

# KIC 007362587

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007362587-01	OBS	No	0.566749	131.873256	9.2	3.909	13.6	9.6	2.03	5345	0.66	16084.16
007362587-02	OBS	No	41.628373	168.157945	204.9	1.153	11.2	10.7	2.03	5345	2.87	52.29
007362587-03	OBS	No	47.284540	136.155573	199.7	0.949	9.8	10.7	2.03	5345	3.01	44.12
007362587-04	OBS	No	34.980600	132.052193	146.0	1.723	9.2	9.7	2.03	5345	2.63	65.94
007362587-05	OBS	No	39.417959	134.519098	193.2	1.144	10.0	12.1	2.03	5345	2.82	56.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007362587-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
007362587-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
007362587-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
007362587-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007362587-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

**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.

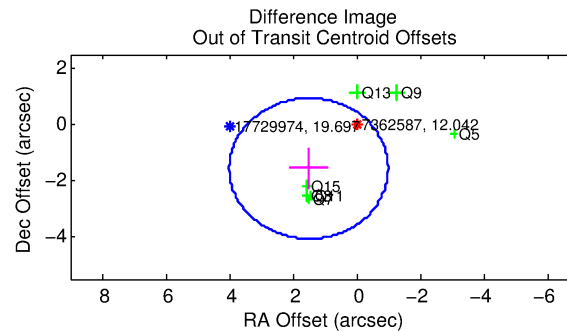
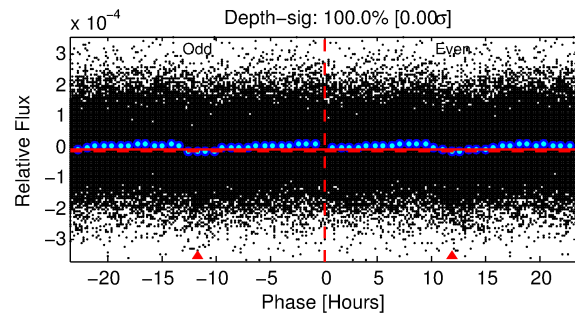
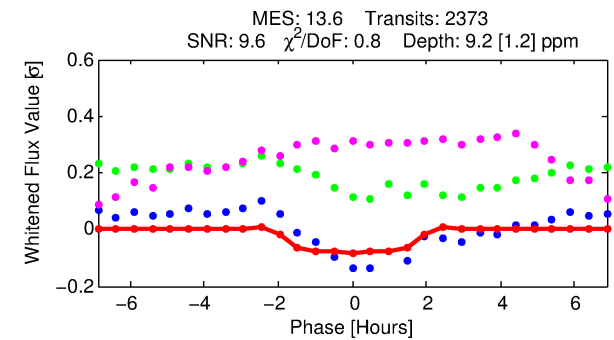
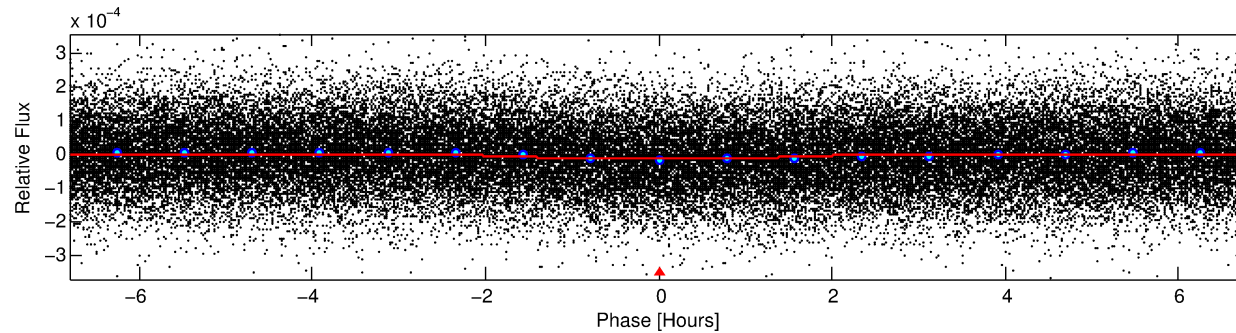
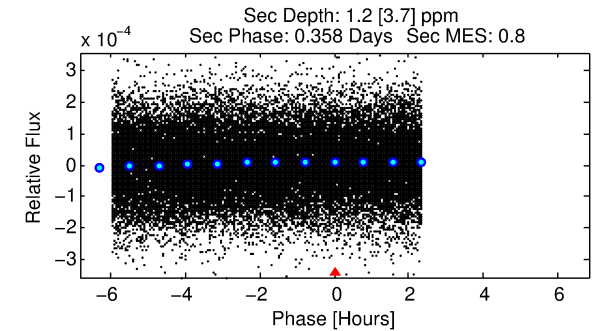
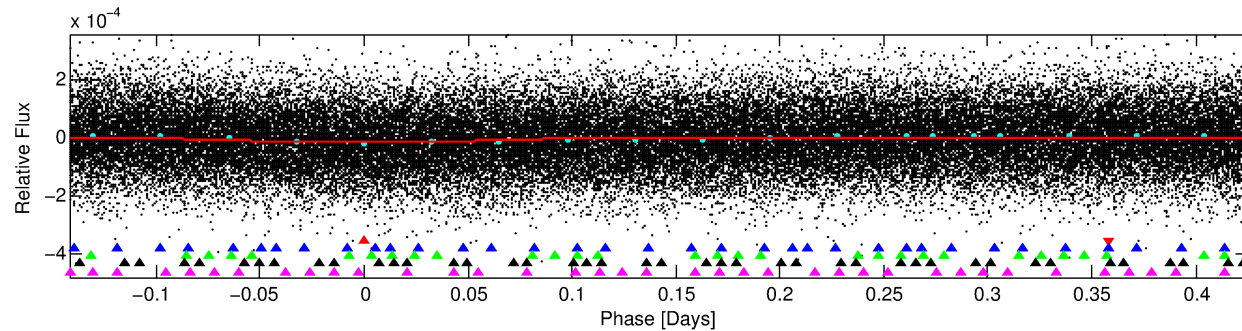
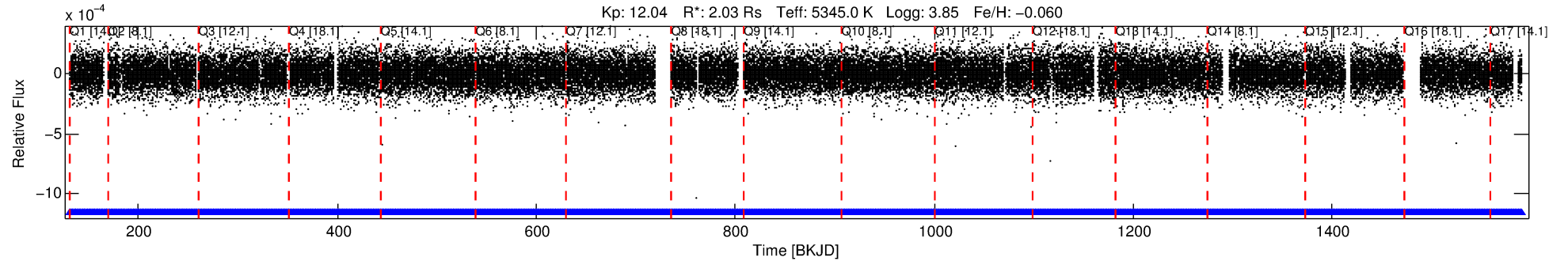
## Ephemeris Match Information For 007362587-01

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	$\sigma_P$	$\sigma_T$
007362587-01	7362587	RR-Lyr-pri	7198959	1:1	1053.3	33	262	7.86	12.04	69255.00	Direct-PRF	0	0.18	21.19

**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: 7362587 Candidate: 1 of 5 Period: 0.567 d



## DV Fit Results:

Period = 0.56675 [0.00001] d  
Epoch = 131.8733 [0.0044] BKJD  
 $R_p/R^*$  = 0.0030 [0.0016]  
 $a/R^*$  = 1.15 [0.59]  
 $b$  = 0.70 [1.57]  
 $S_{\text{eff}}$  = 16084.16 [3858.38]  
 $T_{\text{eq}}$  = 2872 [172] K  
 $R_p$  = 0.66 [0.37]  $R_e$   
 $a$  = 0.0137 [0.0022] AU  
 $A_g$  = 0.30 [0.94] [-0.75σ]  
 $T_{\text{eff}}$  = 3273 [2592] K [0.15σ]

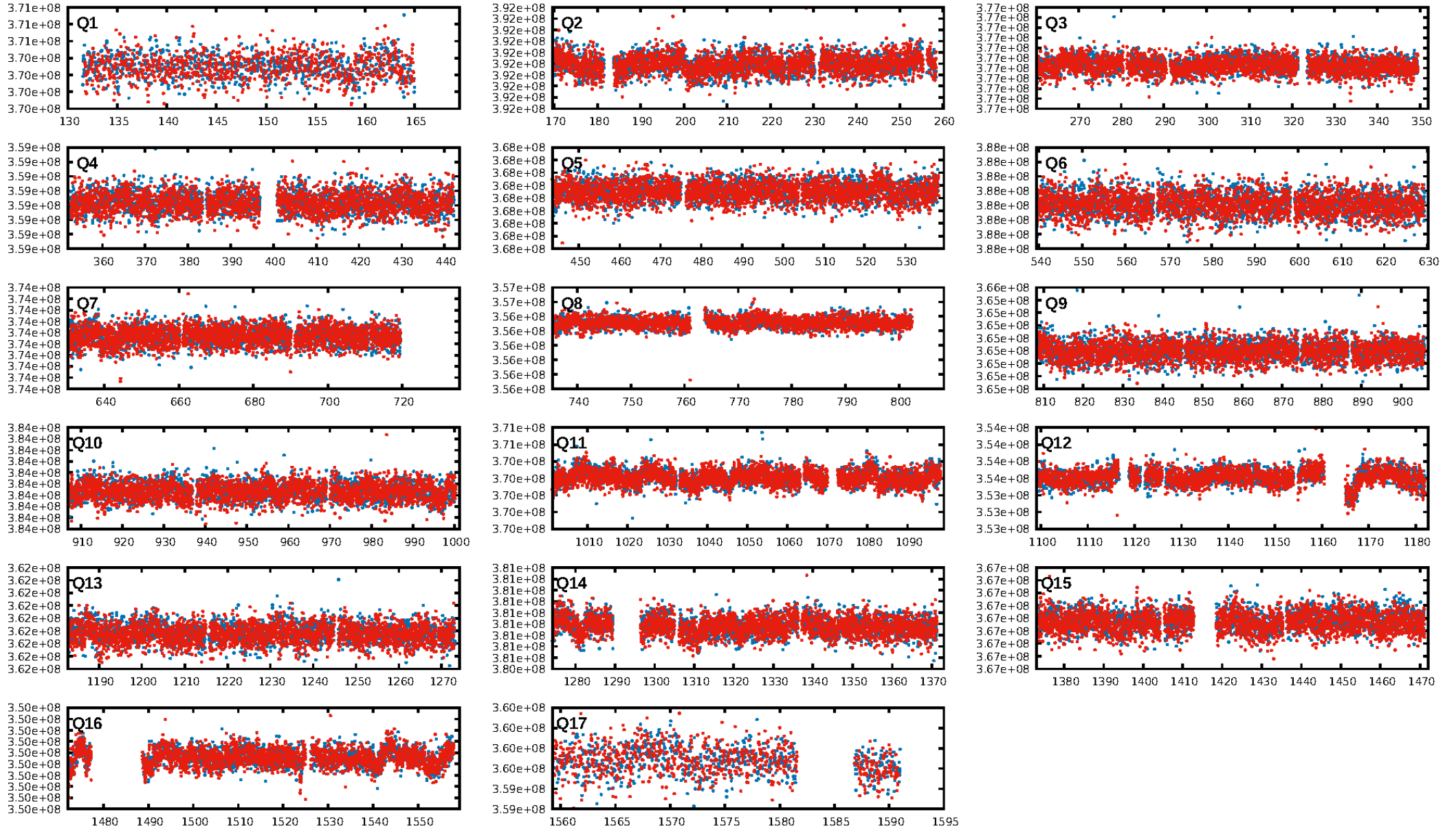
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [193.36σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.26e-19  
RollingBand-fgt: 1.00 [2267/2267]  
**GhostDiagnostic-chr: 0.4604**  
**Centroid-sig: 0.0%**  
Centroid-so: 2.397 arcsec [2.99σ]  
OotOffset-rm: 2.166 arcsec [2.60σ]  
KicOffset-rm: 2.093 arcsec [2.46σ]  
OotOffset-st: 0/4/0/3 [7]  
KicOffset-st: 0/4/0/3 [7]  
DiffImageQuality-fgm: 0.86 [6/7]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:18:24 Z

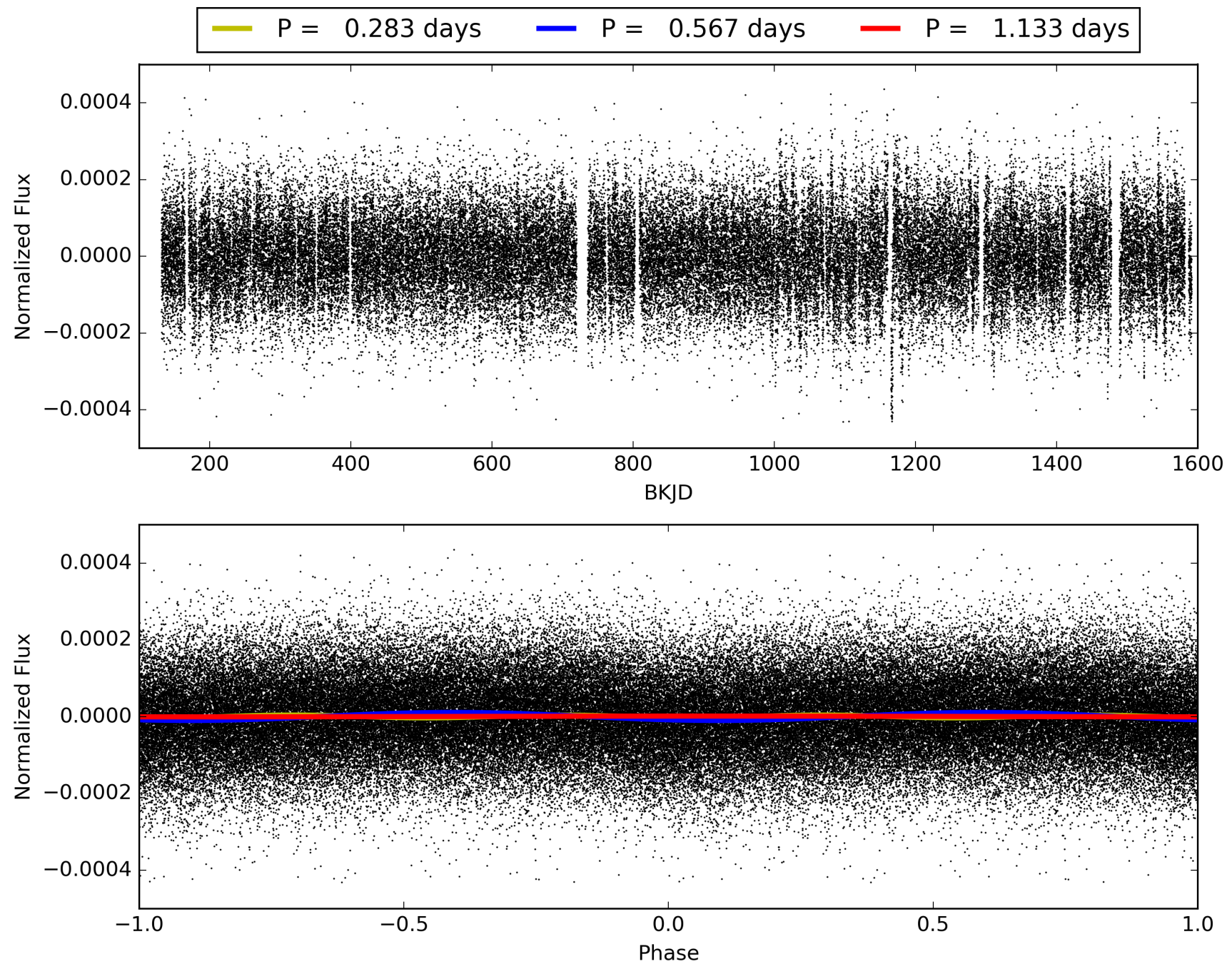
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007362587-01, PDC Light Curves





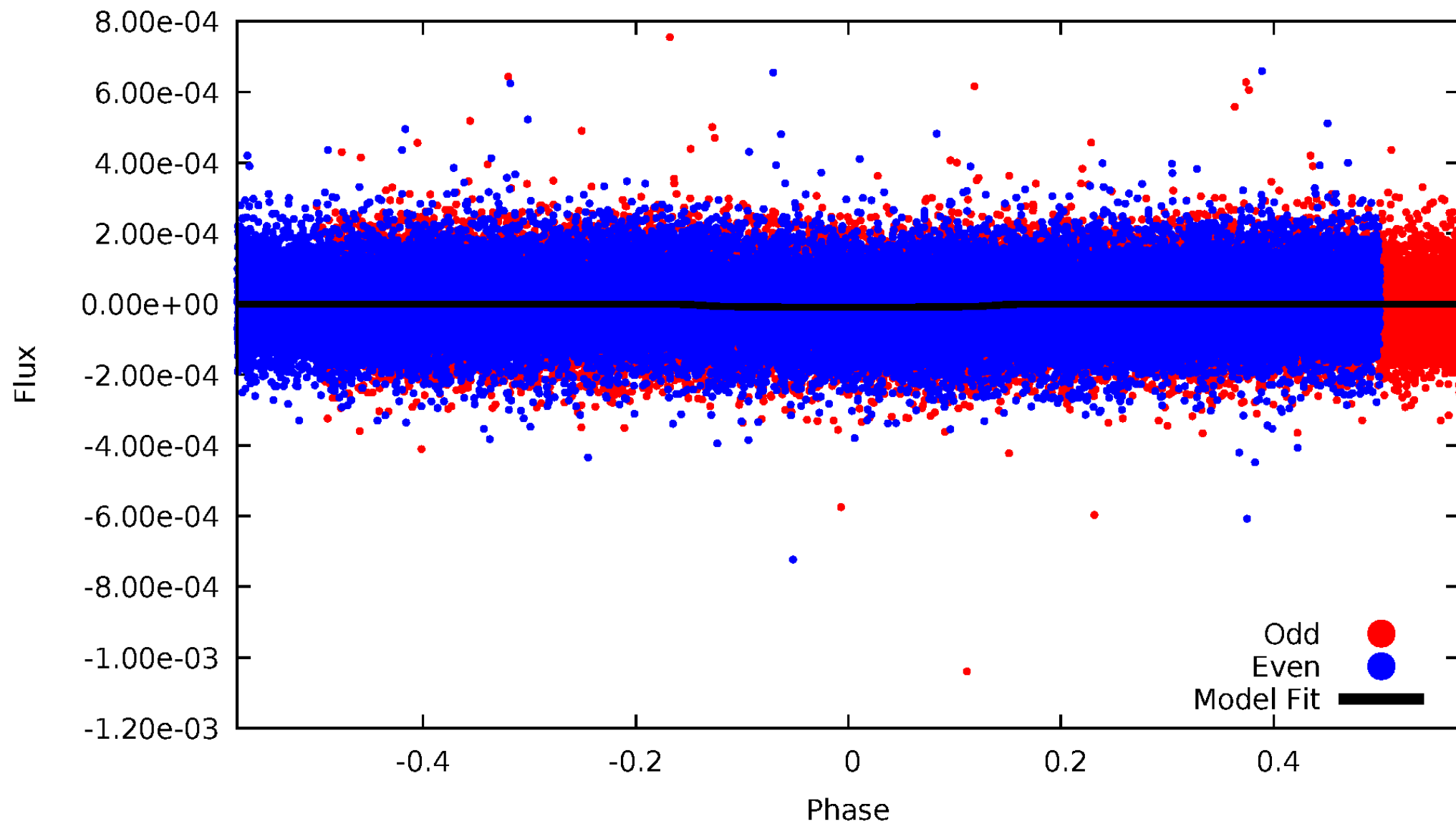
TCE 007362587-01





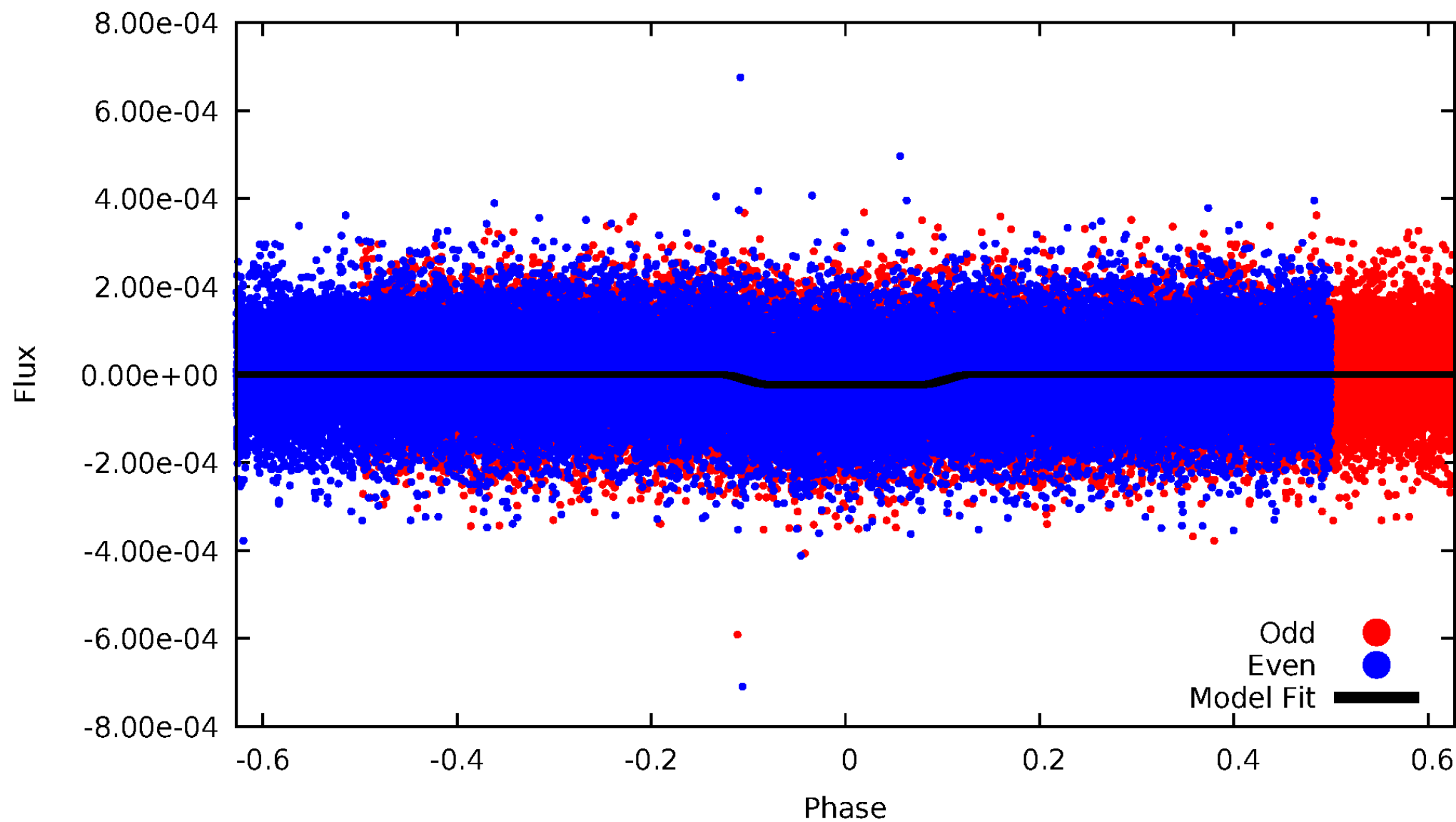
# DV Odd/Even

TCE 007362587-01

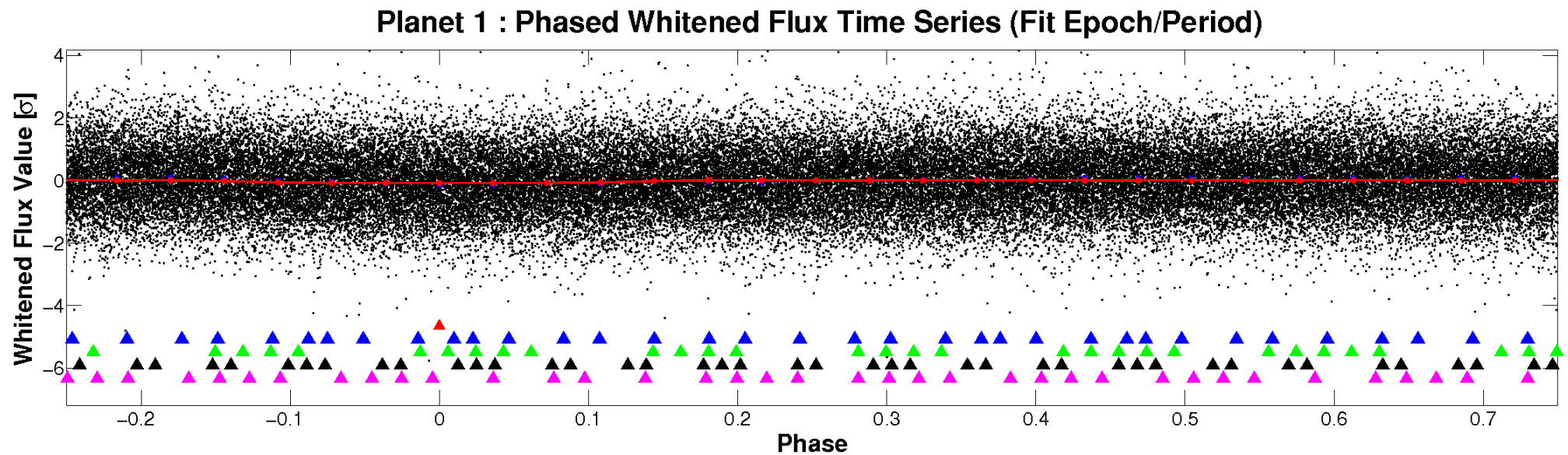
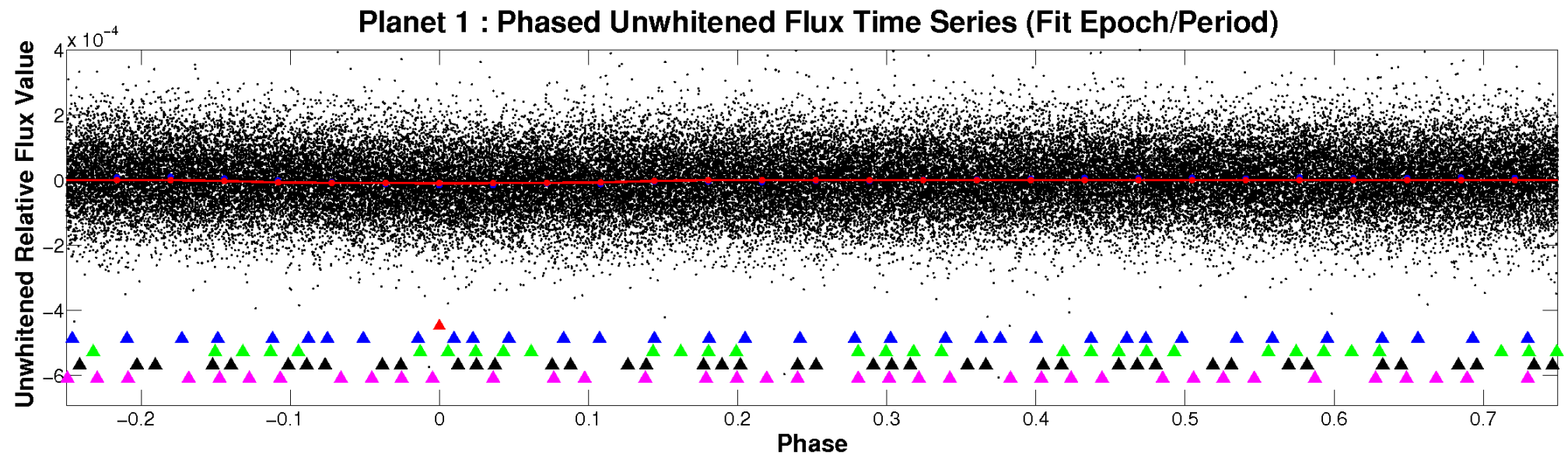


# ALT Odd/Even

TCE 007362587-01



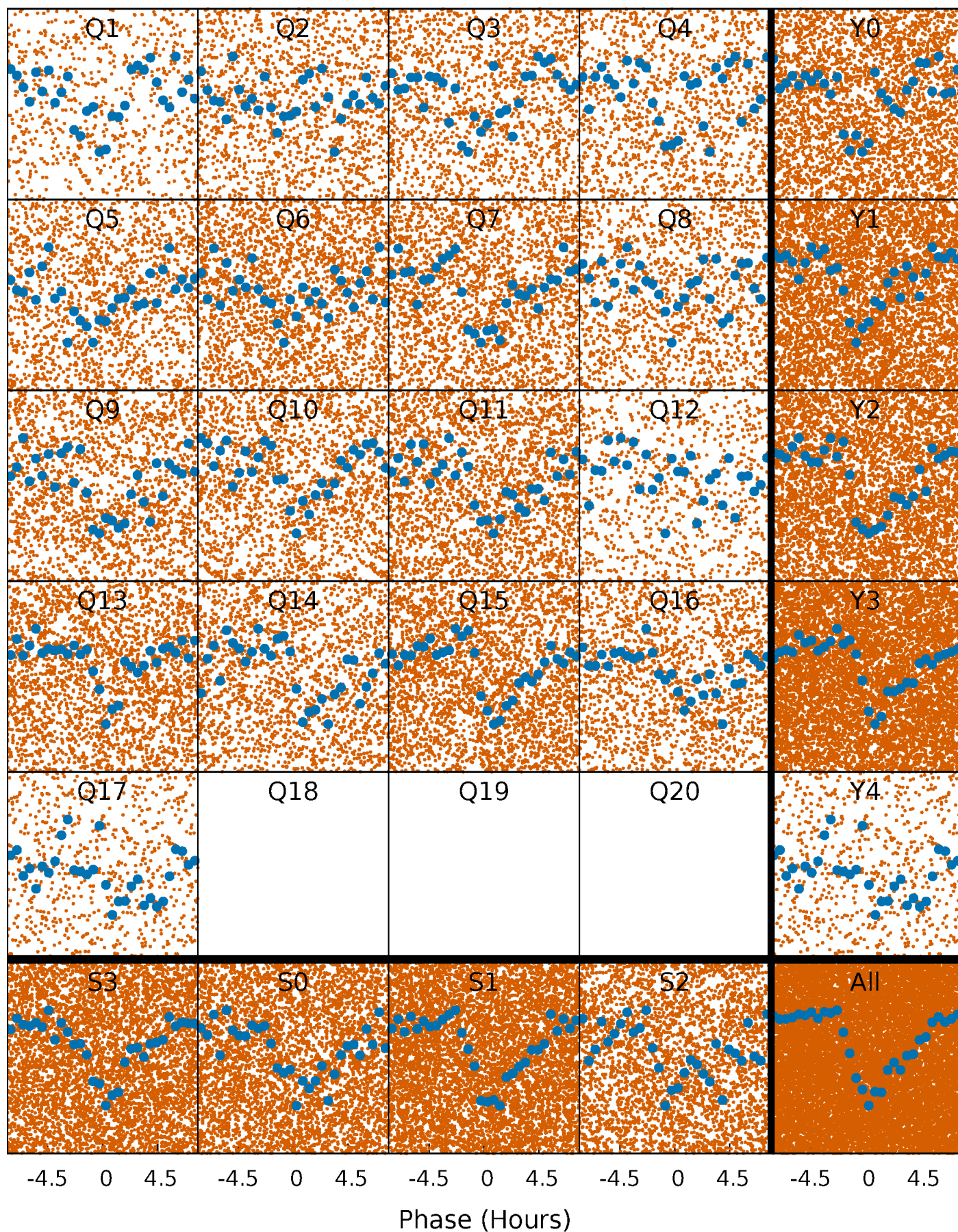
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

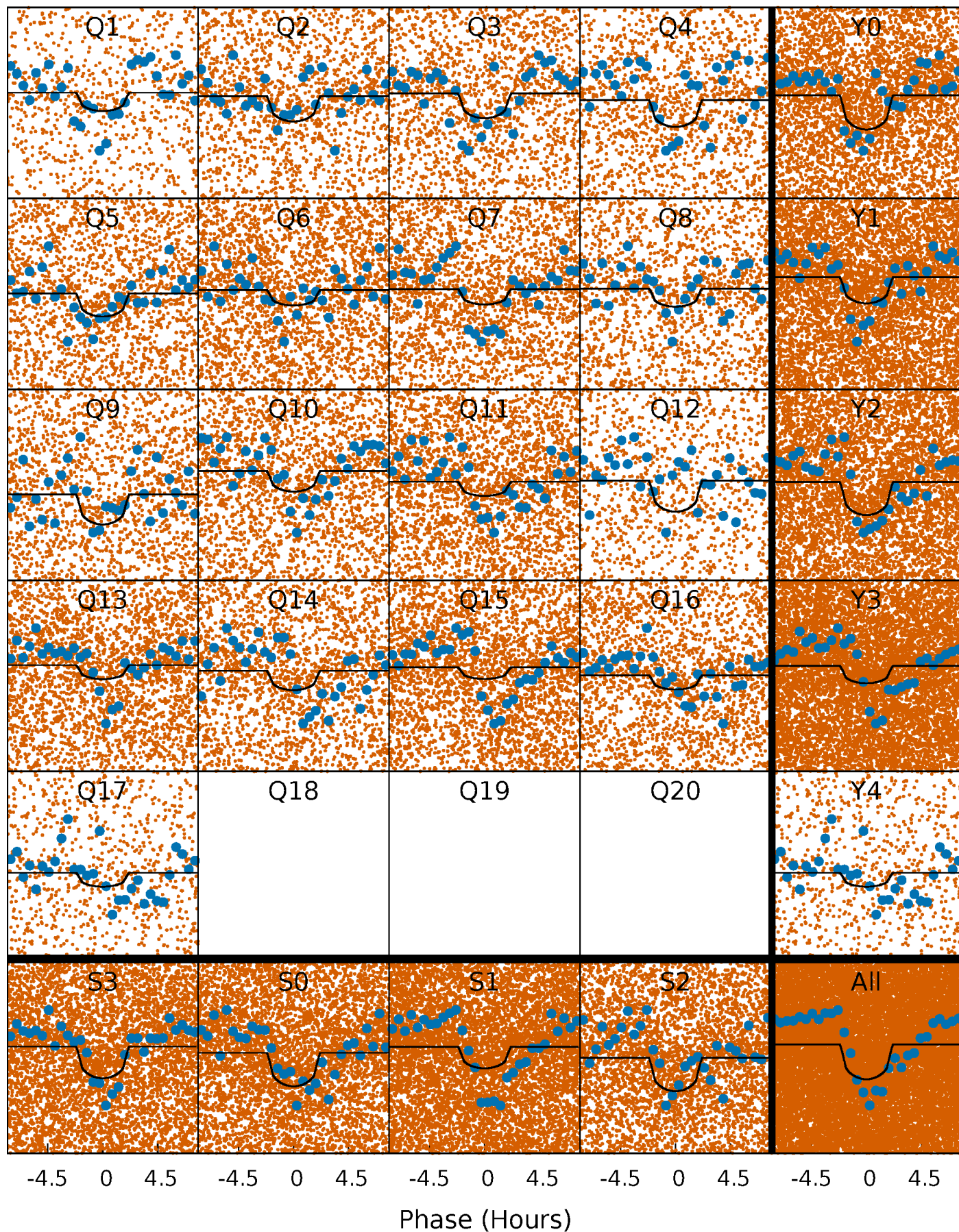
TCE 007362587-01 P= 0.566749 Days  $T_0=131.873256$  (BKJD)





# DV Quarter-Phased Transit Curves

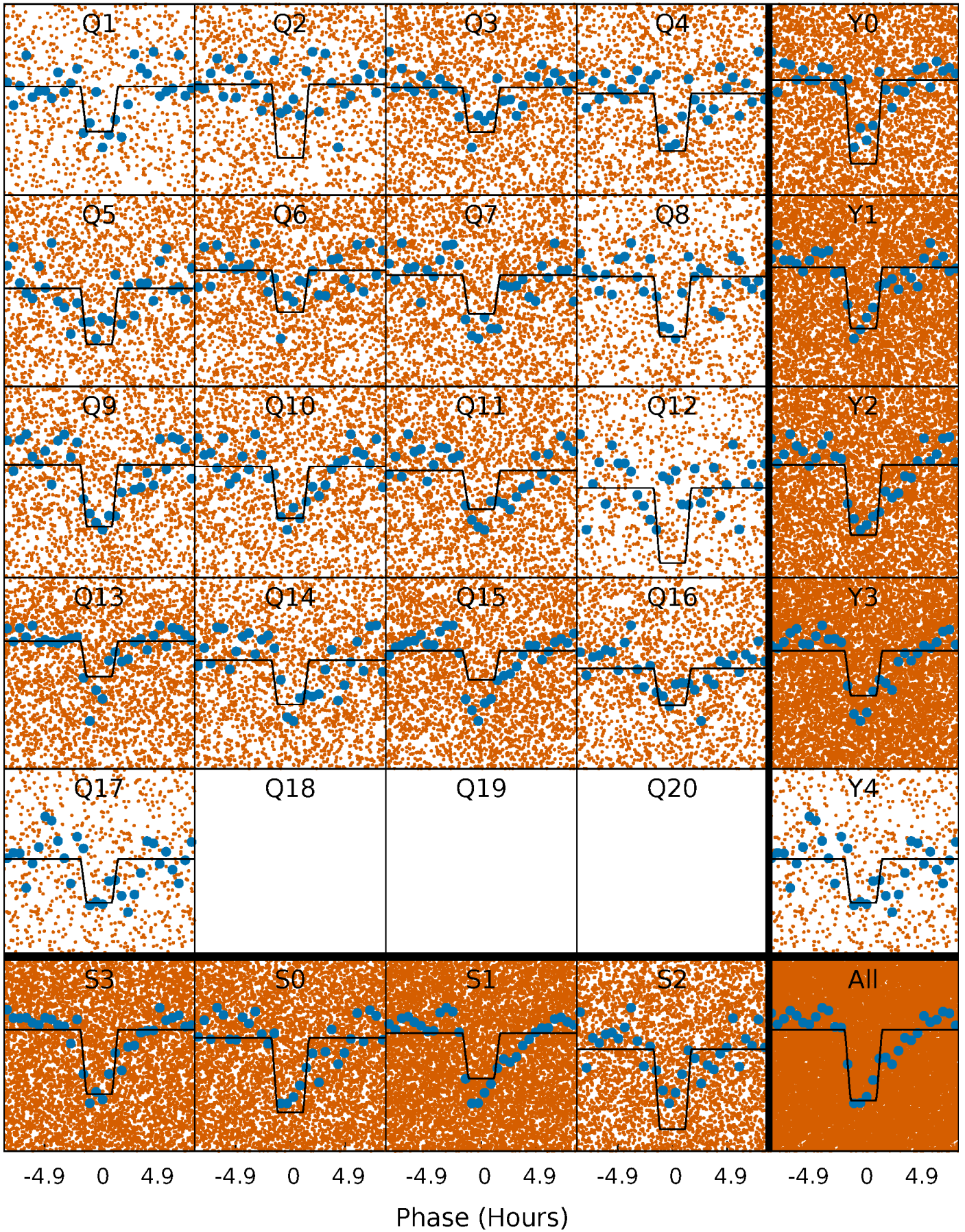
TCE 007362587-01 P= 0.566749 Days  $T_0=131.873256$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 007362587-01 P= 0.566788 Days  $T_0=131.835078$  (BKJD)

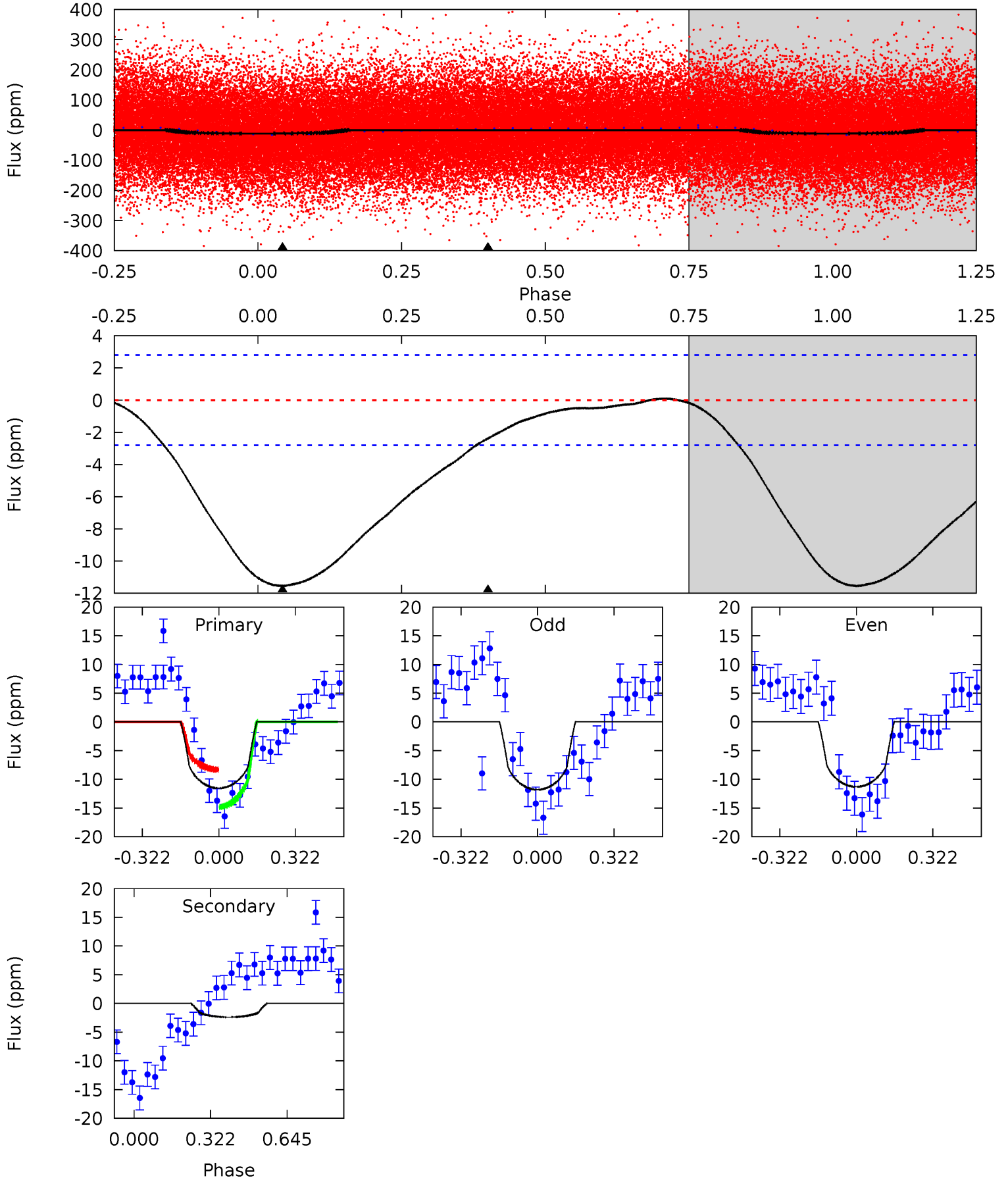




# DV Model-Shift Uniqueness Test

007362587-01, P = 0.566749 Days, E = 131.306507 Days

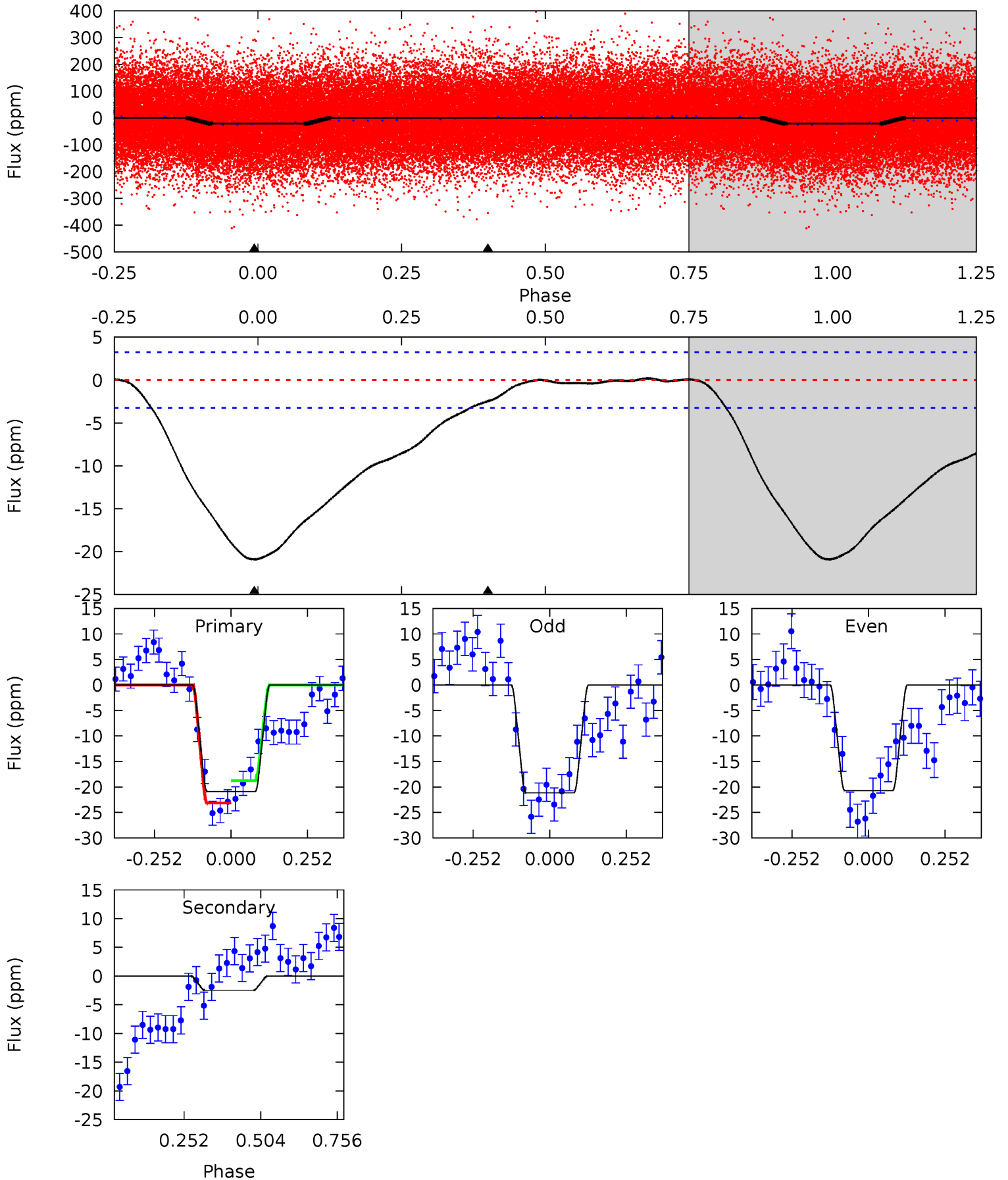
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	3.68	0	0	4.31	0.99	0.26	17.8	17.8	3.68	3.68	0.38	0.97	0.01	4.99



# Alt Model-Shift Uniqueness Test

007362587-01, P = 0.566788 Days, E = 131.268290 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
28.2	3.34	0	0	4.37	1.15	0.14	28.2	28.2	3.34	3.34	0.30	1.04	0.01	2.97



### Stellar Parameters For KIC 007362587

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5345^{+85}_{-74}$	$3.851^{+0.126}_{-0.103}$	$-0.060^{+0.150}_{-0.150}$	$2.034^{+0.387}_{-0.387}$	$1.072^{+0.153}_{-0.139}$	$0.179^{+0.115}_{-0.060}$
	+2%/-1%	+3%/-3%	+250%/-250%	+19%/-19%	+14%/-13%	+64%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 007362587-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	-2±1	$0.66^{+0.35}_{-0.35}$	$3995^{+194}_{-188}$	$3531^{+1922}_{-6502}$	$0.544^{+2.063}_{-0.318}$
Alt.	-2±1	$1.06^{+0.39}_{-0.36}$	$4008^{+182}_{-169}$	$-3007^{+6502}_{-445}$	$0.221^{+0.300}_{-0.117}$

$T_{\text{max}}$  = 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

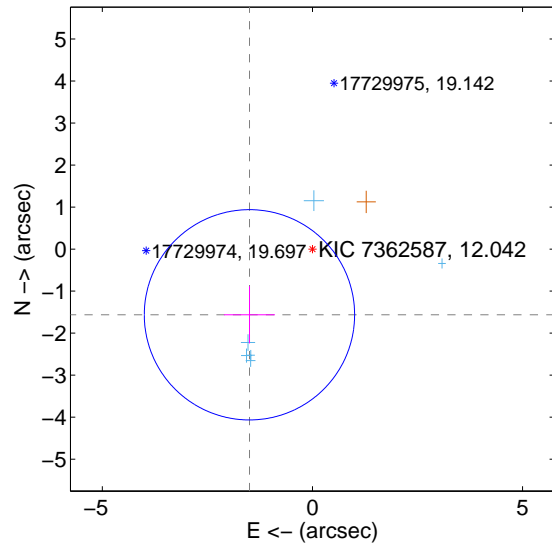
Supplemental centroid analysis for 007362587-01. Kepler magnitude: 12.04. Transit SNR 9.64

There are 6 quarters with good PRF difference image offsets

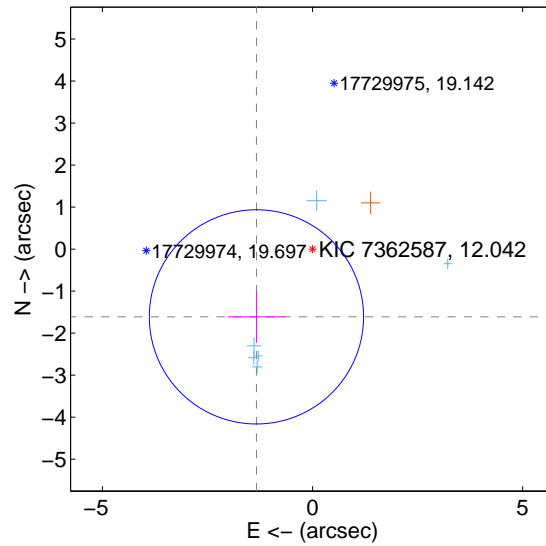
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.166 \pm 0.834$	2.60	$1.499 \pm 0.607$	$-1.564 \pm 0.680$
PRF-fit source offset from KIC position	$2.093 \pm 0.850$	2.46	$1.335 \pm 0.683$	$-1.613 \pm 0.608$
photometric centroid source offset	$2.40 \pm 0.80$	2.99	$-0.90 \pm 0.85$	$-2.22 \pm 0.79$

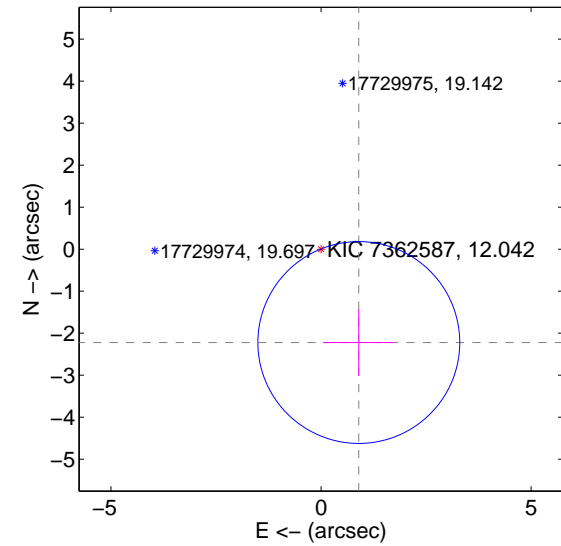
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

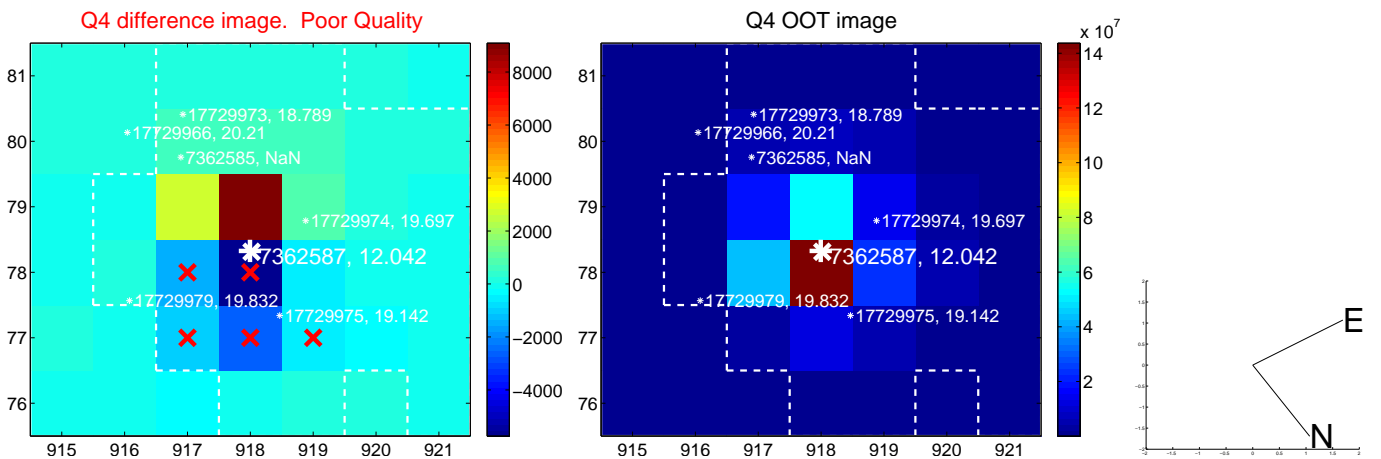
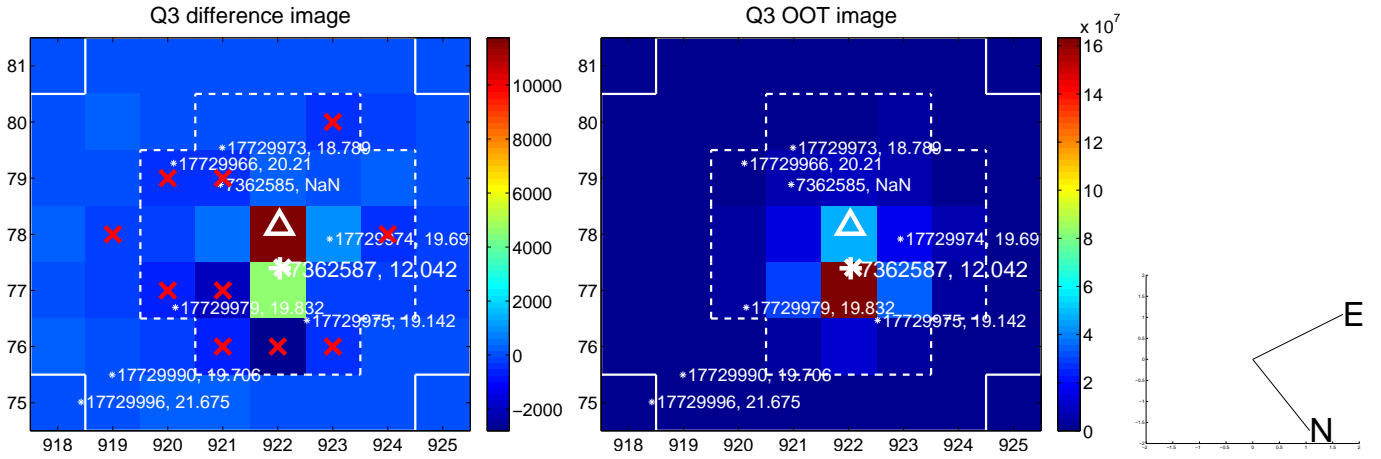
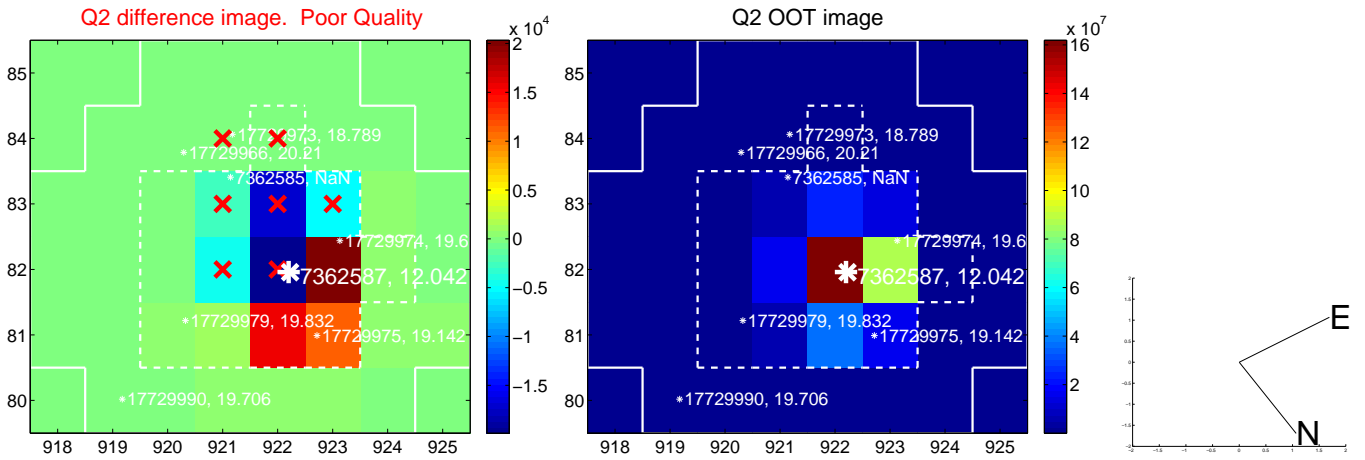
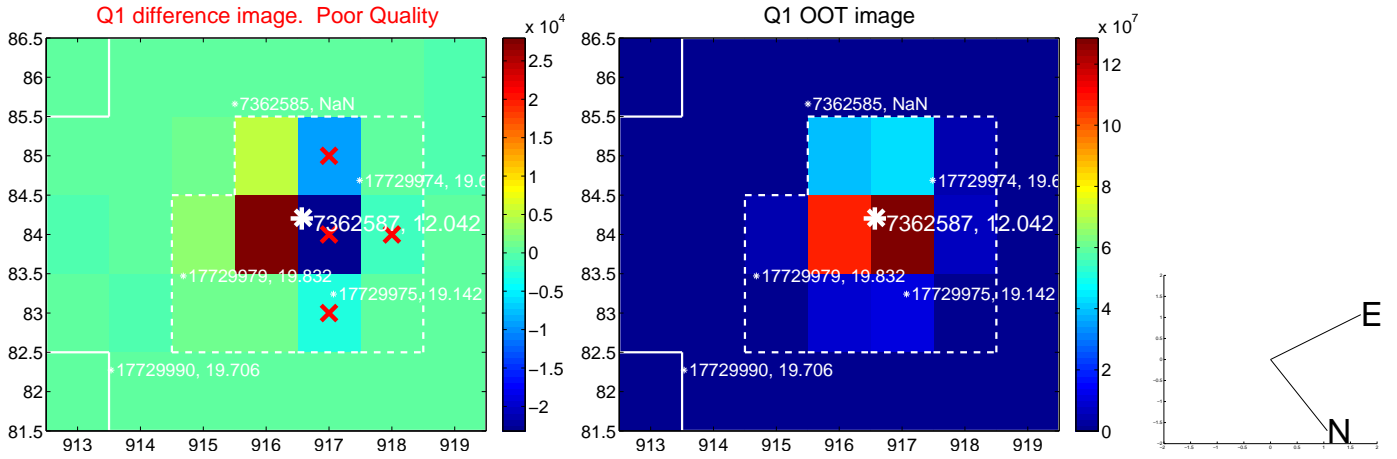


offset from photometric centroids

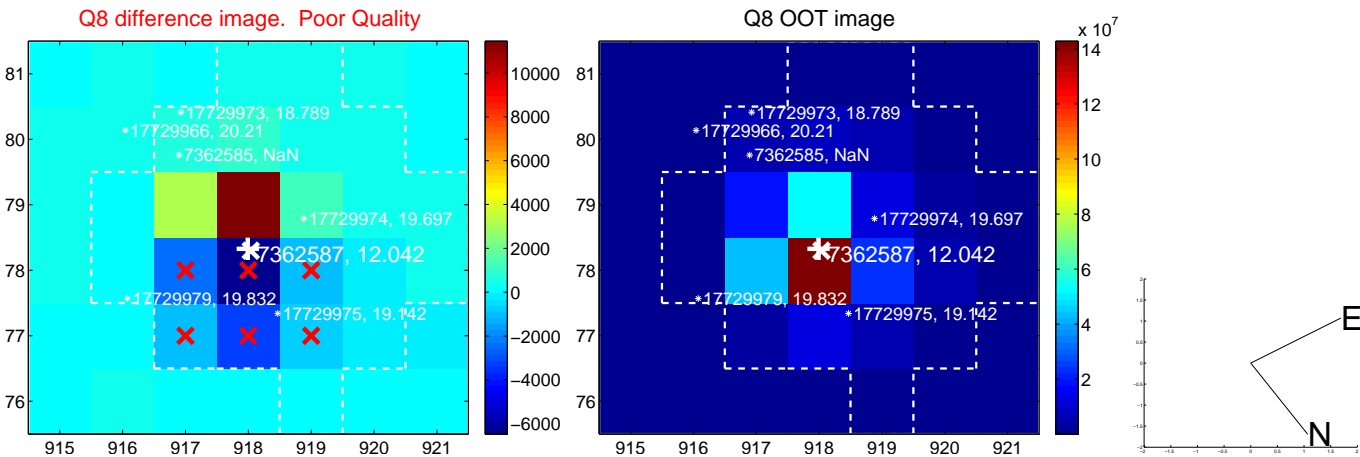
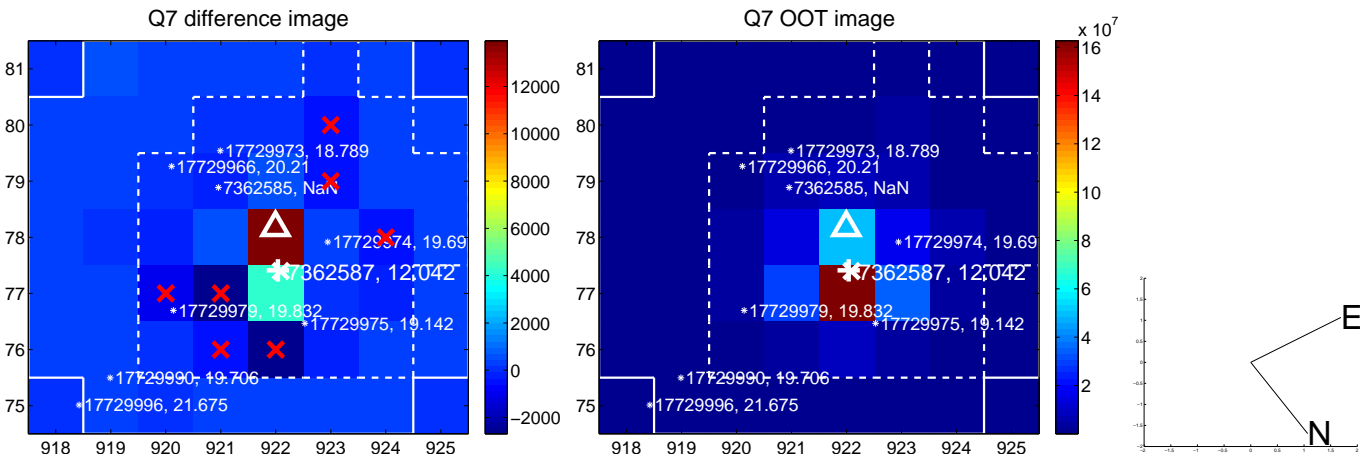
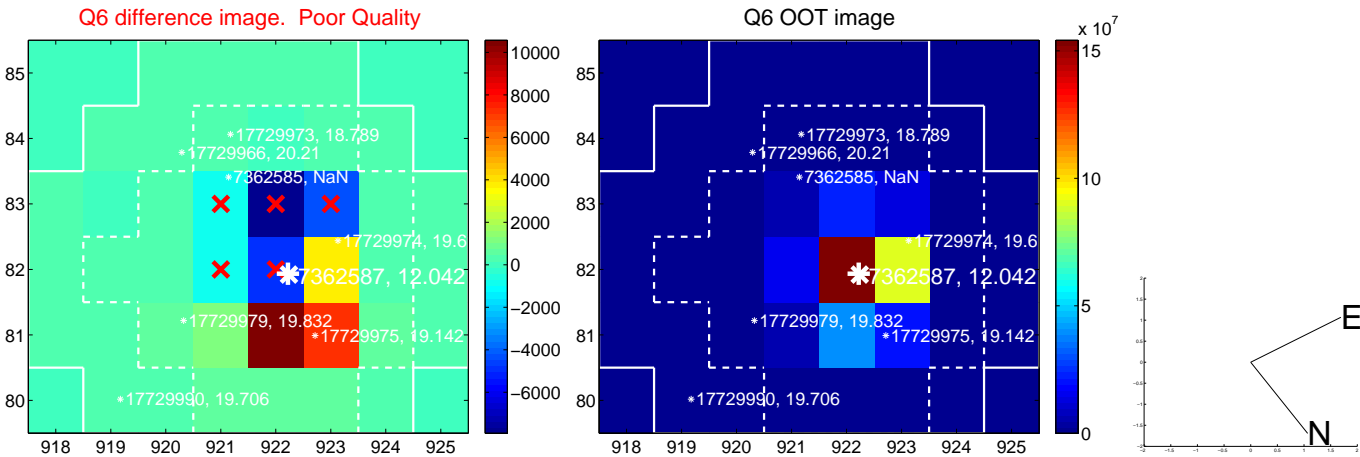
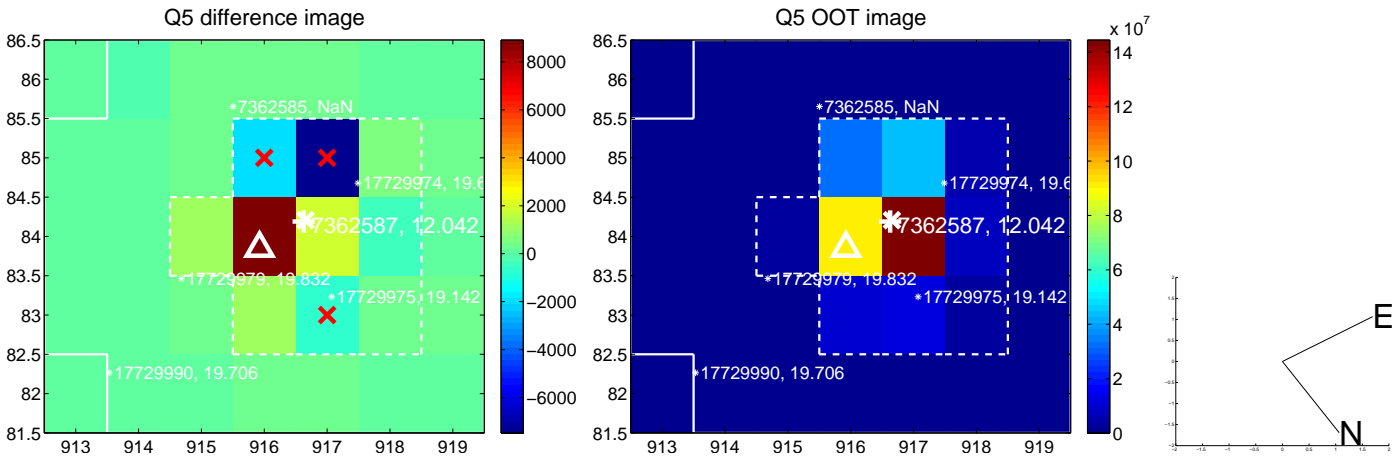


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

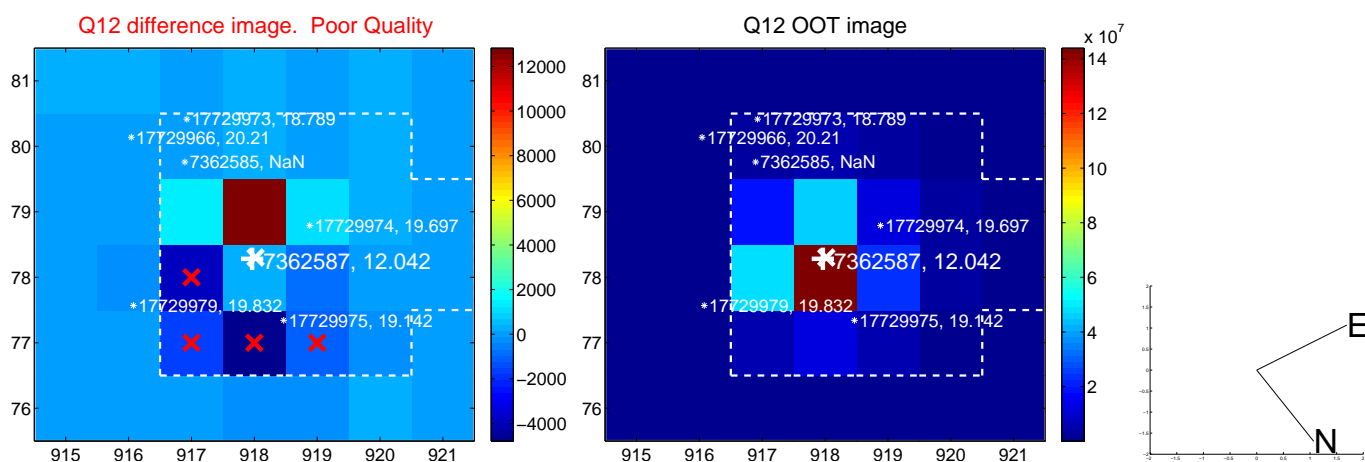
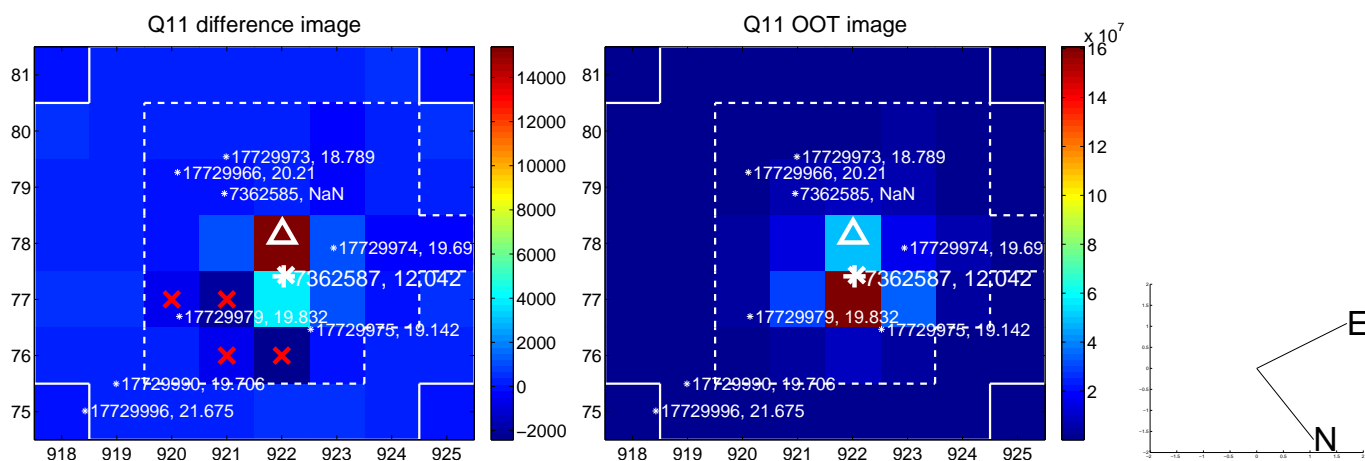
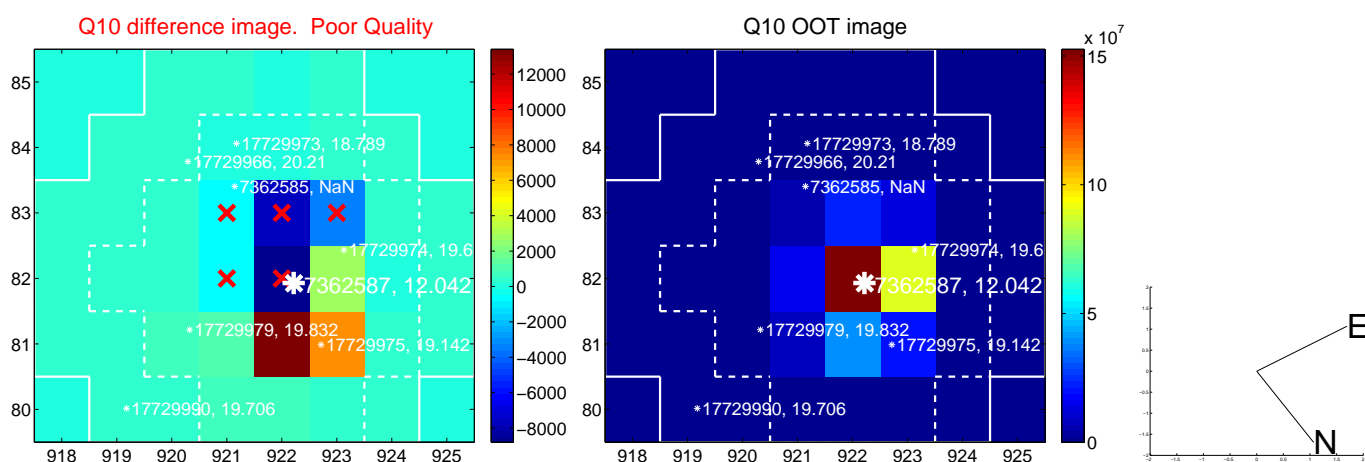
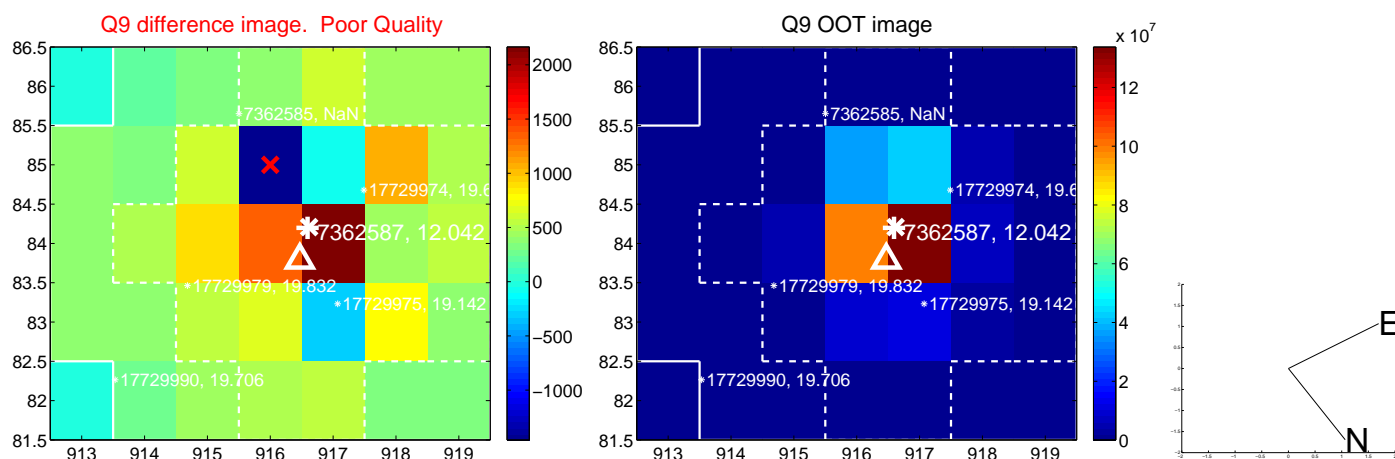


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

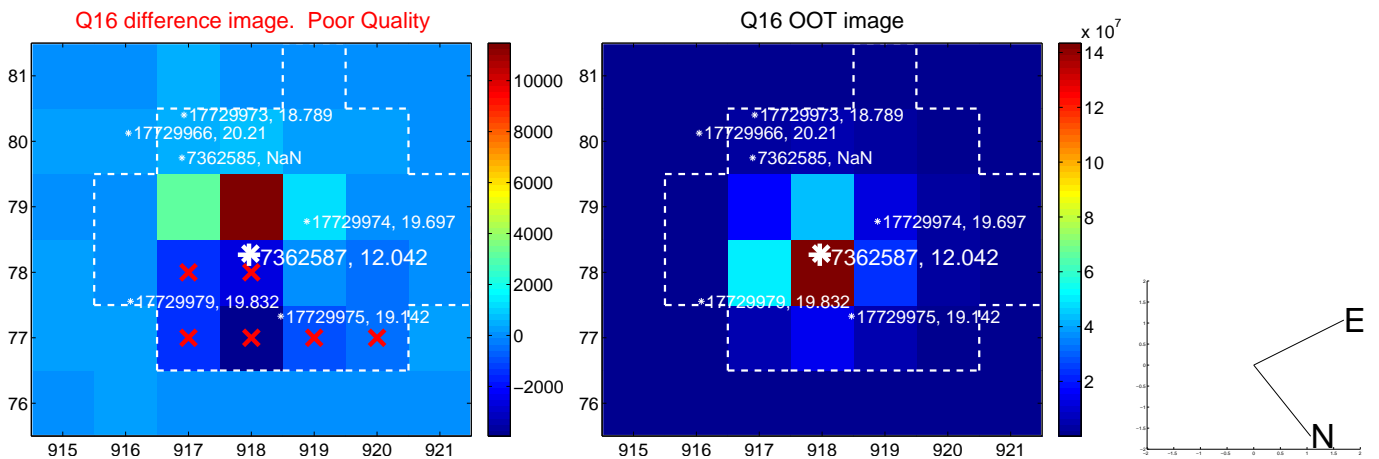
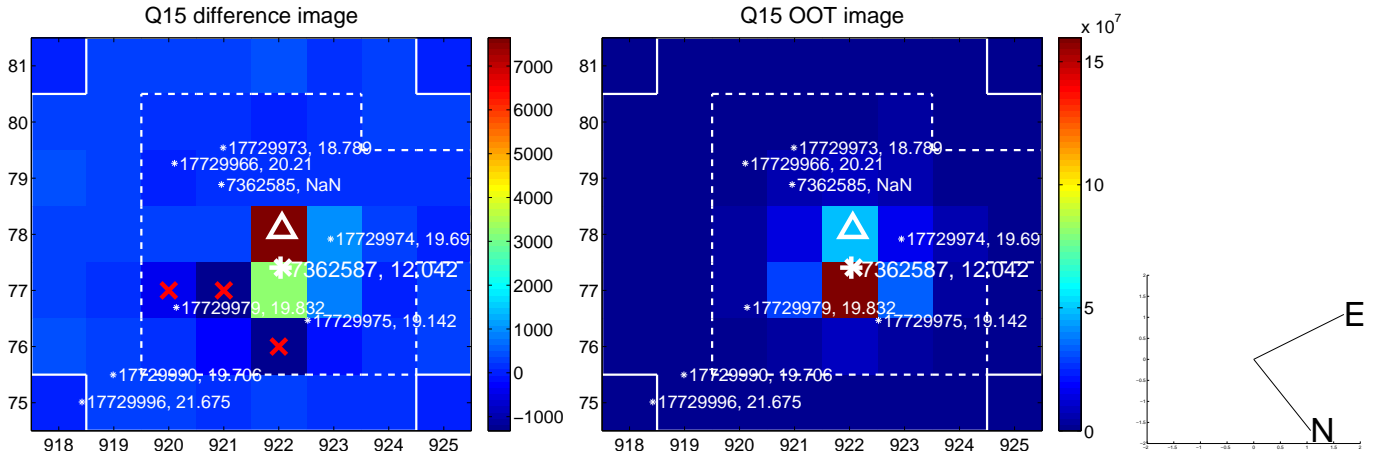
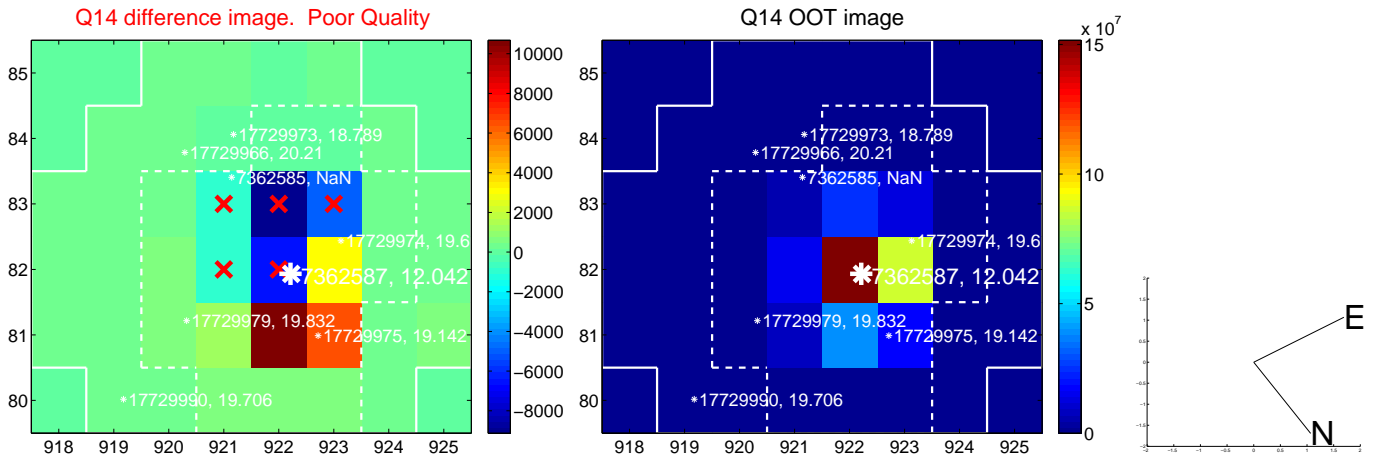
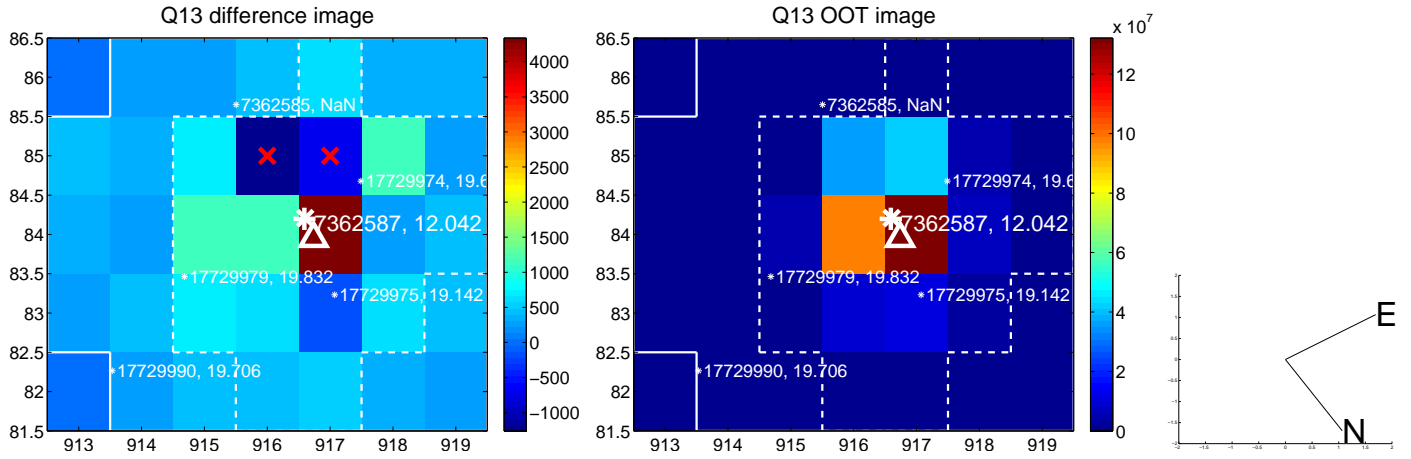




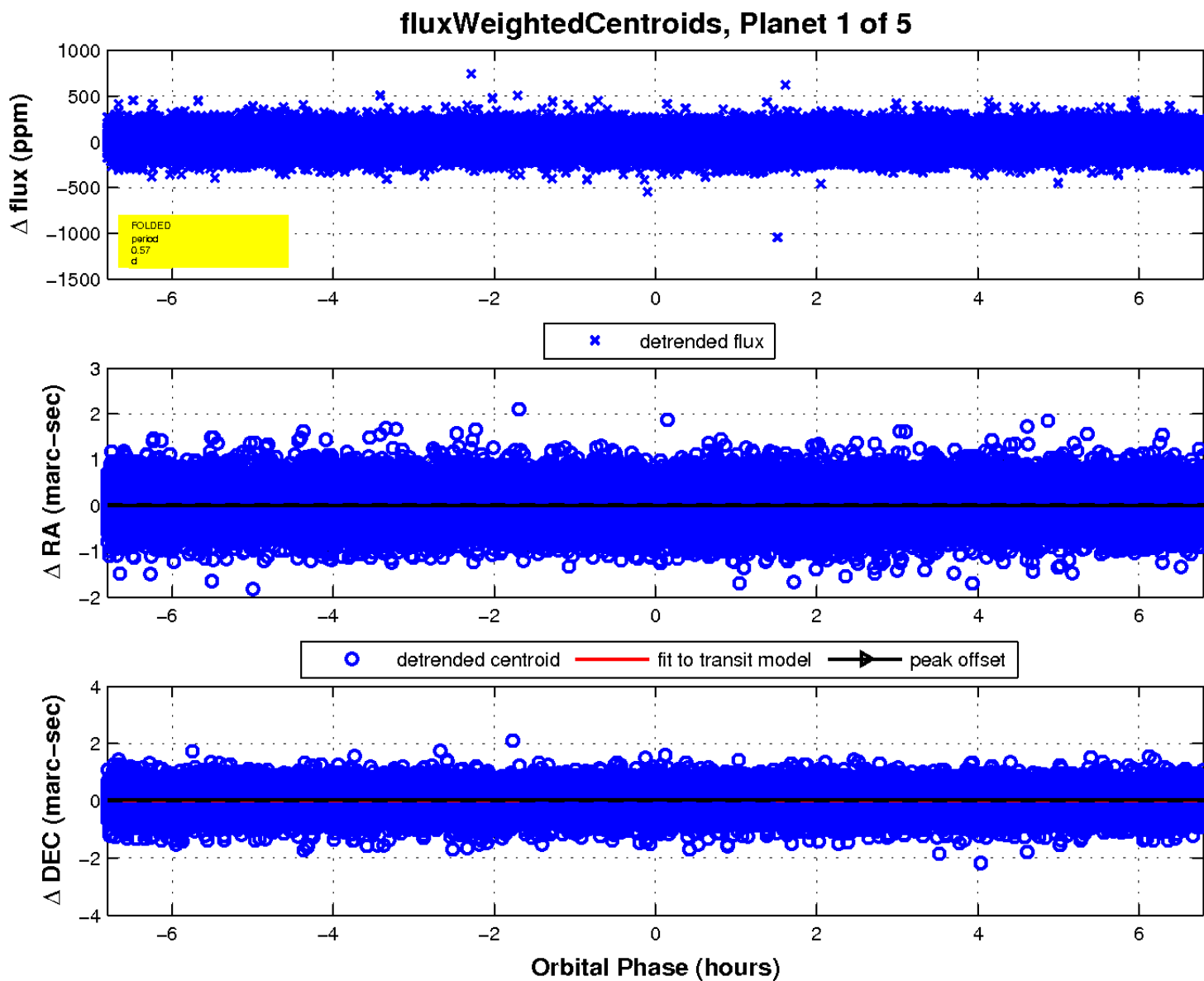
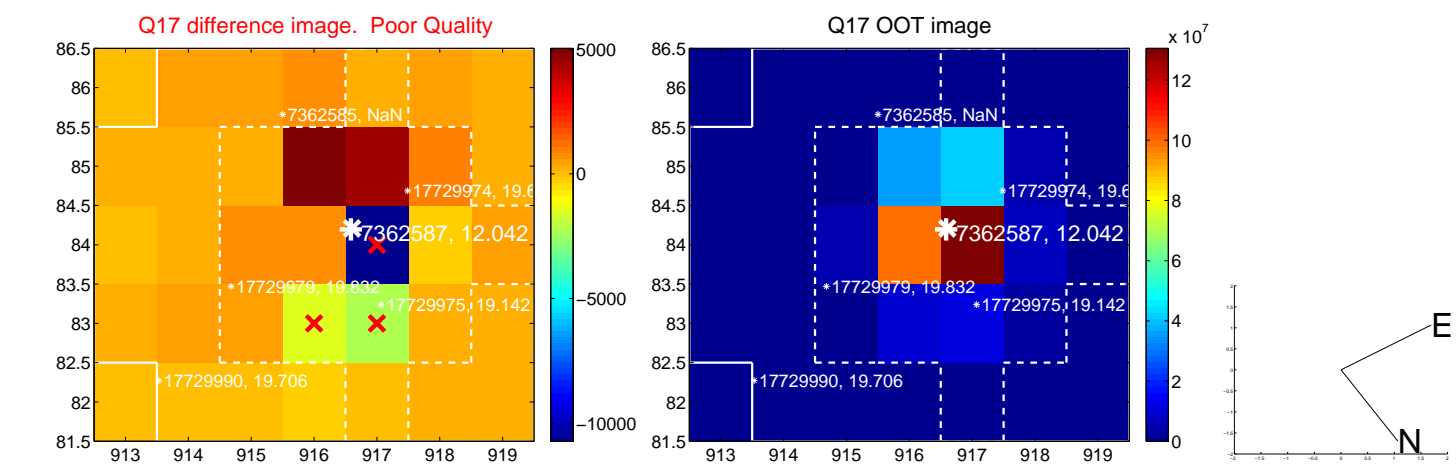
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

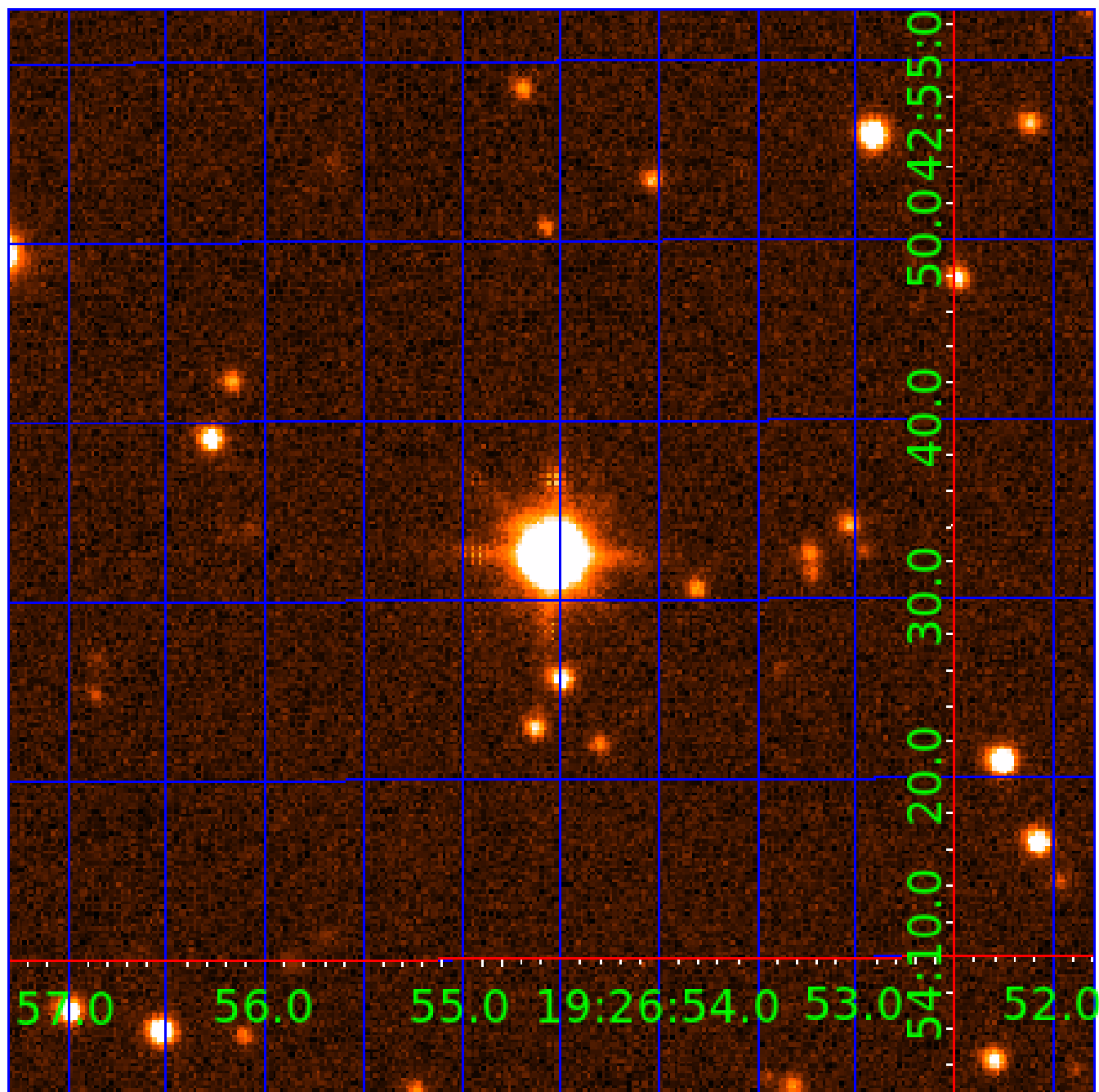


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007362587

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007362587-01	OBS	No	0.566749	131.873256	9.2	3.909	13.6	9.6	2.03	5345	0.66	16084.16
007362587-02	OBS	No	41.628373	168.157945	204.9	1.153	11.2	10.7	2.03	5345	2.87	52.29
007362587-03	OBS	No	47.284540	136.155573	199.7	0.949	9.8	10.7	2.03	5345	3.01	44.12
007362587-04	OBS	No	34.980600	132.052193	146.0	1.723	9.2	9.7	2.03	5345	2.63	65.94
007362587-05	OBS	No	39.417959	134.519098	193.2	1.144	10.0	12.1	2.03	5345	2.82	56.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007362587-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
007362587-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
007362587-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
007362587-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007362587-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

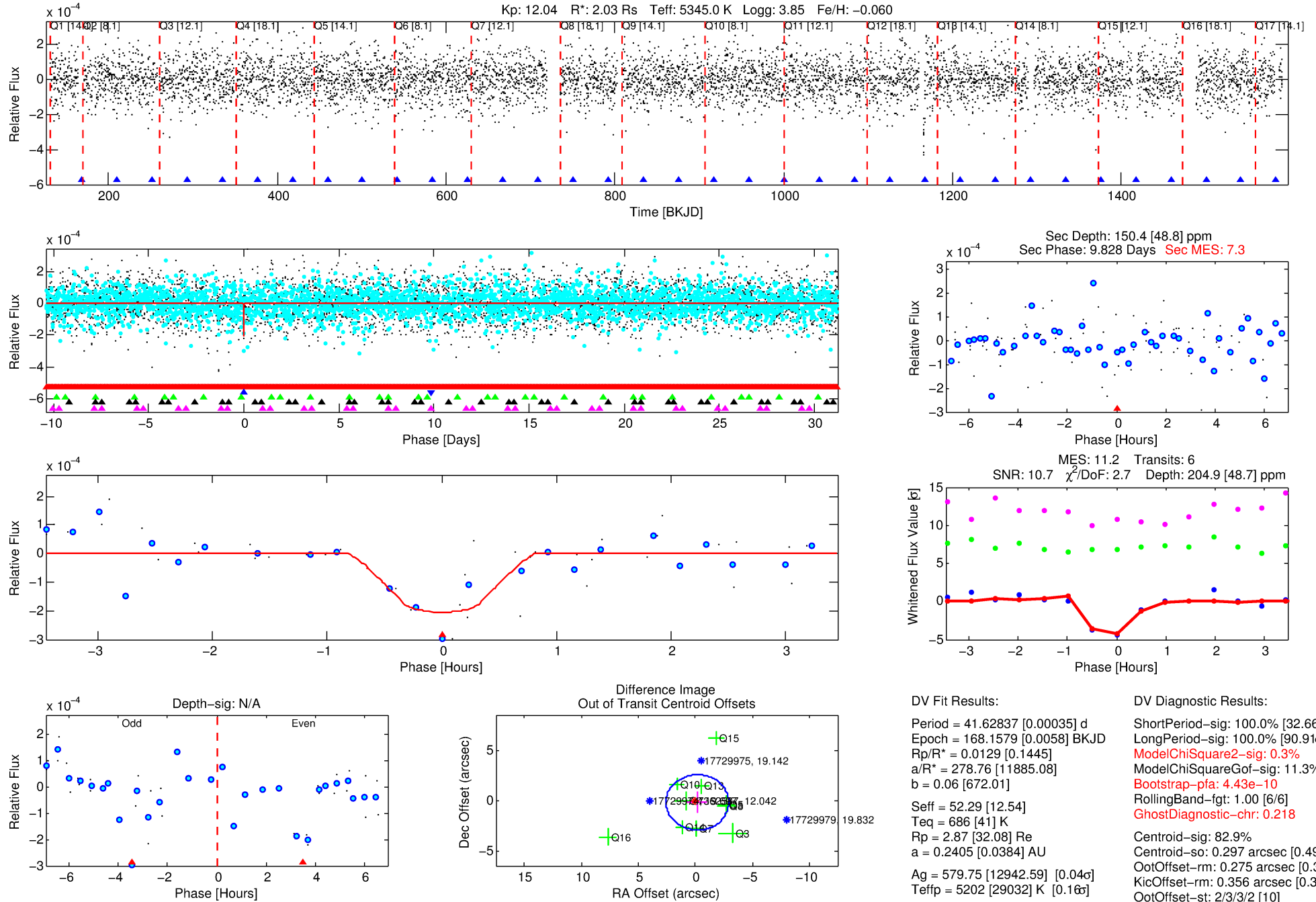
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007362587-02

No Significant Match Found

# DV One-Page Summary

KIC: 7362587 Candidate: 2 of 5 Period: 41.628 d

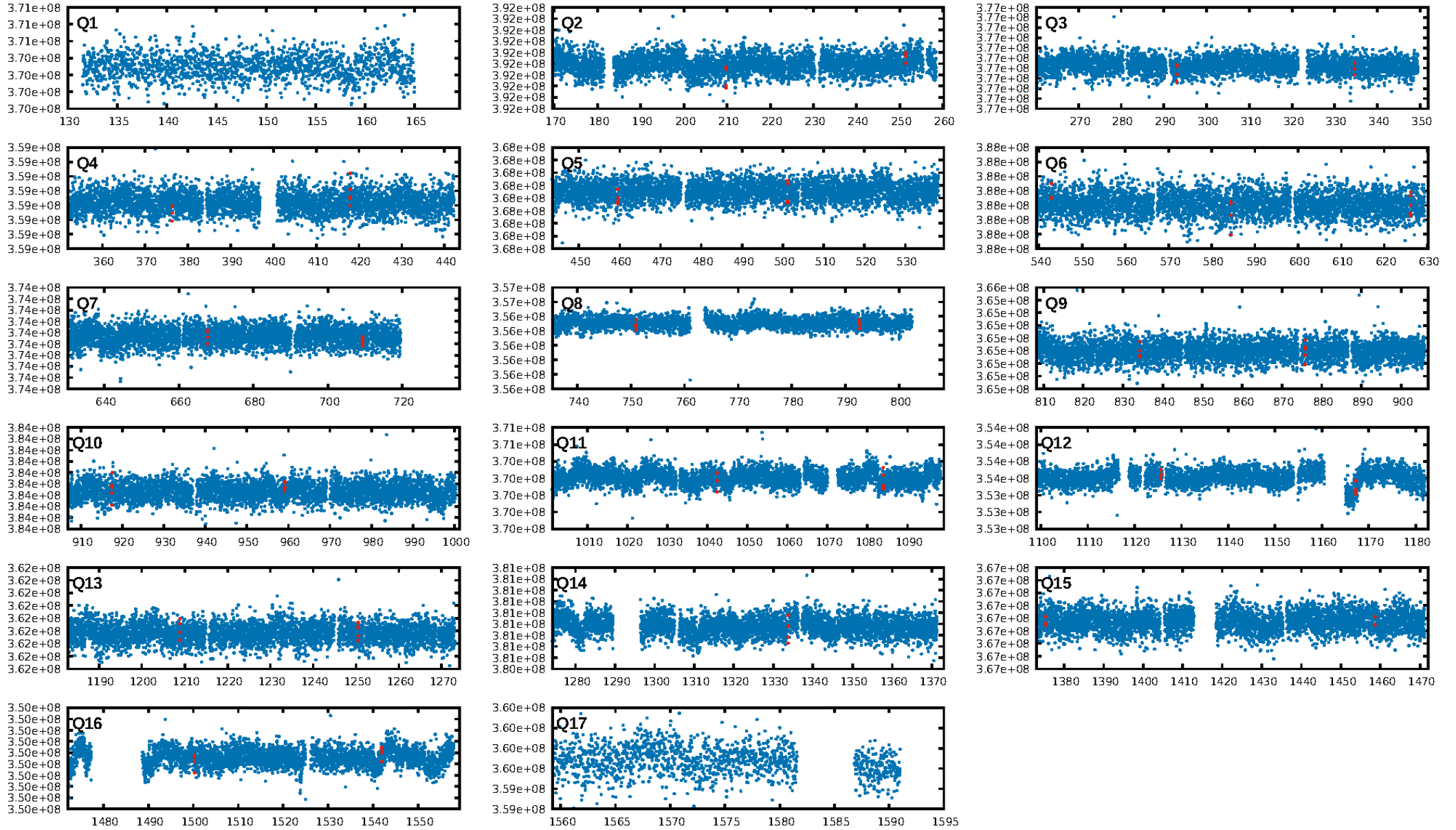


Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:18:35 Z

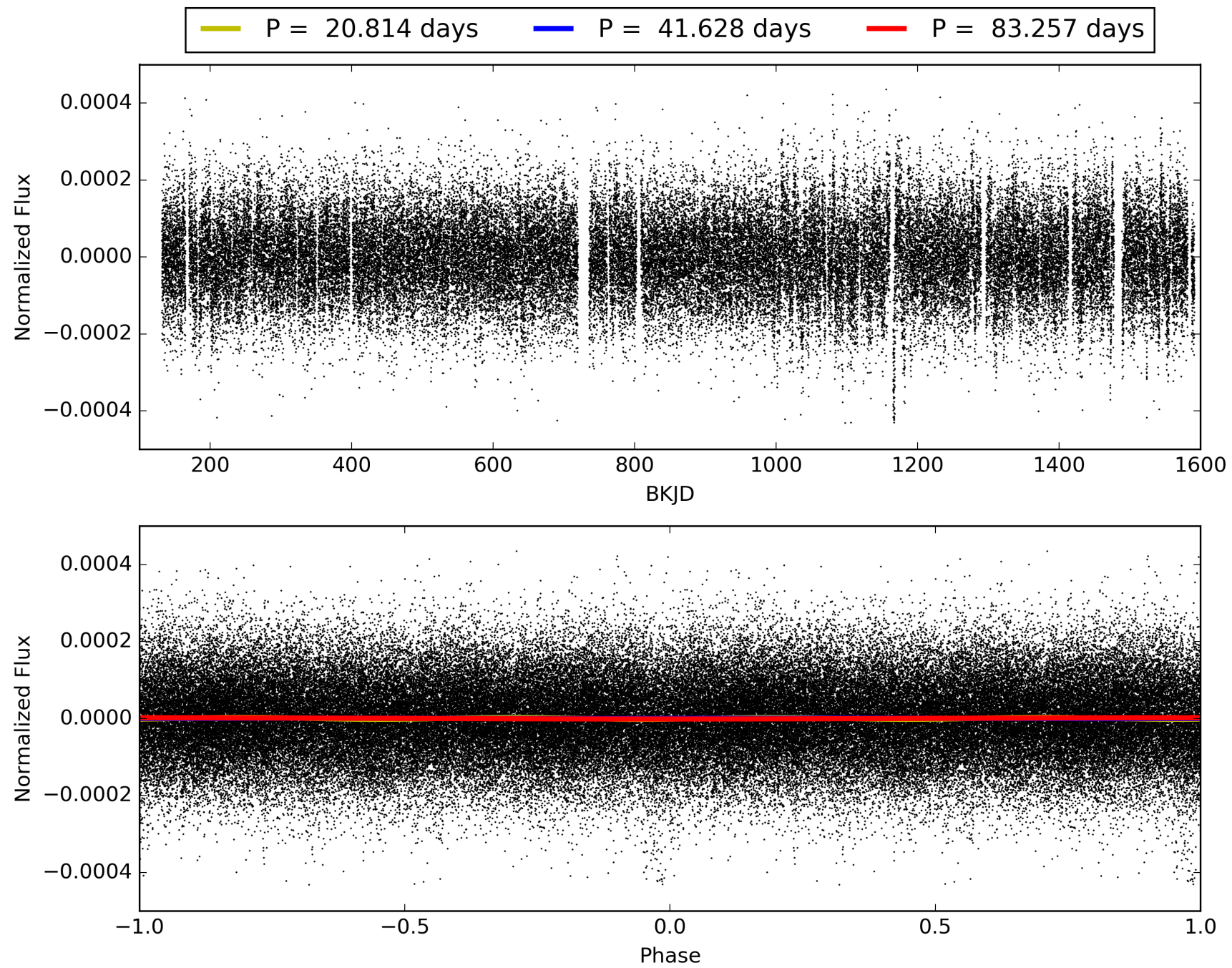
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 007362587-02, PDC Light Curves

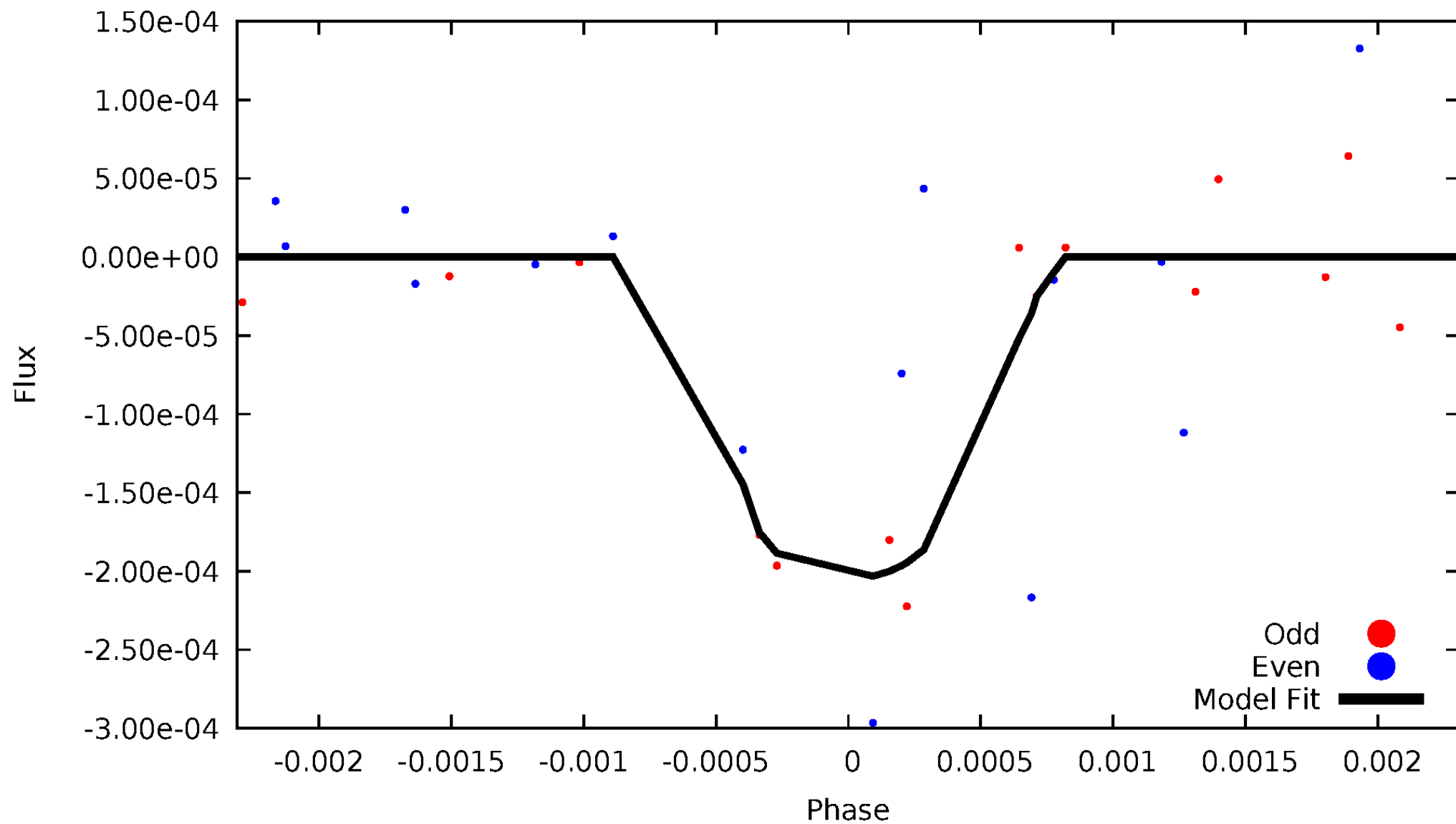


TCE 007362587-02



# DV Odd/Even

TCE 007362587-02





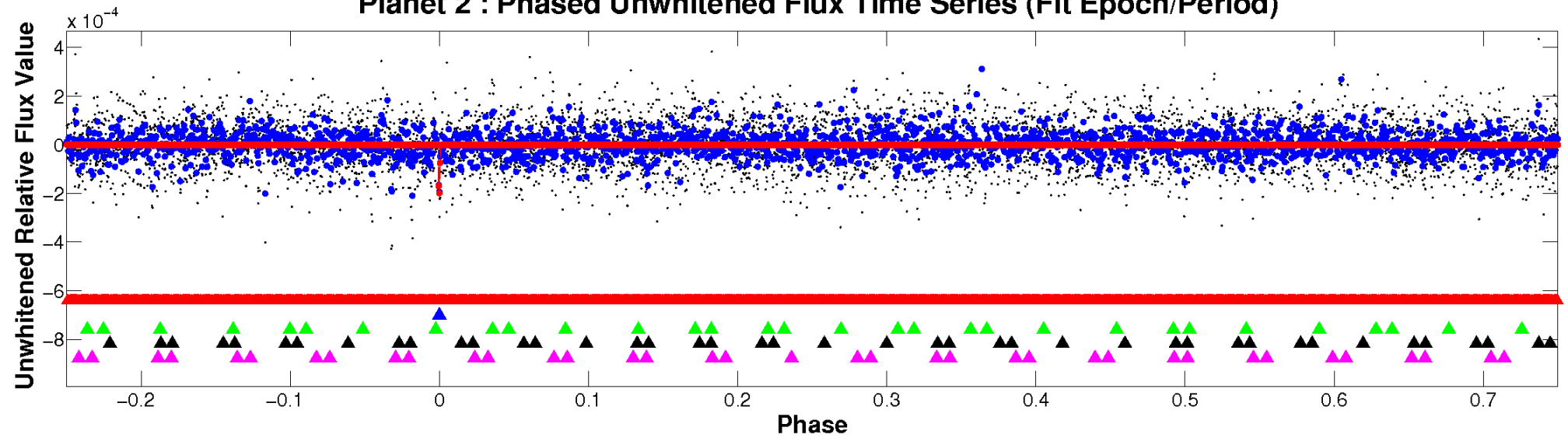


ALT Odd/Even

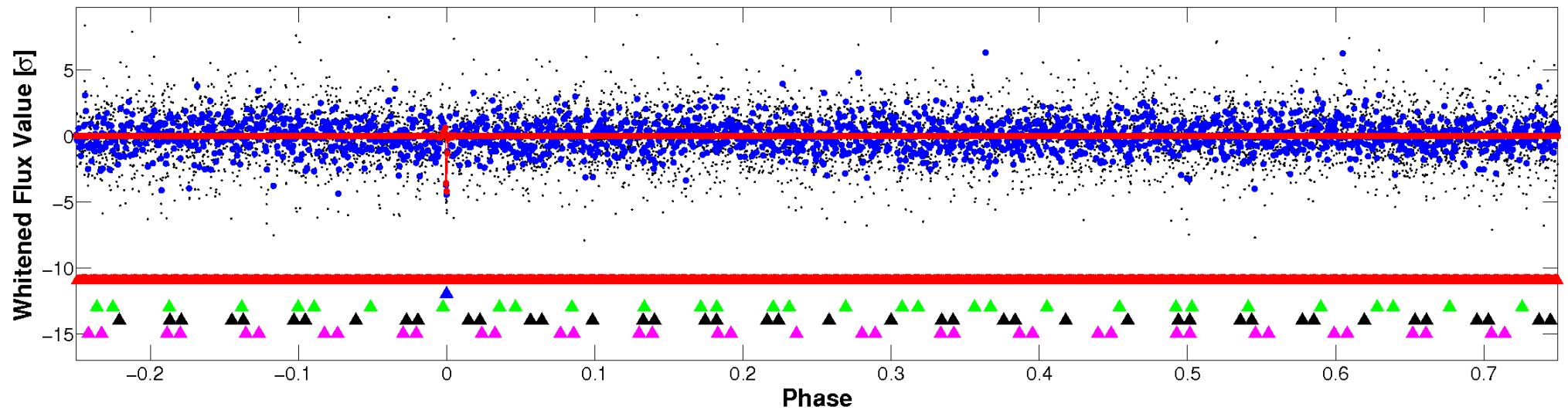
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

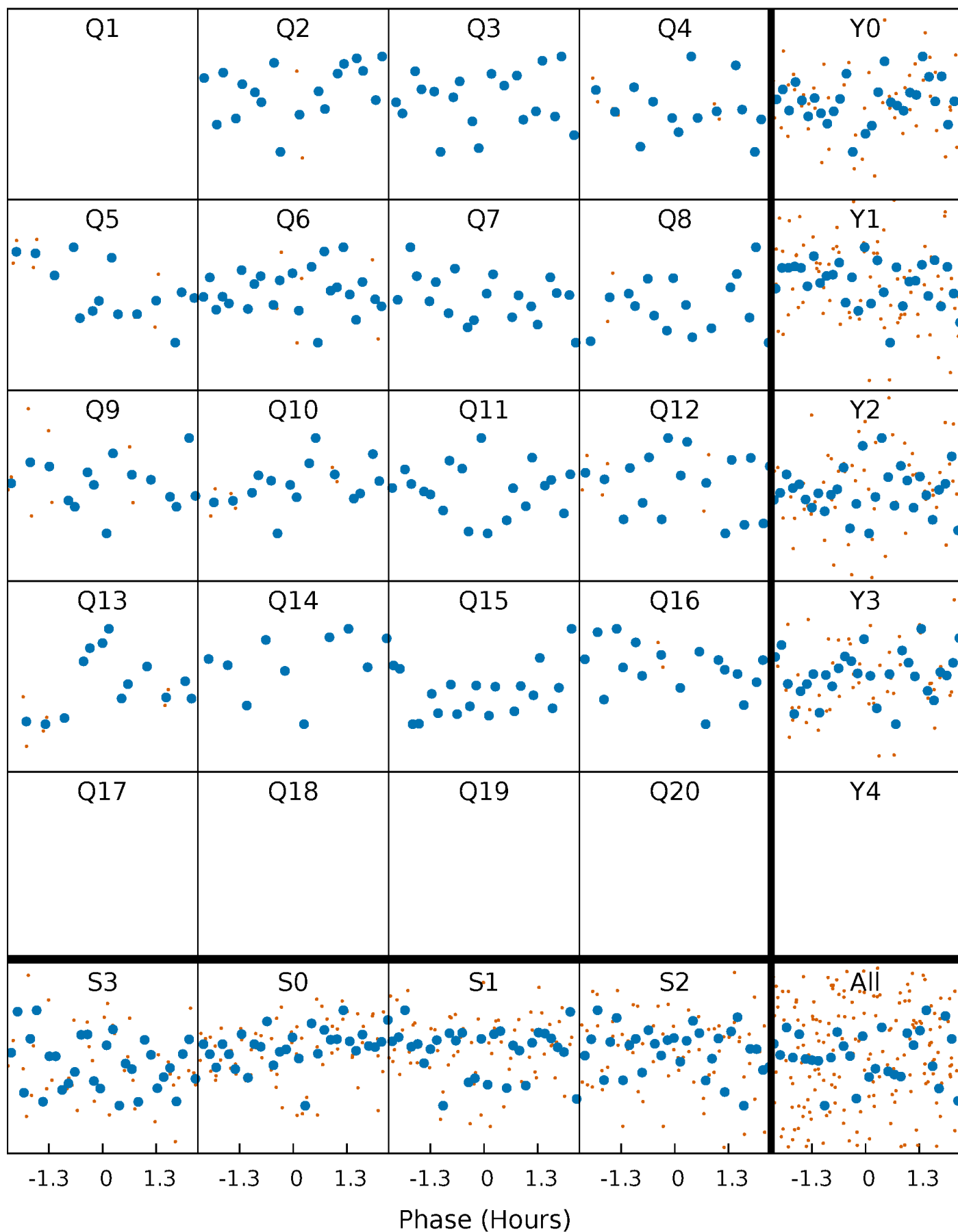


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

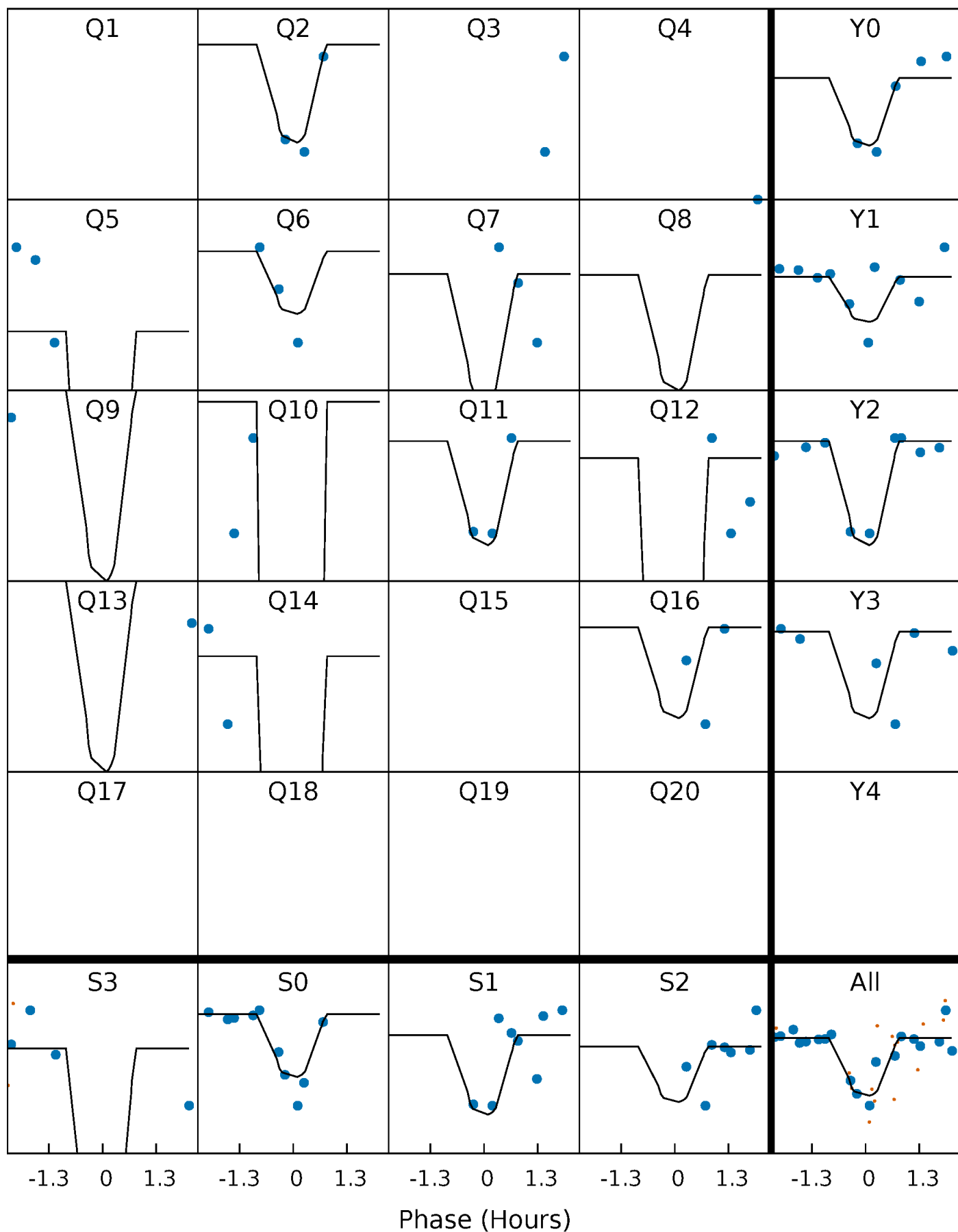
TCE 007362587-02     $P = 41.628373$  Days     $T_0 = 168.157945$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 007362587-02     $P = 41.628373$  Days     $T_0 = 168.157945$  (BKJD)

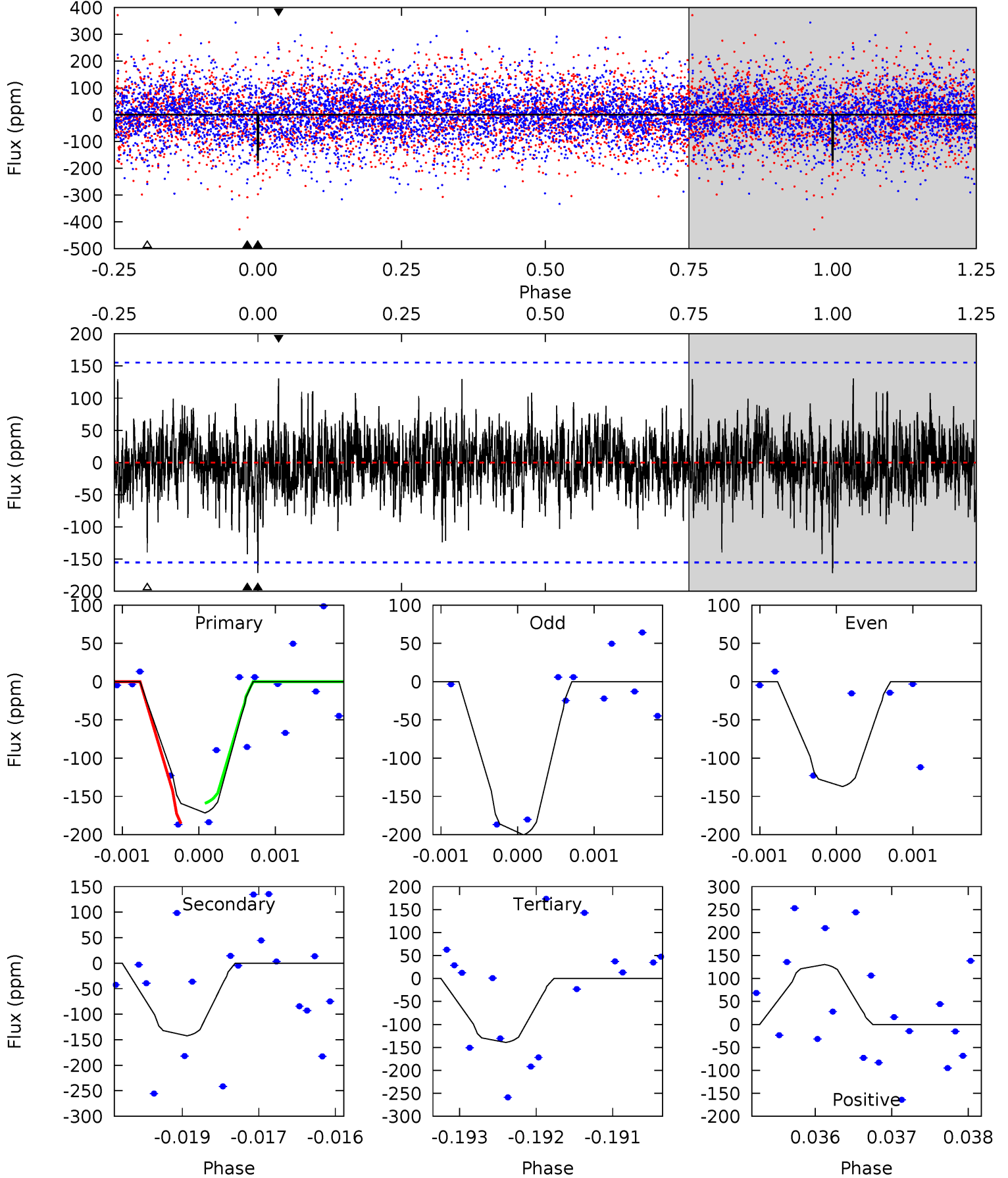


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

007362587-02, P = 41.628373 Days, E = 126.529572 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
5.99	4.97	4.87	4.56	5.43	3.25	1.24	1.13	1.44	0.11	0.42	1.11	0.79	0.43	0.28



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.



### Stellar Parameters For KIC 007362587

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5345^{+85}_{-74}$	$3.851^{+0.126}_{-0.103}$	$-0.060^{+0.150}_{-0.150}$	$2.034^{+0.387}_{-0.387}$	$1.072^{+0.153}_{-0.139}$	$0.179^{+0.115}_{-0.060}$
	+2%/-1%	+3%/-3%	+250%/-250%	+19%/-19%	+14%/-13%	+64%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 007362587-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-142 \pm 29$	$22.42^{+26.19}_{-15.58}$	$955^{+45}_{-43}$	$2595^{+1077}_{-451}$	$8.934^{+83.127}_{-7.097}$
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  $A_{obs} \gg 1.0$

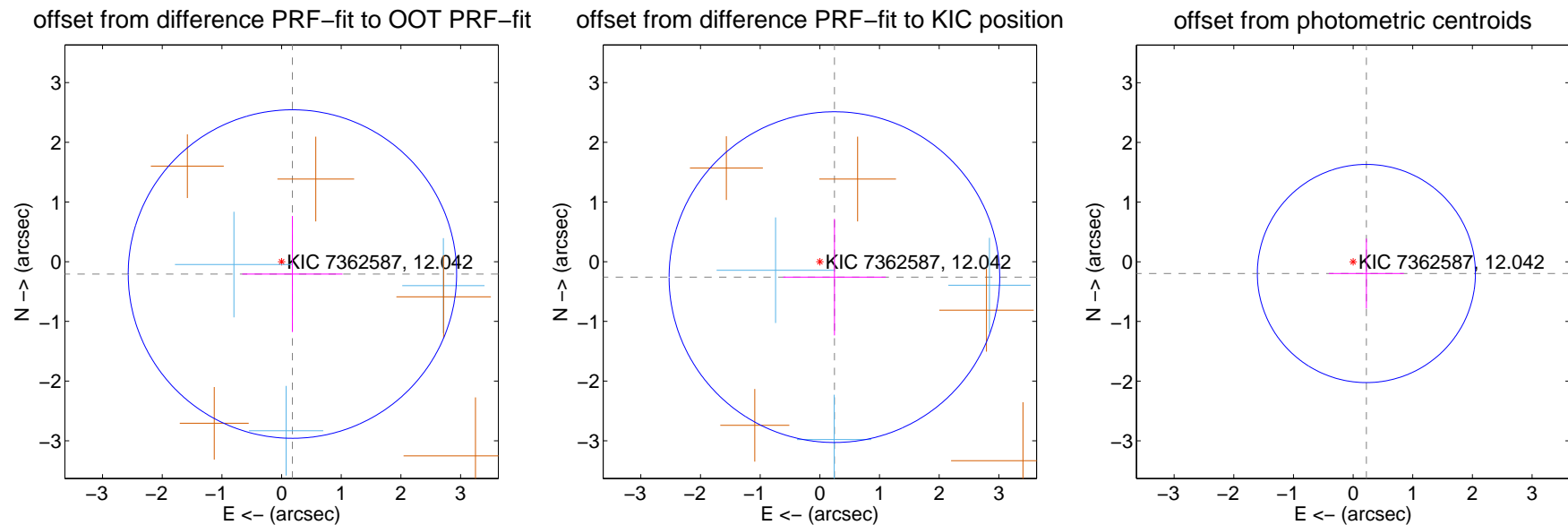
## DV Centroid Data

Supplemental centroid analysis for 007362587-02. Kepler magnitude: 12.04. Transit SNR 10.73

There are 3 quarters with good PRF difference image offsets

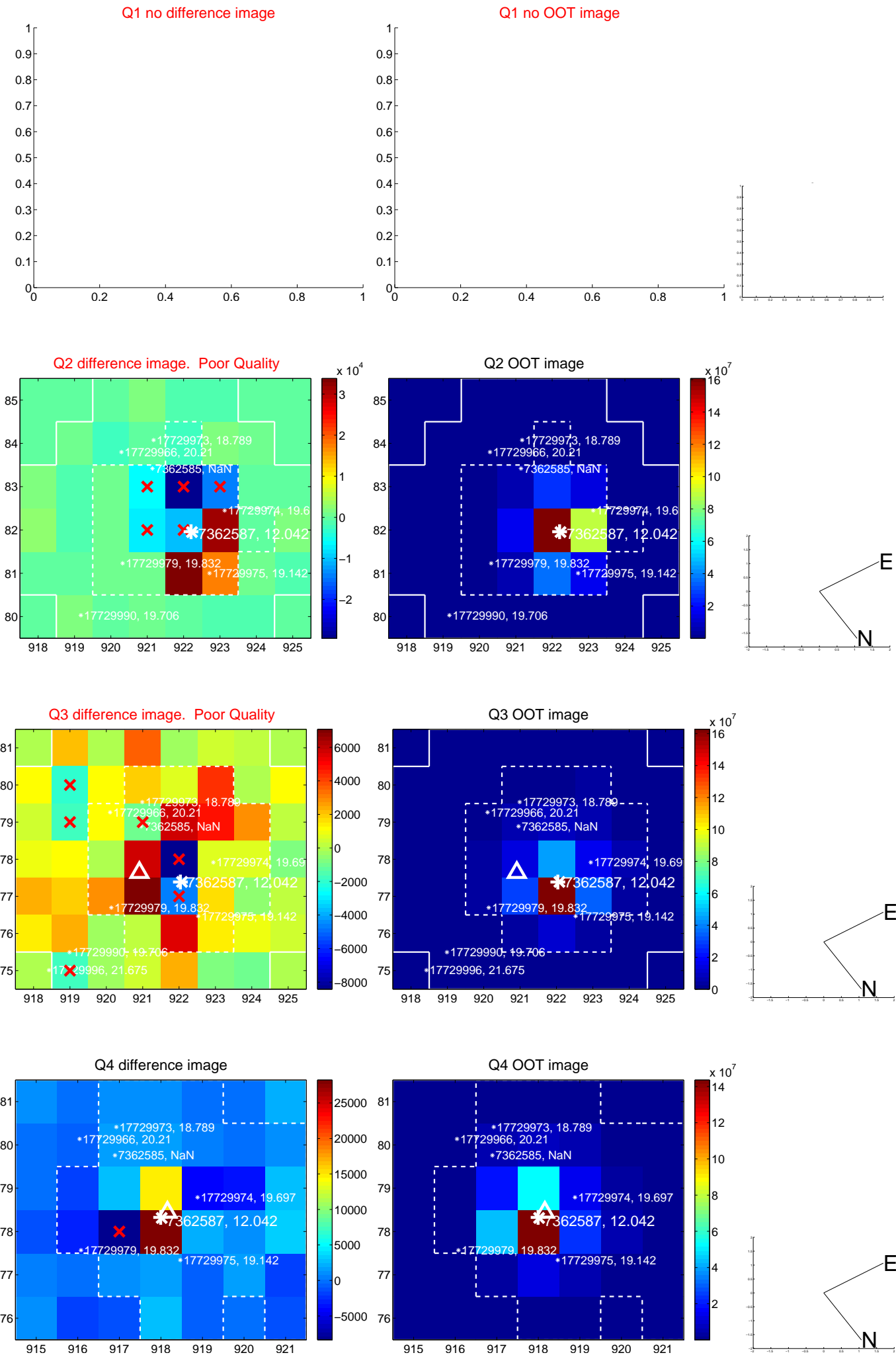
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.275 \pm 0.917$	0.30	$-0.182 \pm 0.841$	$-0.207 \pm 0.972$
PRF-fit source offset from KIC position	$0.356 \pm 0.923$	0.39	$-0.244 \pm 0.860$	$-0.259 \pm 0.976$
photometric centroid source offset	$0.30 \pm 0.61$	0.49	$-0.22 \pm 0.63$	$-0.20 \pm 0.58$

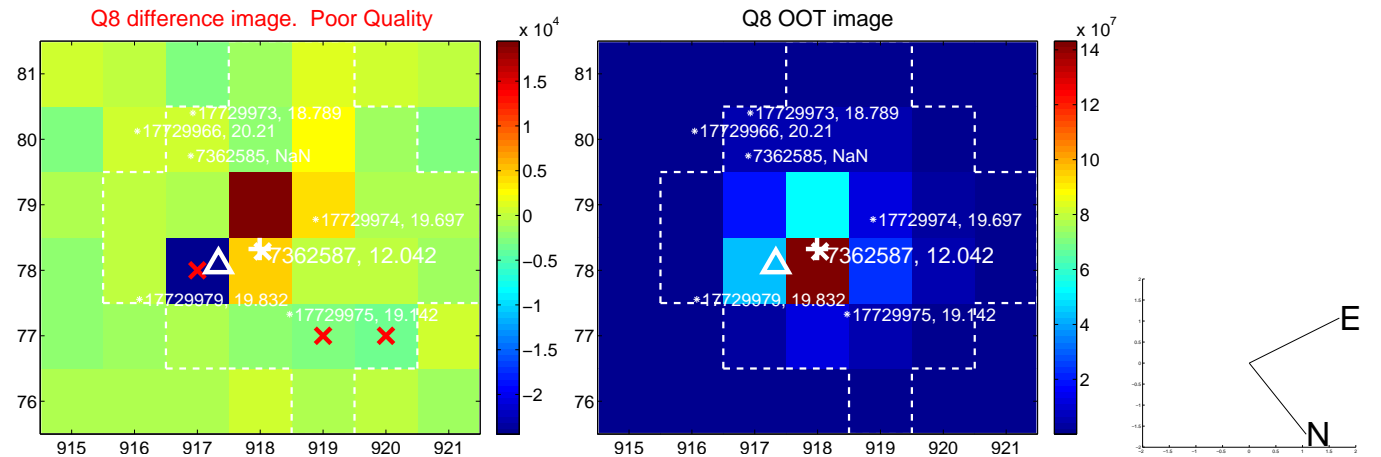
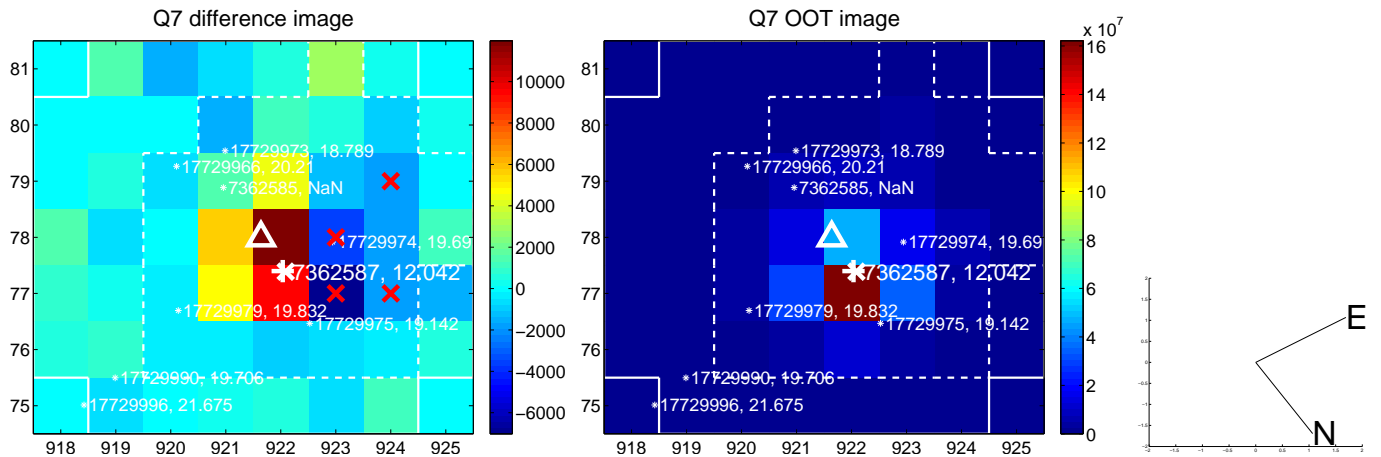
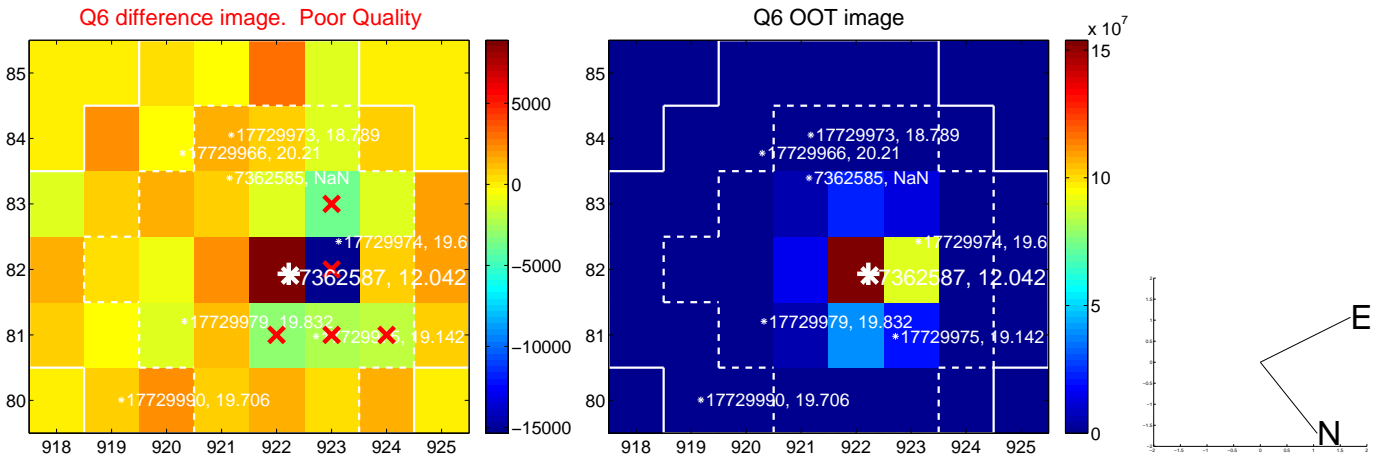
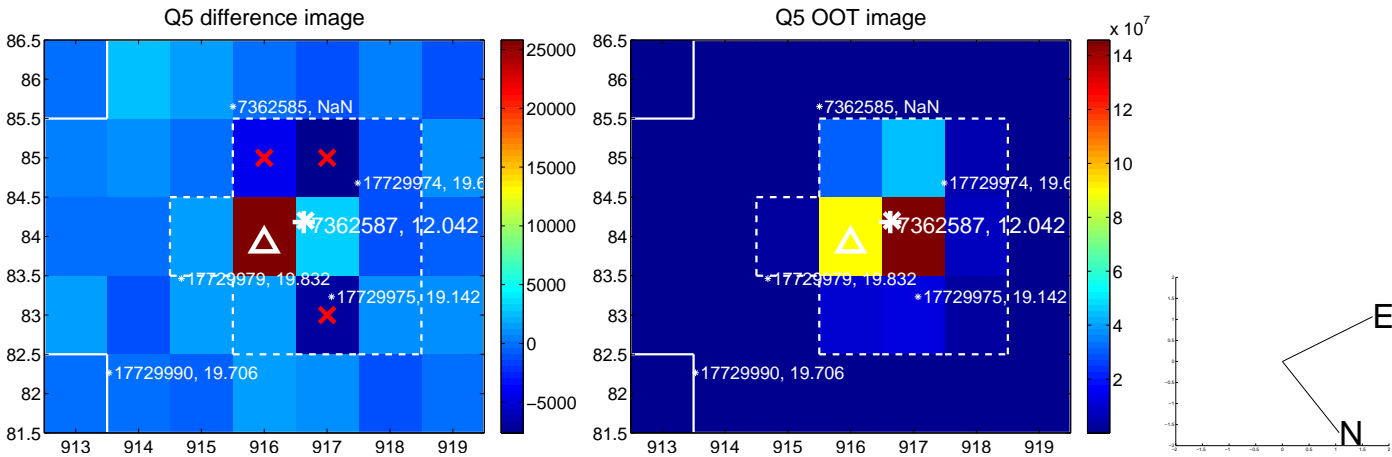


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

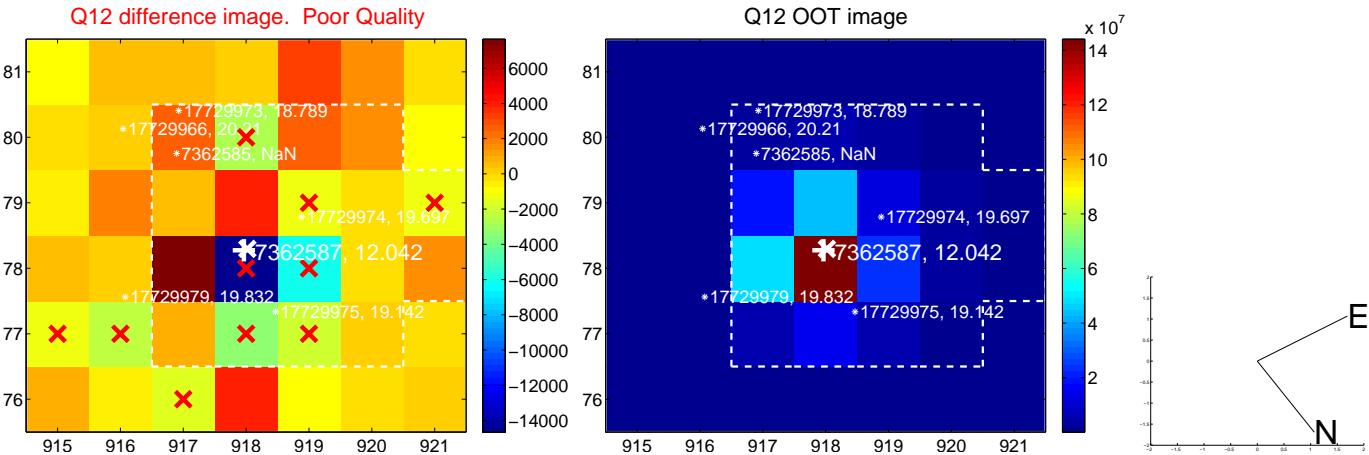
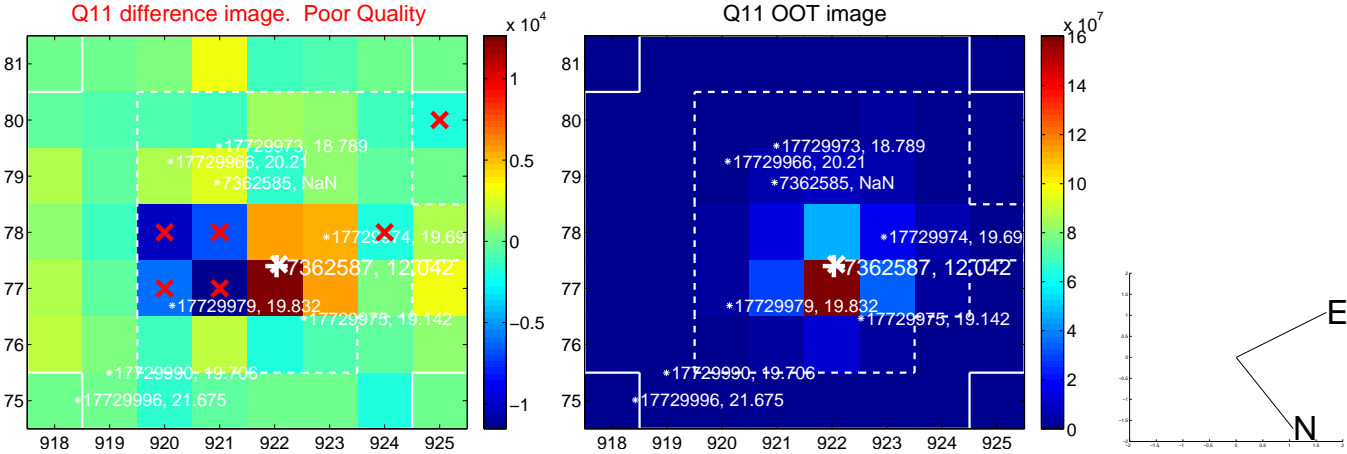
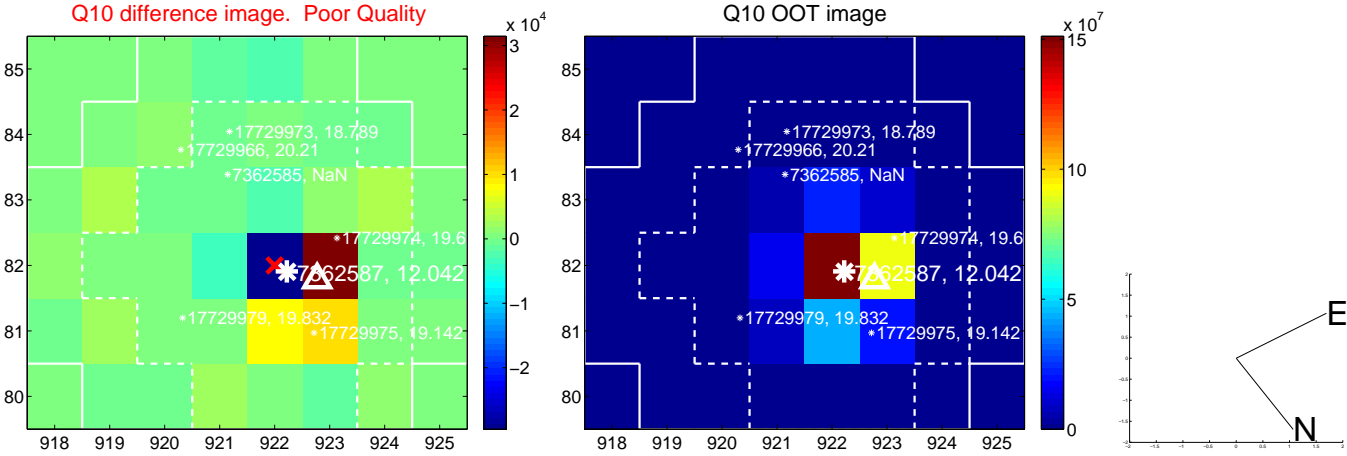
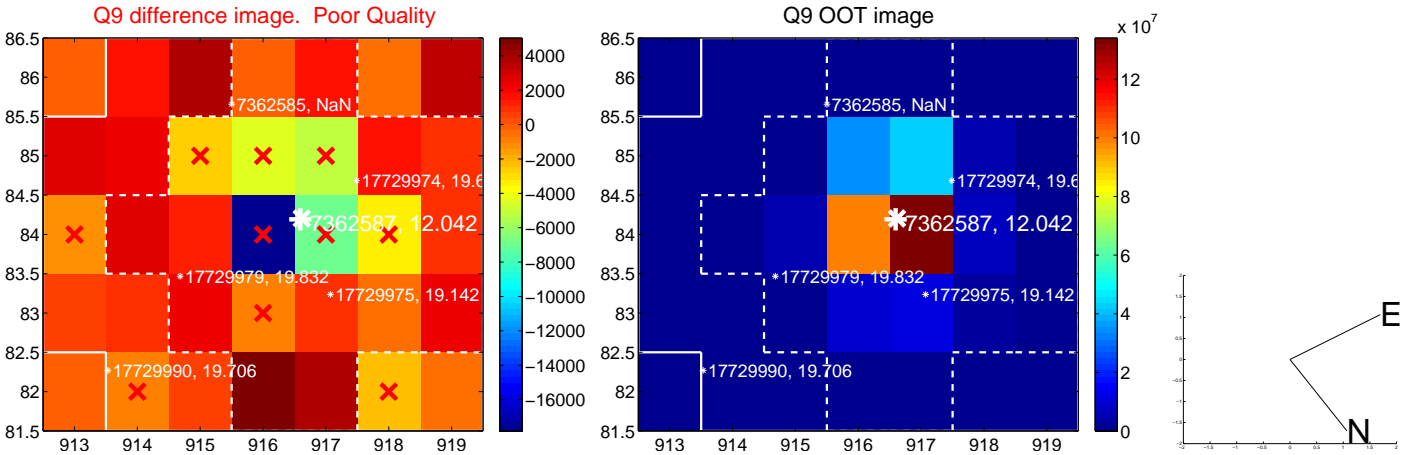


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

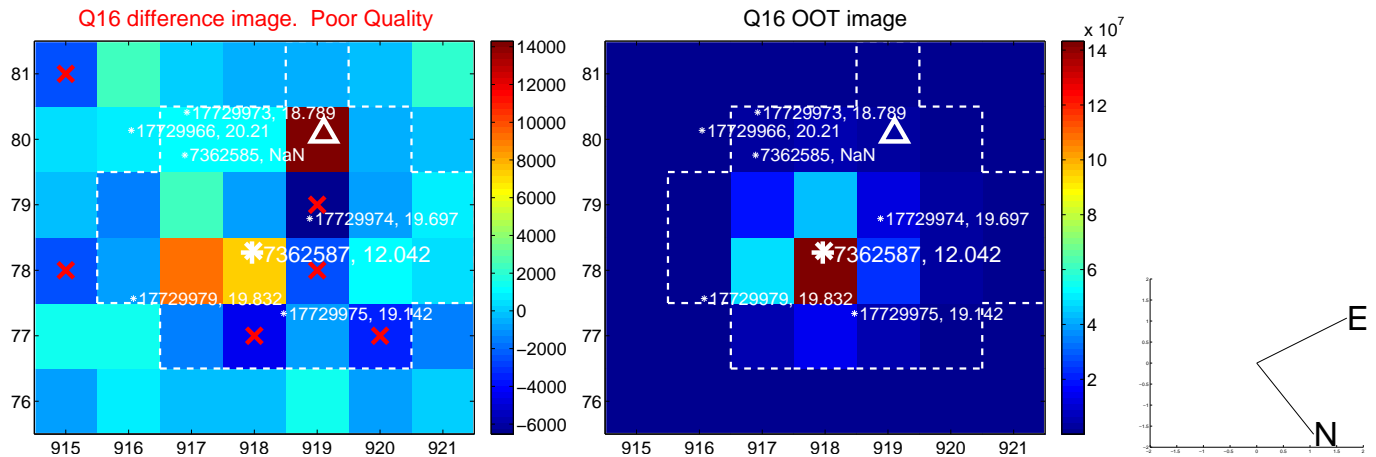
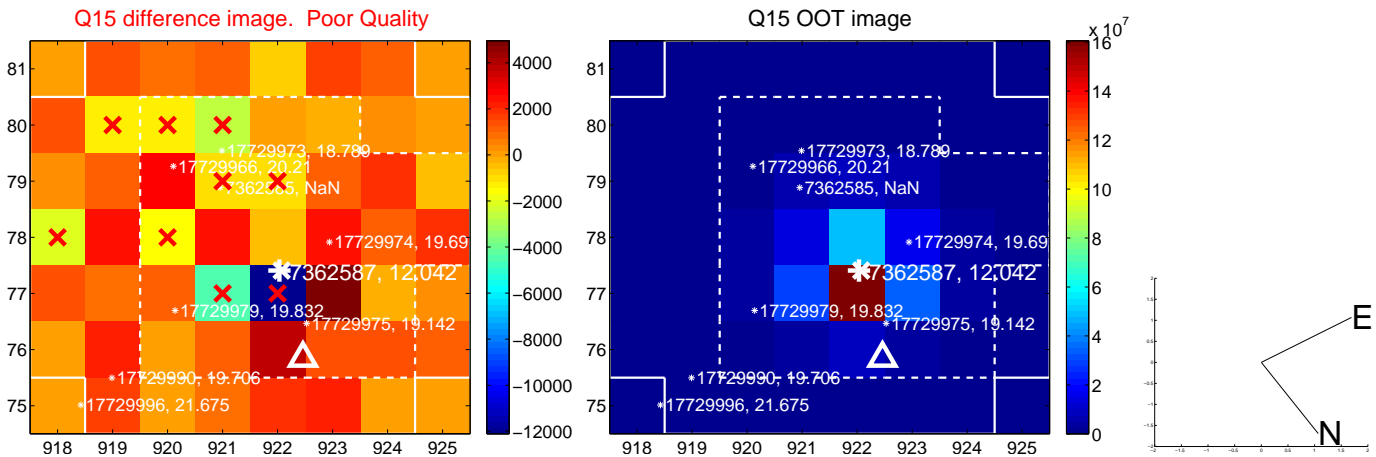
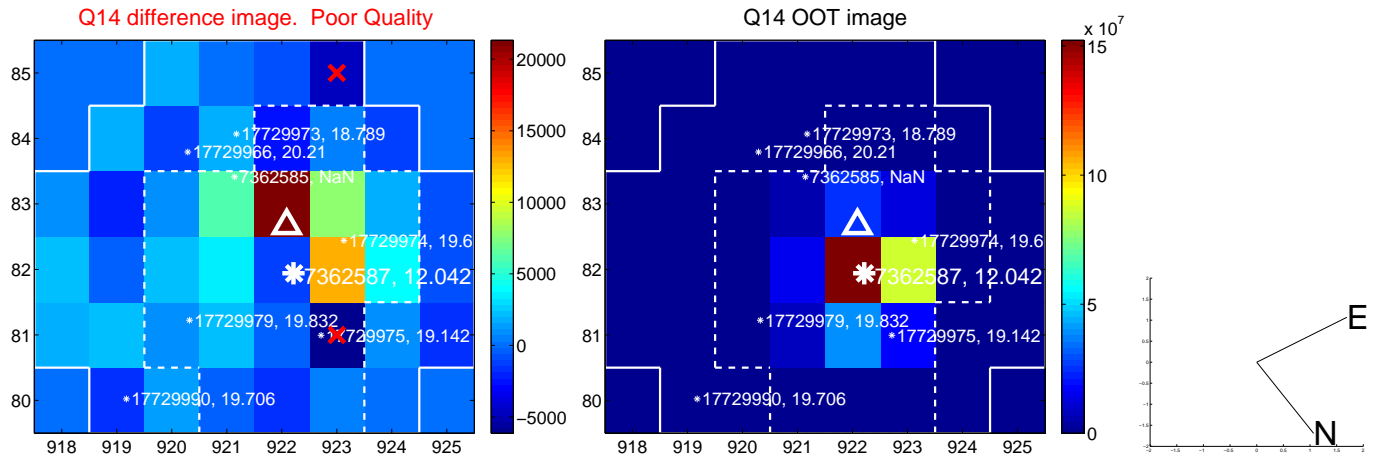
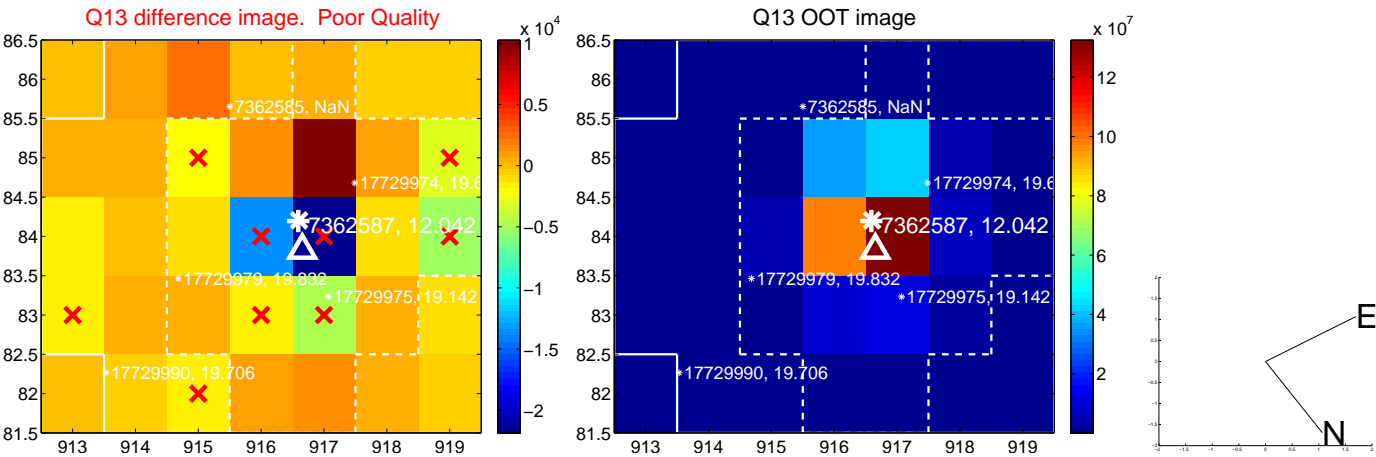




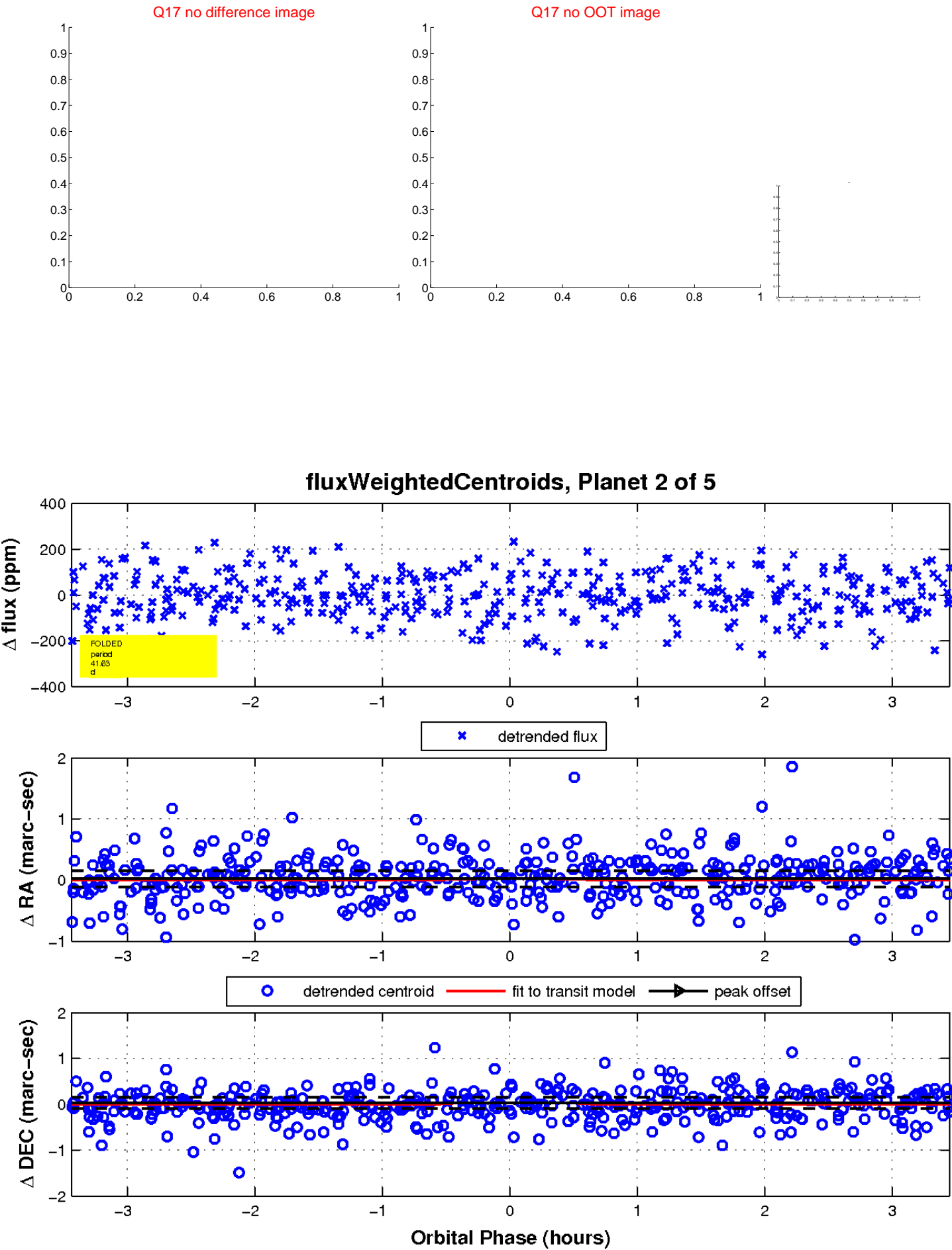
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

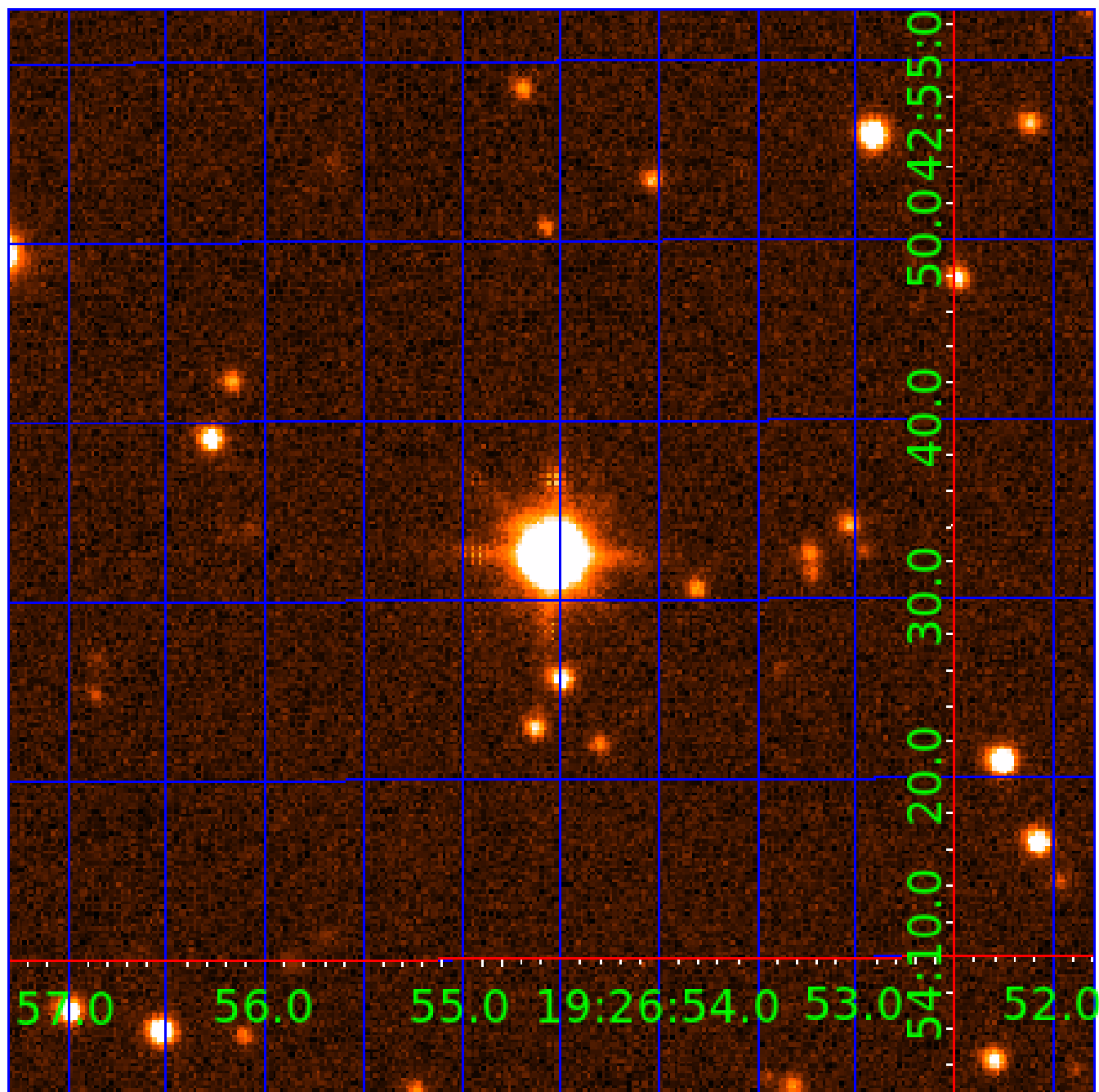


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007362587

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007362587-01	OBS	No	0.566749	131.873256	9.2	3.909	13.6	9.6	2.03	5345	0.66	16084.16
007362587-02	OBS	No	41.628373	168.157945	204.9	1.153	11.2	10.7	2.03	5345	2.87	52.29
007362587-03	OBS	No	47.284540	136.155573	199.7	0.949	9.8	10.7	2.03	5345	3.01	44.12
007362587-04	OBS	No	34.980600	132.052193	146.0	1.723	9.2	9.7	2.03	5345	2.63	65.94
007362587-05	OBS	No	39.417959	134.519098	193.2	1.144	10.0	12.1	2.03	5345	2.82	56.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007362587-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
007362587-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
007362587-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
007362587-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007362587-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

**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.

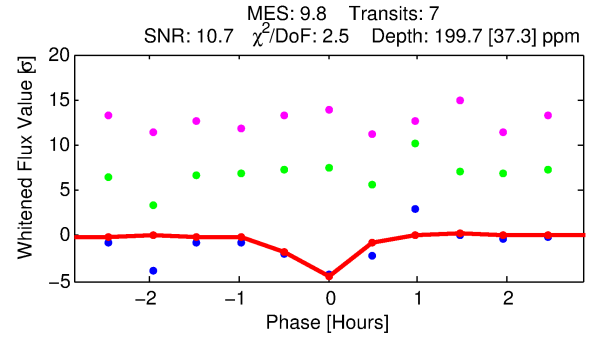
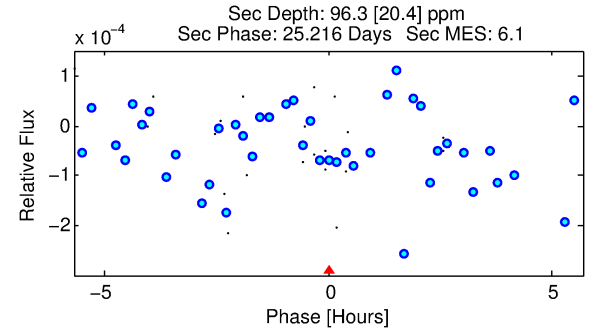
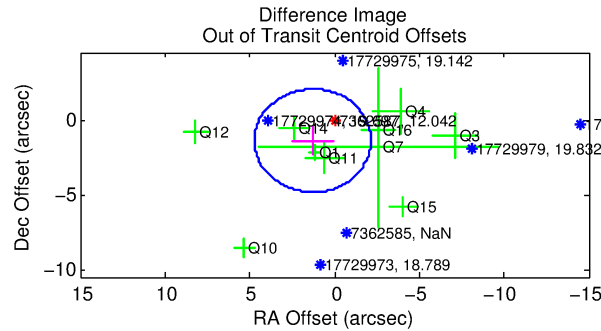
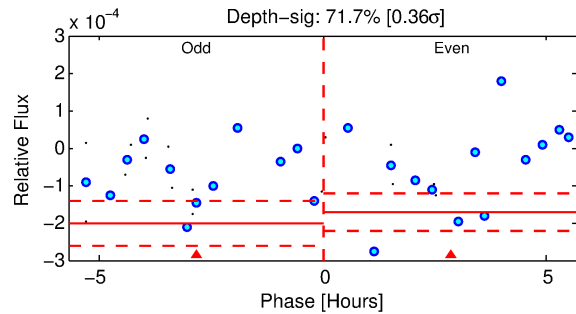
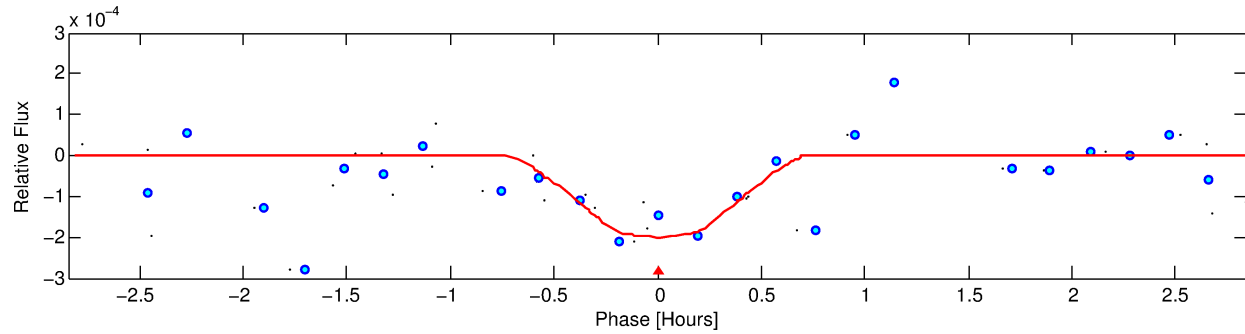
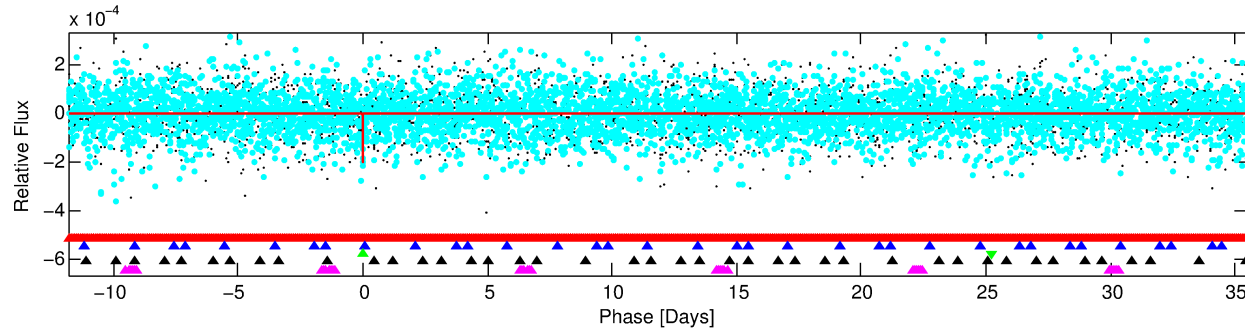
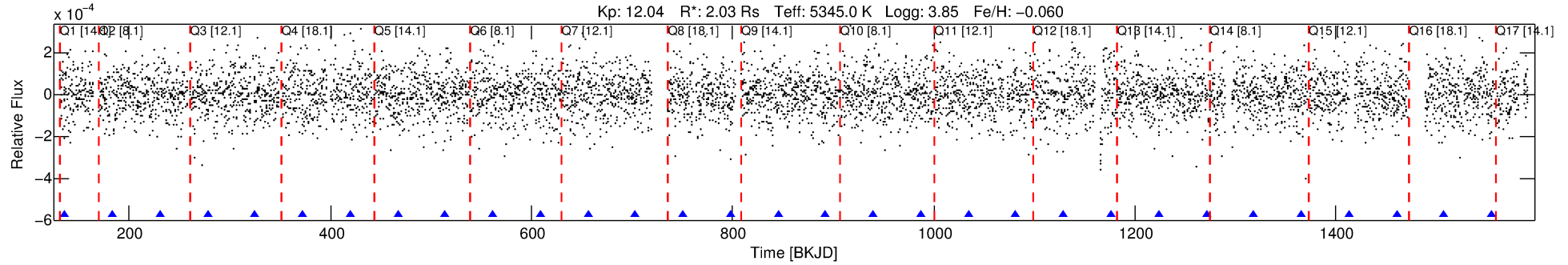
Ephemeris Match Information For 007362587-03

No Significant Match Found



# DV One-Page Summary

KIC: 7362587 Candidate: 3 of 5 Period: 47.285 d



## DV Fit Results:

Period = 47.28454 [0.00030] d  
Epoch = 136.1556 [0.0070] BKJD  
Rp/R\* = 0.0136 [0.0486]  
a/R\* = 311.96 [4287.40]  
b = 0.60 [15.26]  
Seff = 44.12 [10.58]  
Teq = 657 [39] K  
Rp = 3.01 [10.80] Re  
a = 0.2619 [0.0418] AU  
Ag = 400.06 [2865.69] [0.14 $\sigma$ ]  
Teffp = 4544 [8134] K [0.48 $\sigma$ ]

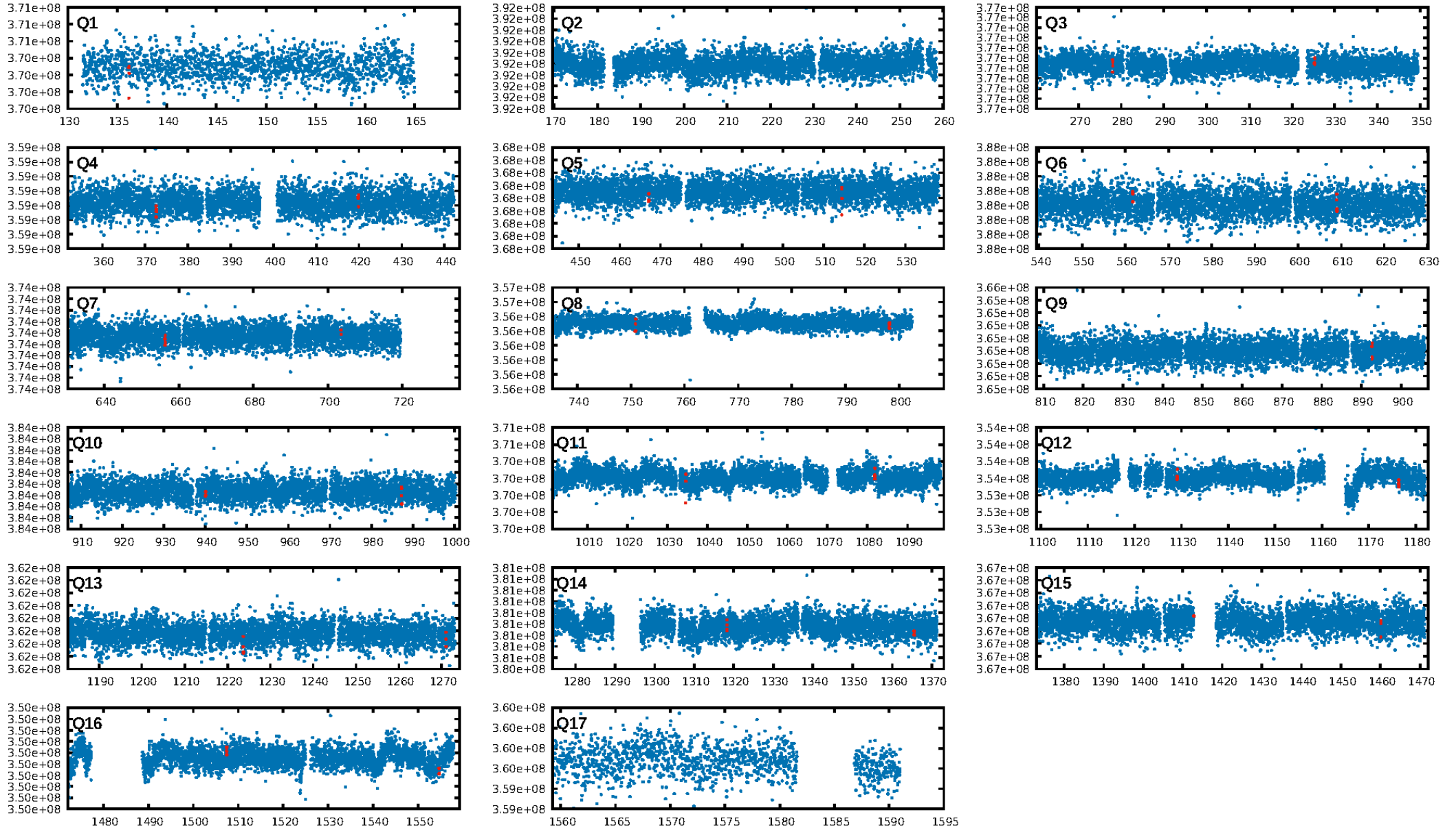
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [90.91 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 57.1%  
ModelChiSquareGof-sig: 99.4%  
**Bootstrap-pfa: 3.55e-08**  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: -0.0197  
Centroid-sig: 50.3%  
Centroid-so: 0.430 arcsec [0.61 $\sigma$ ]  
OotOffset-rm: 1.907 arcsec [1.66 $\sigma$ ]  
KicOffset-rm: 1.867 arcsec [1.59 $\sigma$ ]  
OotOffset-st: 2/4/3/1 [10]  
KicOffset-st: 2/4/3/1 [10]  
DiffImageQuality-fgm: 0.30 [3/10]  
DiffImageOverlap-fno: 0.00 [0/15]

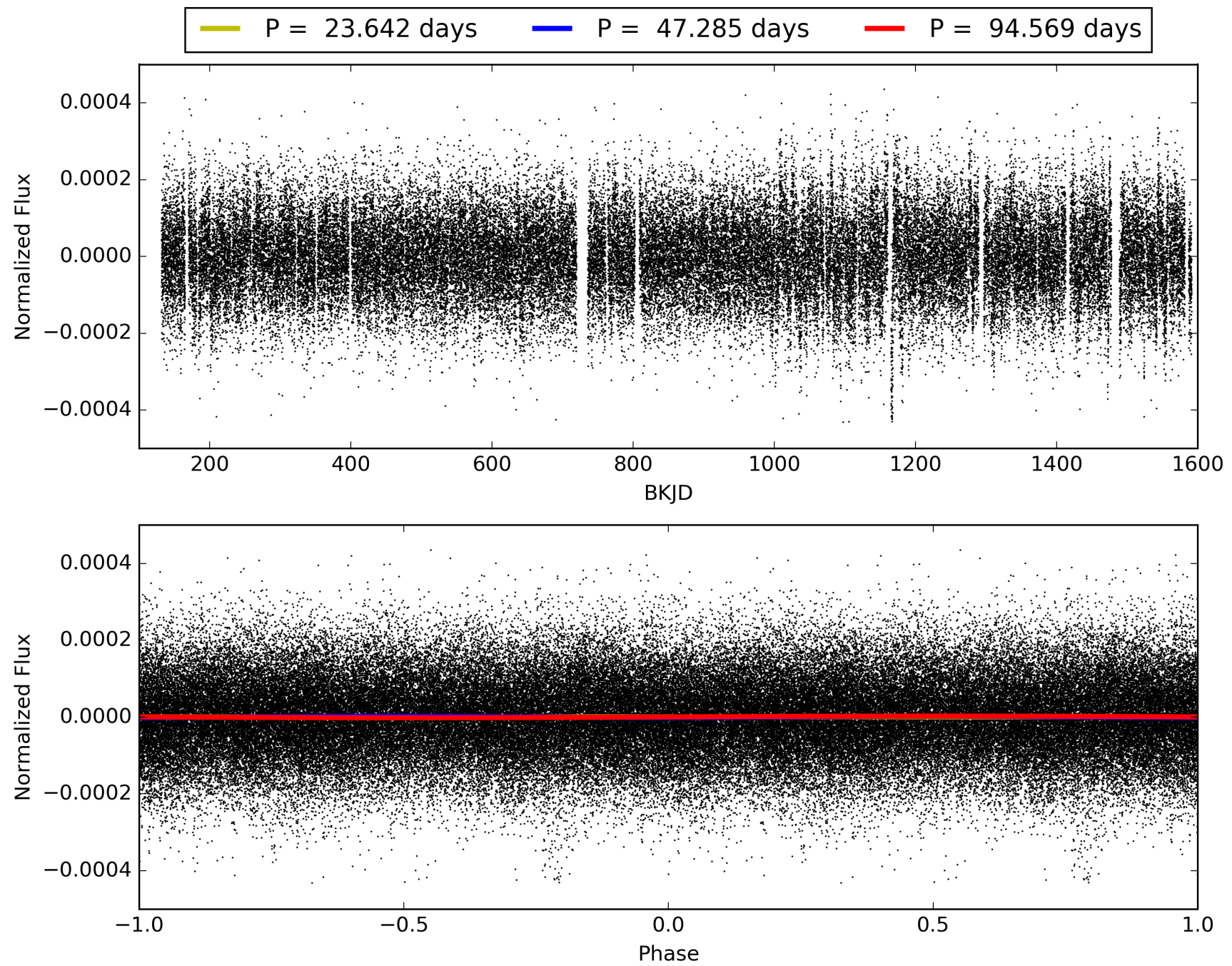
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:18:39 Z

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

# TCE 007362587-03, PDC Light Curves

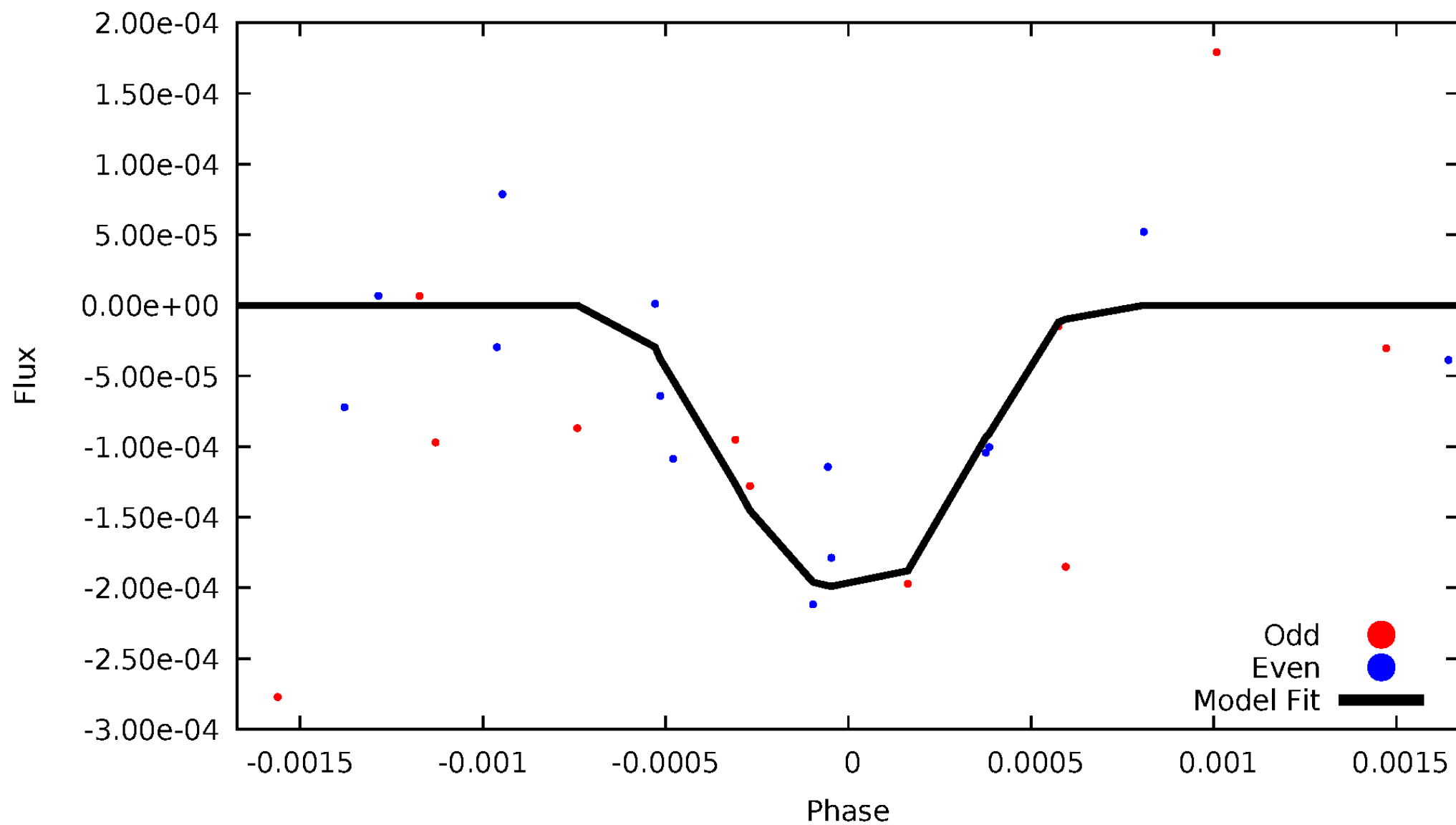


TCE 007362587-03



# DV Odd/Even

TCE 007362587-03





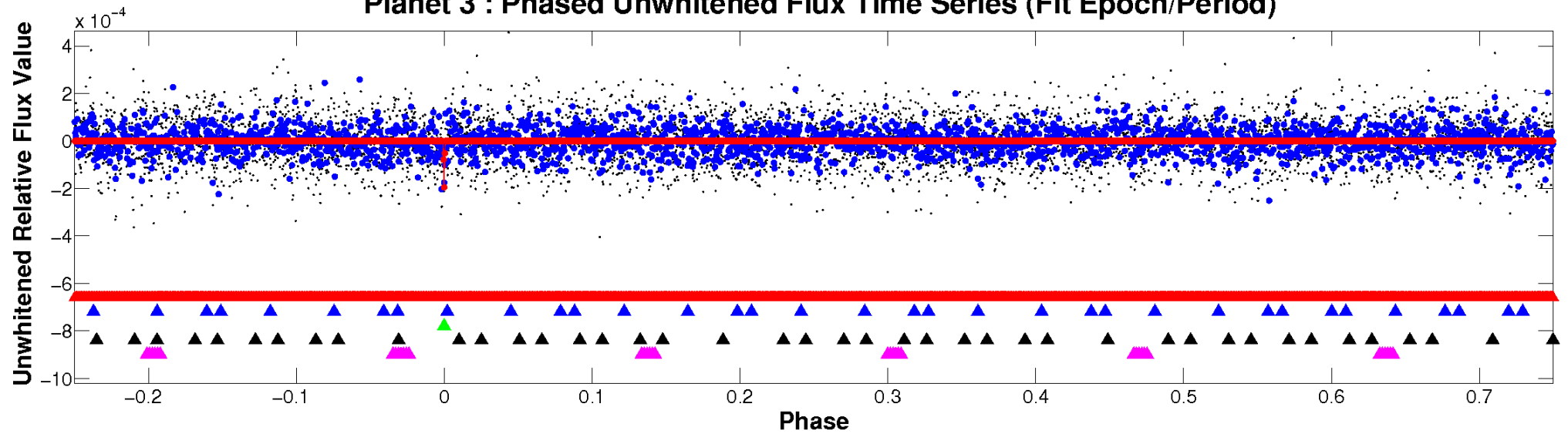
ALT Odd/Even

This plot does not exist for this TCE.

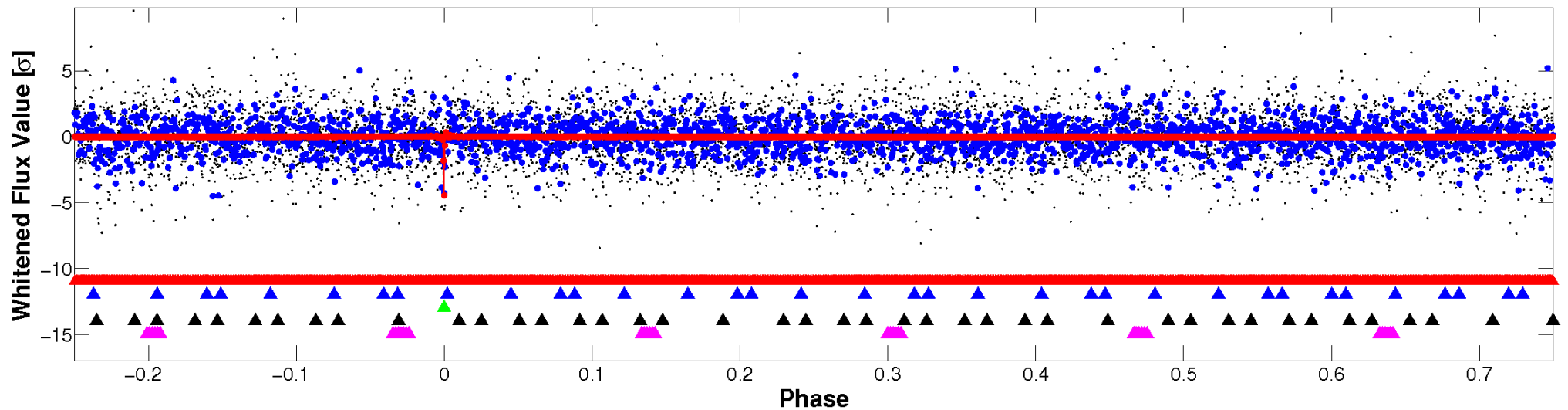


# Non-Whitened Vs. Whitened Light Curve

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

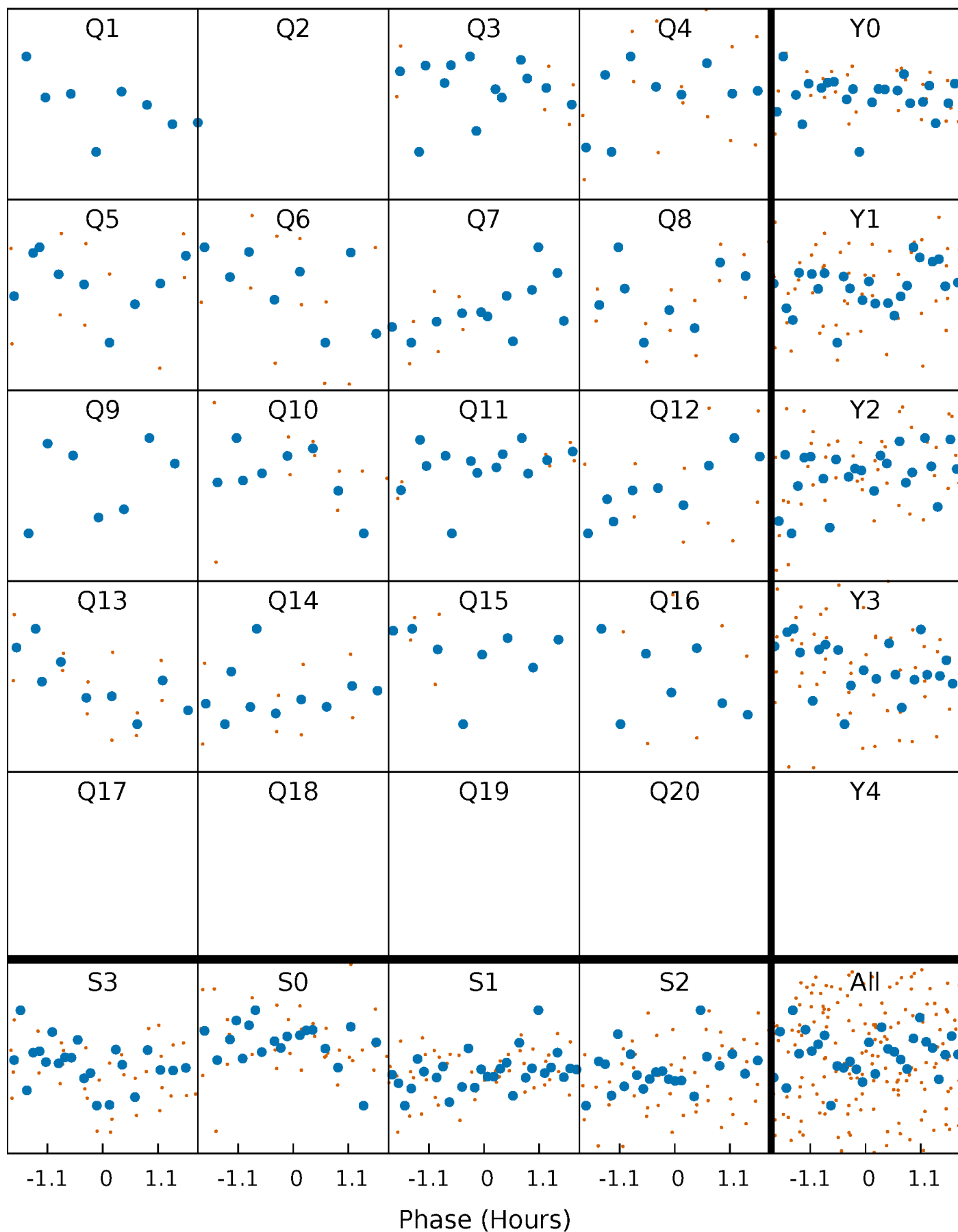


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



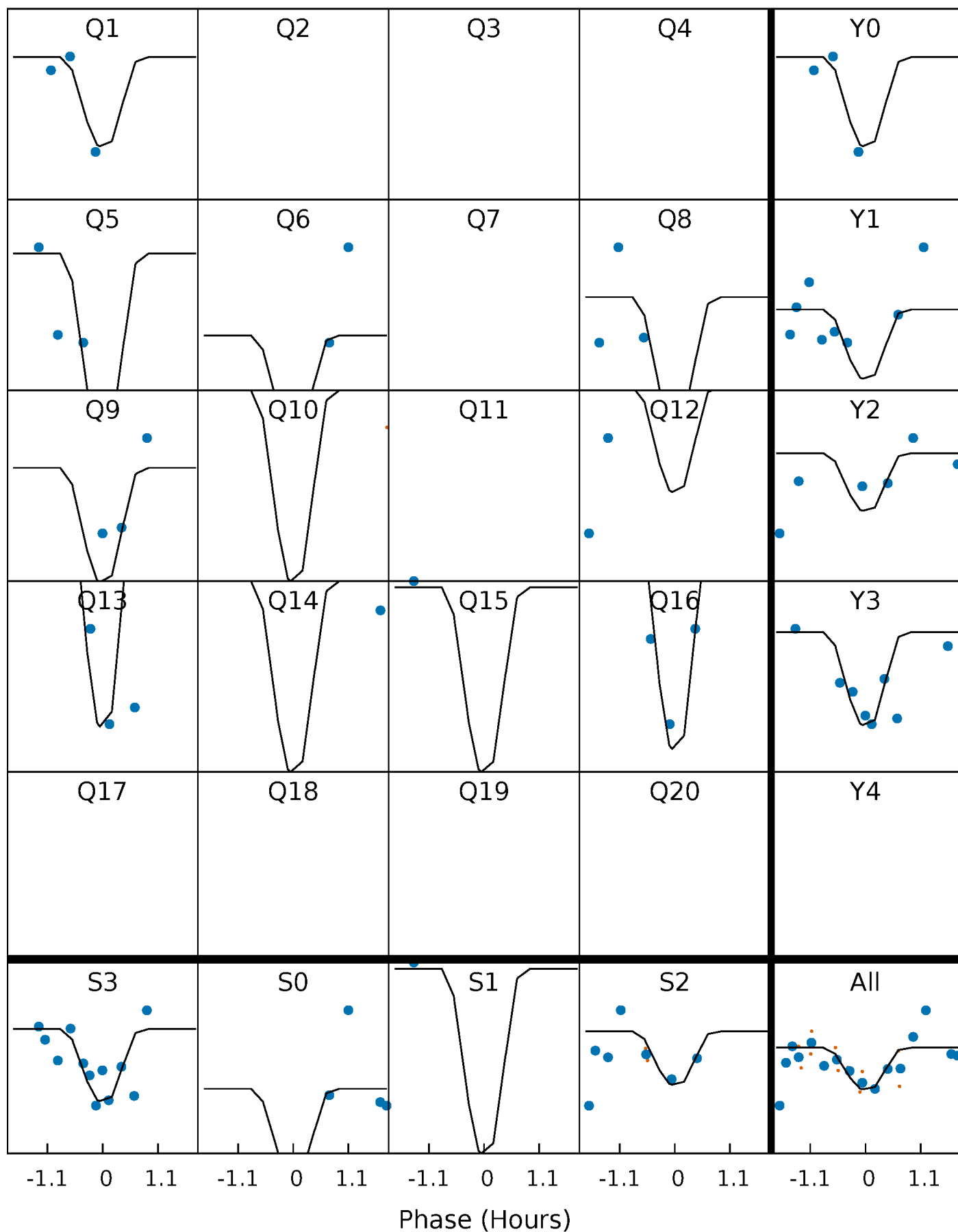
# PDC Quarter-Phased Transit Curves

TCE 007362587-03   P= 47.284540 Days    $T_0=136.155573$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007362587-03     $P = 47.284540$  Days     $T_0 = 136.155573$  (BKJD)

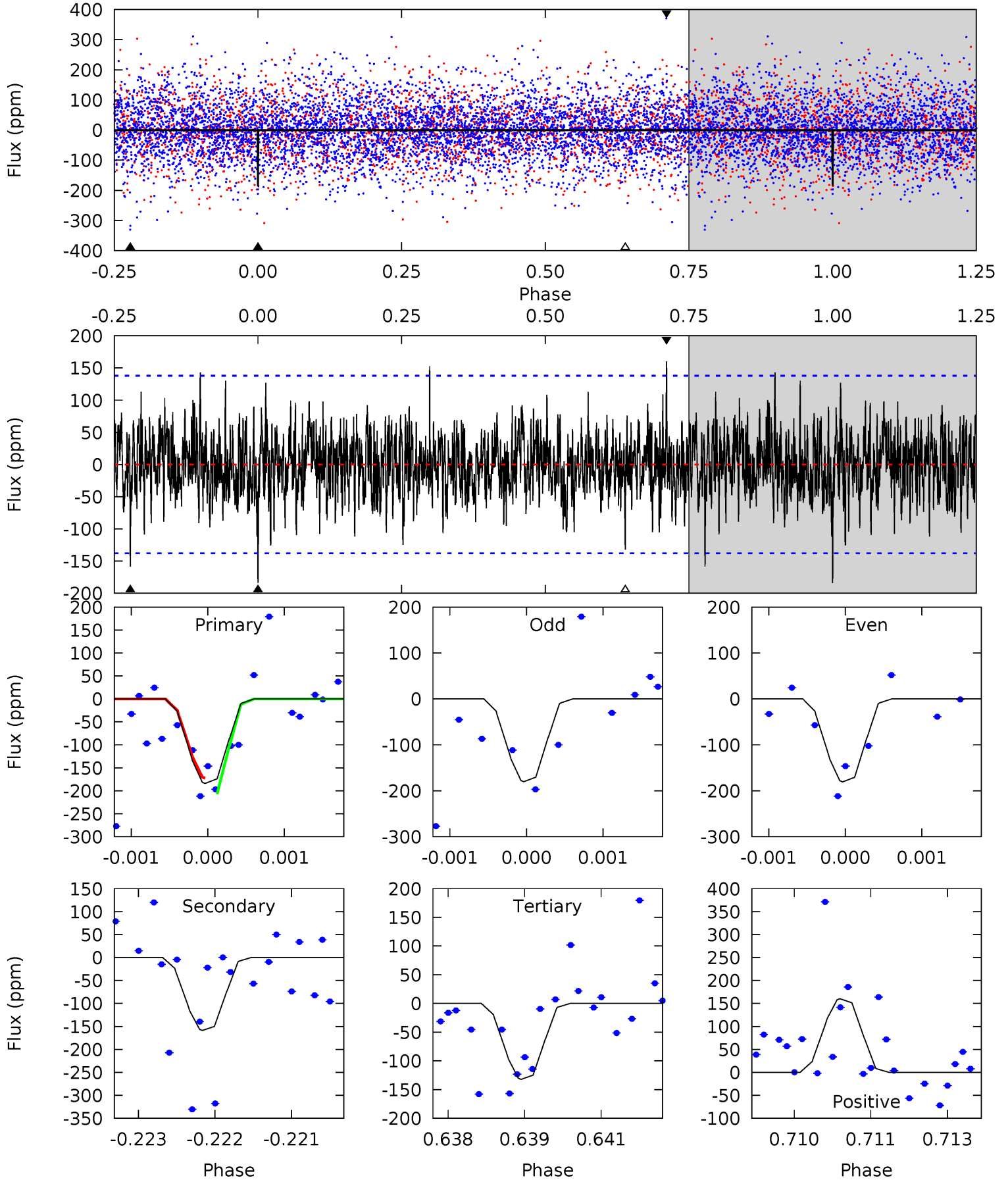


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

007362587-03, P = 47.284540 Days, E = 88.871033 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
7.21	6.21	5.17	6.28	5.40	3.21	1.56	2.03	0.93	1.04	-0.06	0.01	0.93	0.47	0.67



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.



### Stellar Parameters For KIC 007362587

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5345^{+85}_{-74}$	$3.851^{+0.126}_{-0.103}$	$-0.060^{+0.150}_{-0.150}$	$2.034^{+0.387}_{-0.387}$	$1.072^{+0.153}_{-0.139}$	$0.179^{+0.115}_{-0.060}$
	+2%/-1%	+3%/-3%	+250%/-250%	+19%/-19%	+14%/-13%	+64%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 007362587-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-159 \pm 26$	$8.21^{+8.97}_{-5.28}$	$919^{+41}_{-44}$	$3533^{+1804}_{-684}$	$89^{+669}_{-69}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

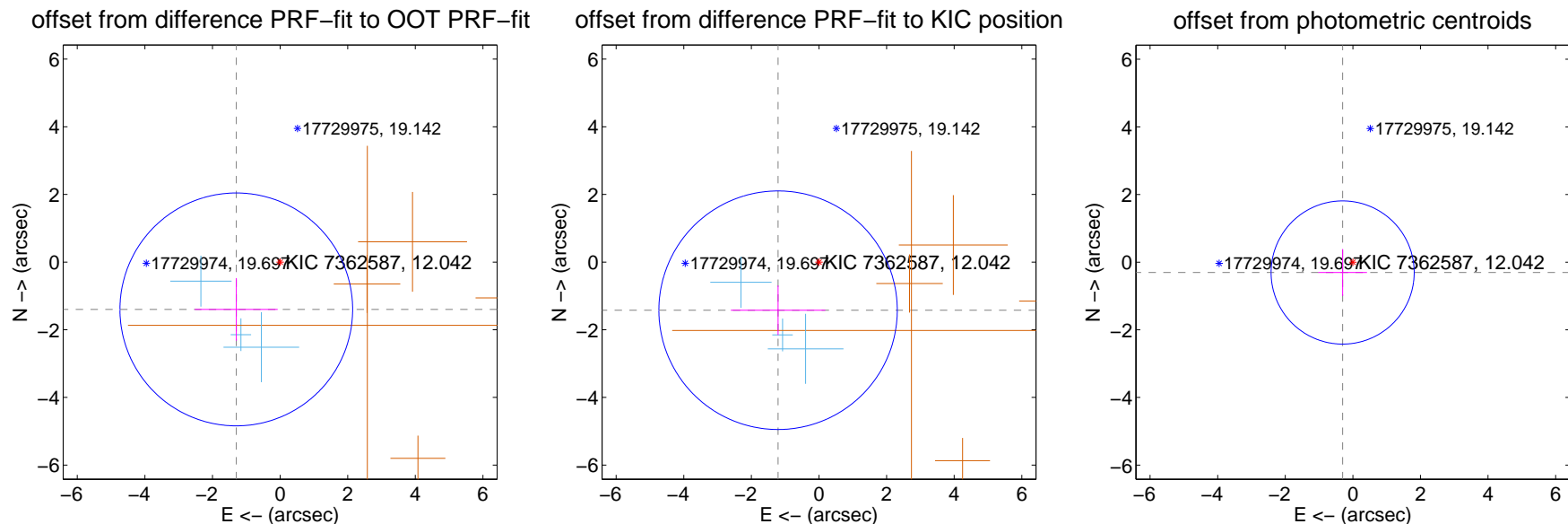
## DV Centroid Data

Supplemental centroid analysis for 007362587-03. Kepler magnitude: 12.04. Transit SNR 10.71

There are 3 quarters with good PRF difference image offsets

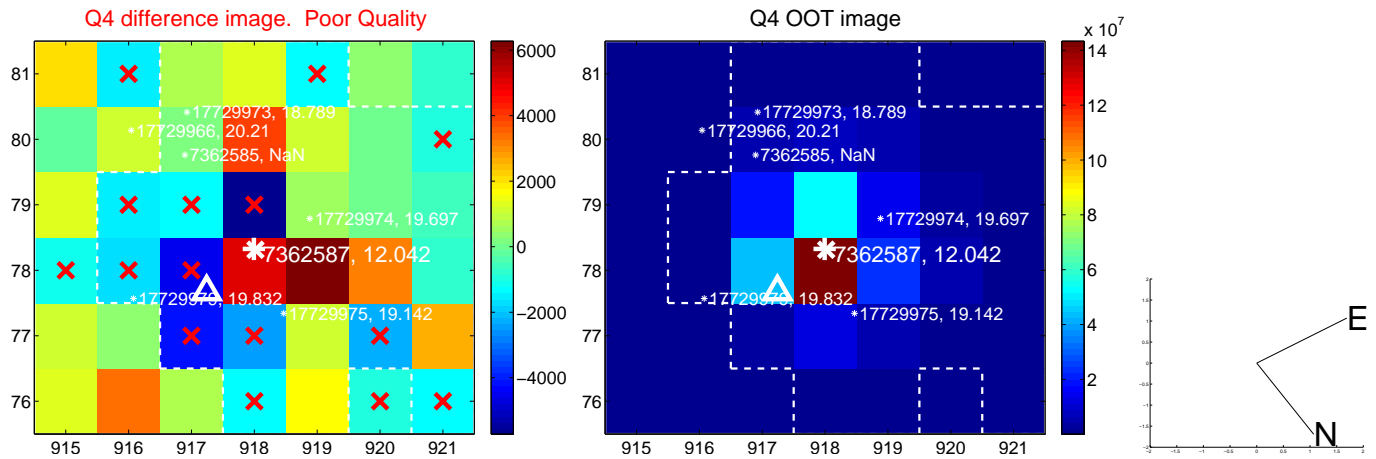
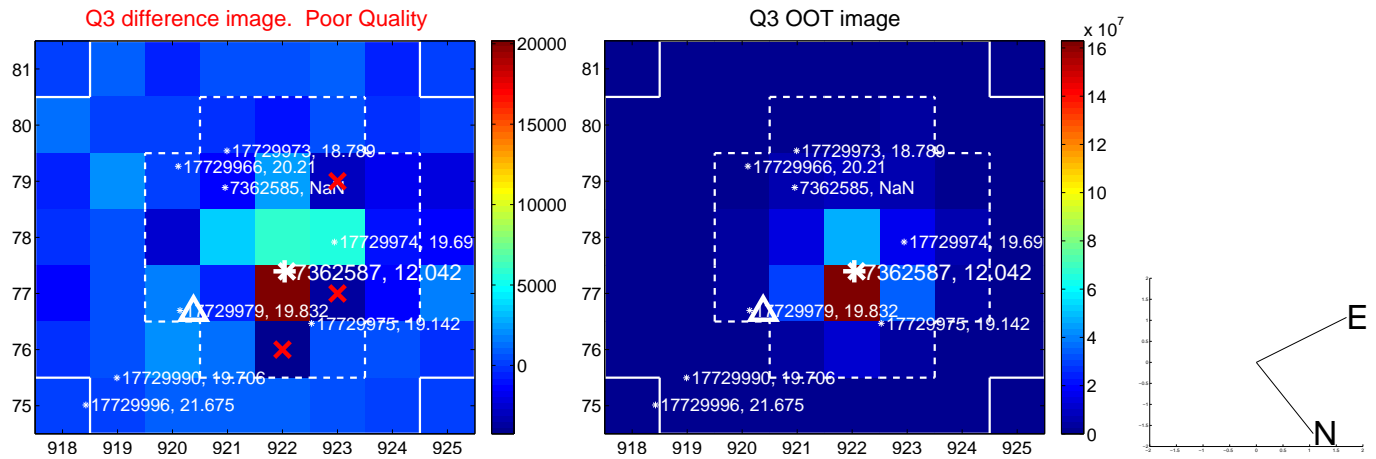
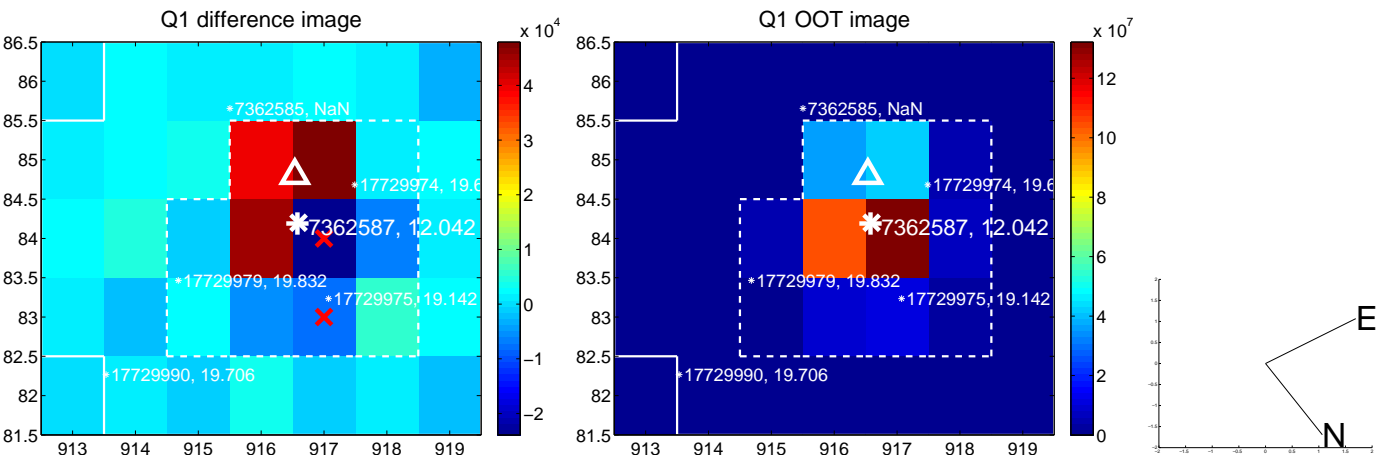
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.907 \pm 1.147$	1.66	$1.296 \pm 1.226$	$-1.399 \pm 0.926$
PRF-fit source offset from KIC position	$1.867 \pm 1.175$	1.59	$1.210 \pm 1.397$	$-1.422 \pm 0.732$
photometric centroid source offset	$0.43 \pm 0.71$	0.61	$0.30 \pm 0.72$	$-0.31 \pm 0.69$

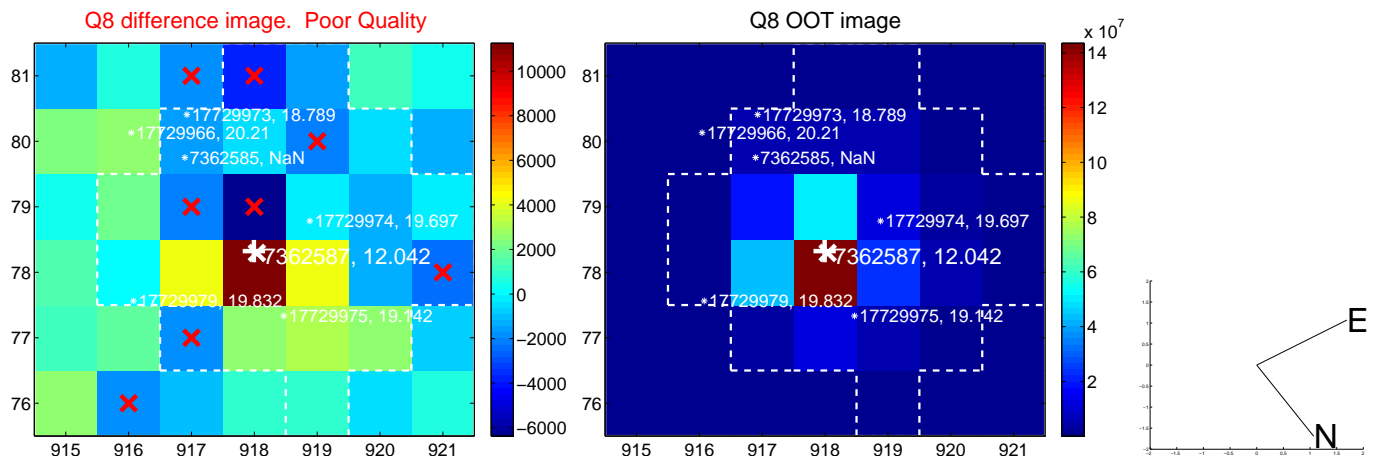
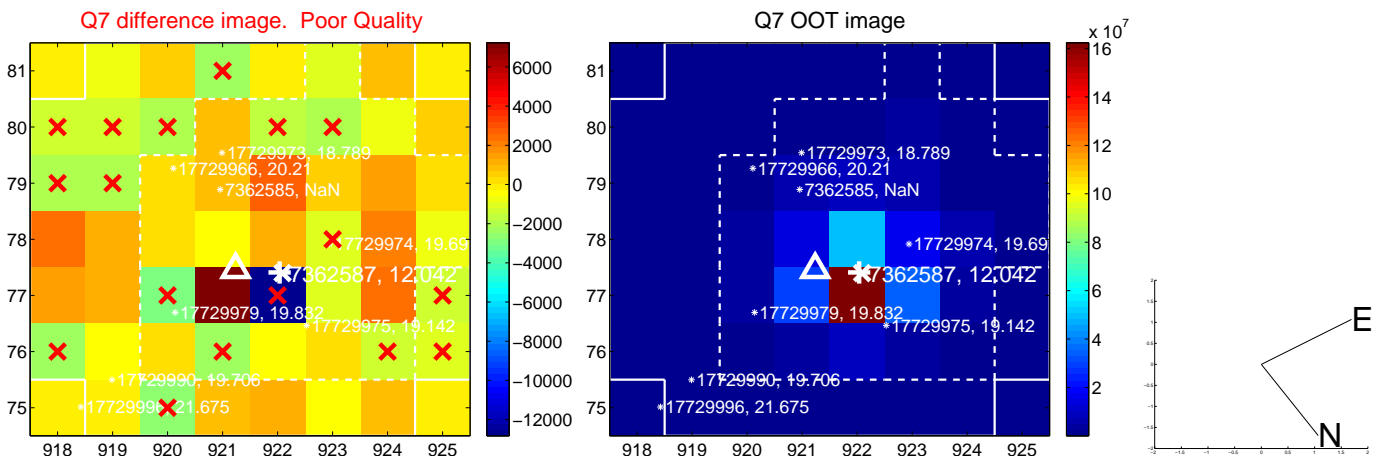
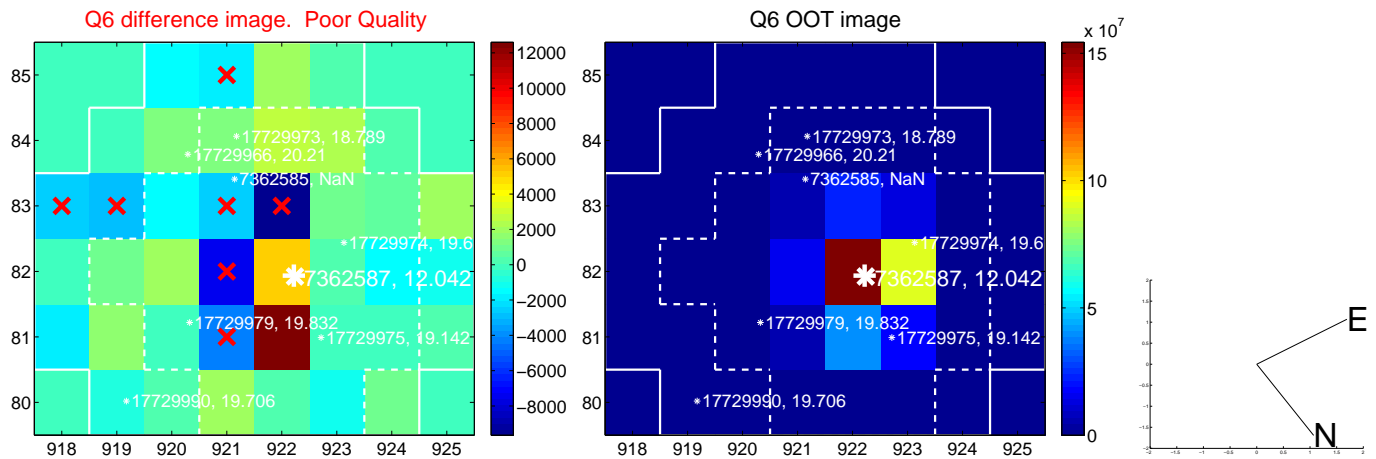
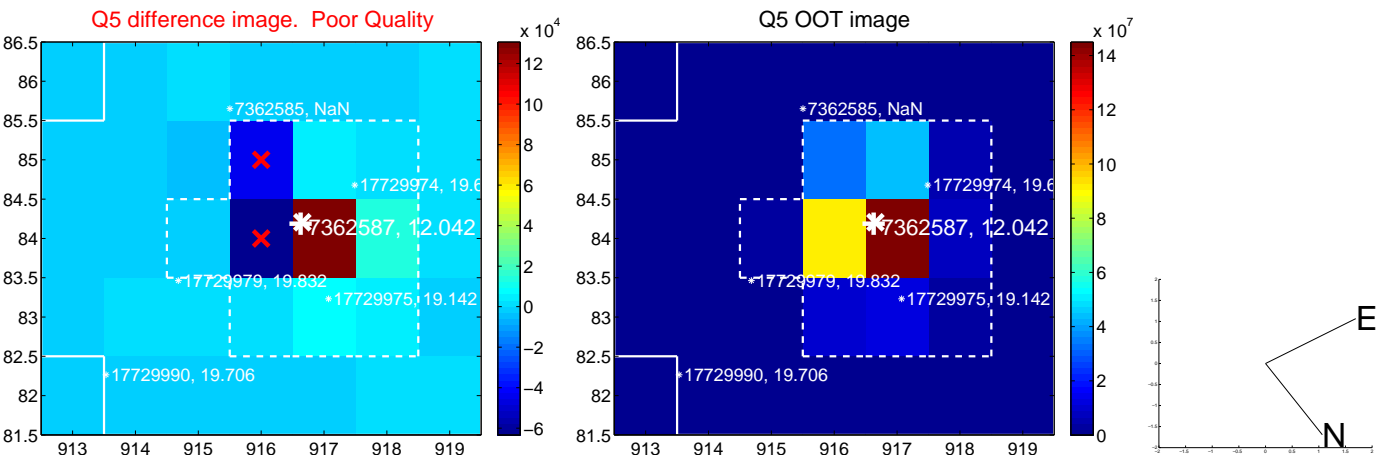


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

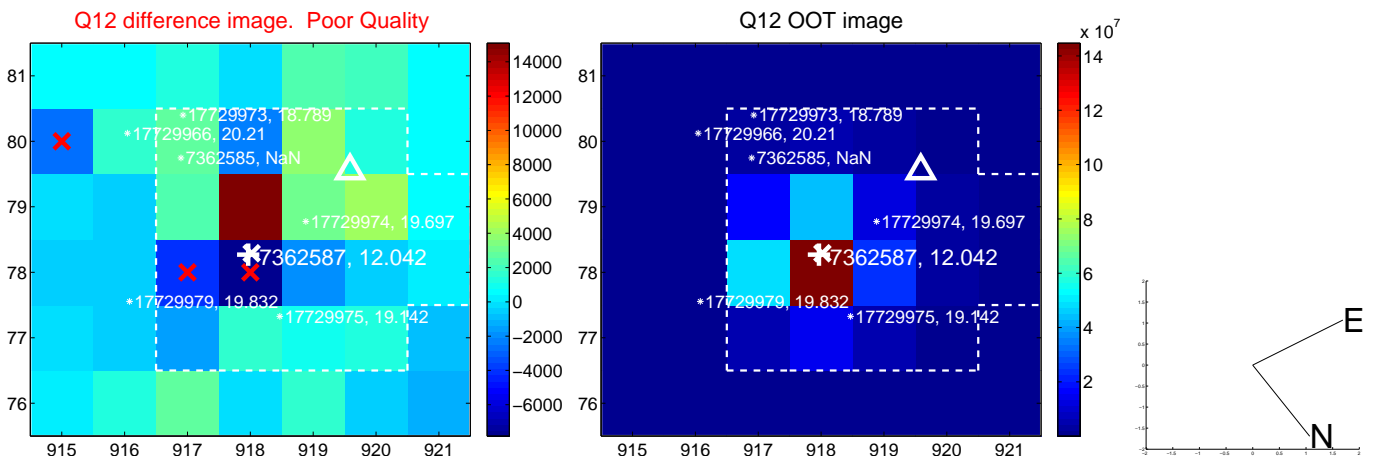
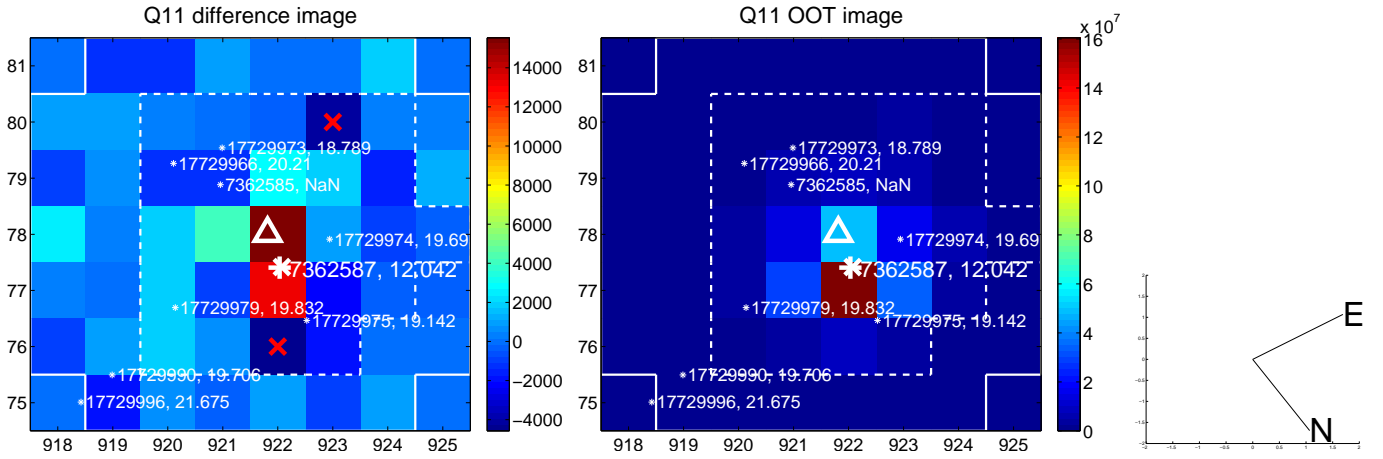
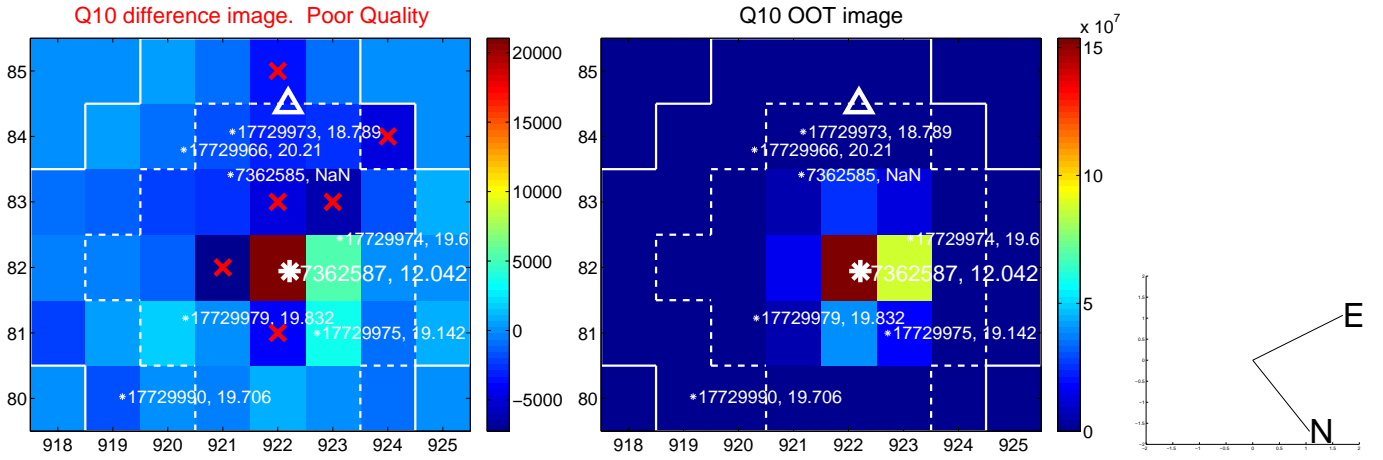
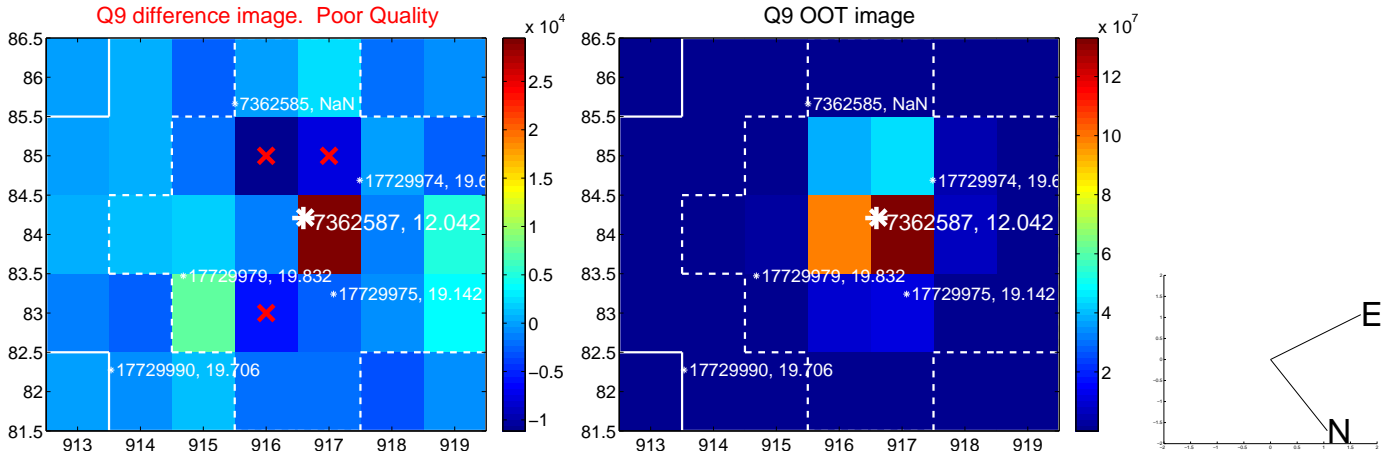
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



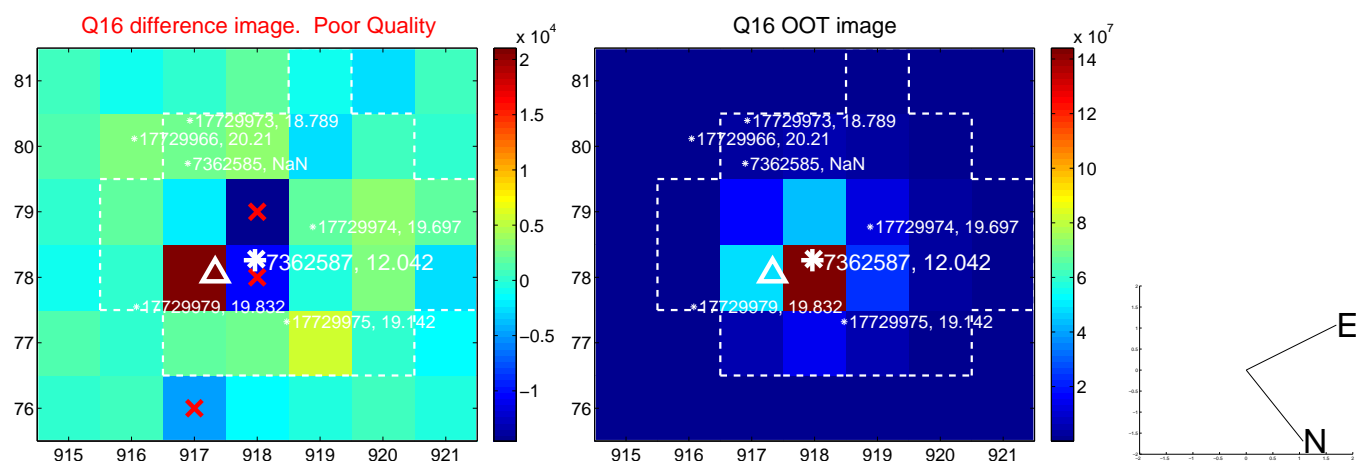
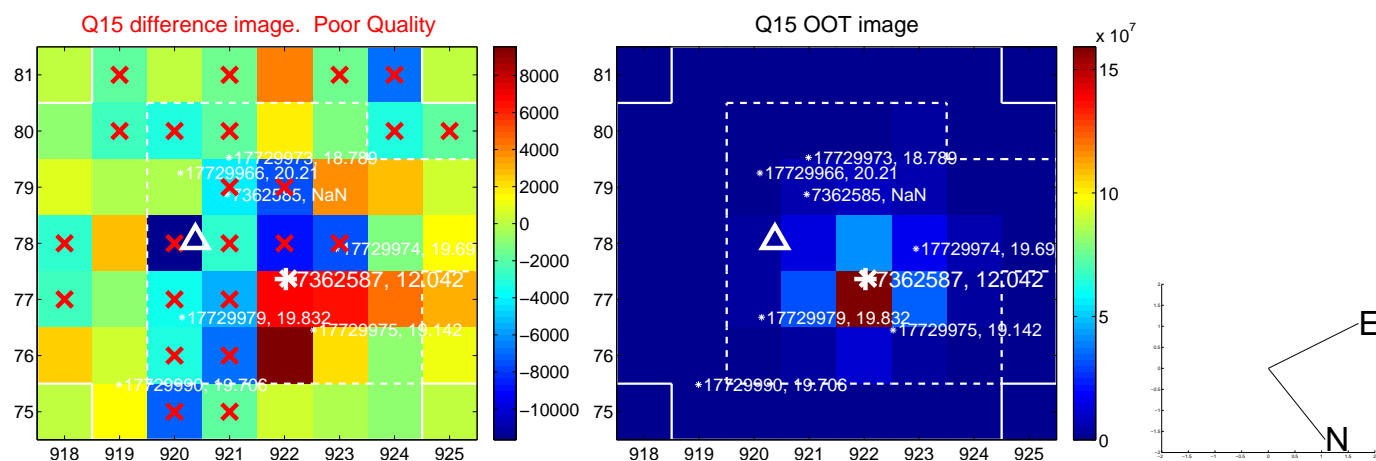
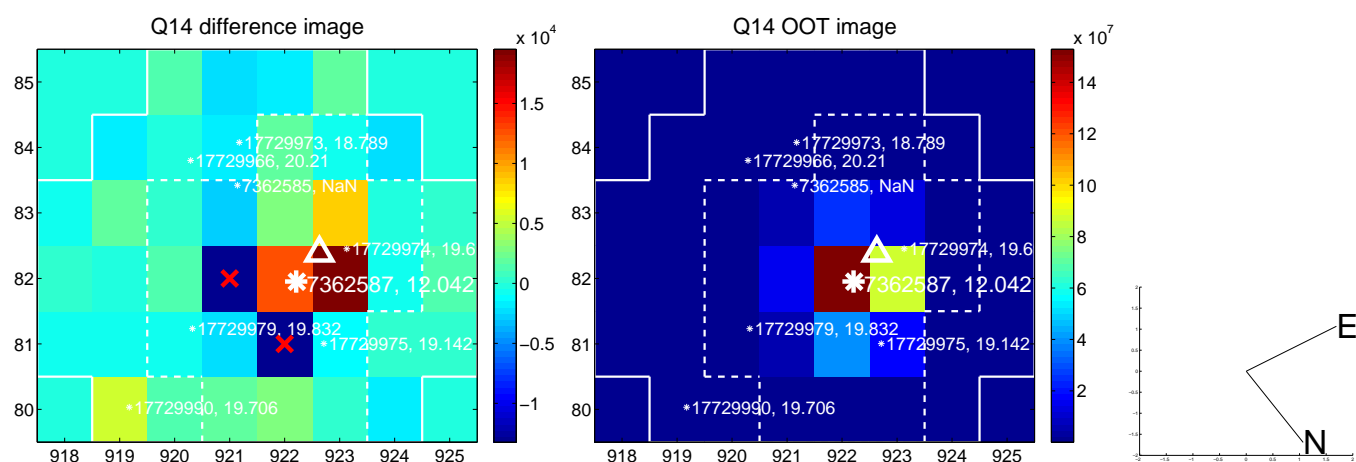
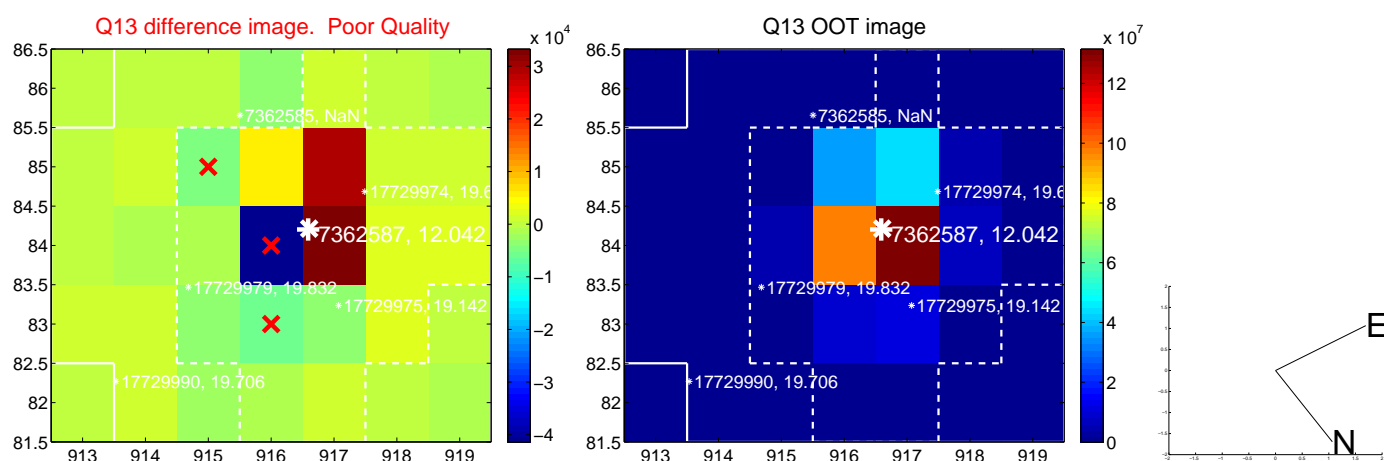
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

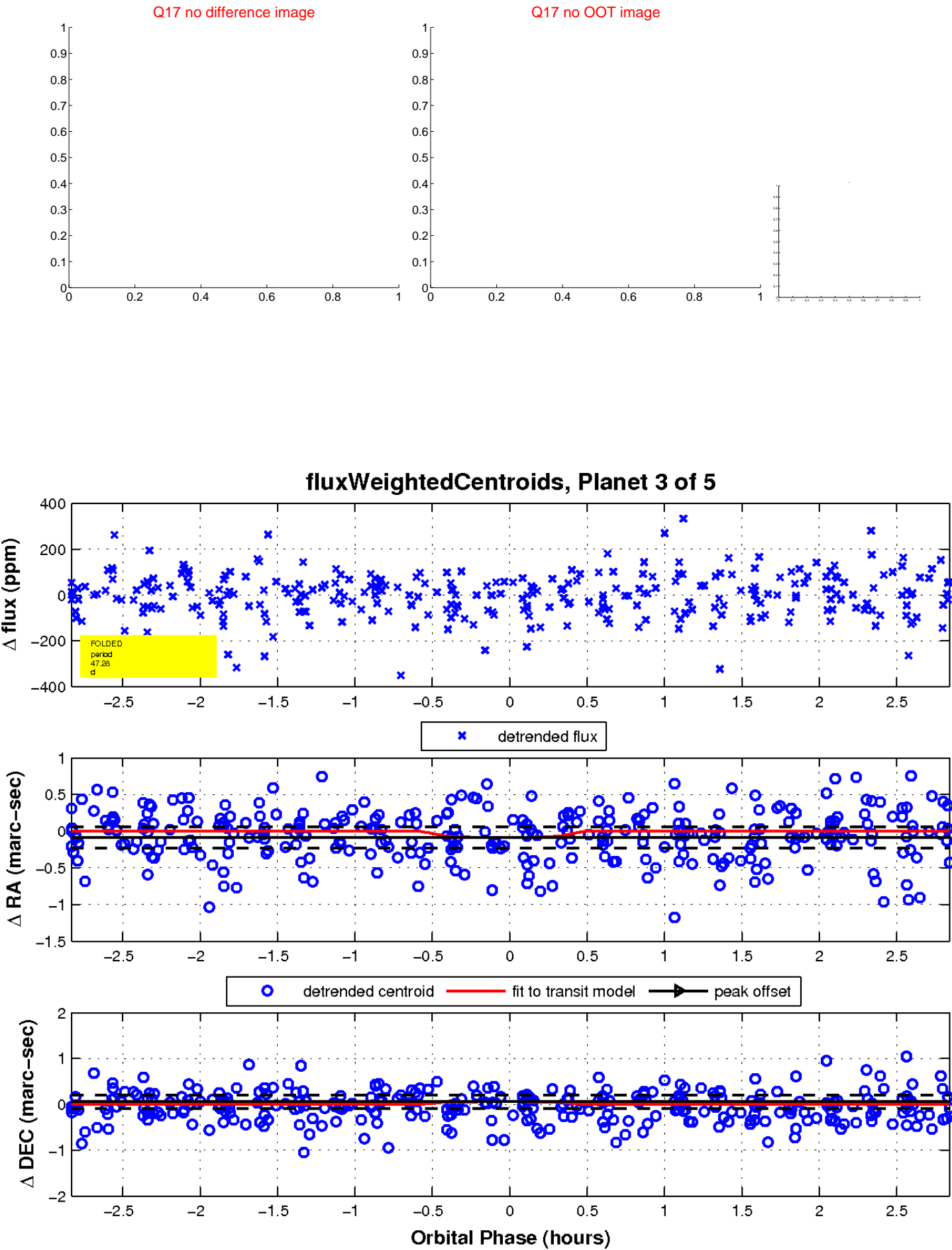


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



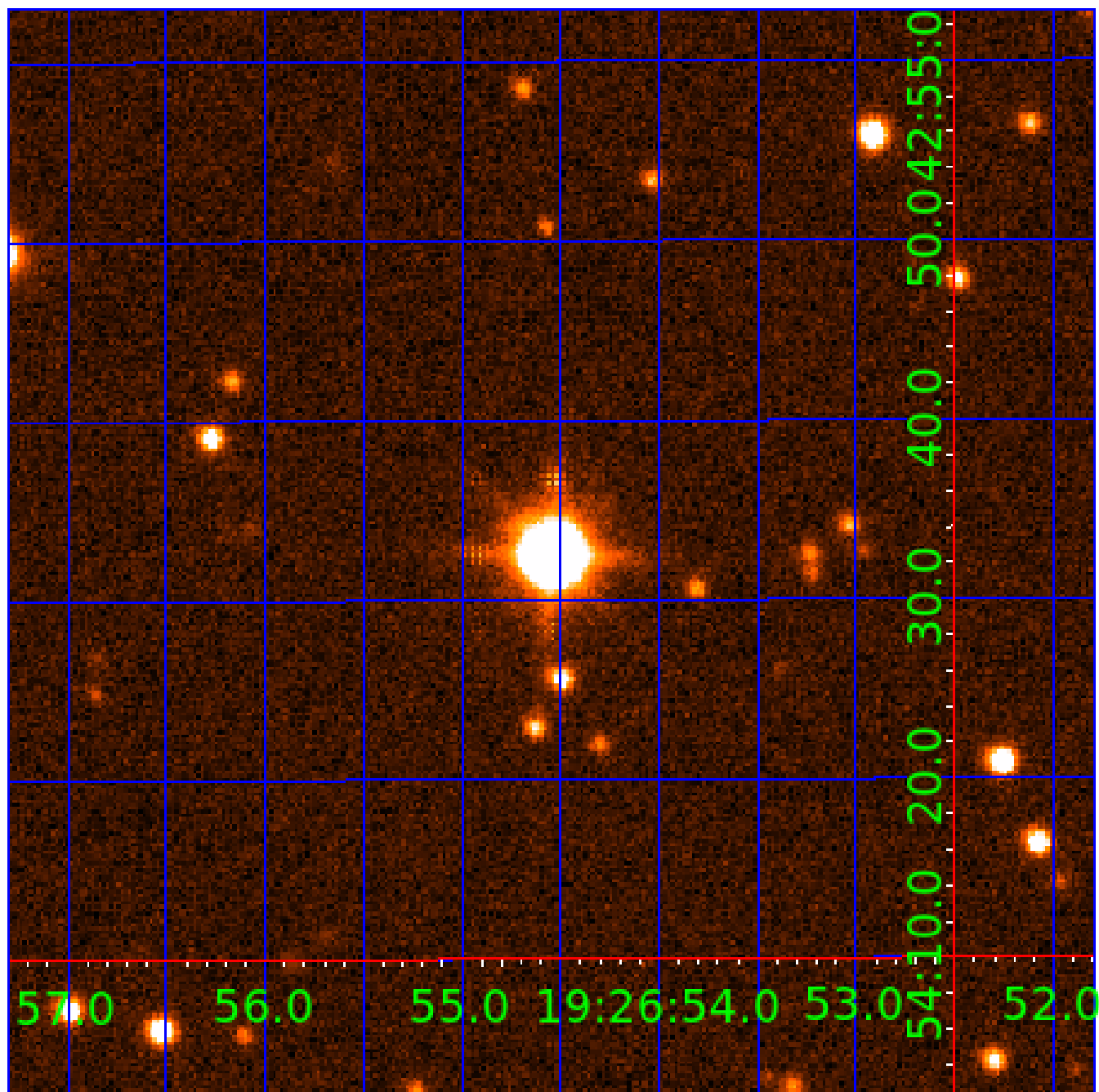


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007362587

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007362587-01	OBS	No	0.566749	131.873256	9.2	3.909	13.6	9.6	2.03	5345	0.66	16084.16
007362587-02	OBS	No	41.628373	168.157945	204.9	1.153	11.2	10.7	2.03	5345	2.87	52.29
007362587-03	OBS	No	47.284540	136.155573	199.7	0.949	9.8	10.7	2.03	5345	3.01	44.12
007362587-04	OBS	No	34.980600	132.052193	146.0	1.723	9.2	9.7	2.03	5345	2.63	65.94
007362587-05	OBS	No	39.417959	134.519098	193.2	1.144	10.0	12.1	2.03	5345	2.82	56.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007362587-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
007362587-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
007362587-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
007362587-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007362587-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

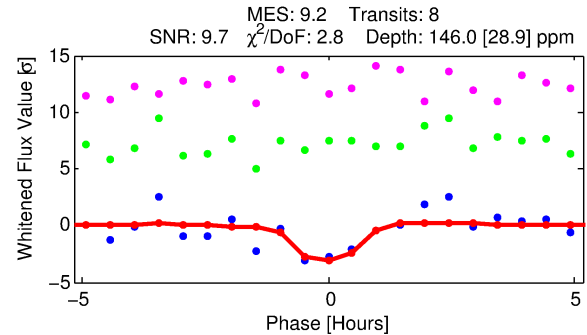
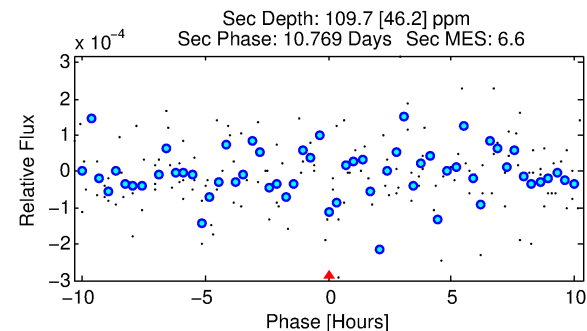
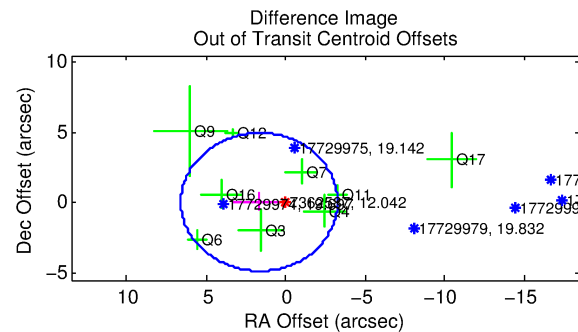
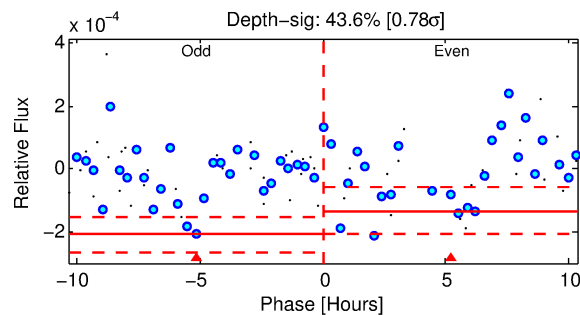
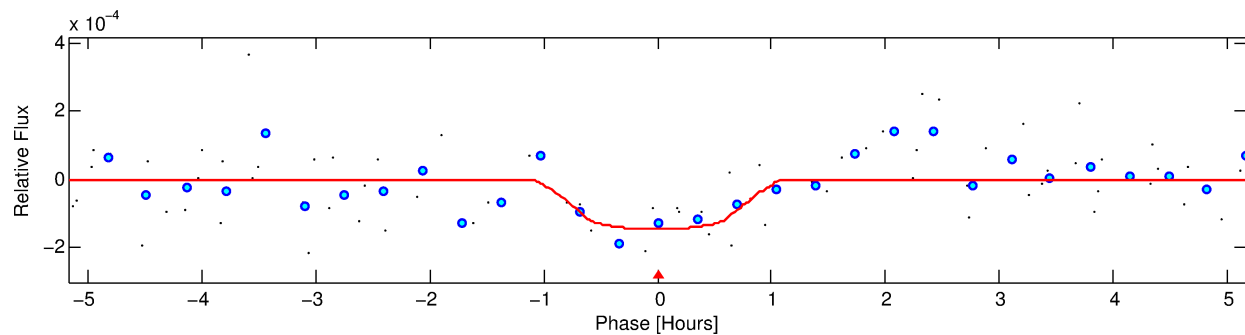
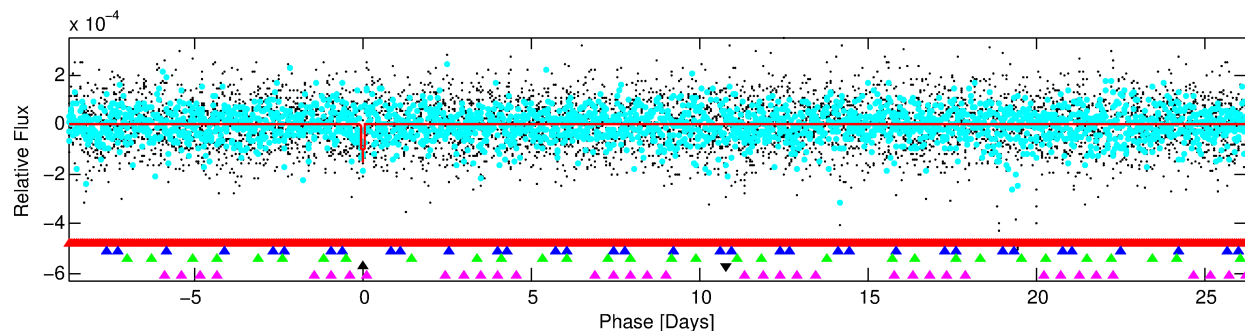
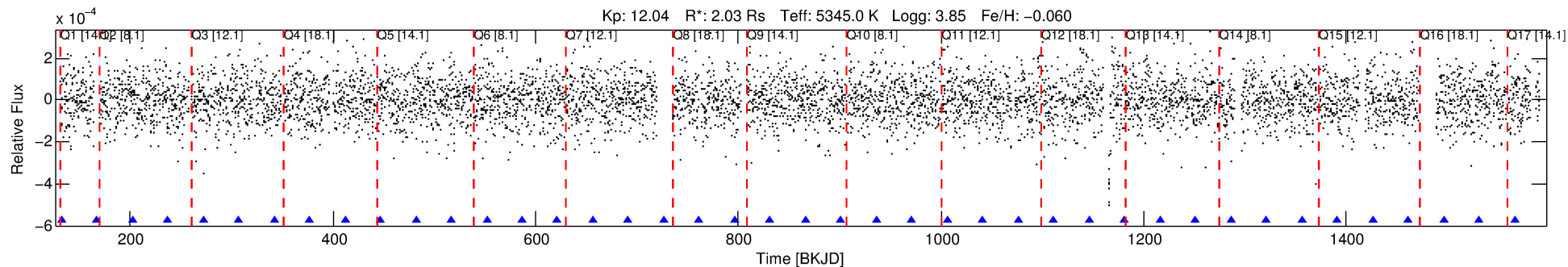
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007362587-04

No Significant Match Found

# DV One-Page Summary

KIC: 7362587 Candidate: 4 of 5 Period: 34.981 d



## DV Fit Results:

Period = 34.98060 [0.00054] d  
Epoch = 132.0522 [0.0134] BKJD  
Rp/R\* = 0.0118 [0.0251]  
a/R\* = 113.86 [924.90]  
b = 0.70 [6.20]  
Seff = 65.94 [15.82]  
Teq = 727 [44] K  
Rp = 2.63 [5.59] Re  
a = 0.2142 [0.0342] AU  
Ag = 401.49 [1713.37] [0.23 $\sigma$ ]  
Teffp = 5029 [5358] K [0.80 $\sigma$ ]

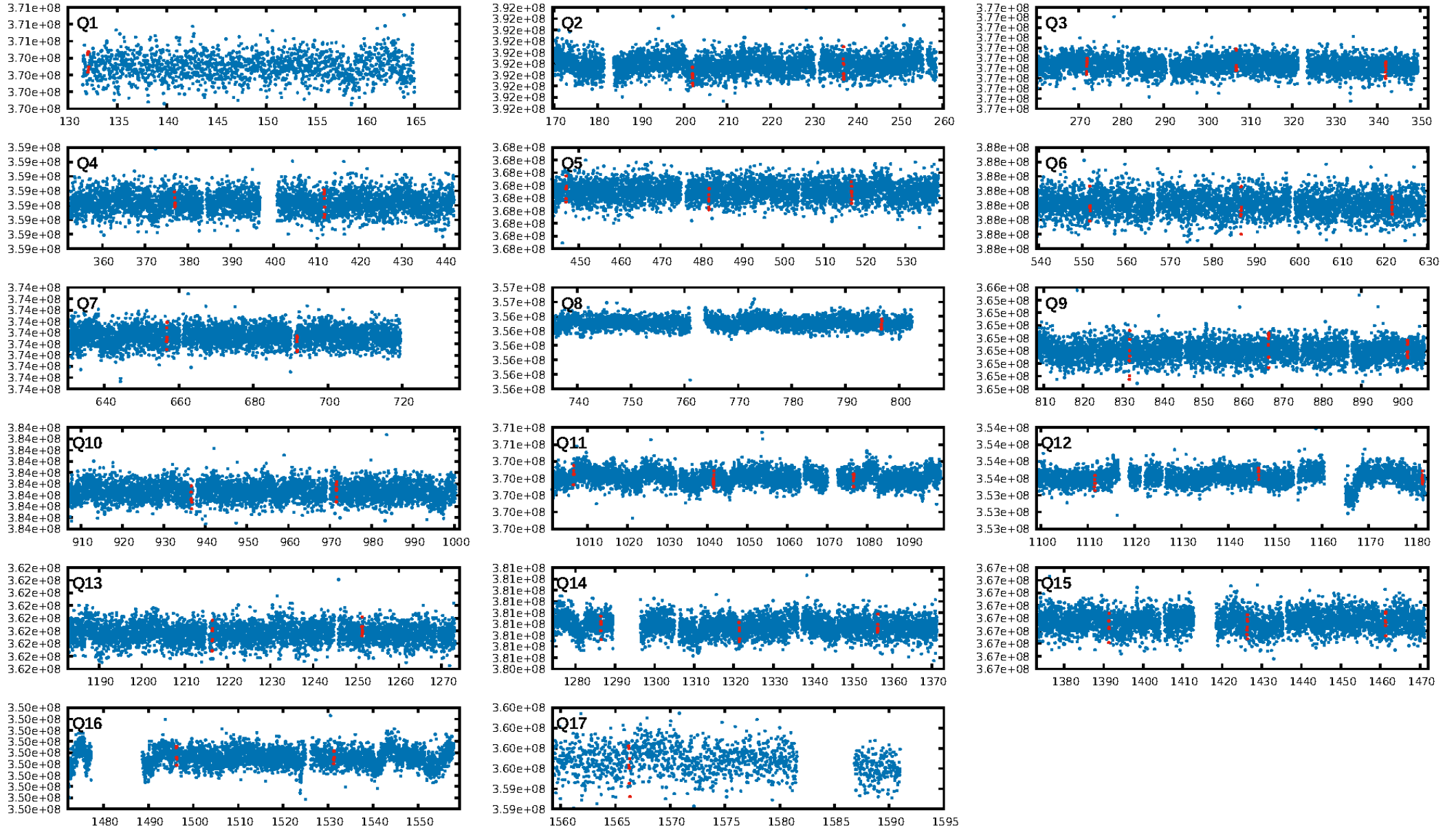
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [193.36 $\sigma$ ]  
LongPeriod-sig: 100.0% [51.50 $\sigma$ ]  
ModelChiSquare2-sig: 26.3%  
ModelChiSquareGof-sig: 88.4%  
**Bootstrap-pfa: 1.86e-07**  
RollingBand-fgt: 1.00 [8/8]  
**GhostDiagnostic-chr: 0.9423**  
Centroid-sig: 31.0%  
Centroid-so: 0.512 arcsec [0.86 $\sigma$ ]  
OotOffset-rm: 1.671 arcsec [1.02 $\sigma$ ]  
OotOffset-st: 1/3/3/2 [9]  
KicOffset-rm: 1.528 arcsec [0.92 $\sigma$ ]  
KicOffset-st: 1/3/3/2 [9]  
DiffImageQuality-fgm: 0.22 [2/9]  
DiffImageOverlap-fno: 0.00 [0/17]

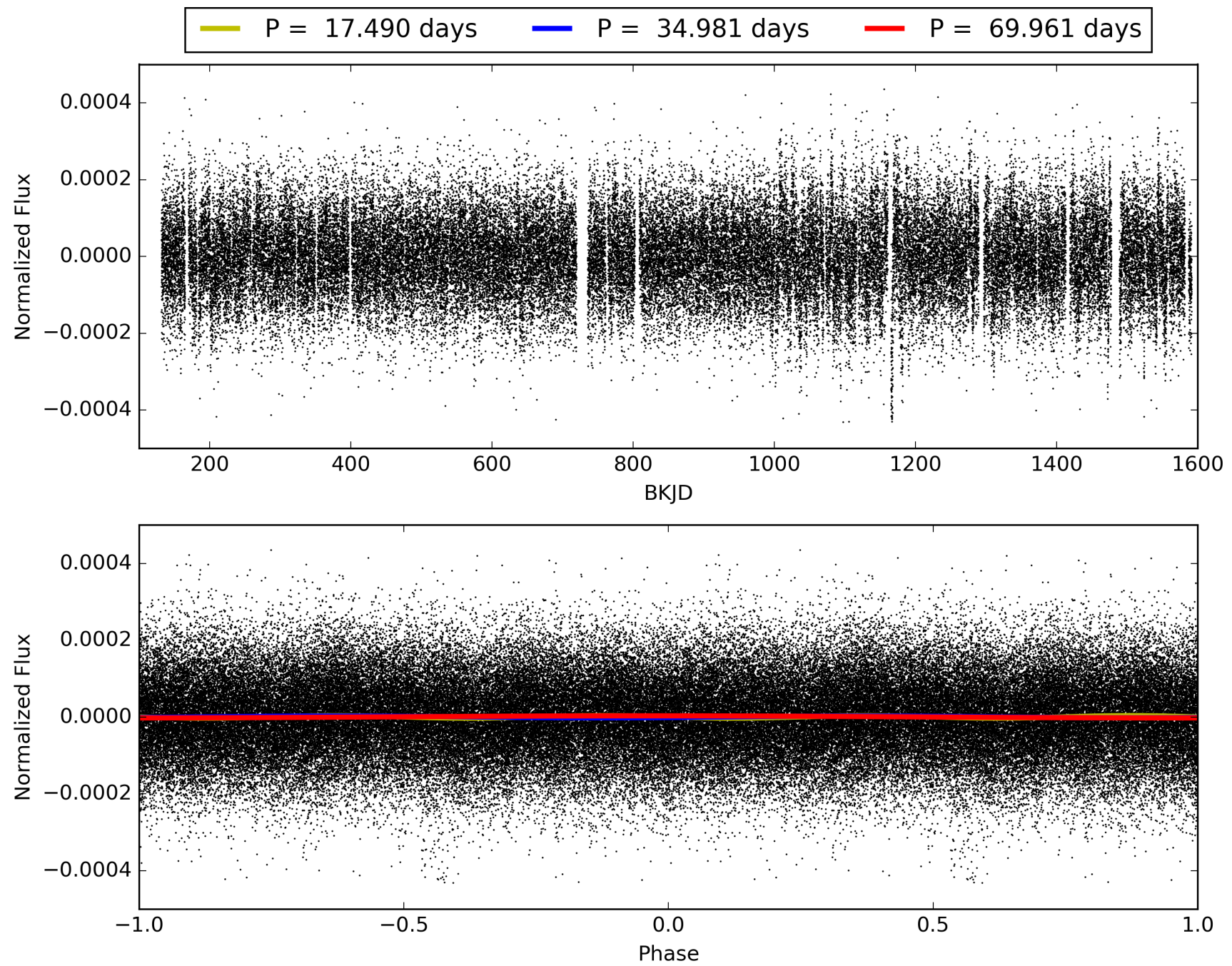
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:18:42 Z

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

# TCE 007362587-04, PDC Light Curves



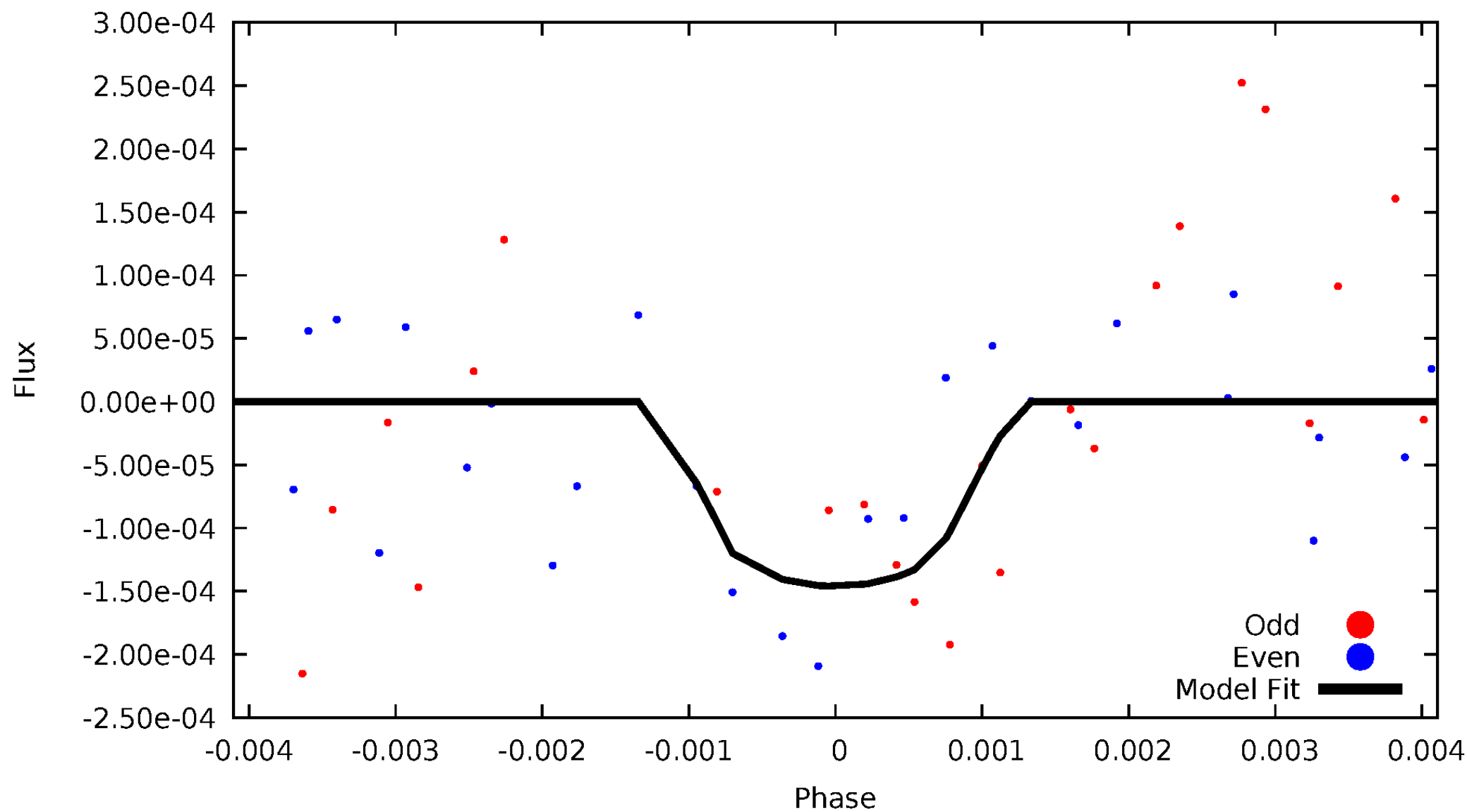
TCE 007362587-04





# DV Odd/Even

TCE 007362587-04



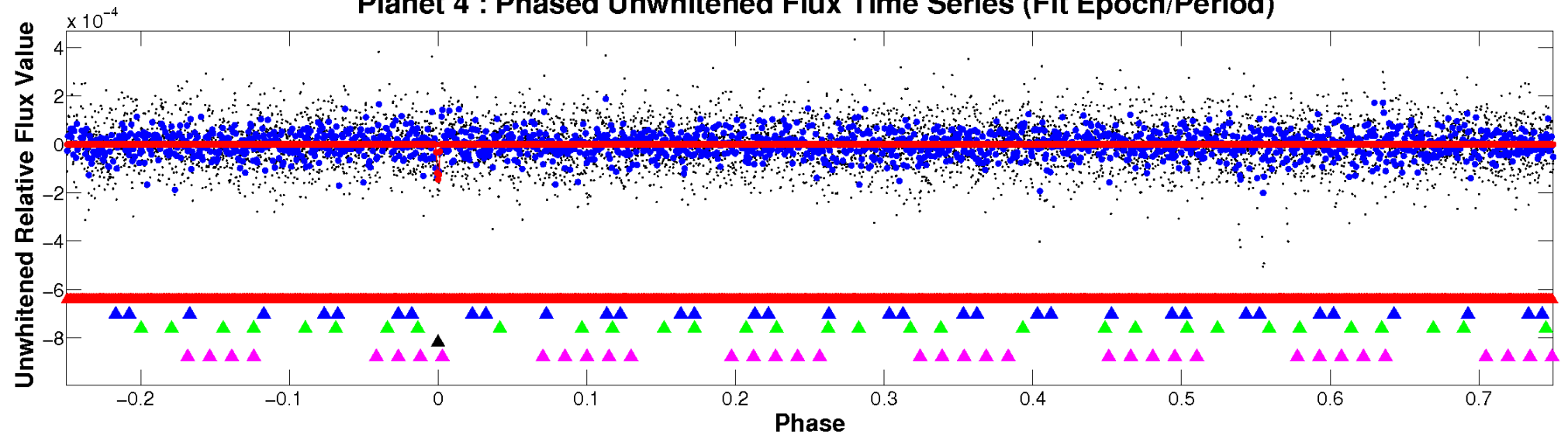


ALT Odd/Even

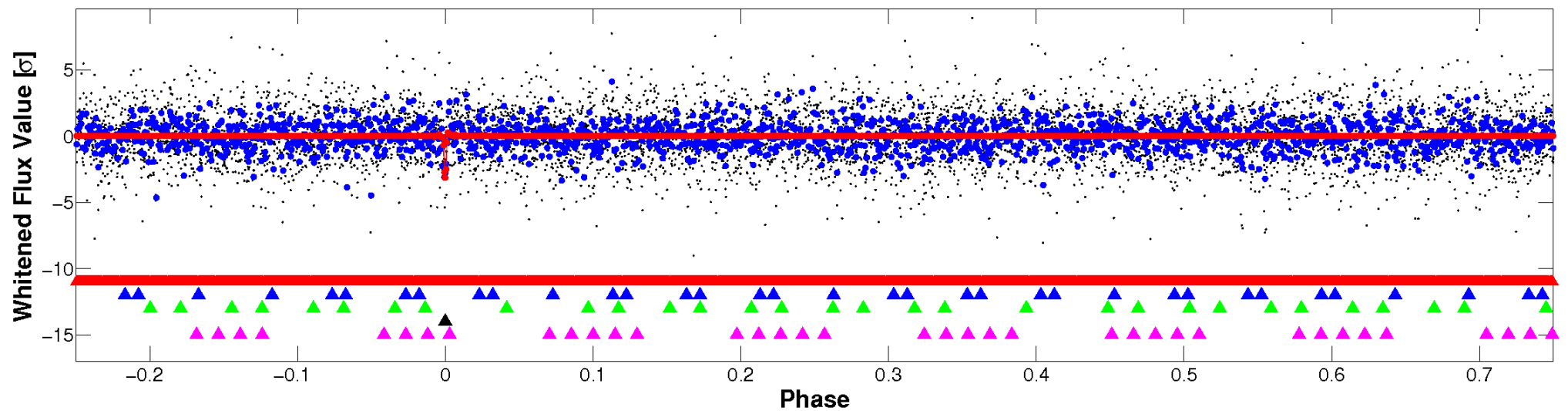
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

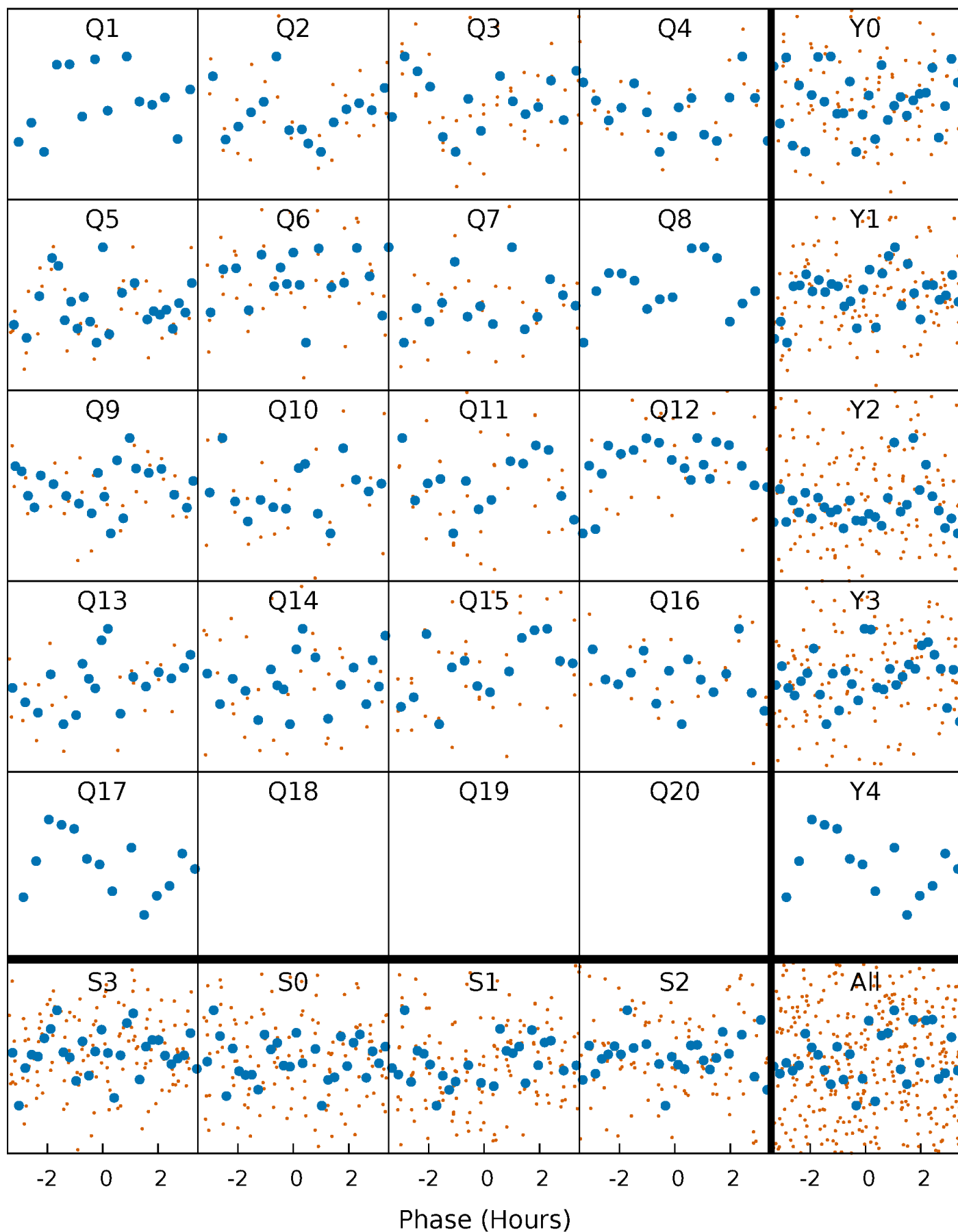


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



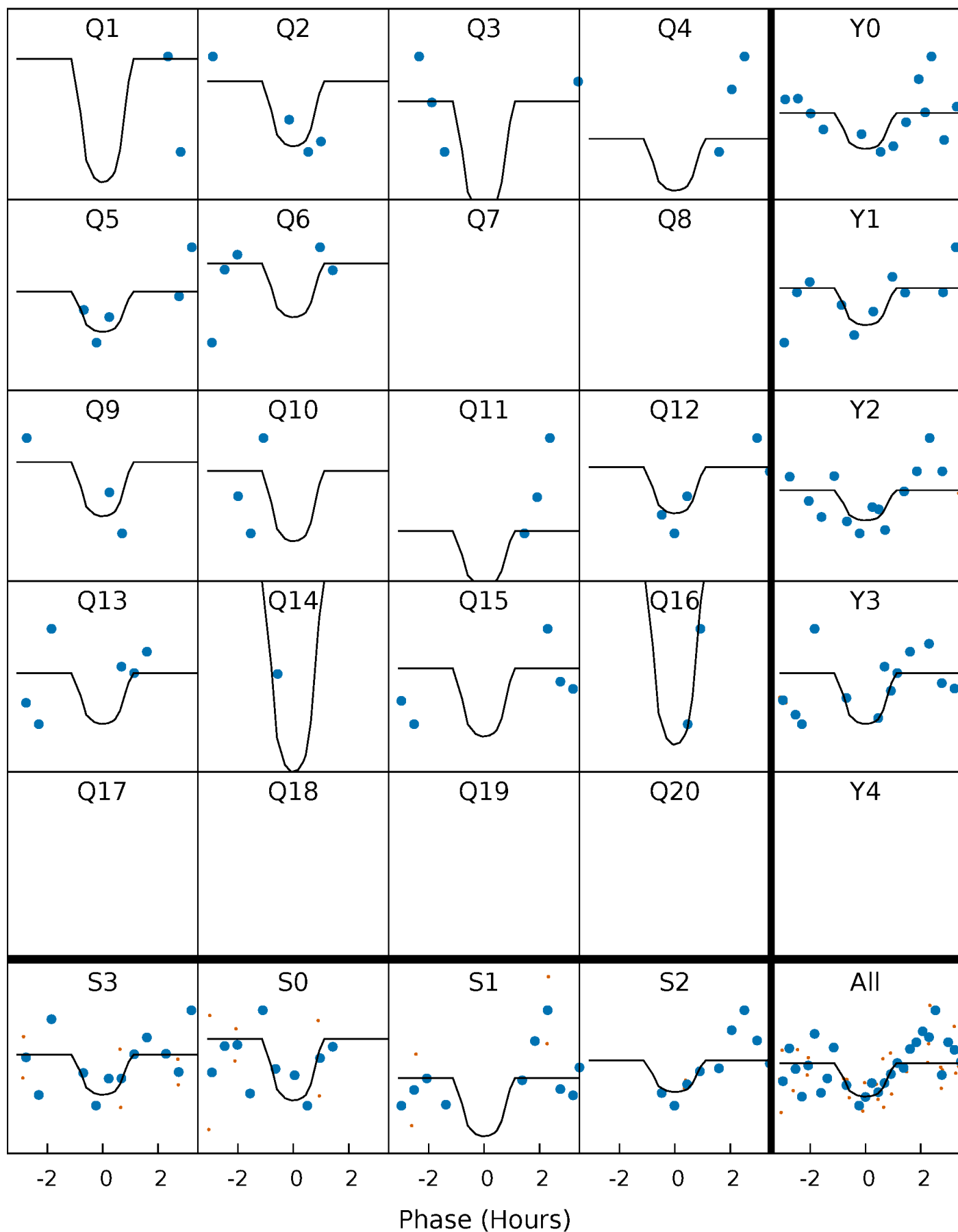
# PDC Quarter-Phased Transit Curves

TCE 007362587-04     $P = 34.980600$  Days     $T_0 = 132.052193$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007362587-04 P= 34.980600 Days  $T_0=132.052193$  (BKJD)



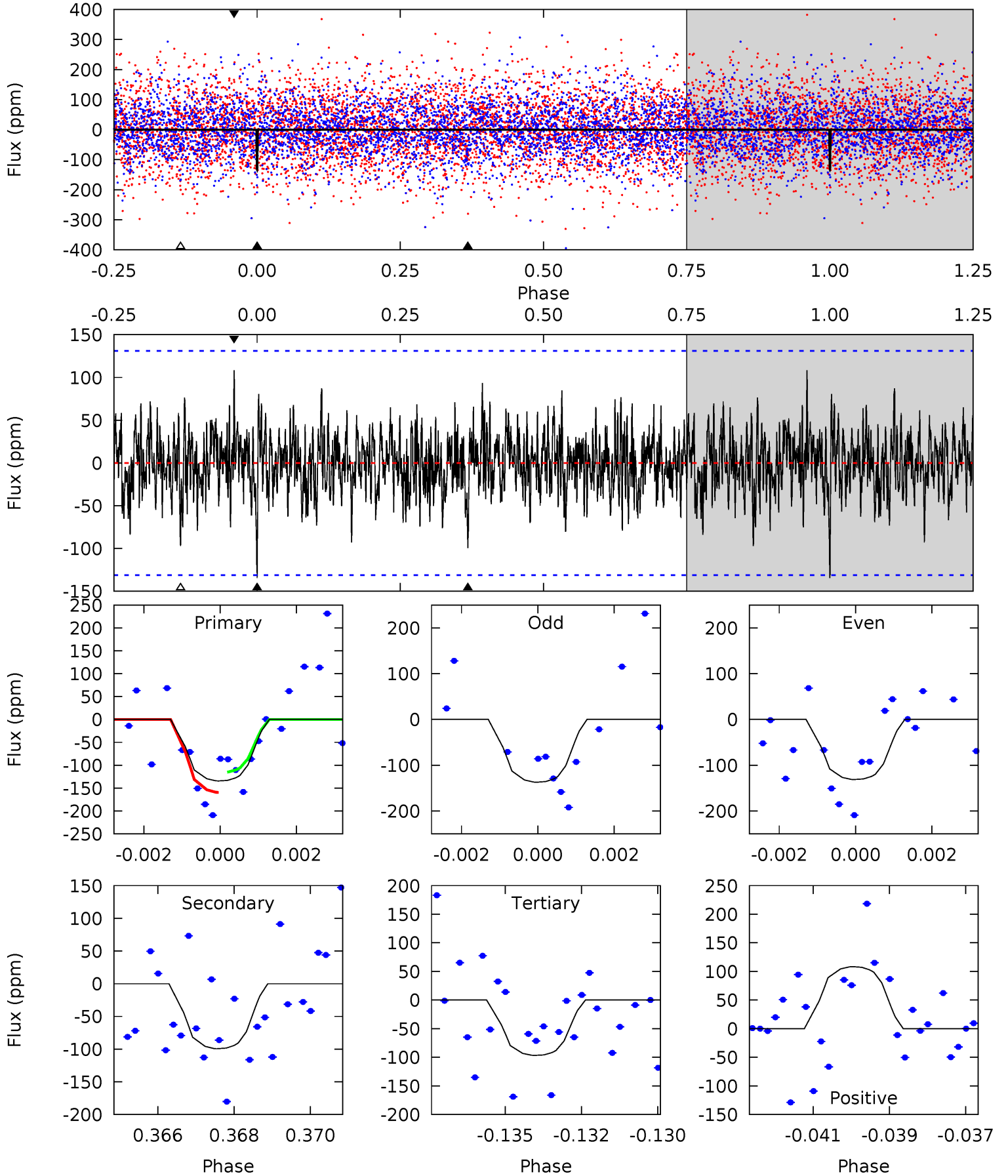
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

007362587-04, P = 34.980600 Days, E = 97.071593 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
5.45	4.04	3.93	4.40	5.32	3.08	1.19	1.53	1.06	0.11	-0.36	0.12	1.02	0.45	0.87



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007362587

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5345^{+85}_{-74}$	$3.851^{+0.126}_{-0.103}$	$-0.060^{+0.150}_{-0.150}$	$2.034^{+0.387}_{-0.387}$	$1.072^{+0.153}_{-0.139}$	$0.179^{+0.115}_{-0.060}$
	+2%/-1%	+3%/-3%	+250%/-250%	+19%/-19%	+14%/-13%	+64%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 007362587-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-99 \pm 25$	$5.25^{+4.19}_{-3.79}$	$1013^{+48}_{-49}$	$3786^{+2758}_{-636}$	$92^{+1086}_{-65}$
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

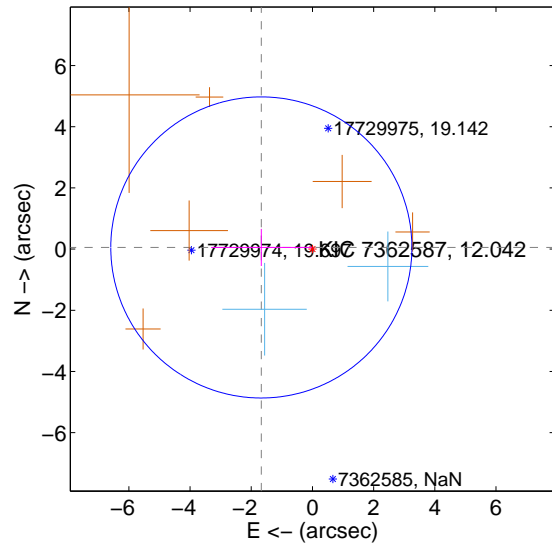
Supplemental centroid analysis for 007362587-04. Kepler magnitude: 12.04. Transit SNR 9.75

There are 2 quarters with good PRF difference image offsets

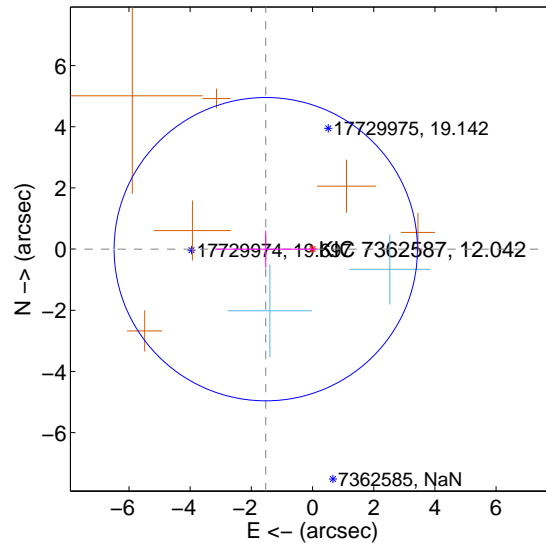
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.671 \pm 1.640$	1.02	$1.670 \pm 1.641$	$0.054 \pm 0.608$
PRF-fit source offset from KIC position	$1.528 \pm 1.652$	0.92	$1.528 \pm 1.652$	$-0.003 \pm 0.606$
photometric centroid source offset	$0.51 \pm 0.60$	0.86	$-0.07 \pm 0.61$	$-0.51 \pm 0.60$

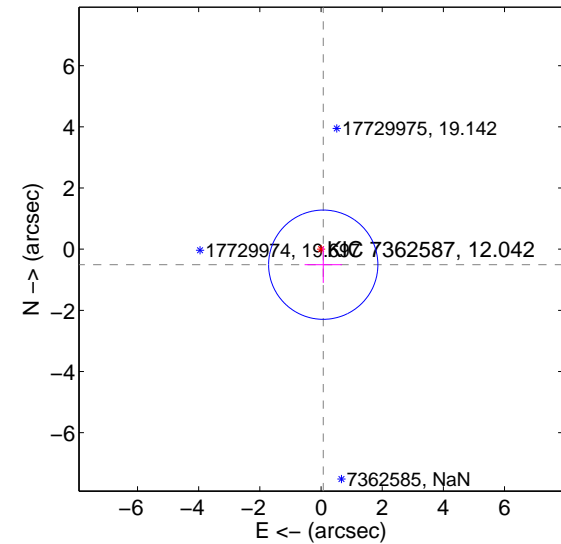
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

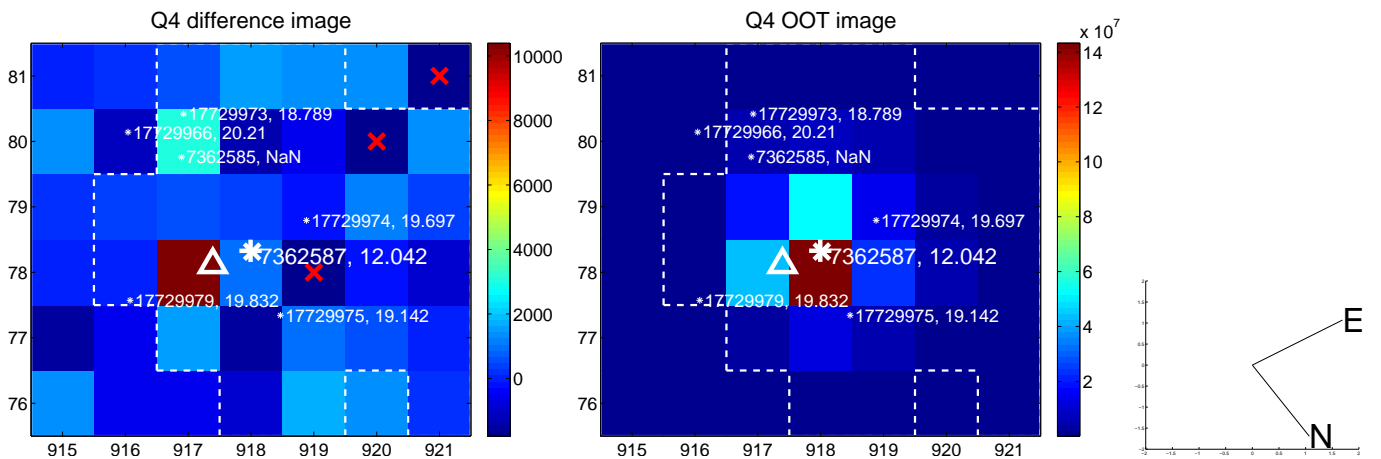
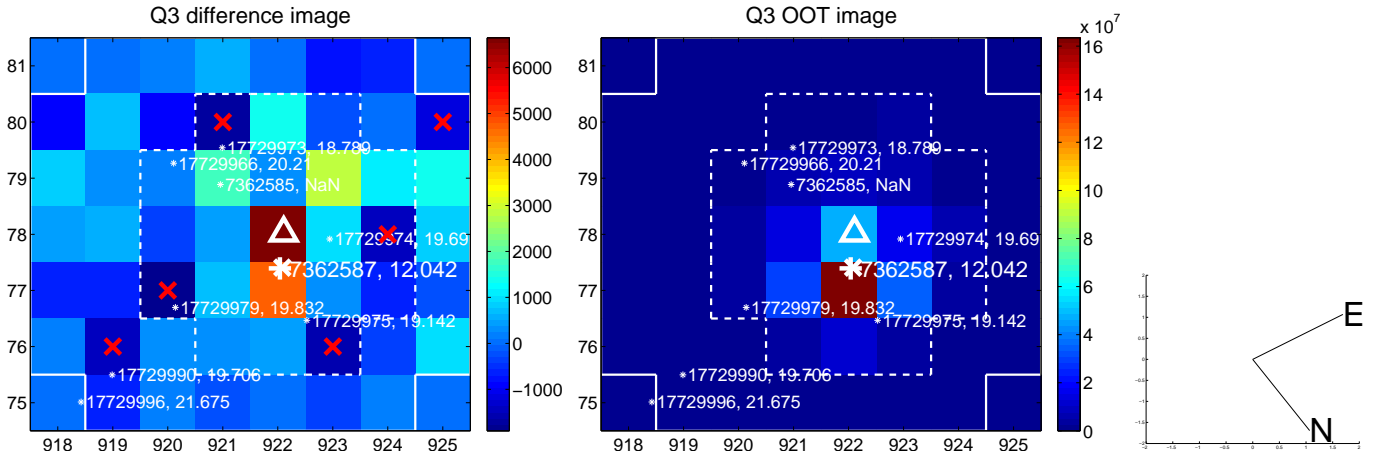
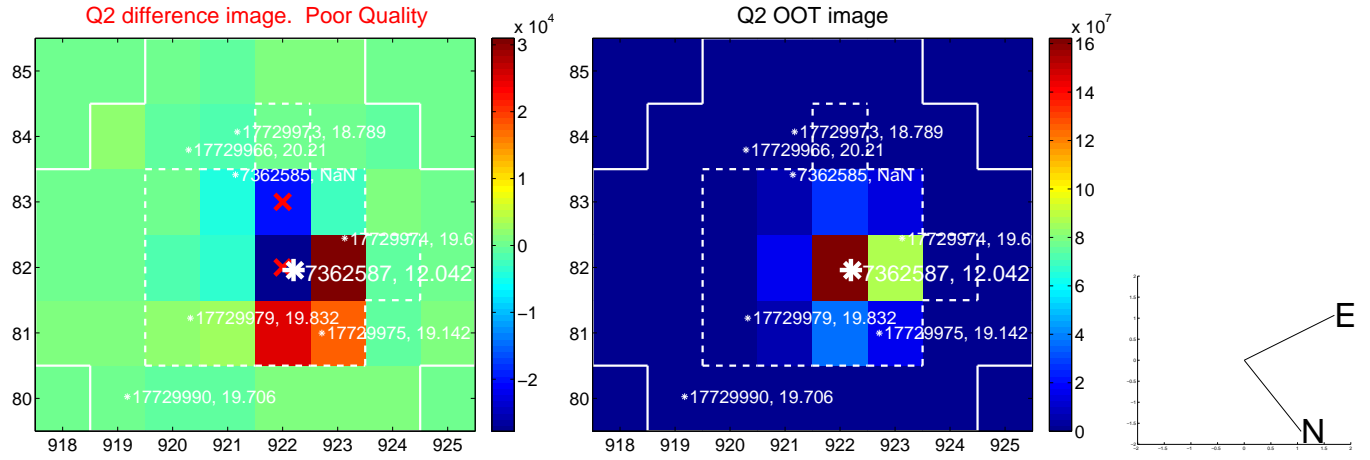
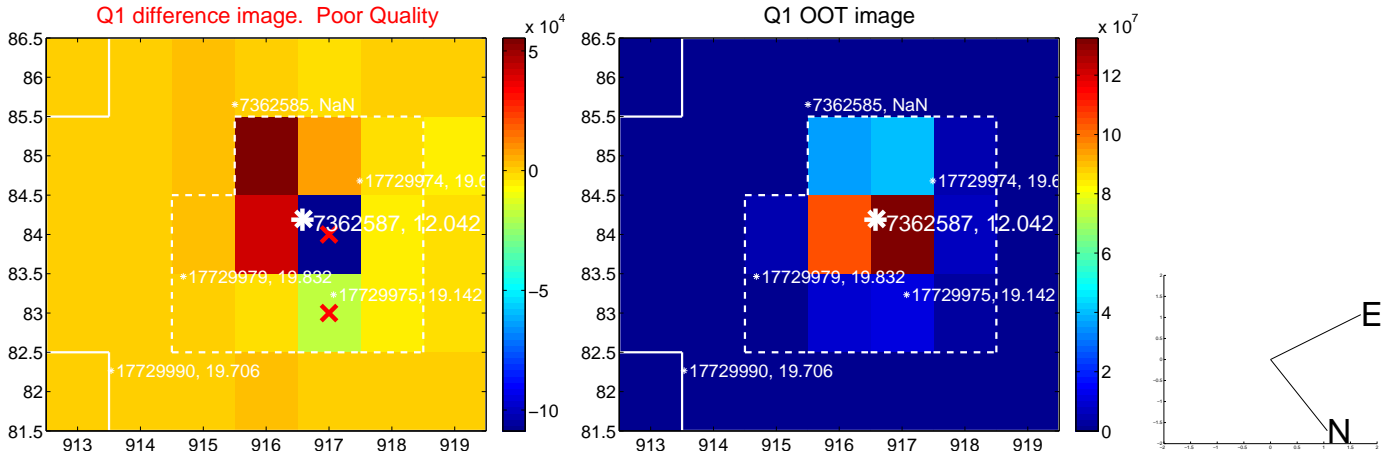


offset from photometric centroids

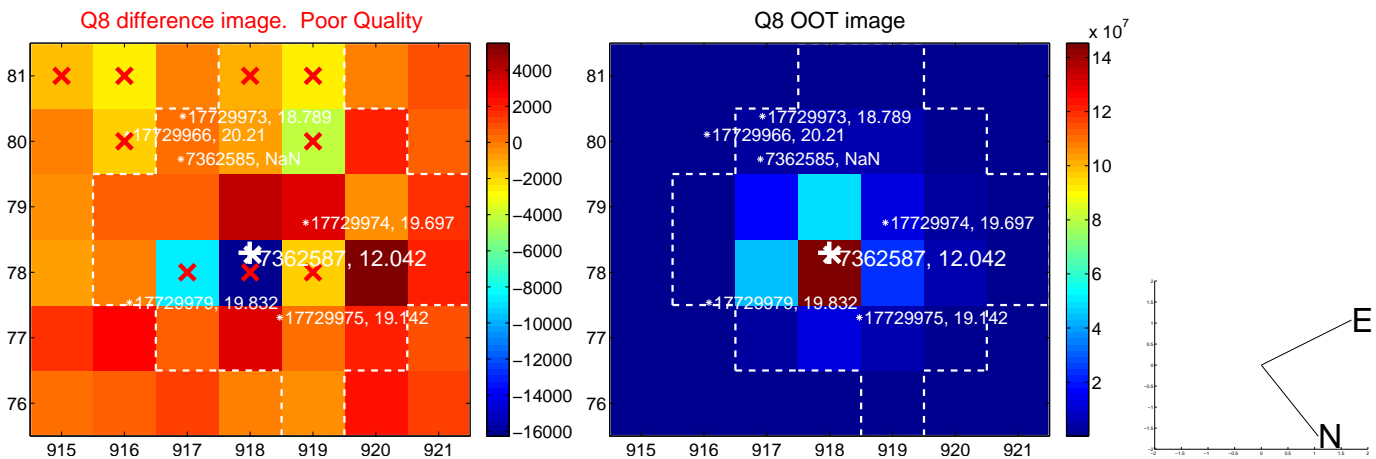
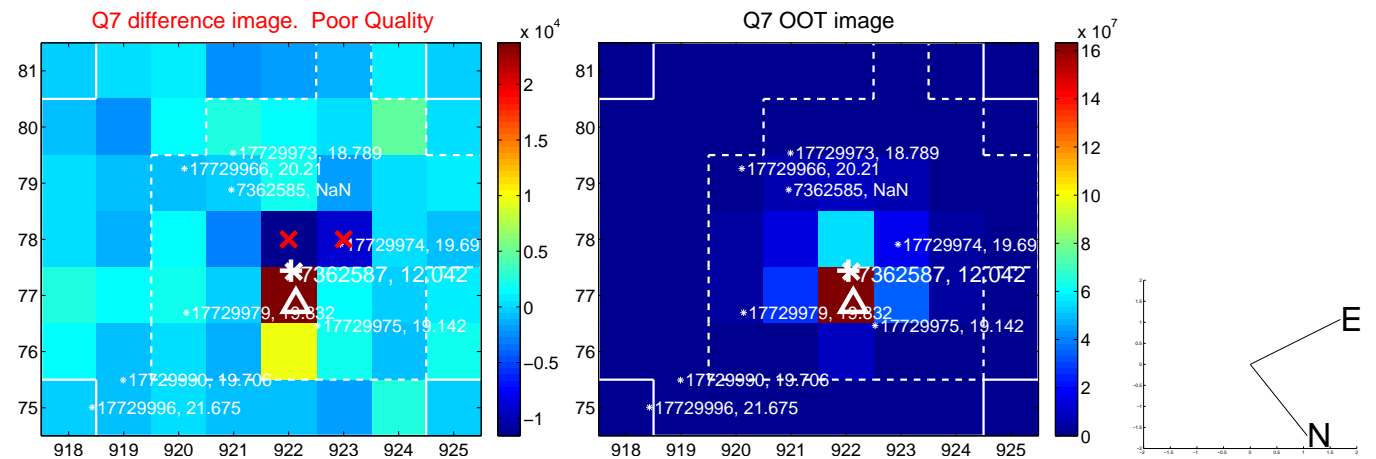
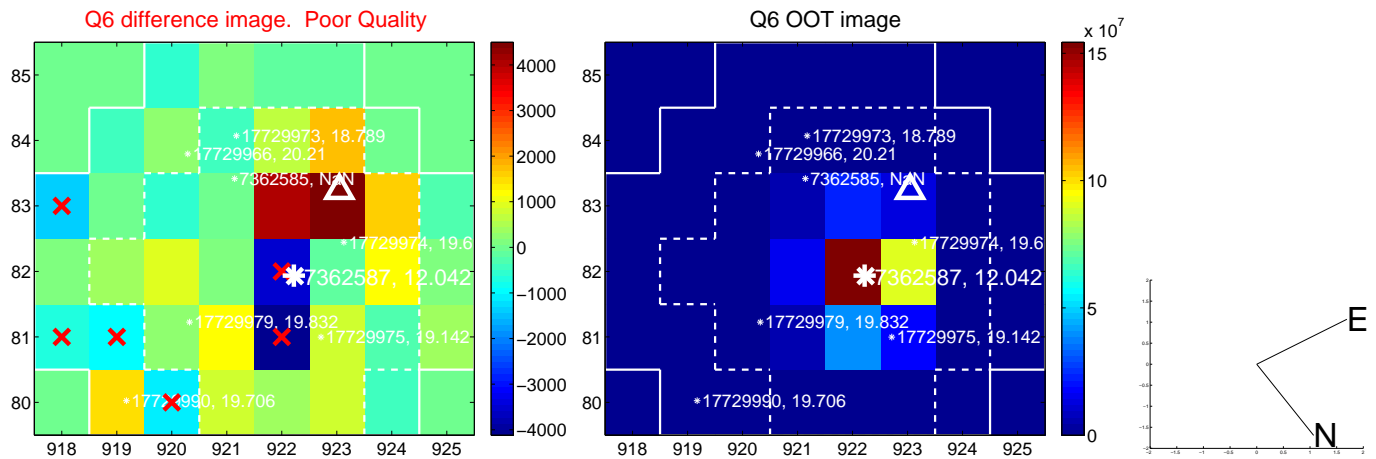
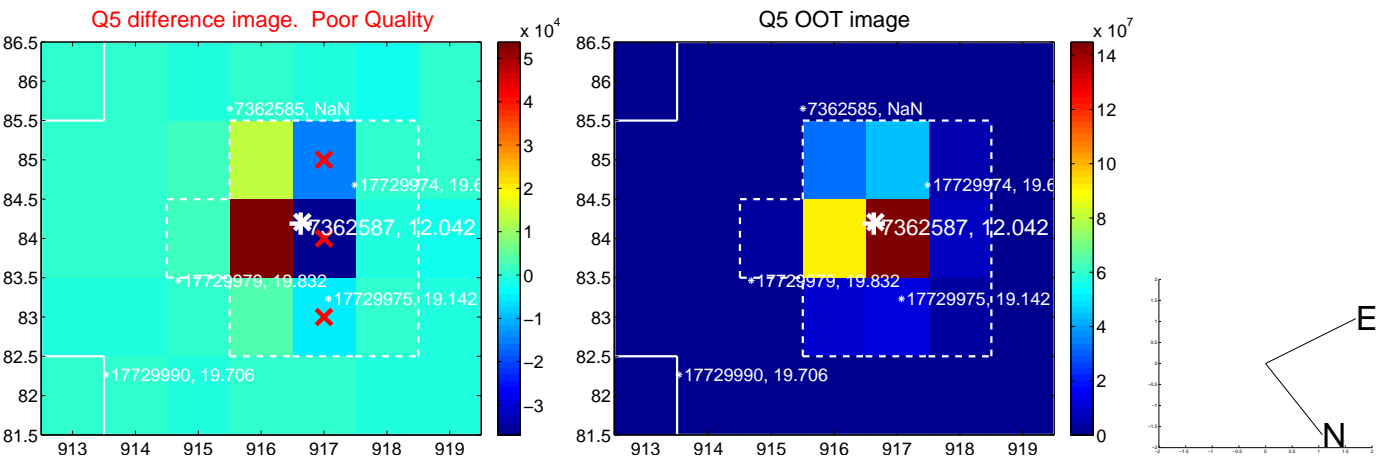


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

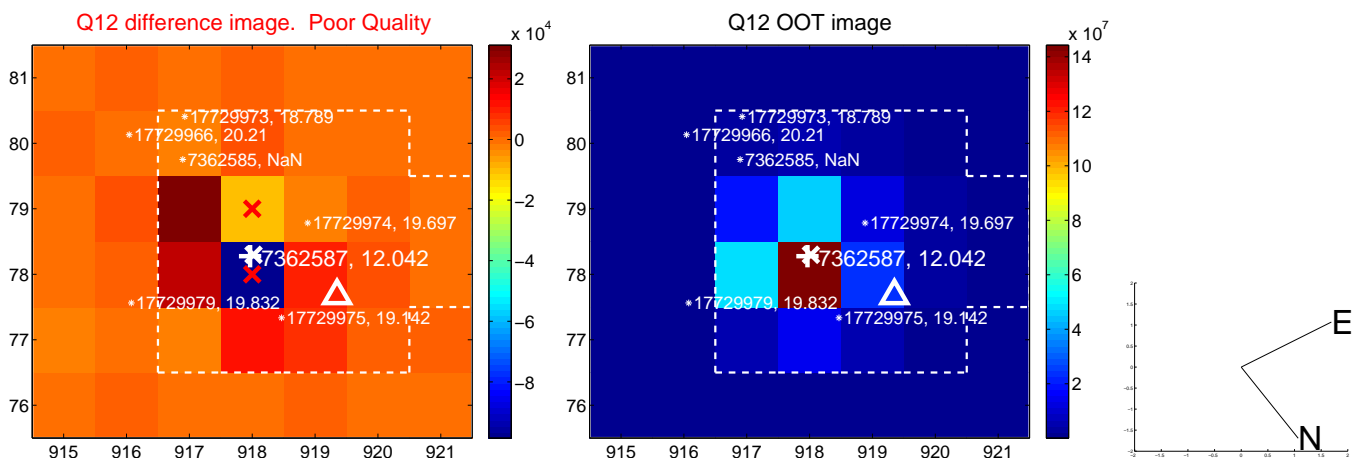
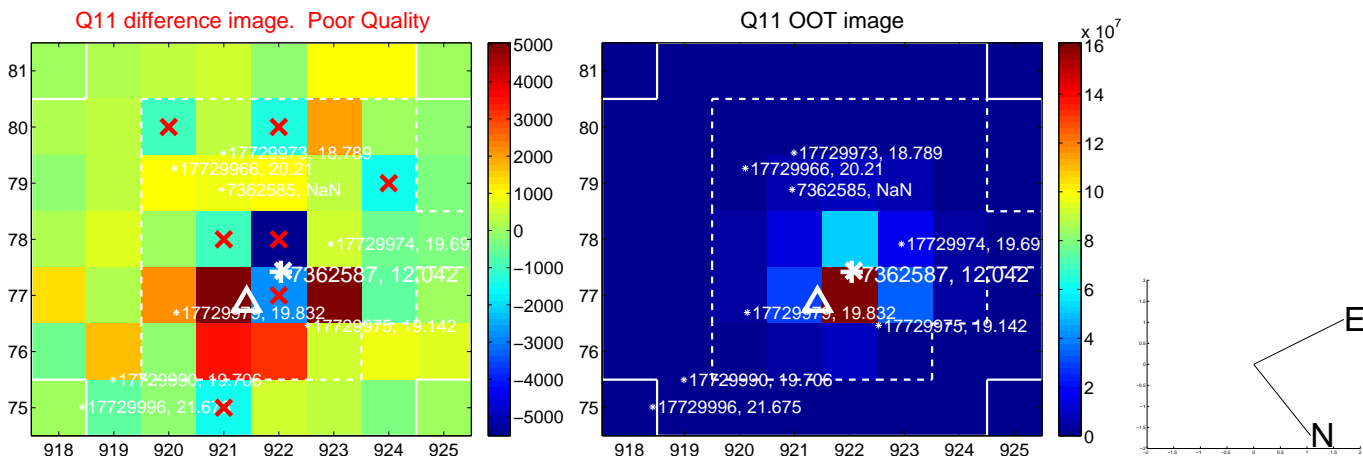
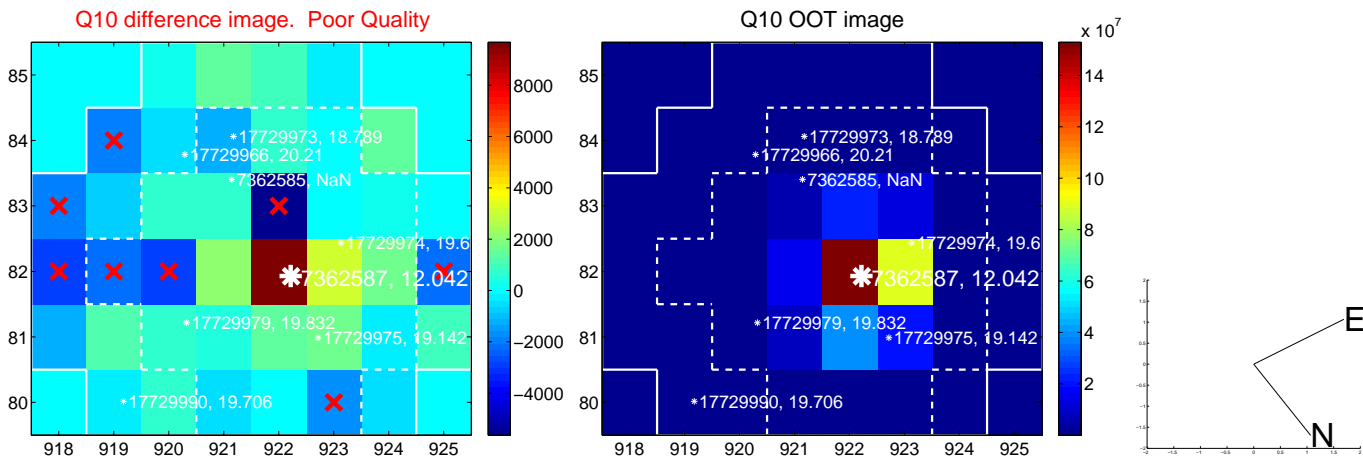
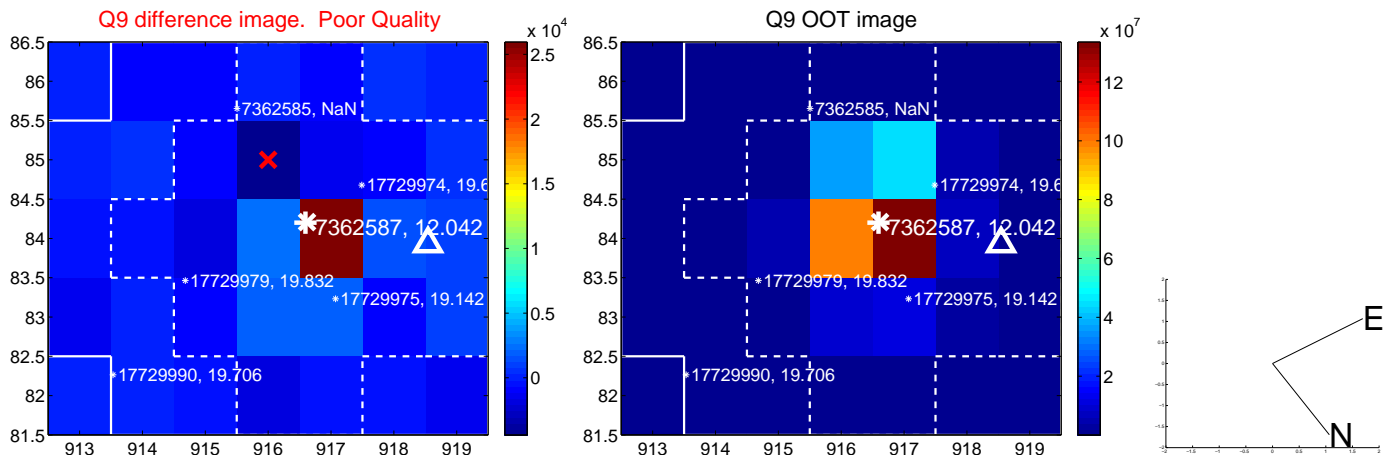
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

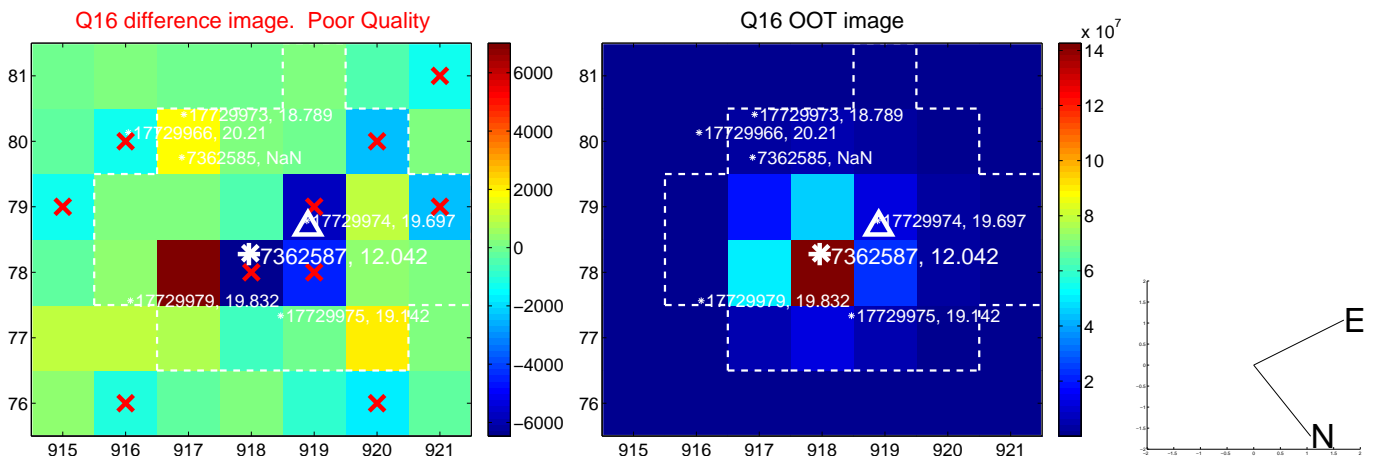
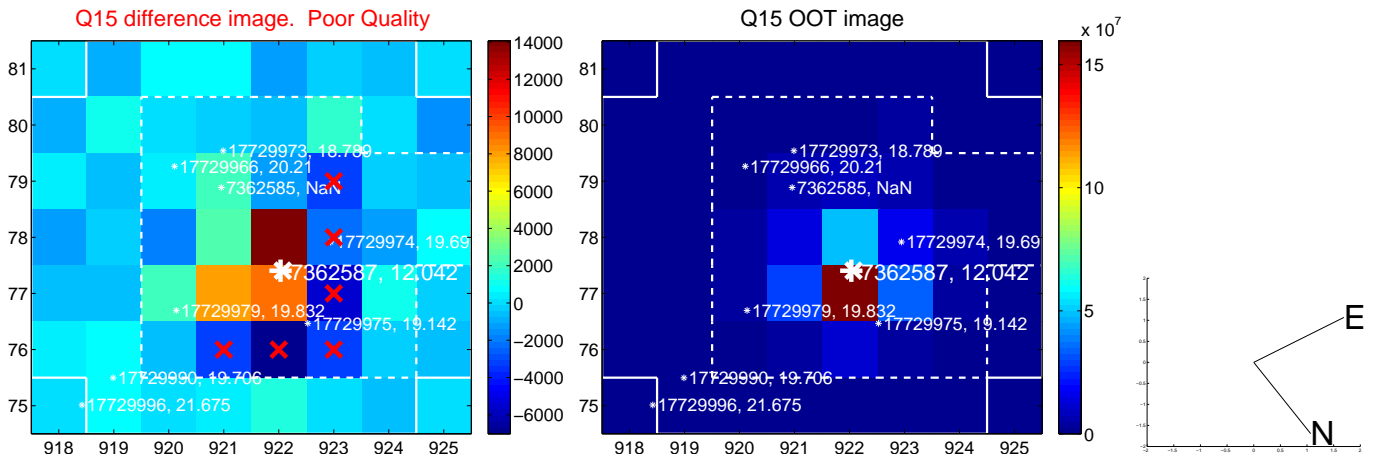
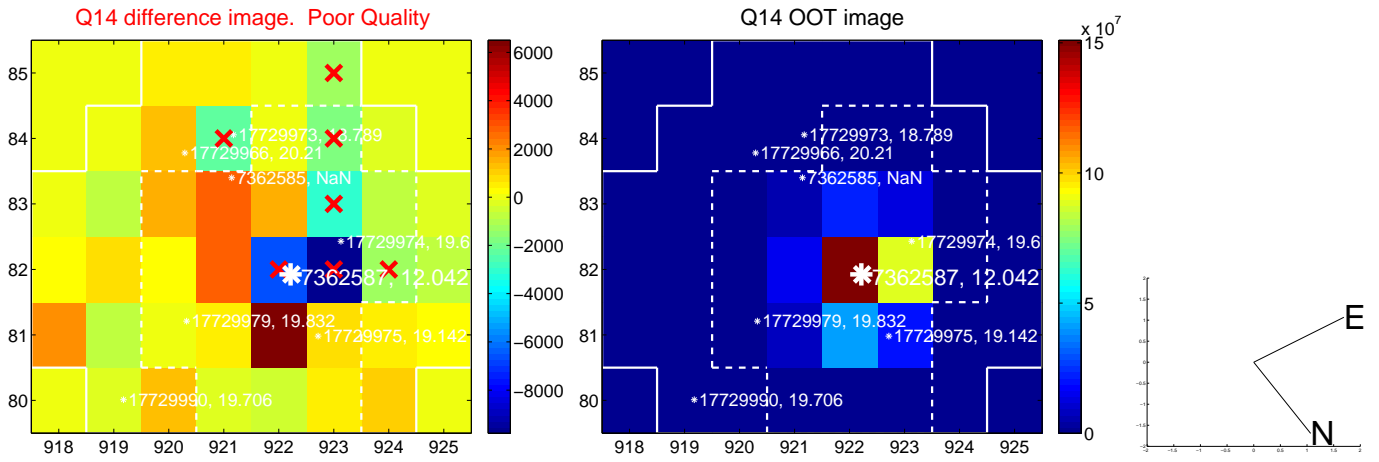
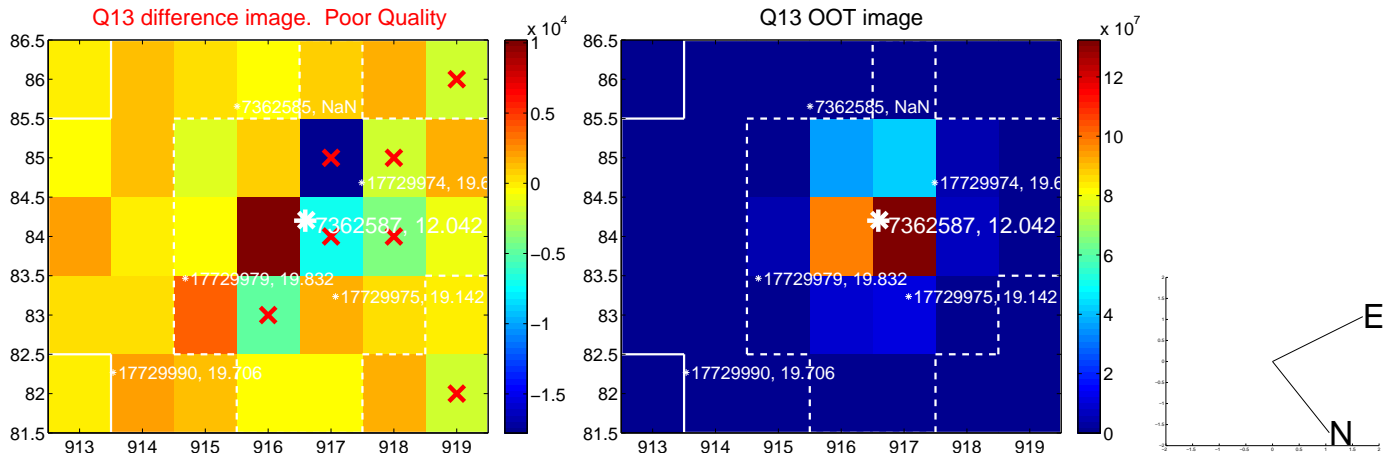


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

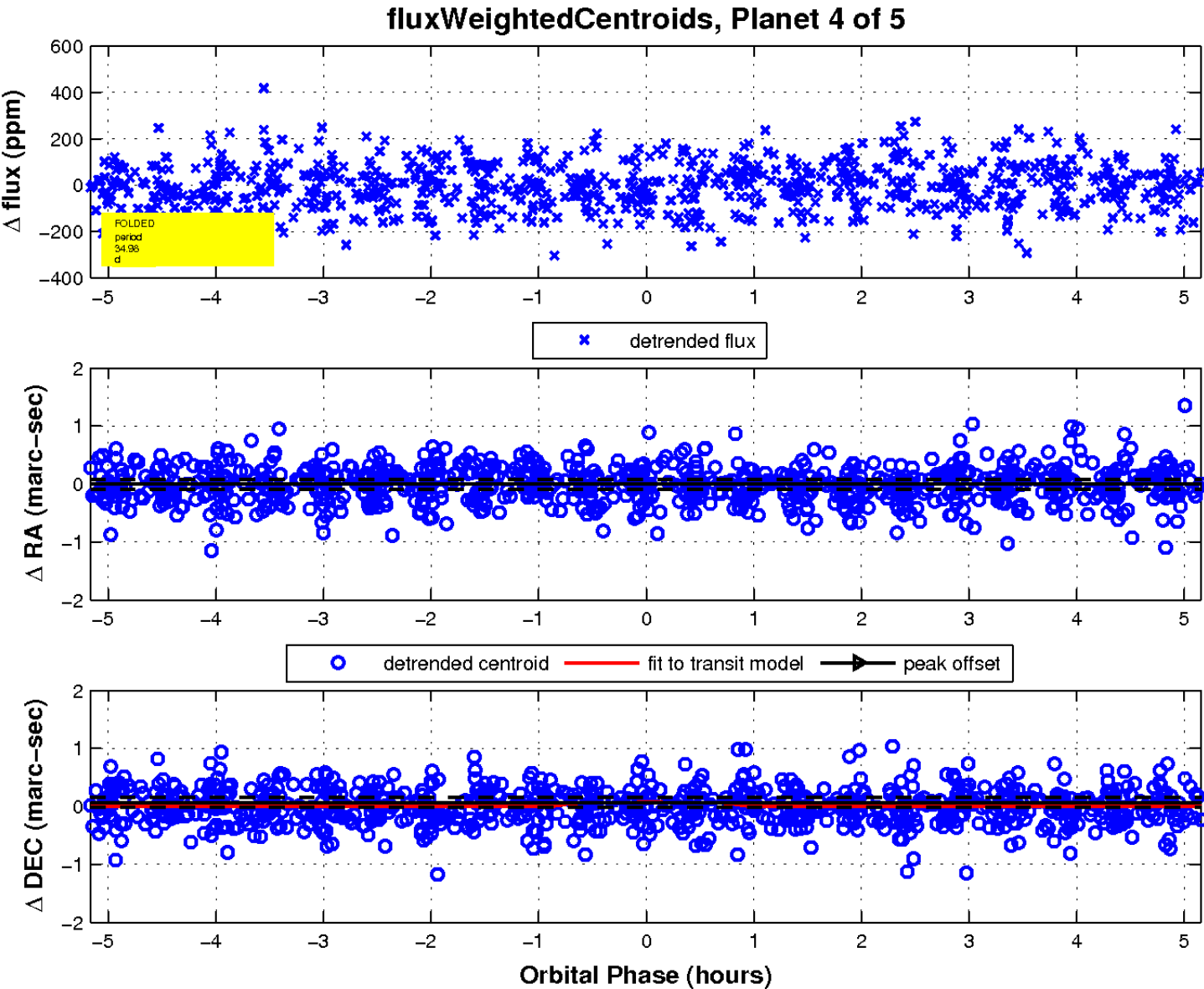
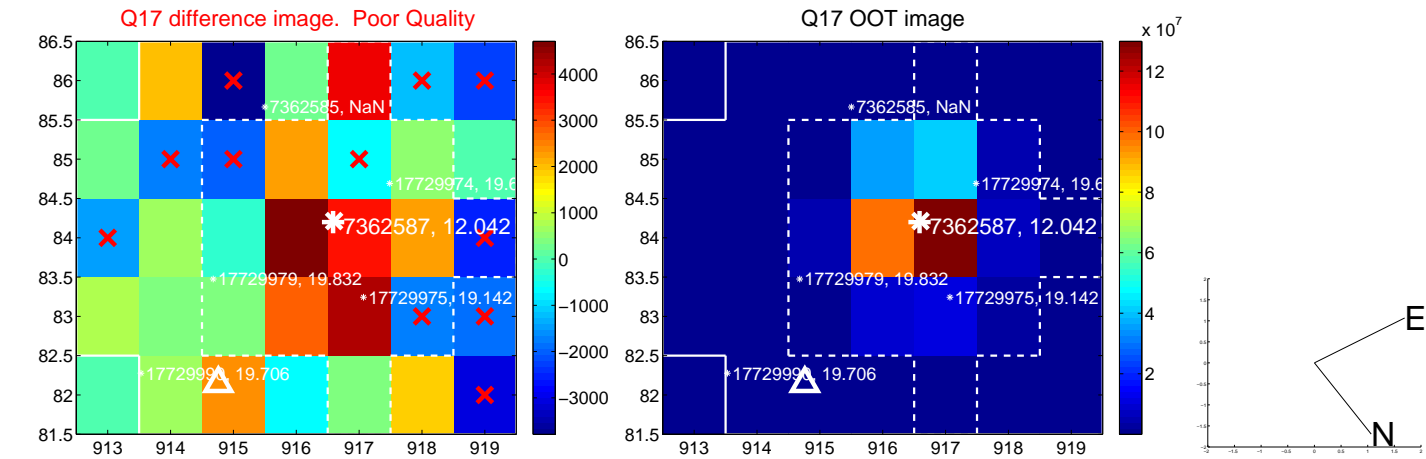




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

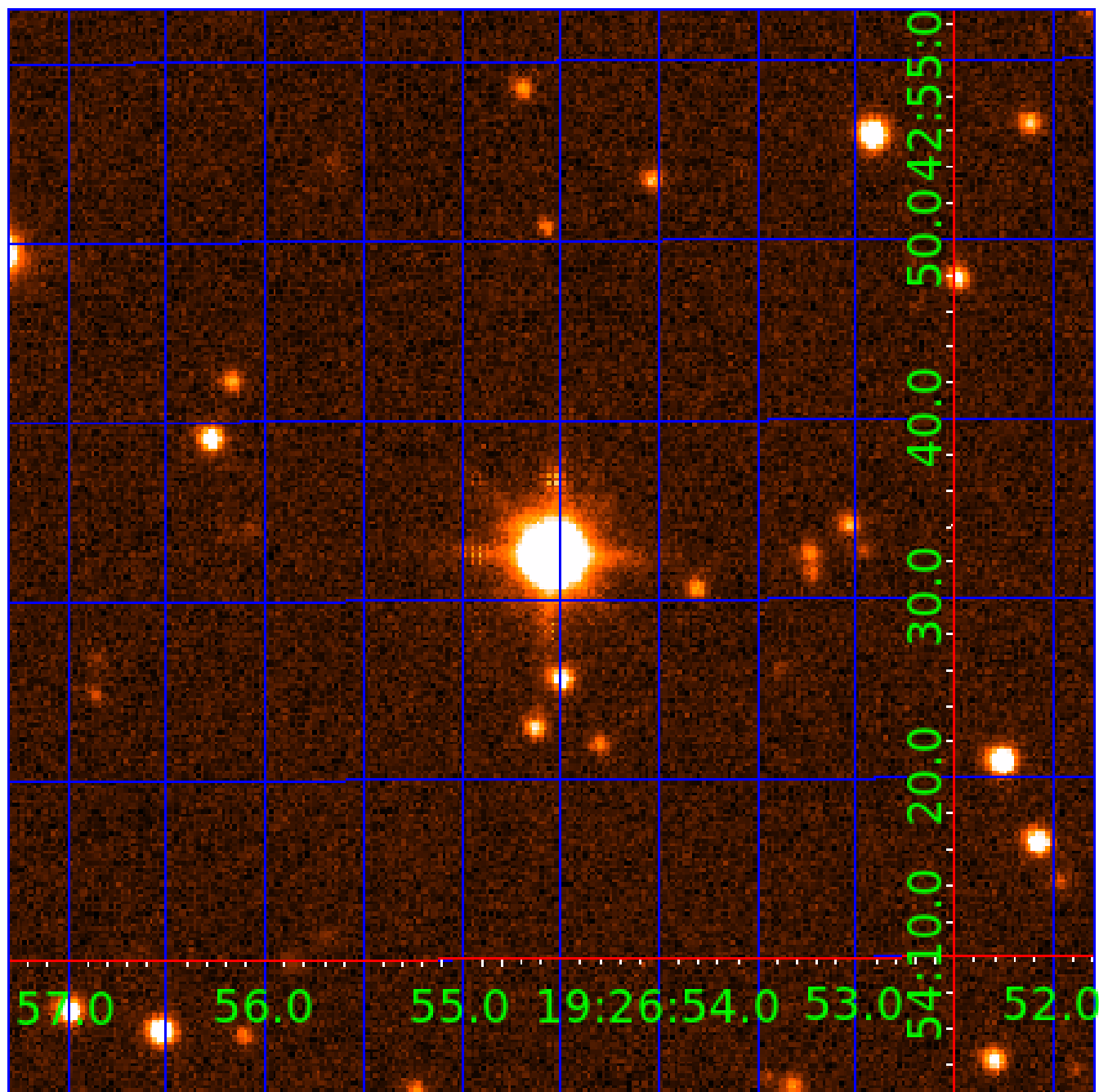


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007362587

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007362587-01	OBS	No	0.566749	131.873256	9.2	3.909	13.6	9.6	2.03	5345	0.66	16084.16
007362587-02	OBS	No	41.628373	168.157945	204.9	1.153	11.2	10.7	2.03	5345	2.87	52.29
007362587-03	OBS	No	47.284540	136.155573	199.7	0.949	9.8	10.7	2.03	5345	3.01	44.12
007362587-04	OBS	No	34.980600	132.052193	146.0	1.723	9.2	9.7	2.03	5345	2.63	65.94
007362587-05	OBS	No	39.417959	134.519098	193.2	1.144	10.0	12.1	2.03	5345	2.82	56.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007362587-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
007362587-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_TER_DV—HALO_GHOST
007362587-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
007362587-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
007362587-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

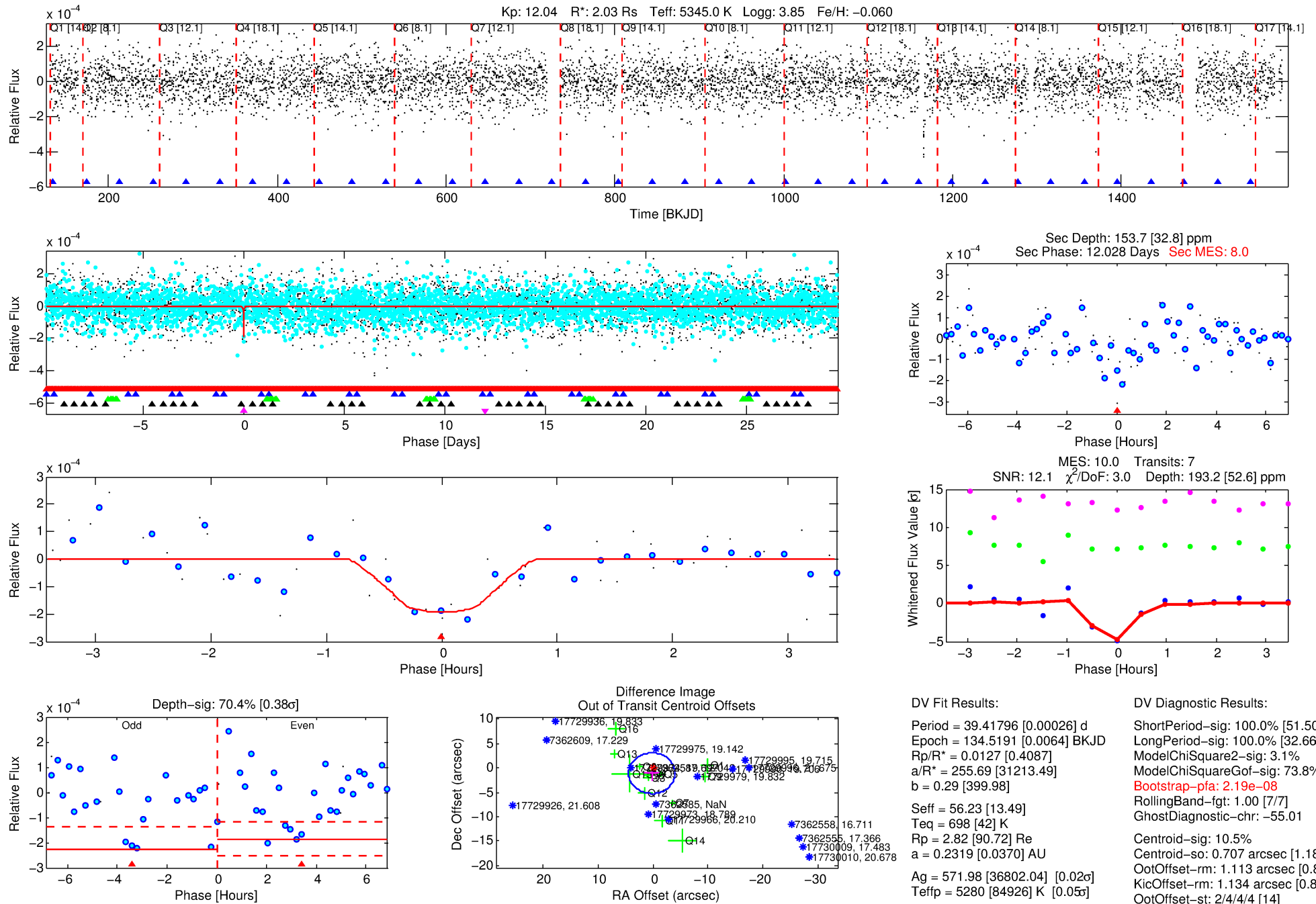
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007362587-05

No Significant Match Found

# DV One-Page Summary

KIC: 7362587 Candidate: 5 of 5 Period: 39.418 d



## DV Fit Results:

Period = 39.41796 [0.00026] d  
Epoch = 134.5191 [0.0064] BKJD  
Rp/R\* = 0.0127 [0.4087]  
a/R\* = 255.69 [31213.49]  
b = 0.29 [399.98]  
Seff = 56.23 [13.49]  
Teq = 698 [42] K  
Rp = 2.82 [90.72] Re  
a = 0.2319 [0.0370] AU  
Ag = 571.98 [36802.04] [0.02σ]  
Teffp = 5280 [84926] K [0.05σ]

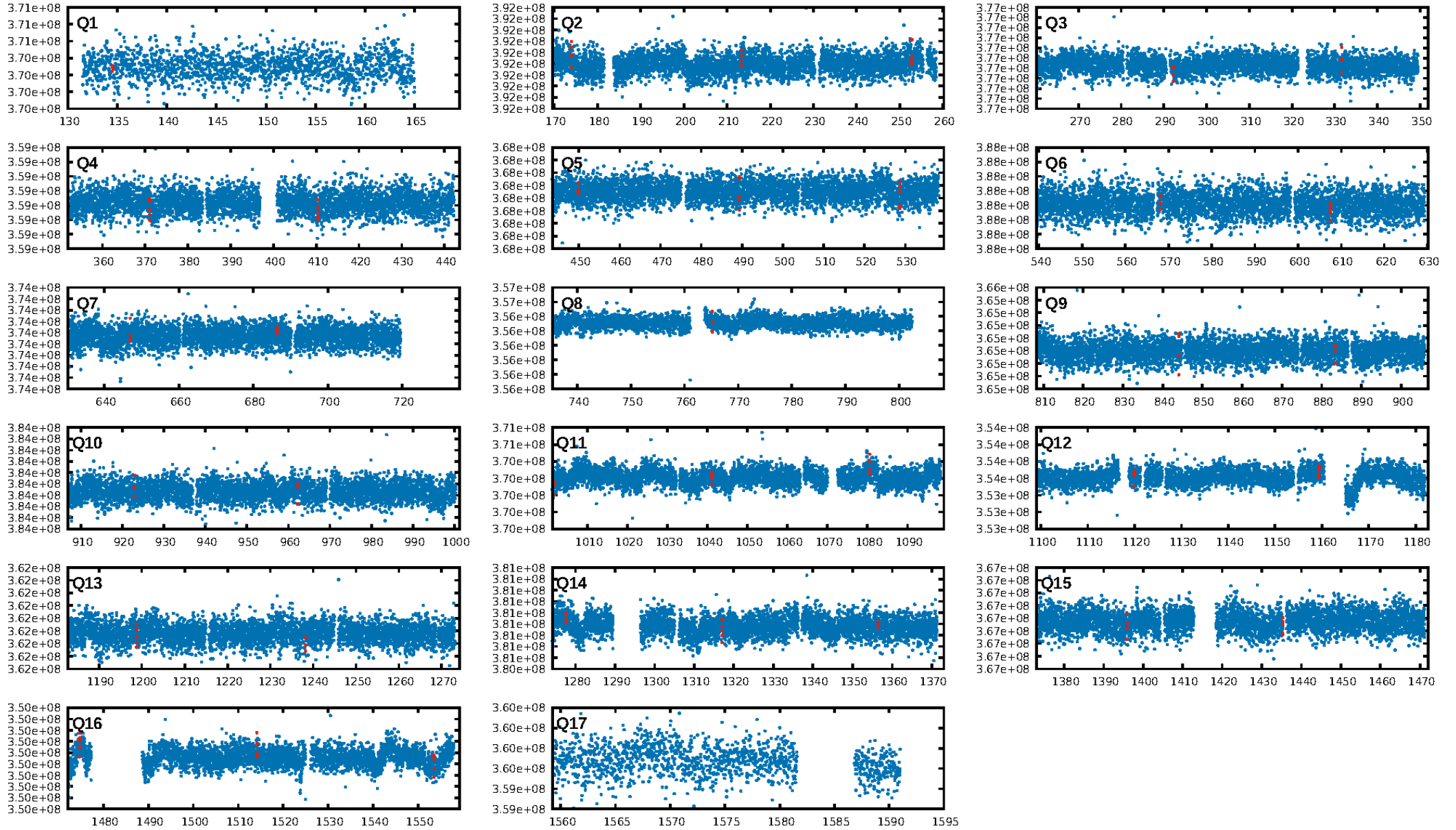
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [51.50σ]  
LongPeriod-sig: 100.0% [32.66σ]  
ModelChiSquare2-sig: 3.1%  
ModelChiSquareGof-sig: 73.8%  
**Bootstrap-pfa: 2.19e-08**  
RollingBand-fgt: 1.00 [7/7]  
GhostDiagnostic-chr: -55.01  
Centroid-sig: 10.5%  
Centroid-so: 0.707 arcsec [1.18σ]  
OotOffset-rm: 1.113 arcsec [0.80σ]  
OotOffset-st: 2/4/4/4 [14]  
KicOffset-rm: 1.134 arcsec [0.86σ]  
KicOffset-st: 2/4/4/4 [14]  
DiffImageQuality-fgm: 0.21 [3/14]  
DiffImageOverlap-fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:18:46 Z

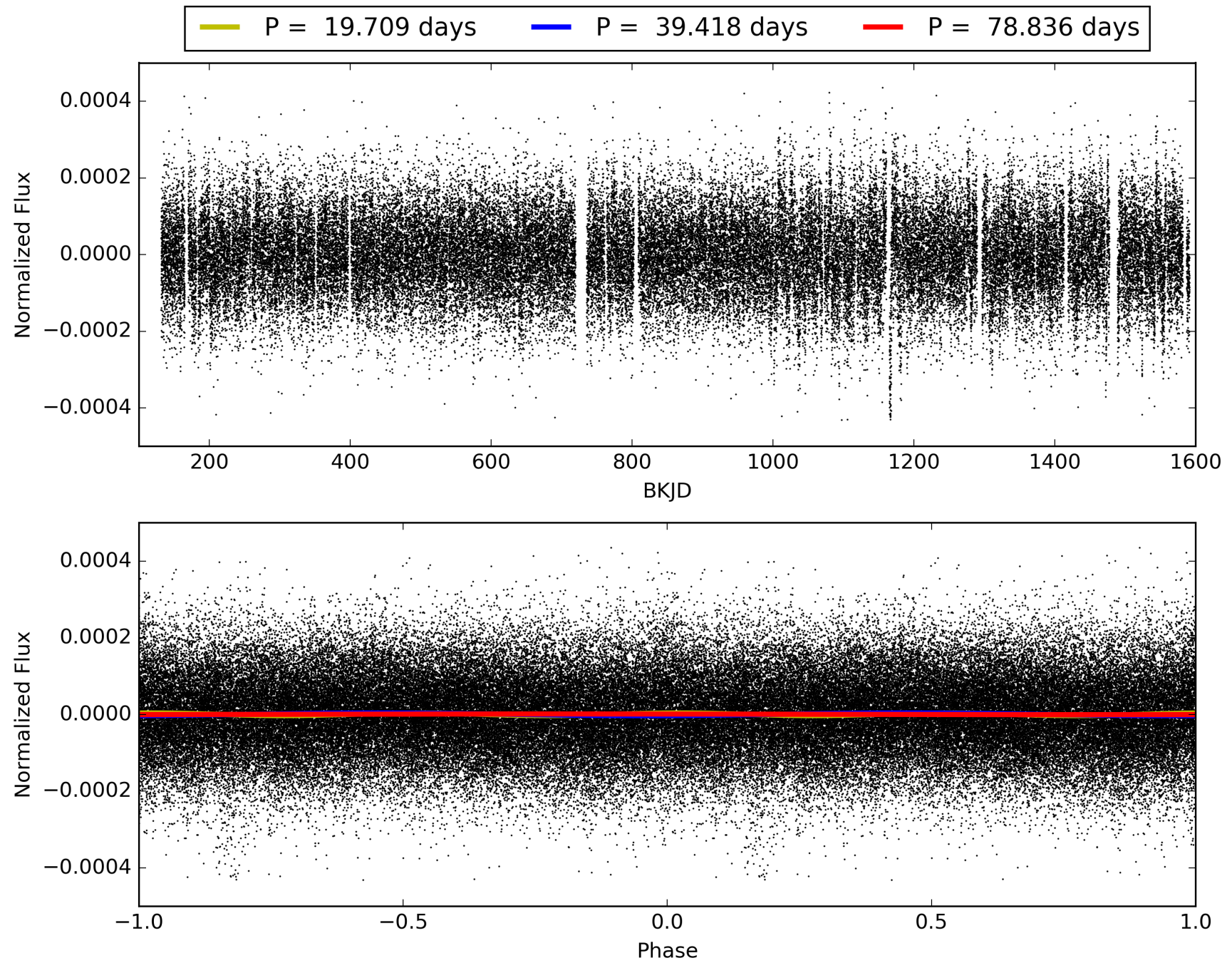
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007362587-05, PDC Light Curves





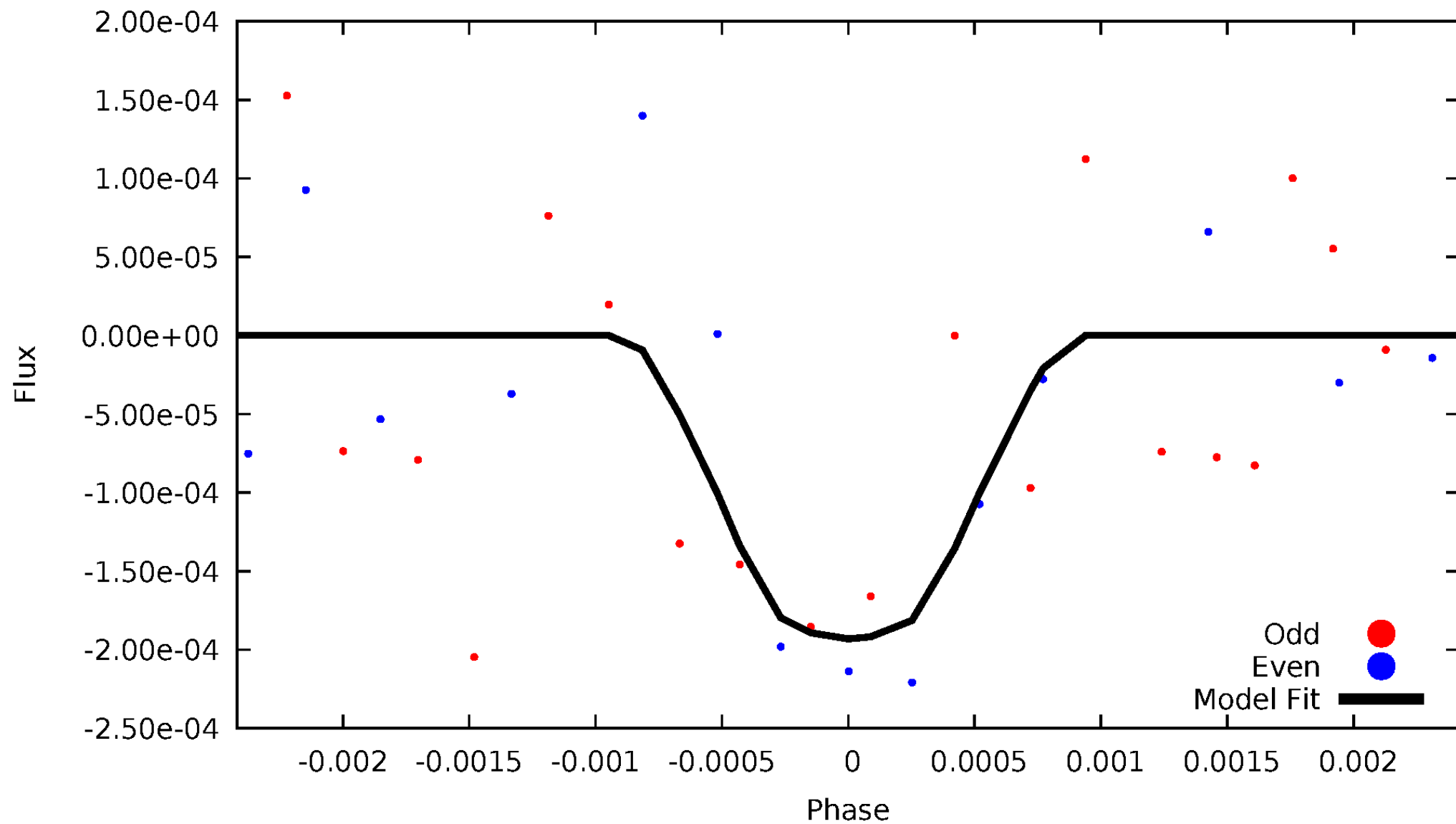
TCE 007362587-05





# DV Odd/Even

TCE 007362587-05



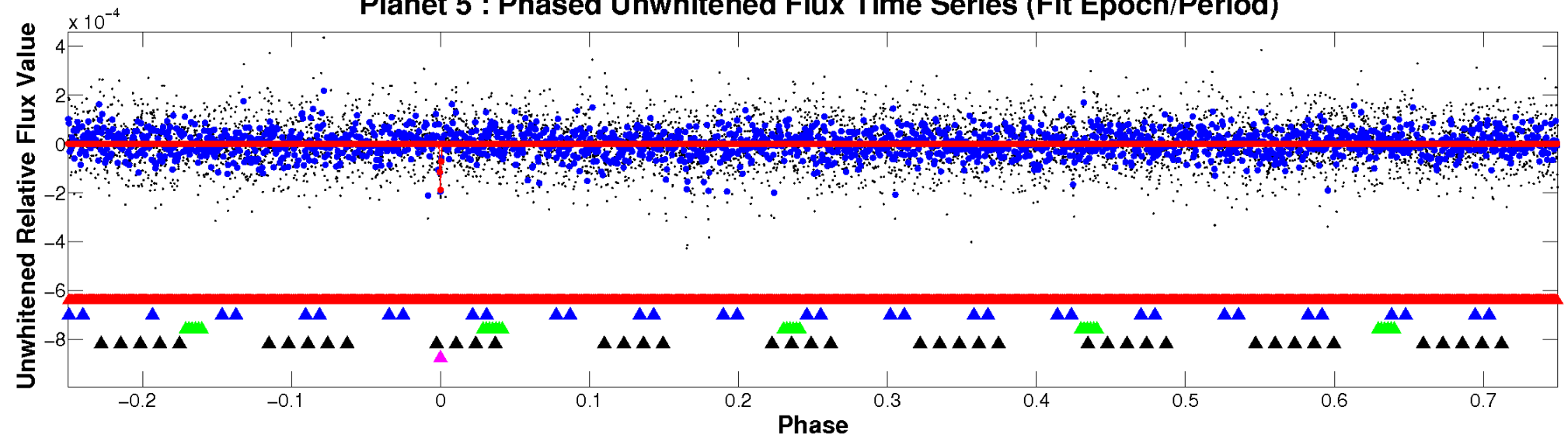


ALT Odd/Even

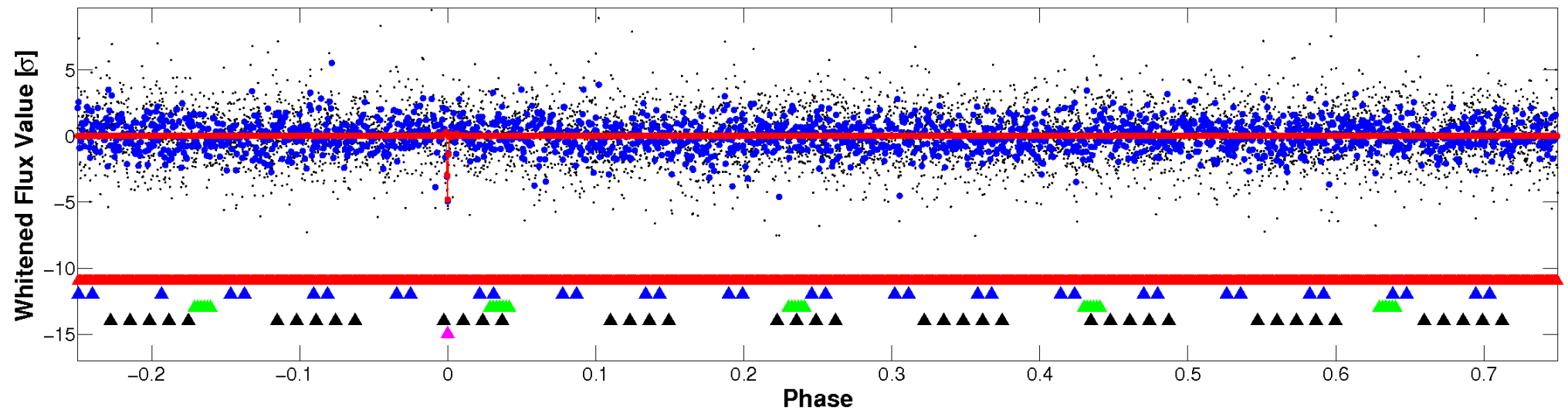
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

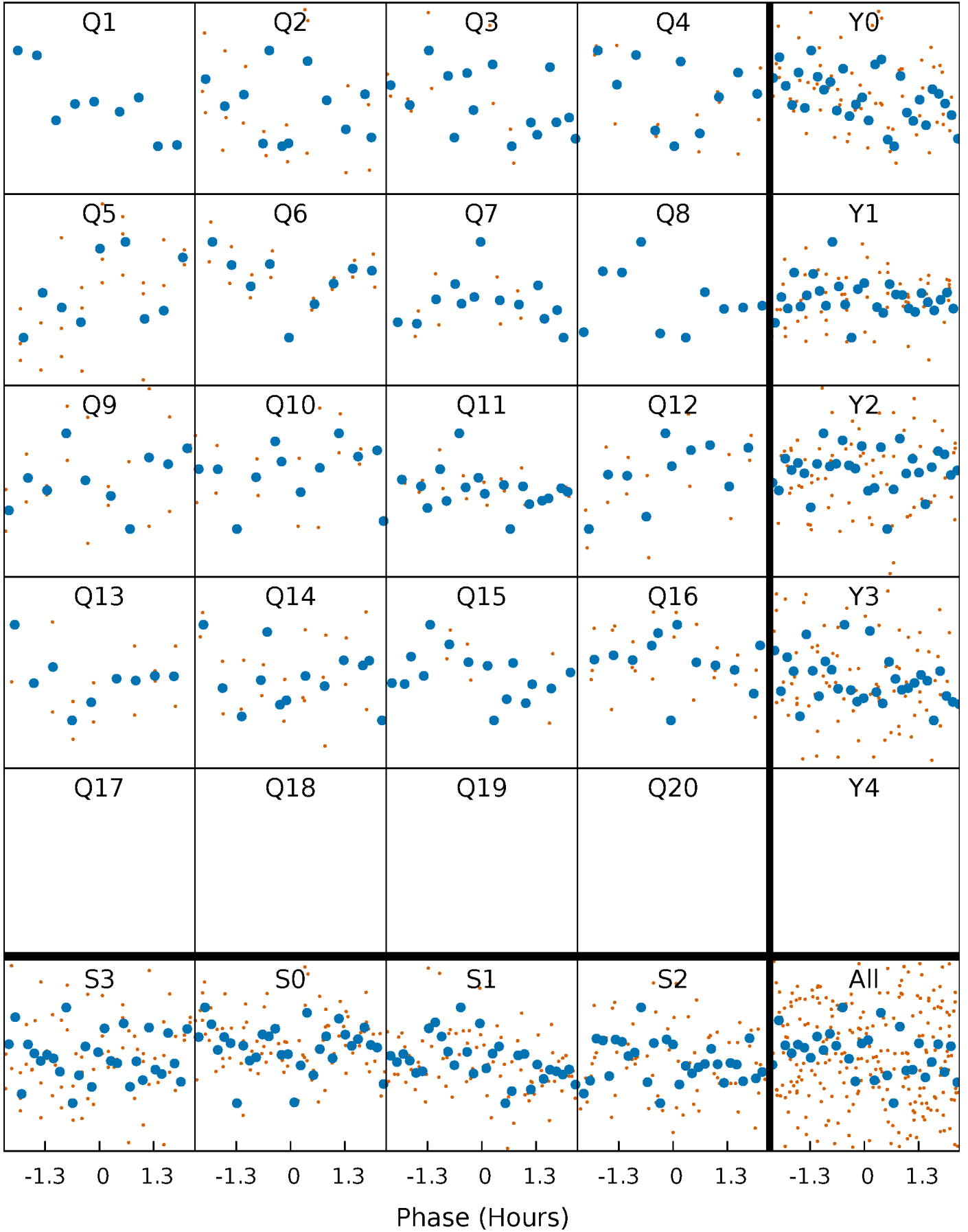


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



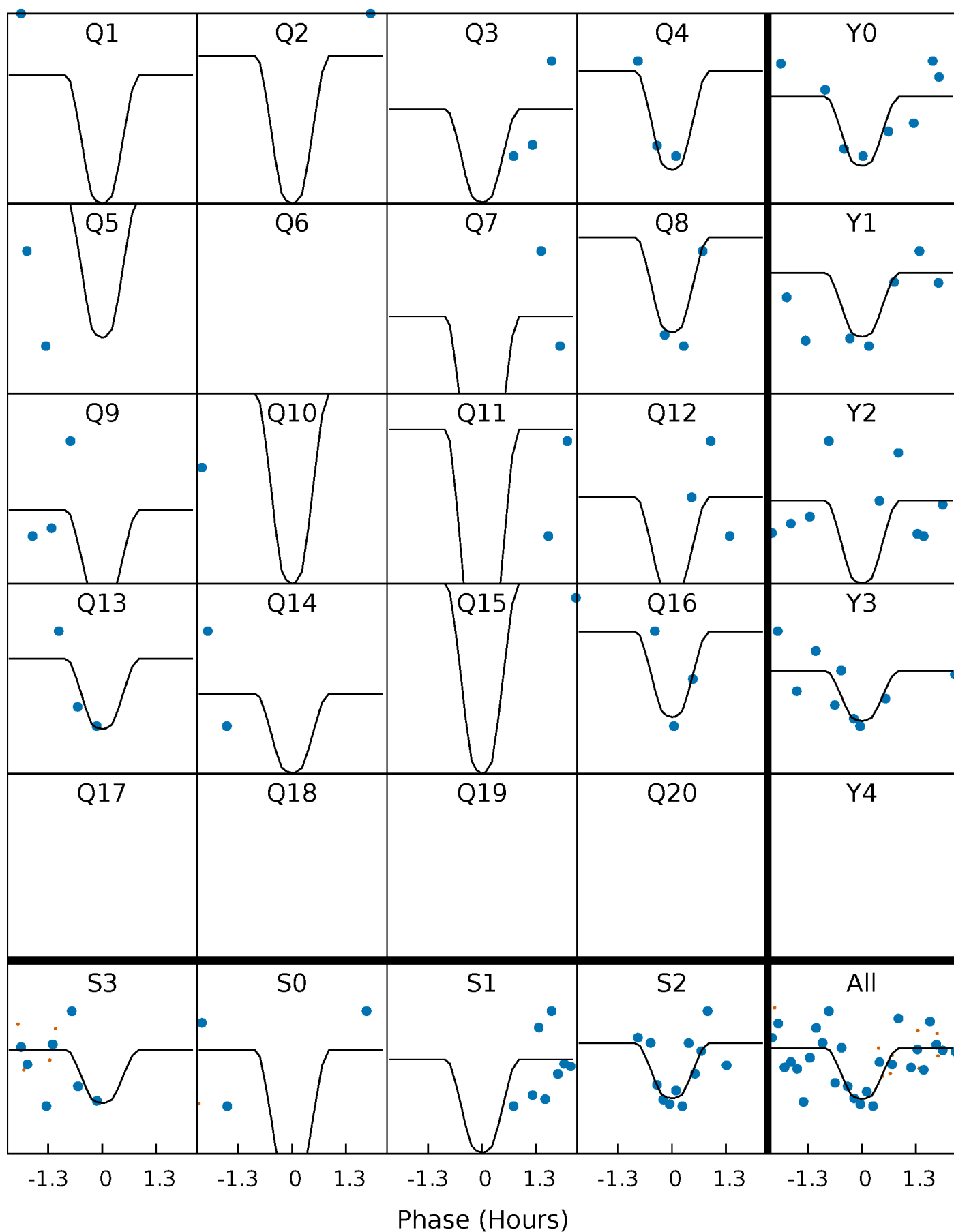
# PDC Quarter-Phased Transit Curves

TCE 007362587-05     $P = 39.417959$  Days     $T_0 = 134.519098$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007362587-05     $P = 39.417959$  Days     $T_0 = 134.519098$  (BKJD)



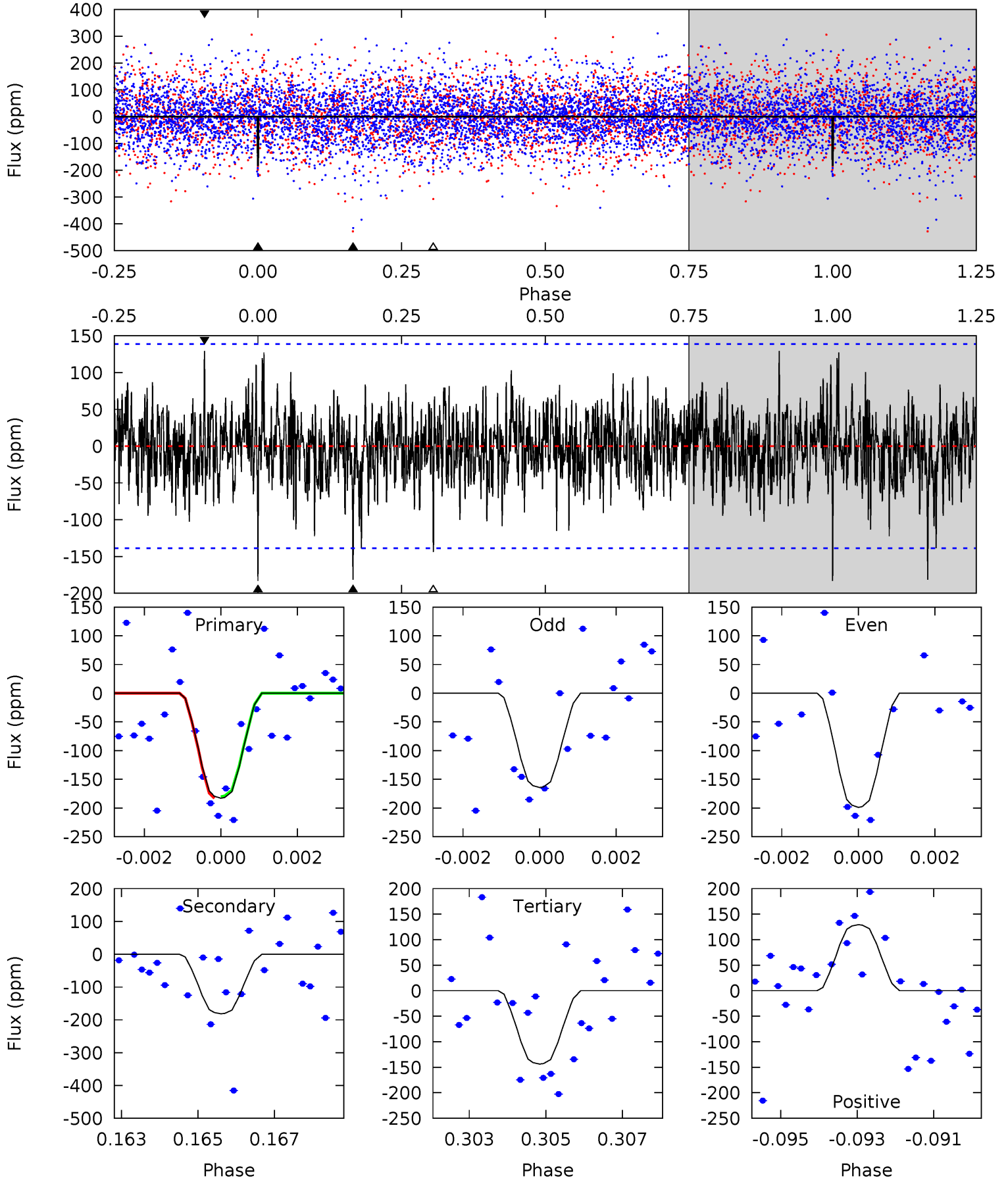
This plot does not exist for this TCE.



# DV Model-Shift Uniqueness Test

007362587-05, P = 39.417959 Days, E = 95.101139 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
7.05	6.99	5.54	4.99	5.35	3.13	1.44	1.51	2.07	1.45	2.01	0.67	1.01	0.41	0.05



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007362587

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5345^{+85}_{-74}$	$3.851^{+0.126}_{-0.103}$	$-0.060^{+0.150}_{-0.150}$	$2.034^{+0.387}_{-0.387}$	$1.072^{+0.153}_{-0.139}$	$0.179^{+0.115}_{-0.060}$
	+2%/-1%	+3%/-3%	+250%/-250%	+19%/-19%	+14%/-13%	+64%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 007362587-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	-181±26	$62.33^{+76.99}_{-44.36}$	$977^{+45}_{-43}$	$2065^{+839}_{-3413}$	$1.328^{+15.506}_{-1.035}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

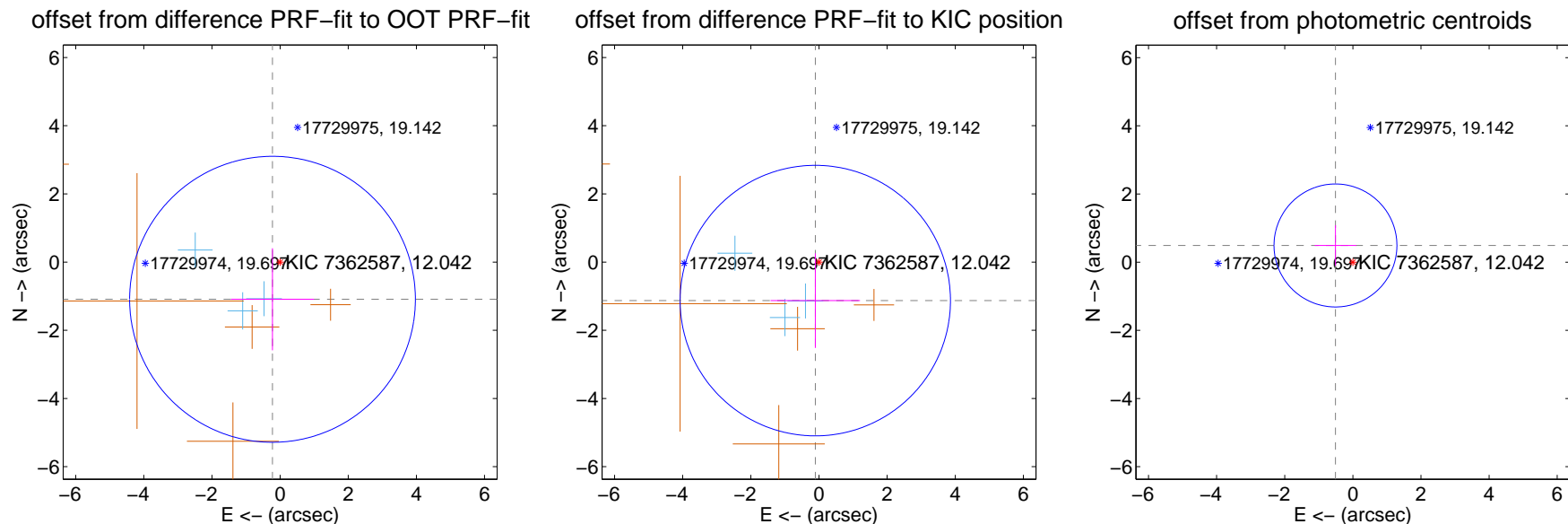
## DV Centroid Data

Supplemental centroid analysis for 007362587-05. Kepler magnitude: 12.04. Transit SNR 12.09

There are 3 quarters with good PRF difference image offsets

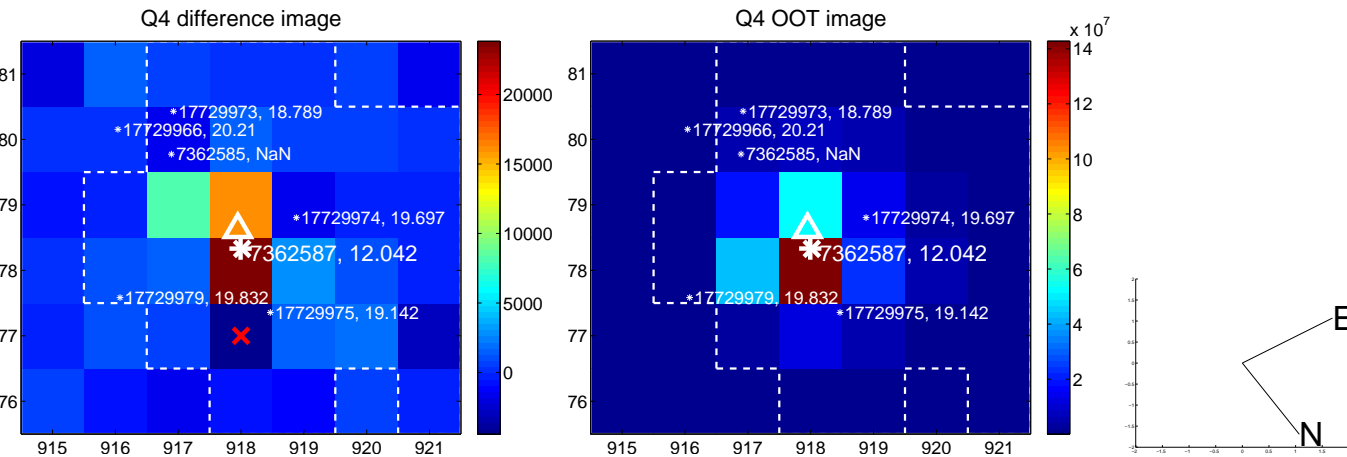
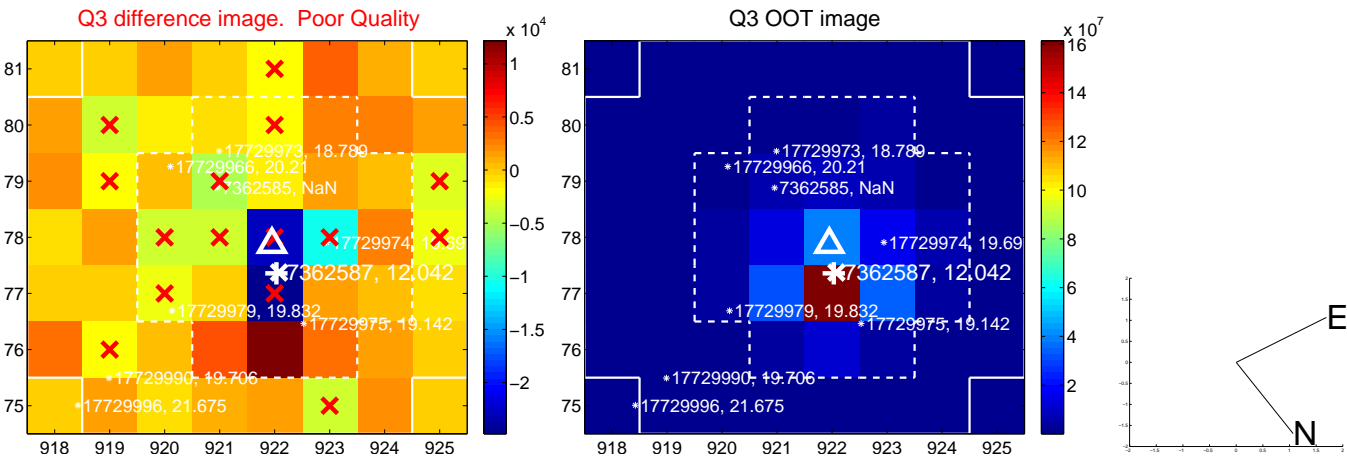
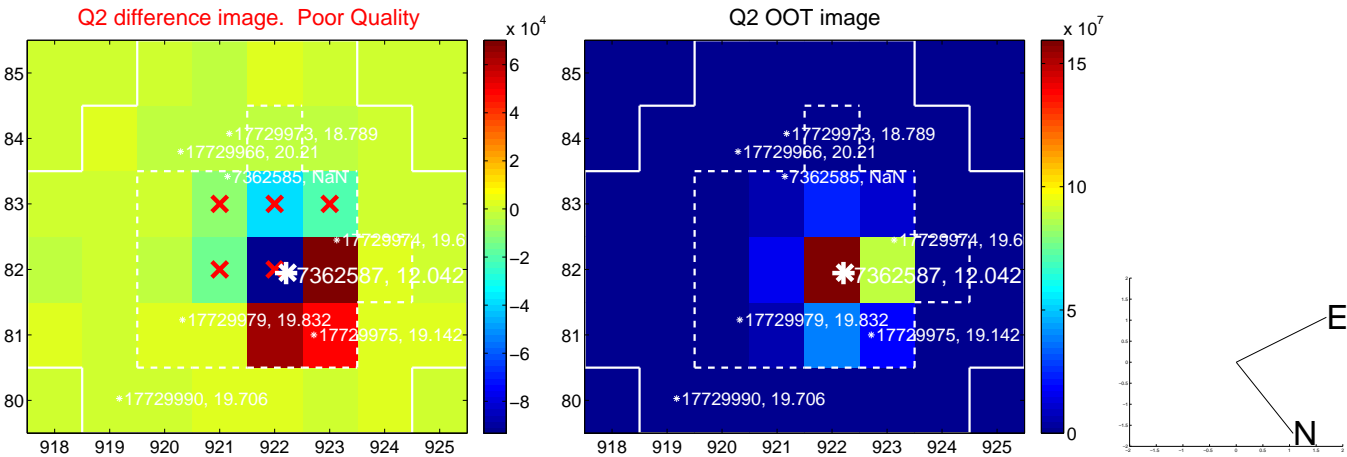
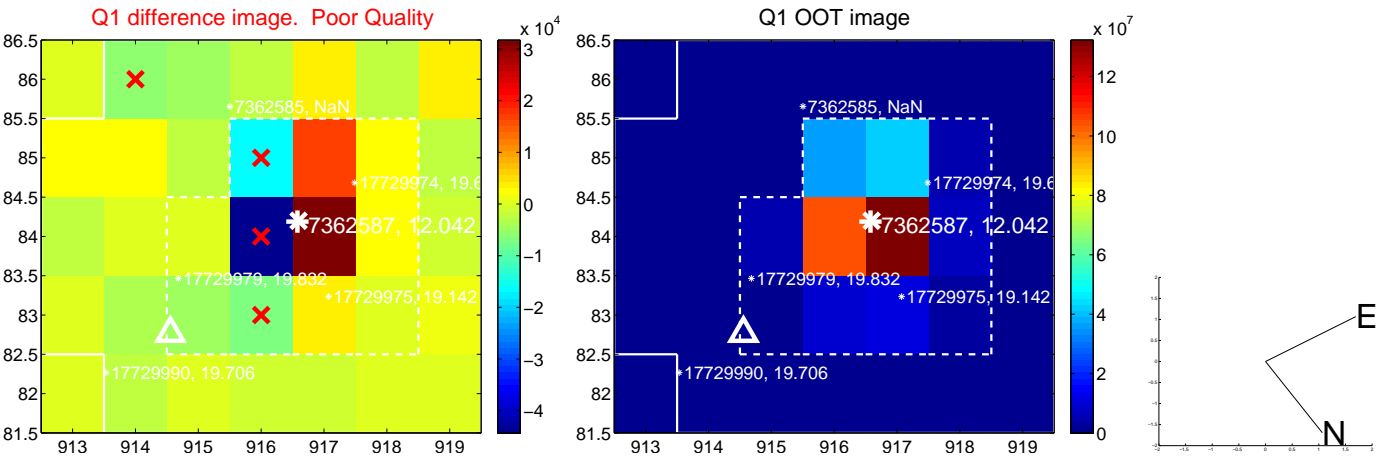
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.113 \pm 1.398$	0.80	$0.223 \pm 1.218$	$-1.091 \pm 1.495$
PRF-fit source offset from KIC position	$1.134 \pm 1.322$	0.86	$0.108 \pm 1.314$	$-1.129 \pm 1.388$
photometric centroid source offset	$0.71 \pm 0.60$	1.18	$0.51 \pm 0.61$	$0.49 \pm 0.59$

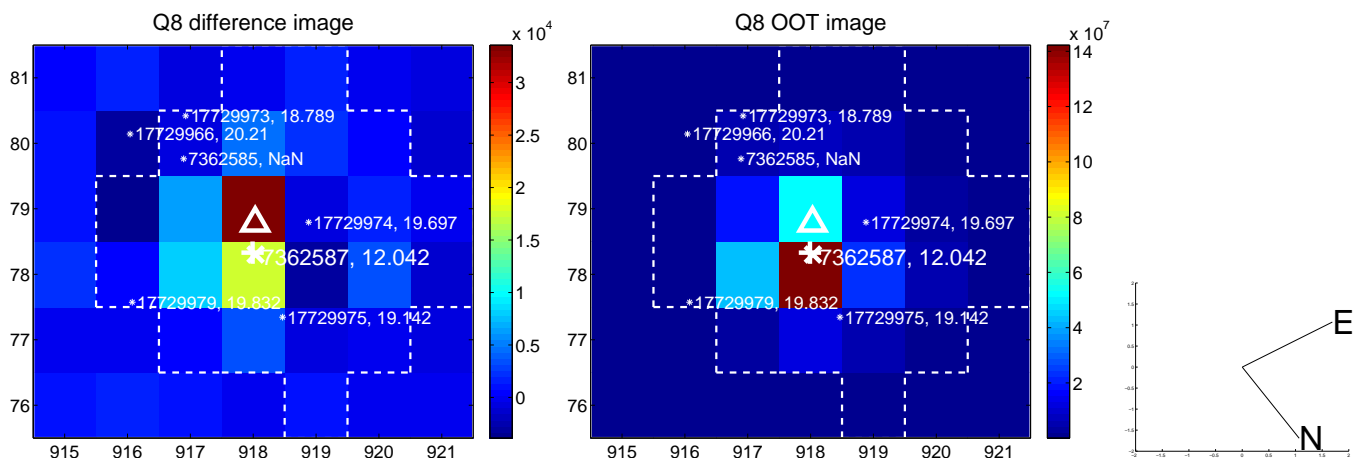
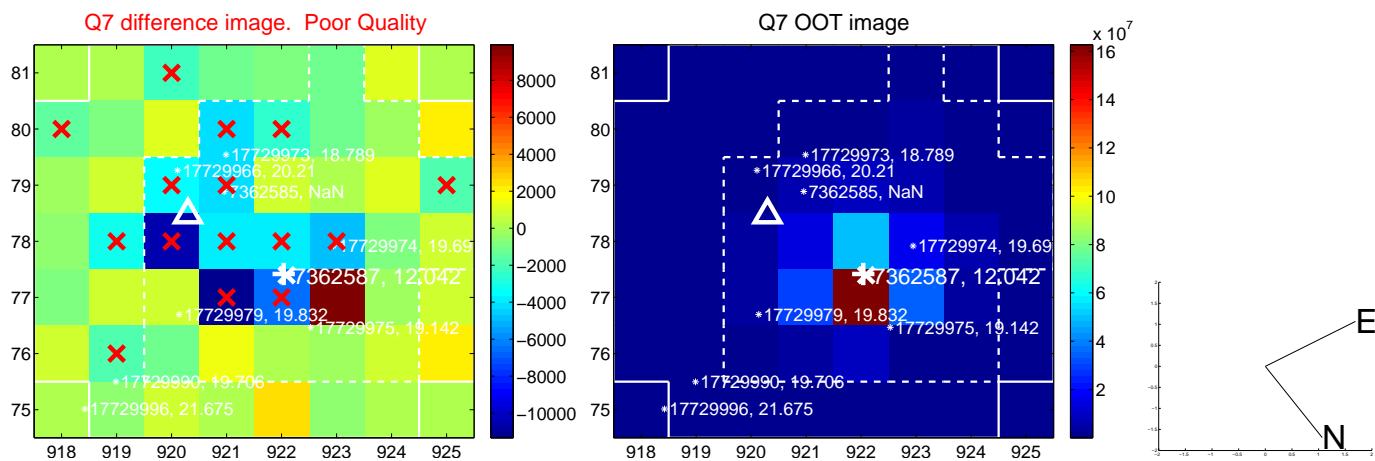
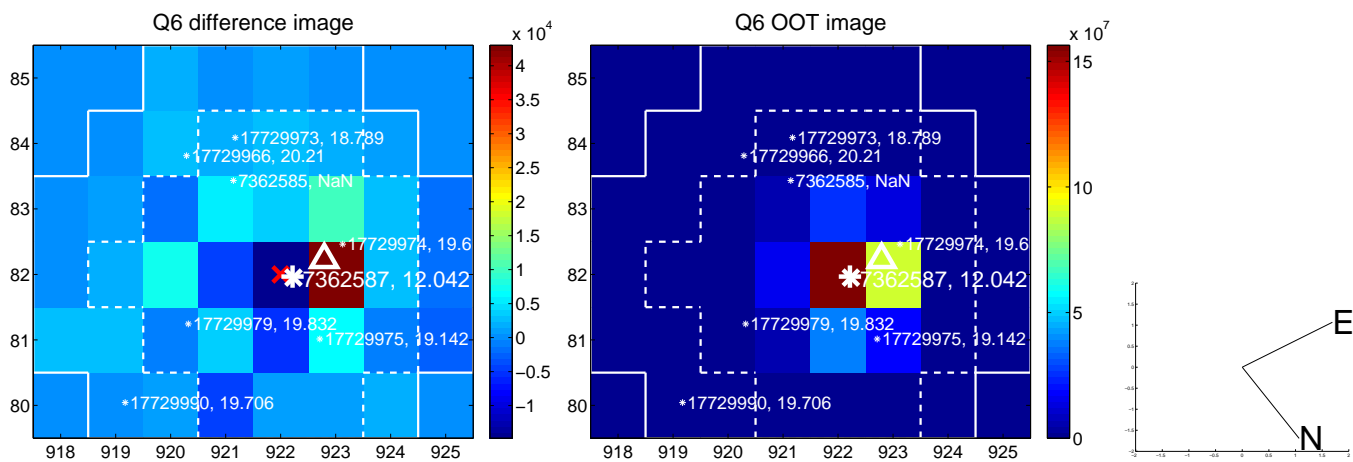
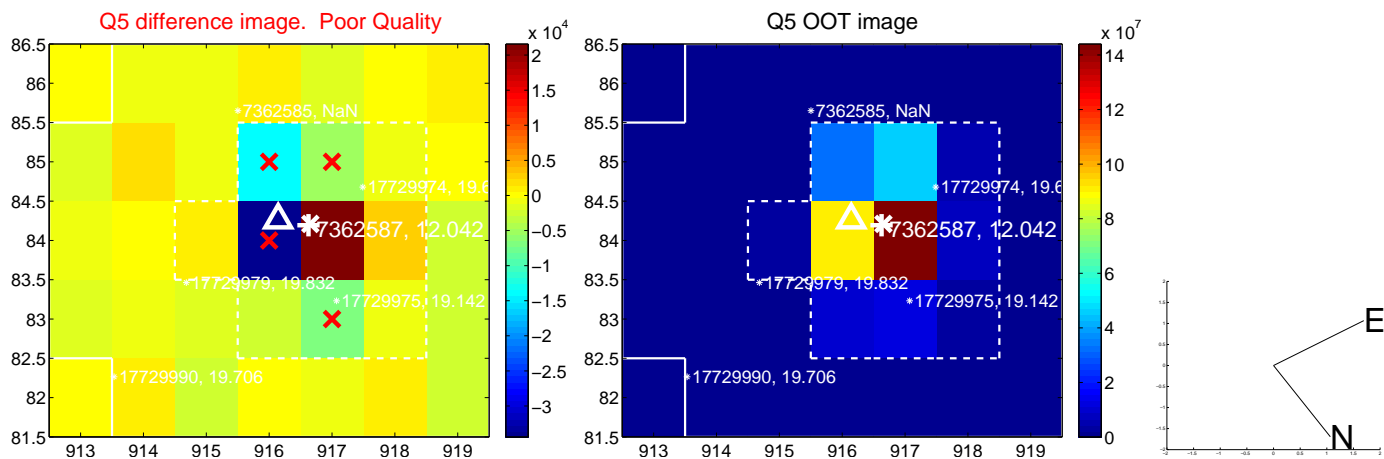


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

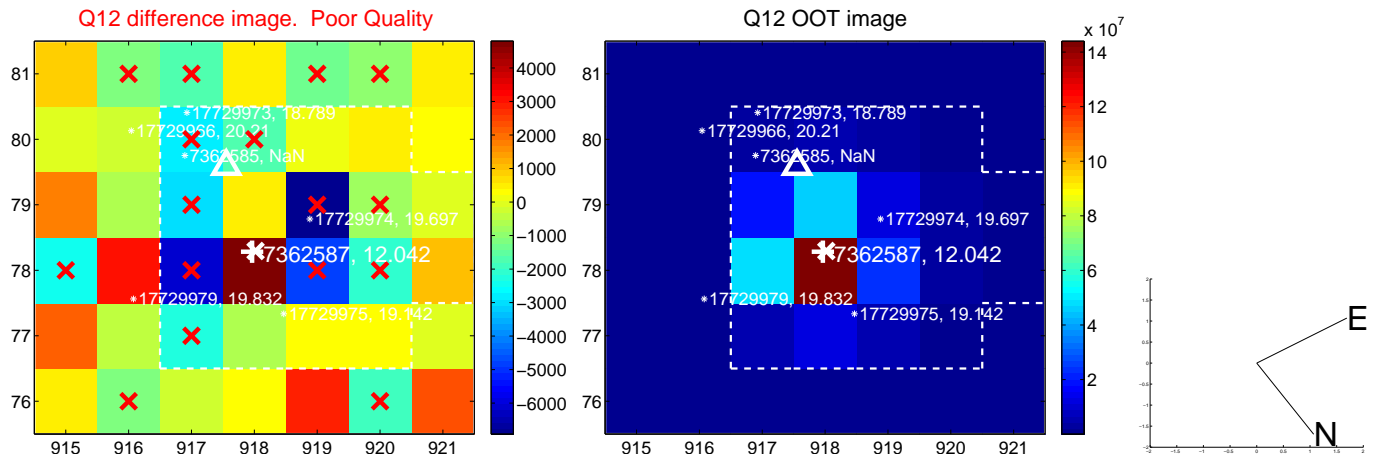
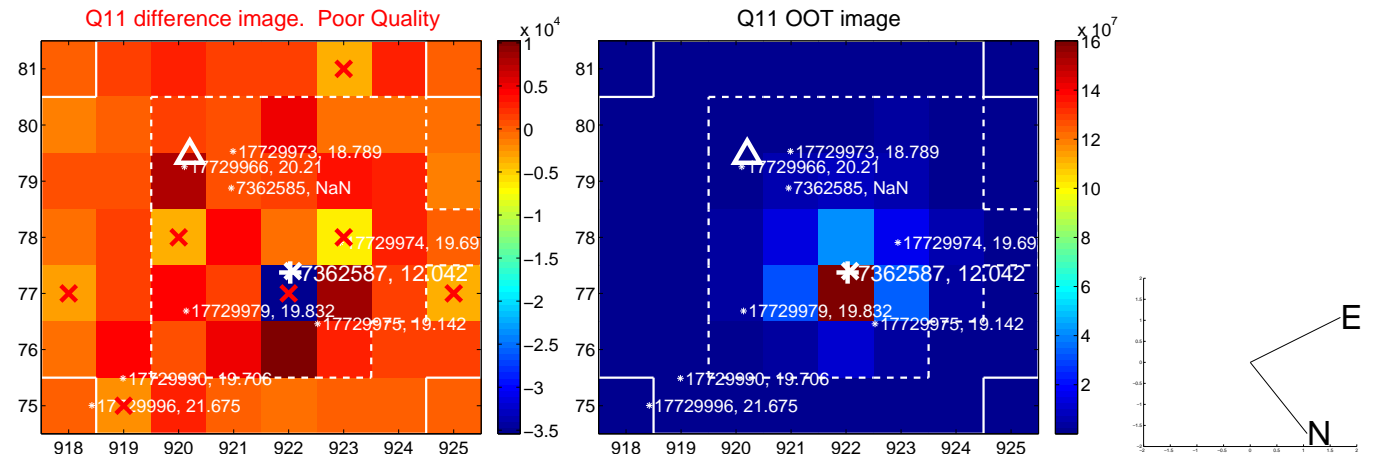
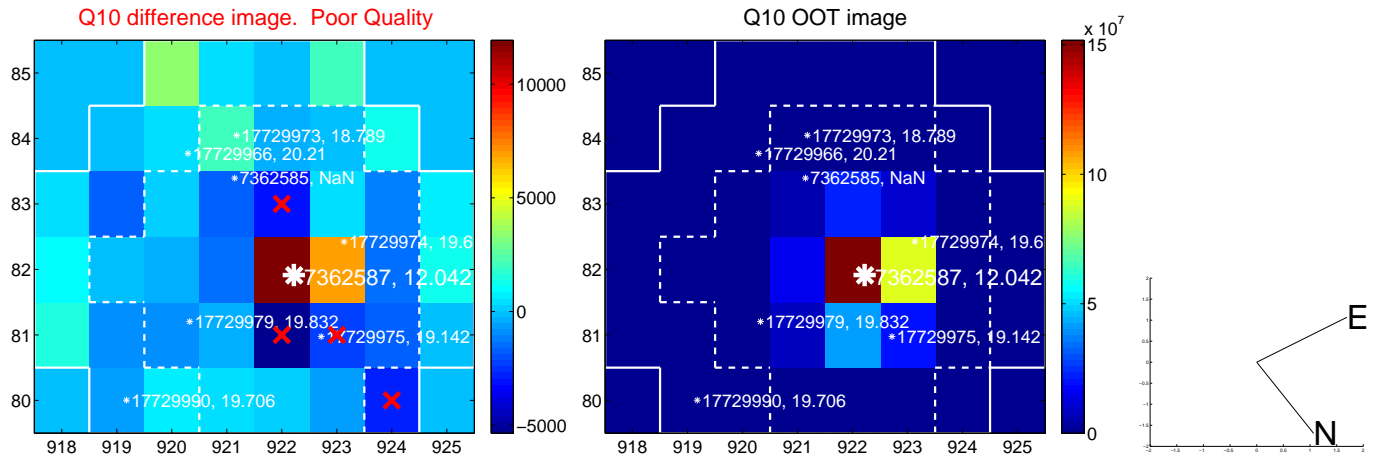
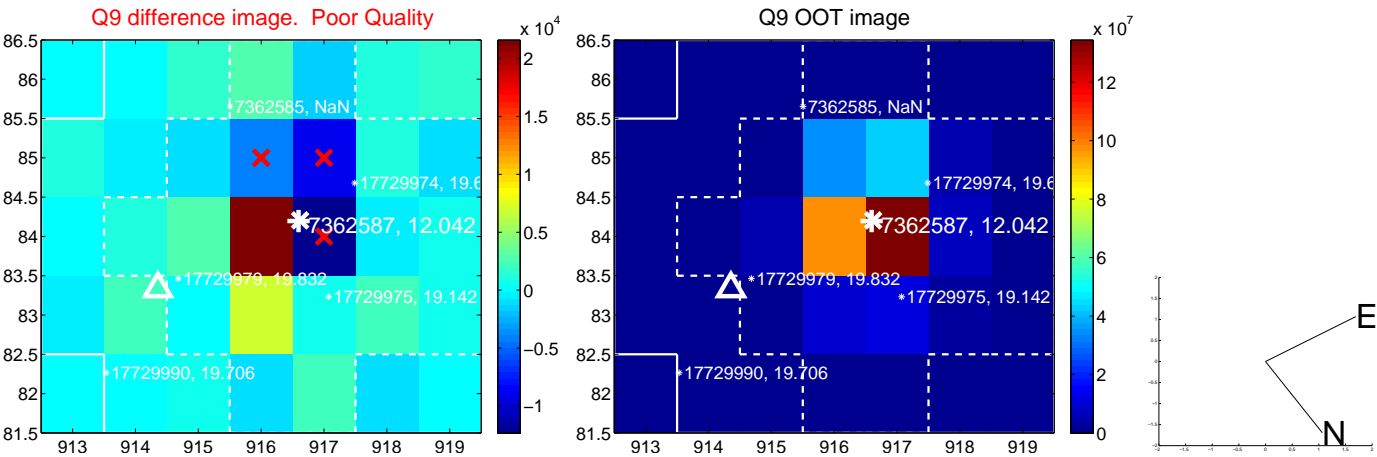
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



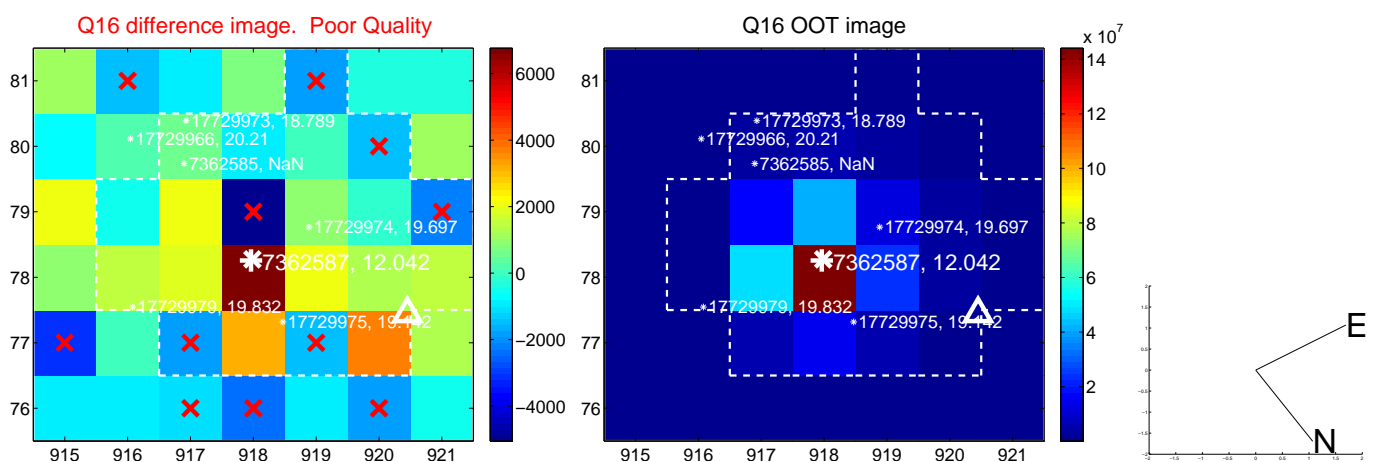
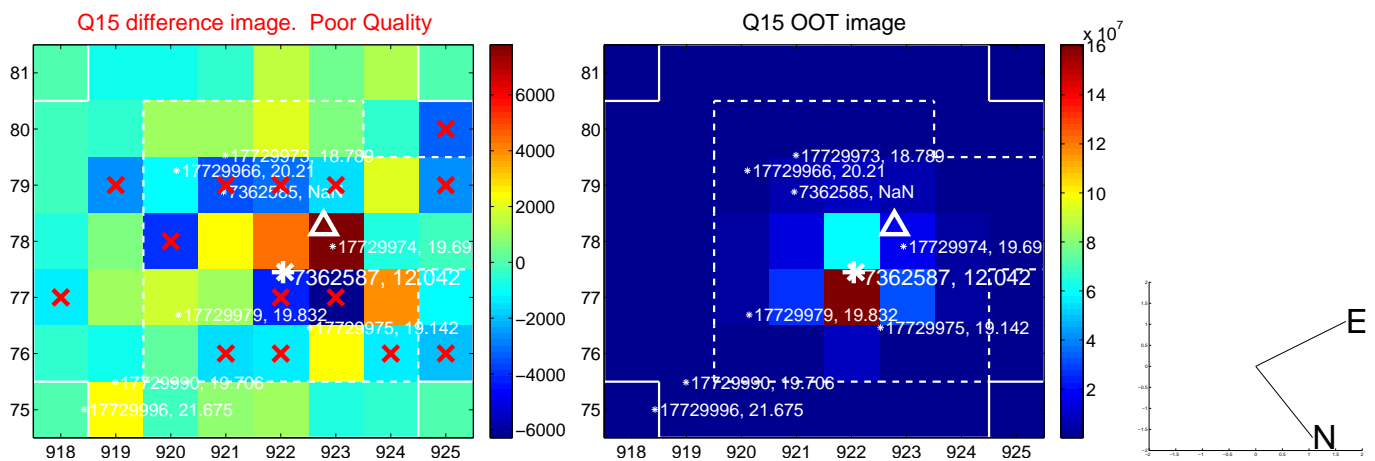
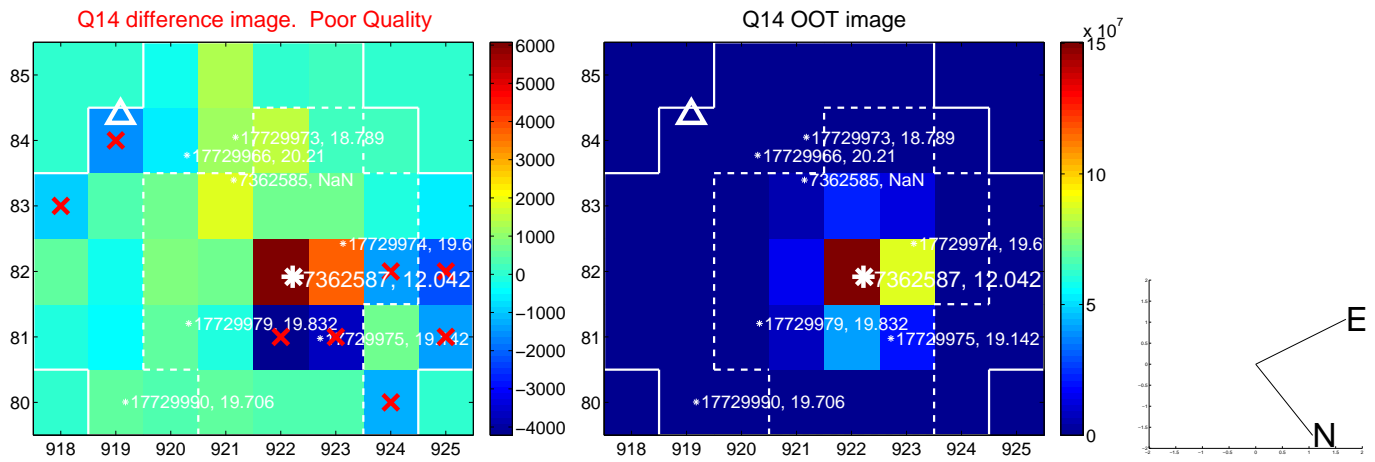
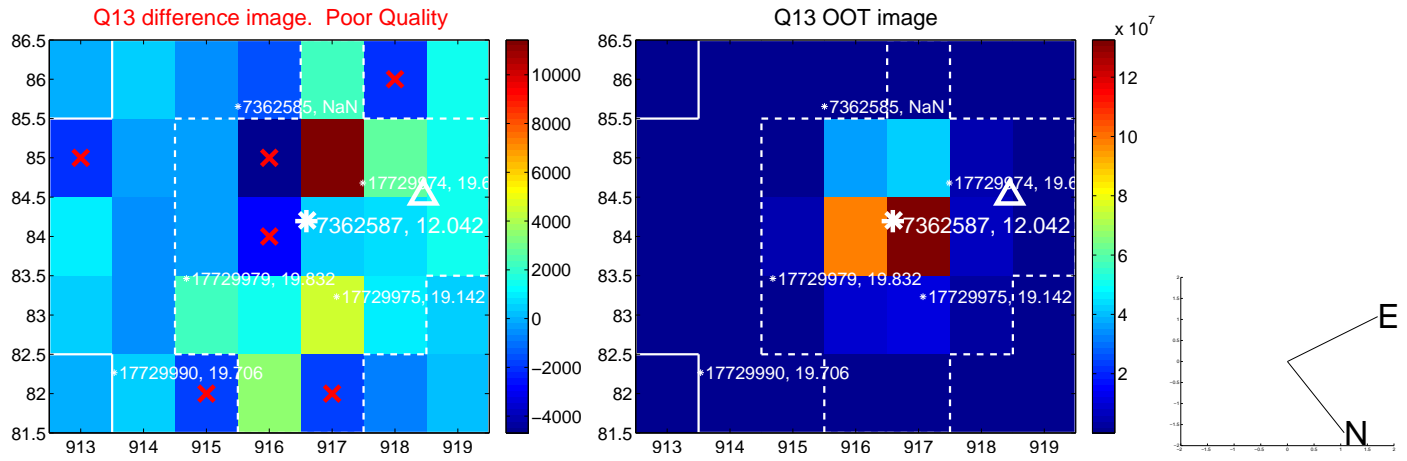
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

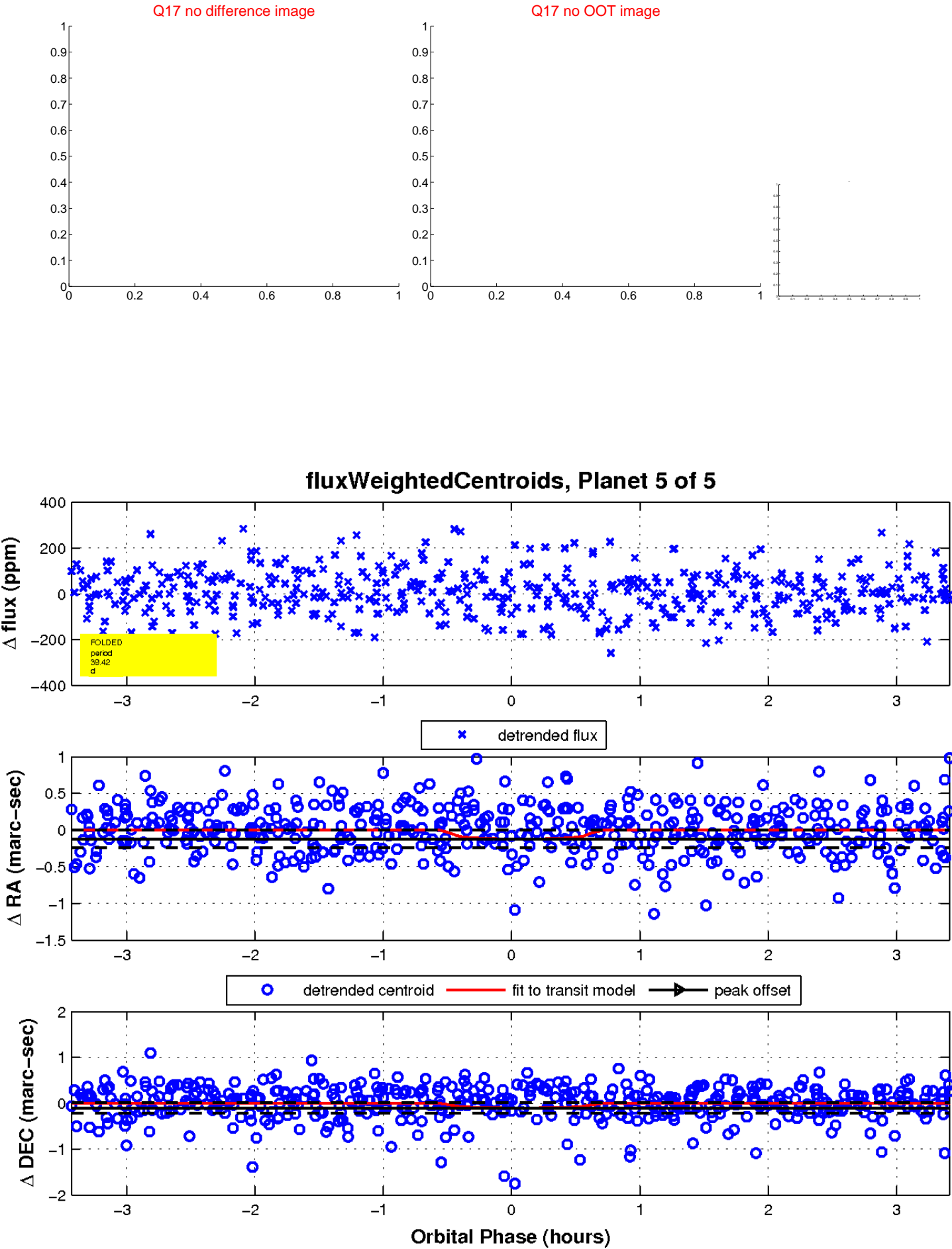


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

