

# KIC 007032218

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007032218-01	OBS	No	0.566768	131.860624	7.4	4.121	7.7	6.4	1.19	6088	0.33	10081.54
007032218-02	OBS	No	7.820680	132.453885	357.6	1.392	14.5	5.9	1.19	6088	2.35	304.61
007032218-03	OBS	No	11.261096	140.079946	399.9	2.000	10.9	-1.0	1.19	6088	2.39	187.34
007032218-04	OBS	No	13.946867	138.356370	90.6	12.521	9.0	5.0	1.19	6088	1.27	140.85
007032218-05	OBS	No	20.099512	144.170718	1297.1	0.612	11.3	10.9	1.19	6088	4.48	86.53
007032218-06	OBS	No	18.992012	138.678752	546.4	2.447	7.5	8.8	1.19	6088	2.87	93.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007032218-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007032218-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007032218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007032218-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007032218-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—CENT_FEW_MEAS
007032218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

**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.

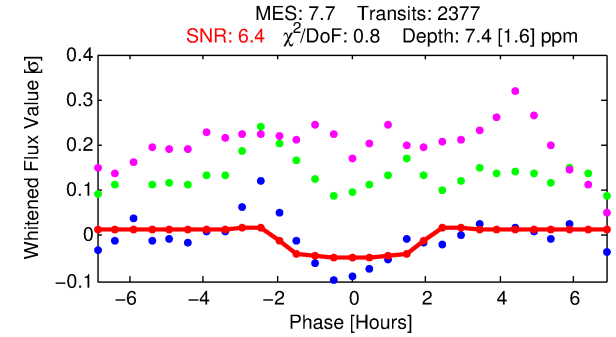
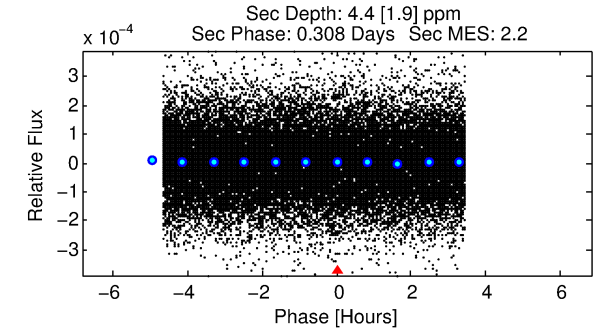
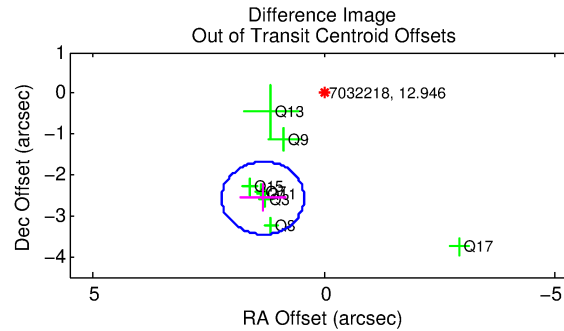
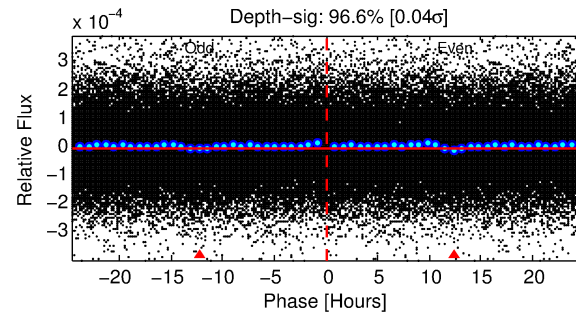
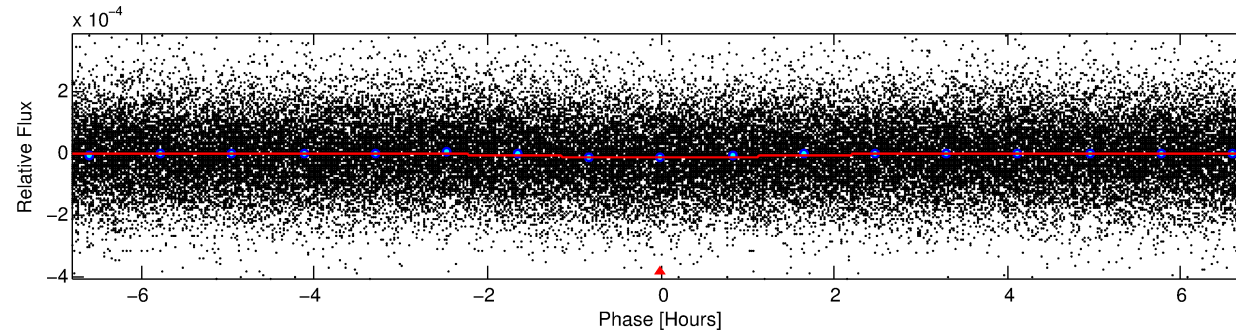
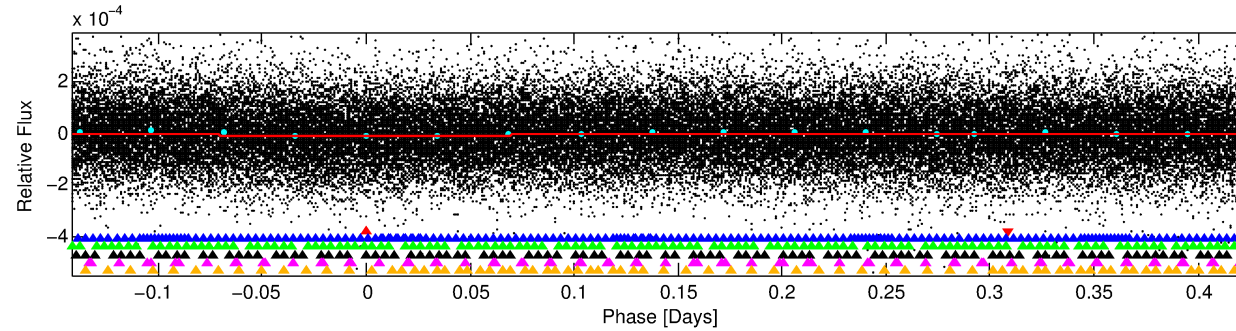
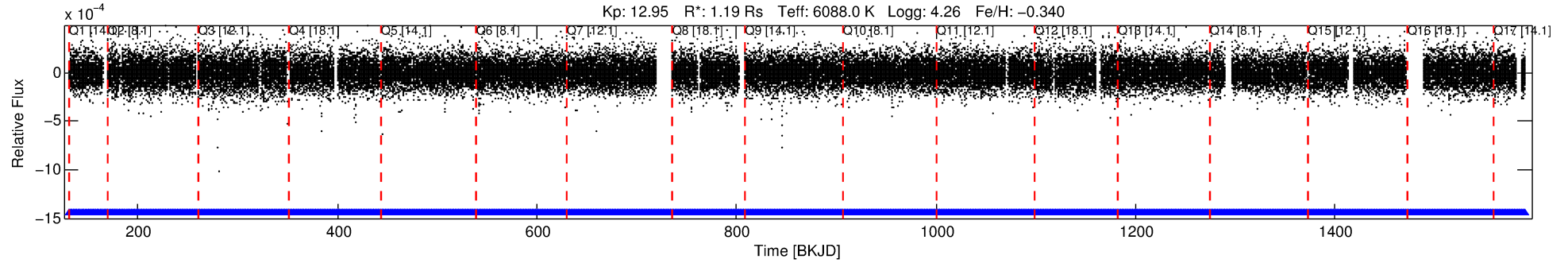
## Ephemeris Match Information For 007032218-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	$\sigma_P$	$\sigma_T$
007032218-01	7032218	RR-Lyr-pri	7198959	1:1	741.3	151	-110	7.86	12.94	89042.00	Direct-PRF	0	4.14	22.32

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7032218 Candidate: 1 of 6 Period: 0.567 d



## DV Fit Results:

Period = 0.56677 [0.00002] d  
Epoch = 131.8606 [0.0058] BKJD  
Rp/R\* = 0.0026 [0.0022]  
a/R\* = 1.18 [1.39]  
b = 0.50 [6.42]  
Seff = 10081.54 [3354.77]  
Teq = 2555 [213] K  
Rp = 0.33 [0.29] Re  
a = 0.0132 [0.0026] AU  
Ag = 3.73 [6.59] [0.41 $\sigma$ ]  
Teffp = 5490 [2390] K [1.22 $\sigma$ ]

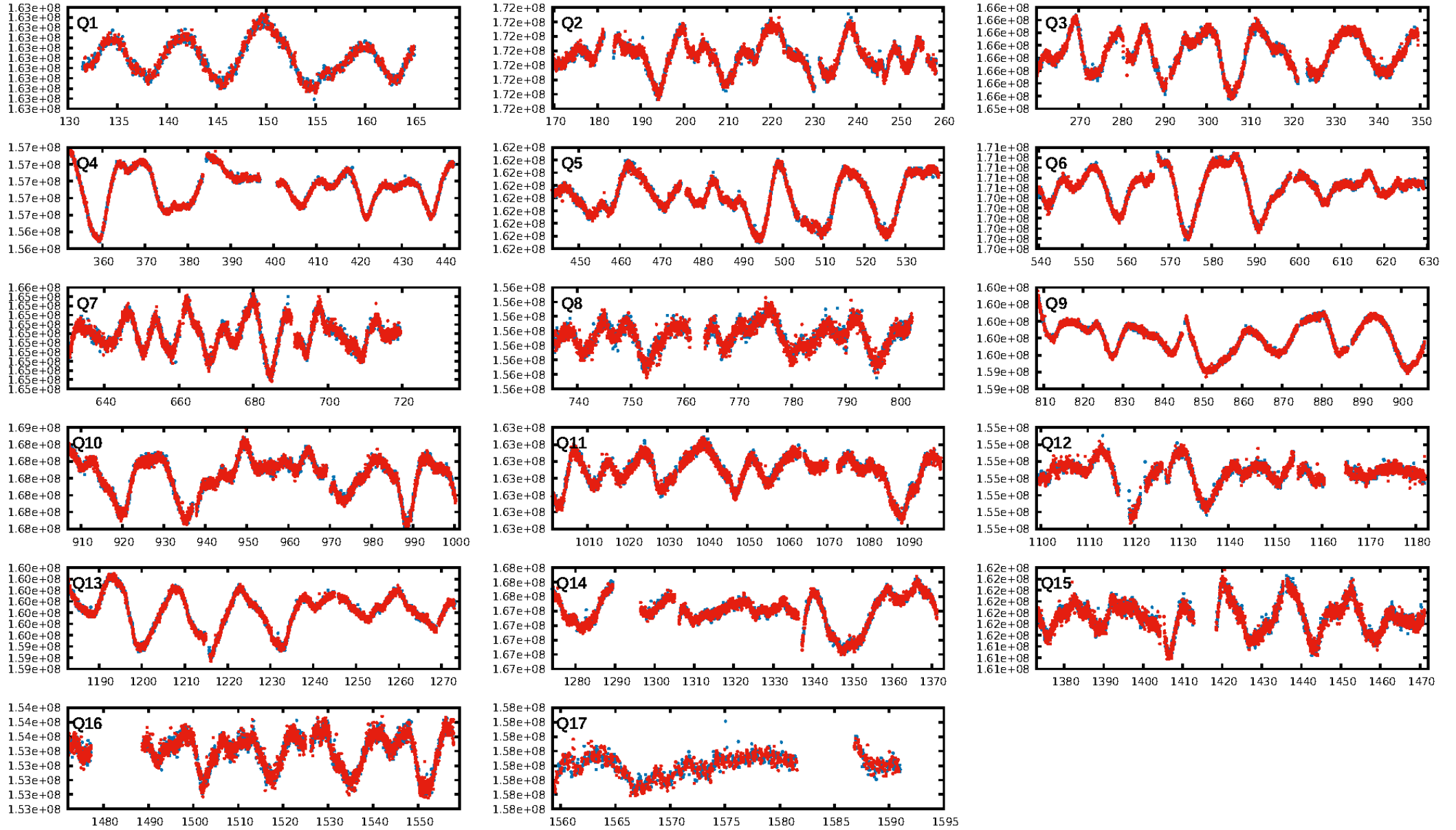
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [40.02 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.09e-30  
RollingBand-fgt: 1.00 [2270/2270]  
GhostDiagnostic-chr: 0.02907  
Centroid-sig: 0.0%  
Centroid-so: 5.059 arcsec [3.64 $\sigma$ ]  
OotOffset-rm: 2.887 arcsec [9.72 $\sigma$ ]  
KicOffset-rm: 3.053 arcsec [10.87 $\sigma$ ]  
OotOffset-st: 0/4/1/3 [8]  
KicOffset-st: 0/4/1/3 [8]  
DiffImageQuality-fgm: 0.50 [4/8]  
DiffImageOverlap-fno: 1.00 [17/17]

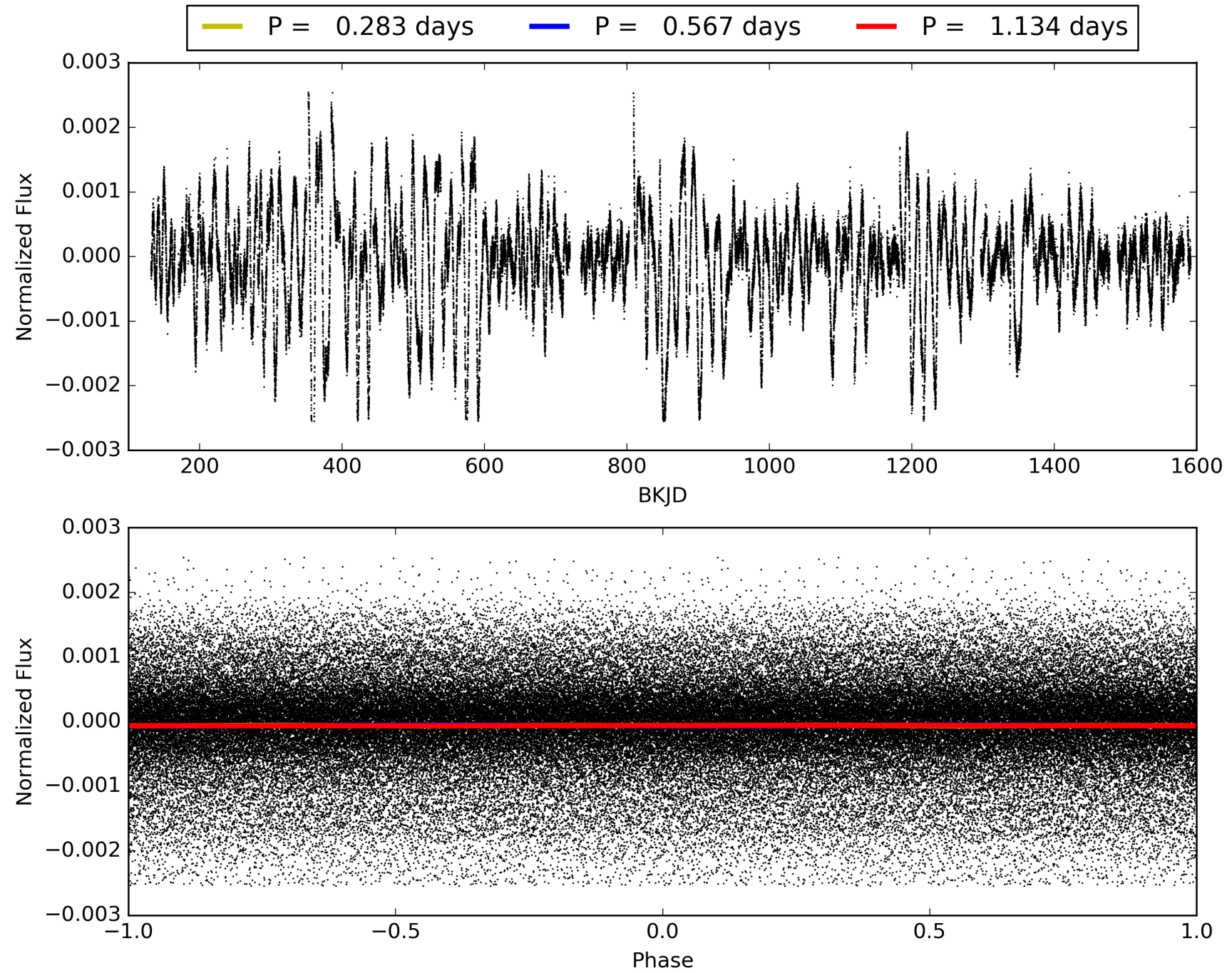
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:56:54 Z

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

# TCE 007032218-01, PDC Light Curves



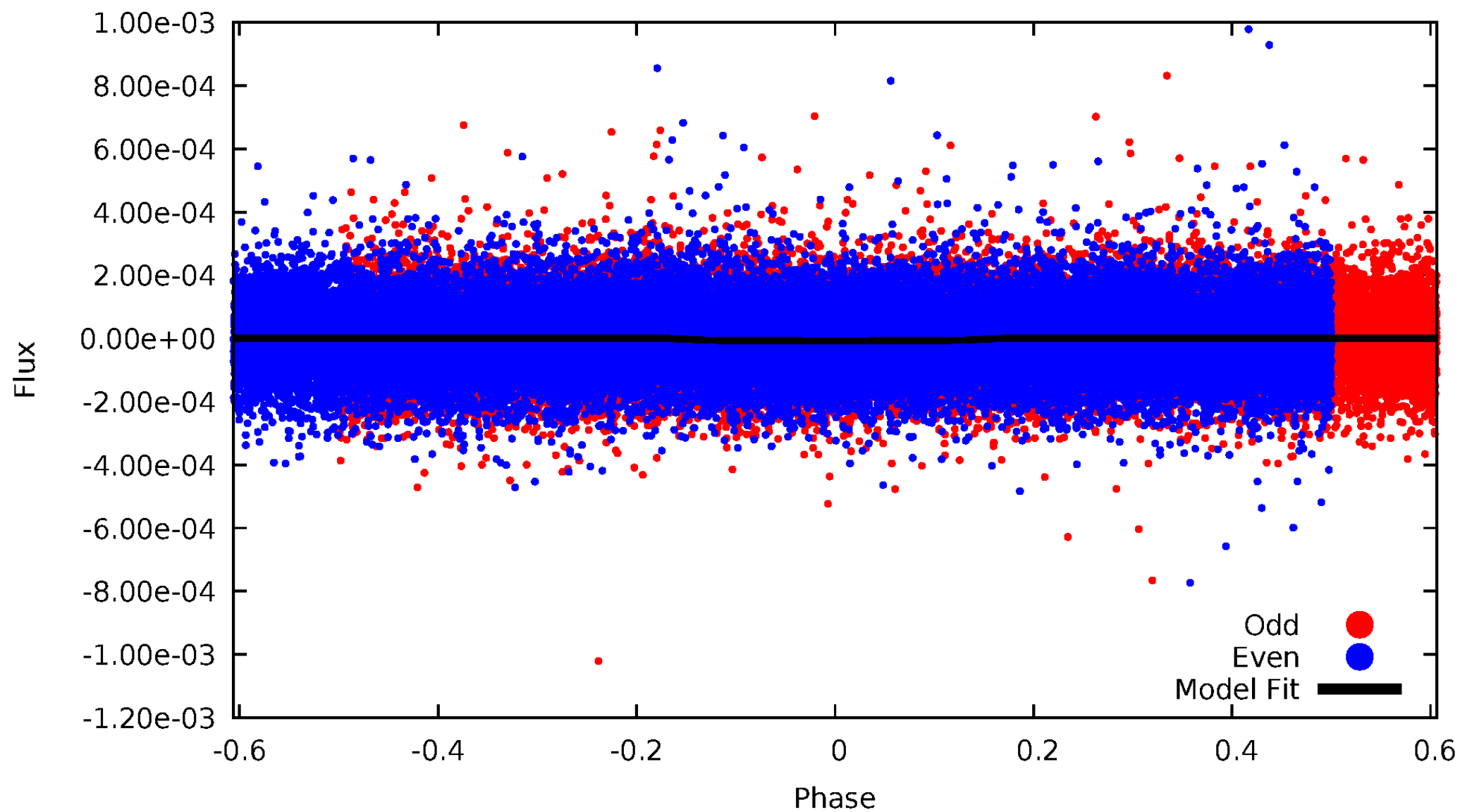
TCE 007032218-01





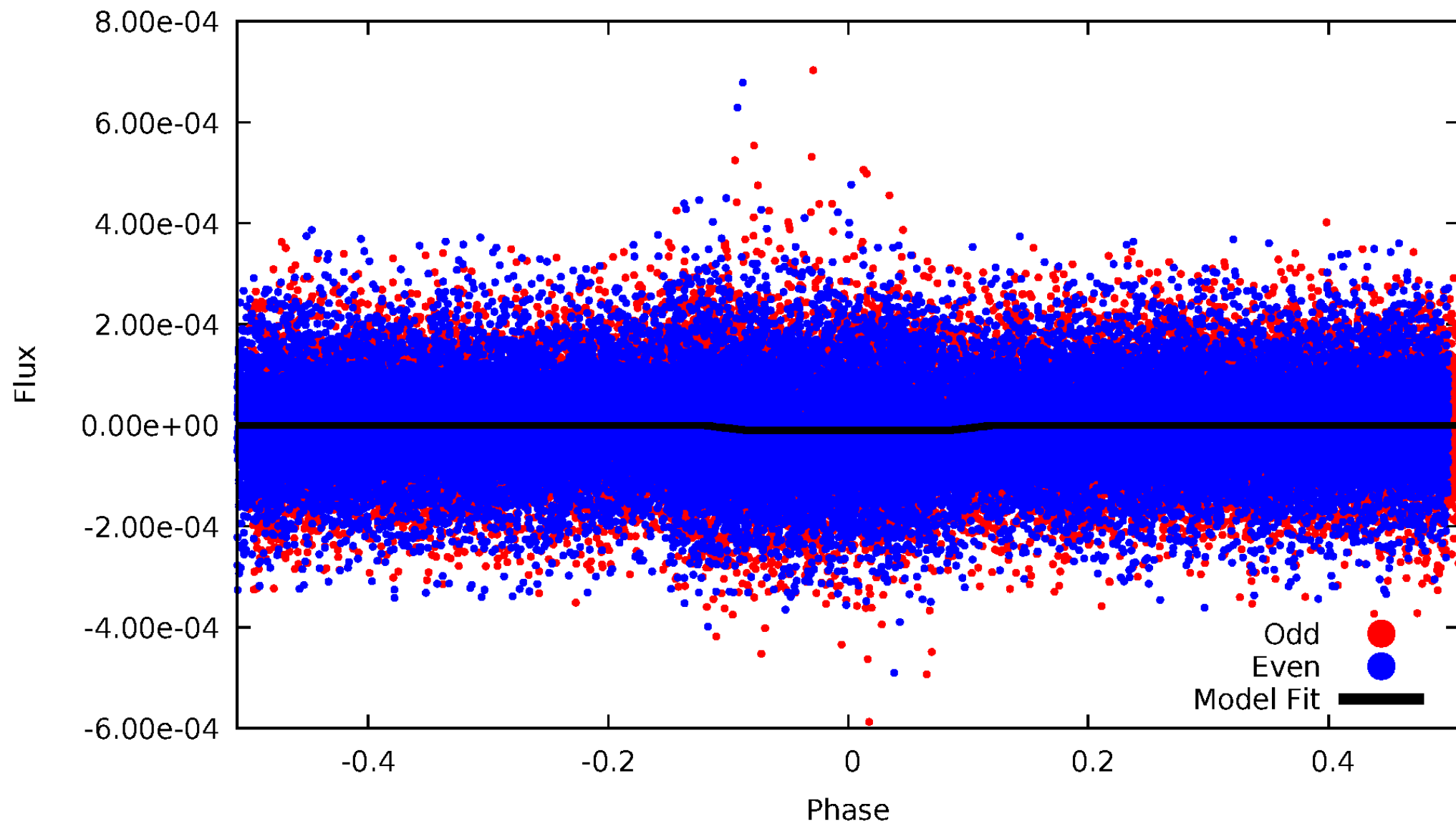
# DV Odd/Even

TCE 007032218-01



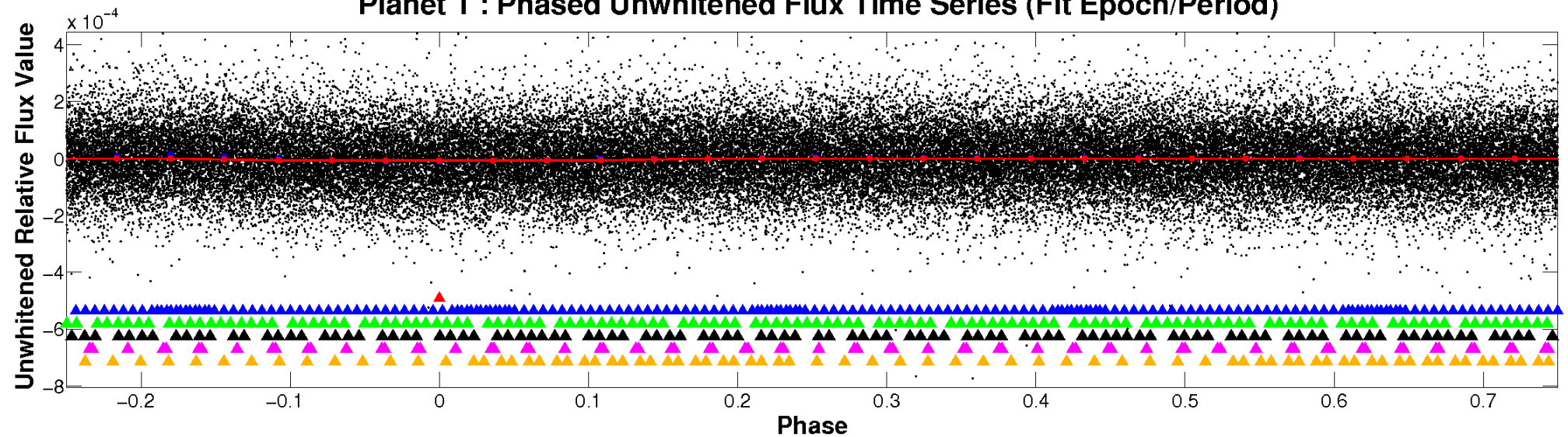
# ALT Odd/Even

TCE 007032218-01

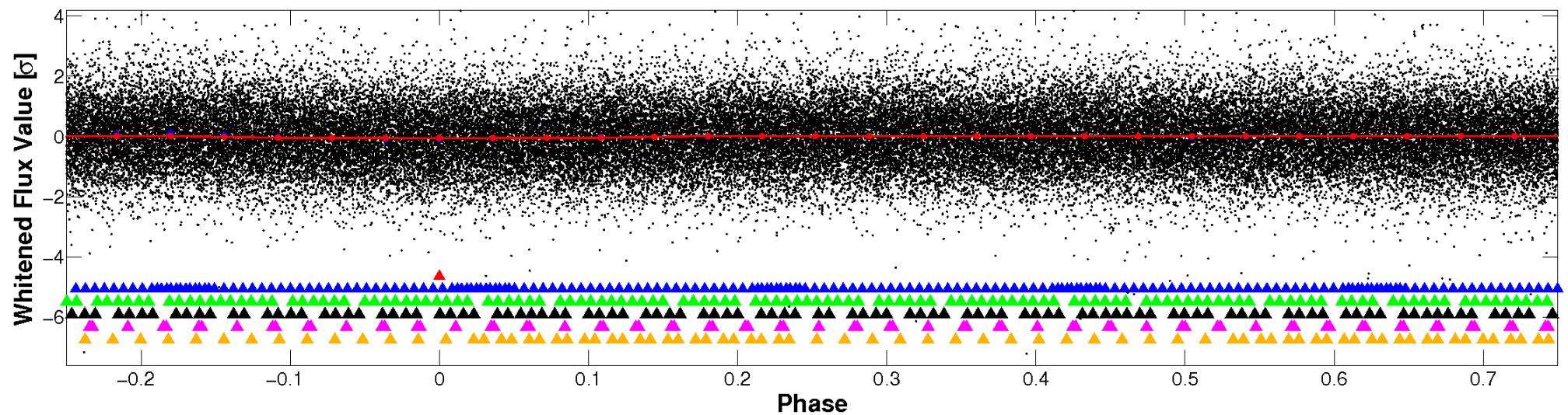


# Non-Whitened Vs. Whitened Light Curve

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

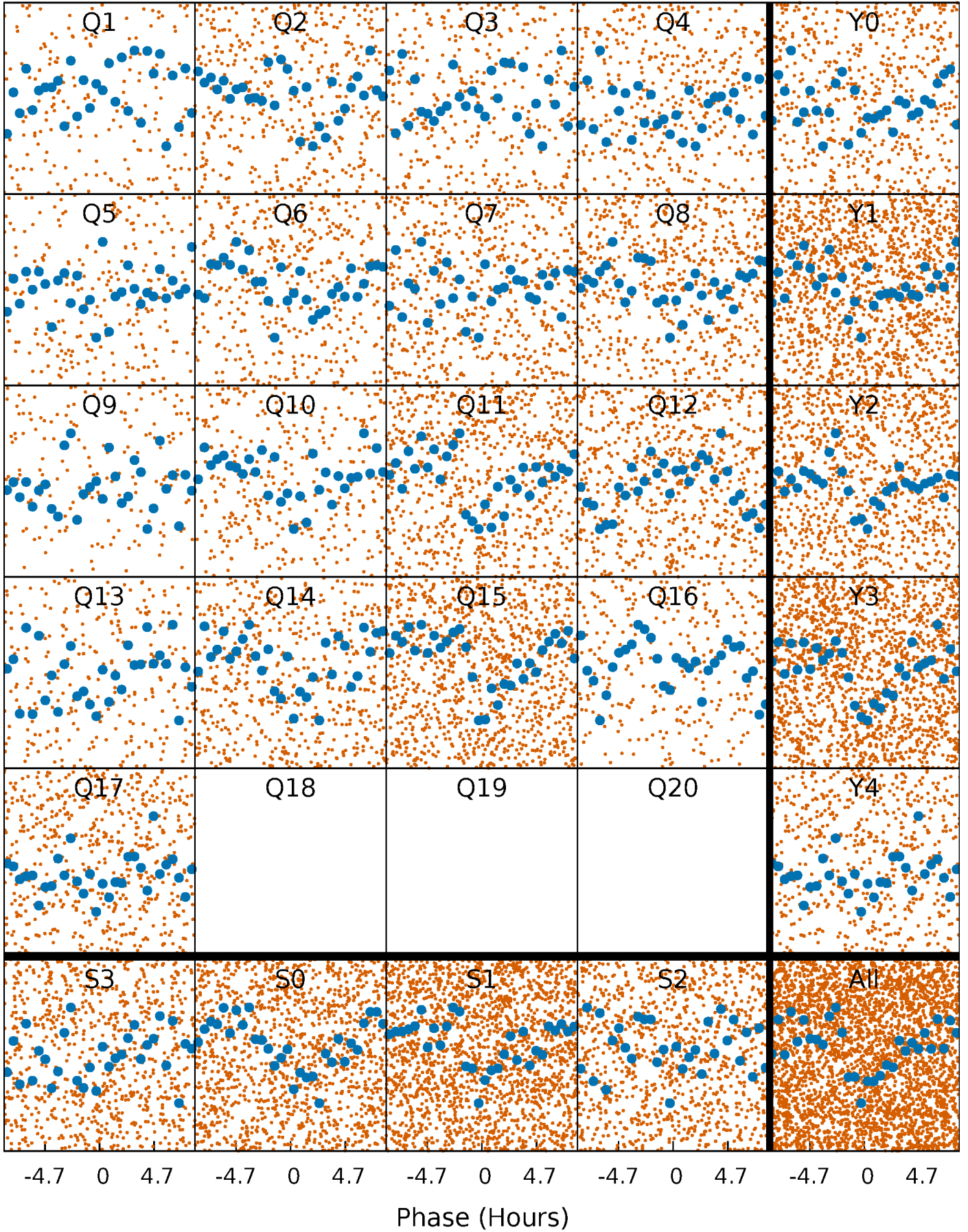


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

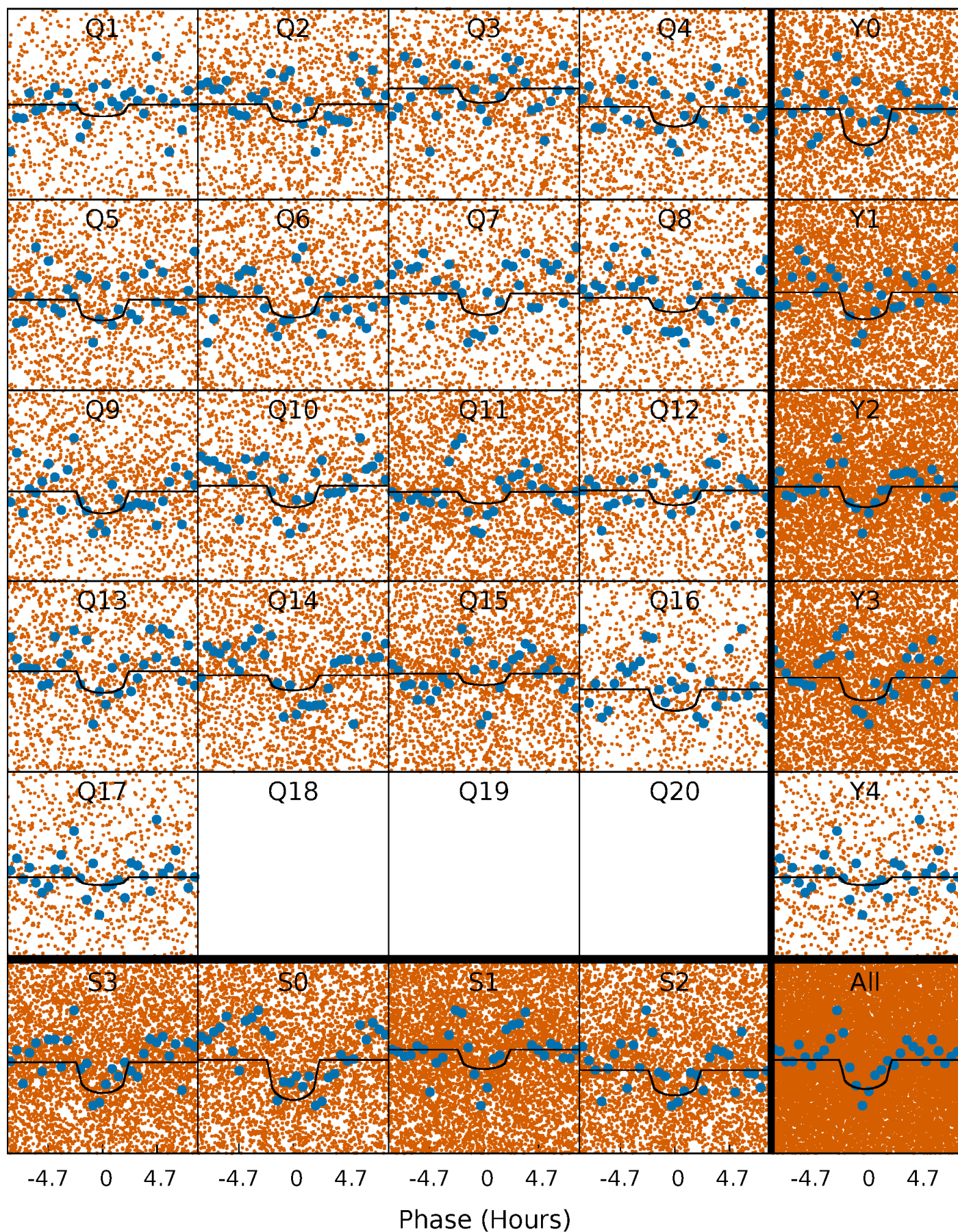
TCE 007032218-01   P= 0.566768 Days    $T_0=131.860624$  (BKJD)





# DV Quarter-Phased Transit Curves

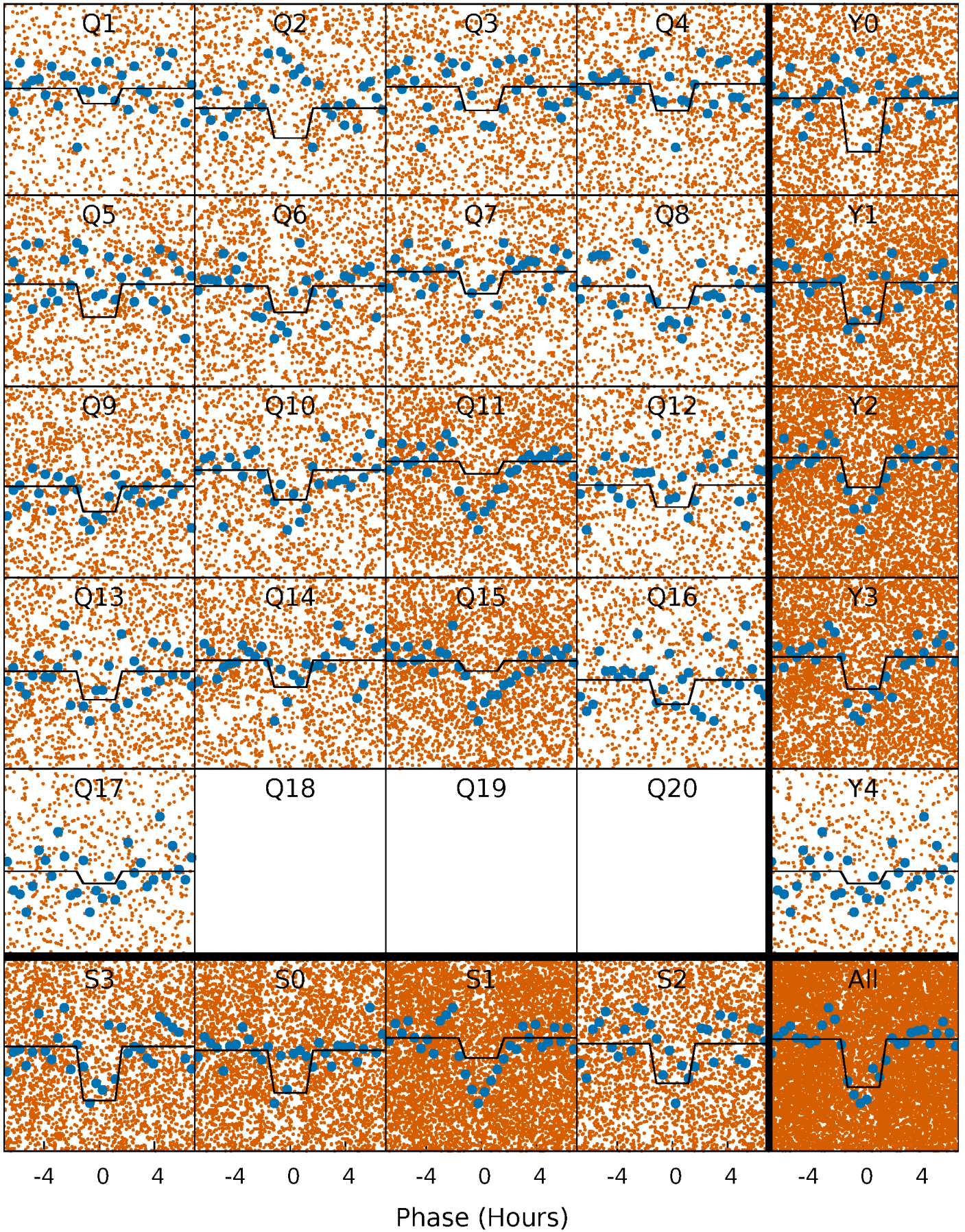
TCE 007032218-01 P= 0.566768 Days  $T_0=131.860624$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

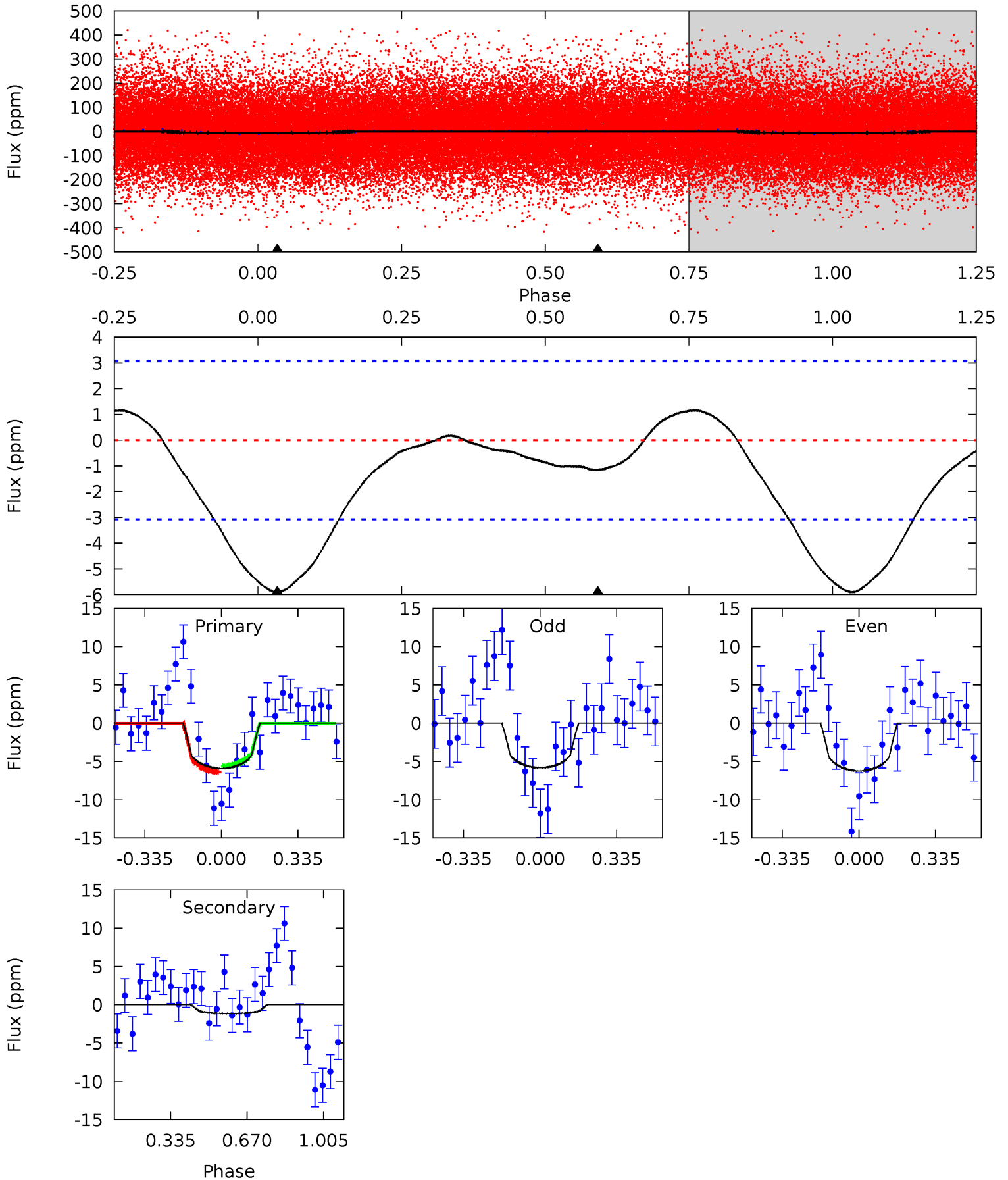
TCE 007032218-01 P= 0.566782 Days  $T_0=131.841481$  (BKJD)



# DV Model-Shift Uniqueness Test

007032218-01, P = 0.566768 Days, E = 131.293856 Days

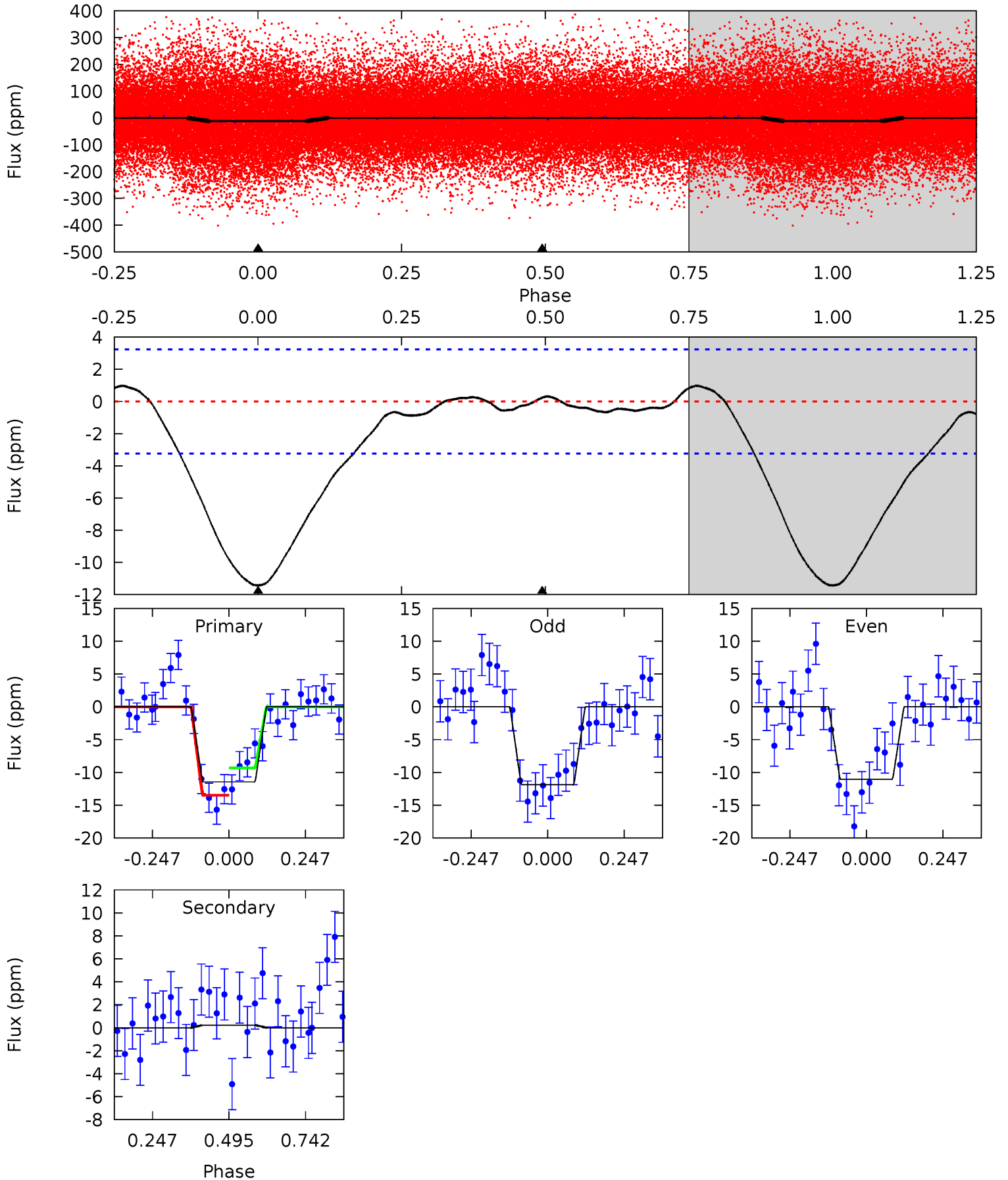
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.27	1.63	0	0	4.30	0.96	0.22	8.27	8.27	1.63	1.63	0.28	0.92	0.16	0.54



# Alt Model-Shift Uniqueness Test

007032218-01, P = 0.566782 Days, E = 131.274699 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
15.4	-0.31	0	0	4.37	1.16	1.01	15.4	15.4	-0.31	-0.31	0.56	0.87	0.08	0





### Stellar Parameters For KIC 007032218

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6088^{+164}_{-164}$	$4.262^{+0.186}_{-0.124}$	$-0.340^{+0.300}_{-0.300}$	$1.191^{+0.237}_{-0.237}$	$0.947^{+0.142}_{-0.095}$	$0.789^{+0.739}_{-0.308}$
	+3%/-3%	+4%/-3%	+88%/-88%	+20%/-20%	+15%/-10%	+94%/-39%
Source	PHO1	FLK73	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 007032218-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1 \pm 1$	$0.35^{+0.28}_{-0.21}$	$3541^{+217}_{-212}$	$3702^{+2197}_{-6724}$	$0.805^{+4.765}_{-0.626}$
Alt.	$0 \pm 1$	$0.43^{+0.27}_{-0.25}$	$3564^{+206}_{-229}$	$-3557^{+1164}_{-780}$	$-0.079^{+0.362}_{-0.796}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

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

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

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

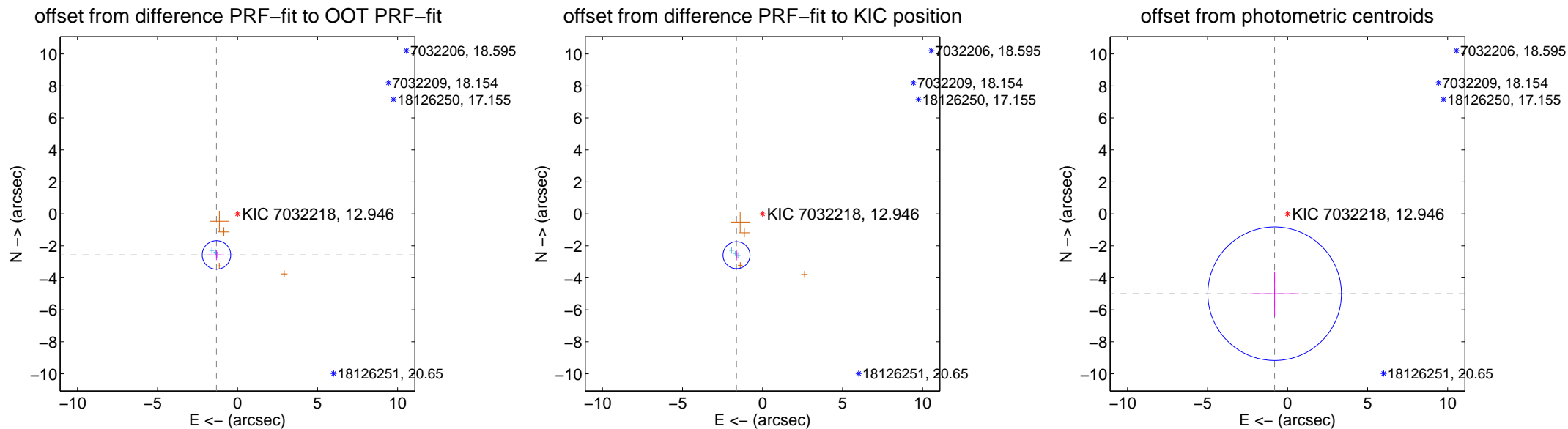
## DV Centroid Data

Supplemental centroid analysis for 007032218-01. Kepler magnitude: 12.95. Transit SNR 6.44

There are 4 quarters with good PRF difference image offsets

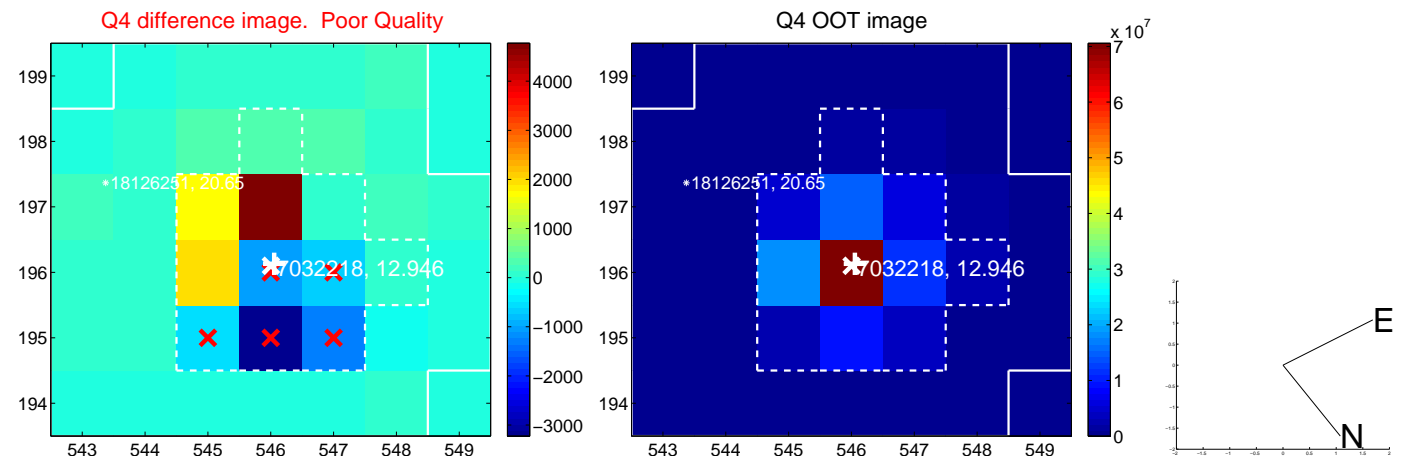
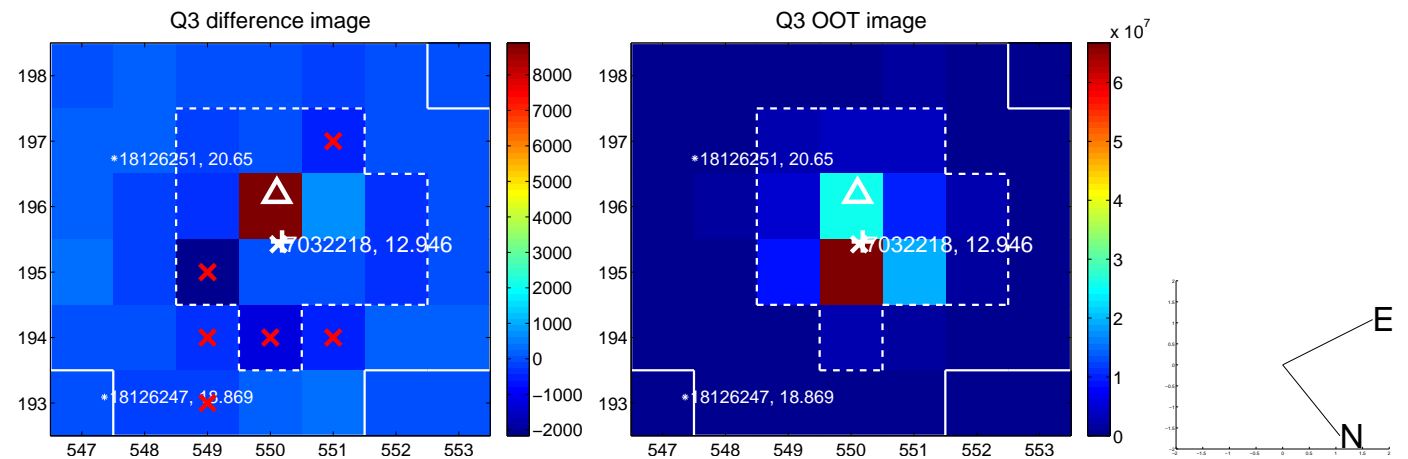
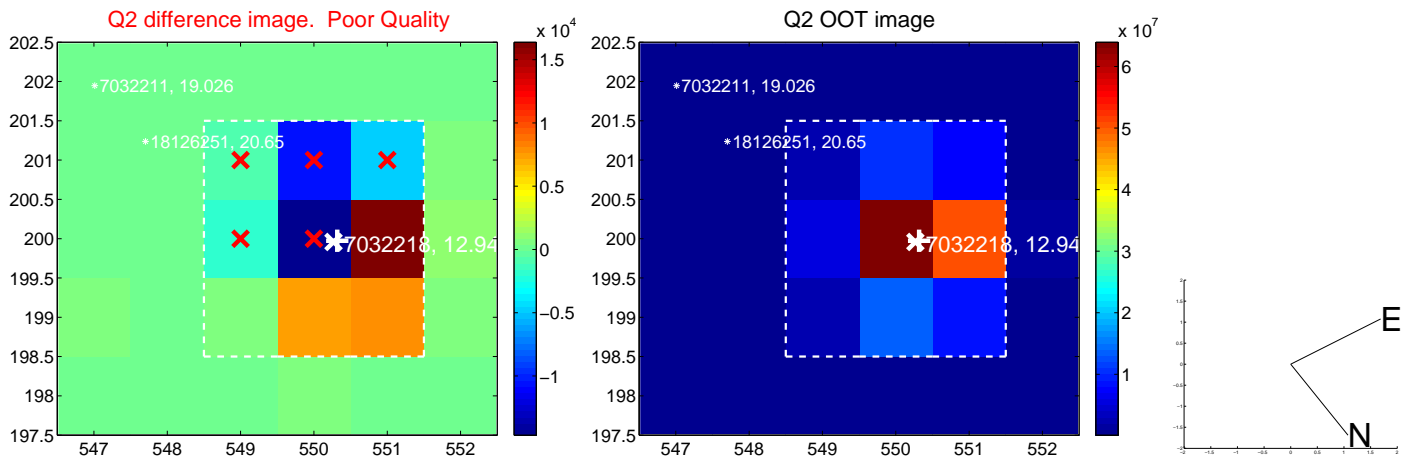
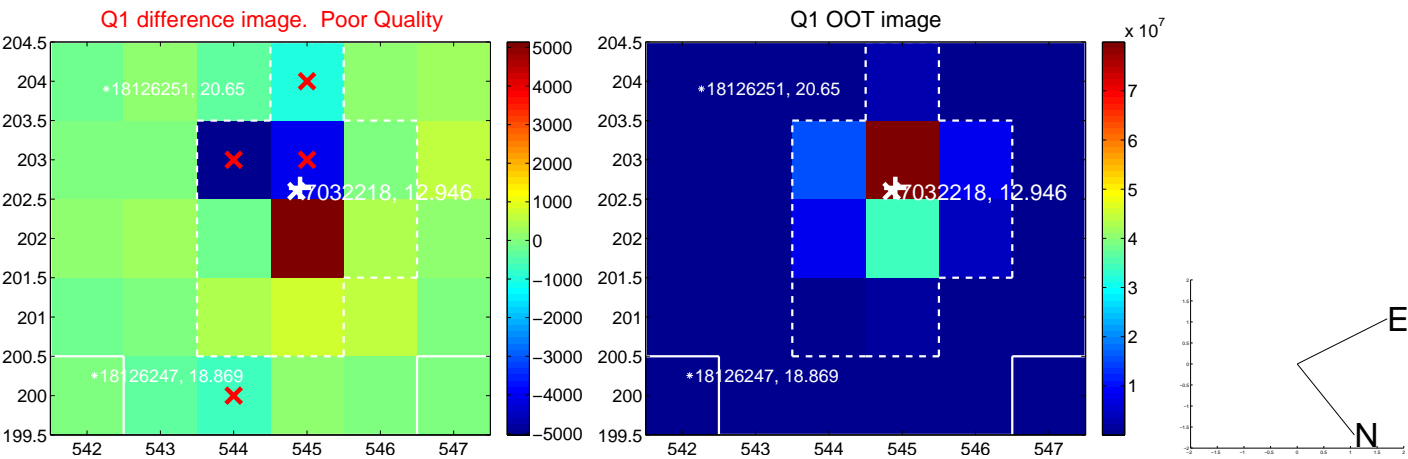
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.887 \pm 0.297$	9.72	$1.316 \pm 0.493$	$-2.570 \pm 0.321$
PRF-fit source offset from KIC position	$3.053 \pm 0.281$	10.87	$1.627 \pm 0.523$	$-2.584 \pm 0.323$
photometric centroid source offset	$5.06 \pm 1.39$	3.64	$0.81 \pm 1.52$	$-4.99 \pm 1.39$

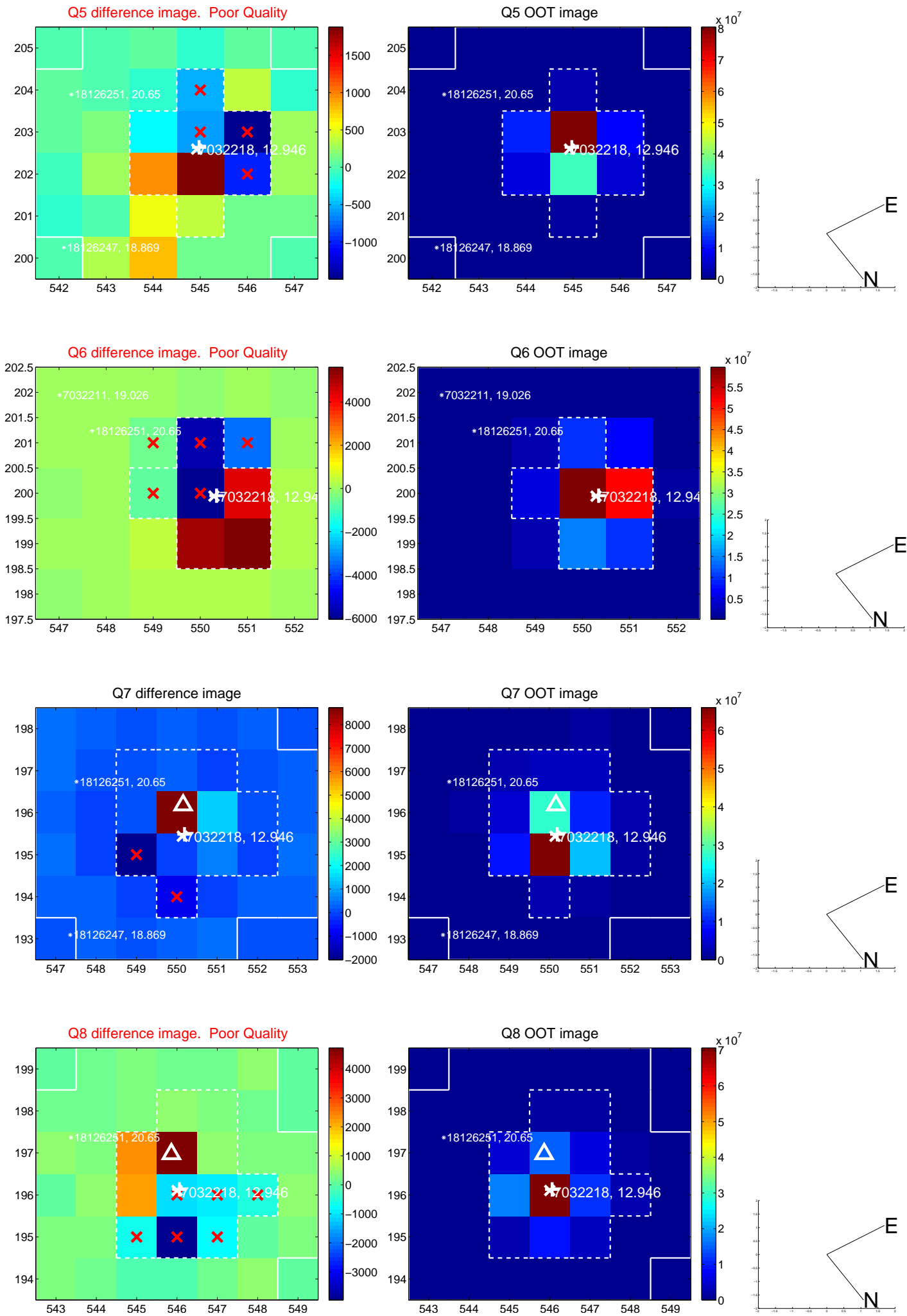


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

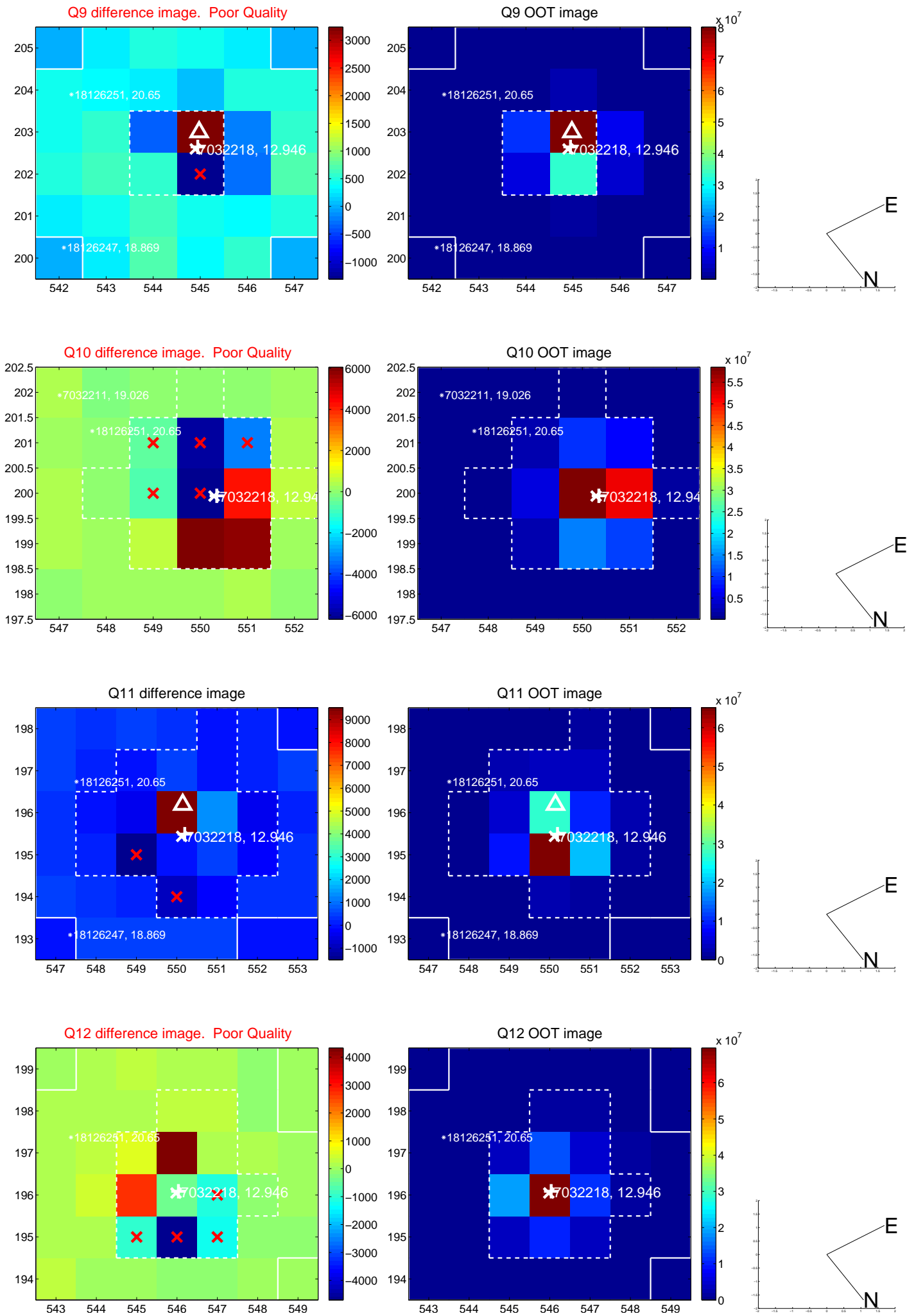


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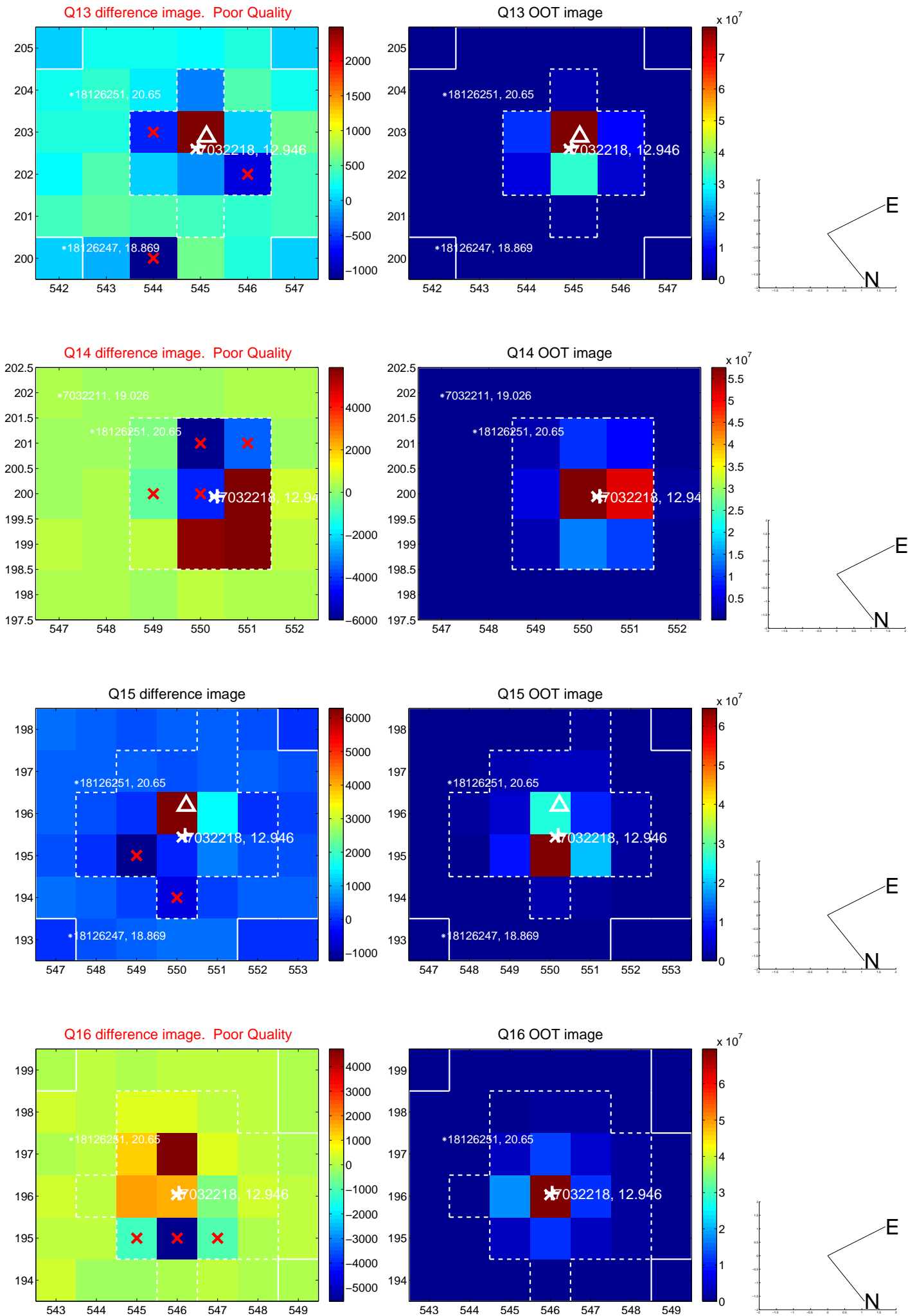




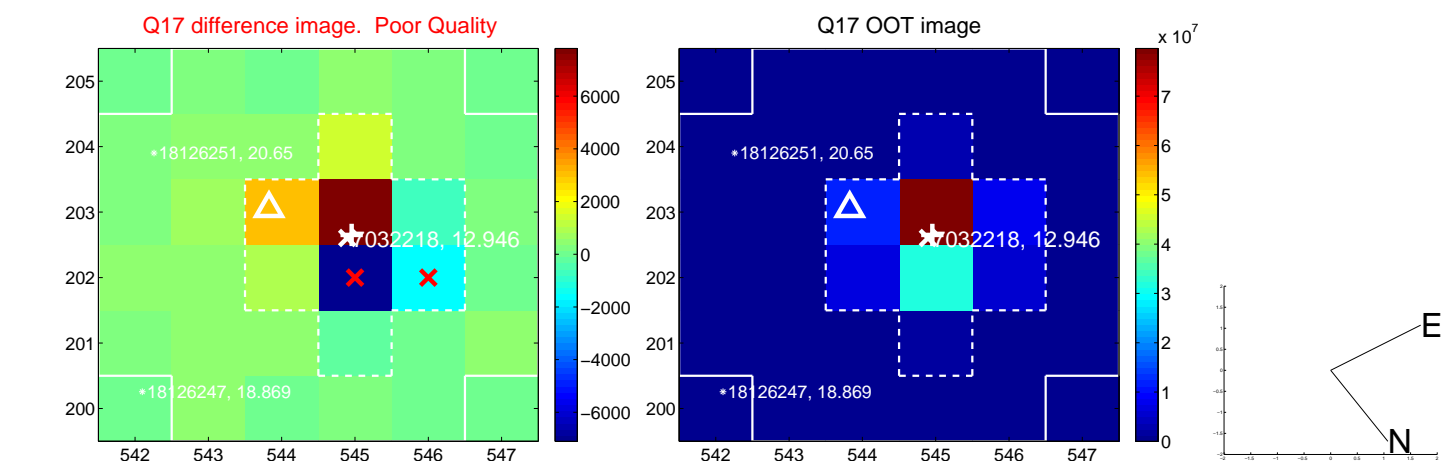
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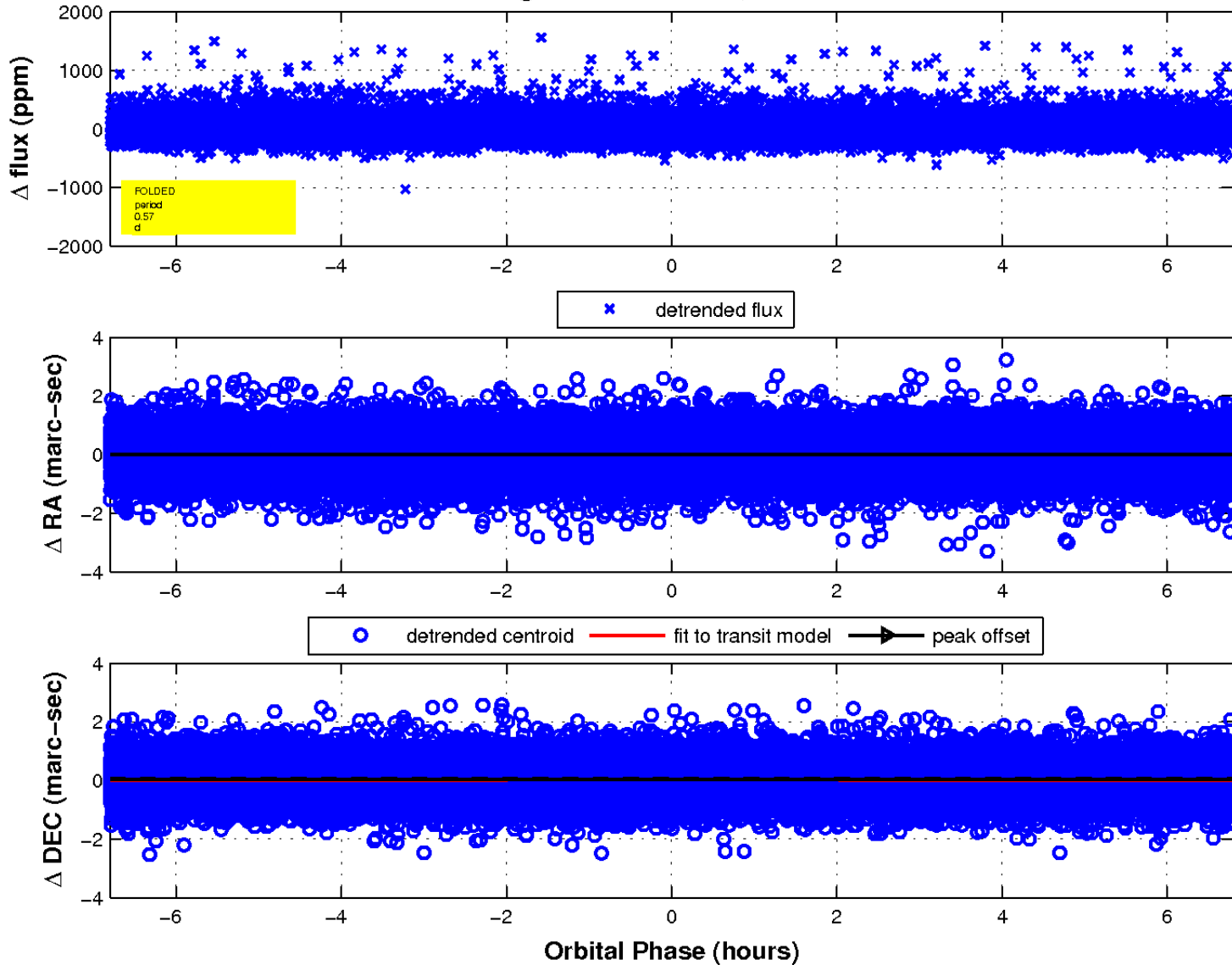
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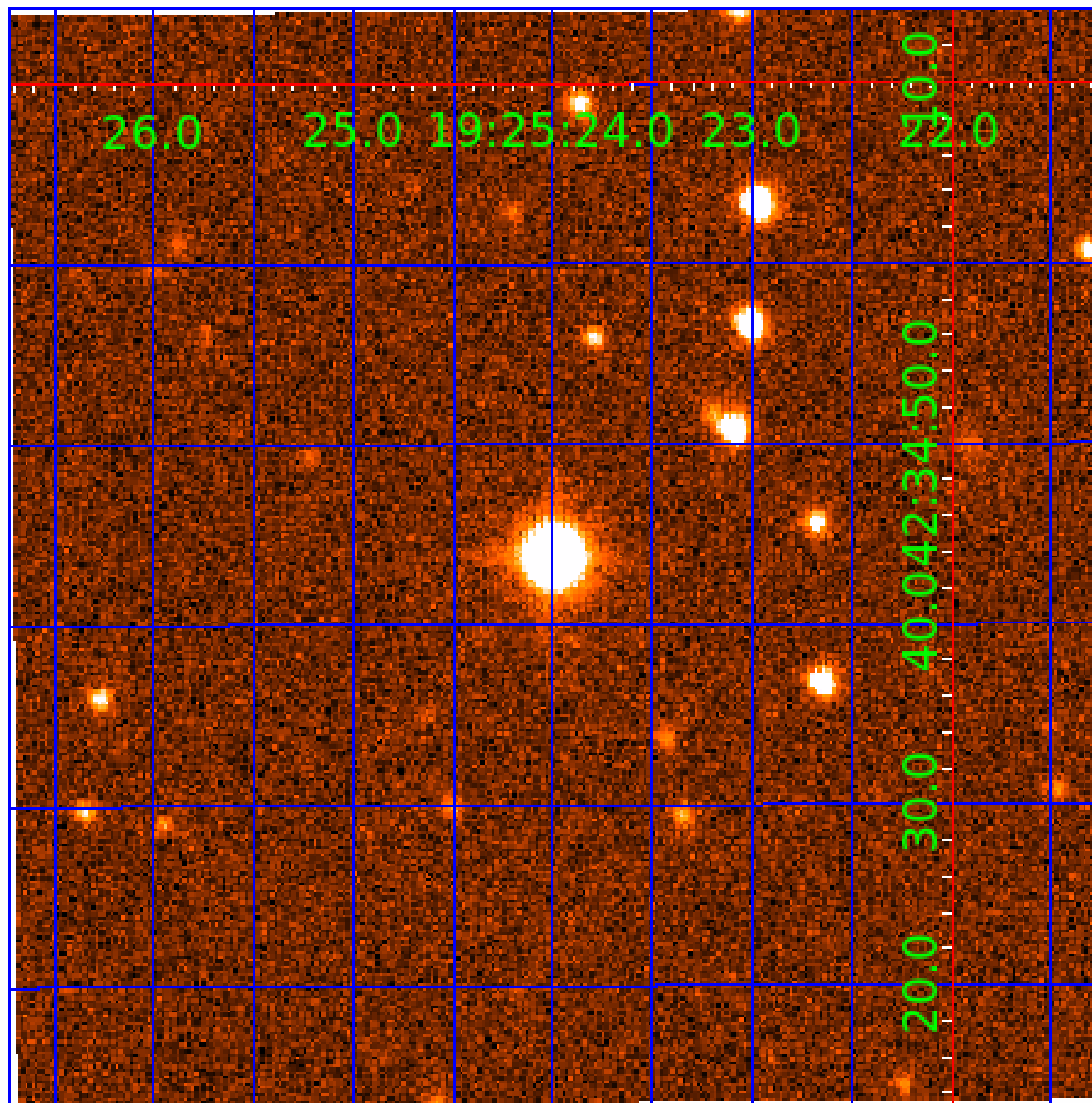


fluxWeightedCentroids, Planet 1 of 6



UKIRT Image

Declination



# KIC 007032218

## Q1-17 DR25 TCE Parameters

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007032218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007032218-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007032218-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—CENT_FEW_MEAS
007032218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

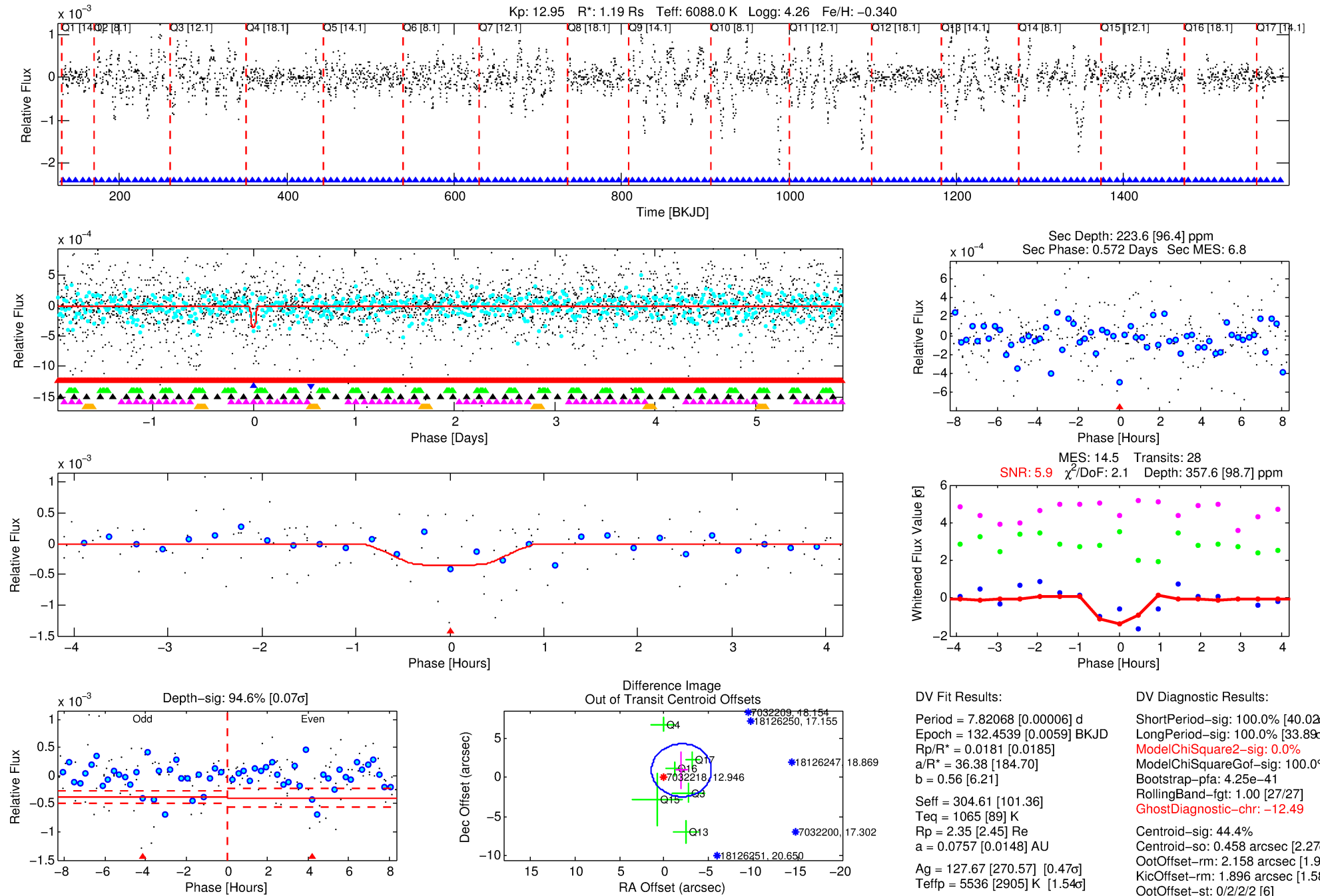
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007032218-02

No Significant Match Found

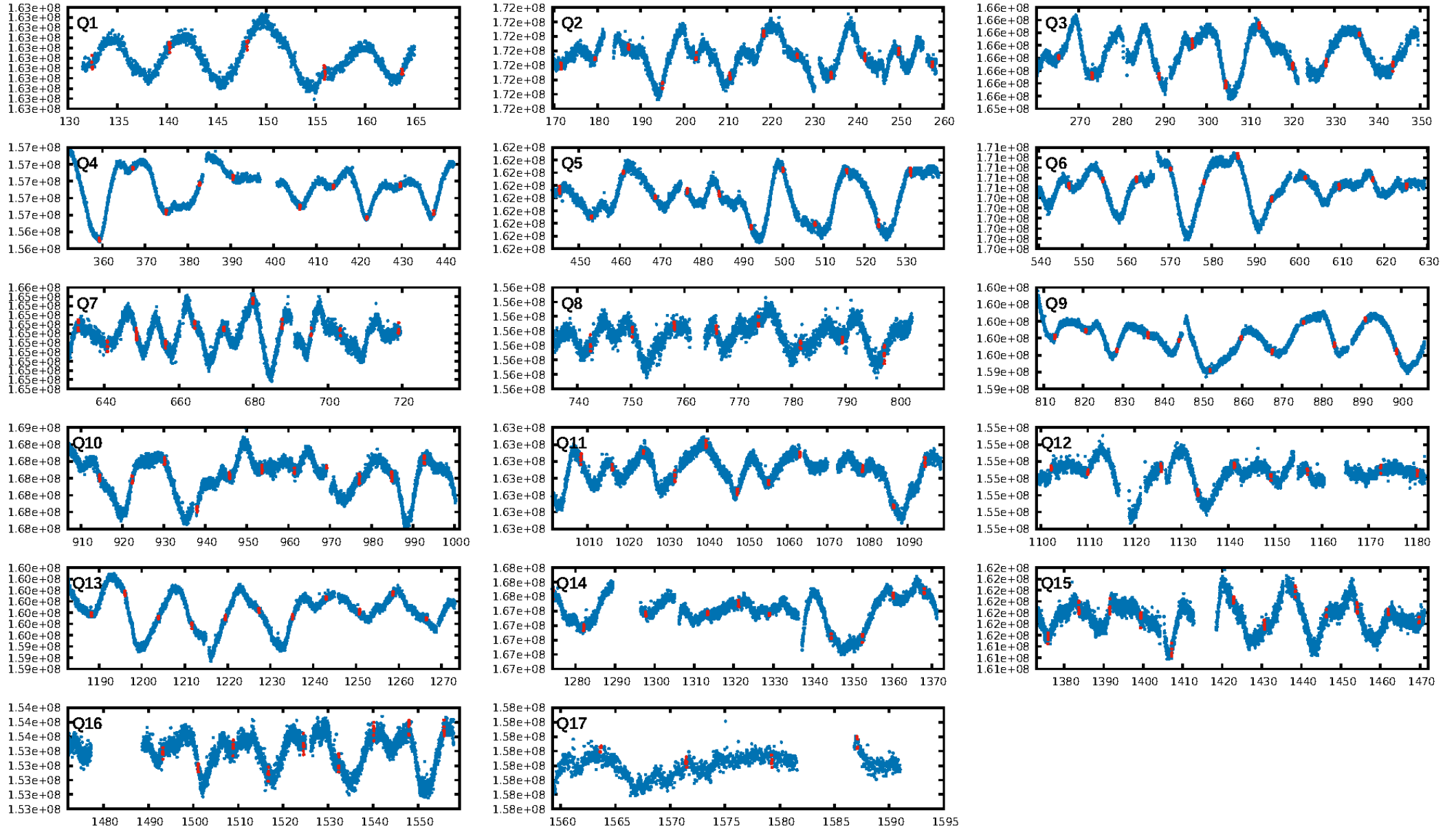
# DV One-Page Summary

KIC: 7032218 Candidate: 2 of 6 Period: 7.821 d

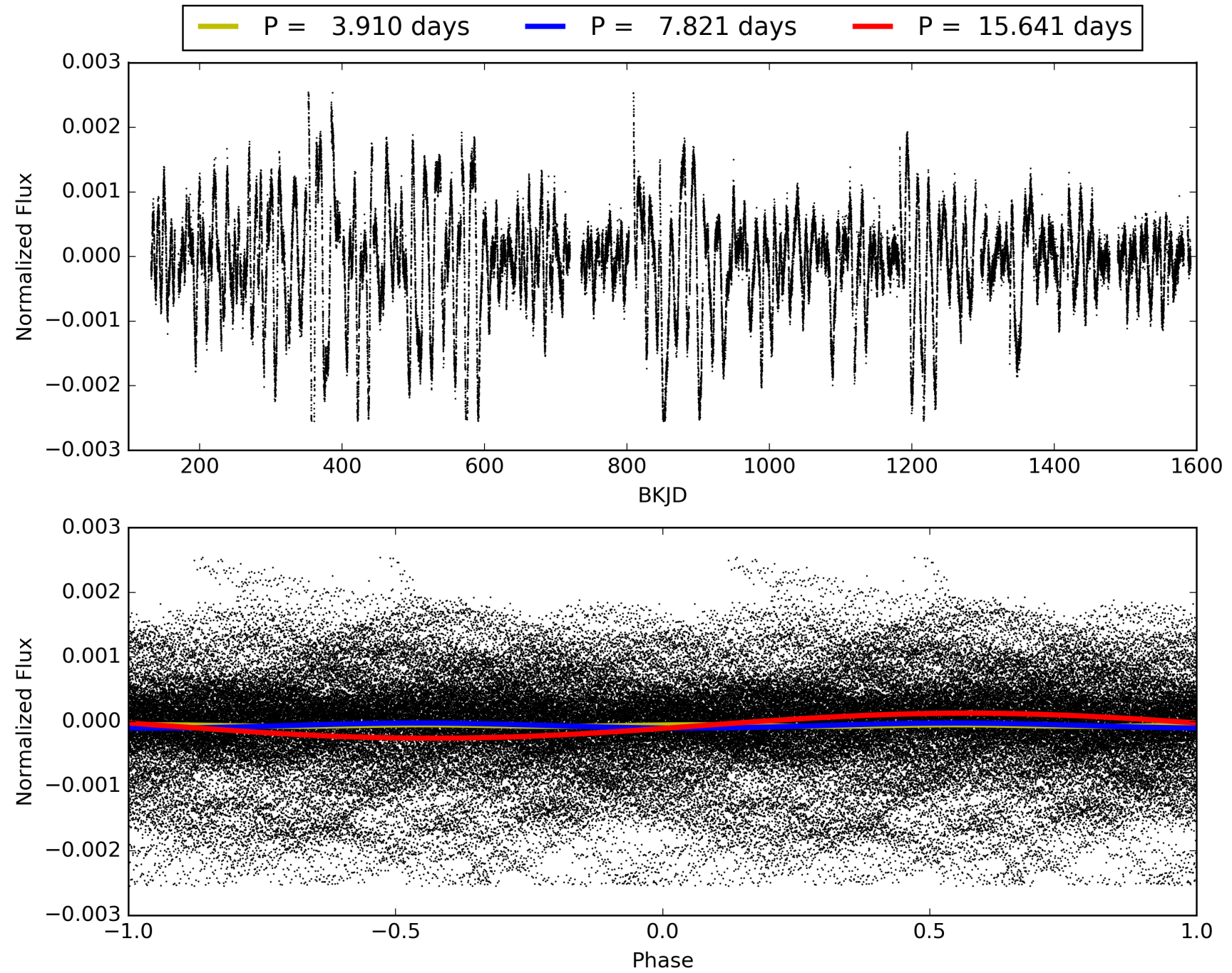




# TCE 007032218-02, PDC Light Curves

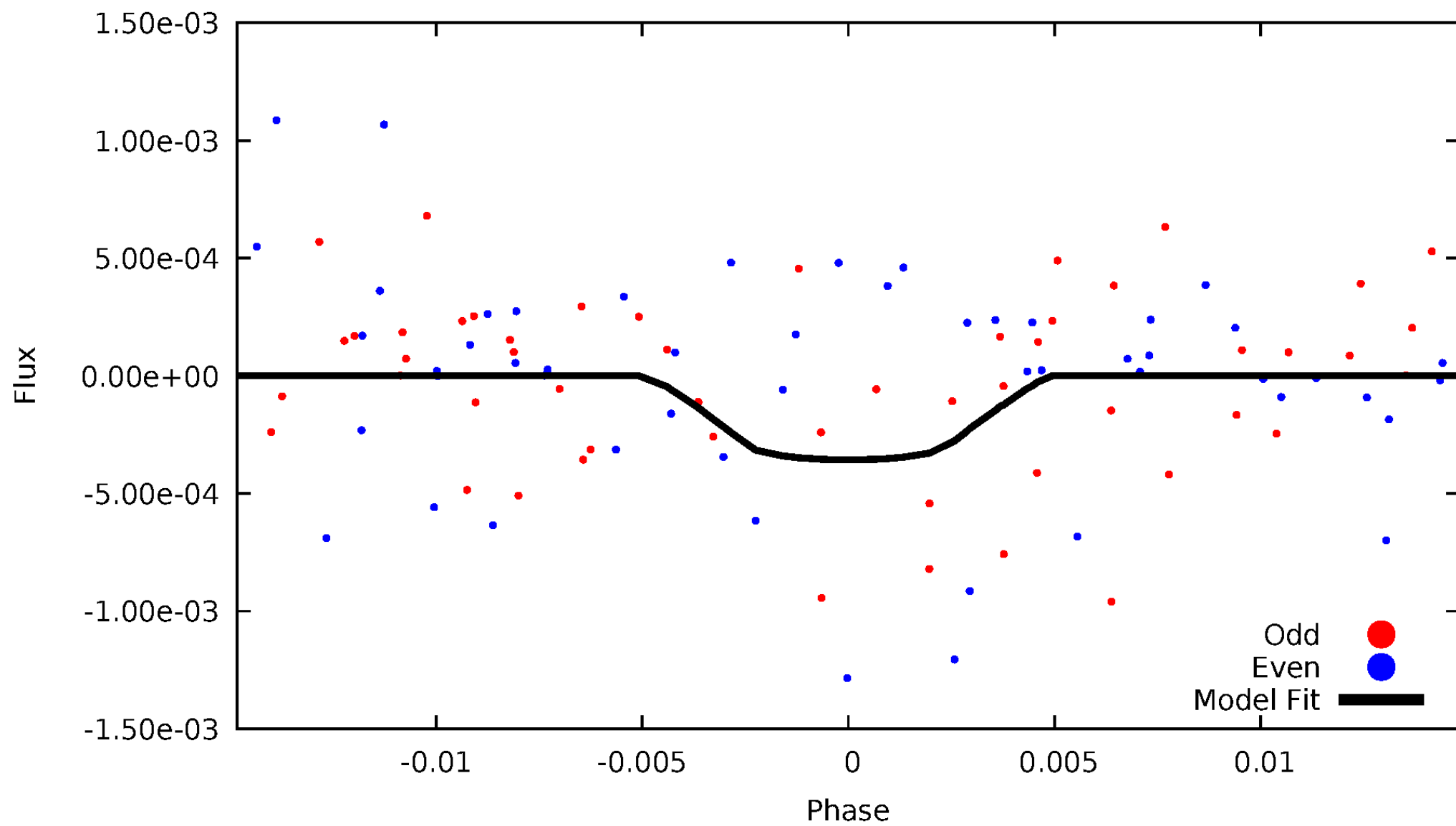


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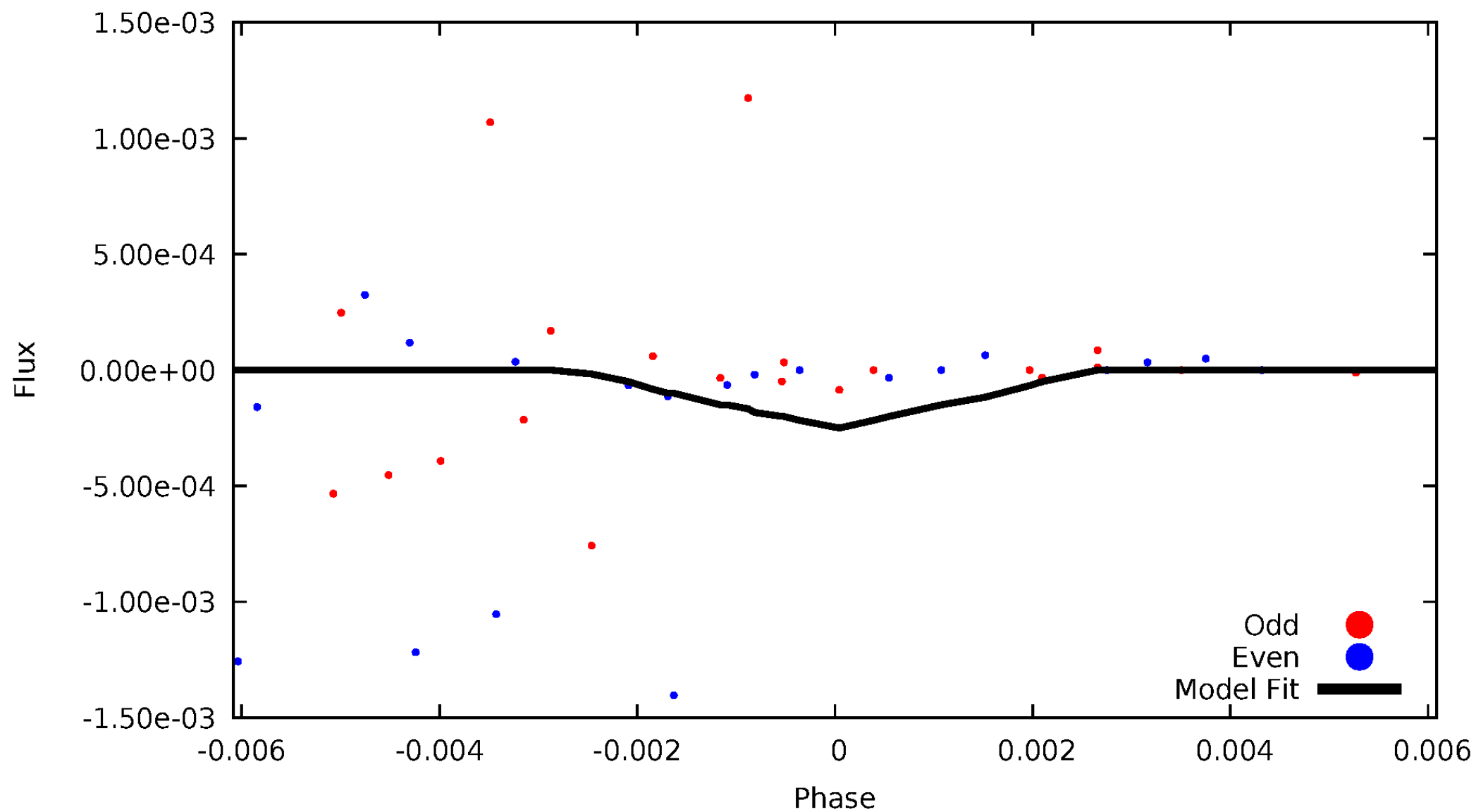
# DV Odd/Even

TCE 007032218-02



# ALT Odd/Even

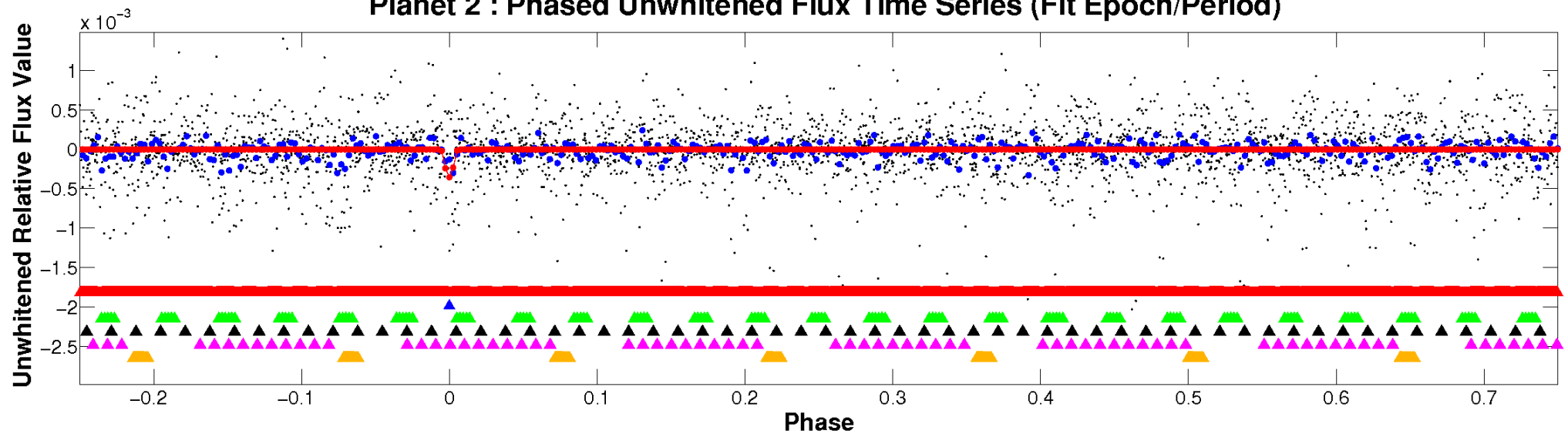
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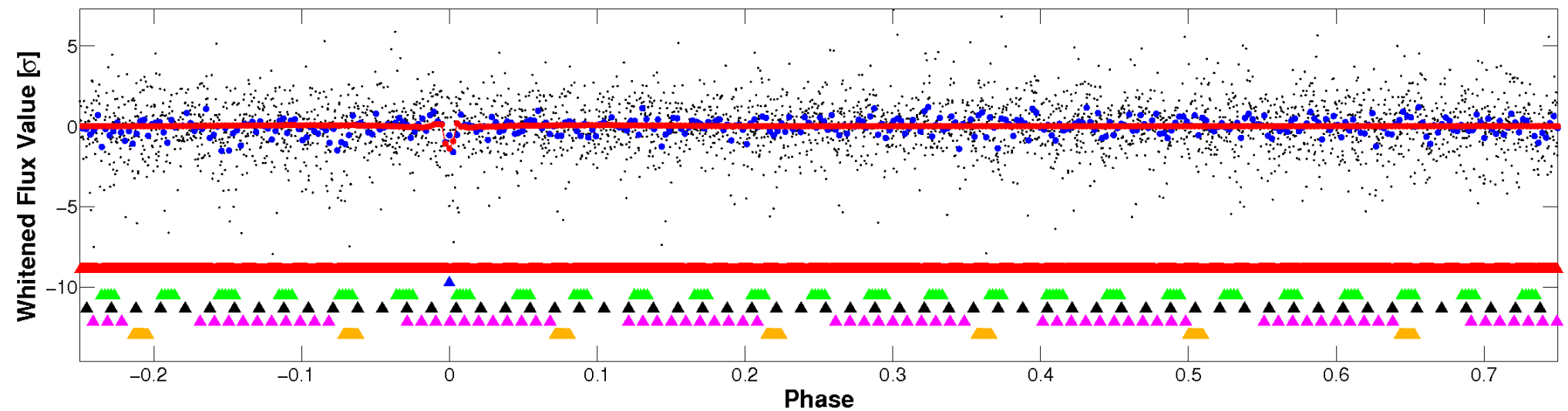


# Non-Whitened Vs. Whitened Light Curve

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

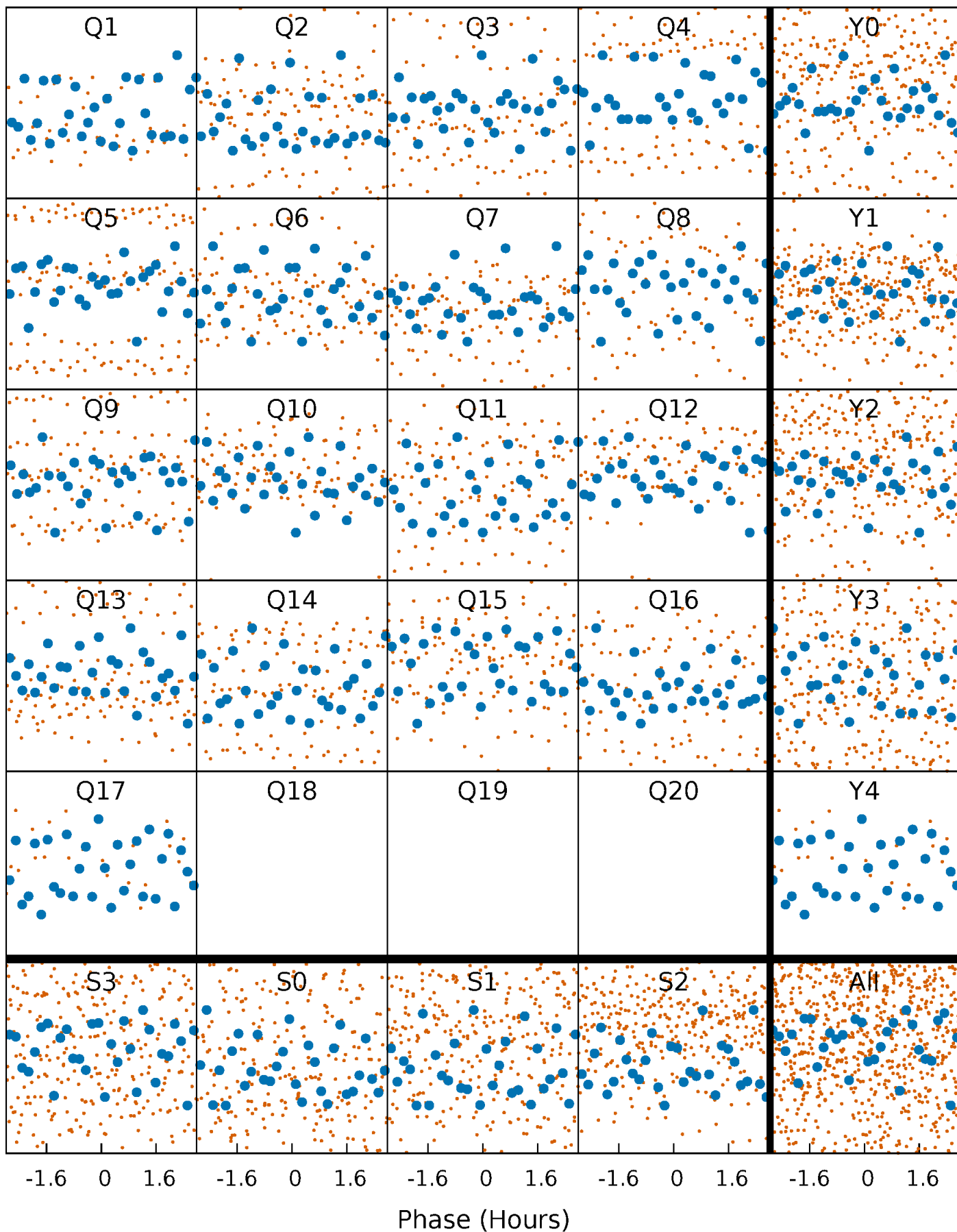


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



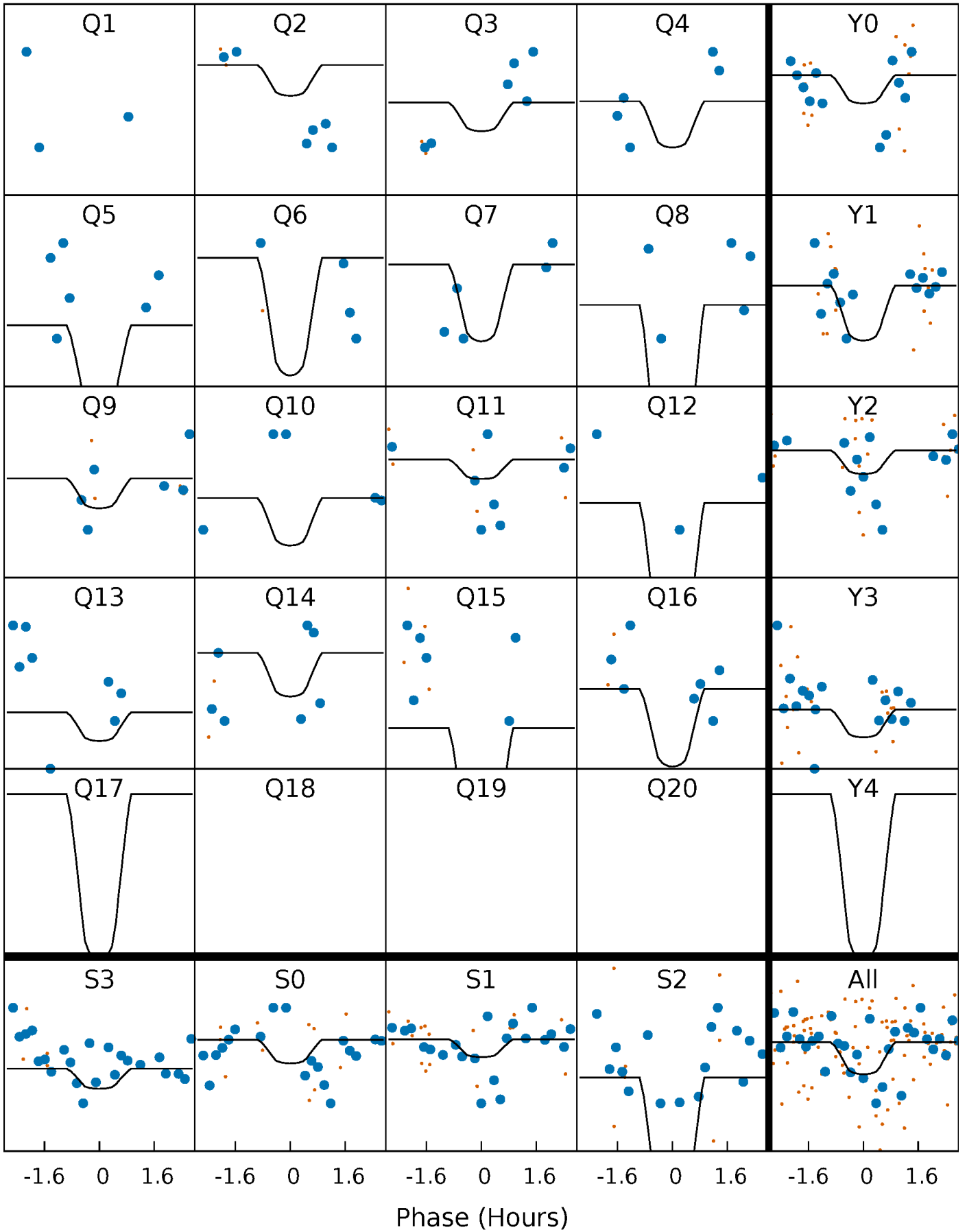
# PDC Quarter-Phased Transit Curves

TCE 007032218-02 P= 7.820680 Days  $T_0=132.453885$  (BKJD)



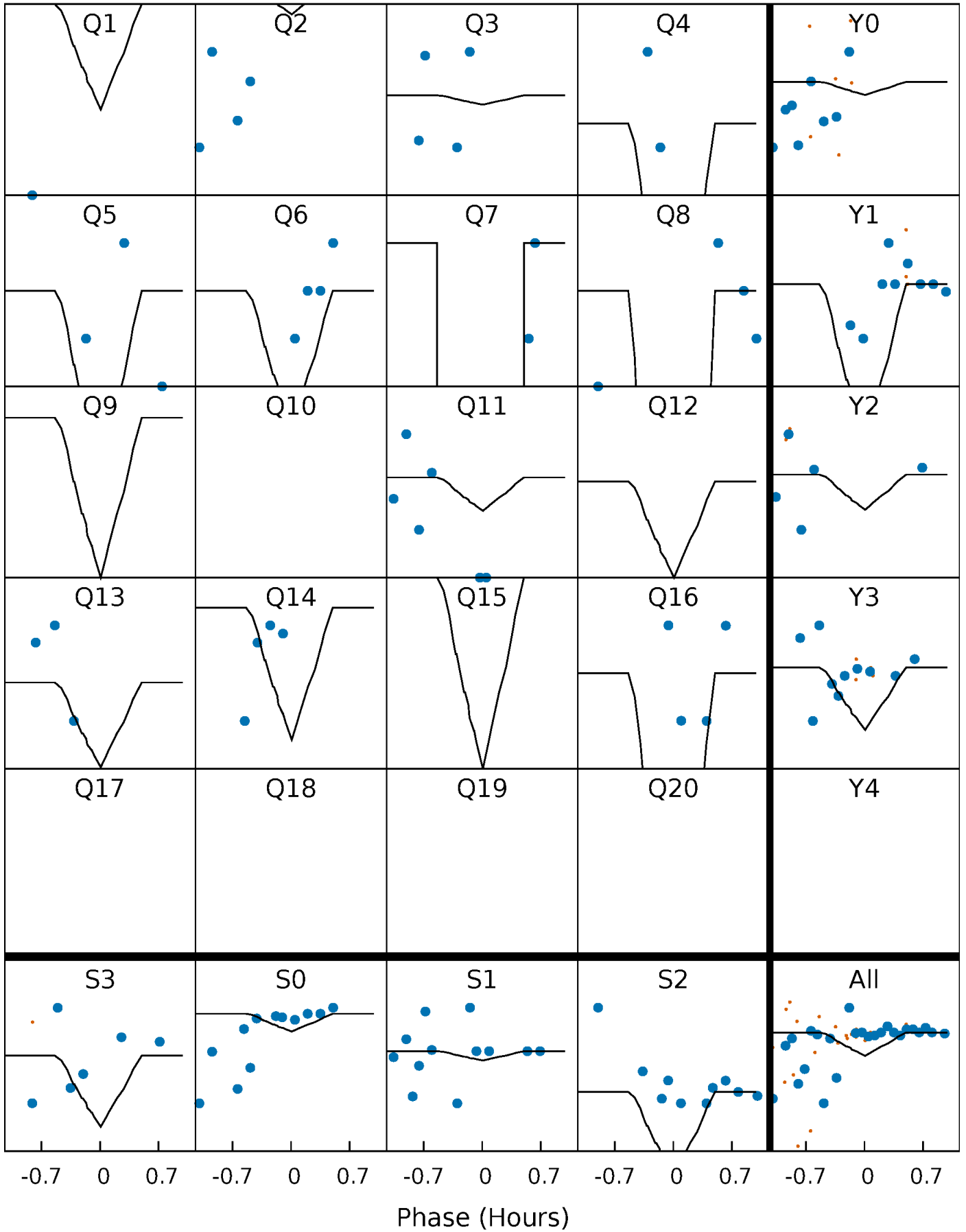
# DV Quarter-Phased Transit Curves

TCE 007032218-02   P= 7.820680 Days    $T_0=132.453885$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007032218-02     $P = 7.820462$  Days     $T_0 = 132.525897$  (BKJD)

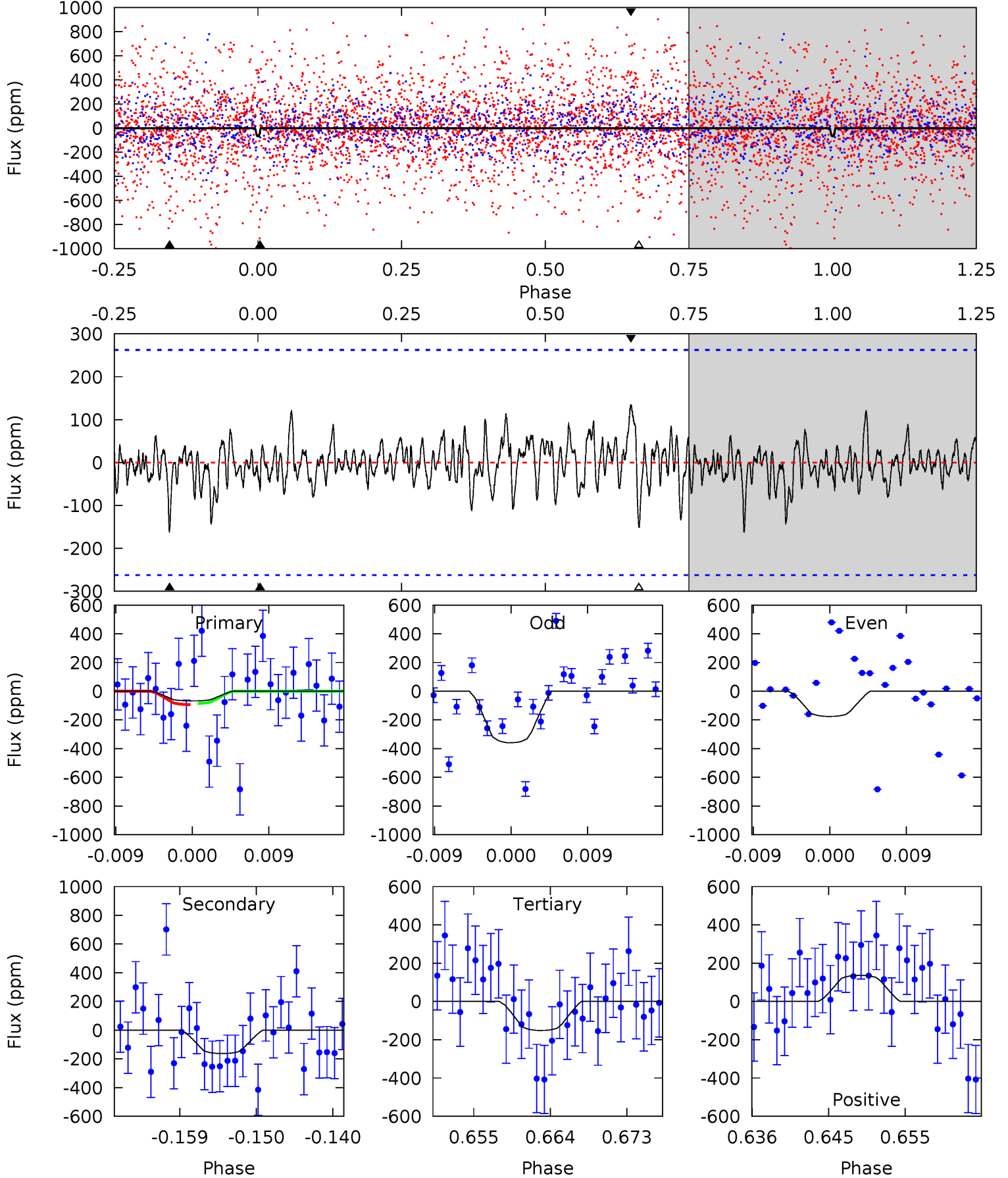




# DV Model-Shift Uniqueness Test

007032218-02, P = 7.820680 Days, E = 124.633205 Days

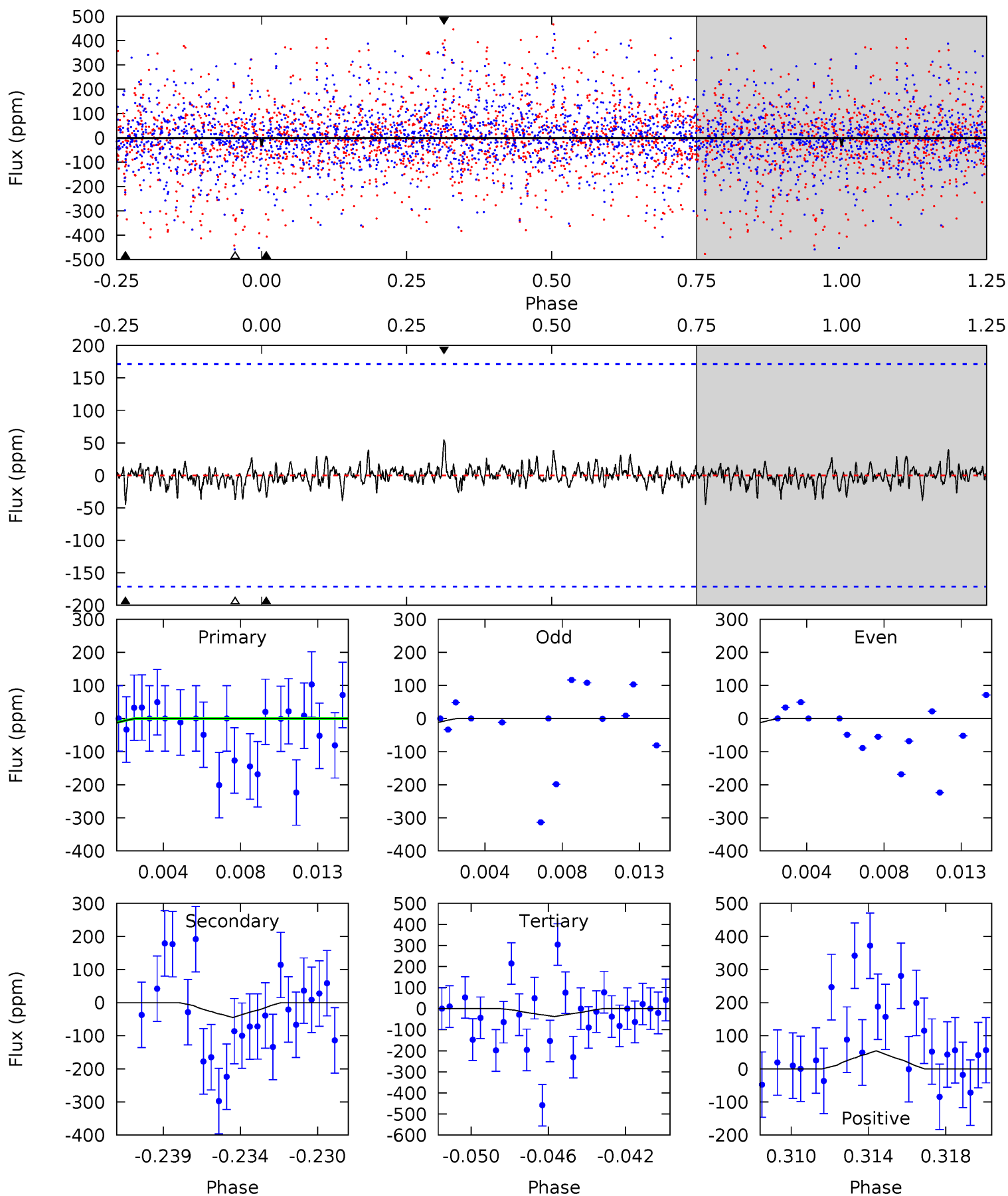
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.29	3.11	2.89	2.60	5.04	2.60	0.84	-1.60	-1.31	0.21	0.51	1.76	1.47	0.46	0



# Alt Model-Shift Uniqueness Test

007032218-02, P = 7.820462 Days, E = 124.705435 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
0.97	1.36	1.14	1.65	5.19	2.86	0.35	-0.17	-0.68	0.22	-0.29	0.03	1.00	0.55	0.02



### Stellar Parameters For KIC 007032218

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6088^{+164}_{-164}$	$4.262^{+0.186}_{-0.124}$	$-0.340^{+0.300}_{-0.300}$	$1.191^{+0.237}_{-0.237}$	$0.947^{+0.142}_{-0.095}$	$0.789^{+0.739}_{-0.308}$
	+3%/-3%	+4%/-3%	+88%/-88%	+20%/-20%	+15%/-10%	+94%/-39%
Source	PHO1	FLK73	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 007032218-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-162 \pm 52$	$2.76^{+2.23}_{-1.78}$	$1477^{+85}_{-95}$	$4740^{+3071}_{-955}$	$68^{+376}_{-50}$
Alt.	$-45 \pm 33$	$2.61^{+2.20}_{-1.70}$	$1480^{+87}_{-84}$	$3712^{+2098}_{-936}$	$17^{+146}_{-14}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

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

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

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

## DV Centroid Data

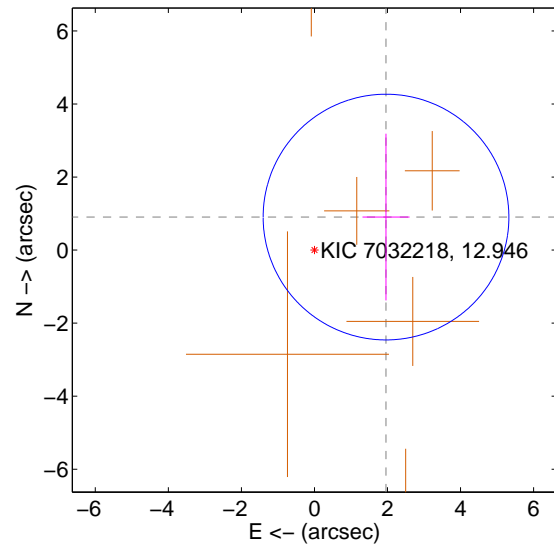
Supplemental centroid analysis for 007032218-02. Kepler magnitude: 12.95. Transit SNR 5.86

There are 0 quarters with good PRF difference image offsets

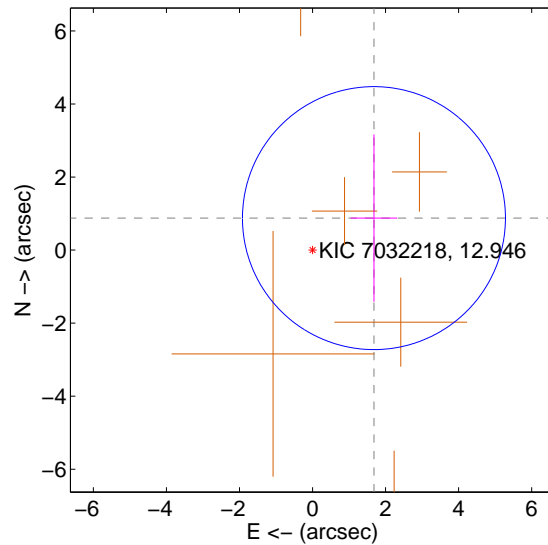
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.158 \pm 1.121$	1.92	$-1.959 \pm 0.645$	$0.904 \pm 2.282$
PRF-fit source offset from KIC position	$1.896 \pm 1.200$	1.58	$-1.682 \pm 0.637$	$0.876 \pm 2.291$
photometric centroid source offset	$0.46 \pm 0.20$	2.27	$0.46 \pm 0.20$	$0.03 \pm 0.18$

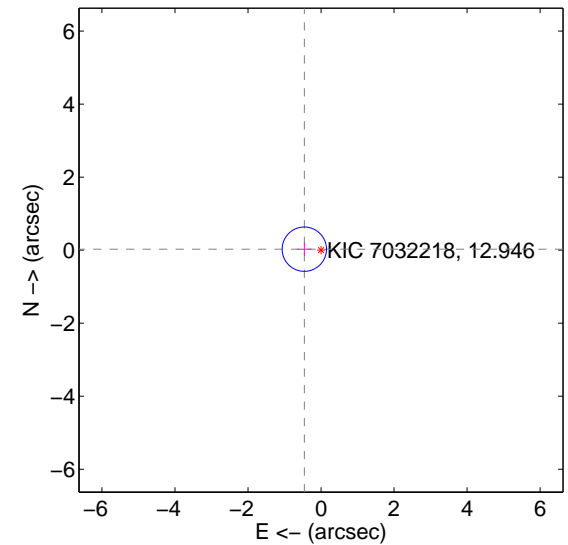
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



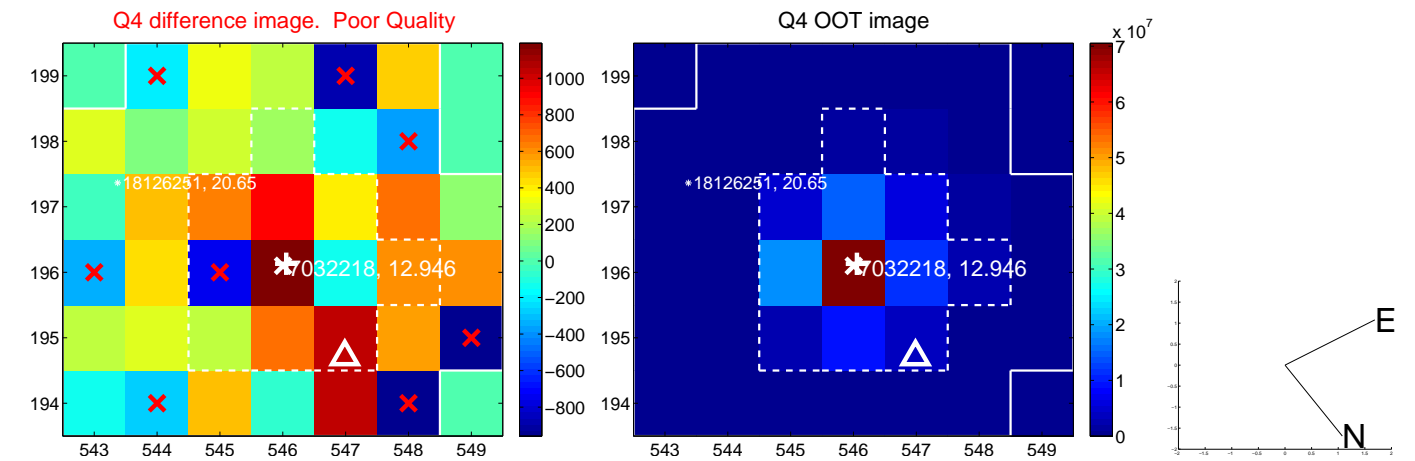
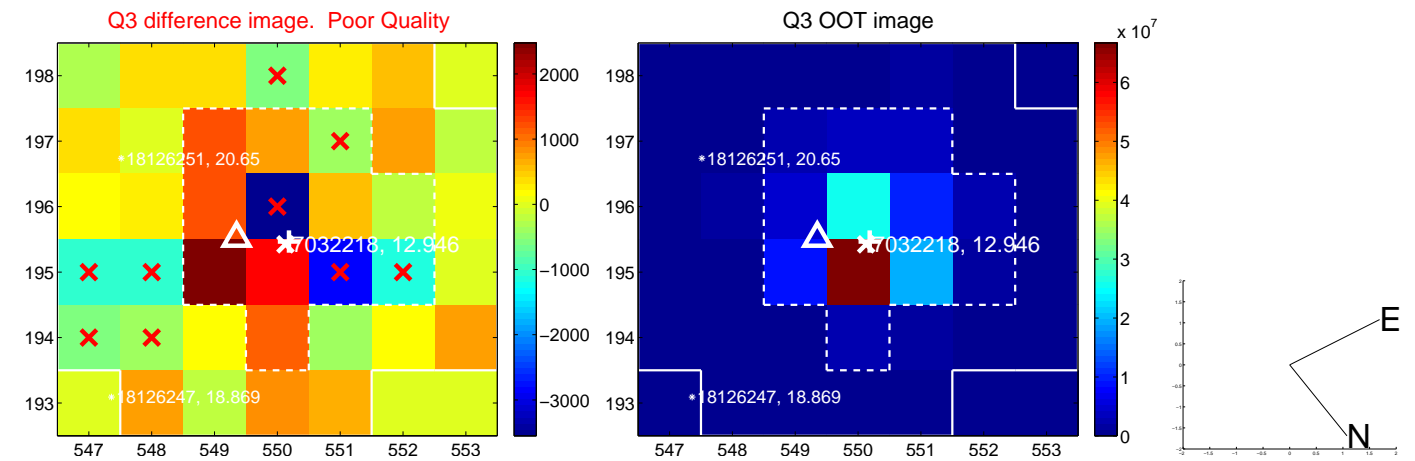
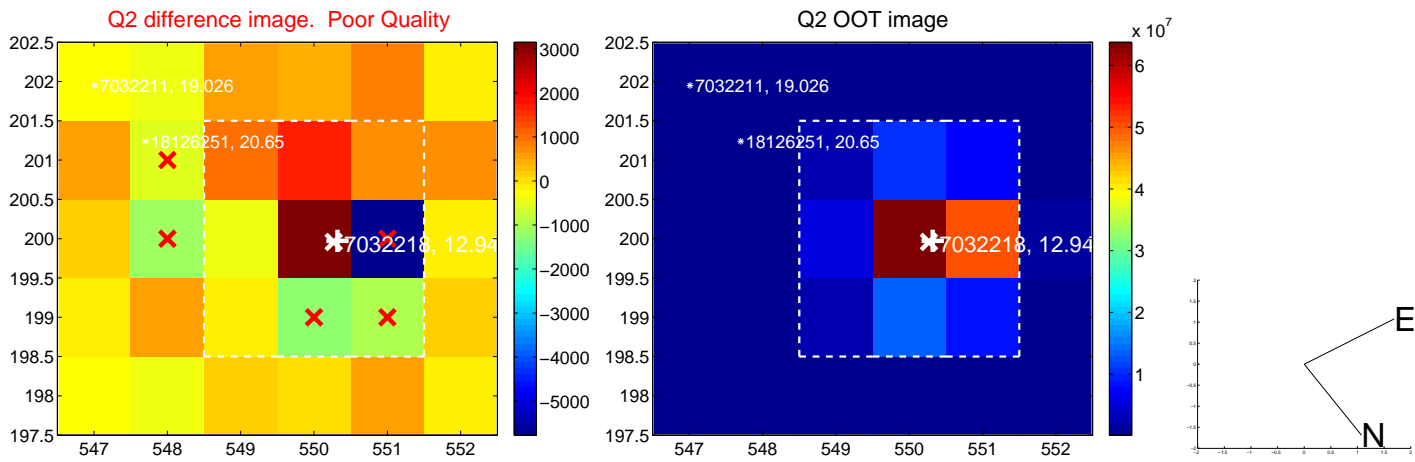
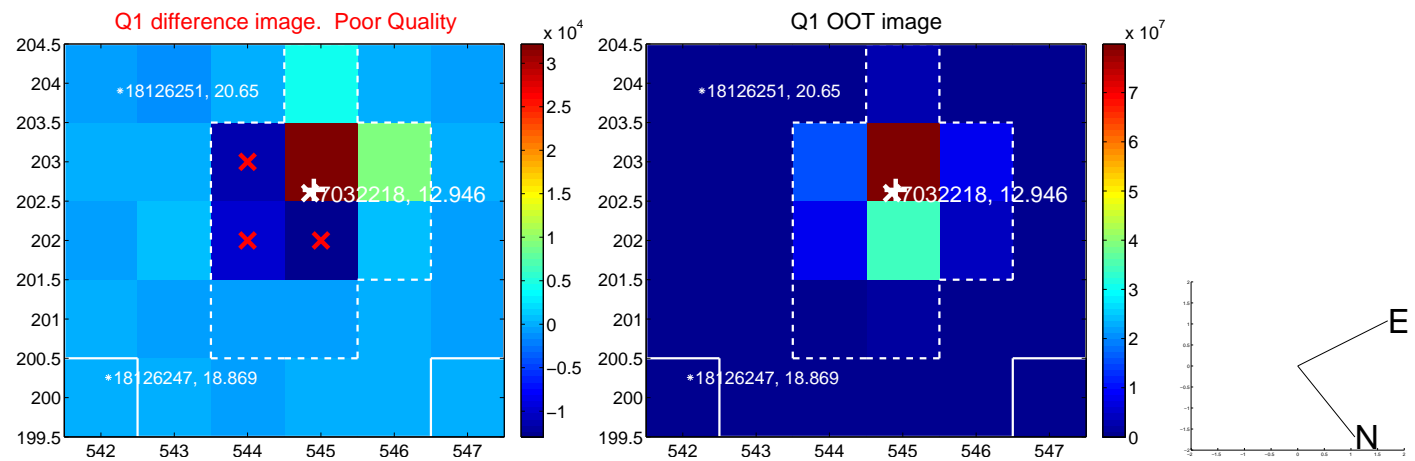
offset from photometric centroids



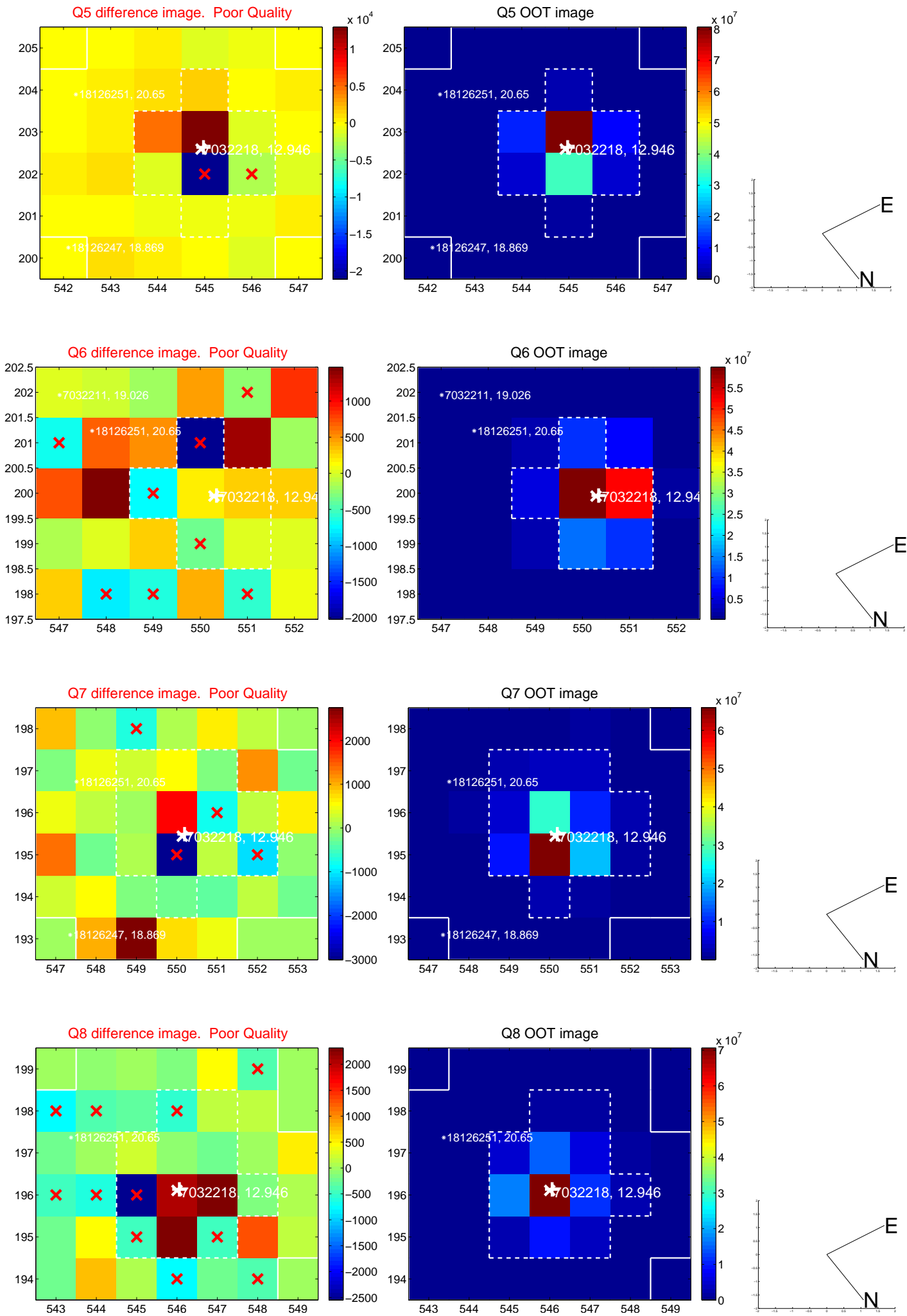
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



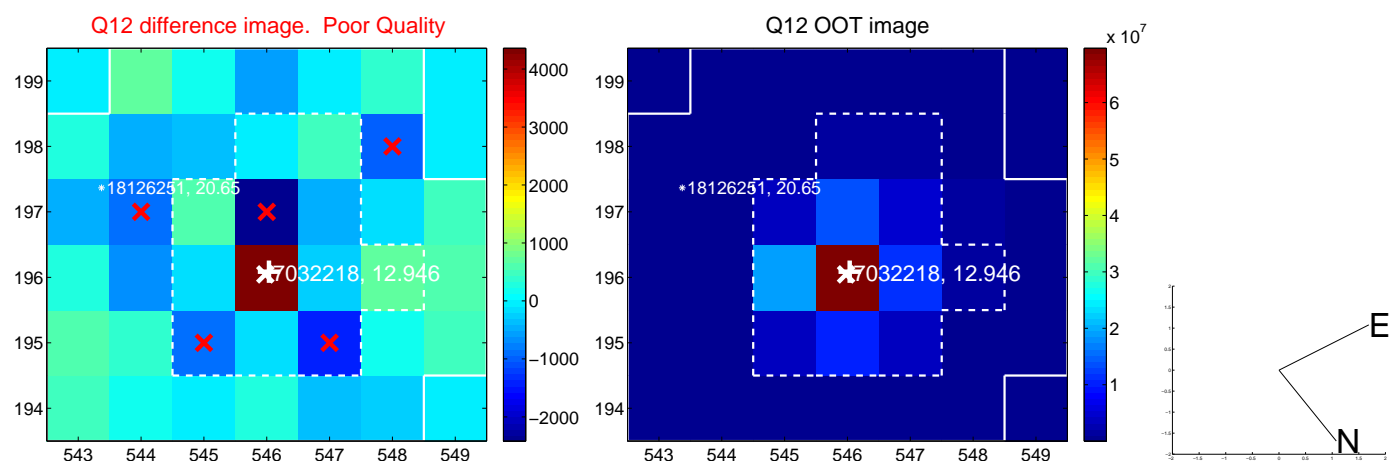
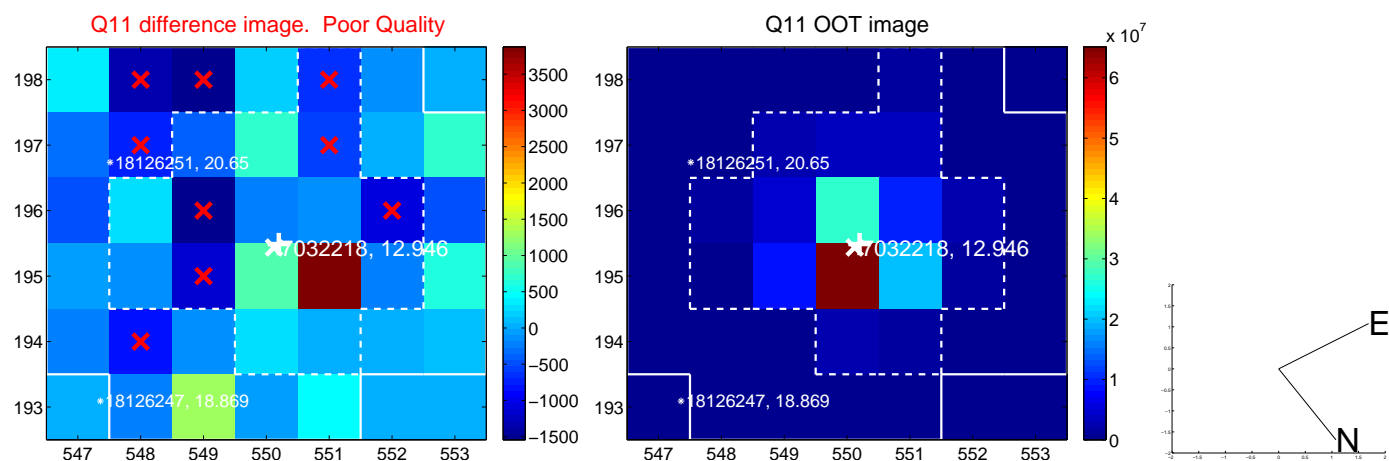
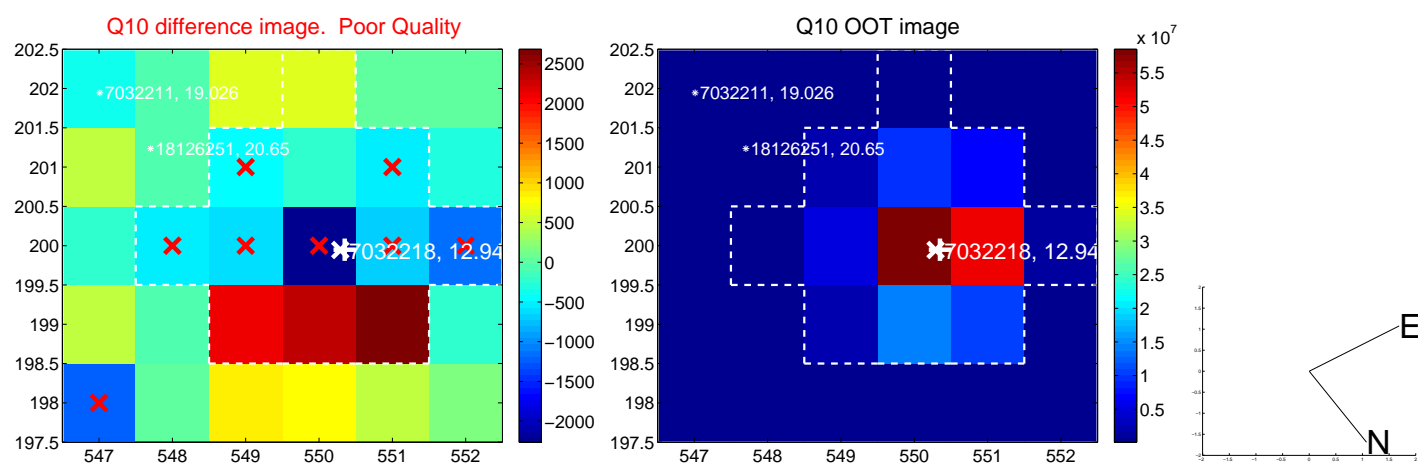
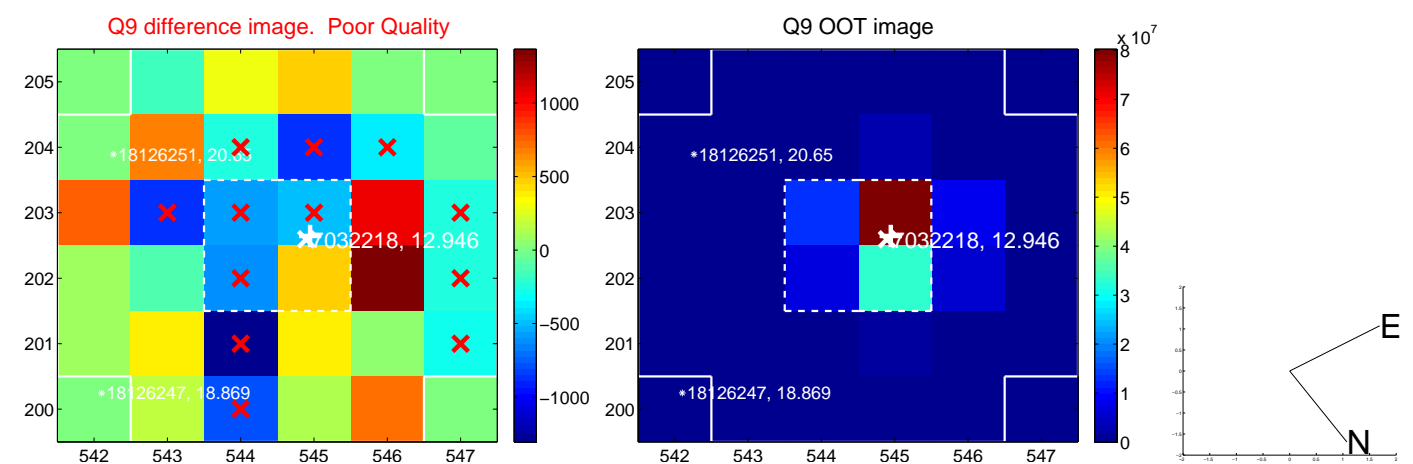
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



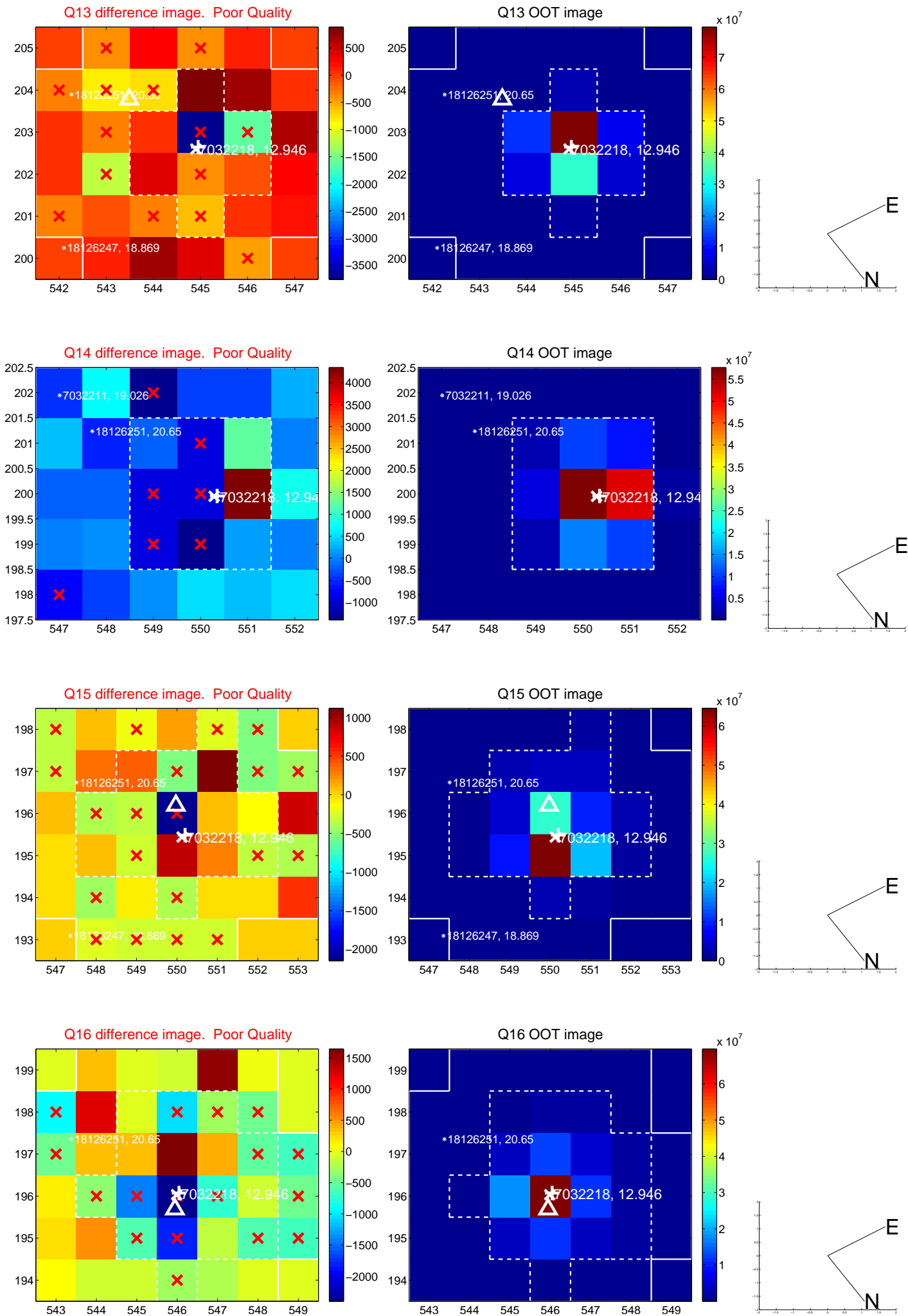
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



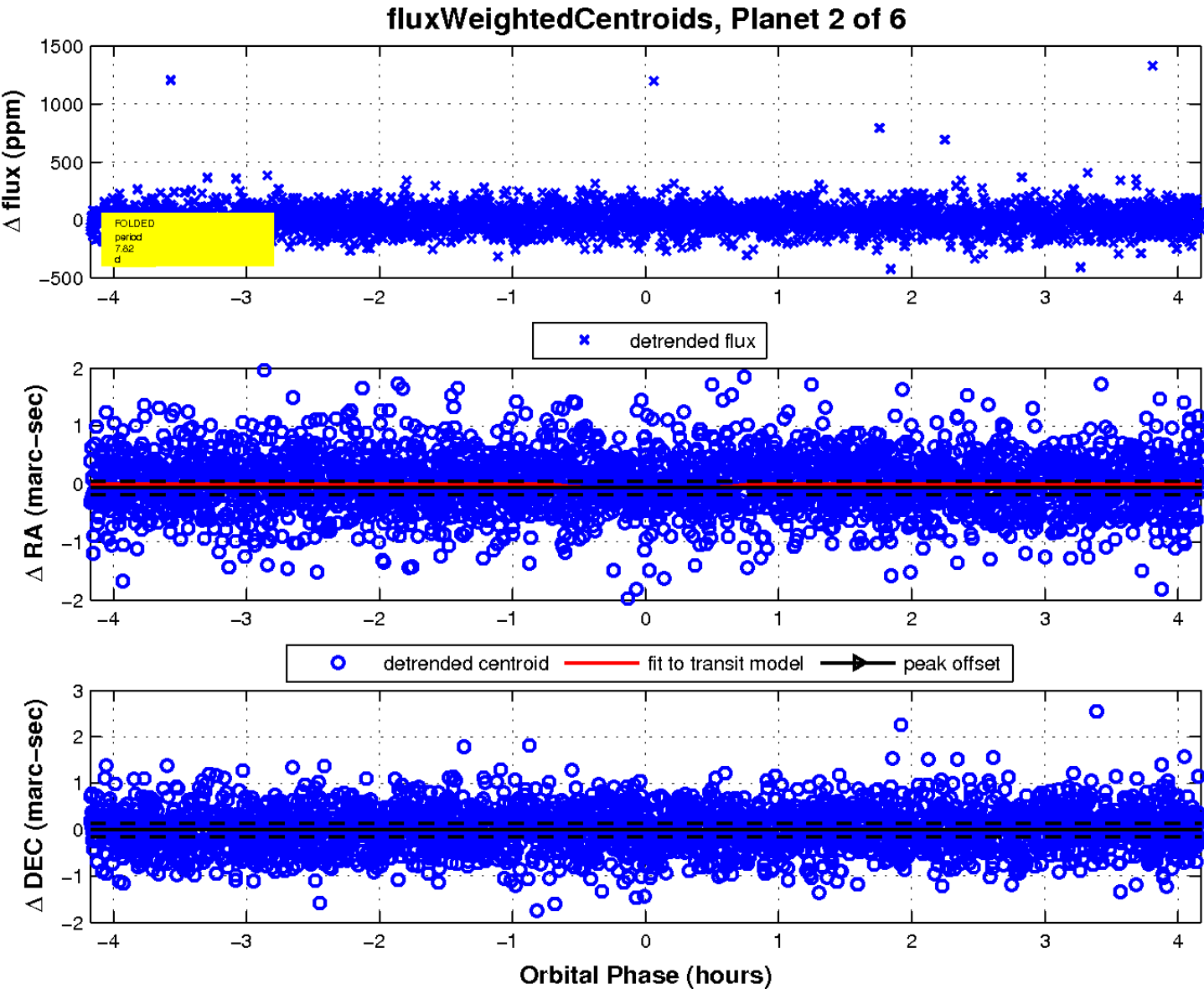
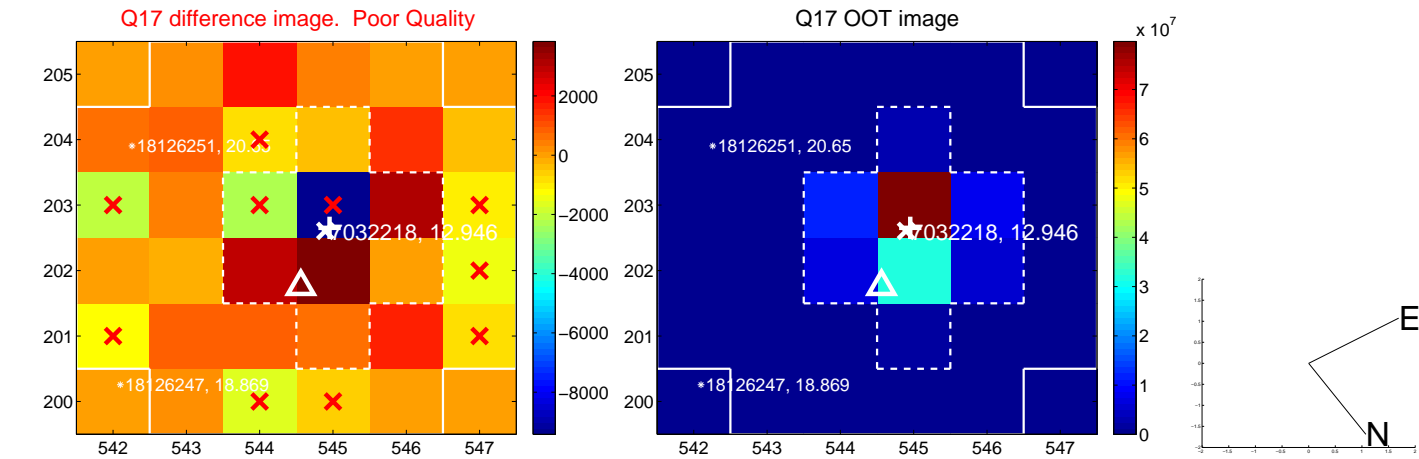
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

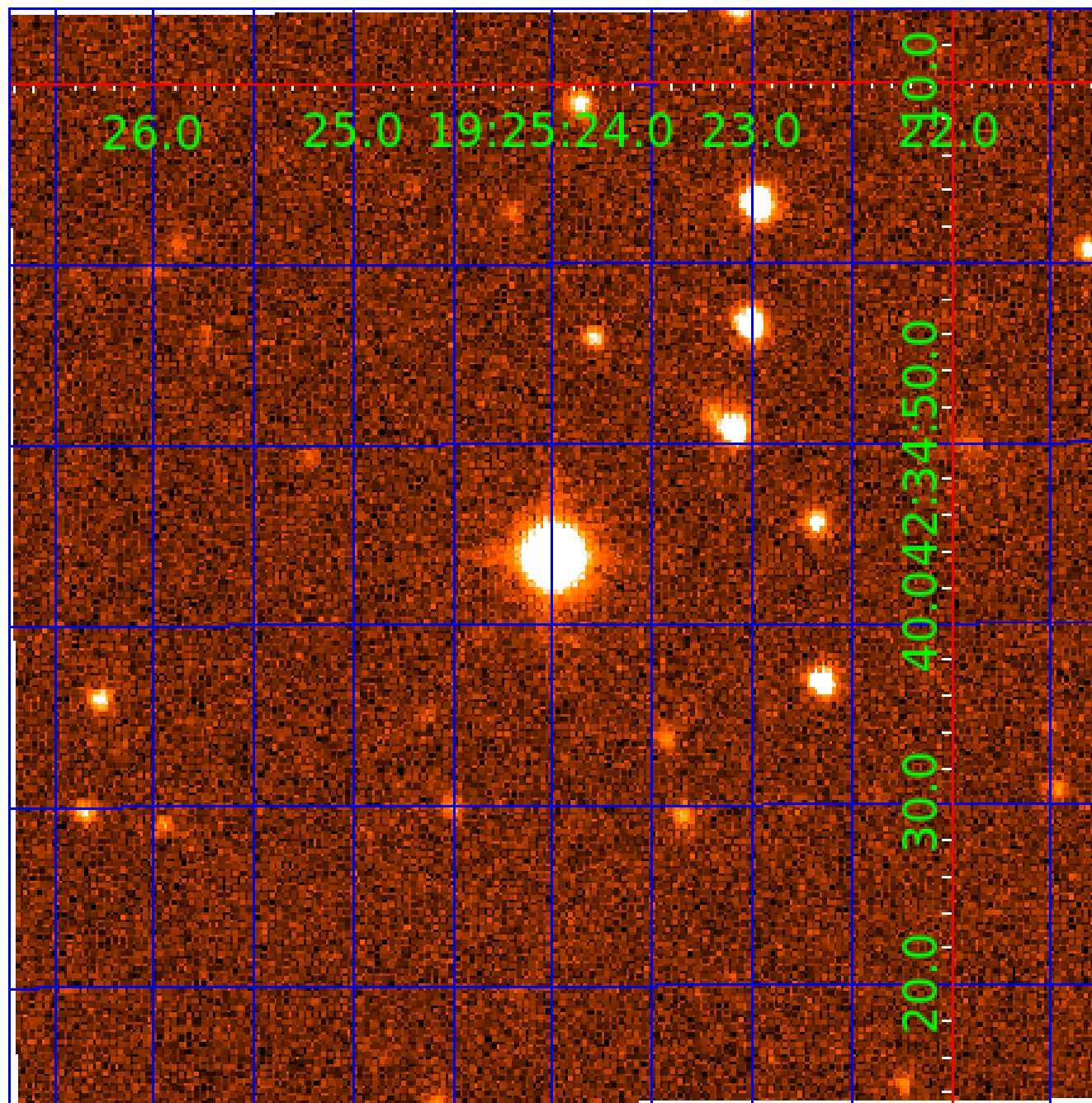


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 007032218

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007032218-01	OBS	No	0.566768	131.860624	7.4	4.121	7.7	6.4	1.19	6088	0.33	10081.54
007032218-02	OBS	No	7.820680	132.453885	357.6	1.392	14.5	5.9	1.19	6088	2.35	304.61
007032218-03	OBS	No	11.261096	140.079946	399.9	2.000	10.9	-1.0	1.19	6088	2.39	187.34
007032218-04	OBS	No	13.946867	138.356370	90.6	12.521	9.0	5.0	1.19	6088	1.27	140.85
007032218-05	OBS	No	20.099512	144.170718	1297.1	0.612	11.3	10.9	1.19	6088	4.48	86.53
007032218-06	OBS	No	18.992012	138.678752	546.4	2.447	7.5	8.8	1.19	6088	2.87	93.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007032218-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007032218-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007032218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007032218-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007032218-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—CENT_FEW_MEAS
007032218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

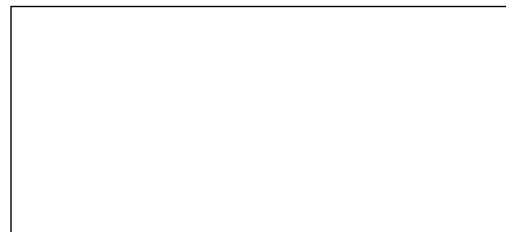
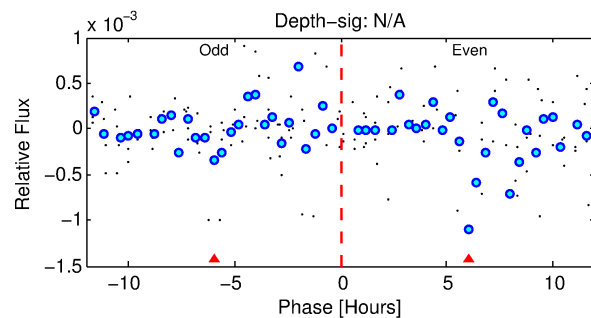
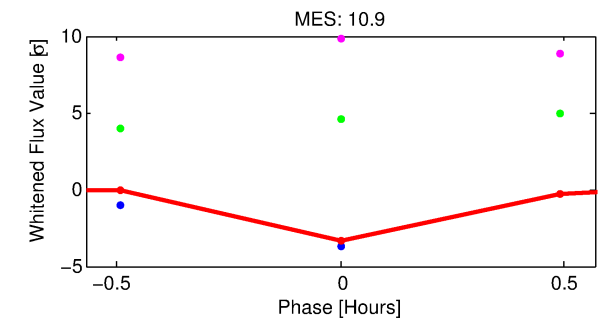
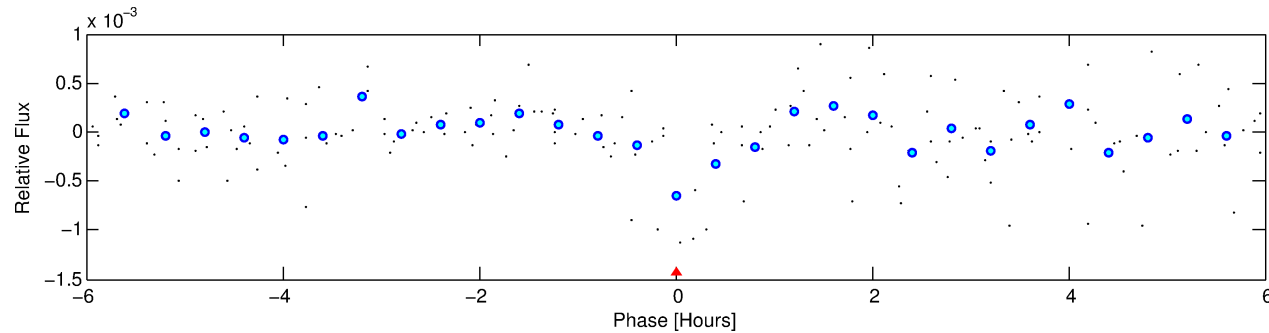
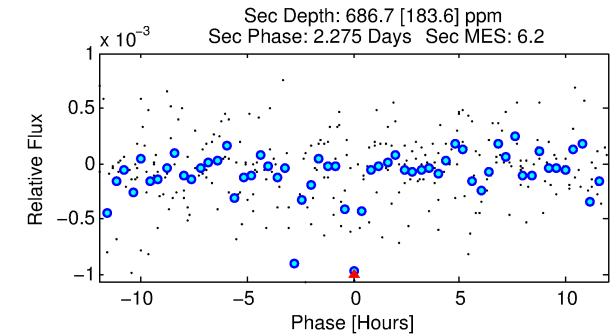
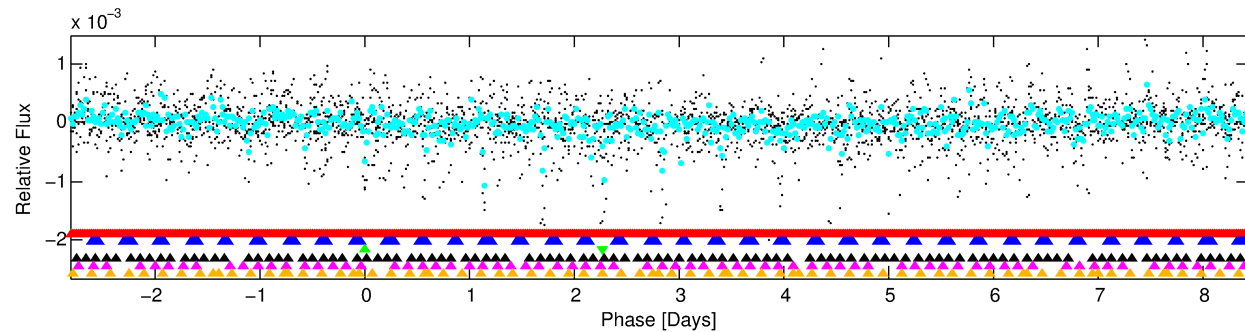
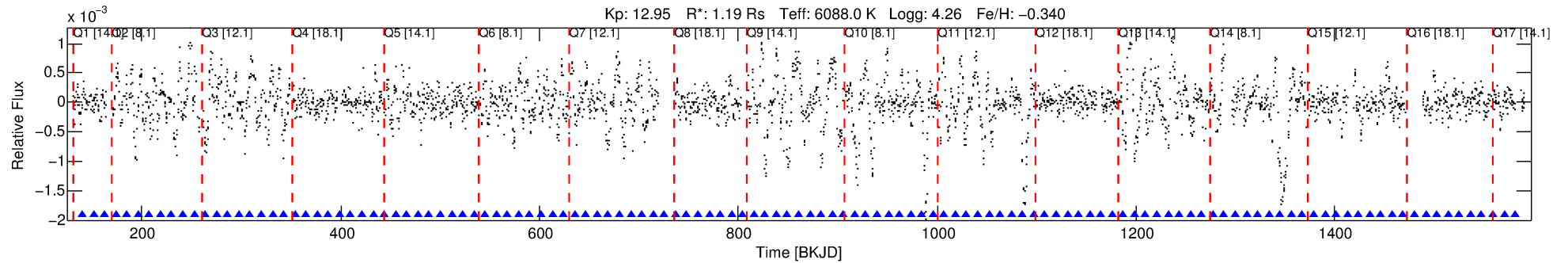
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007032218-03

No Significant Match Found

# DV One-Page Summary

KIC: 7032218 Candidate: 3 of 6 Period: 11.261 d



## TPS TCE Results:

Period = 11.26110 d  
Epoch = 140.0799 BKJD

DV fit results are unavailable

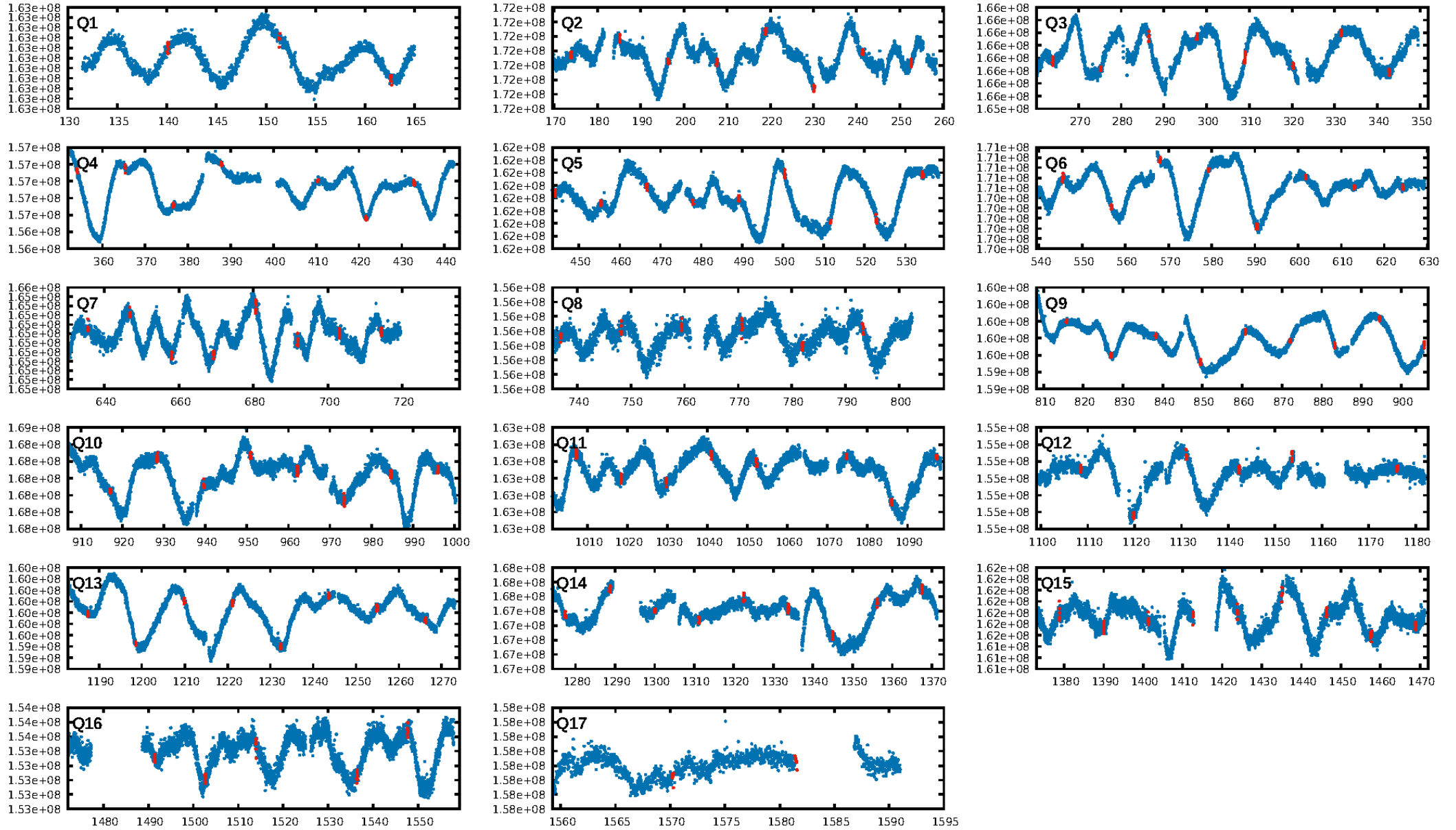
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [33.89σ]  
LongPeriod-sig: 100.0% [5.08σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.68e-32  
RollingBand-fgt: N/A  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: N/A

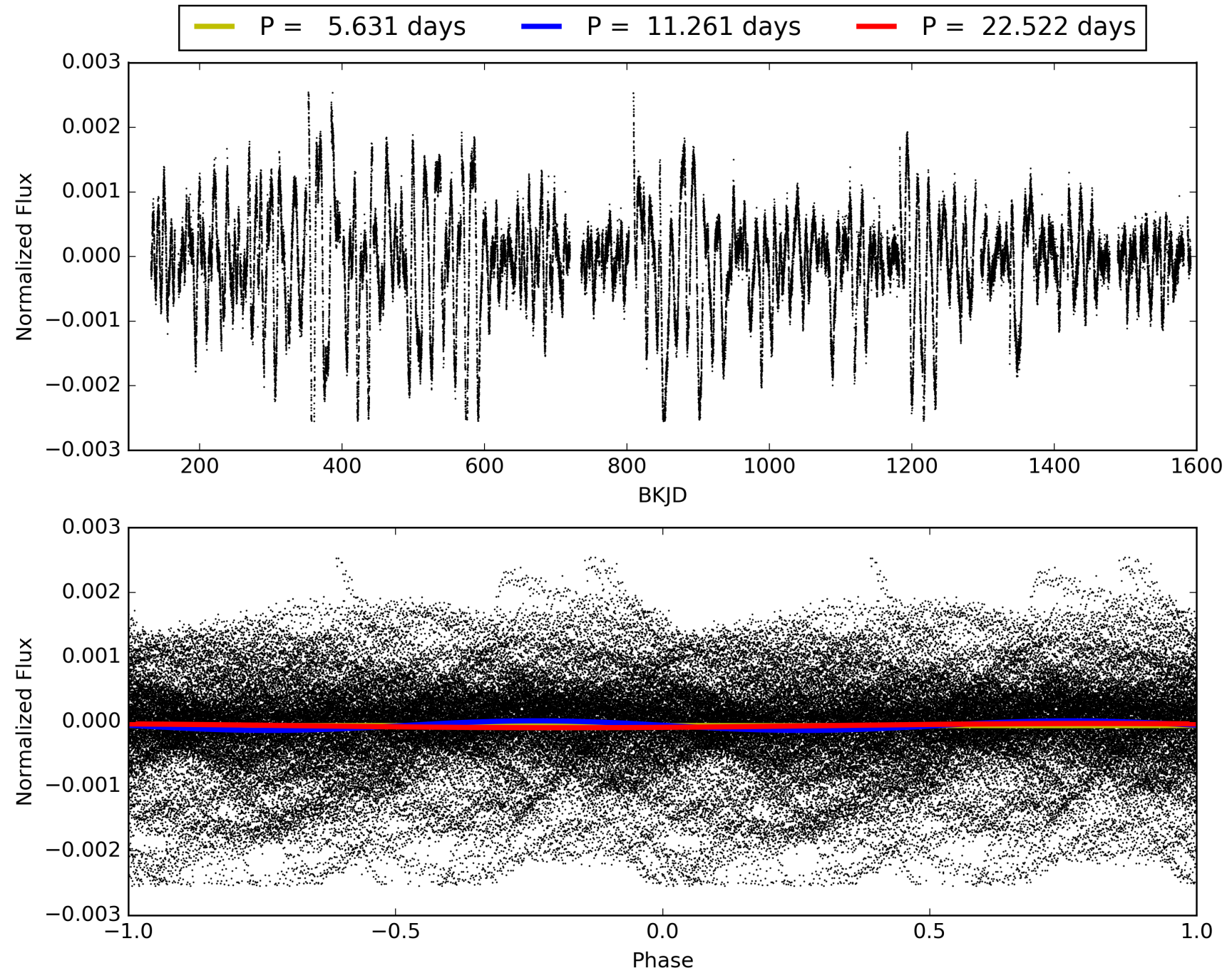
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:57:08 Z

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

# TCE 007032218-03, PDC Light Curves

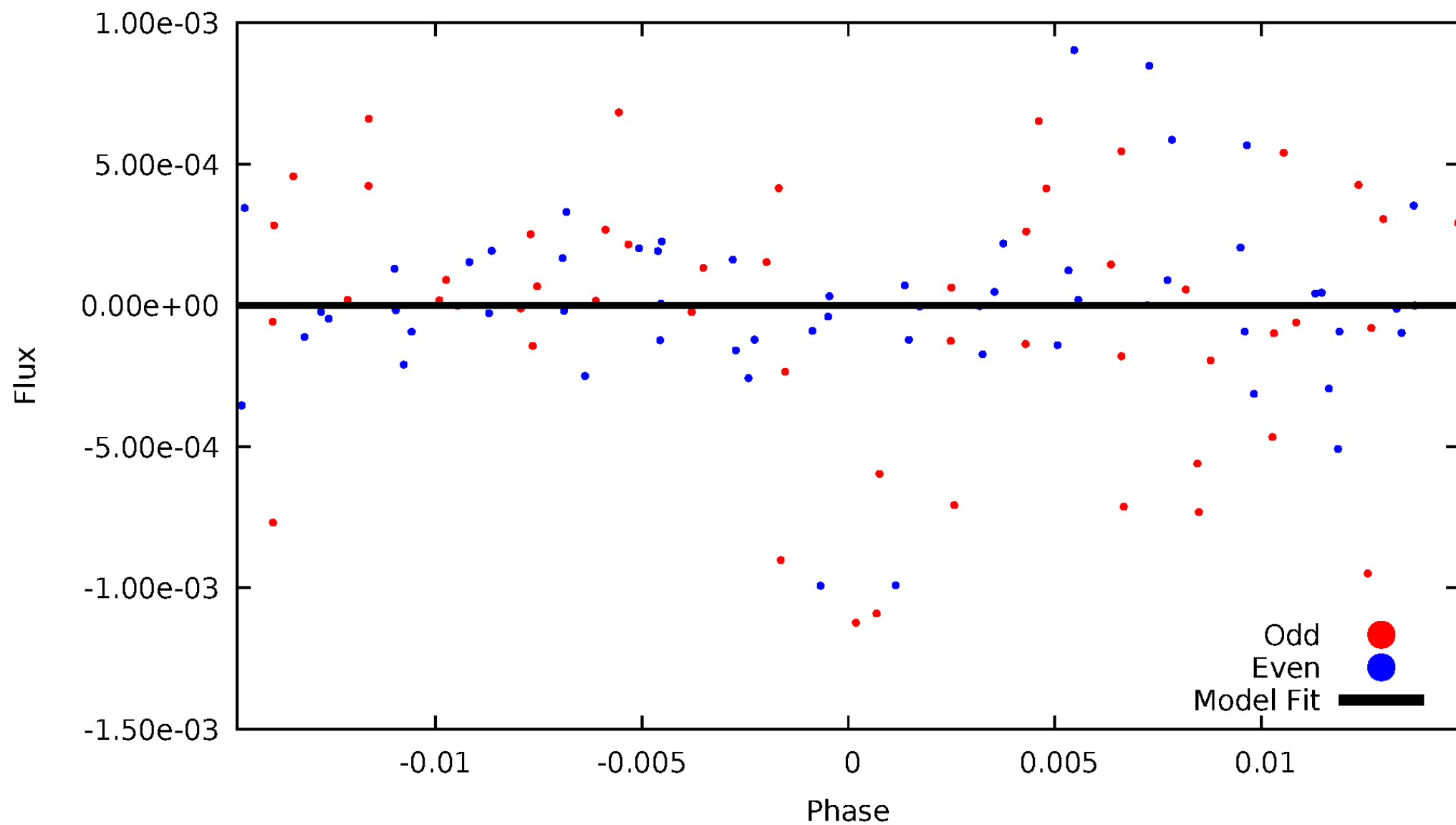


TCE 007032218-03



# DV Odd/Even

TCE 007032218-03





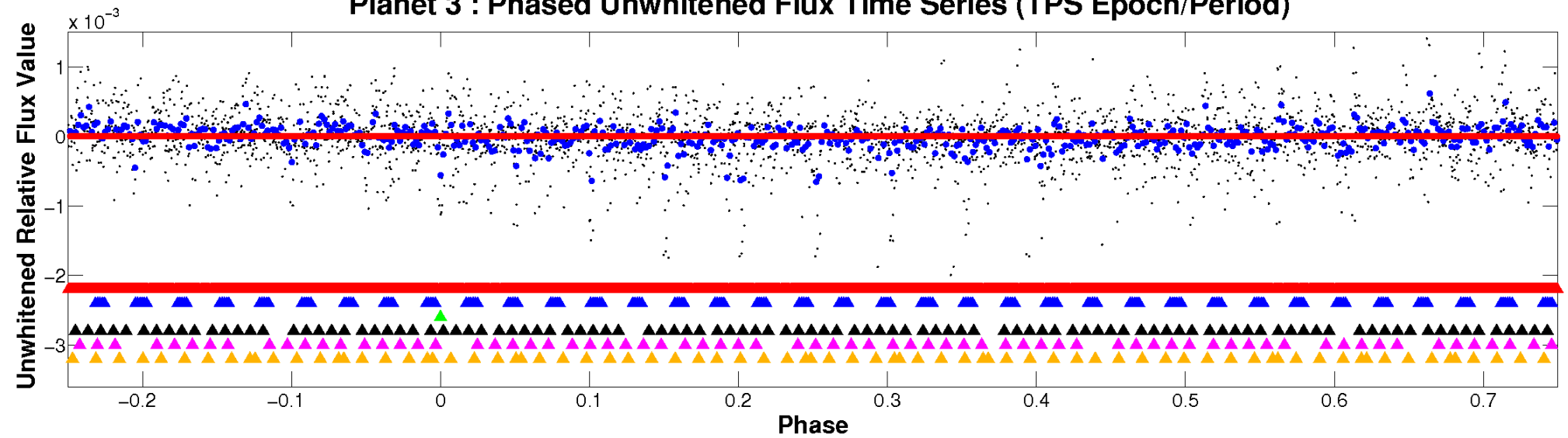


ALT Odd/Even

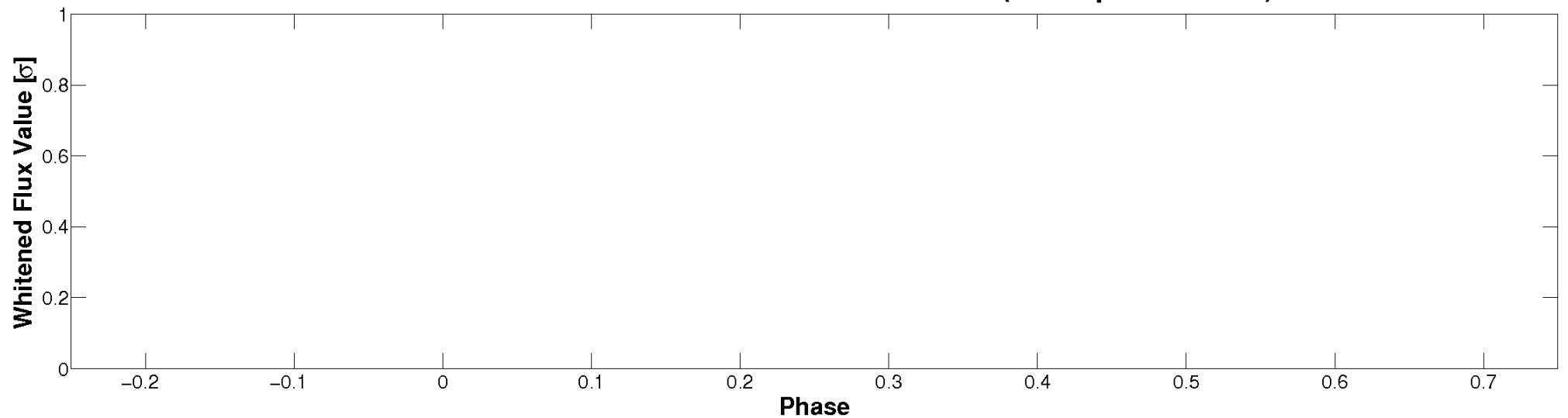
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

**Planet 3 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

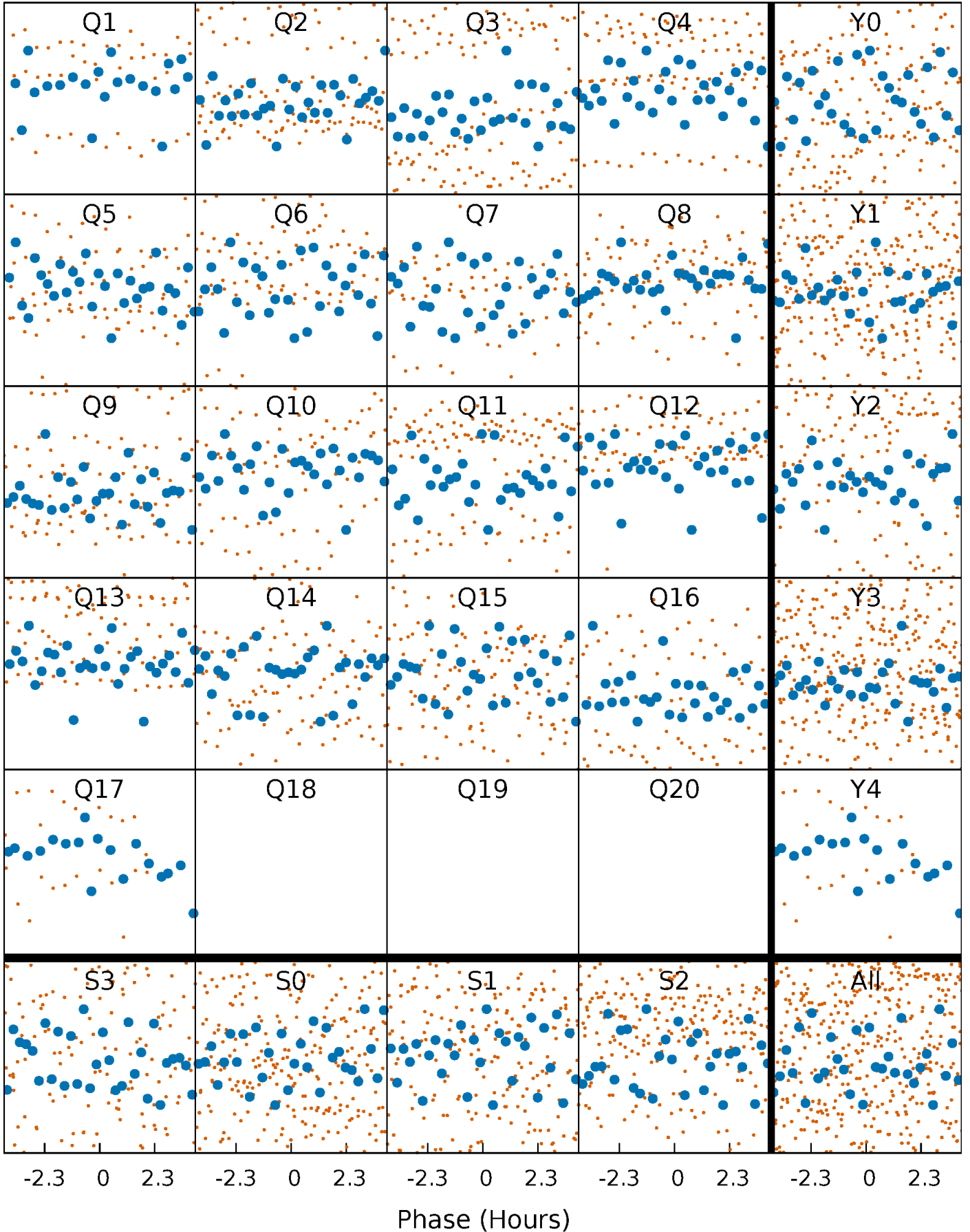


**Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



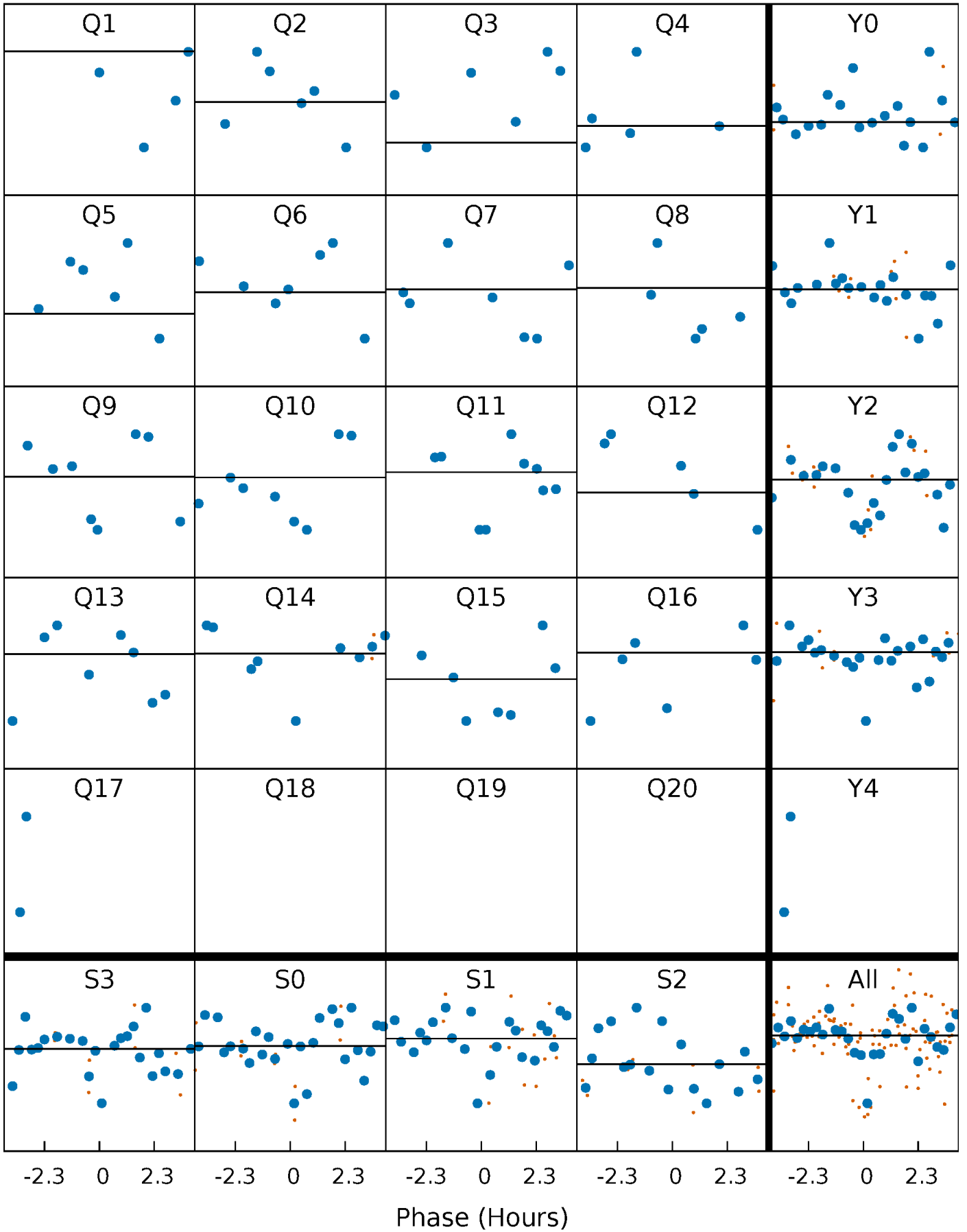
# PDC Quarter-Phased Transit Curves

TCE 007032218-03 P= 11.261096 Days  $T_0=140.079946$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007032218-03   P= 11.261096 Days    $T_0=140.079946$  (BKJD)

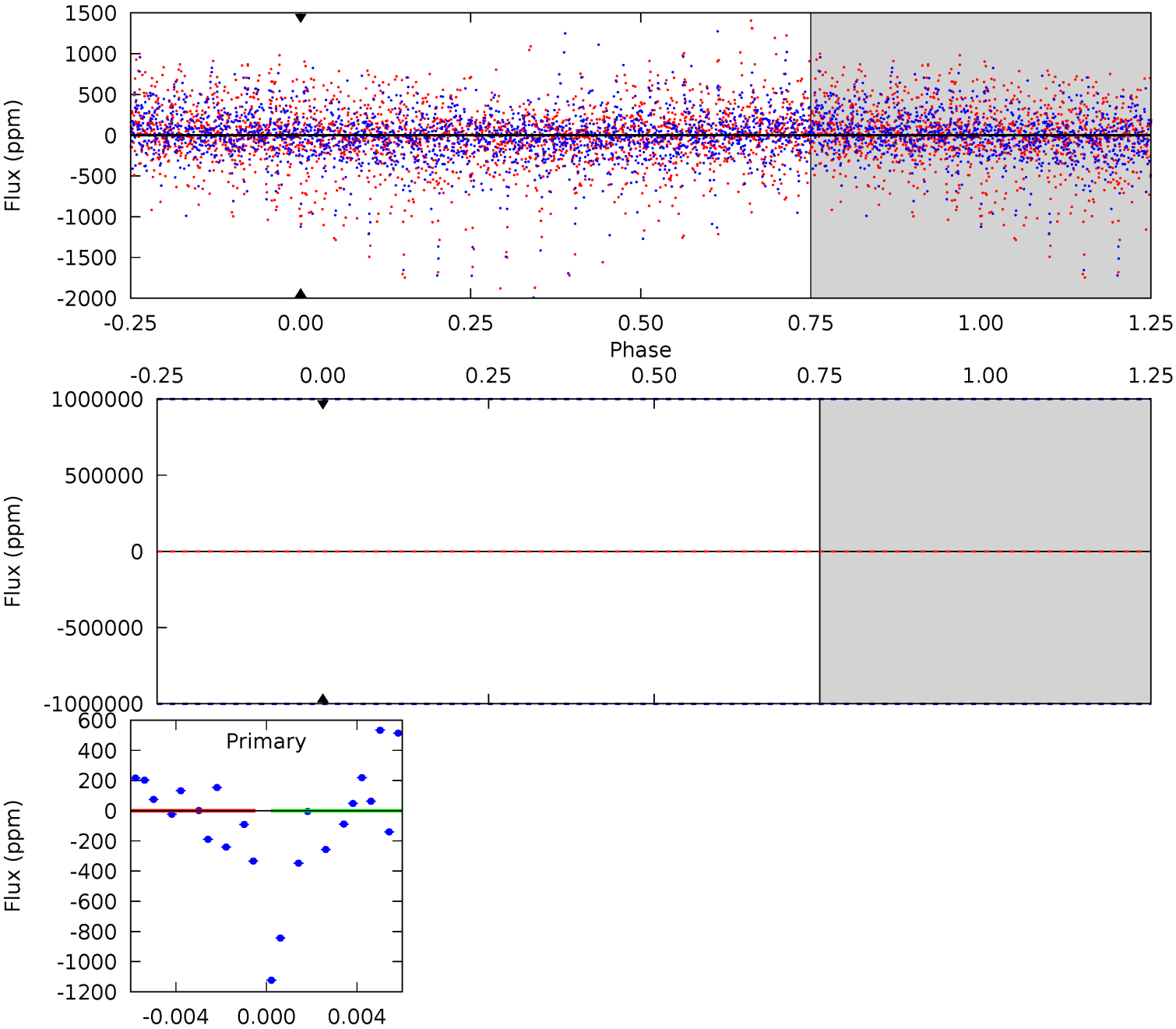


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007032218-03, P = 11.261096 Days, E = 128.818850 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
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0





## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007032218

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6088^{+164}_{-164}$	$4.262^{+0.186}_{-0.124}$	$-0.340^{+0.300}_{-0.300}$	$1.191^{+0.237}_{-0.237}$	$0.947^{+0.142}_{-0.095}$	$0.789^{+0.739}_{-0.308}$
	+3%/-3%	+4%/-3%	+88%/-88%	+20%/-20%	+15%/-10%	+94%/-39%
Source	PHO1	FLK73	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 007032218-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$9.69^{+10.16}_{-6.50}$	$1306^{+75}_{-80}$	$4877^{+19025}_{-28476}$	$97^{+9506}_{-9685}$
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  $A_{obs} \gg 1.0$

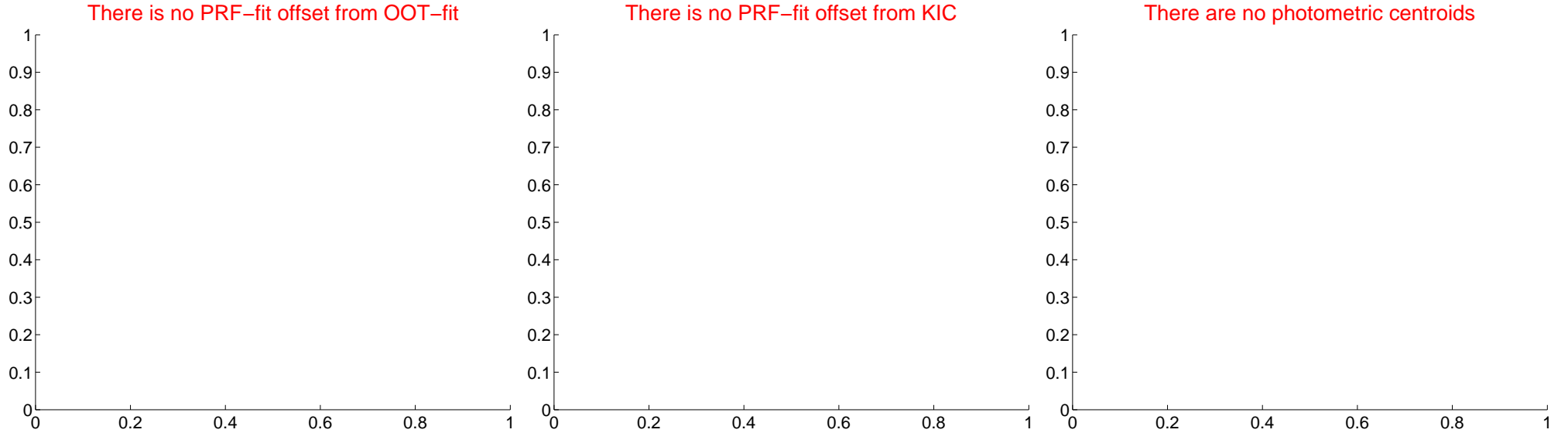
## DV Centroid Data

Supplemental centroid analysis for 007032218-03. Kepler magnitude: 12.95. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—



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.

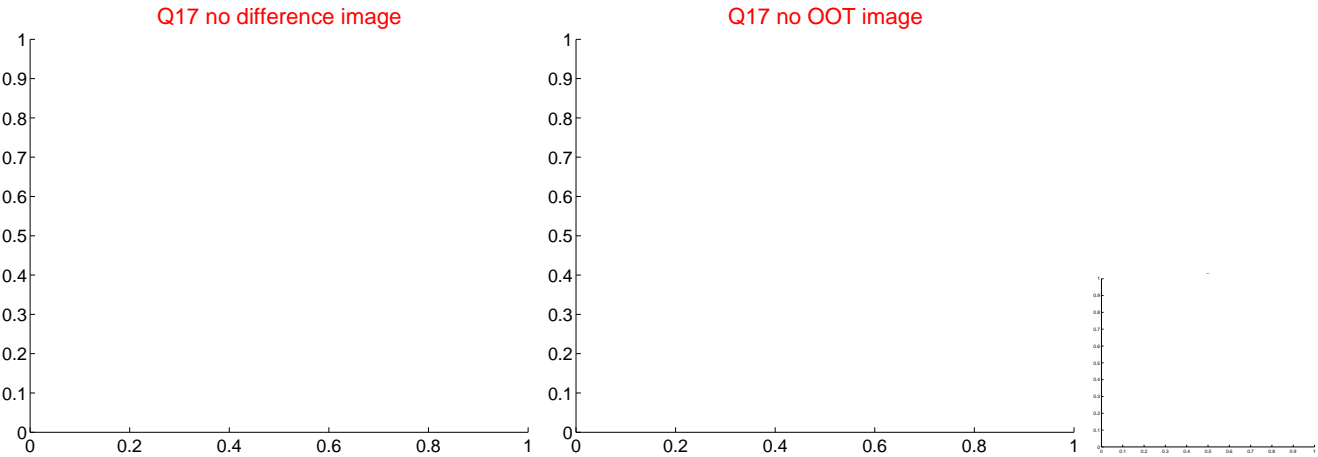




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



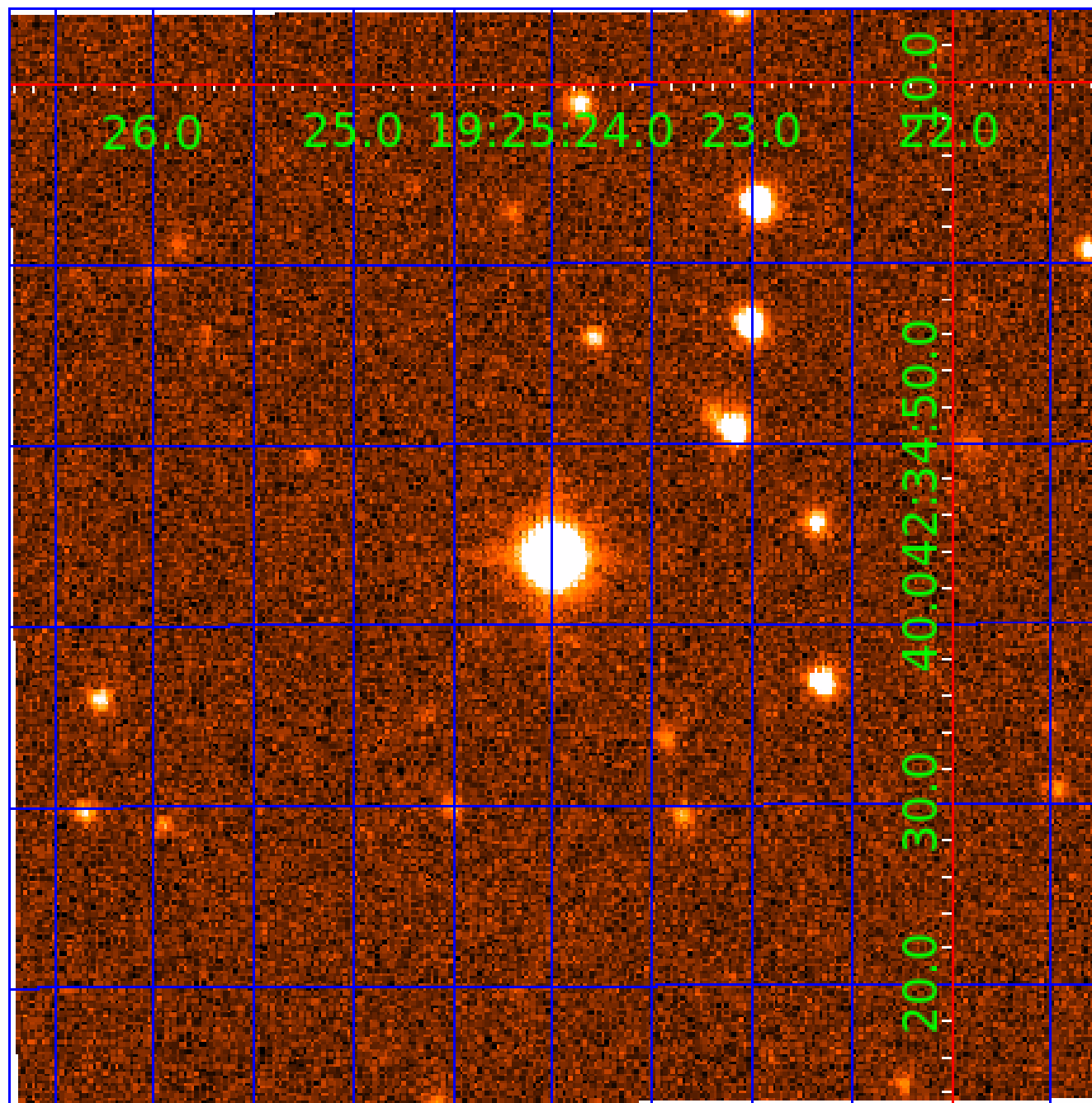
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



# KIC 007032218

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007032218-01	OBS	No	0.566768	131.860624	7.4	4.121	7.7	6.4	1.19	6088	0.33	10081.54
007032218-02	OBS	No	7.820680	132.453885	357.6	1.392	14.5	5.9	1.19	6088	2.35	304.61
007032218-03	OBS	No	11.261096	140.079946	399.9	2.000	10.9	-1.0	1.19	6088	2.39	187.34
007032218-04	OBS	No	13.946867	138.356370	90.6	12.521	9.0	5.0	1.19	6088	1.27	140.85
007032218-05	OBS	No	20.099512	144.170718	1297.1	0.612	11.3	10.9	1.19	6088	4.48	86.53
007032218-06	OBS	No	18.992012	138.678752	546.4	2.447	7.5	8.8	1.19	6088	2.87	93.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007032218-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007032218-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007032218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007032218-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007032218-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—CENT_FEW_MEAS
007032218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

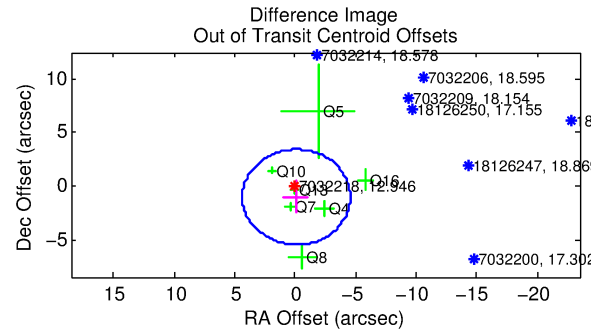
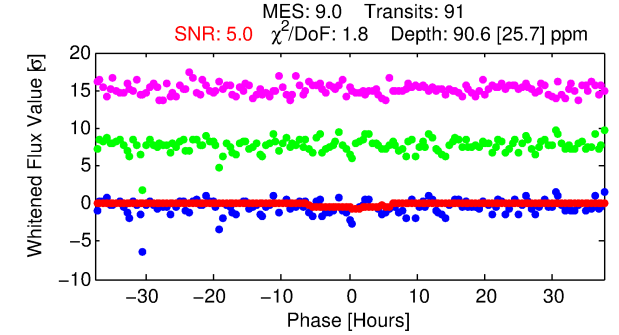
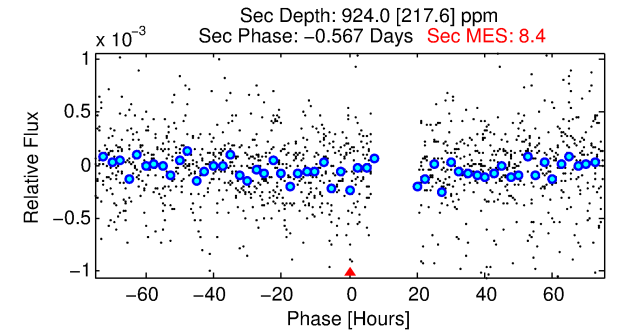
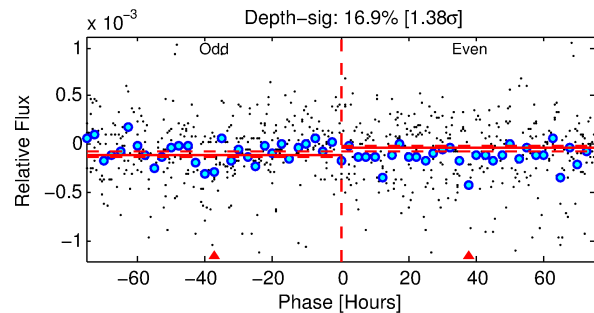
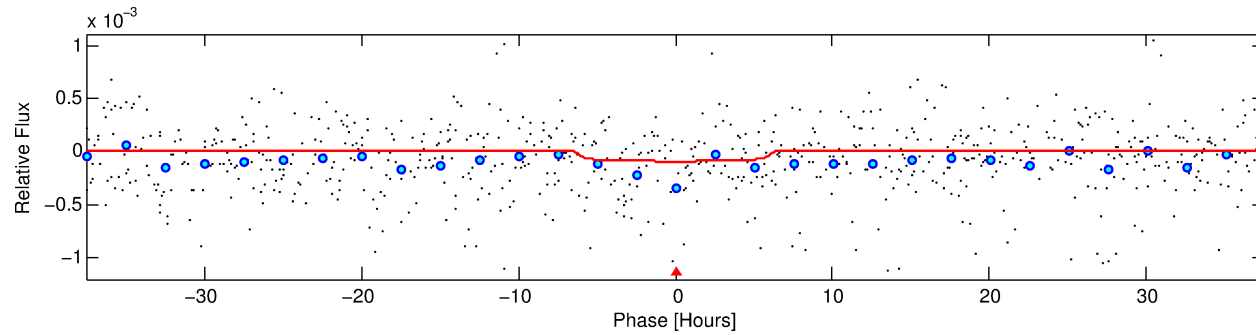
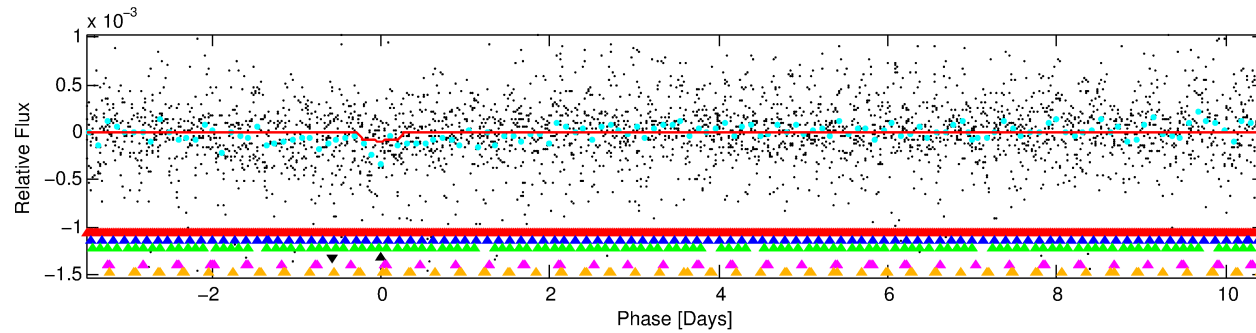
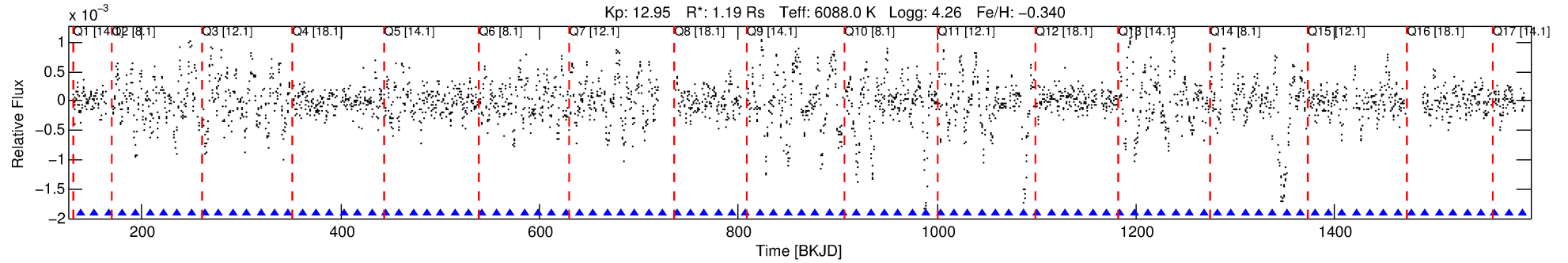
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007032218-04

No Significant Match Found

# DV One-Page Summary

KIC: 7032218 Candidate: 4 of 6 Period: 13.947 d



## DV Fit Results:

Period = 13.94687 [0.00072] d  
Epoch = 138.3564 [0.0433] BKJD  
Rp/R\* = 0.0097 [0.0074]  
a/R\* = 5.06 [18.95]  
b = 0.82 [1.54]  
Seff = 140.85 [46.87]  
Teff = 878 [73] K  
Rp = 1.27 [1.00] Re  
a = 0.1113 [0.0217] AU  
Ag = 3927.09 [6177.39] [0.64 $\sigma$ ]  
Teffp = 10752 [4153] K [2.38 $\sigma$ ]

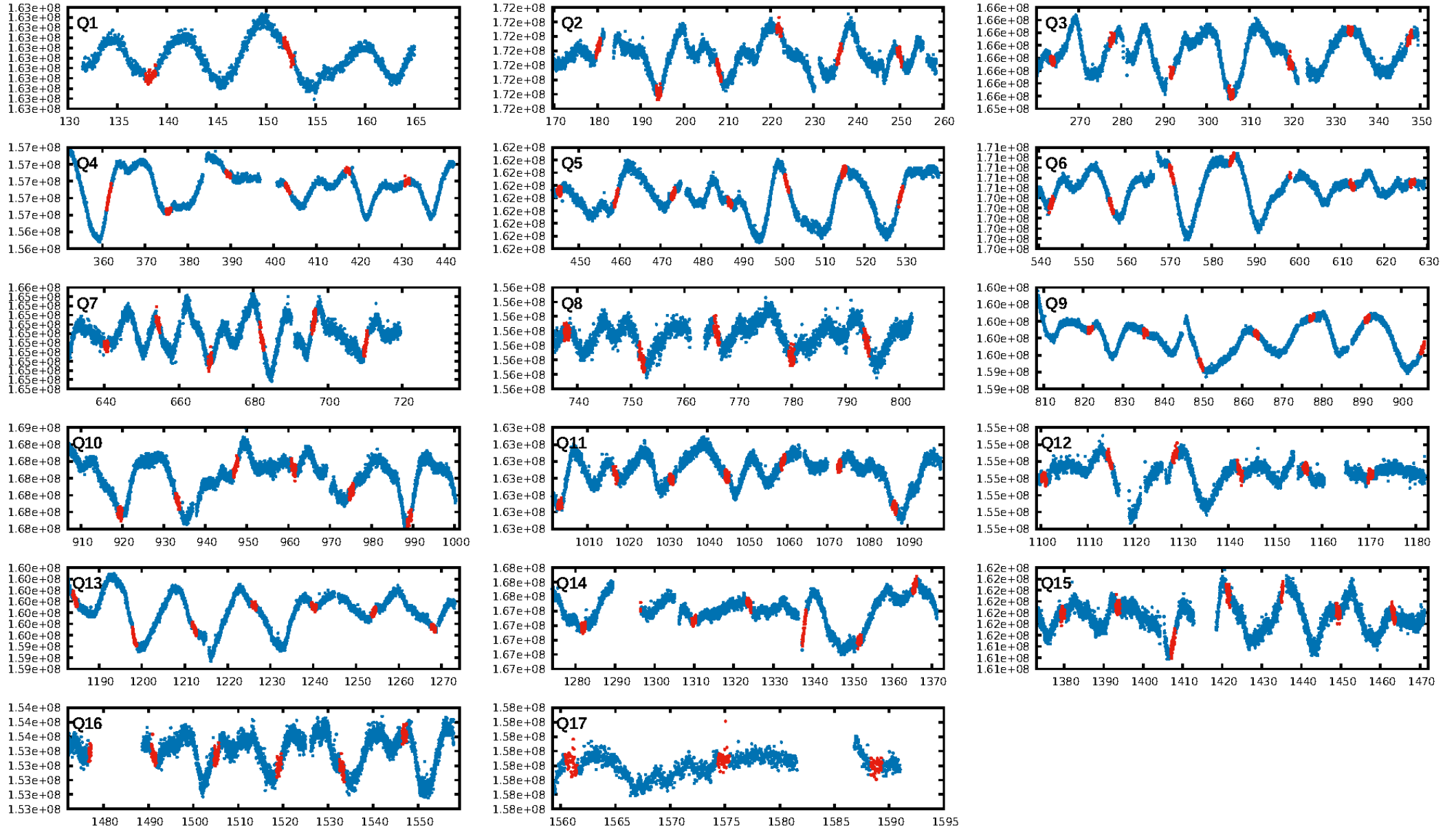
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.08 $\sigma$ ]  
LongPeriod-sig: 100.0% [9.49 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.49e-23  
RollingBand-fgt: 1.00 [86/86]  
GhostDiagnostic-chr: 62.57  
Centroid-sig: 0.0%  
Centroid-so: 0.777 arcsec [2.10 $\sigma$ ]  
OotOffset-rm: 1.041 arcsec [0.70 $\sigma$ ]  
KicOffset-rm: 1.159 arcsec [0.87 $\sigma$ ]  
OotOffset-st: 1/1/3/2 [7]  
KicOffset-st: 1/1/3/2 [7]  
DiffImageQuality-fgm: 0.43 [3/7]  
DiffImageOverlap-fno: 0.00 [0/17]

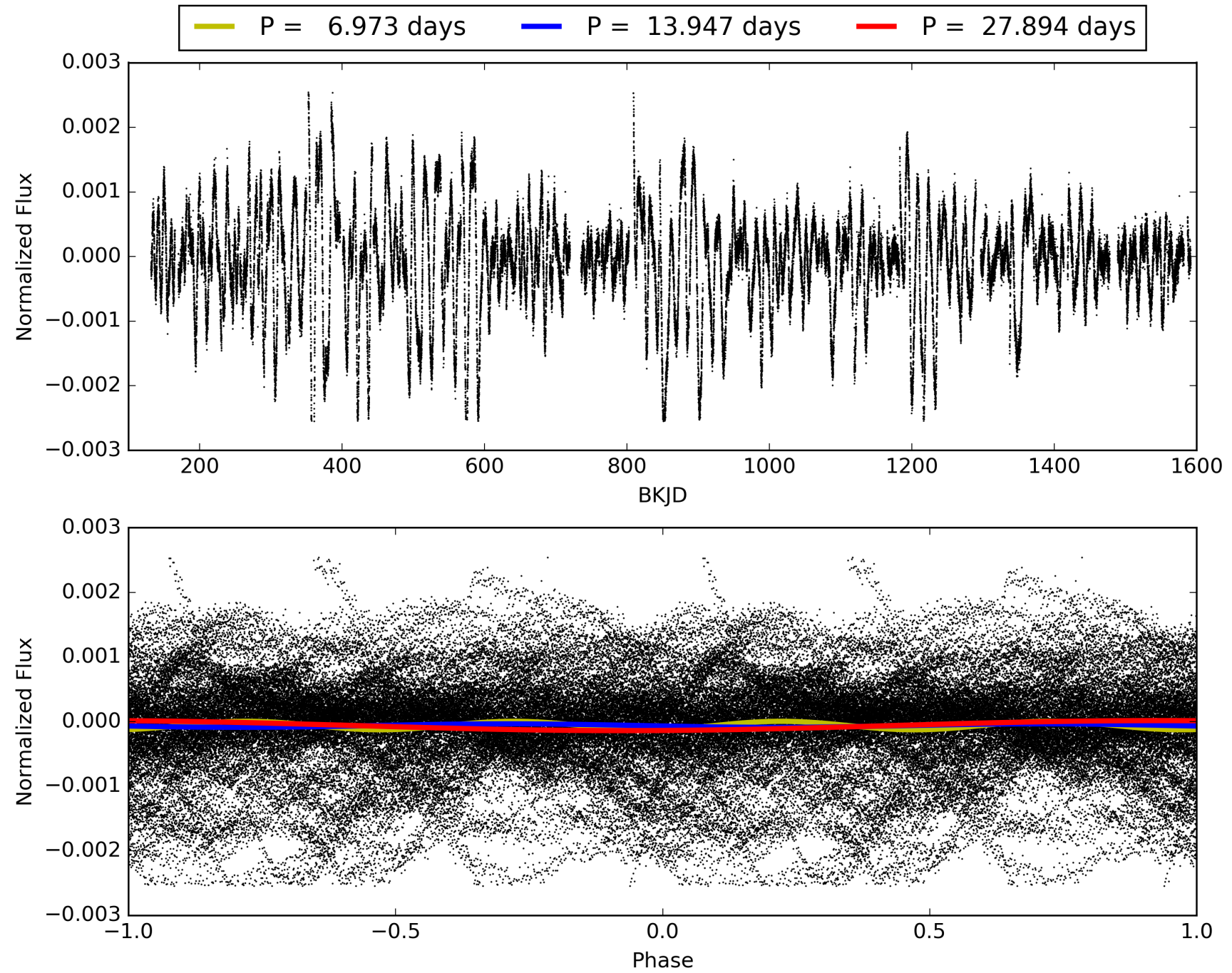
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:57:11 Z

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

# TCE 007032218-04, PDC Light Curves



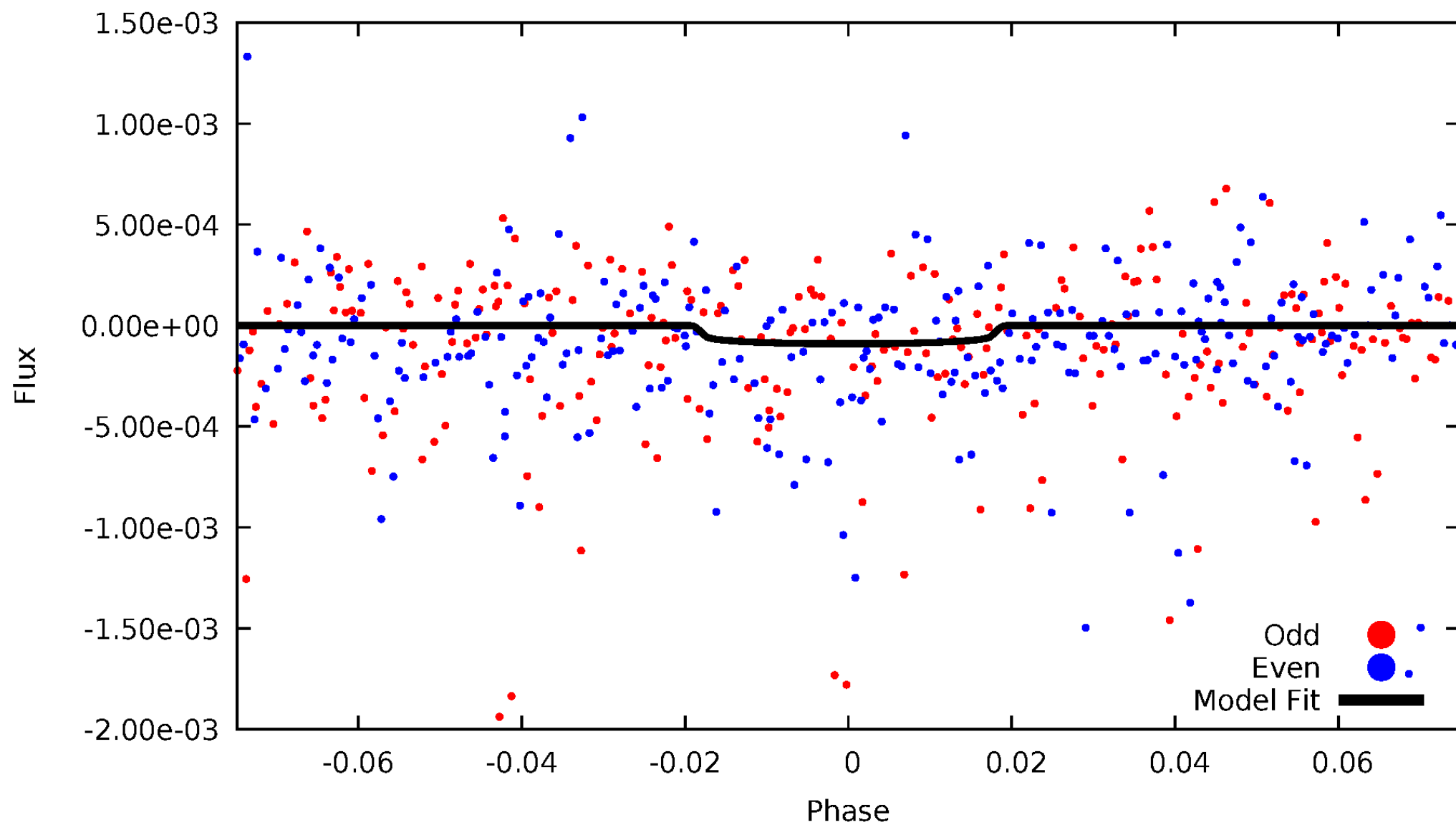
TCE 007032218-04





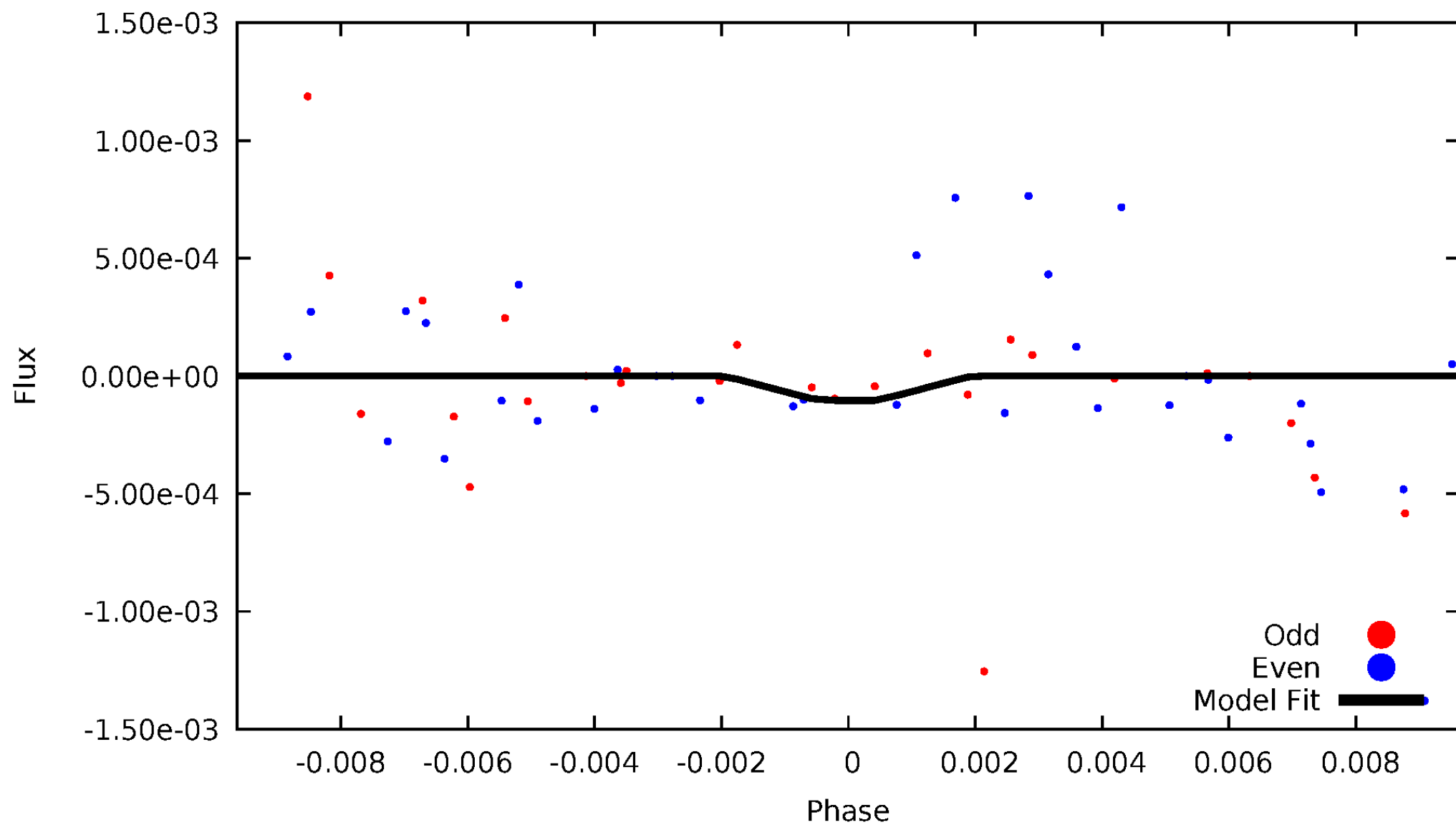
# DV Odd/Even

TCE 007032218-04



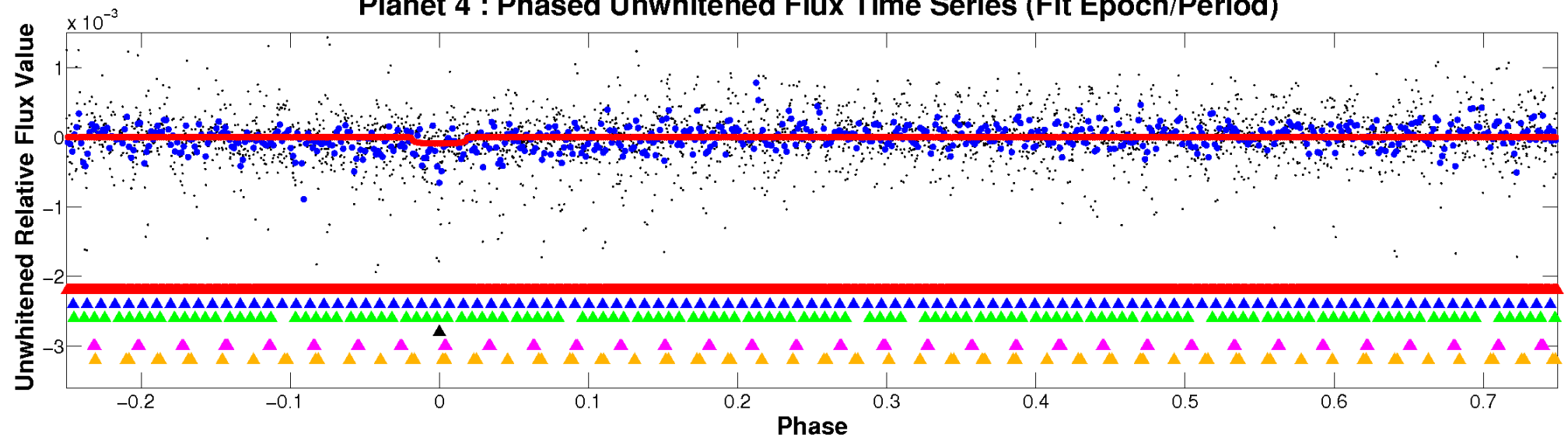
# ALT Odd/Even

TCE 007032218-04

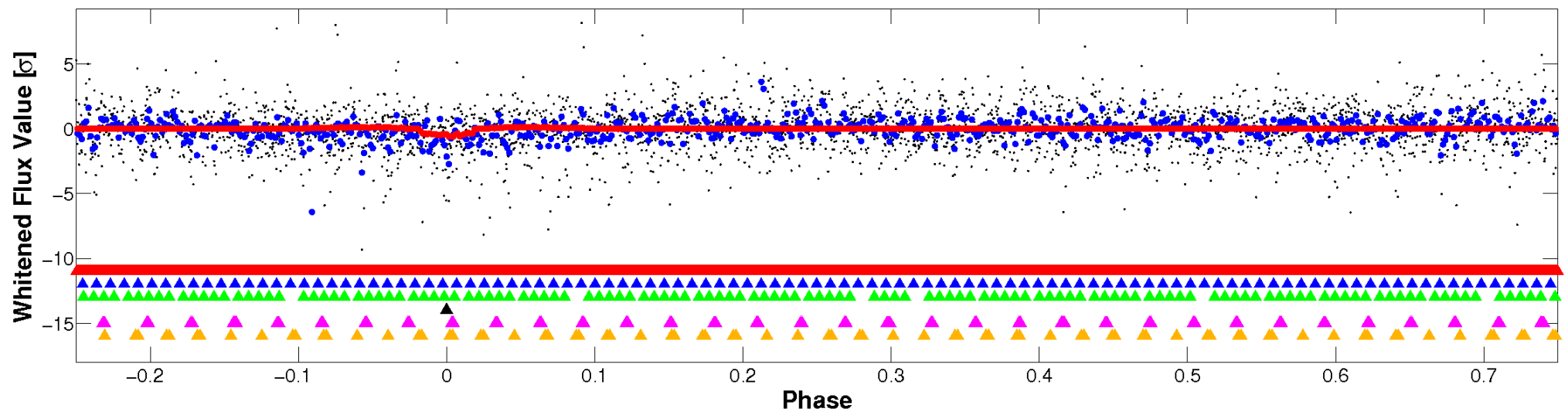


# Non-Whitened Vs. Whitened Light Curve

## Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

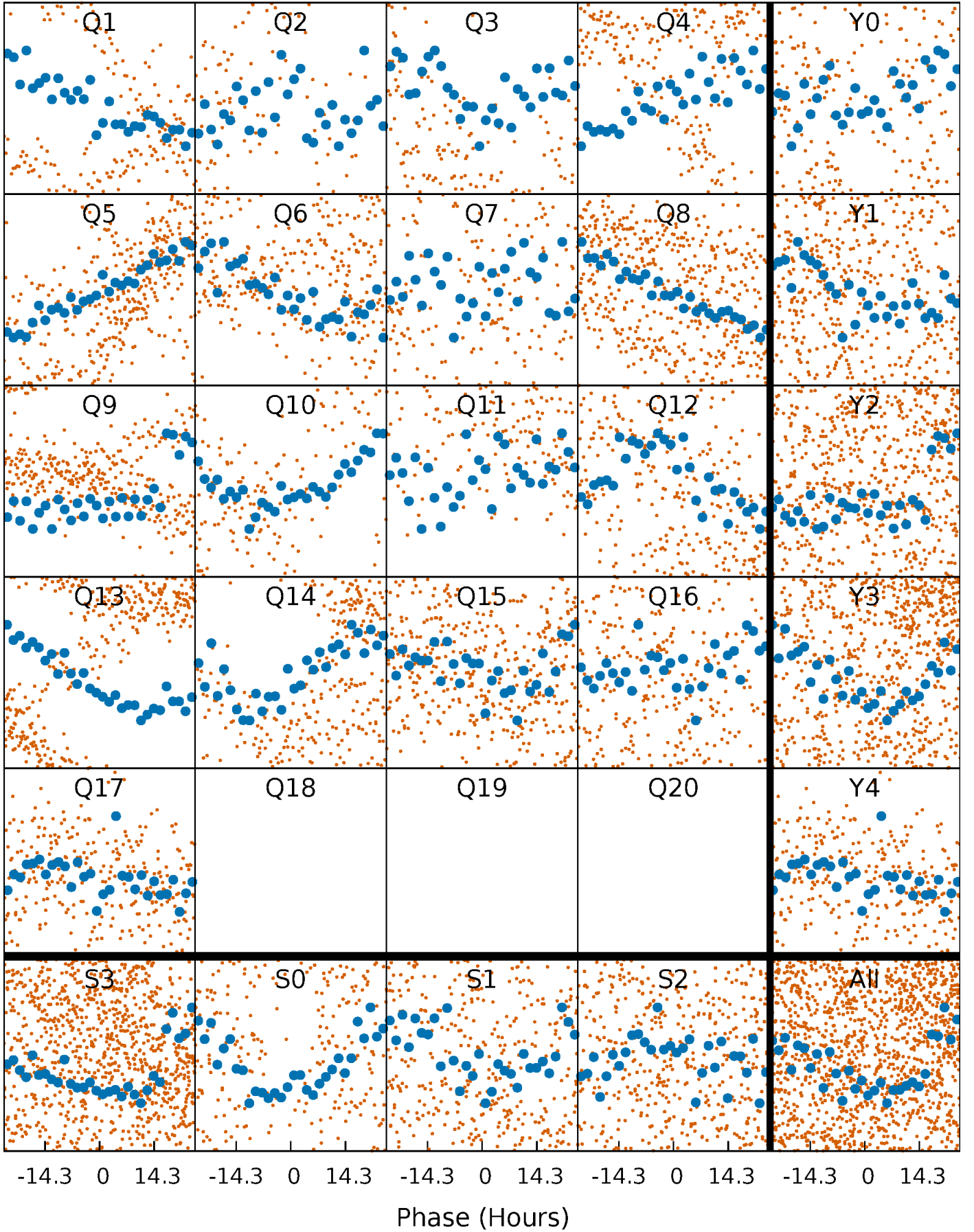


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



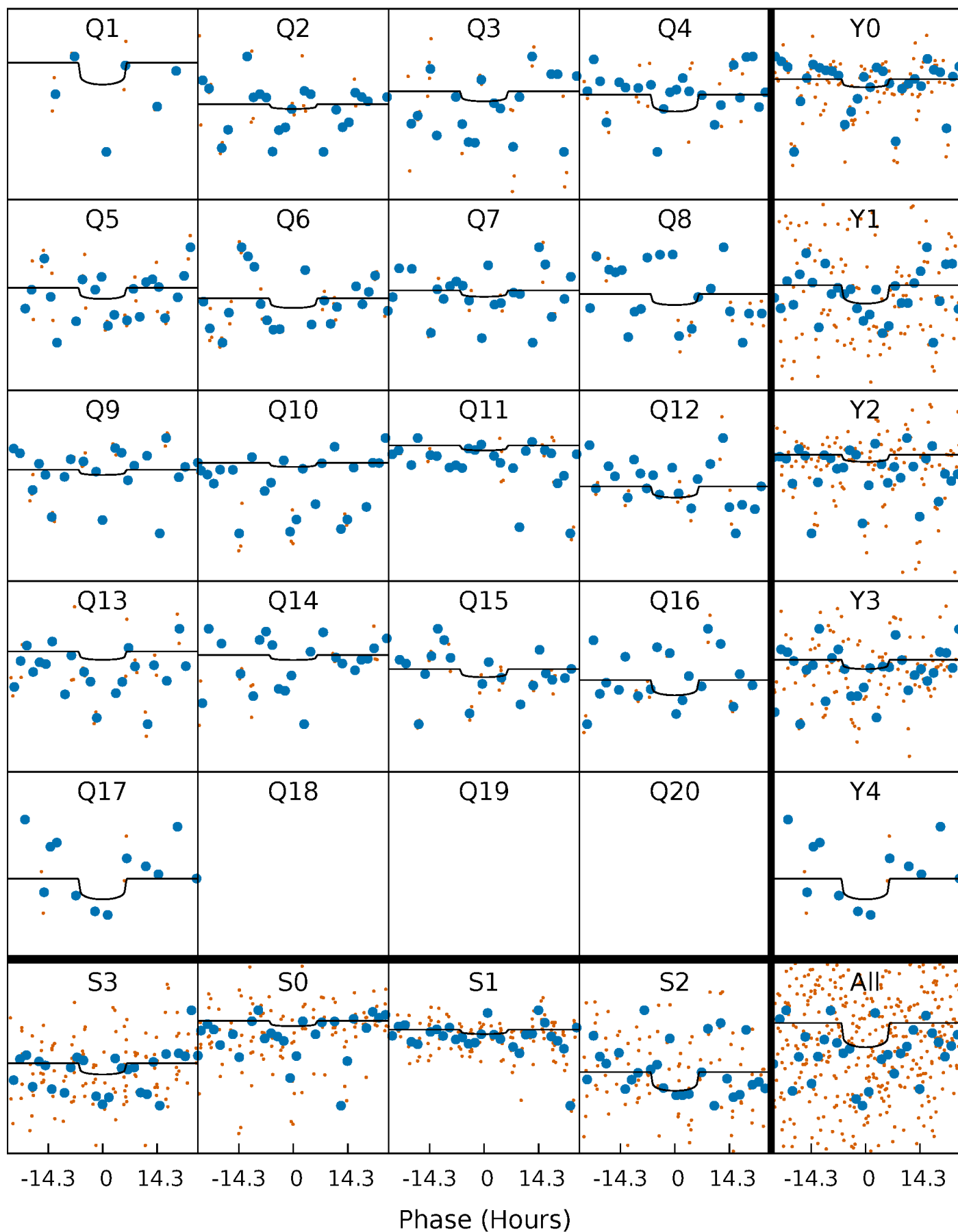
# PDC Quarter-Phased Transit Curves

TCE 007032218-04 P= 13.946867 Days  $T_0=138.356370$  (BKJD)



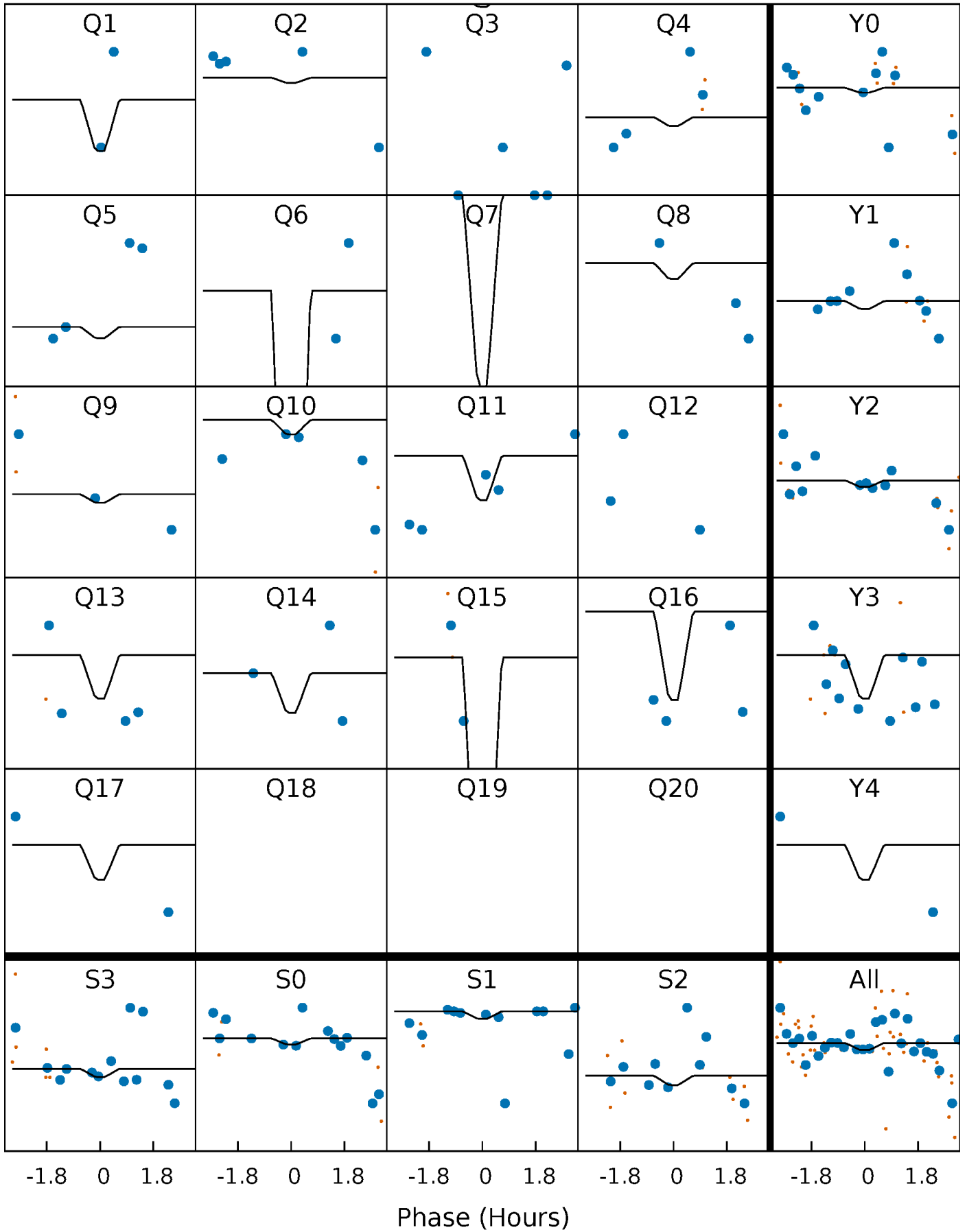
# DV Quarter-Phased Transit Curves

TCE 007032218-04 P= 13.946867 Days  $T_0=138.356370$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

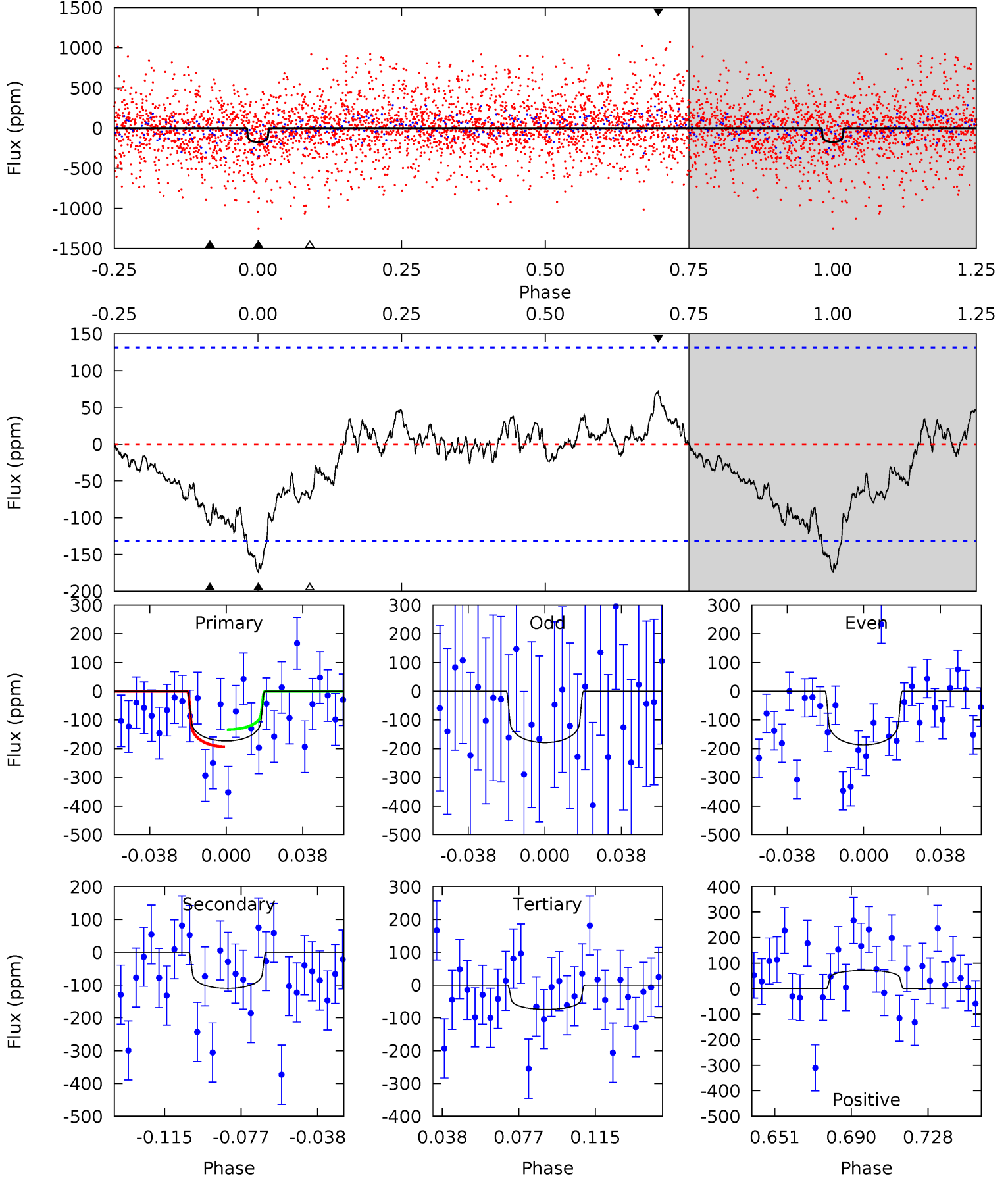
TCE 007032218-04 P= 13.940514 Days  $T_0=138.601933$  (BKJD)



# DV Model-Shift Uniqueness Test

007032218-04, P = 13.946867 Days, E = 124.409503 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
6.29	4.00	2.68	2.60	4.76	2.07	1.16	3.60	3.68	1.32	1.40	0.15	1.32	0.29	0

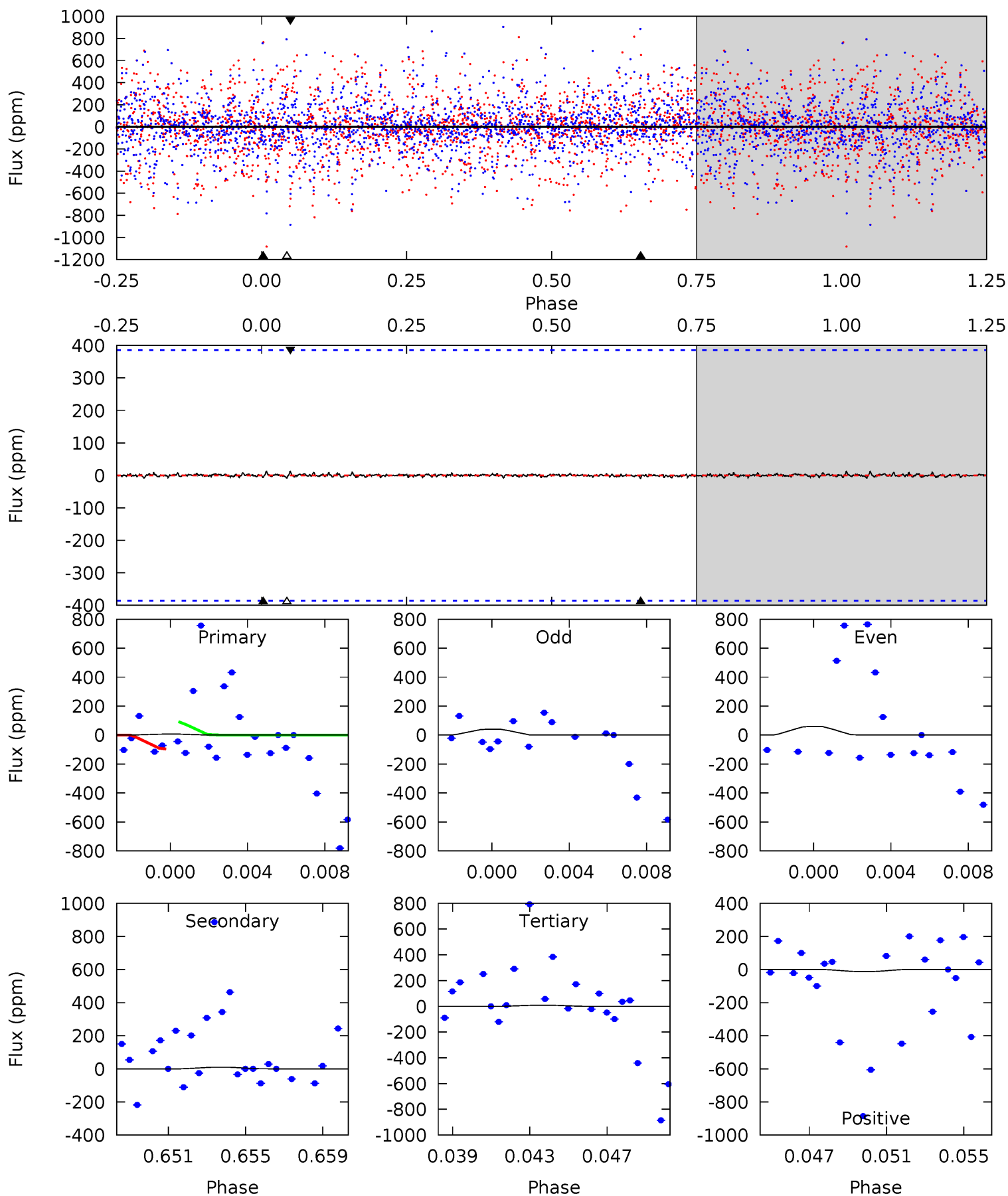




# Alt Model-Shift Uniqueness Test

007032218-04, P = 13.940514 Days, E = 124.661419 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
0.09	0.13	0.11	0.17	5.20	2.89	0.03	-0.03	-0.08	0.02	-0.04	0.12	1.58	0.57	0.03



### Stellar Parameters For KIC 007032218

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6088^{+164}_{-164}$	$4.262^{+0.186}_{-0.124}$	$-0.340^{+0.300}_{-0.300}$	$1.191^{+0.237}_{-0.237}$	$0.947^{+0.142}_{-0.095}$	$0.789^{+0.739}_{-0.308}$
	+3%/-3%	+4%/-3%	+88%/-88%	+20%/-20%	+15%/-10%	+94%/-39%
Source	PHO1	FLK73	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 007032218-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-110 \pm 28$	$1.43^{+0.90}_{-0.84}$	$1219^{+72}_{-76}$	$5971^{+3934}_{-1238}$	$386^{+2038}_{-255}$
Alt.	$-10 \pm 74$	$1.40^{+0.91}_{-0.81}$	$1222^{+71}_{-76}$	$3417^{+2809}_{-9033}$	$24^{+421}_{-318}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

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

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

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

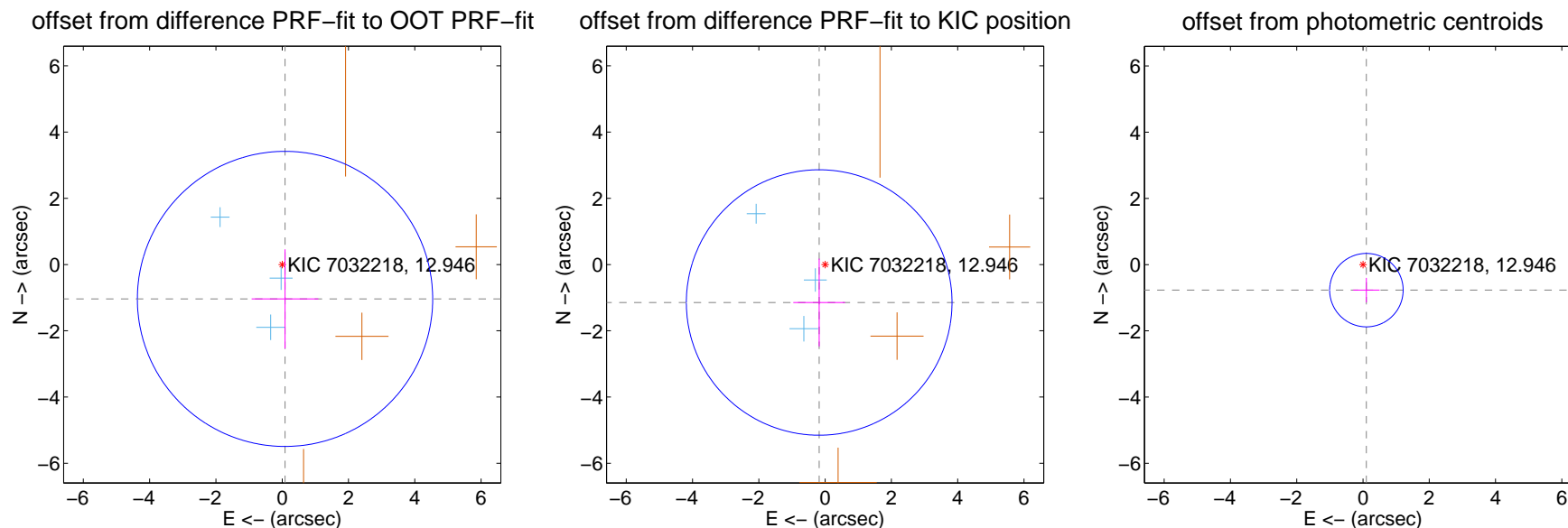
## DV Centroid Data

Supplemental centroid analysis for 007032218-04. Kepler magnitude: 12.95. Transit SNR 5.05

There are 3 quarters with good PRF difference image offsets

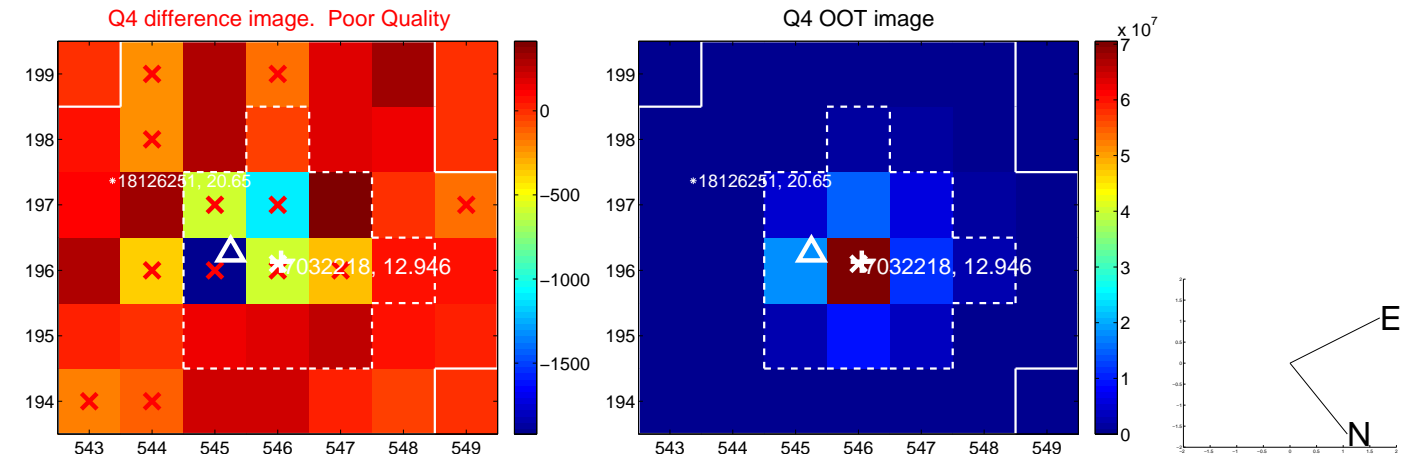
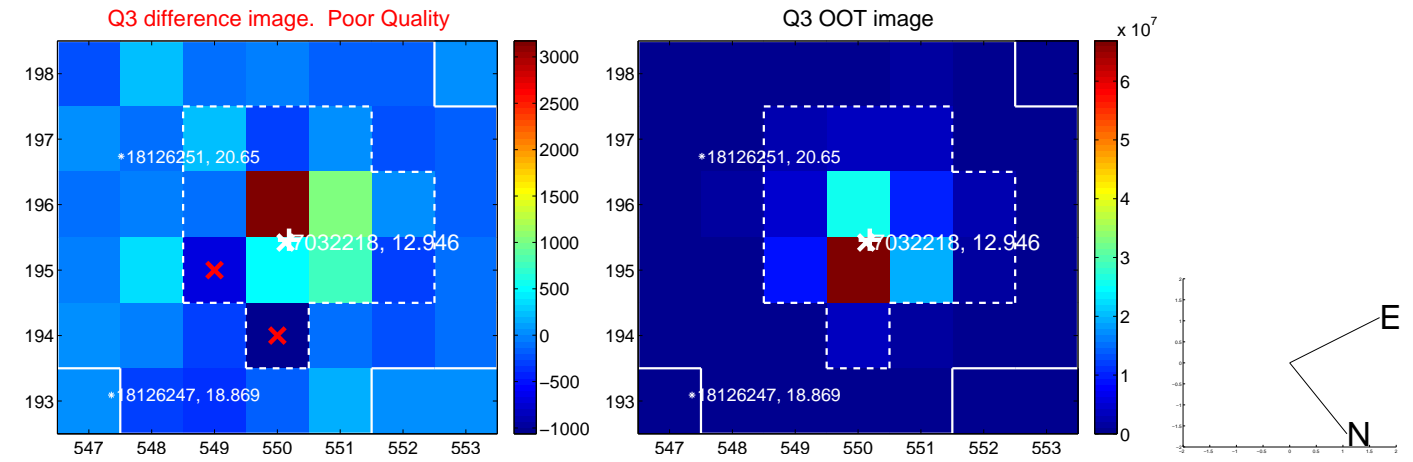
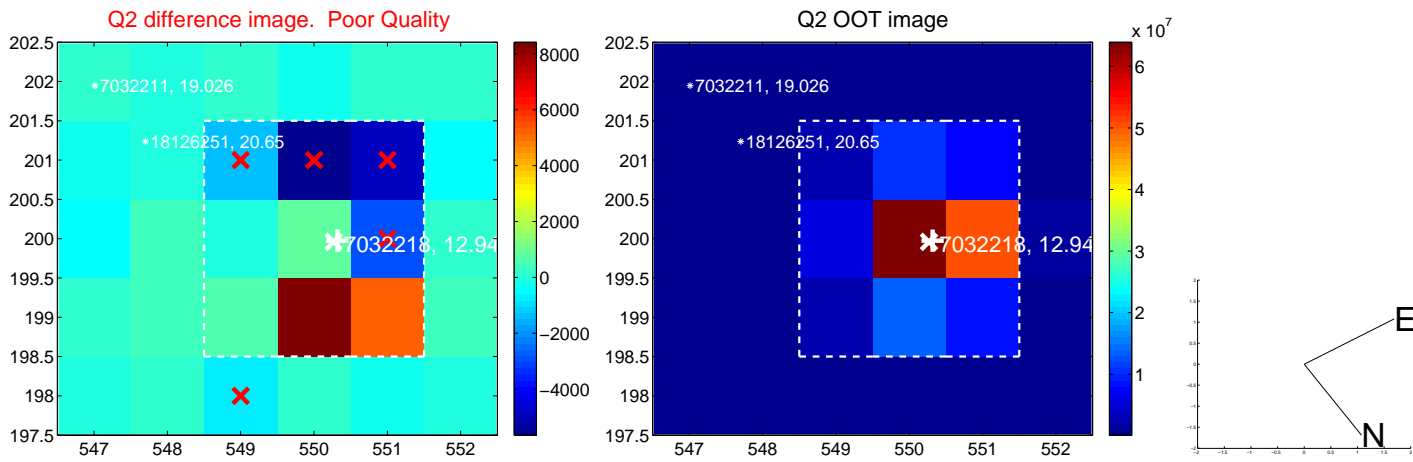
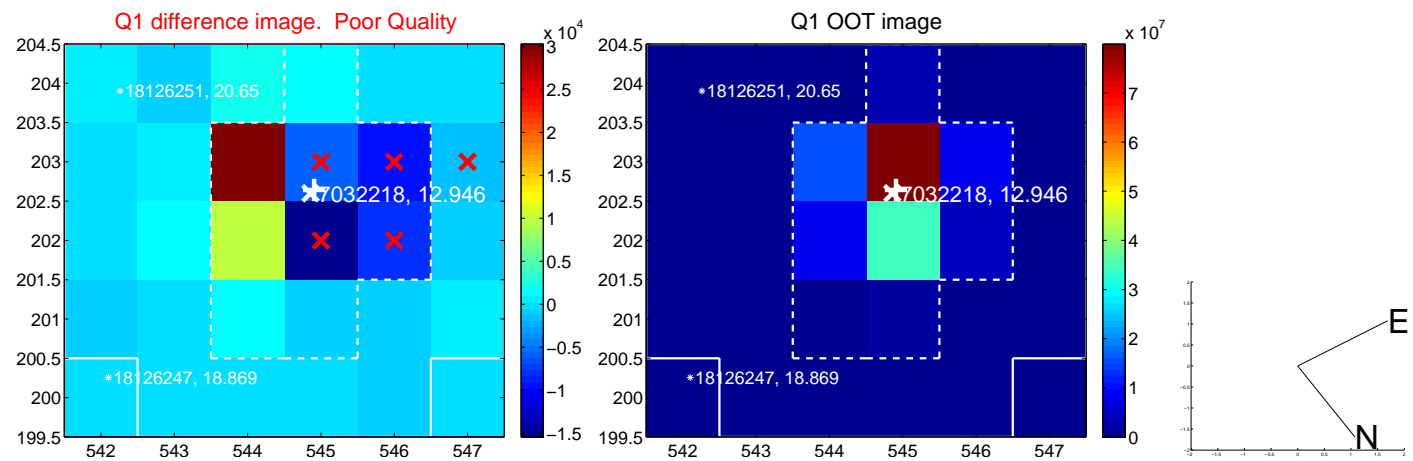
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.041 \pm 1.485$	0.70	$-0.085 \pm 1.006$	$-1.037 \pm 1.497$
PRF-fit source offset from KIC position	$1.159 \pm 1.335$	0.87	$0.179 \pm 0.780$	$-1.145 \pm 1.325$
photometric centroid source offset	$0.78 \pm 0.37$	2.10	$-0.10 \pm 0.40$	$-0.77 \pm 0.37$

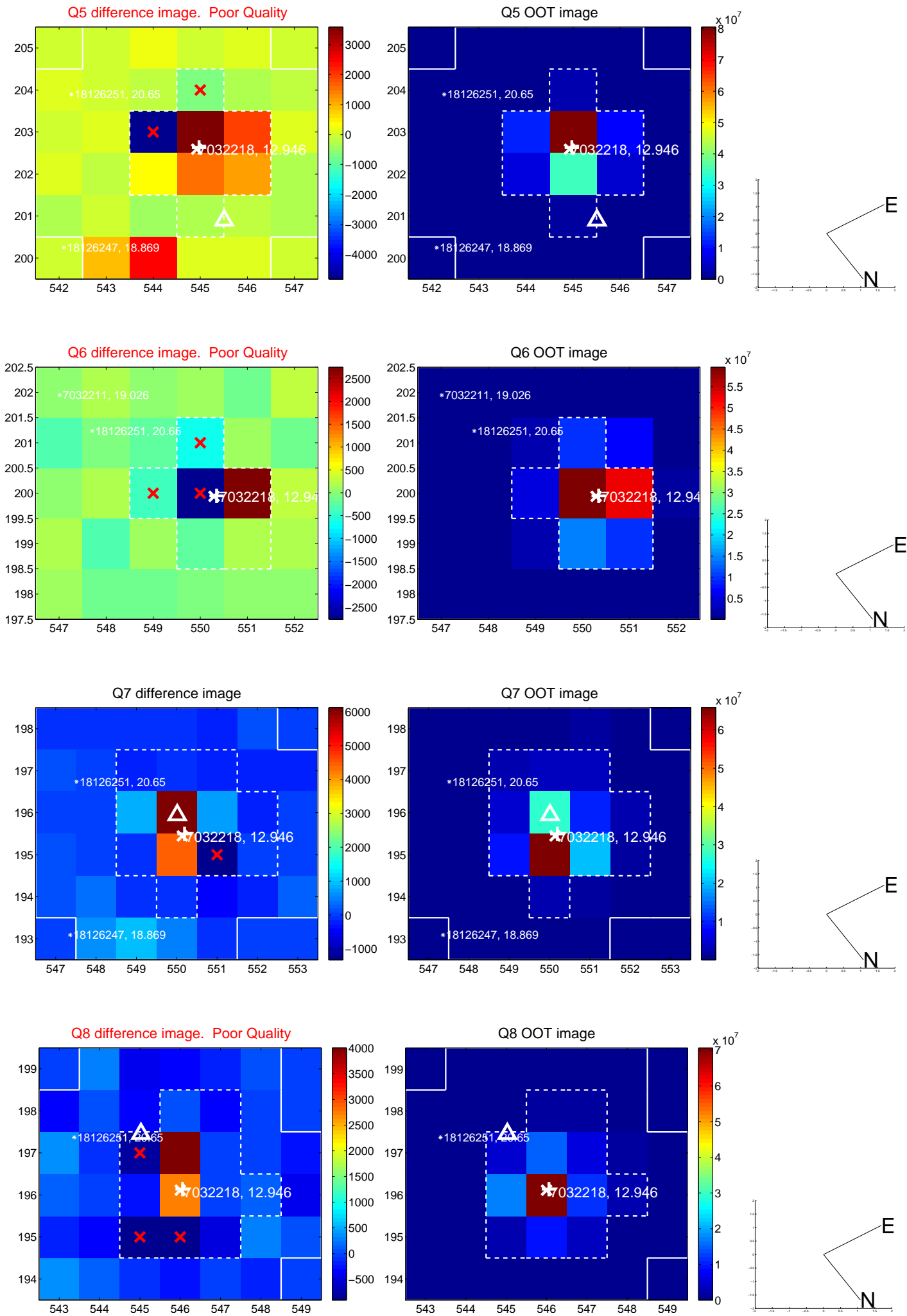


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

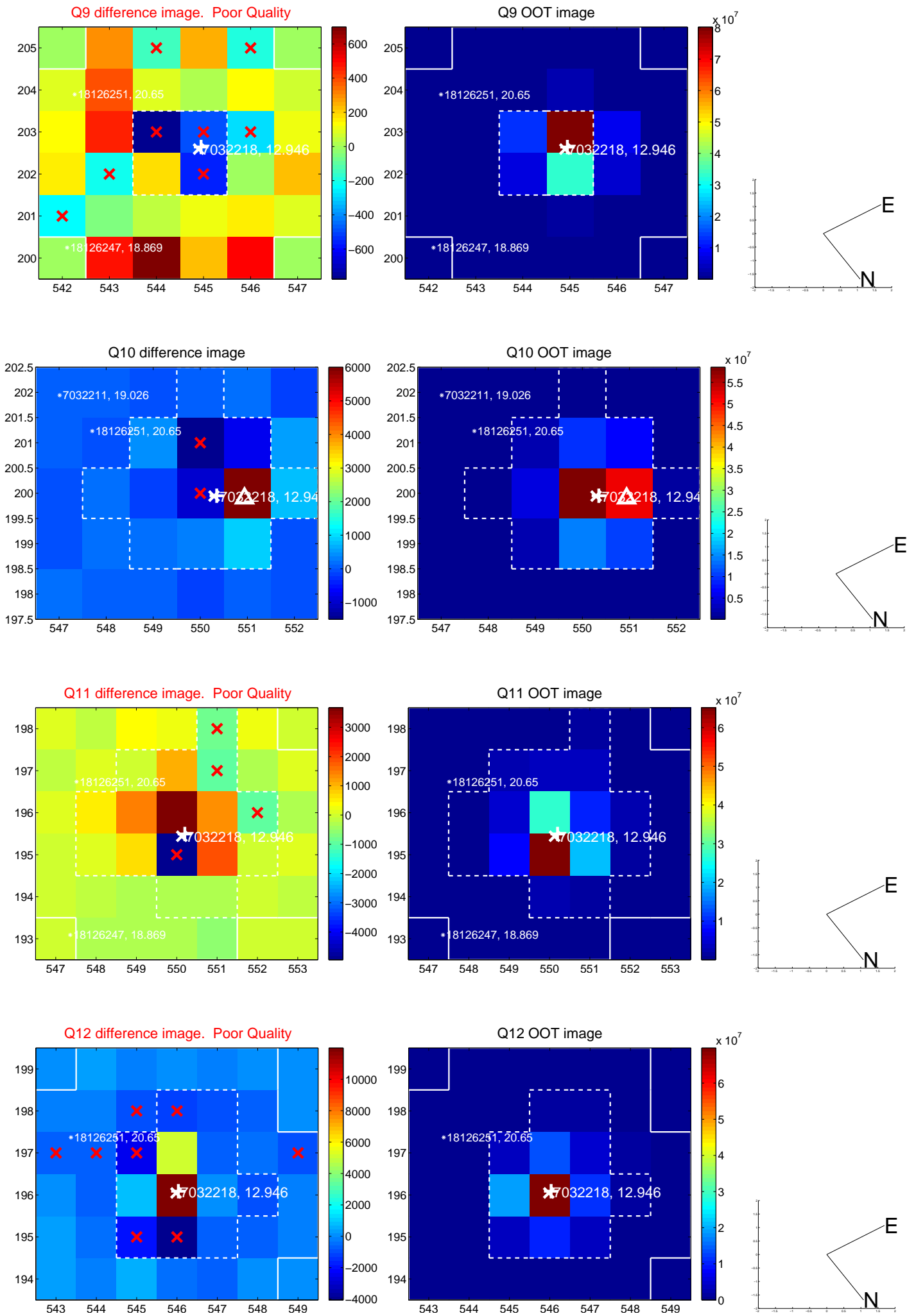
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



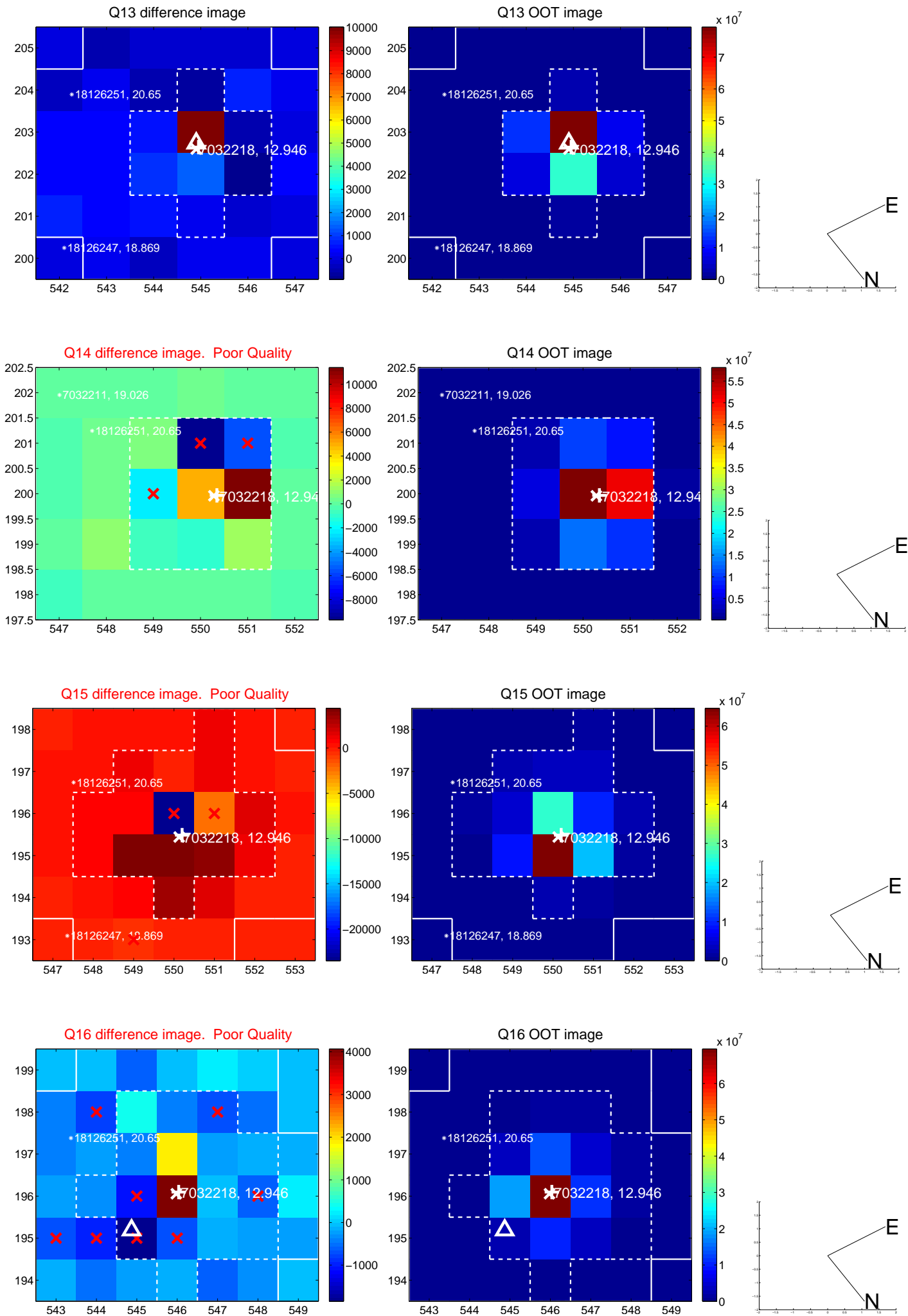
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



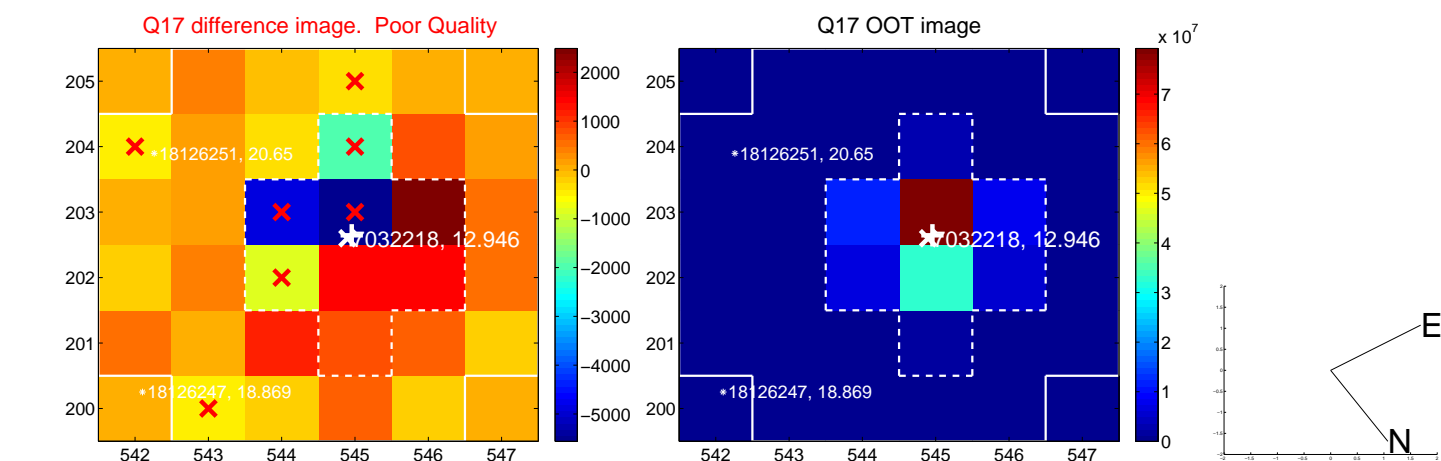
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



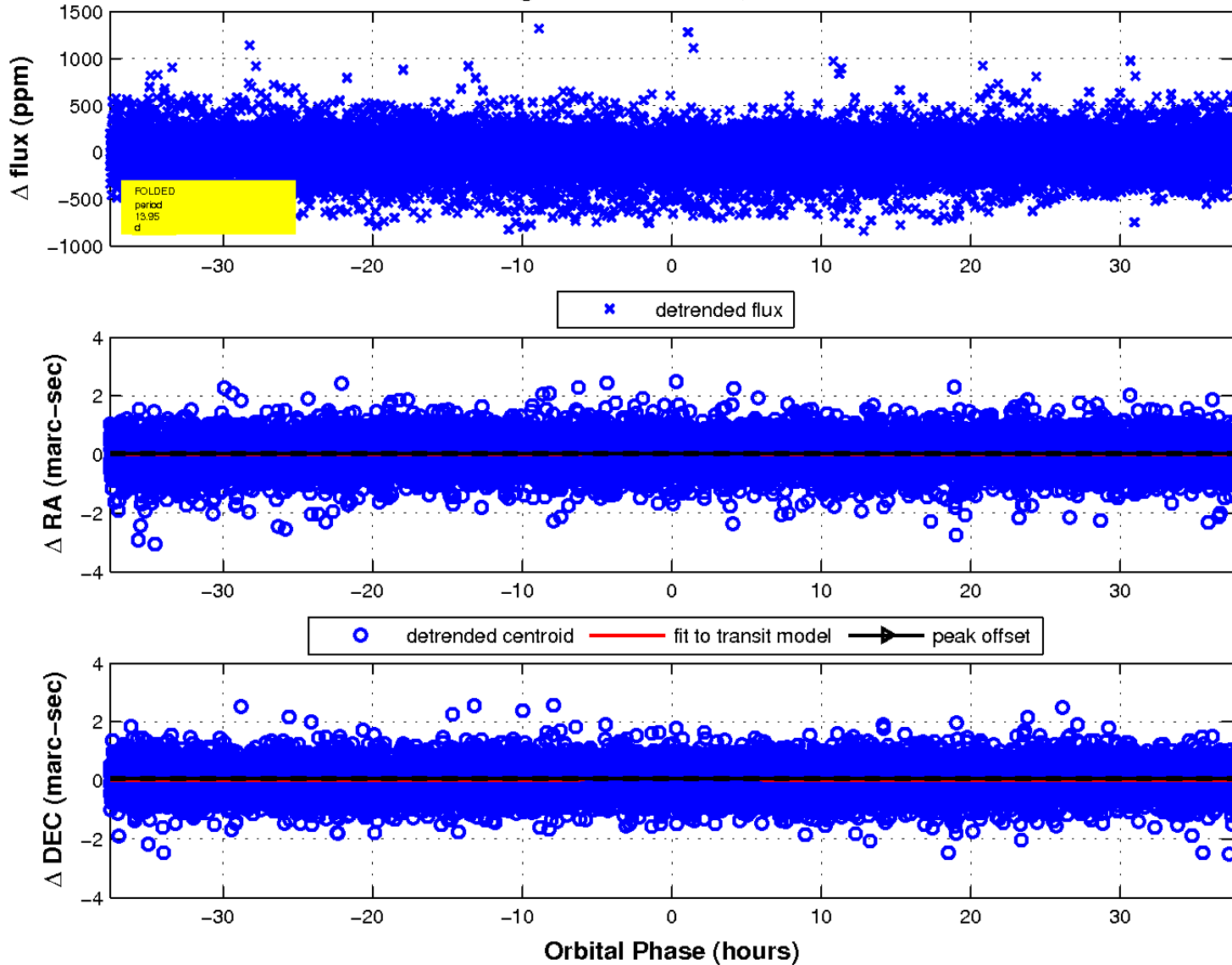
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



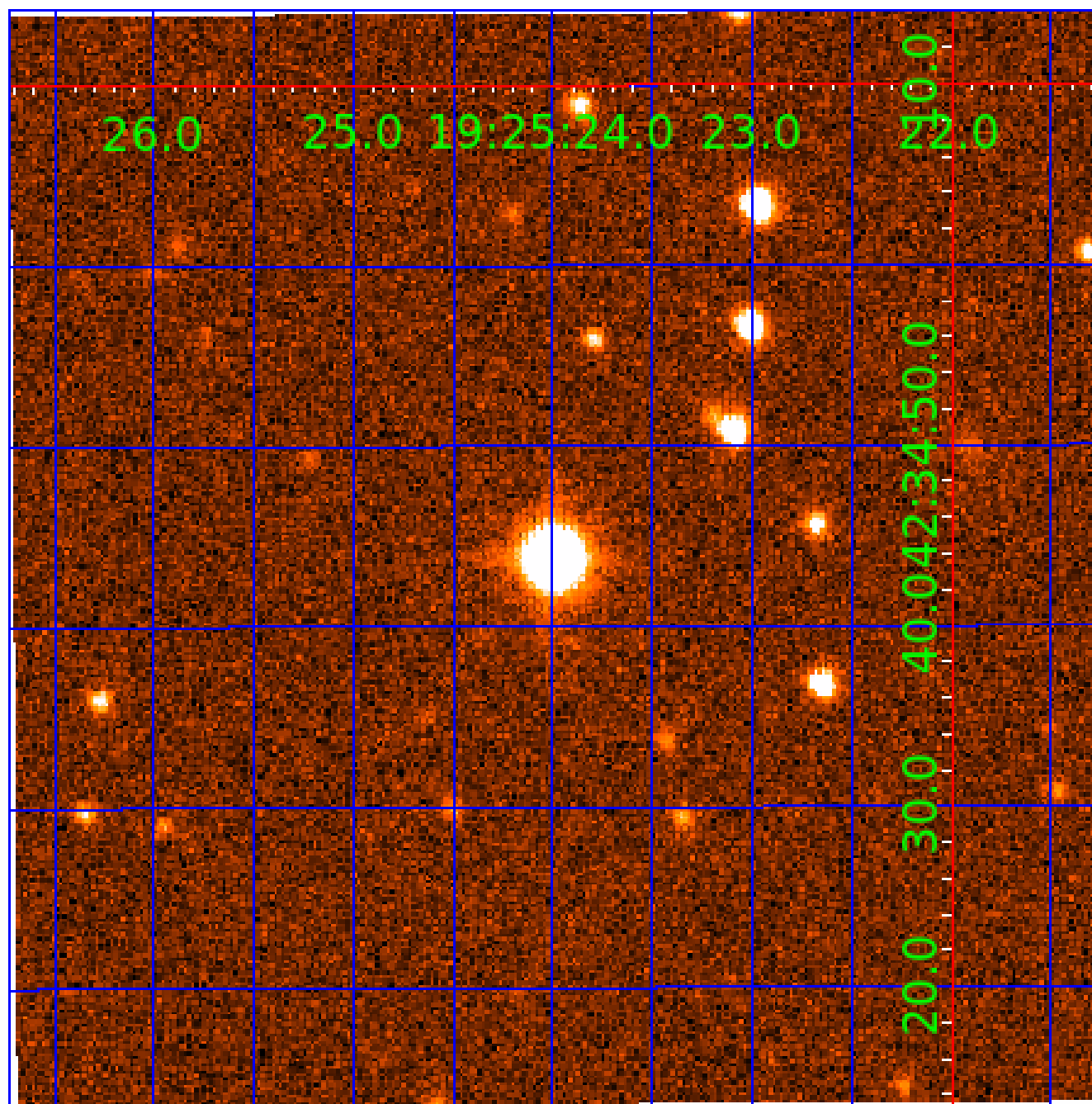
fluxWeightedCentroids, Planet 4 of 6





UKIRT Image

Declination



# KIC 007032218

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007032218-01	OBS	No	0.566768	131.860624	7.4	4.121	7.7	6.4	1.19	6088	0.33	10081.54
007032218-02	OBS	No	7.820680	132.453885	357.6	1.392	14.5	5.9	1.19	6088	2.35	304.61
007032218-03	OBS	No	11.261096	140.079946	399.9	2.000	10.9	-1.0	1.19	6088	2.39	187.34
007032218-04	OBS	No	13.946867	138.356370	90.6	12.521	9.0	5.0	1.19	6088	1.27	140.85
007032218-05	OBS	No	20.099512	144.170718	1297.1	0.612	11.3	10.9	1.19	6088	4.48	86.53
007032218-06	OBS	No	18.992012	138.678752	546.4	2.447	7.5	8.8	1.19	6088	2.87	93.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007032218-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007032218-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007032218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007032218-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007032218-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—CENT_FEW_MEAS
007032218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

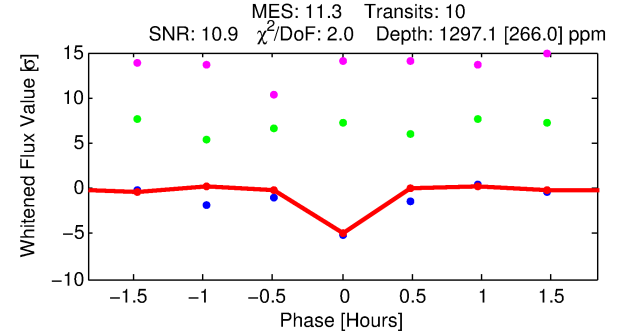
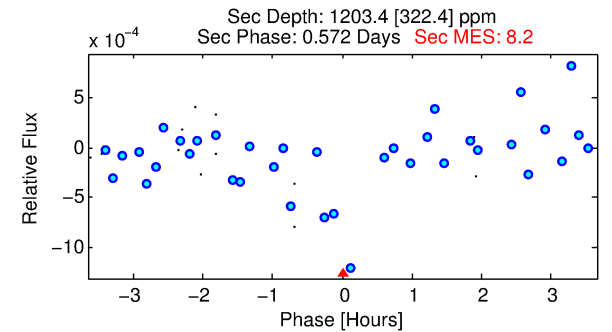
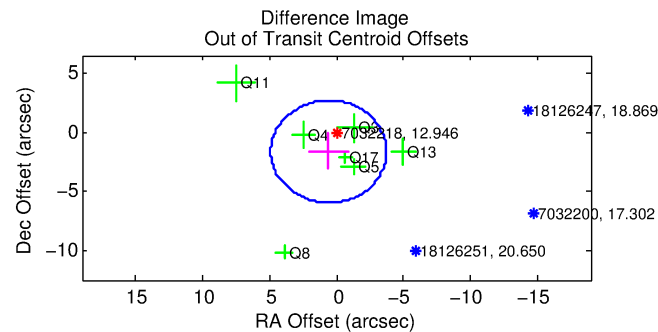
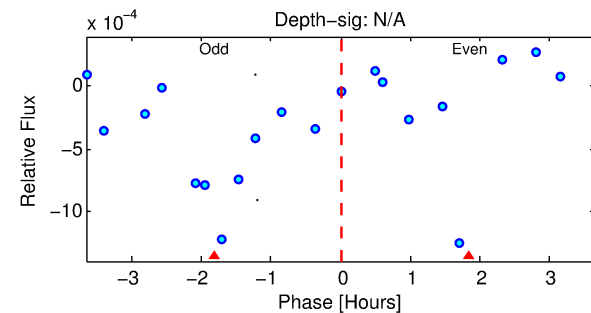
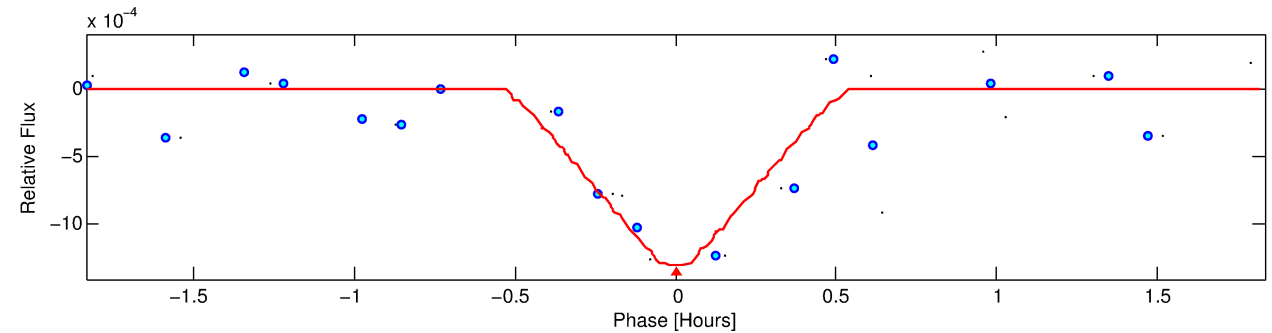
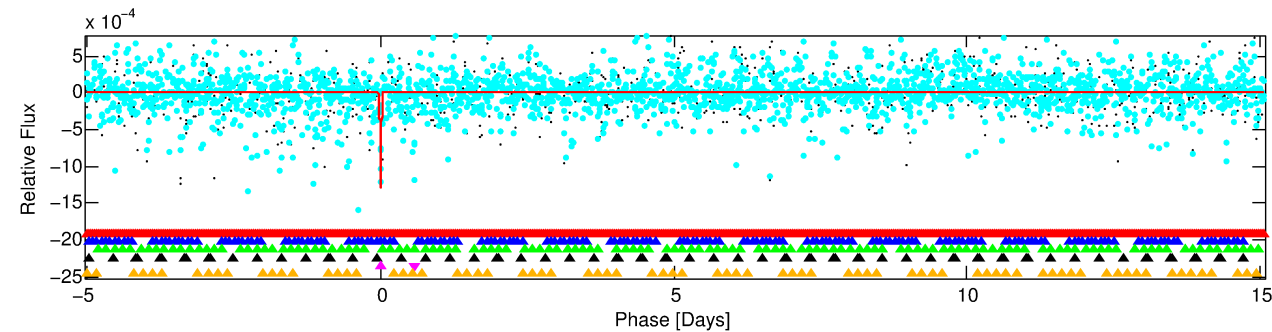
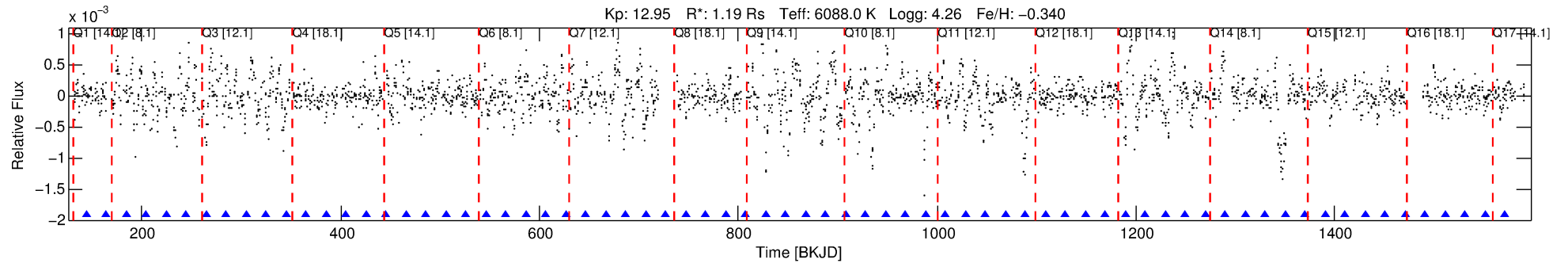
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007032218-05

No Significant Match Found

# DV One-Page Summary

KIC: 7032218 Candidate: 5 of 6 Period: 20.100 d



## DV Fit Results:

Period = 20.09951 [0.00010] d  
Epoch = 144.1707 [0.0041] BKJD  
Rp/R\* = 0.0345 [0.0406]  
a/R\* = 242.17 [1379.03]  
b = 0.37 [13.28]  
Seff = 86.53 [28.79]  
Teq = 778 [65] K  
Rp = 4.48 [5.35] Re  
a = 0.1420 [0.0277] AU  
Ag = 664.59 [1589.32] [0.42σ]  
Teffp = 6105 [3622] K [1.47σ]

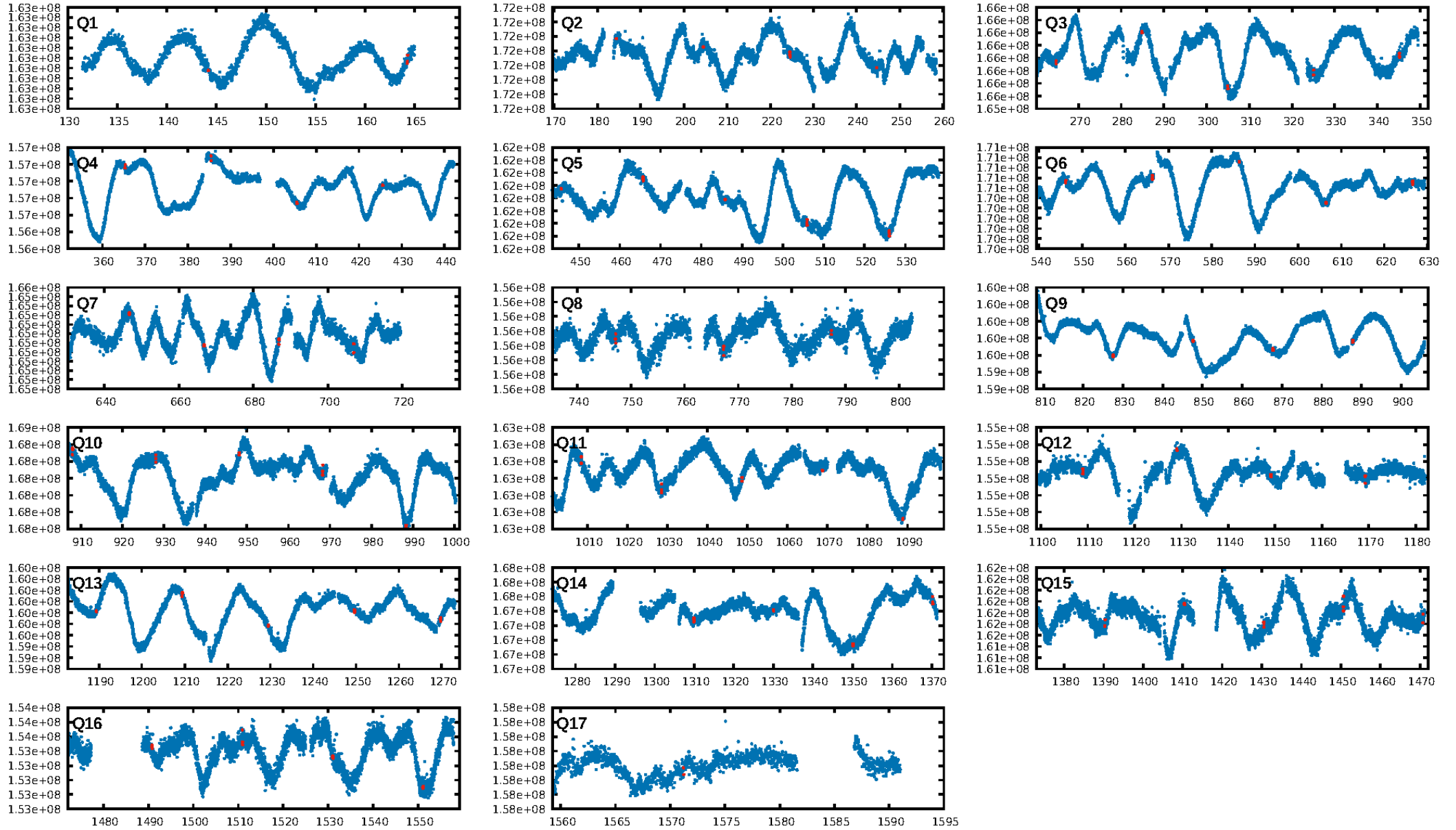
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.54σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.05e-26  
RollingBand-fgt: 1.00 [10/10]  
GhostDiagnostic-chr: -12.08  
Centroid-sig: 4.4%  
Centroid-so: 0.454 arcsec [3.35σ]  
OotOffset-rm: 1.743 arcsec [1.21σ]  
KicOffset-rm: 1.877 arcsec [1.43σ]  
OotOffset-st: 0/2/2/3 [7]  
KicOffset-st: 0/2/2/3 [7]  
DiffImageQuality-fgm: 0.14 [1/7]  
DiffImageOverlap-fno: 0.00 [0/17]

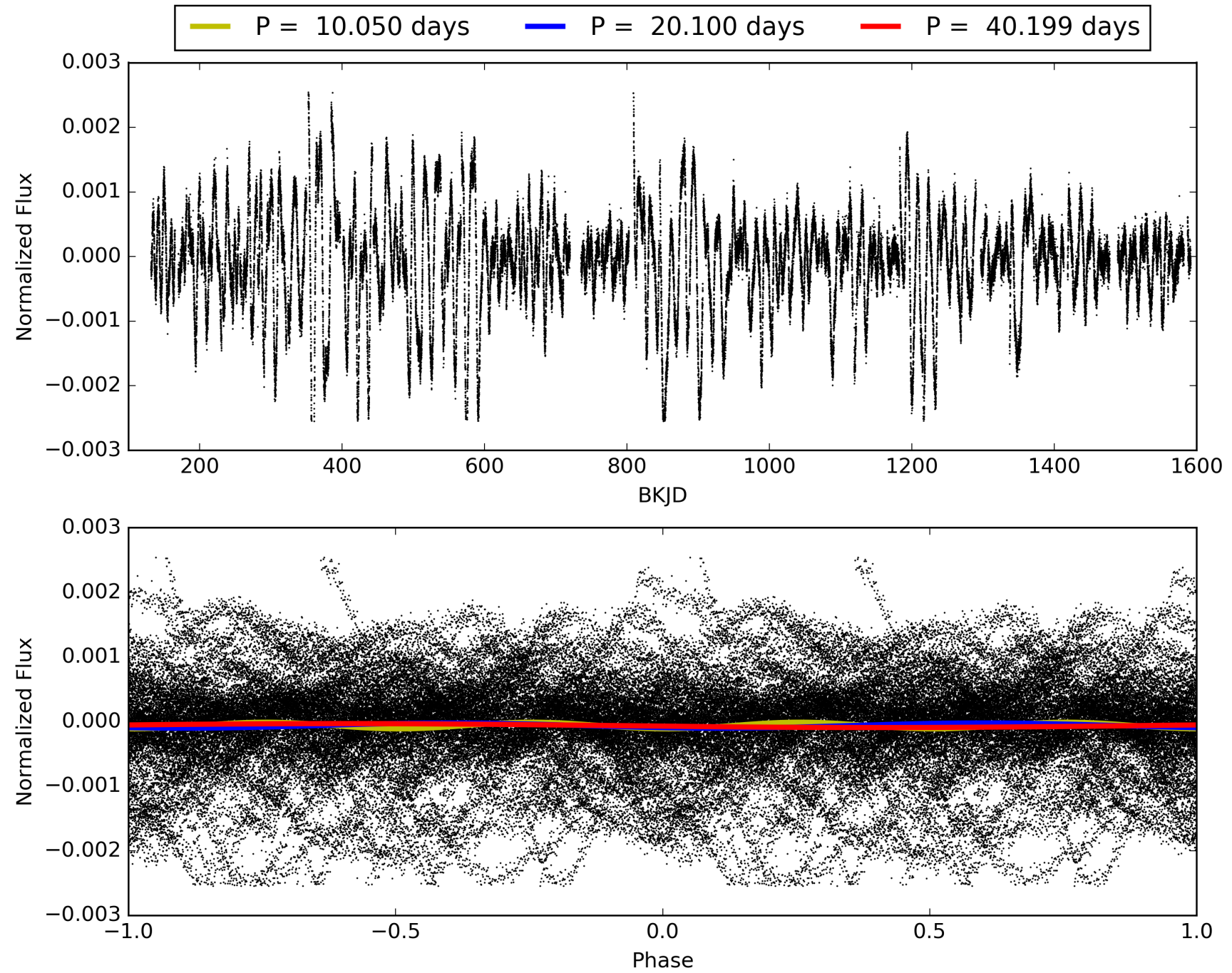
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:57:15 Z

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

# TCE 007032218-05, PDC Light Curves

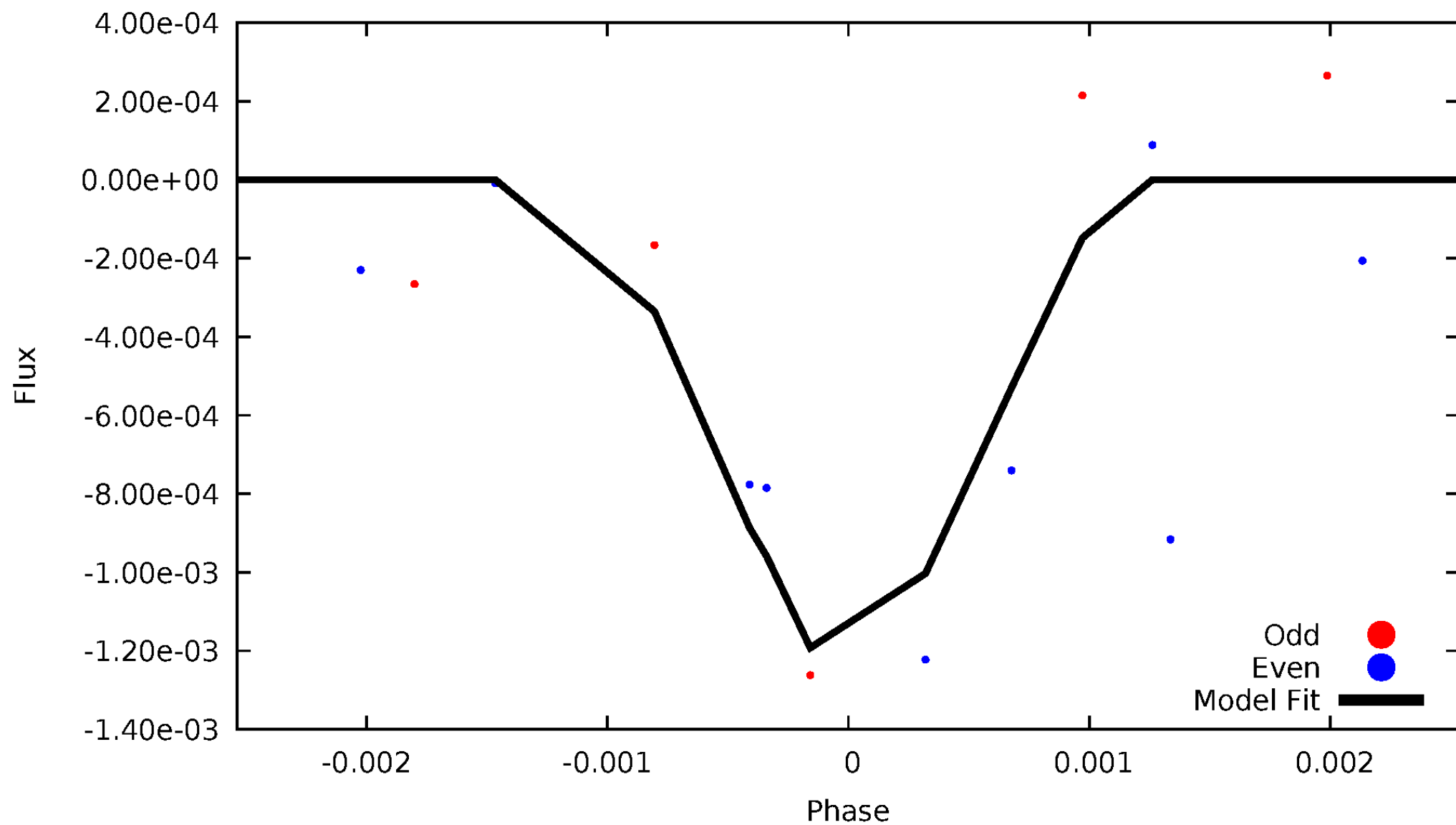


TCE 007032218-05



# DV Odd/Even

TCE 007032218-05





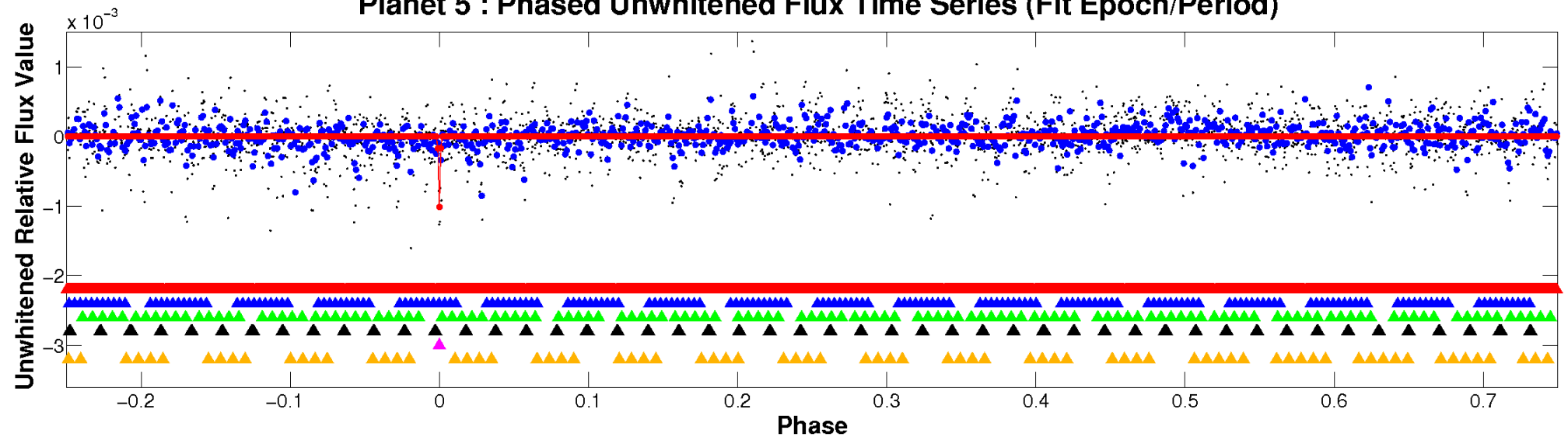
ALT Odd/Even

This plot does not exist for this TCE.

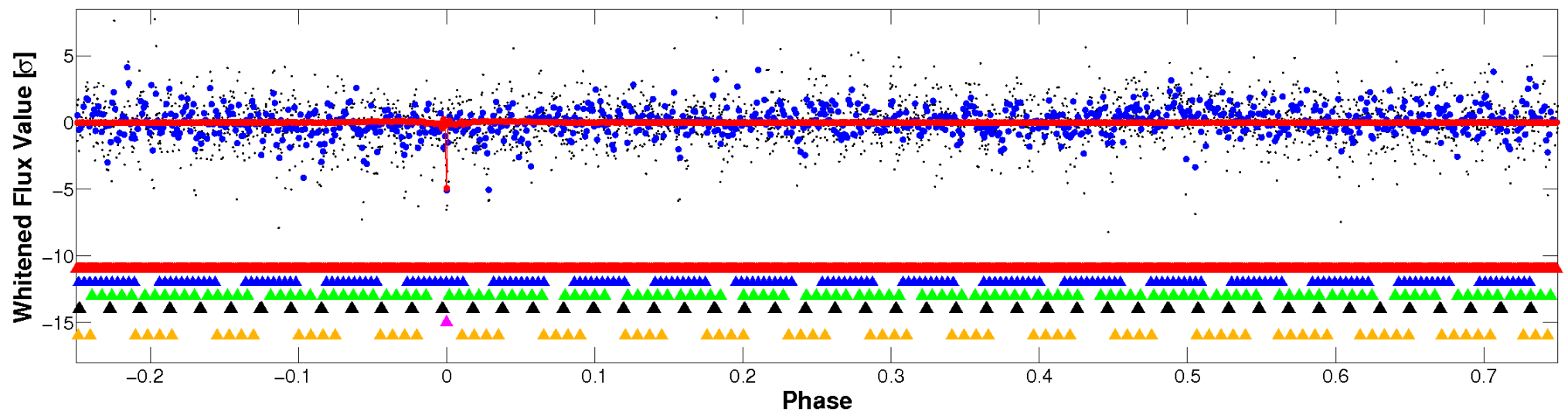


# Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

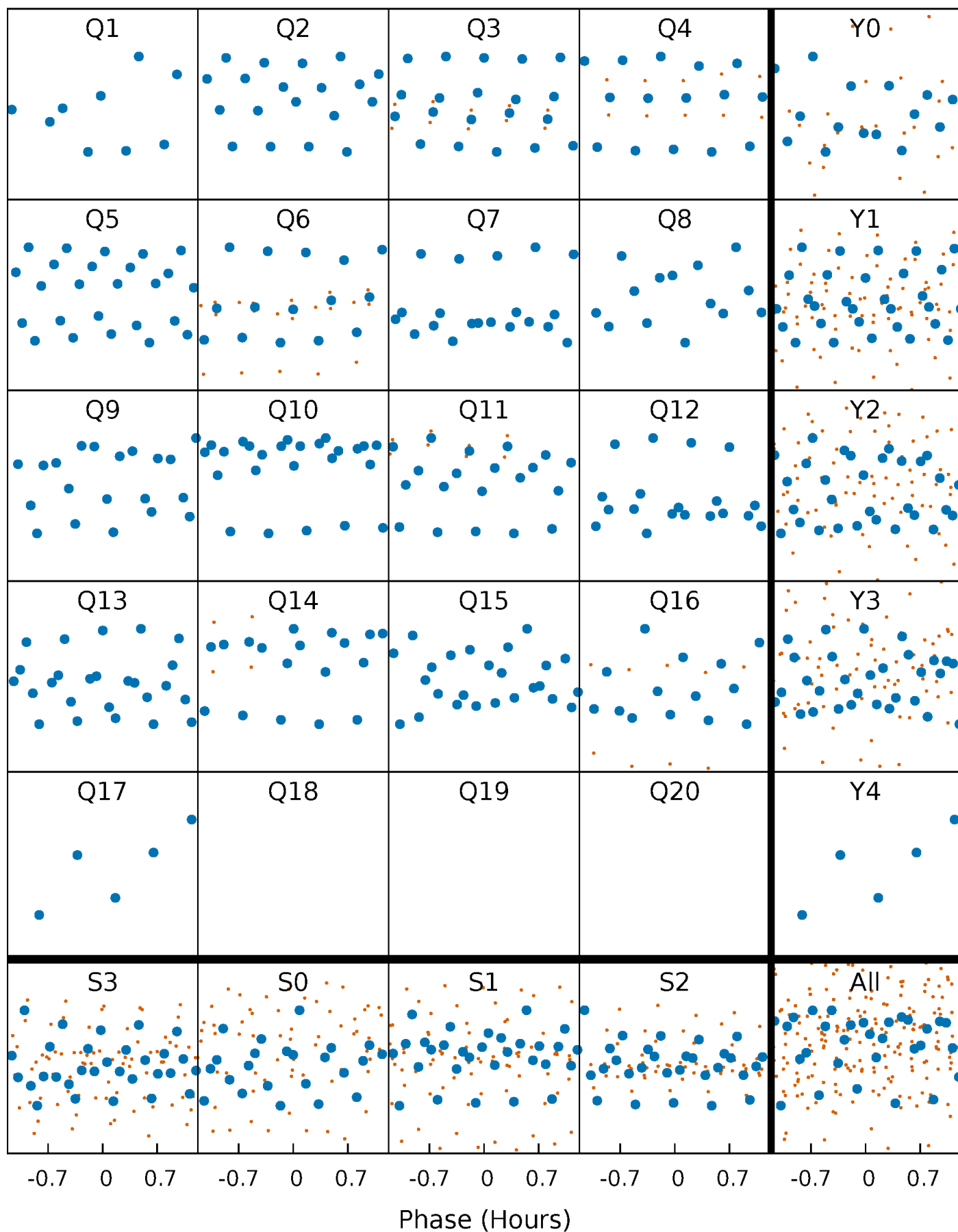


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



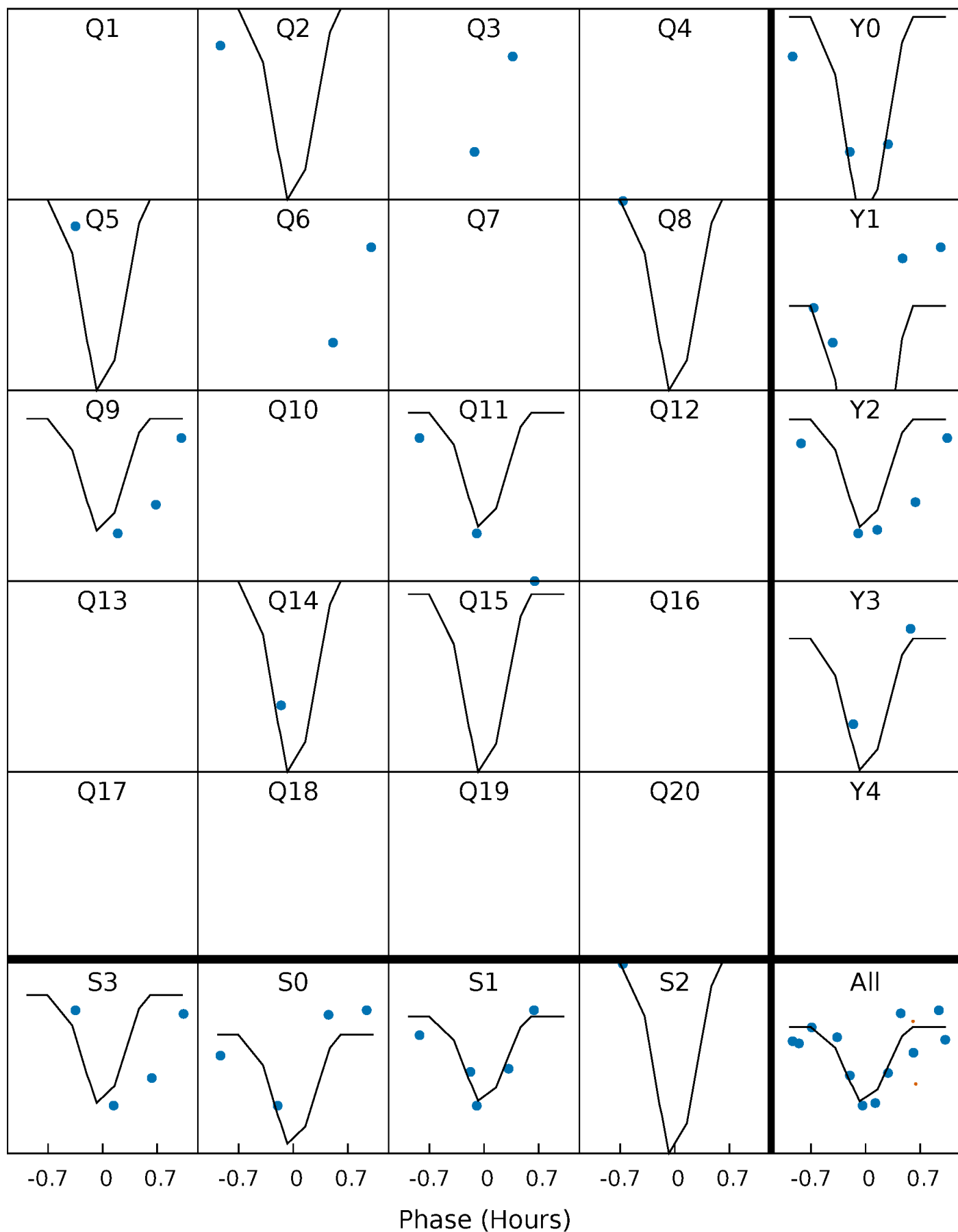
# PDC Quarter-Phased Transit Curves

TCE 007032218-05 P= 20.099512 Days  $T_0=144.170718$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007032218-05     $P = 20.099512$  Days     $T_0 = 144.170718$  (BKJD)

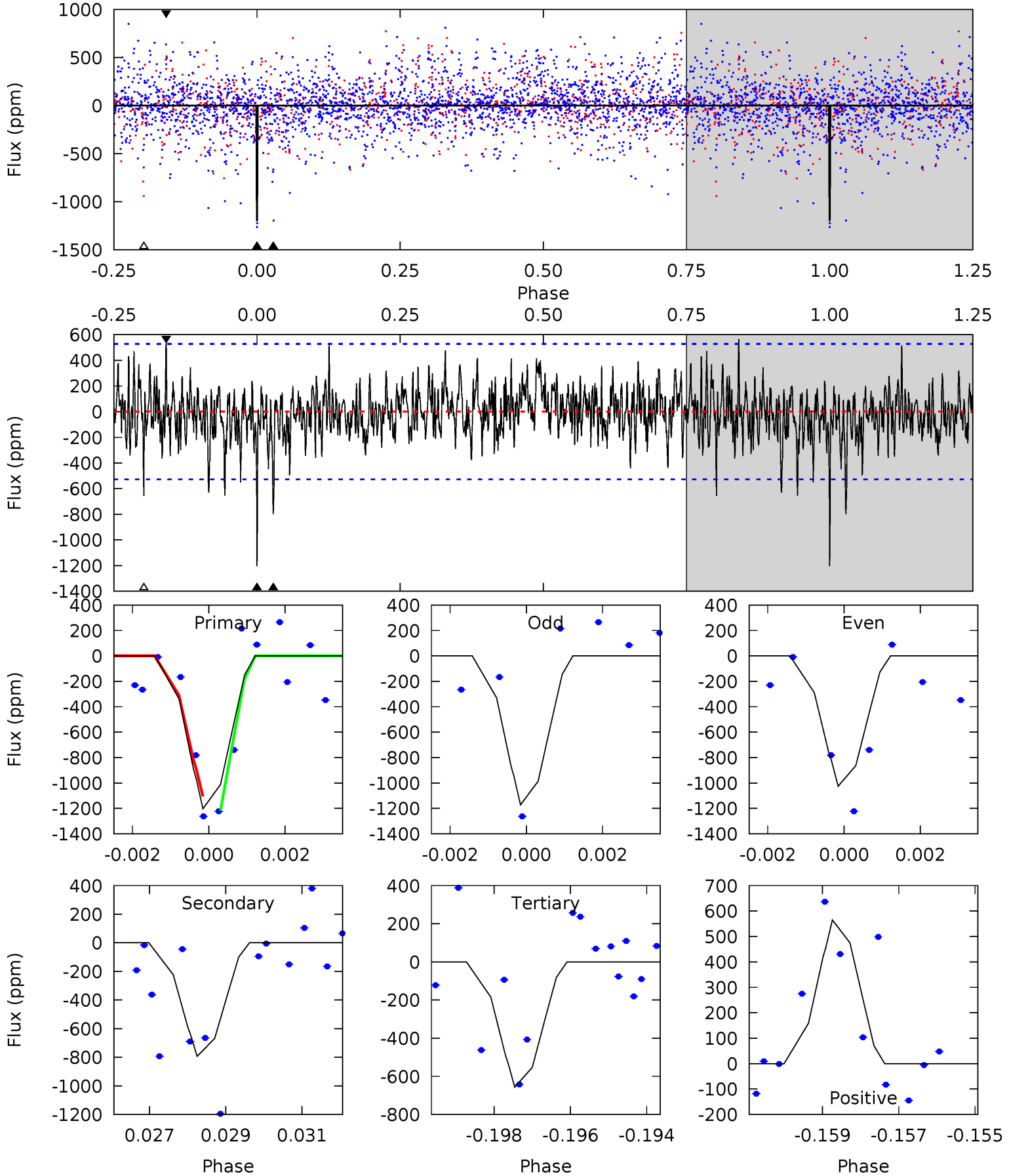


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

007032218-05, P = 20.099512 Days, E = 124.071206 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	8.01	6.63	5.70	5.32	3.08	1.61	5.51	6.44	1.38	2.31	0.66	1.00	0.32	0.57



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007032218

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6088^{+164}_{-164}$	$4.262^{+0.186}_{-0.124}$	$-0.340^{+0.300}_{-0.300}$	$1.191^{+0.237}_{-0.237}$	$0.947^{+0.142}_{-0.095}$	$0.789^{+0.739}_{-0.308}$
	+3%/-3%	+4%/-3%	+88%/-88%	+20%/-20%	+15%/-10%	+94%/-39%
Source	PHO1	FLK73	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 007032218-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-794 \pm 99$	$5.69^{+5.03}_{-3.65}$	$1077^{+58}_{-69}$	$4911^{+3313}_{-1035}$	$273^{+1848}_{-196}$
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

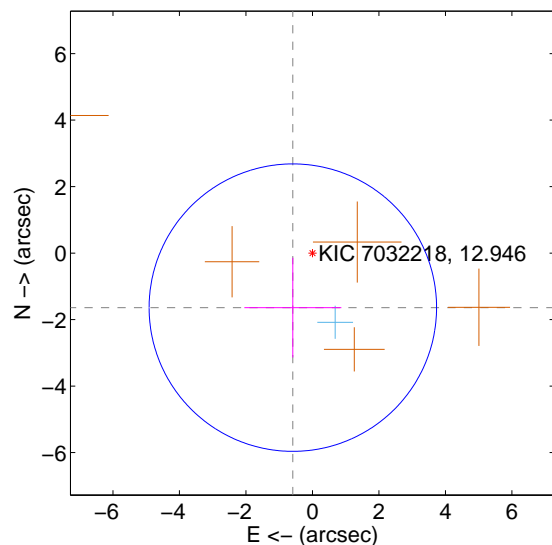
Supplemental centroid analysis for 007032218-05. Kepler magnitude: 12.95. Transit SNR 10.87

There are 1 quarters with good PRF difference image offsets

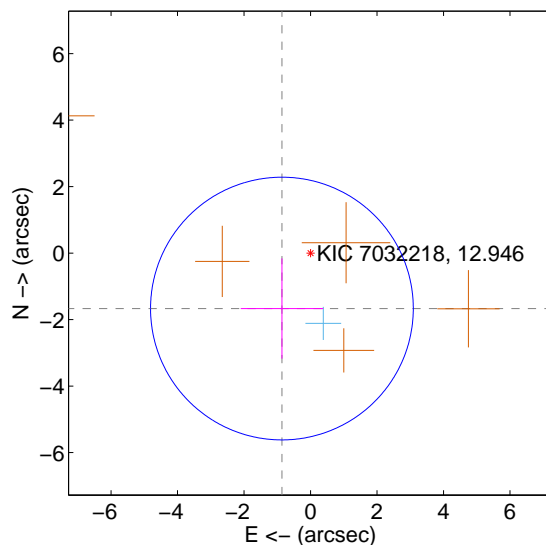
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.743 \pm 1.441$	1.21	$0.590 \pm 1.458$	$-1.640 \pm 1.500$
PRF-fit source offset from KIC position	$1.877 \pm 1.317$	1.43	$0.860 \pm 1.240$	$-1.668 \pm 1.507$
photometric centroid source offset	$0.45 \pm 0.14$	3.35	$0.43 \pm 0.14$	$0.15 \pm 0.13$

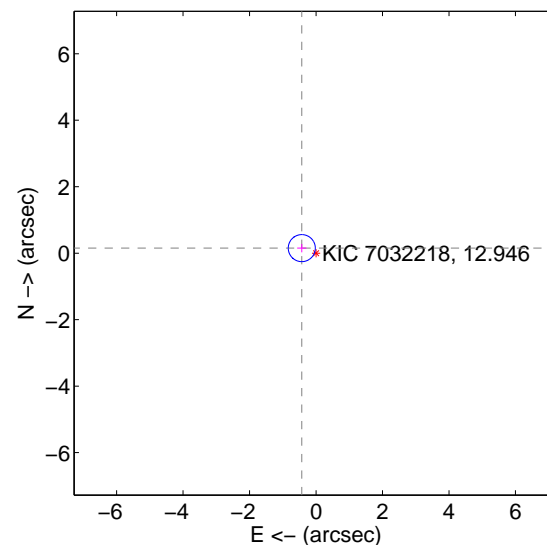
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



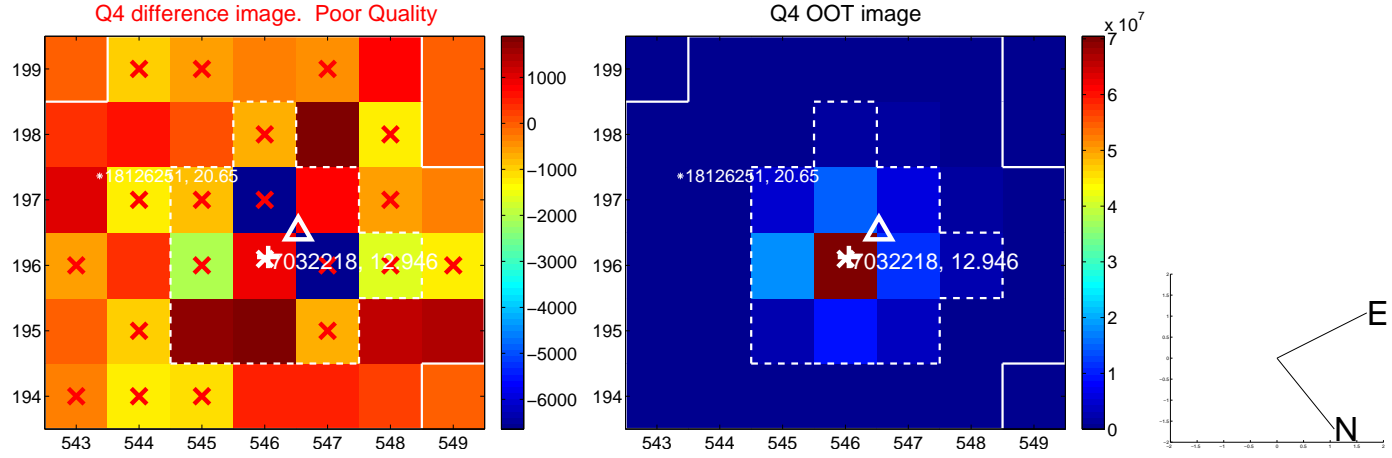
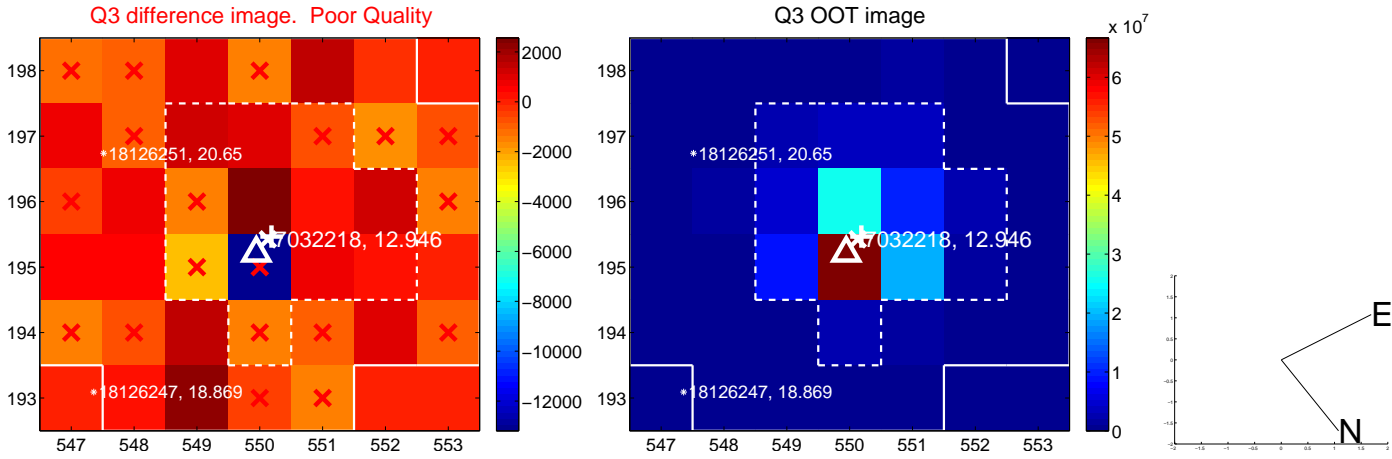
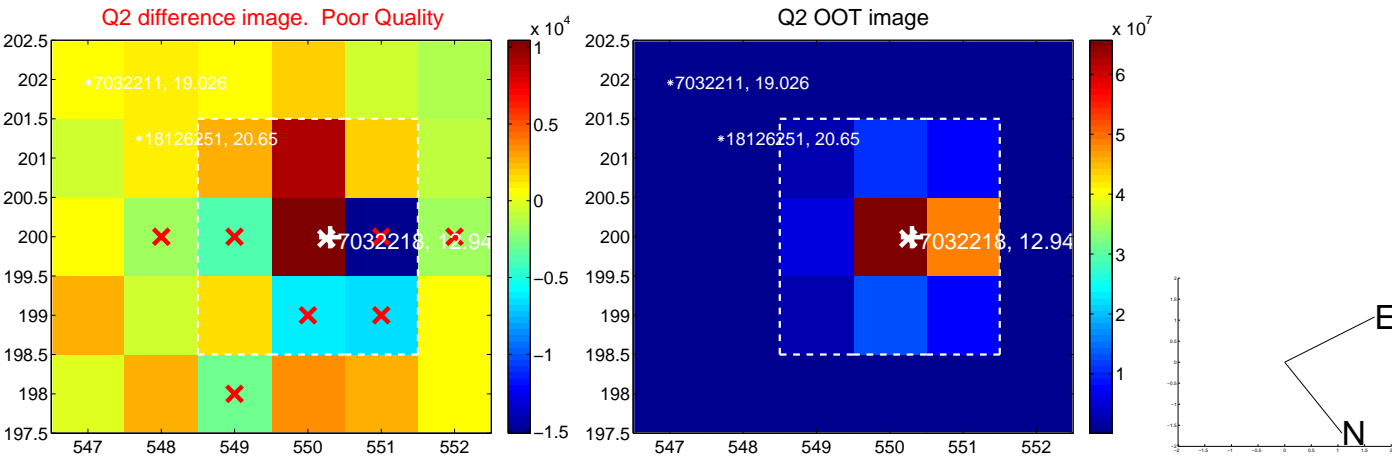
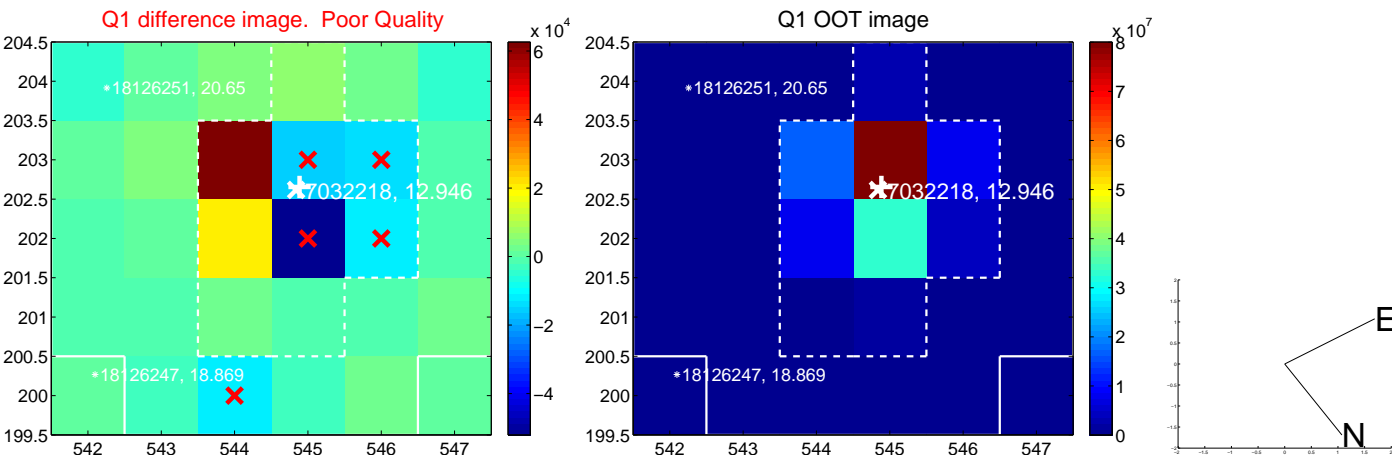
offset from photometric centroids



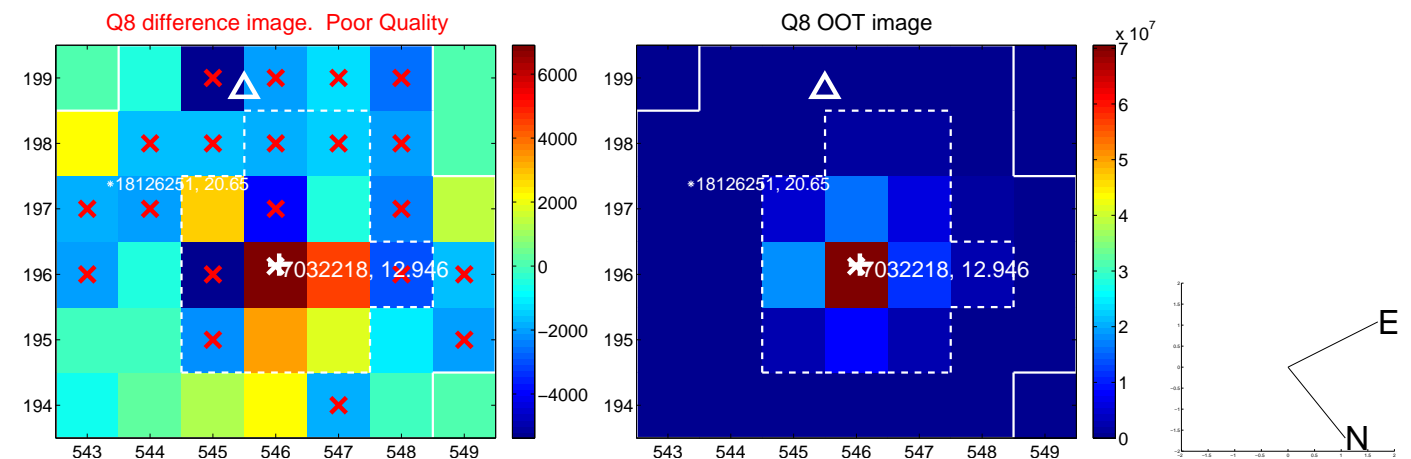
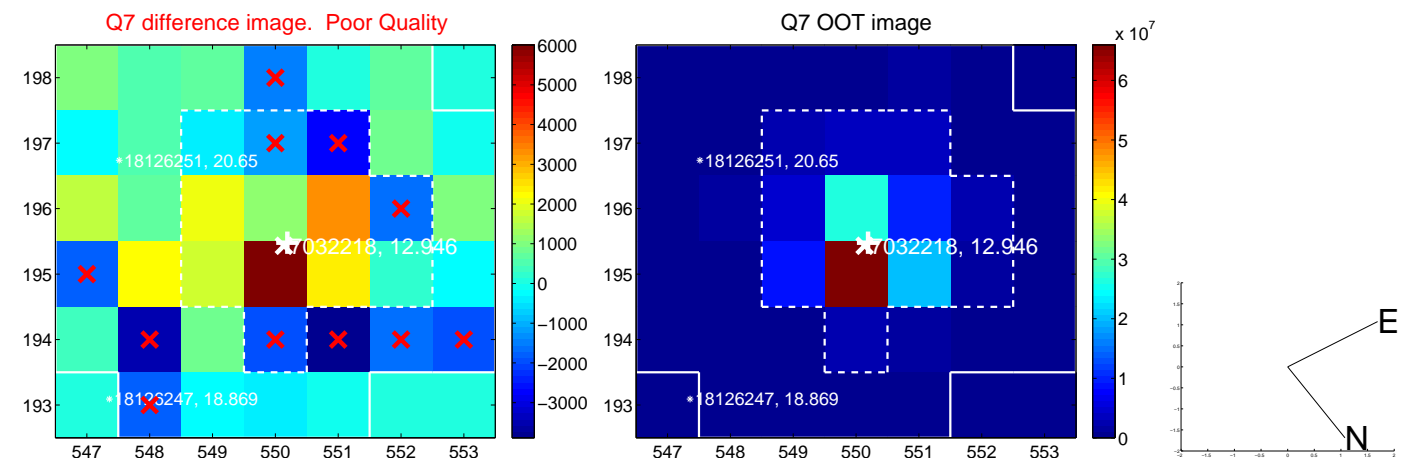
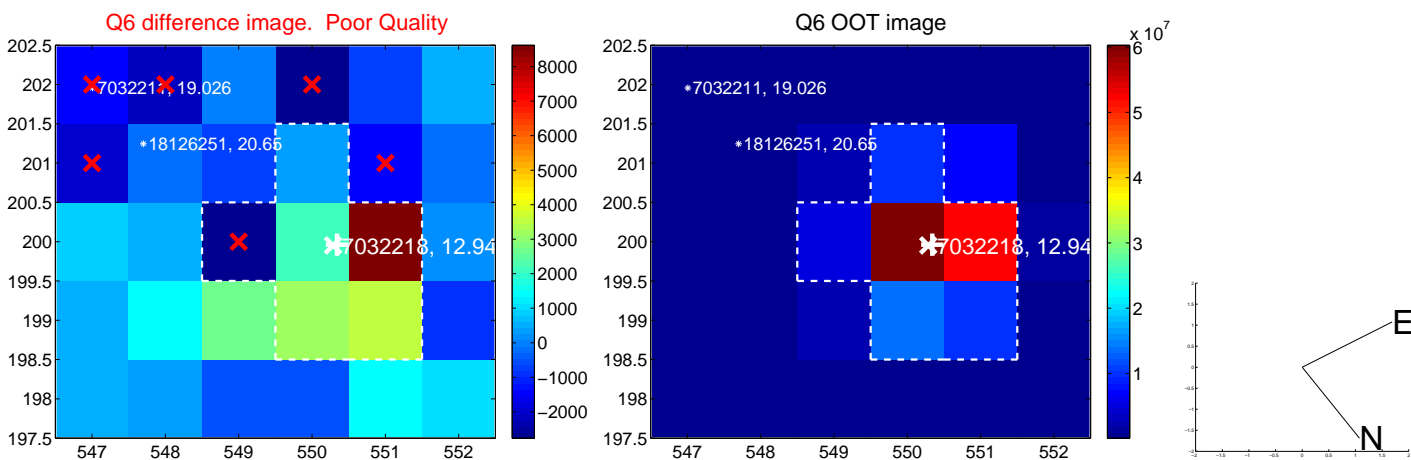
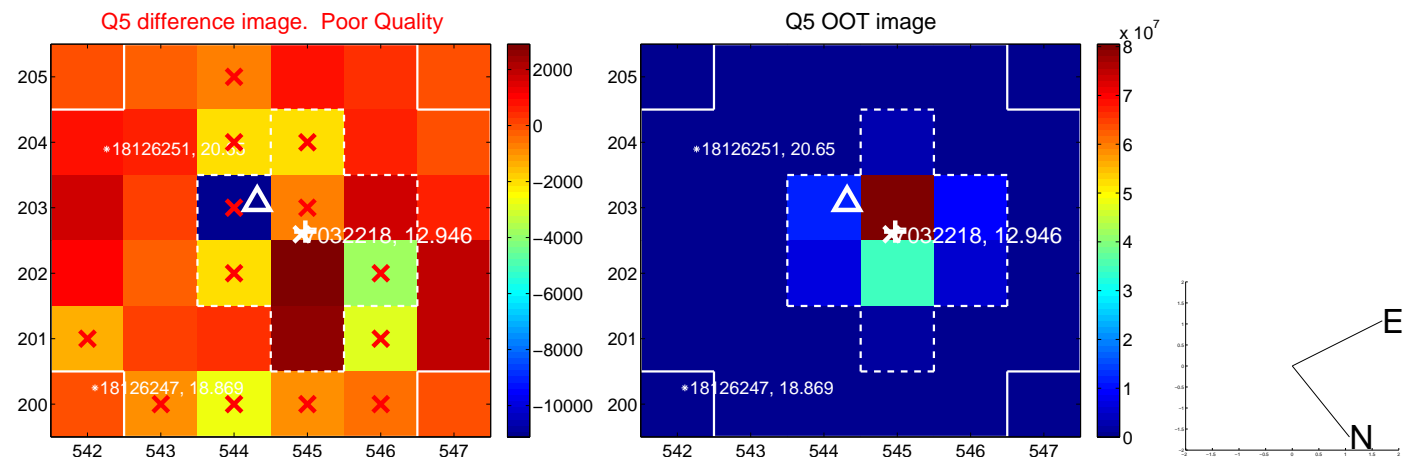
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



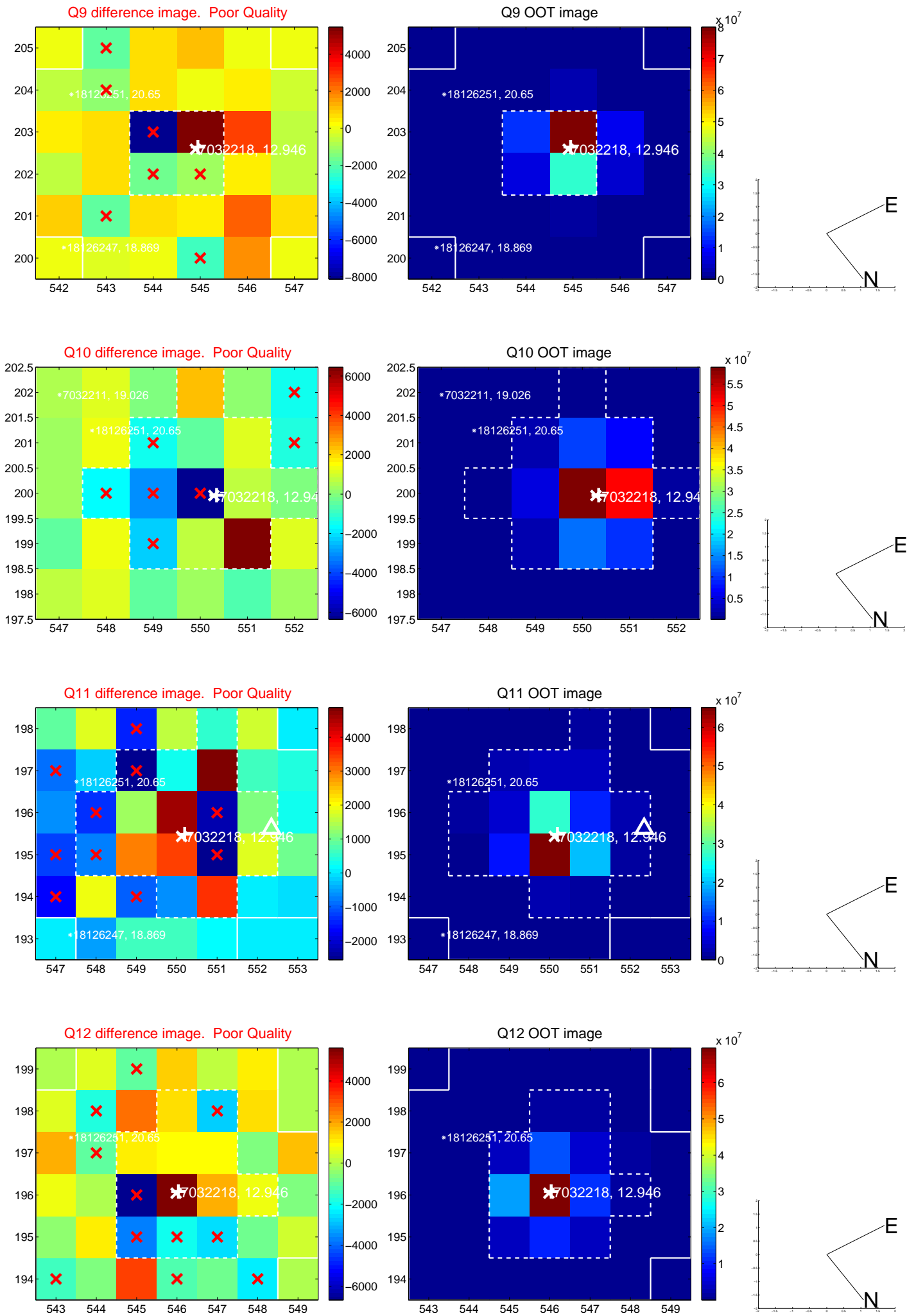
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



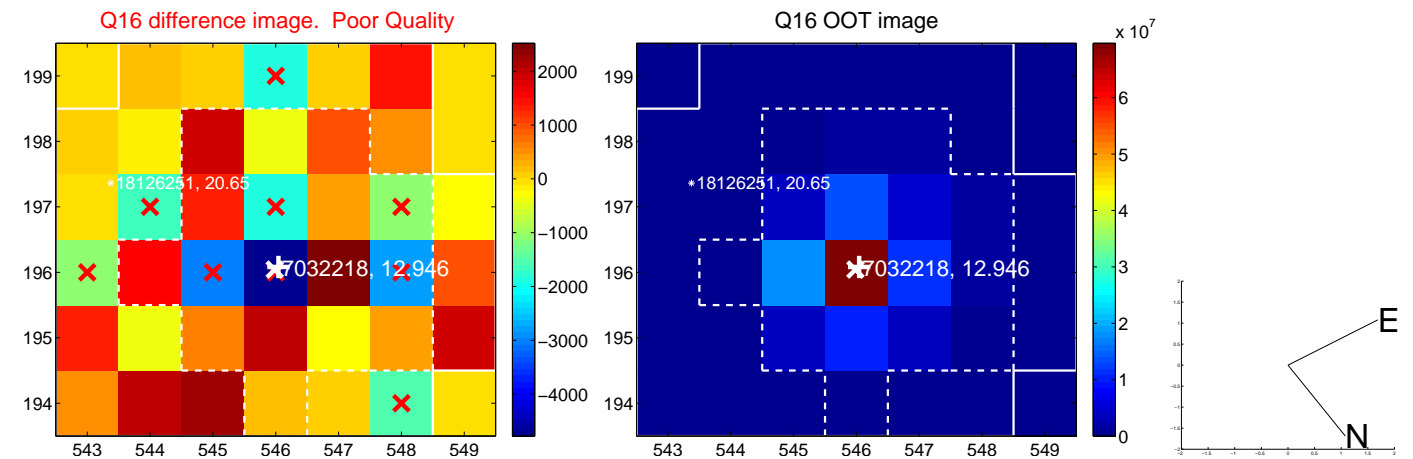
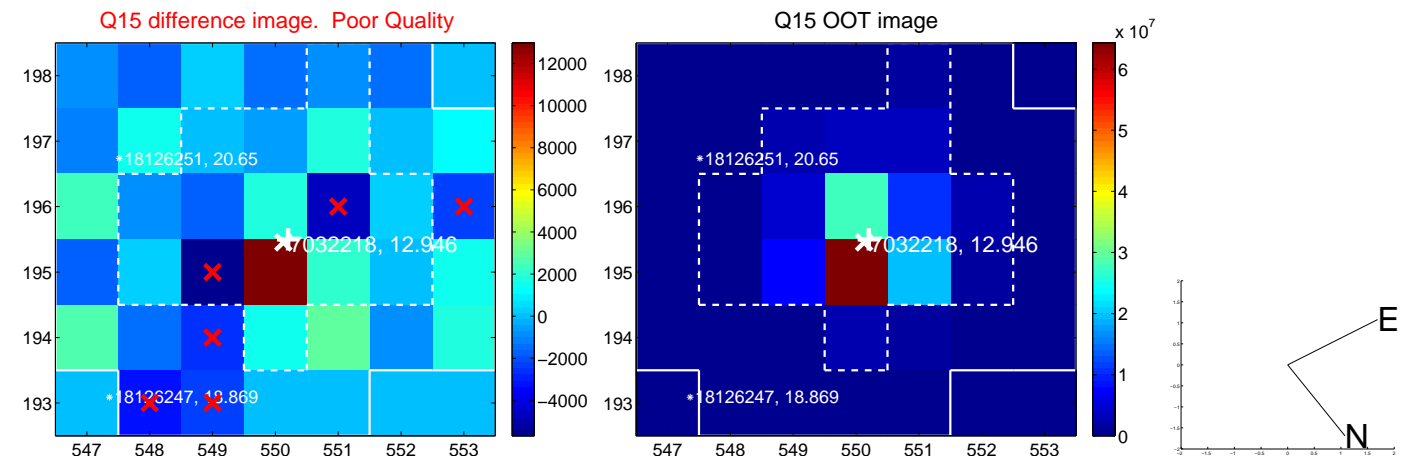
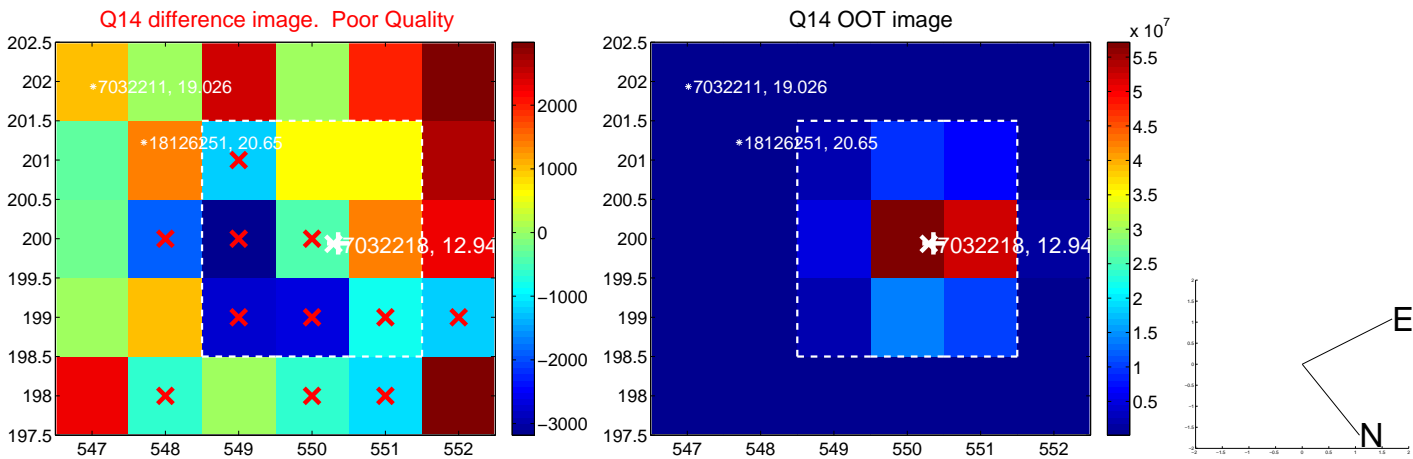
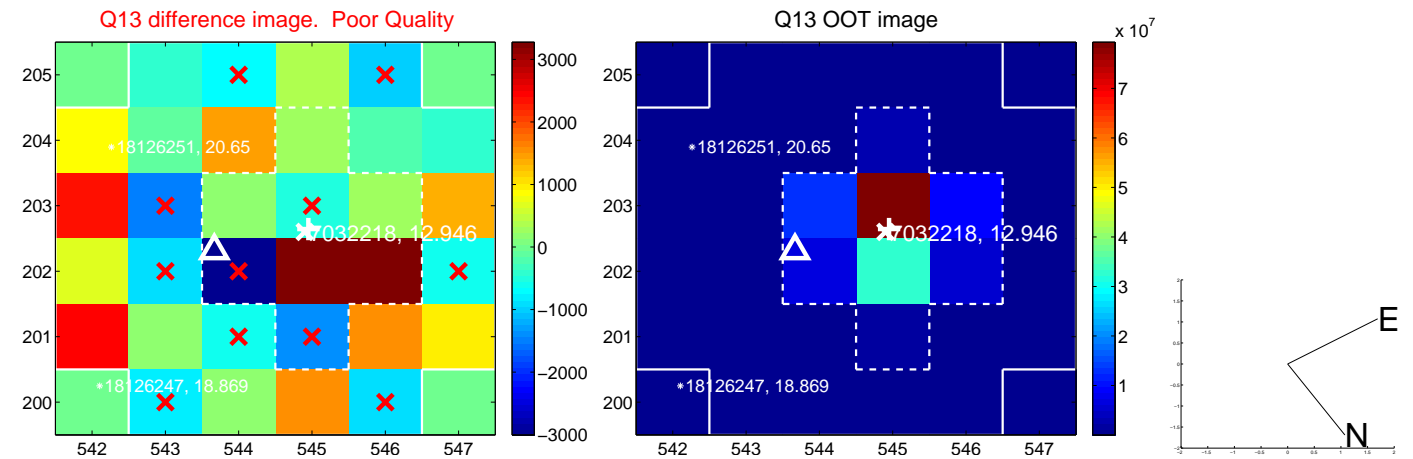
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



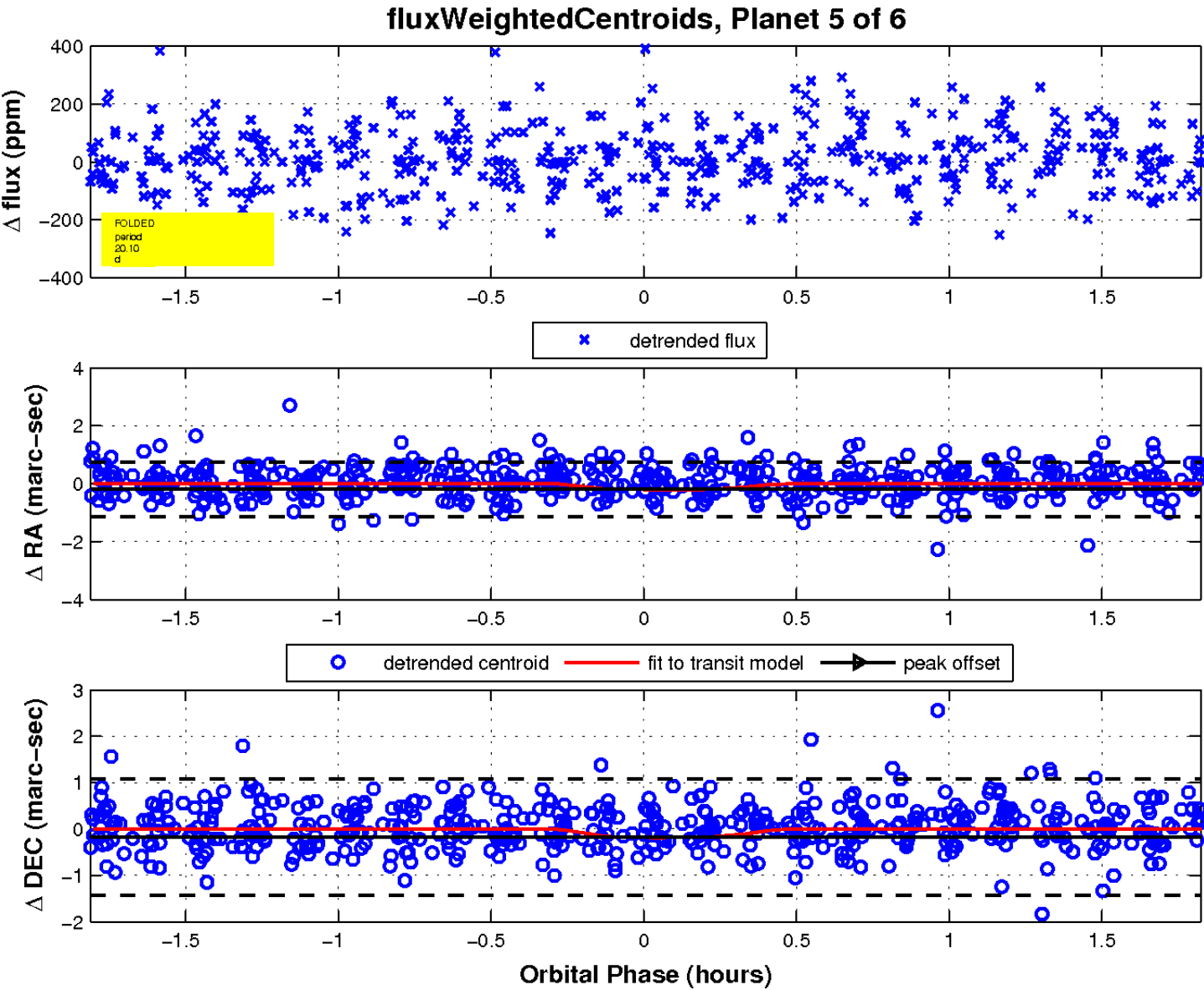
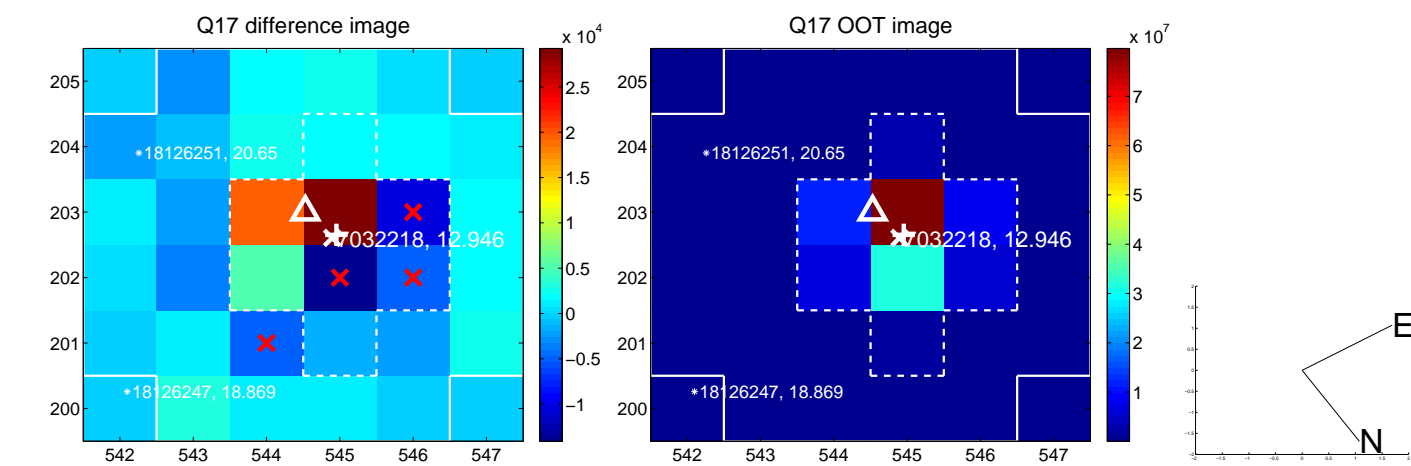
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

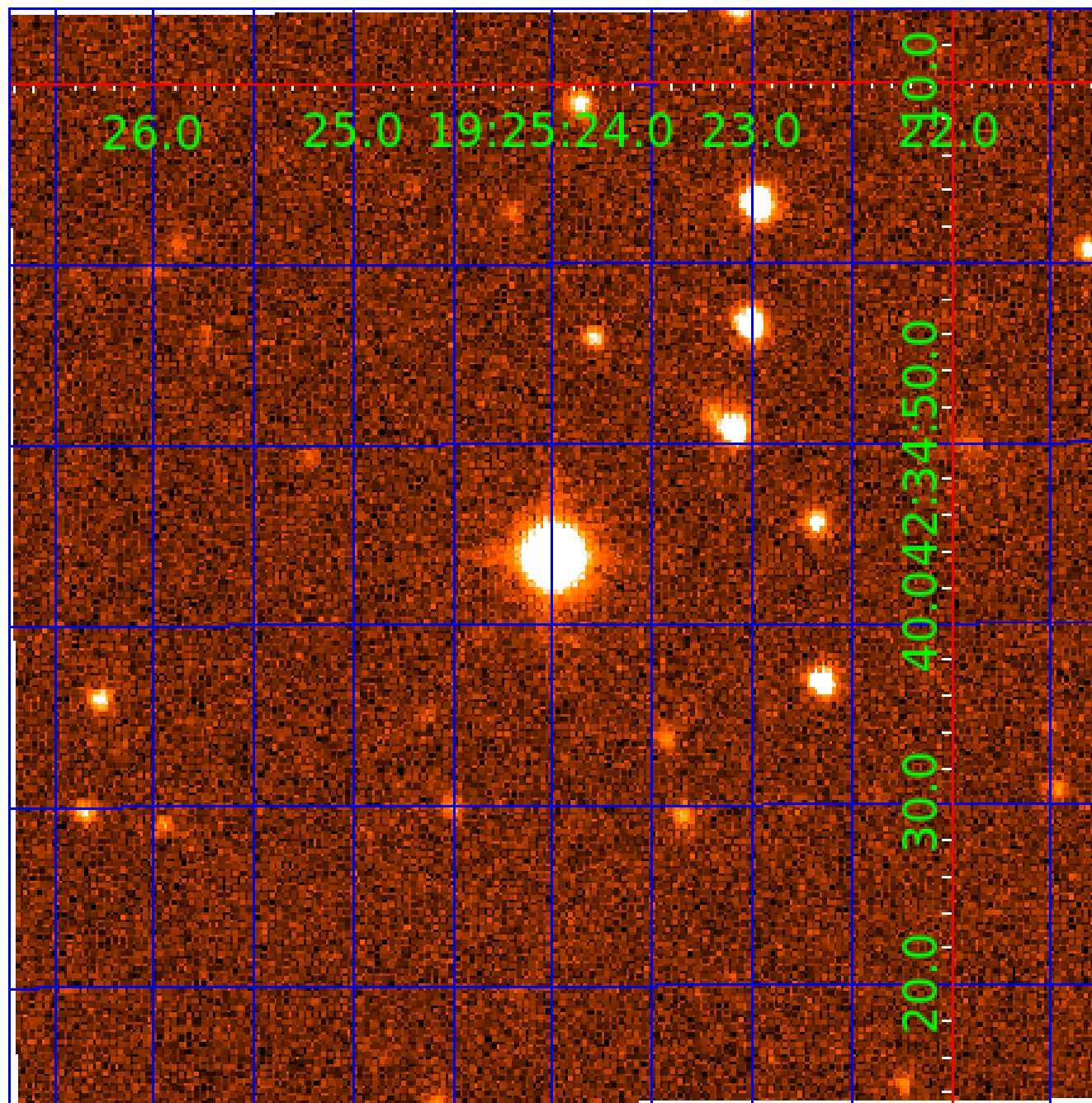


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007032218

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007032218-01	OBS	No	0.566768	131.860624	7.4	4.121	7.7	6.4	1.19	6088	0.33	10081.54
007032218-02	OBS	No	7.820680	132.453885	357.6	1.392	14.5	5.9	1.19	6088	2.35	304.61
007032218-03	OBS	No	11.261096	140.079946	399.9	2.000	10.9	-1.0	1.19	6088	2.39	187.34
007032218-04	OBS	No	13.946867	138.356370	90.6	12.521	9.0	5.0	1.19	6088	1.27	140.85
007032218-05	OBS	No	20.099512	144.170718	1297.1	0.612	11.3	10.9	1.19	6088	4.48	86.53
007032218-06	OBS	No	18.992012	138.678752	546.4	2.447	7.5	8.8	1.19	6088	2.87	93.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007032218-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007032218-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
007032218-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007032218-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007032218-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—CENT_FEW_MEAS
007032218-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_TER_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

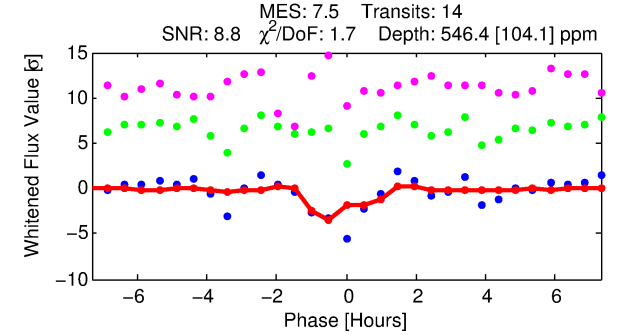
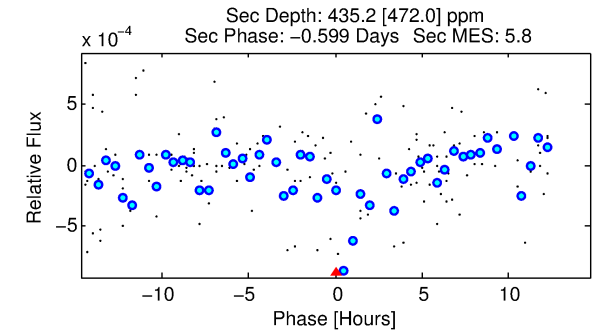
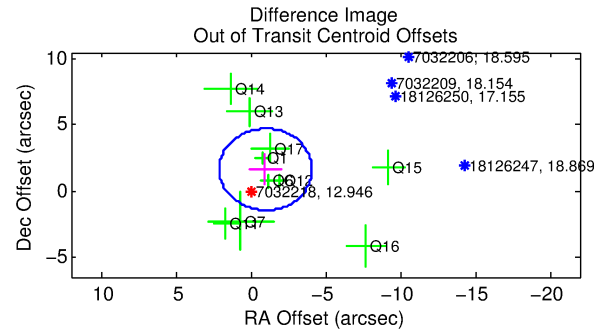
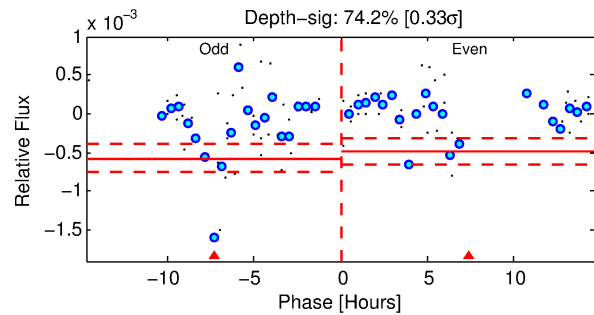
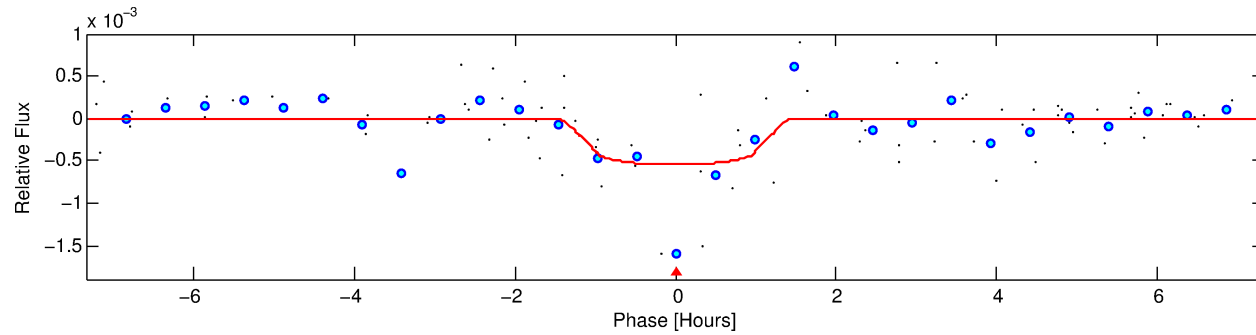
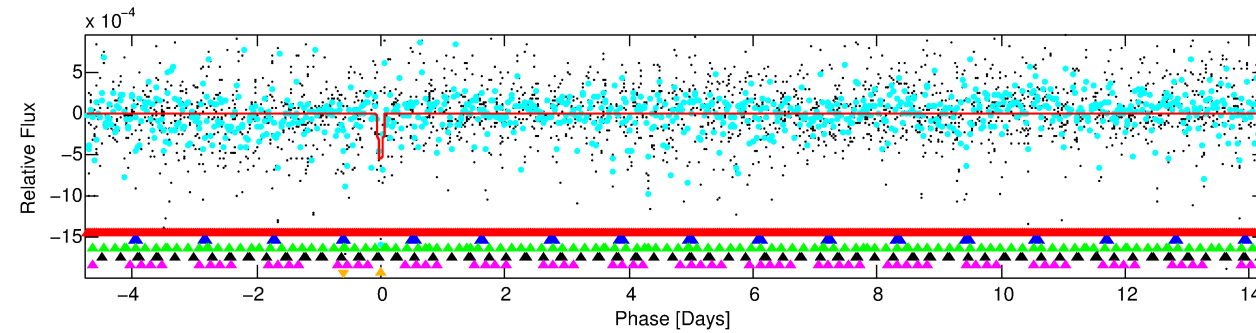
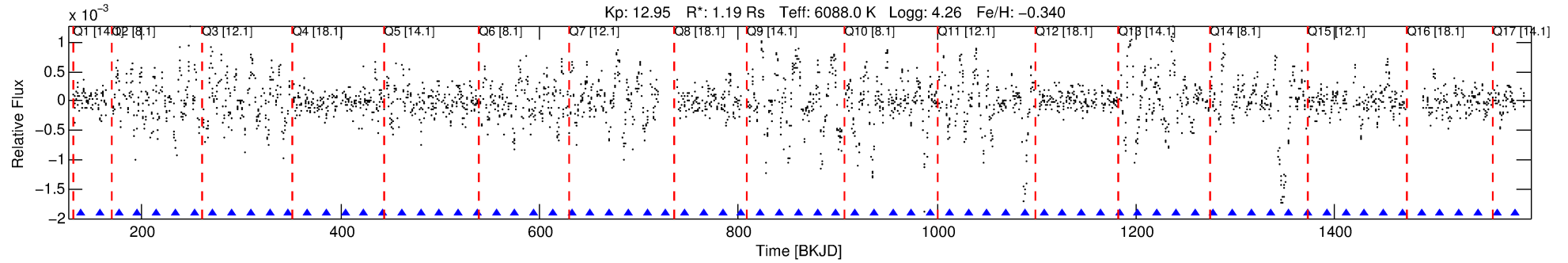
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007032218-06

No Significant Match Found

# DV One-Page Summary

KIC: 7032218 Candidate: 6 of 6 Period: 18.992 d



## DV Fit Results:

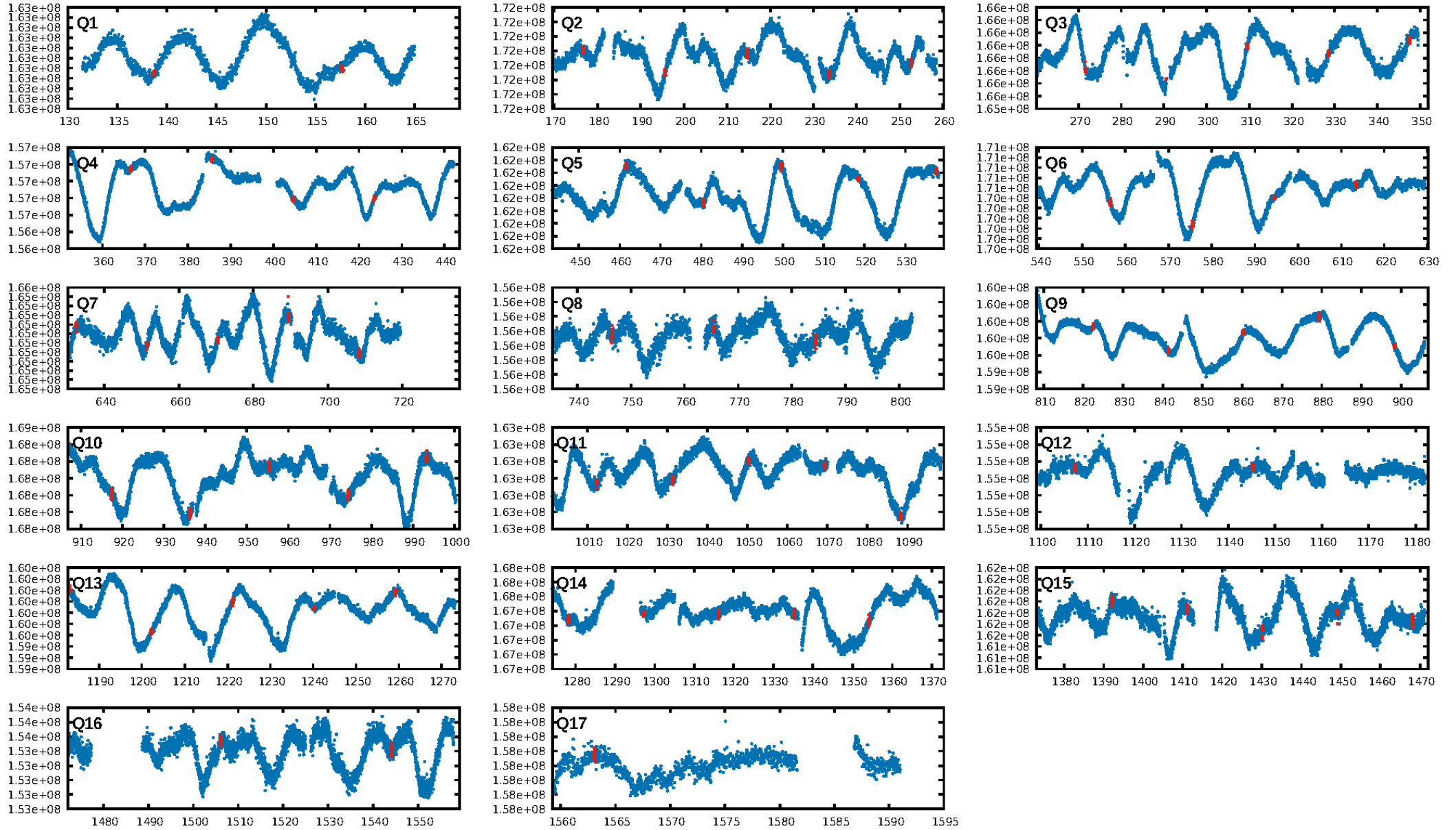
Period = 18.99201 [0.00020] d  
Epoch = 138.6788 [0.0087] BKJD  
Rp/R\* = 0.0221 [0.1010]  
a/R\* = 53.05 [1218.28]  
b = 0.49 [35.43]  
Seff = 93.32 [31.05]  
Teff = 793 [66] K  
Rp = 2.87 [13.14] Re  
a = 0.1368 [0.0267] AU  
Ag = 545.03 [5027.99] [0.11 $\sigma$ ]  
Teffp = 5921 [13648] K [0.38 $\sigma$ ]

## DV Diagnostic Results:

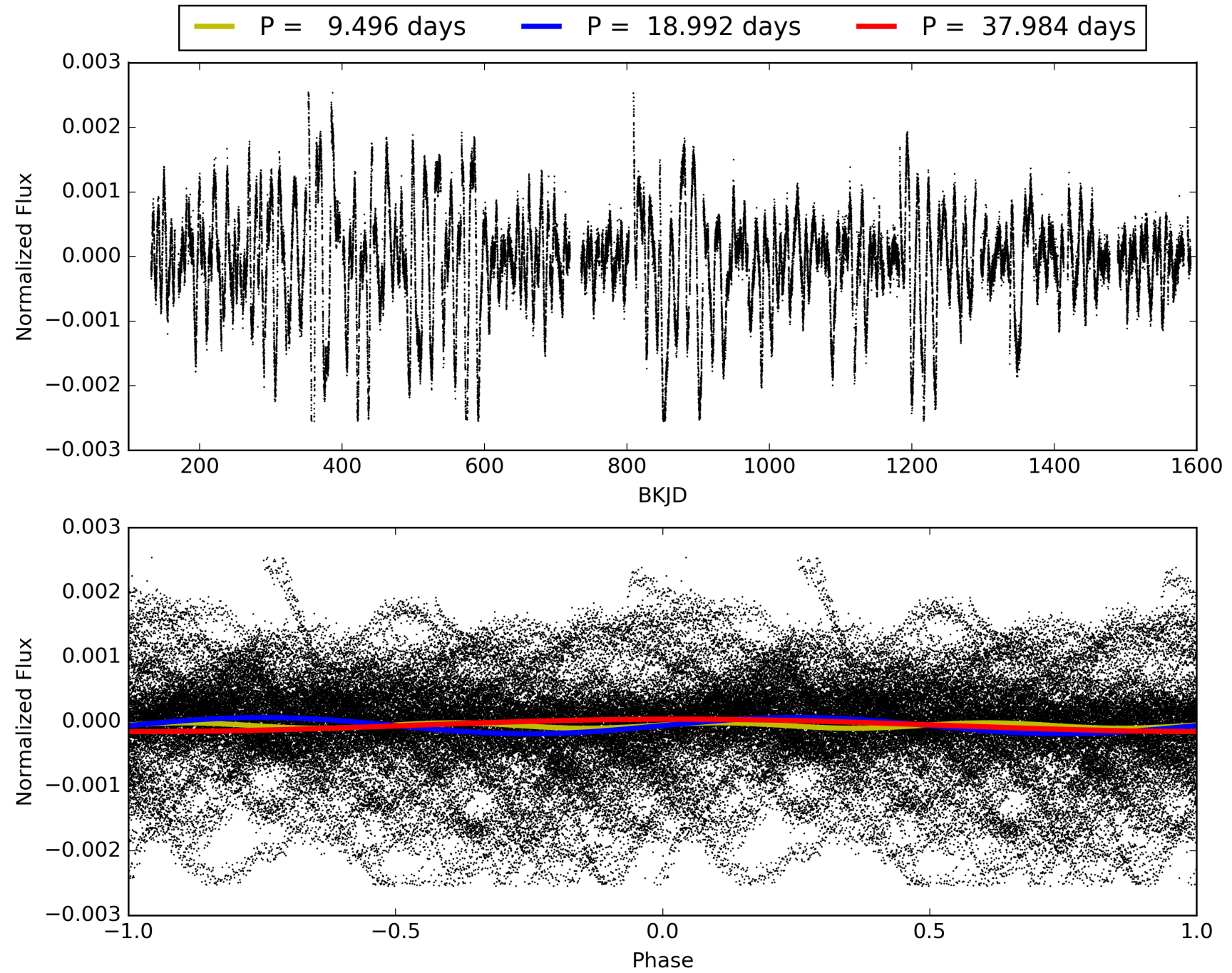
ShortPeriod-sig: 100.0% [9.49 $\sigma$ ]  
LongPeriod-sig: 100.0% [10.54 $\sigma$ ]  
ModelChiSquare2-sig: 2.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.92e-13  
RollingBand-fgt: 1.00 [13/13]  
**GhostDiagnostic-chr: -1.427**  
Centroid-sig: 14.5%  
Centroid-so: 0.392 arcsec [2.52 $\sigma$ ]  
OotOffset-rm: 1.918 arcsec [1.86 $\sigma$ ]  
KicOffset-rm: 1.805 arcsec [1.76 $\sigma$ ]  
OotOffset-st: 2/3/2/3 [10]  
KicOffset-st: 2/3/2/3 [10]  
DiffImageQuality-fgm: 0.20 [2/10]  
DiffImageOverlap-fno: 0.00 [0/17]



# TCE 007032218-06, PDC Light Curves

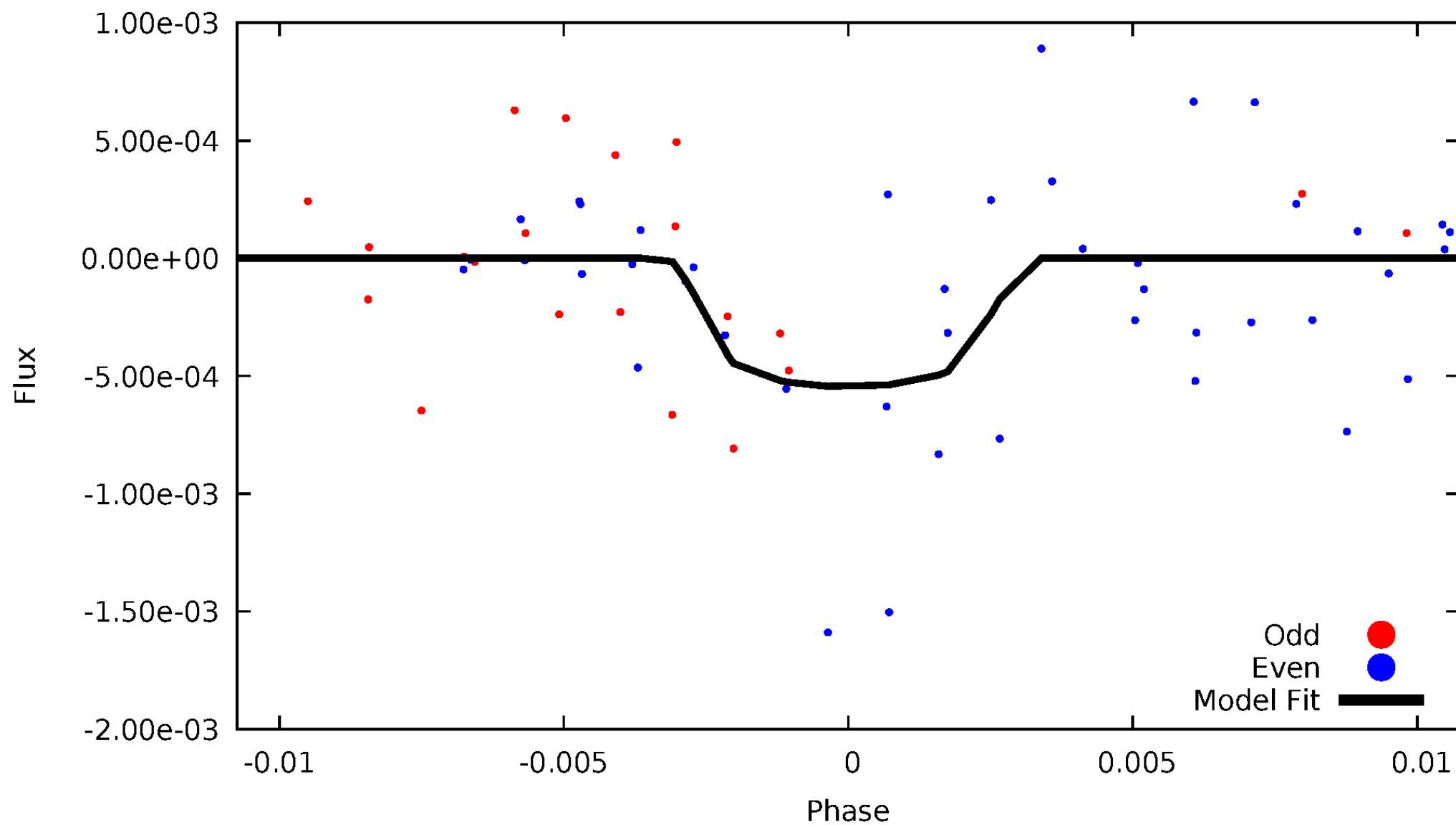


TCE 007032218-06



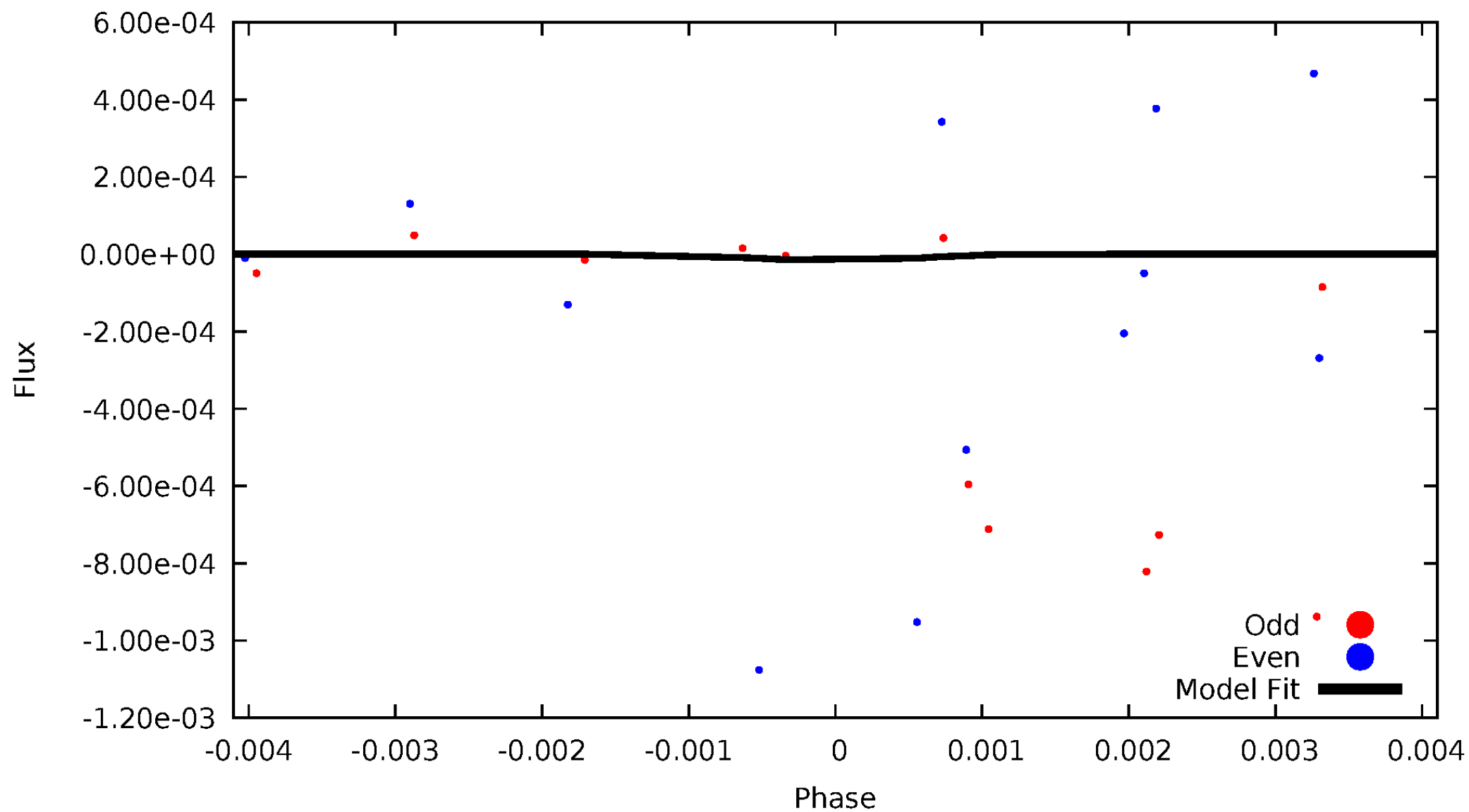
# DV Odd/Even

TCE 007032218-06



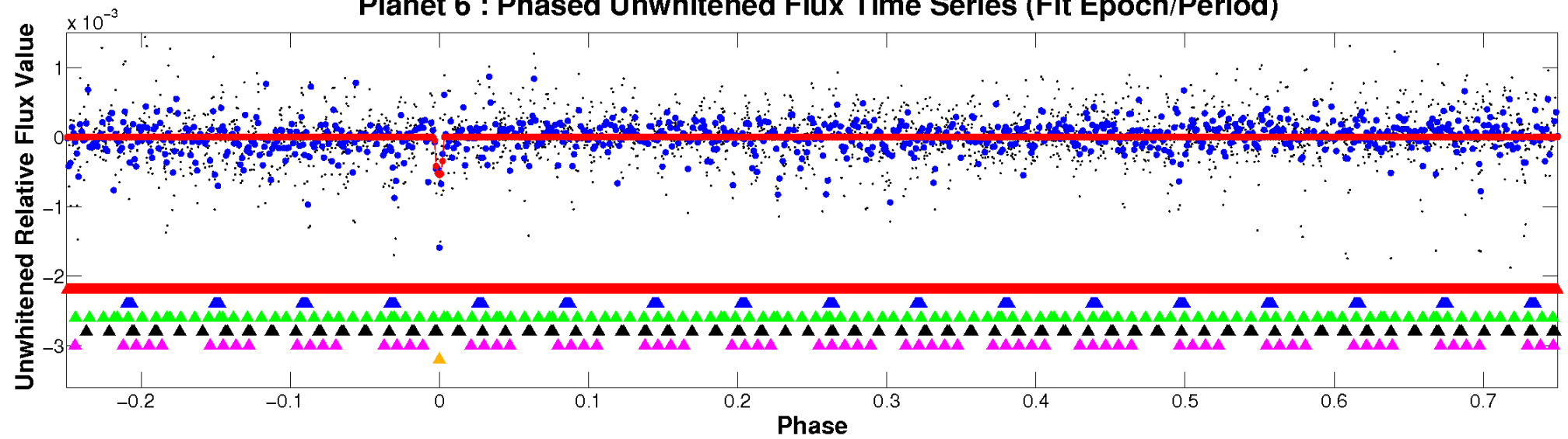
# ALT Odd/Even

TCE 007032218-06

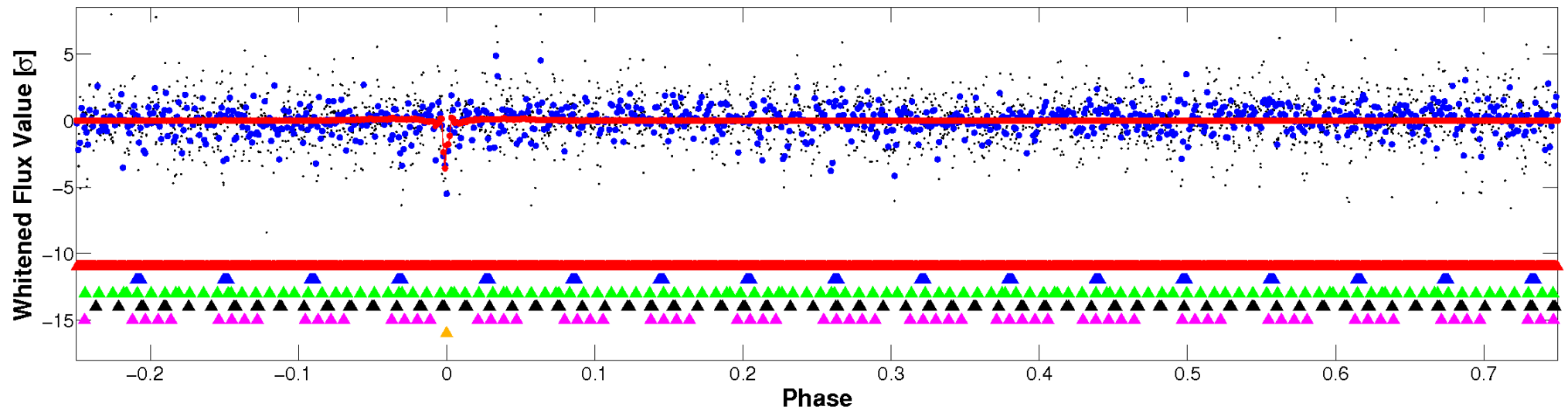


# Non-Whitened Vs. Whitened Light Curve

## Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

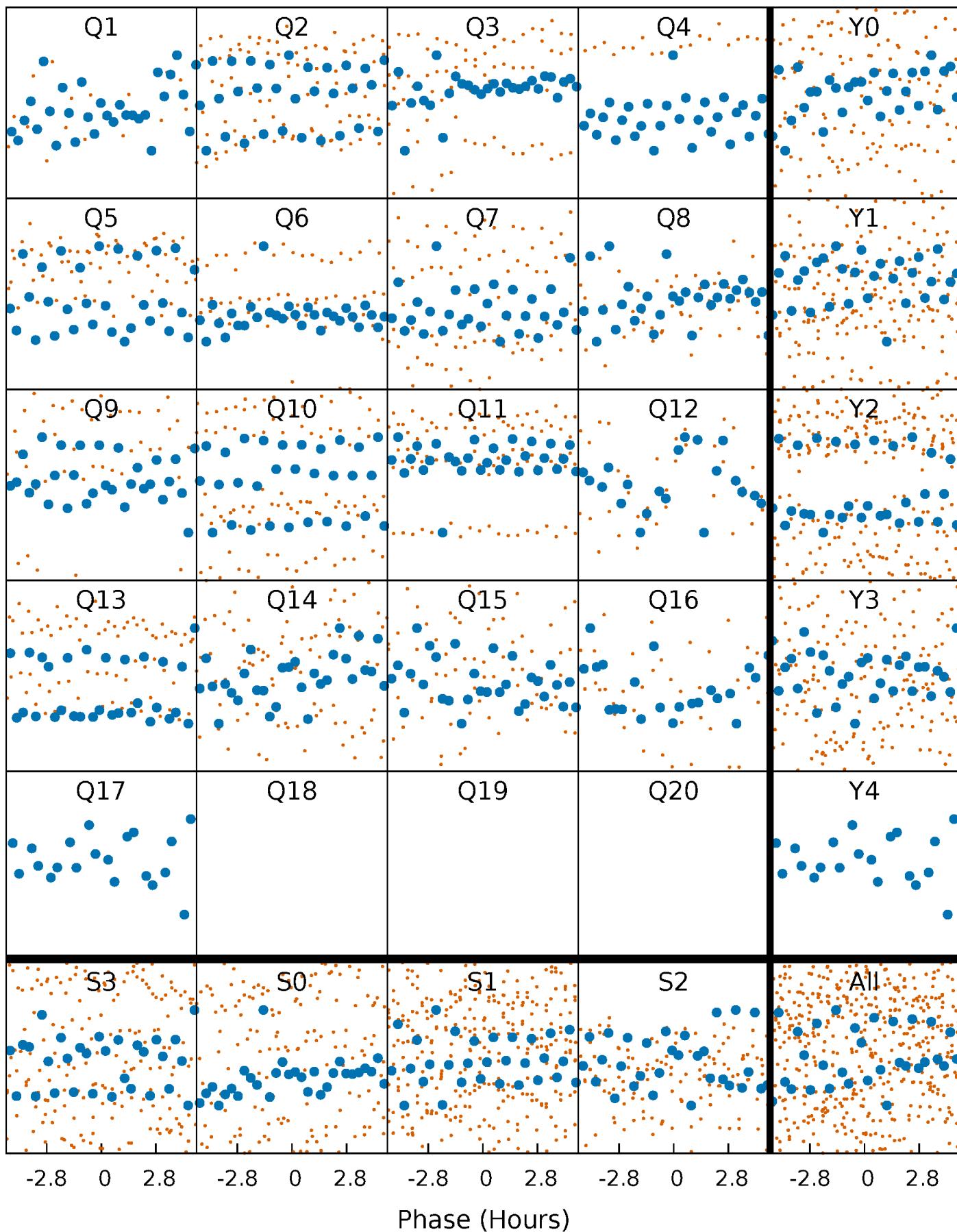


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



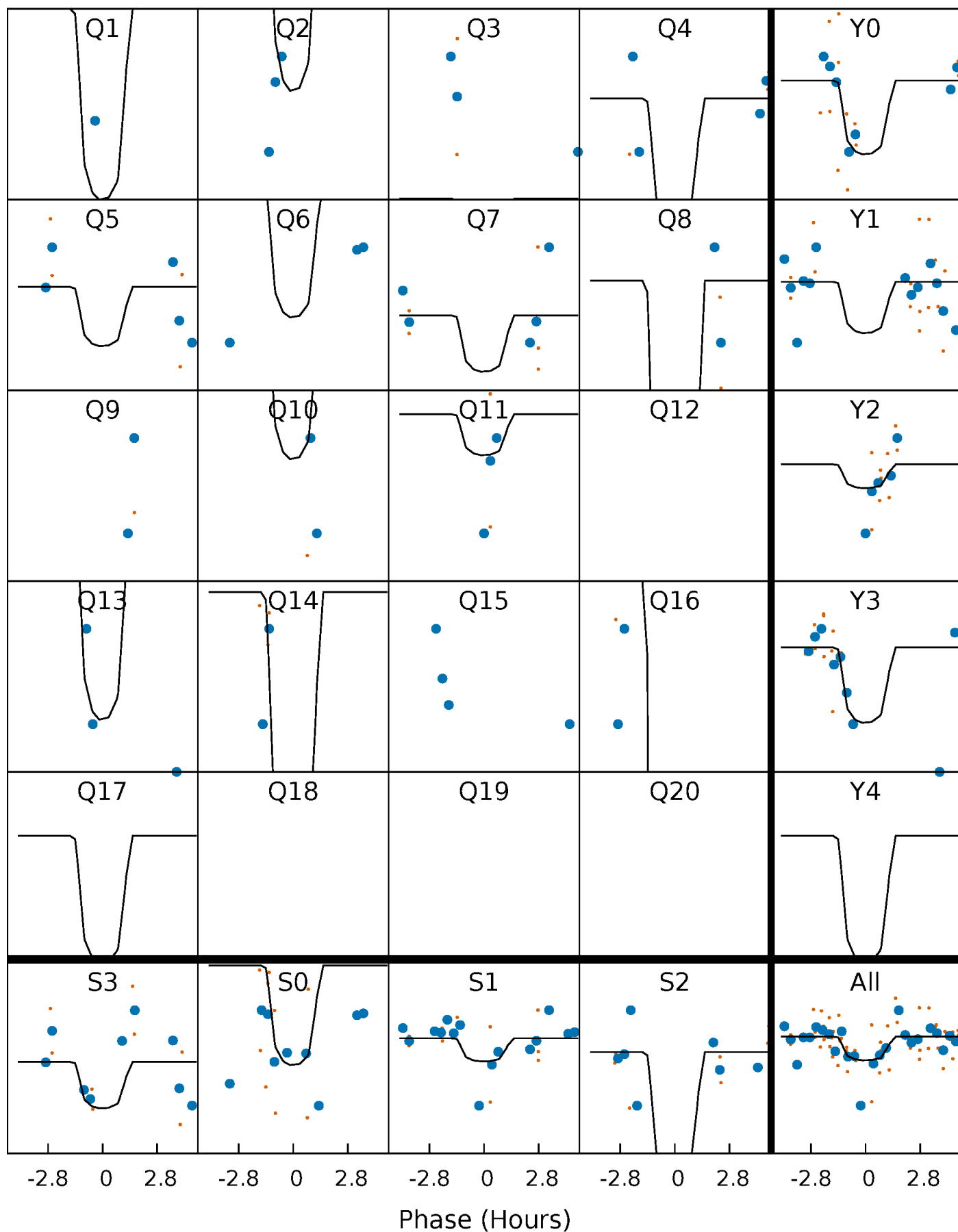
# PDC Quarter-Phased Transit Curves

TCE 007032218-06 P= 18.992012 Days  $T_0=138.678752$  (BKJD)



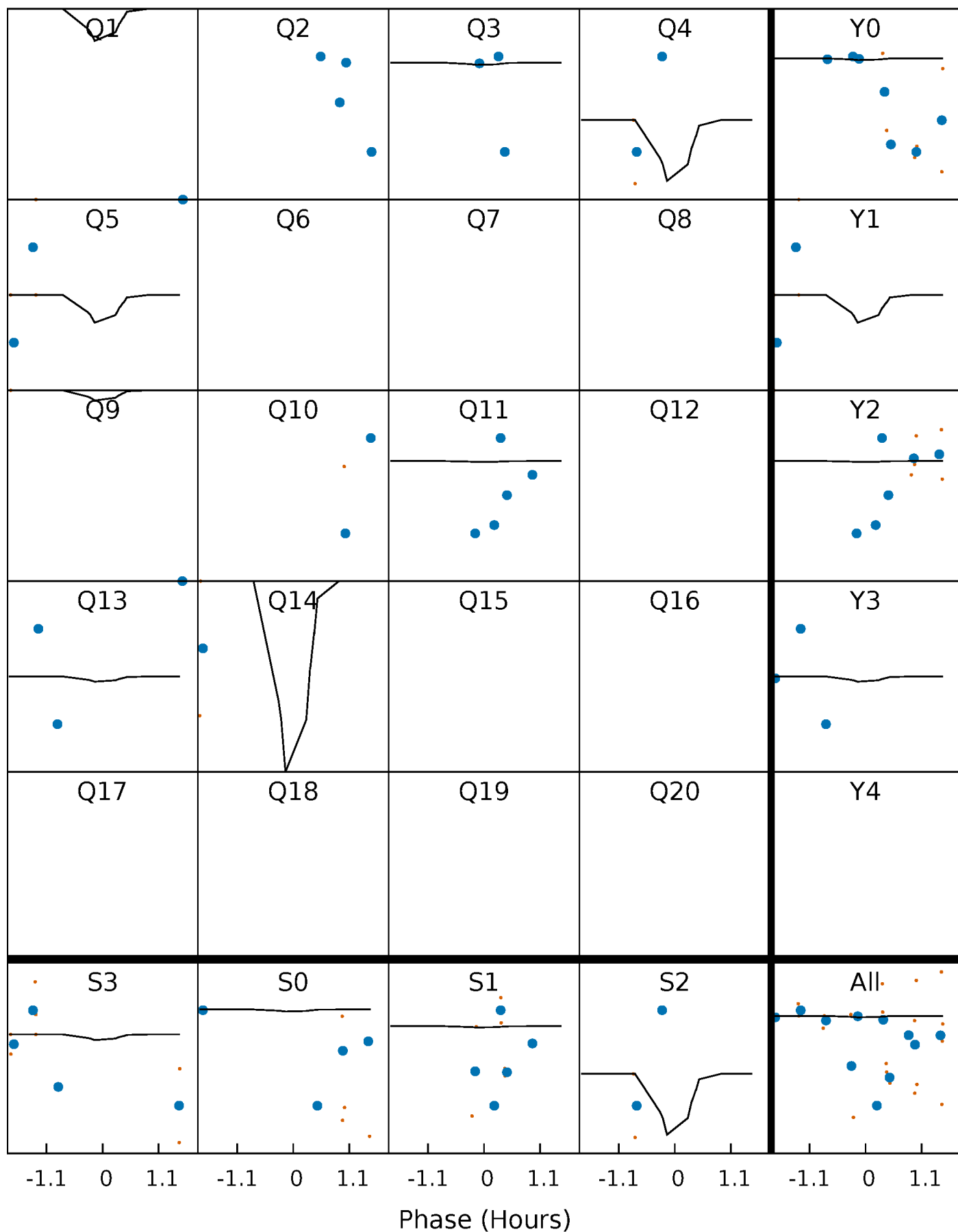
# DV Quarter-Phased Transit Curves

TCE 007032218-06 P= 18.992012 Days  $T_0=138.678752$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007032218-06 P= 18.993825 Days  $T_0=138.591109$  (BKJD)

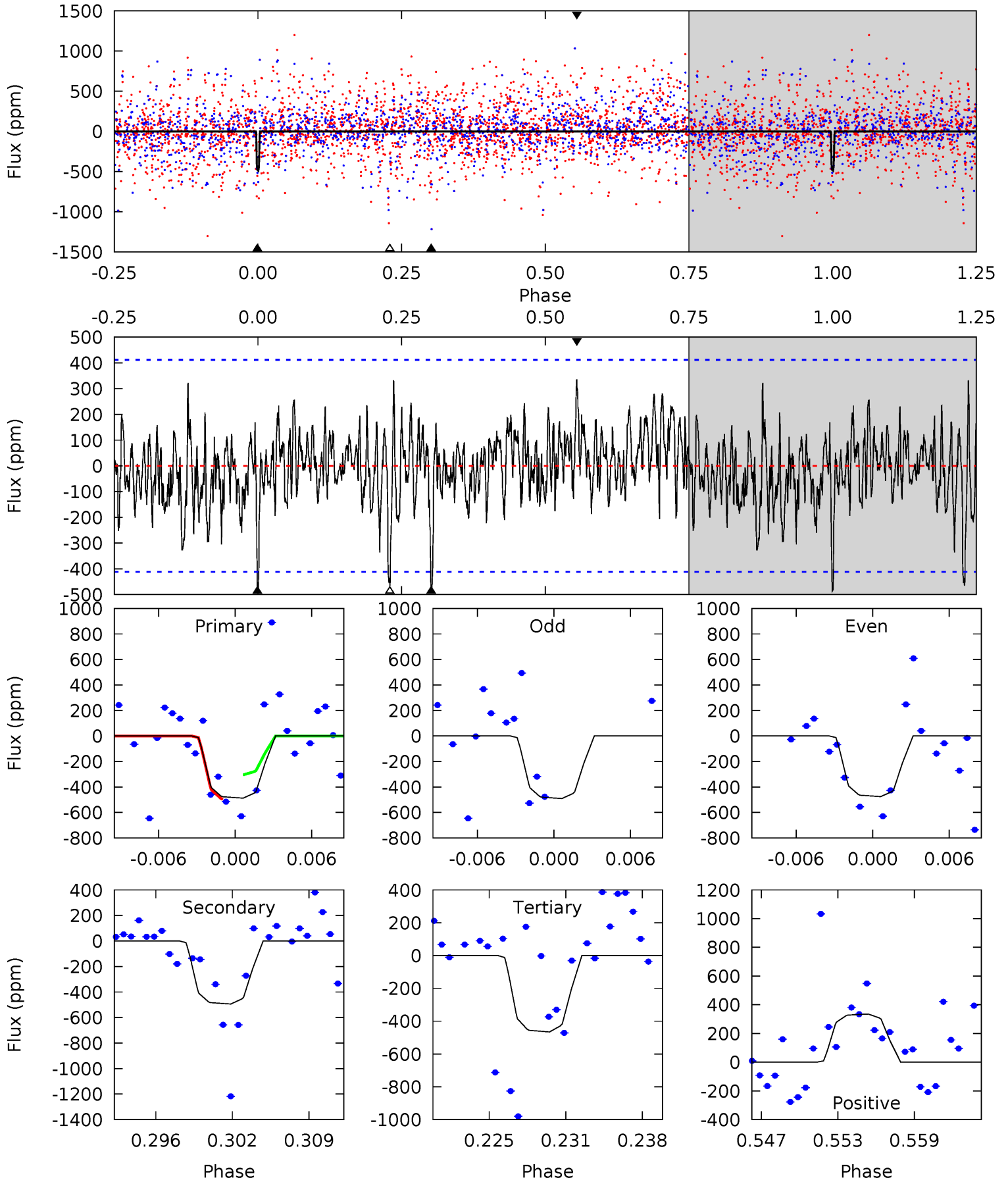




# DV Model-Shift Uniqueness Test

007032218-06, P = 18.992012 Days, E = 119.686740 Days

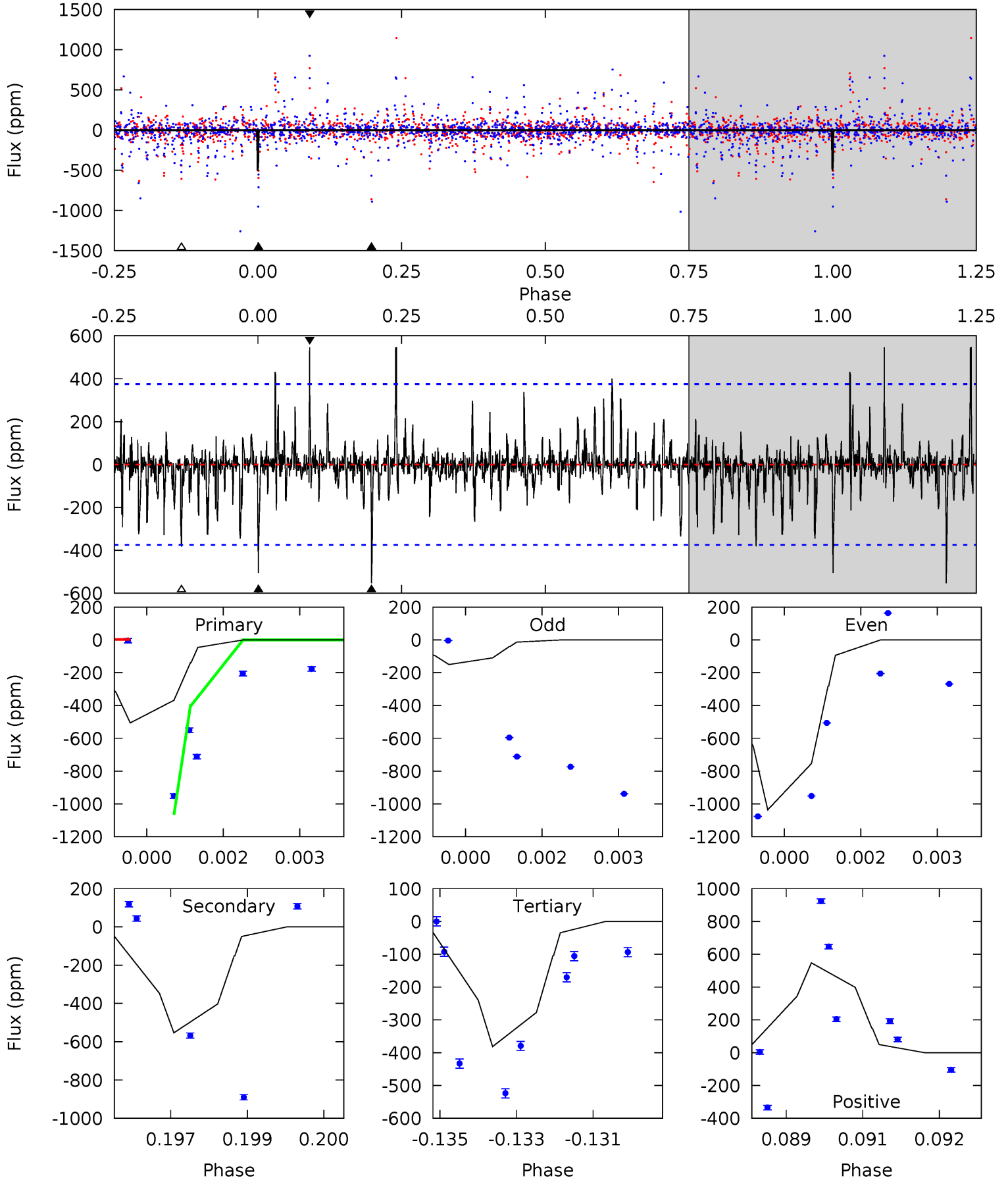
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.05	6.13	5.78	4.16	5.11	2.72	1.37	0.27	1.89	0.35	1.97	0.09	1.11	0.40	0



# Alt Model-Shift Uniqueness Test

007032218-06, P = 18.993825 Days, E = 119.597284 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
7.25	7.93	5.47	7.84	5.37	3.16	1.05	1.78	-0.59	2.46	0.08	3.29	1.00	0.50	6.65



### Stellar Parameters For KIC 007032218

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6088^{+164}_{-164}$	$4.262^{+0.186}_{-0.124}$	$-0.340^{+0.300}_{-0.300}$	$1.191^{+0.237}_{-0.237}$	$0.947^{+0.142}_{-0.095}$	$0.789^{+0.739}_{-0.308}$
	+3%/-3%	+4%/-3%	+88%/-88%	+20%/-20%	+15%/-10%	+94%/-39%
Source	PHO1	FLK73	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 007032218-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-494 \pm 81$	$10.00^{+11.00}_{-6.99}$	$1098^{+62}_{-67}$	$3669^{+2154}_{-741}$	$51^{+498}_{-39}$
Alt.	$-553 \pm 70$	$9.15^{+9.09}_{-6.33}$	$1101^{+58}_{-64}$	$3894^{+2368}_{-798}$	$68^{+631}_{-51}$

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

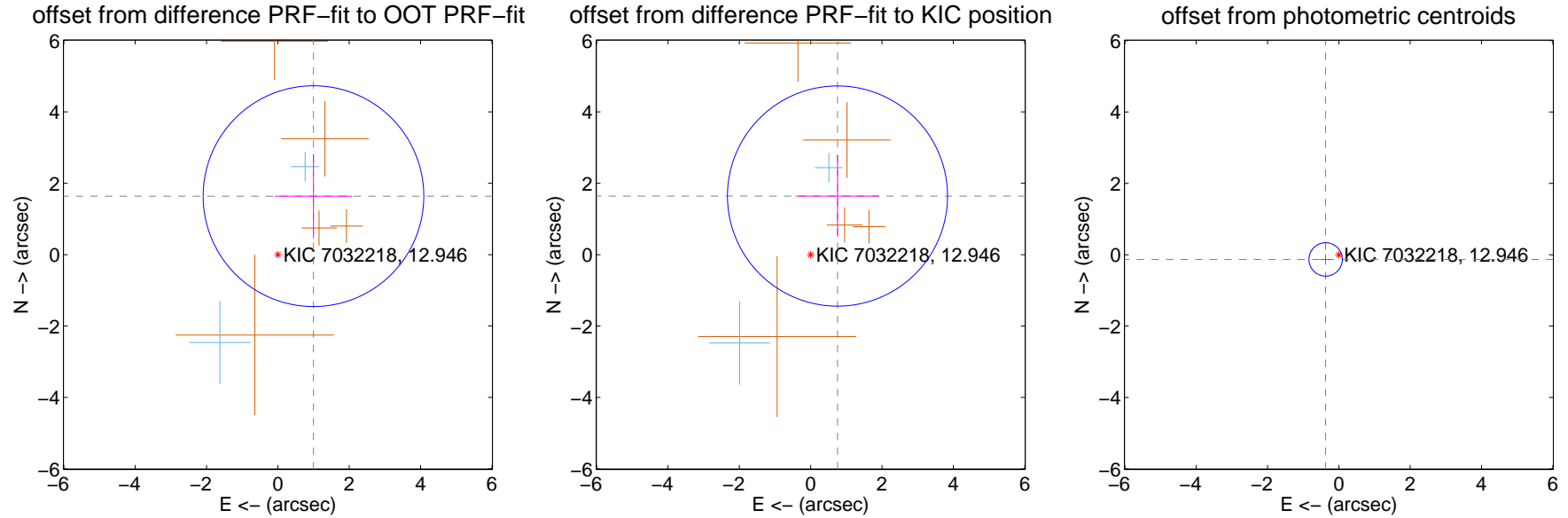
## DV Centroid Data

Supplemental centroid analysis for 007032218-06. Kepler magnitude: 12.95. Transit SNR 8.75

There are 2 quarters with good PRF difference image offsets

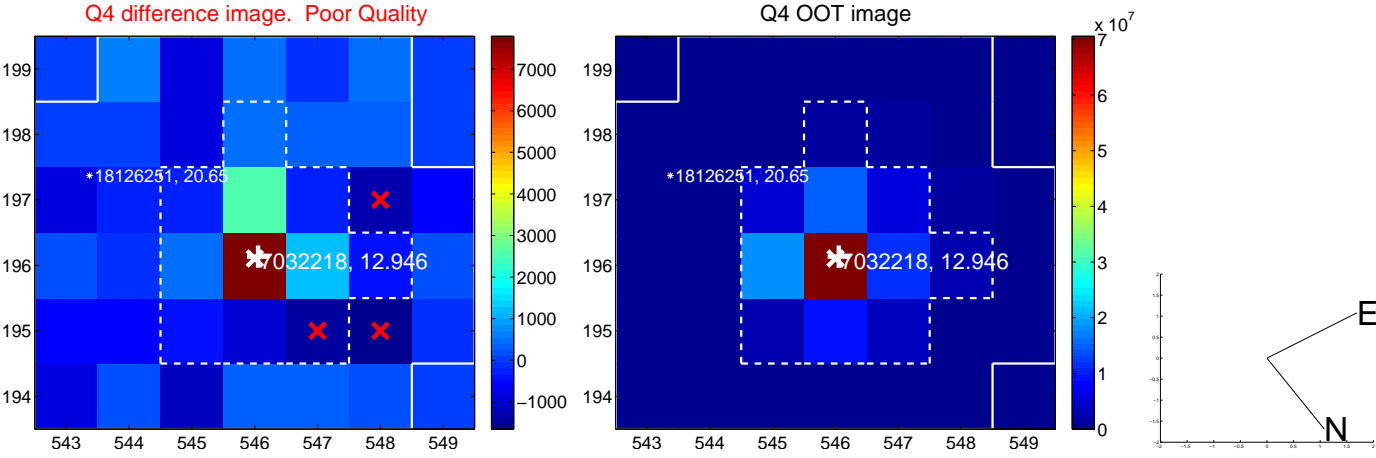
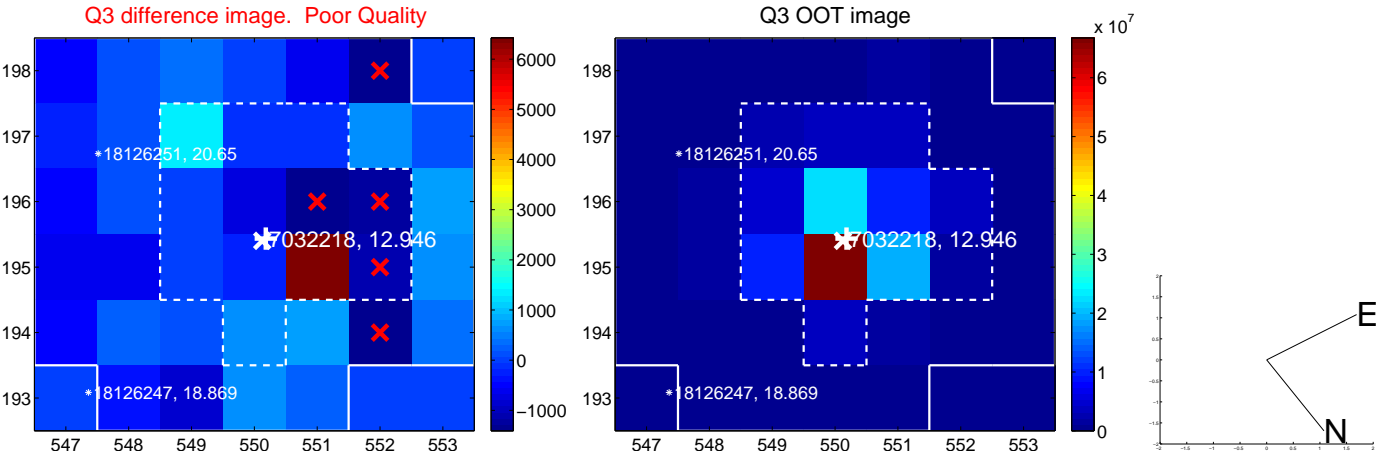
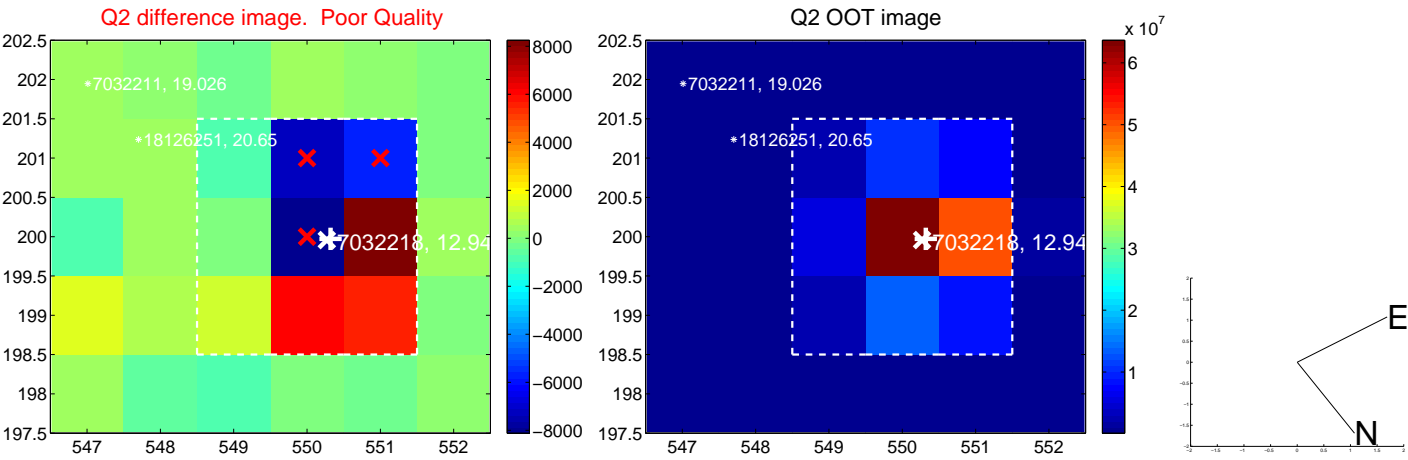
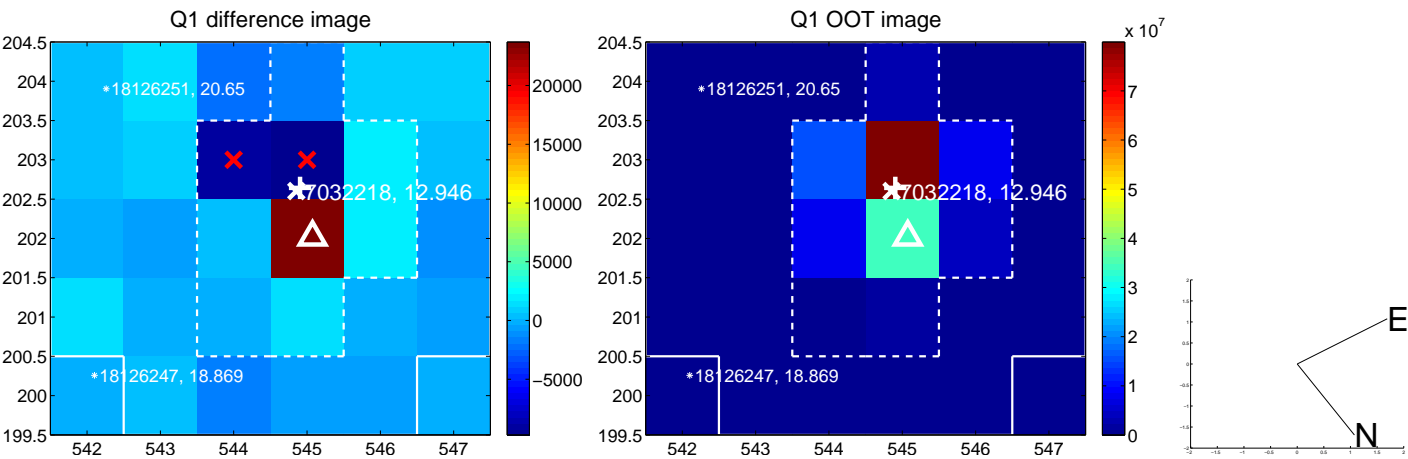
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.918 \pm 1.031$	1.86	$-0.997 \pm 1.079$	$1.638 \pm 1.181$
PRF-fit source offset from KIC position	$1.805 \pm 1.028$	1.76	$-0.752 \pm 1.171$	$1.641 \pm 1.143$
photometric centroid source offset	$0.39 \pm 0.16$	2.52	$0.37 \pm 0.16$	$-0.13 \pm 0.14$

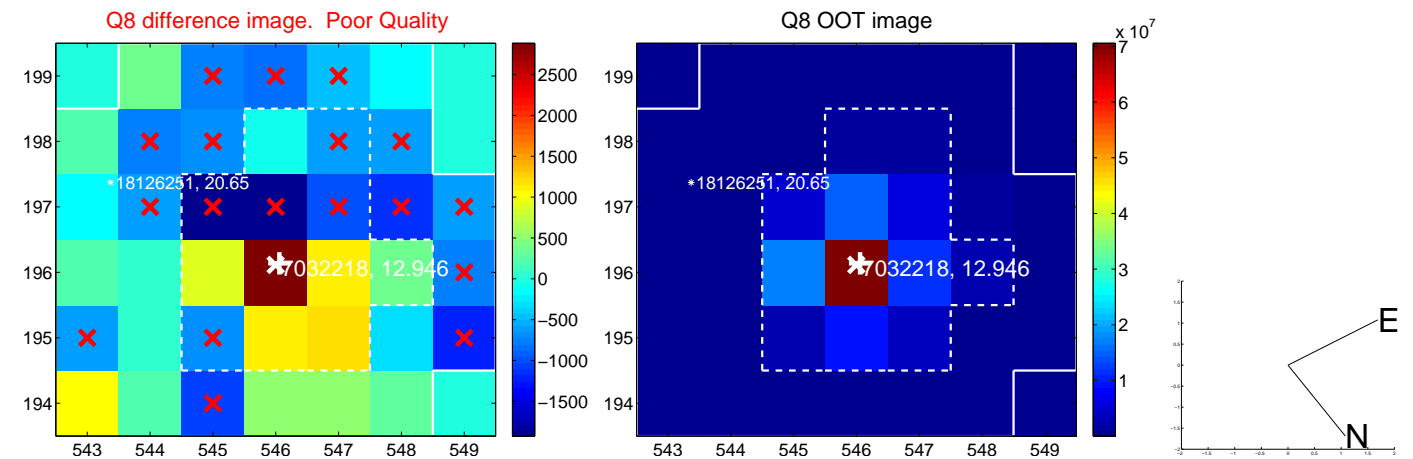
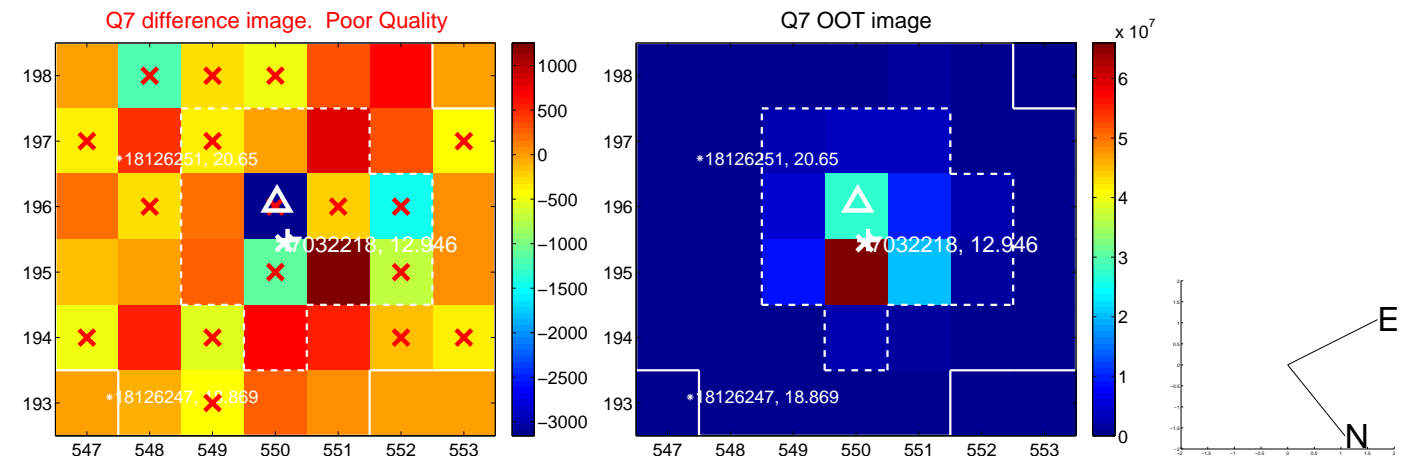
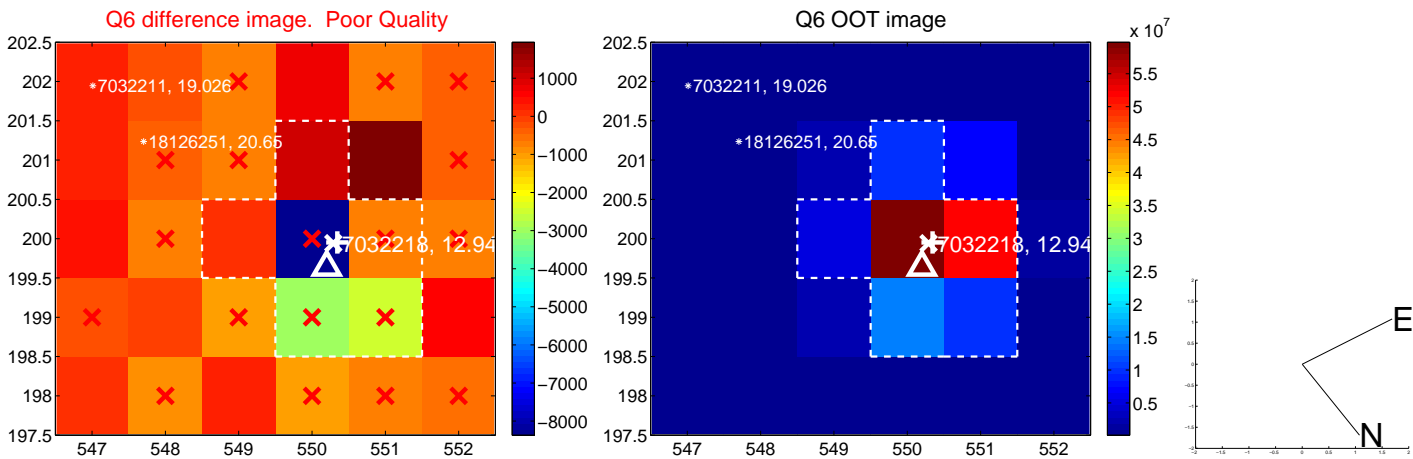
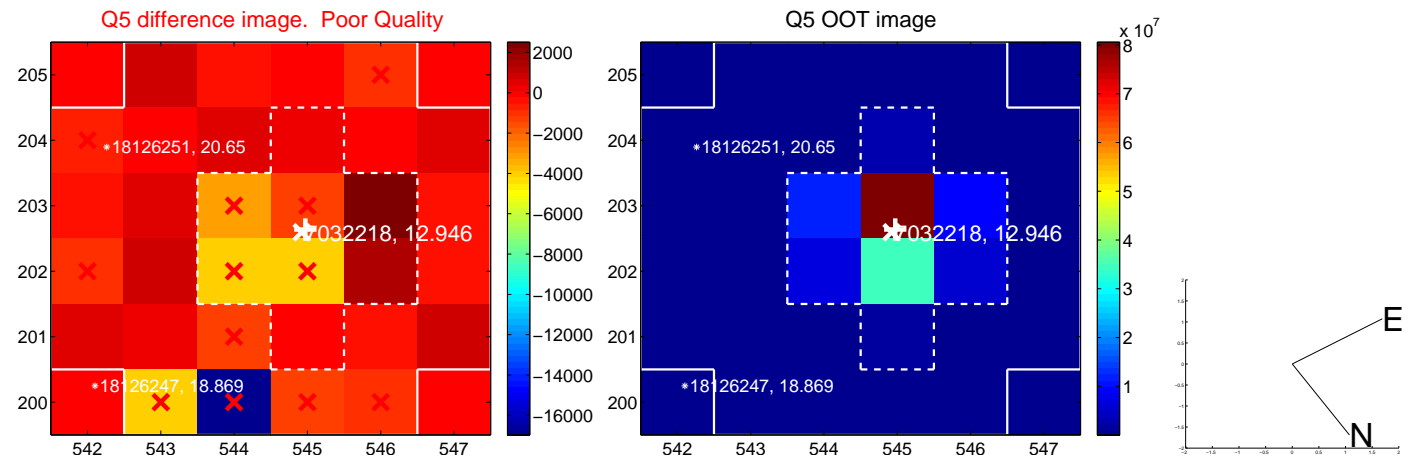


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

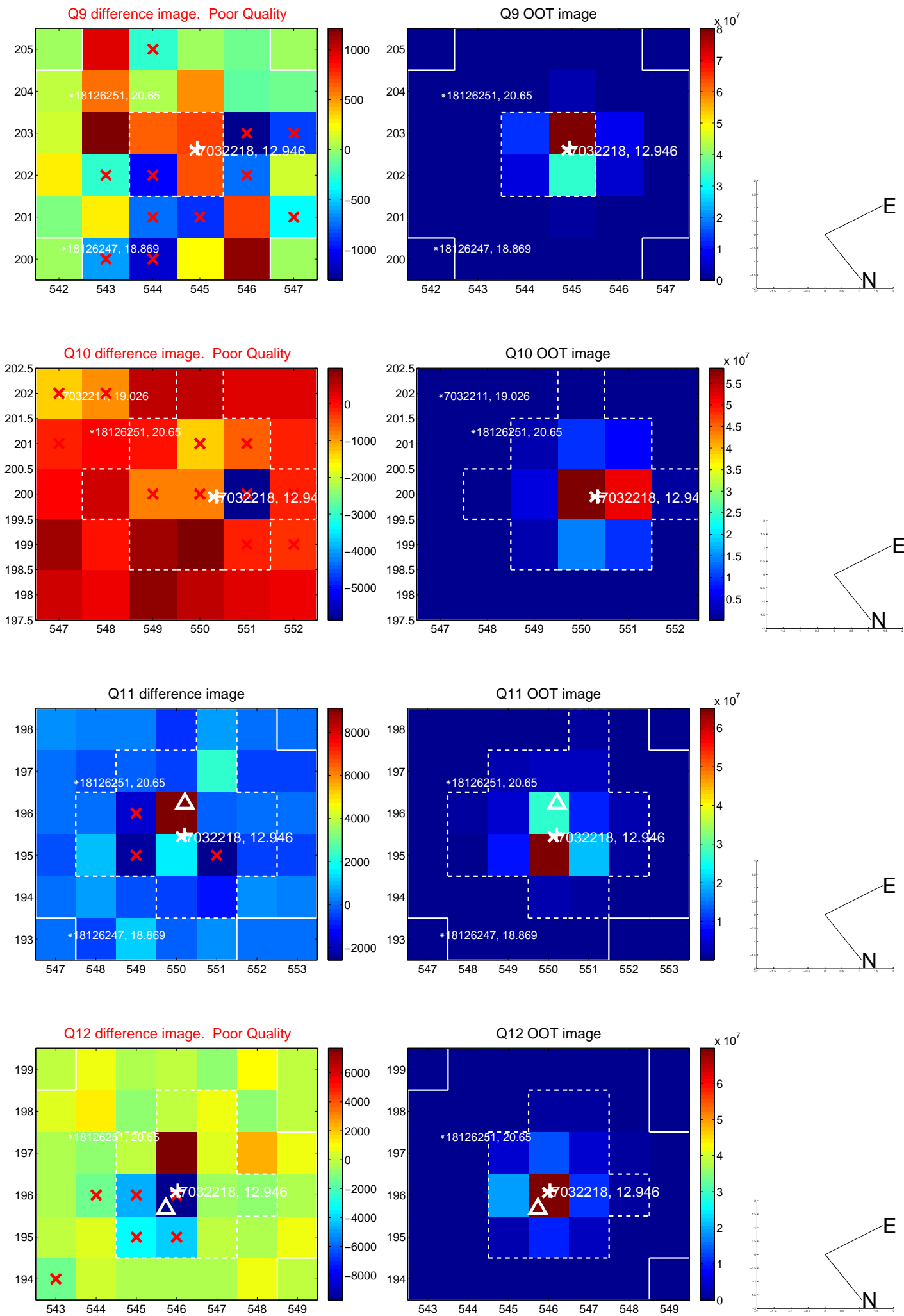
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



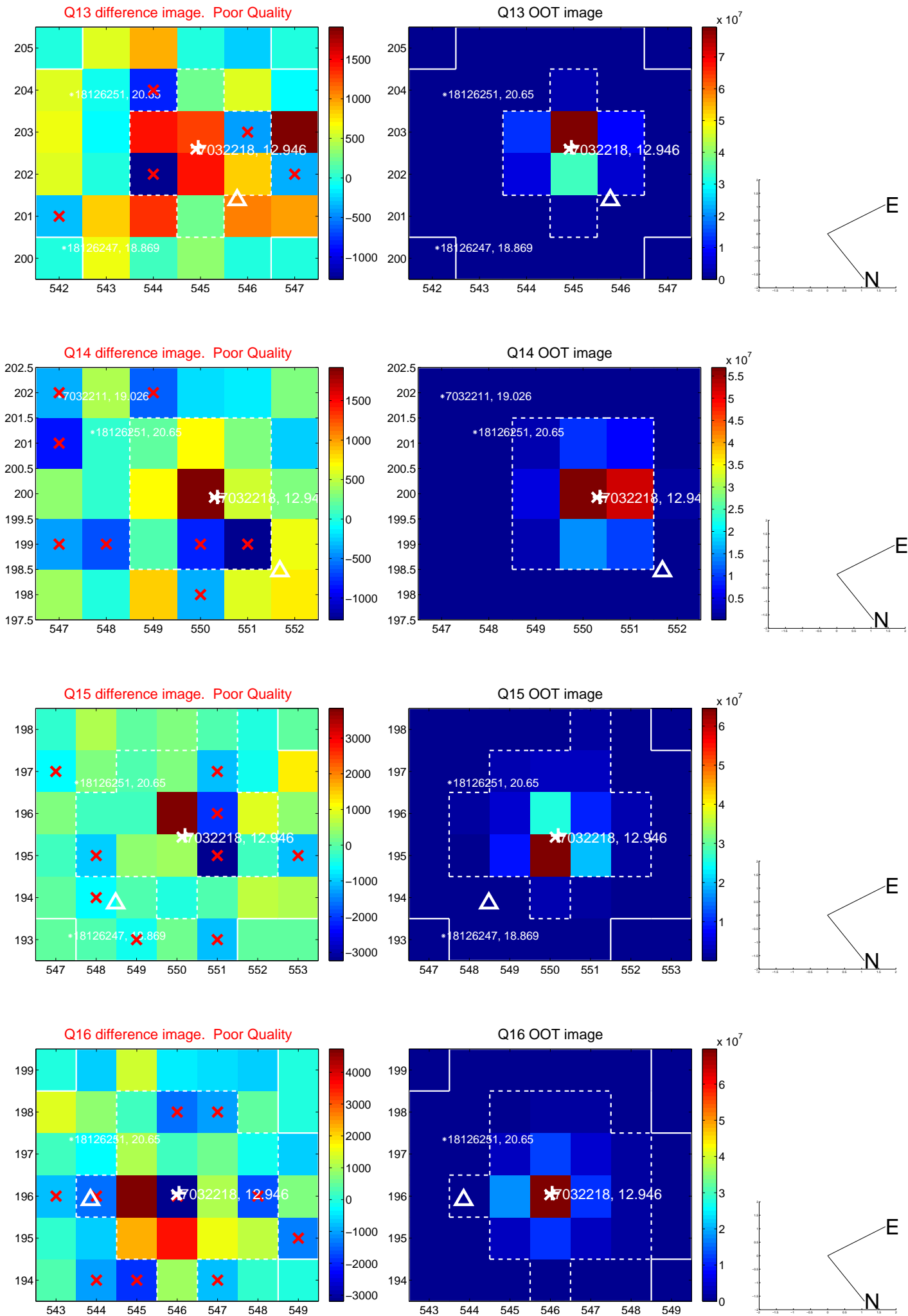
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

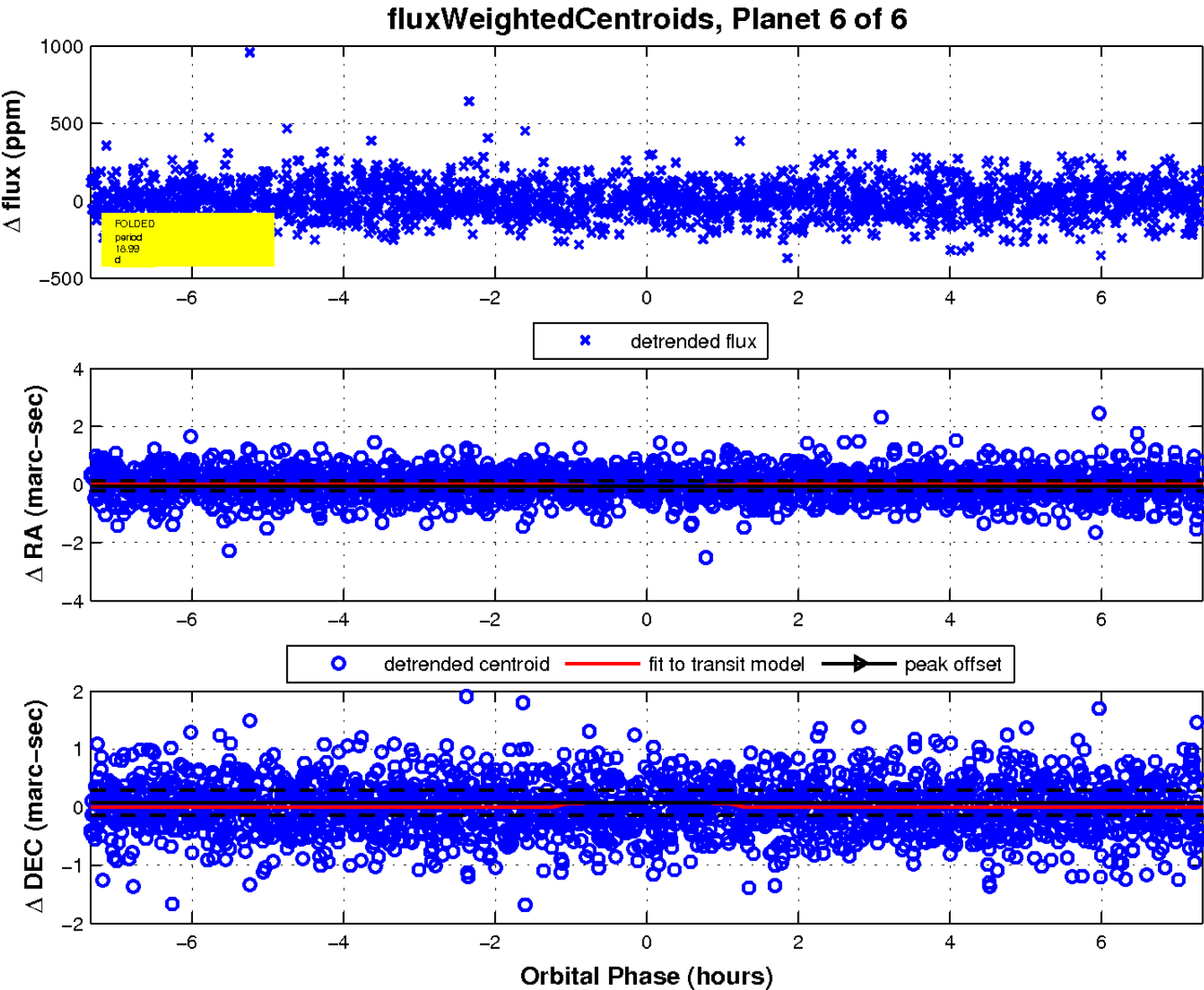
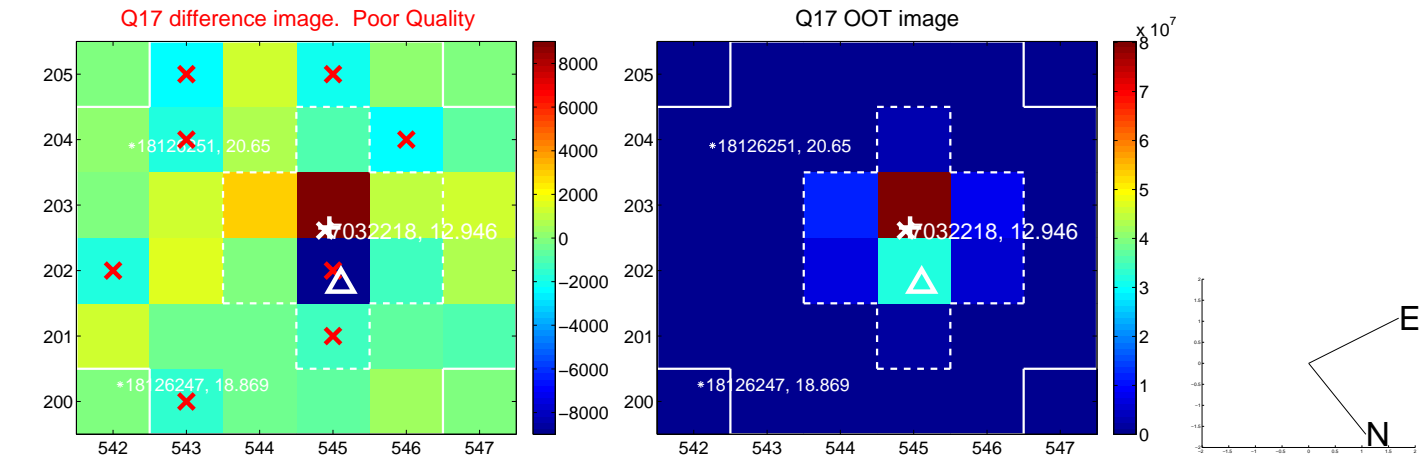


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

