

# KIC 011456279

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011456279-01	OBS	No	0.648314	132.130092	20.7	1.847	9.9	10.4	1.59	7329	0.84	22679.00
011456279-02	OBS	No	1.387590	131.749463	19.2	3.541	7.8	6.6	1.59	7329	0.80	8222.23
011456279-03	OBS	No	255.953440	308.543318	259.5	4.498	8.2	7.7	1.59	7329	3.00	7.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011456279-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
011456279-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
011456279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

**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 011456279-01

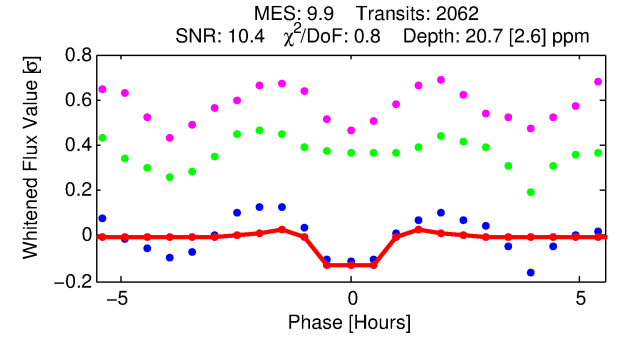
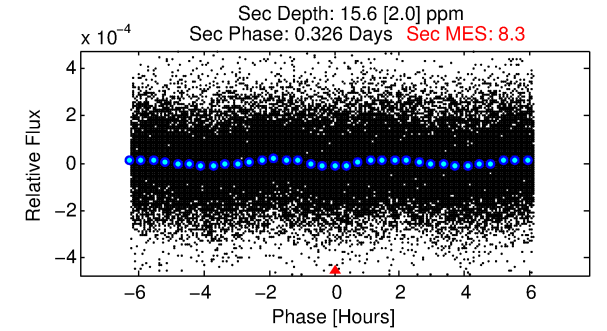
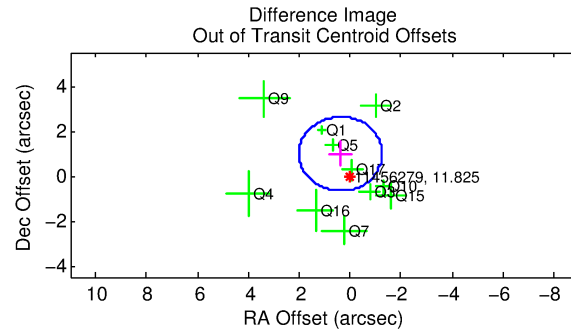
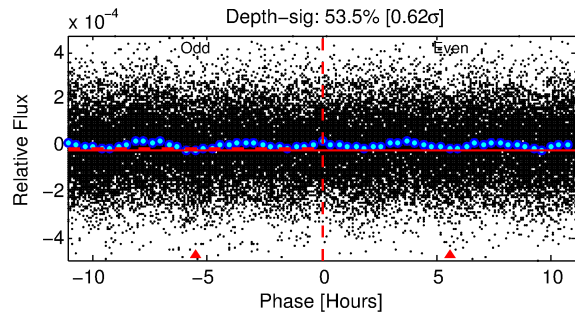
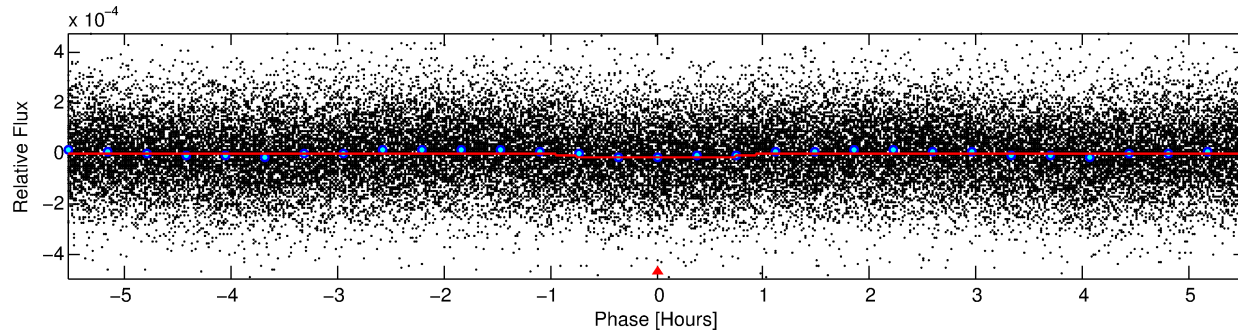
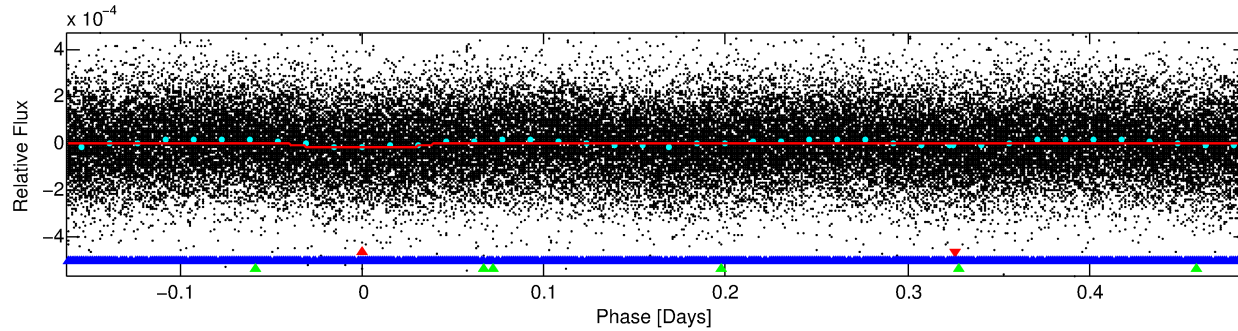
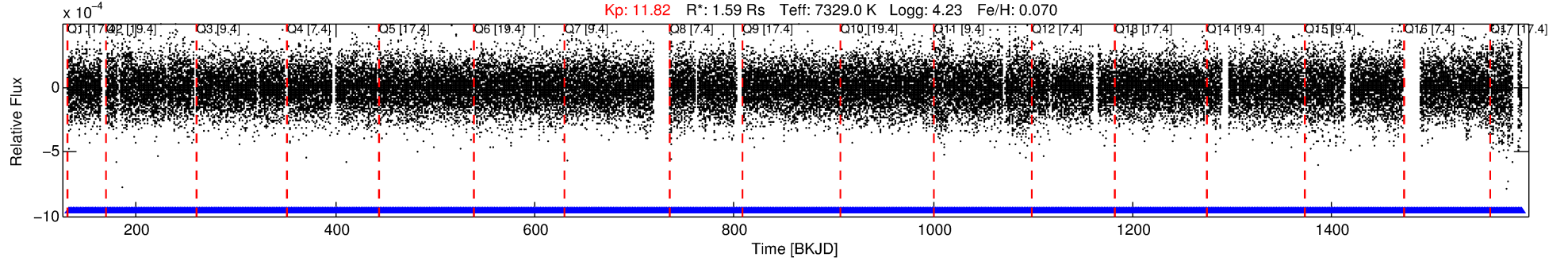
No Significant Match Found

# DV One-Page Summary

KIC: 11456279 Candidate: 1 of 3 Period: 0.648 d

KOI: K03204 Corr: No Ephemeris Match

Kp: 11.82 R\*: 1.59 Rs Teff: 7329.0 K Logg: 4.23 Fe/H: 0.070



## DV Fit Results:

Period = 0.64831 [0.00001] d  
Epoch = 132.1301 [0.0019] BKJD  
Rp/R\* = 0.0049 [0.0011]  
a/R\* = 1.50 [1.20]  
b = 0.91 [0.29]  
Seff = 22679.00 [10251.88]  
Teq = 3129 [354] K  
Rp = 0.84 [0.35] Re  
a = 0.0170 [0.0049] AU  
Ag = 3.48 [2.22] [1.12σ]  
Teffp = 6609 [844] K [3.80σ]

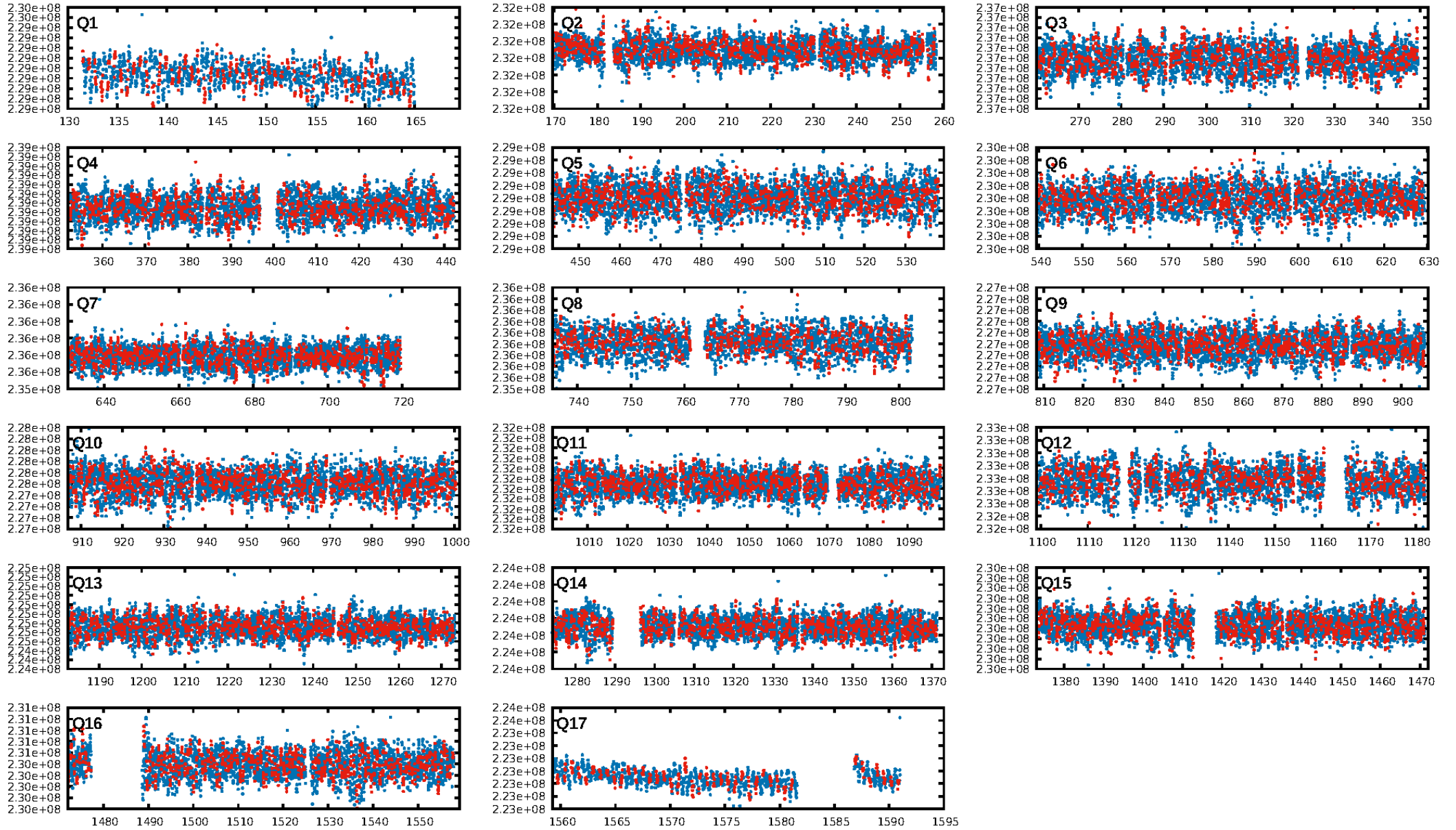
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [4.44σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.34e-19  
RollingBand-fgt: 1.00 [1969/1969]  
GhostDiagnostic-chr: 74.31  
Centroid-sig: 4.6%  
Centroid-so: 0.965 arcsec [1.38σ]  
OotOffset-rm: 1.051 arcsec [1.92σ]  
OotOffset-st: 2/3/2/4 [11]  
KicOffset-rm: 1.065 arcsec [1.76σ]  
KicOffset-st: 2/3/2/4 [11]  
DiffImageQuality-fgm: 0.73 [8/11]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:02:57 Z

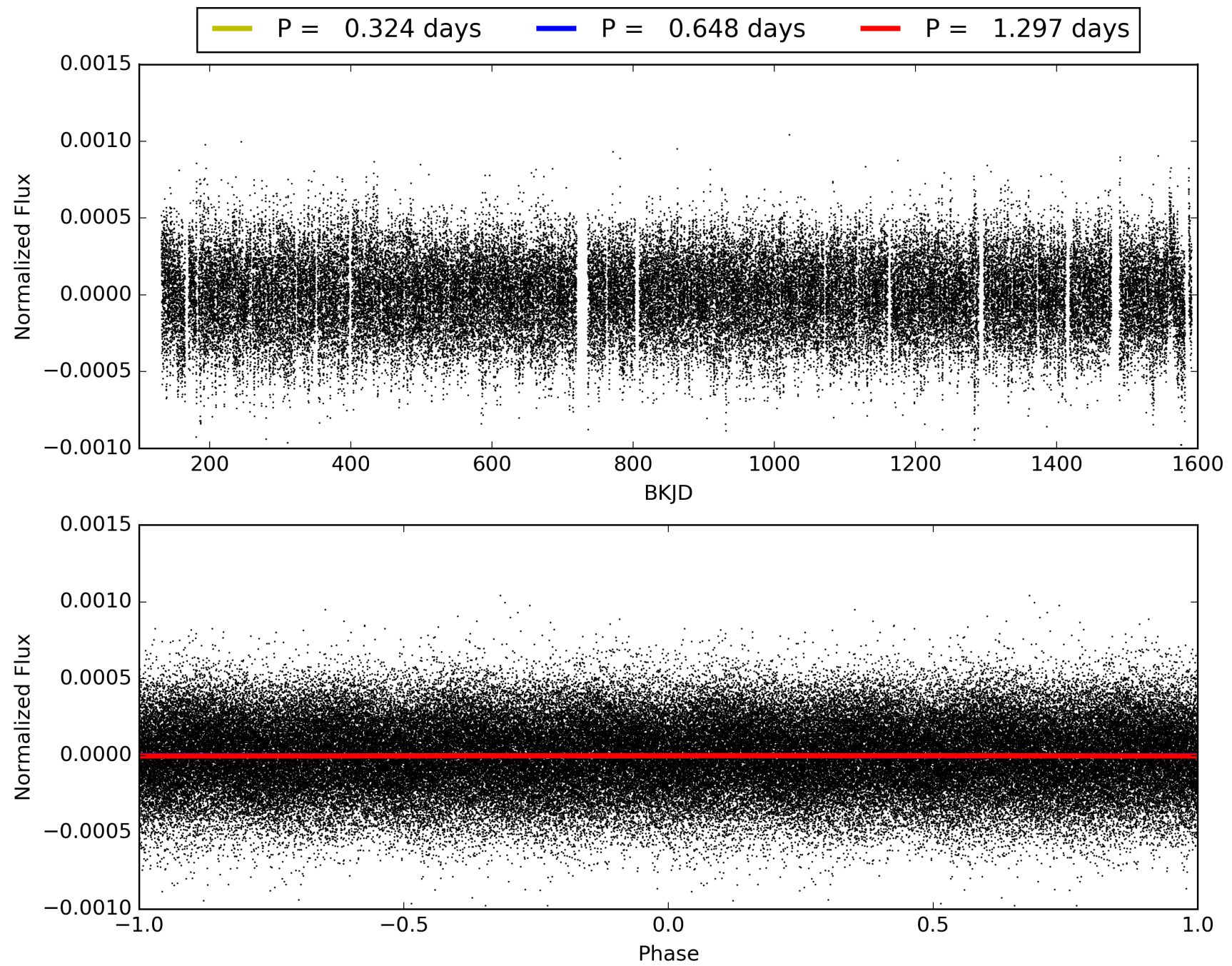
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011456279-01, PDC Light Curves





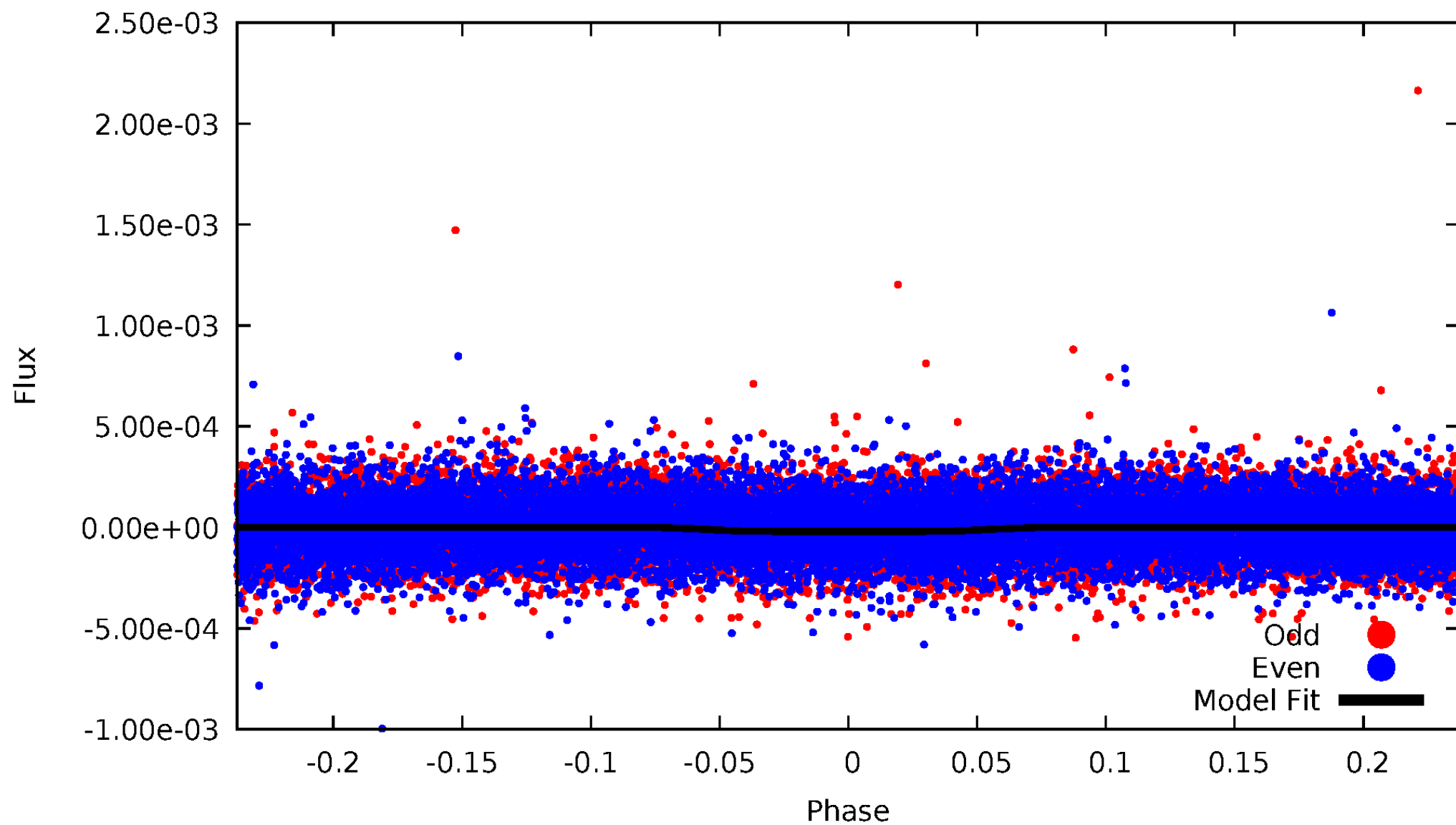
TCE 011456279-01





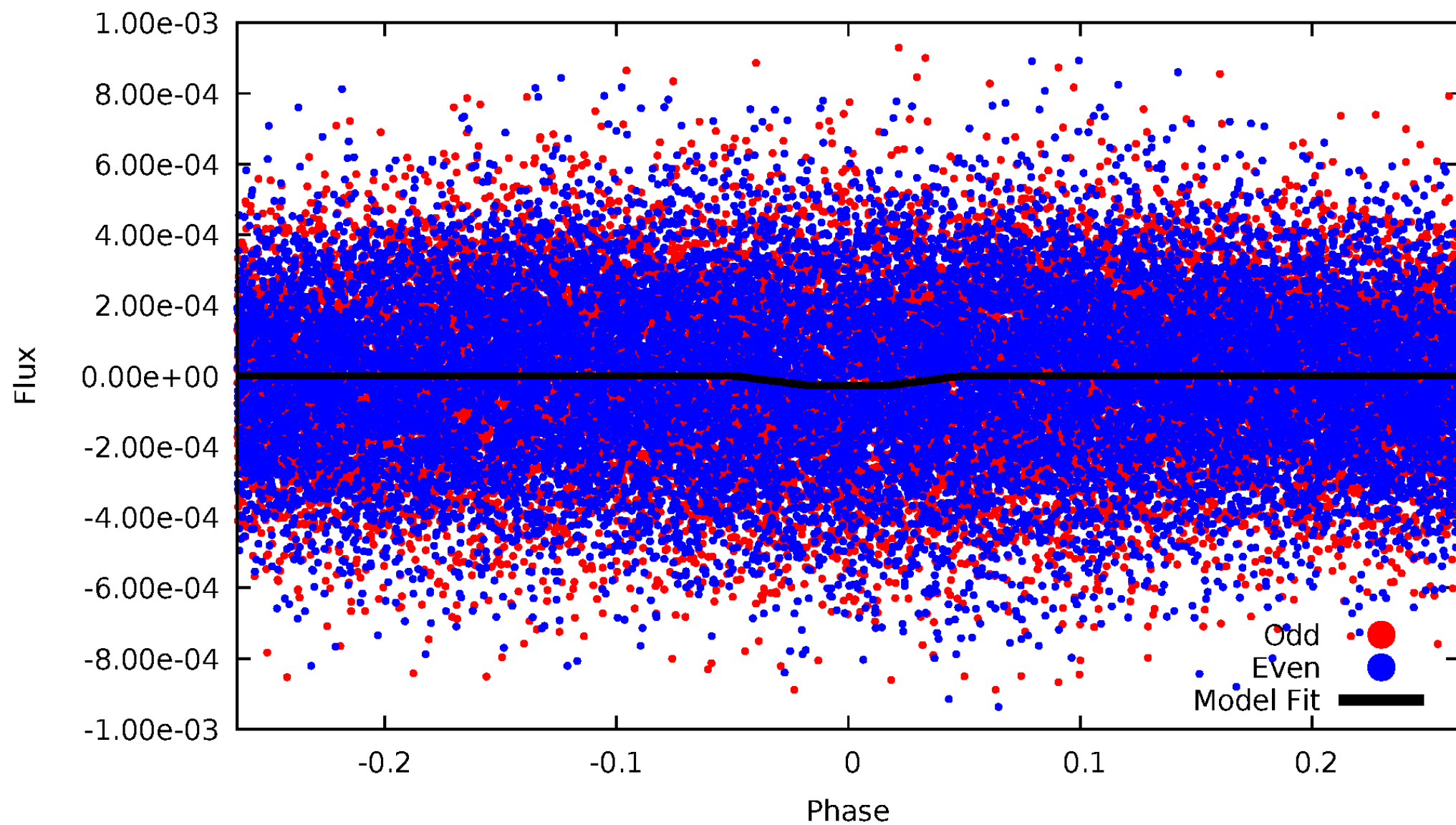
# DV Odd/Even

TCE 011456279-01



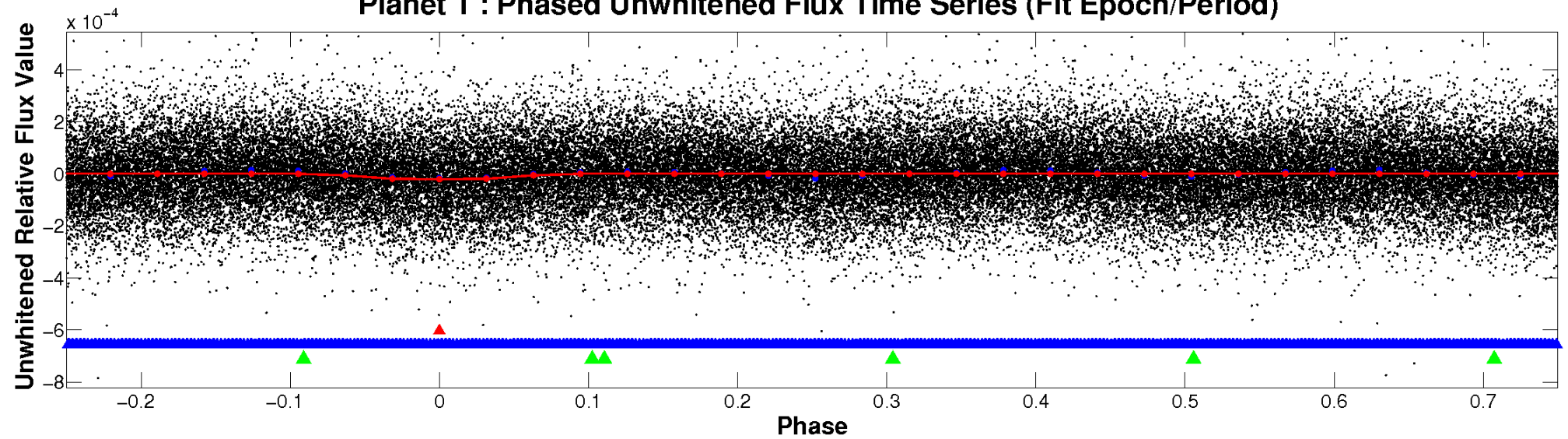
# ALT Odd/Even

TCE 011456279-01

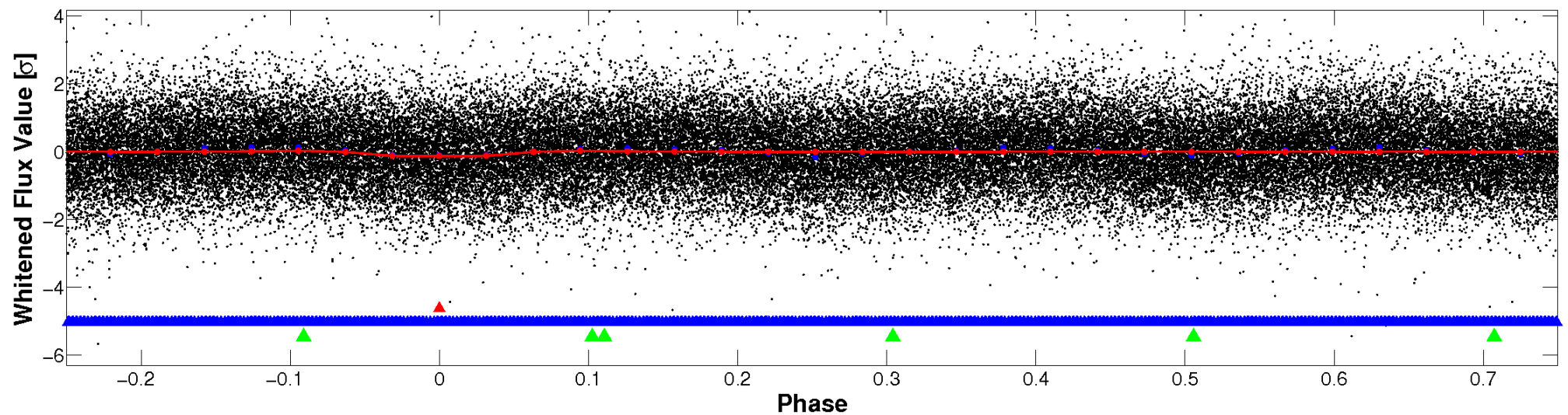


# Non-Whitened Vs. Whitened Light Curve

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



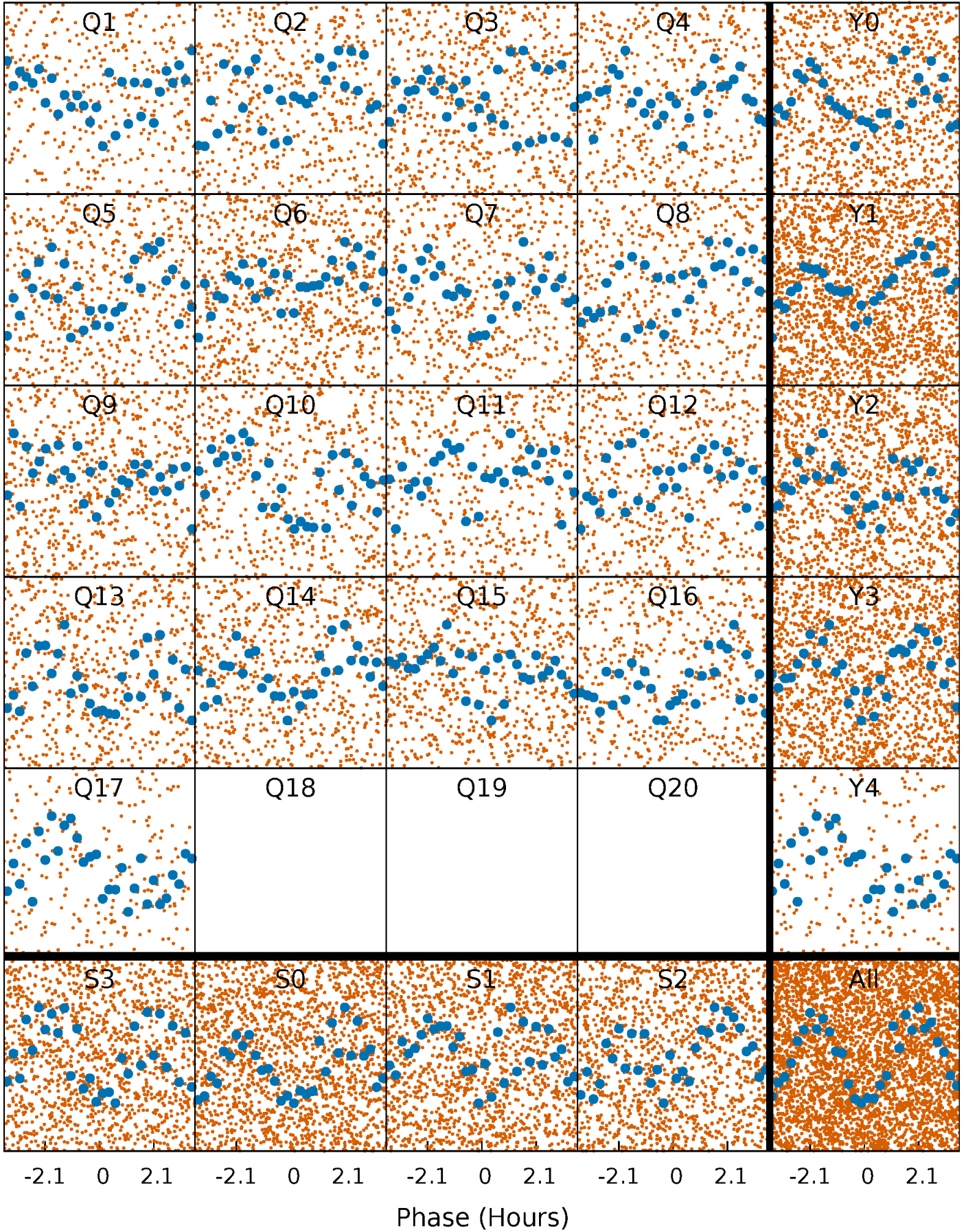
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





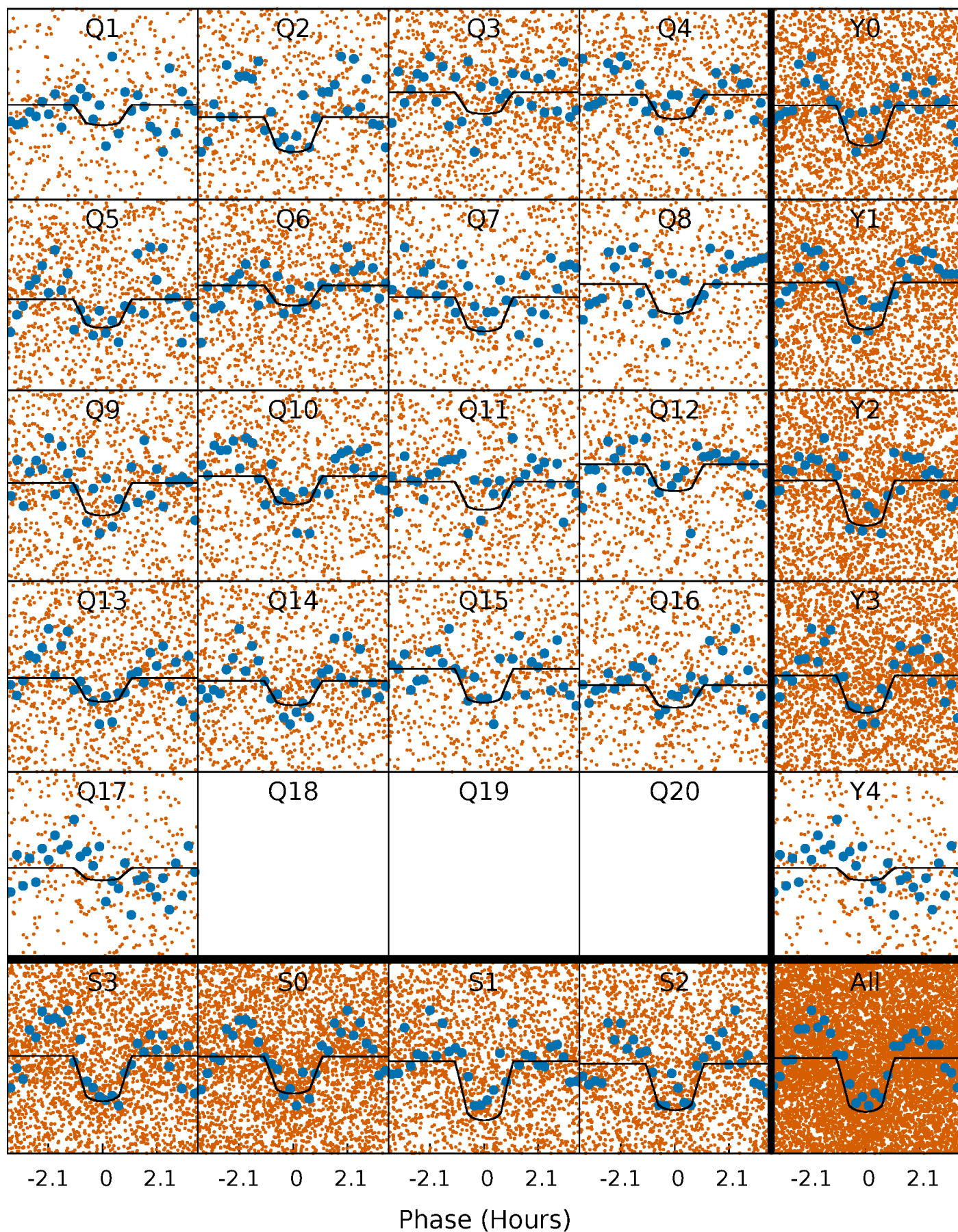
# PDC Quarter-Phased Transit Curves

TCE 011456279-01 P= 0.648314 Days  $T_0=132.130092$  (BKJD)



# DV Quarter-Phased Transit Curves

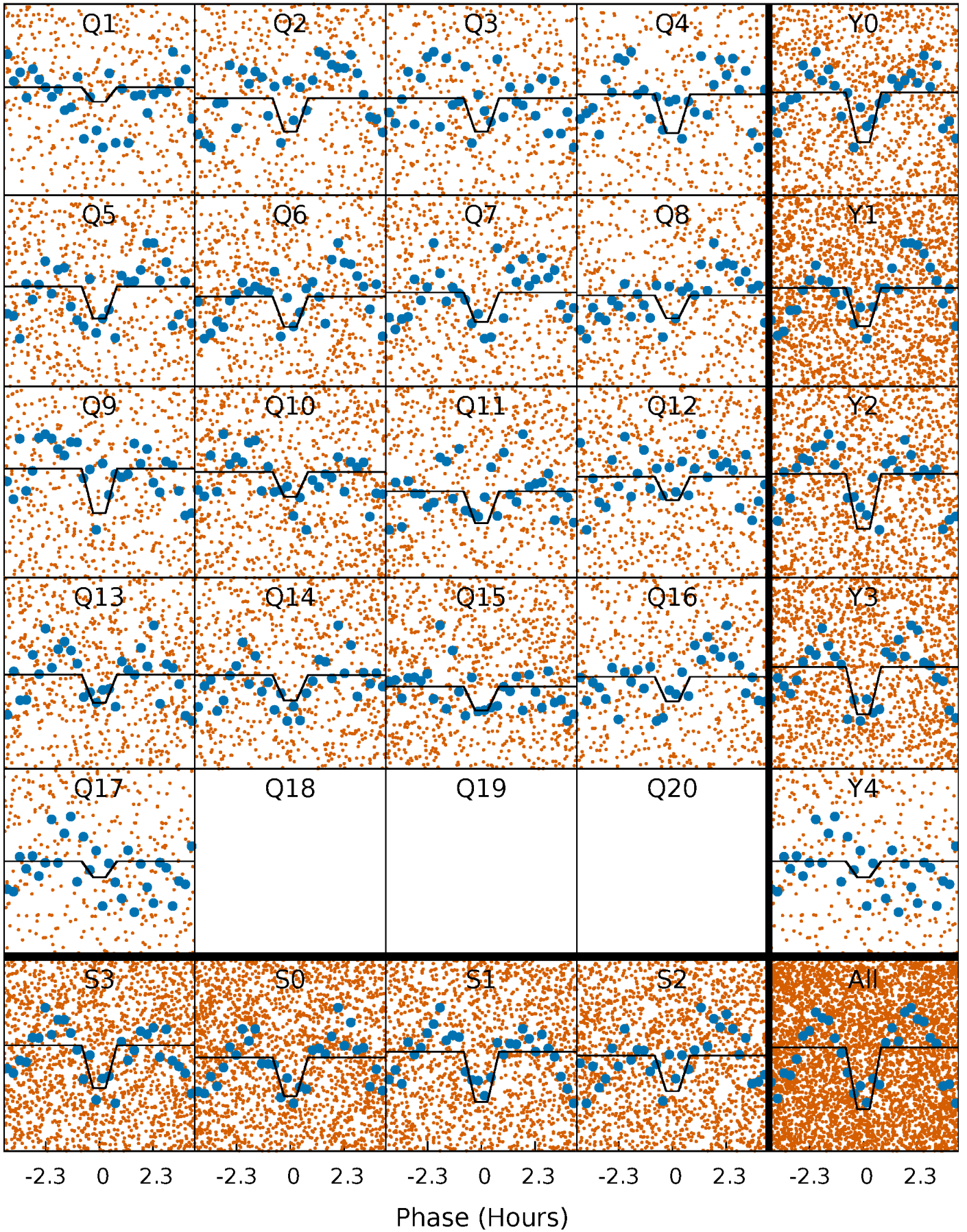
TCE 011456279-01 P= 0.648314 Days  $T_0=132.130092$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 011456279-01 P= 0.648316 Days  $T_0=132.127922$  (BKJD)

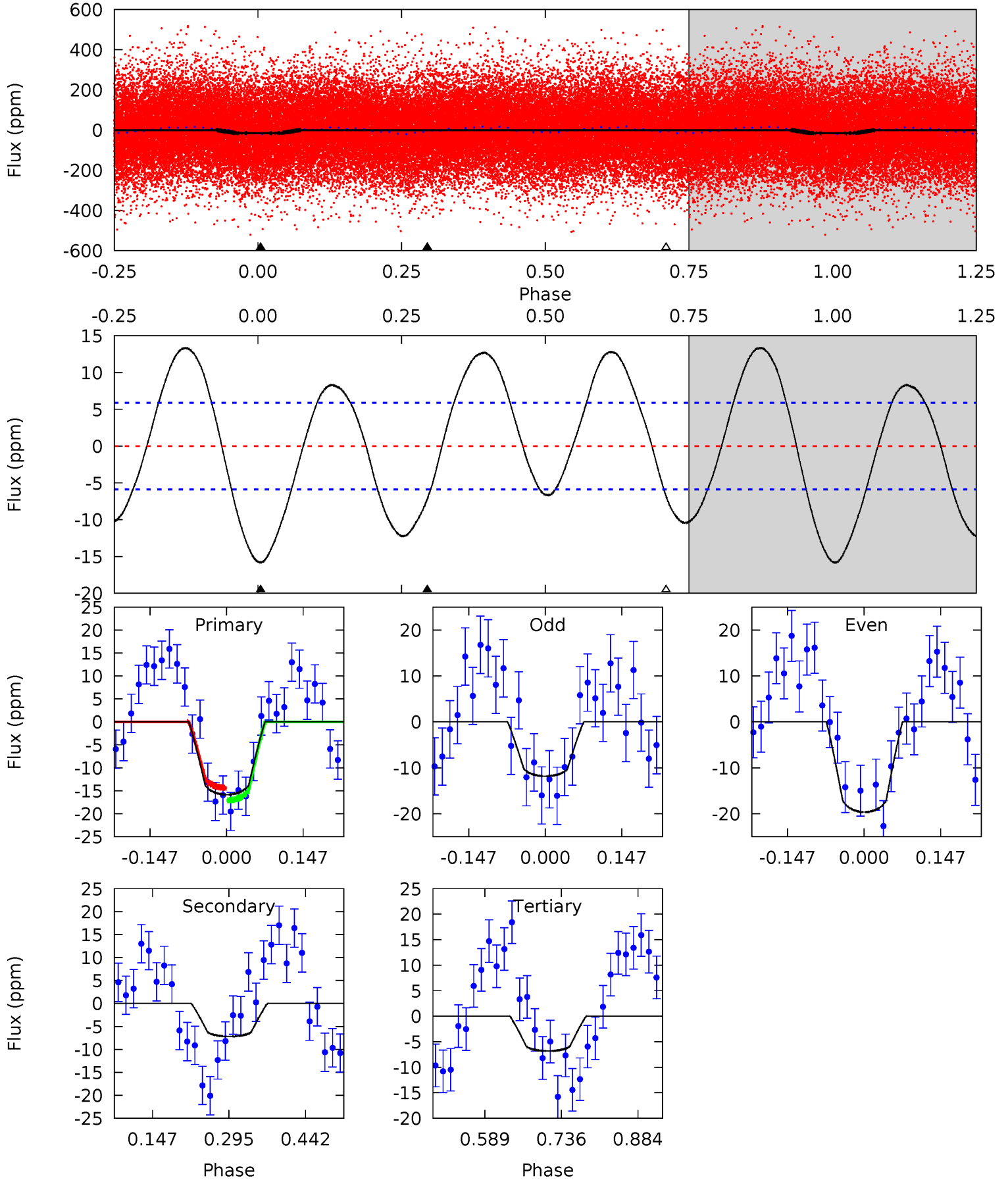




# DV Model-Shift Uniqueness Test

011456279-01, P = 0.648314 Days, E = 131.481778 Days

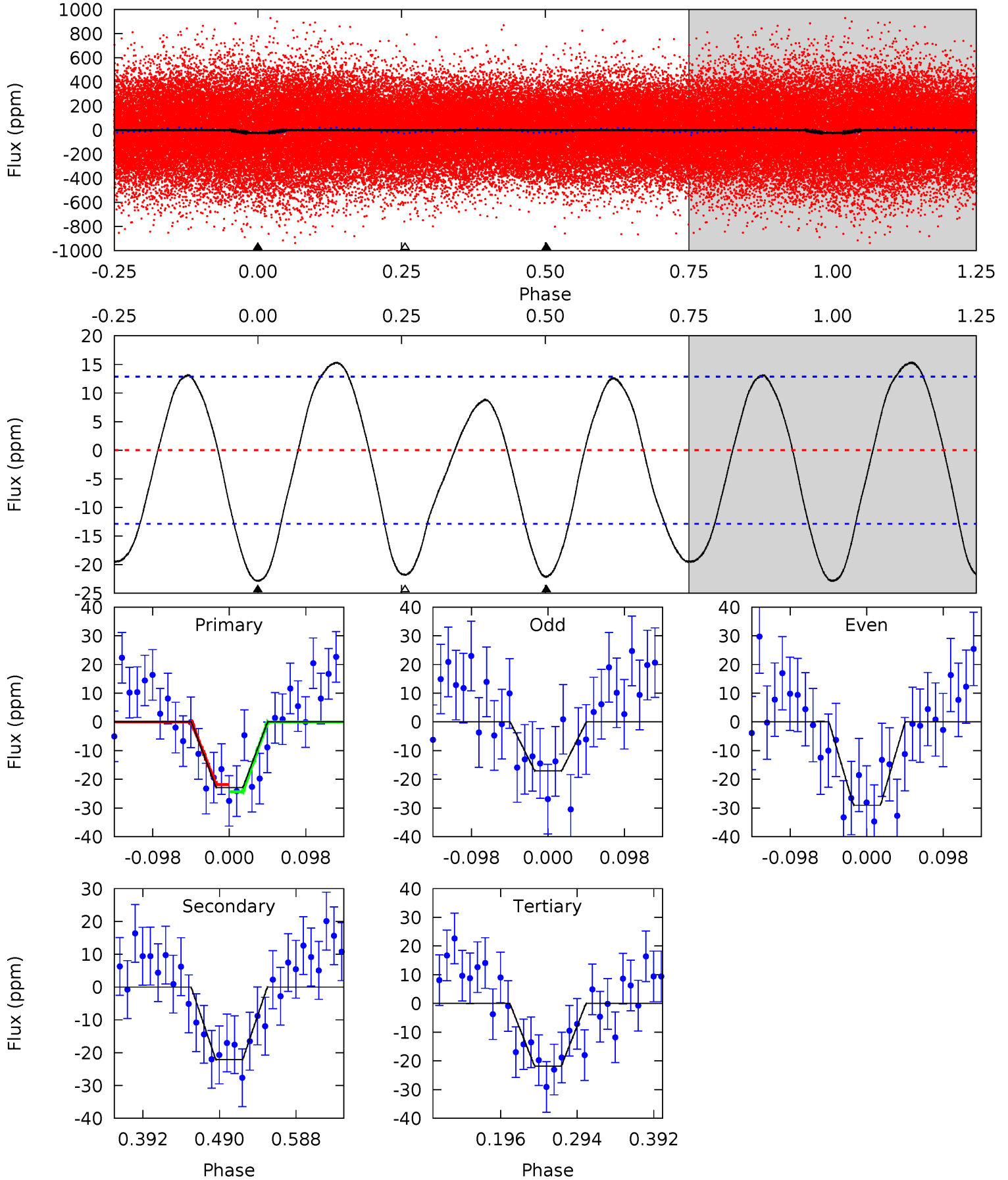
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	5.48	5.20	0	4.48	1.45	5.58	6.88	12.1	0.28	5.48	3.02	0.89	0.46	1.05



# Alt Model-Shift Uniqueness Test

011456279-01, P = 0.648316 Days, E = 131.479606 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
8.12	7.86	7.74	0	4.57	1.66	4.35	0.38	8.12	0.12	7.86	2.18	1.19	0.40	0.45



### Stellar Parameters For KIC 011456279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7329^{+203}_{-319}$	$4.226^{+0.075}_{-0.225}$	$0.070^{+0.200}_{-0.350}$	$1.590^{+0.558}_{-0.239}$	$1.550^{+0.211}_{-0.211}$	$0.543^{+0.216}_{-0.292}$
	+3%/-4%	+2%/-5%	+286%/-500%	+35%/-15%	+14%/-14%	+40%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 011456279-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-7 \pm 1$	$0.87^{+0.25}_{-0.20}$	$4427^{+399}_{-258}$	$5098^{+826}_{-654}$	$1.460^{+1.110}_{-0.601}$
Alt.	$-22 \pm 3$	$0.94^{+0.28}_{-0.23}$	$4449^{+354}_{-276}$	$6810^{+1123}_{-864}$	$3.961^{+2.990}_{-1.640}$

$T_{max}$  = 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  $A_{obs} \gg 1.0$



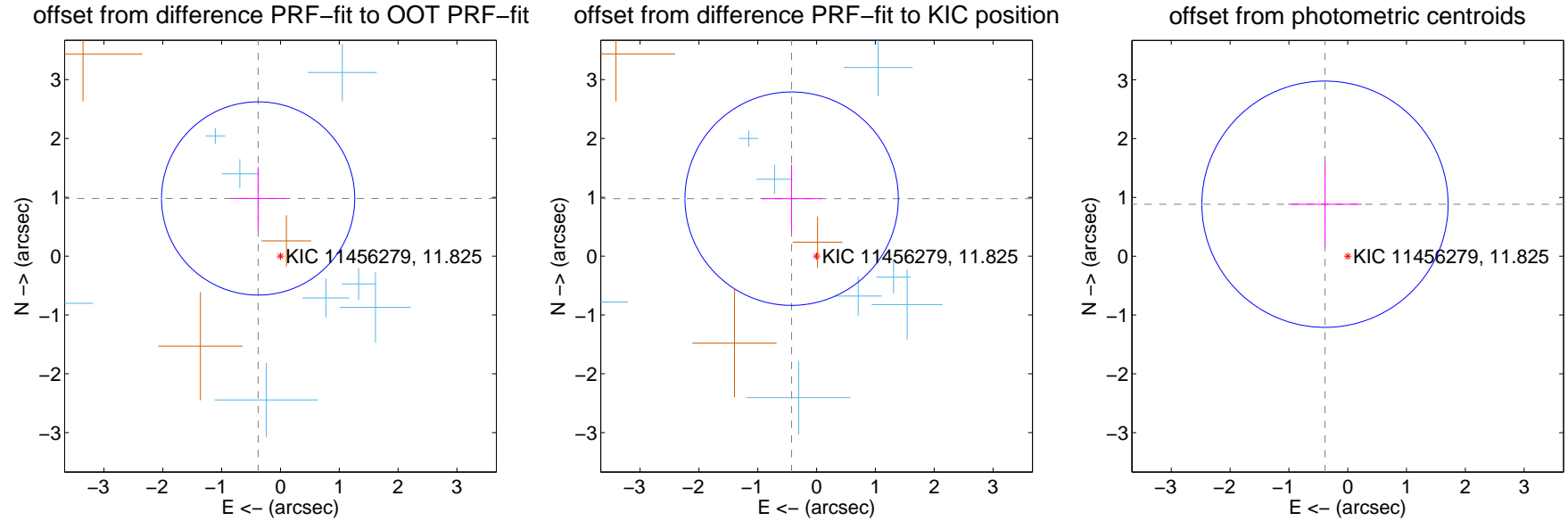
## DV Centroid Data

Supplemental centroid analysis for 011456279-01. **Kepler magnitude: 11.82.** Transit SNR 10.37

There are 8 quarters with good PRF difference image offsets

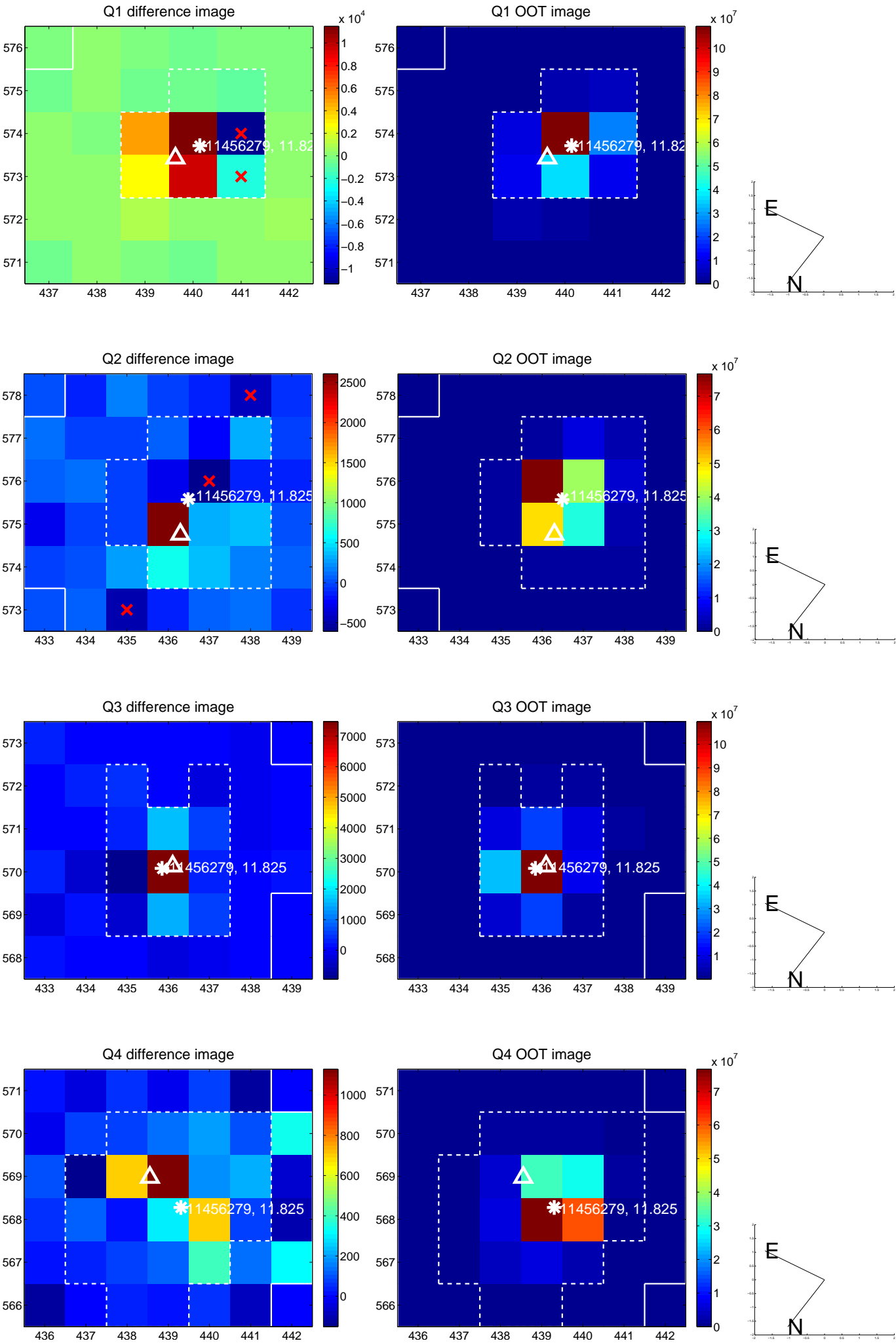
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.051 \pm 0.548$	1.92	$0.380 \pm 0.469$	$0.980 \pm 0.533$
PRF-fit source offset from KIC position	$1.065 \pm 0.605$	1.76	$0.424 \pm 0.511$	$0.977 \pm 0.577$
photometric centroid source offset	$0.96 \pm 0.70$	1.38	$0.39 \pm 0.63$	$0.88 \pm 0.71$

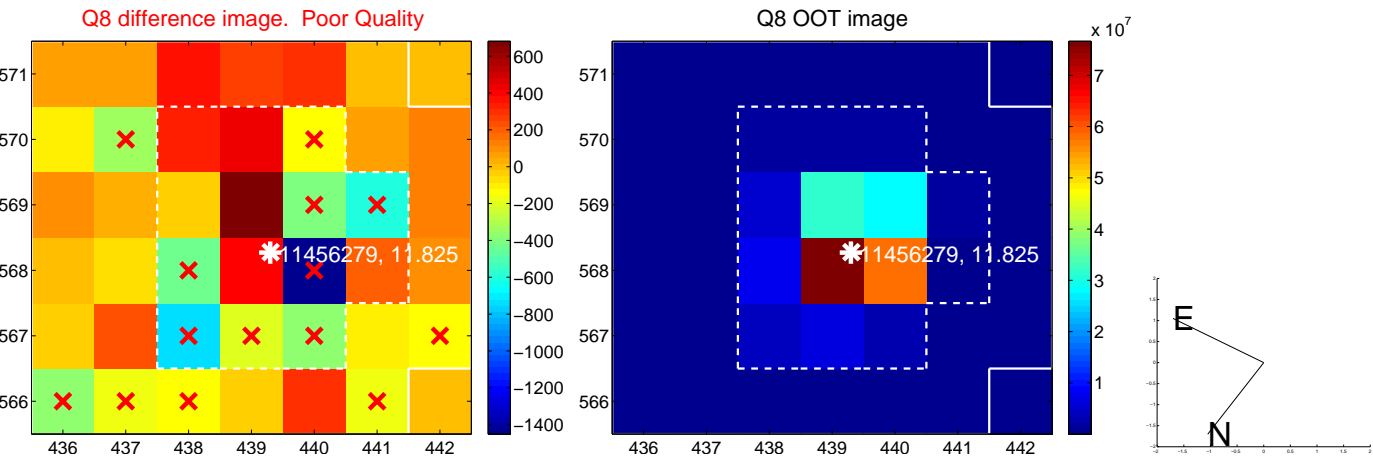
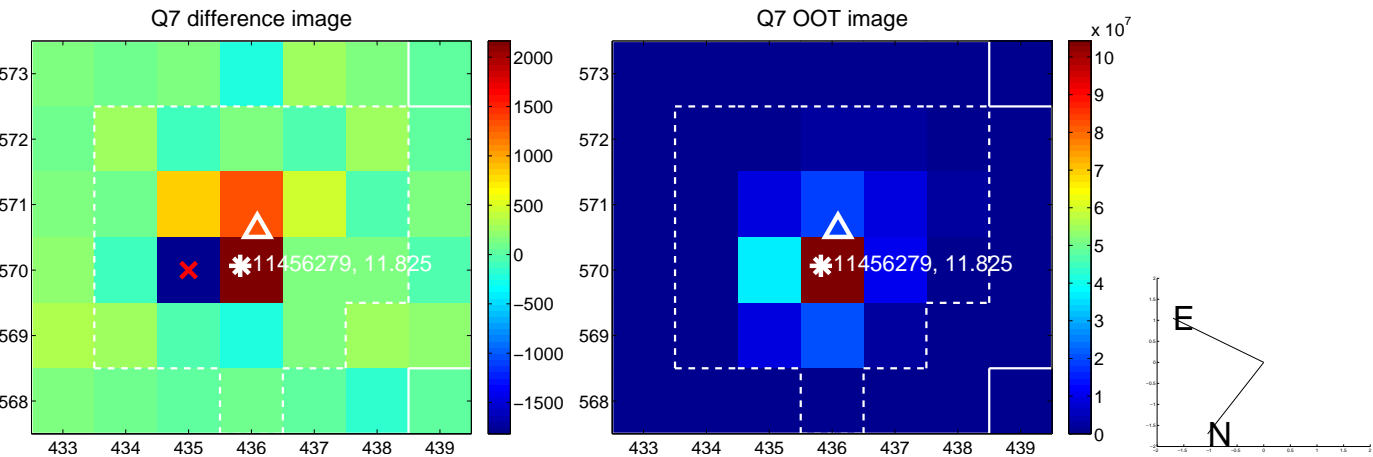
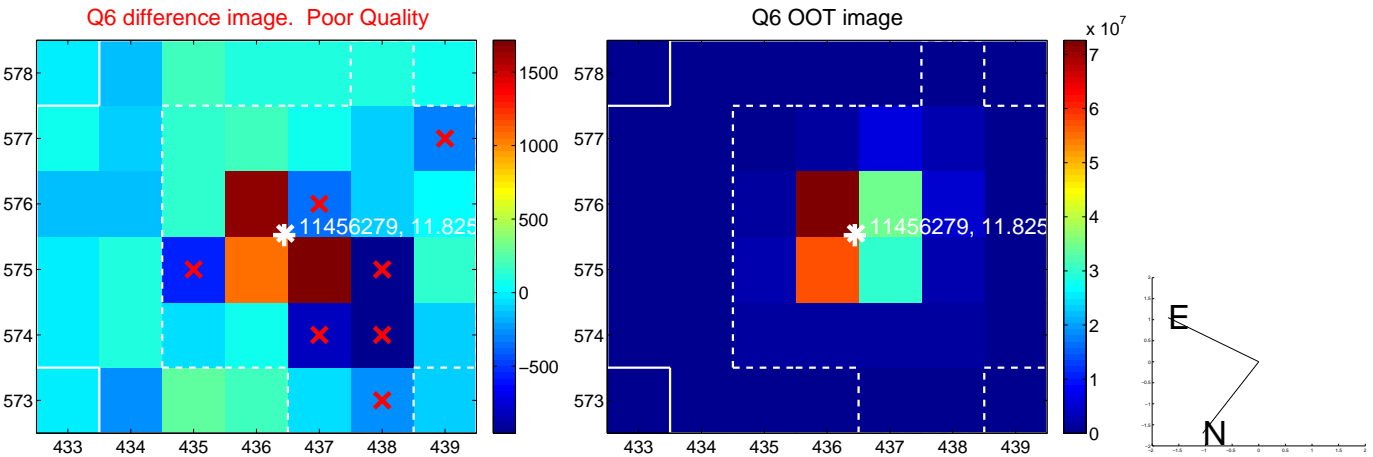
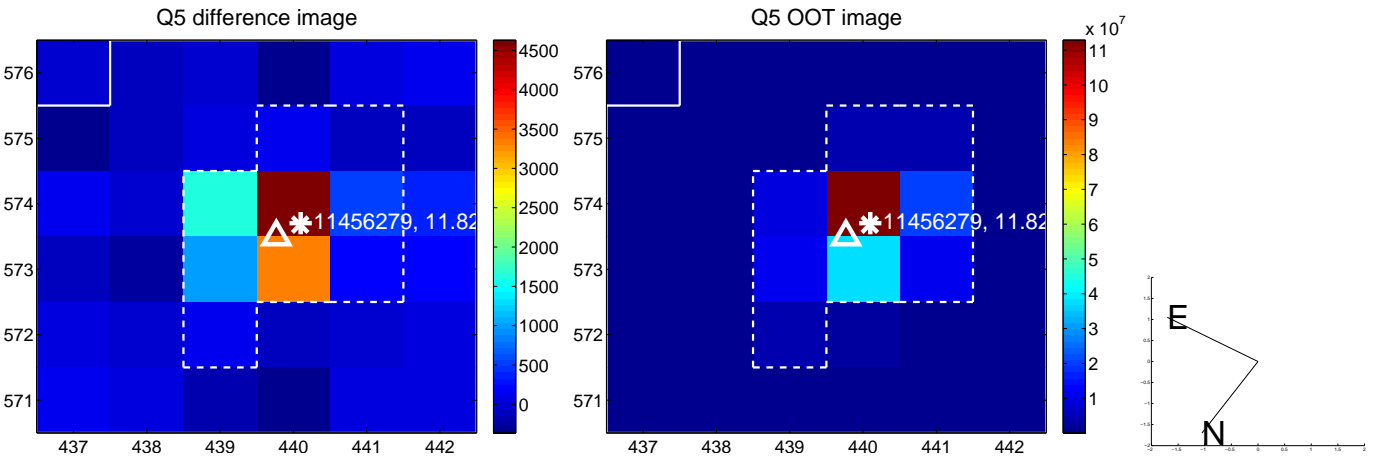


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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.

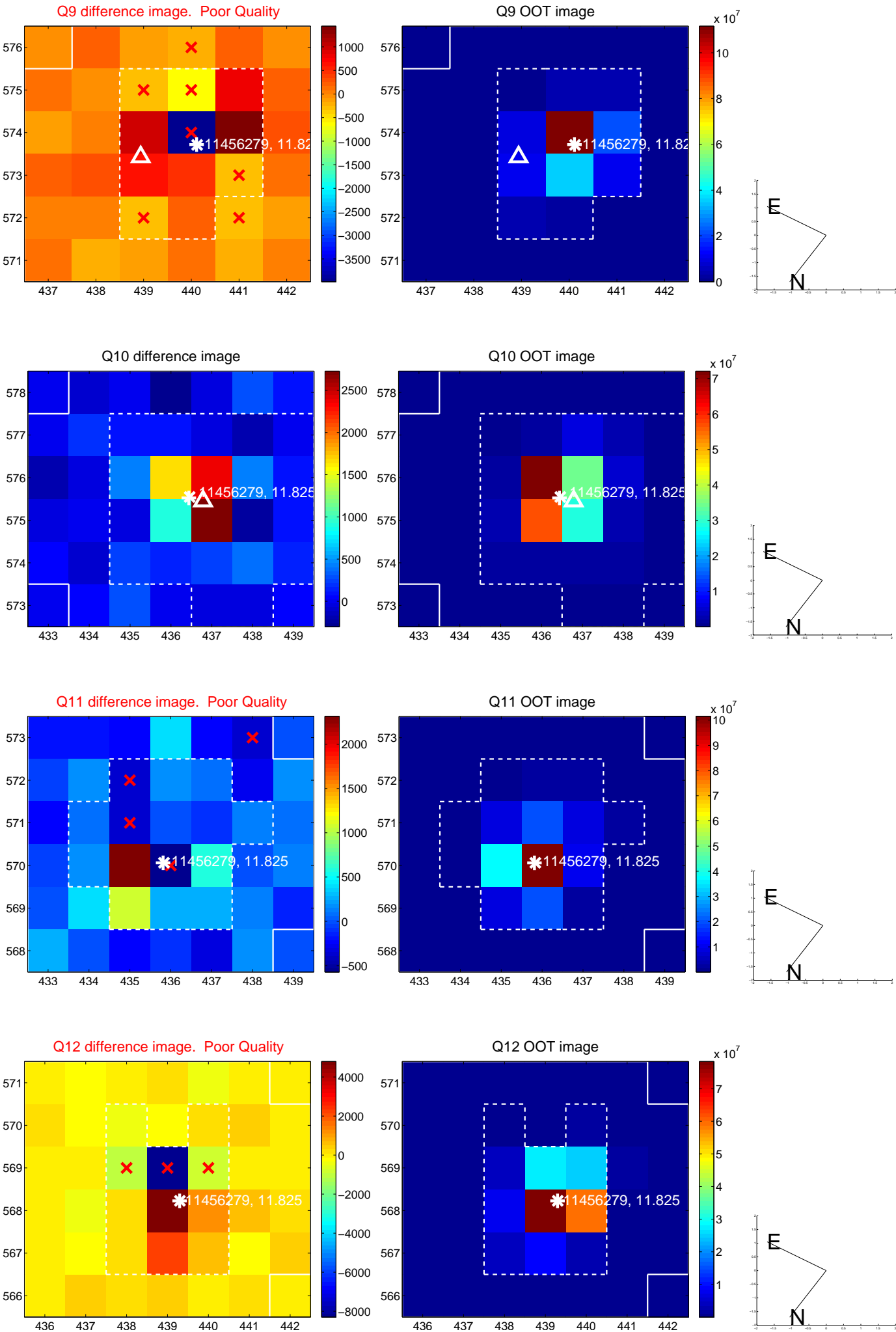


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

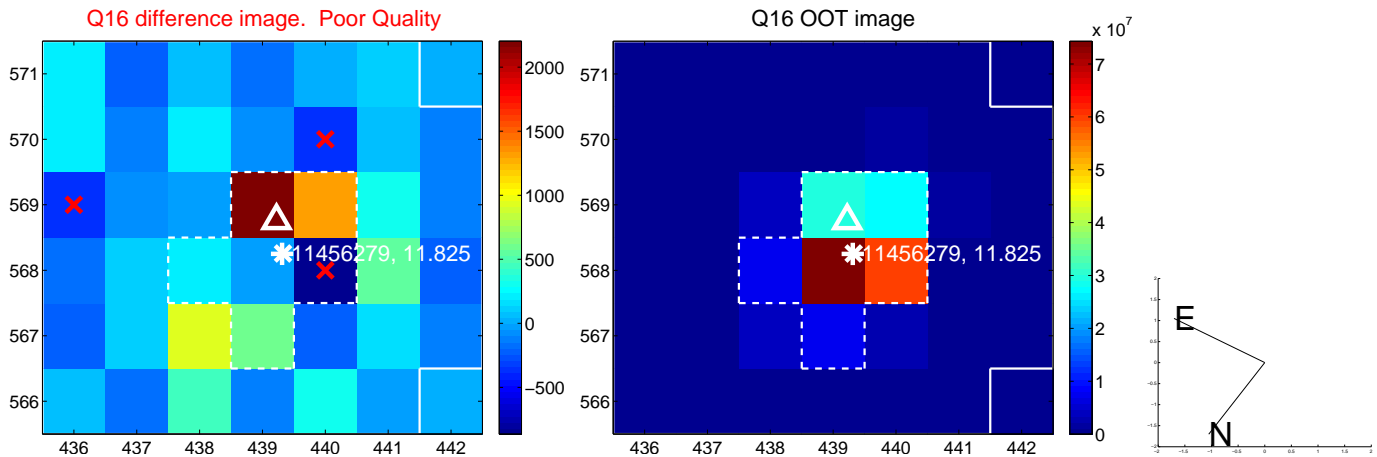
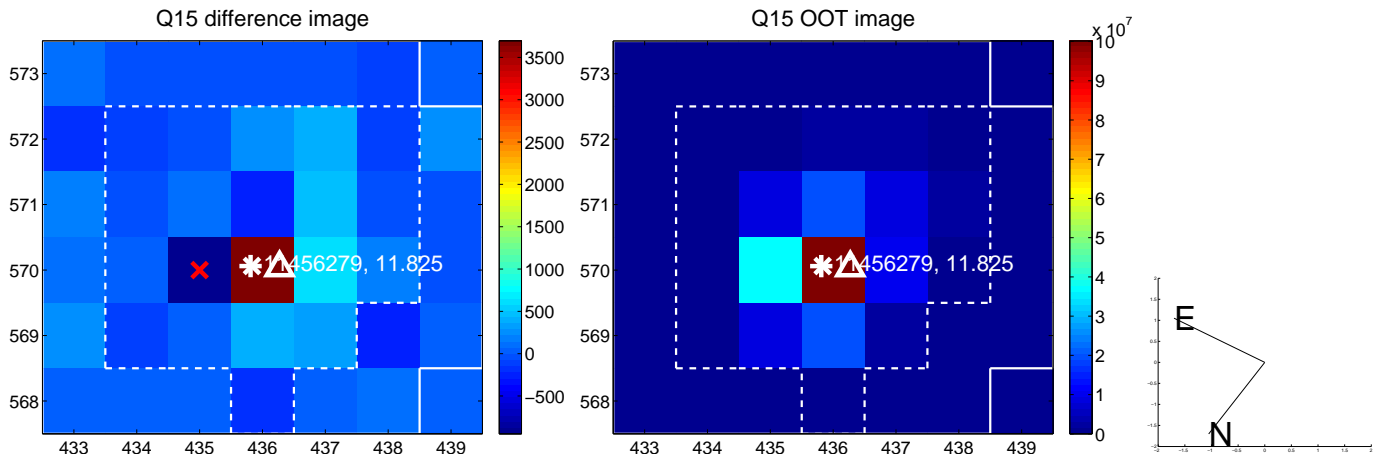
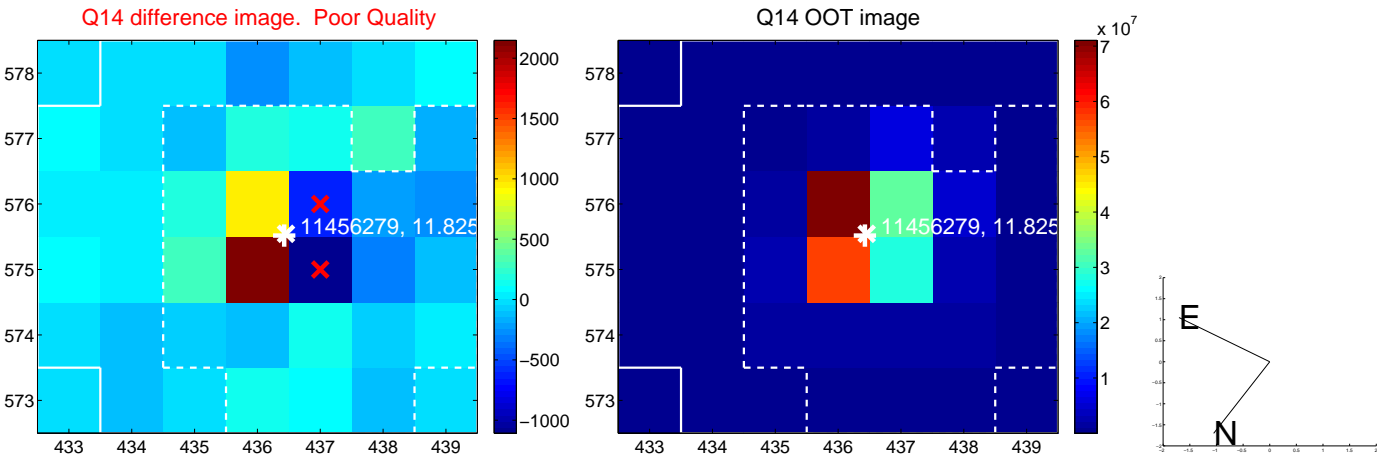
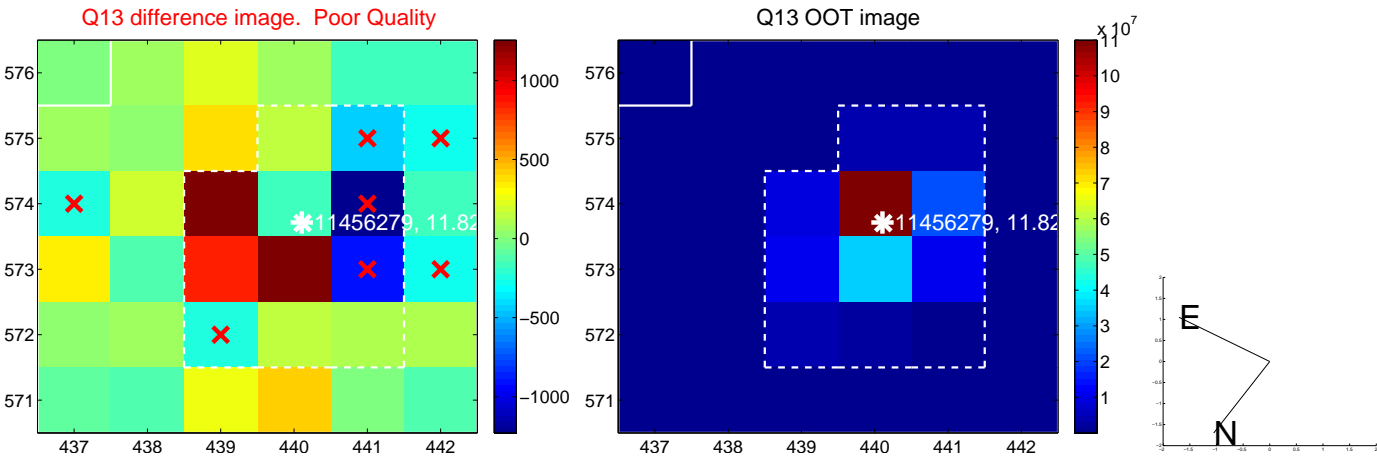




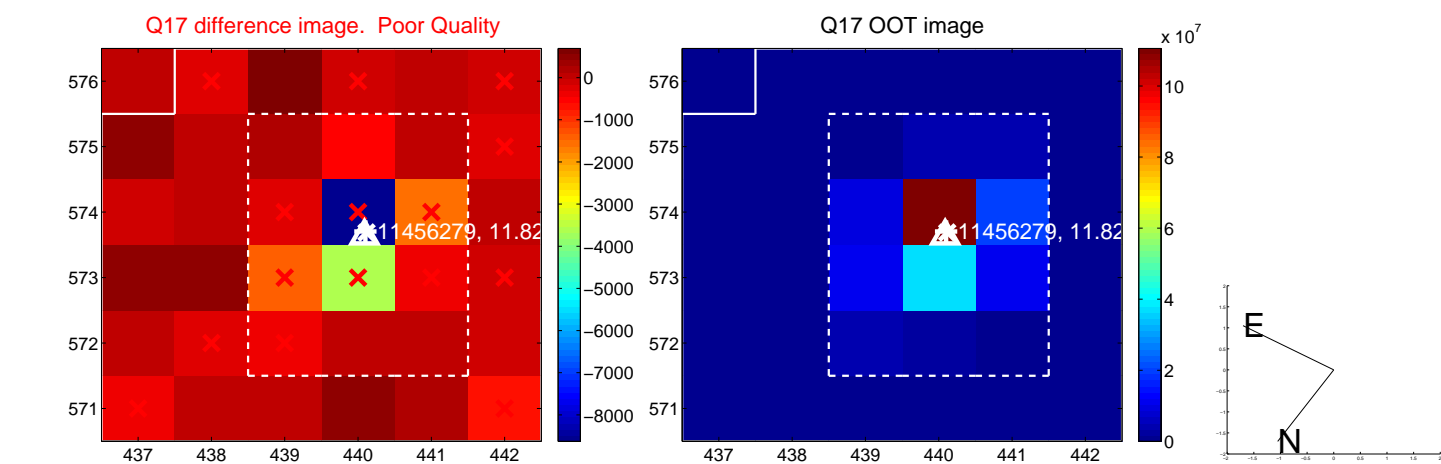
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



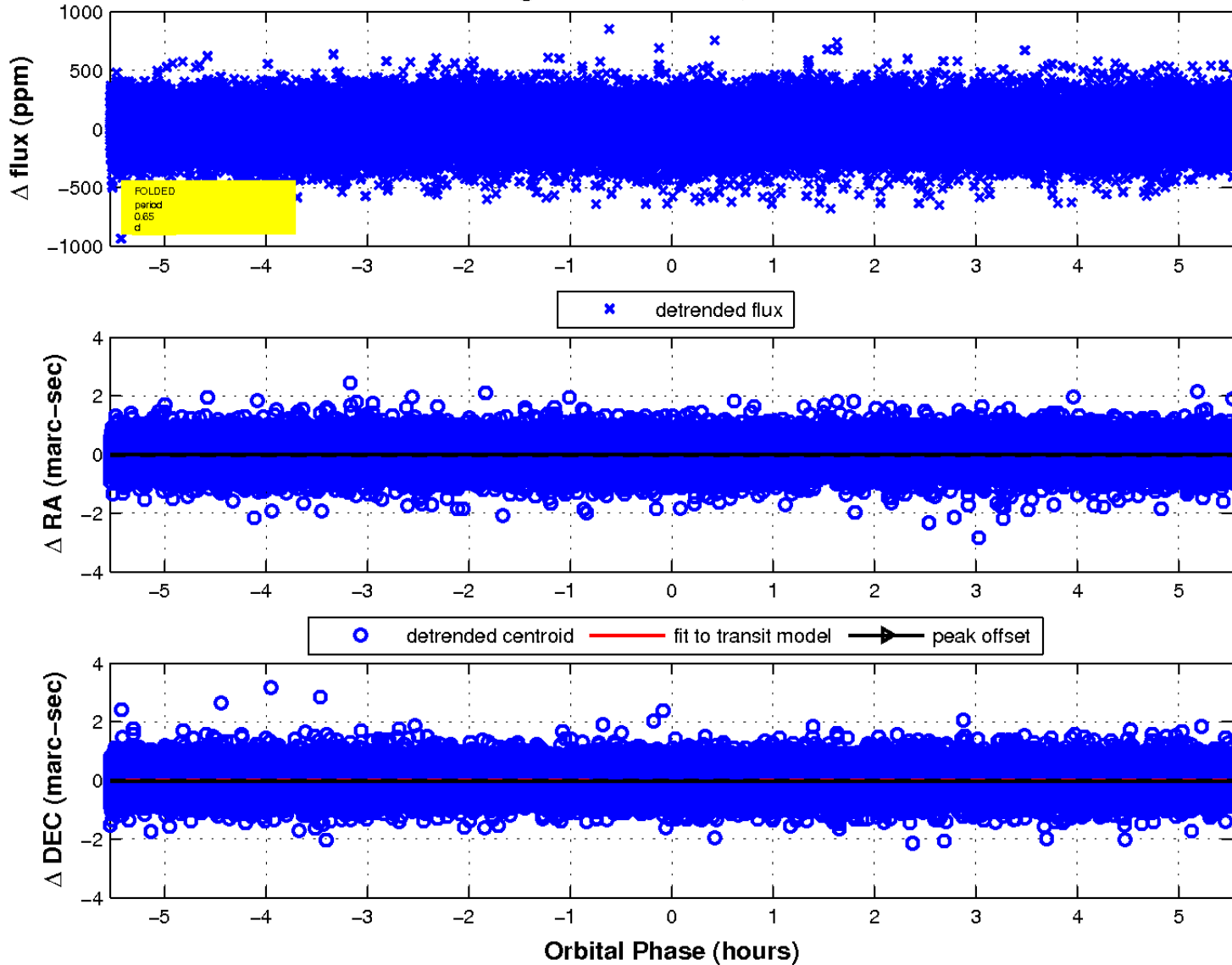
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

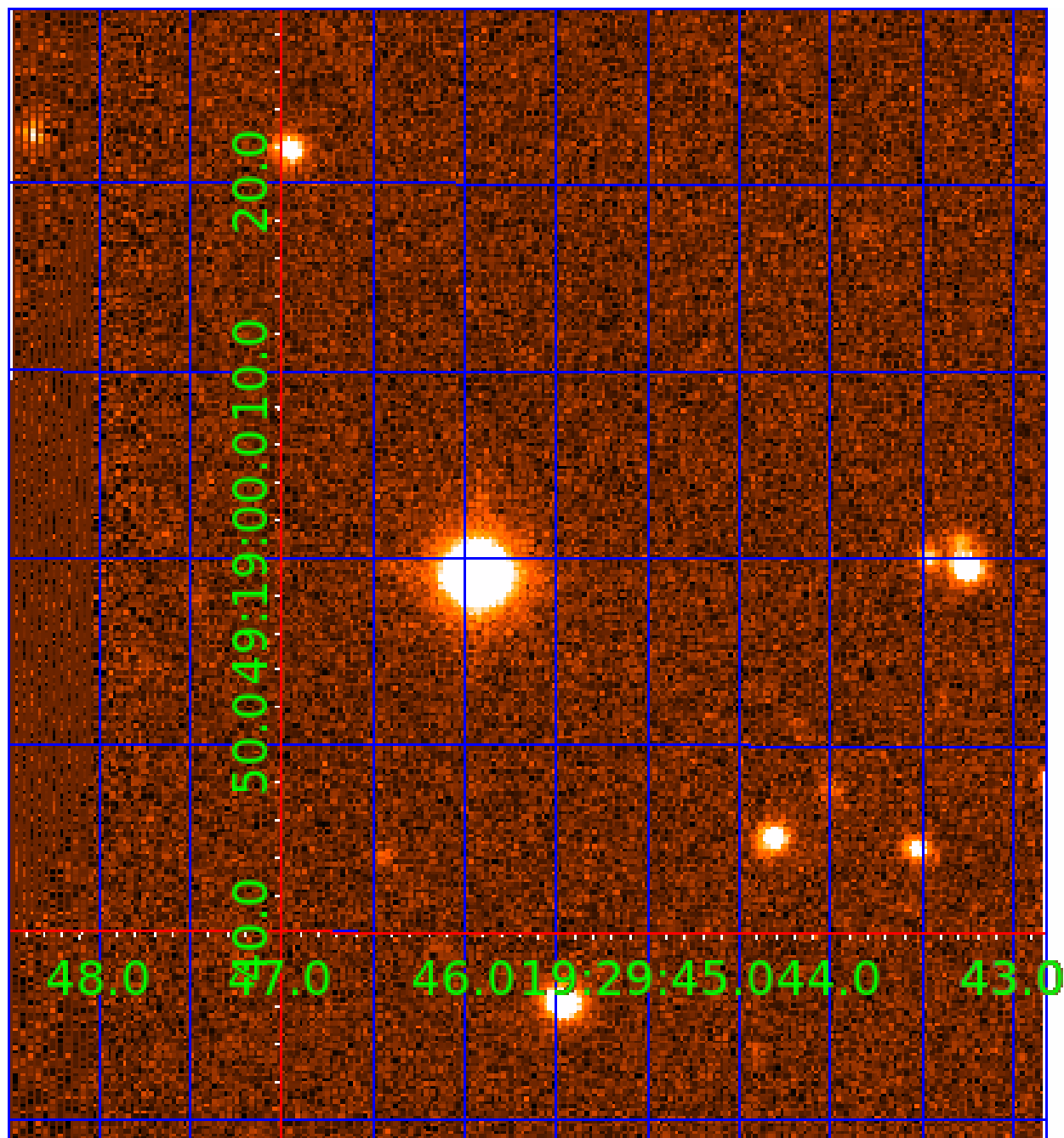


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



# KIC 011456279

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011456279-01	OBS	No	0.648314	132.130092	20.7	1.847	9.9	10.4	1.59	7329	0.84	22679.00
011456279-02	OBS	No	1.387590	131.749463	19.2	3.541	7.8	6.6	1.59	7329	0.80	8222.23
011456279-03	OBS	No	255.953440	308.543318	259.5	4.498	8.2	7.7	1.59	7329	3.00	7.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011456279-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
011456279-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
011456279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

**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 011456279-02

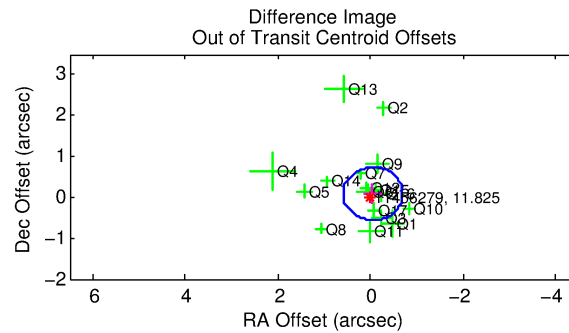
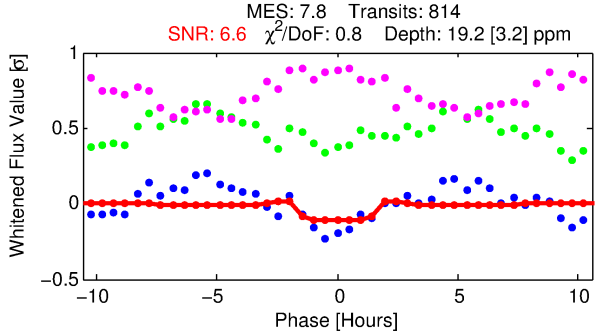
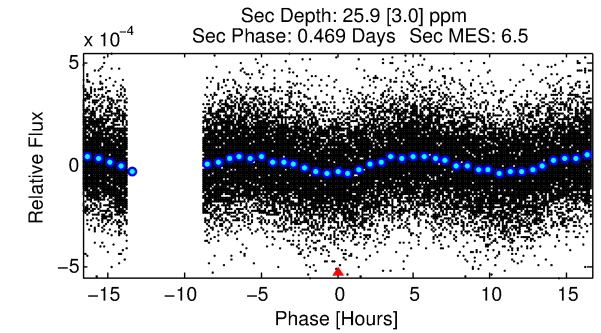
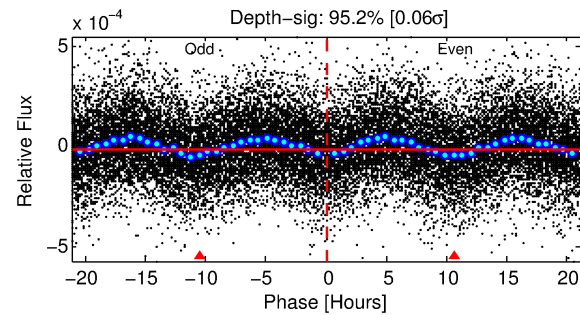
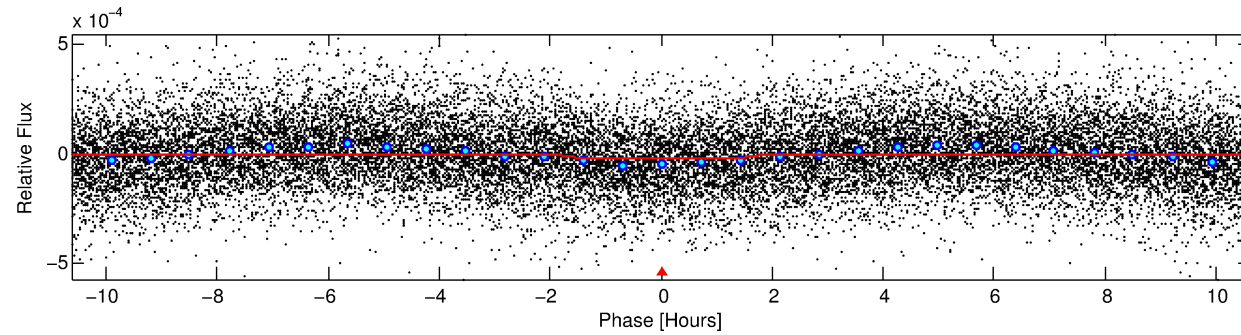
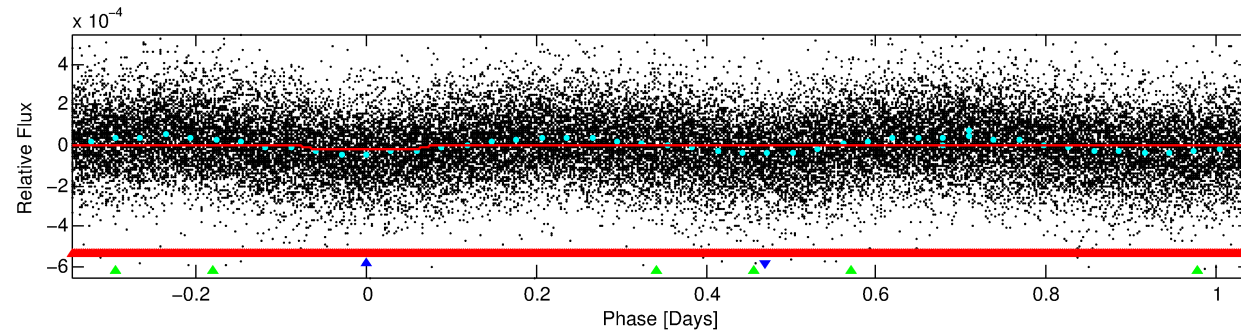
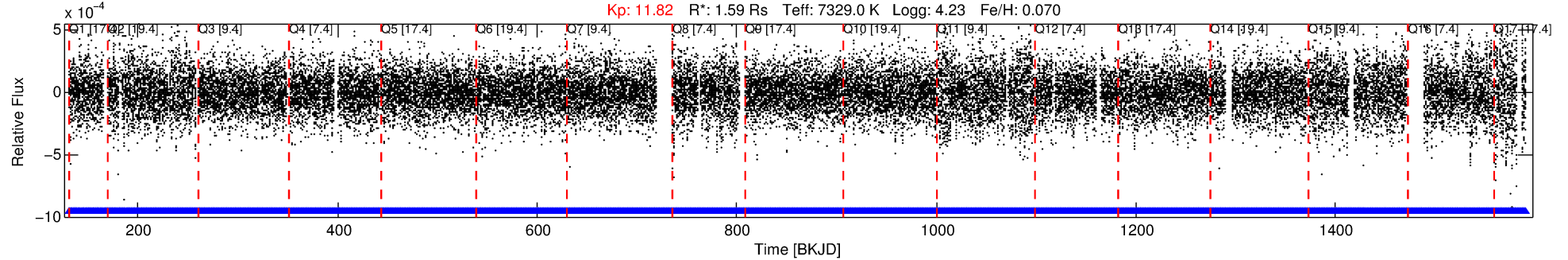
No Significant Match Found

# DV One-Page Summary

KIC: 11456279 Candidate: 2 of 3 Period: 1.388 d

KOI: K03204 Corr: No Ephemeris Match

Kp: 11.82 R\*: 1.59 Rs Teff: 7329.0 K Logg: 4.23 Fe/H: 0.070



## DV Fit Results:

Period = 1.38759 [0.00002] d  
Epoch = 131.7495 [0.0047] BKJD  
Rp/R\* = 0.0046 [0.0012]  
a/R\* = 1.67 [1.75]  
b = 0.89 [0.38]  
Seff = 8222.23 [3716.80]  
Teq = 2428 [274] K  
Rp = 0.80 [0.35] Re  
a = 0.0282 [0.0082] AU  
Ag = 17.61 [12.10] [1.37σ]  
Teffp = 7690 [1102] K [4.63σ]

## DV Diagnostic Results:

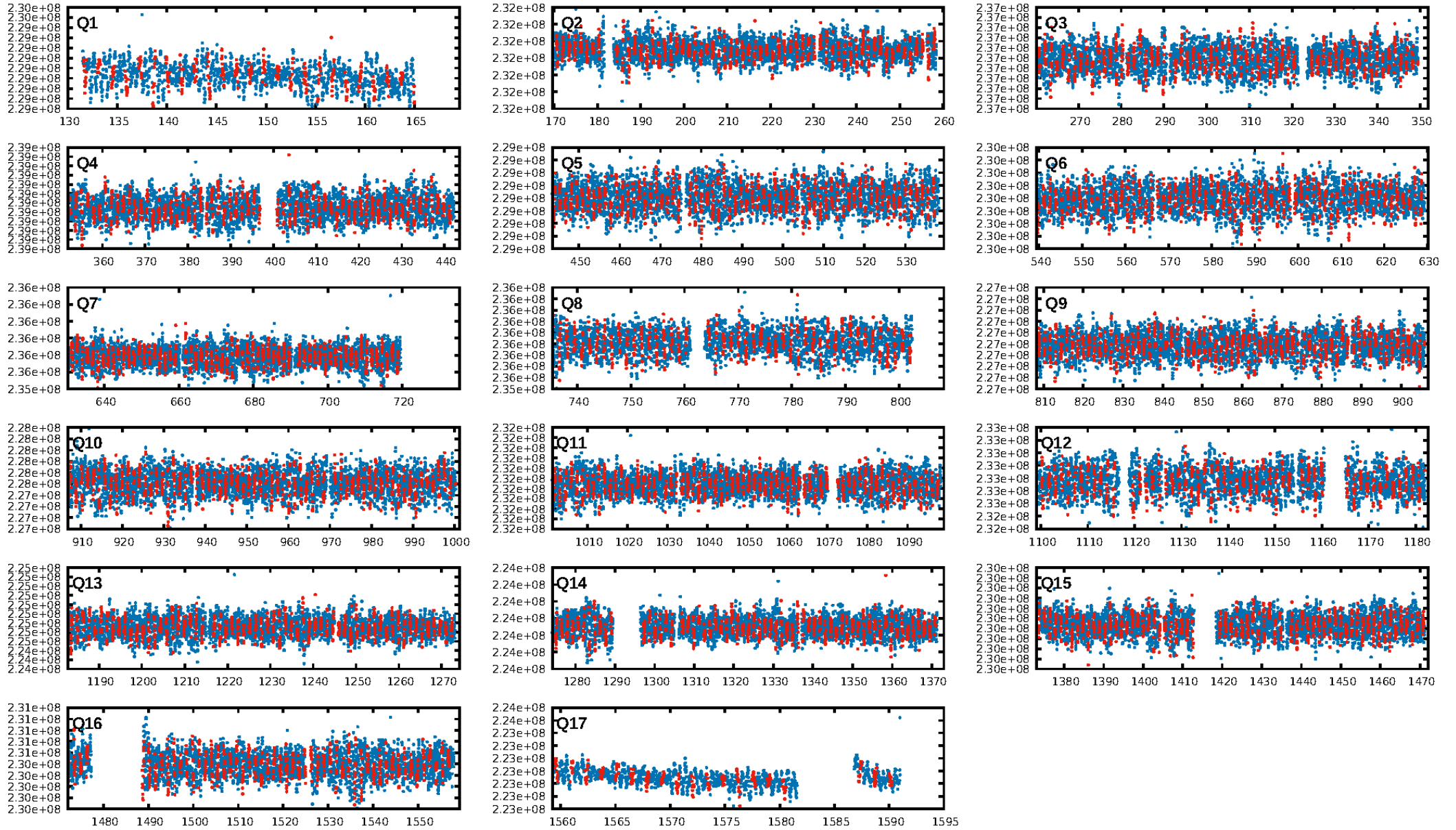
ShortPeriod-sig: 100.0% [4.44σ]  
LongPeriod-sig: 100.0% [1067.19σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.38e-12  
RollingBand-fgt: 1.00 [777/777]  
GhostDiagnostic-chr: -1.253  
Centroid-sig: 43.8%  
Centroid-so: 0.650 arcsec [0.85σ]  
OotOffset-rm: 0.096 arcsec [0.45σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.143 arcsec [0.67σ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:03:08 Z

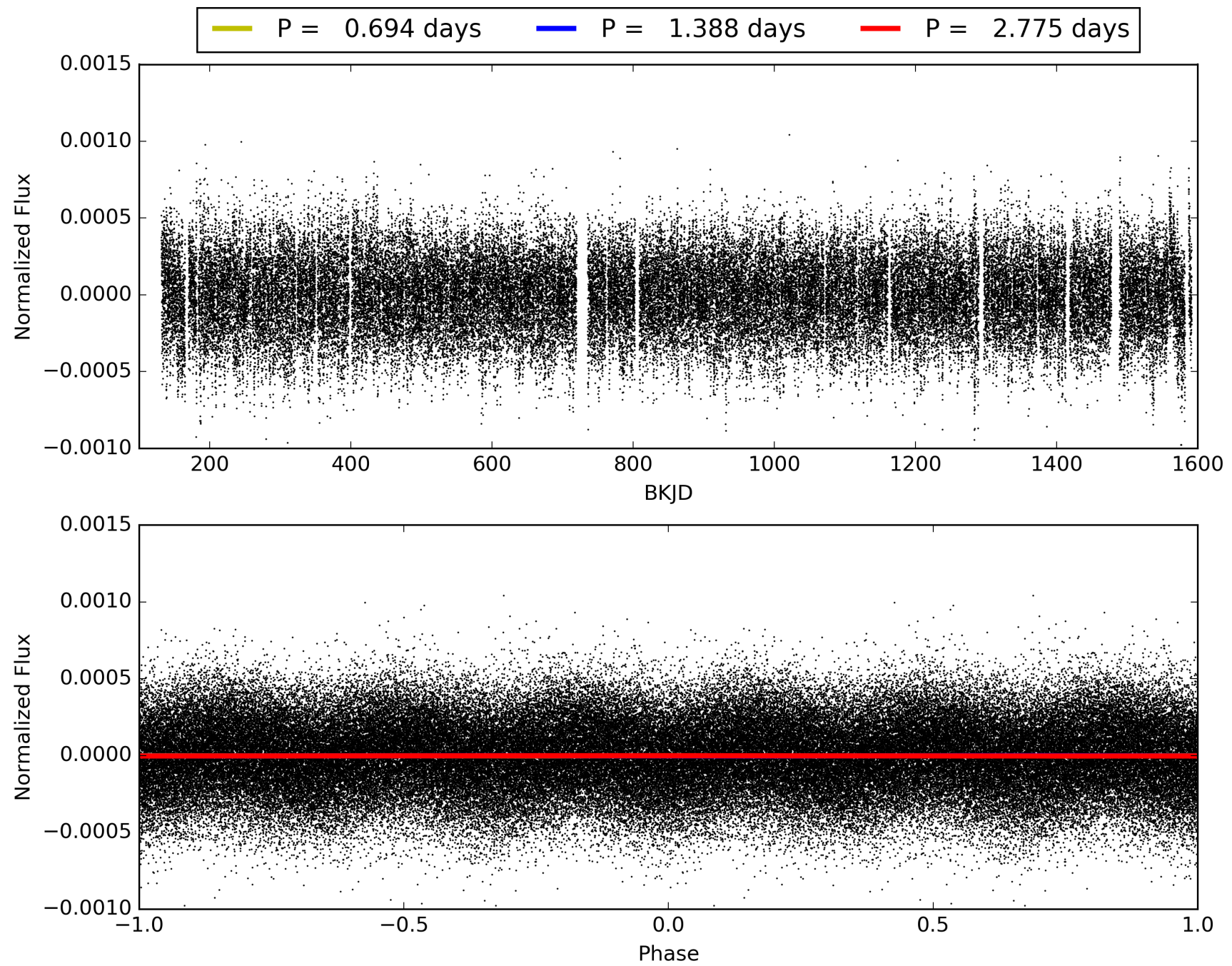
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 011456279-02, PDC Light Curves

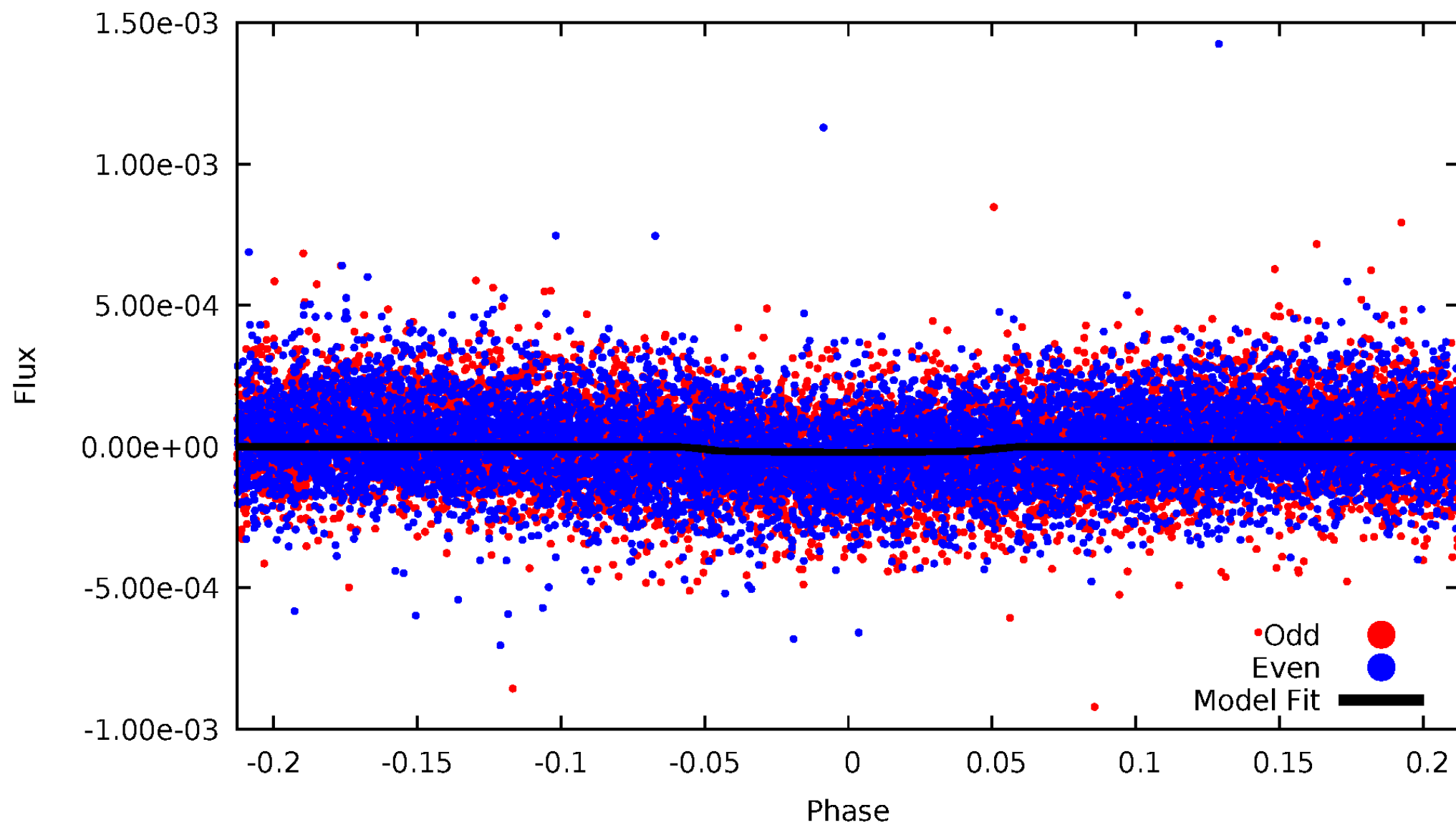


TCE 011456279-02



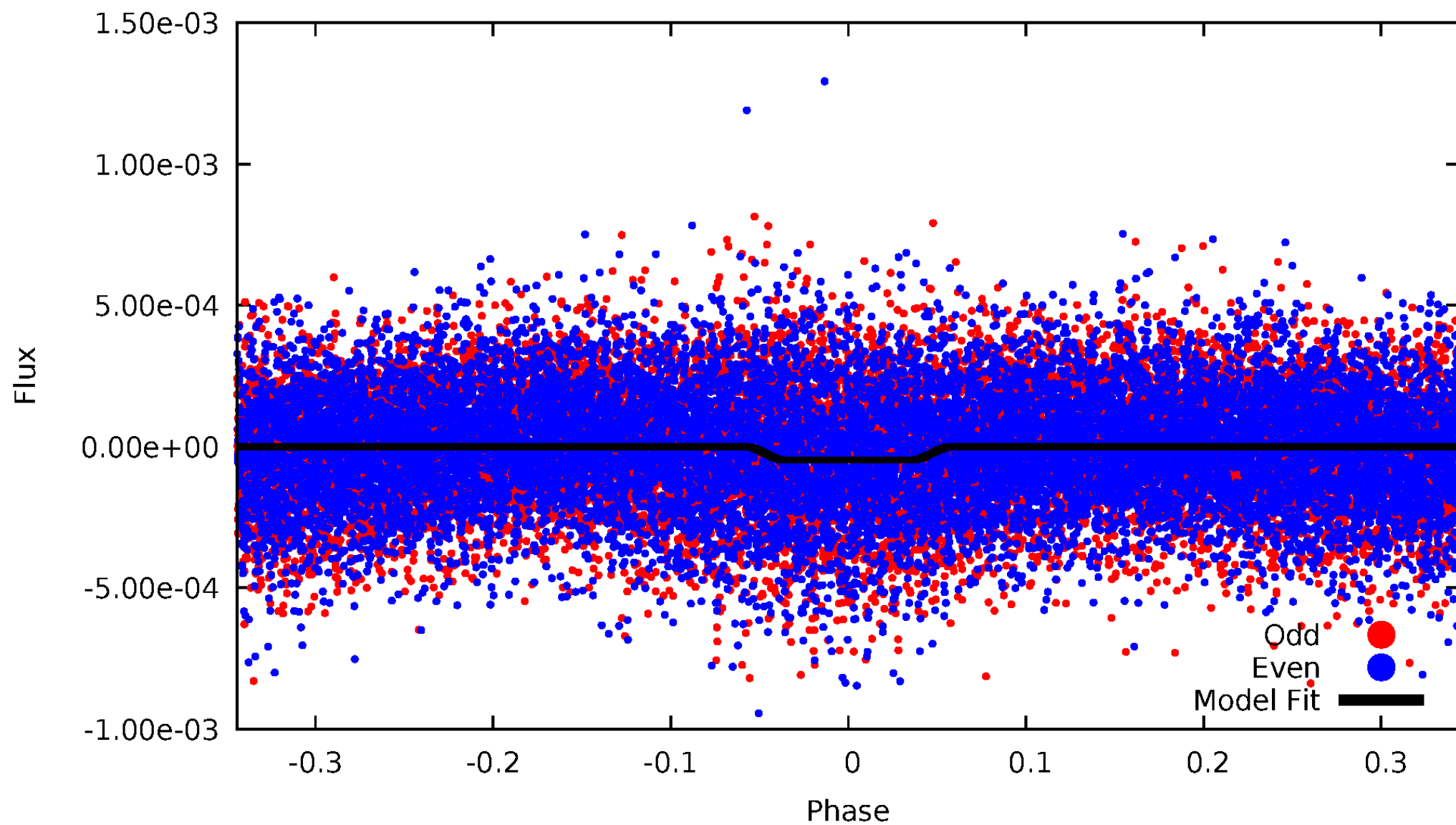
# DV Odd/Even

TCE 011456279-02



# ALT Odd/Even

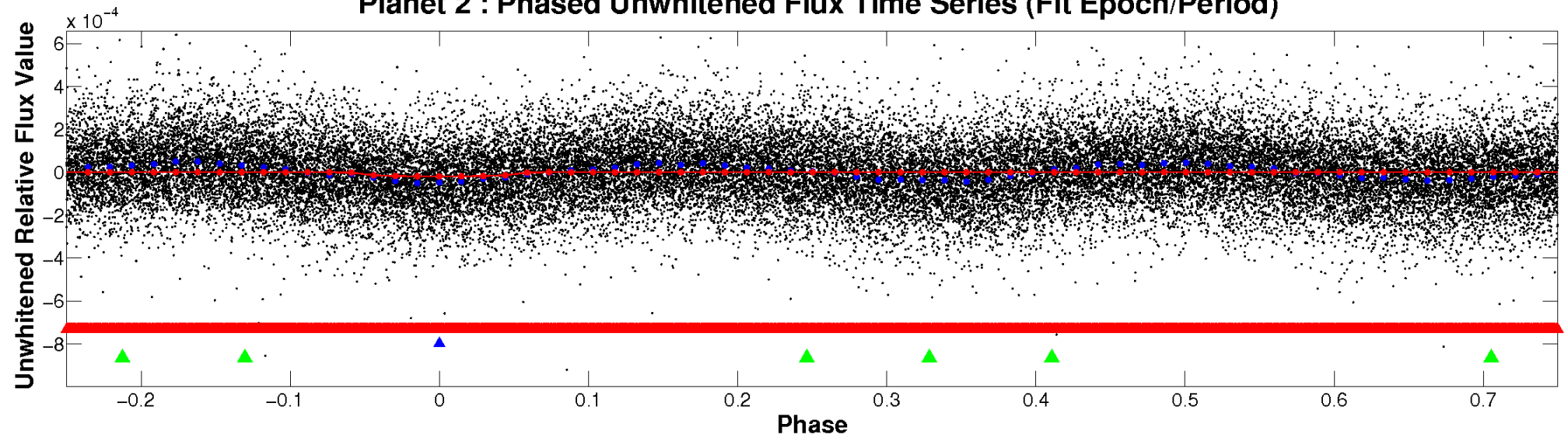
TCE 011456279-02



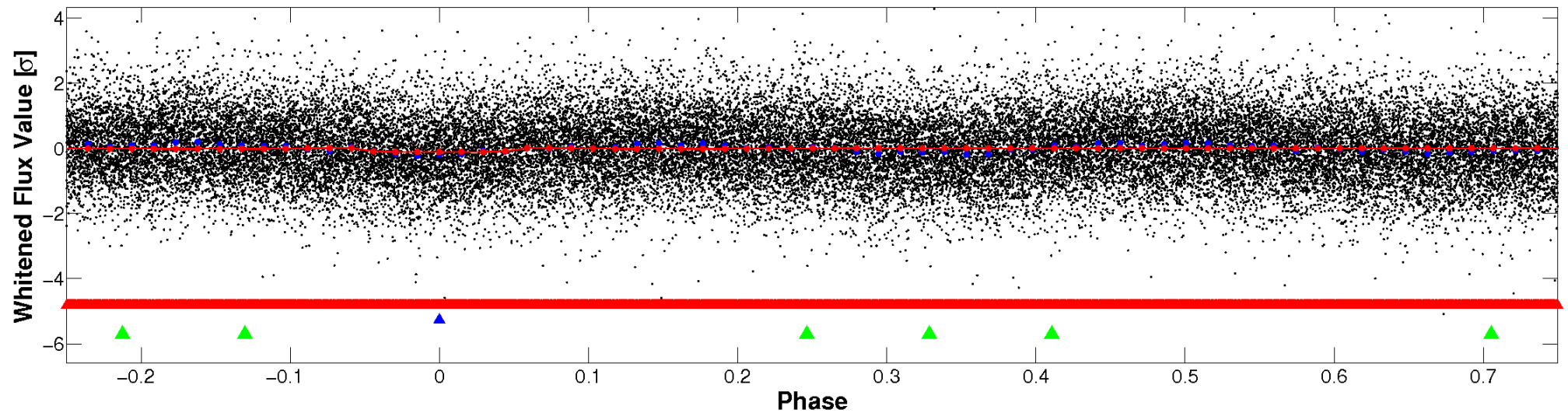


# Non-Whitened Vs. Whitened Light Curve

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

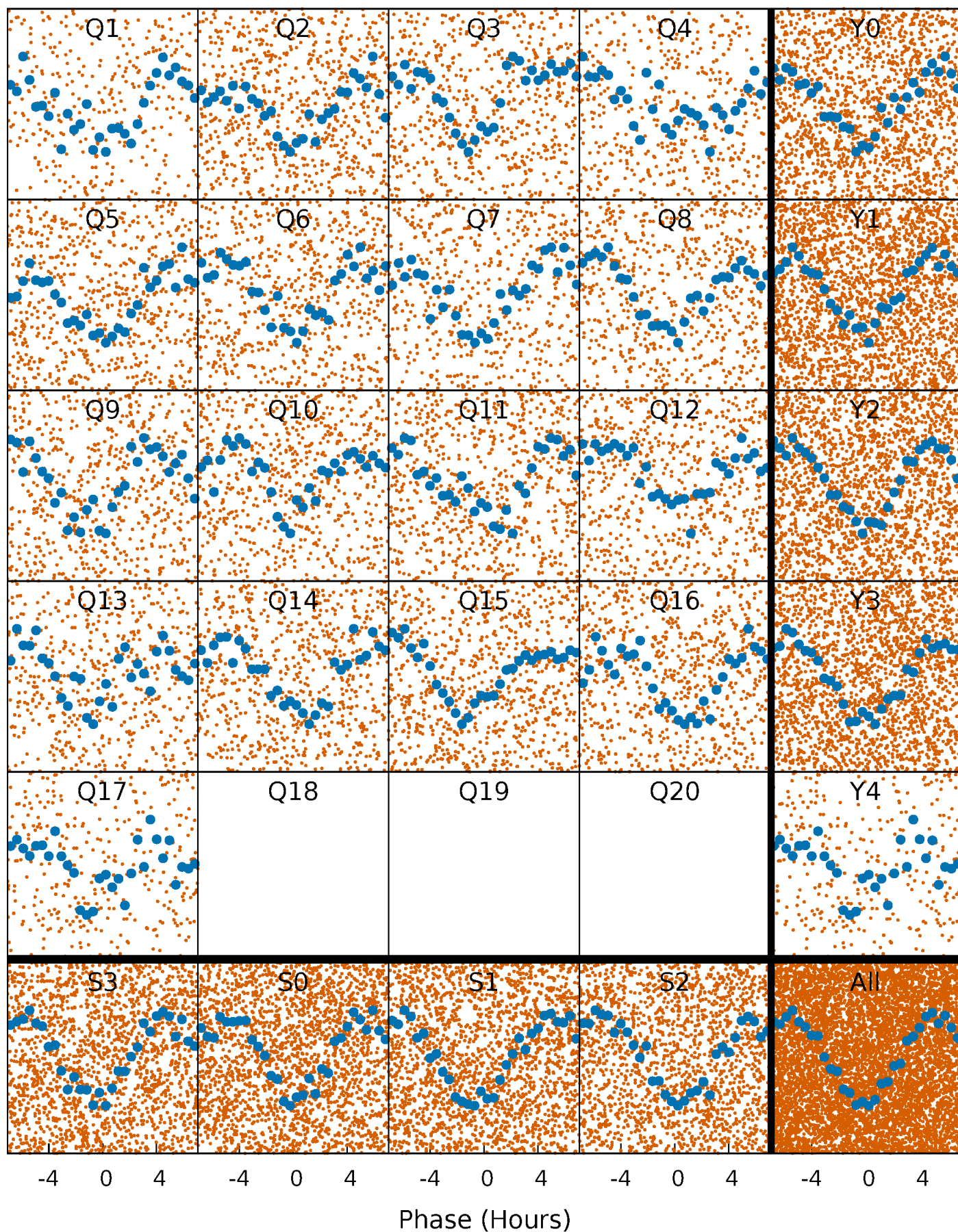


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

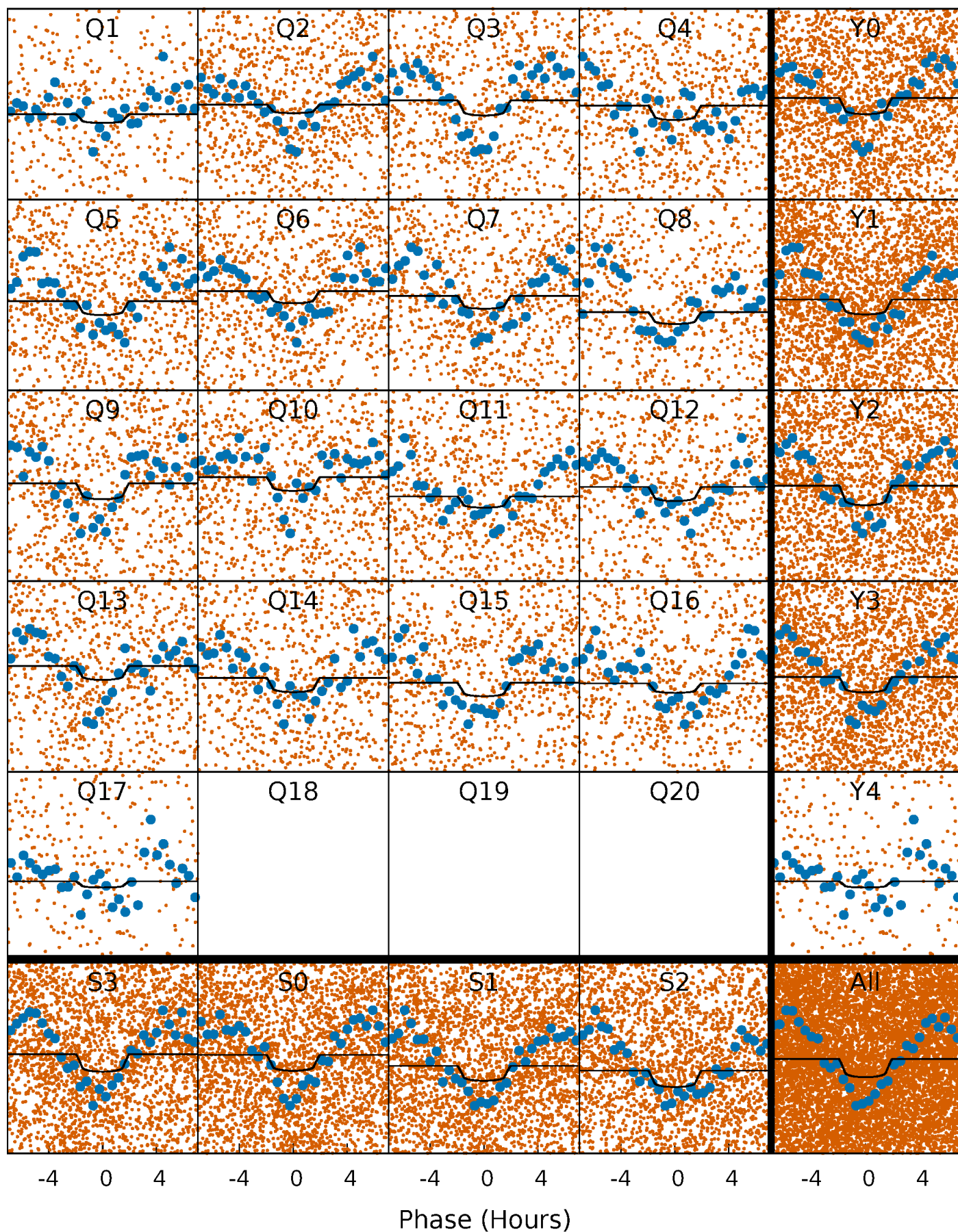
TCE 011456279-02 P= 1.387590 Days  $T_0=131.749463$  (BKJD)





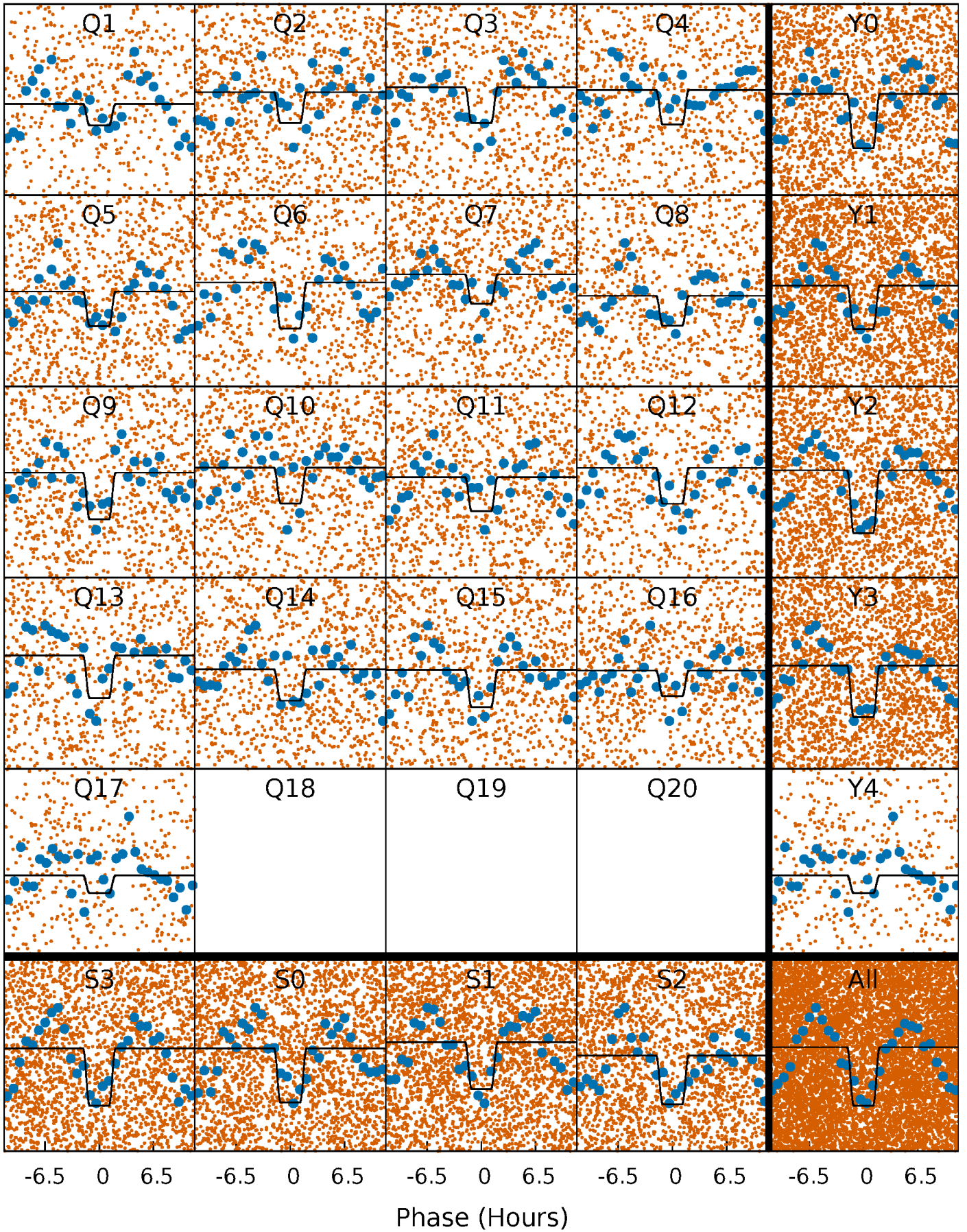
# DV Quarter-Phased Transit Curves

TCE 011456279-02     $P = 1.387590$  Days     $T_0 = 131.749463$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 011456279-02   P= 1.387620 Days    $T_0=131.729653$  (BKJD)

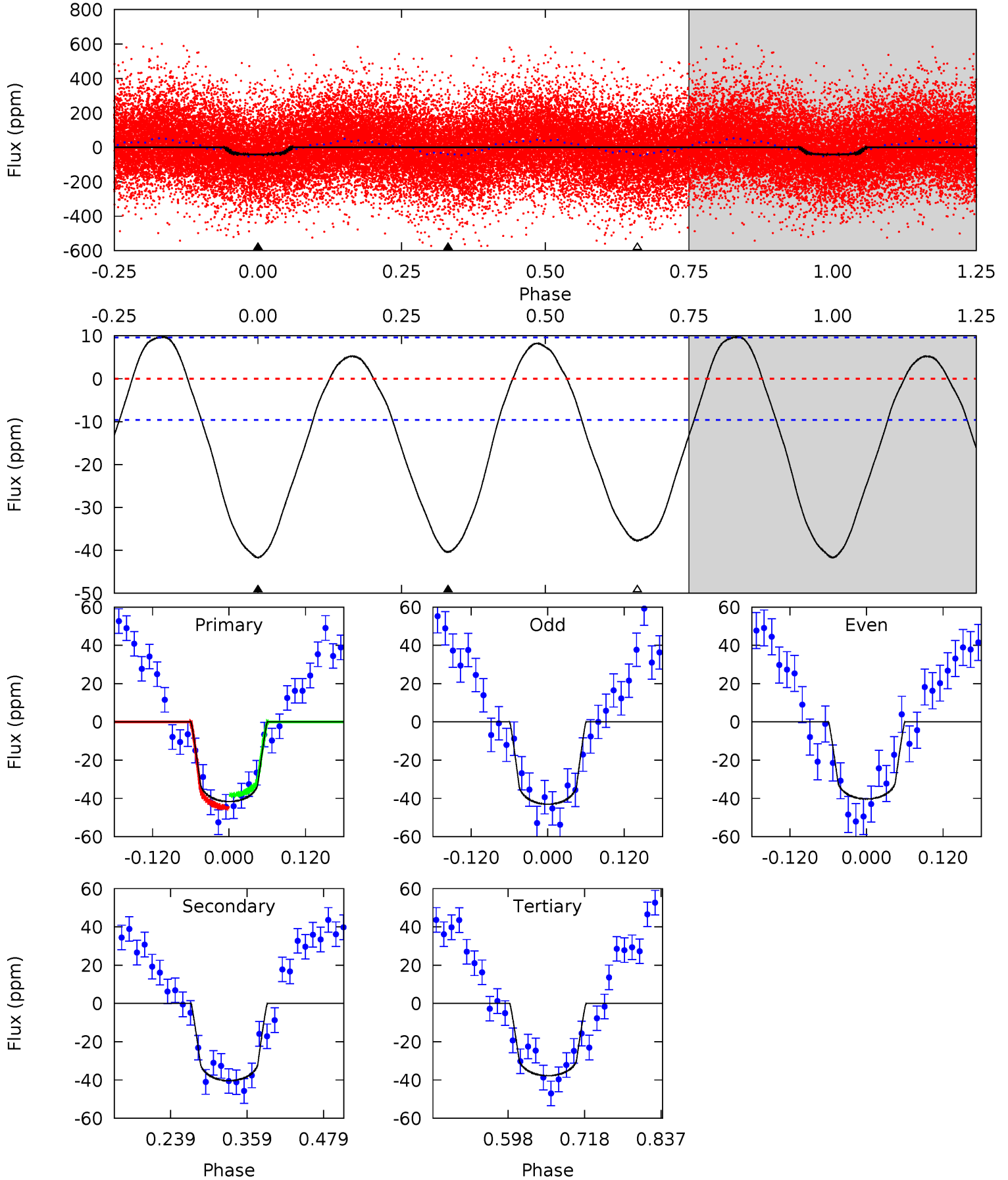




# DV Model-Shift Uniqueness Test

011456279-02, P = 1.387590 Days, E = 130.361873 Days

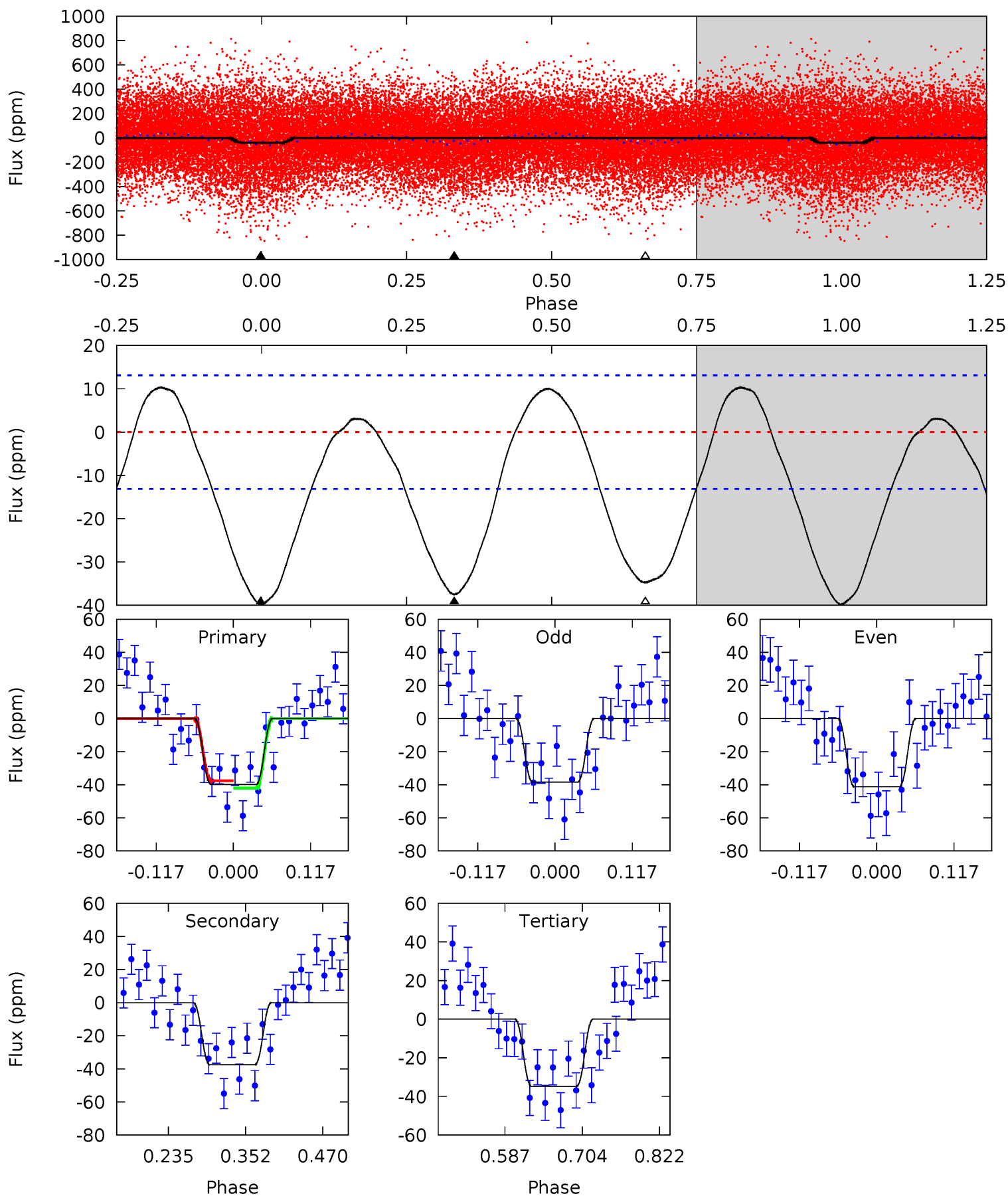
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	19.0	17.8	0	4.53	1.56	7.66	1.84	19.7	1.24	19.0	0.65	0.99	0.19	1.52



# Alt Model-Shift Uniqueness Test

011456279-02, P = 1.387620 Days, E = 130.342033 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
13.7	12.9	12.0	0	4.53	1.57	5.25	1.75	13.7	0.95	12.9	0.49	1.09	0.21	0.78





### Stellar Parameters For KIC 011456279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7329^{+203}_{-319}$	$4.226^{+0.075}_{-0.225}$	$0.070^{+0.200}_{-0.350}$	$1.590^{+0.558}_{-0.239}$	$1.550^{+0.211}_{-0.211}$	$0.543^{+0.216}_{-0.292}$
	+3%/-4%	+2%/-5%	+286%/-500%	+35%/-15%	+14%/-14%	+40%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 011456279-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-40 \pm 2$	$0.85^{+0.27}_{-0.24}$	$3444^{+301}_{-189}$	$8747^{+2240}_{-1194}$	$24^{+21}_{-11}$
Alt.	$-38 \pm 3$	$1.24^{+0.32}_{-0.26}$	$3454^{+297}_{-212}$	$6762^{+851}_{-616}$	$10^{+6}_{-4}$

$T_{max}$  = 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

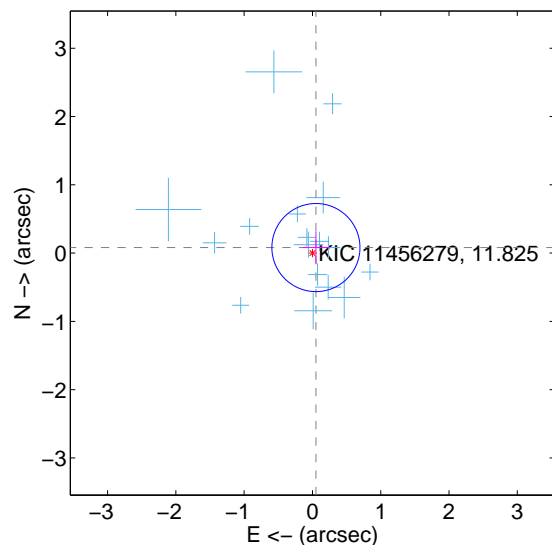
Supplemental centroid analysis for 011456279-02. **Kepler magnitude: 11.82.** Transit SNR 6.60

There are 17 quarters with good PRF difference image offsets

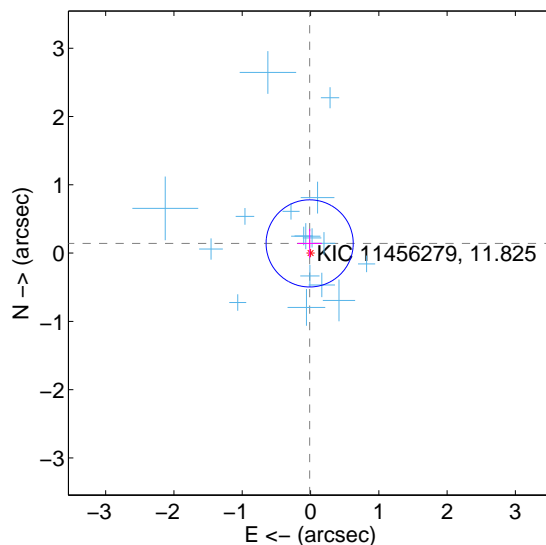
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.096 \pm 0.215$	0.45	$-0.051 \pm 0.198$	$0.081 \pm 0.236$
PRF-fit source offset from KIC position	$0.143 \pm 0.213$	0.67	$0.013 \pm 0.177$	$0.142 \pm 0.212$
photometric centroid source offset	$0.65 \pm 0.77$	0.85	$0.47 \pm 0.72$	$0.44 \pm 0.82$

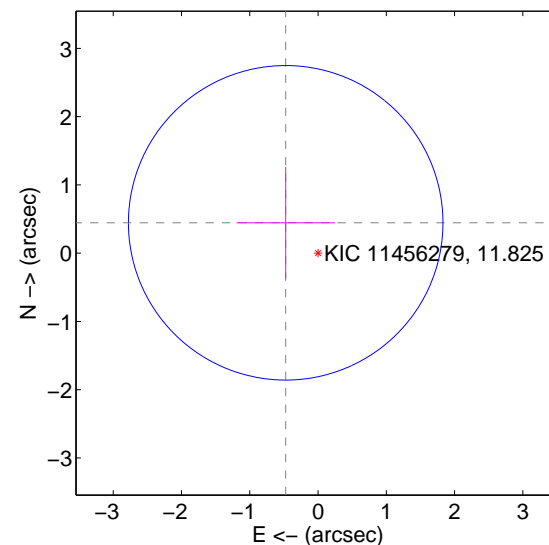
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

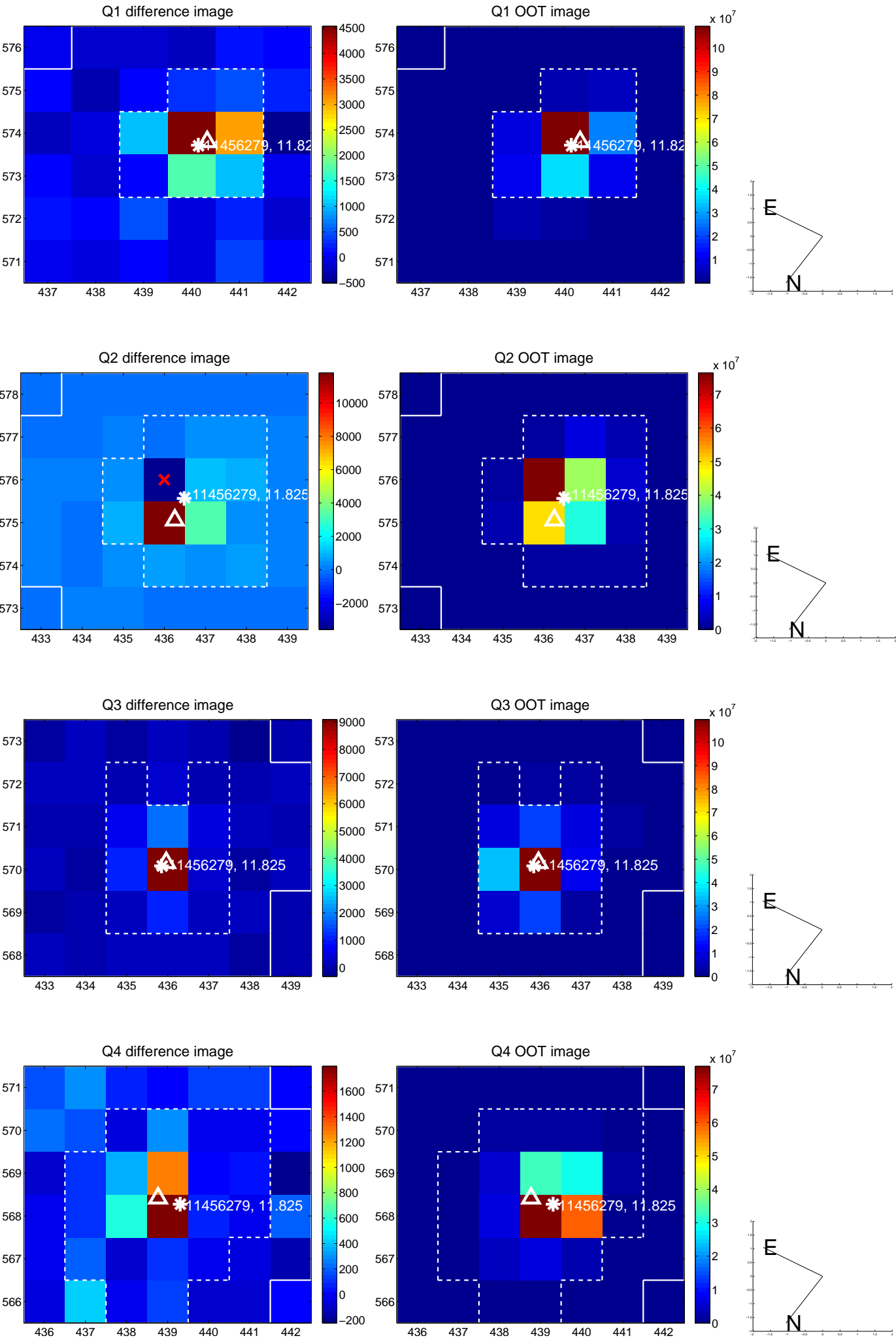


offset from photometric centroids

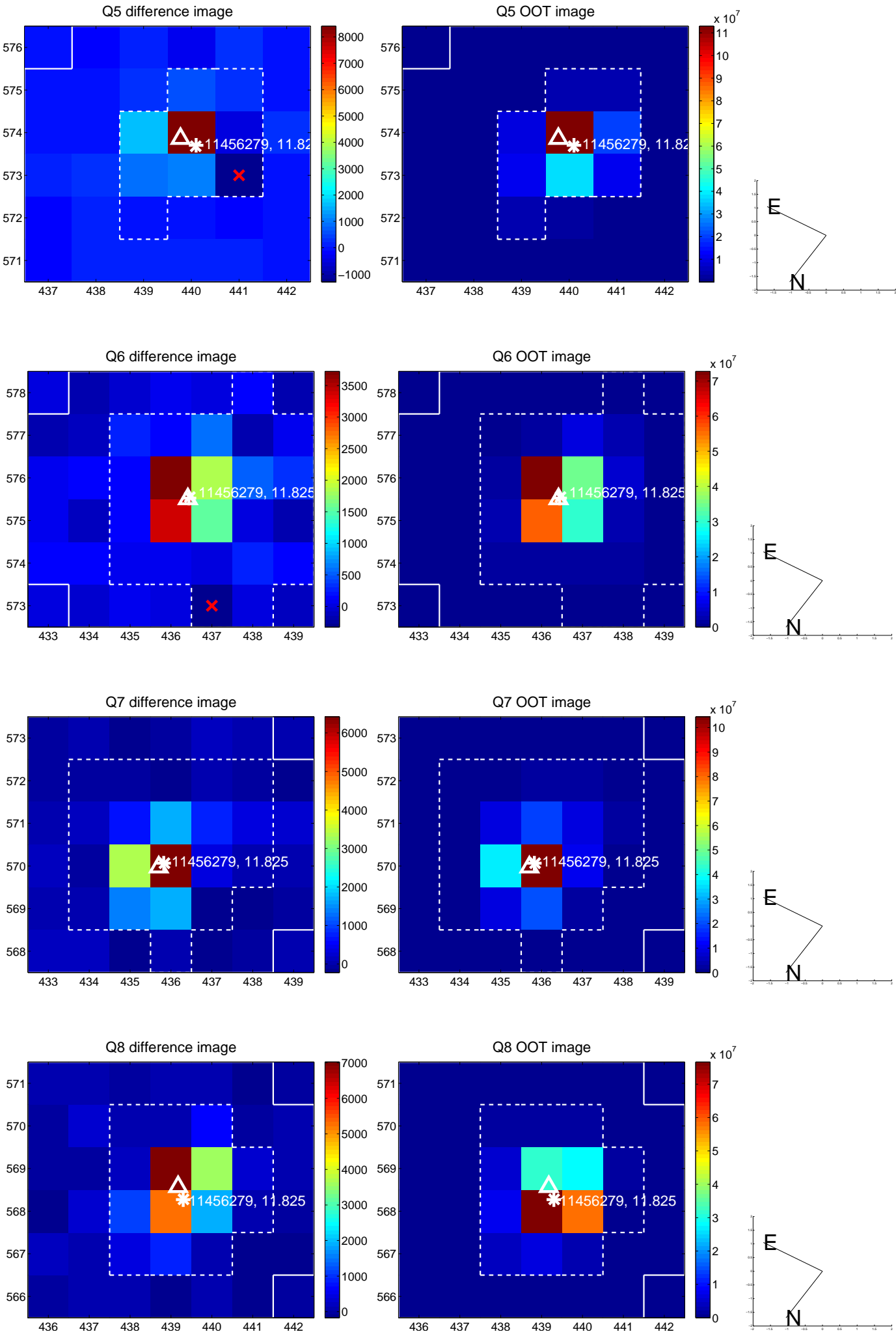


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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.

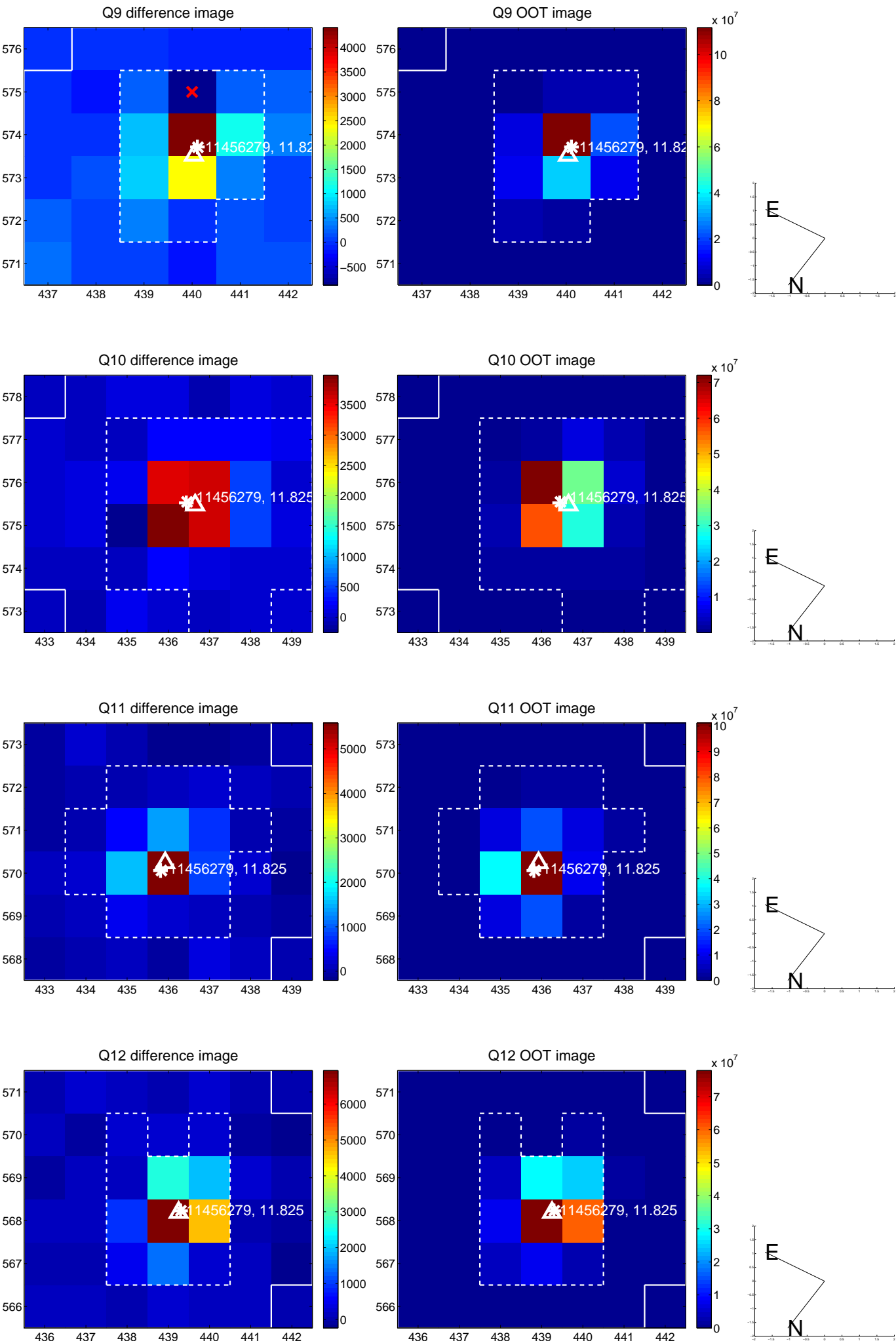


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

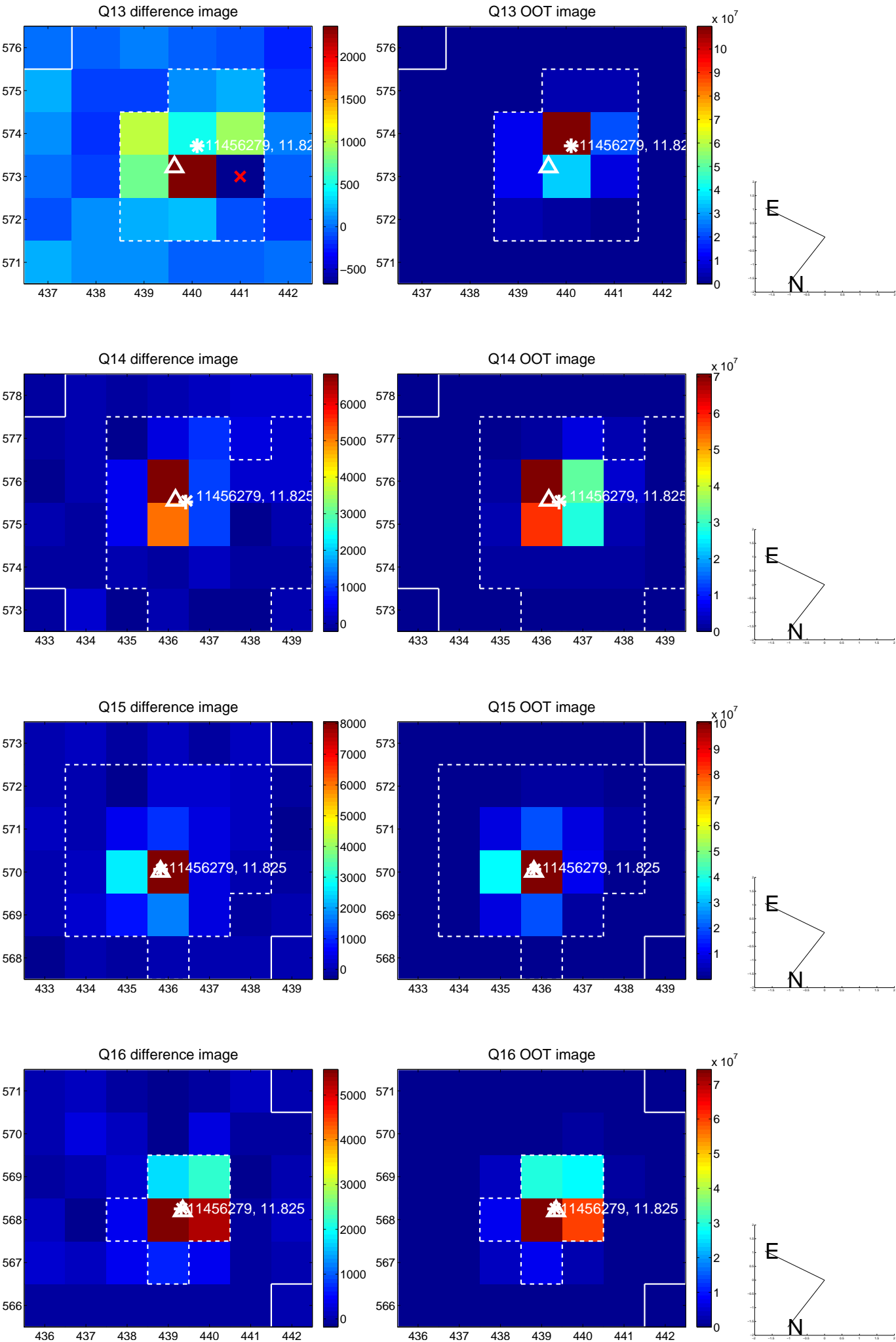




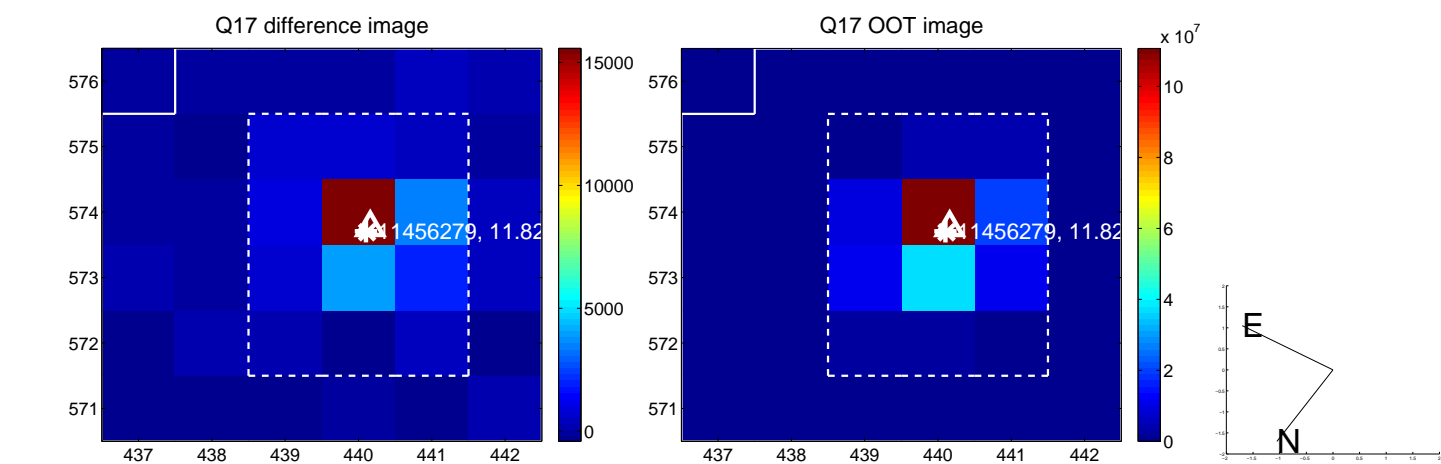
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



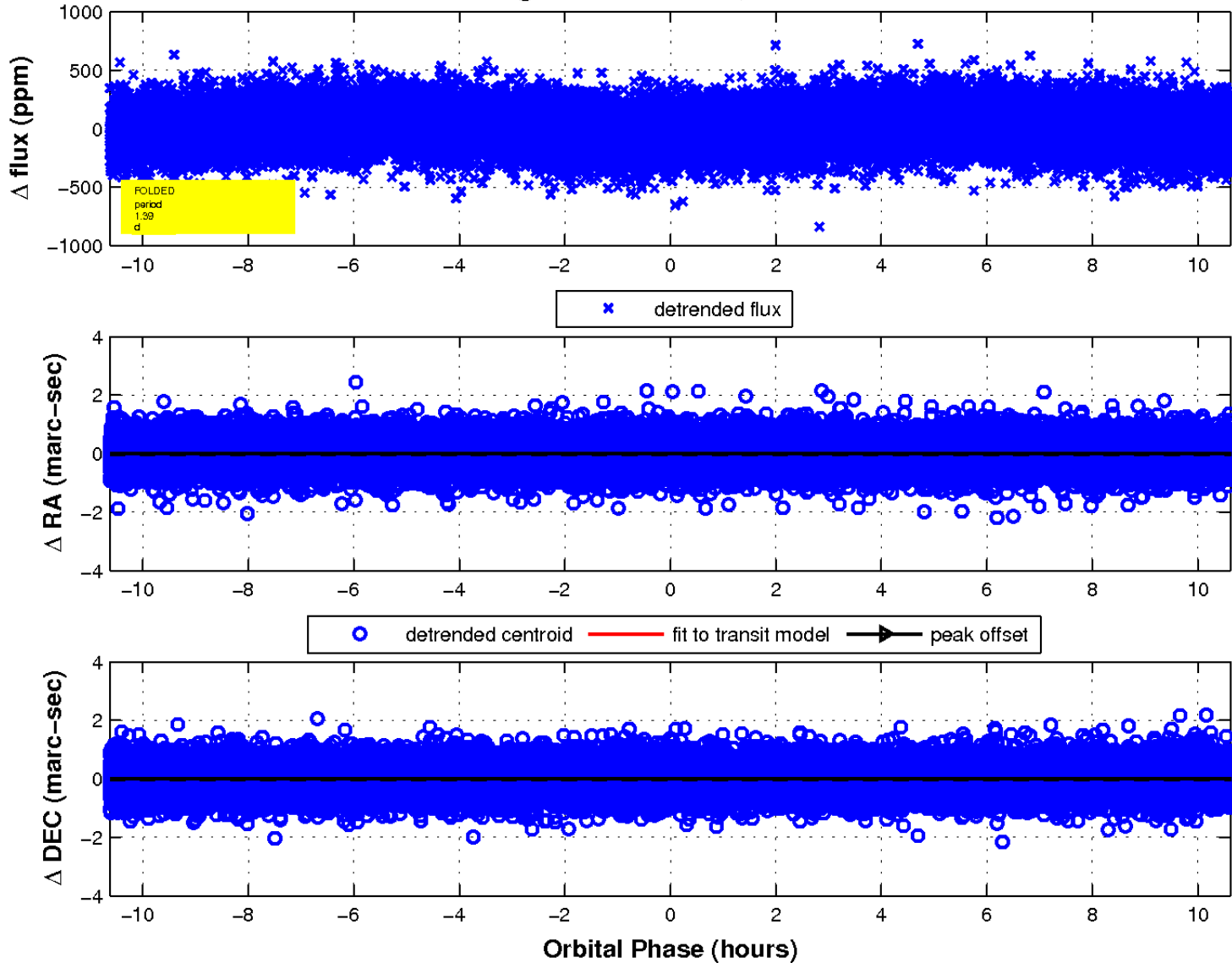
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

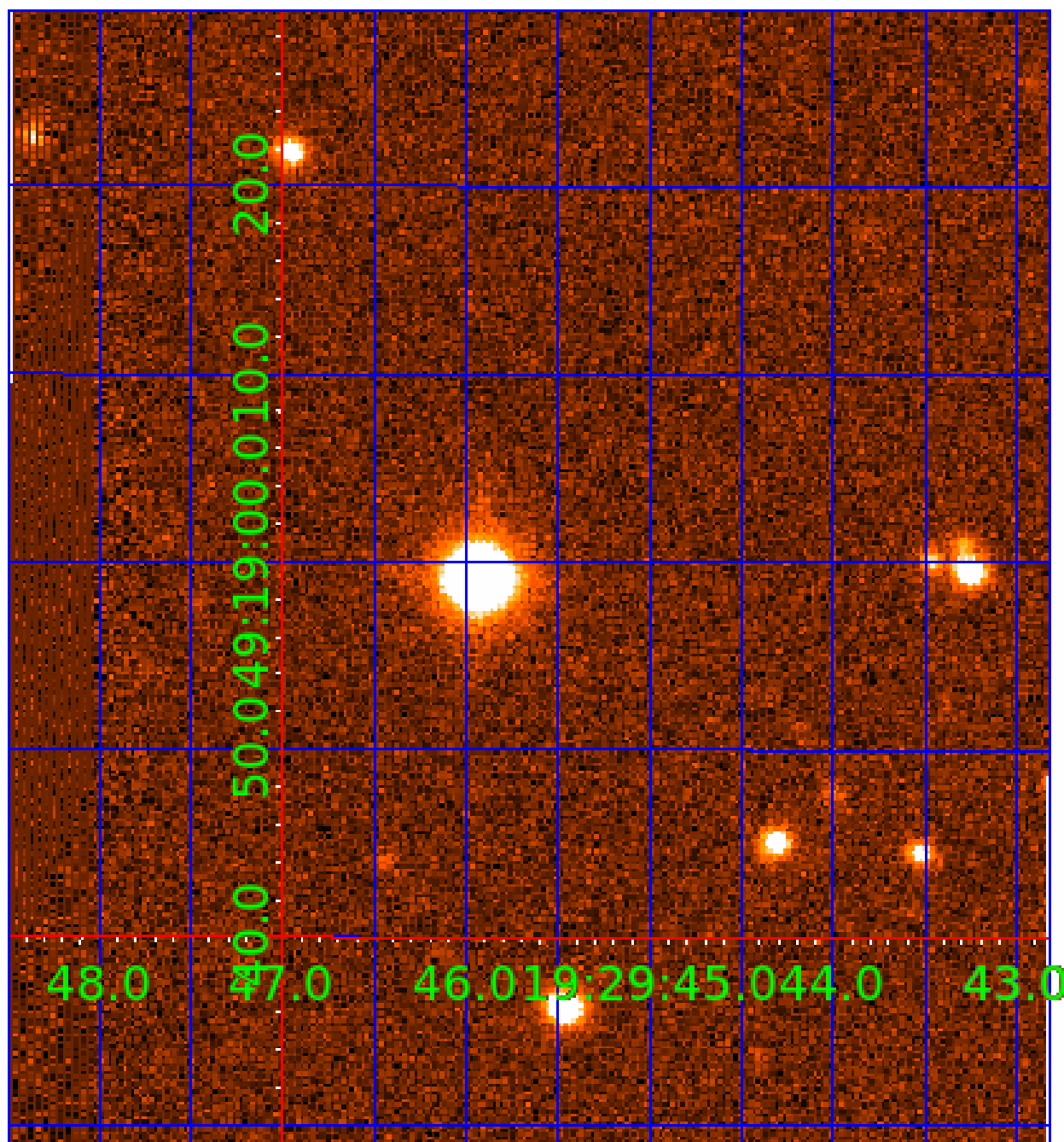


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



# KIC 011456279

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011456279-01	OBS	No	0.648314	132.130092	20.7	1.847	9.9	10.4	1.59	7329	0.84	22679.00
011456279-02	OBS	No	1.387590	131.749463	19.2	3.541	7.8	6.6	1.59	7329	0.80	8222.23
011456279-03	OBS	No	255.953440	308.543318	259.5	4.498	8.2	7.7	1.59	7329	3.00	7.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011456279-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
011456279-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
011456279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

**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 011456279-03

No Significant Match Found

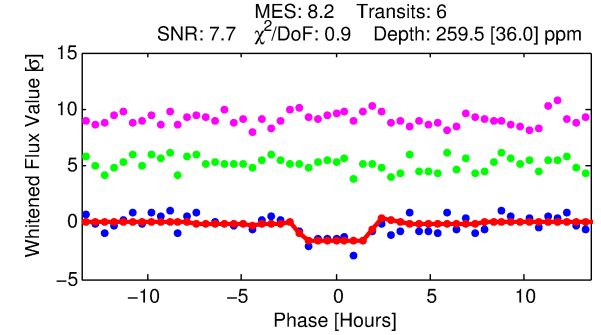
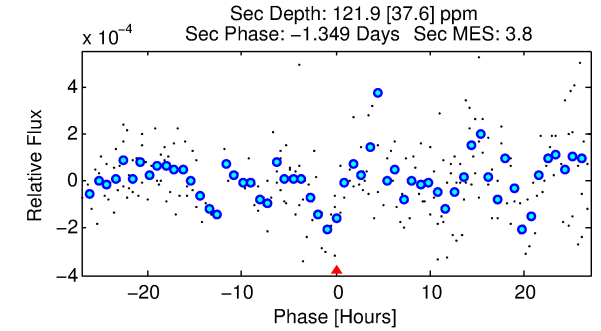
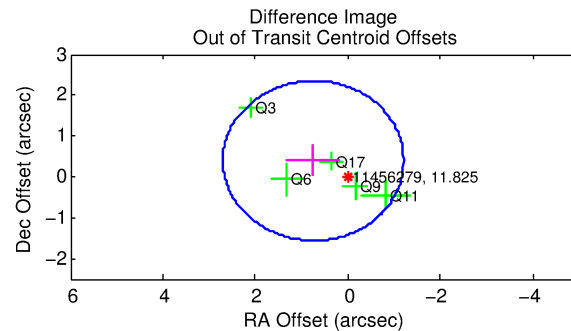
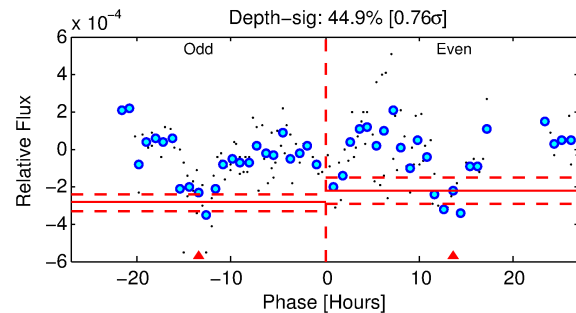
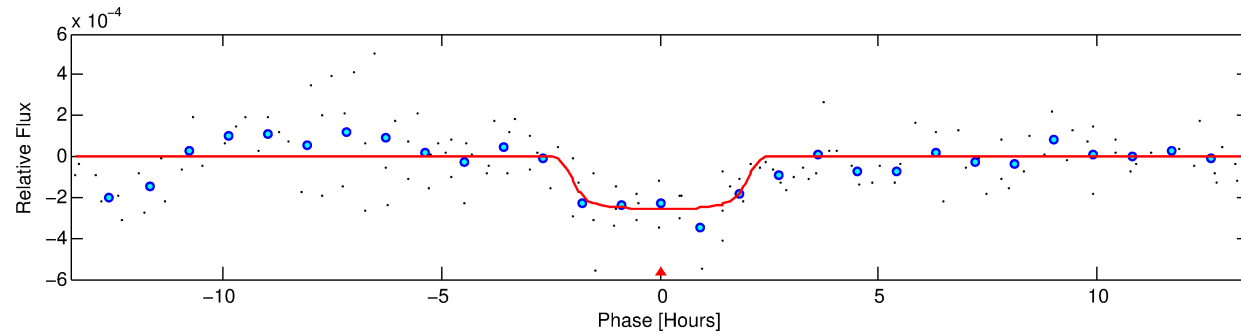
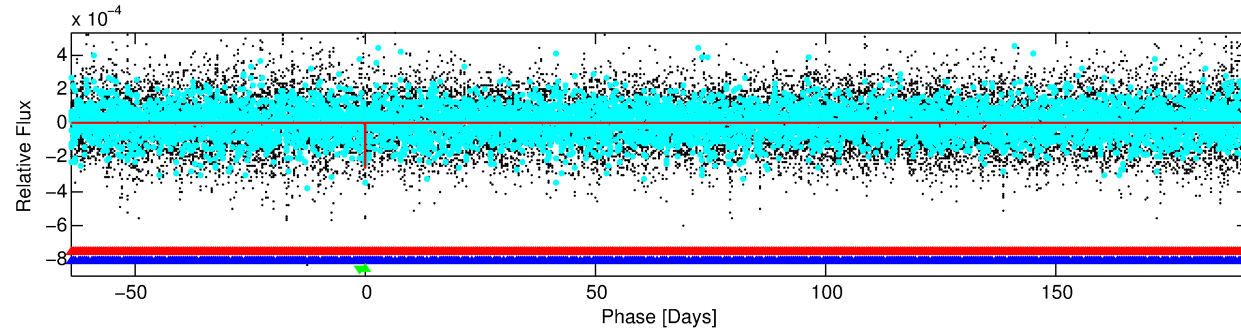
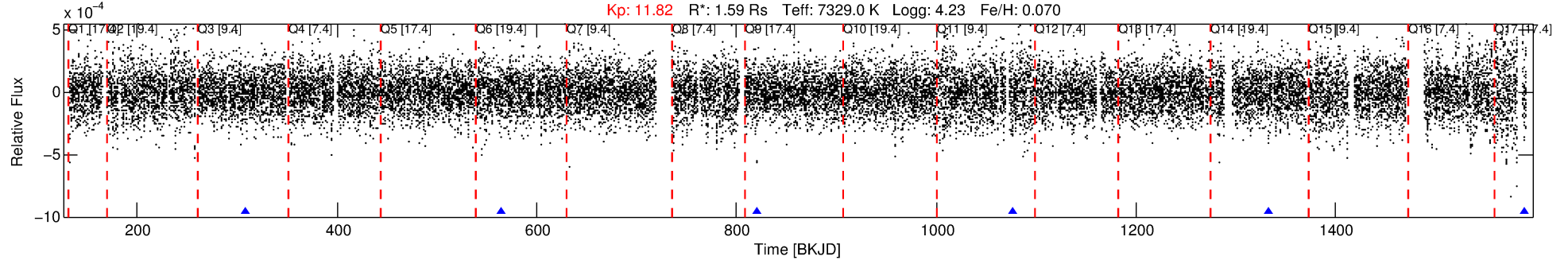


# DV One-Page Summary

KIC: 11456279 Candidate: 3 of 3 Period: 255.953 d

KOI: K03204 Corr: No Ephemeris Match

Kp: 11.82 R\*: 1.59 Rs Teff: 7329.0 K Logg: 4.23 Fe/H: 0.070



## DV Fit Results:

Period = 255.95344 [0.00361] d  
Epoch = 308.5433 [0.0104] BKJD  
Rp/R\* = 0.0173 [0.0046]  
a/R\* = 192.90 [315.57]  
b = 0.92 [0.29]  
Seff = 7.83 [3.54]  
Teq = 427 [48] K  
Rp = 3.00 [1.32] Re  
a = 0.9136 [0.2657] AU  
Ag = 6206.10 [4615.58] [1.34σ]  
Teffp = 5854 [936] K [5.79σ]

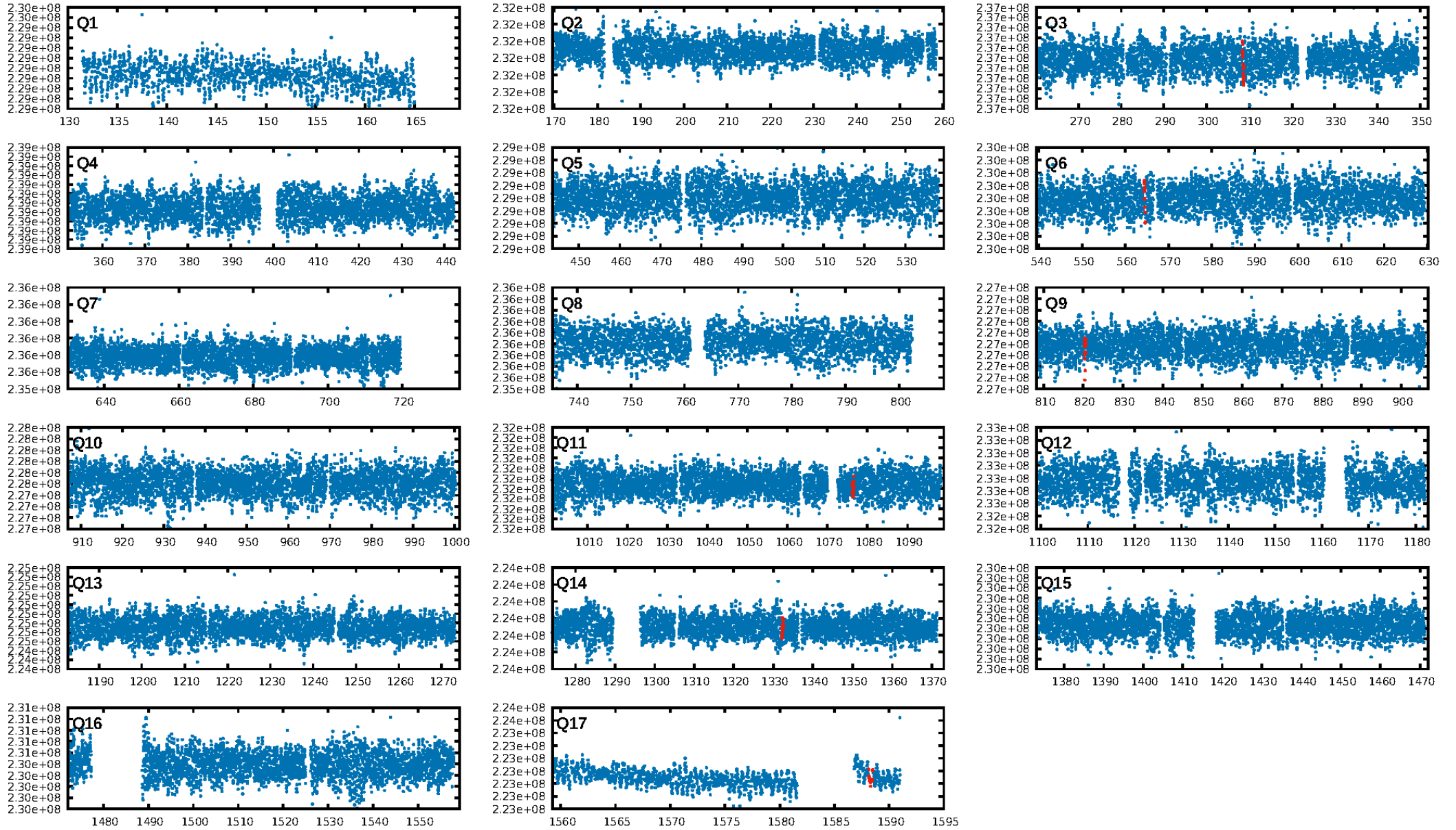
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1067.19σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.19e-13  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 1.79  
Centroid-sig: 14.1%  
Centroid-so: 0.721 arcsec [0.99σ]  
OotOffset-rm: 0.849 arcsec [1.30σ]  
OotOffset-st: 1/2/0/2 [5]  
KicOffset-rm: 0.920 arcsec [1.70σ]  
KicOffset-st: 1/2/0/2 [5]  
DiffImageQuality-fgm: 0.80 [4/5]  
DiffImageOverlap-fno: 0.00 [0/6]

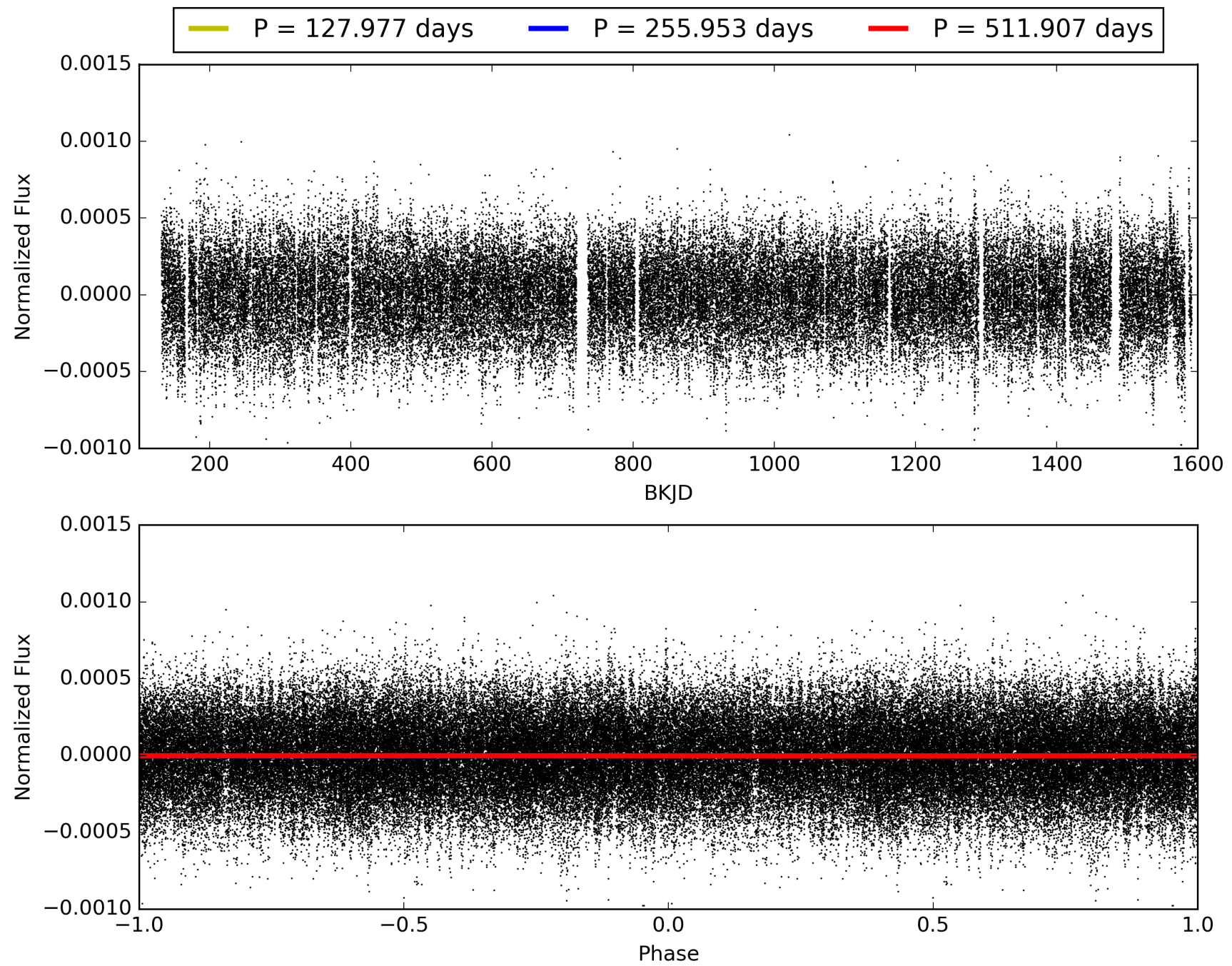
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:03:18 Z

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

# TCE 011456279-03, PDC Light Curves

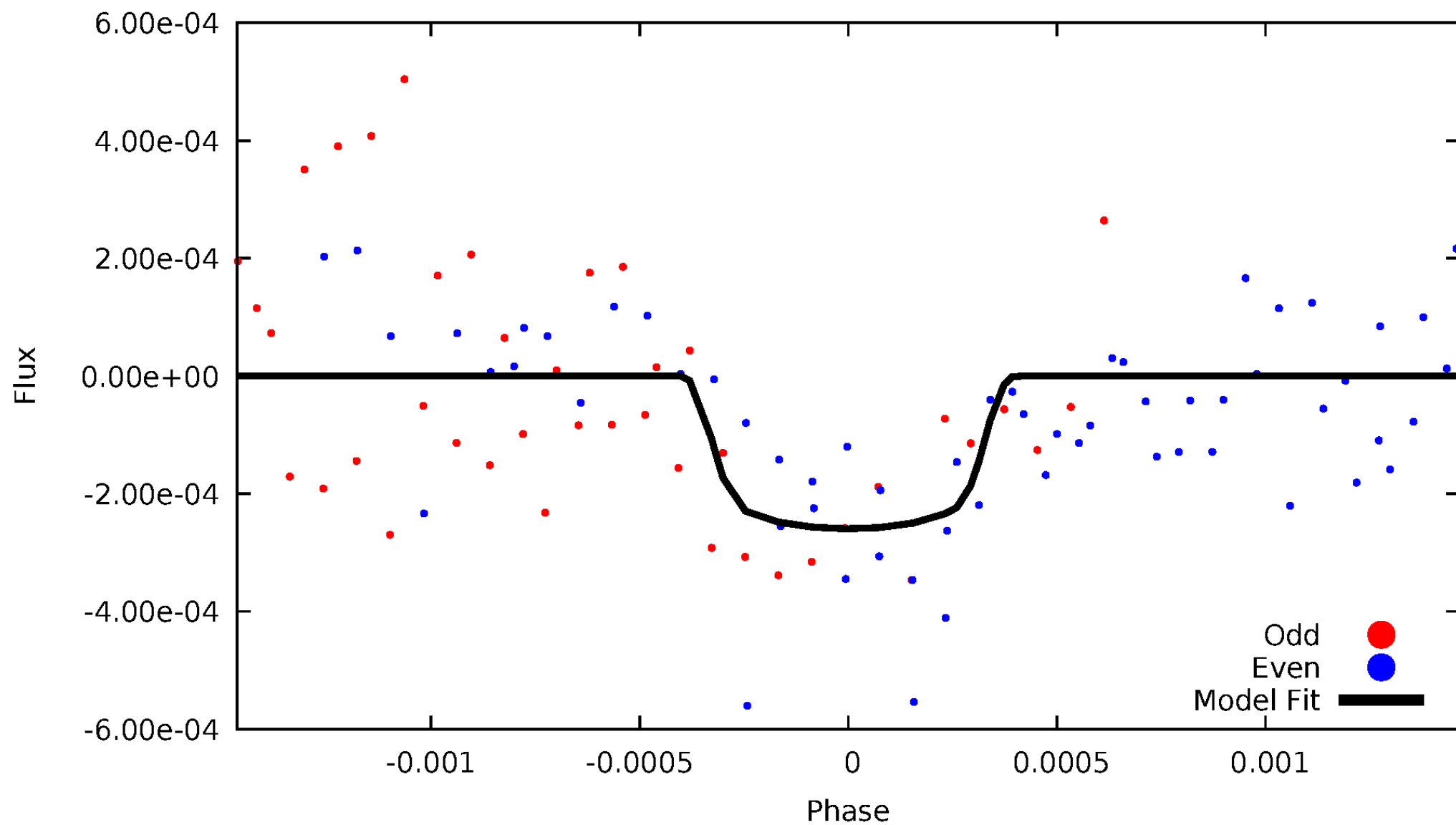


TCE 011456279-03



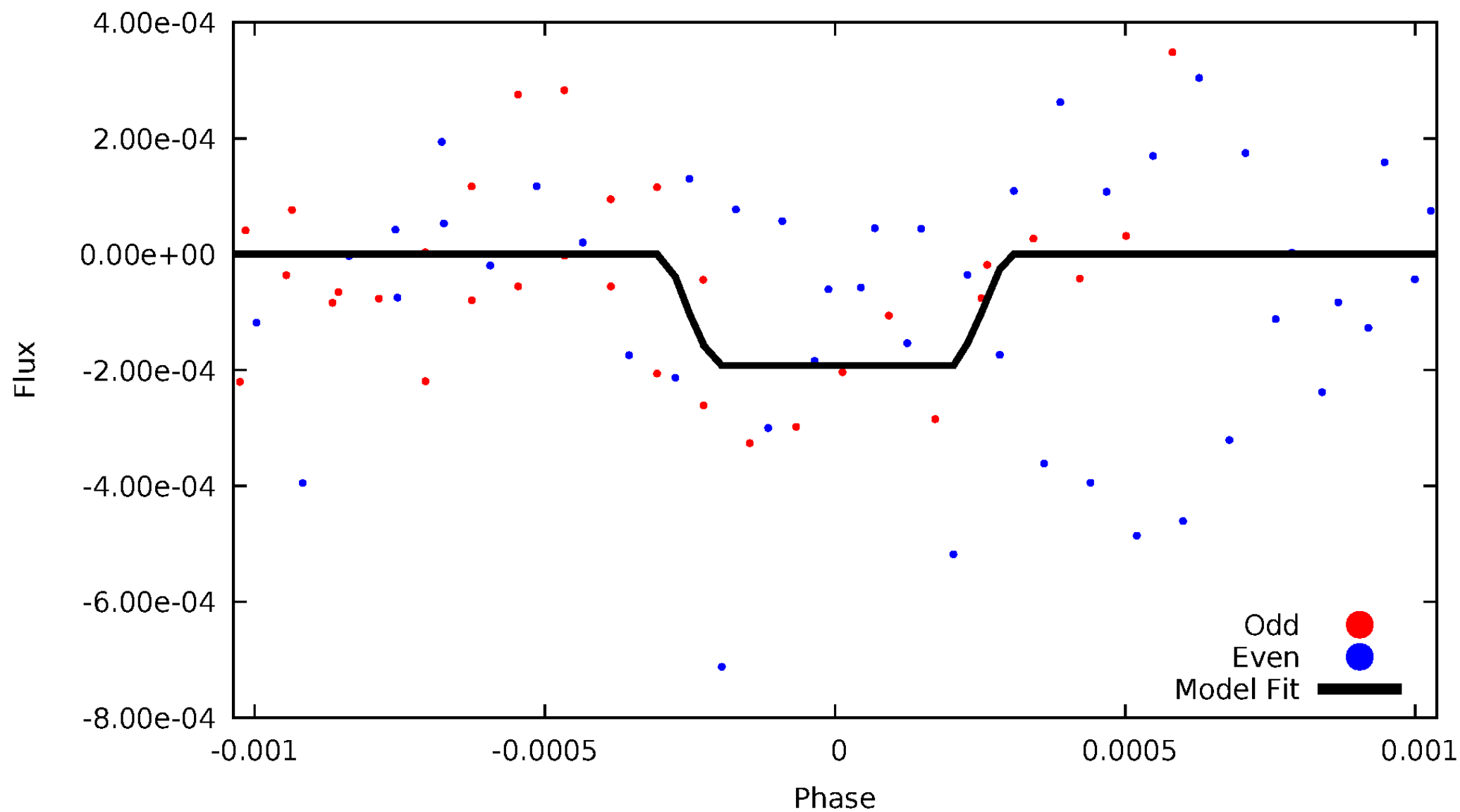
# DV Odd/Even

TCE 011456279-03



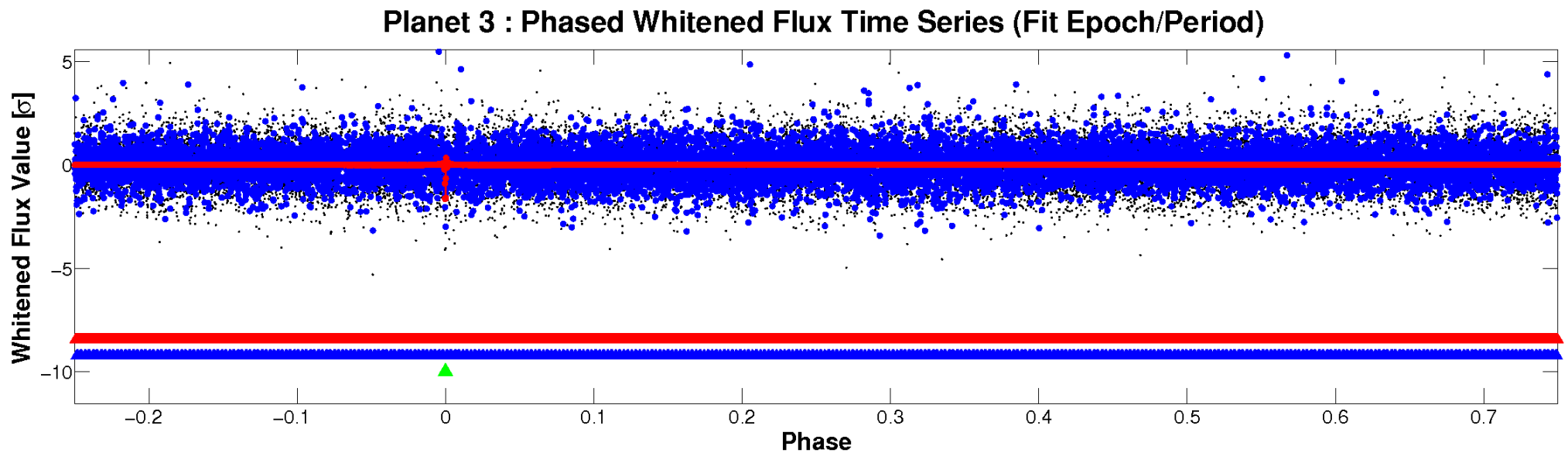
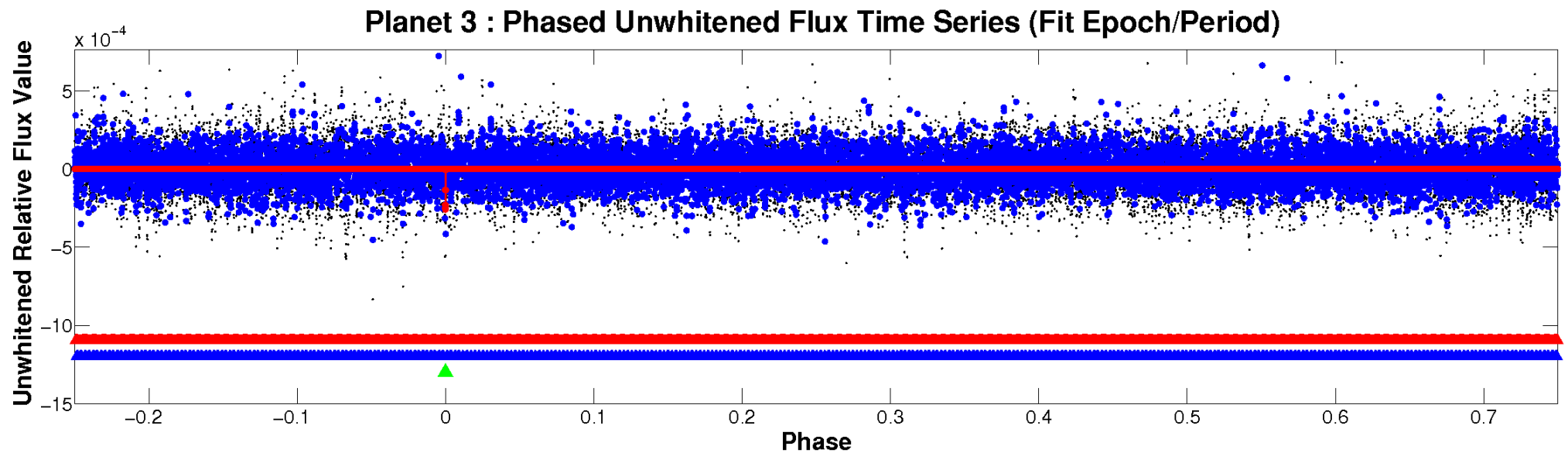
# ALT Odd/Even

TCE 011456279-03



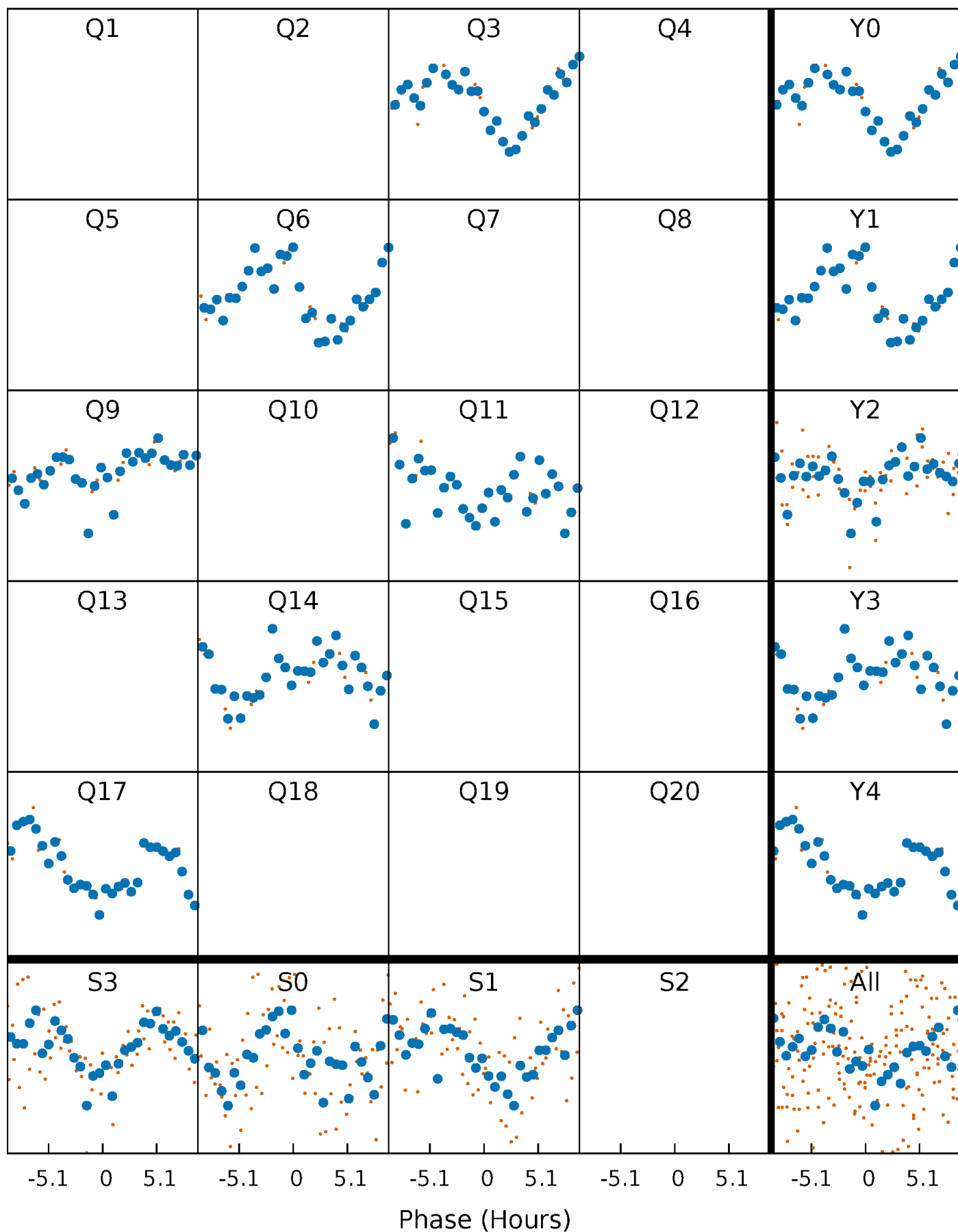


# Non-Whitened Vs. Whitened Light Curve



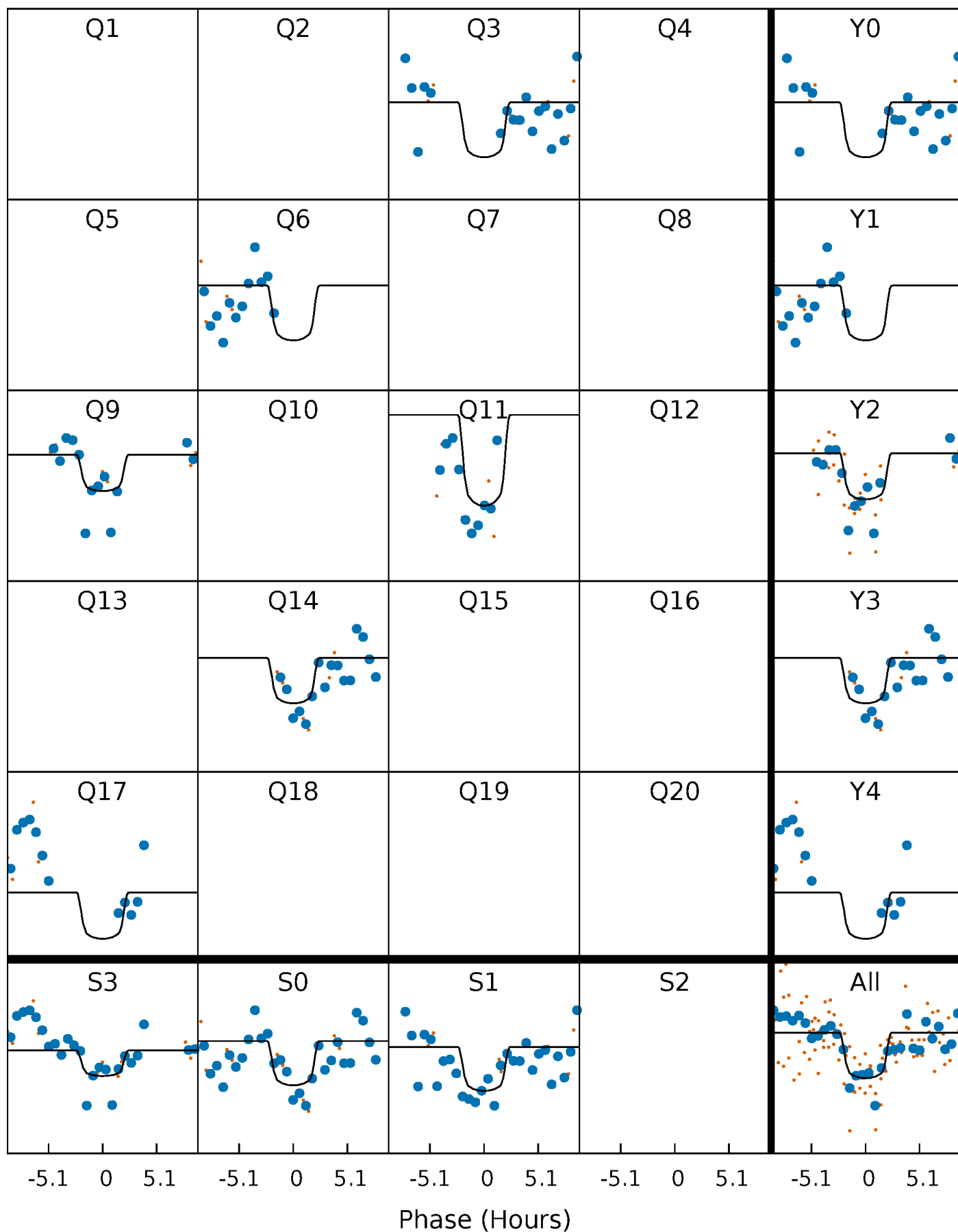
# PDC Quarter-Phased Transit Curves

TCE 011456279-03     $P=255.953440$  Days     $T_0=308.543318$  (BKJD)



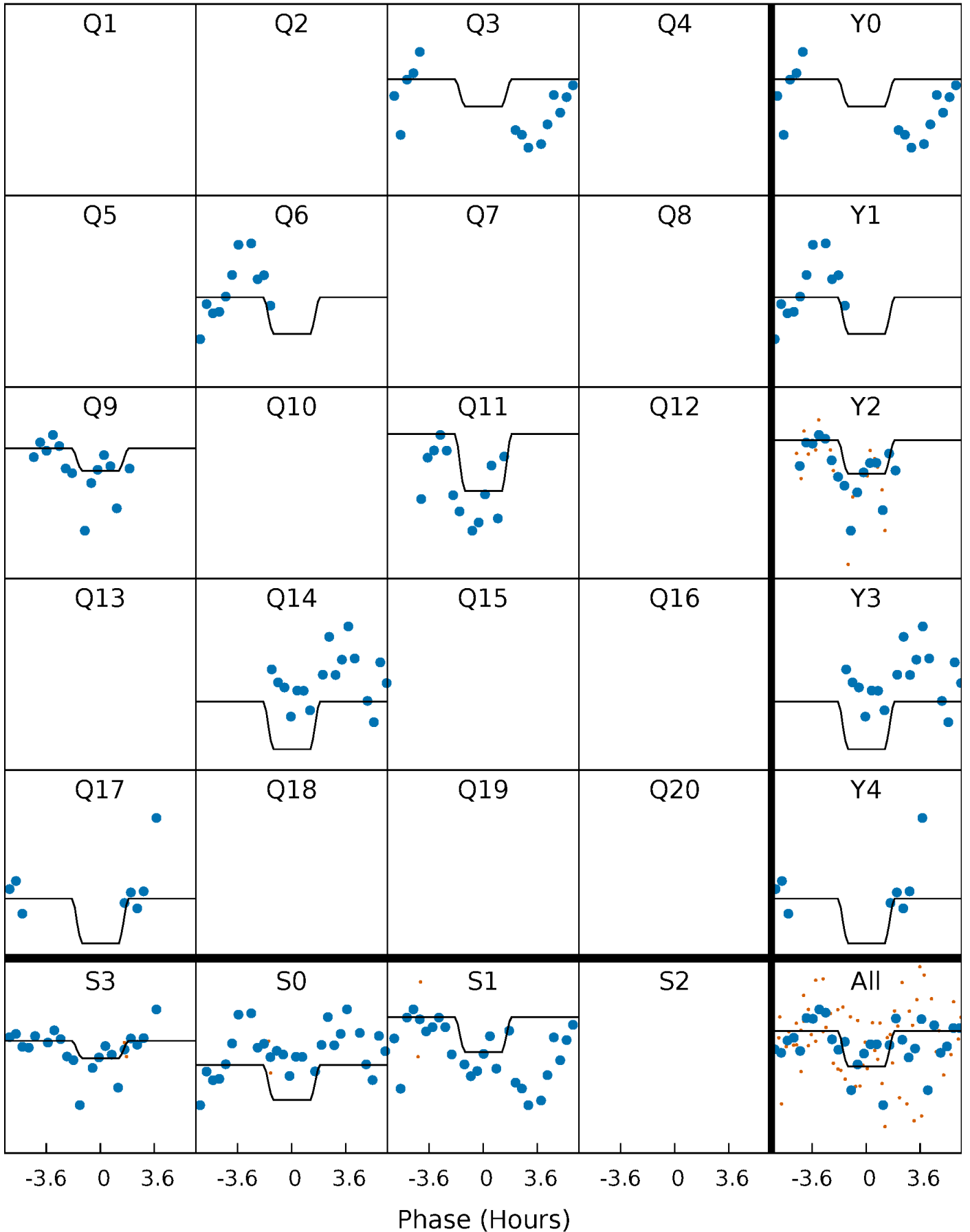
# DV Quarter-Phased Transit Curves

TCE 011456279-03     $P=255.953440$  Days     $T_0=308.543318$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

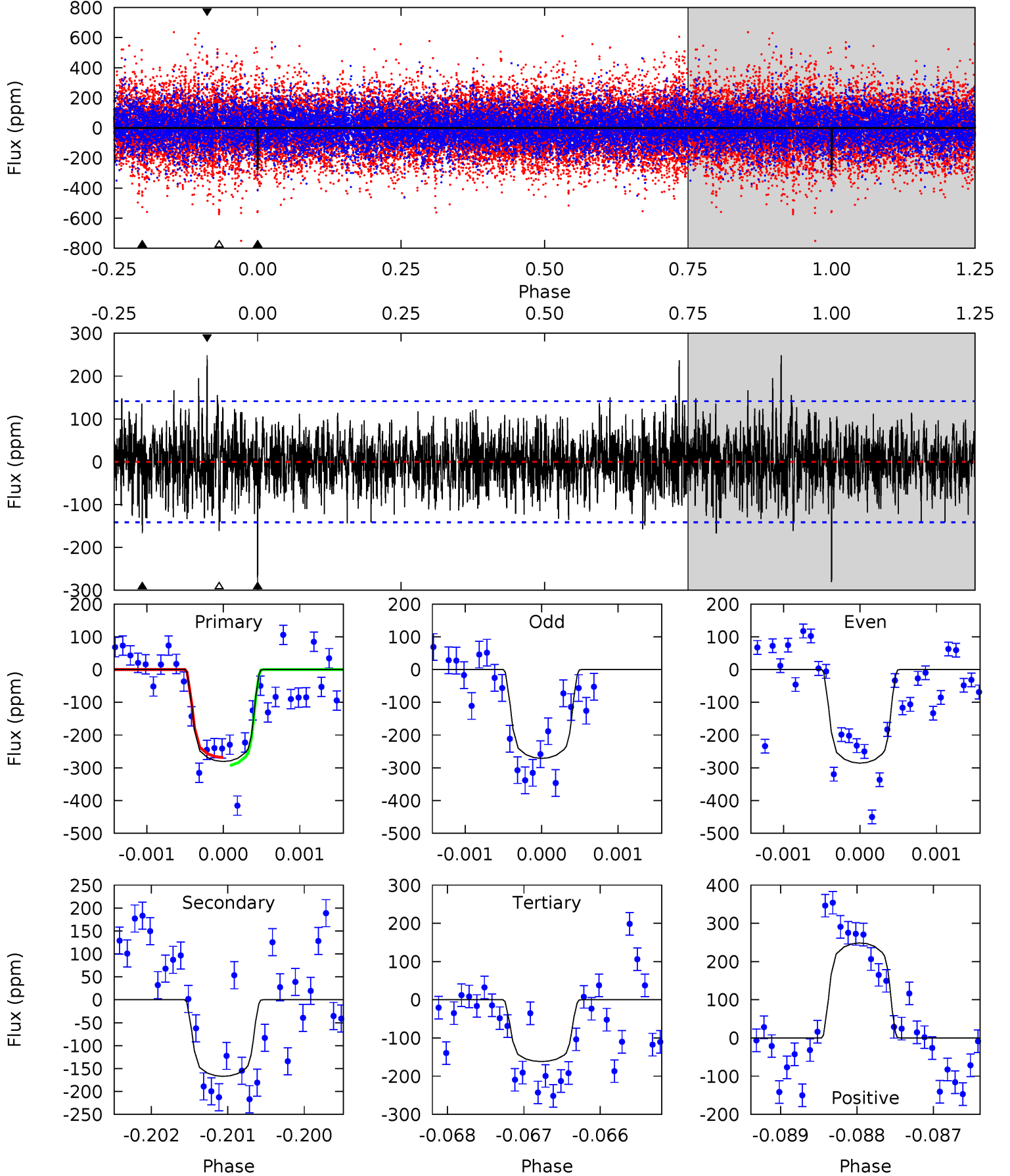
TCE 011456279-03 P=255.960165 Days  $T_0=308.517777$  (BKJD)



# DV Model-Shift Uniqueness Test

011456279-03,  $P = 255.953440$  Days,  $E = 52.589878$  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
10.9	6.48	6.28	9.65	5.49	3.35	1.94	4.62	1.24	0.20	-3.17	0.27	0.99	0.47	0.48

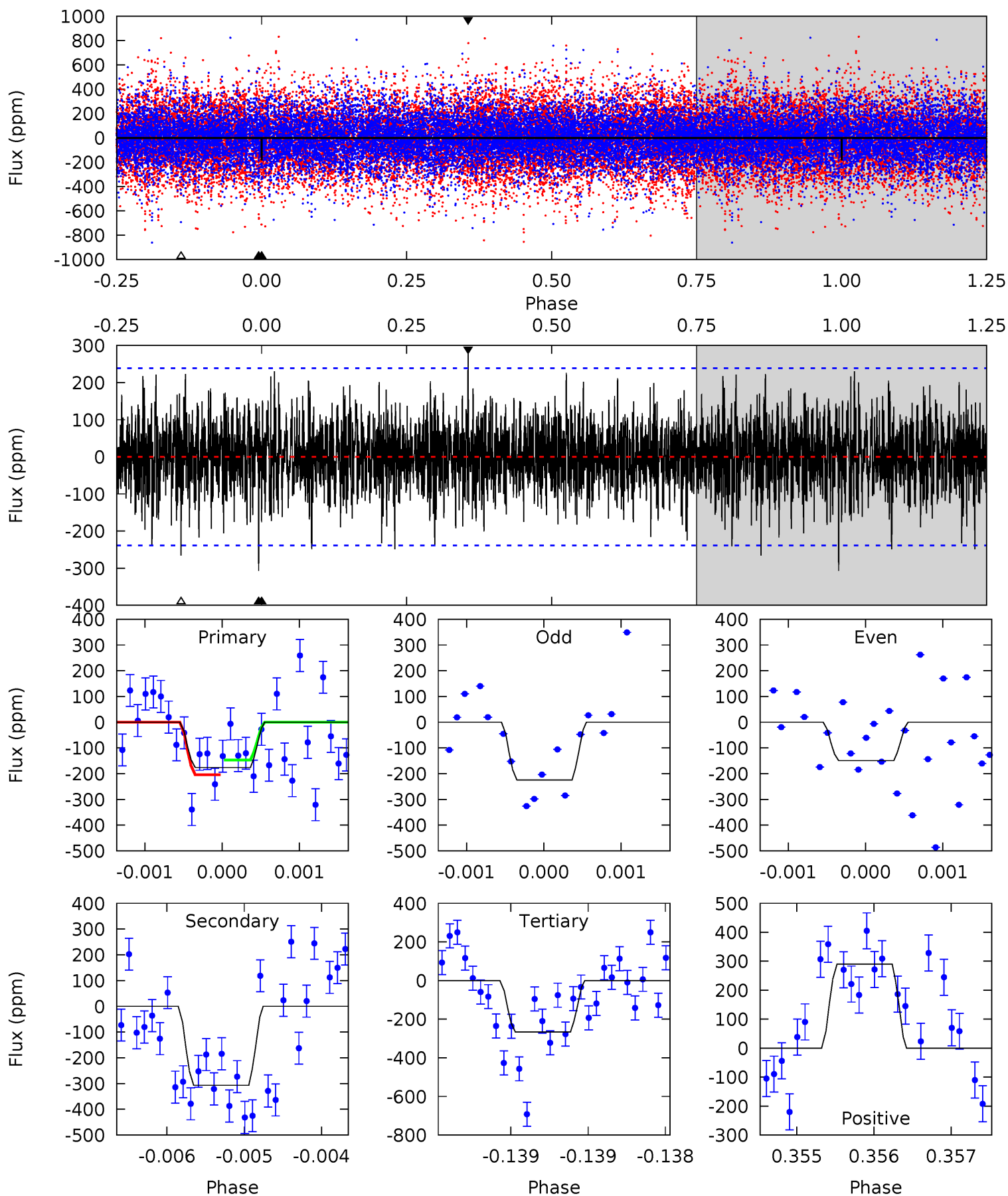




# Alt Model-Shift Uniqueness Test

011456279-03, P = 255.960165 Days, E = 52.557612 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
4.10	7.13	6.18	6.75	5.55	3.45	1.64	-2.08	-2.65	0.94	0.38	0.86	0.73	0.49	0.67



### Stellar Parameters For KIC 011456279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7329^{+203}_{-319}$	$4.226^{+0.075}_{-0.225}$	$0.070^{+0.200}_{-0.350}$	$1.590^{+0.558}_{-0.239}$	$1.550^{+0.211}_{-0.211}$	$0.543^{+0.216}_{-0.292}$
	+3%/-4%	+2%/-5%	+286%/-500%	+35%/-15%	+14%/-14%	+40%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 011456279-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-167 \pm 26$	$3.16^{+0.98}_{-0.88}$	$605^{+46}_{-35}$	$6180^{+1270}_{-660}$	$7619^{+7125}_{-3207}$
Alt.	$-307 \pm 43$	$2.53^{+0.95}_{-0.81}$	$605^{+50}_{-36}$	$8366^{+2621}_{-1368}$	$21323^{+26240}_{-10035}$

$T_{max}$  = 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  $A_{obs} \gg 1.0$

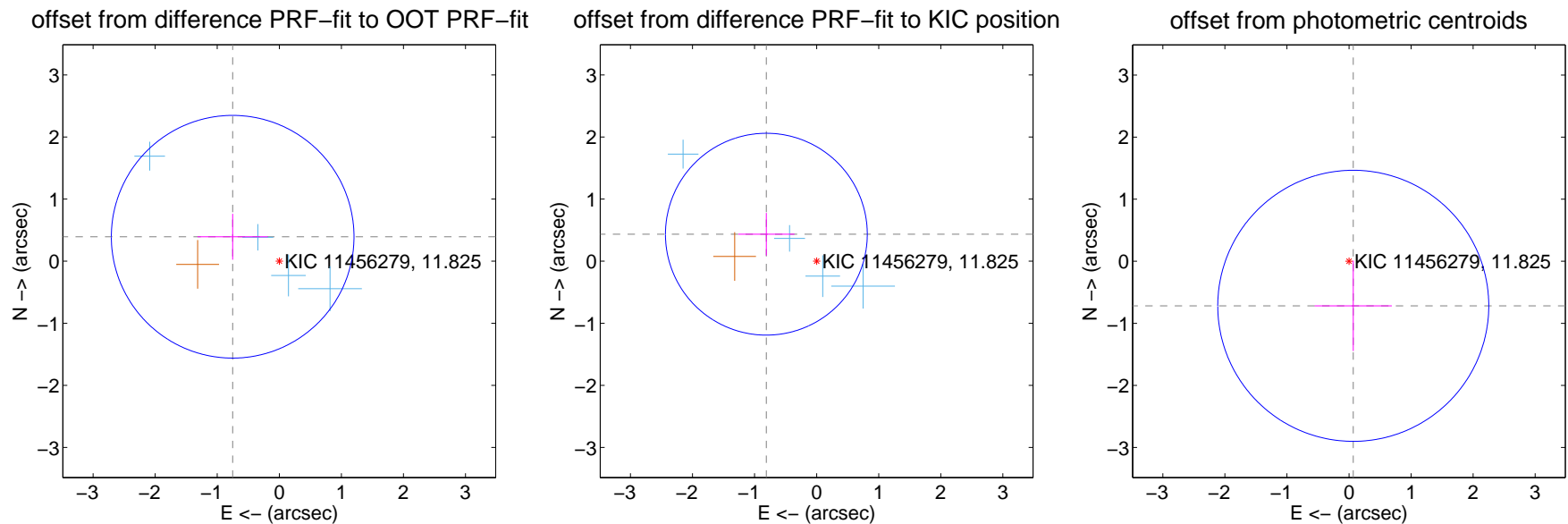
## DV Centroid Data

Supplemental centroid analysis for 011456279-03. **Kepler magnitude: 11.82.** Transit SNR 7.67

There are 4 quarters with good PRF difference image offsets

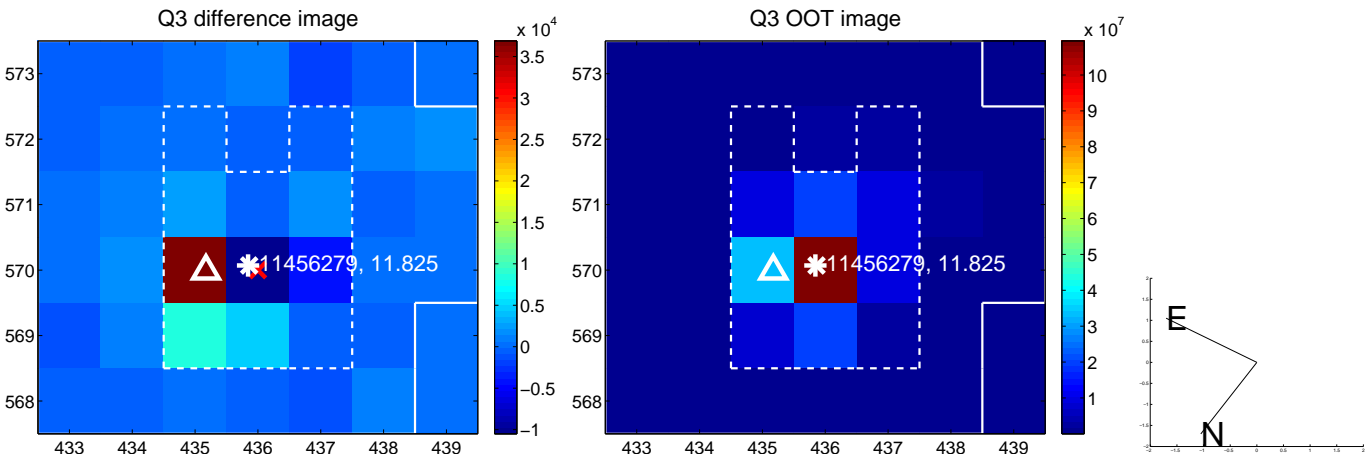
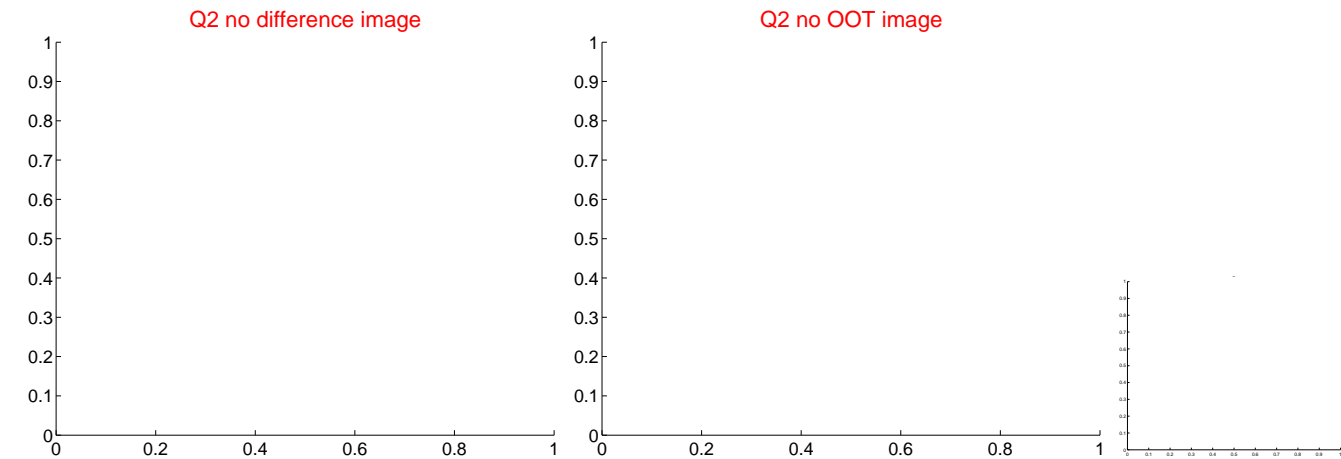
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.849 \pm 0.652$	1.30	$0.752 \pm 0.567$	$0.394 \pm 0.370$
PRF-fit source offset from KIC position	$0.920 \pm 0.542$	1.70	$0.810 \pm 0.453$	$0.435 \pm 0.343$
photometric centroid source offset	$0.72 \pm 0.73$	0.99	$-0.07 \pm 0.62$	$-0.72 \pm 0.73$

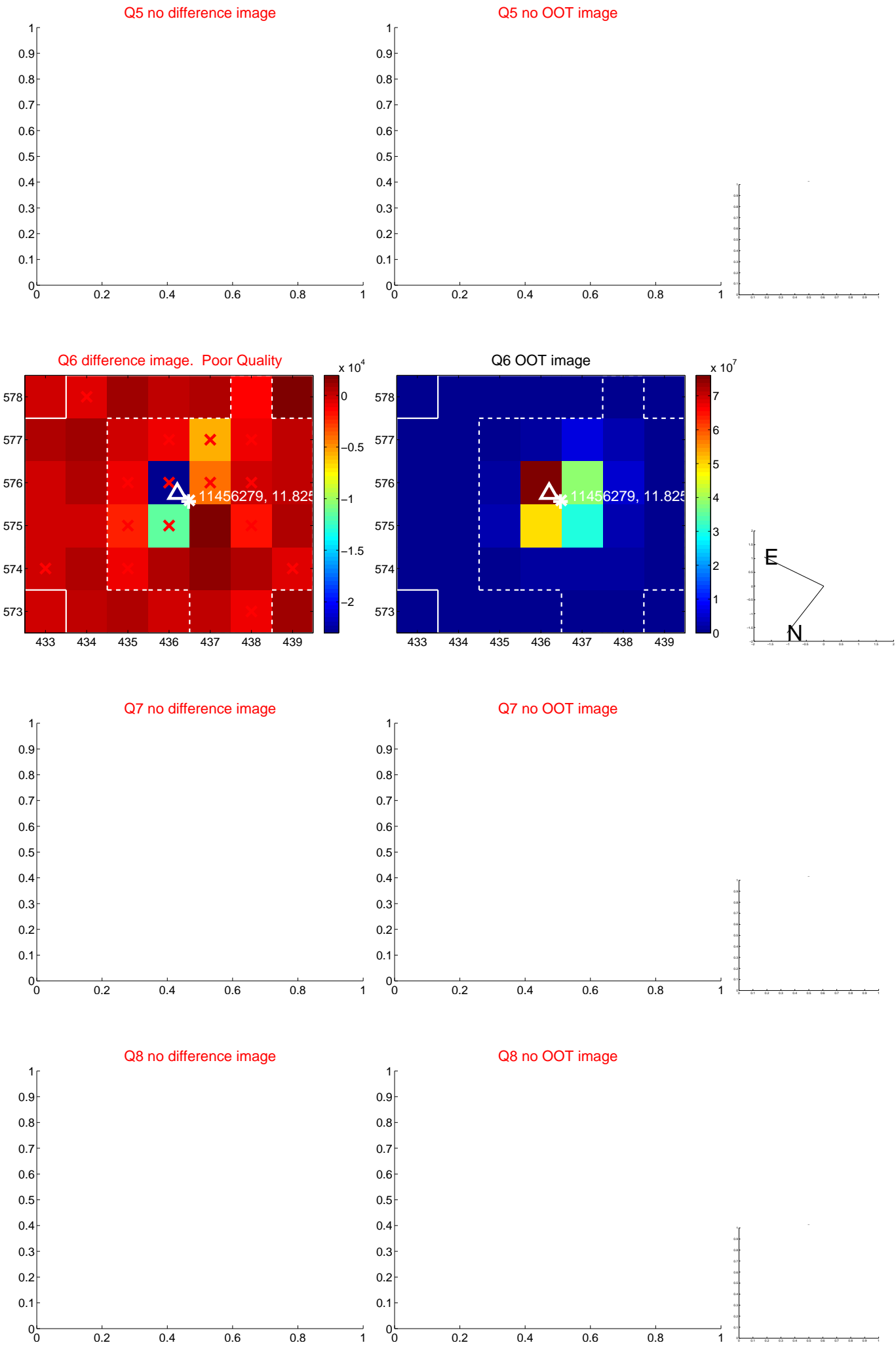


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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.

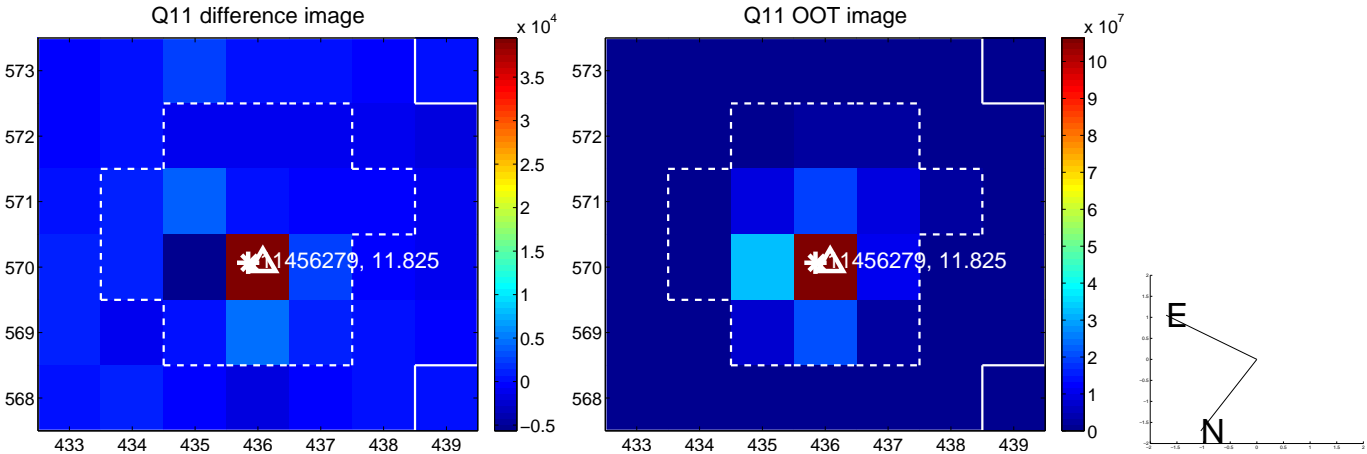
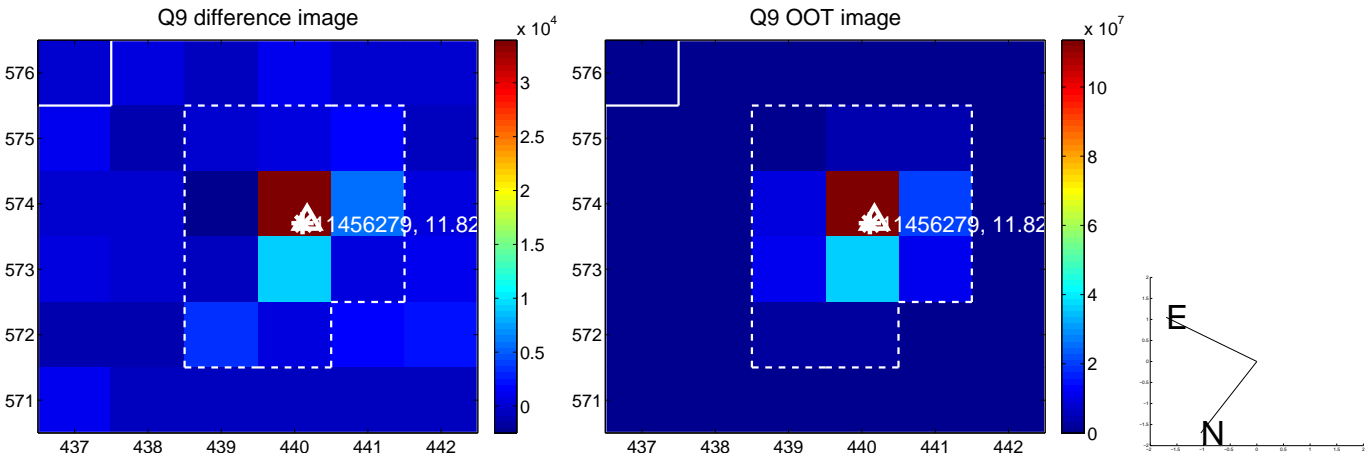


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

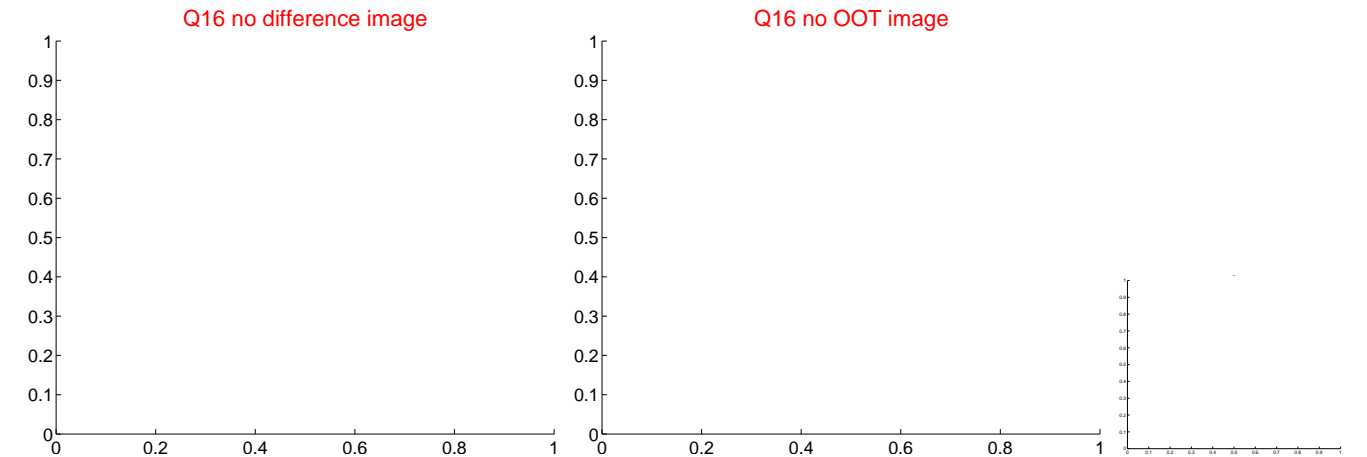
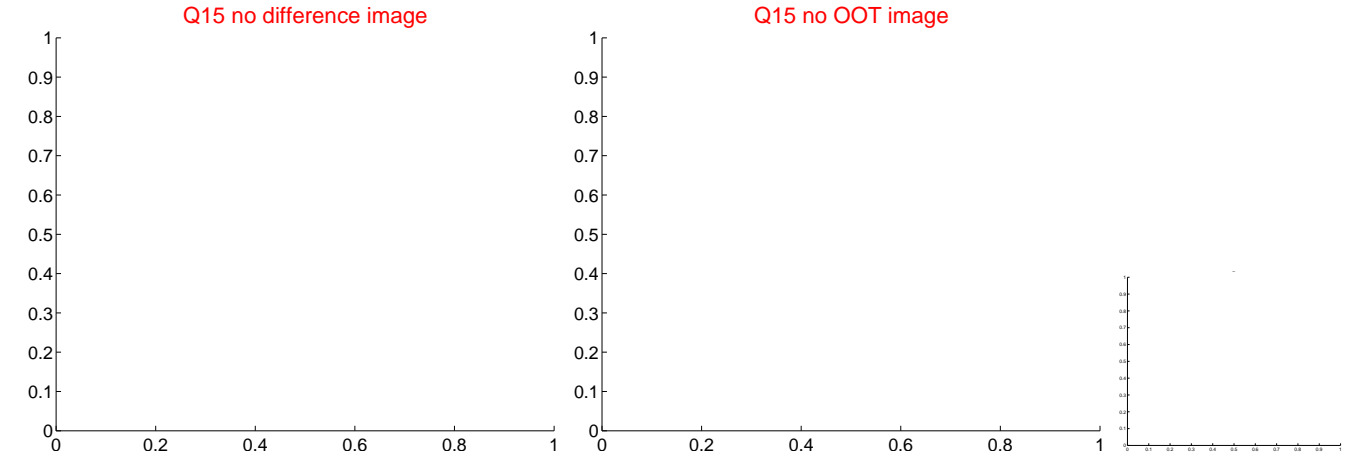
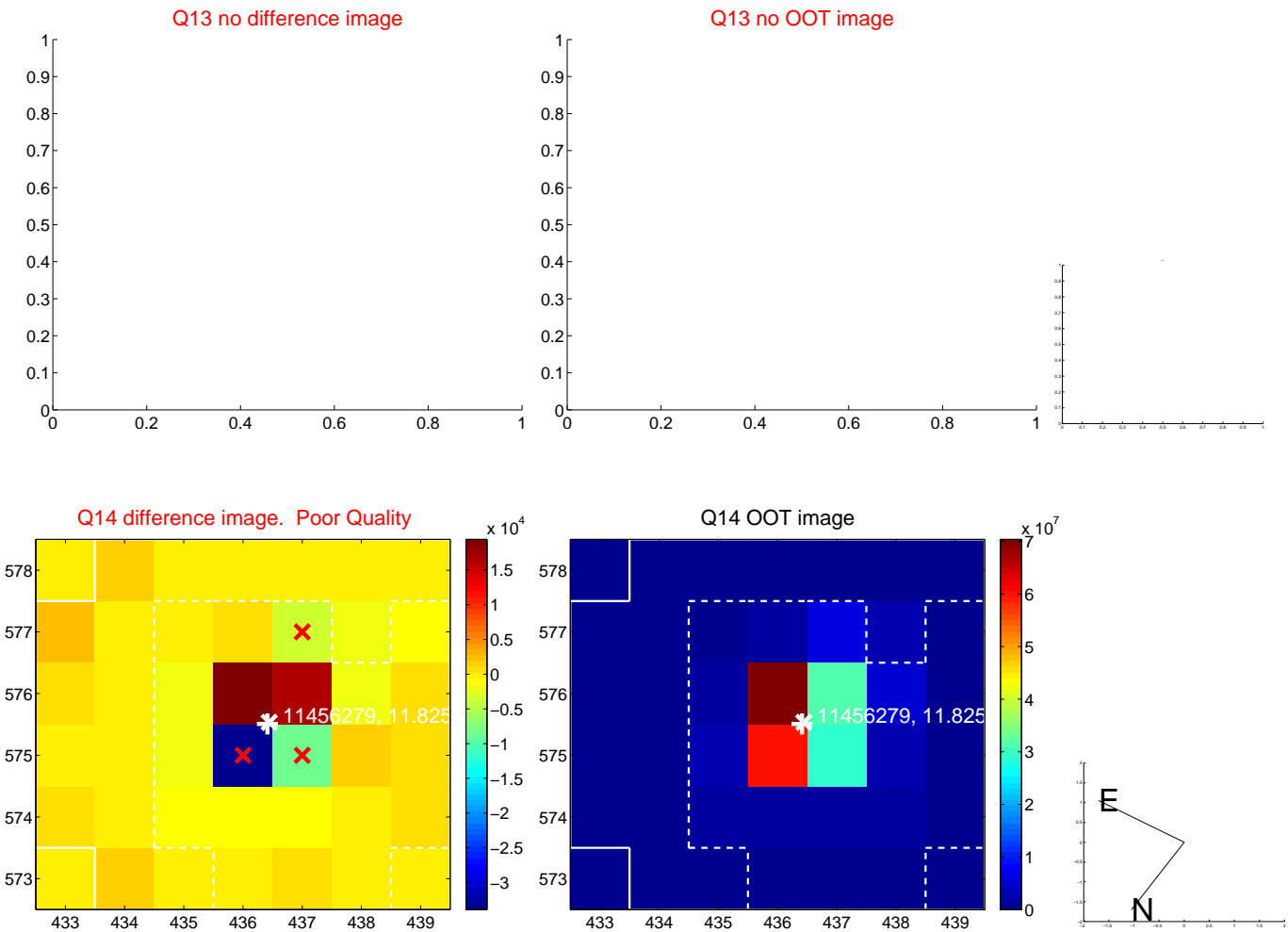




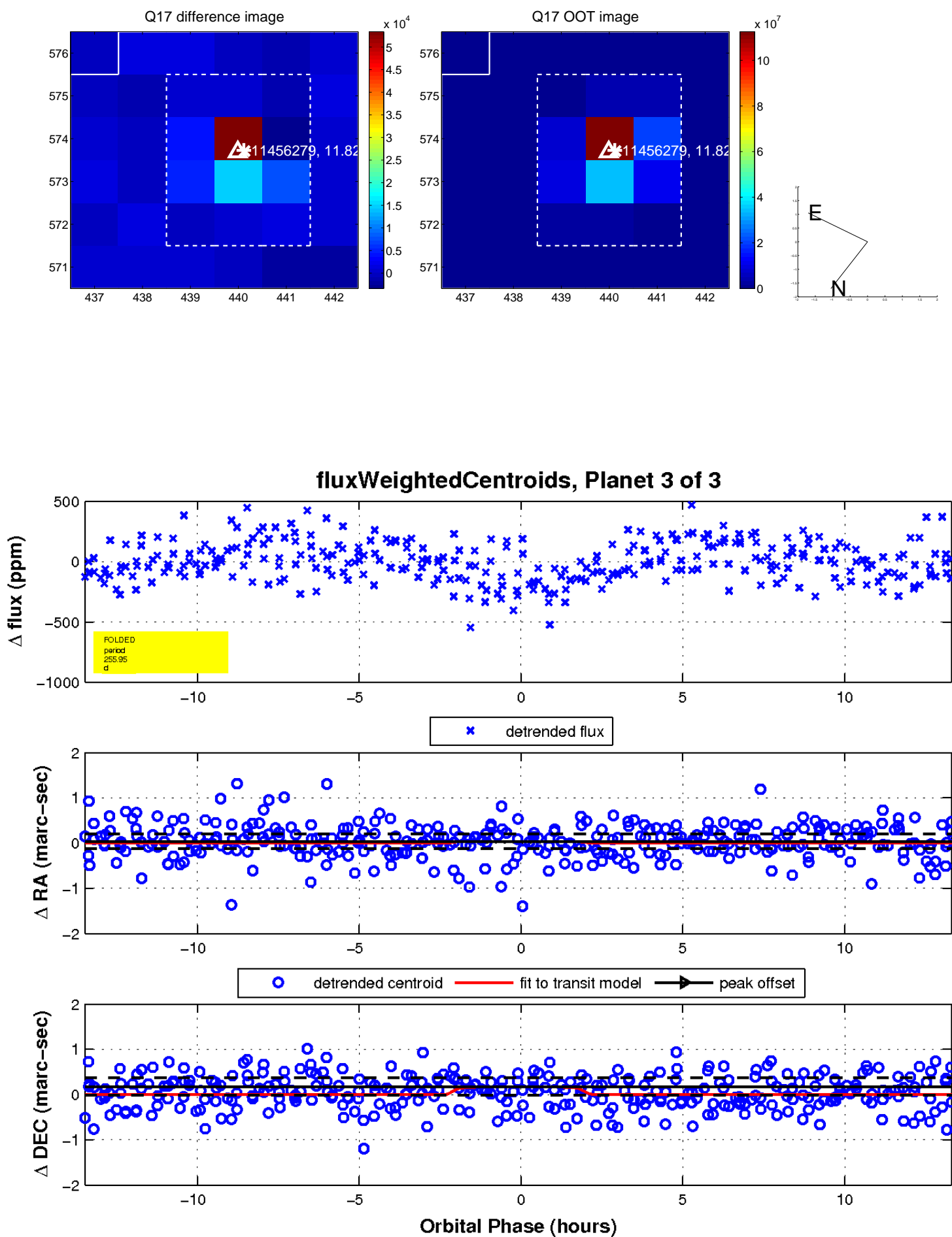
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

