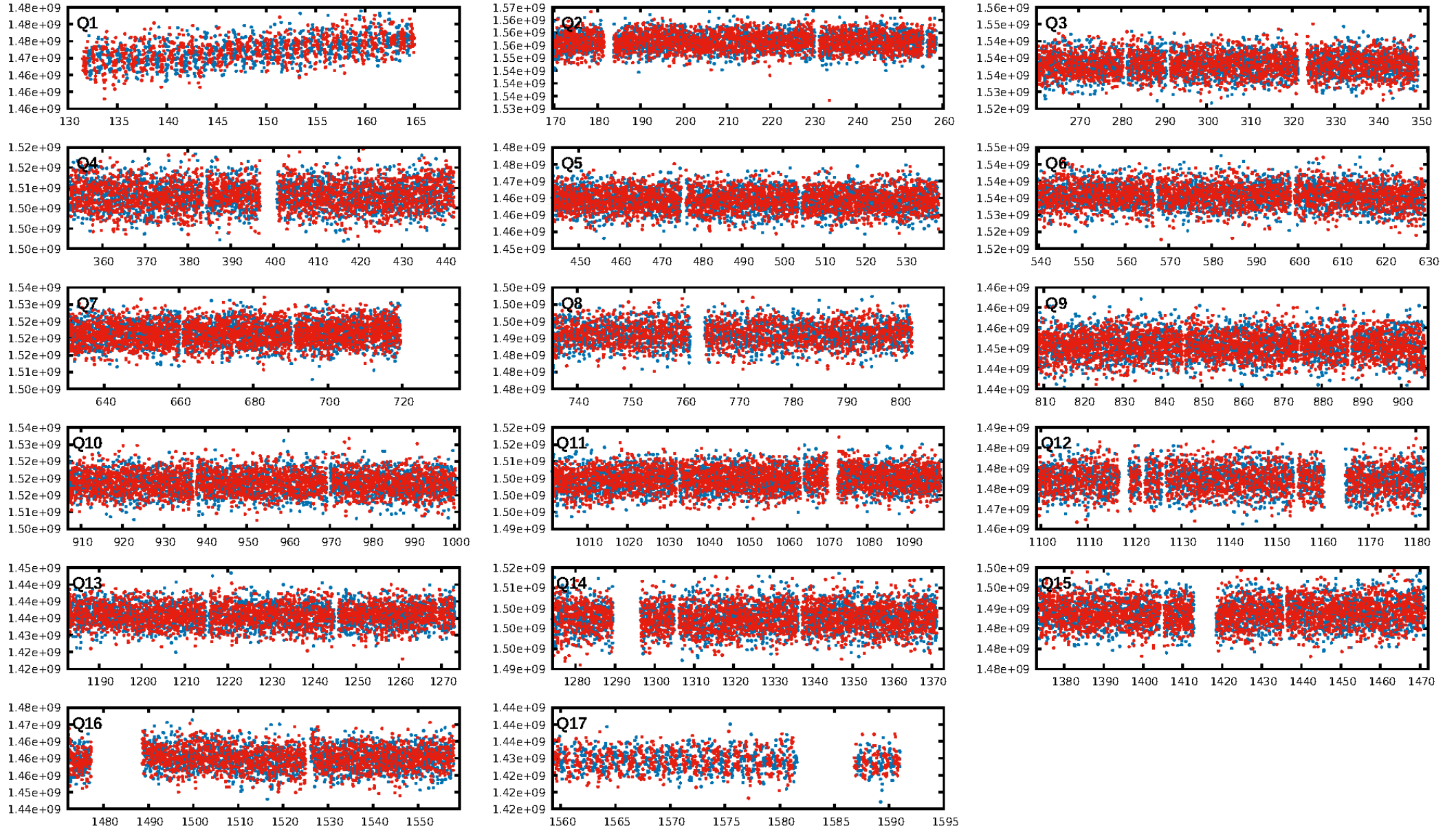
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1322/1325]  
GhostDiagnostic-chr: 1.181  
Centroid-sig: 75.7%  
Centroid-so: 0.363 arcsec [5.31 $\sigma$ ]  
OotOffset-rm: 0.299 arcsec [1.28 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.263 arcsec [0.88 $\sigma$ ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.35 [6/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 05:57:50 Z

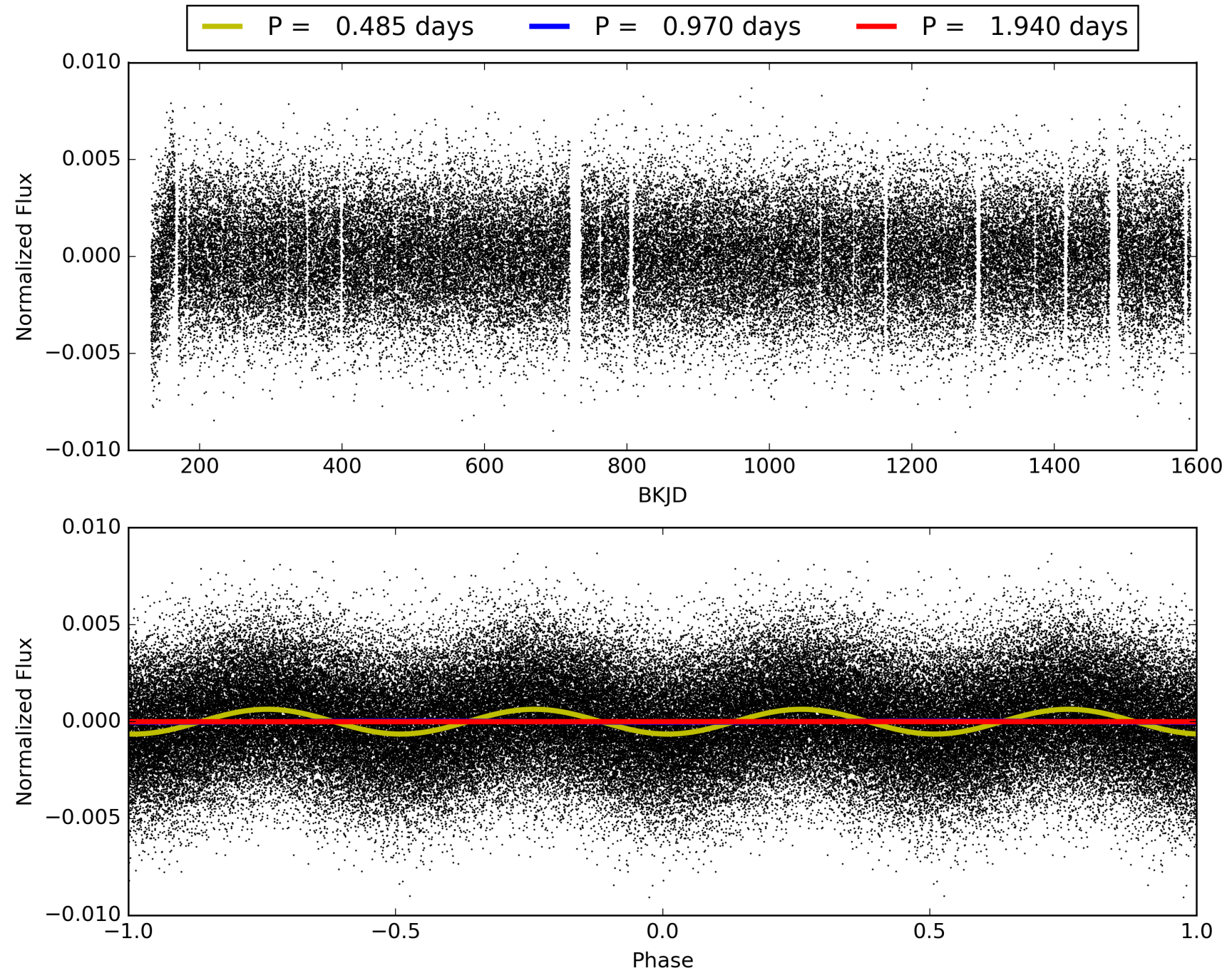
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006922690-01, PDC Light Curves



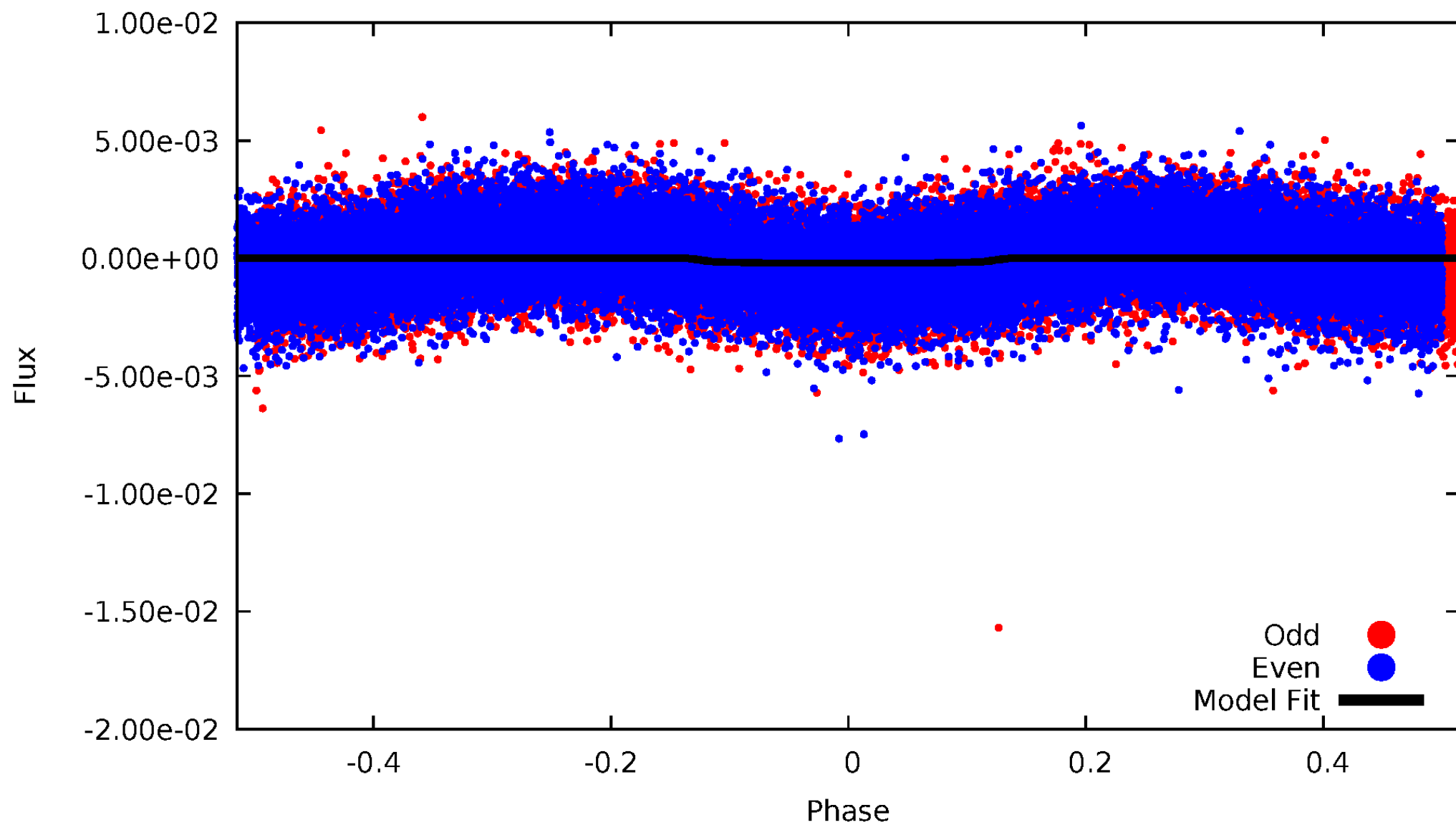


TCE 006922690-01



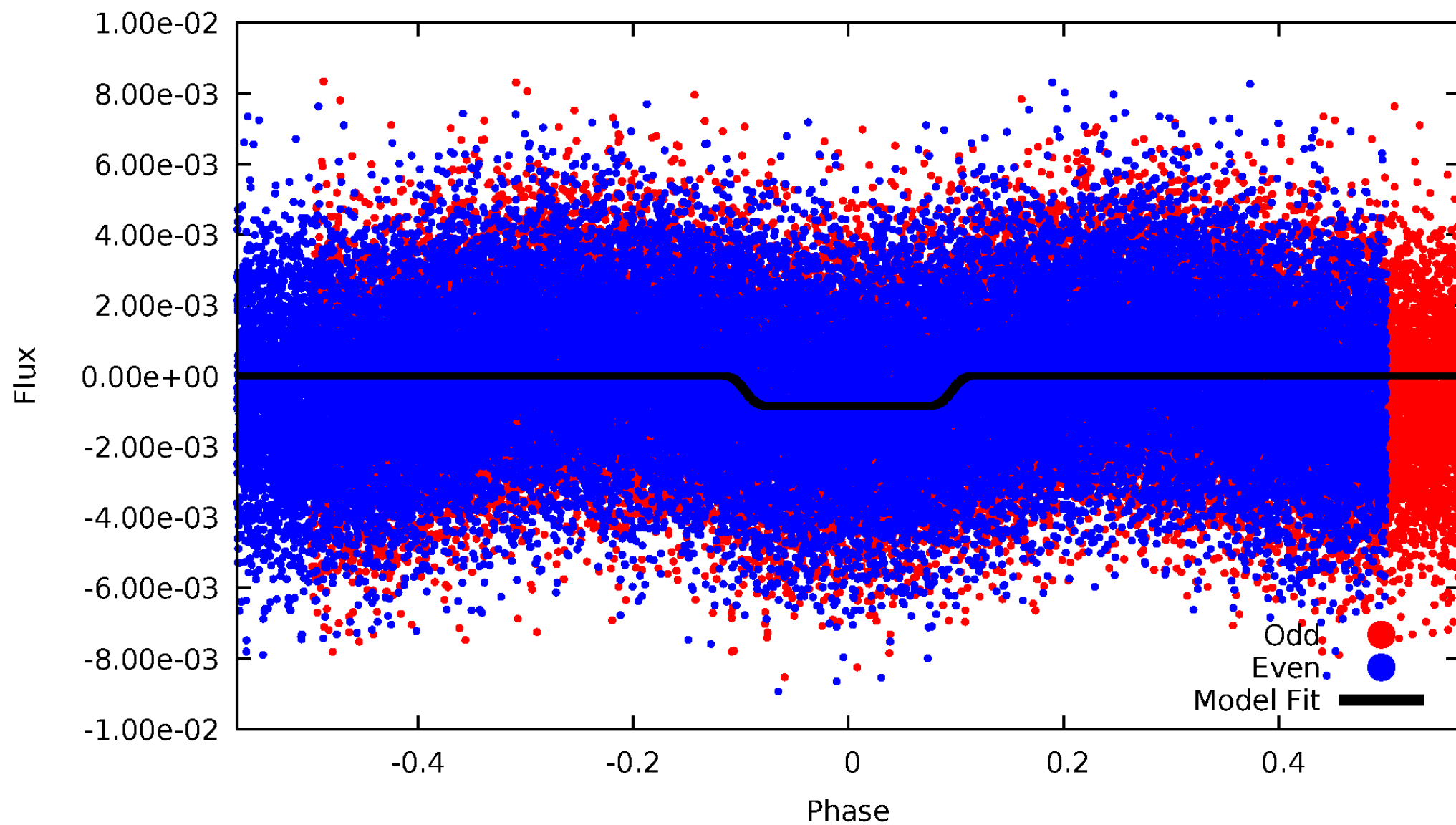
# DV Odd/Even

TCE 006922690-01



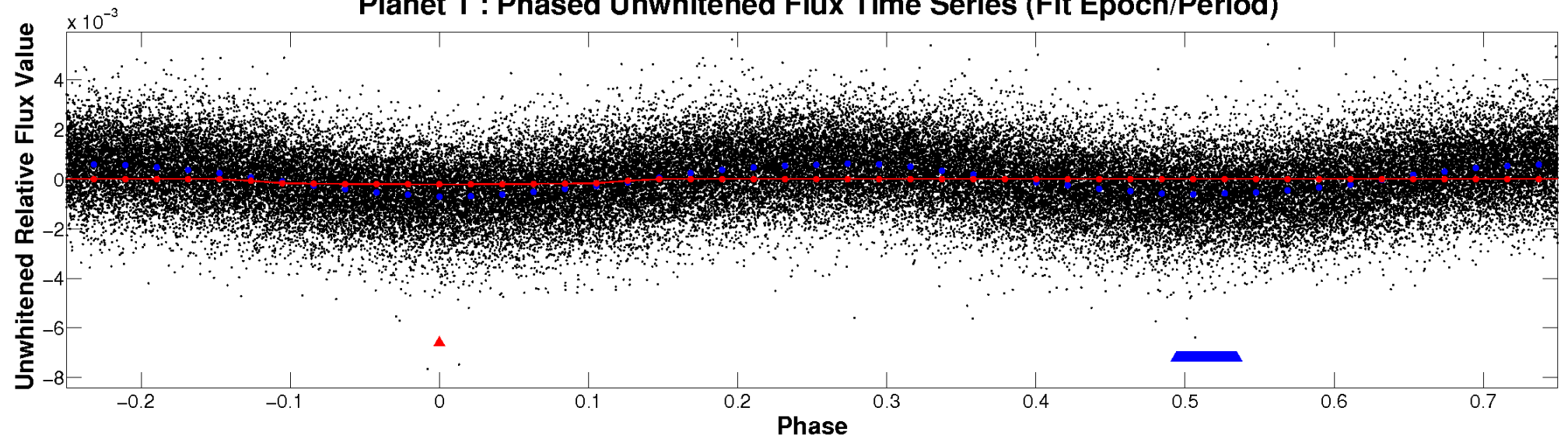
# ALT Odd/Even

TCE 006922690-01

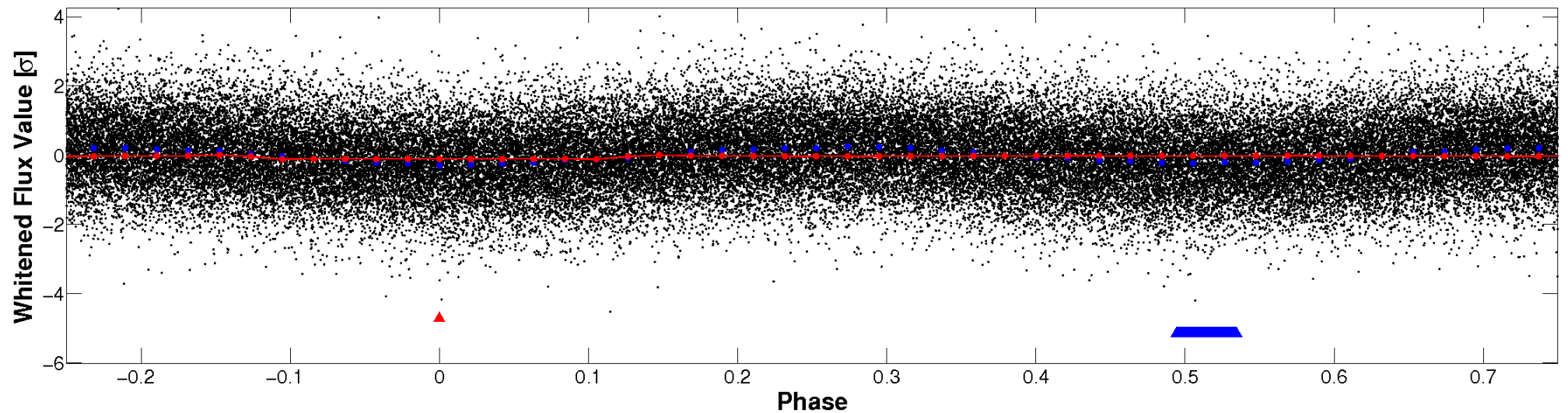


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**



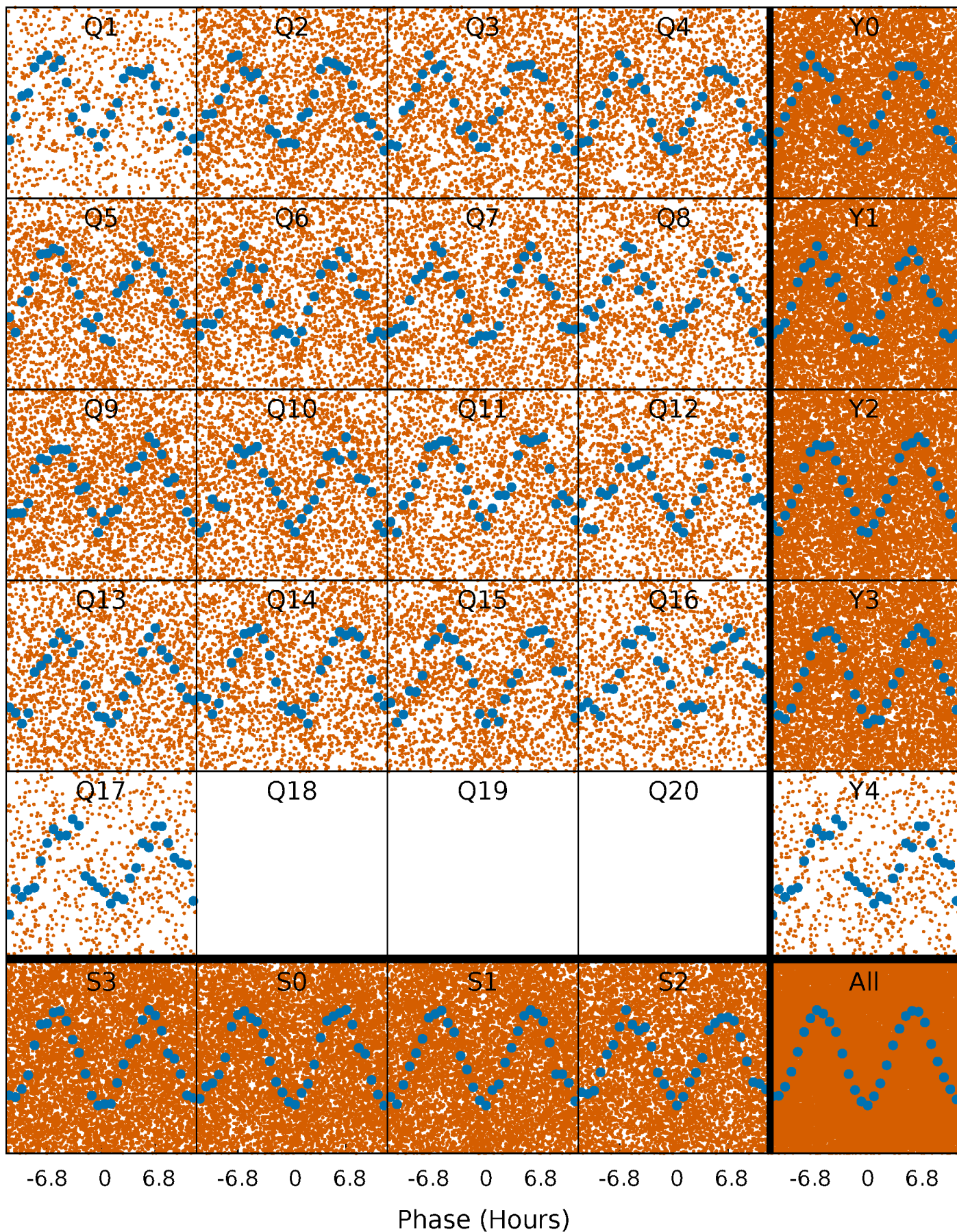
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

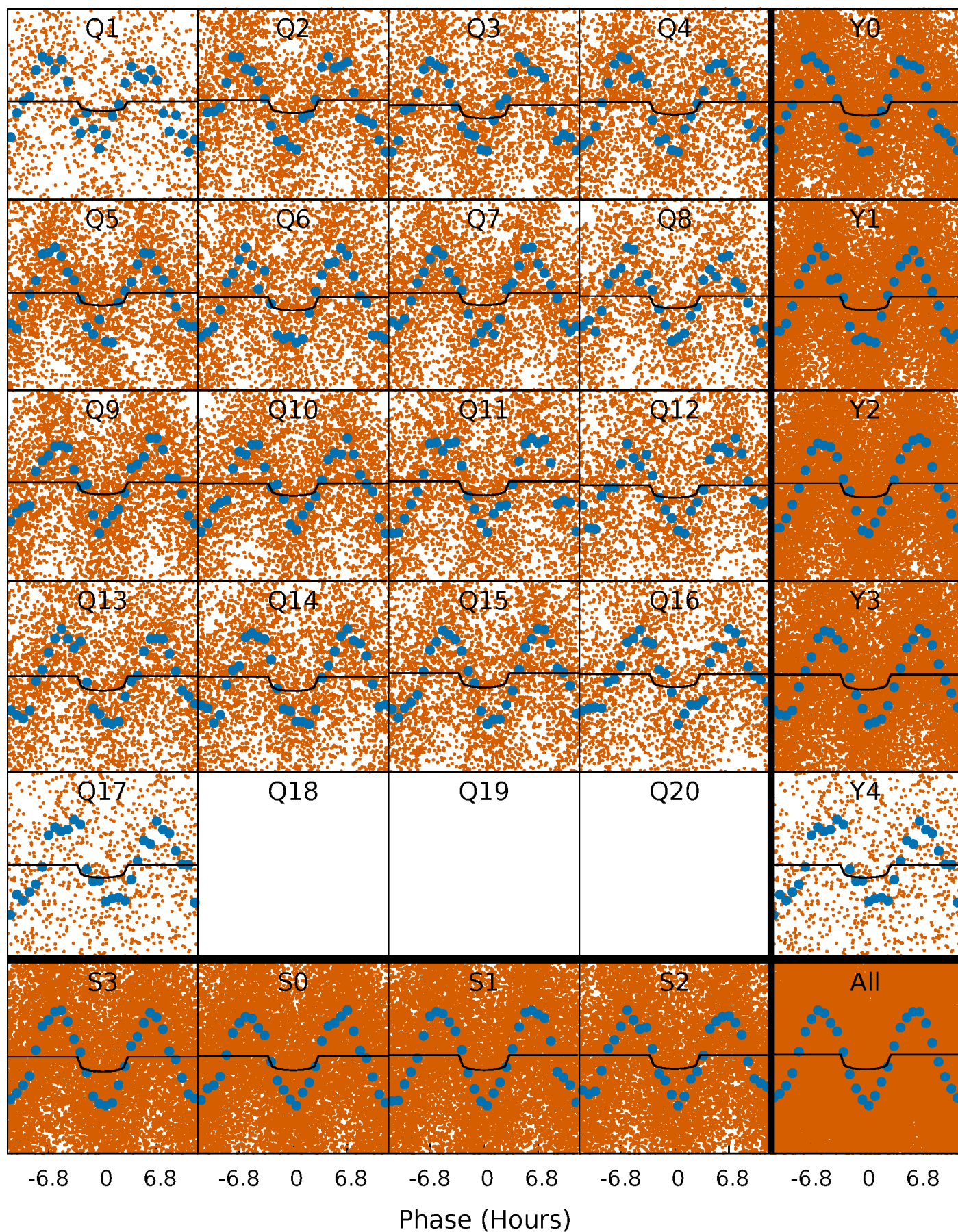
TCE 006922690-01 P= 0.970031 Days  $T_0=131.746654$  (BKJD)





# DV Quarter-Phased Transit Curves

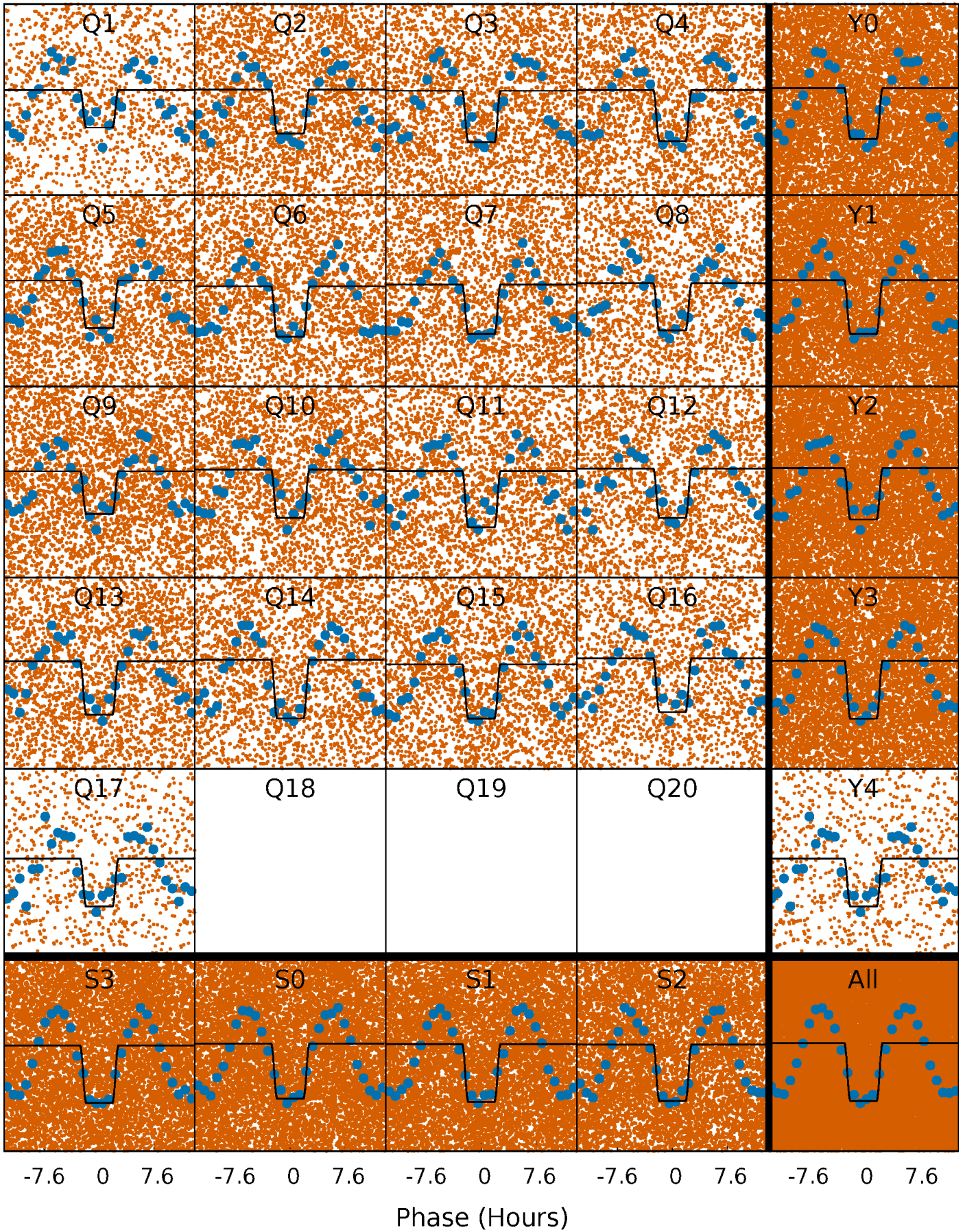
TCE 006922690-01 P= 0.970031 Days  $T_0=131.746654$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

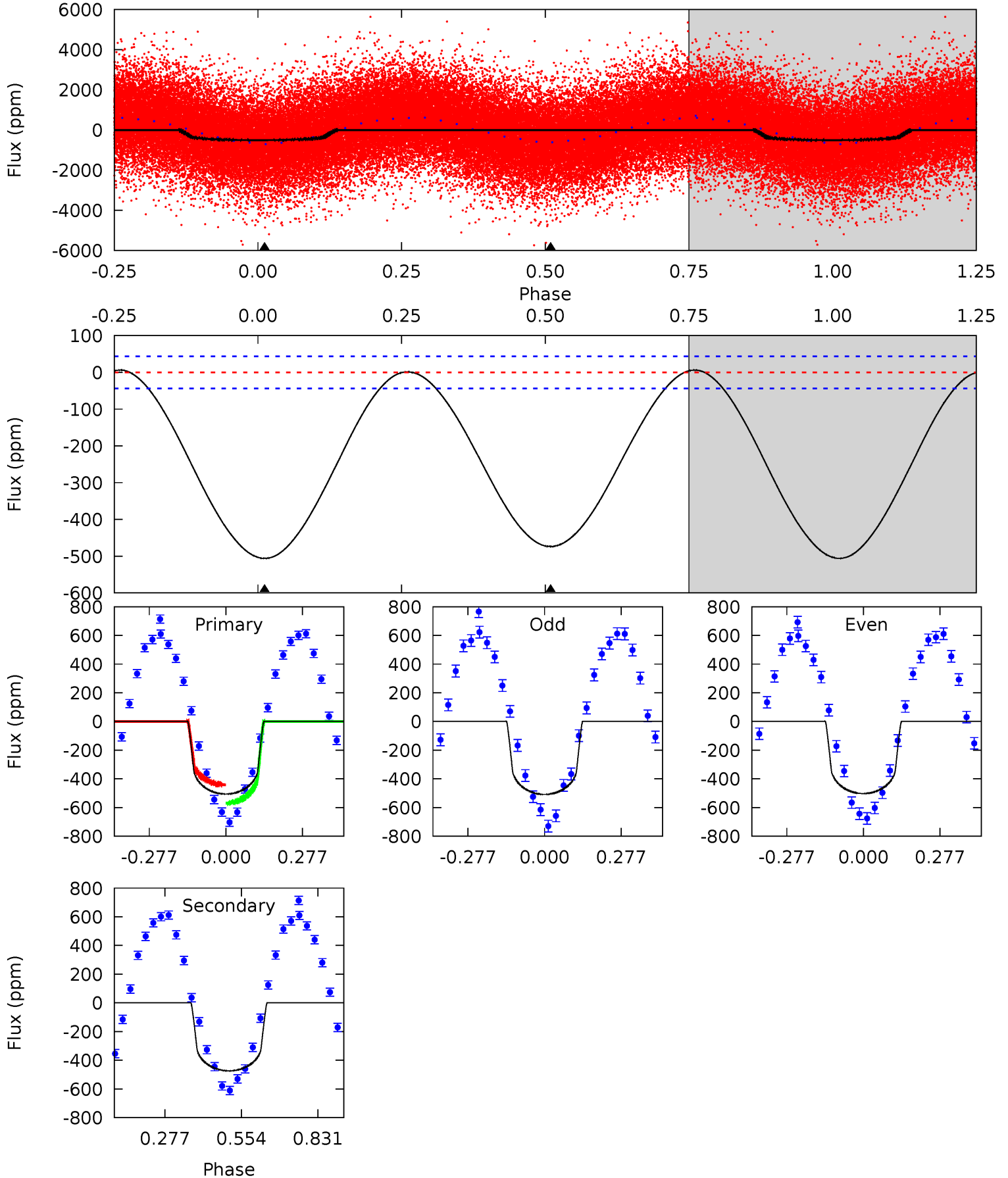
TCE 006922690-01   P= 0.970096 Days    $T_0=131.709042$  (BKJD)



# DV Model-Shift Uniqueness Test

006922690-01, P = 0.970031 Days, E = 130.776623 Days

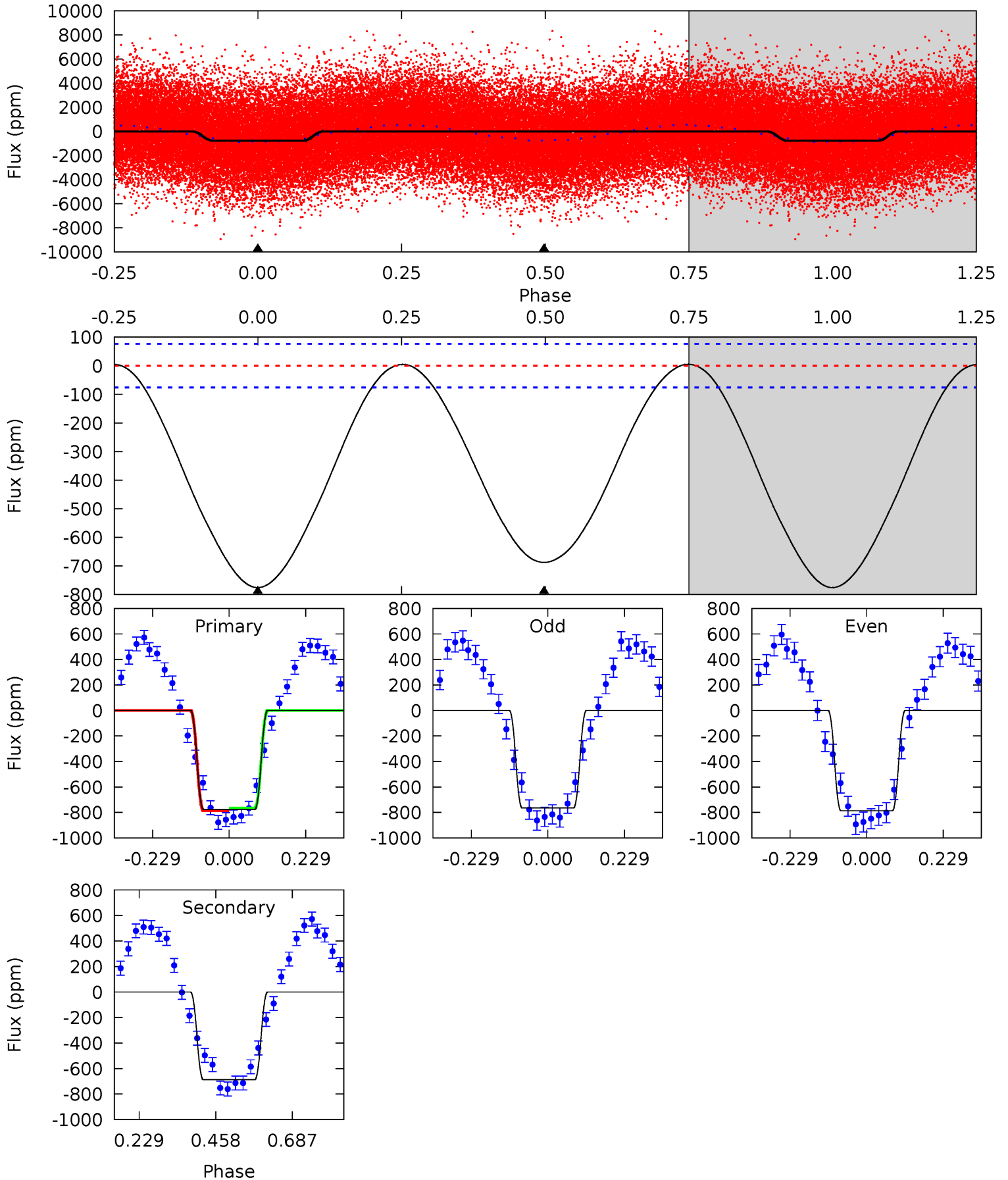
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.4	47.2	0	0	4.35	1.09	0.44	50.4	50.4	47.2	47.2	0.30	1.00	0.01	6.91



# Alt Model-Shift Uniqueness Test

006922690-01, P = 0.970096 Days, E = 130.738946 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.7	39.6	0	0	4.39	1.20	0.33	44.7	44.7	39.6	39.6	0.62	0.96	0.01	0.51





### Stellar Parameters For KIC 006922690

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7542^{+210}_{-341}$	$3.594^{+0.468}_{-0.083}$	$0.210^{+0.150}_{-0.350}$	$3.978^{+0.527}_{-2.107}$	$2.265^{+0.224}_{-0.628}$	$0.051^{+0.271}_{-0.014}$
	+3%/-5%	+13%/-2%	+71%/-167%	+13%/-53%	+10%/-28%	+535%/-28%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006922690-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-474 \pm 10$	$5.43^{+3.73}_{-3.00}$	$5642^{+397}_{-718}$	$9807^{+9280}_{-2830}$	$5.560^{+20.697}_{-3.616}$
Alt.	$-688 \pm 17$	$11.23^{+4.31}_{-4.15}$	$5637^{+401}_{-727}$	$6700^{+1719}_{-1016}$	$1.884^{+2.740}_{-0.887}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming A=0.3)

$A_{obs}$  = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

## DV Centroid Data

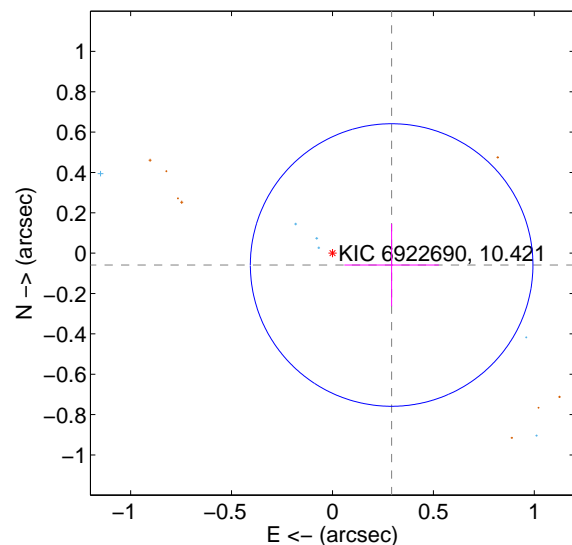
Supplemental centroid analysis for 006922690-01. **Kepler magnitude: 10.42.** Transit SNR 14.06

There are 6 quarters with good PRF difference image offsets

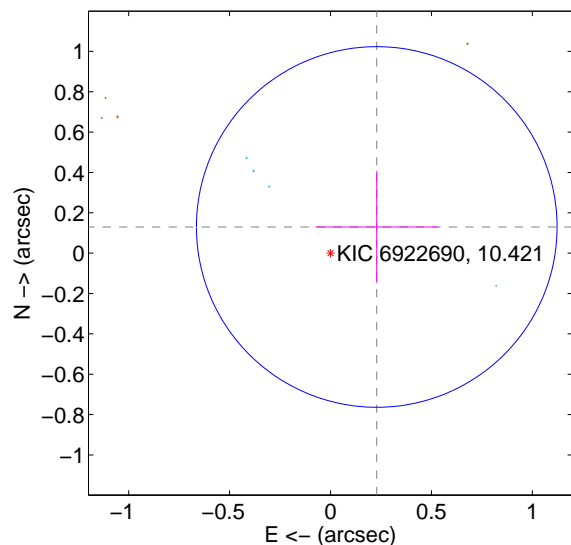
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.299 \pm 0.233$	1.28	$-0.293 \pm 0.234$	$-0.059 \pm 0.204$
PRF-fit source offset from KIC position	$0.263 \pm 0.298$	0.88	$-0.229 \pm 0.304$	$0.130 \pm 0.277$
photometric centroid source offset	<b><math>0.36 \pm 0.07</math></b>	<b>5.31</b>	$0.14 \pm 0.11$	$0.34 \pm 0.06$

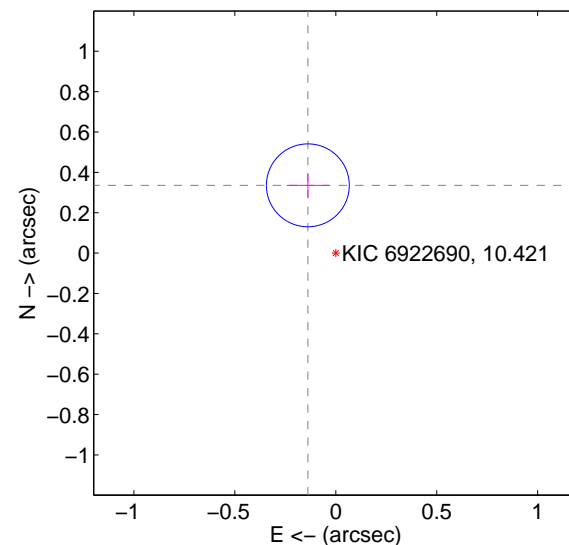
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

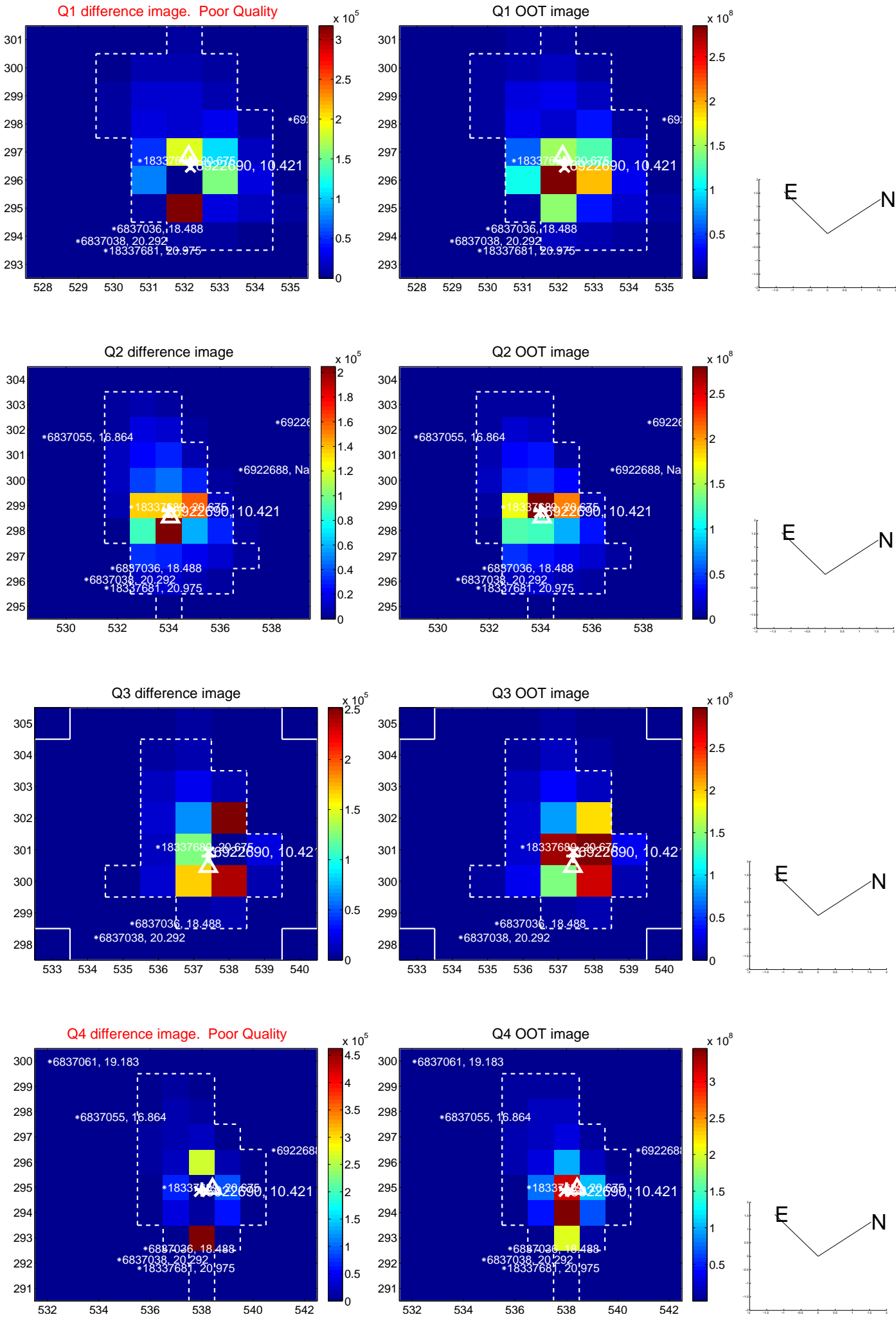


offset from photometric centroids

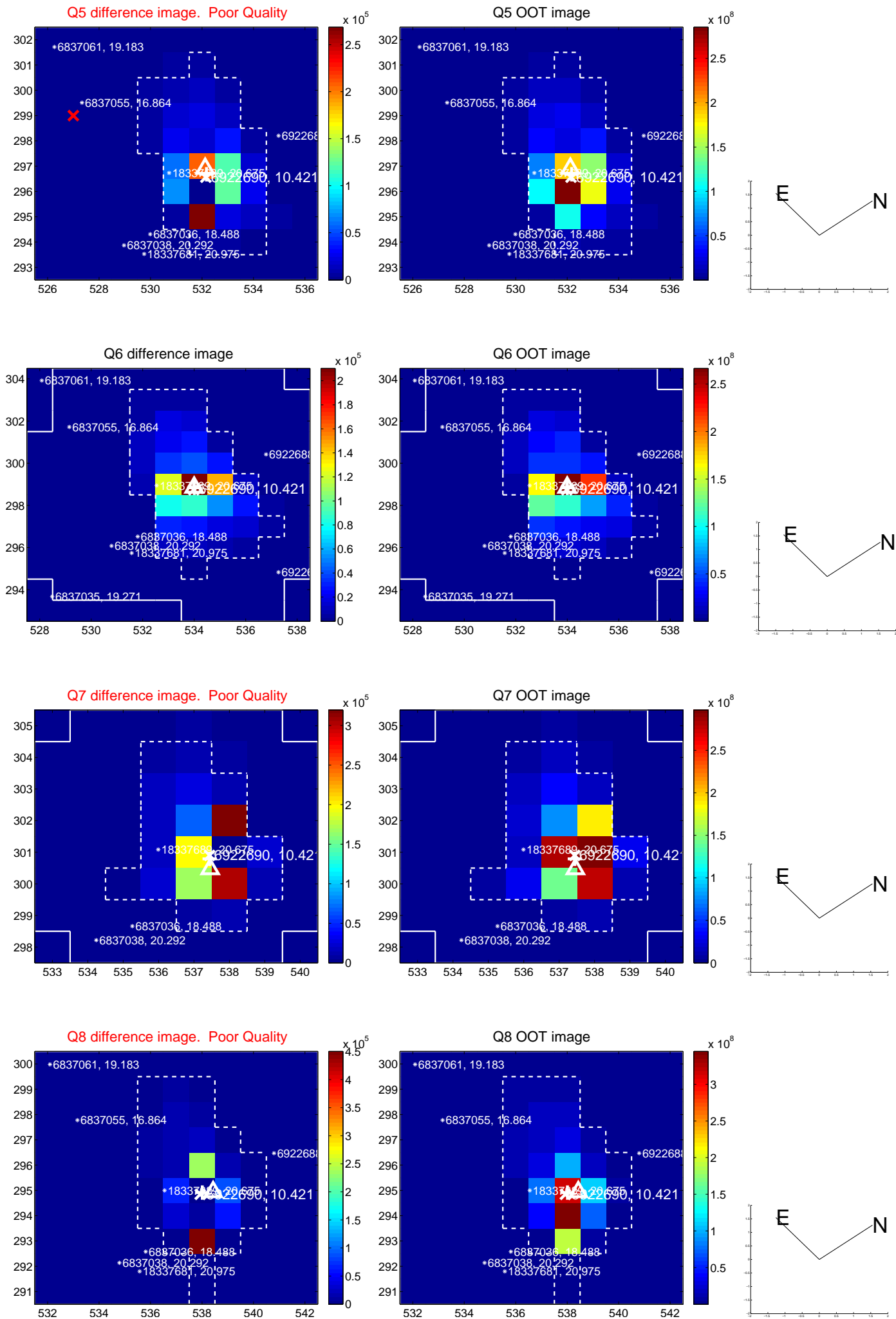


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

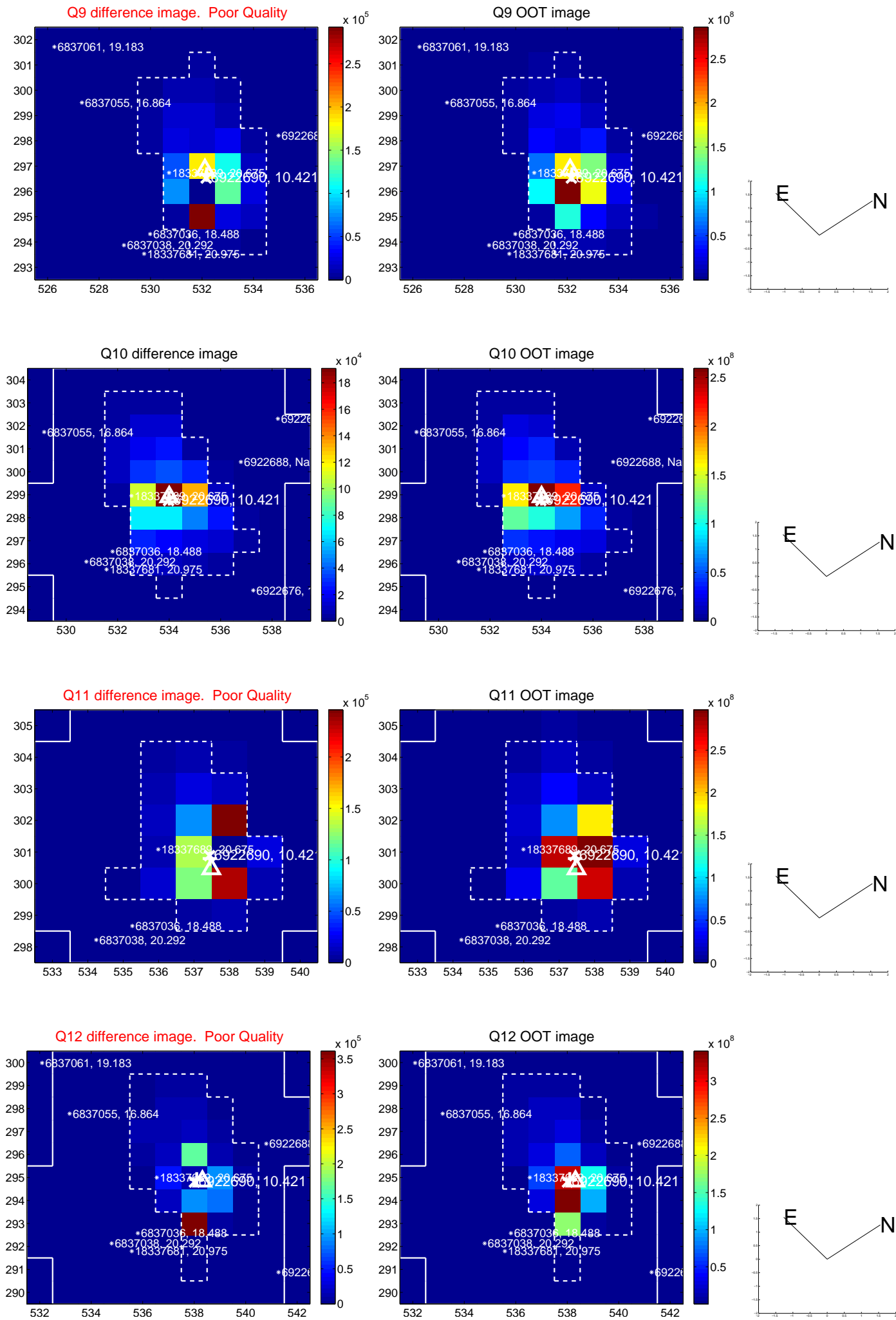


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

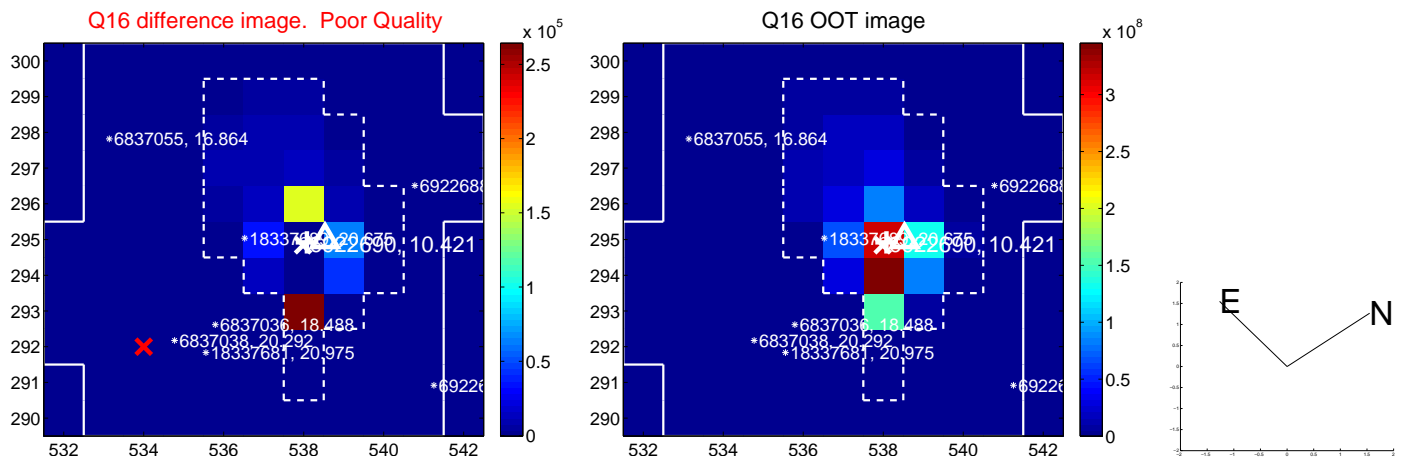
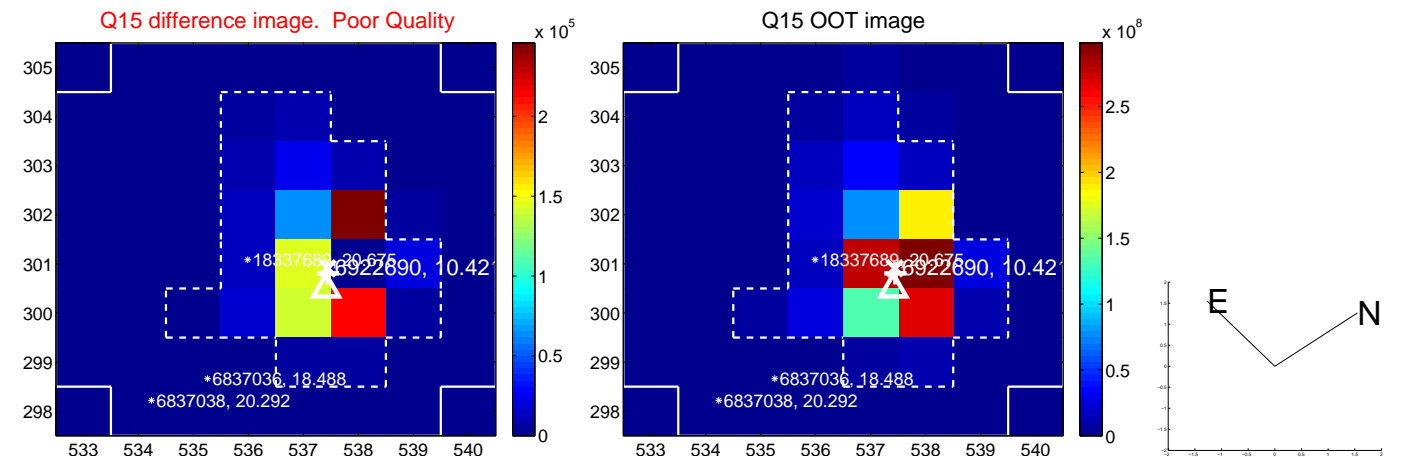
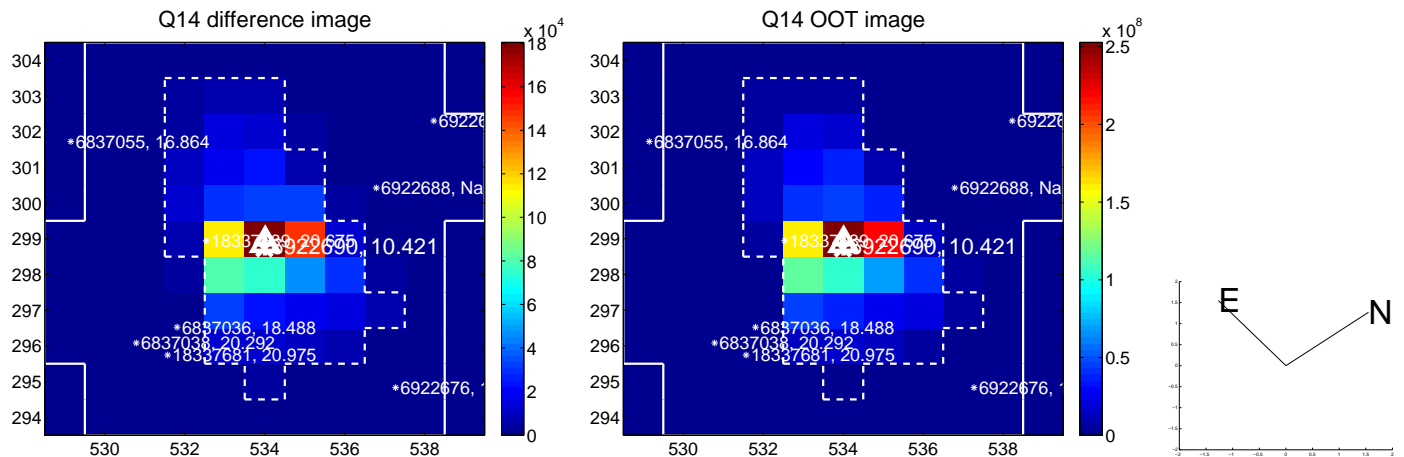
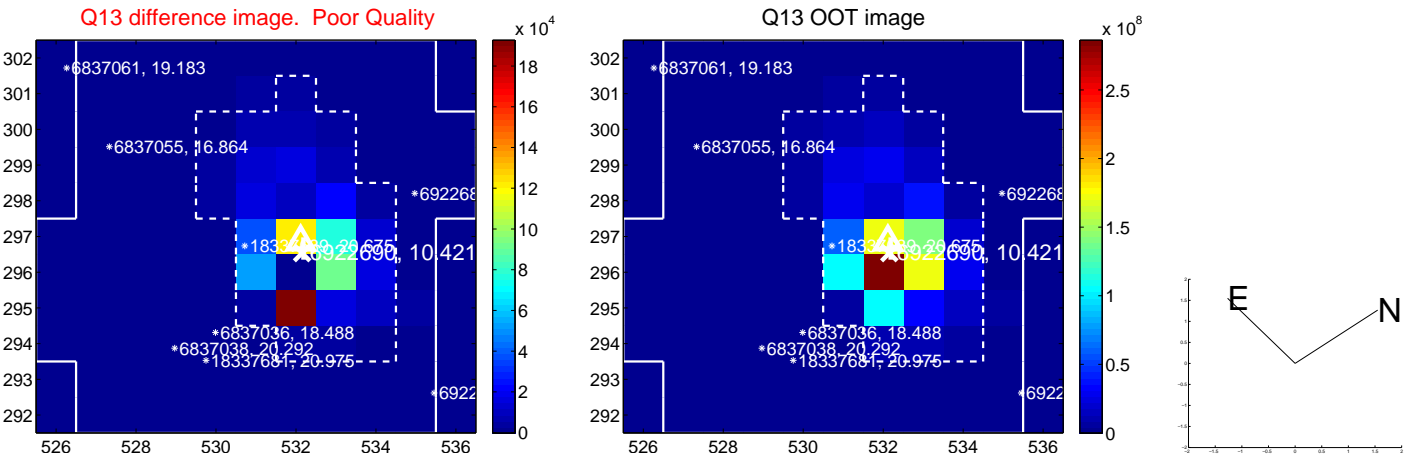




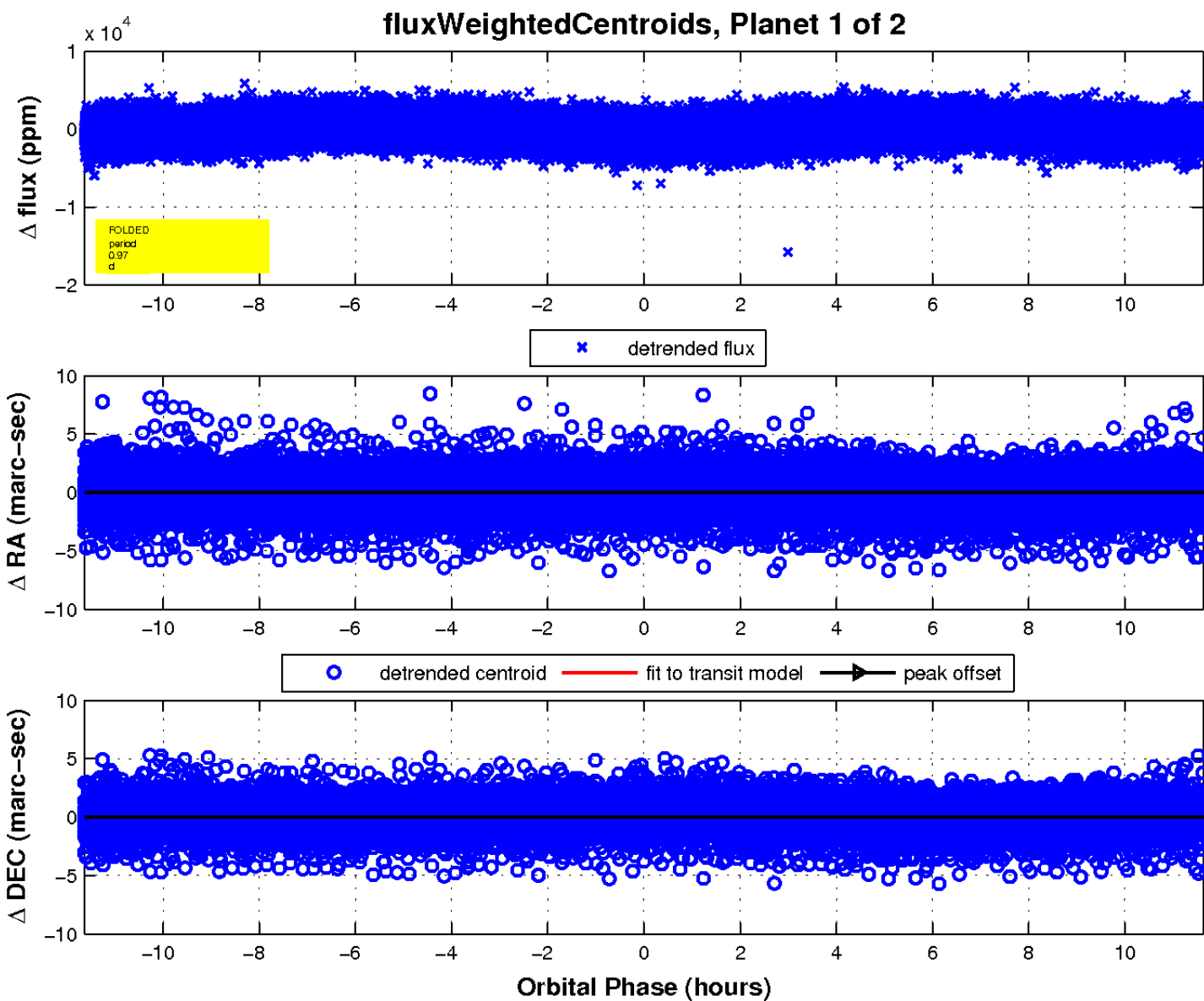
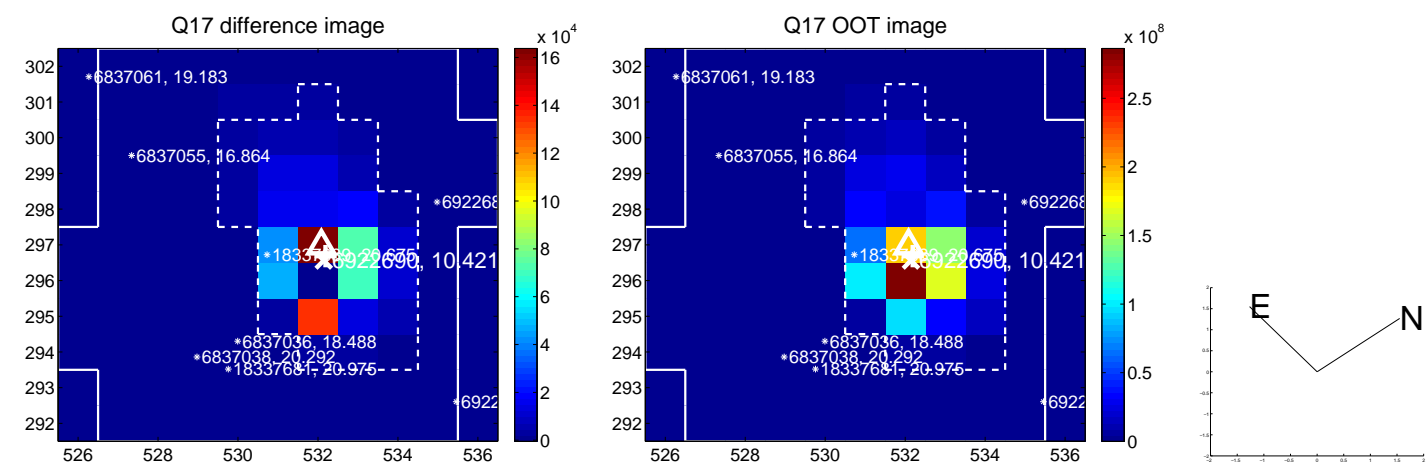
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



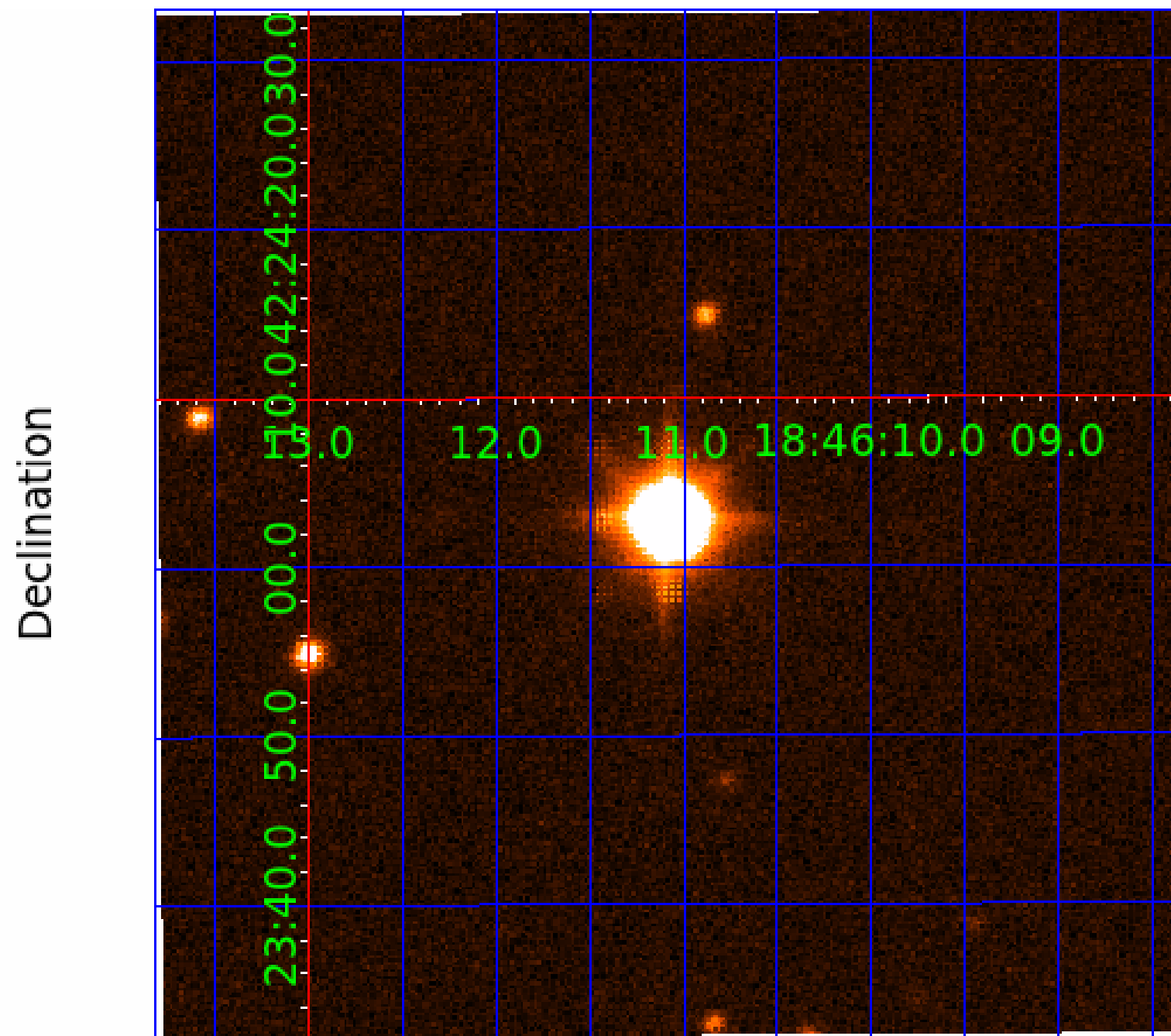
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image





# KIC 006922690

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006922690-01	OBS	No	0.970031	131.746654	206.7	5.991	14.8	14.1	3.98	7542	5.86	72260.84
006922690-02	OBS	No	0.970057	132.226200	230.6	2.756	17.2	18.5	3.98	7542	6.26	72258.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006922690-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
006922690-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

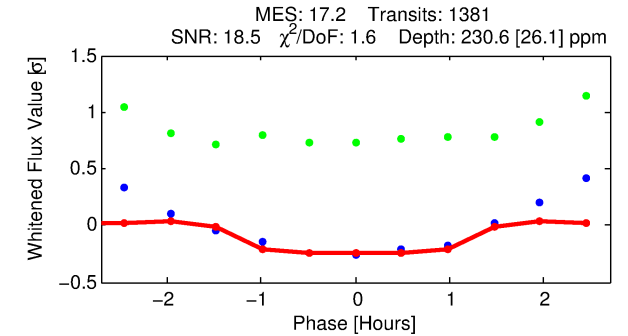
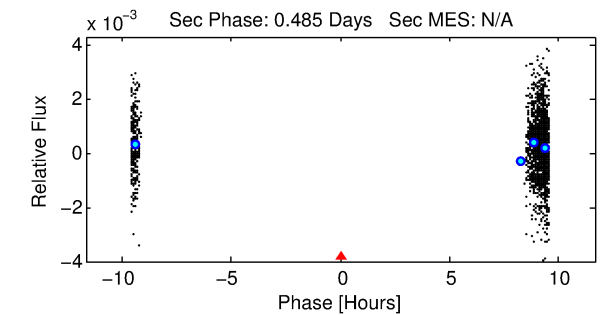
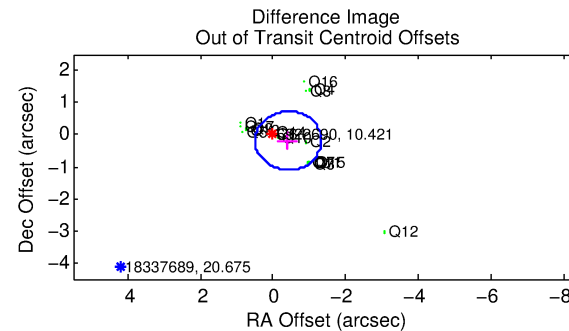
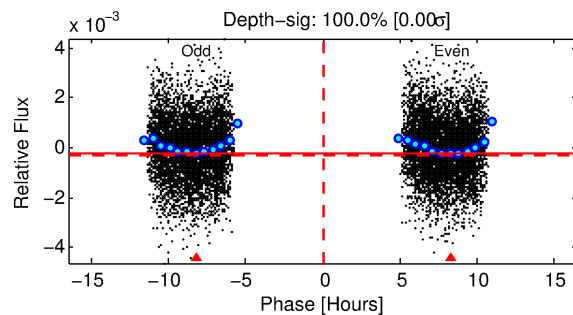
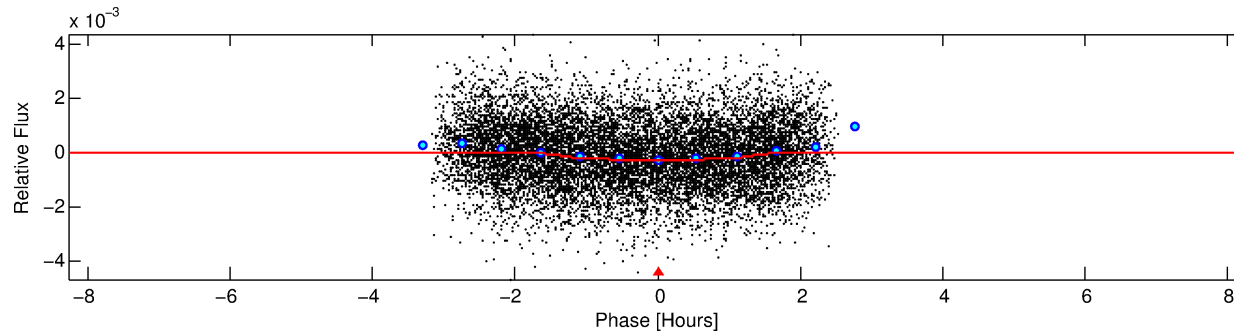
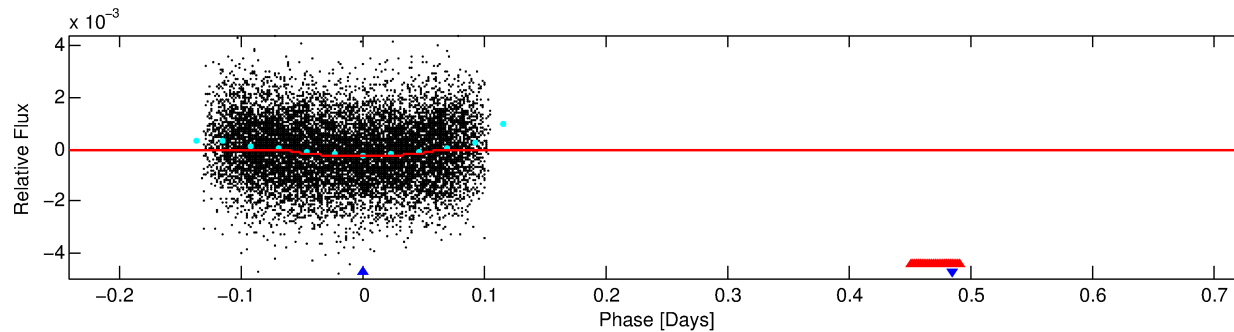
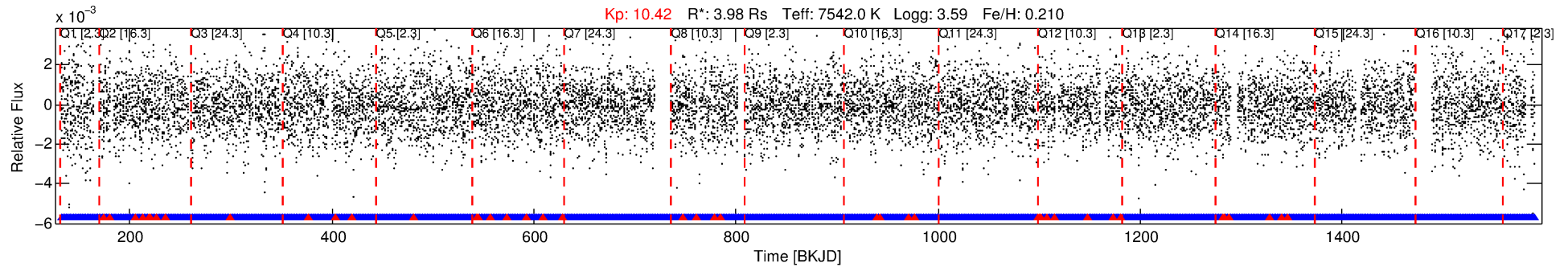
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006922690-02

No Significant Match Found

# DV One-Page Summary

KIC: 6922690 Candidate: 2 of 2 Period: 0.970 d



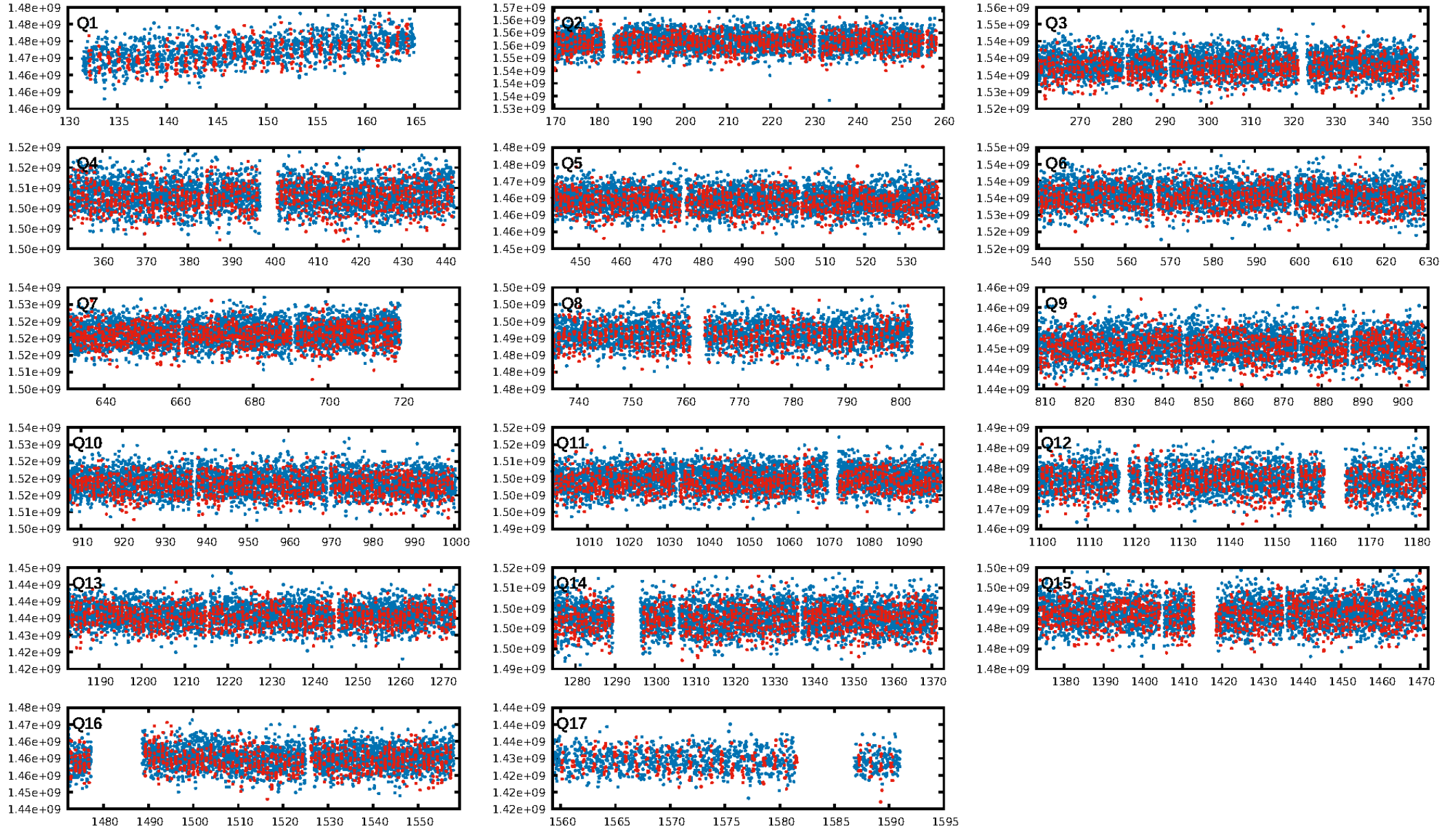
## DV Fit Results:

Period = 0.97006 [0.00001] d  
Epoch = 132.2262 [0.0024] BKJD  
Rp/R\* = 0.0144 [0.0088]  
a/R\* = 2.48 [7.13]  
b = 0.50 [5.19]  
Seff = 72258.27 [59300.31]  
Teq = 4181 [858] K  
Rp = 6.26 [5.05] Re  
a = 0.0252 [0.0127] AU

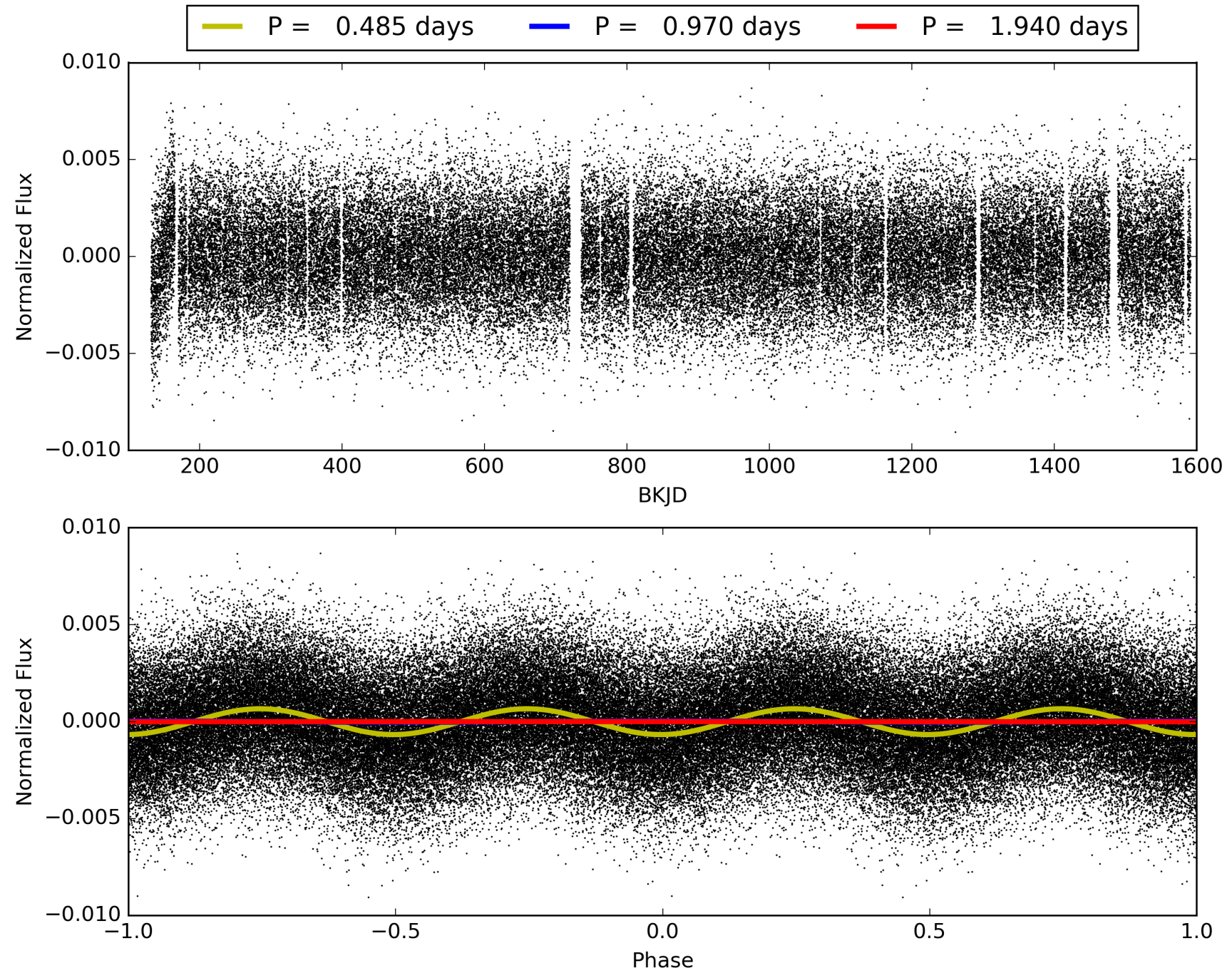
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.97 [1278/1320]  
GhostDiagnostic-chr: 1.164  
Centroid-sig: 52.1%  
Centroid-so: 0.422 arcsec [4.90σ]  
OotOffset-rm: 0.457 arcsec [1.50σ]  
KicOffset-rm: 0.506 arcsec [1.52σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.47 [8/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006922690-02, PDC Light Curves



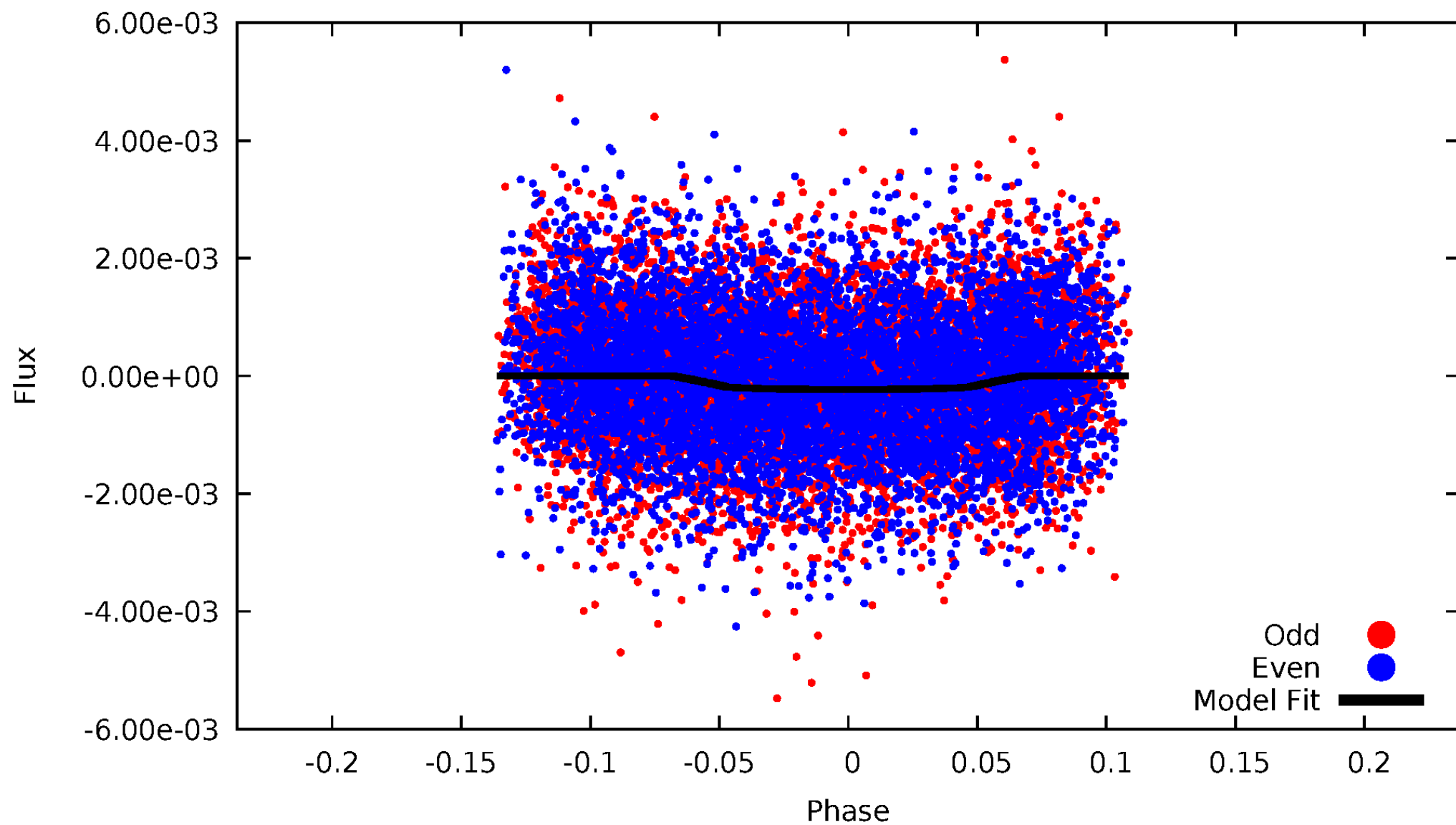
TCE 006922690-02





DV Odd/Even

TCE 006922690-02



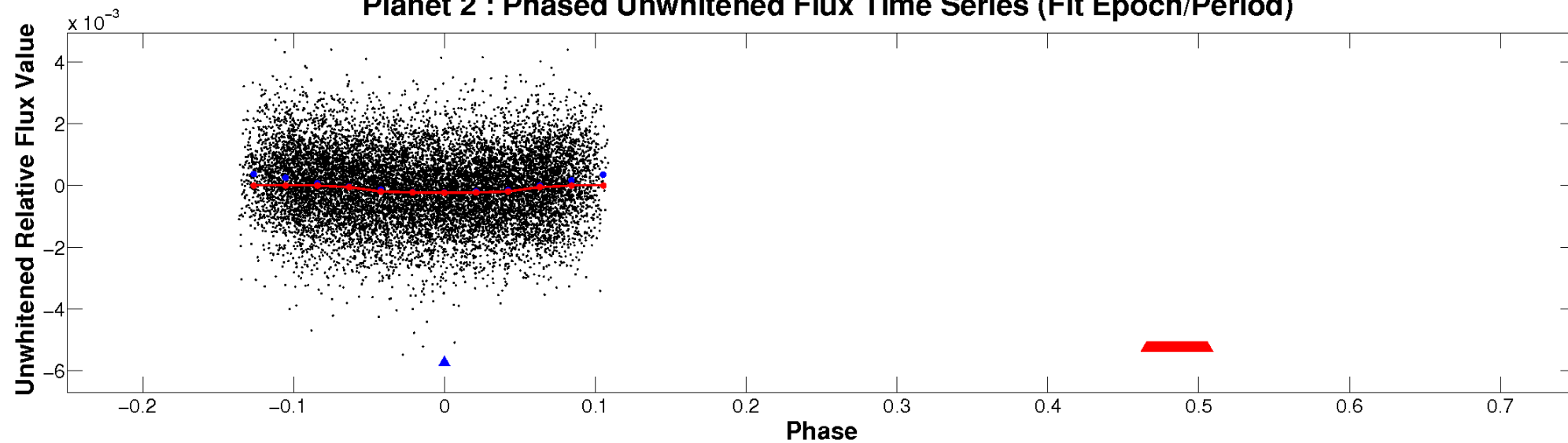


ALT Odd/Even

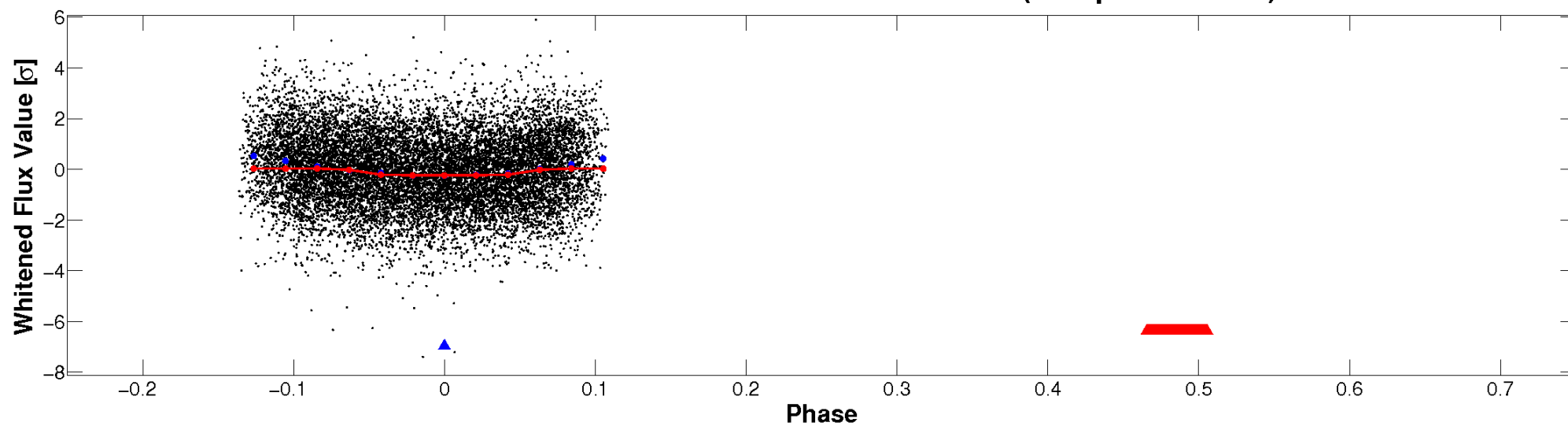
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

## Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

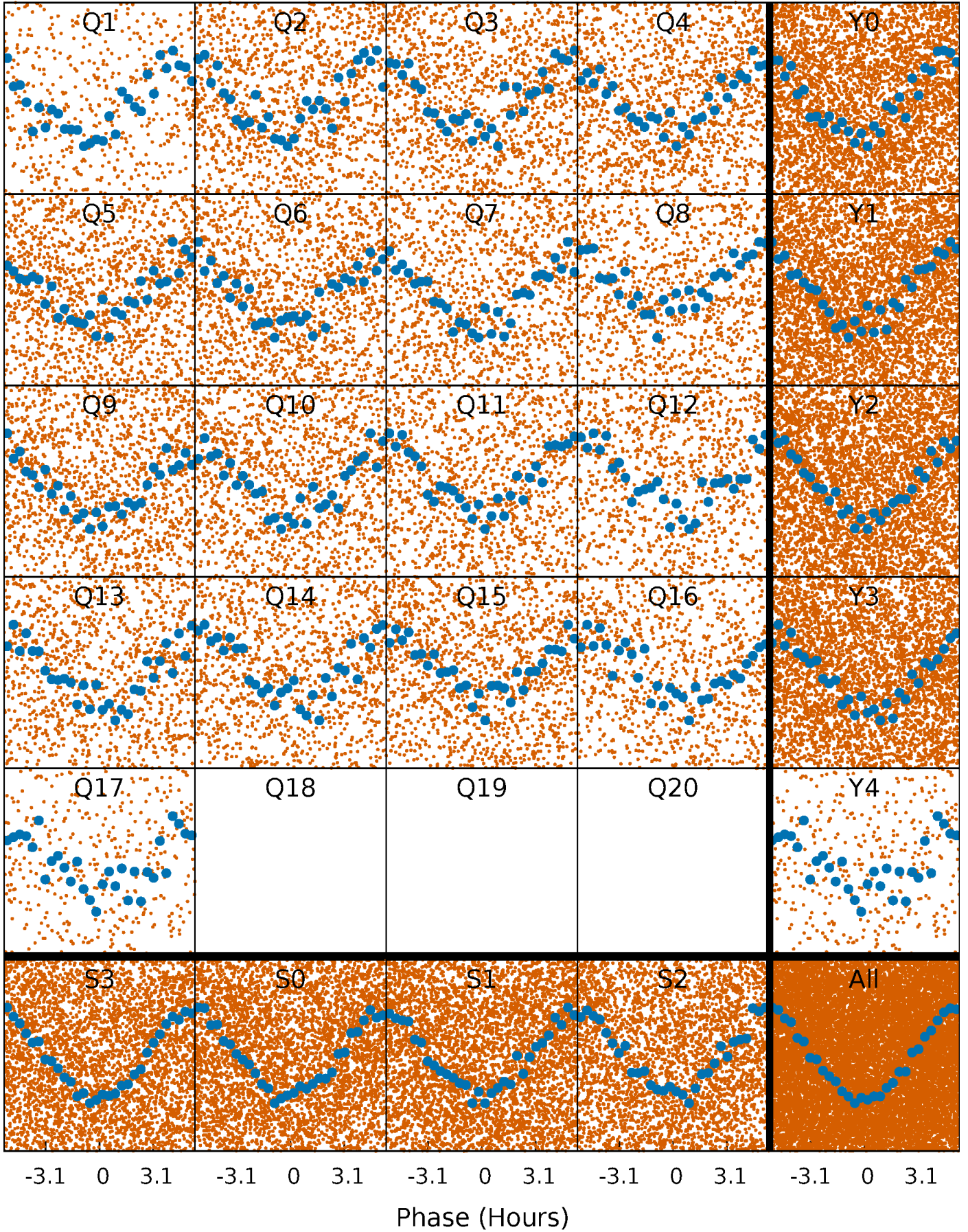


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

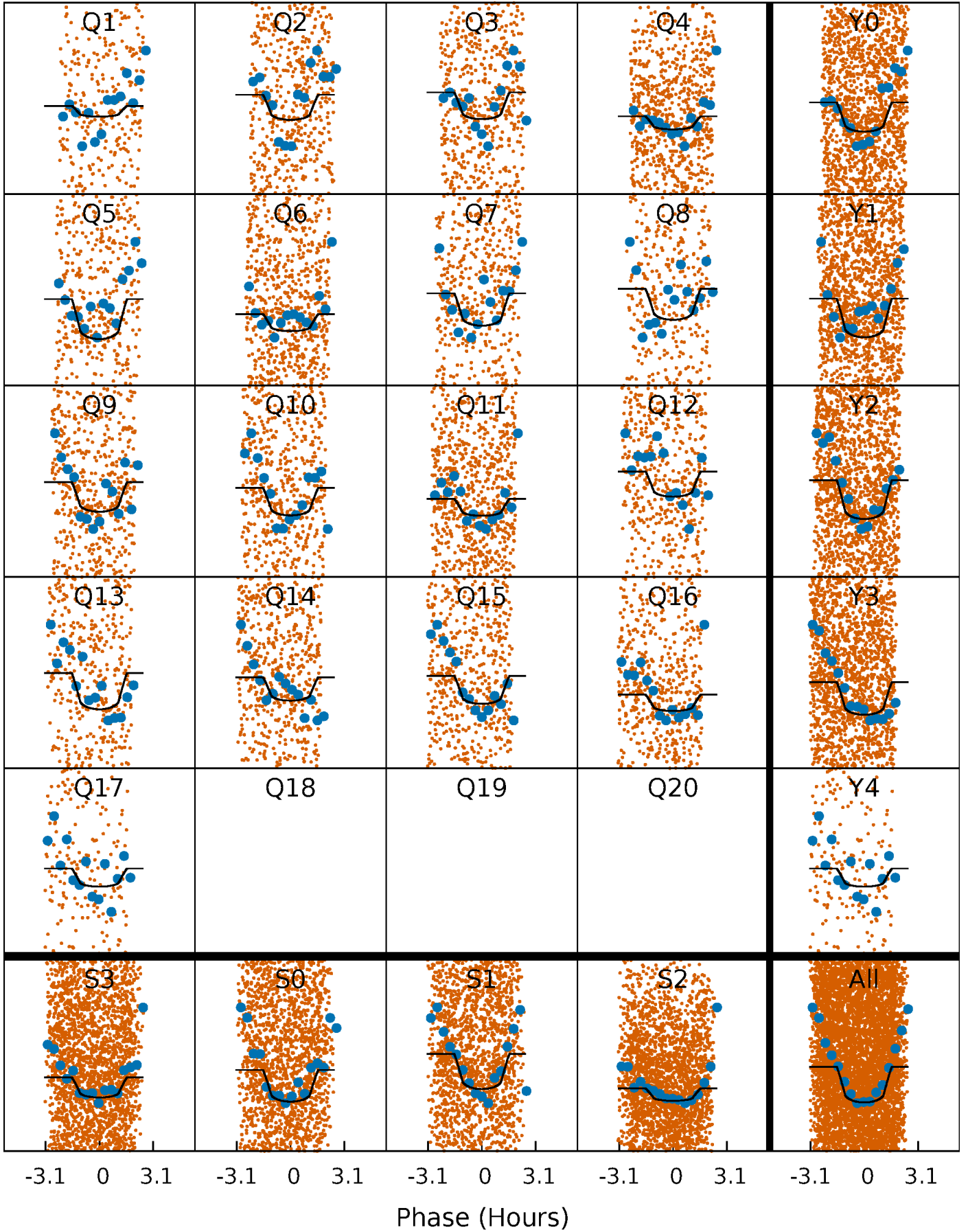
TCE 006922690-02   P= 0.970057 Days    $T_0=132.226200$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 006922690-02     $P = 0.970057$  Days     $T_0 = 132.226200$  (BKJD)

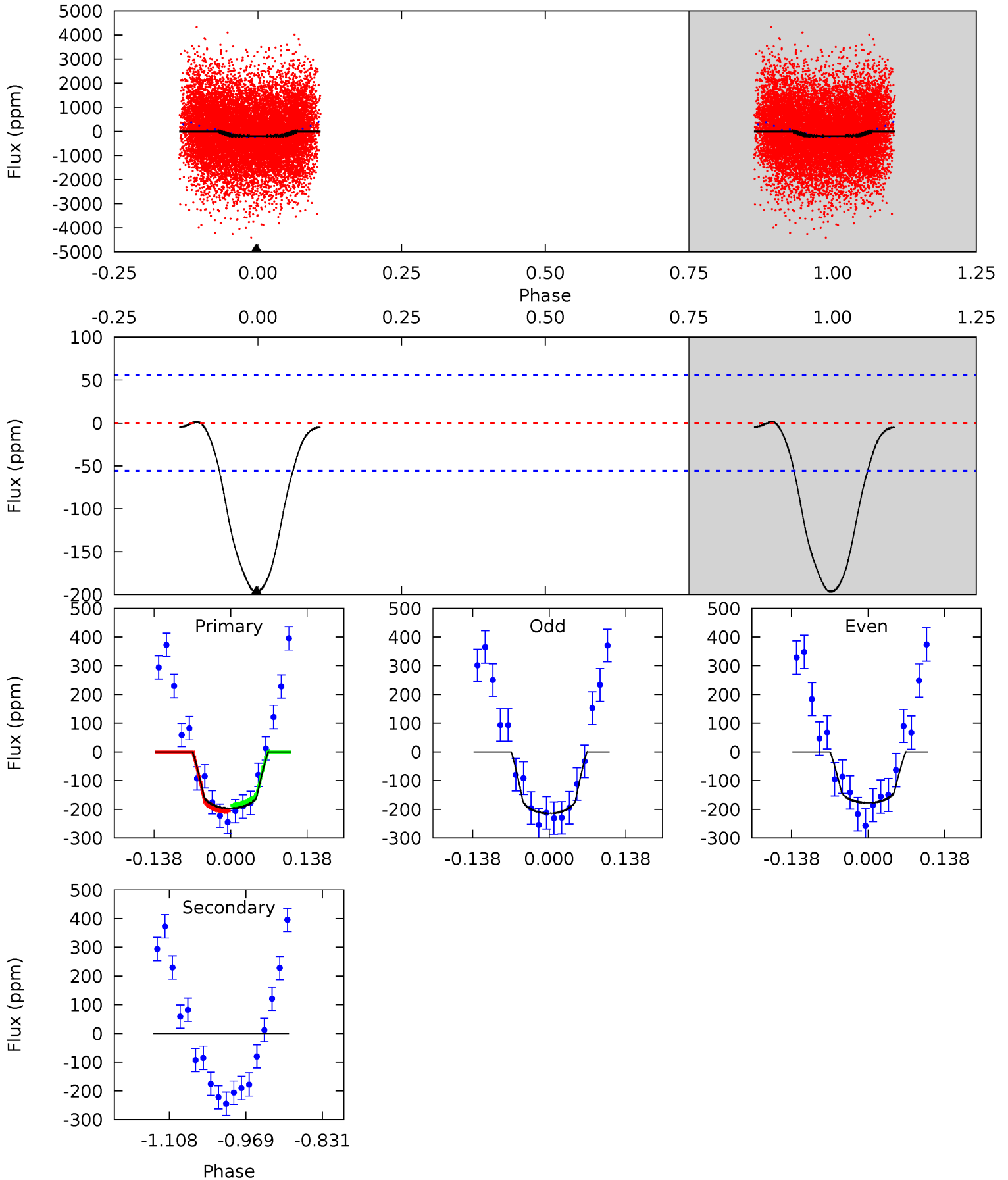


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

006922690-02, P = 0.970057 Days, E = 131.256143 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	0	0	0	4.50	1.48	0.21	15.8	15.8	0	0	1.50	0.98	0.01	0.80



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 006922690

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7542^{+210}_{-341}$	$3.594^{+0.468}_{-0.083}$	$0.210^{+0.150}_{-0.350}$	$3.978^{+0.527}_{-2.107}$	$2.265^{+0.224}_{-0.628}$	$0.051^{+0.271}_{-0.014}$
	+3%/-5%	+13%/-2%	+71%/-167%	+13%/-53%	+10%/-28%	+535%/-28%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006922690-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 12$	$5.50^{+3.89}_{-3.05}$	$5614^{+410}_{-641}$	$-4653^{+1193}_{-537}$	$0.000^{+0.222}_{-0.173}$
Alt.	N/A	N/A	N/A	N/A	N/A

$T_{max}$  = Theoretical Maximum Planetary Temperature  
 $T_{obs}$  = Observed Planetary Temperature (Assuming A=0.3)  
 $A_{obs}$  = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$



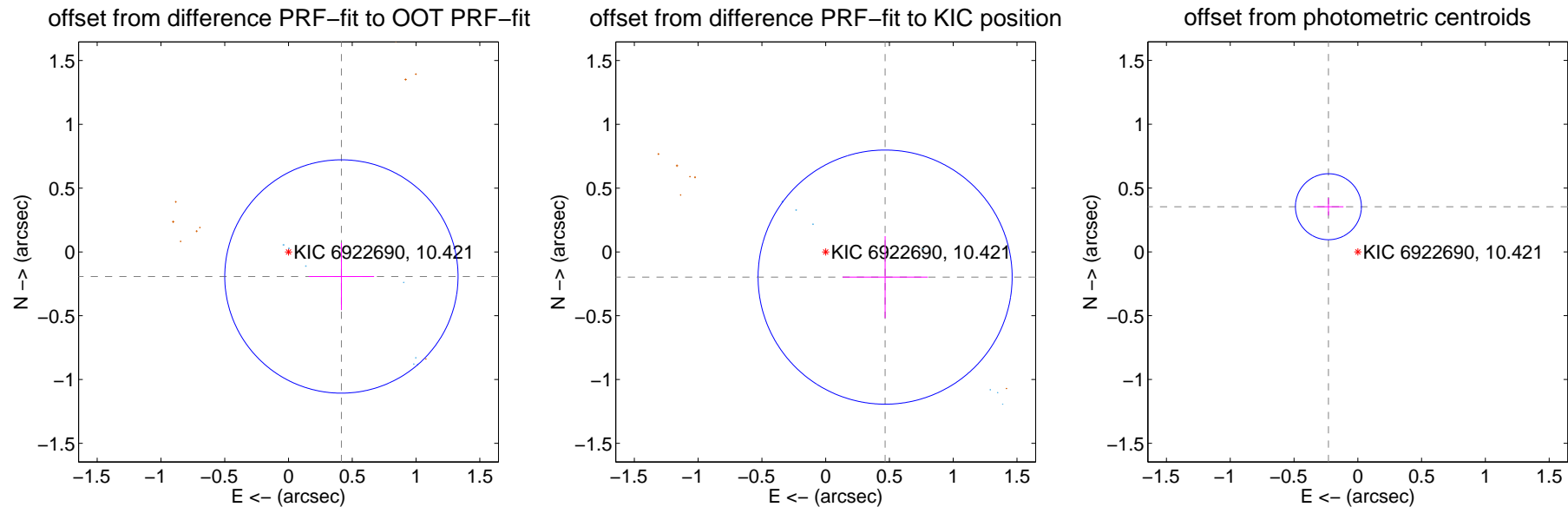
## DV Centroid Data

Supplemental centroid analysis for 006922690-02. **Kepler magnitude: 10.42.** Transit SNR 18.49

There are 8 quarters with good PRF difference image offsets

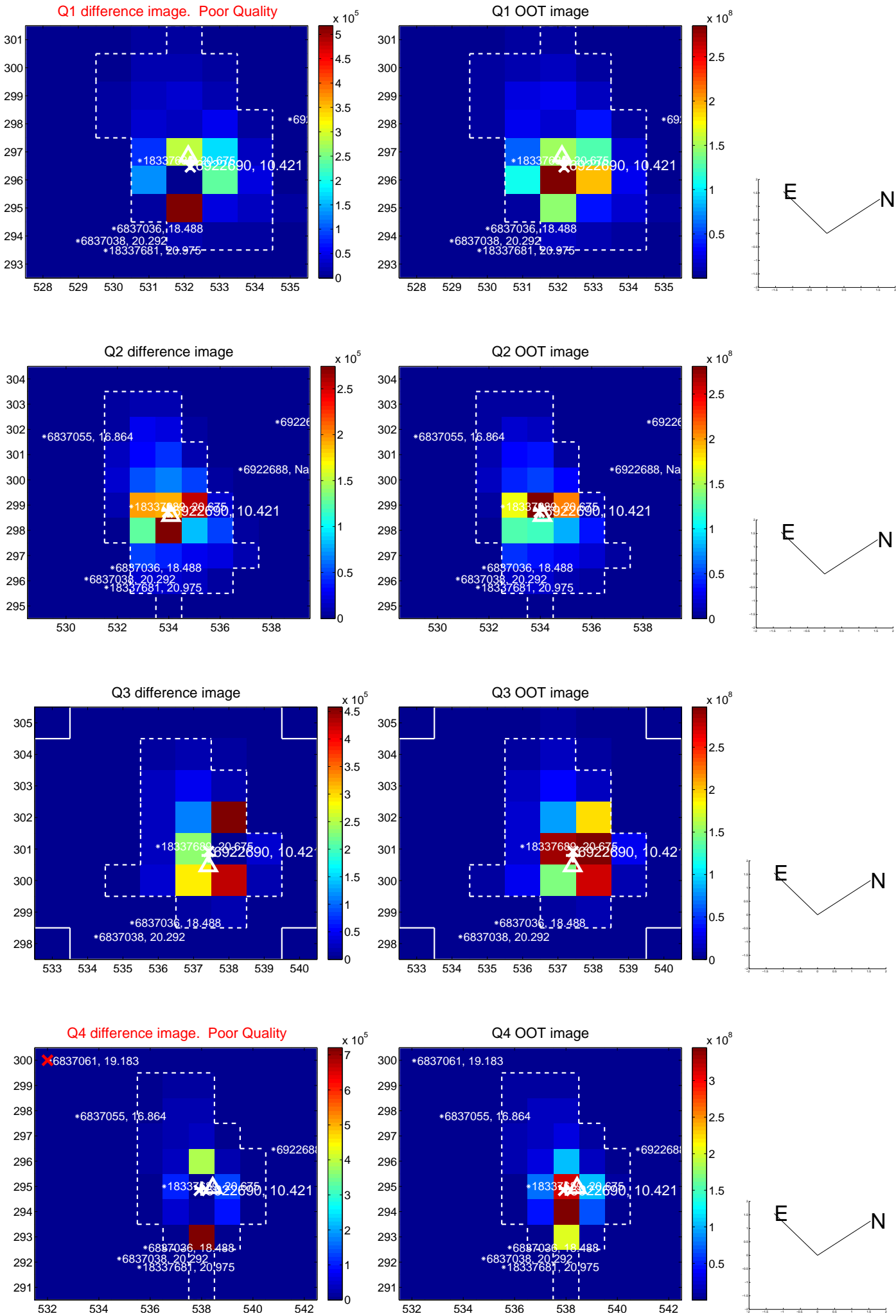
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.457 \pm 0.305$	1.50	$-0.415 \pm 0.256$	$-0.193 \pm 0.264$
PRF-fit source offset from KIC position	$0.506 \pm 0.332$	1.52	$-0.466 \pm 0.334$	$-0.197 \pm 0.321$
photometric centroid source offset	$0.42 \pm 0.09$	4.90	$0.23 \pm 0.12$	$0.35 \pm 0.07$

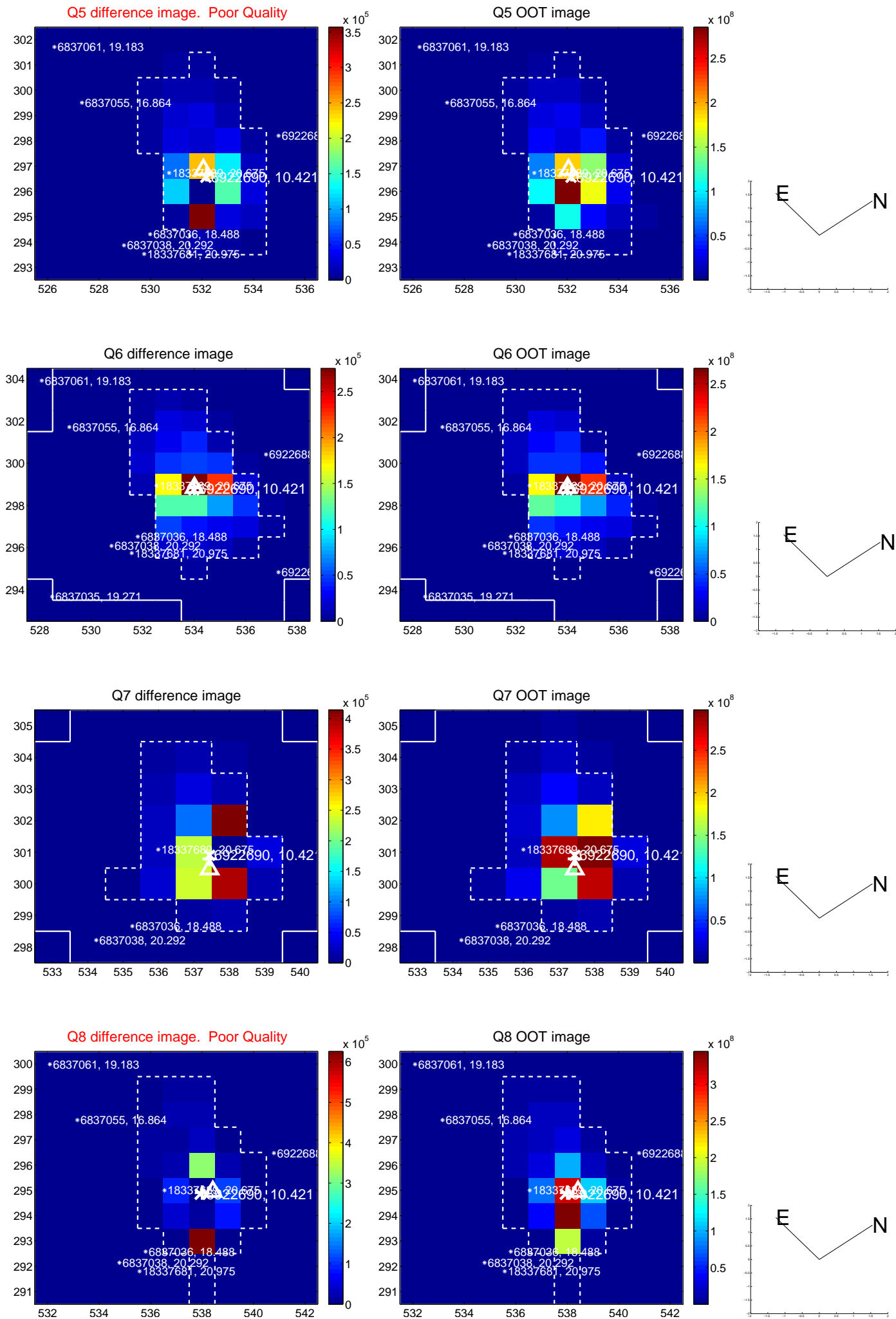


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

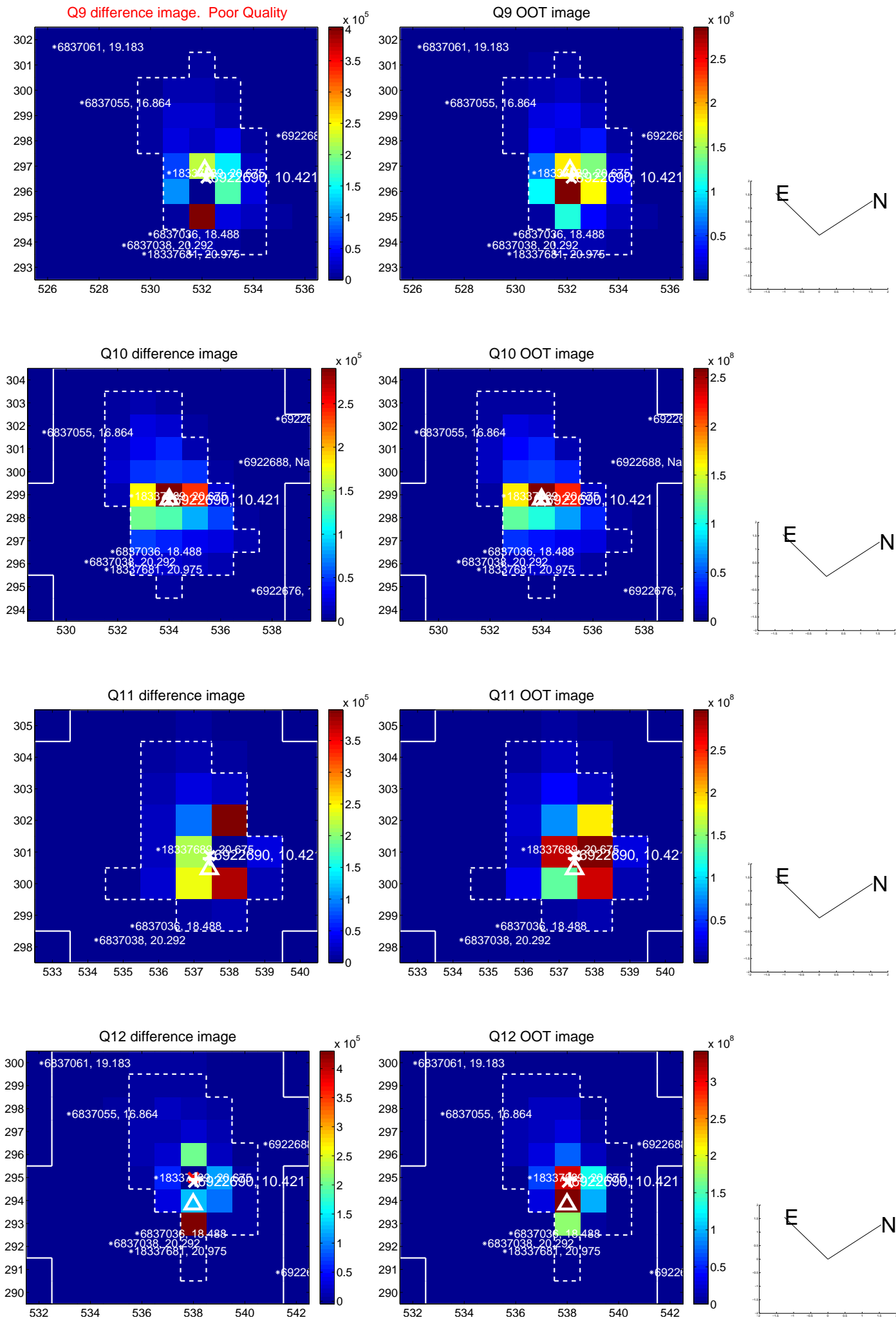
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



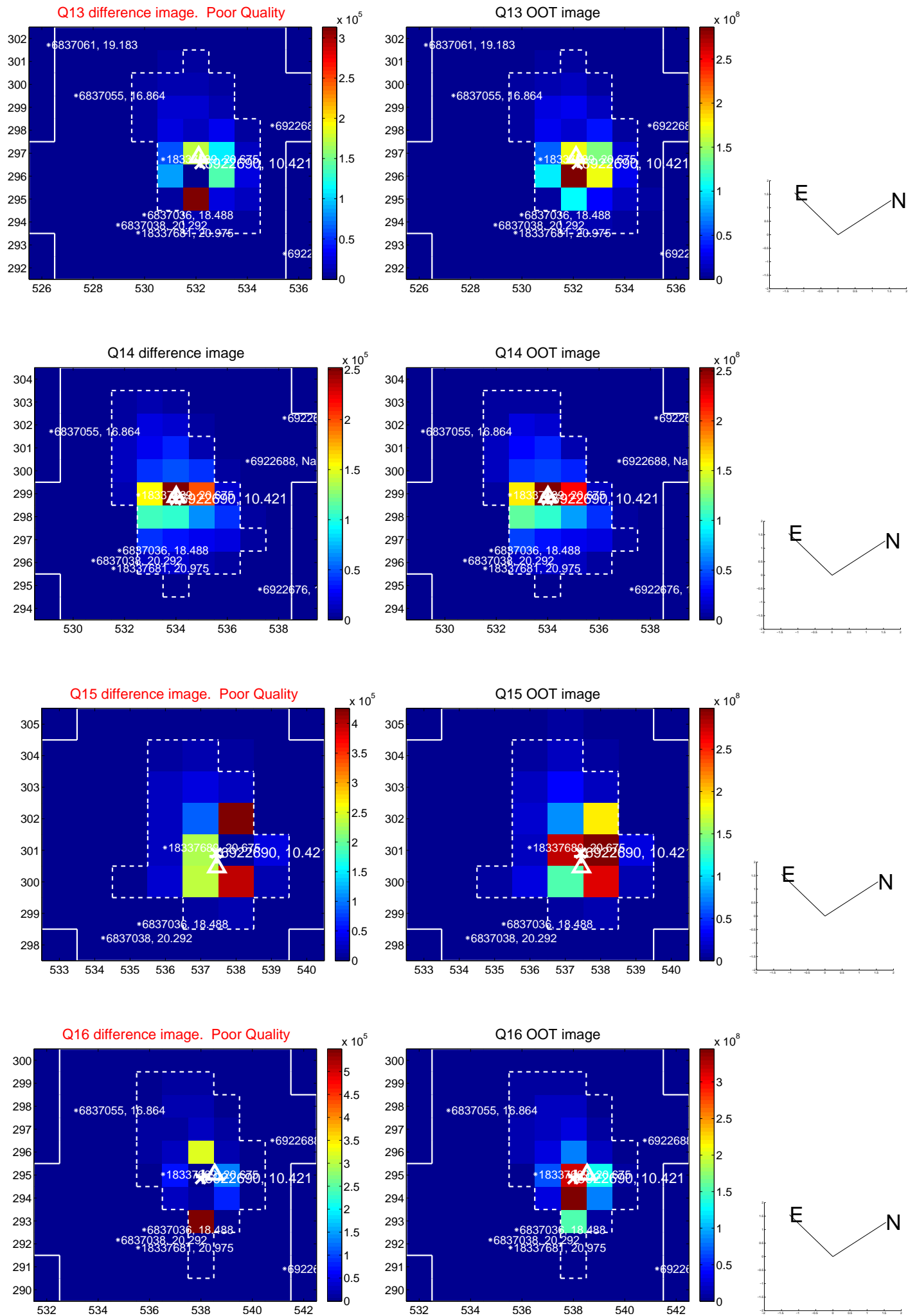
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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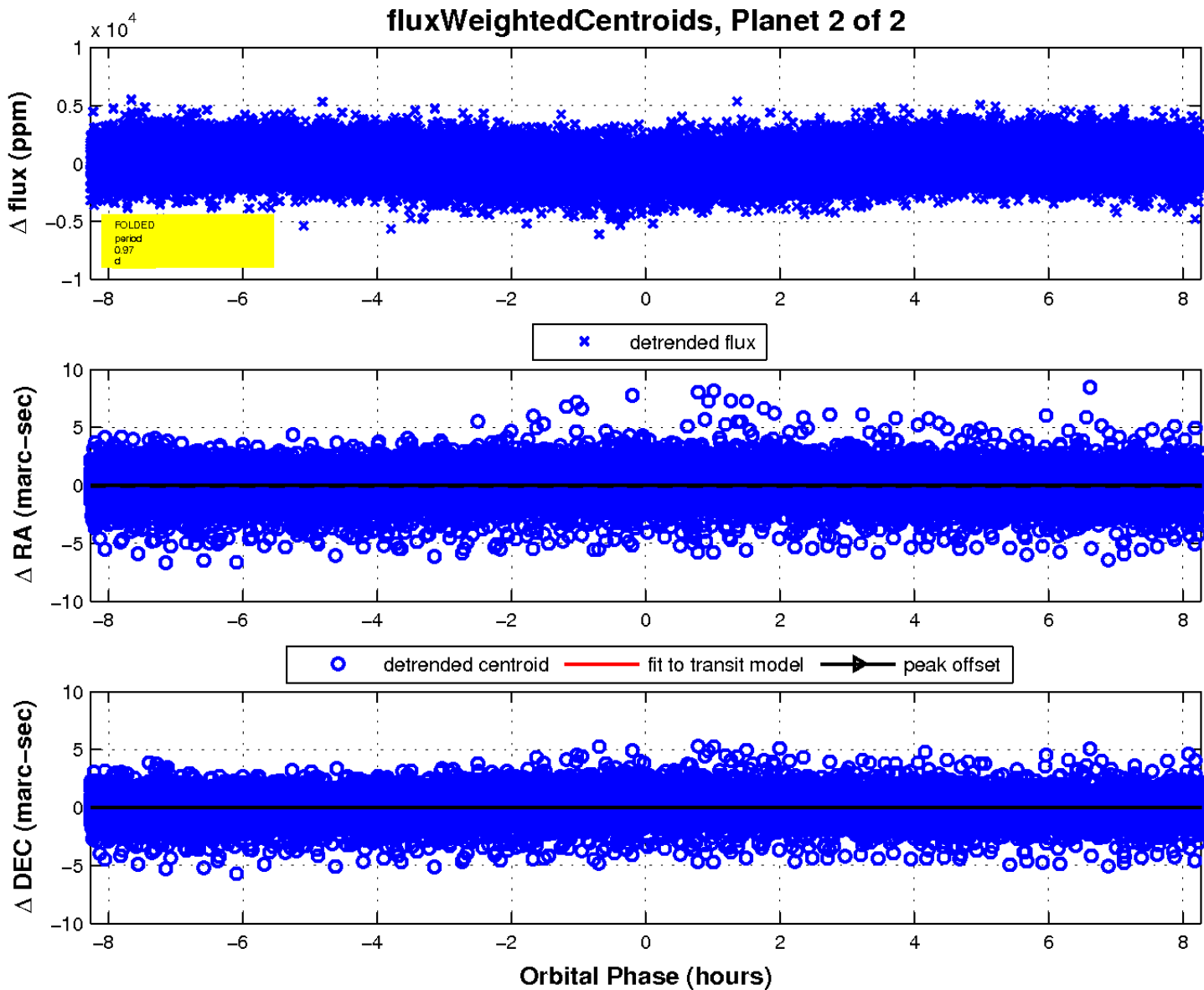
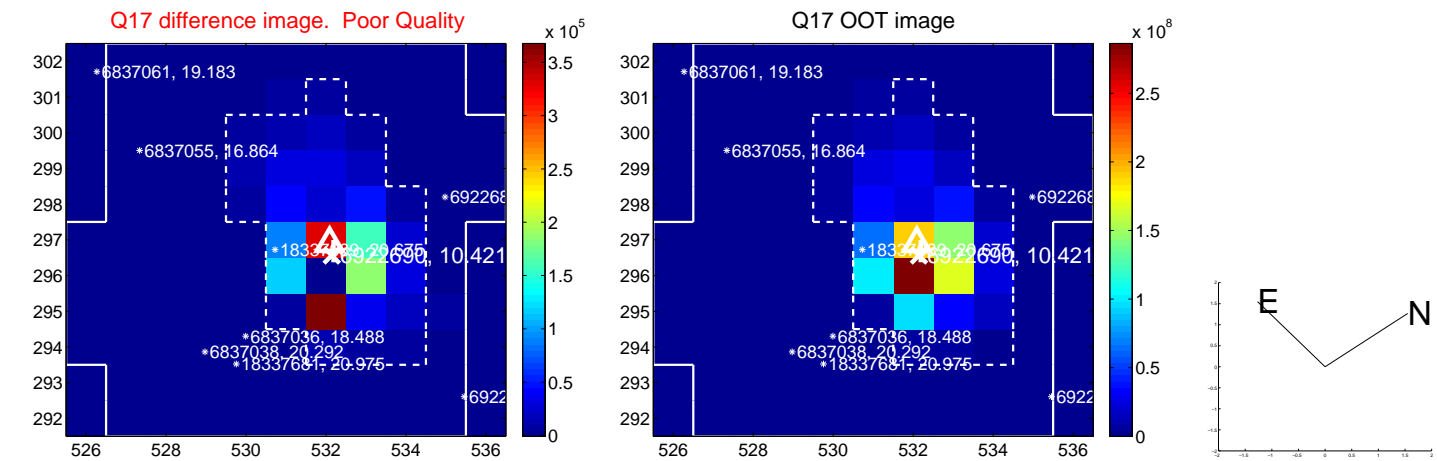


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination

