

# KIC 007117284

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007117284-01	OBS	No	0.566772	131.843688	6.6	4.125	9.1	5.7	1.31	6485	0.34	13391.74
007117284-02	OBS	No	23.796793	136.493510	57.4	2.603	11.3	4.7	1.31	6485	1.12	91.77
007117284-03	OBS	No	11.322769	131.696398	319.2	0.609	11.3	12.2	1.31	6485	2.52	247.05
007117284-04	OBS	No	9.030618	136.124683	109.7	3.110	10.1	11.3	1.31	6485	1.57	334.01
007117284-05	OBS	No	13.097523	134.745744	251.8	0.872	10.6	13.7	1.31	6485	2.11	203.45

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007117284-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_FEW_MEAS—HALO_GHOST—EPHEM_MATCH
007117284-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007117284-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007117284-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007117284-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS—HALO_GHOST

**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.

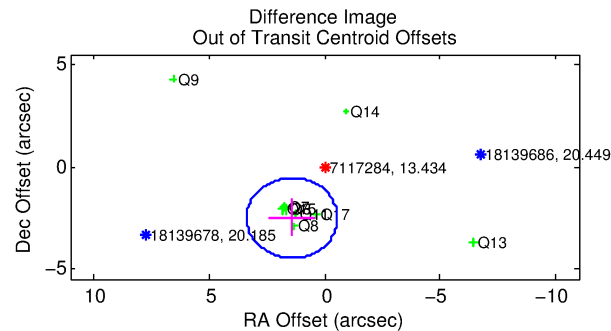
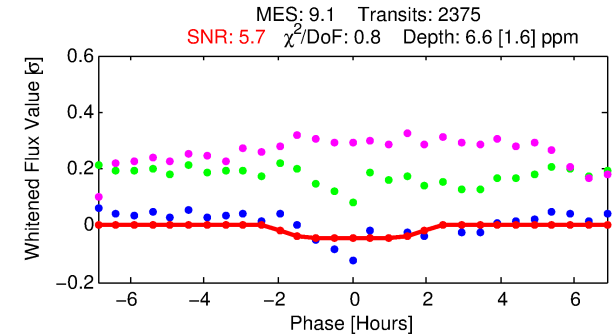
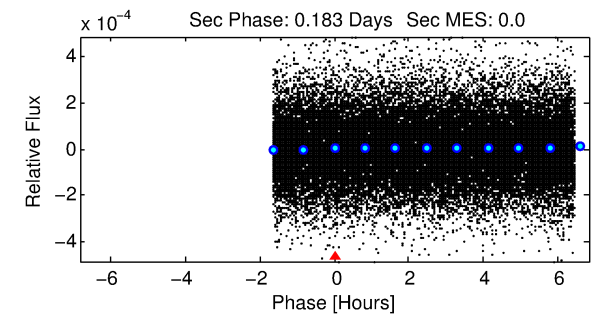
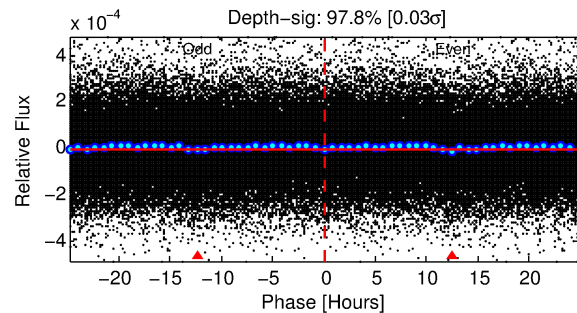
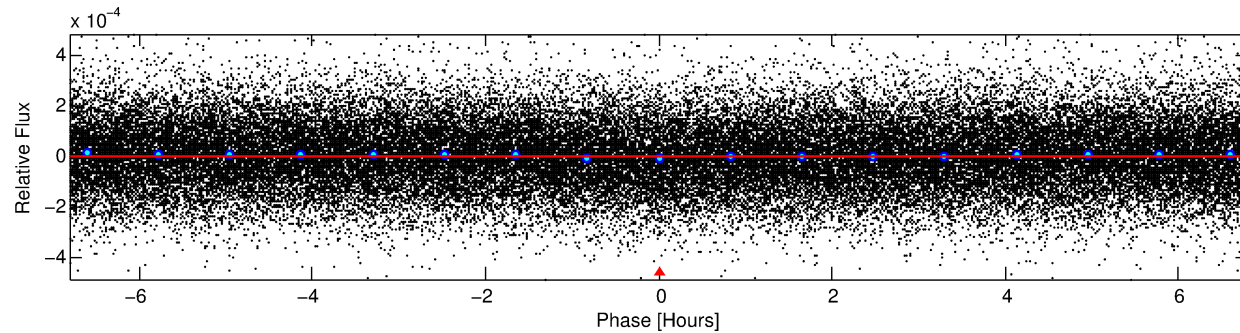
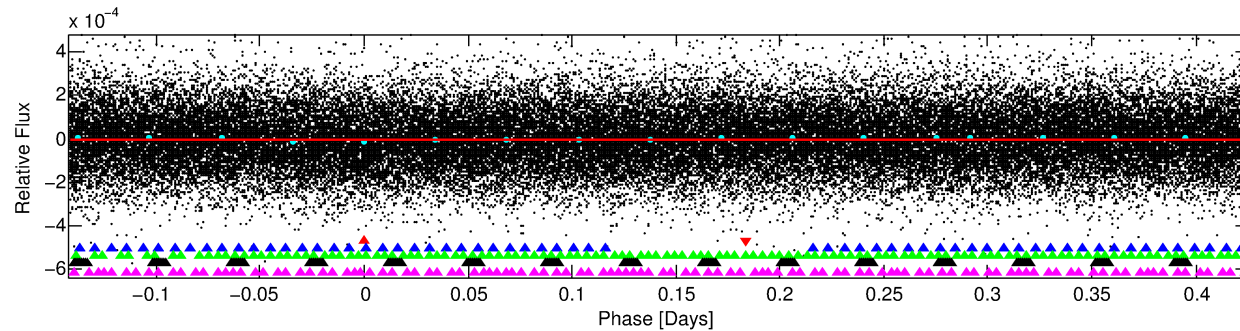
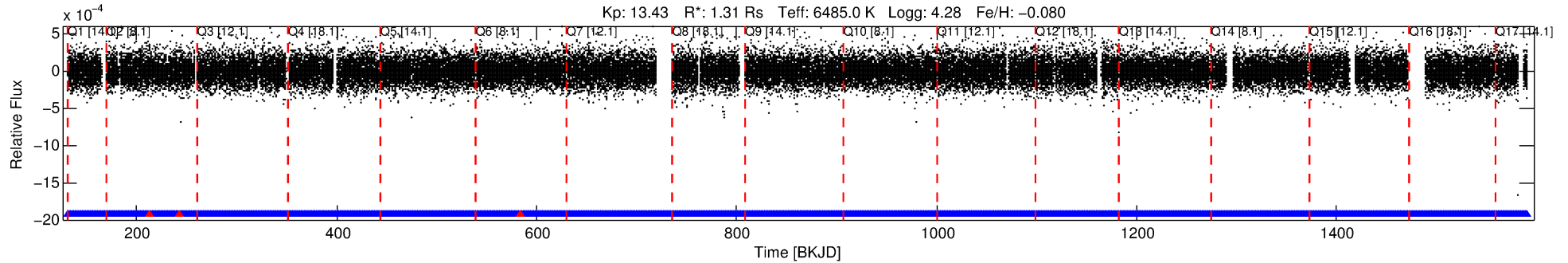
## Ephemeris Match Information For 007117284-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $\mu$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
007117284-01	7117284	RR-Lyr-pri	7198959	1:1	868.7	201	85	7.86	13.43	89042.00	Direct-PRF	0	4.98	23.84

**Notes:**  $P_1:P_2$  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.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  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: 7117284 Candidate: 1 of 5 Period: 0.567 d



## DV Fit Results:

Period = 0.56677 [0.00002] d  
Epoch = 131.8437 [0.0079] BKJD  
Rp/R\* = 0.0024 [0.0046]  
a/R\* = 1.23 [4.25]  
b = 0.07 [143.07]  
Seff = 13391.73 [3972.93]  
Teq = 2743 [203] K  
Rp = 0.34 [0.66] Re  
a = 0.0143 [0.0027] AU  
Ag = N/A  
Teffp = N/A

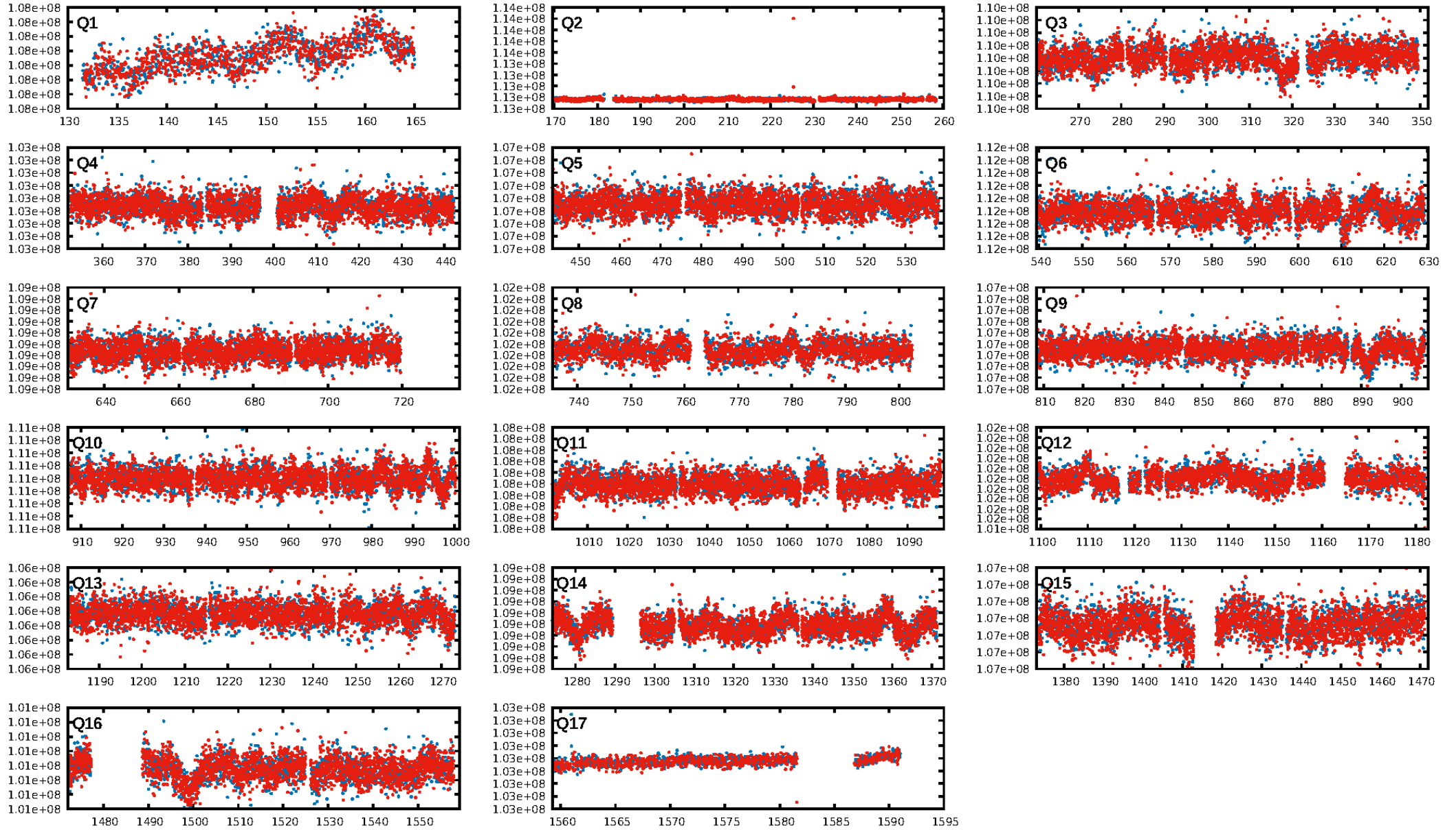
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [39.32 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.21e-17  
RollingBand-fgt: 1.00 [2265/2268]  
GhostDiagnostic-chr: 0.2004  
Centroid-sig: 59.7%  
Centroid-so: 0.986 arcsec [0.50 $\sigma$ ]  
OotOffset-rm: 2.885 arcsec [4.40 $\sigma$ ]  
KicOffset-rm: 3.062 arcsec [4.83 $\sigma$ ]  
OotOffset-st: 1/4/1/3 [9]  
KicOffset-st: 1/4/1/3 [9]  
DiffImageQuality-fgm: 0.67 [6/9]  
DiffImageOverlap-fno: 1.00 [17/17]

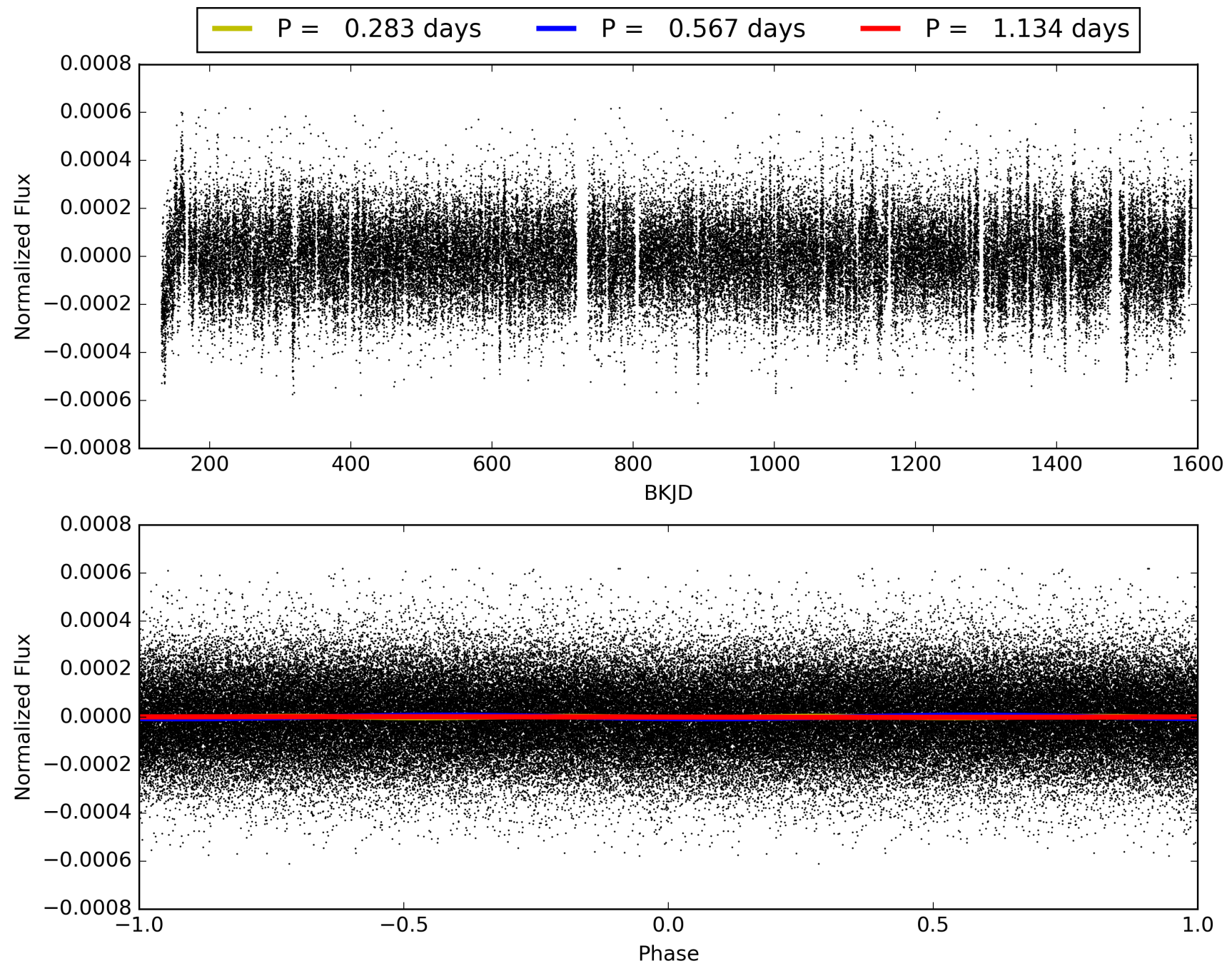
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:00:11 Z

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

# TCE 007117284-01, PDC Light Curves



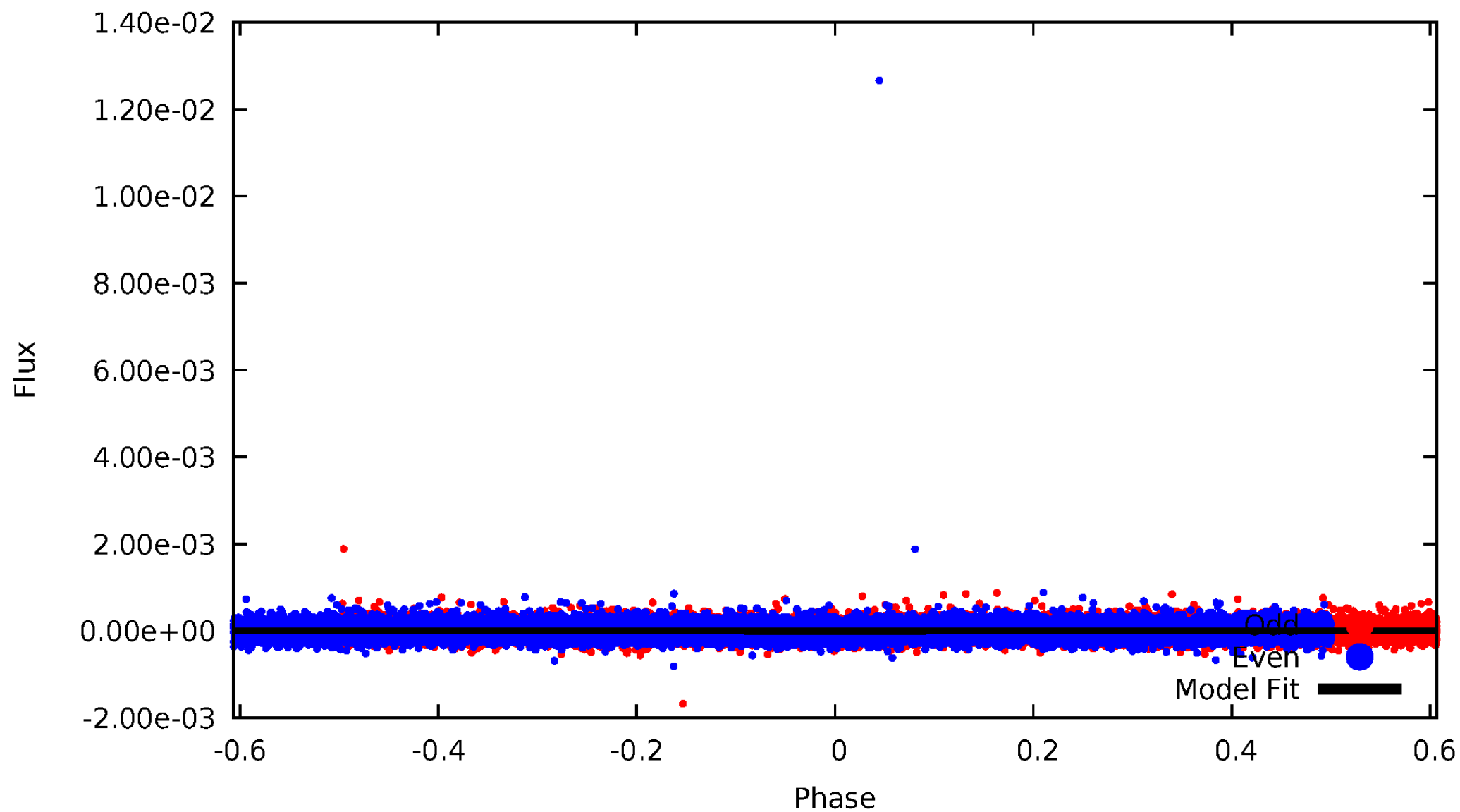
TCE 007117284-01





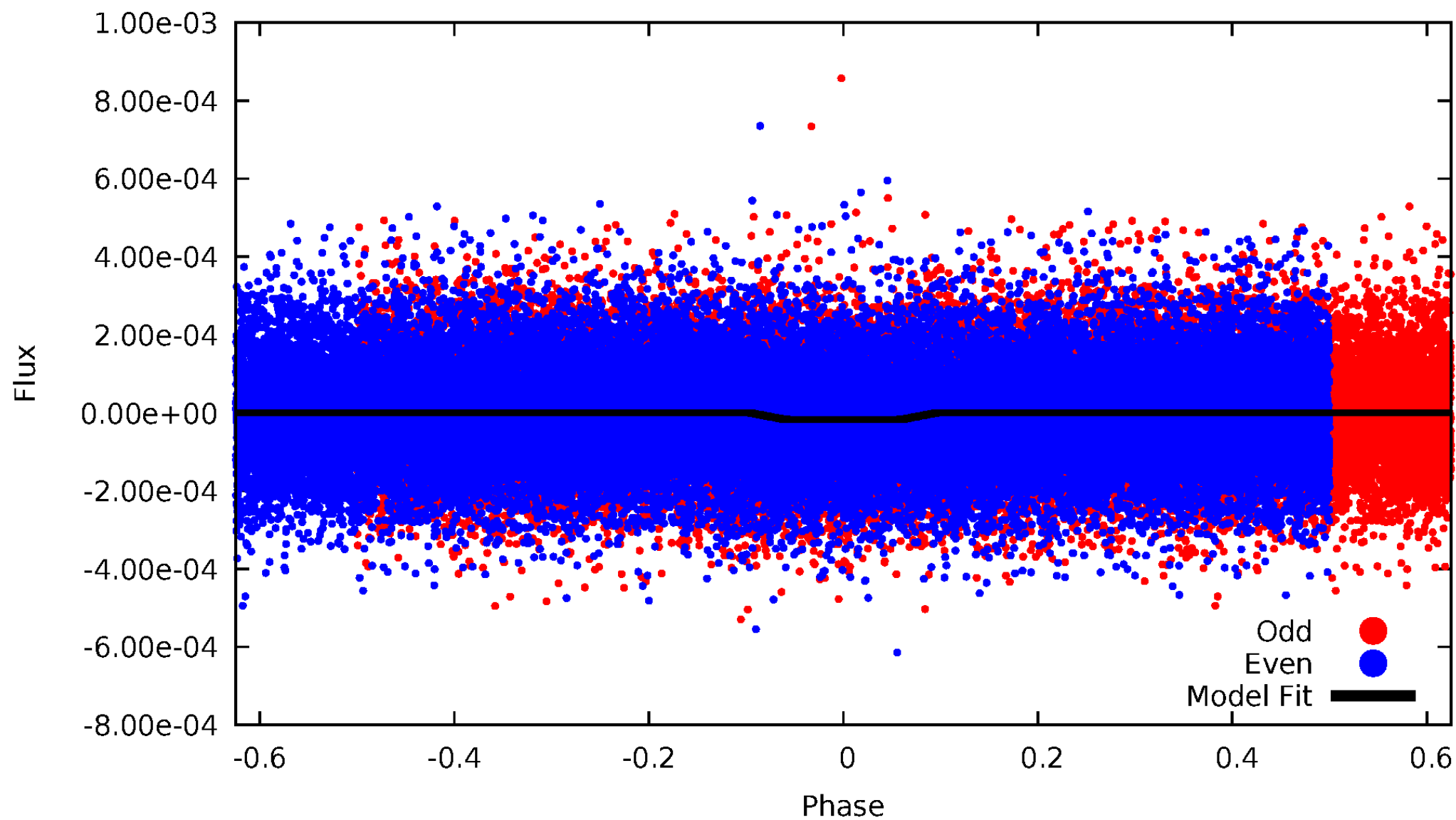
# DV Odd/Even

TCE 007117284-01

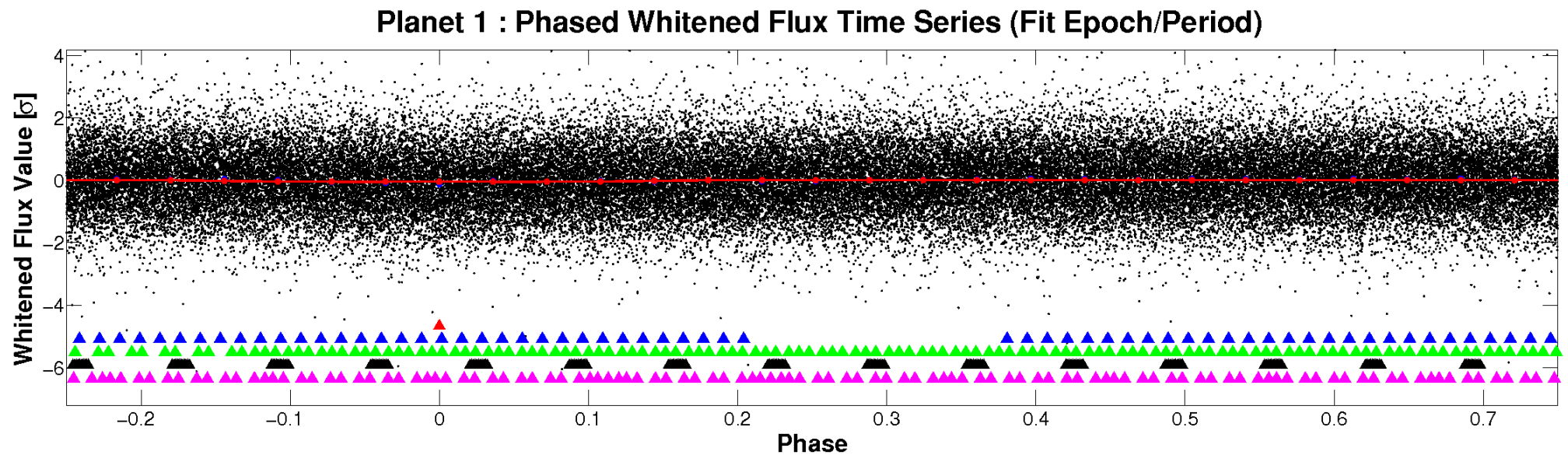
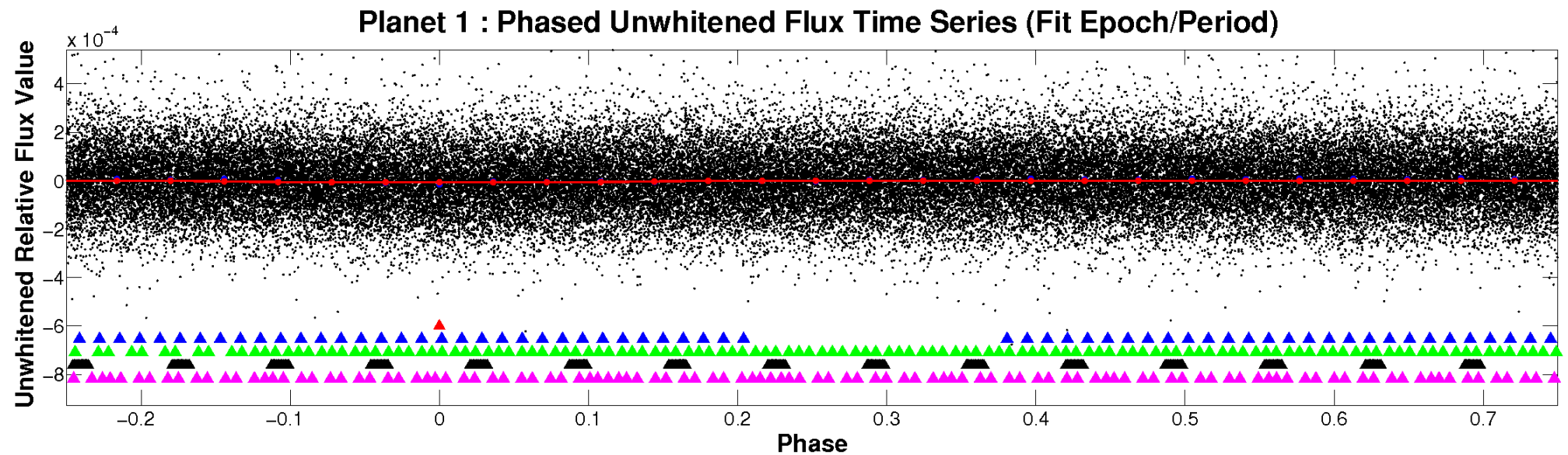


# ALT Odd/Even

TCE 007117284-01

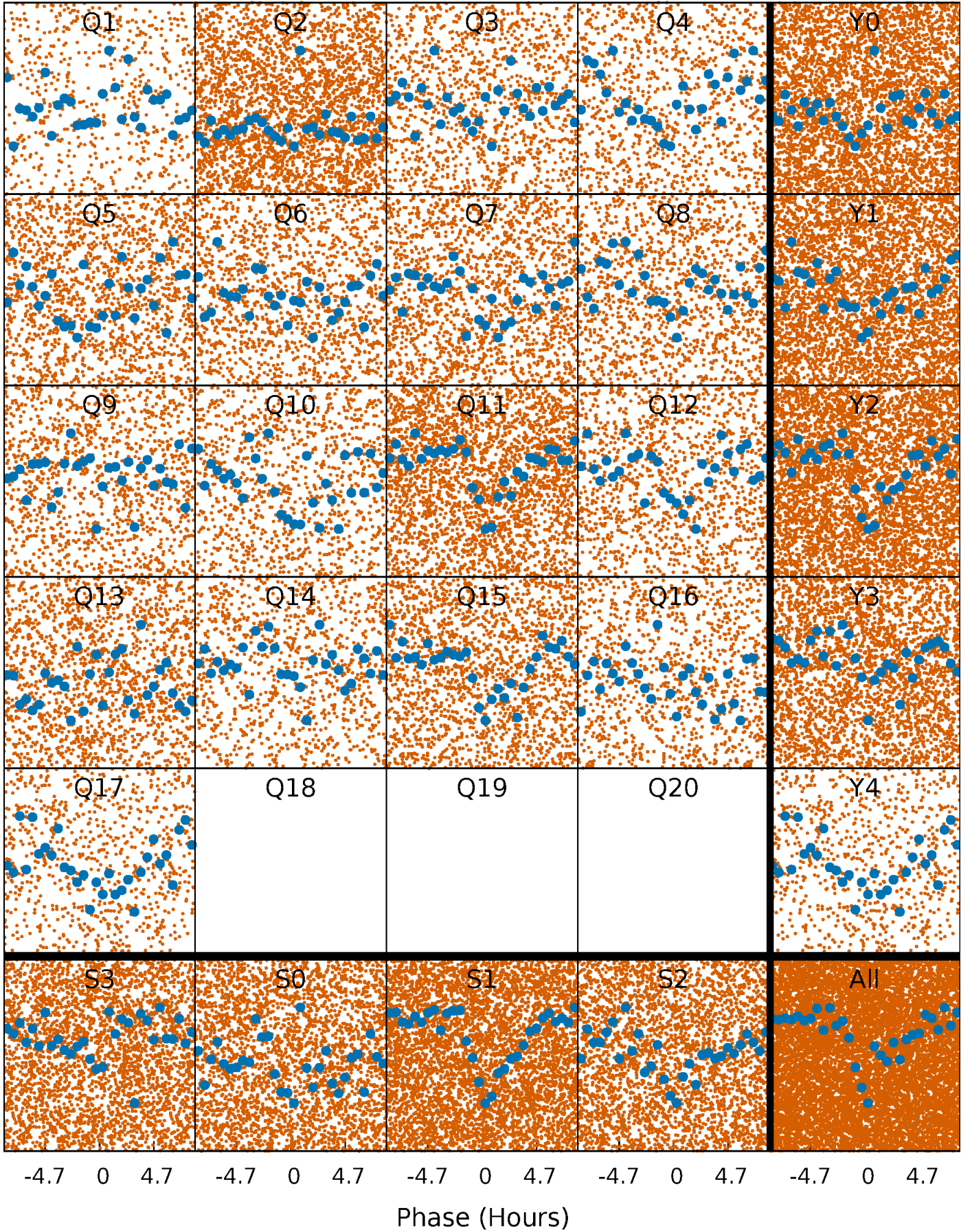


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

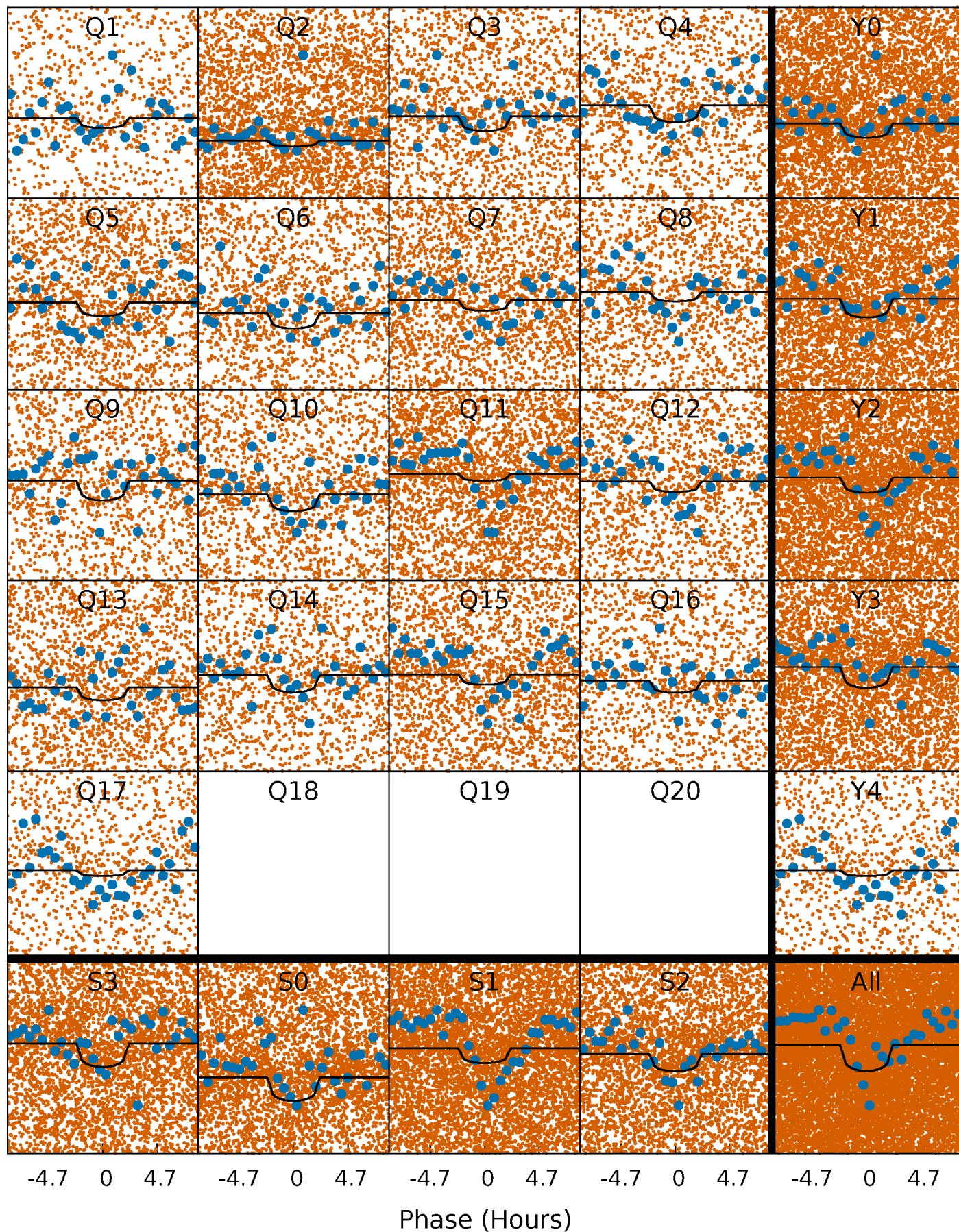
TCE 007117284-01   P= 0.566772 Days    $T_0=131.843688$  (BKJD)





# DV Quarter-Phased Transit Curves

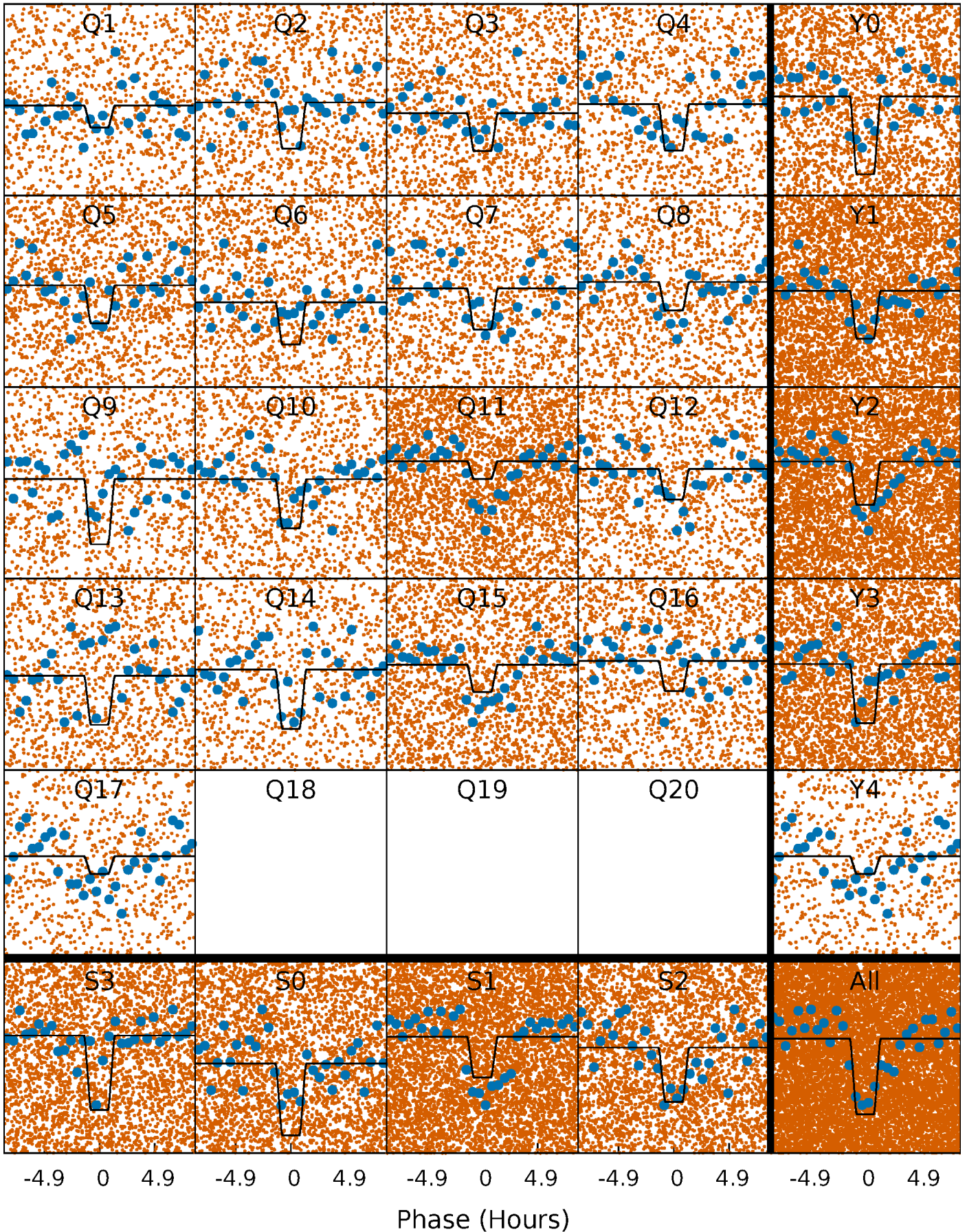
TCE 007117284-01 P= 0.566772 Days  $T_0=131.843688$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

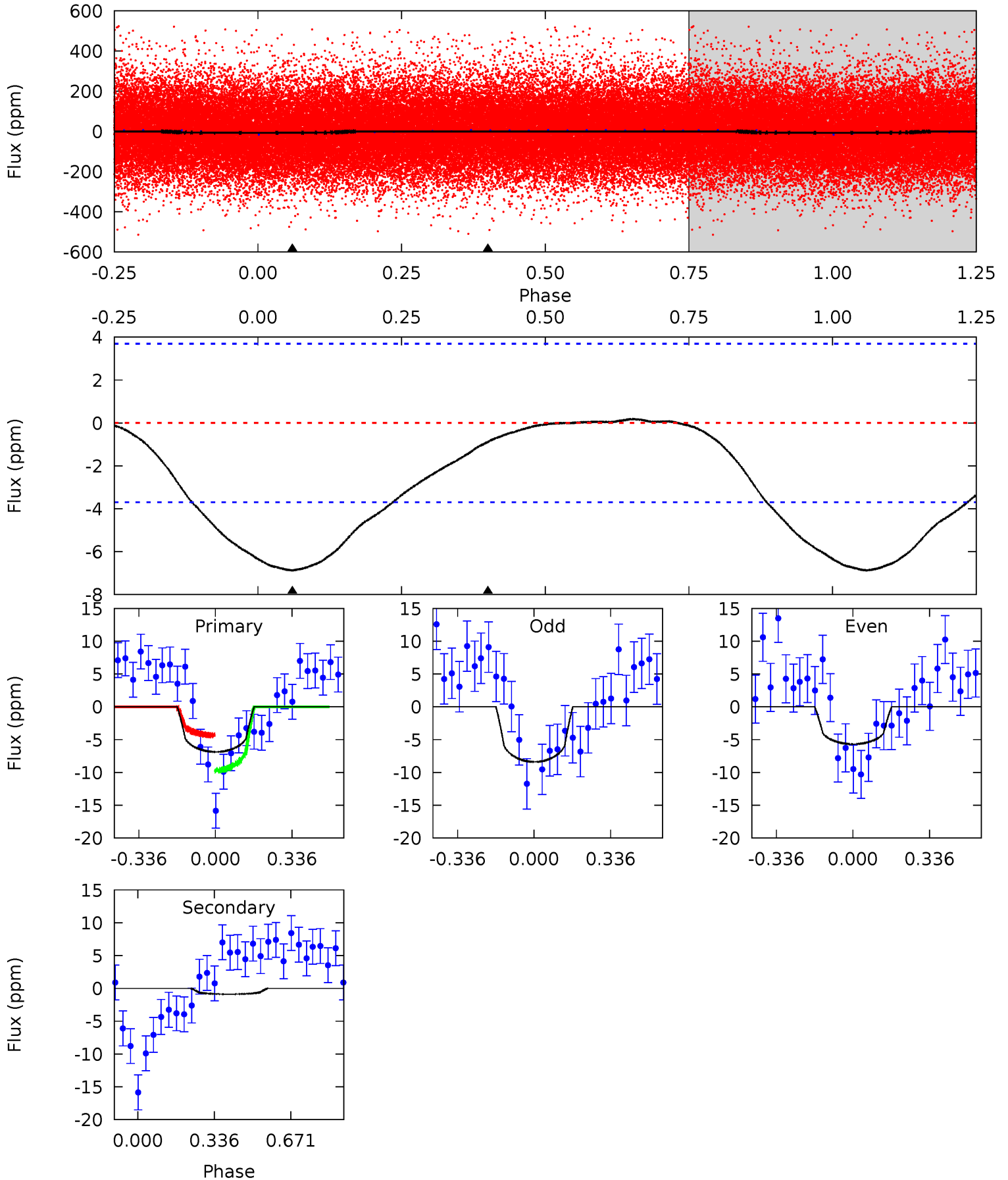
TCE 007117284-01 P= 0.566801 Days  $T_0=131.811752$  (BKJD)



# DV Model-Shift Uniqueness Test

007117284-01, P = 0.566772 Days, E = 131.276916 Days

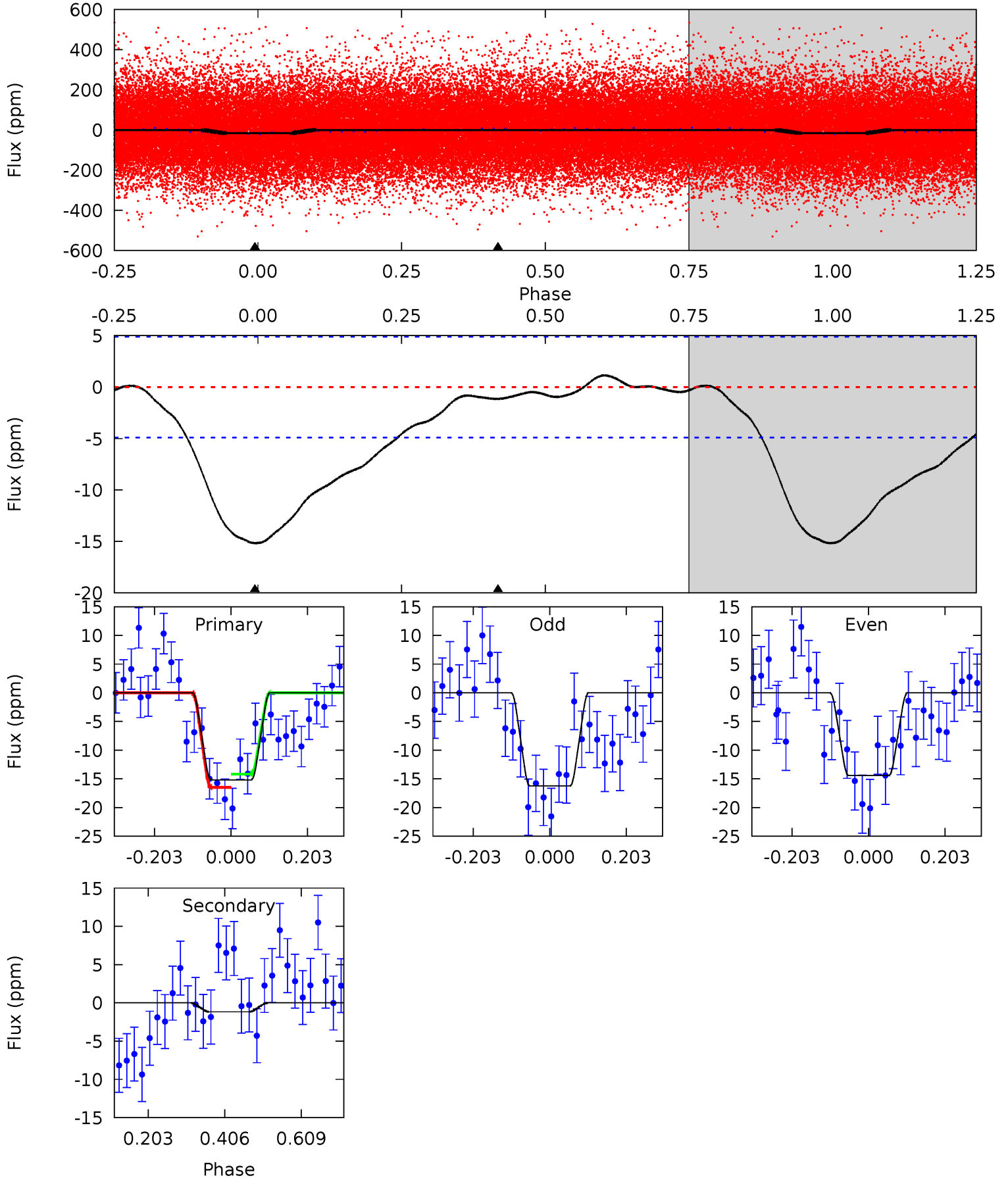
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.02	1.04	0	0	4.30	0.96	0.19	8.02	8.02	1.04	1.04	1.58	0.84	0.03	3.13



# Alt Model-Shift Uniqueness Test

007117284-01, P = 0.566801 Days, E = 131.244951 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	1.05	0	0	4.41	1.27	1.69	13.7	13.7	1.05	1.05	0.82	0.91	0.07	1.03





### Stellar Parameters For KIC 007117284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6485^{+144}_{-208}$	$4.283^{+0.096}_{-0.144}$	$-0.080^{+0.250}_{-0.300}$	$1.310^{+0.296}_{-0.197}$	$1.200^{+0.157}_{-0.157}$	$0.752^{+0.384}_{-0.297}$
	+2%/-3%	+2%/-3%	+312%/-375%	+23%/-15%	+13%/-13%	+51%/-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 007117284-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1 \pm 1$	$0.58^{+0.56}_{-0.38}$	$3834^{+222}_{-205}$	$-3048^{+7935}_{-634}$	$0.196^{+1.718}_{-0.206}$
Alt.	$-1 \pm 1$	$0.78^{+0.57}_{-0.49}$	$3838^{+209}_{-175}$	$-3213^{+7717}_{-442}$	$0.151^{+1.273}_{-0.157}$

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

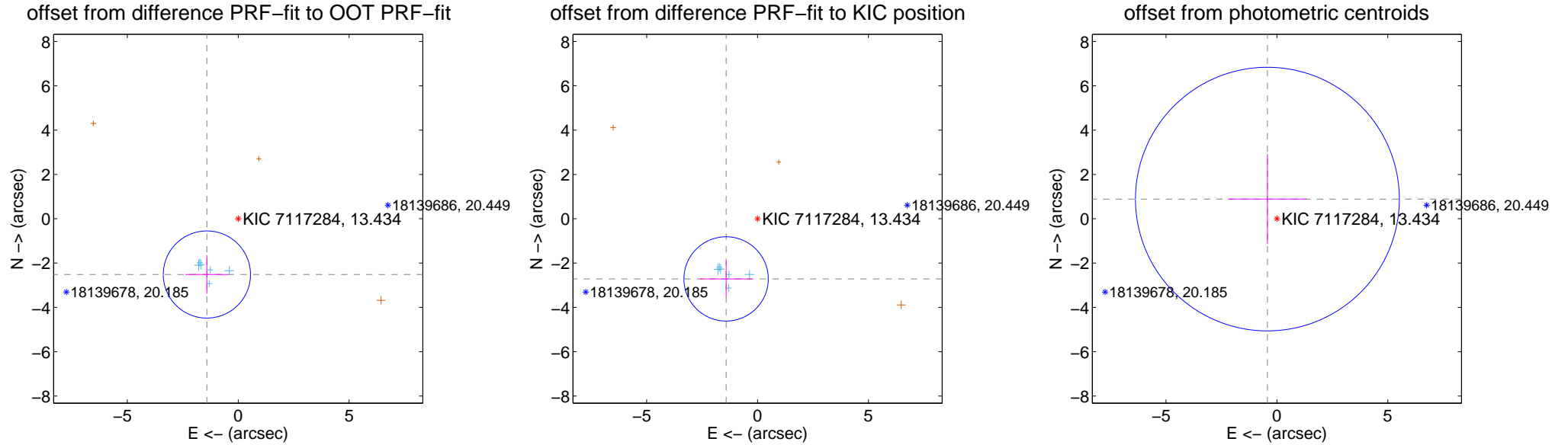
## DV Centroid Data

Supplemental centroid analysis for 007117284-01. Kepler magnitude: 13.43. Transit SNR 5.74

There are 6 quarters with good PRF difference image offsets

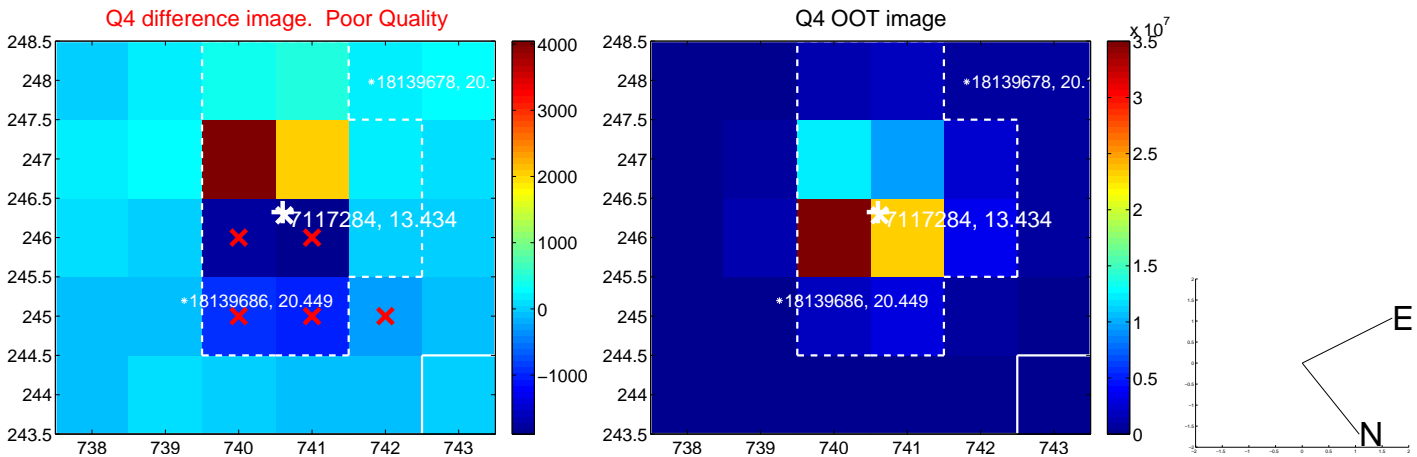
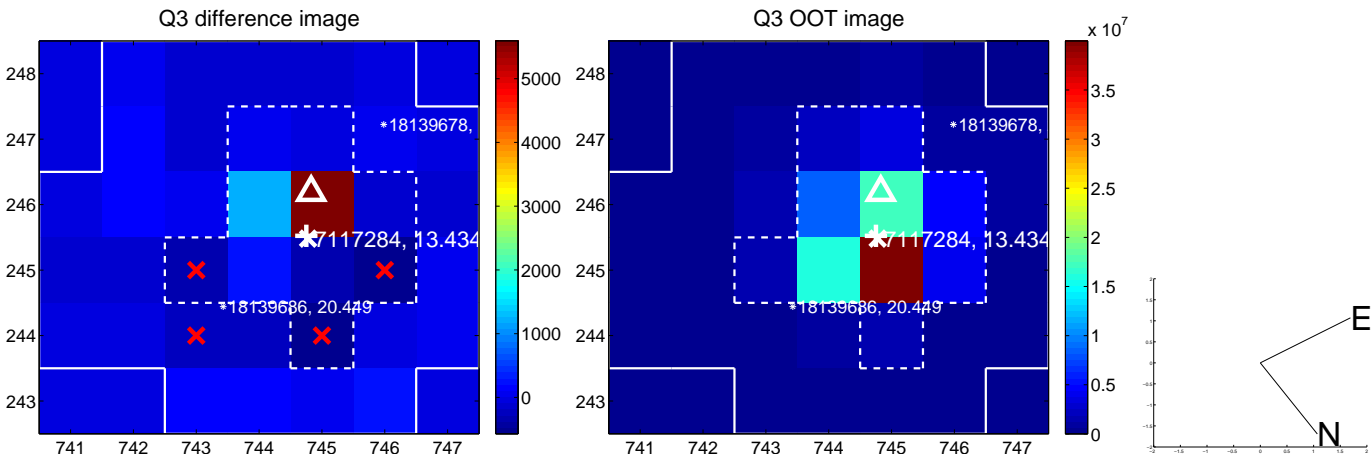
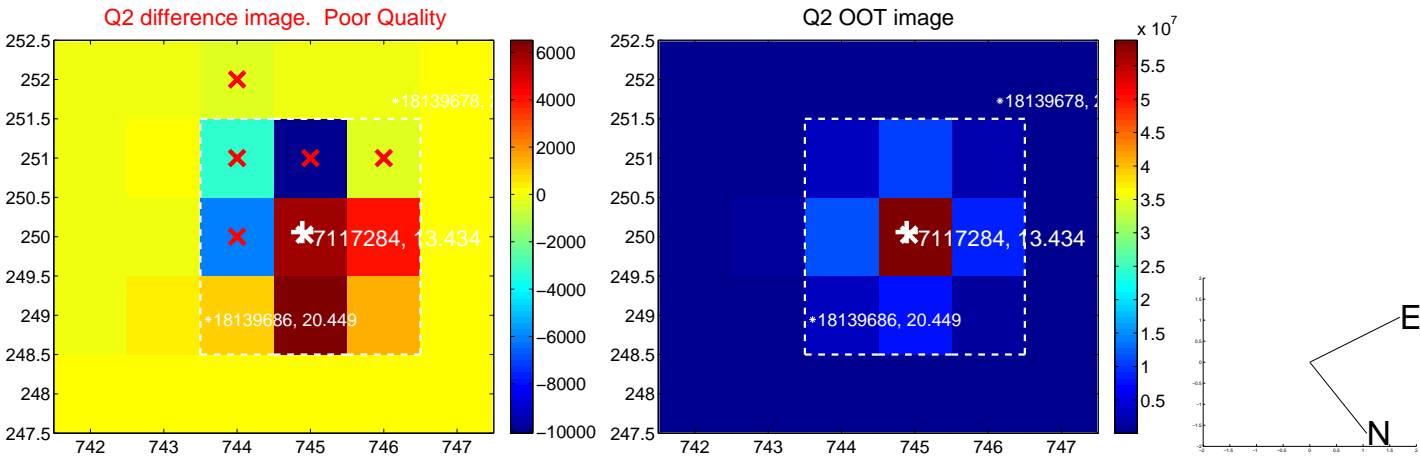
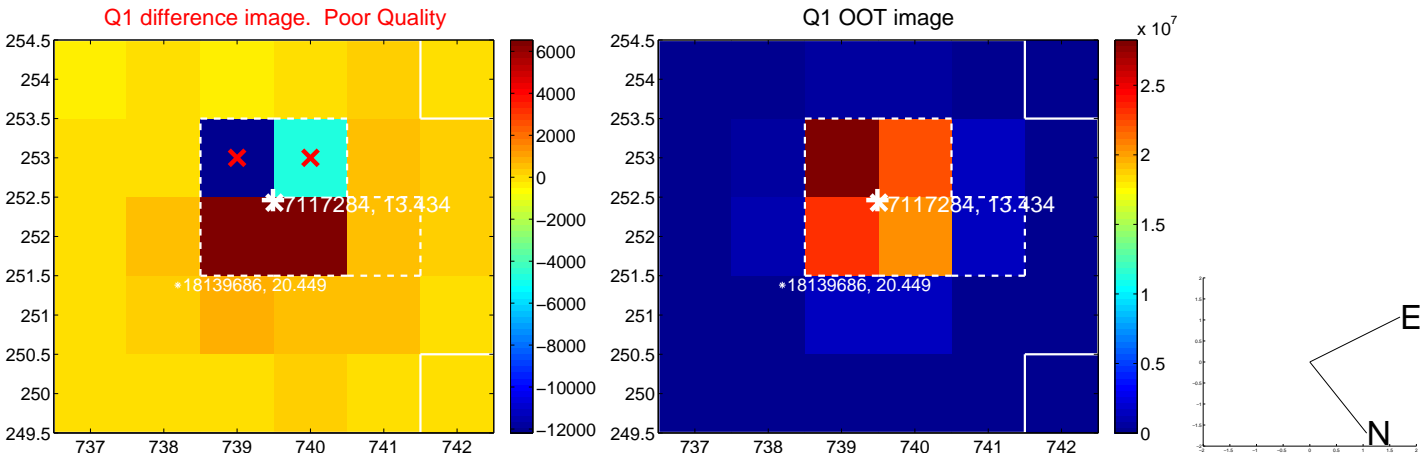
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.885 \pm 0.655$	4.40	$1.412 \pm 0.971$	$-2.516 \pm 0.866$
PRF-fit source offset from KIC position	$3.062 \pm 0.634$	4.83	$1.418 \pm 1.174$	$-2.714 \pm 0.818$
photometric centroid source offset	$0.99 \pm 1.98$	0.50	$0.43 \pm 1.77$	$0.89 \pm 2.03$

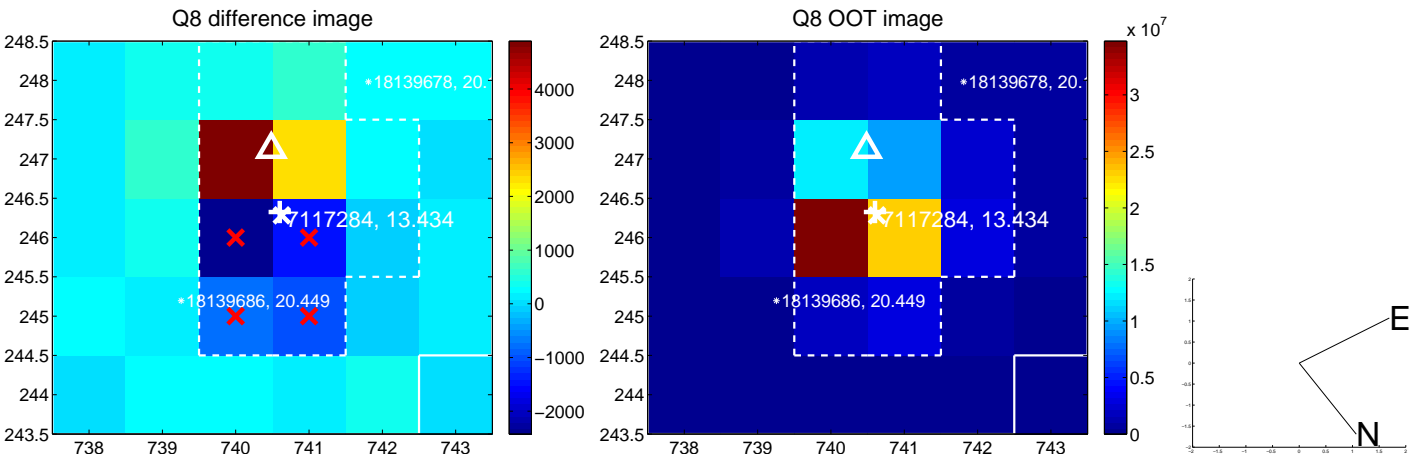
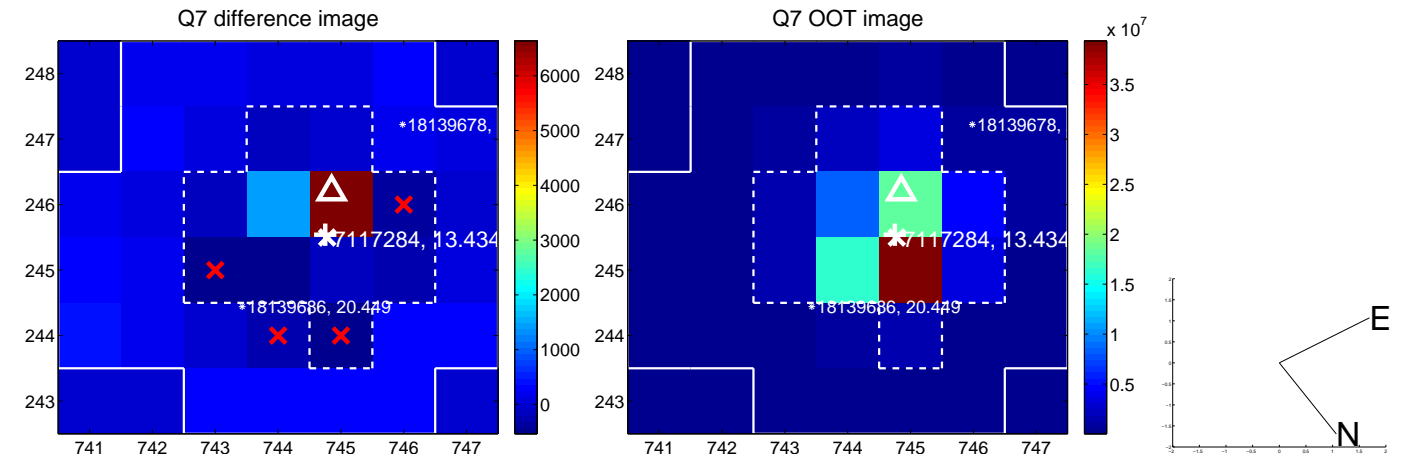
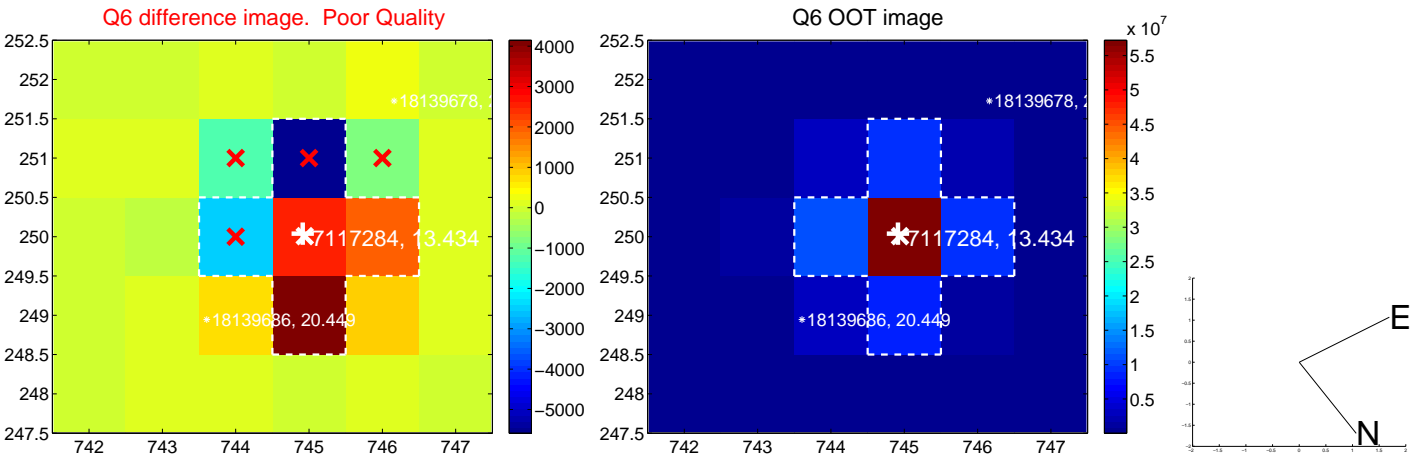
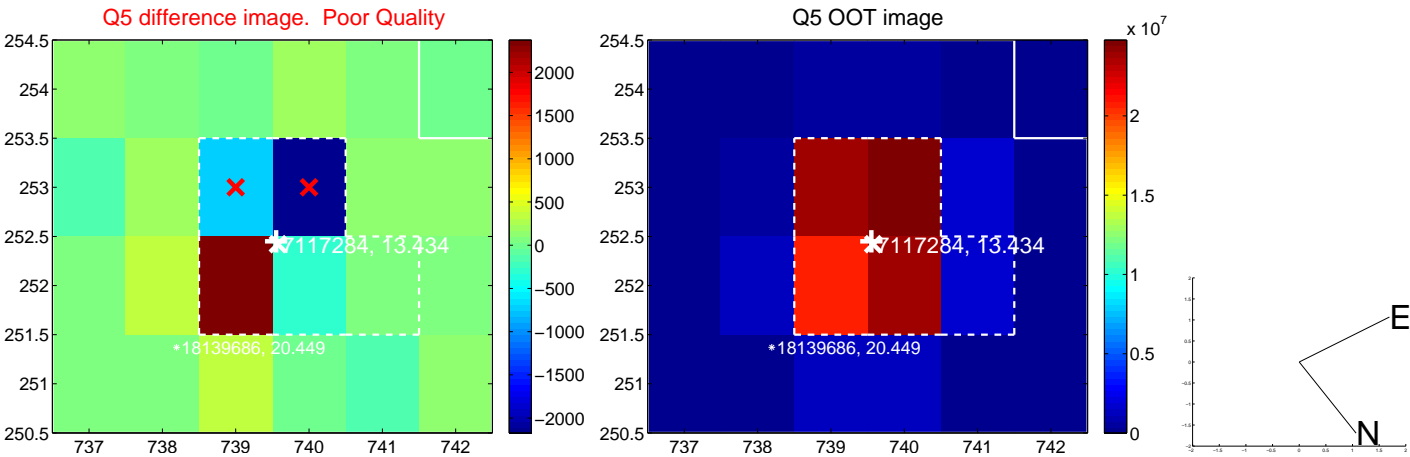


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

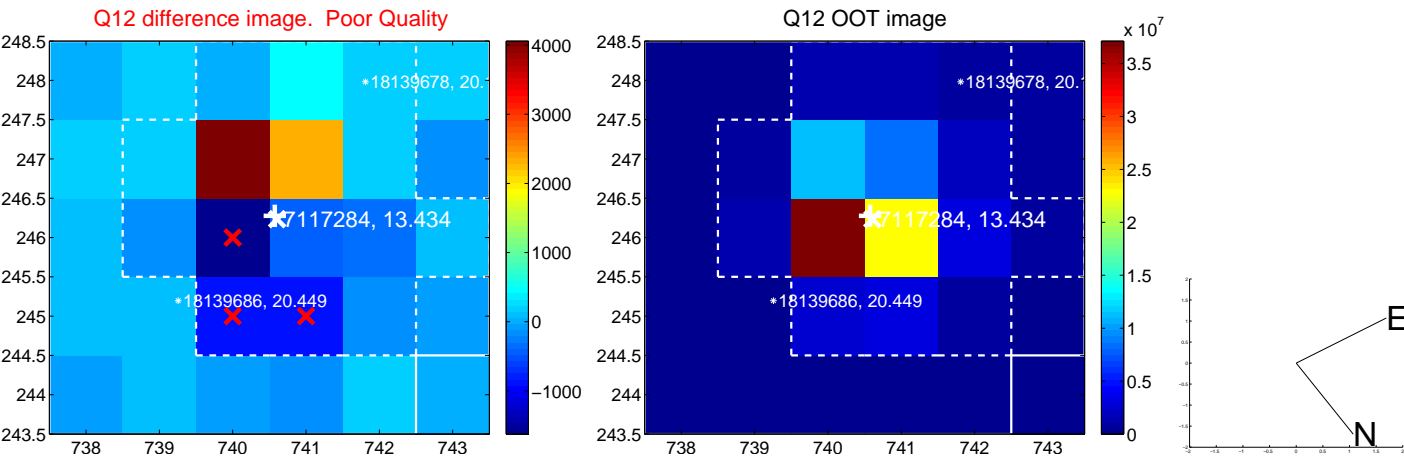
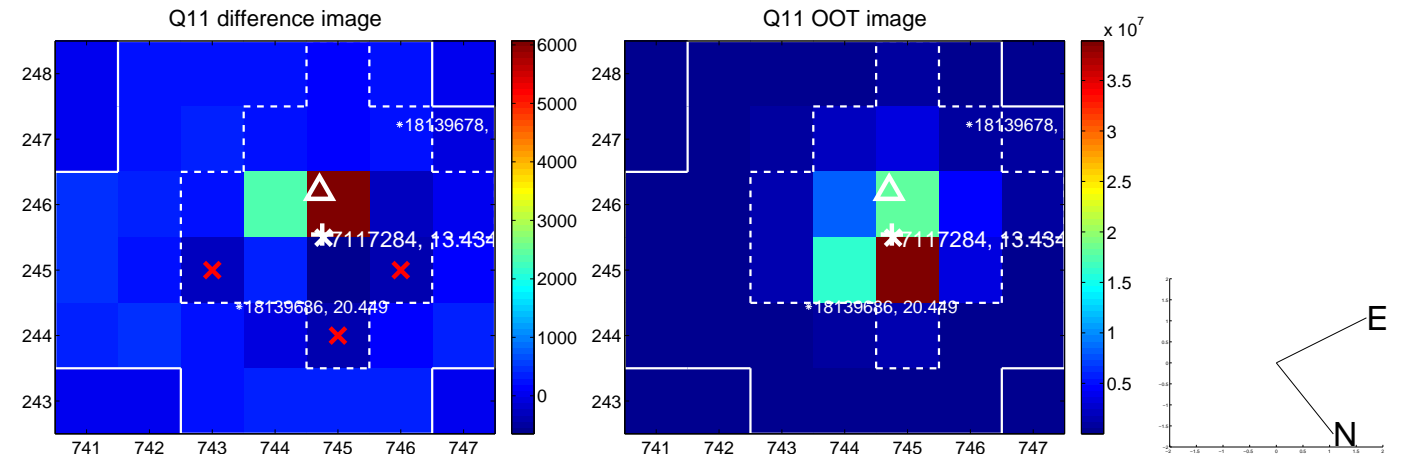
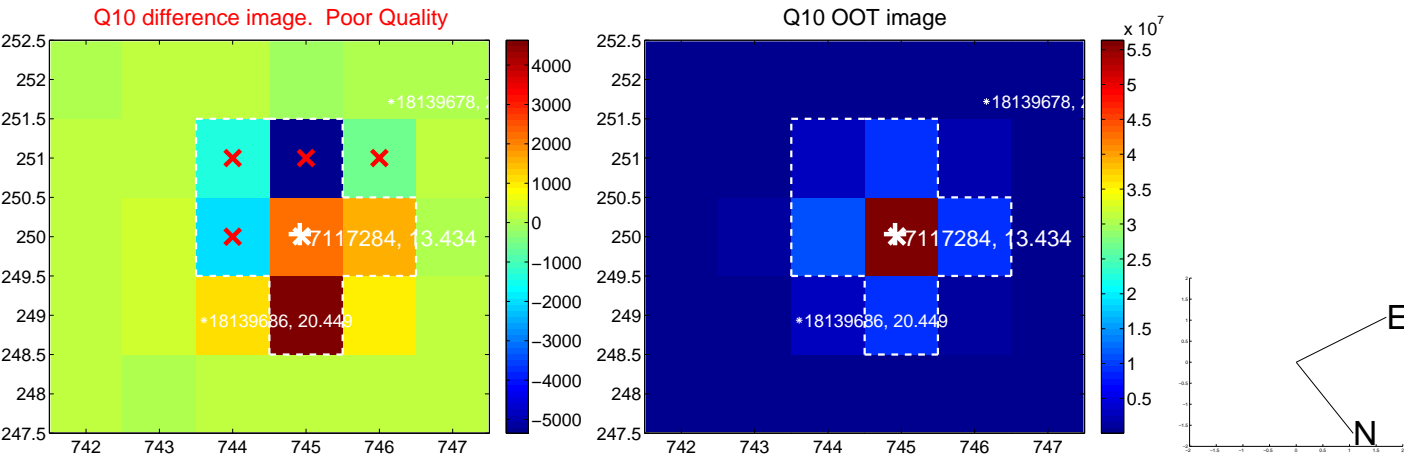
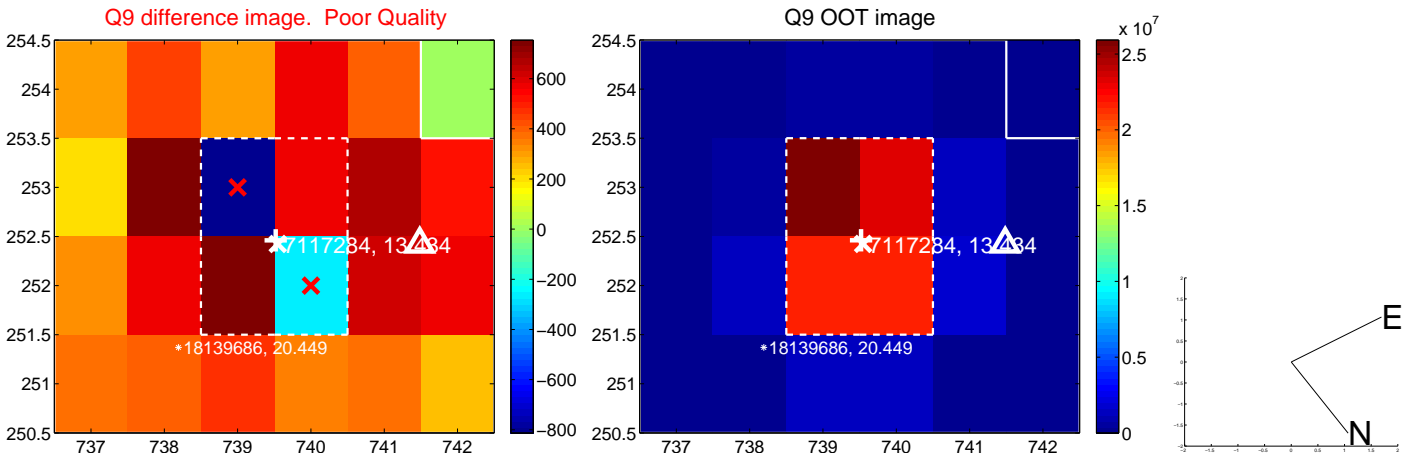


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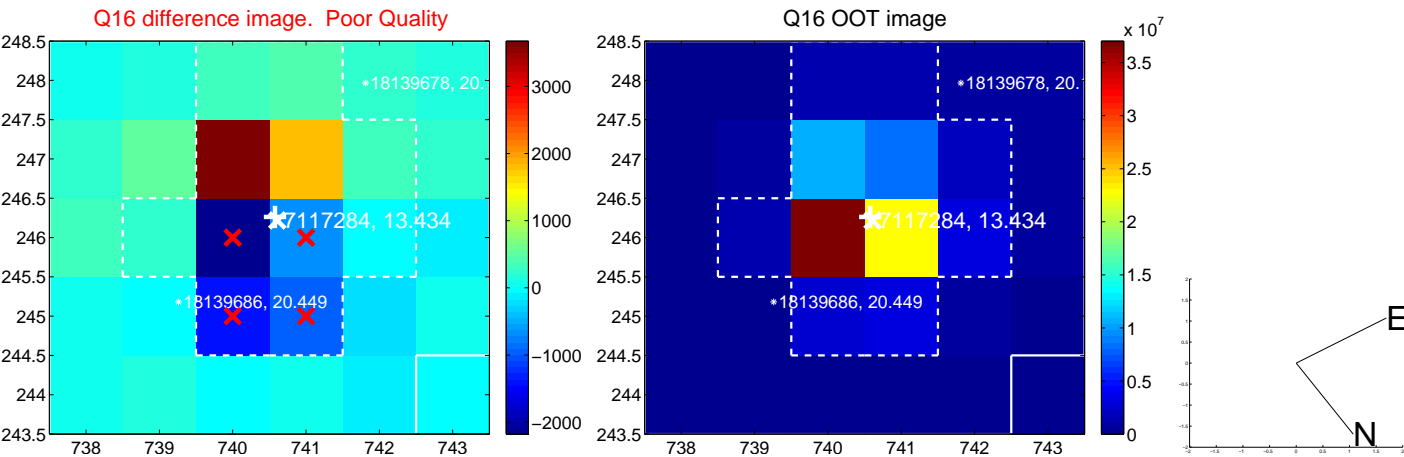
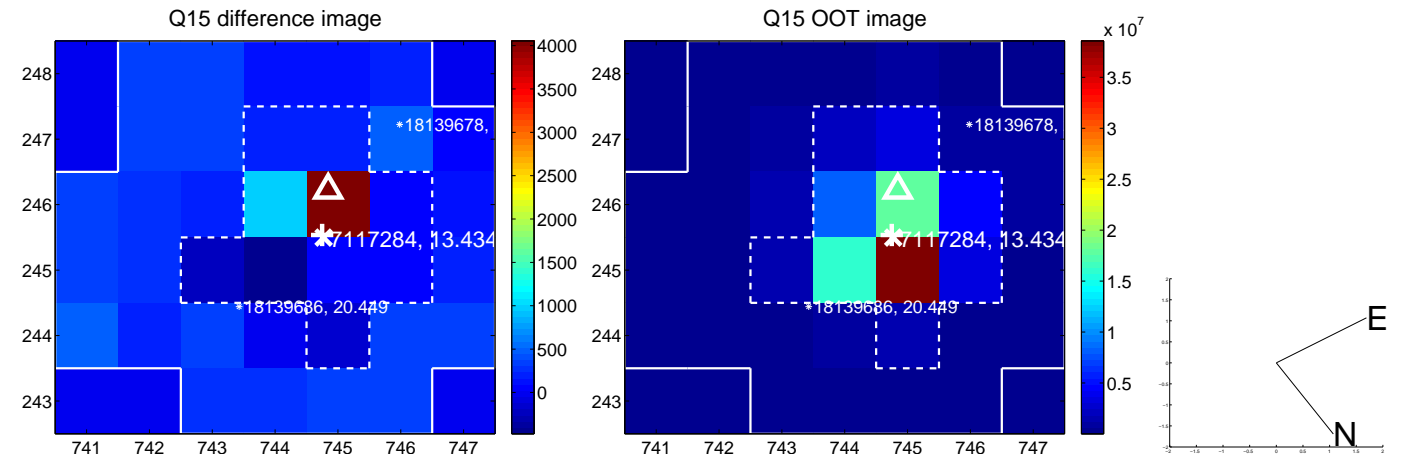
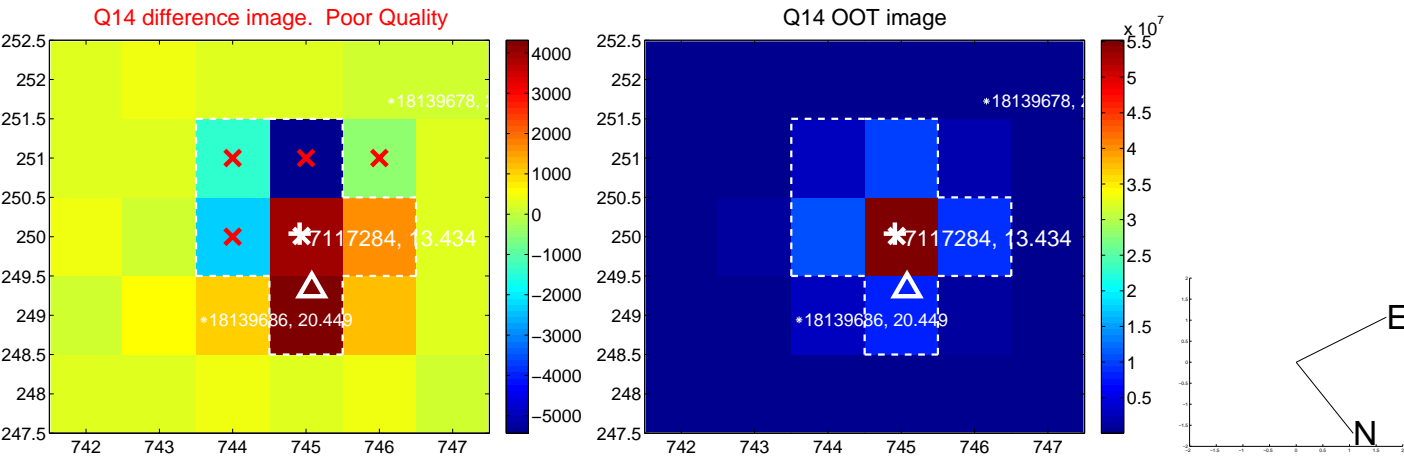
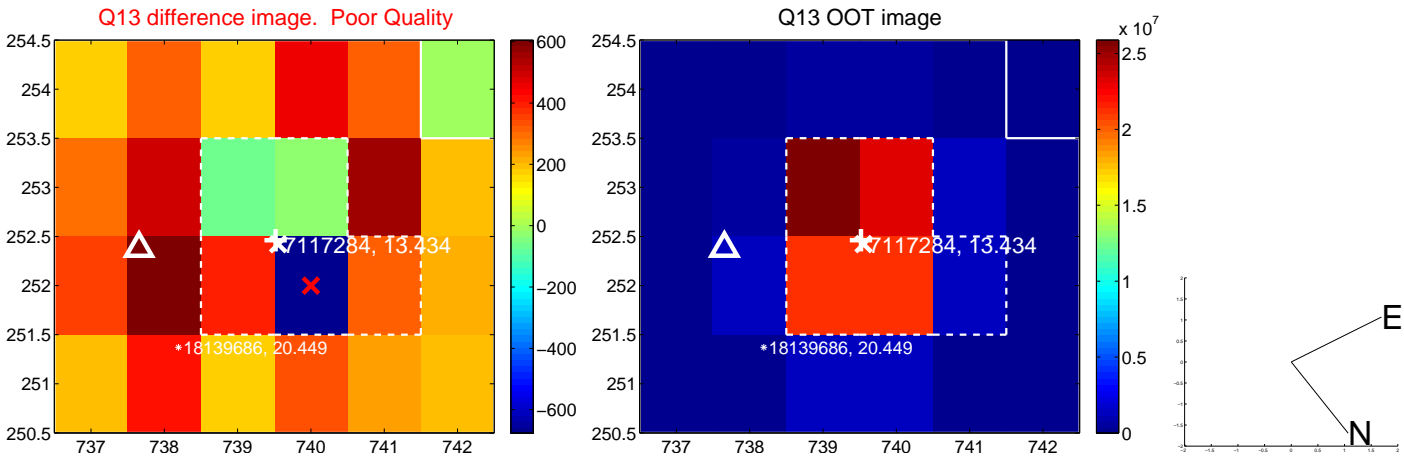




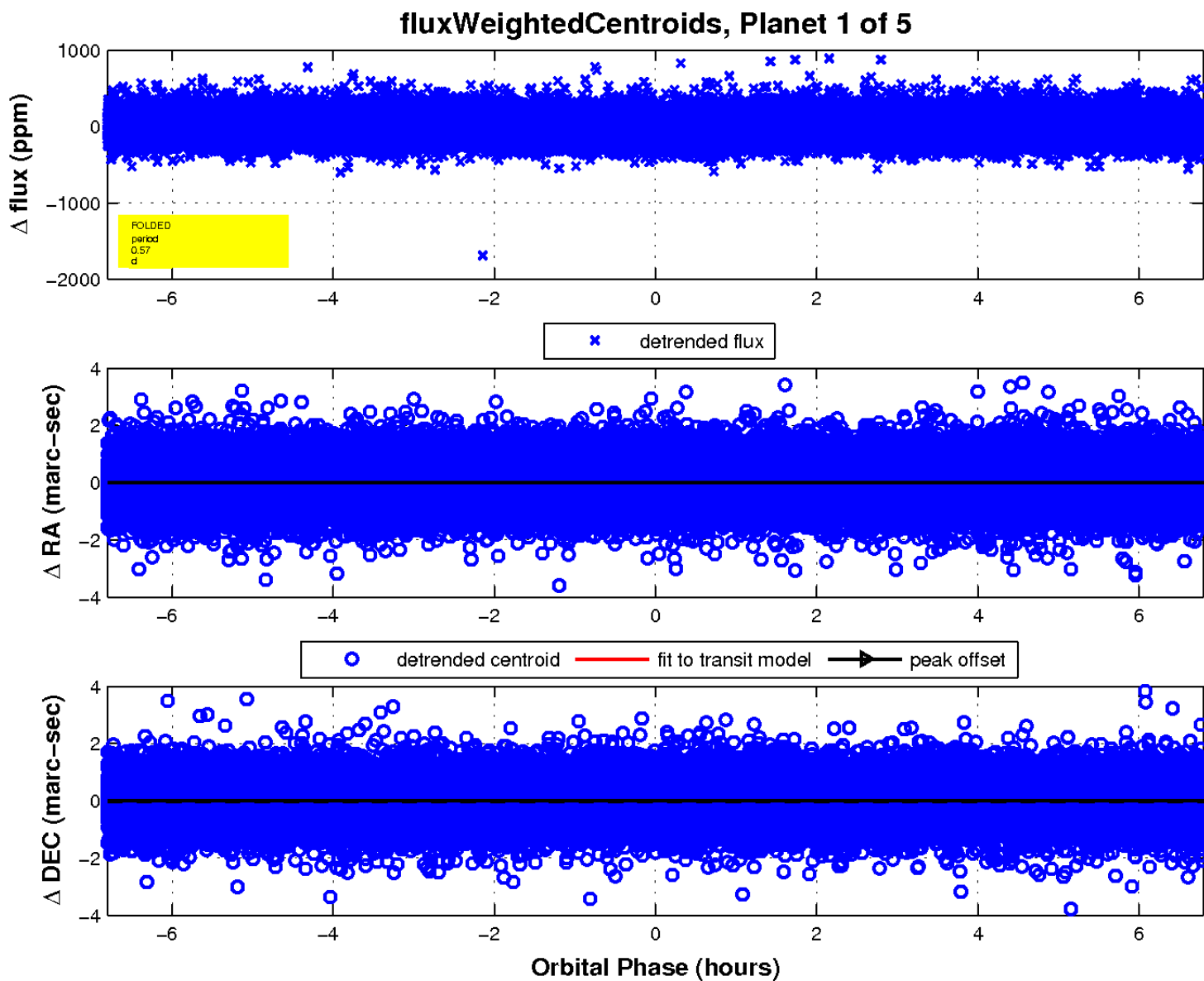
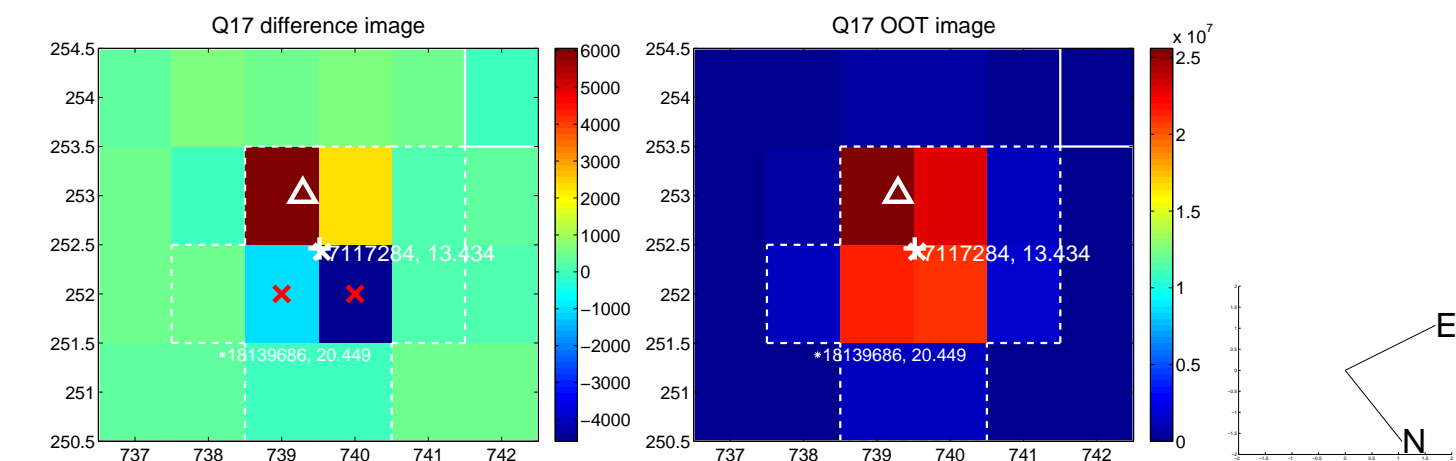
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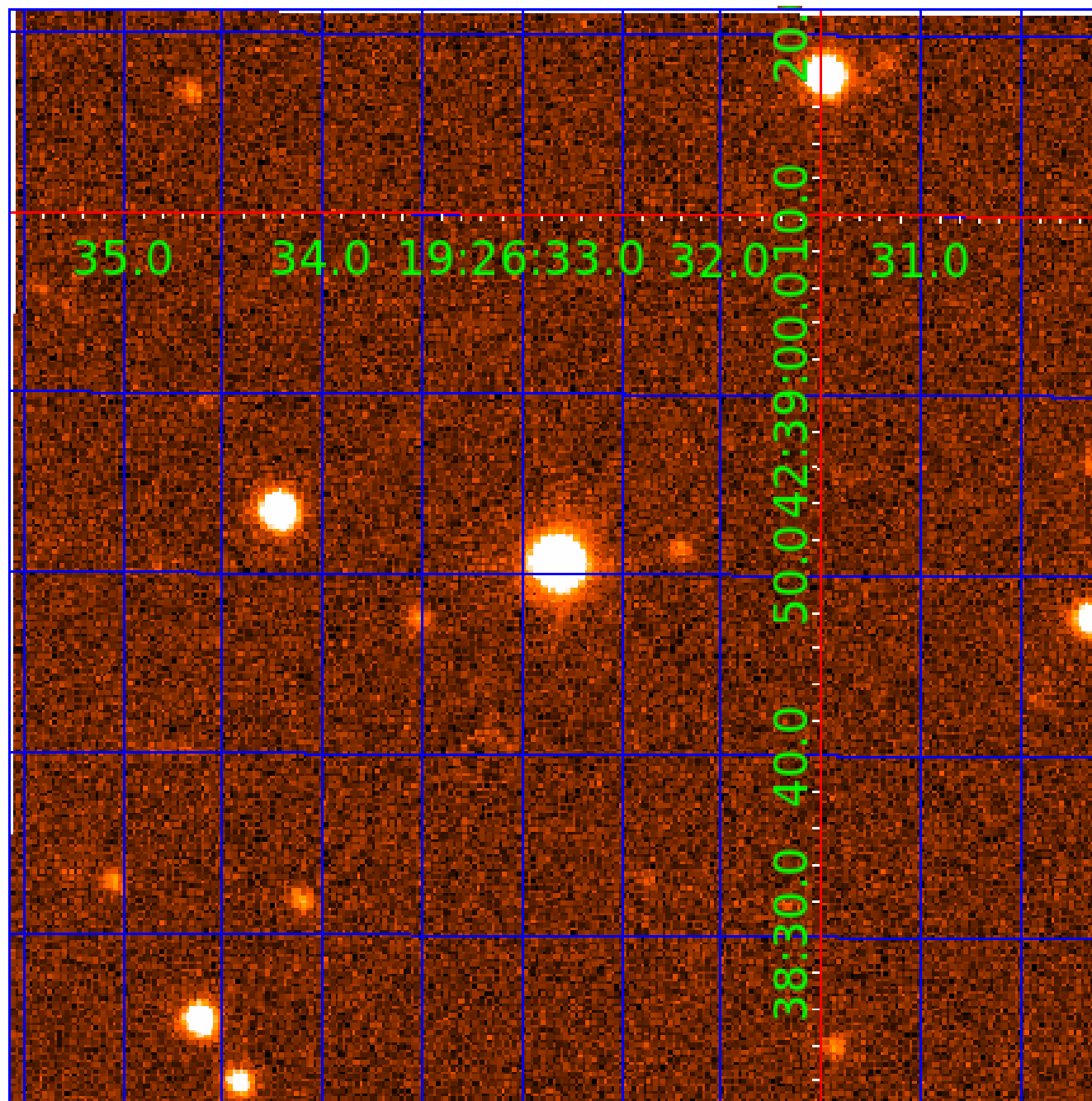


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UKIRT Image

Declination





# KIC 007117284

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

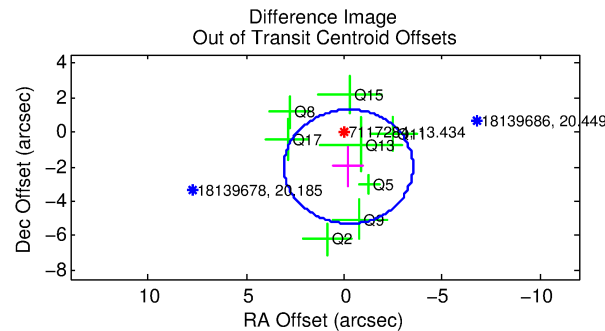
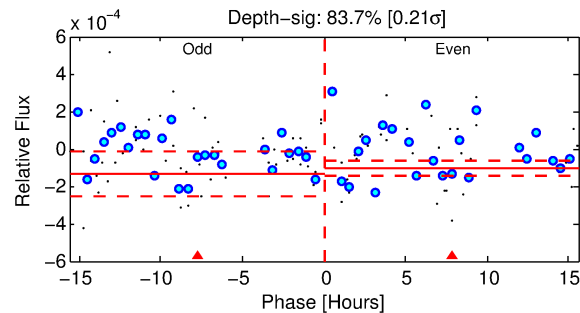
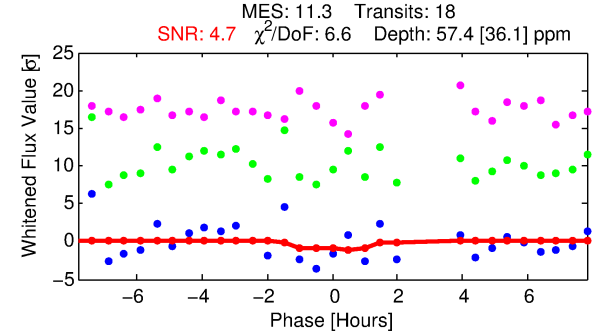
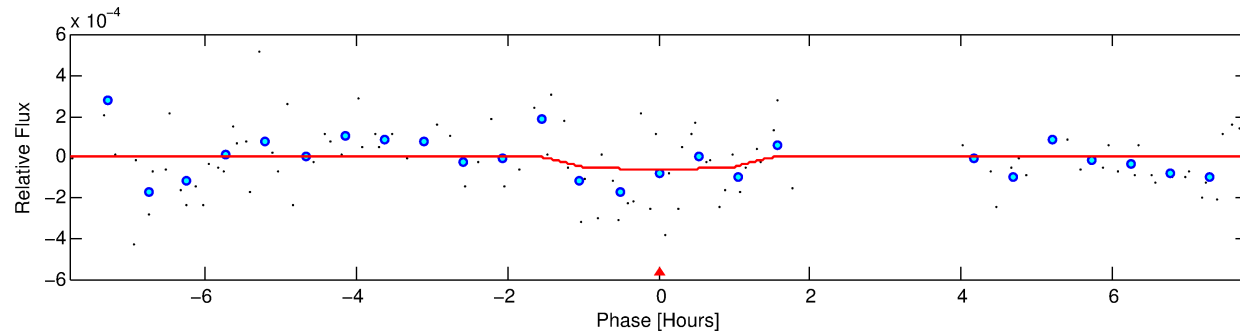
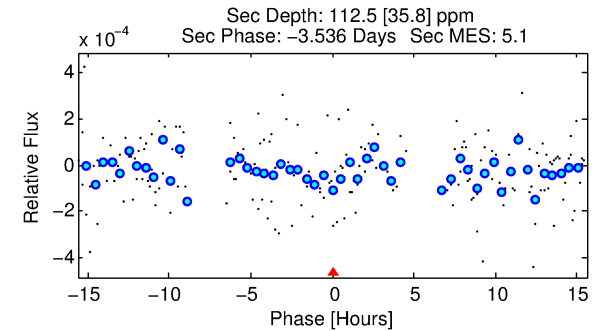
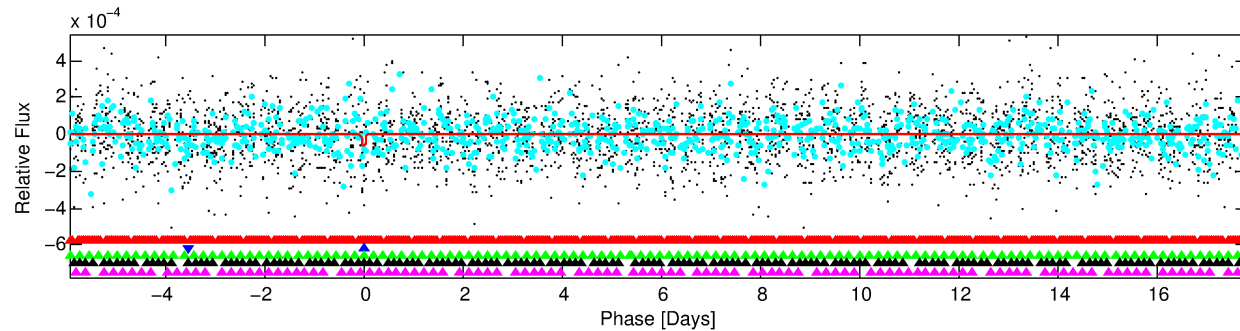
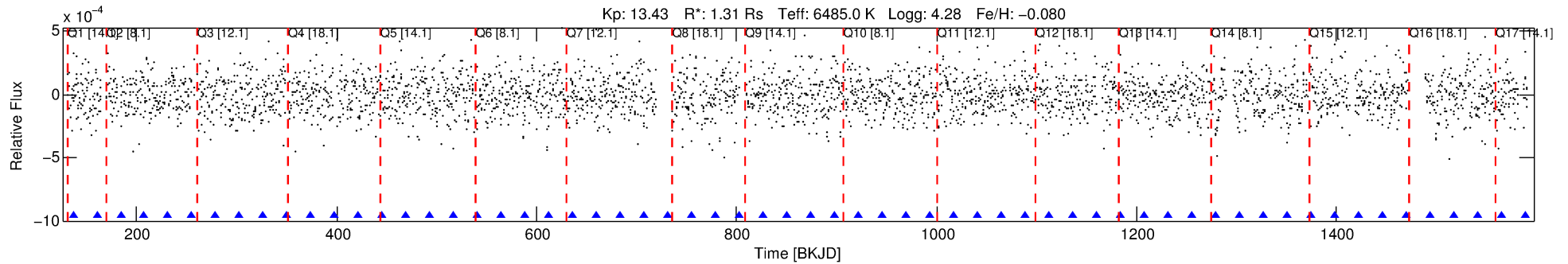
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Ephemeris Match Information For 007117284-02

No Significant Match Found

# DV One-Page Summary

KIC: 7117284 Candidate: 2 of 5 Period: 23.797 d



## DV Fit Results:

Period = 23.79679 [0.00308] d  
Epoch = 136.4935 [0.1597] BKJD  
Rp/R\* = 0.0079 [0.0317]  
a/R\* = 37.57 [825.12]  
b = 0.85 [7.28]  
Seff = 91.77 [27.22]  
Teq = 789 [59] K  
Rp = 1.12 [4.54] Re  
a = 0.1721 [0.0322] AU  
Ag = 1449.03 [11698.79] [0.12 $\sigma$ ]  
Teffp = 7529 [15189] K [0.44 $\sigma$ ]

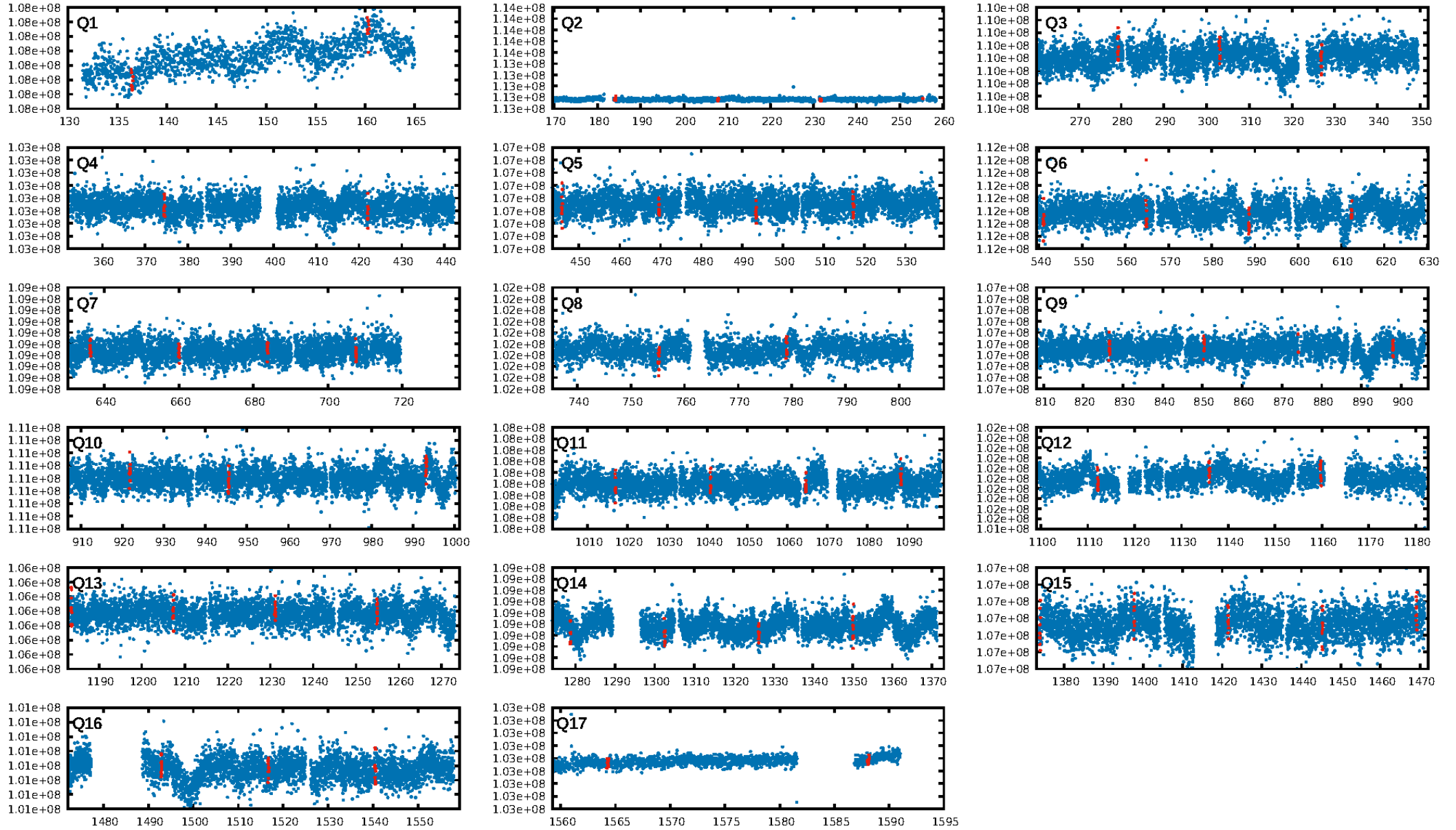
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [93.54 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: 6.21e-15  
RollingBand-fgt: 1.00 [16/16]  
GhostDiagnostic-chr: 0.03682  
Centroid-sig: 8.7%  
Centroid-so: 2.888 arcsec [1.66 $\sigma$ ]  
OotOffset-rm: 2.008 arcsec [1.83 $\sigma$ ]  
OotOffset-st: 1/2/1/4 [8]  
KicOffset-rm: 2.183 arcsec [2.00 $\sigma$ ]  
KicOffset-st: 1/2/1/4 [8]  
DiffImageQuality-fgm: 0.25 [2/8]  
DiffImageOverlap-fno: 0.00 [0/17]

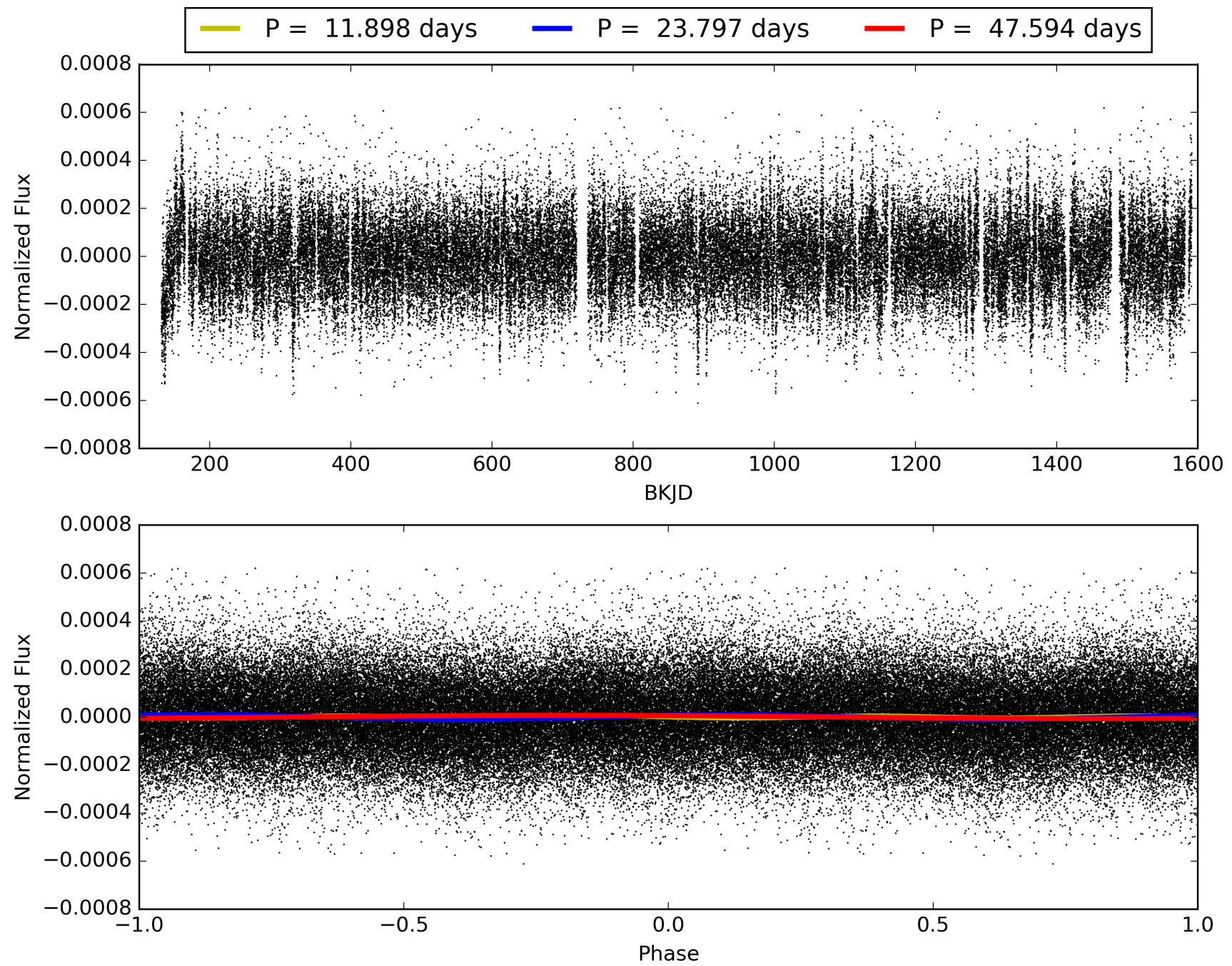
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:00:22 Z

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

# TCE 007117284-02, PDC Light Curves

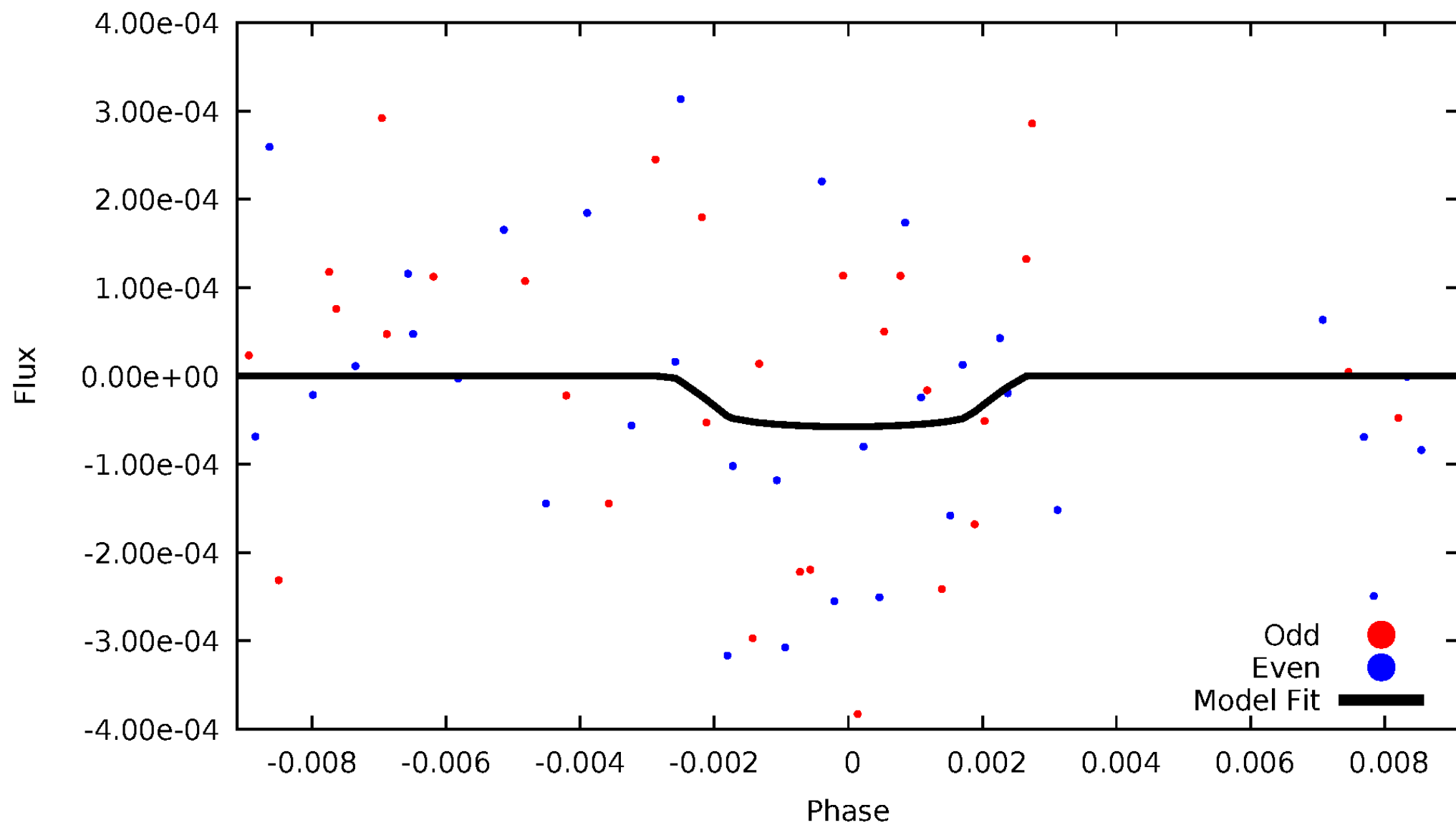


TCE 007117284-02



# DV Odd/Even

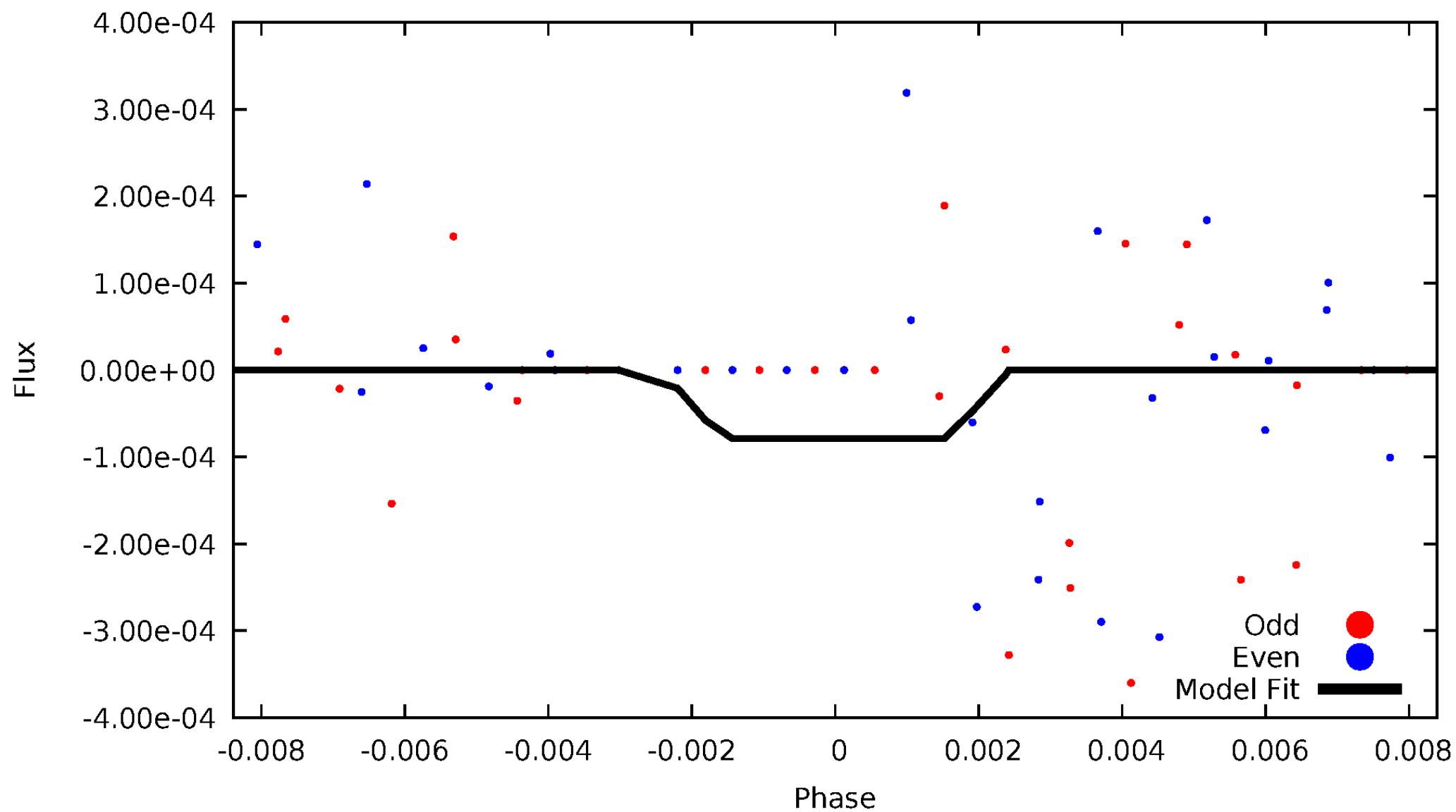
TCE 007117284-02





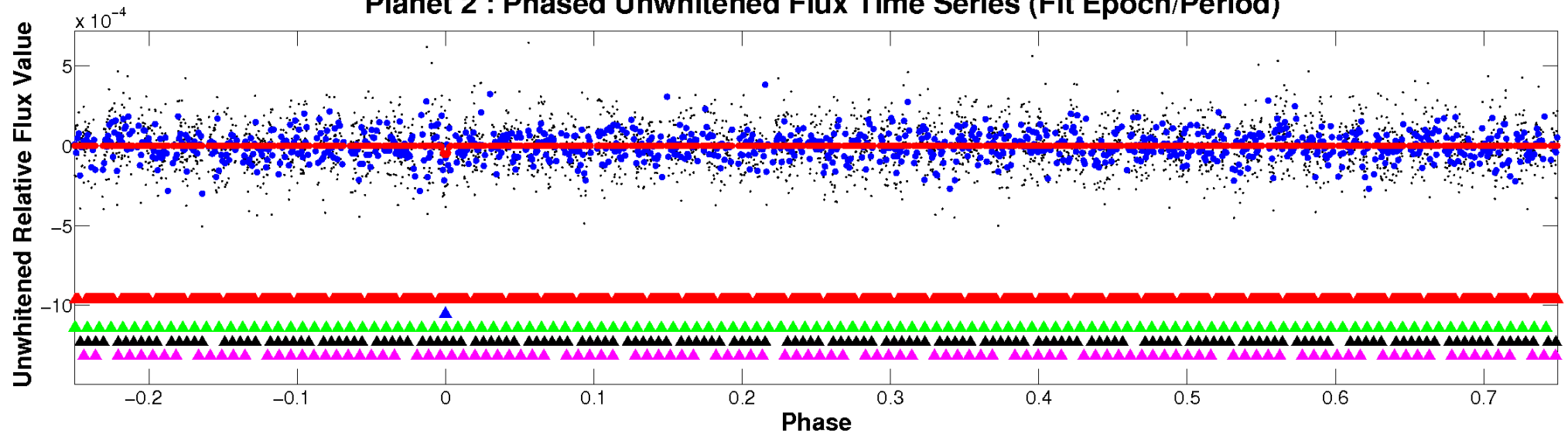
# ALT Odd/Even

TCE 007117284-02

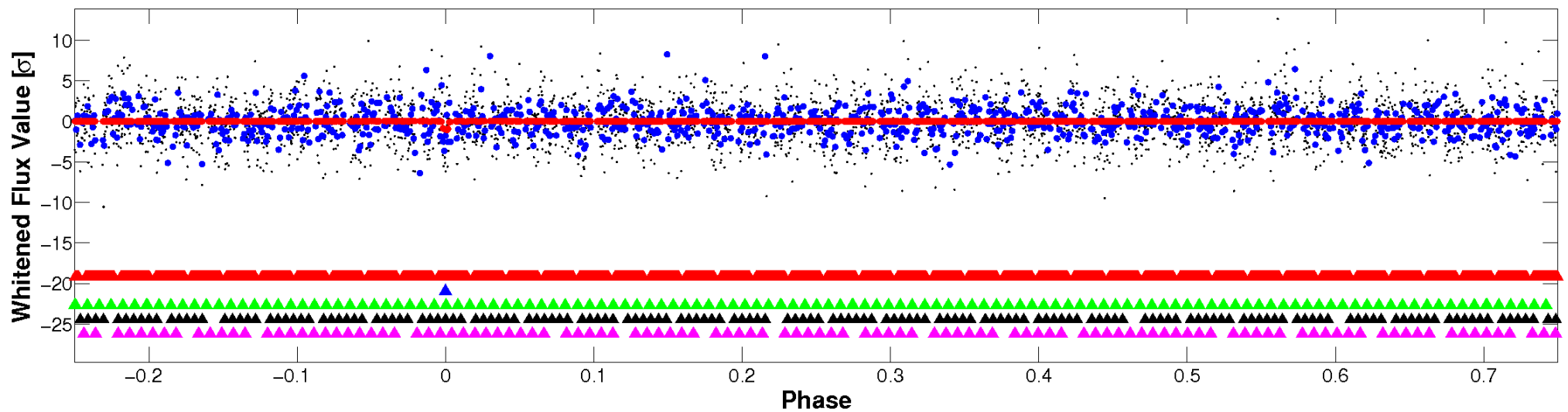


# Non-Whitened Vs. Whitened Light Curve

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

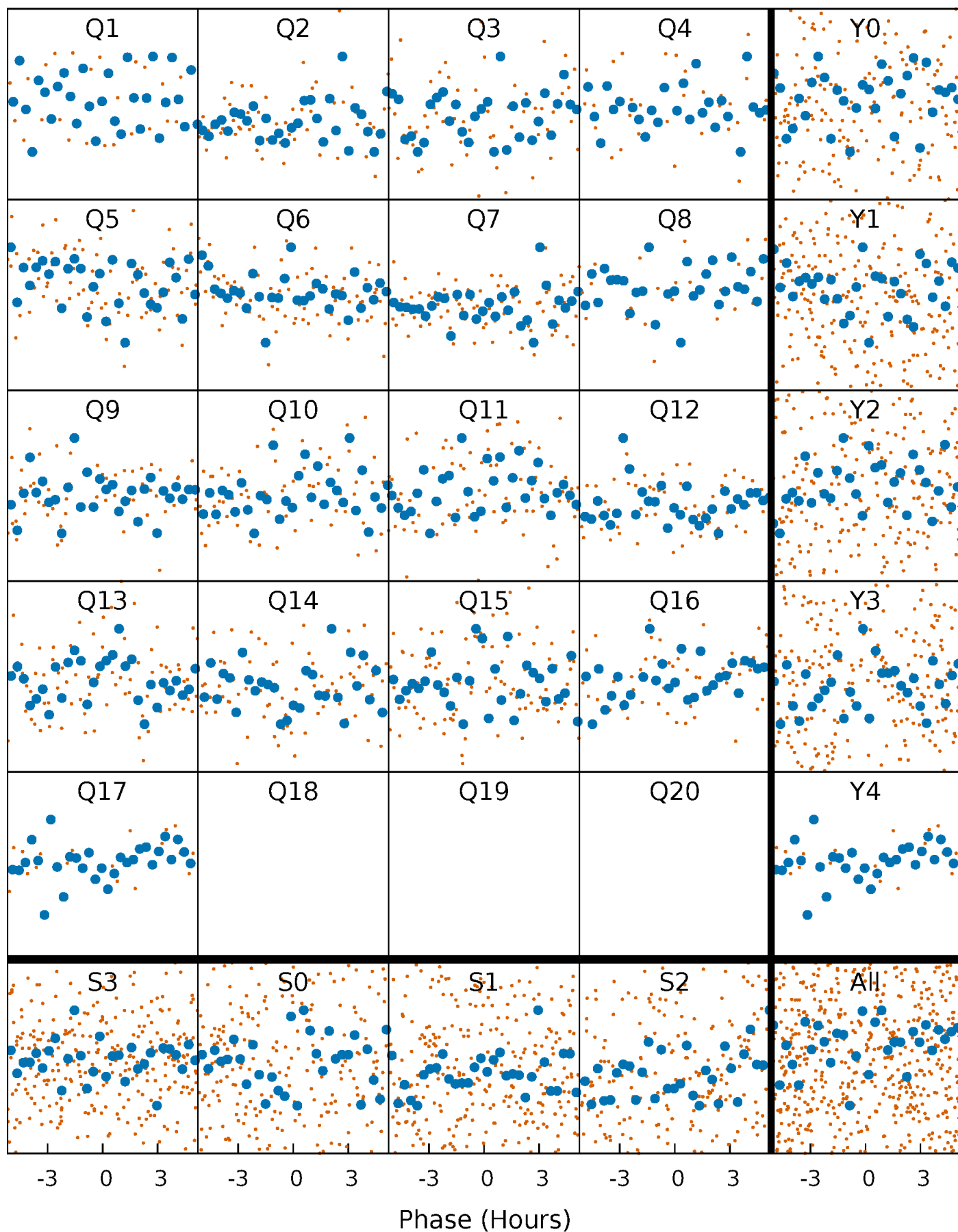


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



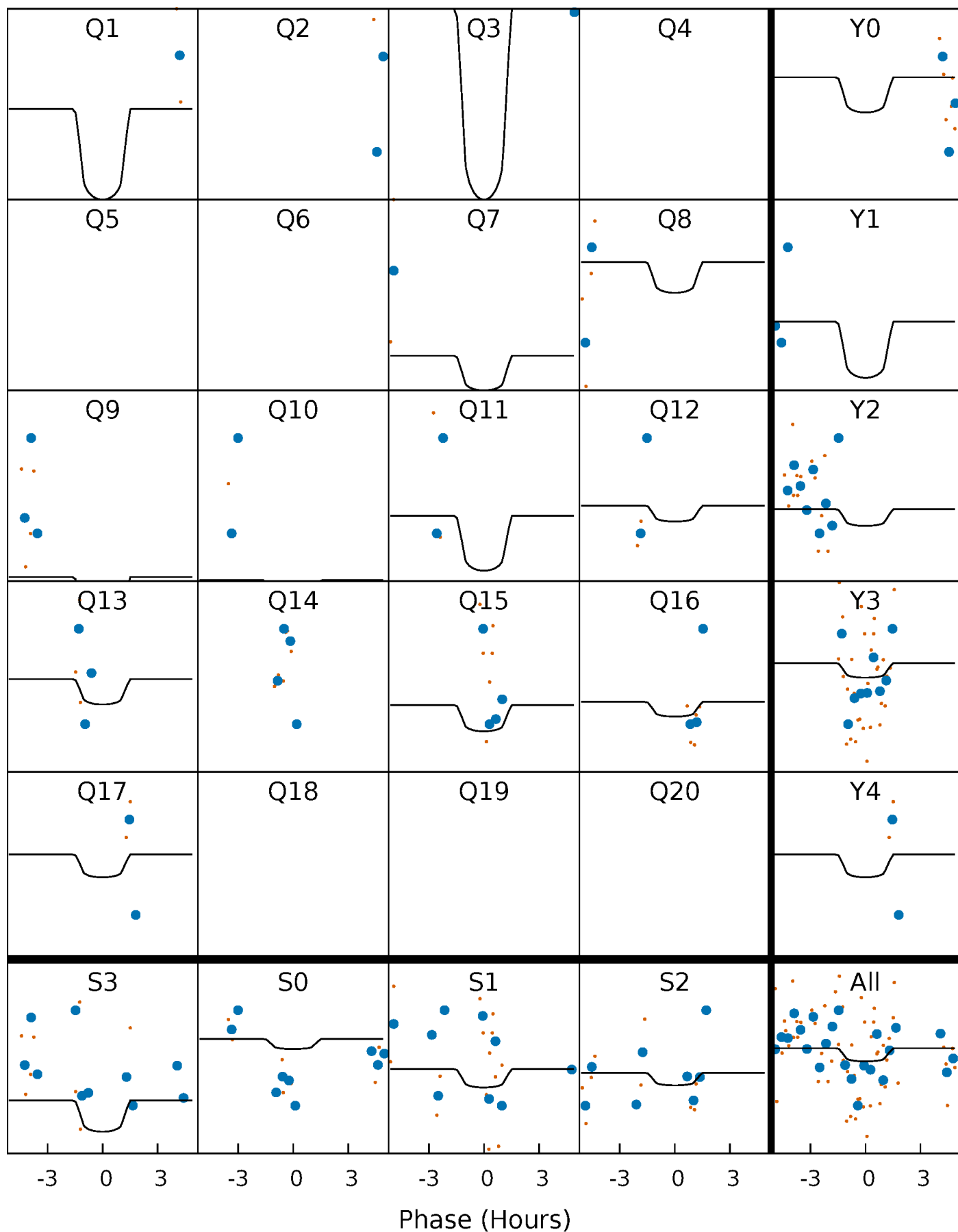
# PDC Quarter-Phased Transit Curves

TCE 007117284-02 P= 23.796793 Days  $T_0=136.493509$  (BKJD)



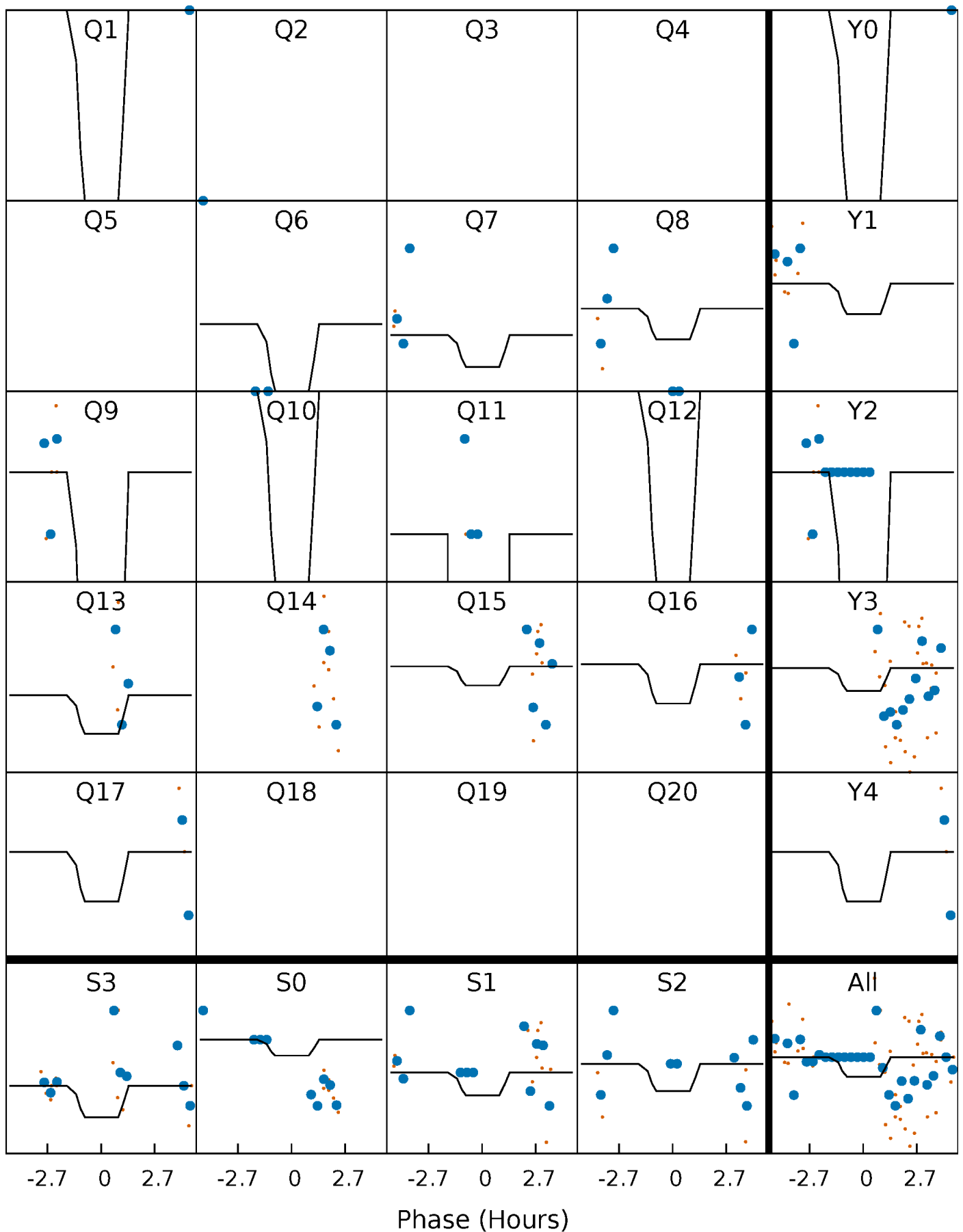
# DV Quarter-Phased Transit Curves

TCE 007117284-02 P= 23.796793 Days  $T_0=136.493509$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007117284-02 P= 23.795136 Days  $T_0=136.483172$  (BKJD)

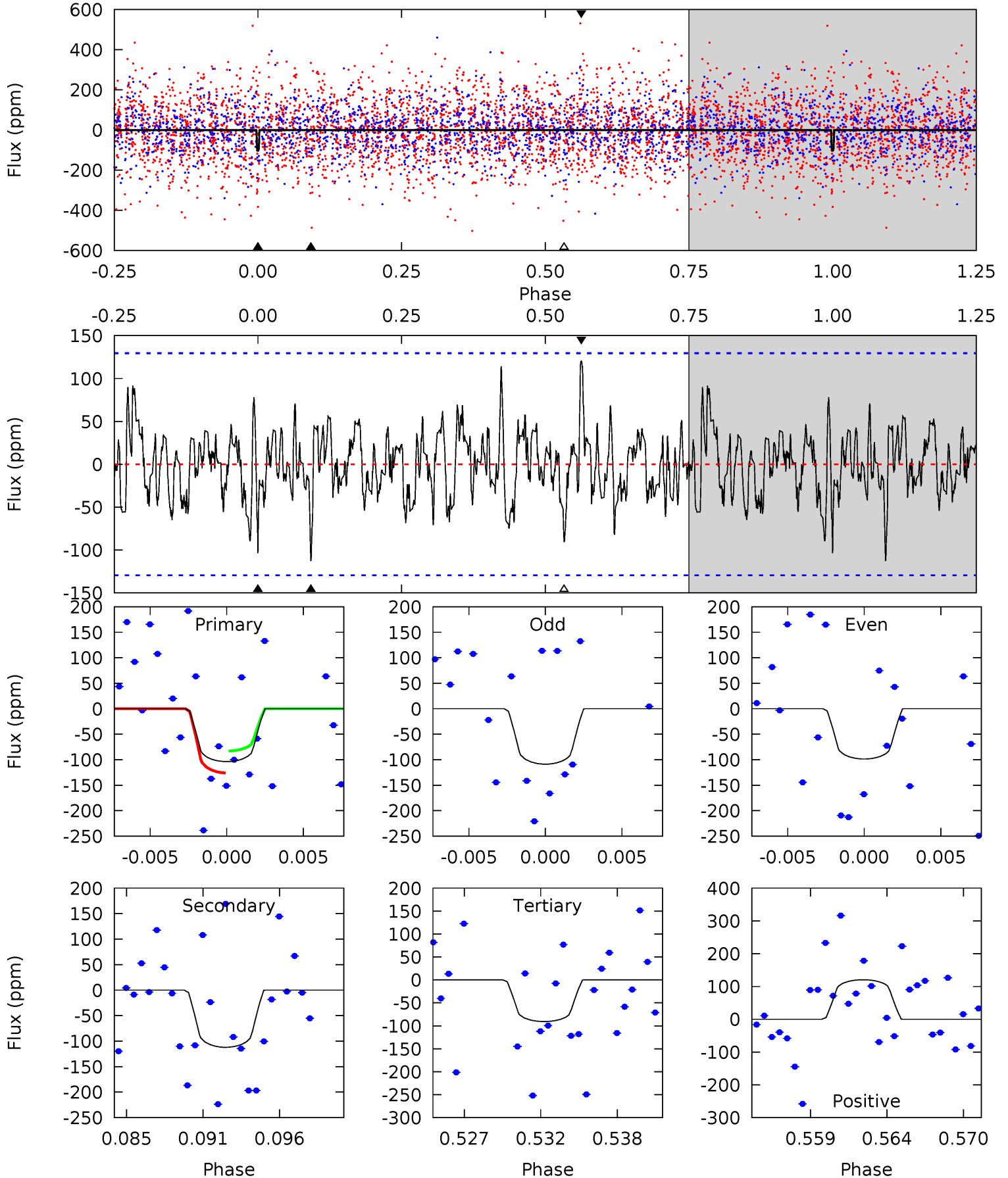




# DV Model-Shift Uniqueness Test

007117284-02,  $P = 23.796793$  Days,  $E = 112.696716$  Days

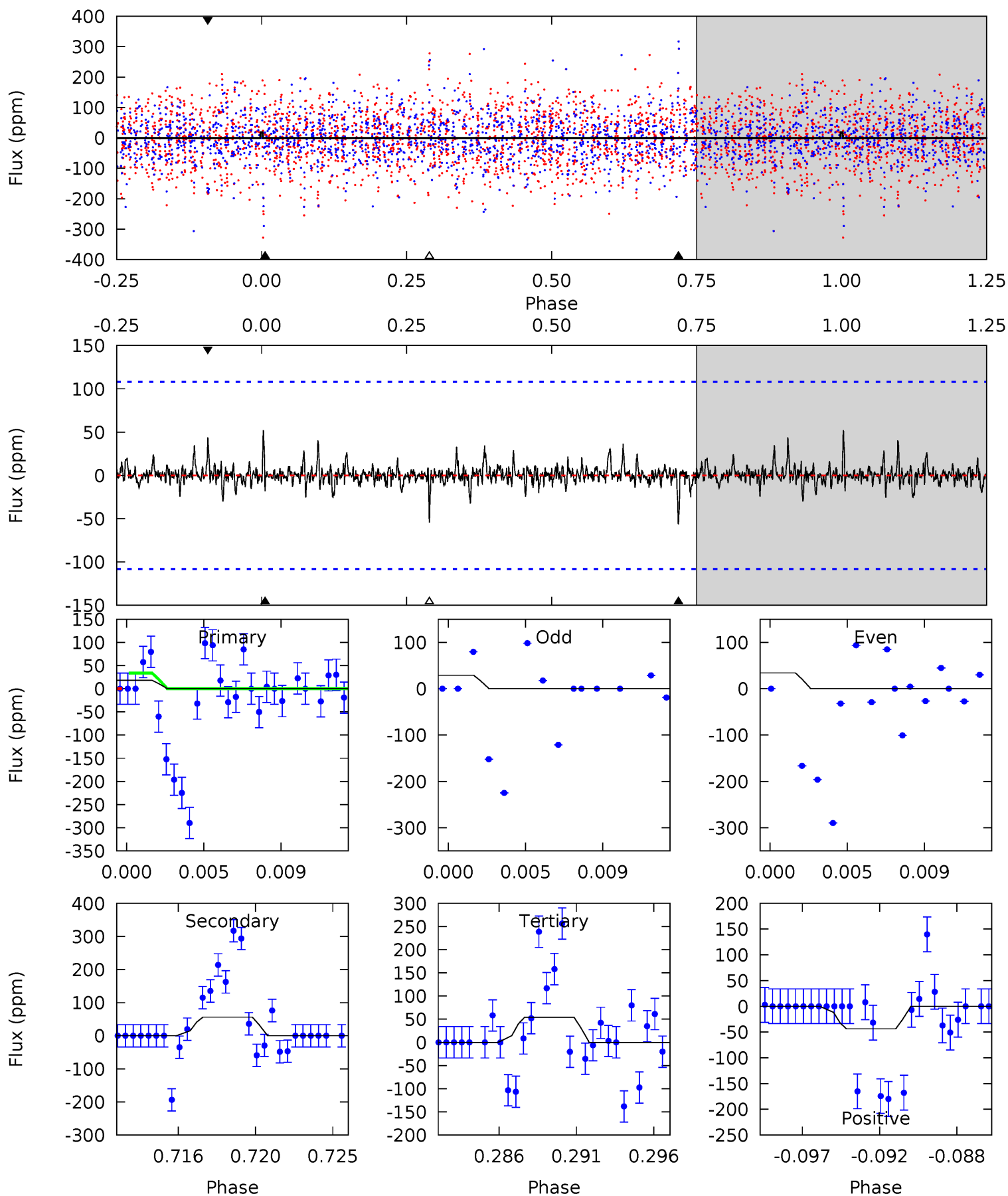
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.12	4.46	3.60	4.79	5.15	2.79	1.33	0.52	-0.67	0.85	-0.33	0.20	1.07	0.52	0.86



# Alt Model-Shift Uniqueness Test

007117284-02, P = 23.795136 Days, E = 112.688036 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
0.87	2.70	2.60	2.10	5.17	2.83	0.40	-1.73	-1.22	0.10	0.60	0.13	1.00	0.48	0



### Stellar Parameters For KIC 007117284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6485^{+144}_{-208}$	$4.283^{+0.096}_{-0.144}$	$-0.080^{+0.250}_{-0.300}$	$1.310^{+0.296}_{-0.197}$	$1.200^{+0.157}_{-0.157}$	$0.752^{+0.384}_{-0.297}$
	+2%/-3%	+2%/-3%	+312%/-375%	+23%/-15%	+13%/-13%	+51%/-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 007117284-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-112 \pm 25$	$3.69^{+3.80}_{-2.63}$	$1109^{+63}_{-58}$	$4383^{+3404}_{-975}$	$135^{+1509}_{-104}$
Alt.	$-56 \pm 21$	$3.53^{+3.77}_{-2.39}$	$1103^{+61}_{-50}$	$3872^{+2414}_{-827}$	$71^{+613}_{-55}$

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

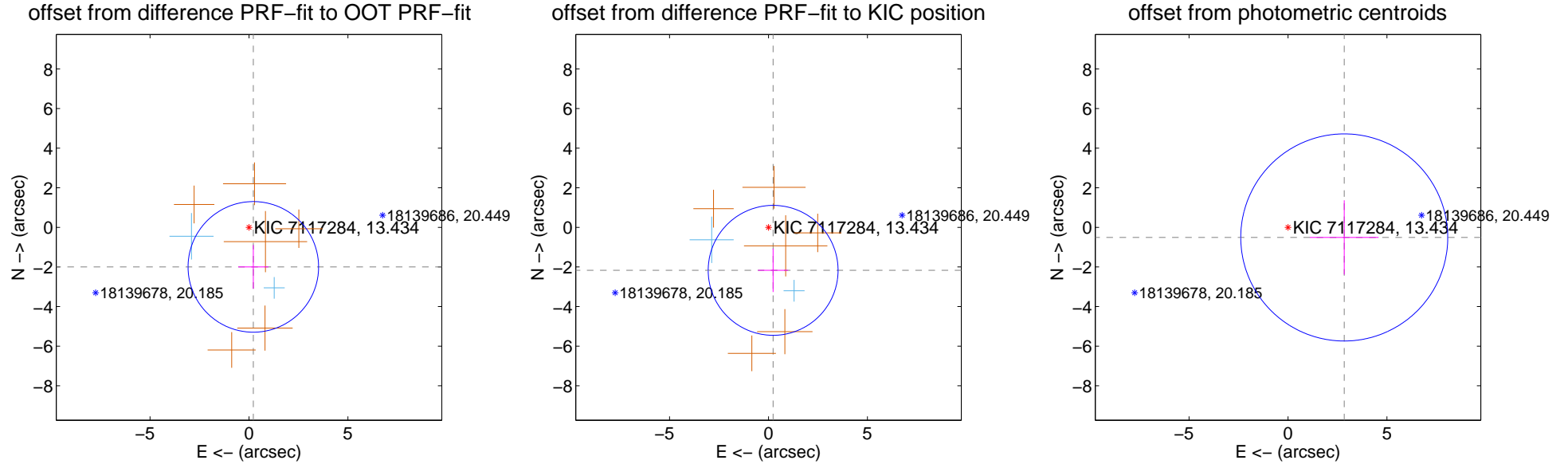
## DV Centroid Data

Supplemental centroid analysis for 007117284-02. Kepler magnitude: 13.43. Transit SNR 4.73

There are 2 quarters with good PRF difference image offsets

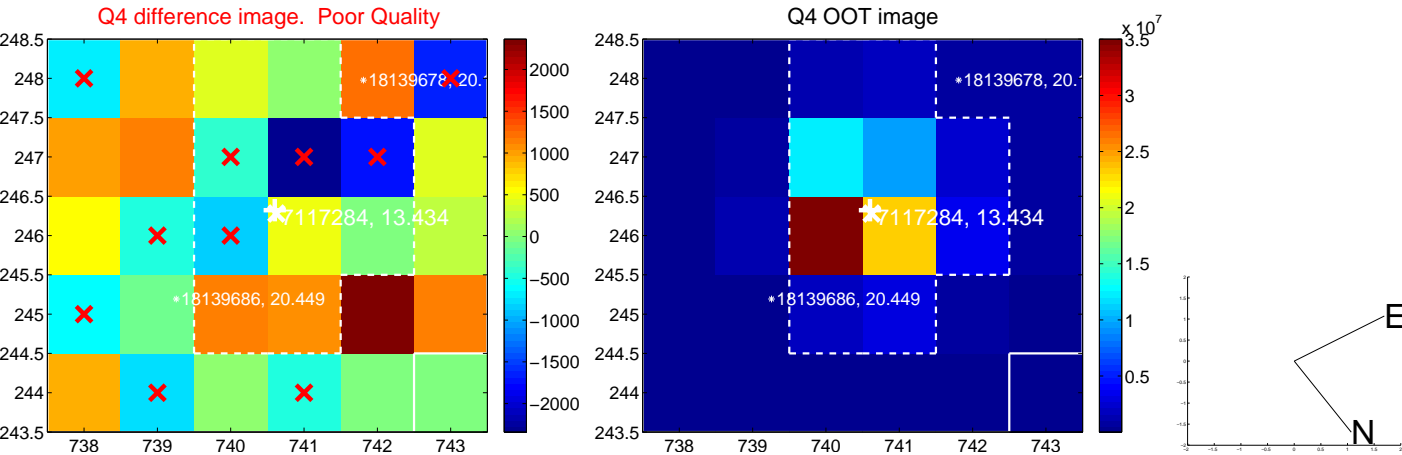
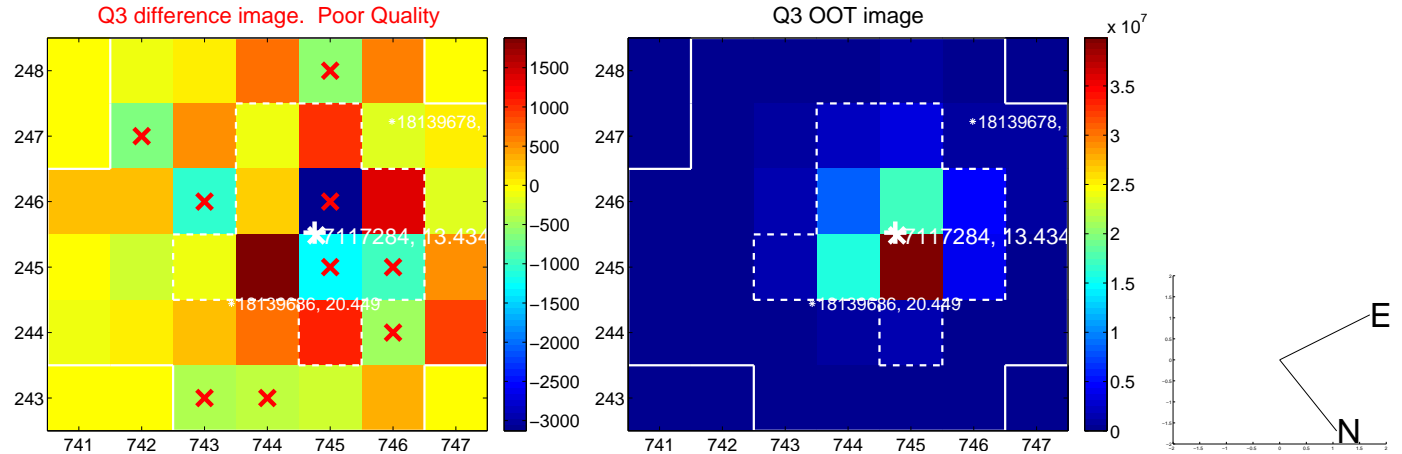
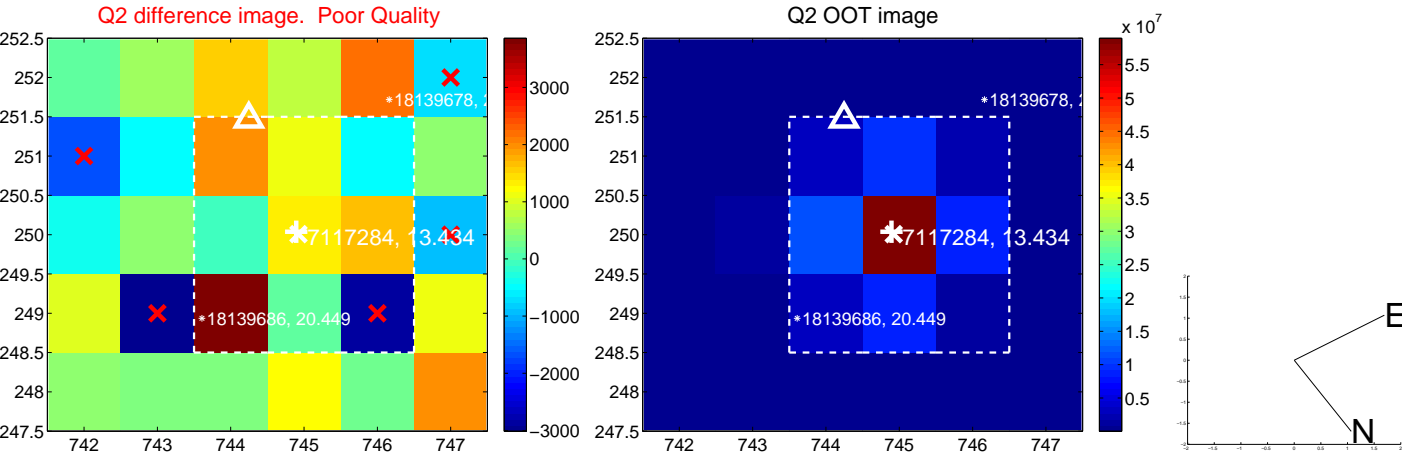
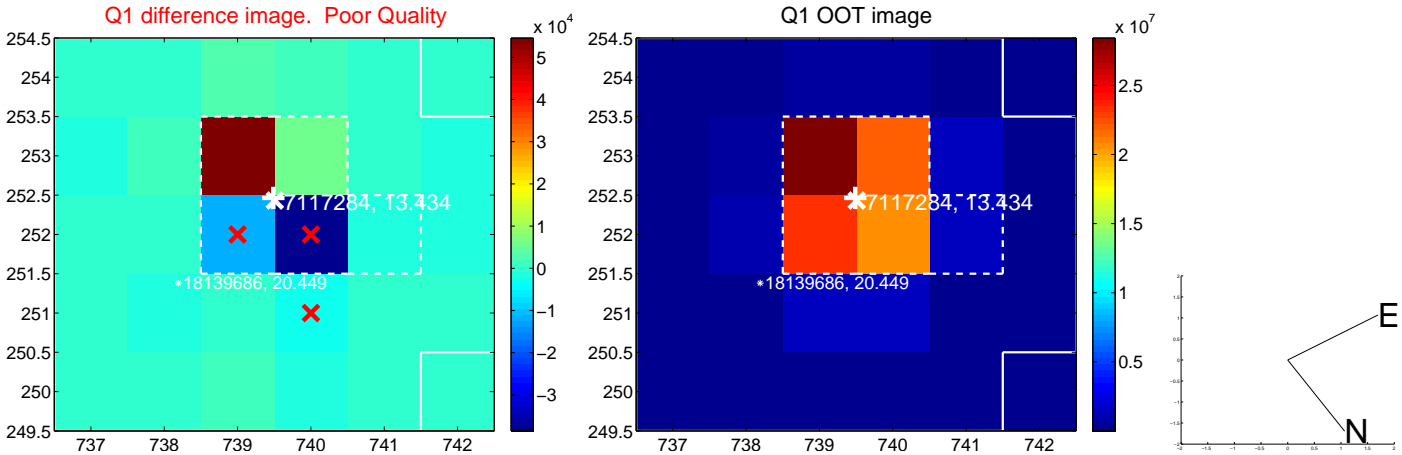
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.008 \pm 1.099$	1.83	$-0.219 \pm 0.761$	$-1.996 \pm 1.103$
PRF-fit source offset from KIC position	$2.183 \pm 1.094$	2.00	$-0.234 \pm 0.761$	$-2.171 \pm 1.097$
photometric centroid source offset	$2.89 \pm 1.74$	1.66	$-2.84 \pm 1.74$	$-0.51 \pm 1.87$



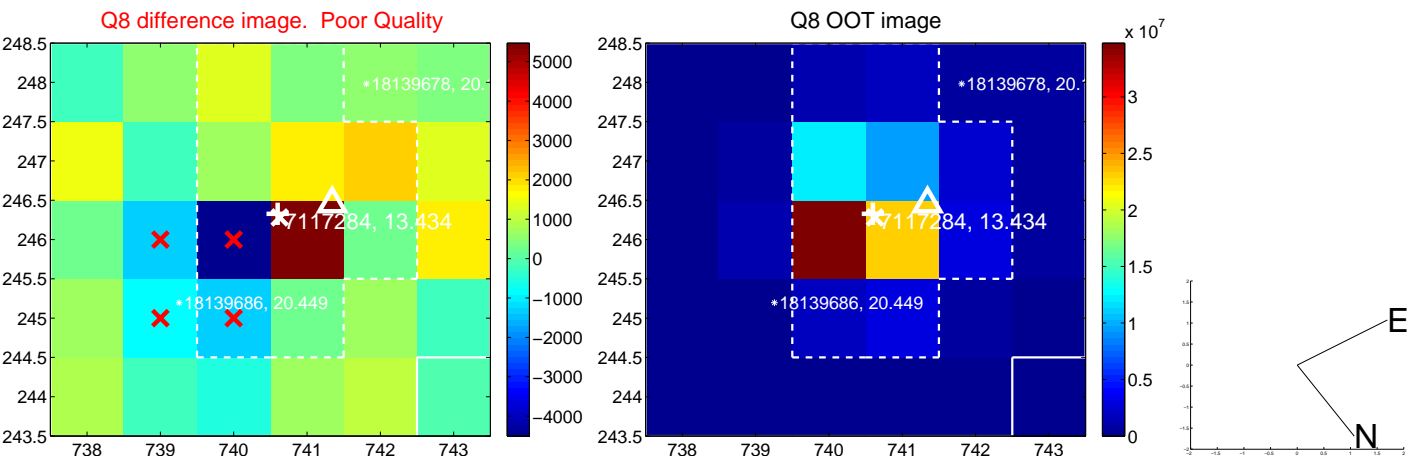
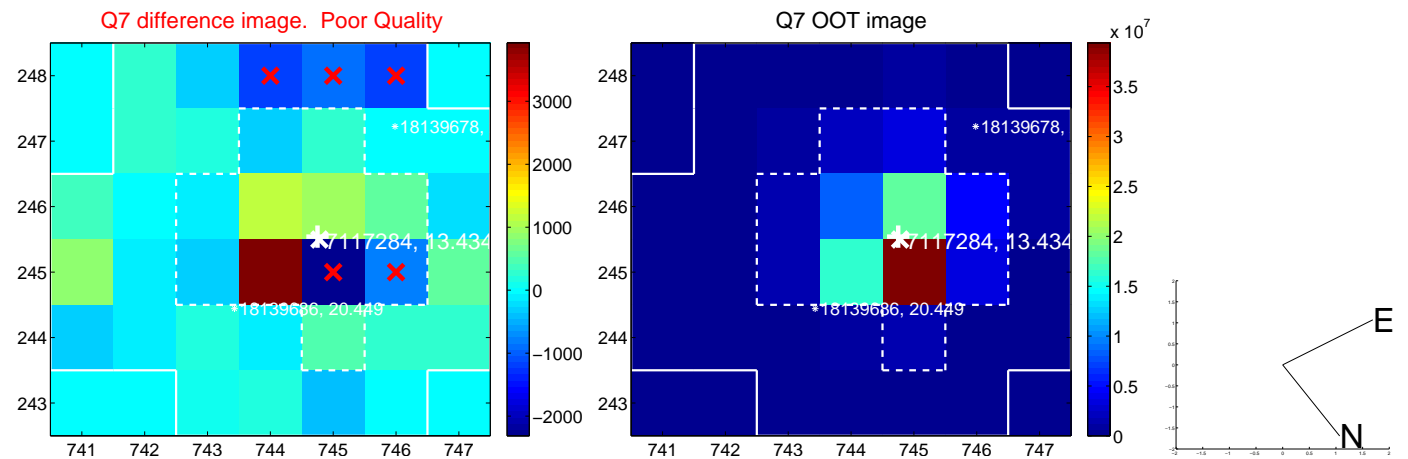
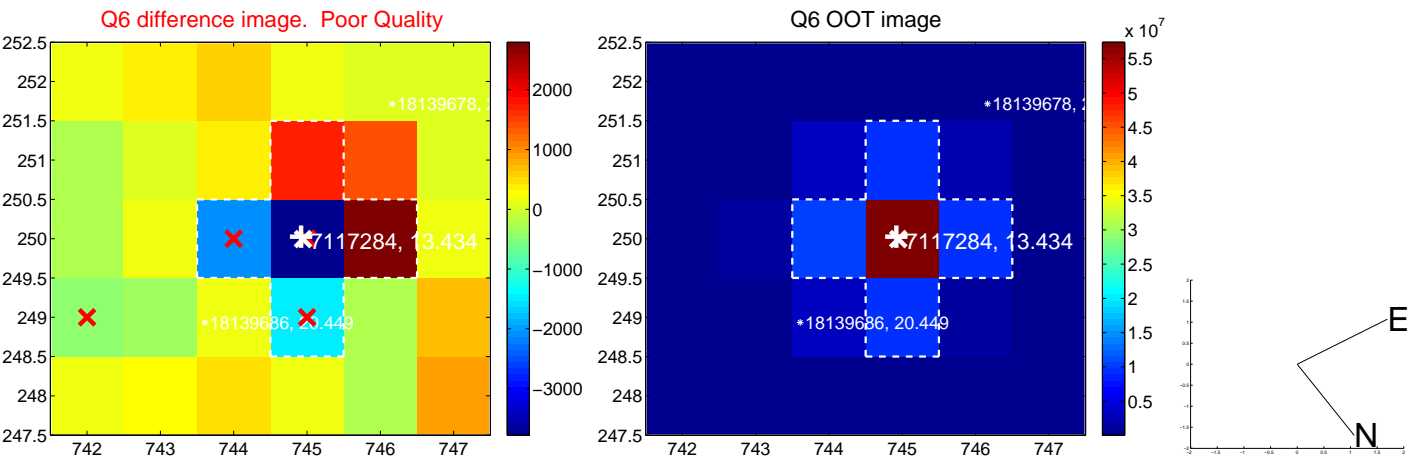
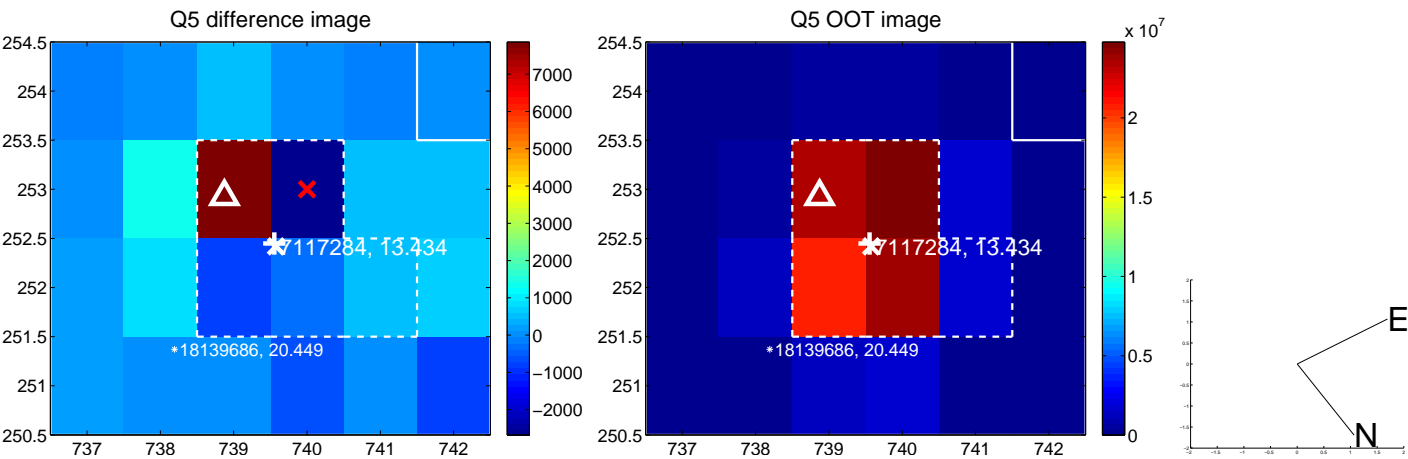
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

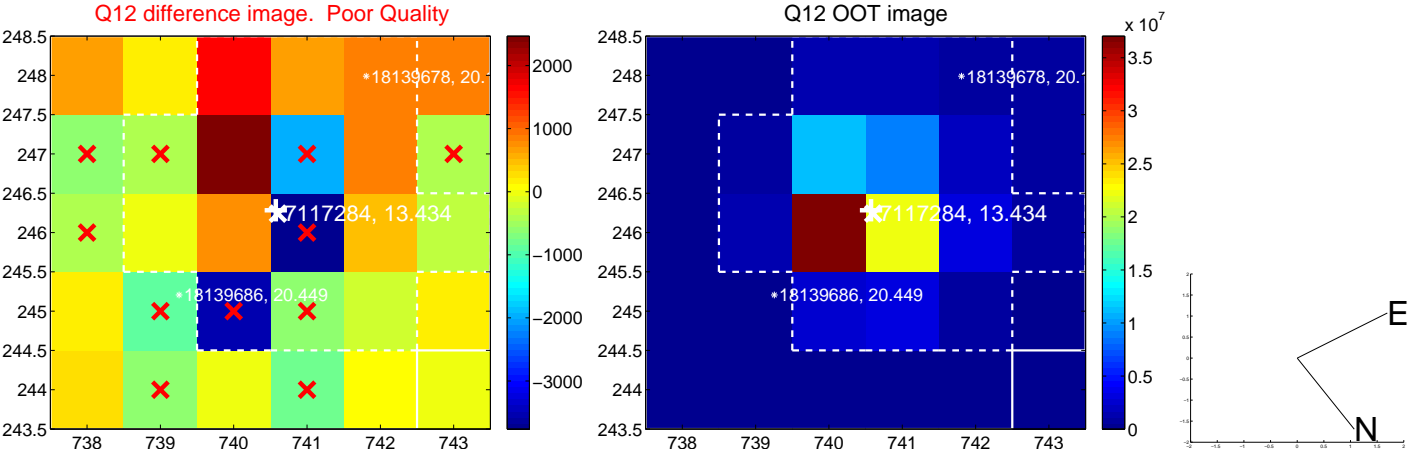
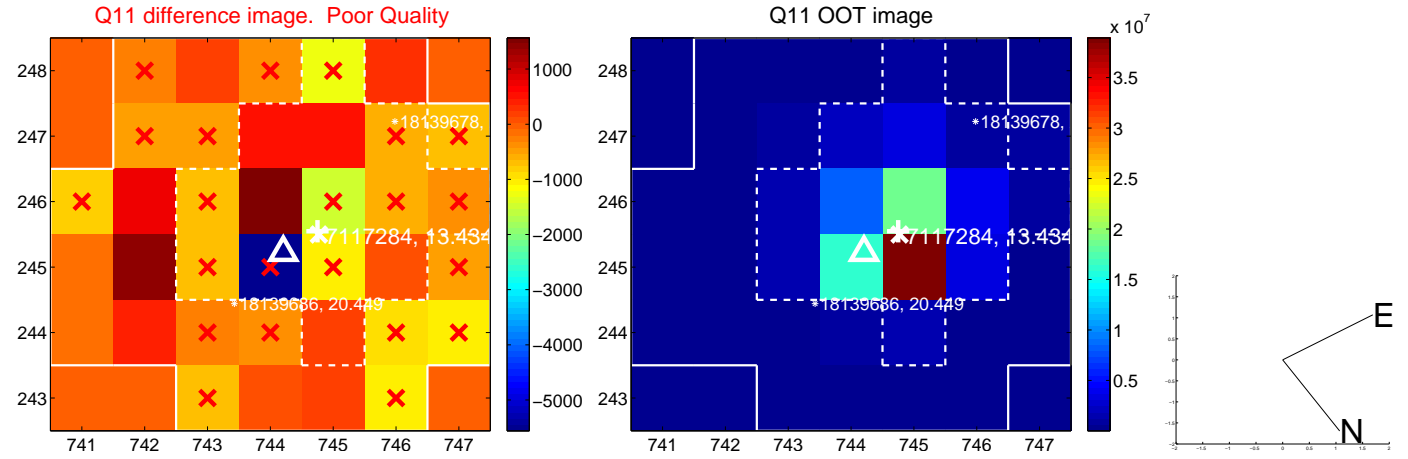
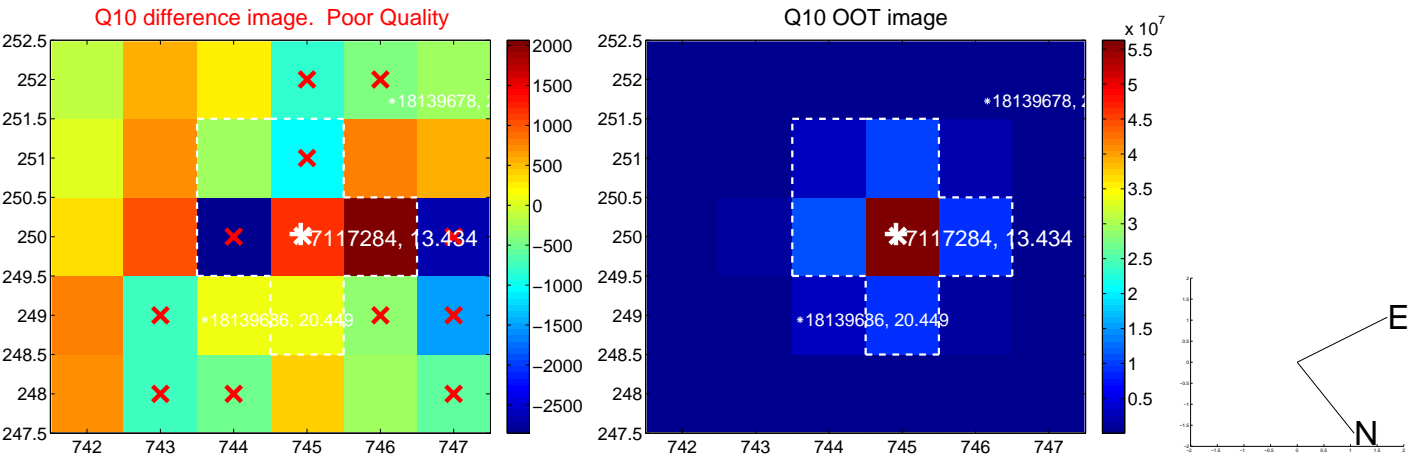
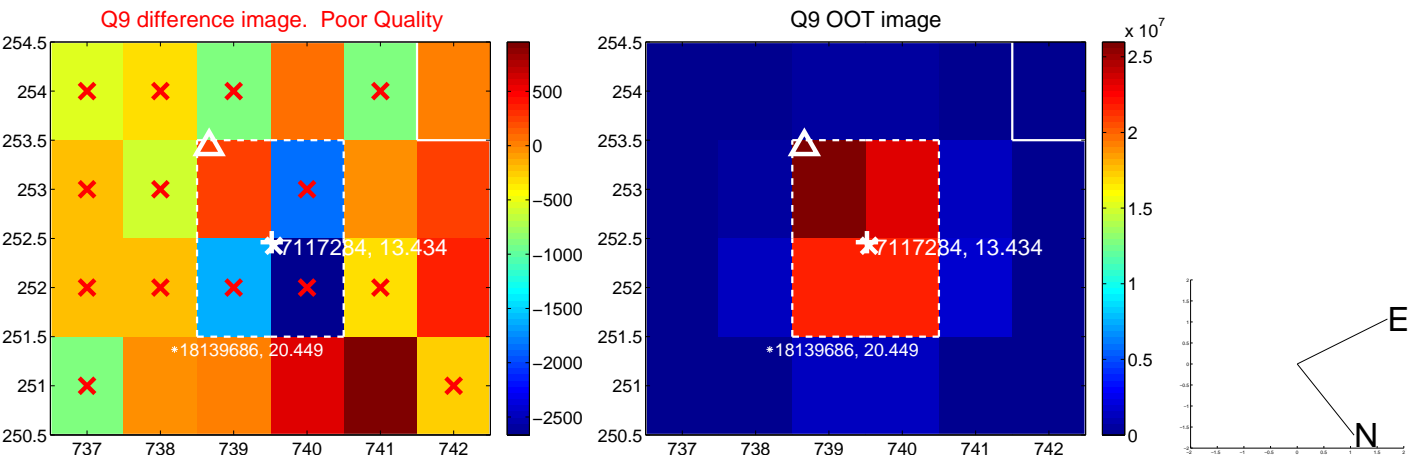




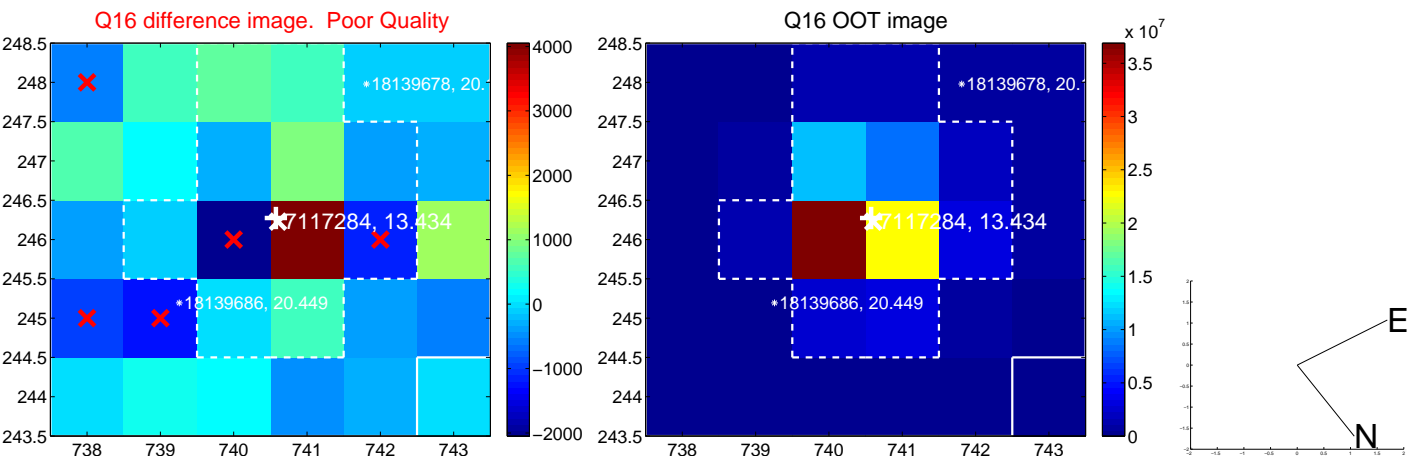
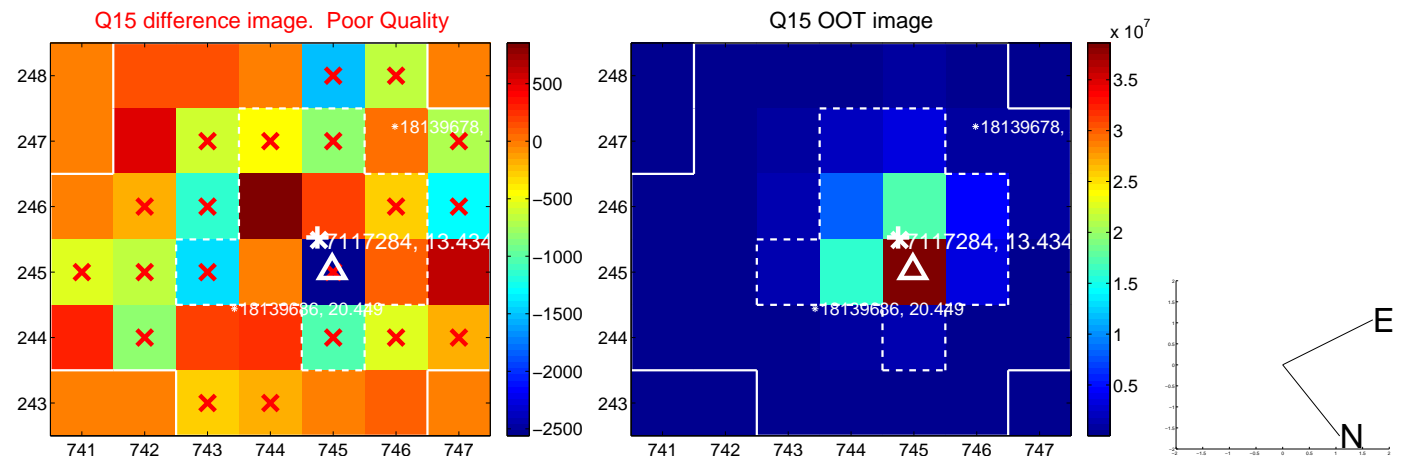
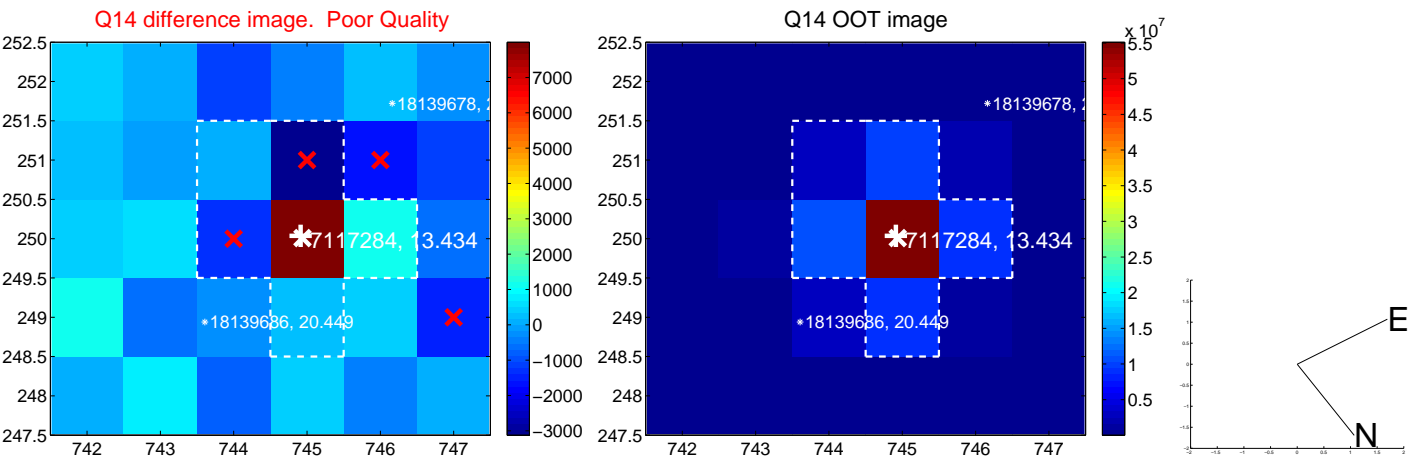
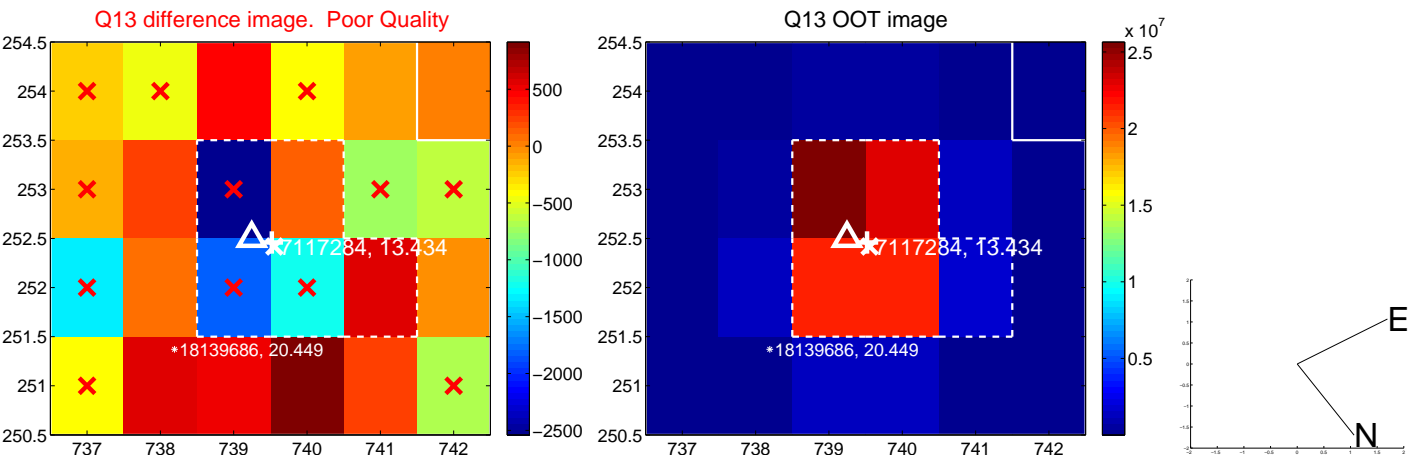
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



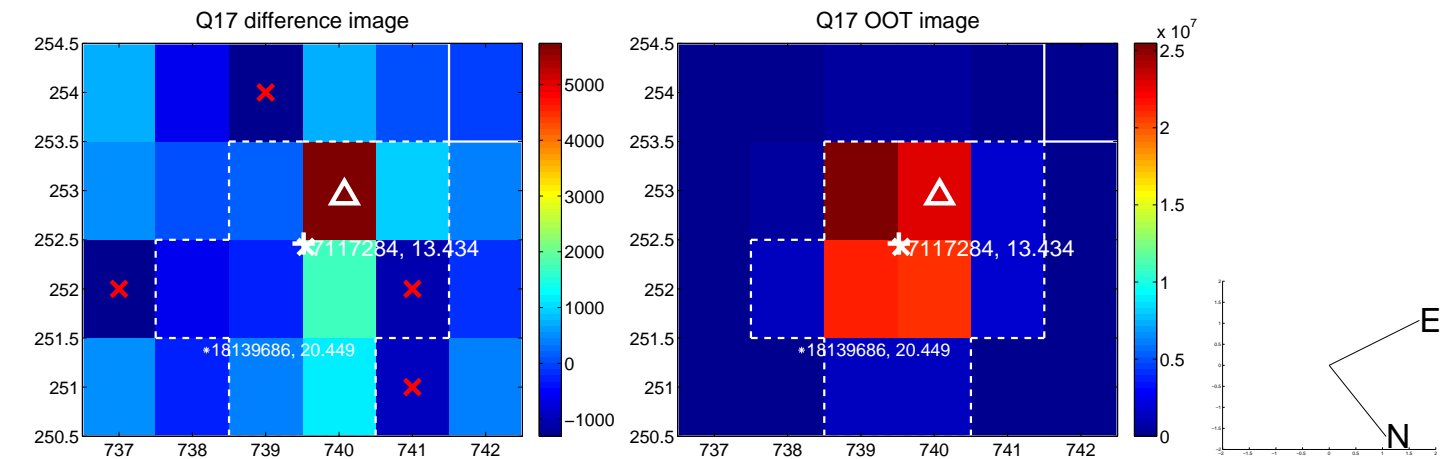
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



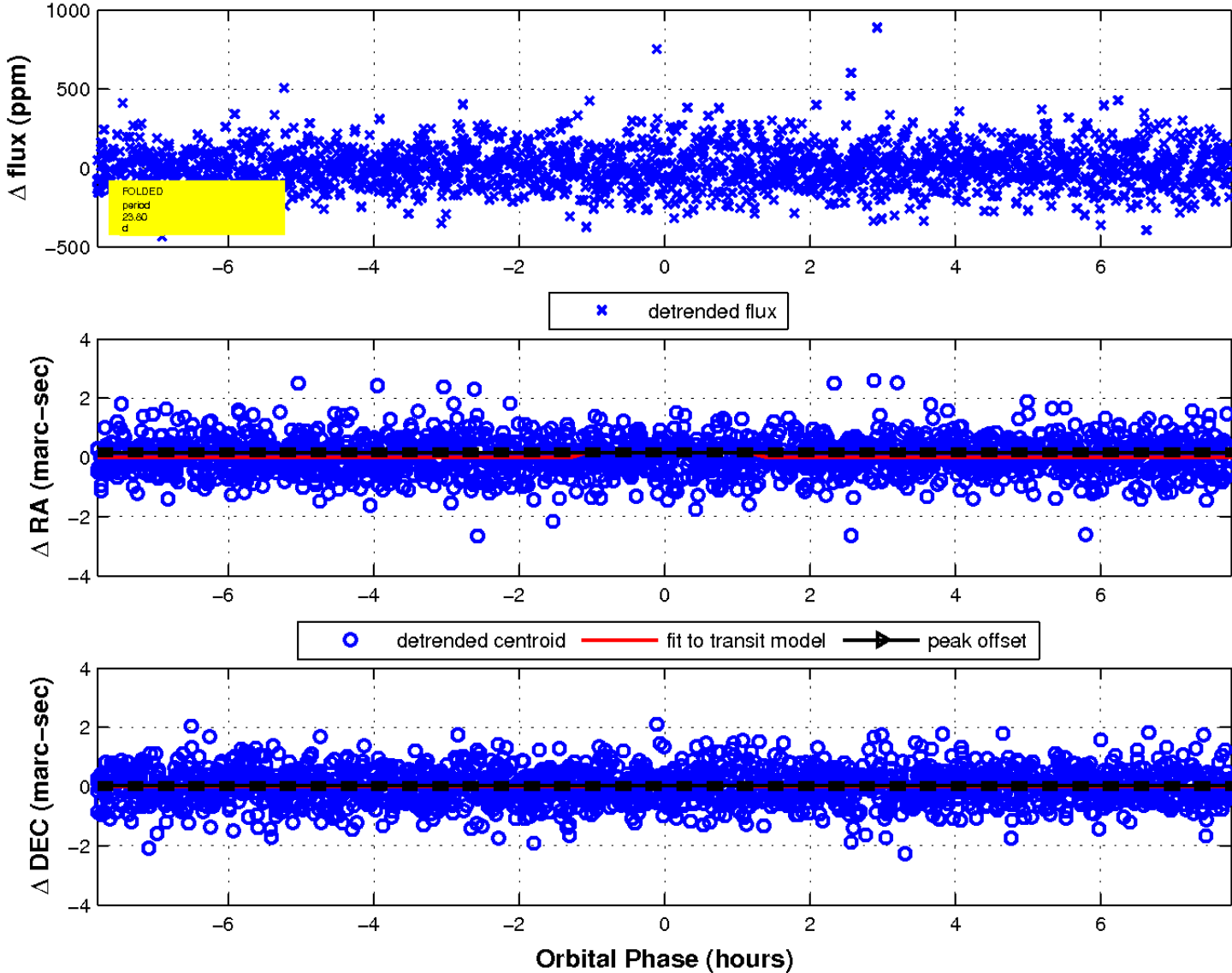
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

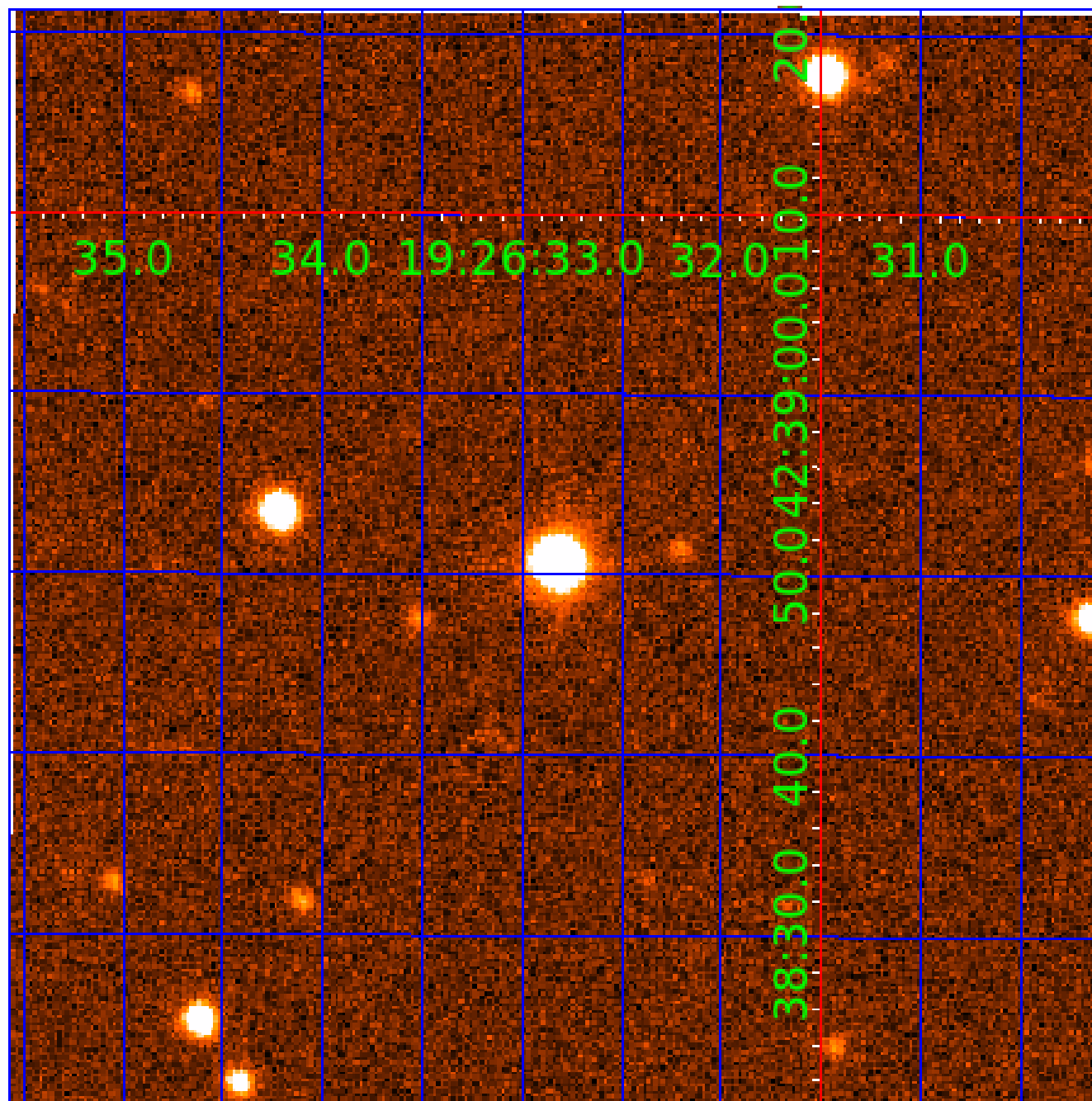


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination





# KIC 007117284

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007117284-01	OBS	No	0.566772	131.843688	6.6	4.125	9.1	5.7	1.31	6485	0.34	13391.74
007117284-02	OBS	No	23.796793	136.493510	57.4	2.603	11.3	4.7	1.31	6485	1.12	91.77
007117284-03	OBS	No	11.322769	131.696398	319.2	0.609	11.3	12.2	1.31	6485	2.52	247.05
007117284-04	OBS	No	9.030618	136.124683	109.7	3.110	10.1	11.3	1.31	6485	1.57	334.01
007117284-05	OBS	No	13.097523	134.745744	251.8	0.872	10.6	13.7	1.31	6485	2.11	203.45

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007117284-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_FEW_MEAS—HALO_GHOST—EPHEM_MATCH
007117284-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007117284-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007117284-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007117284-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS—HALO_GHOST

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

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

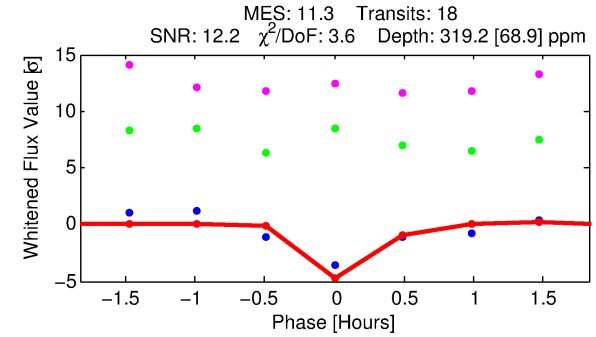
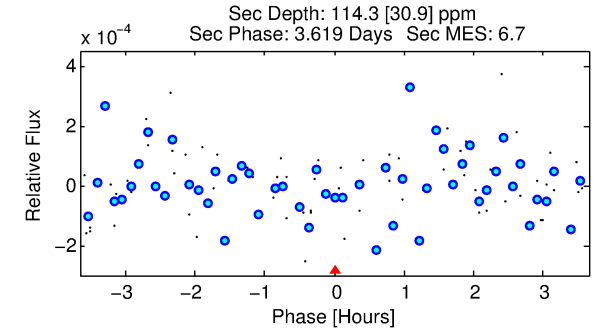
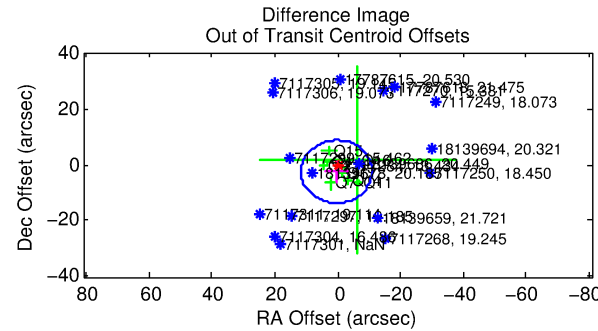
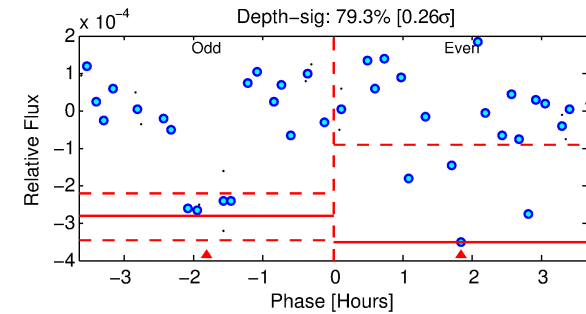
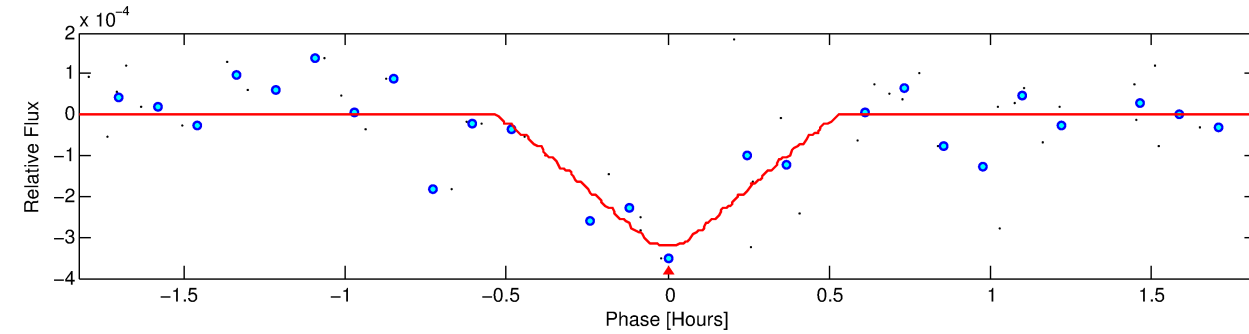
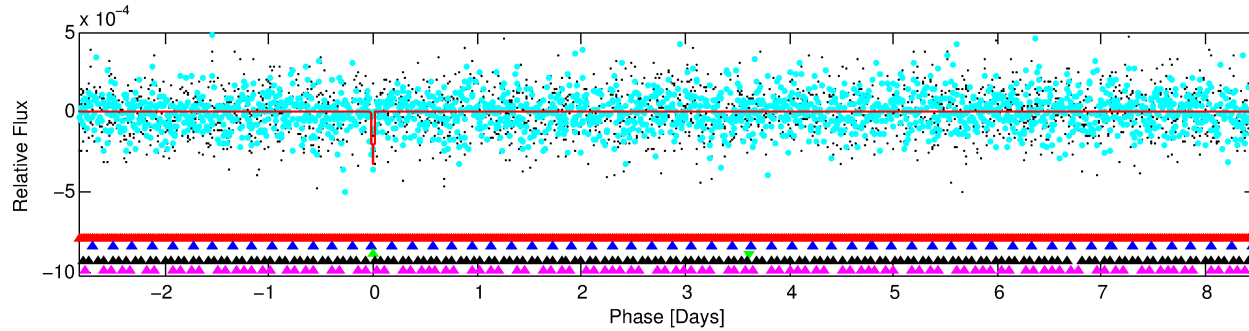
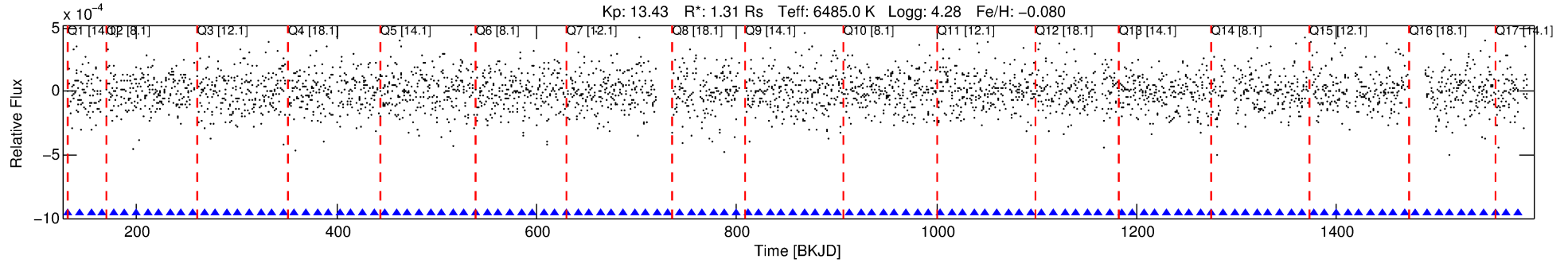
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007117284-03

No Significant Match Found

# DV One-Page Summary

KIC: 7117284 Candidate: 3 of 5 Period: 11.323 d



## DV Fit Results:

Period = 11.32277 [0.00006] d  
Epoch = 131.6964 [0.0046] BKJD  
Rp/R\* = 0.0176 [0.0173]  
a/R\* = 115.94 [638.73]  
b = 0.61 [5.73]  
Seff = 247.05 [73.29]  
Teq = 1011 [75] K  
Rp = 2.52 [2.54] Re  
a = 0.1049 [0.0196] AU  
Ag = 108.93 [217.91] [0.50 $\sigma$ ]  
Teffp = 5049 [2508] K [1.61 $\sigma$ ]

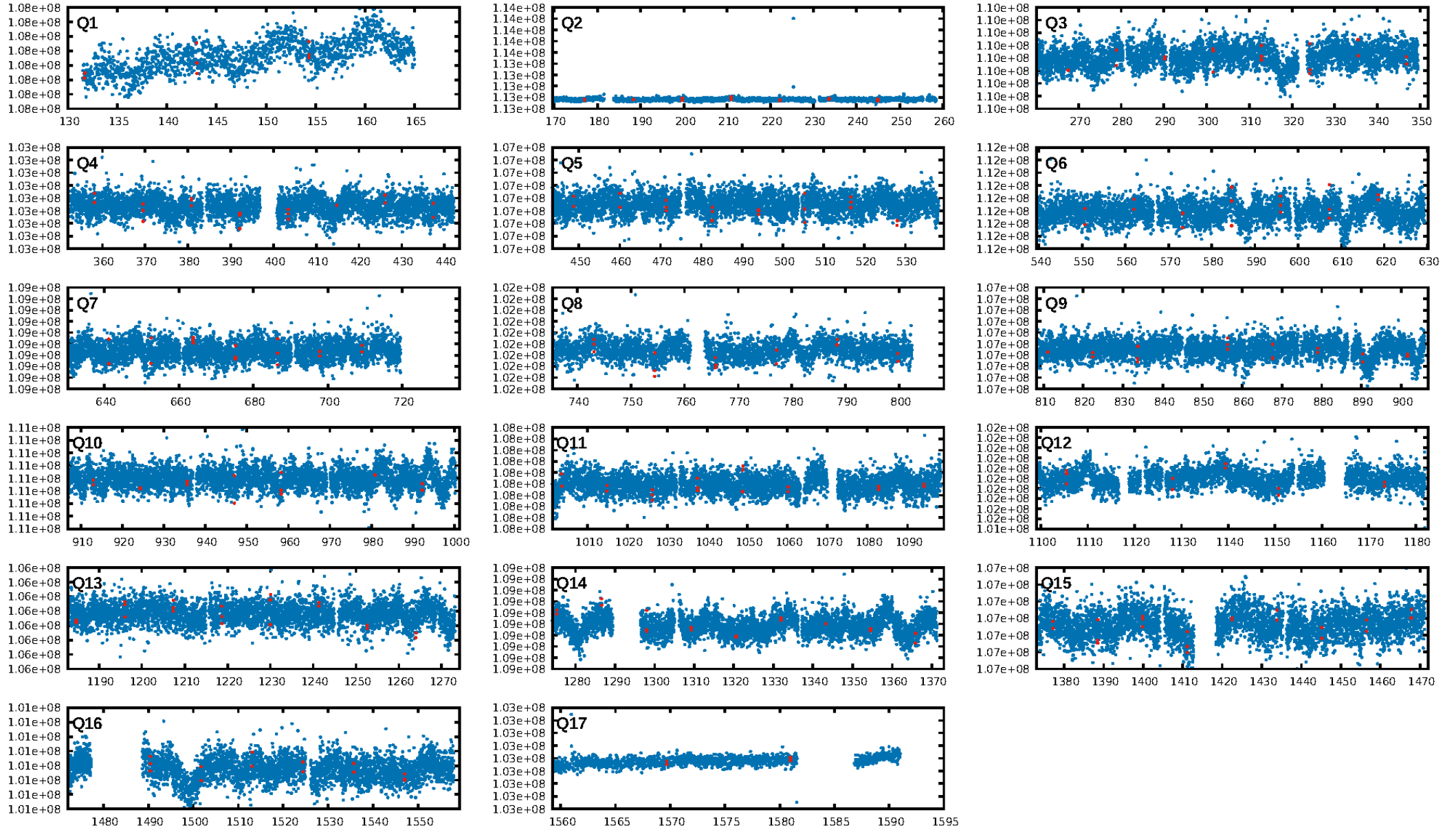
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.36 $\sigma$ ]  
LongPeriod-sig: 100.0% [40.05 $\sigma$ ]  
ModelChiSquare2-sig: 3.2%  
ModelChiSquareGof-sig: 57.9%  
**Bootstrap-pfa: 2.49e-11**  
RollingBand-fgt: 1.00 [18/18]  
GhostDiagnostic-chr: -4.04  
Centroid-sig: 7.3%  
Centroid-so: 0.803 arcsec [1.64 $\sigma$ ]  
OotOffset-rm: 2.529 arcsec [0.67 $\sigma$ ]  
KicOffset-rm: 2.707 arcsec [0.72 $\sigma$ ]  
OotOffset-st: 1/3/2/3 [9]  
KicOffset-st: 1/3/2/3 [9]  
DiffImageQuality-fgm: 0.11 [1/9]  
DiffImageOverlap-fno: 0.00 [0/17]

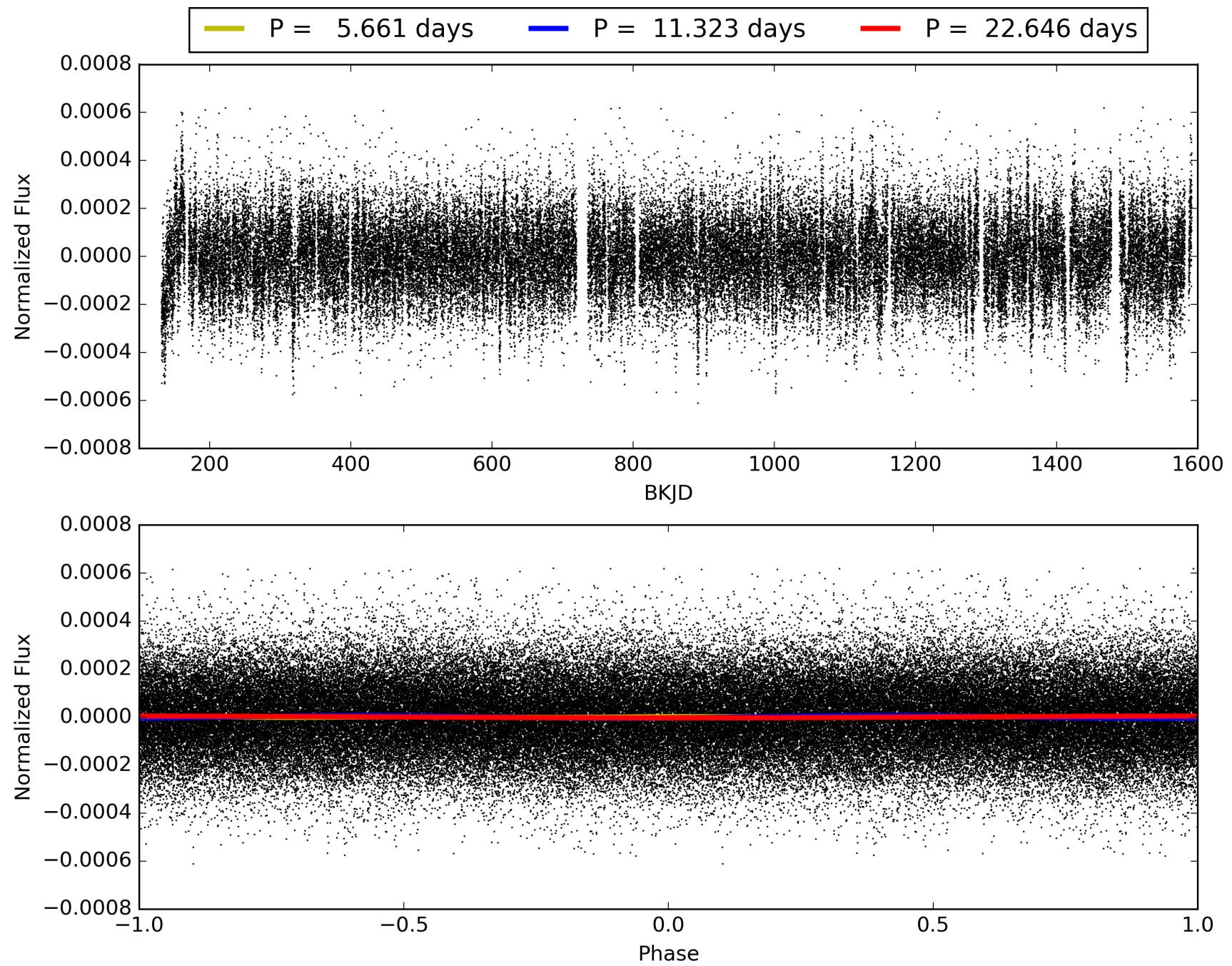
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:00:25 Z

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

# TCE 007117284-03, PDC Light Curves

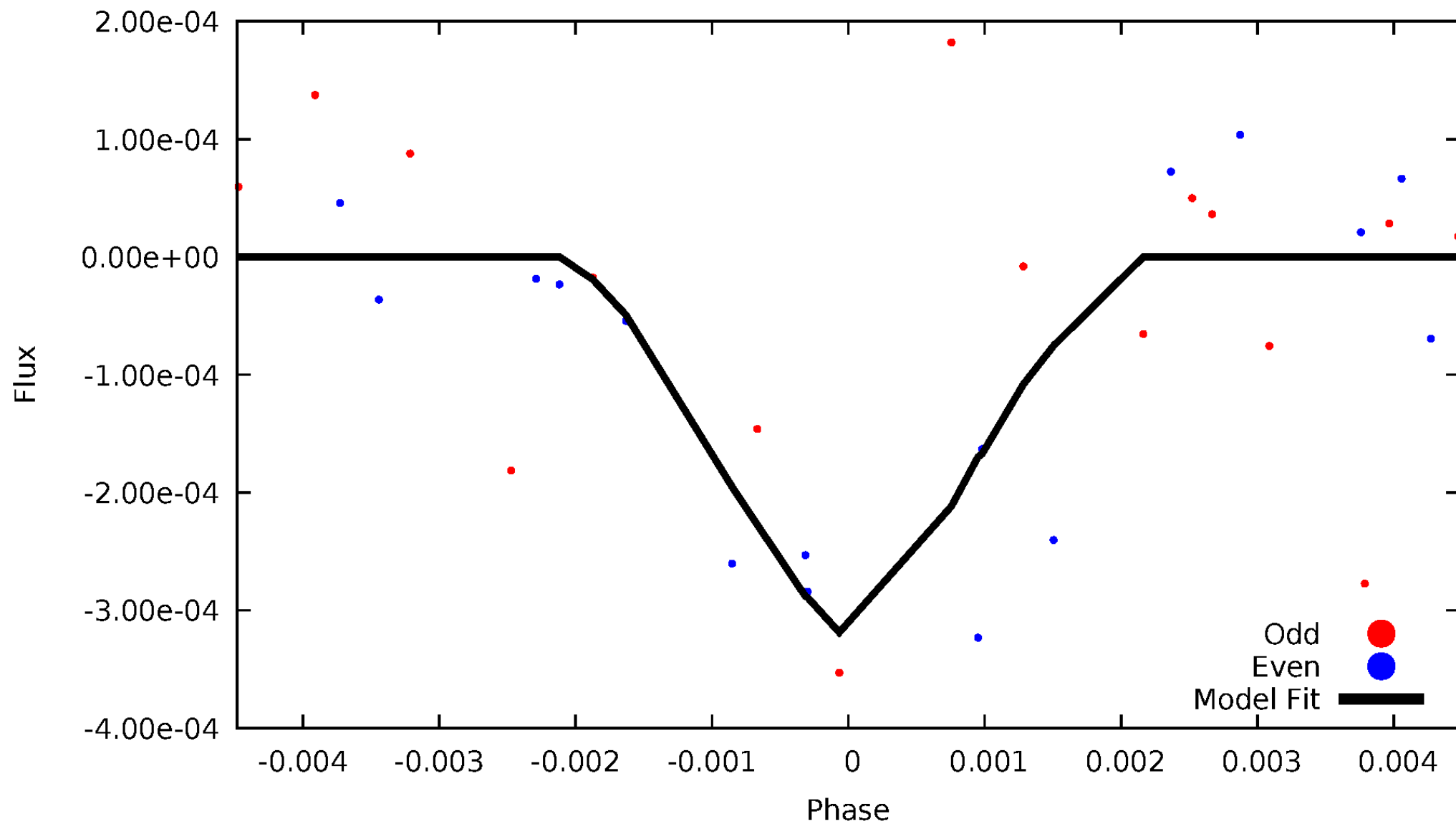


TCE 007117284-03



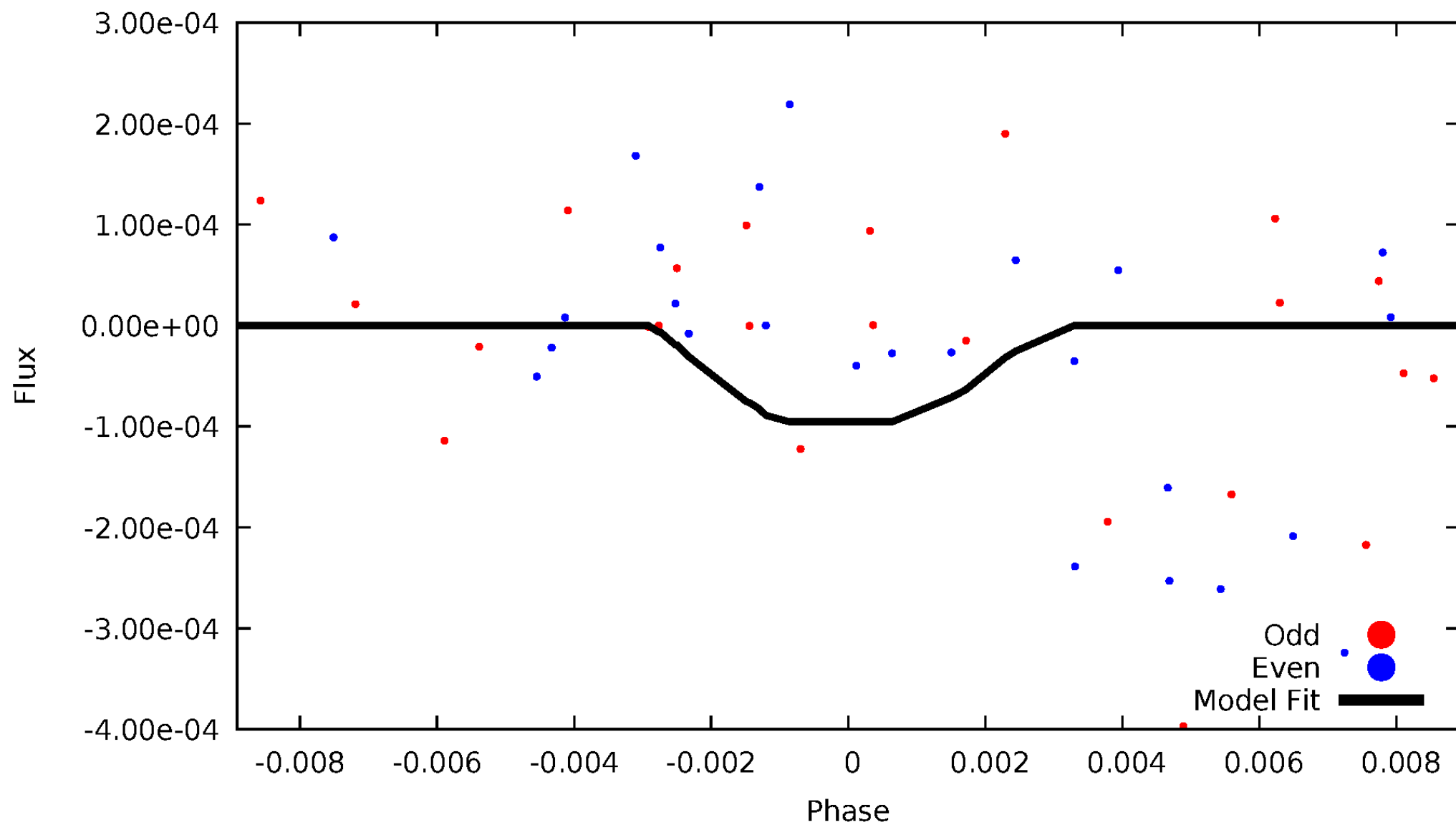
# DV Odd/Even

TCE 007117284-03



# ALT Odd/Even

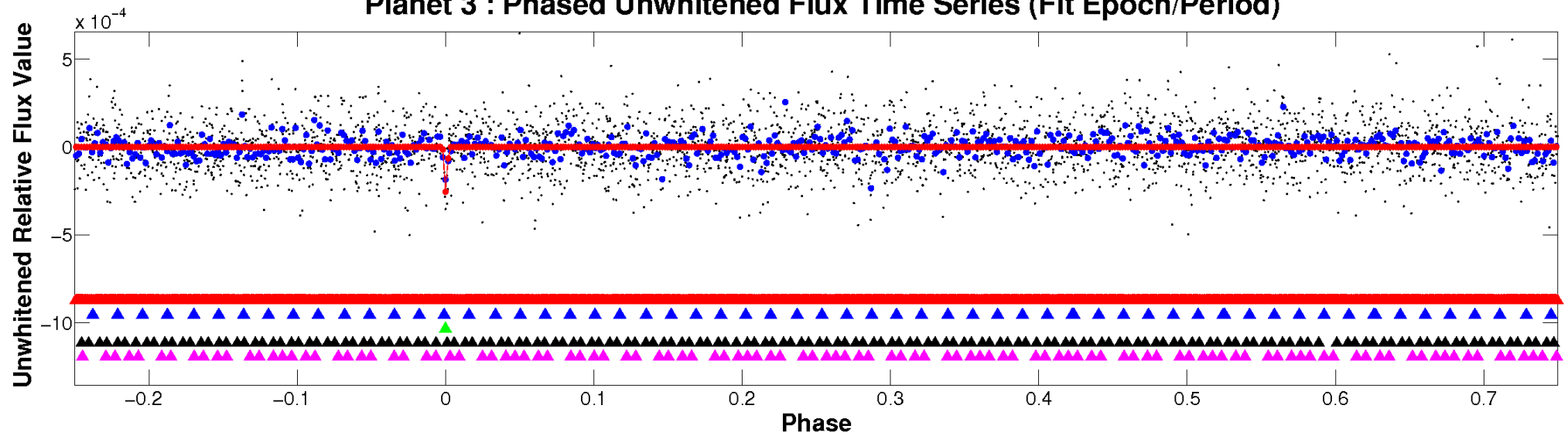
TCE 007117284-03



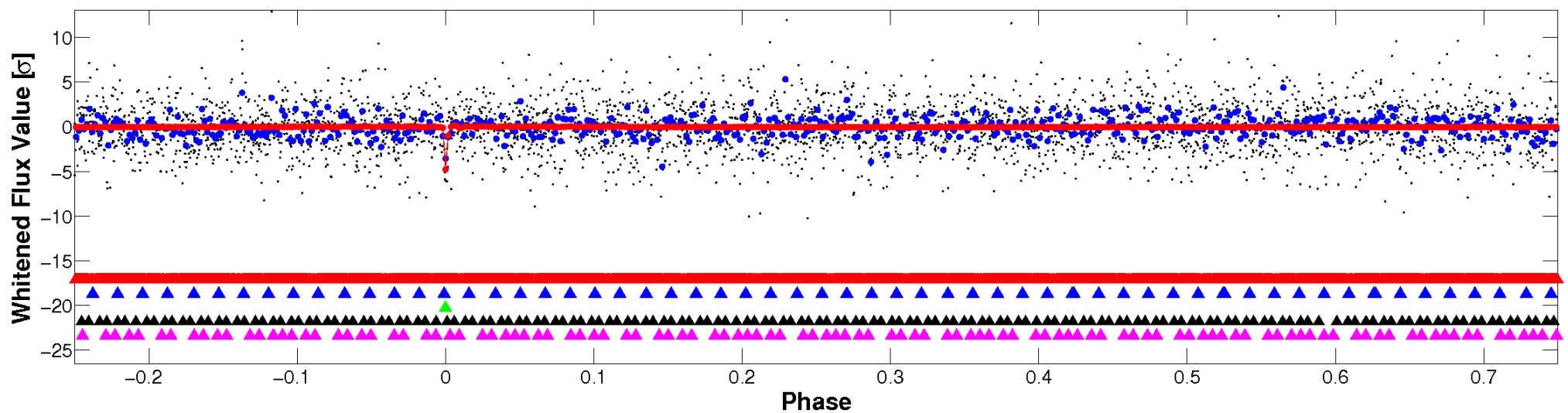


# Non-Whitened Vs. Whitened Light Curve

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

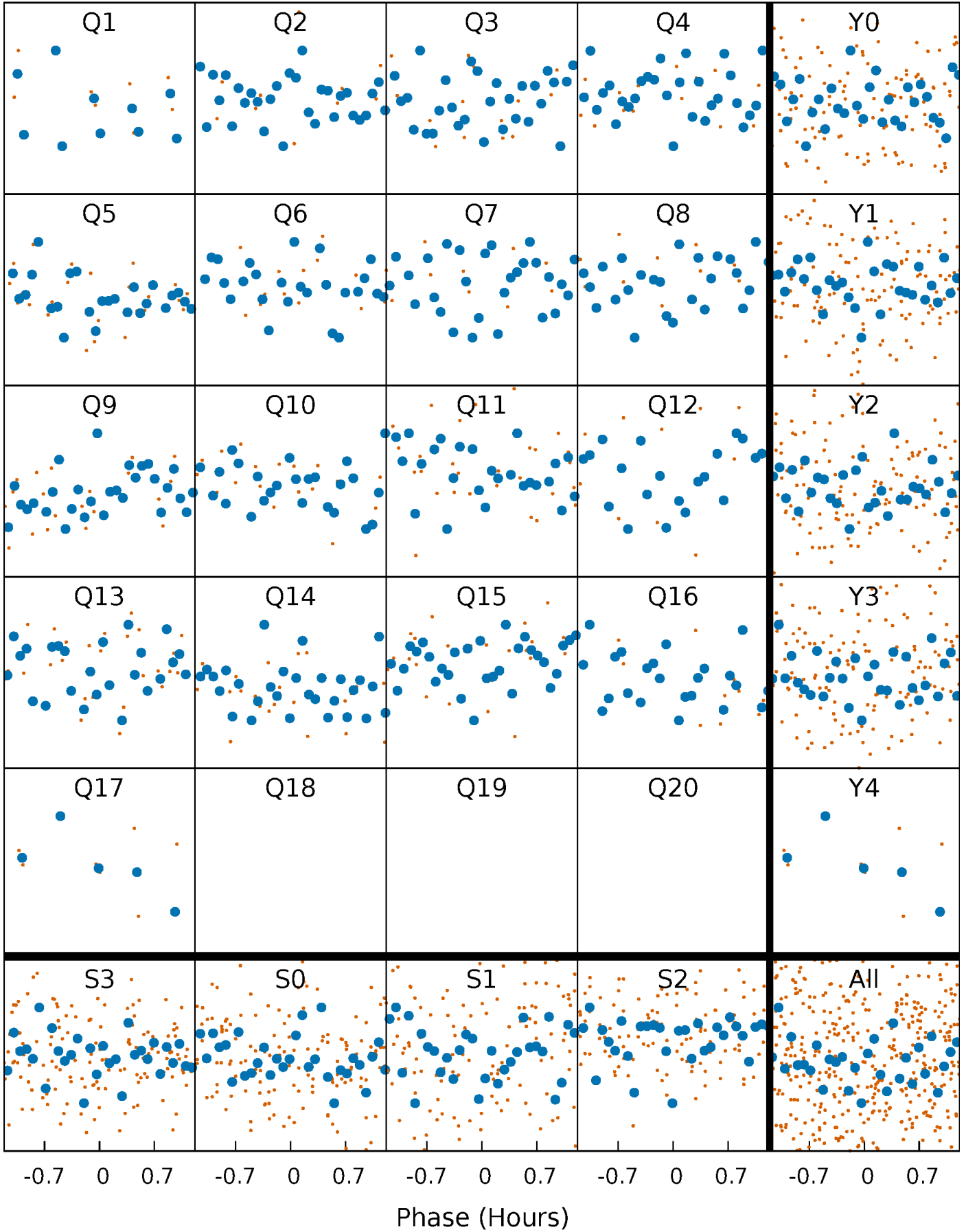


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



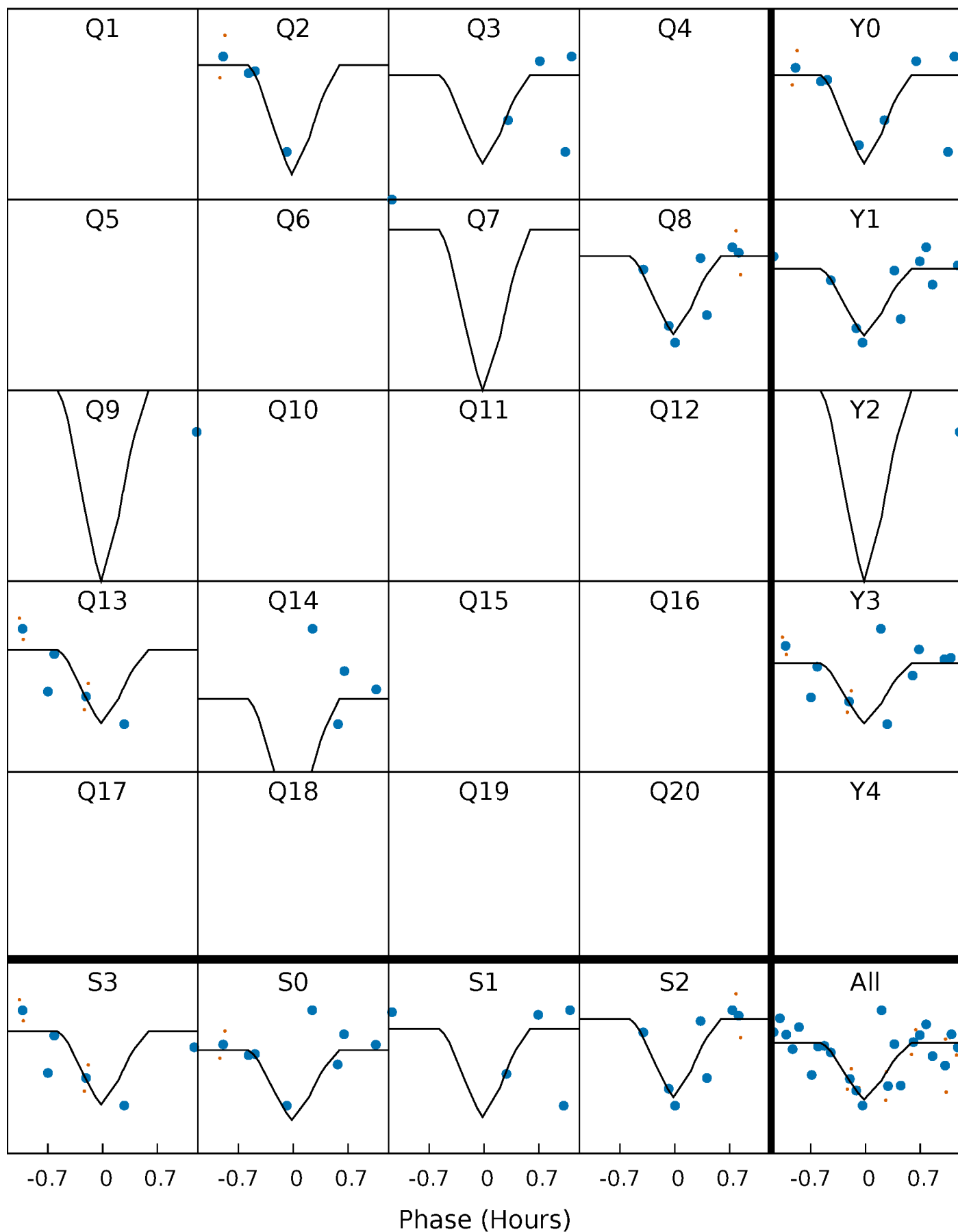
# PDC Quarter-Phased Transit Curves

TCE 007117284-03 P= 11.322769 Days  $T_0=131.696398$  (BKJD)



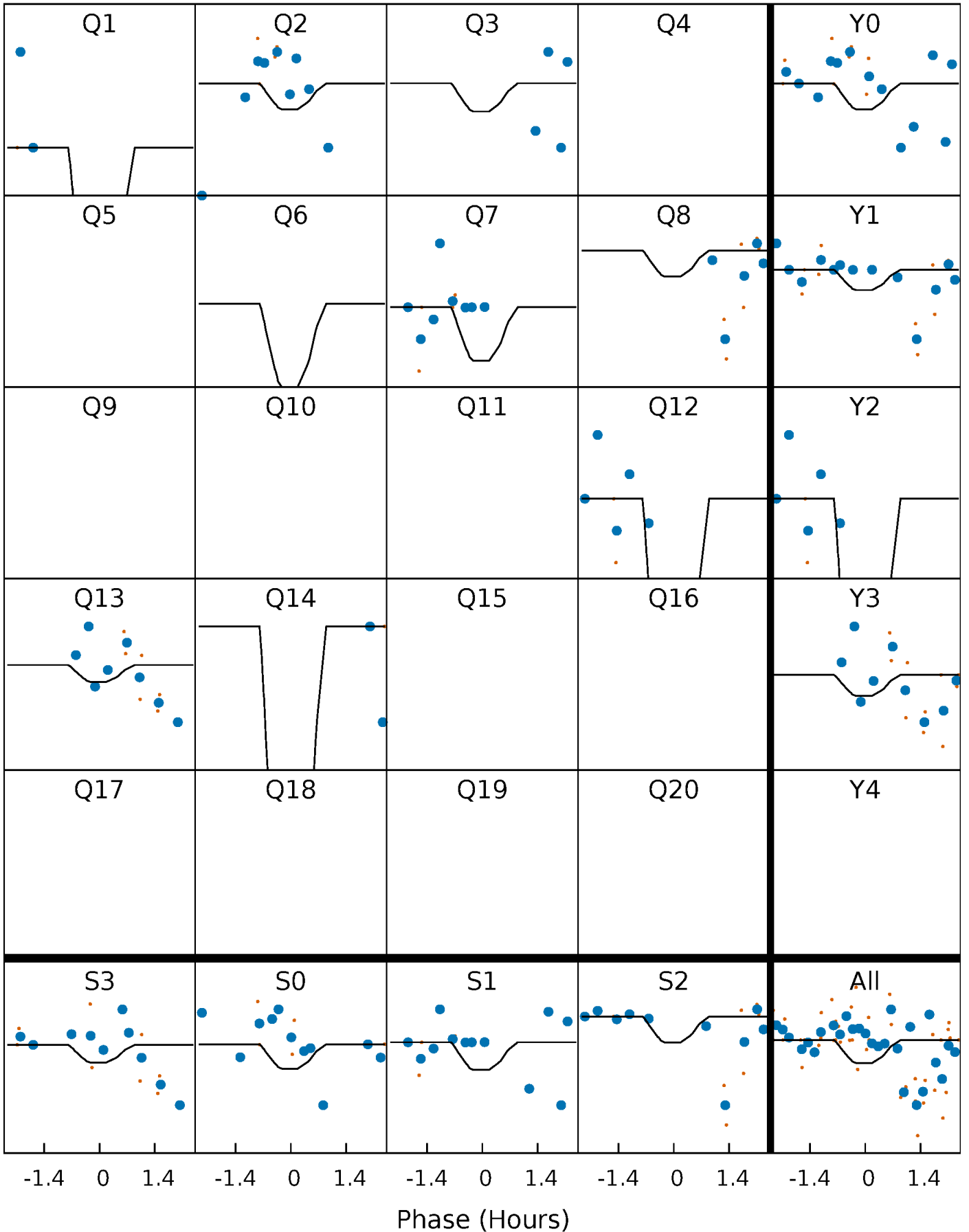
# DV Quarter-Phased Transit Curves

TCE 007117284-03 P= 11.322769 Days  $T_0=131.696398$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

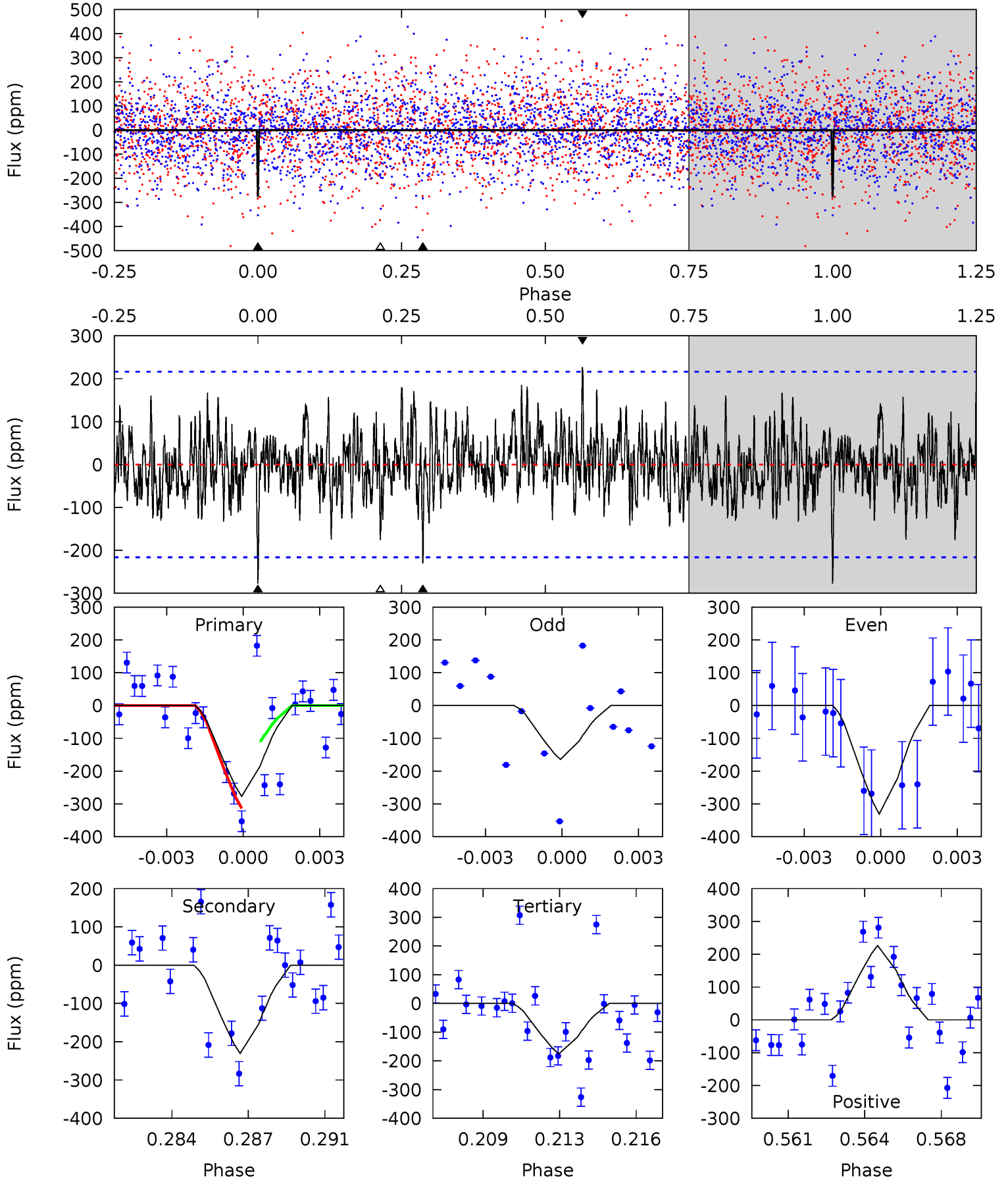
TCE 007117284-03 P= 11.322433 Days  $T_0=131.658753$  (BKJD)



# DV Model-Shift Uniqueness Test

007117284-03, P = 11.322769 Days, E = 120.373629 Days

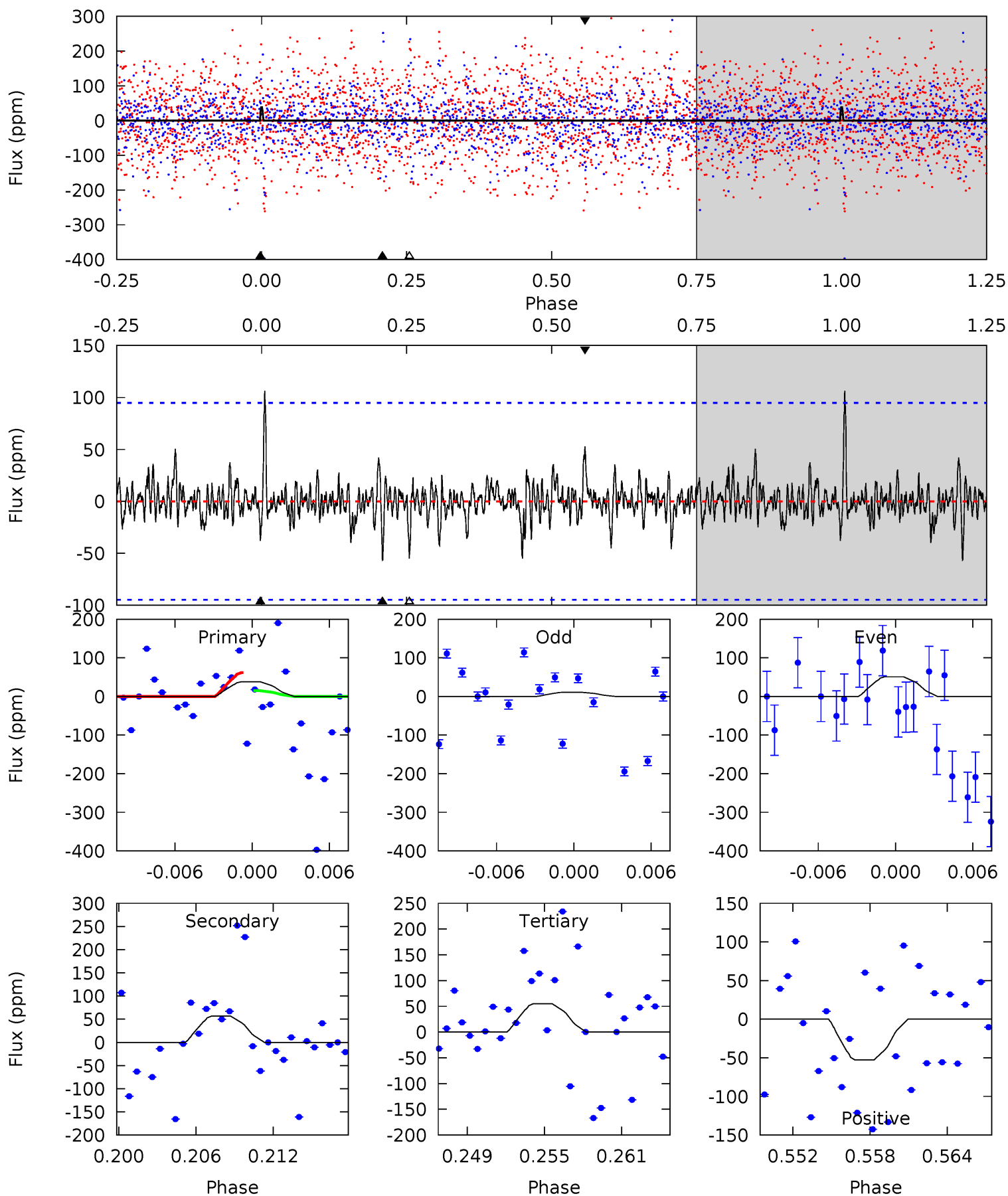
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.71	5.58	4.25	5.48	5.23	2.93	1.45	2.45	1.23	1.33	0.11	2.05	1.00	0.45	2.41



# Alt Model-Shift Uniqueness Test

007117284-03,  $P = 11.322433$  Days,  $E = 120.336320$  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
2.05	3.06	2.97	2.85	5.12	2.74	0.78	-0.92	-0.80	0.09	0.21	1.05	0.54	0.65	1.29





### Stellar Parameters For KIC 007117284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6485^{+144}_{-208}$	$4.283^{+0.096}_{-0.144}$	$-0.080^{+0.250}_{-0.300}$	$1.310^{+0.296}_{-0.197}$	$1.200^{+0.157}_{-0.157}$	$0.752^{+0.384}_{-0.297}$
	+2%/-3%	+2%/-3%	+312%/-375%	+23%/-15%	+13%/-13%	+51%/-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 007117284-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-231 \pm 41$	$2.94^{+2.59}_{-1.74}$	$1422^{+82}_{-76}$	$5578^{+3853}_{-1264}$	$157^{+778}_{-111}$
Alt.	$-57 \pm 18$	$2.37^{+1.91}_{-1.61}$	$1417^{+85}_{-63}$	$4485^{+3271}_{-877}$	$58^{+481}_{-41}$

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

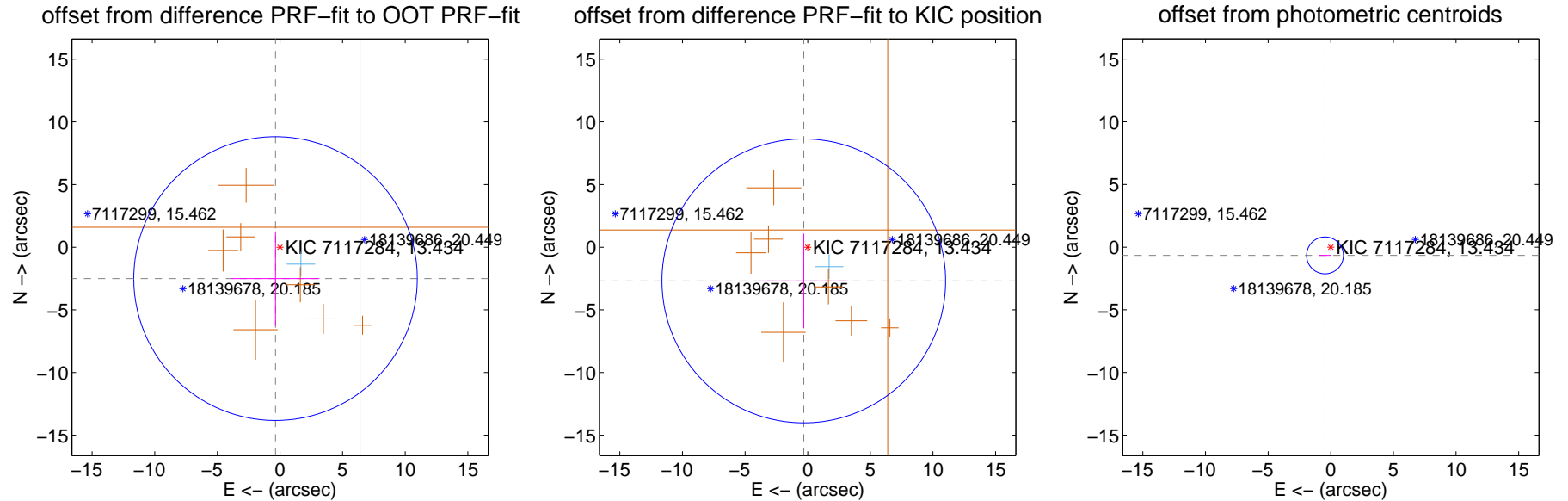
## DV Centroid Data

Supplemental centroid analysis for 007117284-03. Kepler magnitude: 13.43. Transit SNR 12.23

There are 1 quarters with good PRF difference image offsets

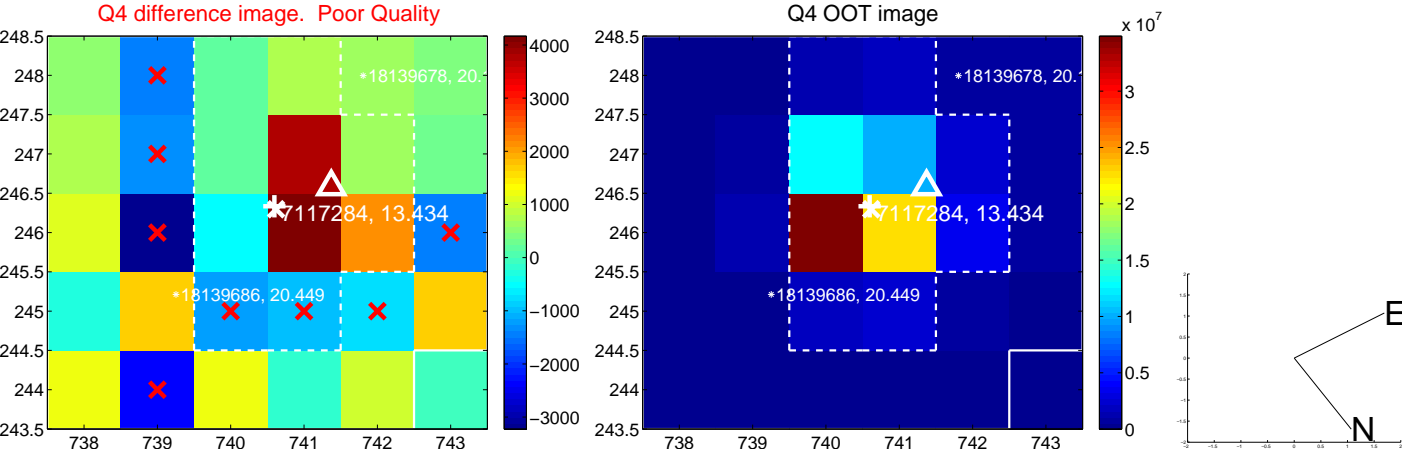
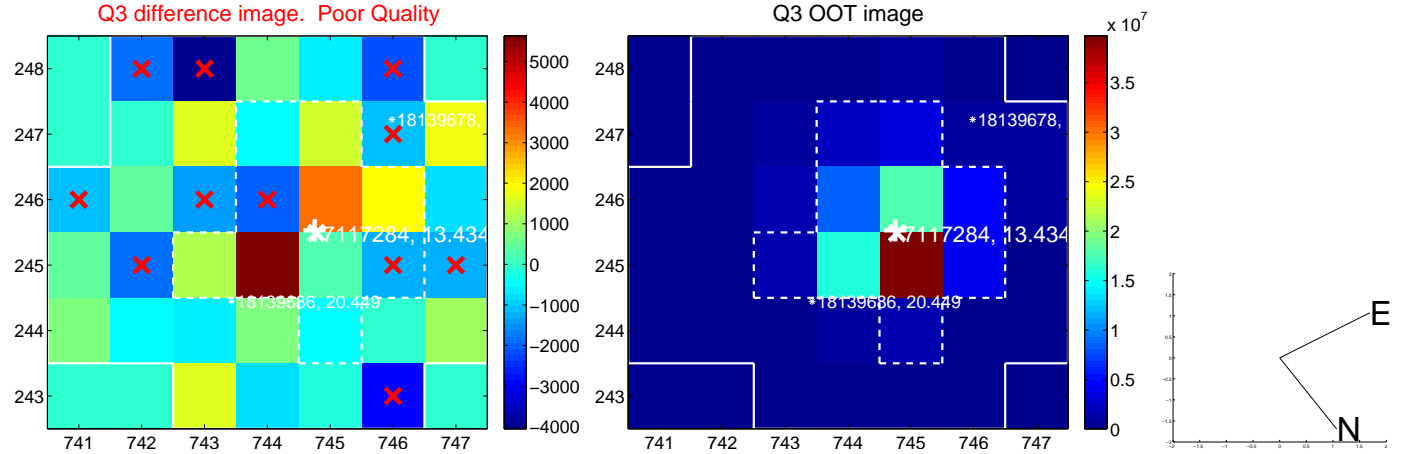
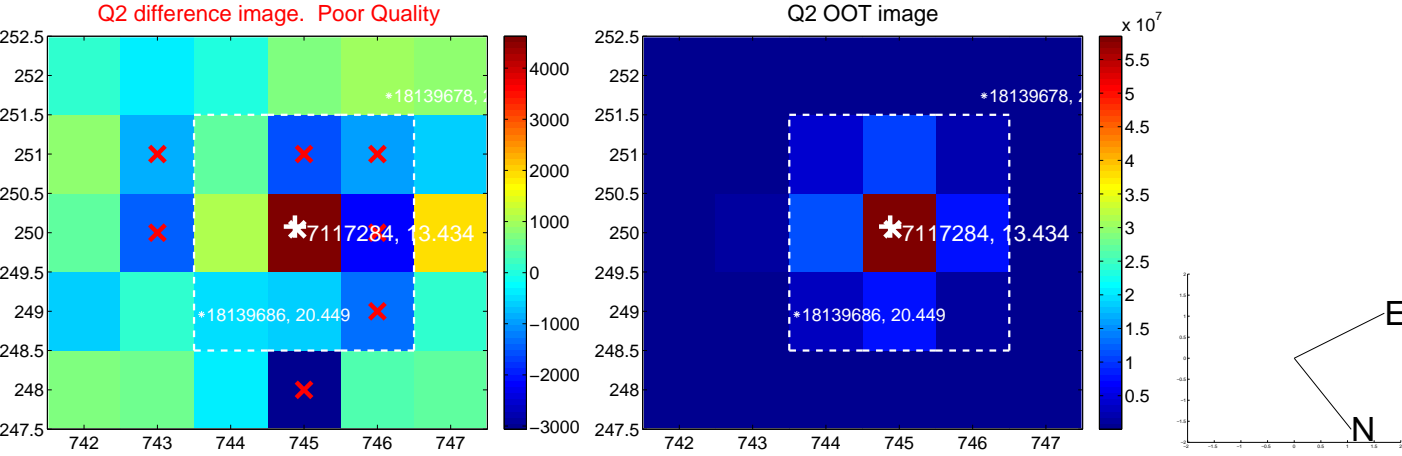
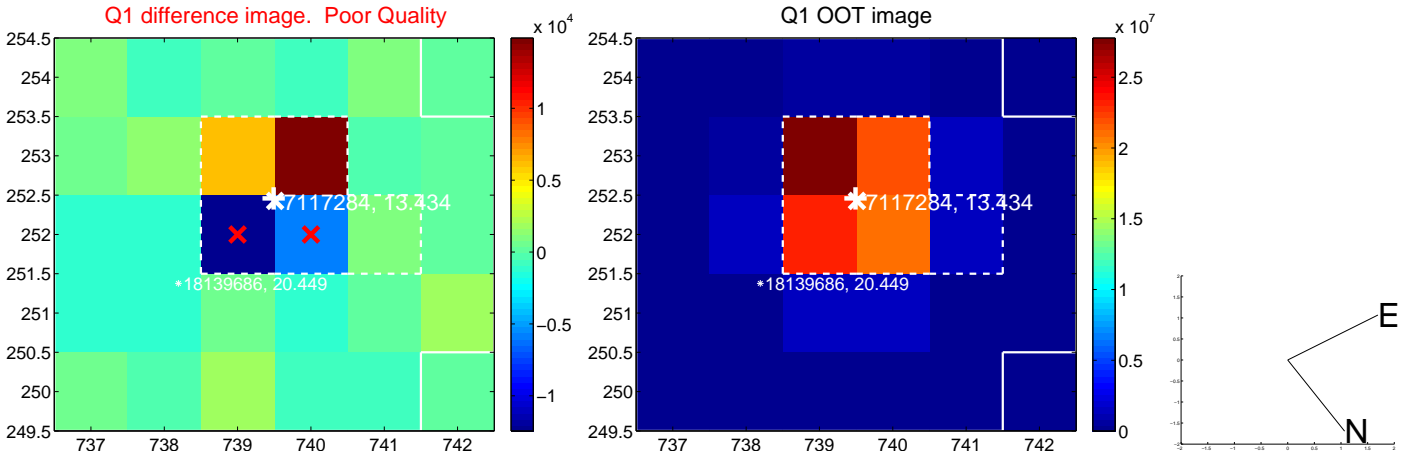
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.529 \pm 3.772$	0.67	$0.355 \pm 3.506$	$-2.504 \pm 3.777$
PRF-fit source offset from KIC position	$2.707 \pm 3.773$	0.72	$0.314 \pm 3.506$	$-2.689 \pm 3.777$
photometric centroid source offset	$0.80 \pm 0.49$	1.64	$0.46 \pm 0.47$	$-0.66 \pm 0.50$

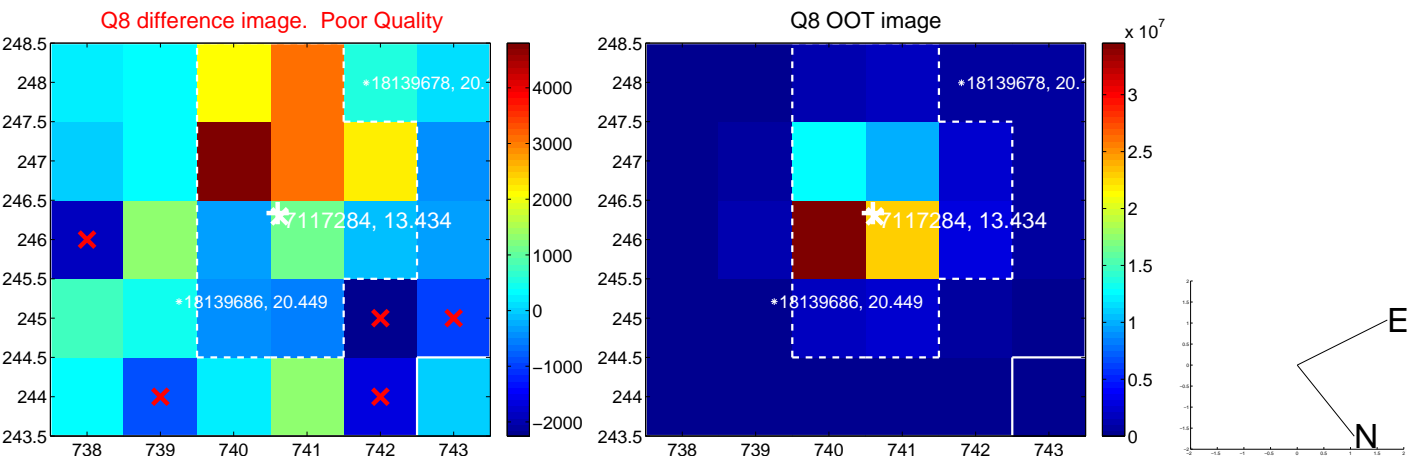
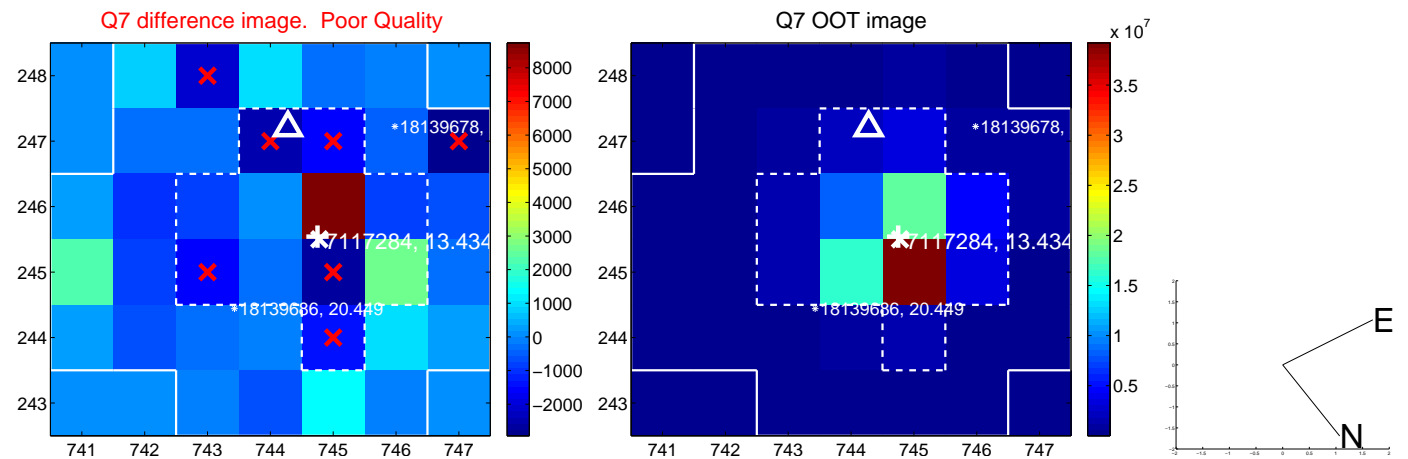
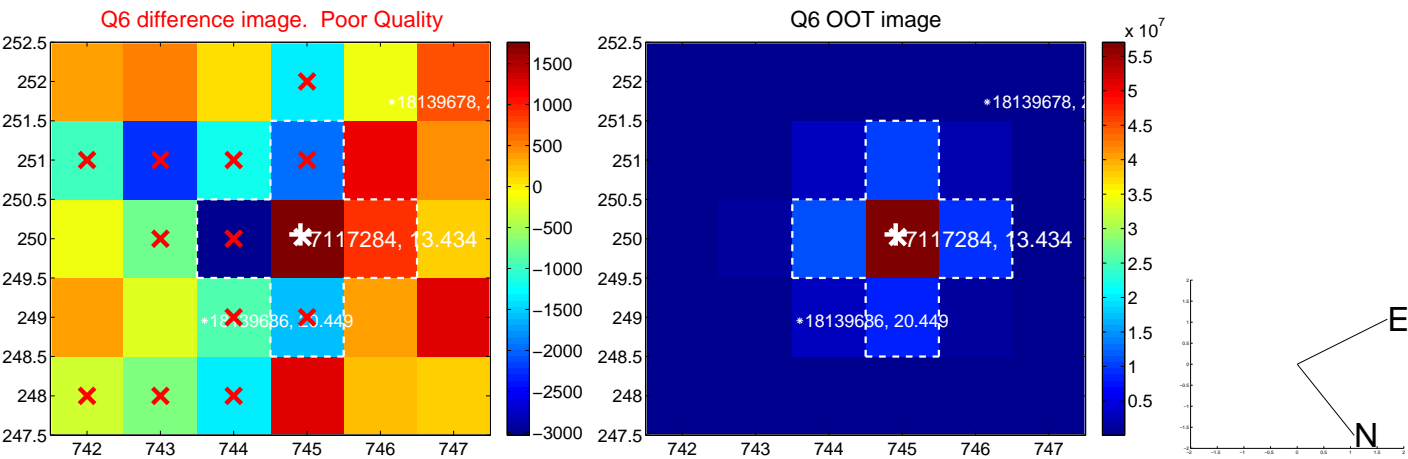
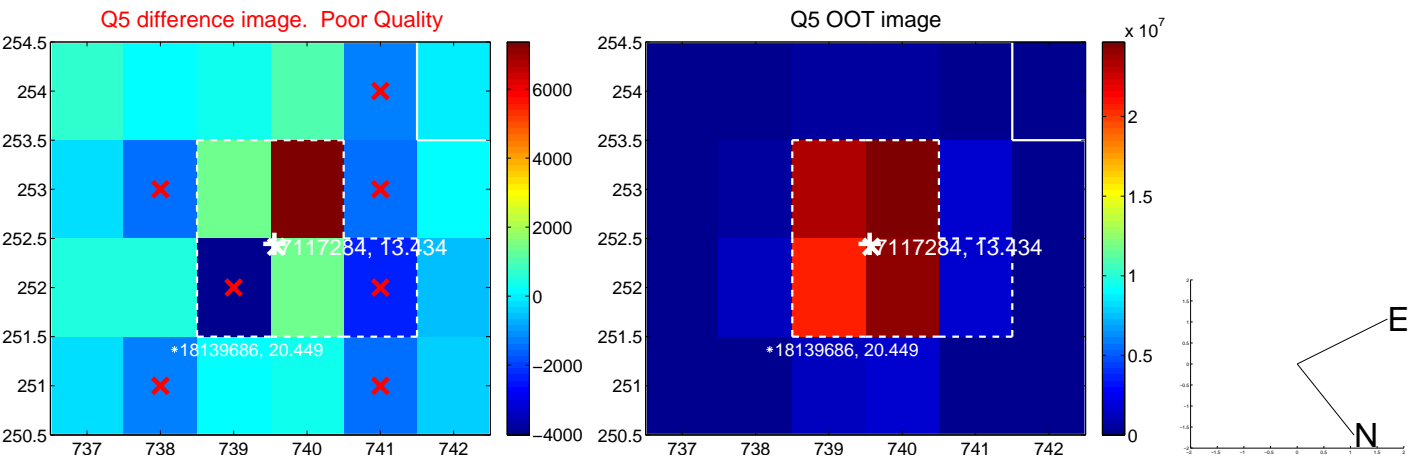


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

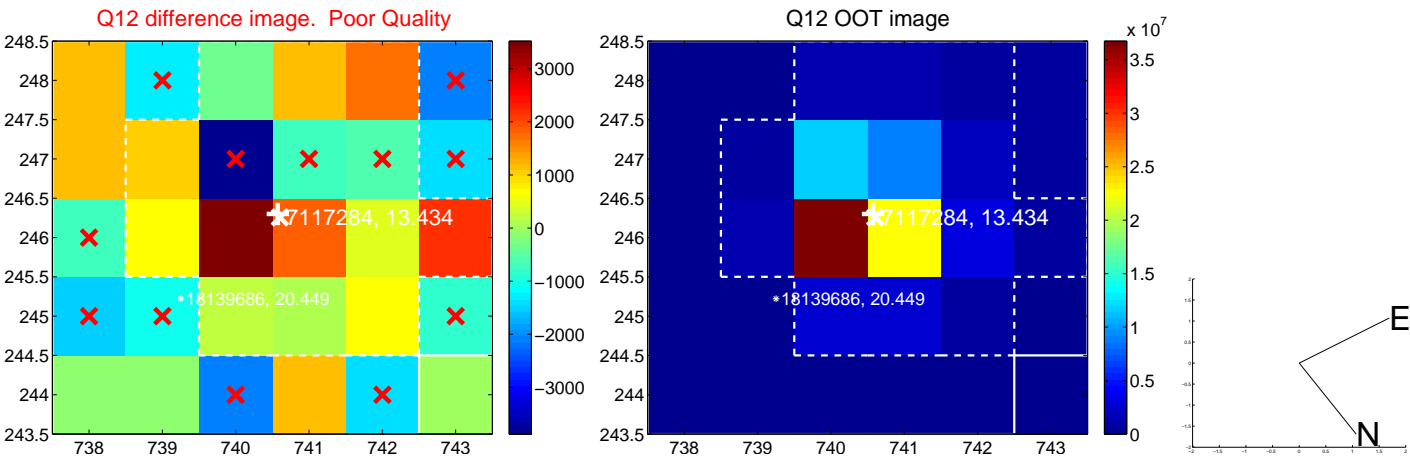
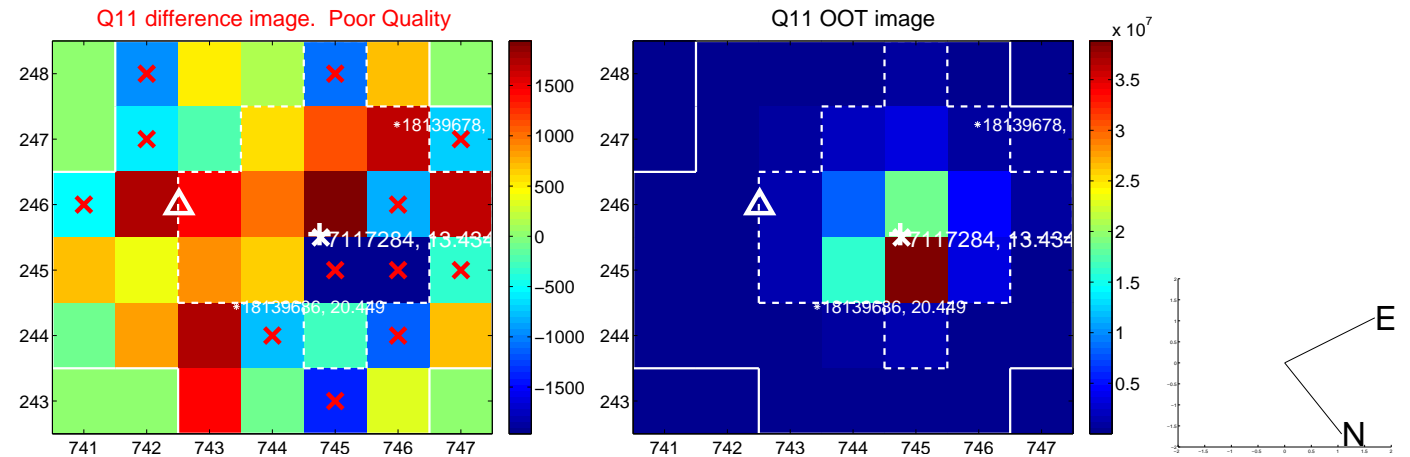
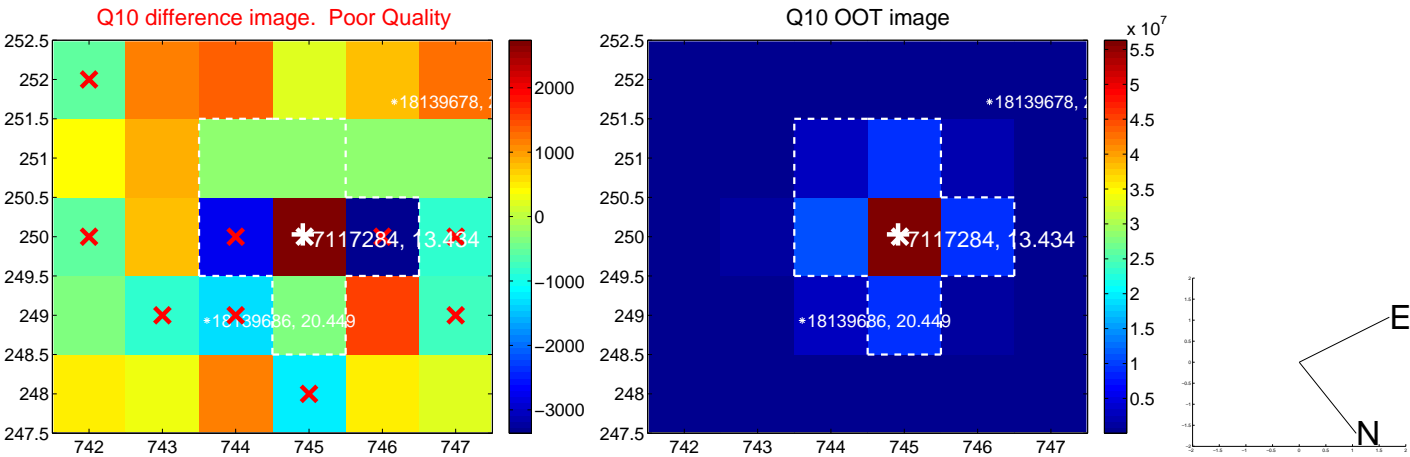
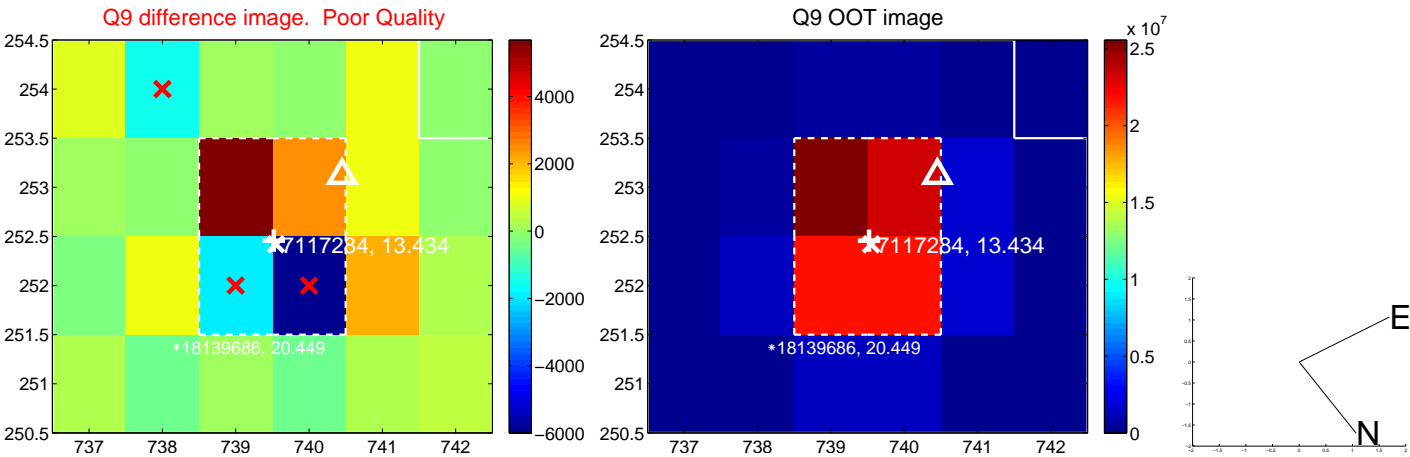
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



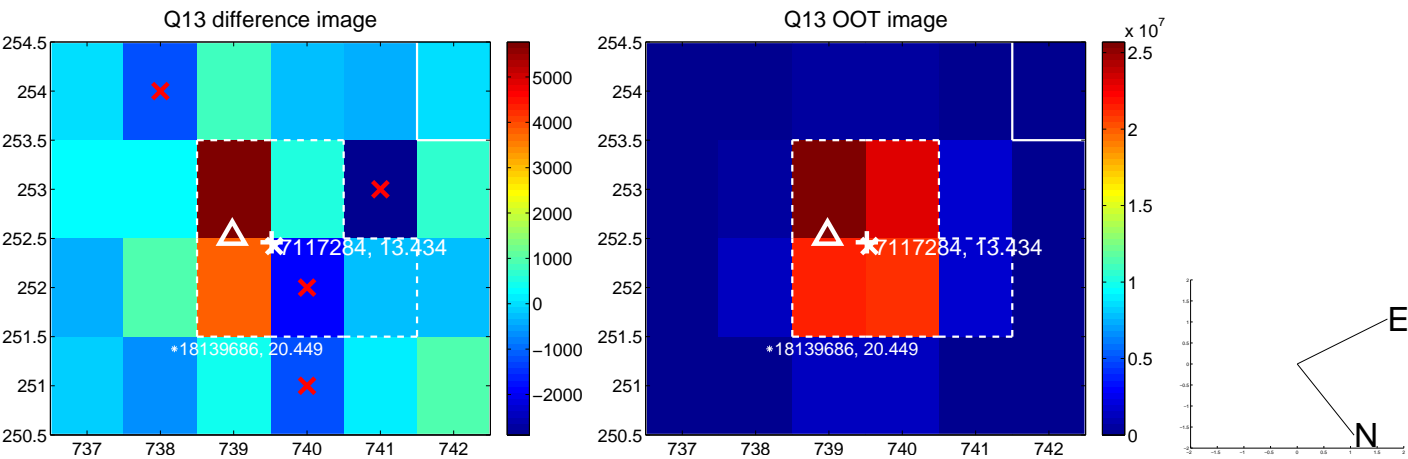
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

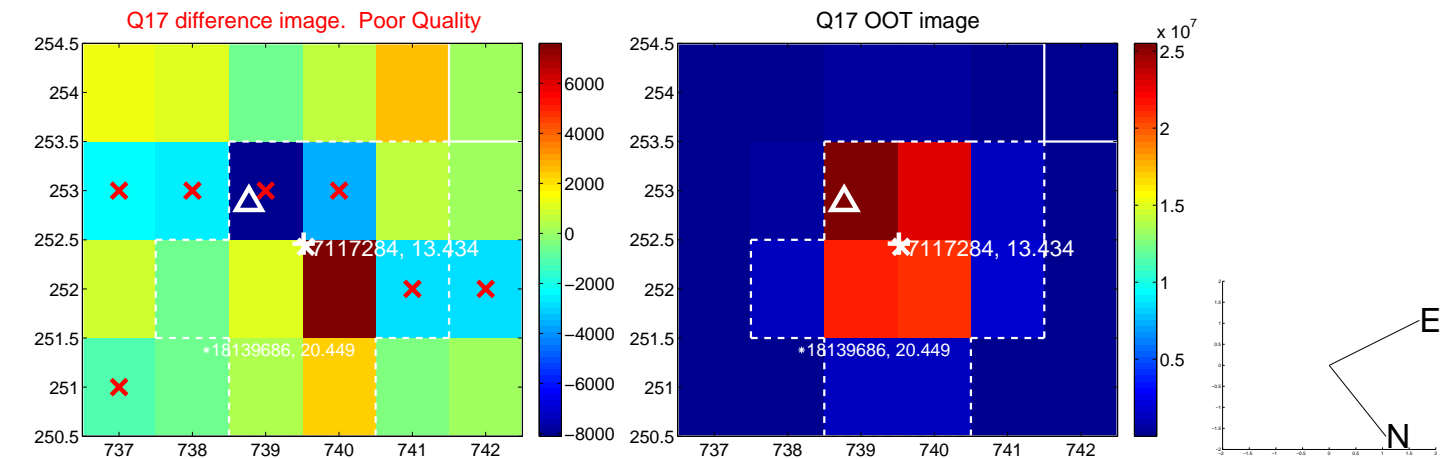


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

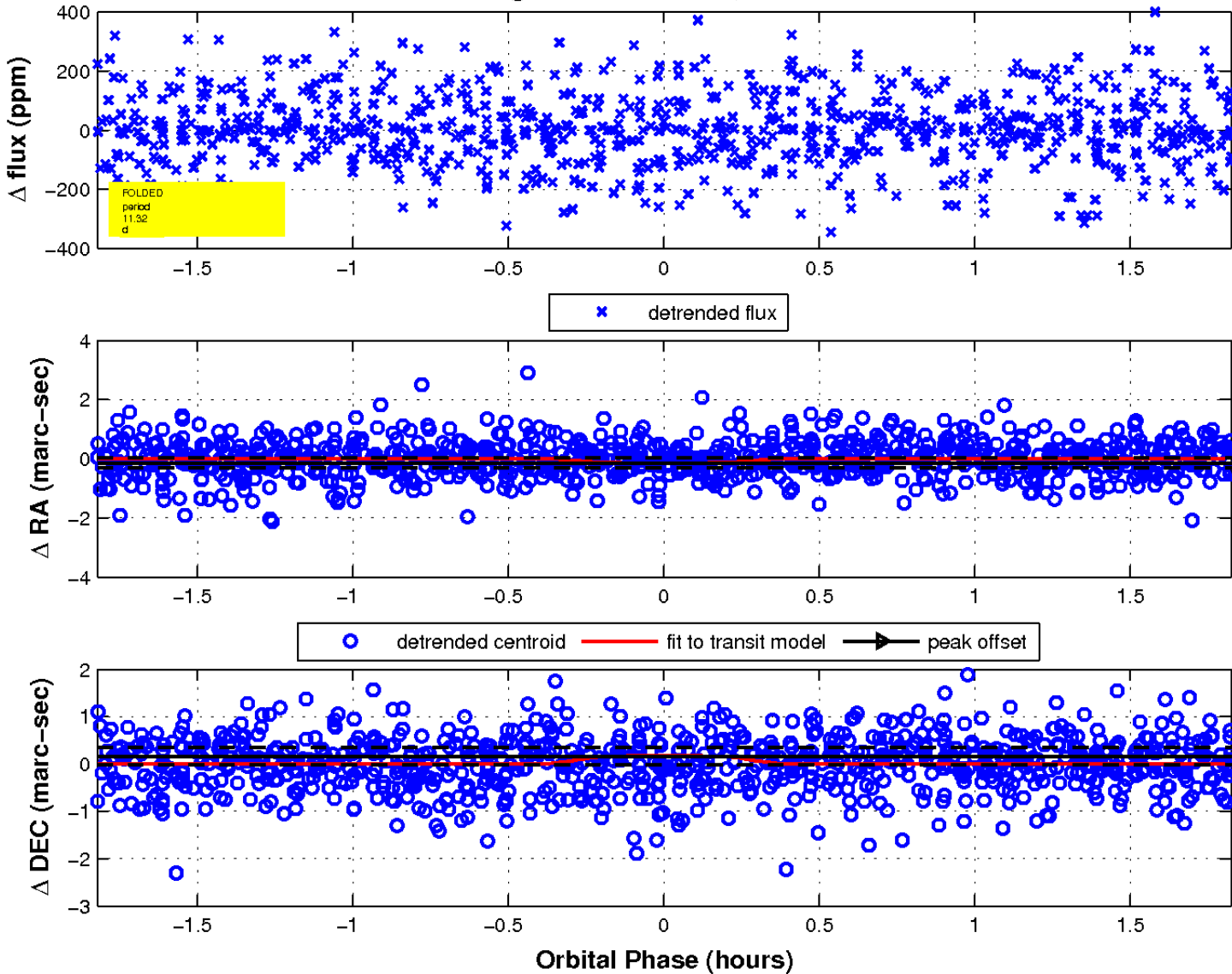




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.

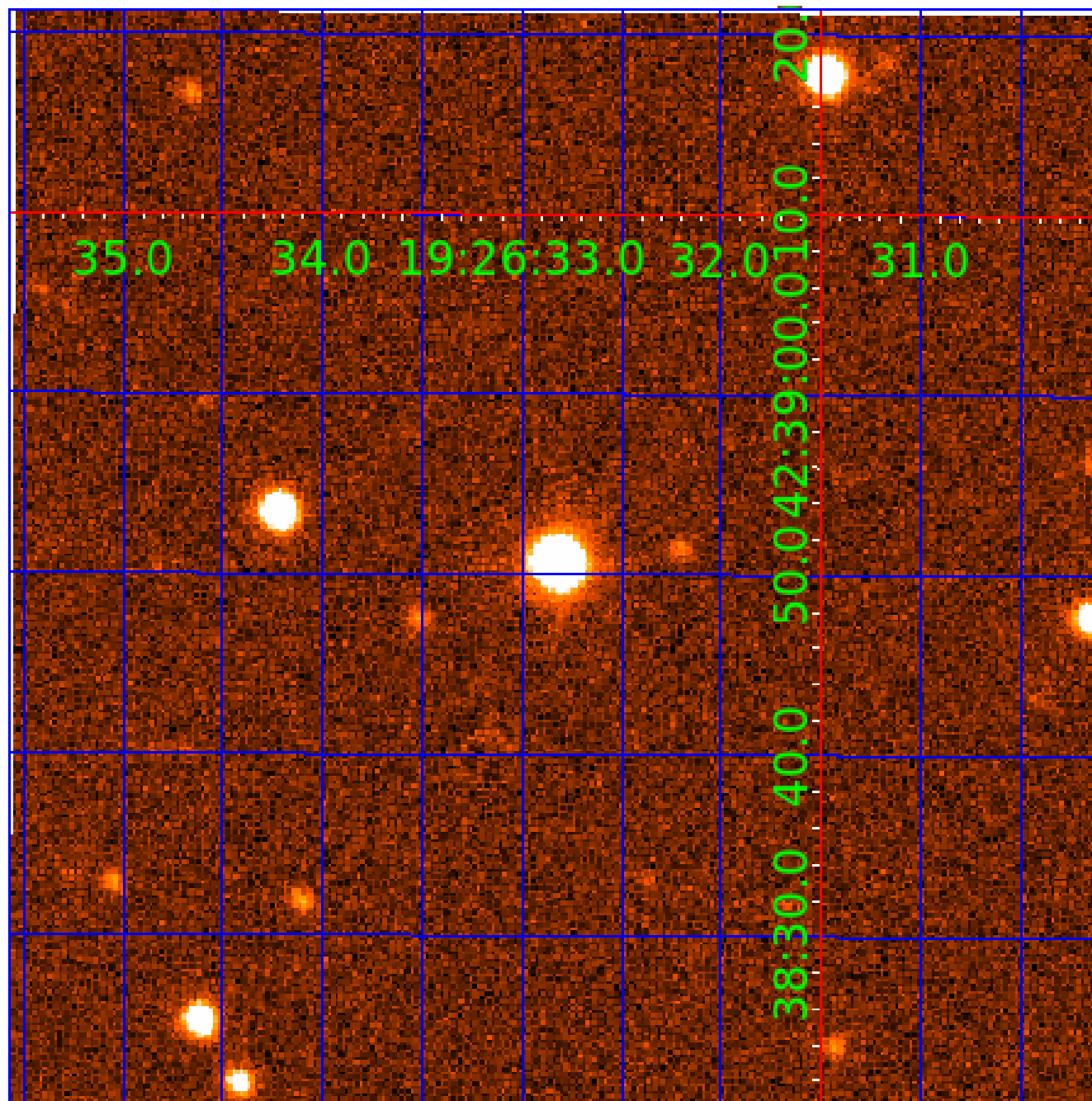


fluxWeightedCentroids, Planet 3 of 5



UKIRT Image

Declination



# KIC 007117284

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007117284-01	OBS	No	0.566772	131.843688	6.6	4.125	9.1	5.7	1.31	6485	0.34	13391.74
007117284-02	OBS	No	23.796793	136.493510	57.4	2.603	11.3	4.7	1.31	6485	1.12	91.77
007117284-03	OBS	No	11.322769	131.696398	319.2	0.609	11.3	12.2	1.31	6485	2.52	247.05
007117284-04	OBS	No	9.030618	136.124683	109.7	3.110	10.1	11.3	1.31	6485	1.57	334.01
007117284-05	OBS	No	13.097523	134.745744	251.8	0.872	10.6	13.7	1.31	6485	2.11	203.45

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007117284-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_FEW_MEAS—HALO_GHOST—EPHEM_MATCH
007117284-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007117284-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007117284-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007117284-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS—HALO_GHOST

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

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

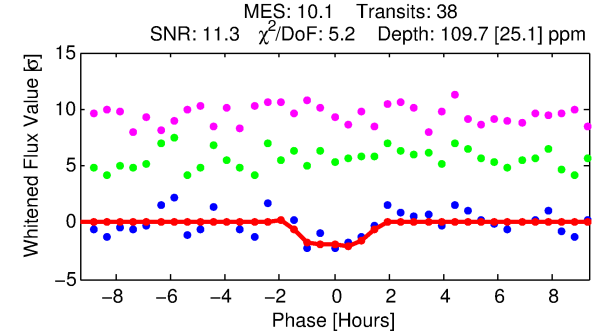
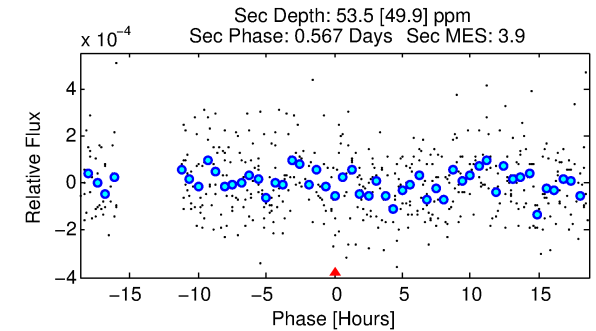
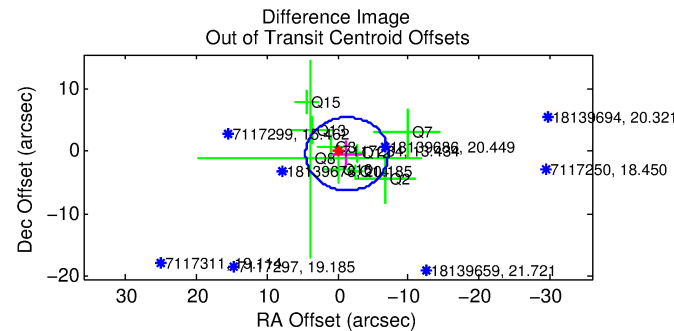
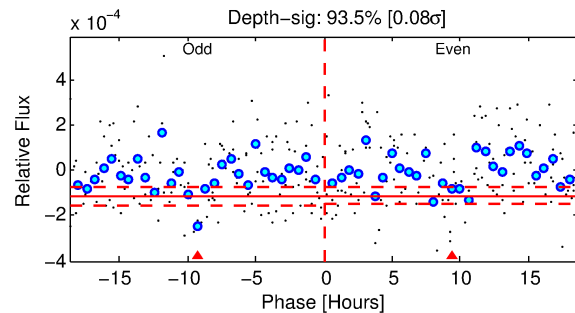
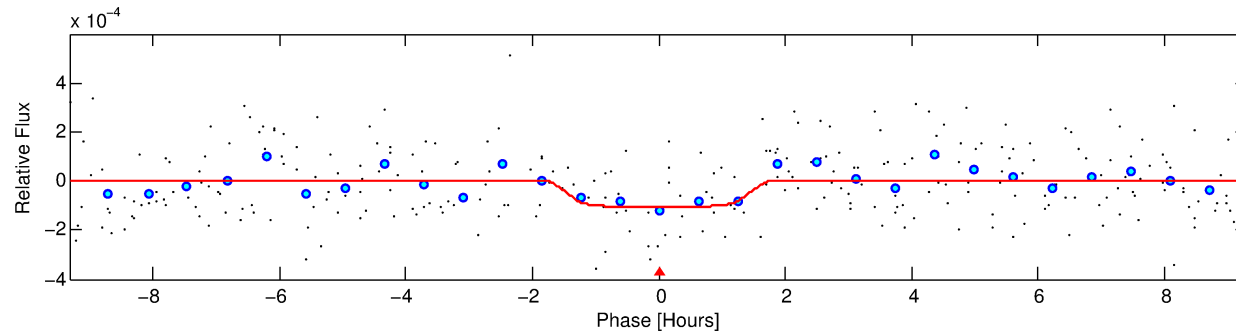
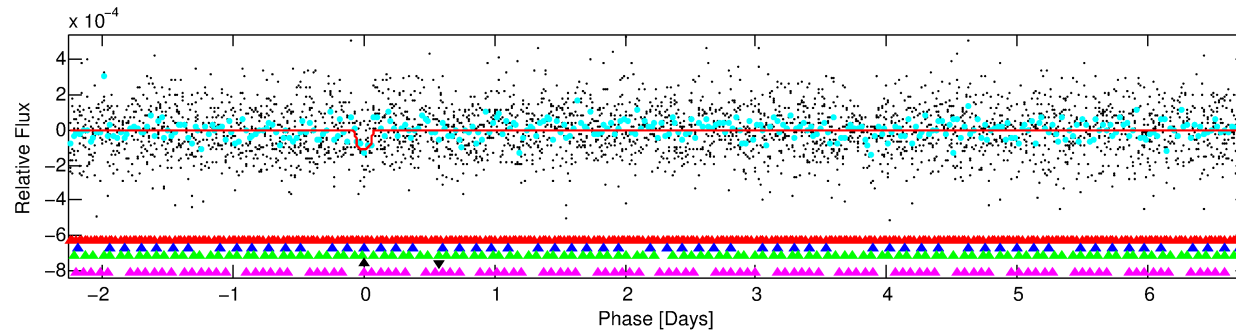
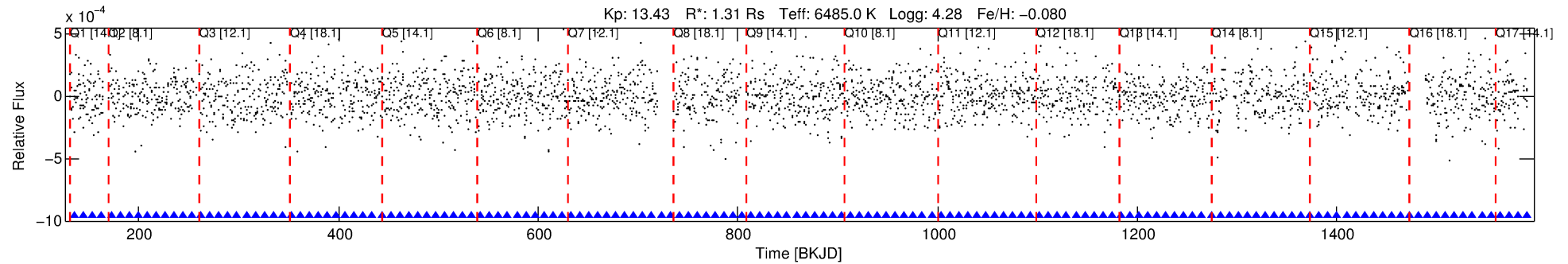
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007117284-04

No Significant Match Found

# DV One-Page Summary

KIC: 7117284 Candidate: 4 of 5 Period: 9.031 d



## DV Fit Results:

Period = 9.03062 [0.00017] d  
Epoch = 136.1247 [0.0153] BKJD  
Rp/R\* = 0.0110 [0.0147]  
a/R\* = 11.54 [86.37]  
b = 0.87 [2.18]  
Seff = 334.01 [99.09]  
Teq = 1090 [81] K  
Rp = 1.57 [2.13] Re  
a = 0.0902 [0.0169] AU  
Ag = 97.36 [277.40] [0.35 $\sigma$ ]  
Teffp = 5294 [3758] K [1.12 $\sigma$ ]

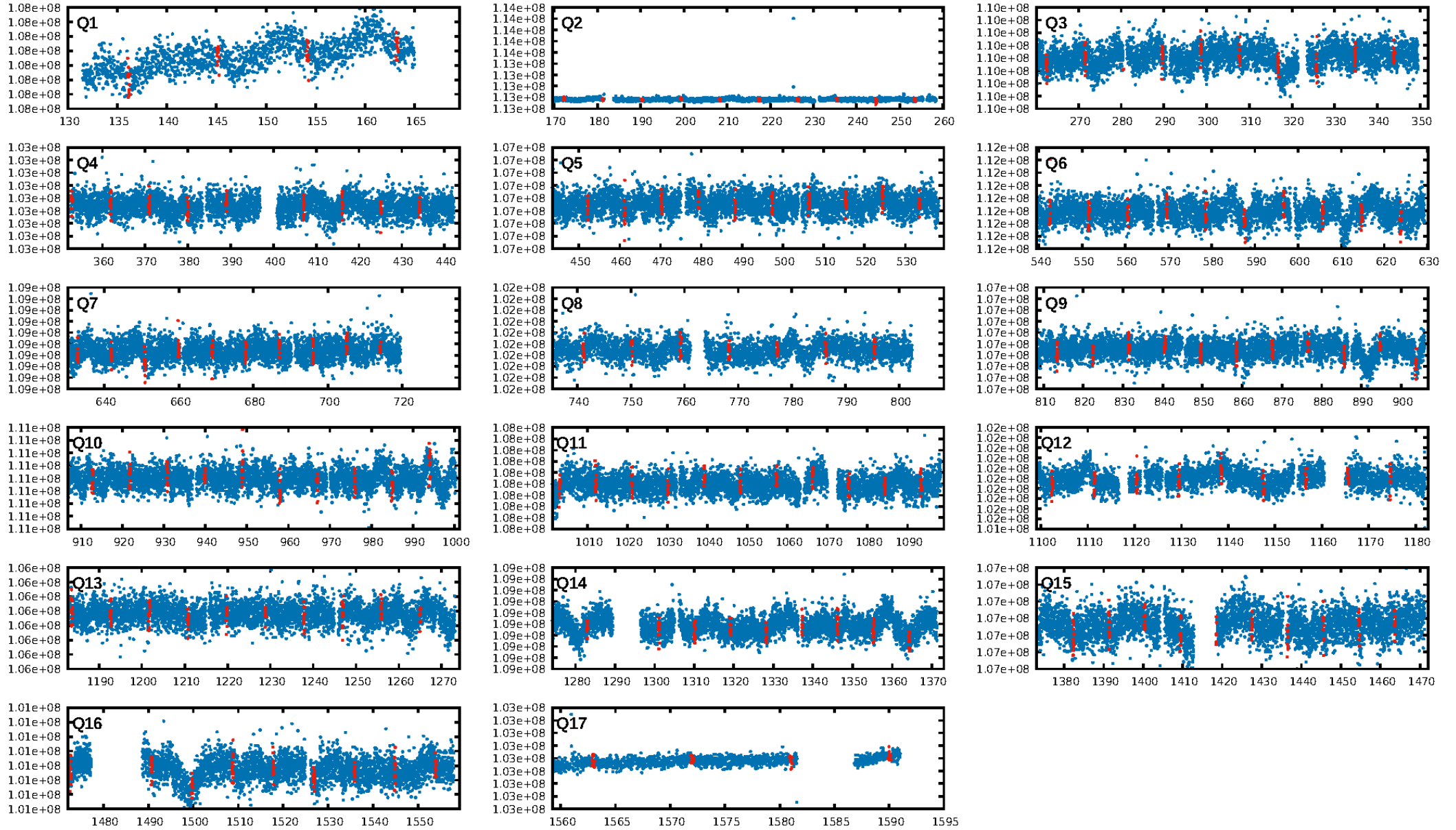
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [39.32 $\sigma$ ]  
LongPeriod-sig: 100.0% [17.36 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.09e-13  
RollingBand-fgt: 1.00 [34/34]  
GhostDiagnostic-chr: 0.749  
Centroid-sig: 0.5%  
Centroid-so: 1.200 arcsec [2.28 $\sigma$ ]  
OotOffset-rm: 1.395 arcsec [0.71 $\sigma$ ]  
KicOffset-rm: 1.533 arcsec [0.79 $\sigma$ ]  
OotOffset-st: 2/3/3/1 [9]  
KicOffset-st: 2/3/3/1 [9]  
DiffImageQuality-fgm: 0.11 [1/9]  
DiffImageOverlap-fno: 0.00 [0/17]

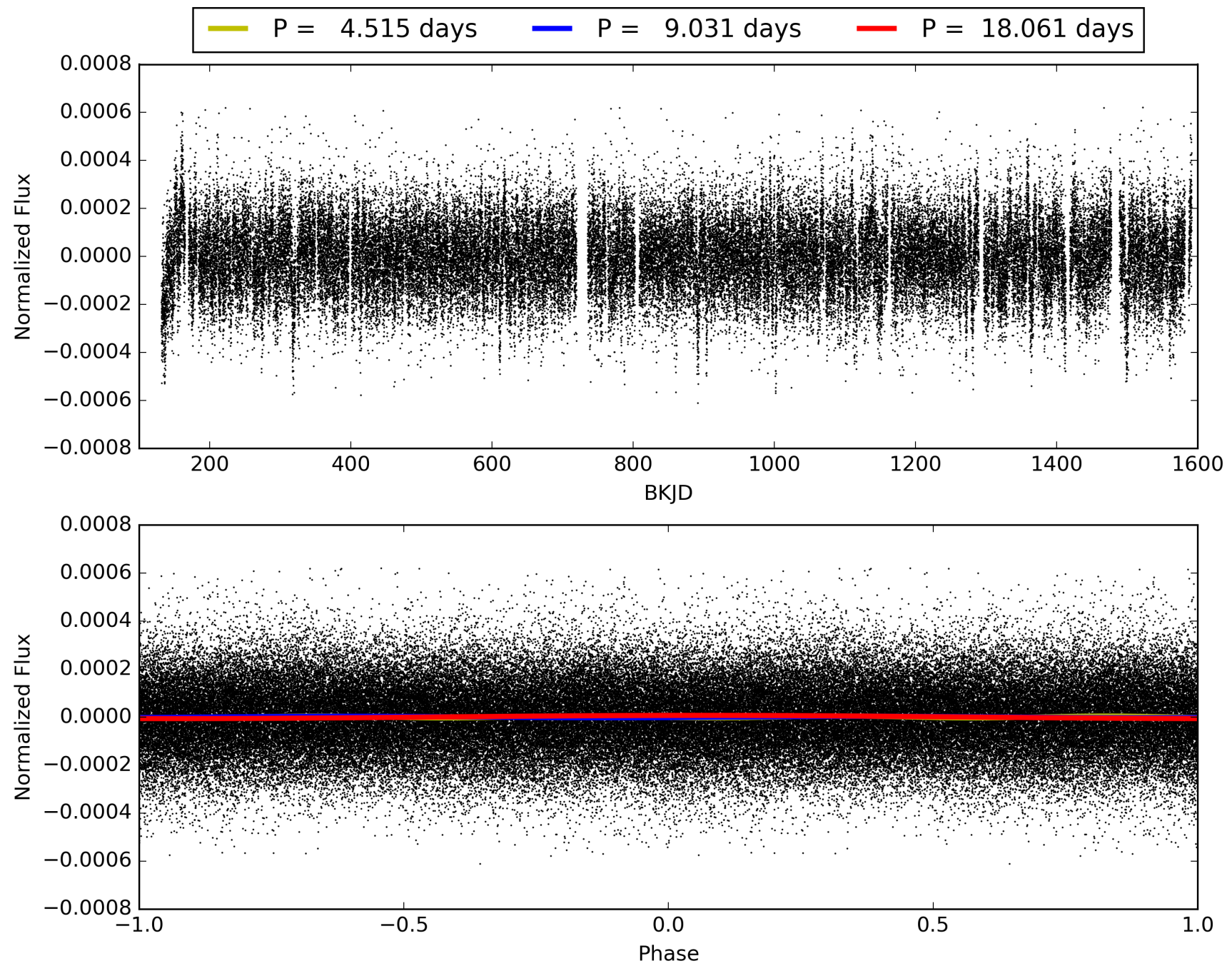
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:00:28 Z

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

# TCE 007117284-04, PDC Light Curves



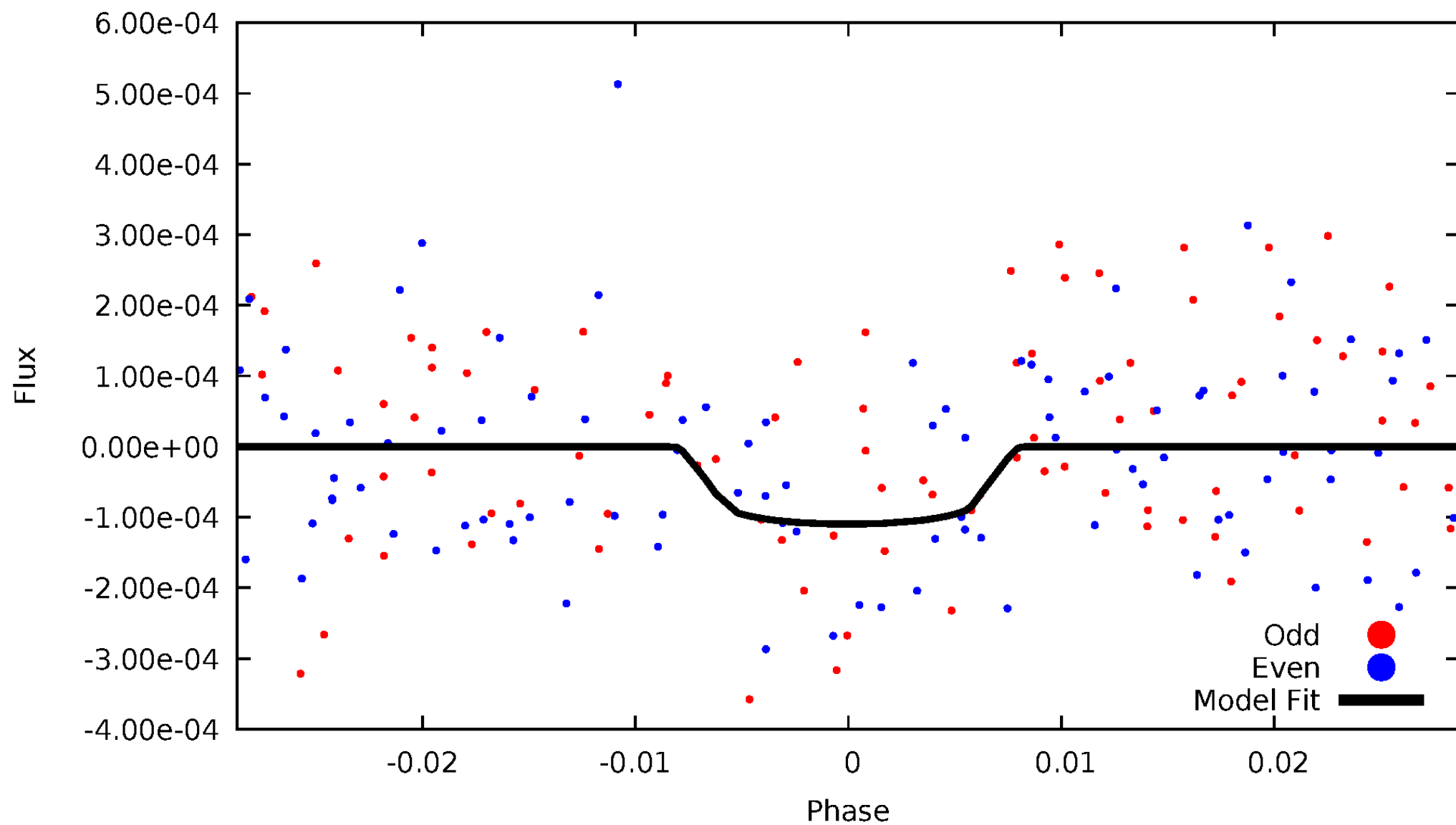
TCE 007117284-04





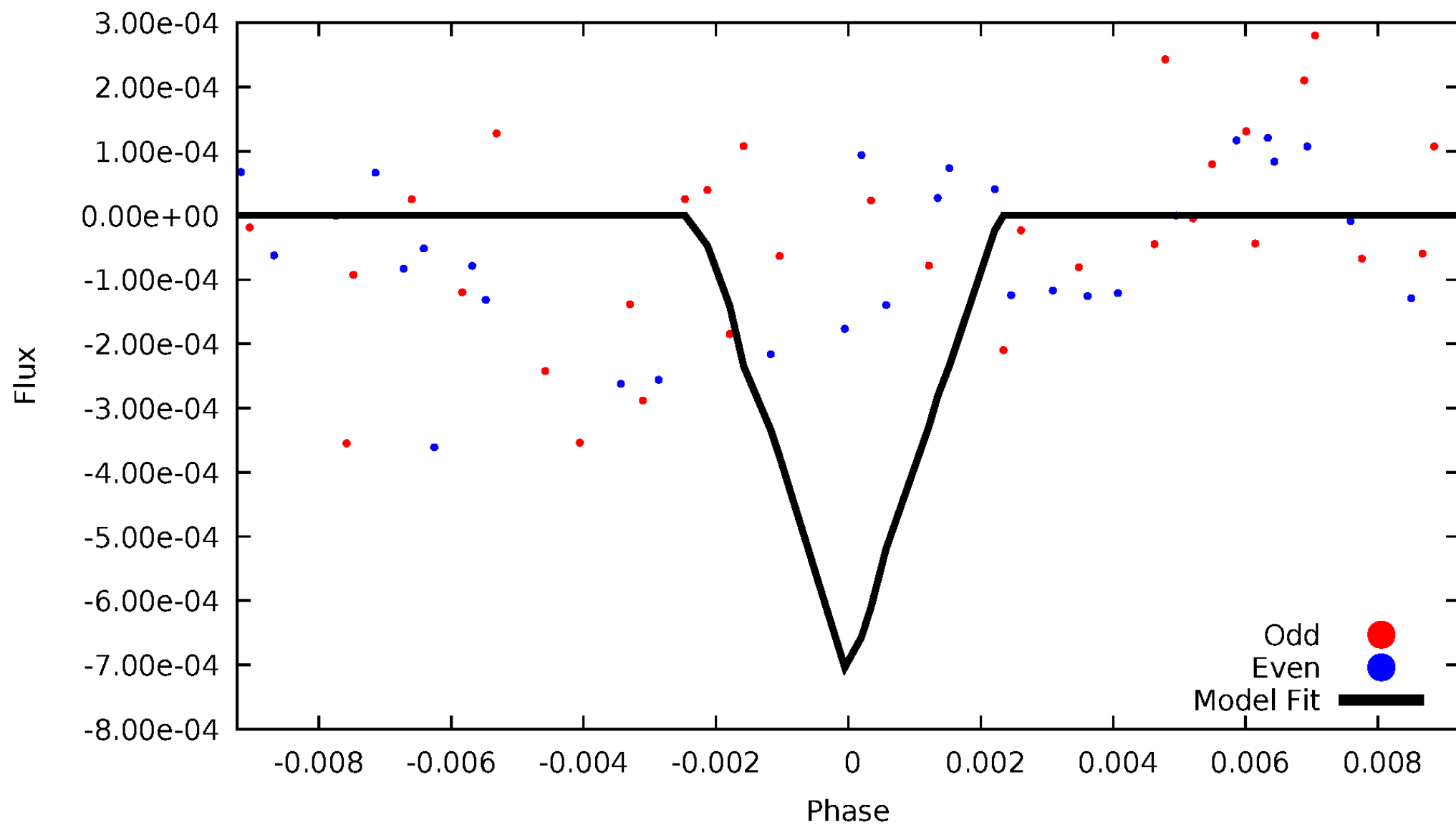
# DV Odd/Even

TCE 007117284-04



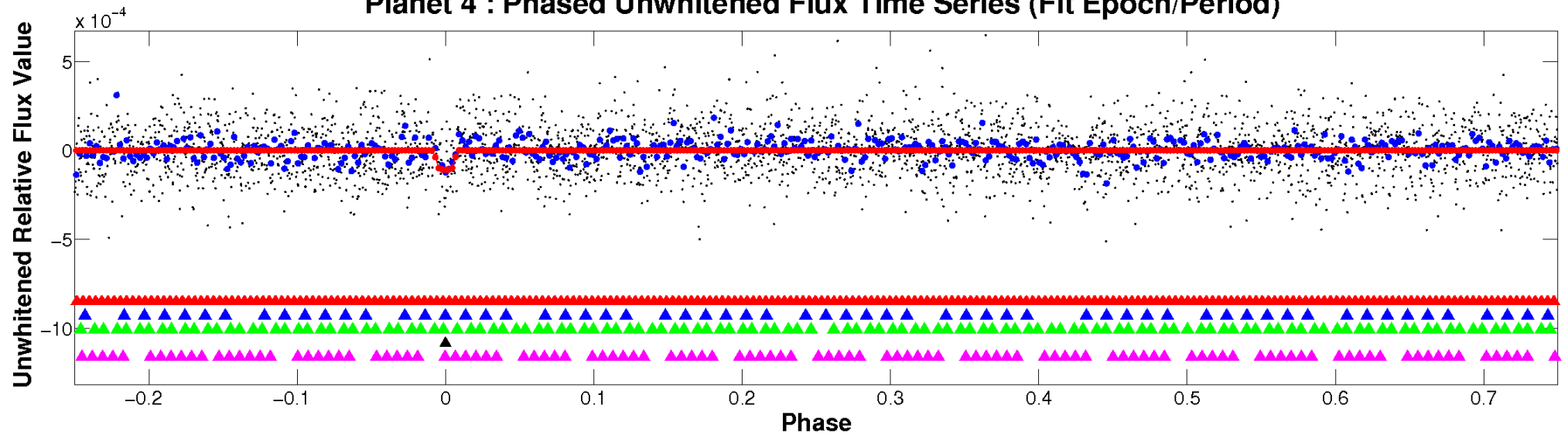
# ALT Odd/Even

TCE 007117284-04

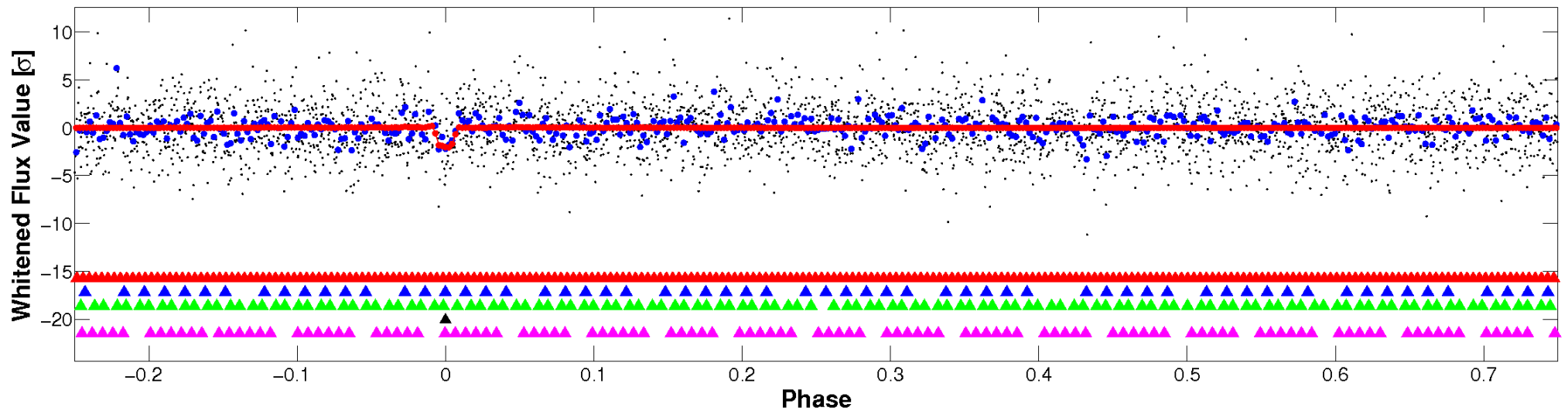


# Non-Whitened Vs. Whitened Light Curve

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

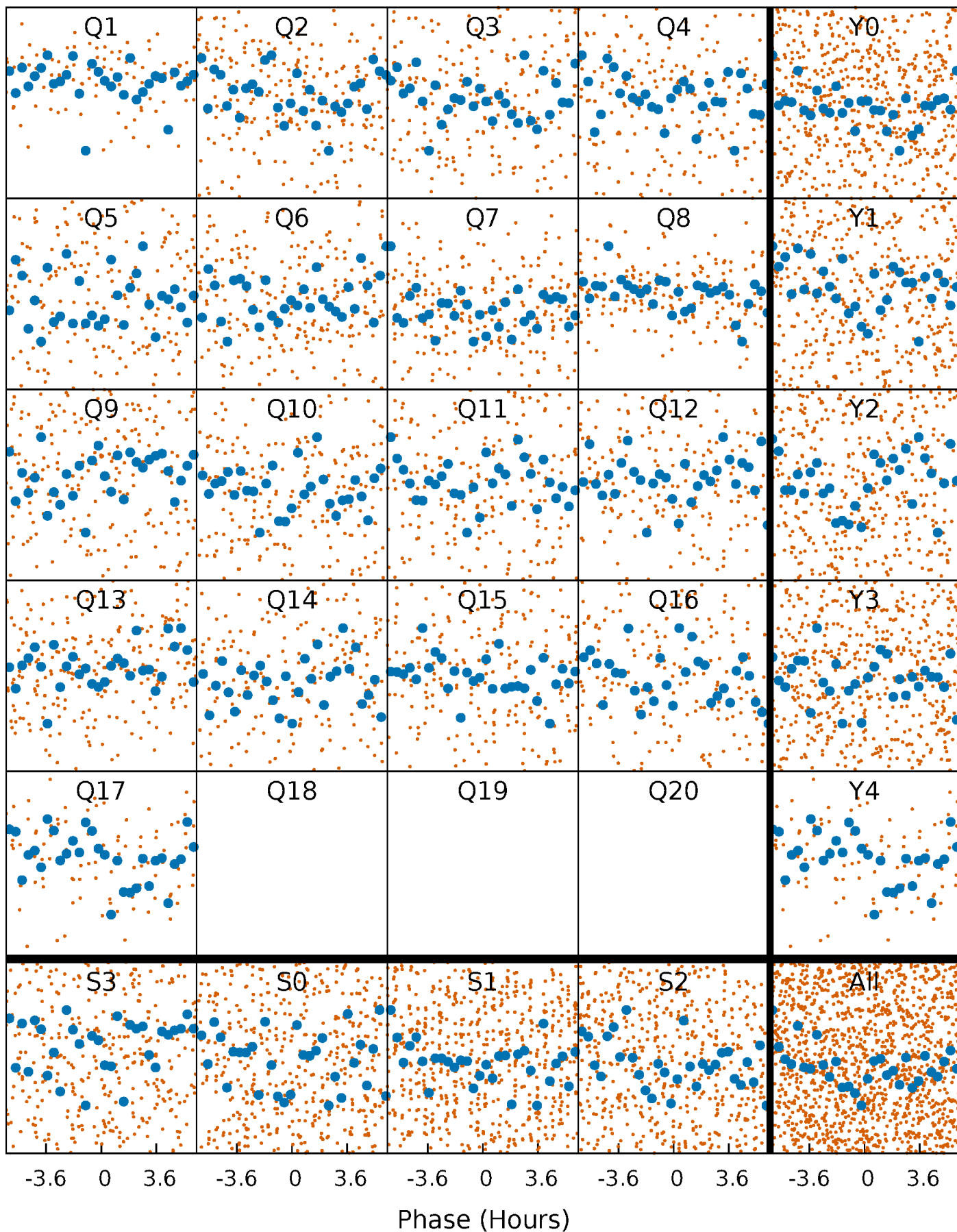


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



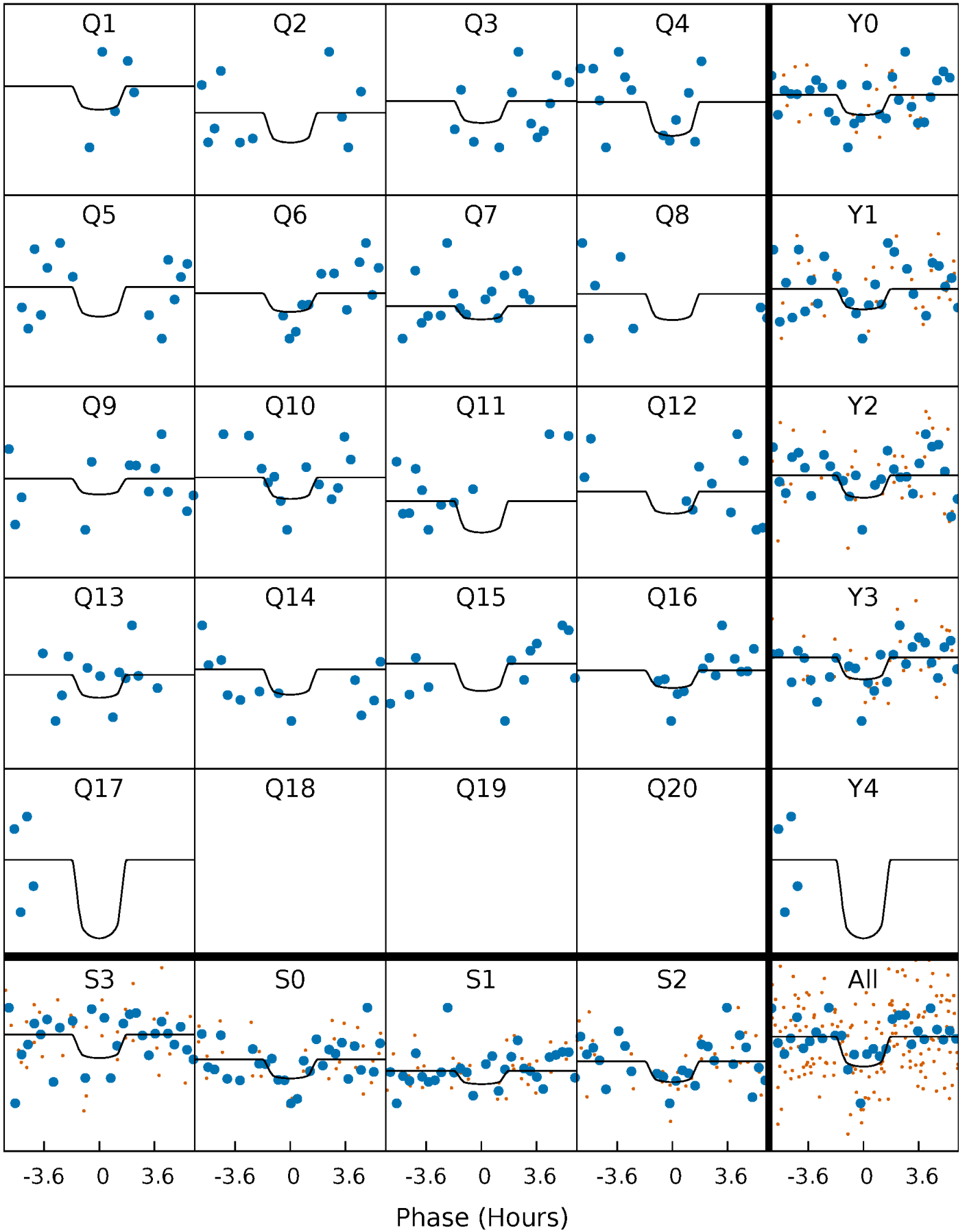
# PDC Quarter-Phased Transit Curves

TCE 007117284-04   P= 9.030618 Days    $T_0=136.124683$  (BKJD)



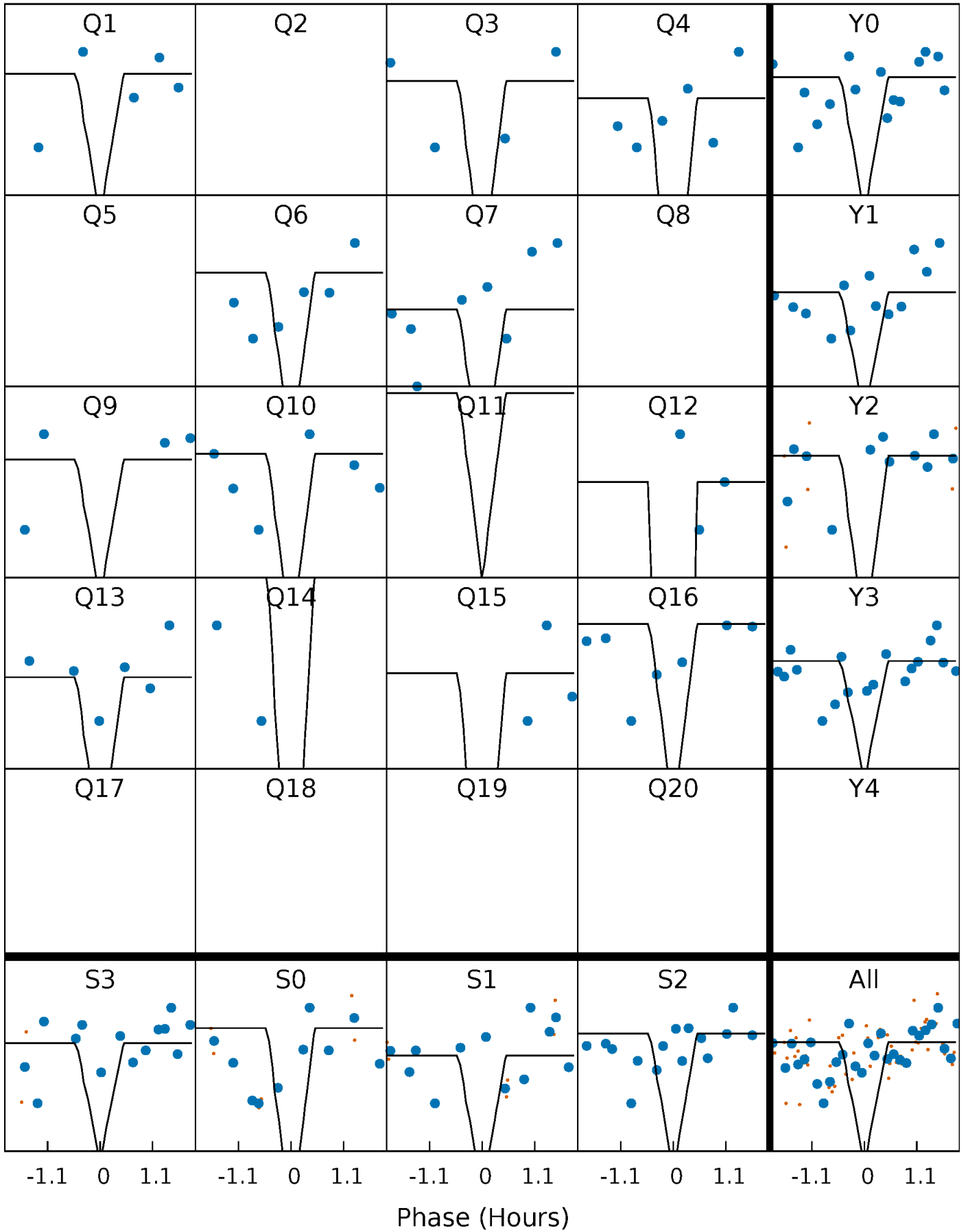
# DV Quarter-Phased Transit Curves

TCE 007117284-04   P= 9.030618 Days    $T_0=136.124683$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

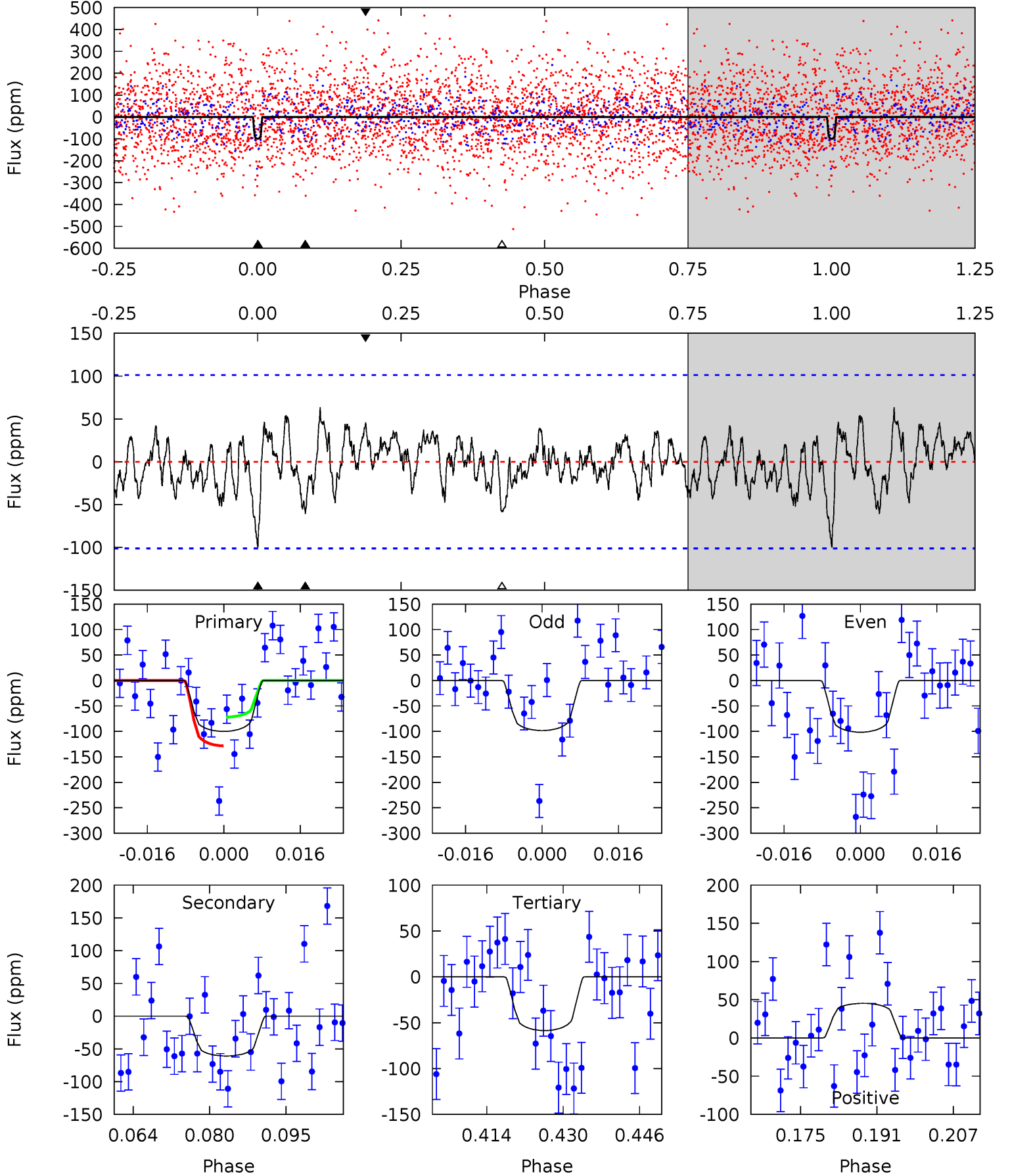
TCE 007117284-04 P= 9.030685 Days  $T_0=136.146183$  (BKJD)



# DV Model-Shift Uniqueness Test

007117284-04, P = 9.030618 Days, E = 127.094065 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.88	2.97	2.86	2.21	4.94	2.41	1.05	2.02	2.67	0.11	0.76	0.08	1.21	0.39	1.37

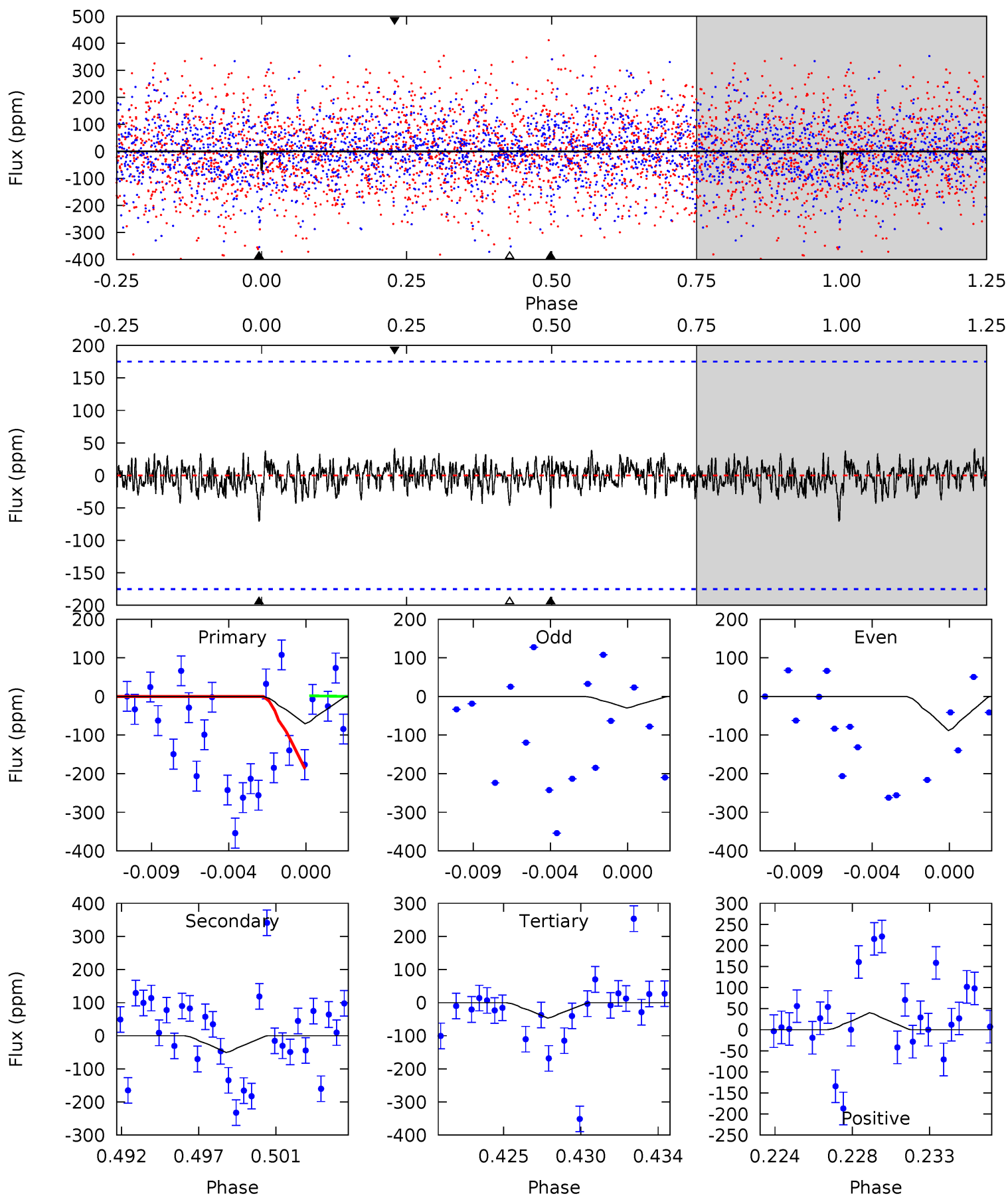




# Alt Model-Shift Uniqueness Test

007117284-04, P = 9.030685 Days, E = 127.115498 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
2.09	1.49	1.38	1.19	5.18	2.84	0.43	0.71	0.90	0.12	0.30	0.86	1.00	0.36	2.69



### Stellar Parameters For KIC 007117284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6485^{+144}_{-208}$	$4.283^{+0.096}_{-0.144}$	$-0.080^{+0.250}_{-0.300}$	$1.310^{+0.296}_{-0.197}$	$1.200^{+0.157}_{-0.157}$	$0.752^{+0.384}_{-0.297}$
	+2%/-3%	+2%/-3%	+312%/-375%	+23%/-15%	+13%/-13%	+51%/-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 007117284-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-61 \pm 20$	$2.24^{+1.90}_{-1.50}$	$1529^{+88}_{-78}$	$4713^{+3298}_{-1036}$	$53^{+445}_{-40}$
Alt.	$-51 \pm 34$	$4.00^{+2.23}_{-2.07}$	$1530^{+88}_{-73}$	$3644^{+1114}_{-774}$	$13^{+45}_{-10}$

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

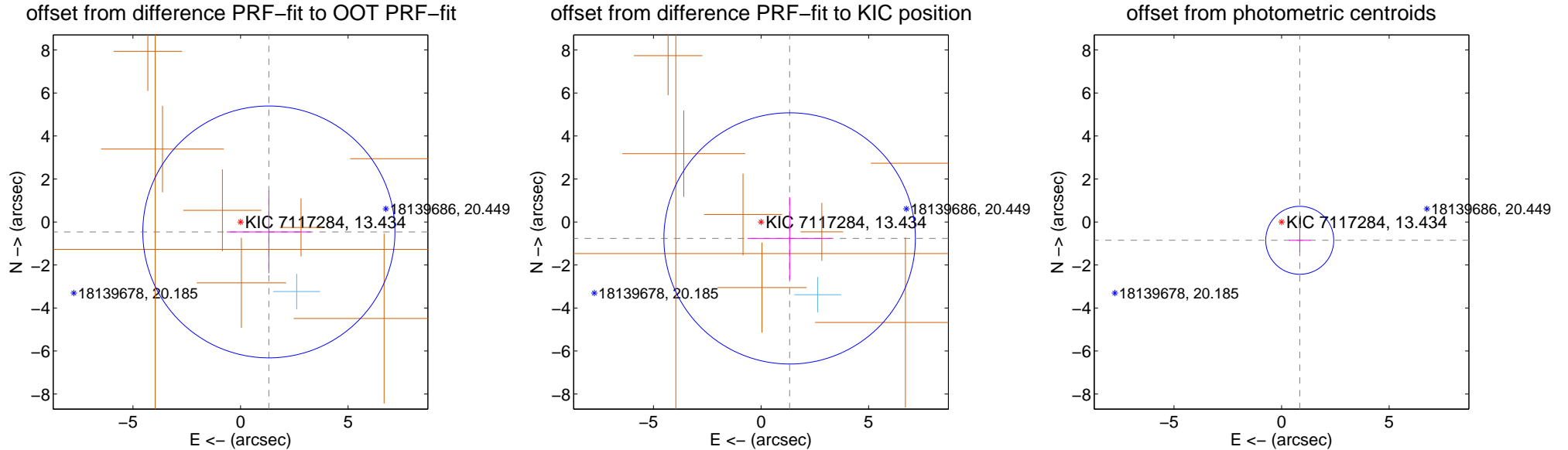
## DV Centroid Data

Supplemental centroid analysis for 007117284-04. Kepler magnitude: 13.43. Transit SNR 11.25

There are 1 quarters with good PRF difference image offsets

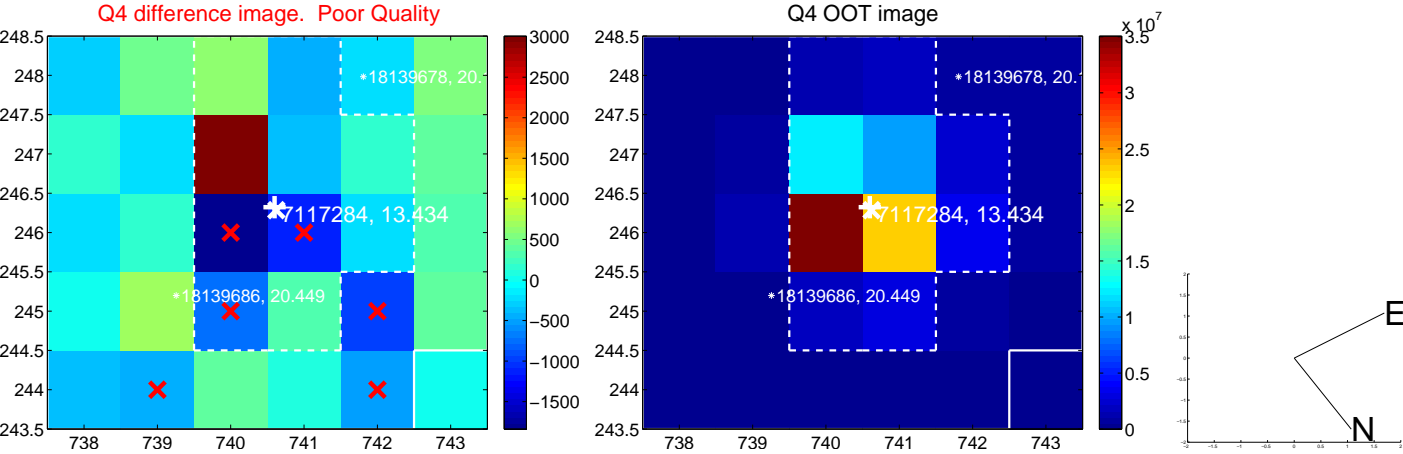
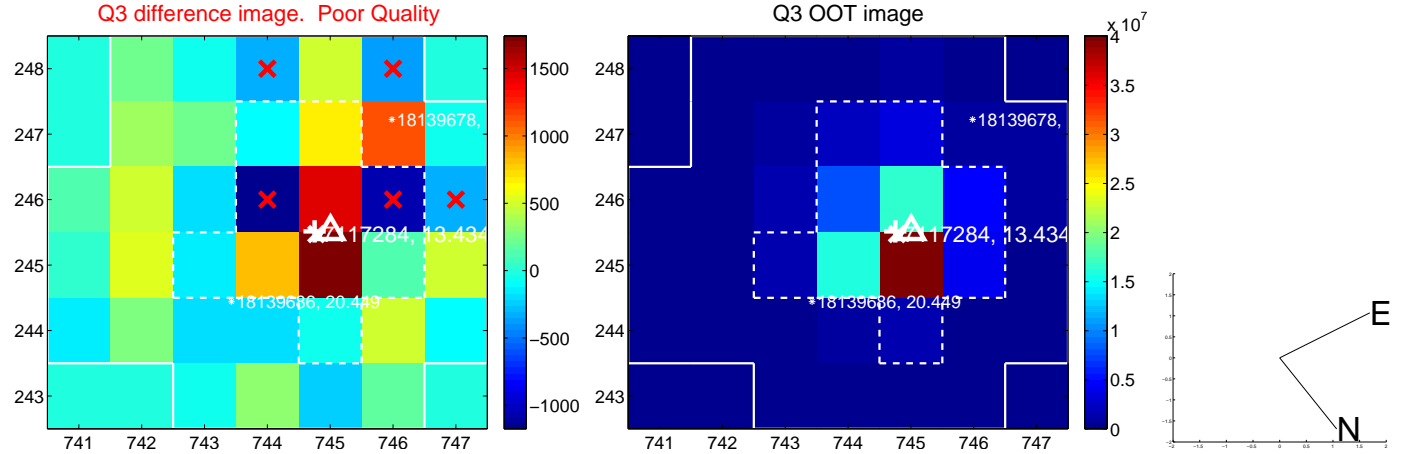
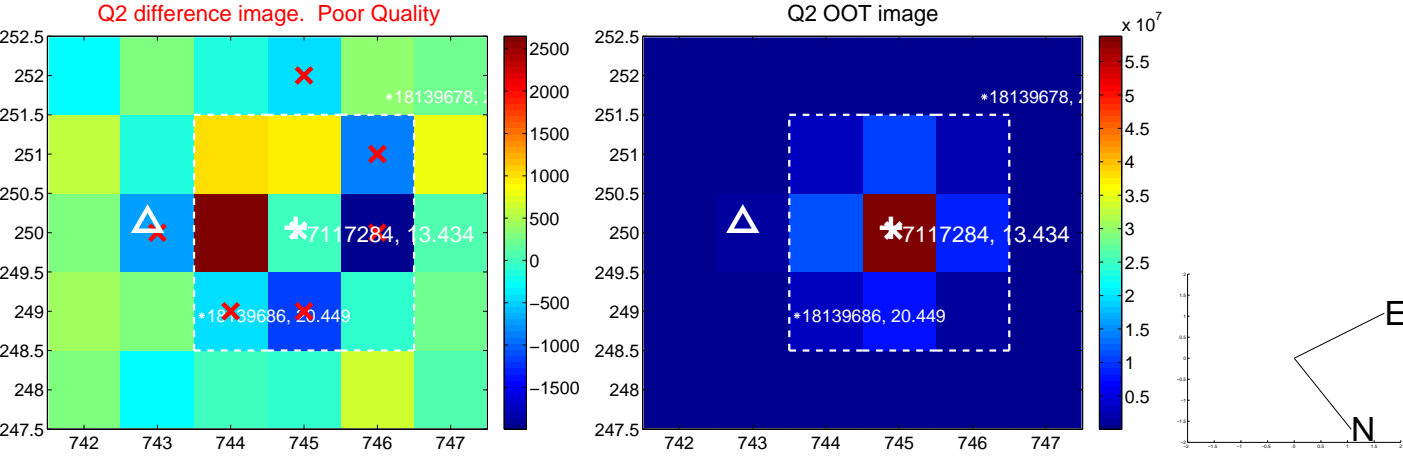
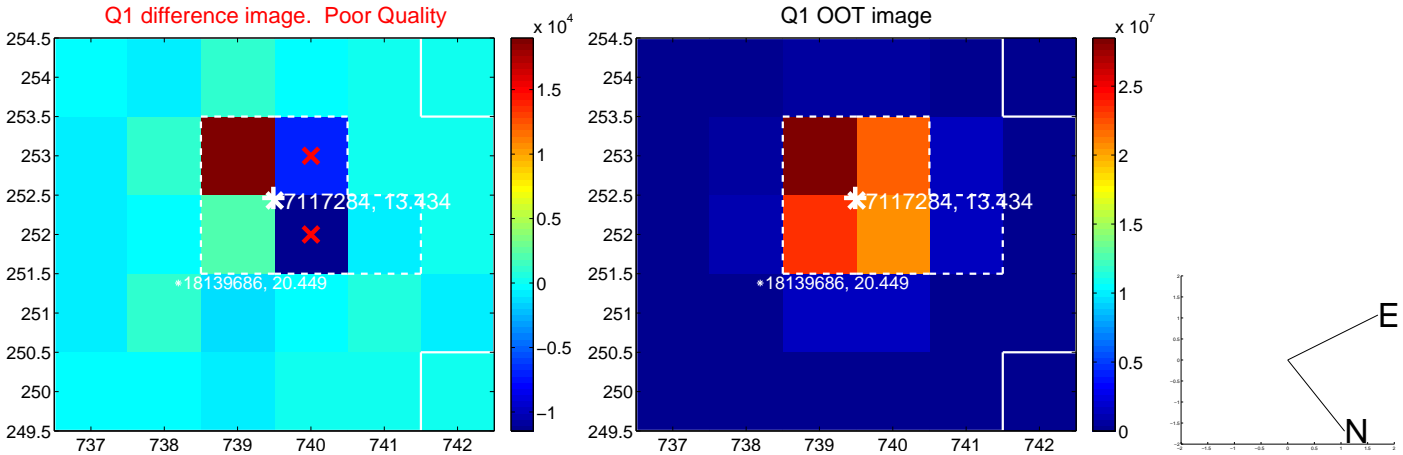
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.395 \pm 1.952$	0.71	$-1.316 \pm 1.956$	$-0.463 \pm 1.920$
PRF-fit source offset from KIC position	$1.533 \pm 1.947$	0.79	$-1.329 \pm 1.956$	$-0.764 \pm 1.920$
photometric centroid source offset	$1.20 \pm 0.53$	2.28	$-0.84 \pm 0.51$	$-0.85 \pm 0.55$

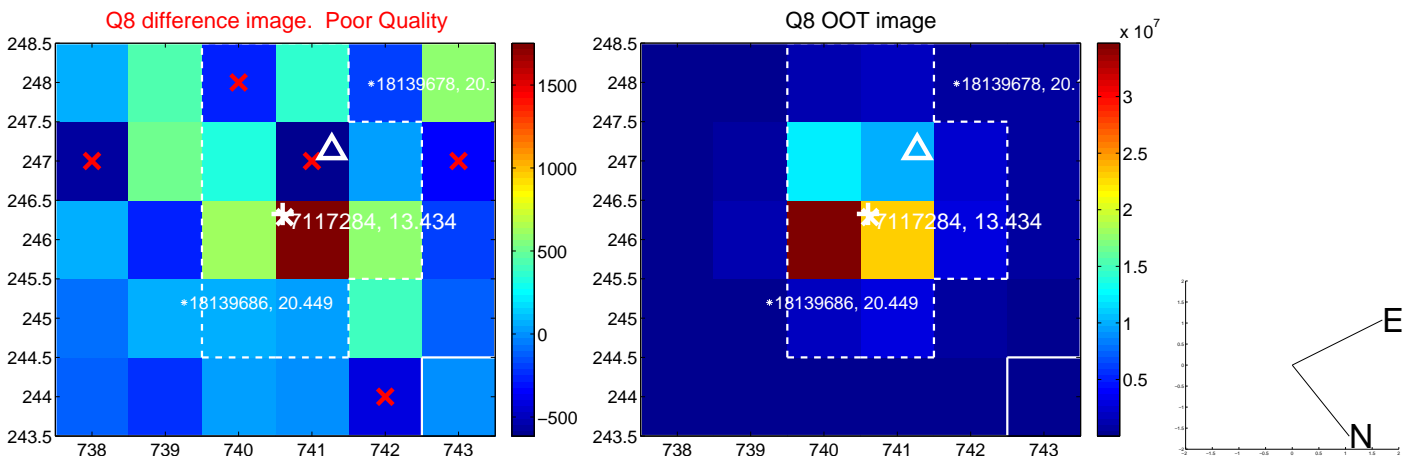
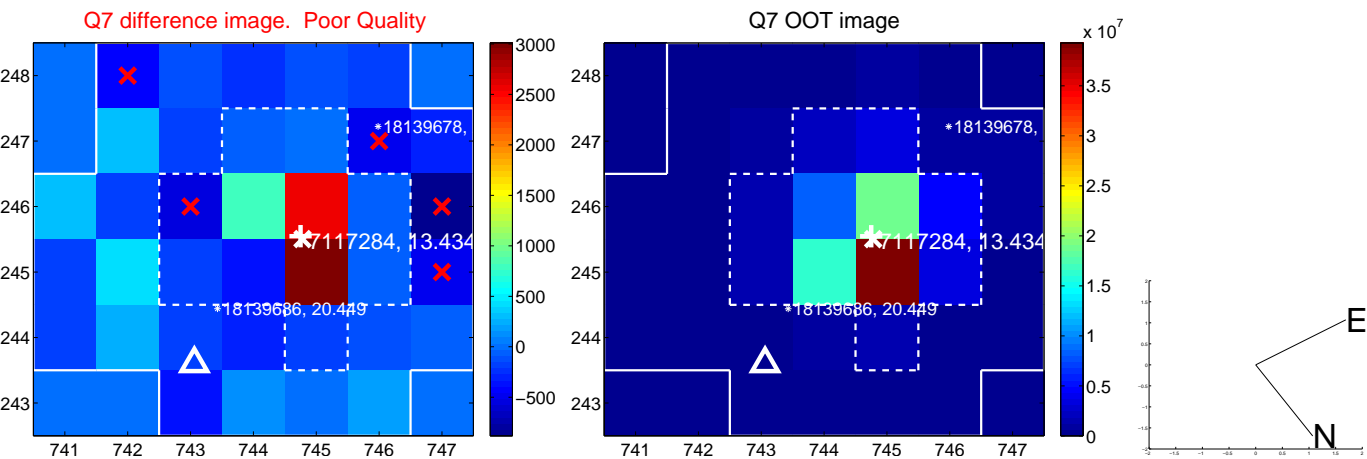
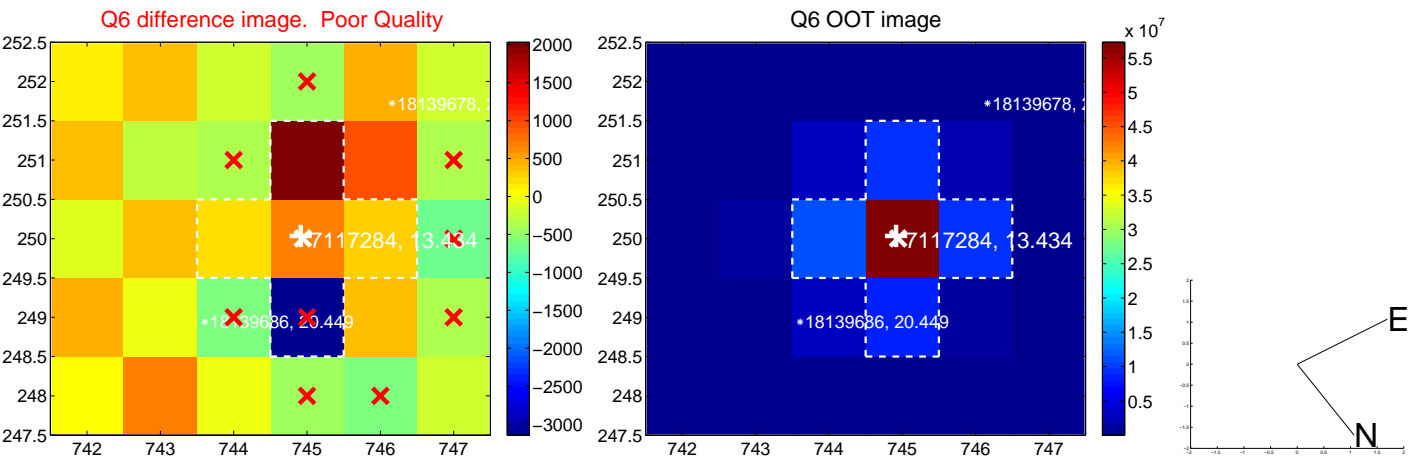
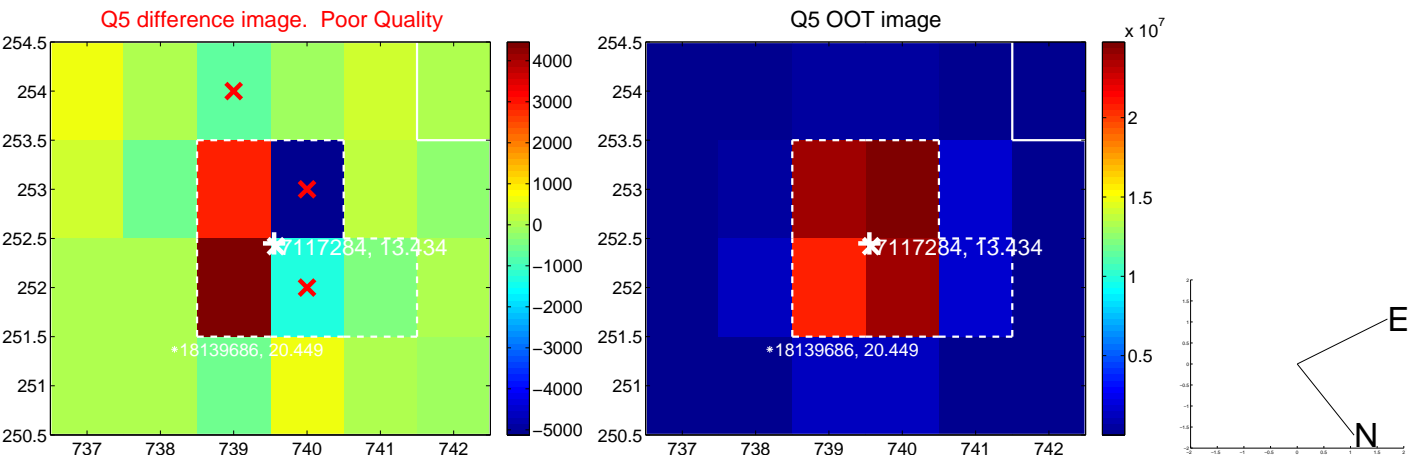


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

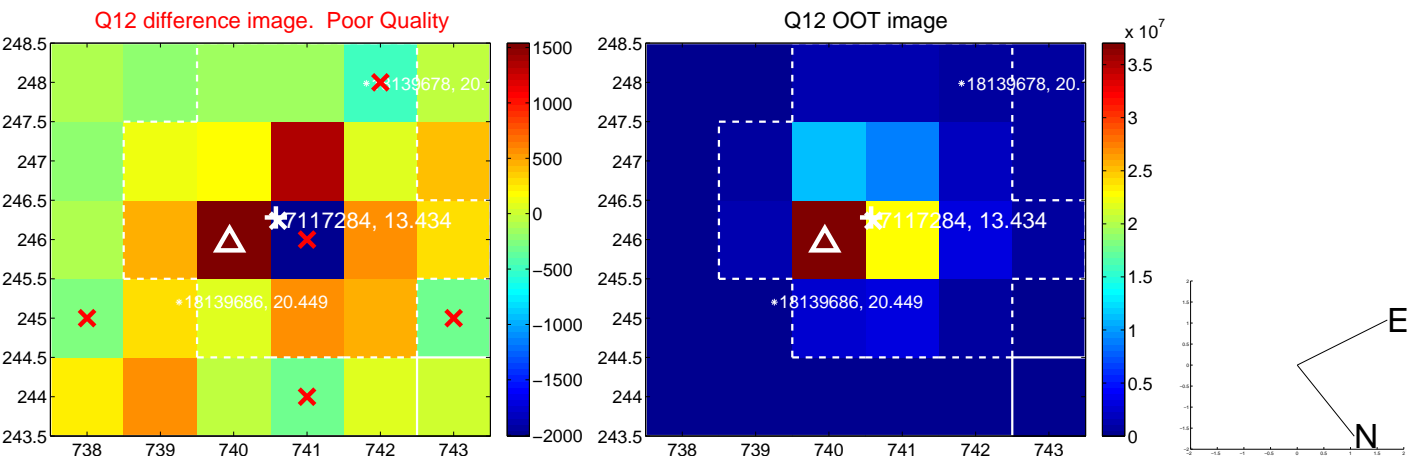
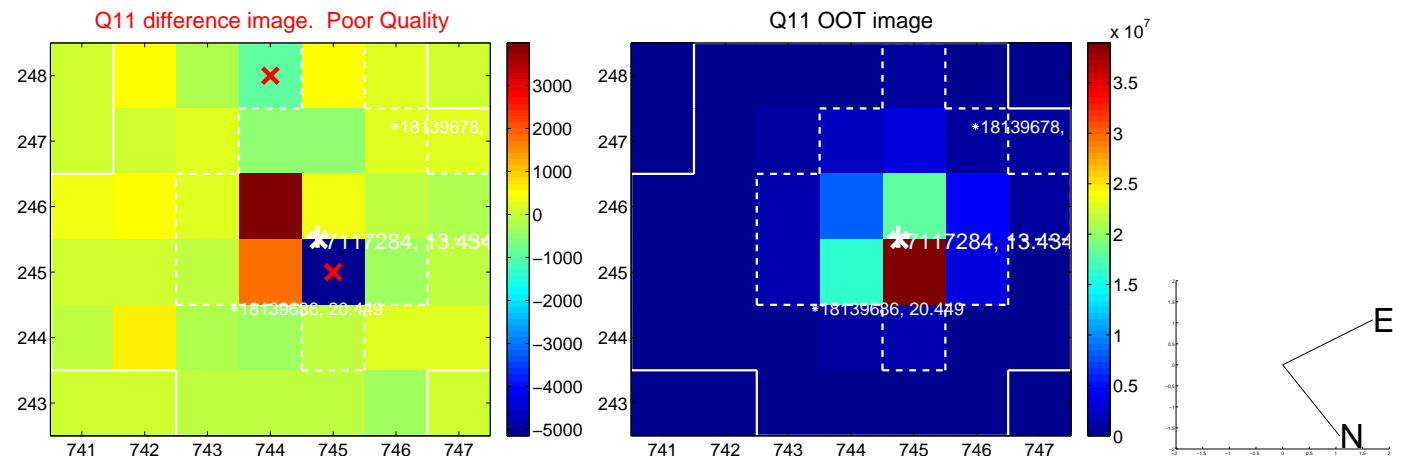
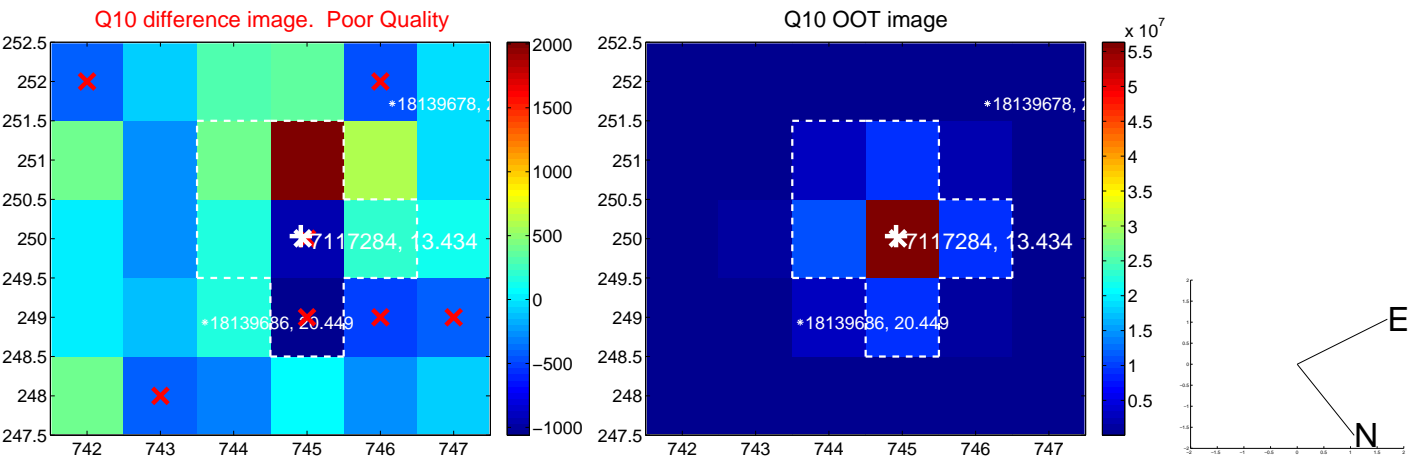
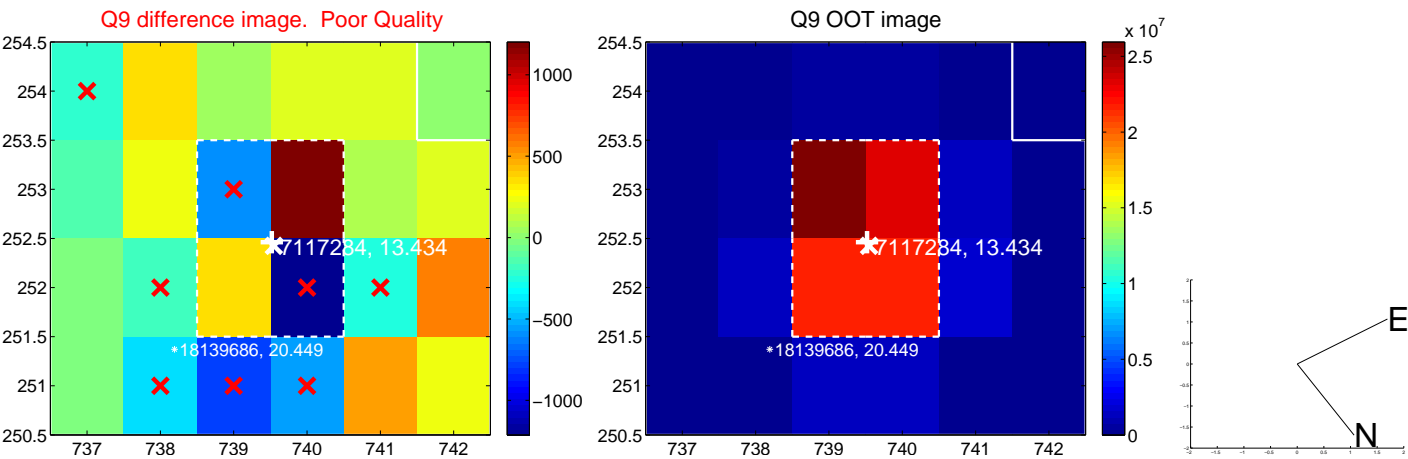
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



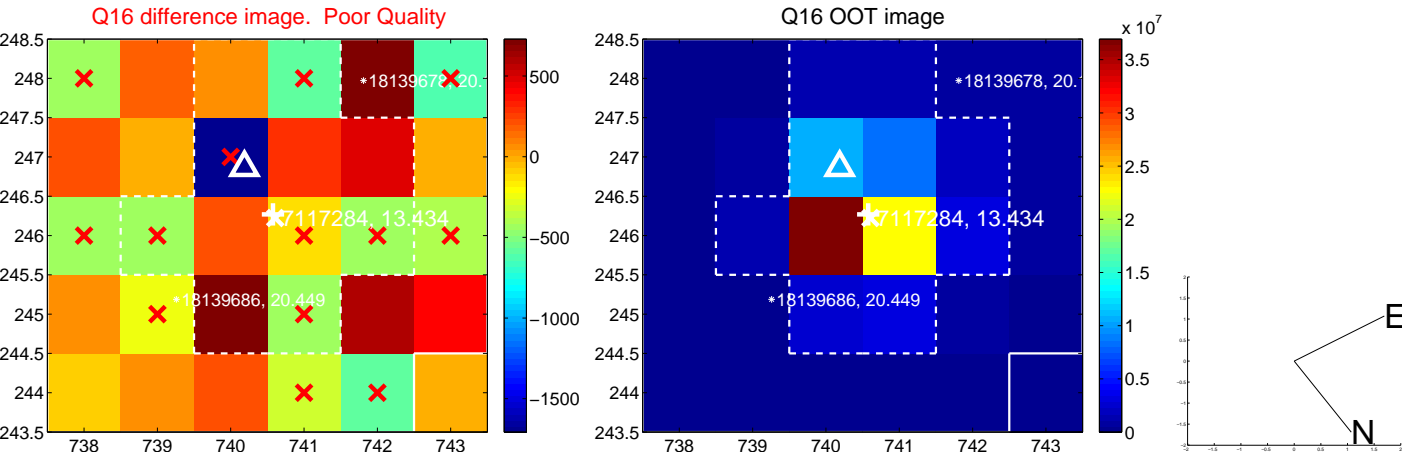
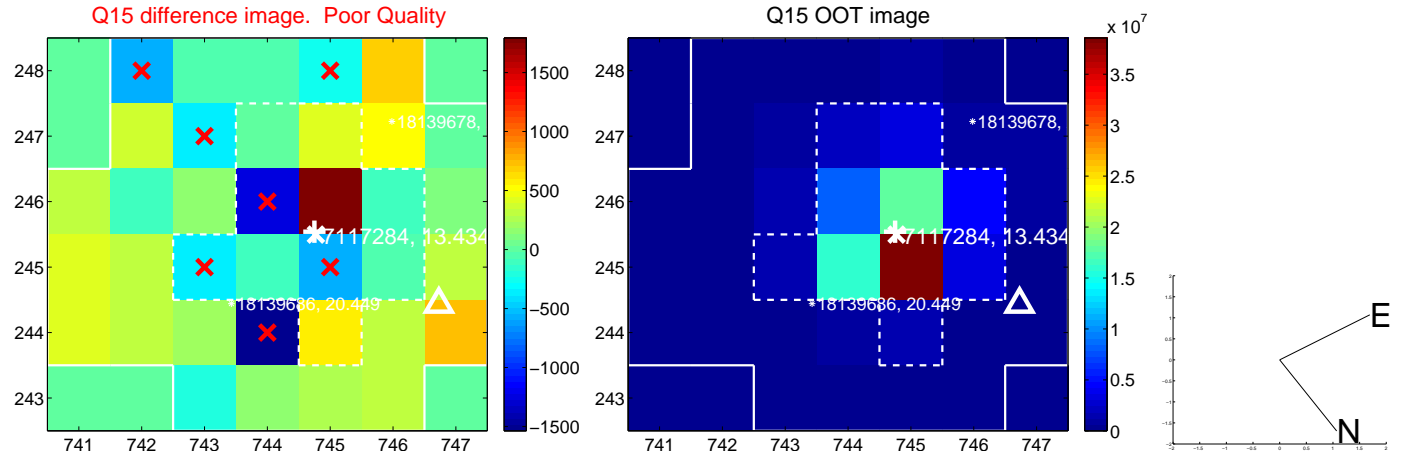
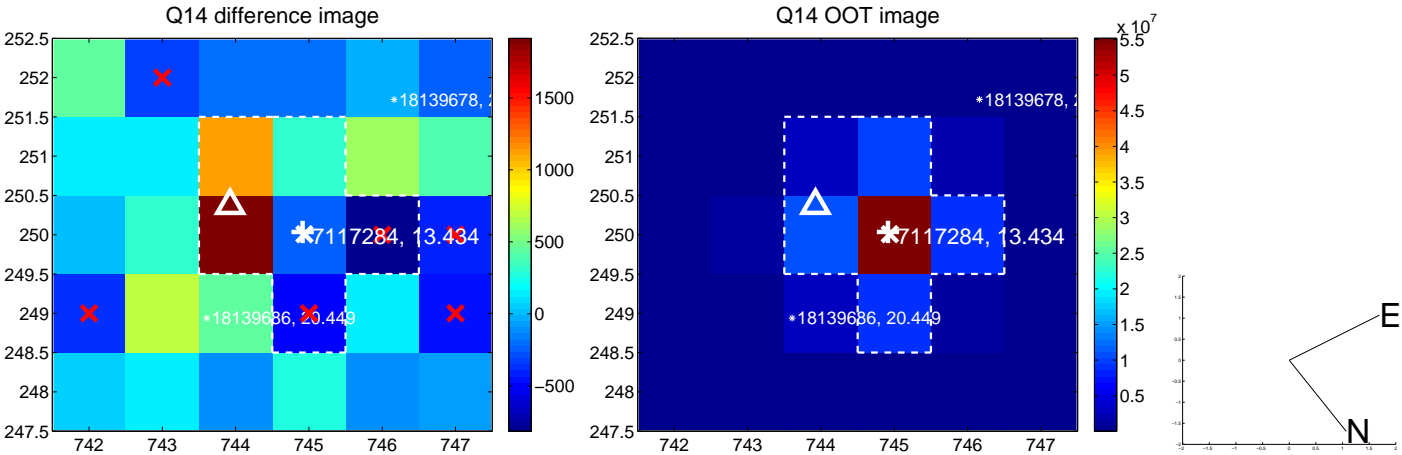
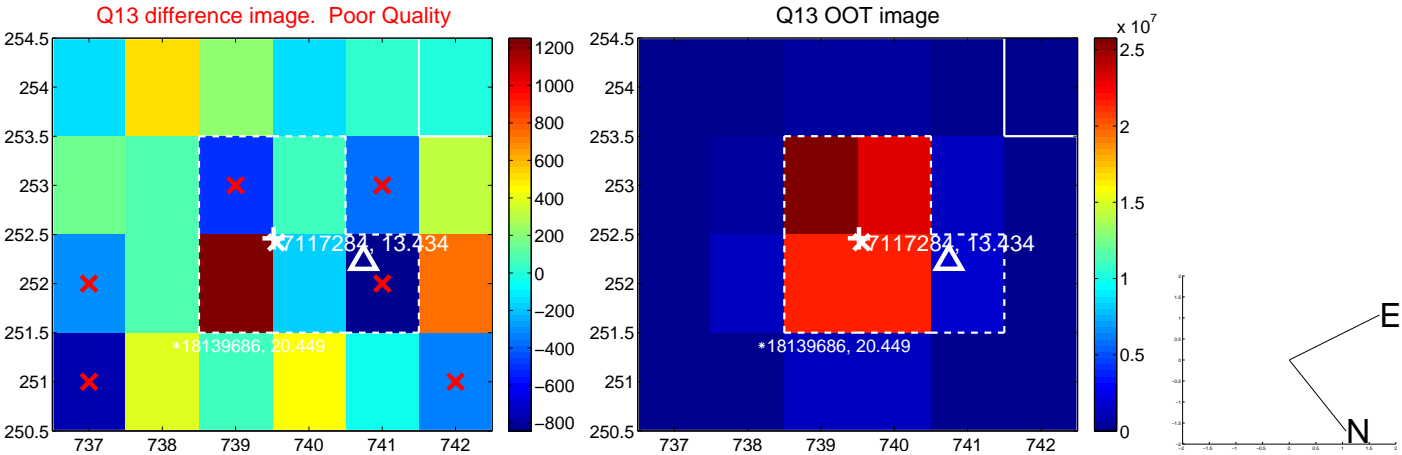
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

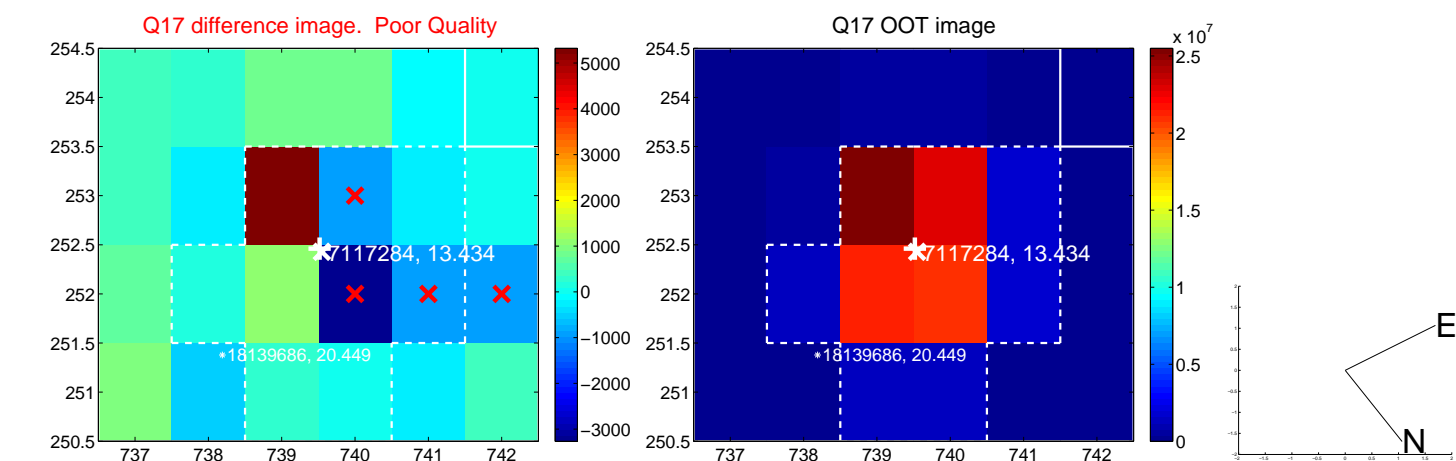


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

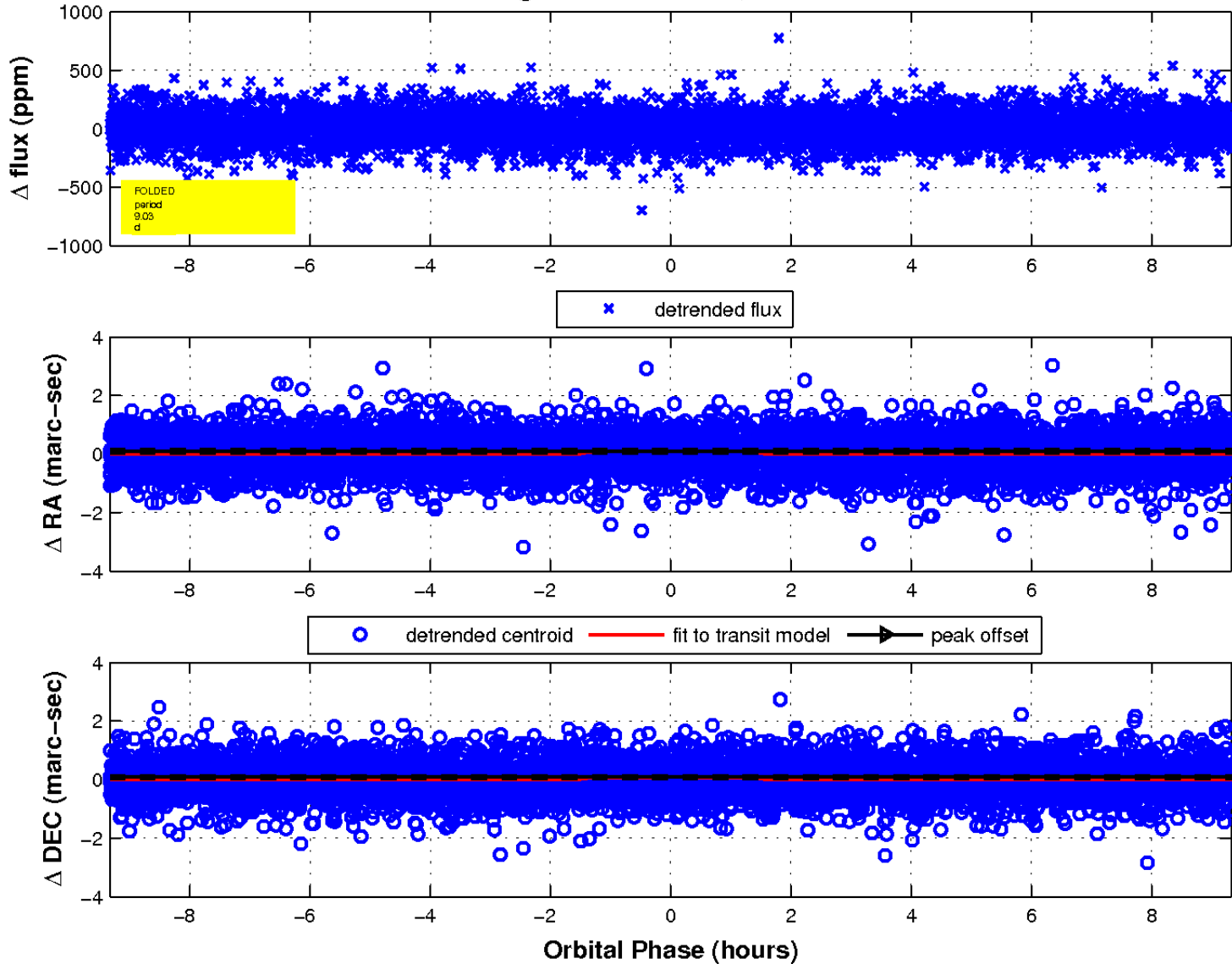




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

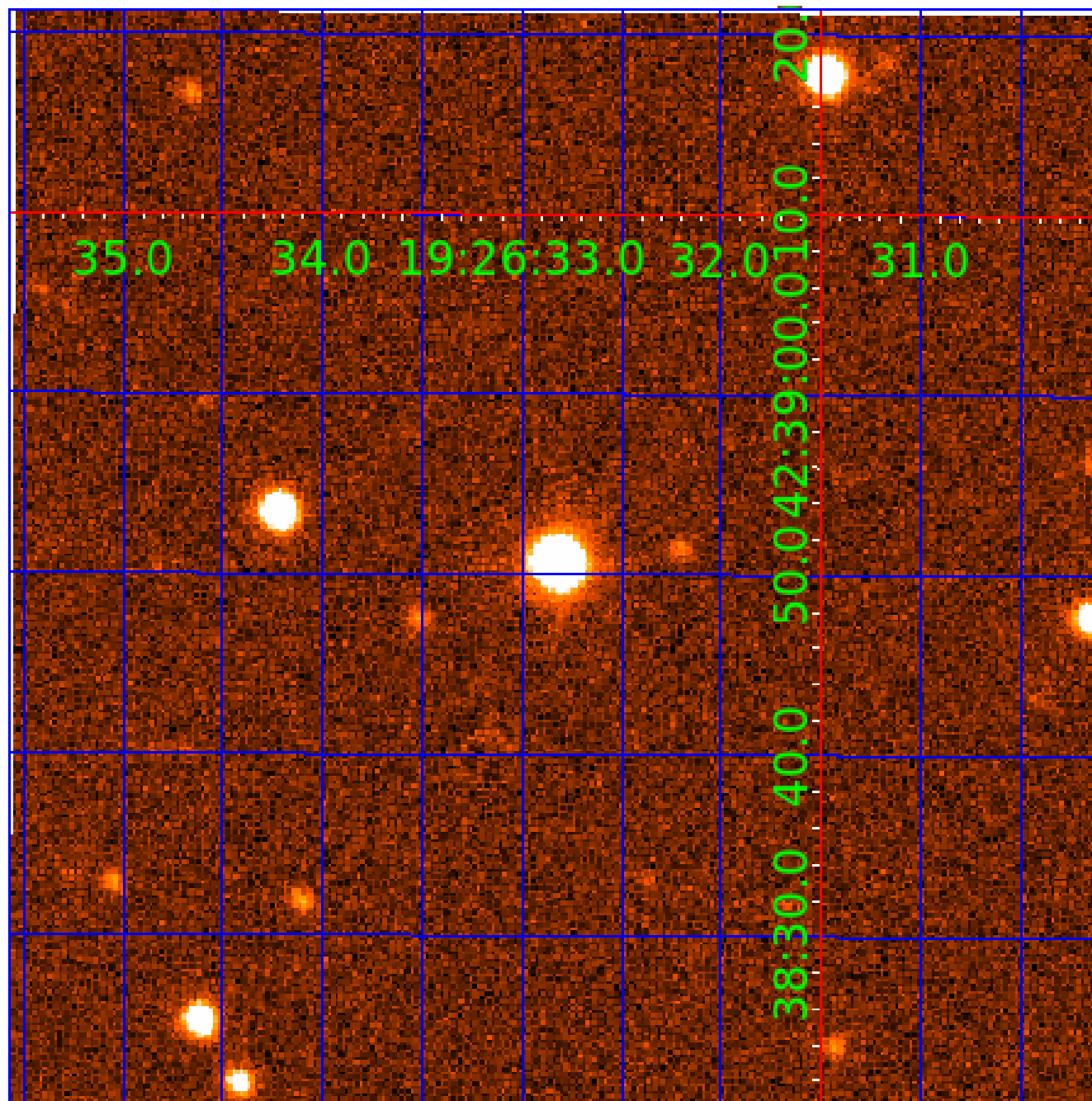


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# KIC 007117284

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007117284-01	OBS	No	0.566772	131.843688	6.6	4.125	9.1	5.7	1.31	6485	0.34	13391.74
007117284-02	OBS	No	23.796793	136.493510	57.4	2.603	11.3	4.7	1.31	6485	1.12	91.77
007117284-03	OBS	No	11.322769	131.696398	319.2	0.609	11.3	12.2	1.31	6485	2.52	247.05
007117284-04	OBS	No	9.030618	136.124683	109.7	3.110	10.1	11.3	1.31	6485	1.57	334.01
007117284-05	OBS	No	13.097523	134.745744	251.8	0.872	10.6	13.7	1.31	6485	2.11	203.45

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007117284-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_FEW_MEAS—HALO_GHOST—EPHEM_MATCH
007117284-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
007117284-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007117284-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007117284-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_MEAS—HALO_GHOST

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

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

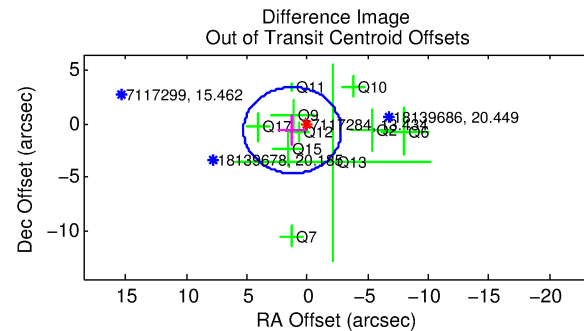
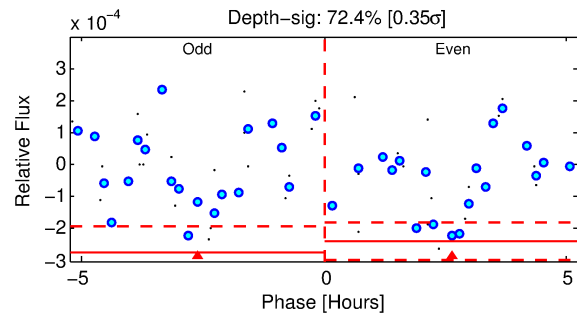
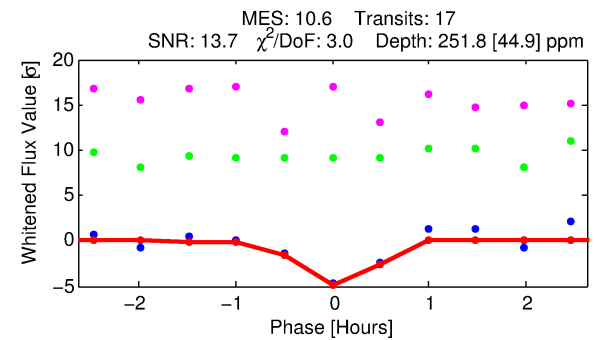
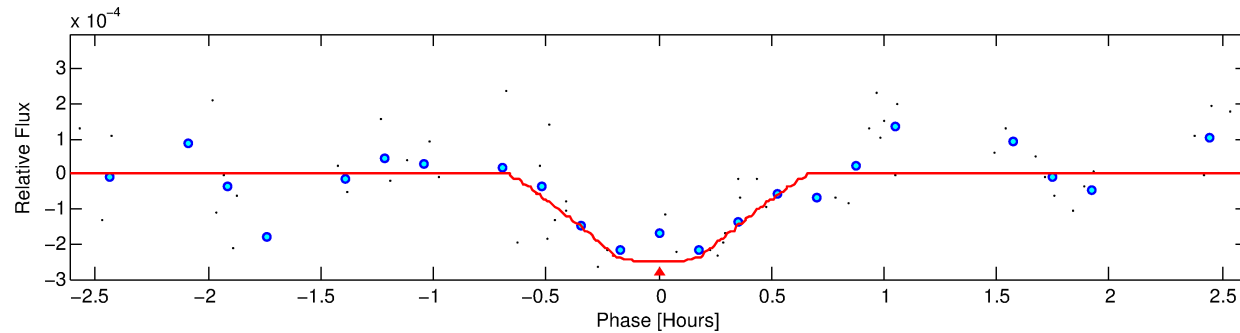
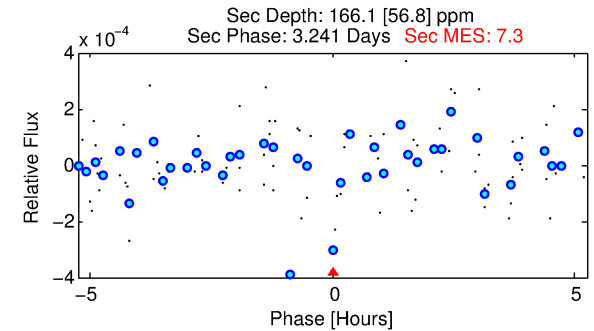
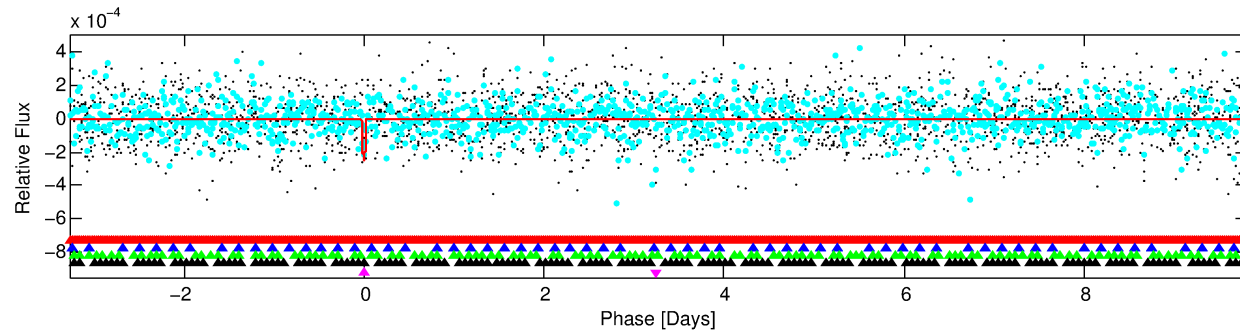
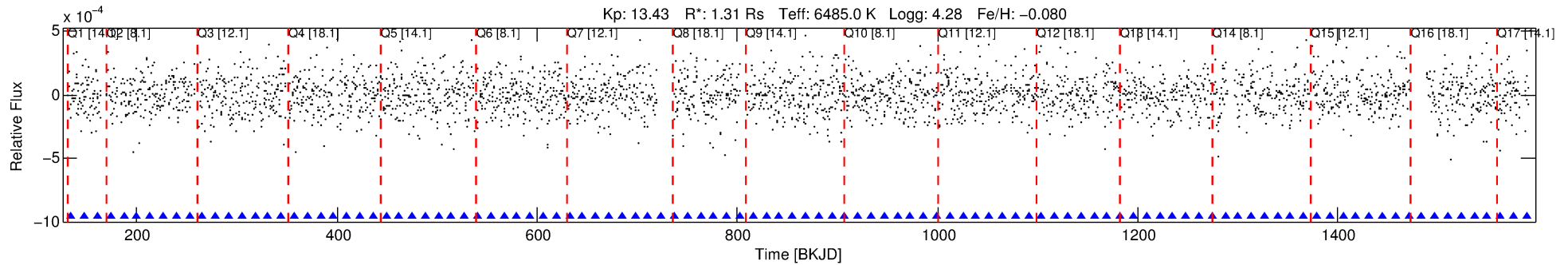
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007117284-05

No Significant Match Found

# DV One-Page Summary

KIC: 7117284 Candidate: 5 of 5 Period: 13.098 d



## DV Fit Results:

Period = 13.09752 [0.00007] d  
Epoch = 134.7457 [0.0047] BKJD  
Rp/R\* = 0.0148 [0.0299]  
a/R\* = 115.82 [1224.19]  
b = 0.11 [98.67]  
Seff = 203.45 [60.36]  
Teq = 963 [71] K  
Rp = 2.11 [4.30] Re  
a = 0.1156 [0.0216] AU  
Ag = 273.63 [1113.53] [0.24σ]  
Teffp = 6056 [6151] K [0.83σ]

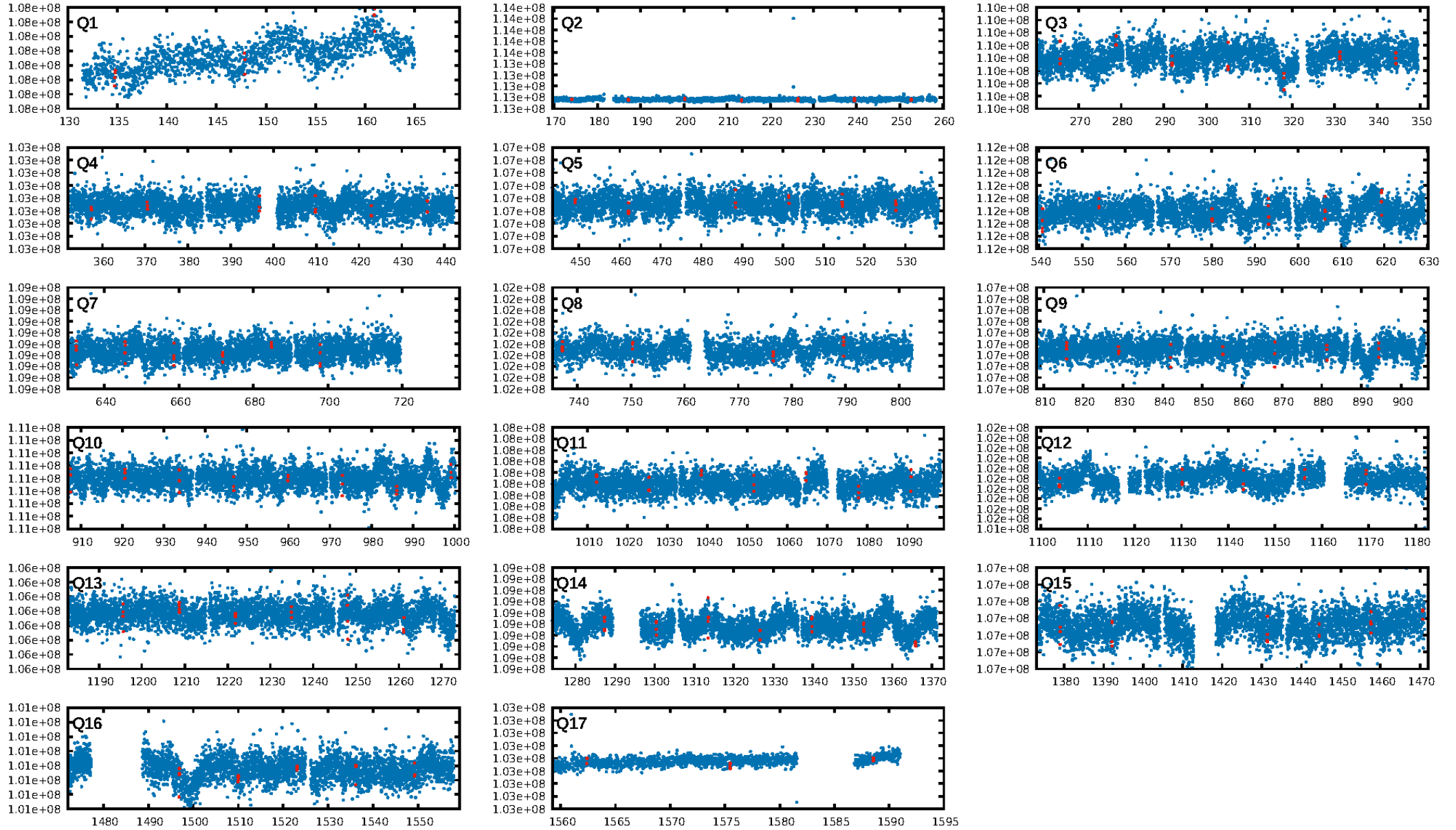
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [40.05σ]  
LongPeriod-sig: 100.0% [93.54σ]  
ModelChiSquare2-sig: 0.3%  
ModelChiSquareGof-sig: 89.2%  
**Bootstrap-pfa: 3.00e-10**  
RollingBand-fgt: 1.00 [17/17]  
GhostDiagnostic-chr: -0.113  
Centroid-sig: 1.4%  
Centroid-so: 1.286 arcsec [2.44σ]  
OotOffset-rm: 1.385 arcsec [1.03σ]  
KicOffset-rm: 1.514 arcsec [1.21σ]  
OotOffset-st: 3/3/1/3 [10]  
KicOffset-st: 3/3/1/3 [10]  
DiffImageQuality-fgm: 0.20 [2/10]  
DiffImageOverlap-fno: 0.00 [0/17]

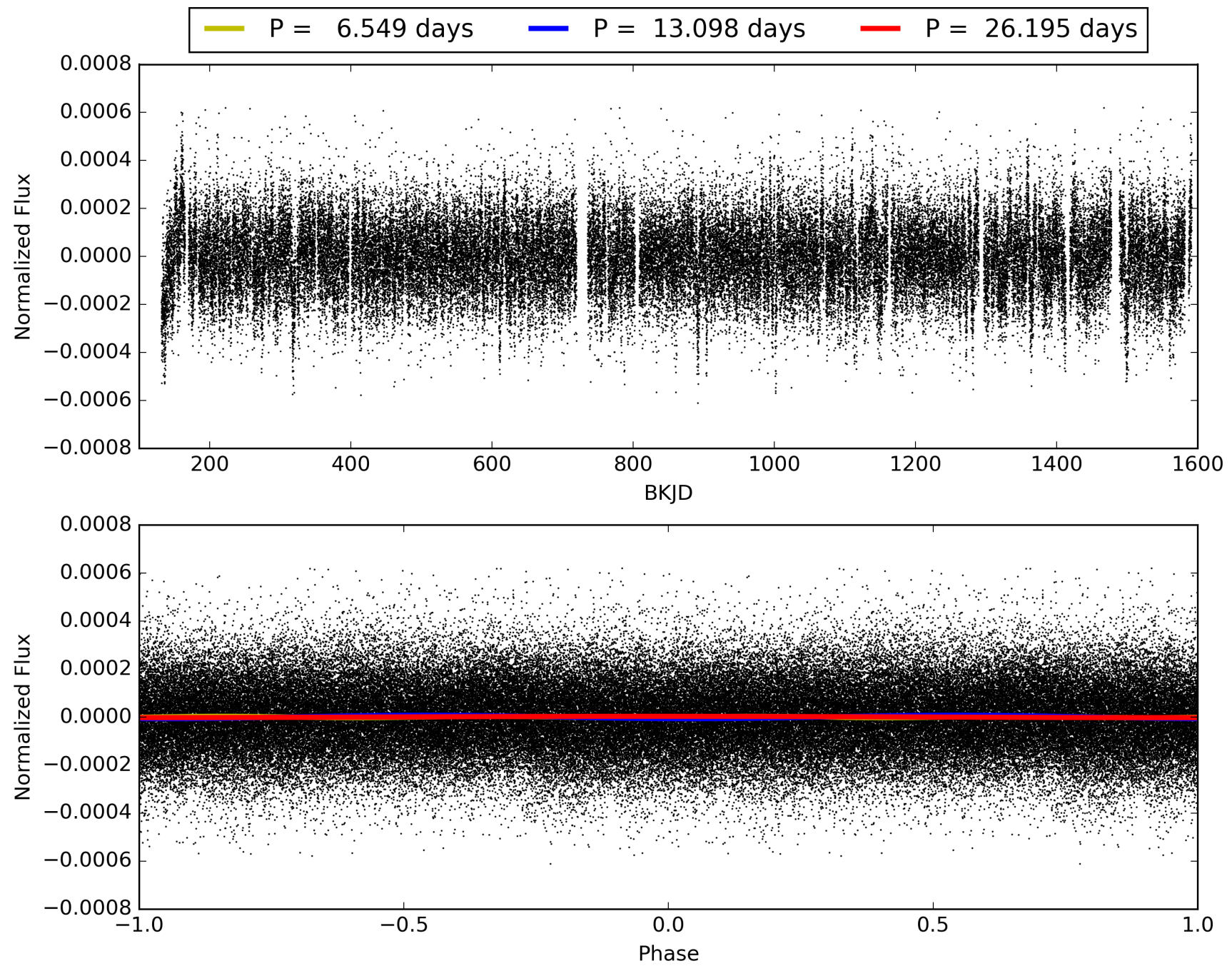
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:00:30 Z

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

# TCE 007117284-05, PDC Light Curves

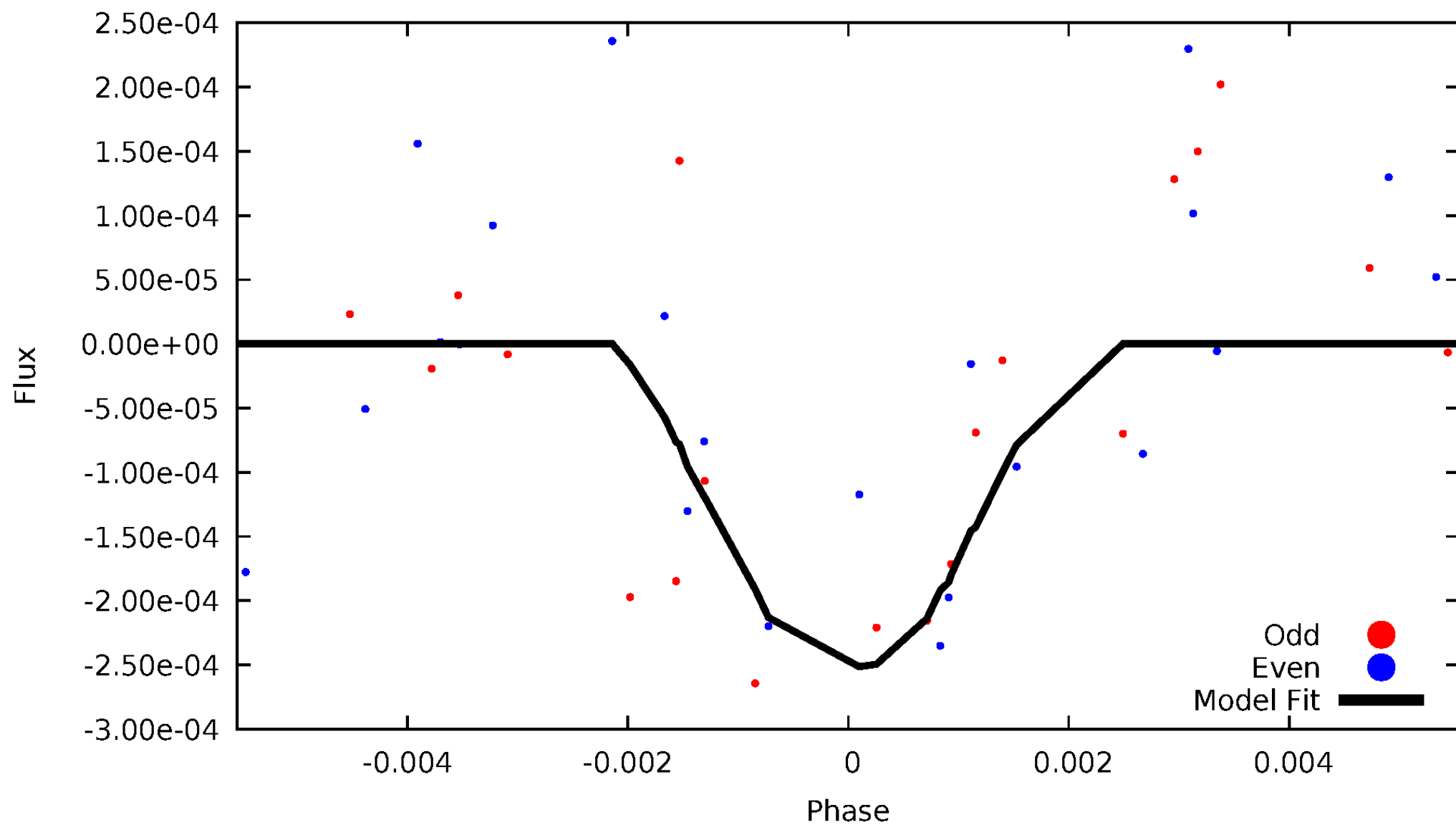


TCE 007117284-05



# DV Odd/Even

TCE 007117284-05





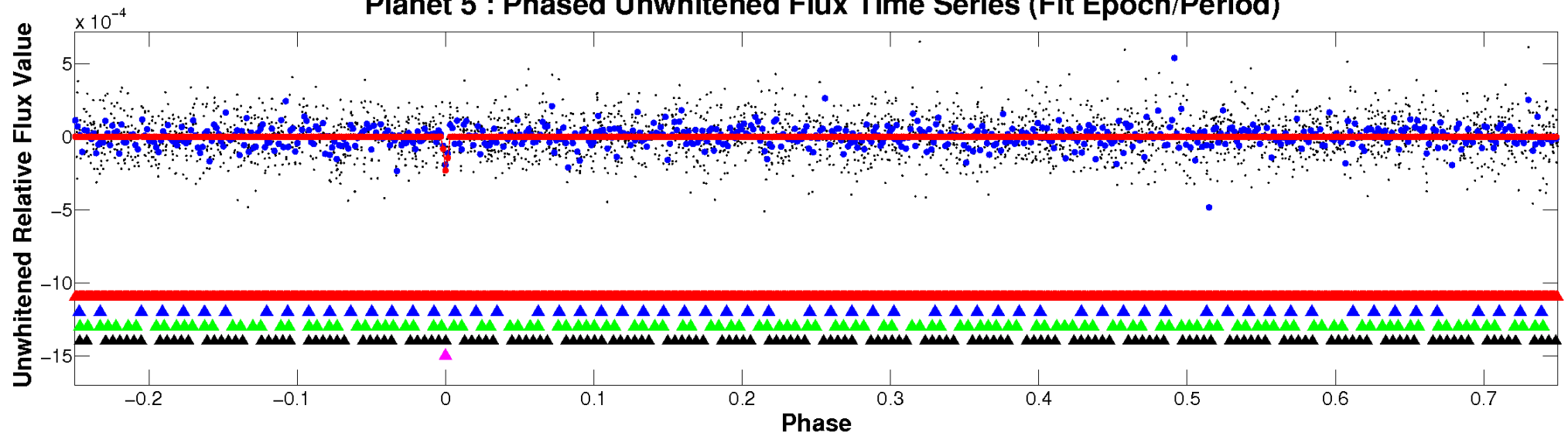


ALT Odd/Even

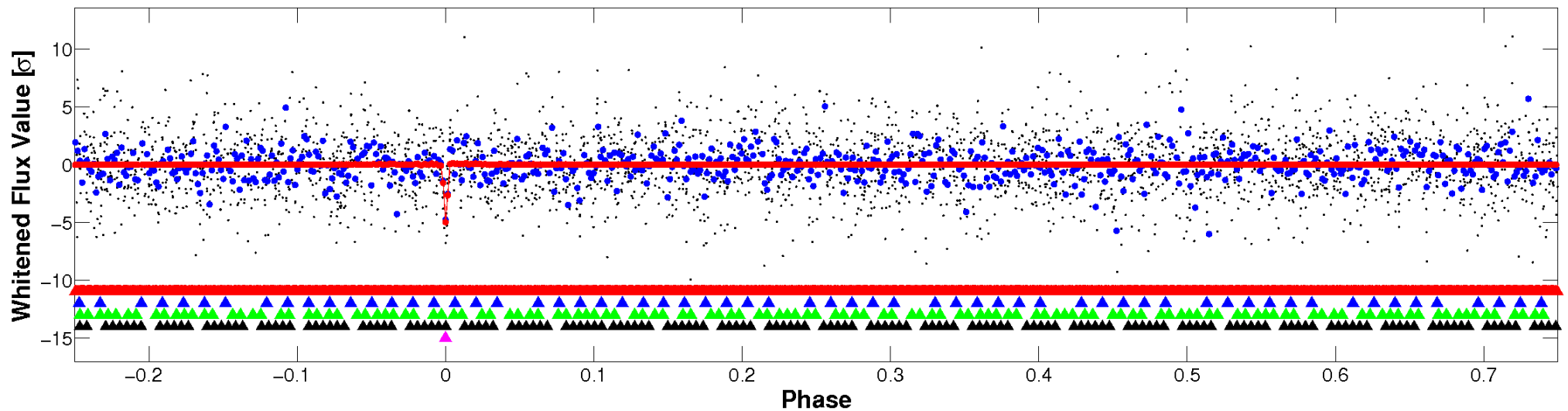
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

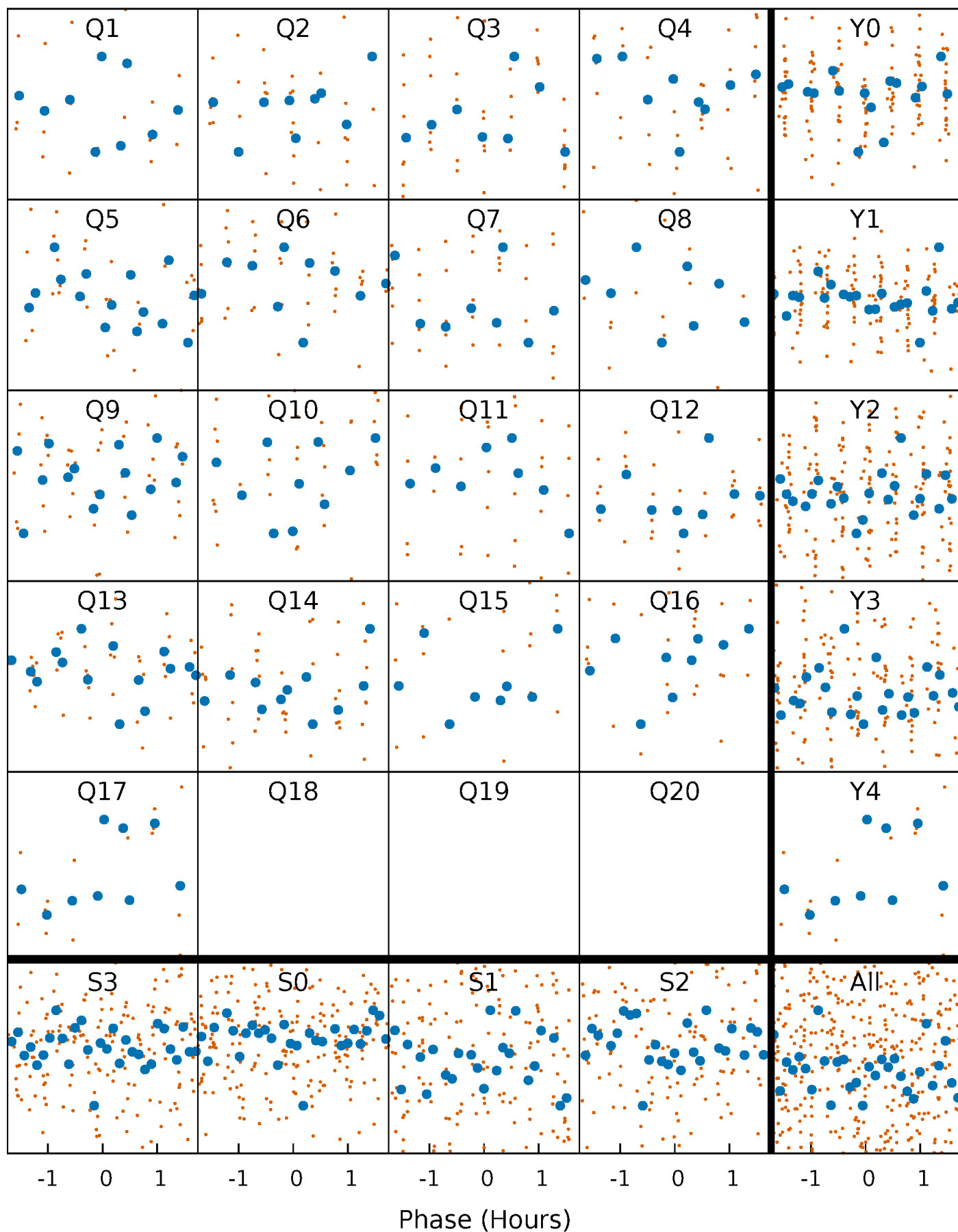


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



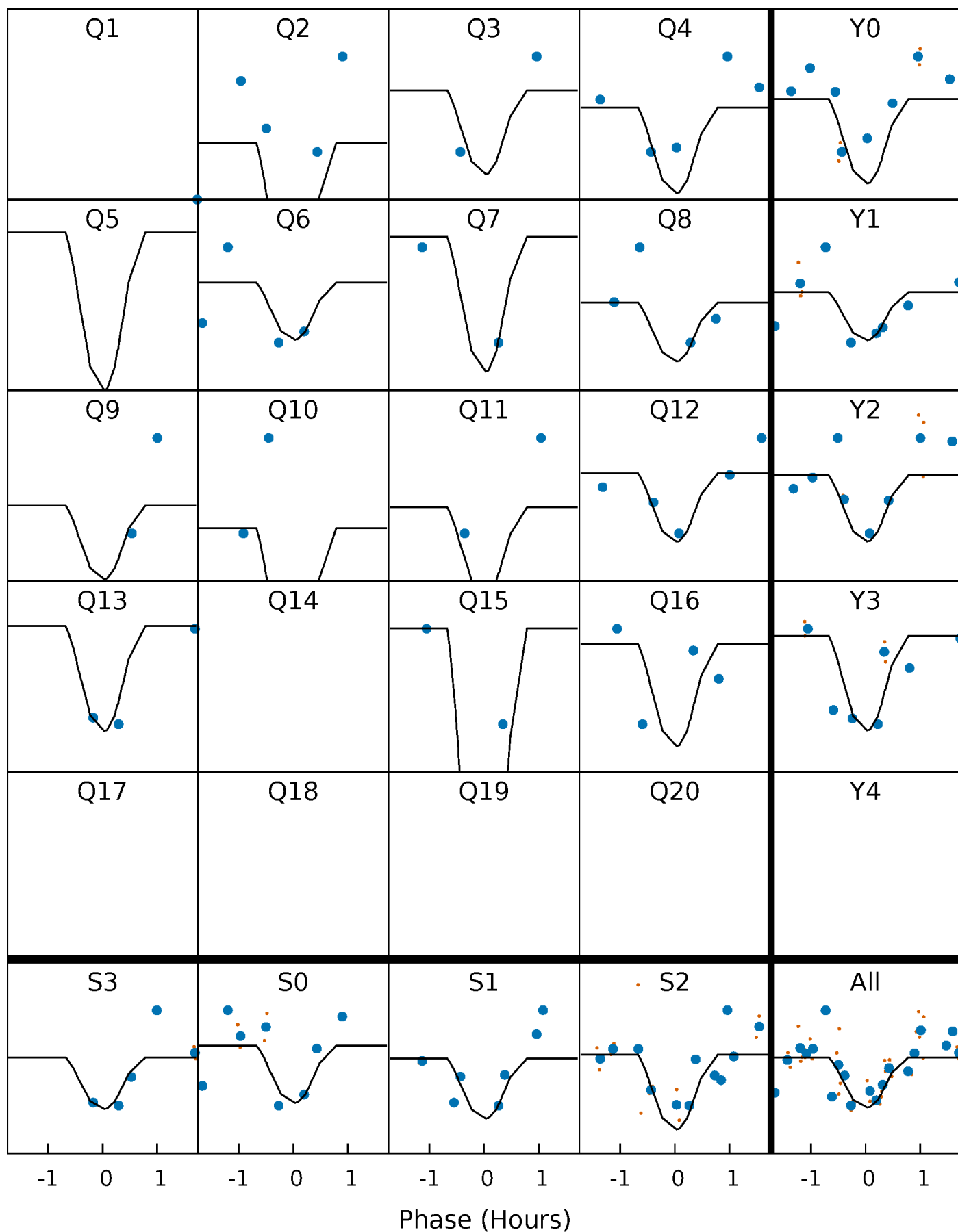
# PDC Quarter-Phased Transit Curves

TCE 007117284-05   P= 13.097523 Days    $T_0=134.745744$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007117284-05   P= 13.097523 Days    $T_0=134.745744$  (BKJD)

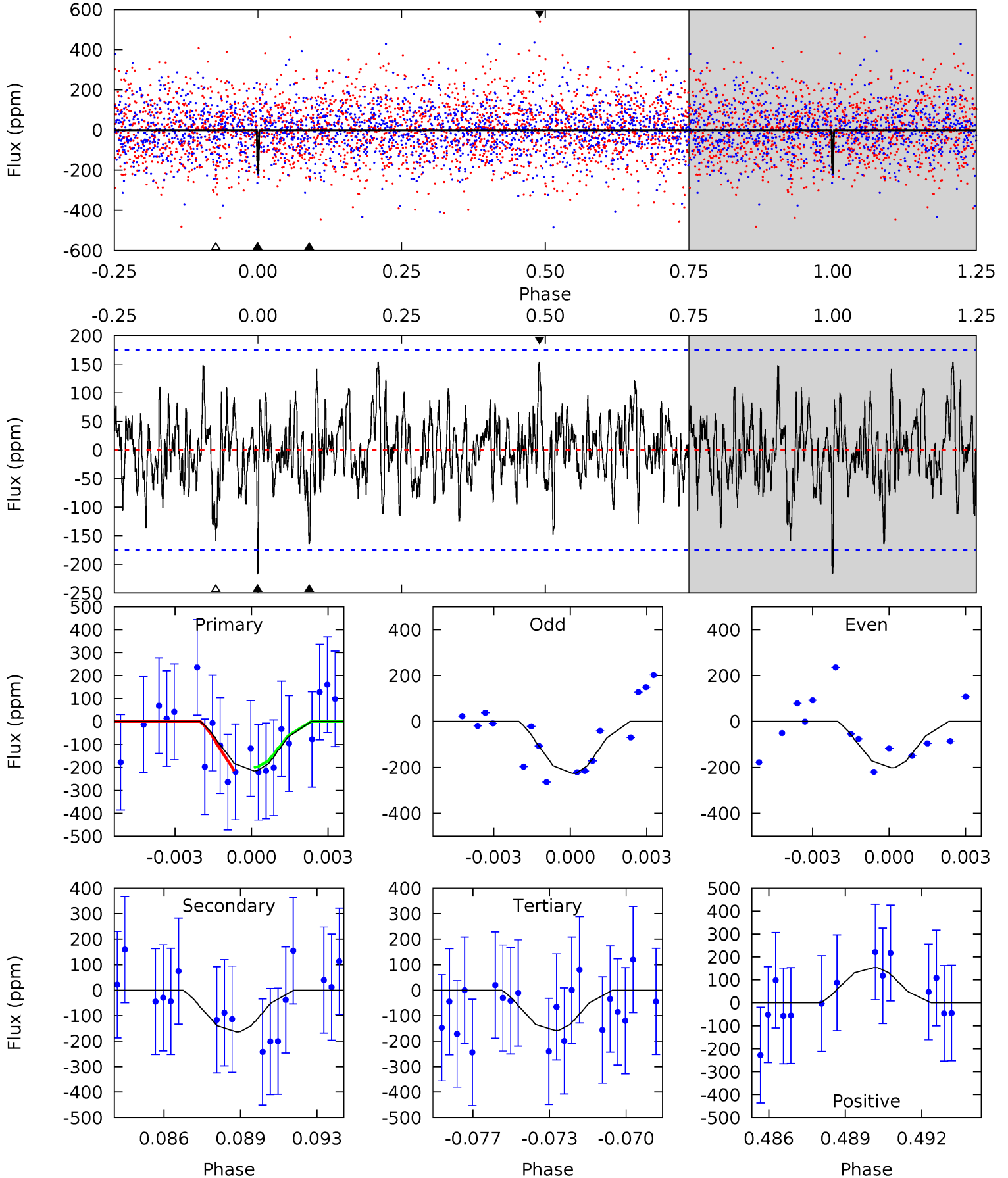


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

007117284-05,  $P = 13.097523$  Days,  $E = 121.648221$  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
6.45	4.91	4.75	4.61	5.24	2.95	1.49	1.70	1.84	0.16	0.29	0.37	0.94	0.42	0.24





## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007117284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6485^{+144}_{-208}$	$4.283^{+0.096}_{-0.144}$	$-0.080^{+0.250}_{-0.300}$	$1.310^{+0.296}_{-0.197}$	$1.200^{+0.157}_{-0.157}$	$0.752^{+0.384}_{-0.297}$
	+2%/-3%	+2%/-3%	+312%/-375%	+23%/-15%	+13%/-13%	+51%/-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 007117284-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-164 \pm 33$	$3.82^{+3.62}_{-2.61}$	$1353^{+86}_{-67}$	$4600^{+3485}_{-962}$	$79^{+700}_{-59}$
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

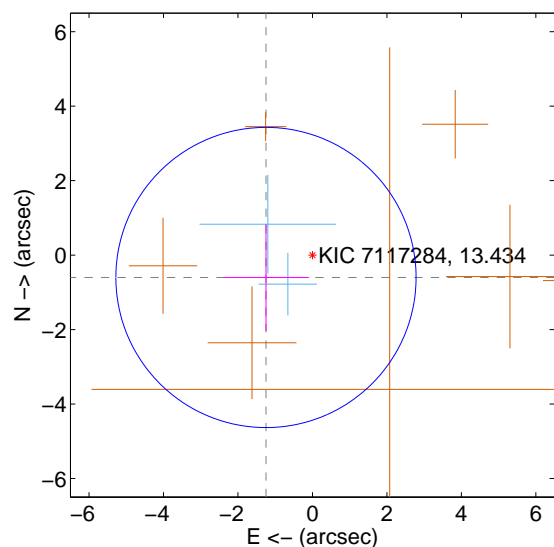
Supplemental centroid analysis for 007117284-05. Kepler magnitude: 13.43. Transit SNR 13.71

There are 2 quarters with good PRF difference image offsets

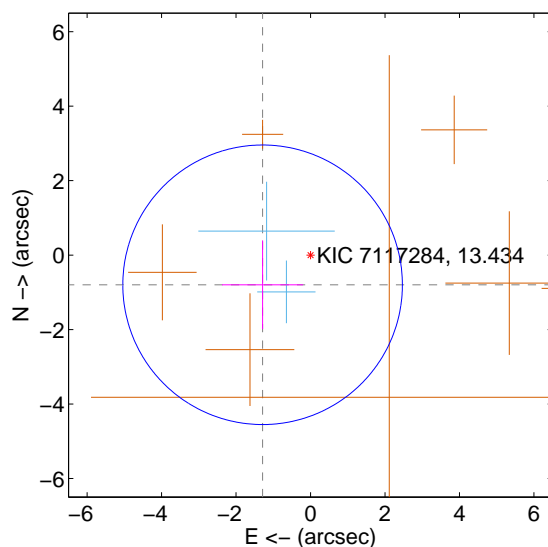
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.385 \pm 1.344$	1.03	$1.248 \pm 1.150$	$-0.601 \pm 1.434$
PRF-fit source offset from KIC position	$1.514 \pm 1.251$	1.21	$1.287 \pm 1.088$	$-0.797 \pm 1.192$
photometric centroid source offset	$1.29 \pm 0.53$	2.44	$-1.28 \pm 0.53$	$-0.15 \pm 0.56$

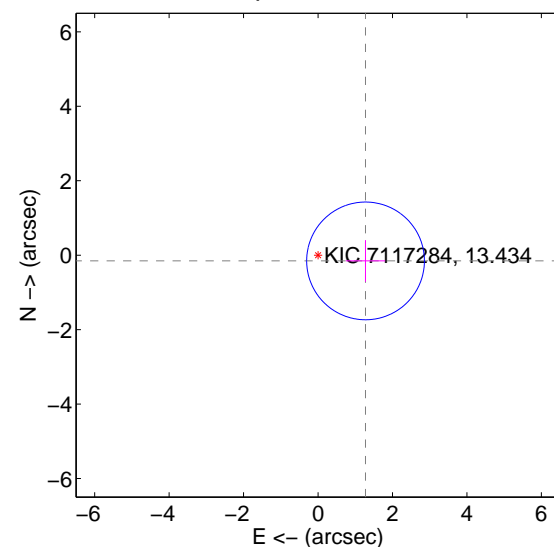
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

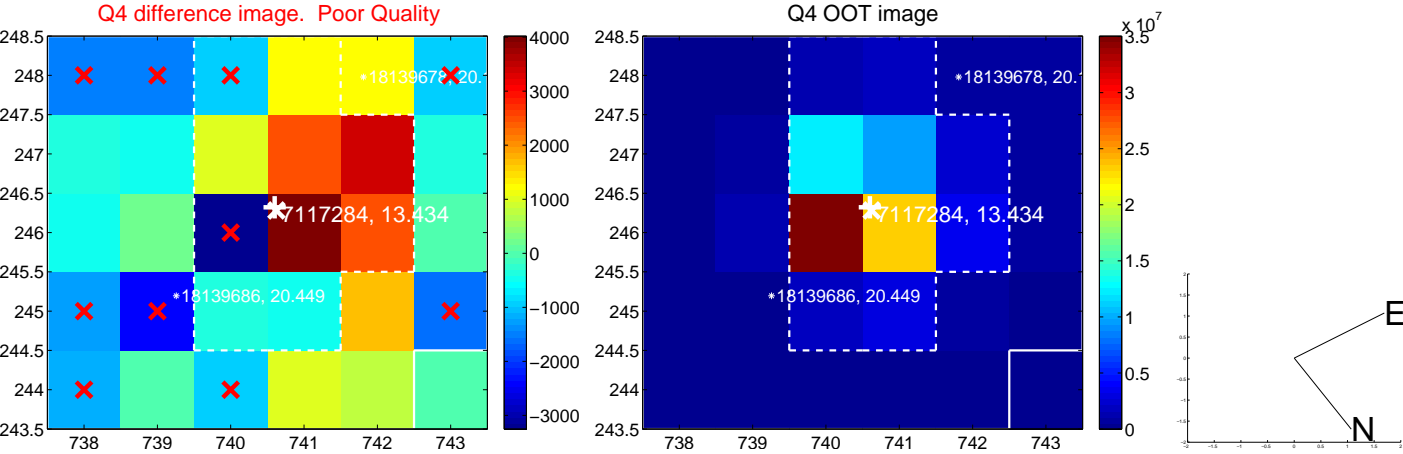
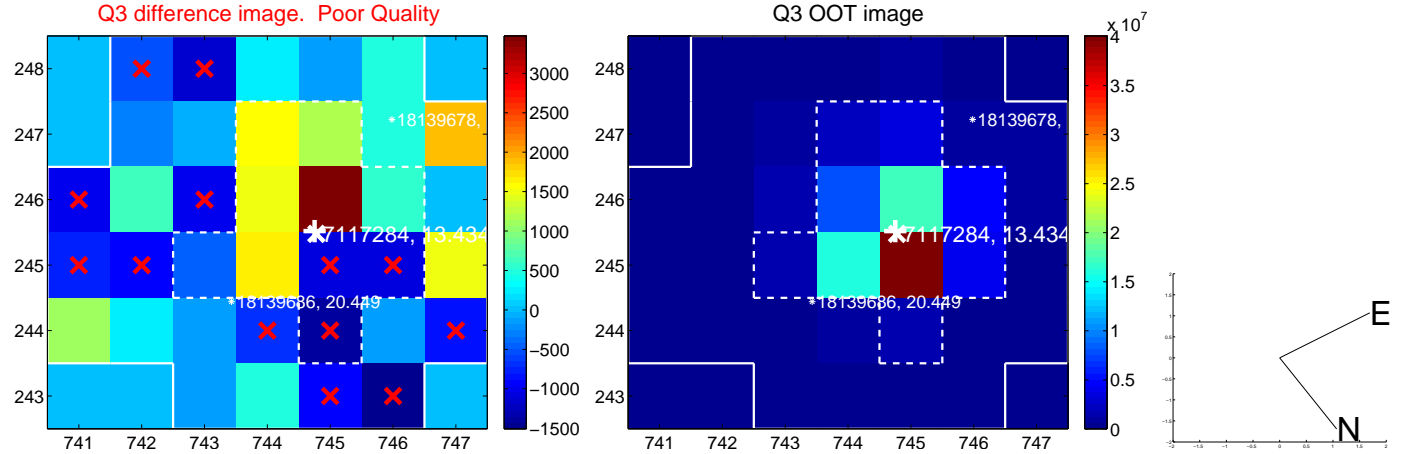
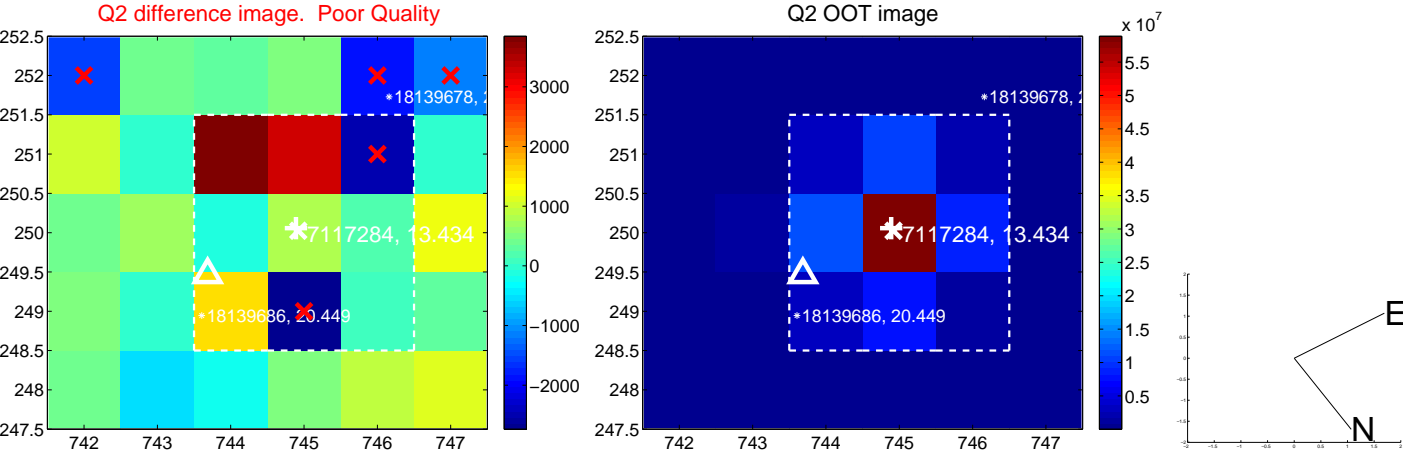
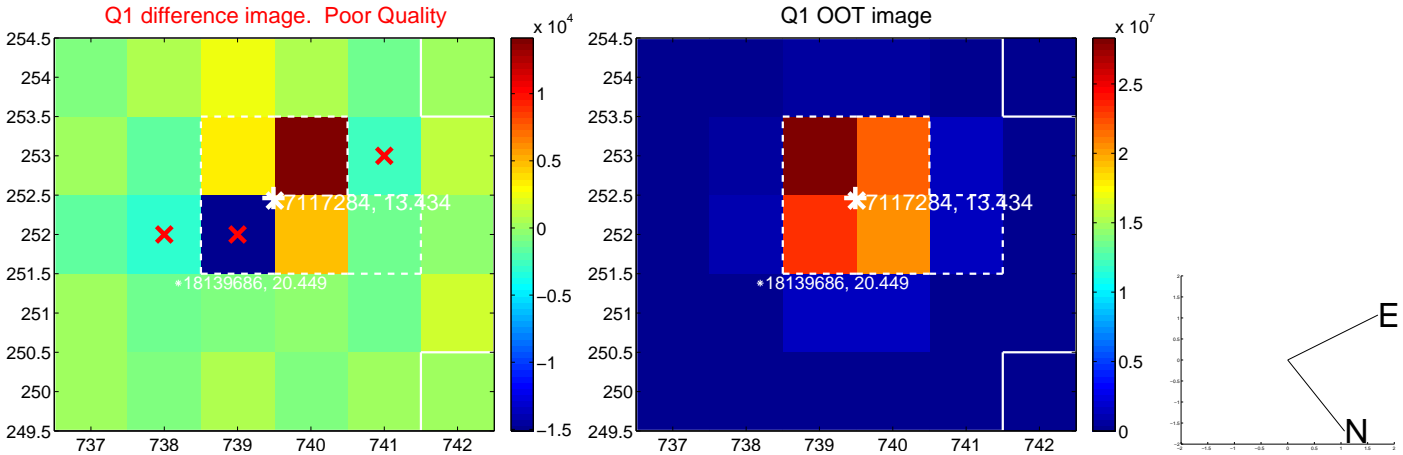


offset from photometric centroids

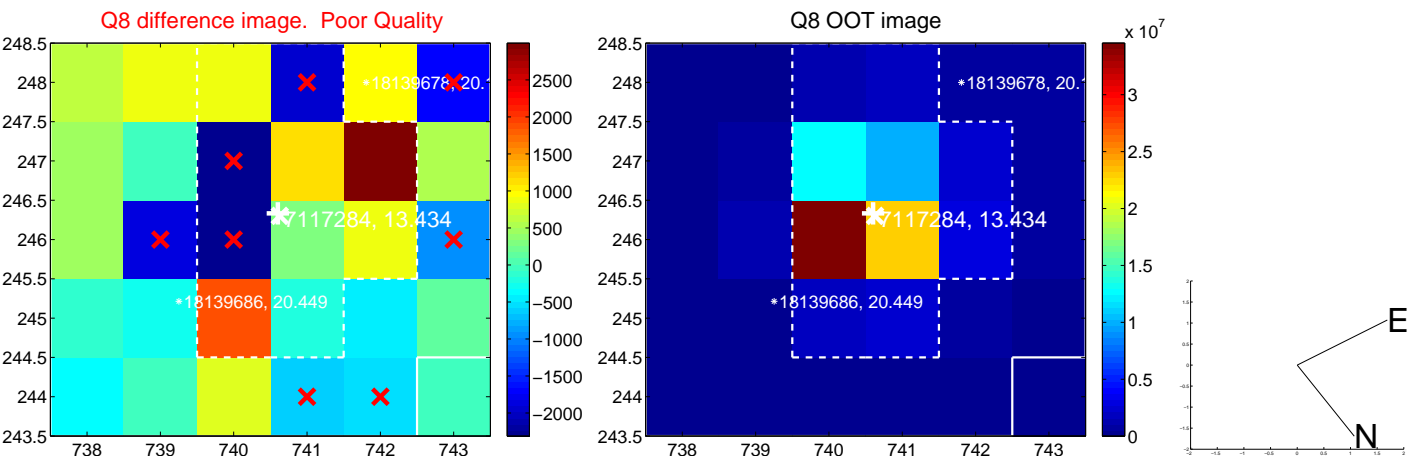
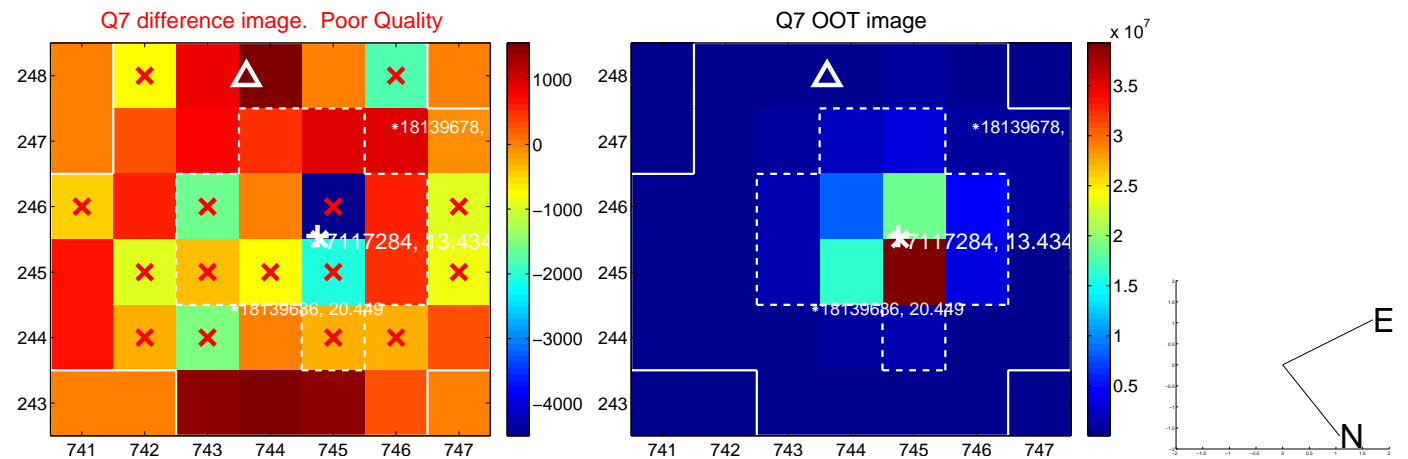
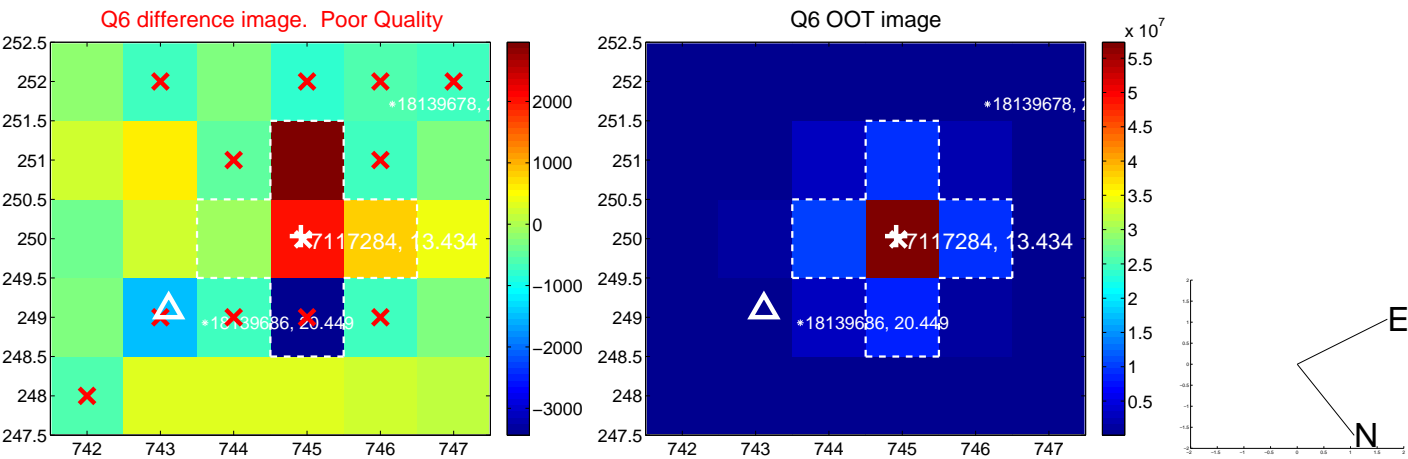
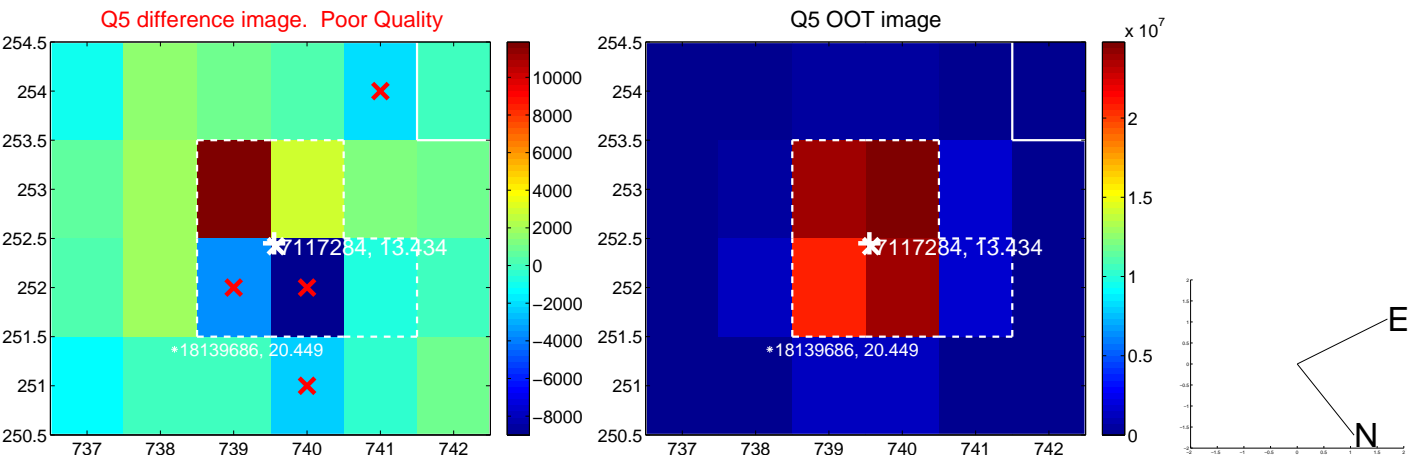


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

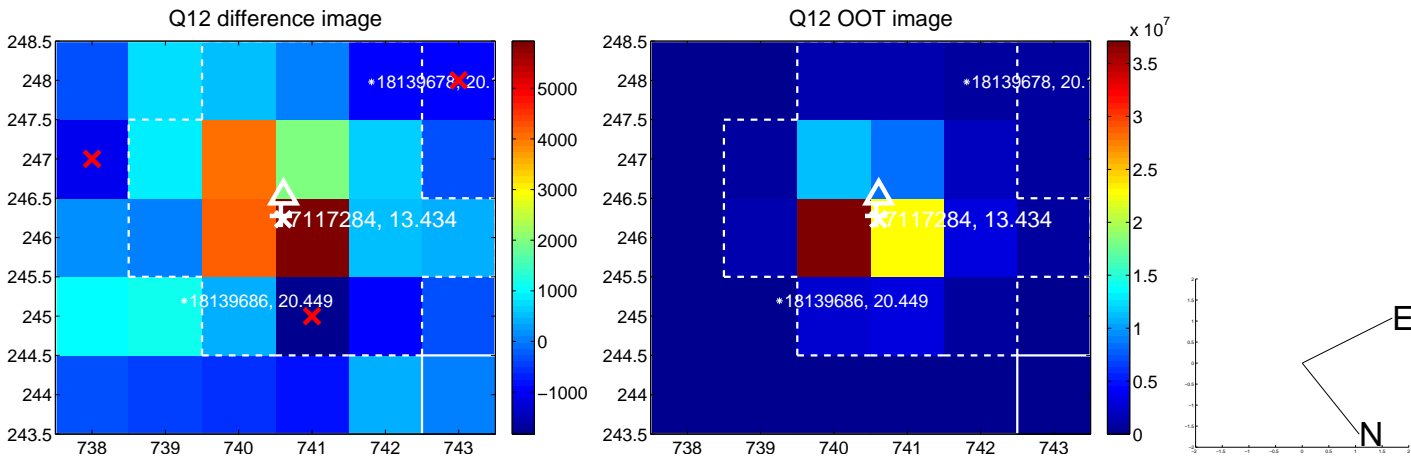
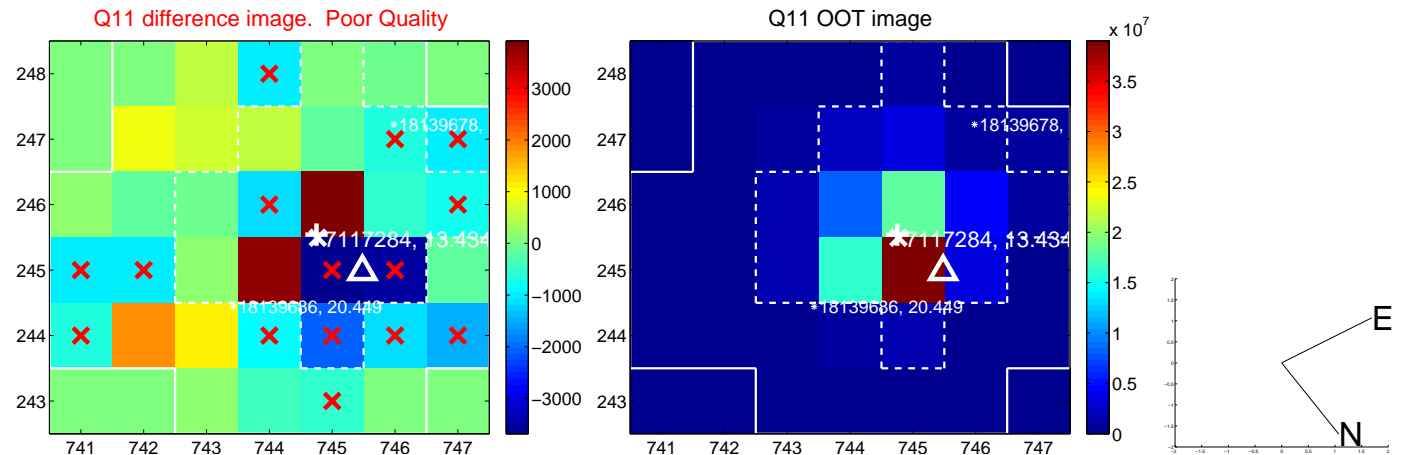
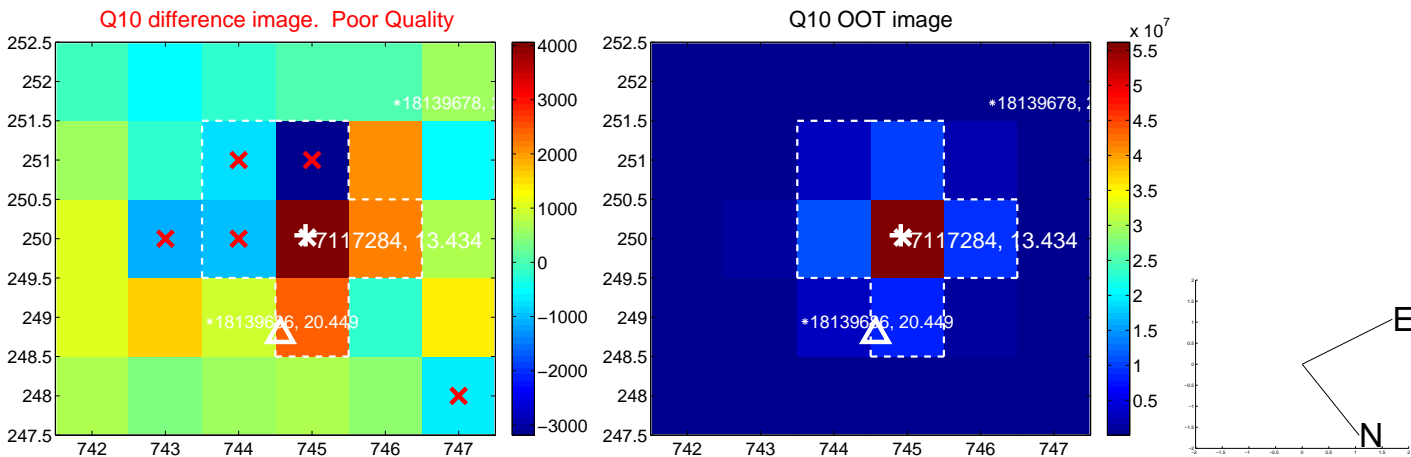
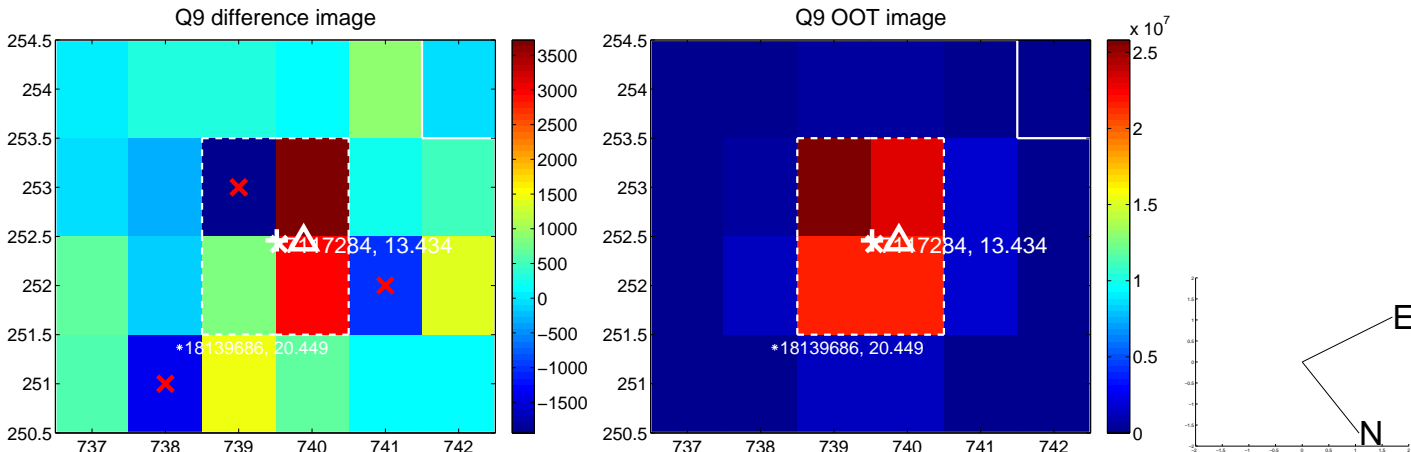
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



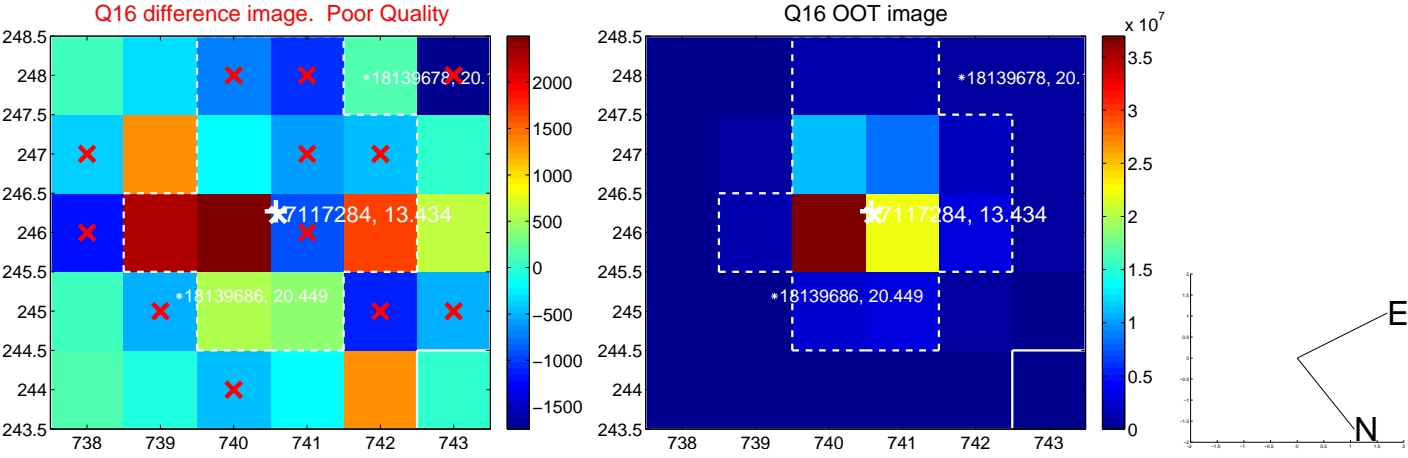
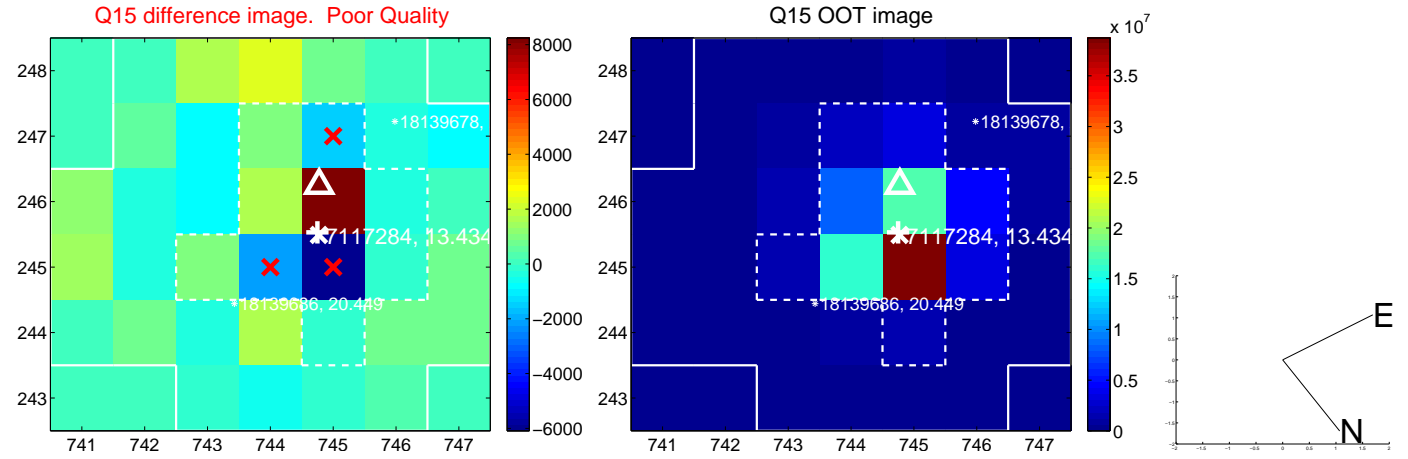
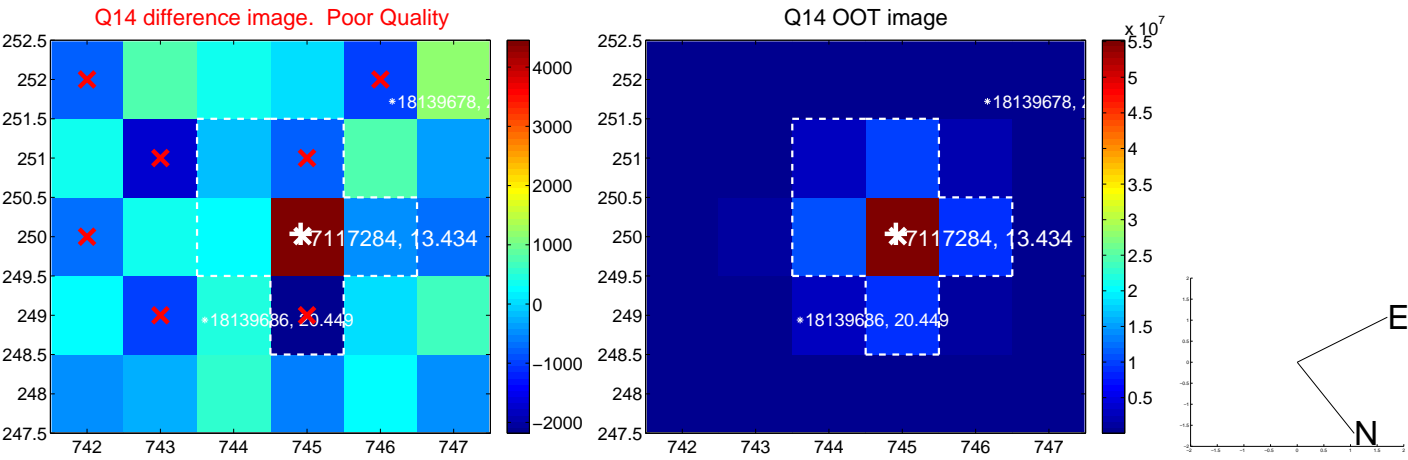
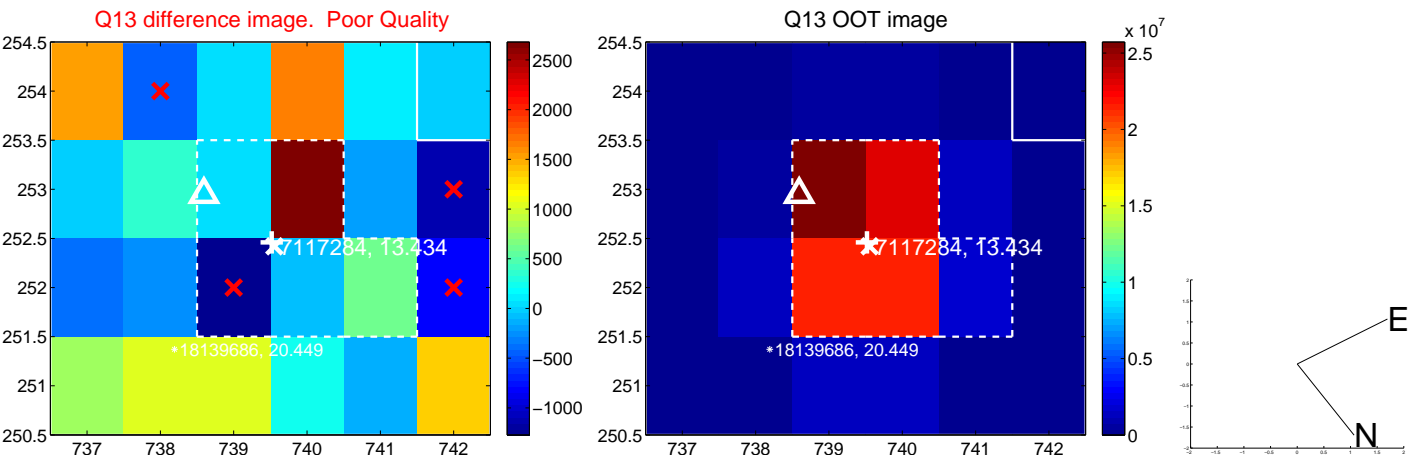
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

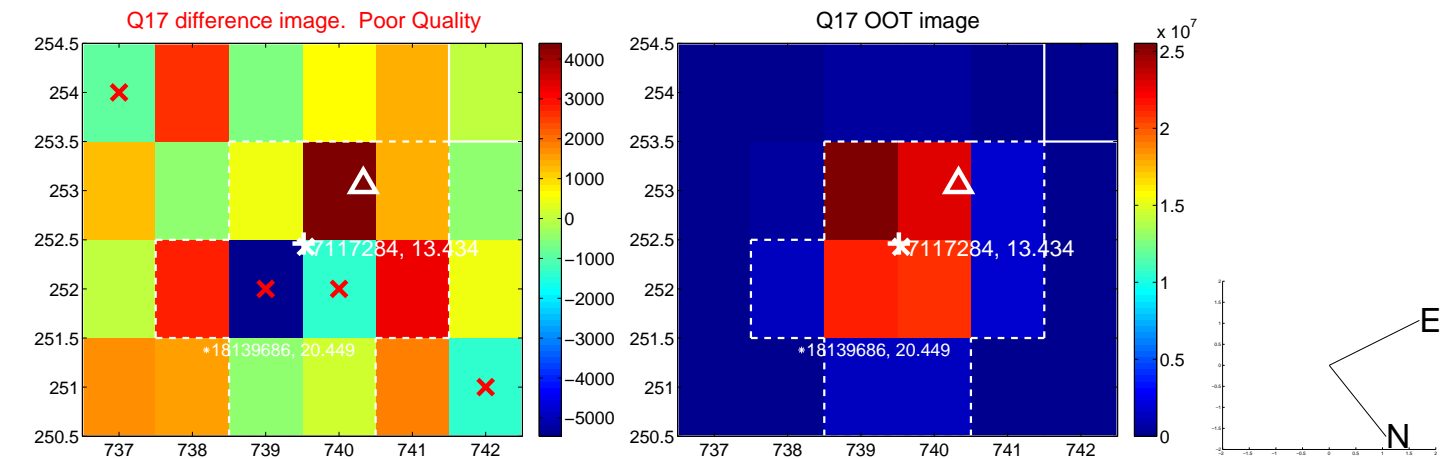


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

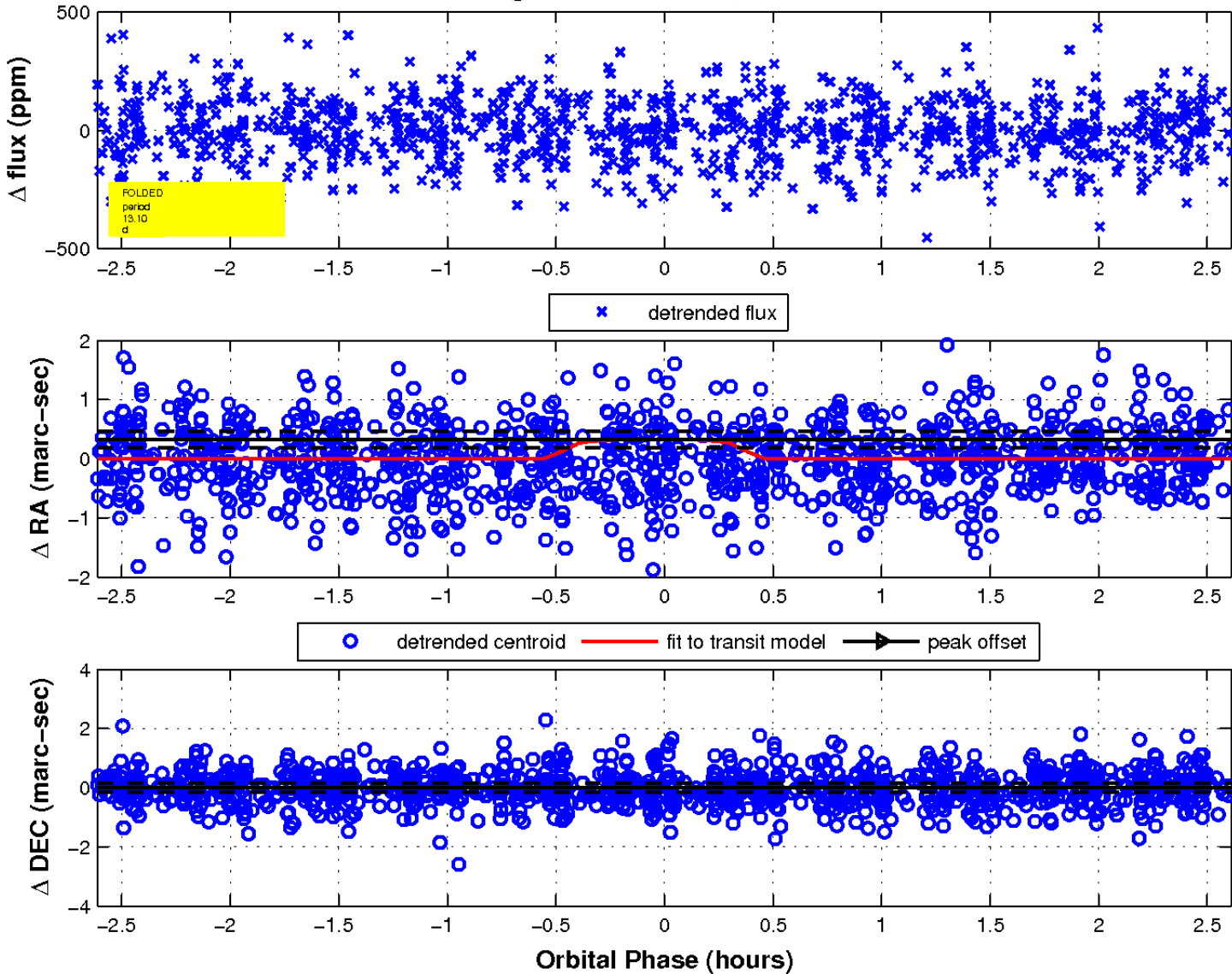




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 5 of 5



UKIRT Image

Declination

