

KIC 010226488

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})
010226488-01	OBS	No	0.660613	131.706539	14.5	4.679	8.7	6.1	0.78	5638	0.30	2768.18
010226488-02	OBS	No	37.153693	159.936660	403.8	2.365	10.0	10.0	0.78	5638	1.57	12.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010226488-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
010226488-02	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 for comment definitions.

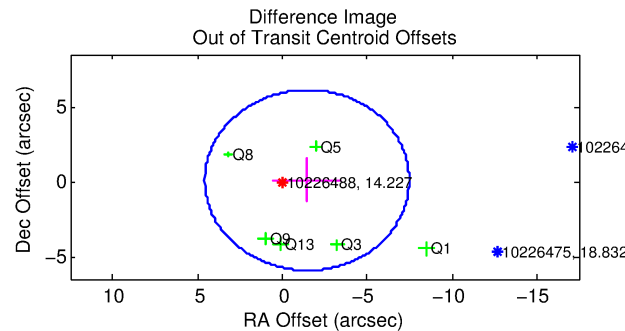
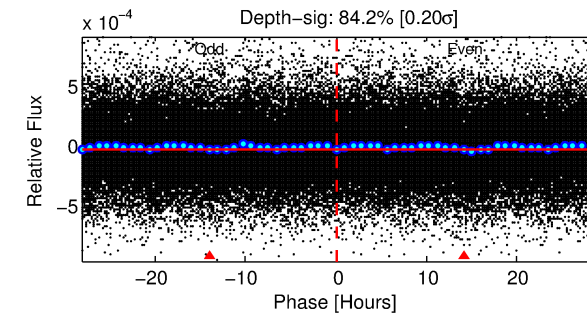
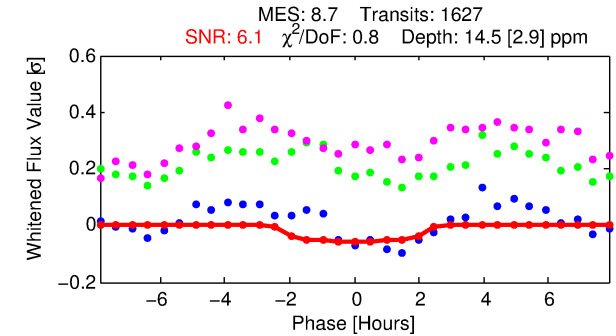
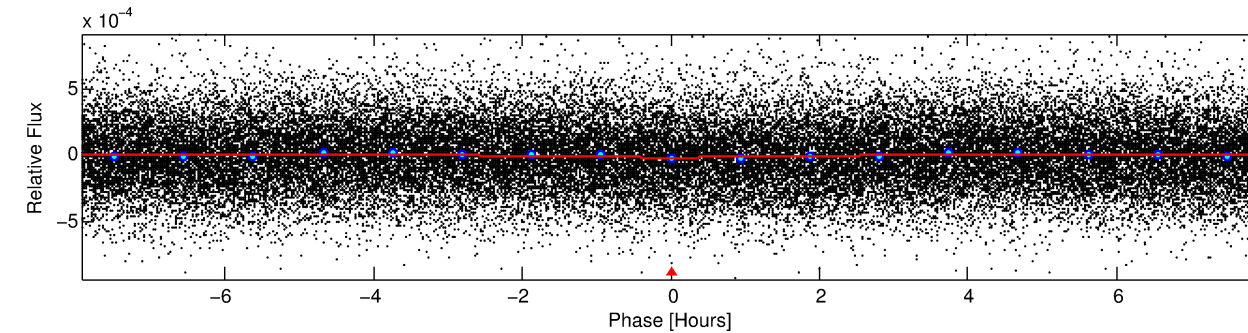
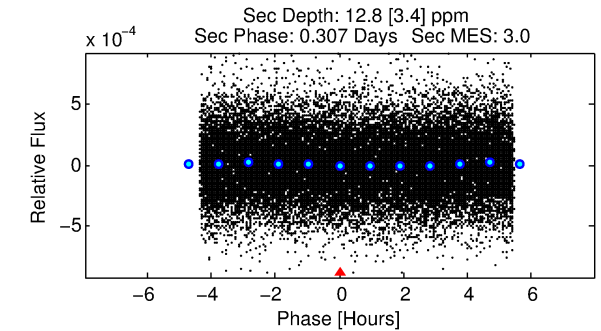
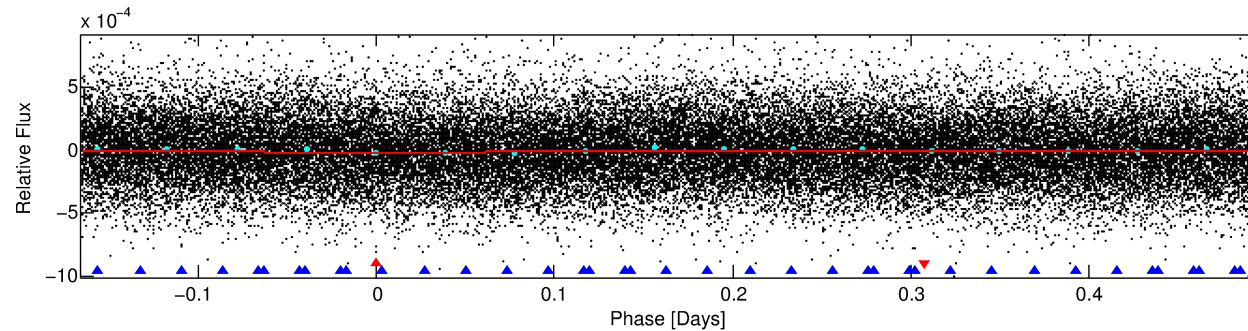
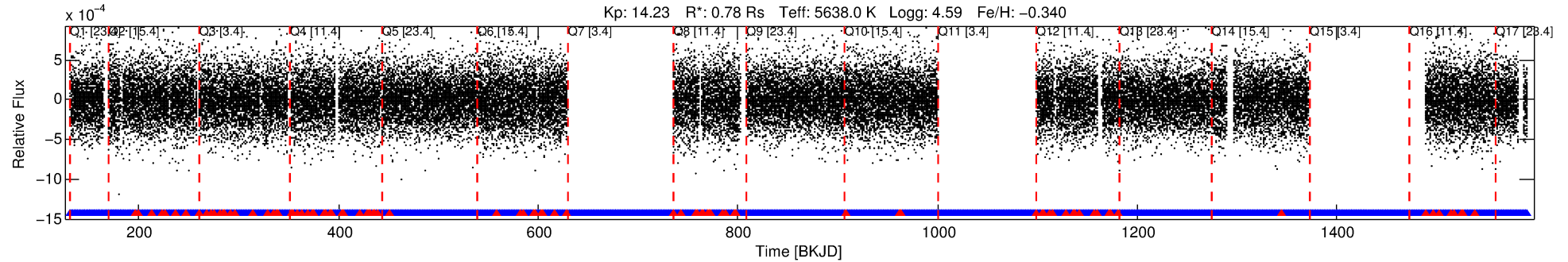
Ephemeris Match Information For 010226488-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (μ)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010226488-01	10226488	010226451-01	10226451	1:1	32.8	-8	2	14.95	14.23	2.33	Direct-PRF	1	2.74	1.36

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ 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. σ_P and σ_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 σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10226488 Candidate: 1 of 2 Period: 0.661 d



DV Fit Results:

Period = 0.66061 [0.00002] d
Epoch = 131.7065 [0.0092] BKJD
Rp/R* = 0.0035 [0.0063]
a/R* = 1.21 [3.09]
b = 0.42 [15.79]
Seff = 2768.18 [760.31]
Teff = 1850 [127] K
Rp = 0.30 [0.54] Re
a = 0.0141 [0.0025] AU
Ag = 15.53 [55.73] [0.26σ]
Teffp = 5677 [5083] K [0.75σ]

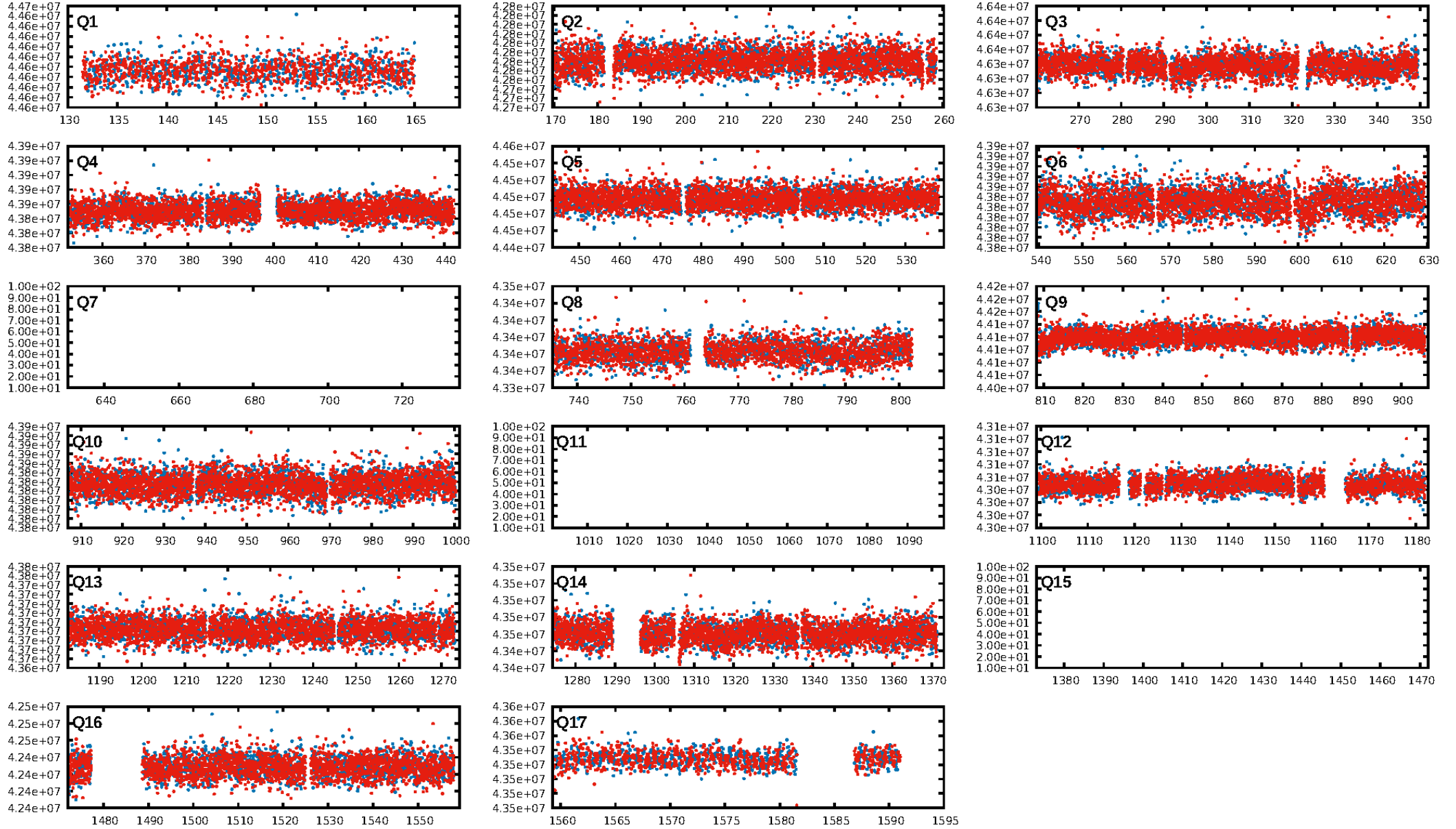
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [167.06σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.35e-11
RollingBand-fgt: 0.94 [1436/1535]
GhostDiagnostic-chr: 0.3183
Centroid-sig: 12.3%
Centroid-so: 2.996 arcsec [1.19σ]
OotOffset-rm: 1.467 arcsec [0.73σ]
OotOffset-st: 0/1/1/4 [6]
KicOffset-rm: 1.517 arcsec [0.76σ]
KicOffset-st: 0/1/1/4 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 1.00 [14/14]

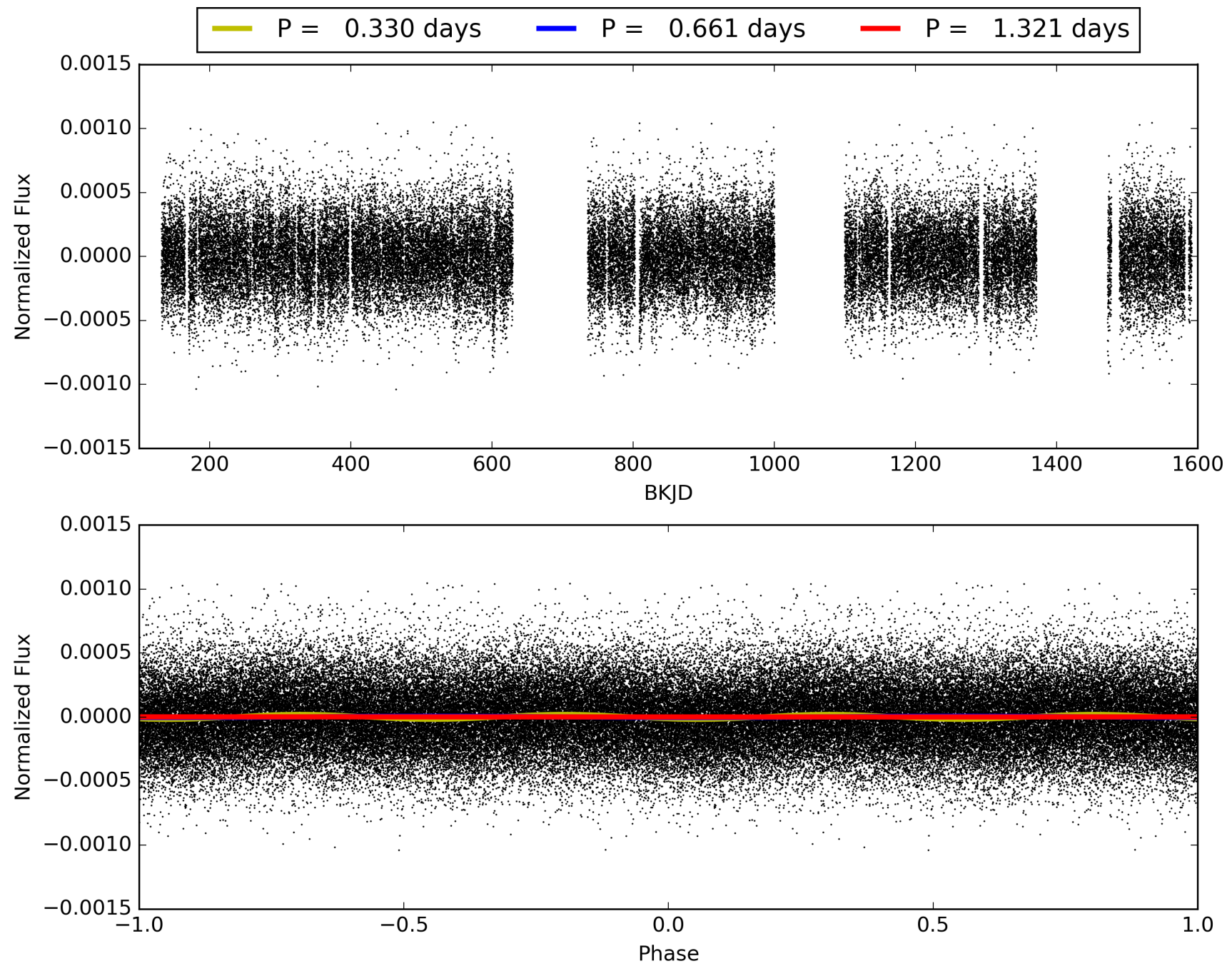
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:36:03 Z

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

TCE 010226488-01, PDC Light Curves

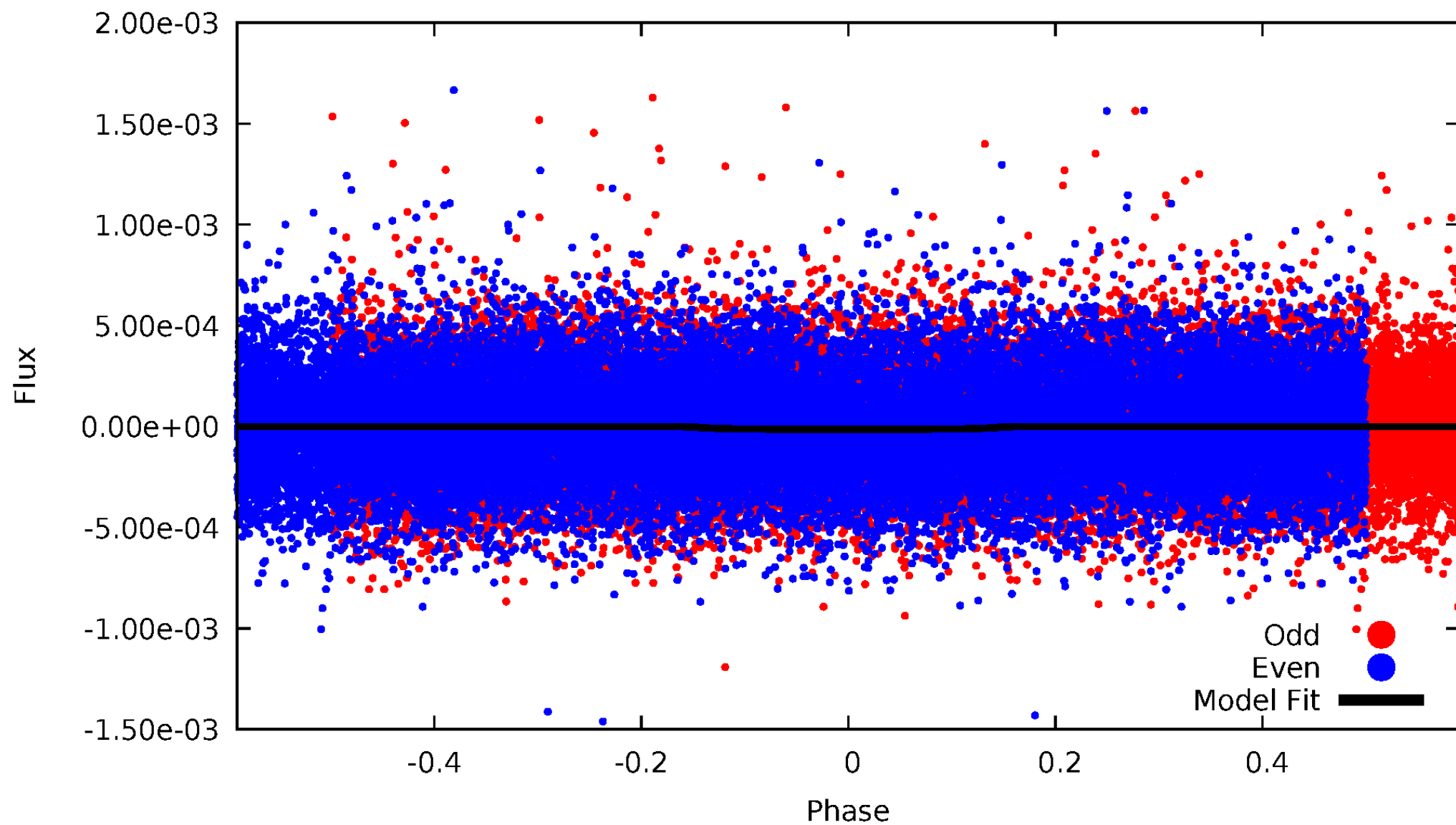


TCE 010226488-01



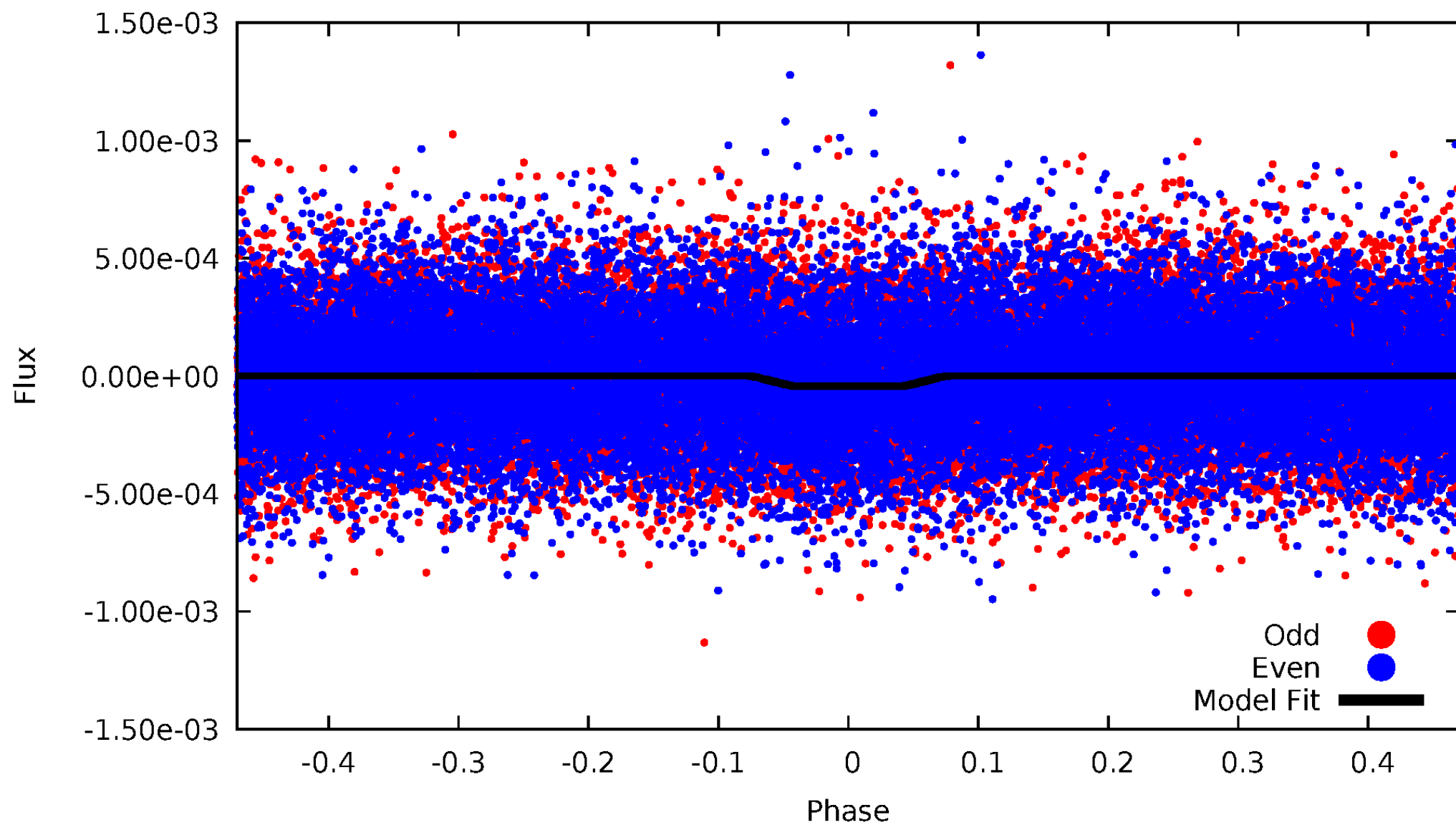
DV Odd/Even

TCE 010226488-01

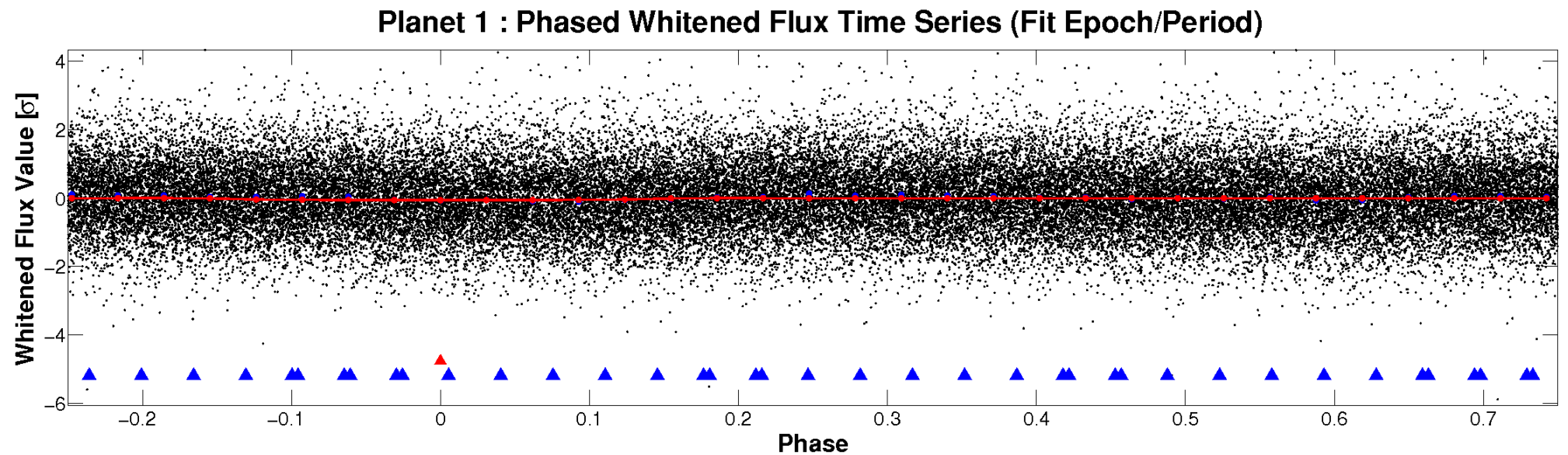
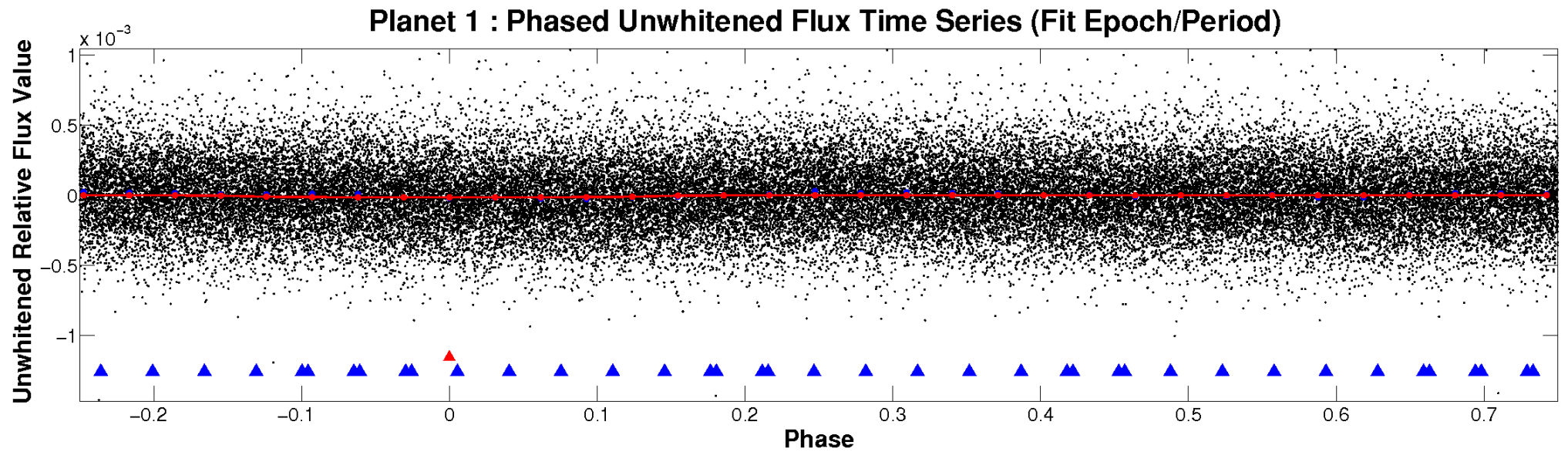


ALT Odd/Even

TCE 010226488-01

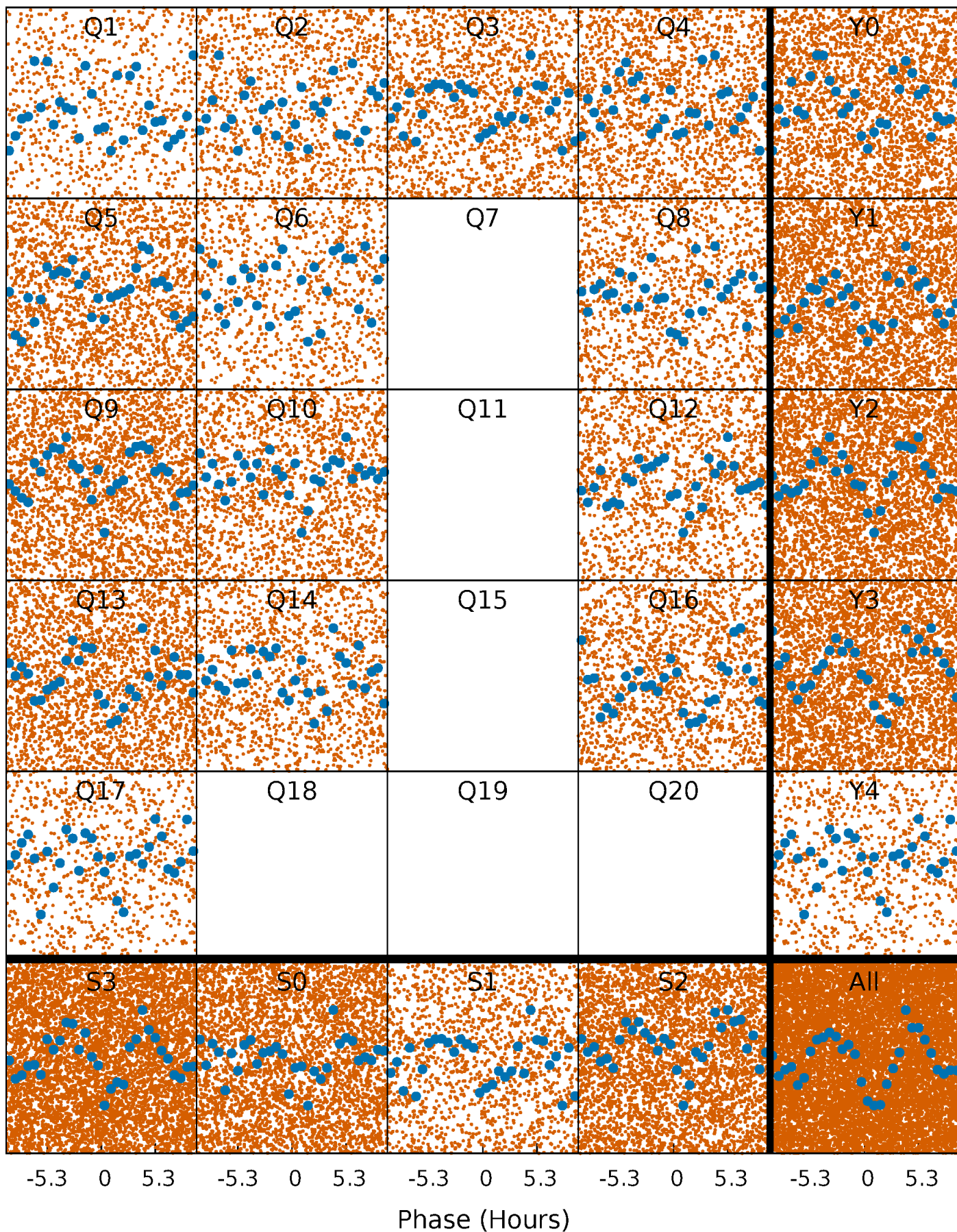


Non-Whitened Vs. Whitened Light Curve



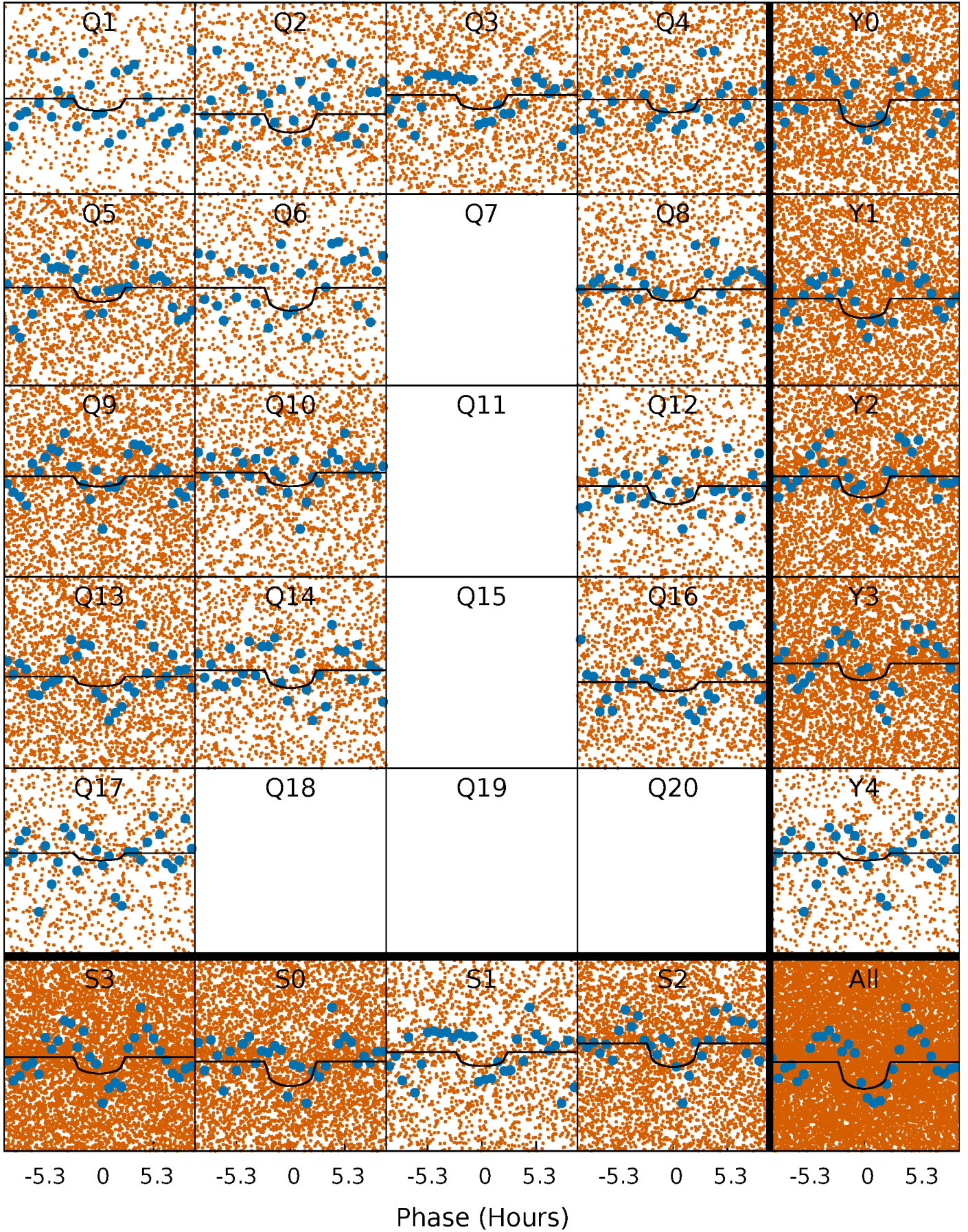
PDC Quarter-Phased Transit Curves

TCE 010226488-01 P= 0.660613 Days $T_0=131.706539$ (BKJD)



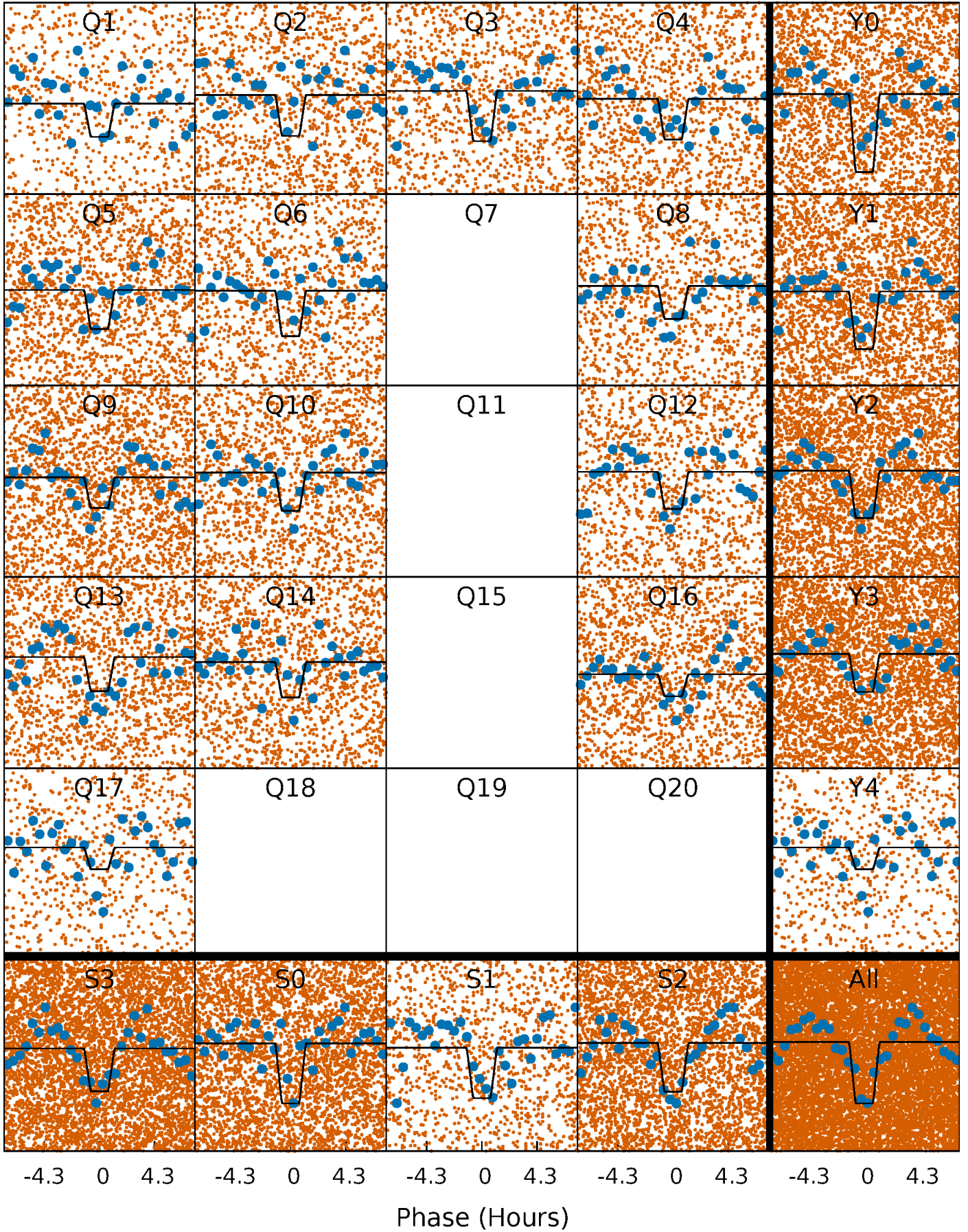
DV Quarter-Phased Transit Curves

TCE 010226488-01 P= 0.660613 Days $T_0=131.706539$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

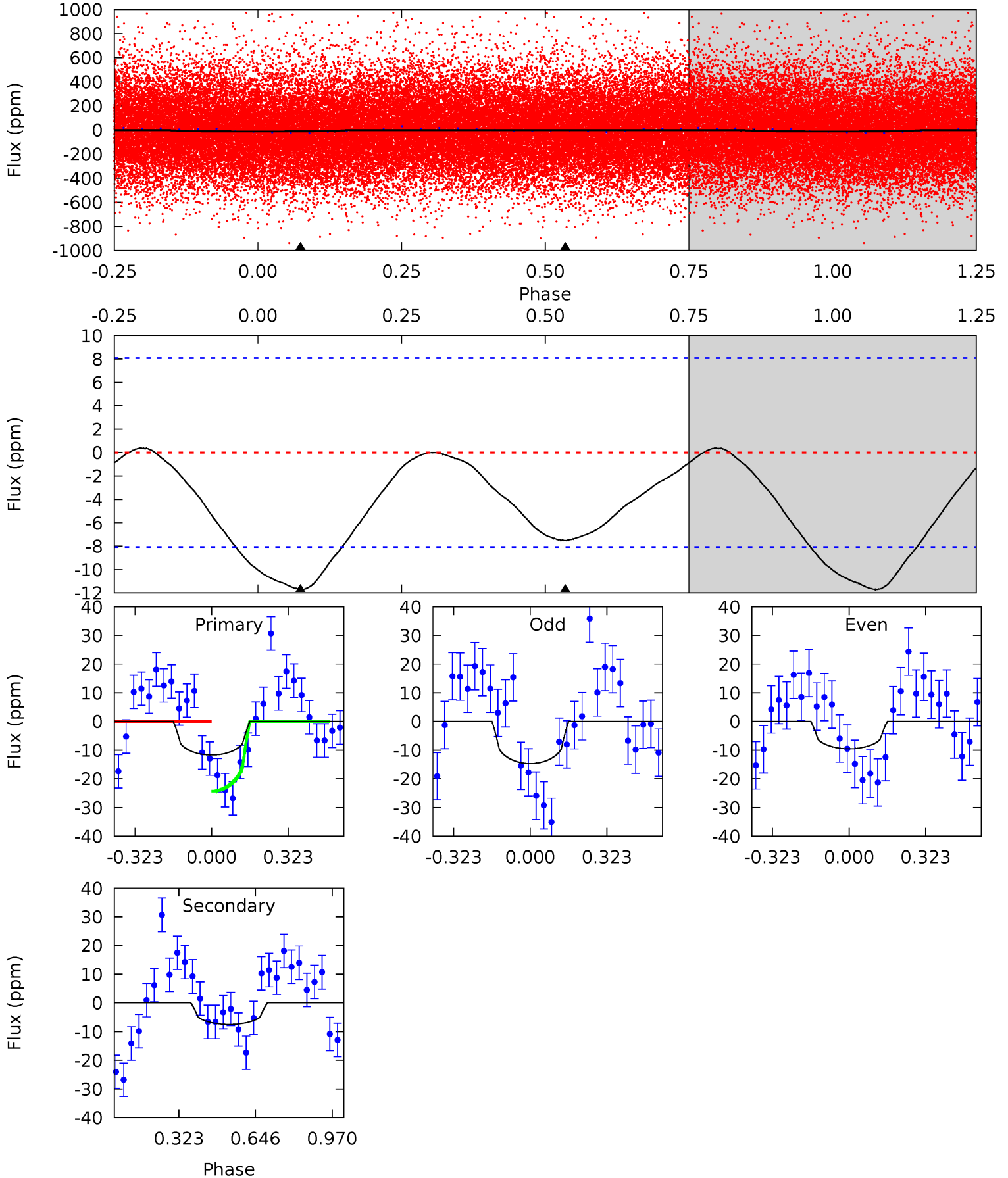
TCE 010226488-01 P= 0.660654 Days $T_0=131.698039$ (BKJD)



DV Model-Shift Uniqueness Test

010226488-01, P = 0.660613 Days, E = 131.045926 Days

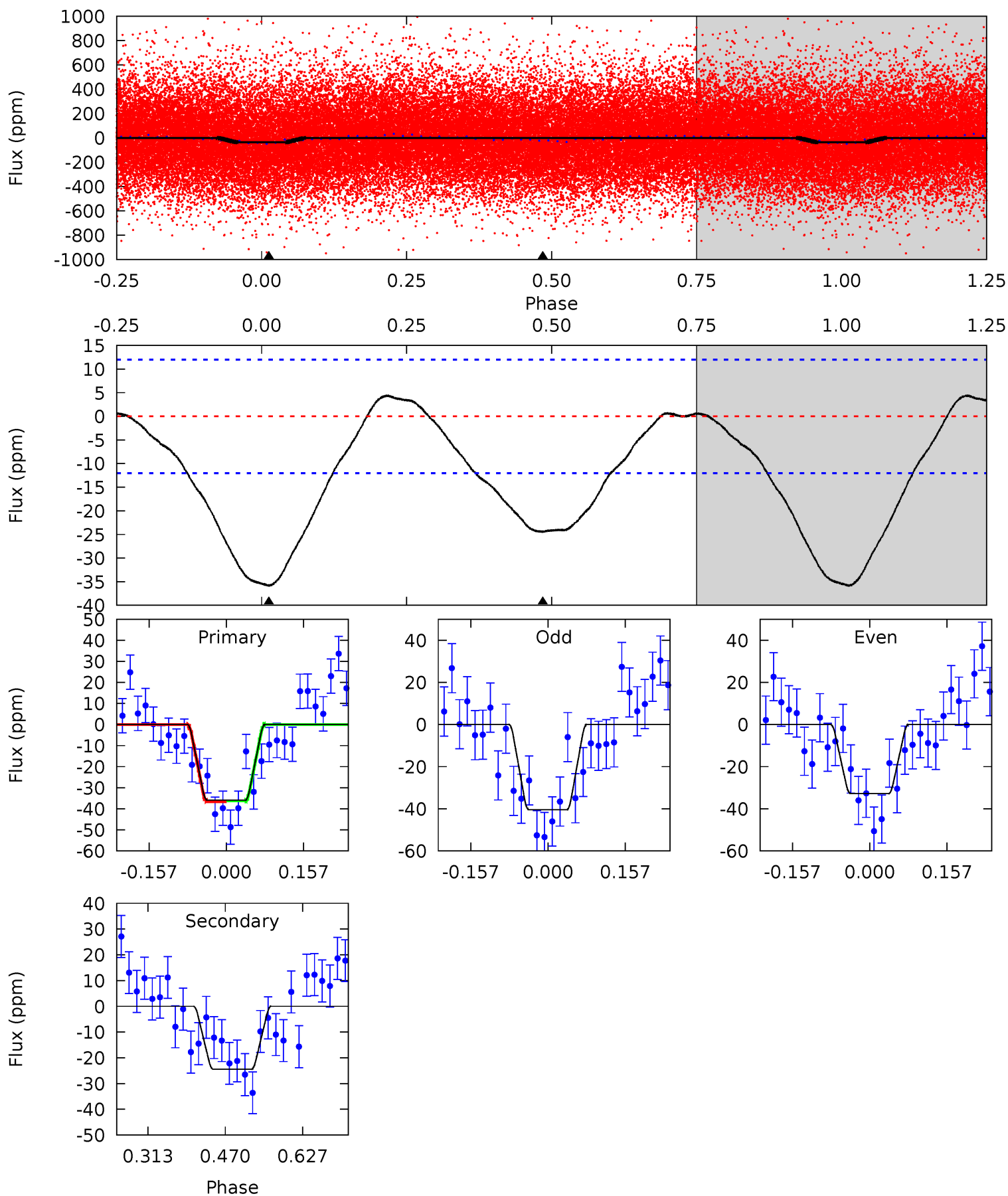
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.25	4.01	0	0	4.31	0.99	0.22	6.25	6.25	4.01	4.01	1.37	0.84	0.03	6.39



Alt Model-Shift Uniqueness Test

010226488-01, P = 0.660654 Days, E = 131.037385 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	9.09	0	0	4.47	1.42	1.22	13.3	13.3	9.09	9.09	1.42	0.90	0.11	0.08



Stellar Parameters For KIC 010226488

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5638^{+152}_{-152}	$4.587^{+0.036}_{-0.135}$	$-0.340^{+0.300}_{-0.300}$	$0.780^{+0.169}_{-0.056}$	$0.872^{+0.088}_{-0.097}$	$2.585^{+0.476}_{-1.032}$
	+3%/-3%	+1%/-3%	+88%/-88%	+22%/-7%	+10%/-11%	+18%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010226488-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-8 ± 2	$0.53^{+0.50}_{-0.33}$	2627^{+135}_{-99}	4006^{+2292}_{-997}	$2.924^{+19.955}_{-2.208}$
Alt.	-24 ± 3	$0.71^{+0.52}_{-0.45}$	2630^{+126}_{-104}	4515^{+2972}_{-892}	$5.550^{+36.032}_{-3.842}$

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

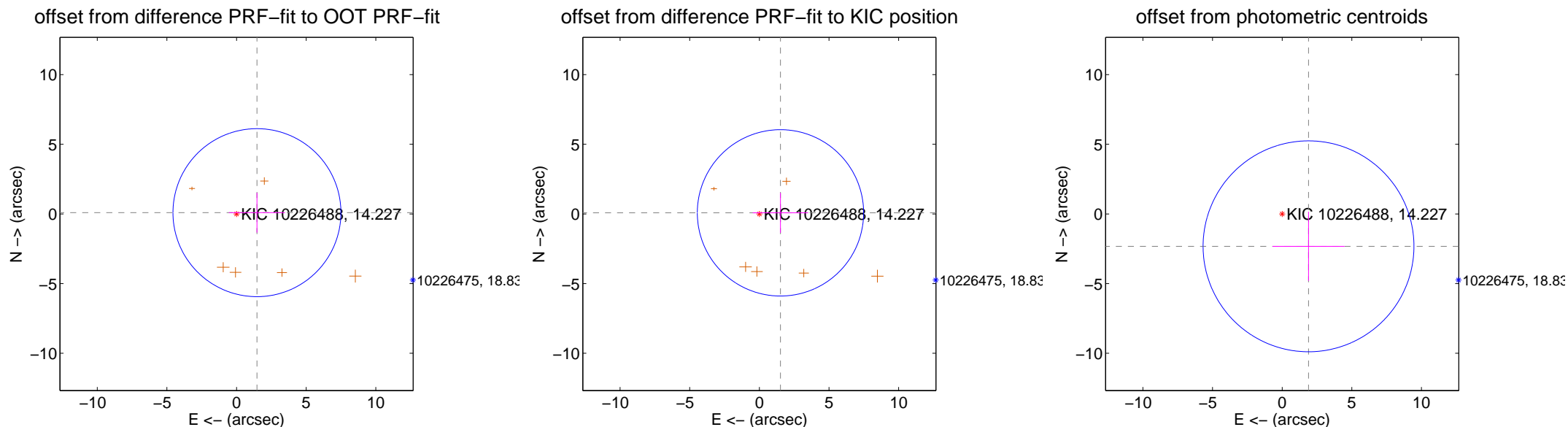
DV Centroid Data

Supplemental centroid analysis for 010226488-01. Kepler magnitude: 14.23. Transit SNR 6.05

There are 0 quarters with good PRF difference image offsets

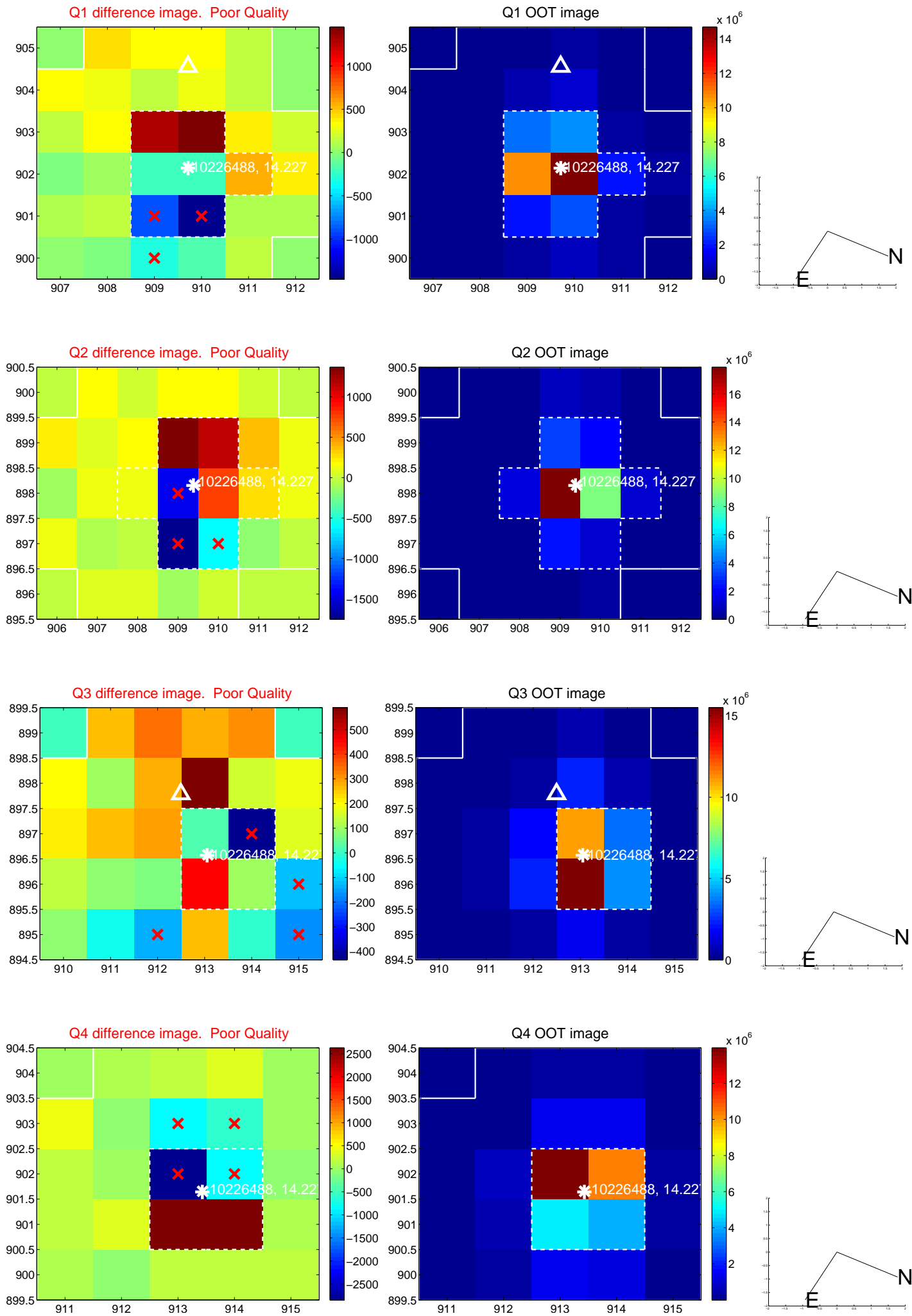
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.467 ± 2.009	0.73	-1.464 ± 2.011	0.092 ± 1.432
PRF-fit source offset from KIC position	1.517 ± 1.989	0.76	-1.515 ± 1.991	0.078 ± 1.430
photometric centroid source offset	3.00 ± 2.52	1.19	-1.89 ± 2.58	-2.32 ± 2.48

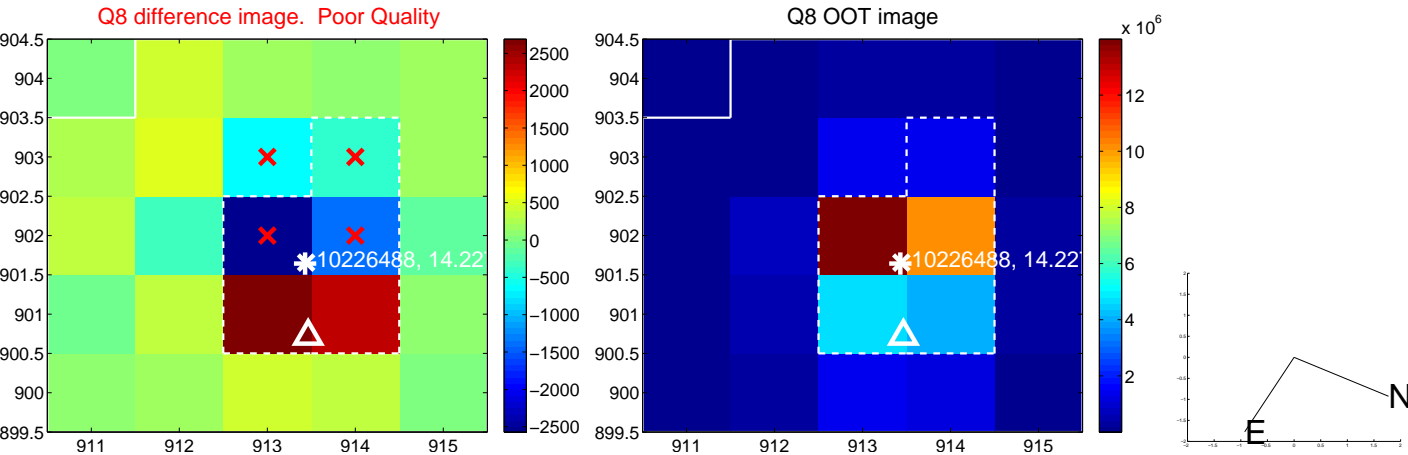
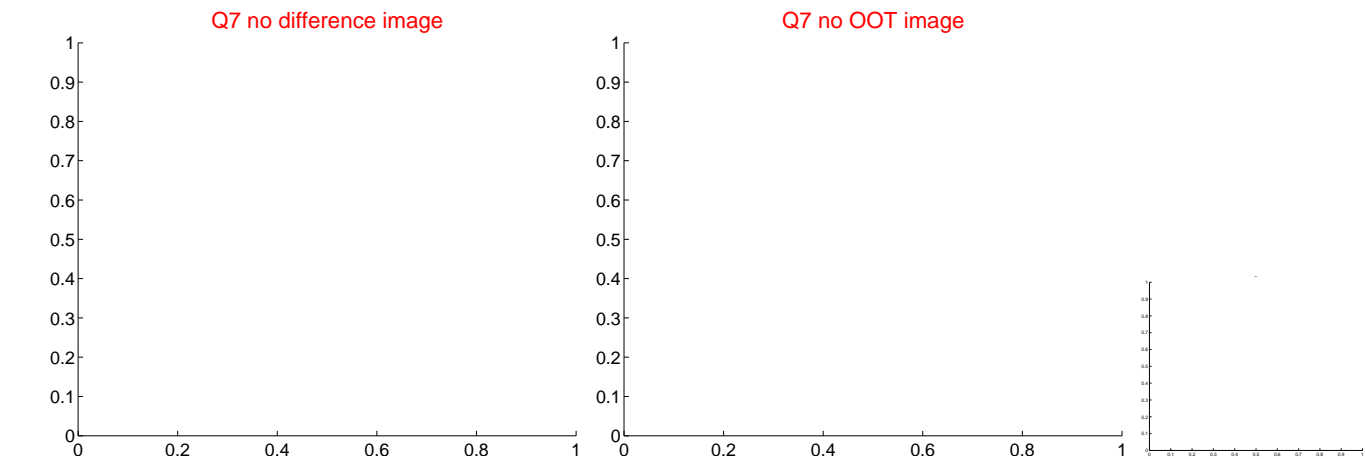
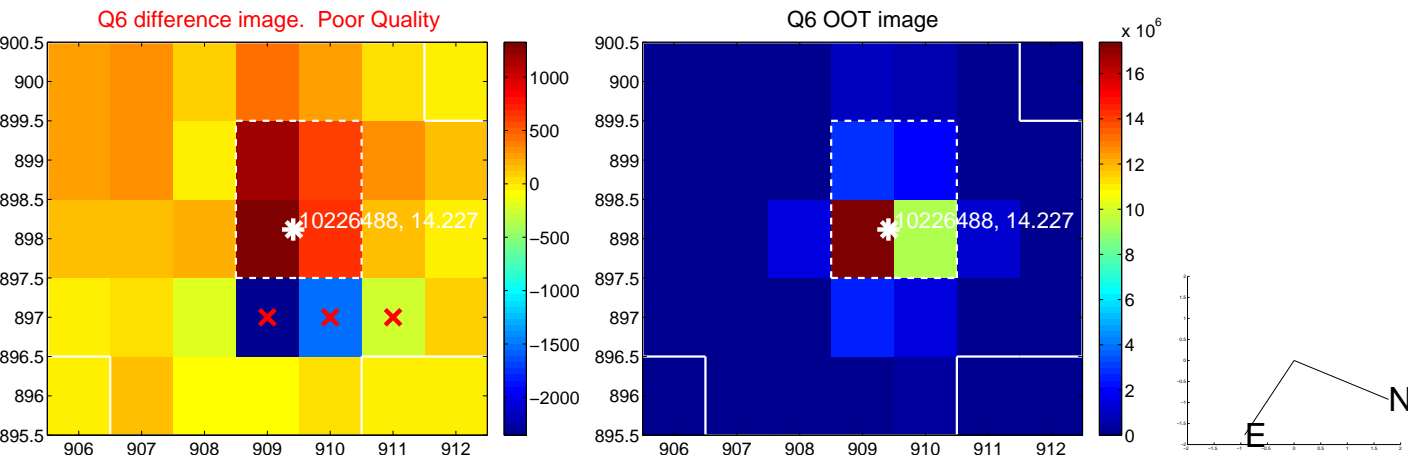
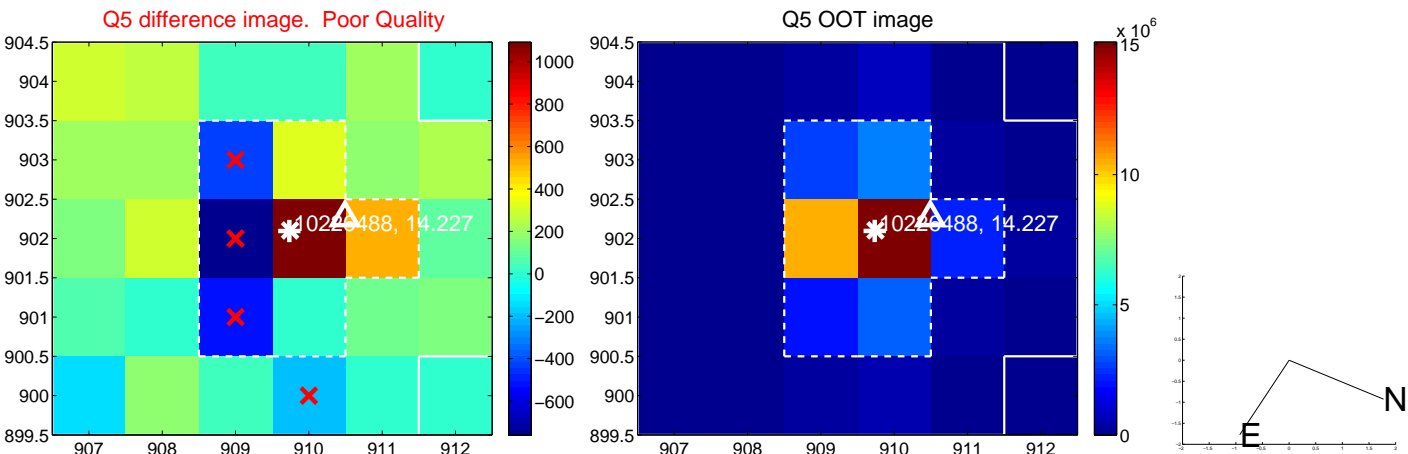


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

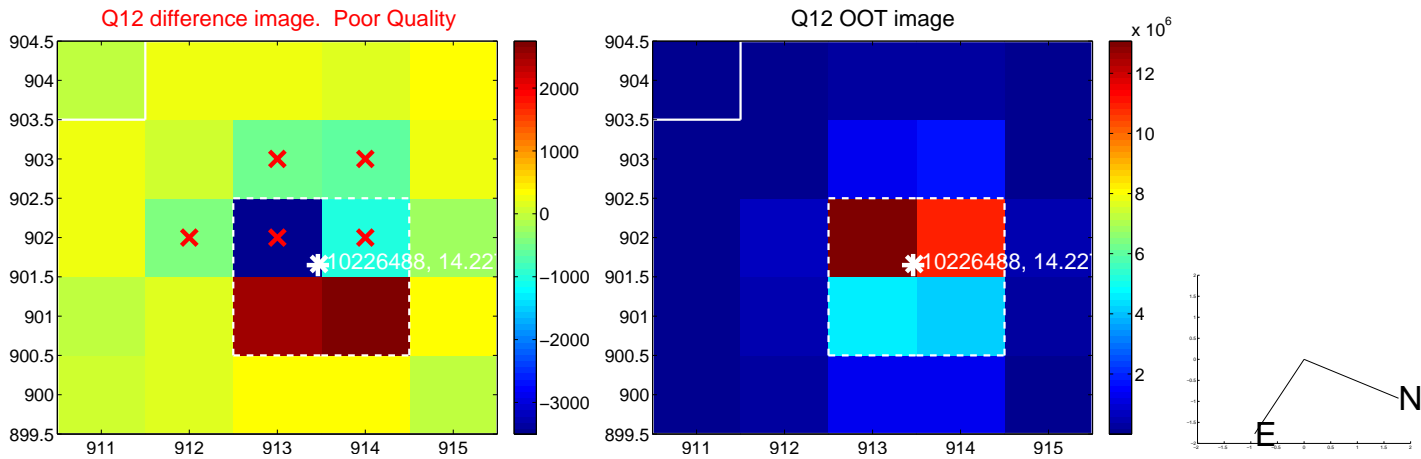
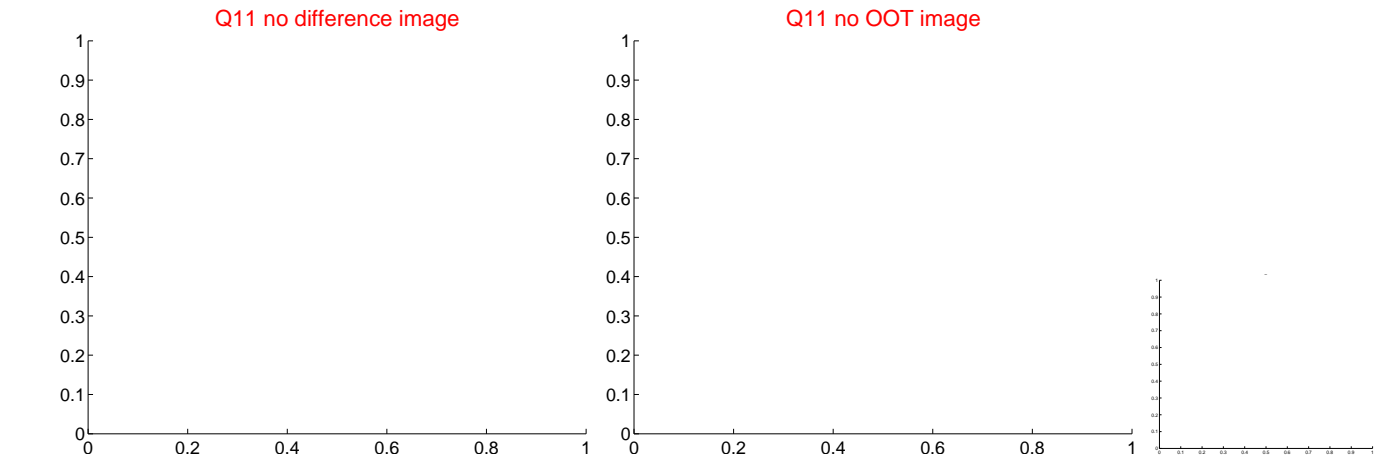
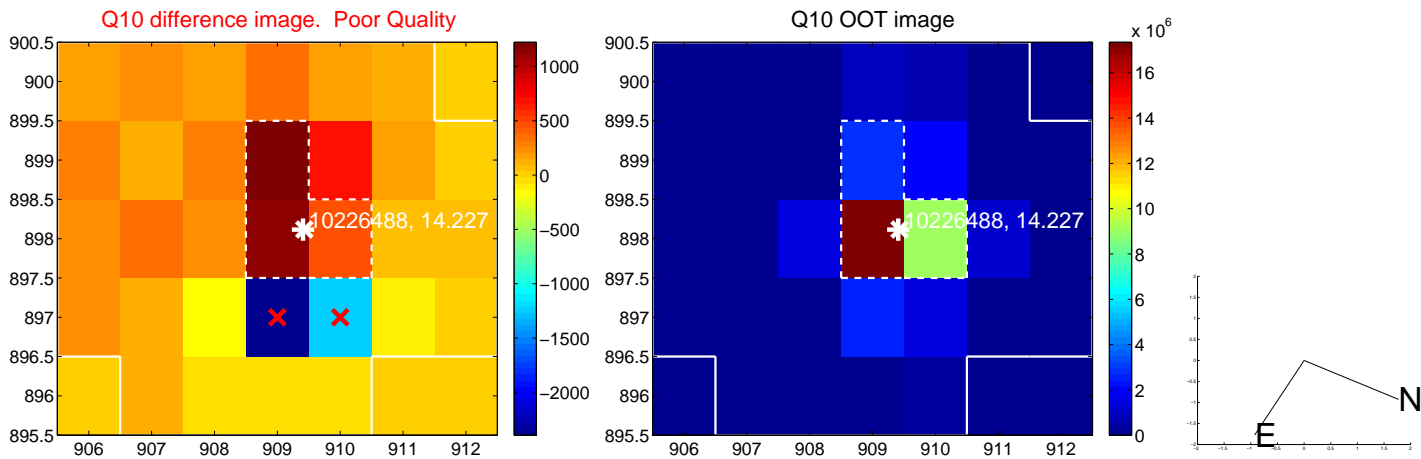
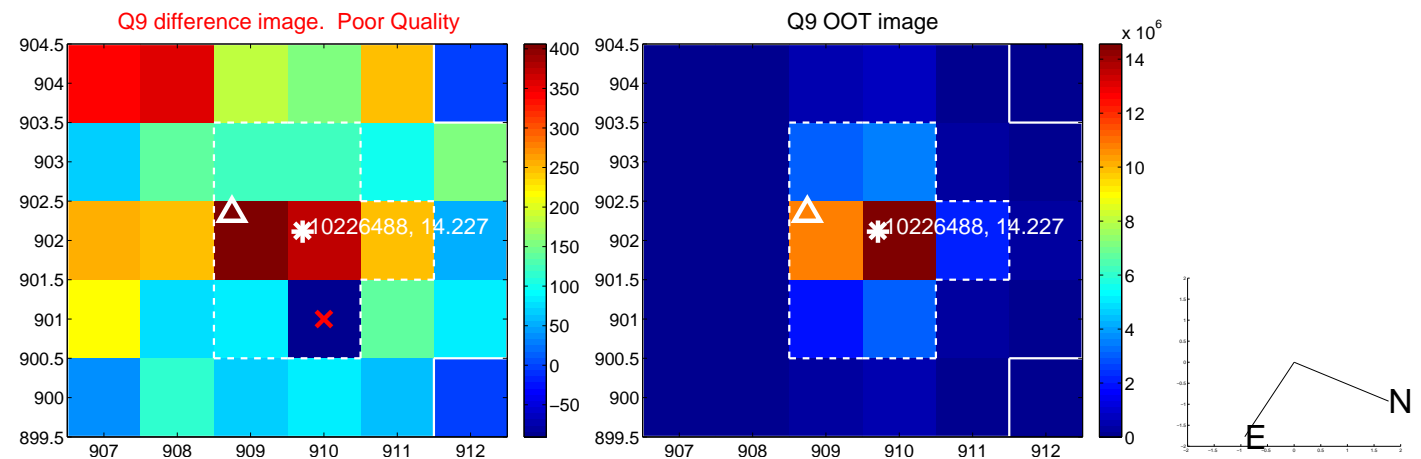
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



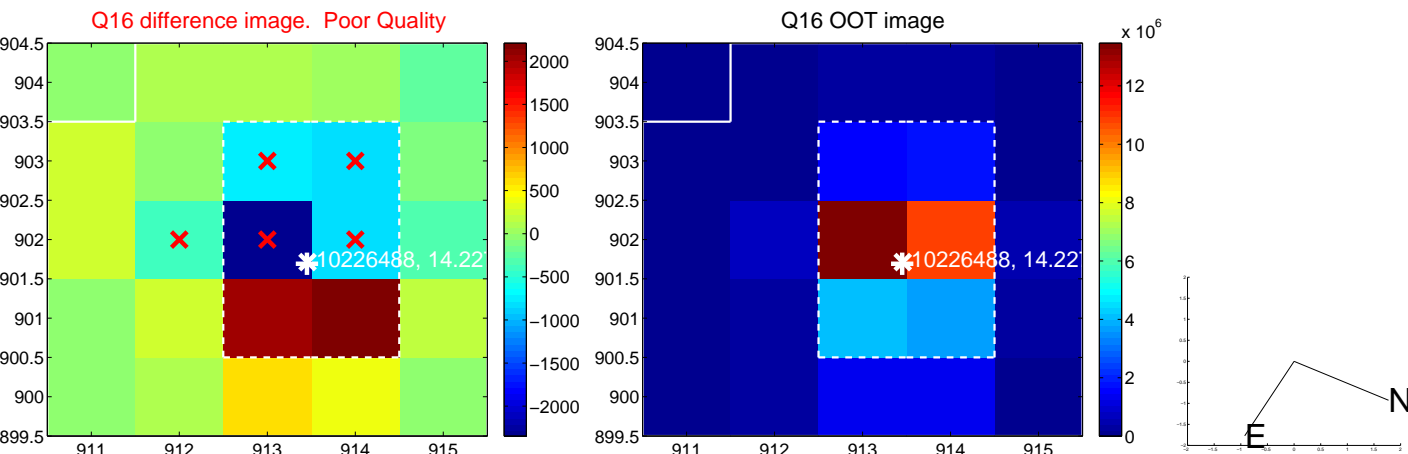
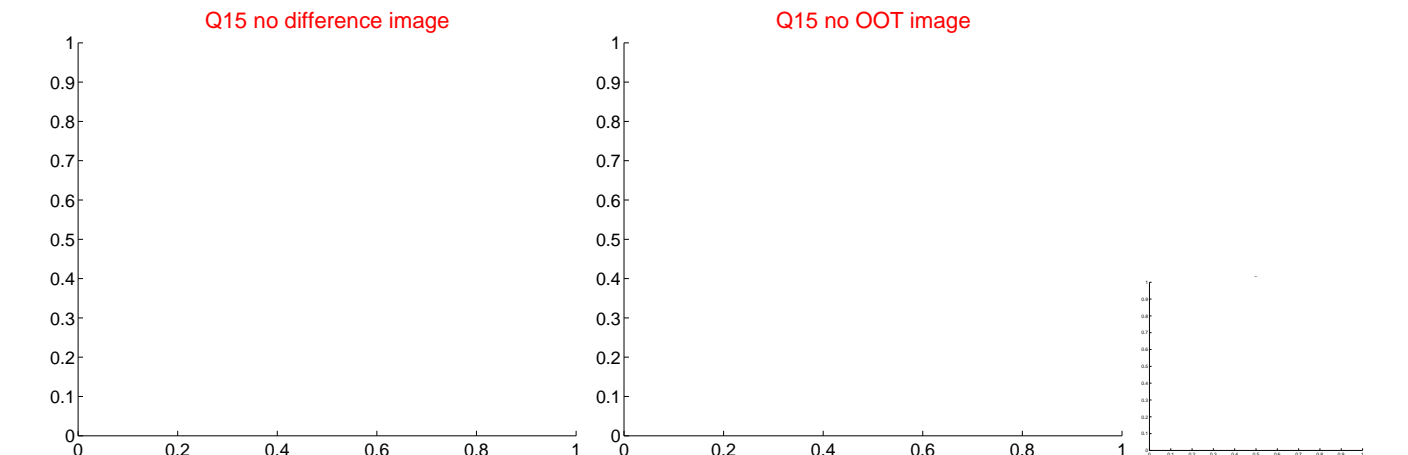
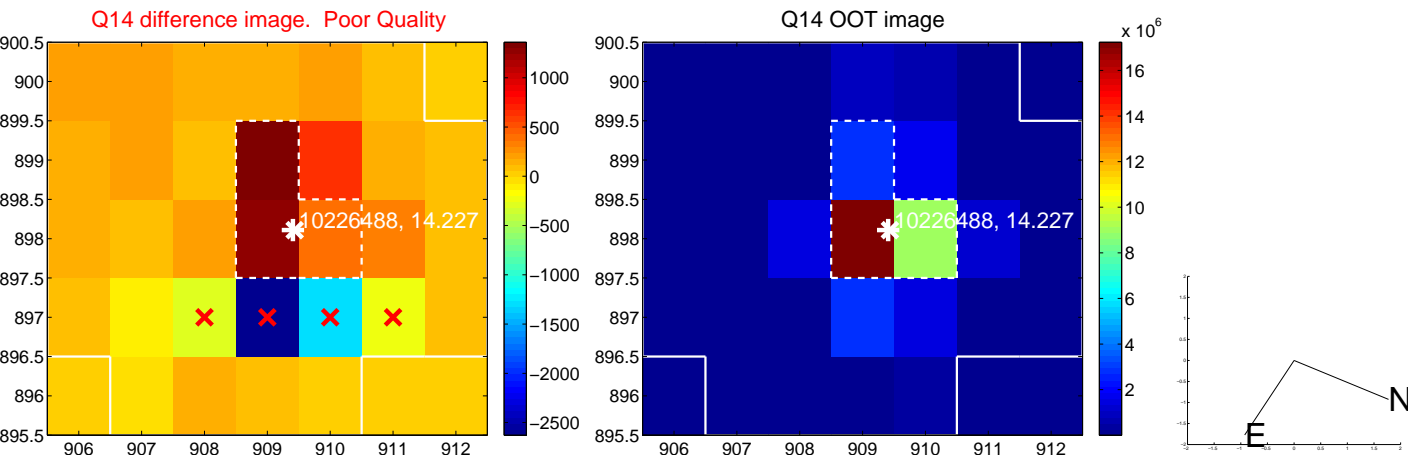
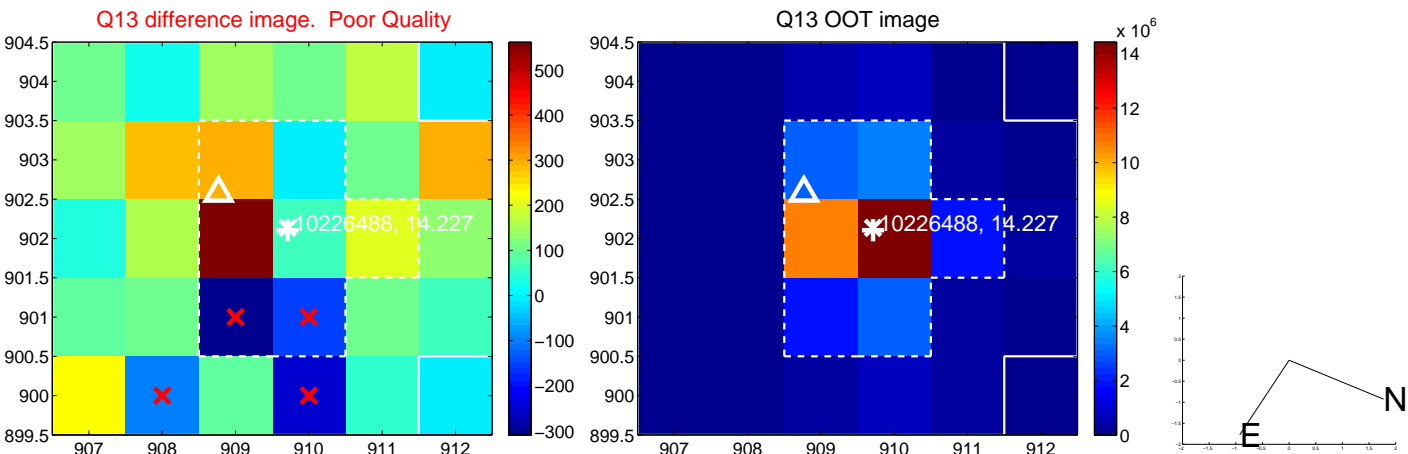
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



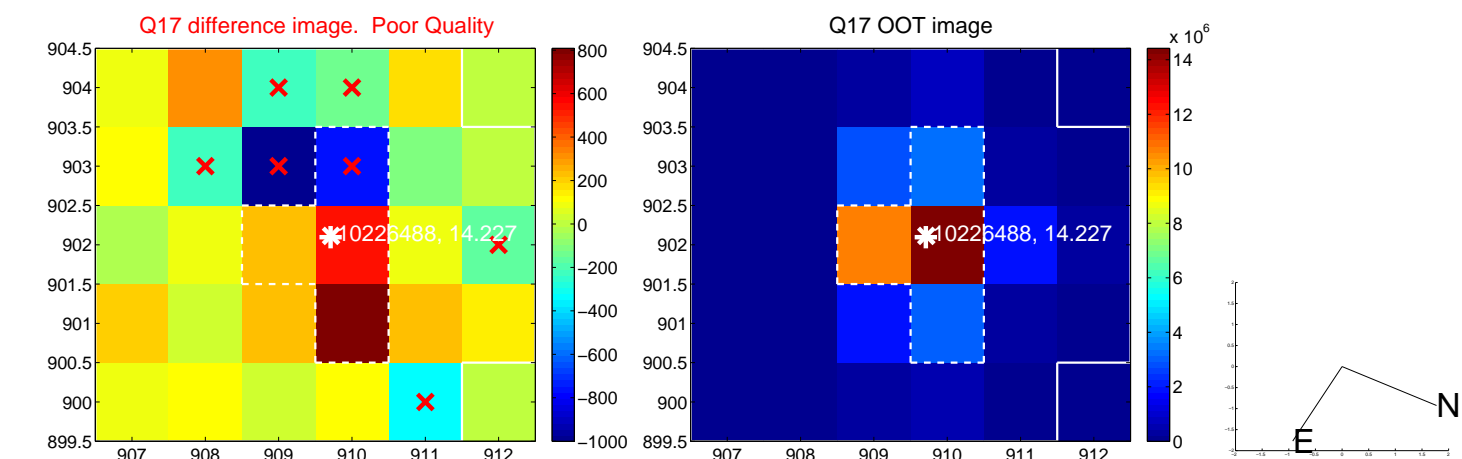
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



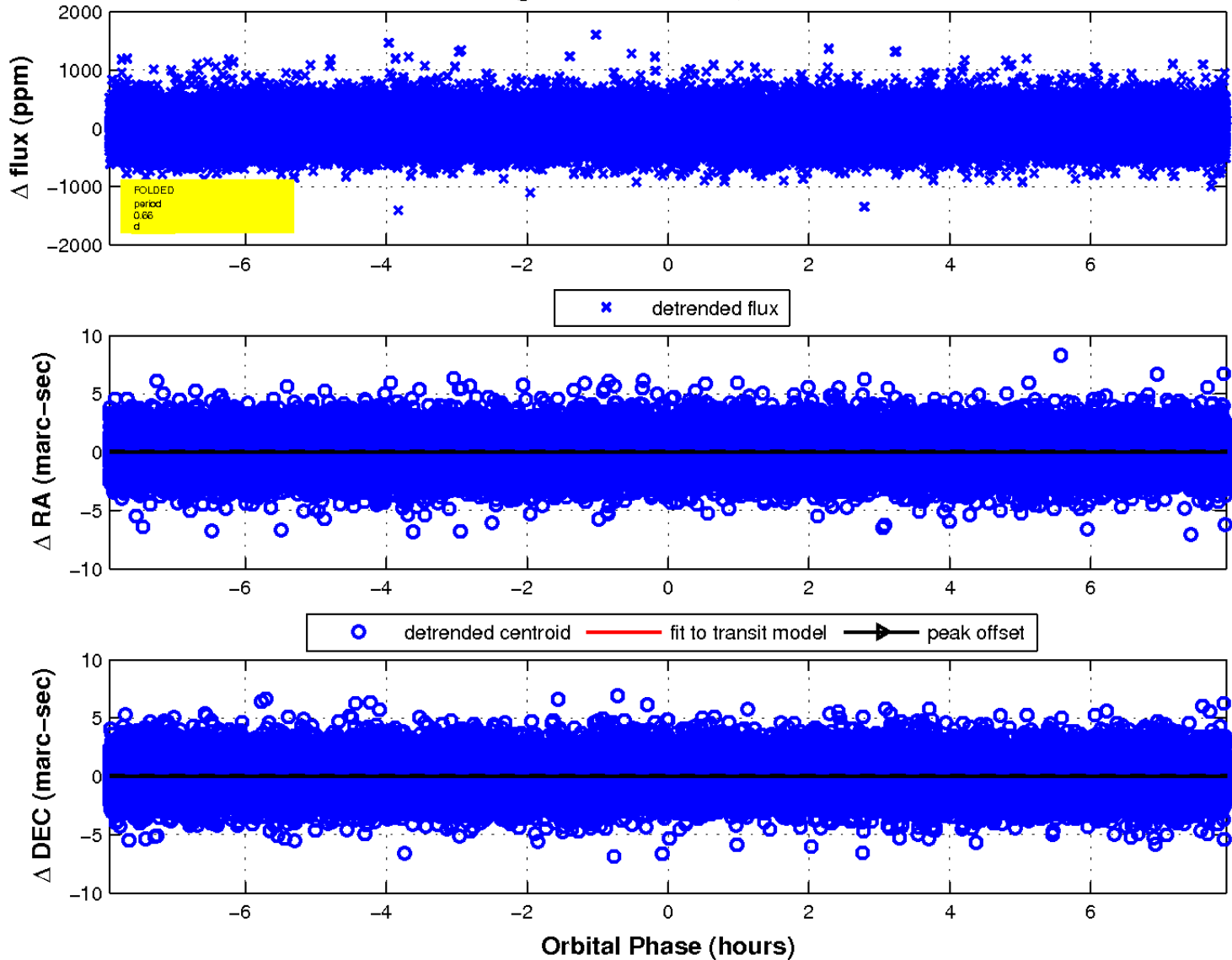
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

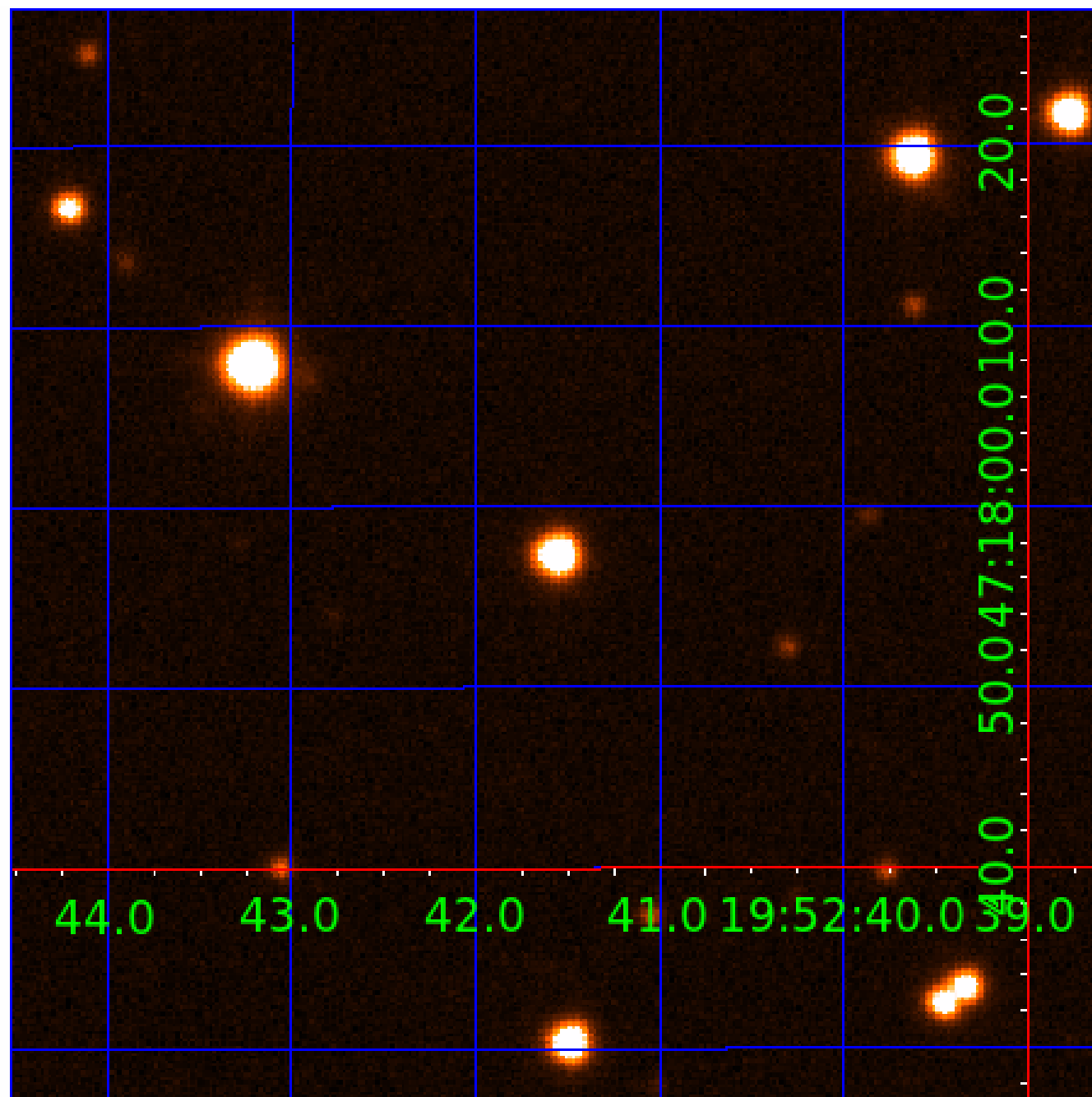


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010226488

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})
010226488-01	OBS	No	0.660613	131.706539	14.5	4.679	8.7	6.1	0.78	5638	0.30	2768.18
010226488-02	OBS	No	37.153693	159.936660	403.8	2.365	10.0	10.0	0.78	5638	1.57	12.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010226488-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH
010226488-02	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.

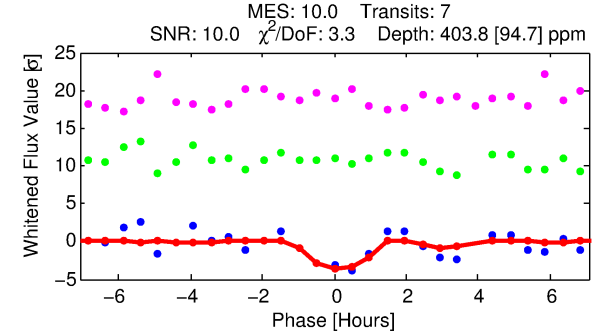
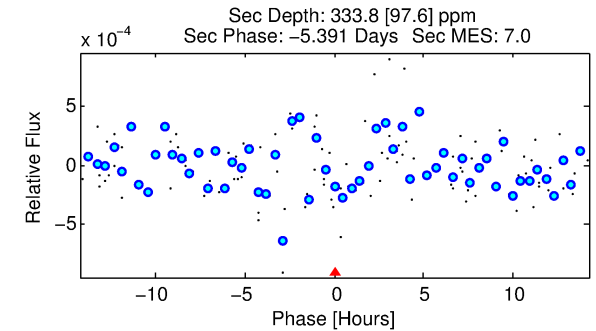
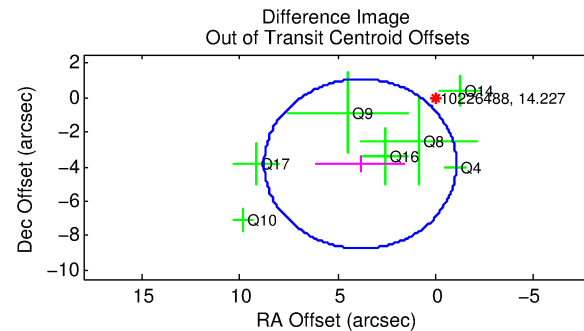
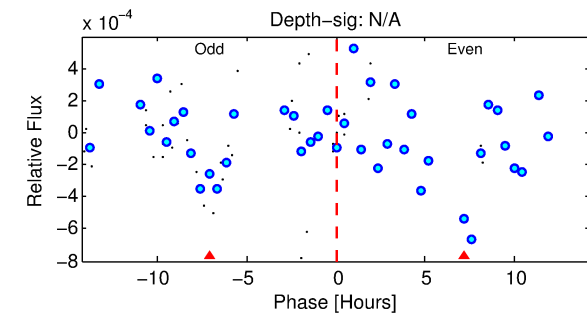
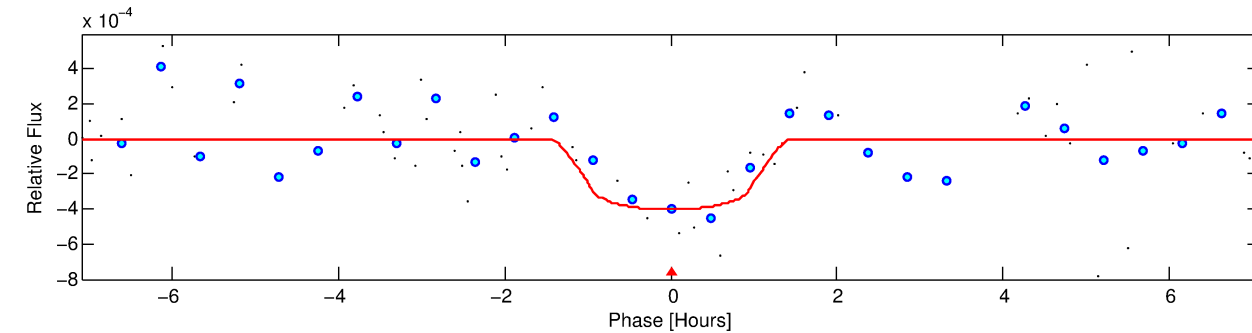
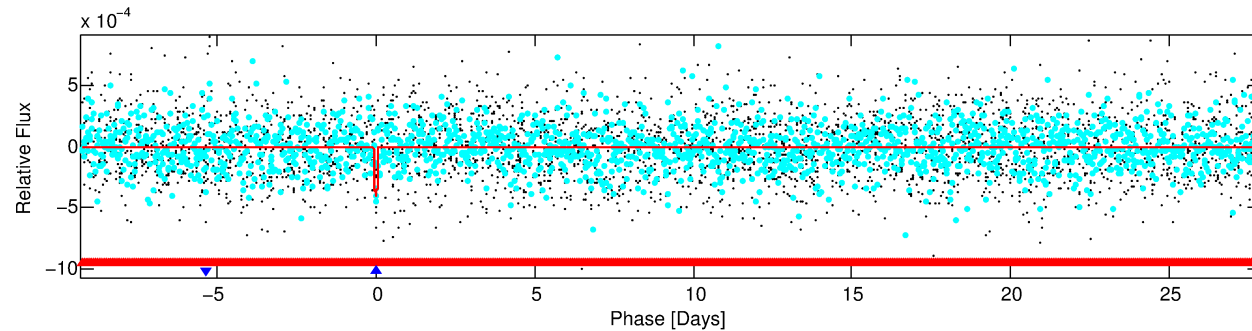
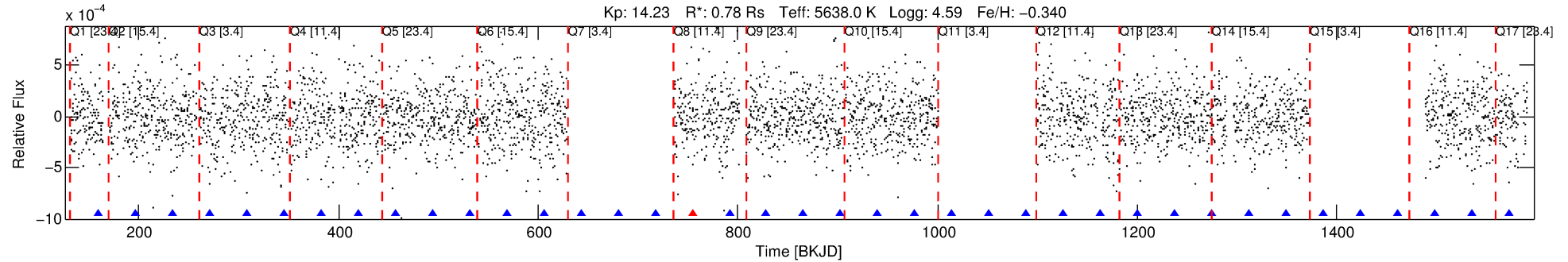
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010226488-02

No Significant Match Found

DV One-Page Summary

KIC: 10226488 Candidate: 2 of 2 Period: 37.154 d



DV Fit Results:

Period = 37.15369 [0.00064] d
Epoch = 159.9367 [0.0240] BKJD
Rp/R* = 0.0184 [0.1050]
a/R* = 118.18 [2991.35]
b = 0.26 [91.17]
Seff = 12.85 [3.53]
Teq = 483 [33] K
Rp = 1.57 [8.94] Re
a = 0.2071 [0.0368] AU
Ag = 3209.90 [36649.48] [0.09σ]
Teffp = 5618 [16033] K [0.32σ]

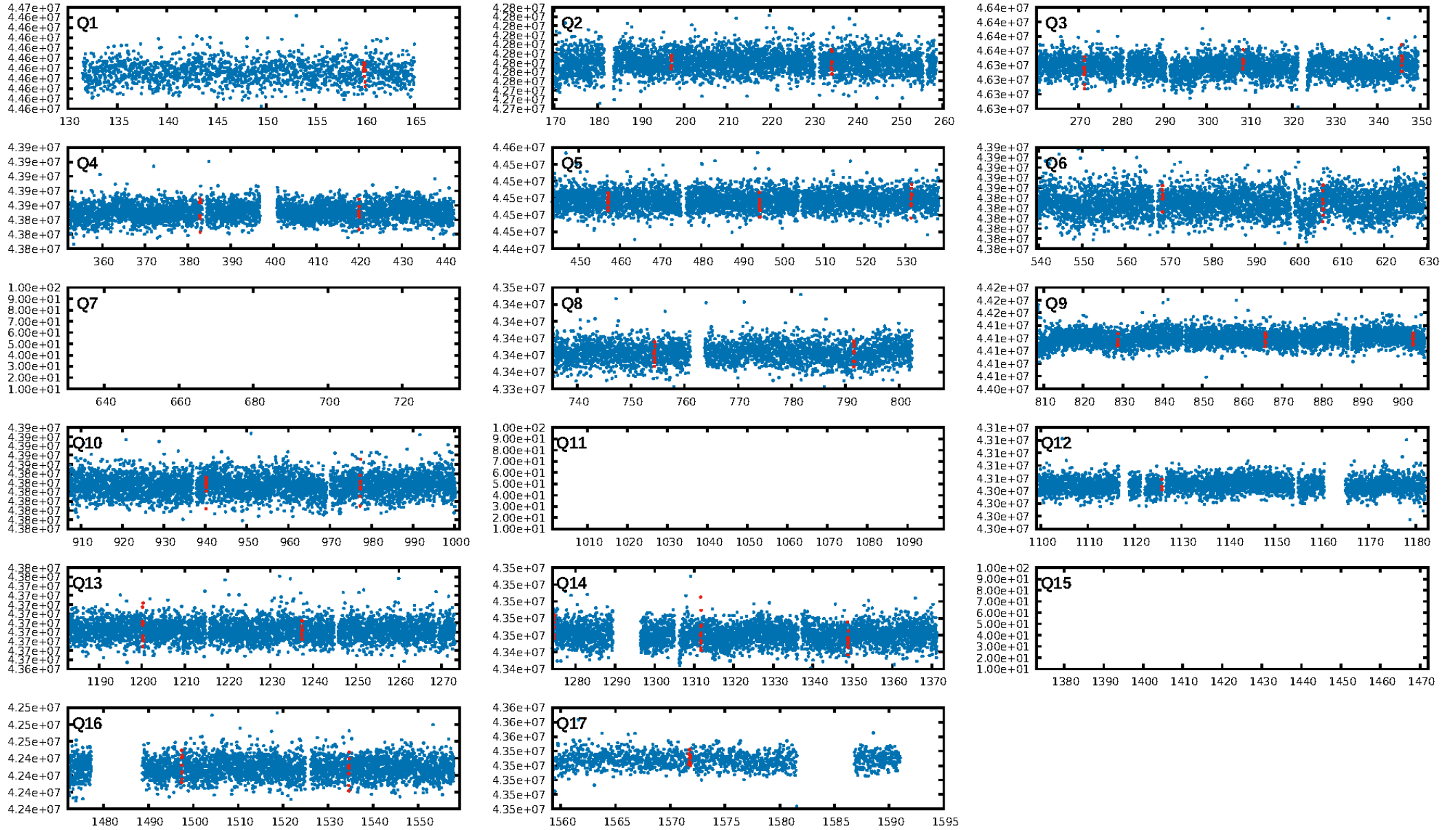
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [167.06σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 18.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.37e-09
RollingBand-fgt: 0.86 [6/7]
GhostDiagnostic-chr: 0.7341
Centroid-sig: 69.5%
Centroid-so: 0.345 arcsec [0.37σ]
OotOffset-rm: 5.431 arcsec [3.32σ]
KicOffset-rm: 5.476 arcsec [3.33σ]
OotOffset-st: 2/0/3/2 [7]
KicOffset-st: 2/0/3/2 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.00 [0/13]

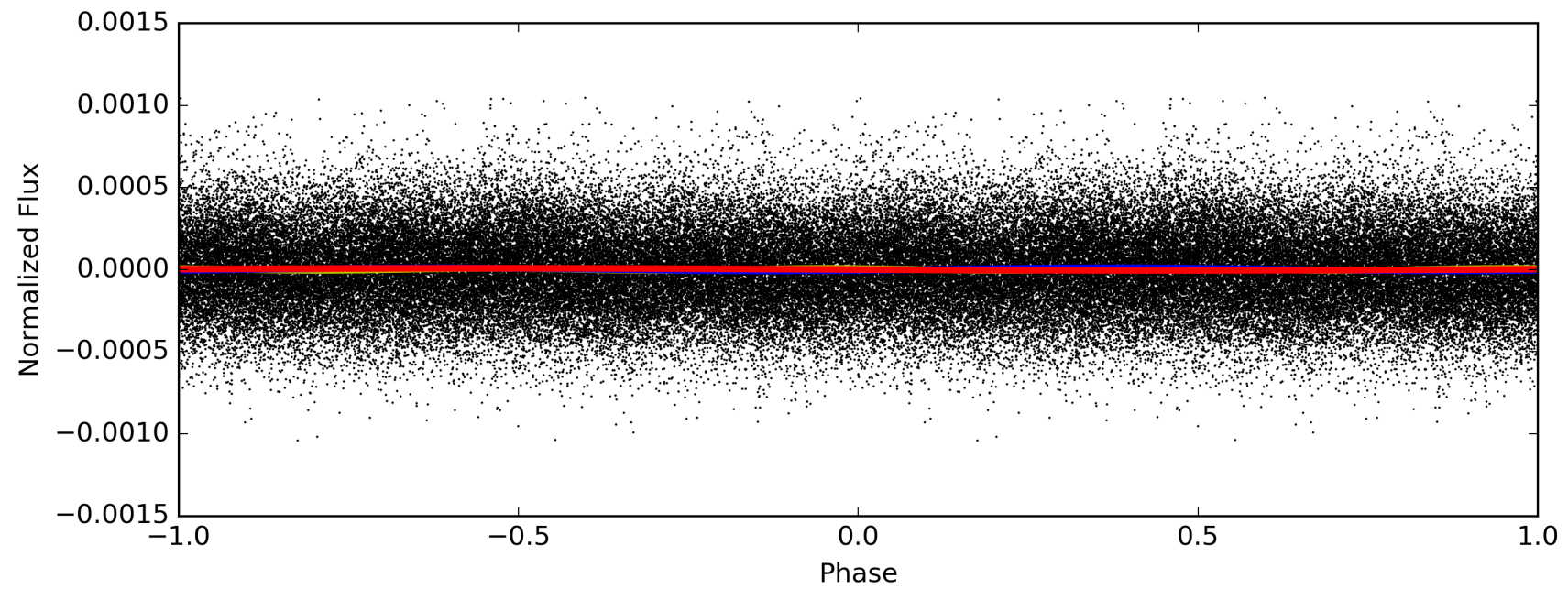
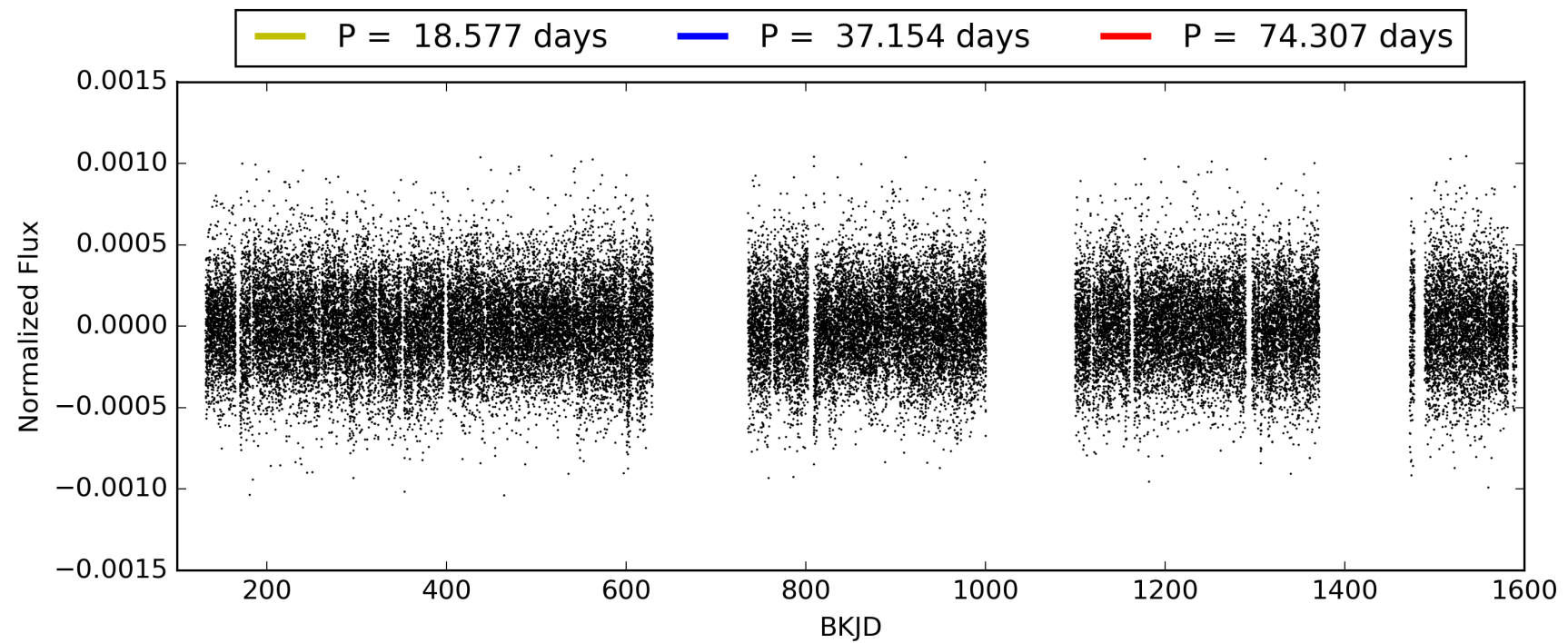
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:36:16 Z

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

TCE 010226488-02, PDC Light Curves

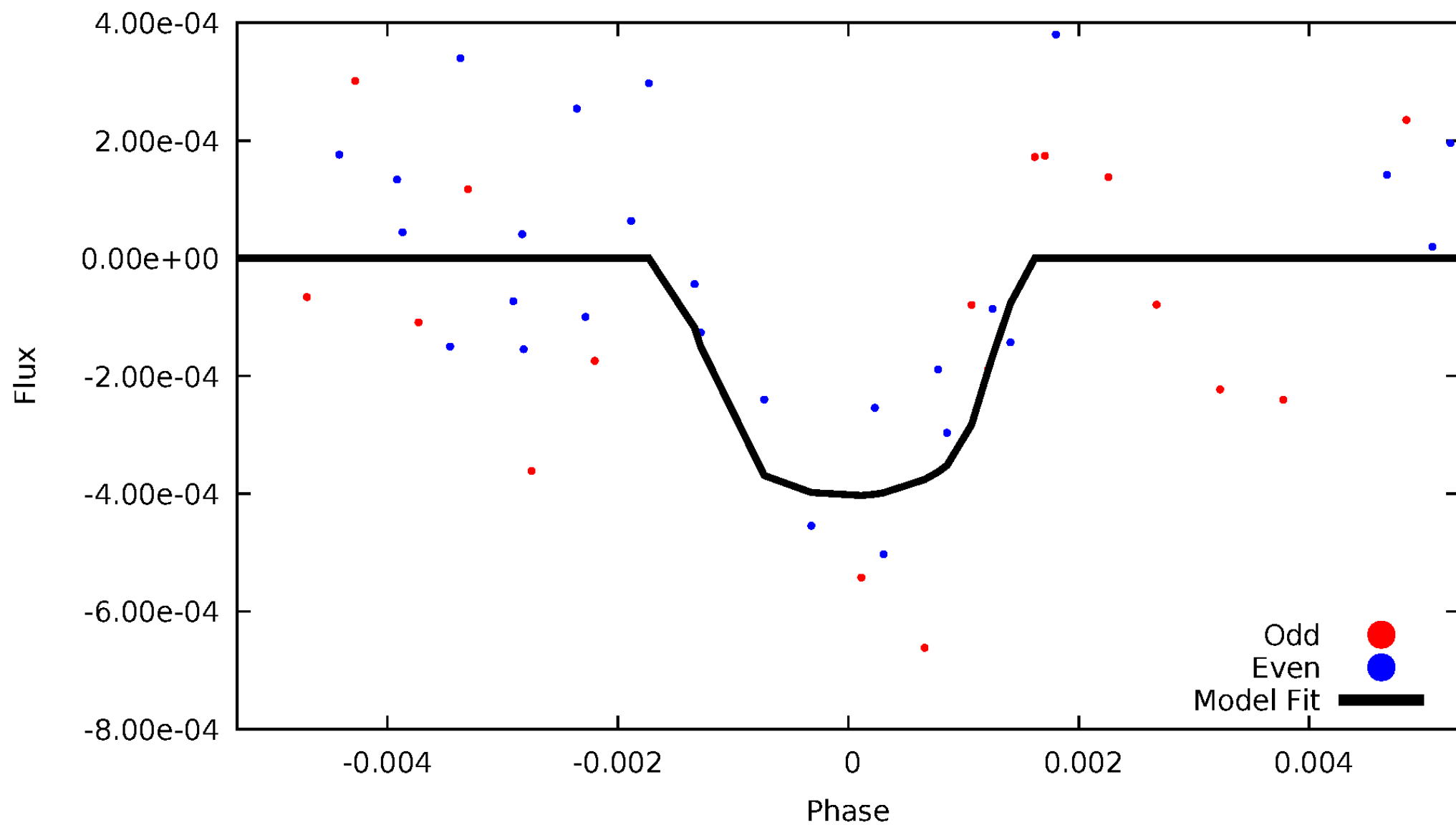


TCE 010226488-02



DV Odd/Even

TCE 010226488-02

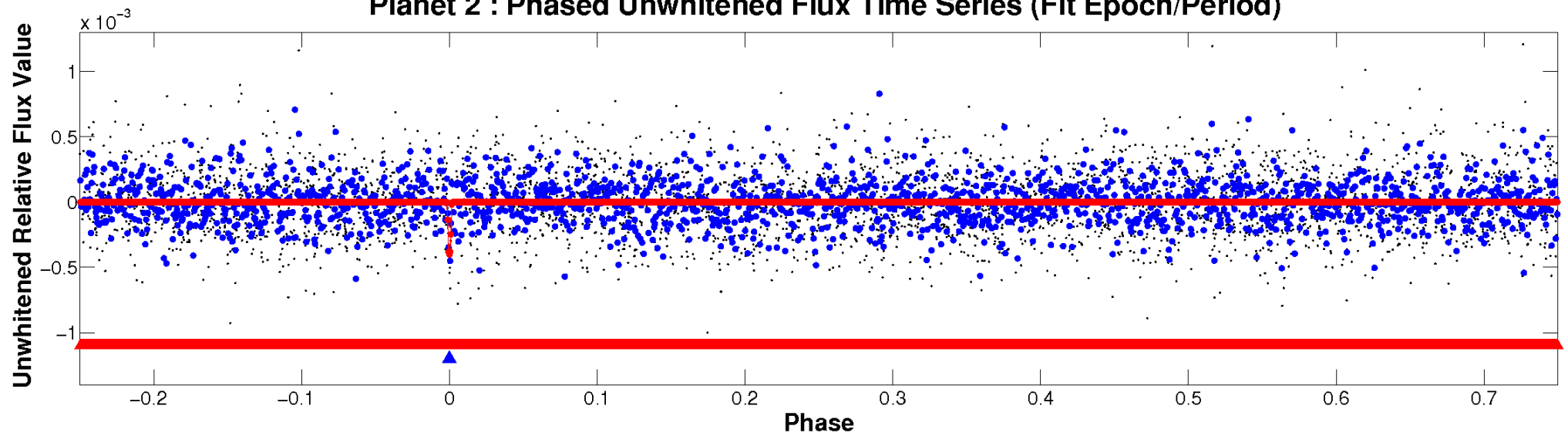


ALT Odd/Even

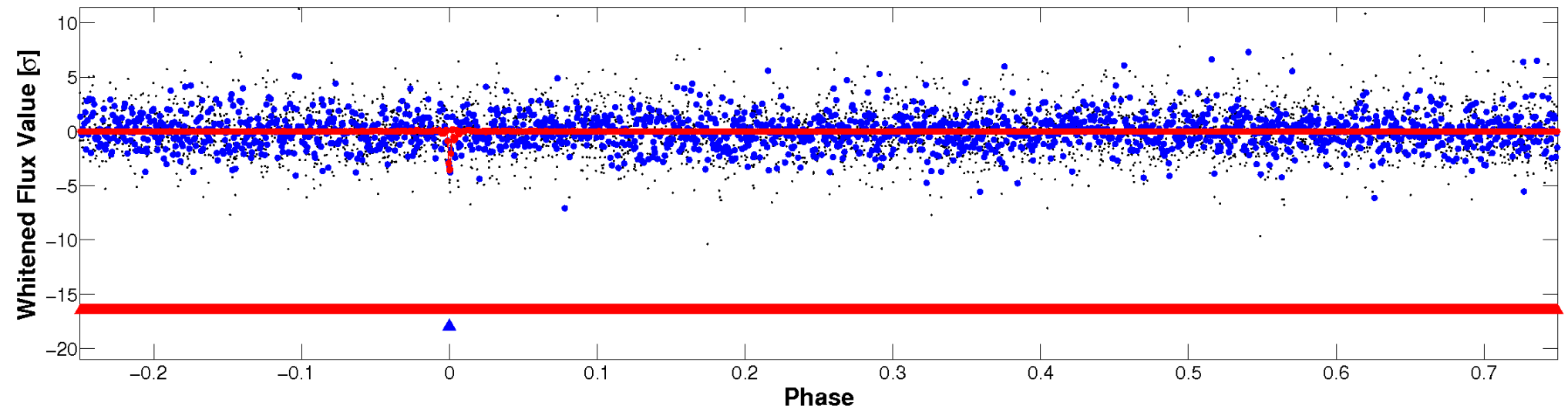
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

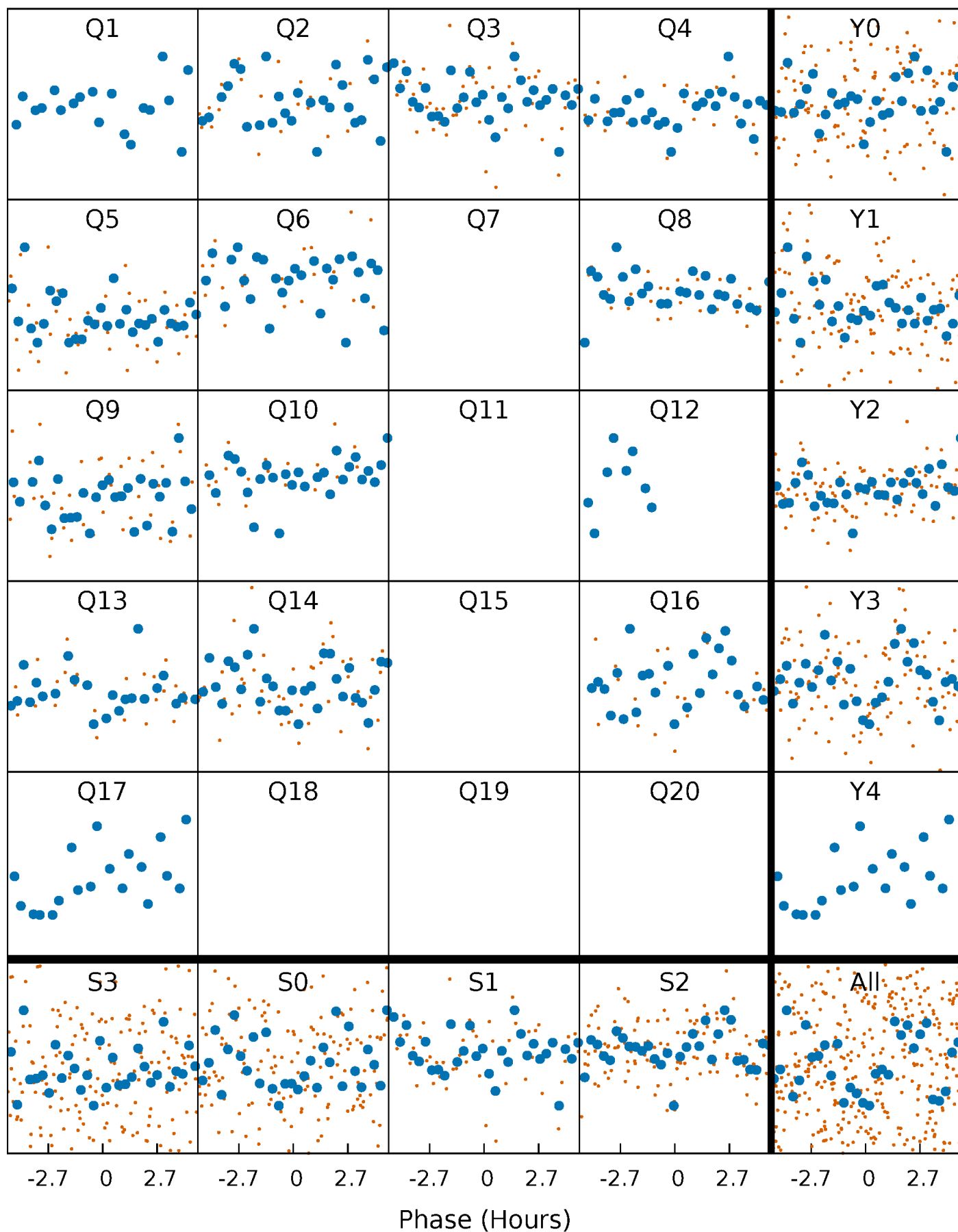


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



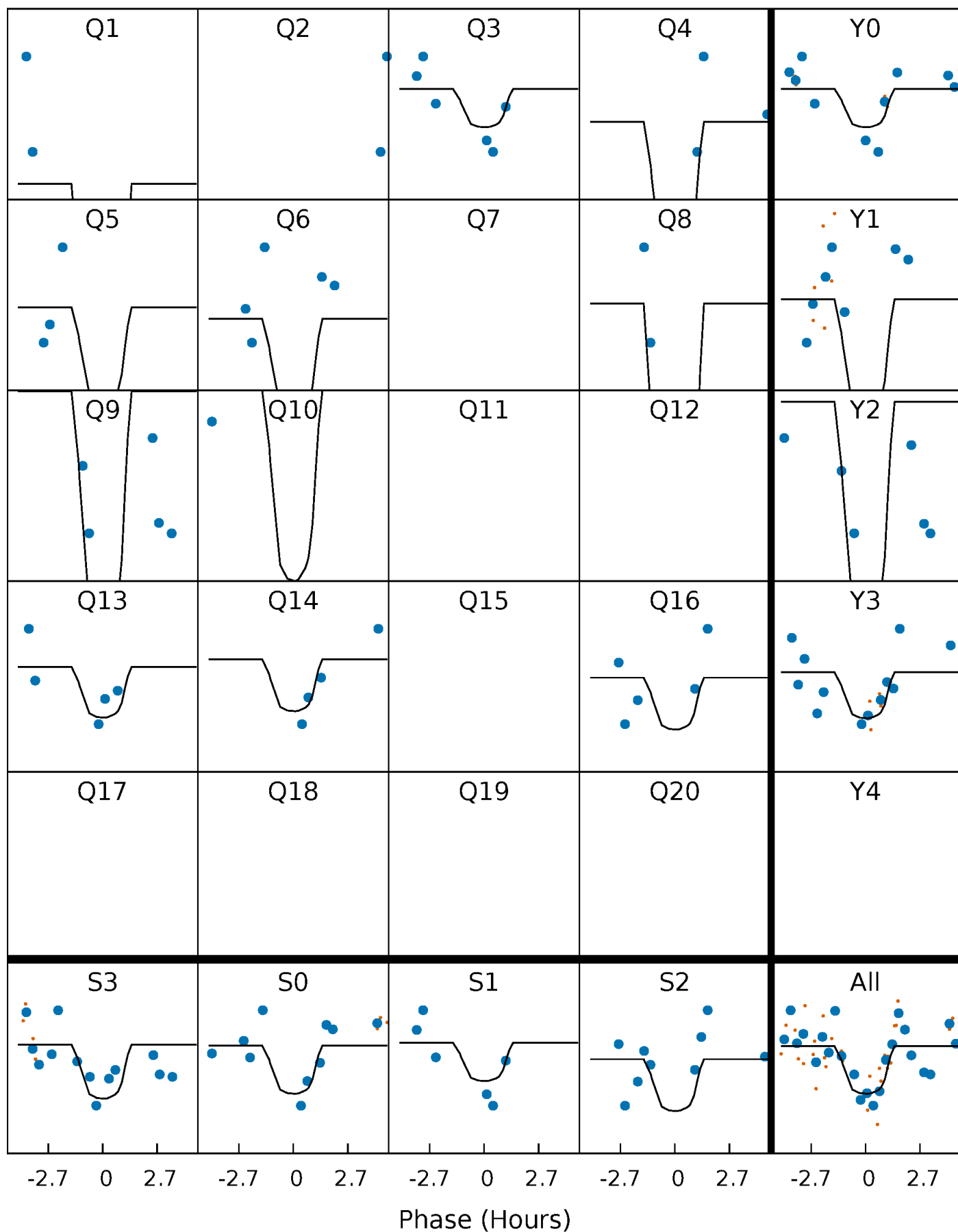
PDC Quarter-Phased Transit Curves

TCE 010226488-02 P= 37.153693 Days $T_0=159.936660$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010226488-02 P= 37.153693 Days $T_0=159.936660$ (BKJD)

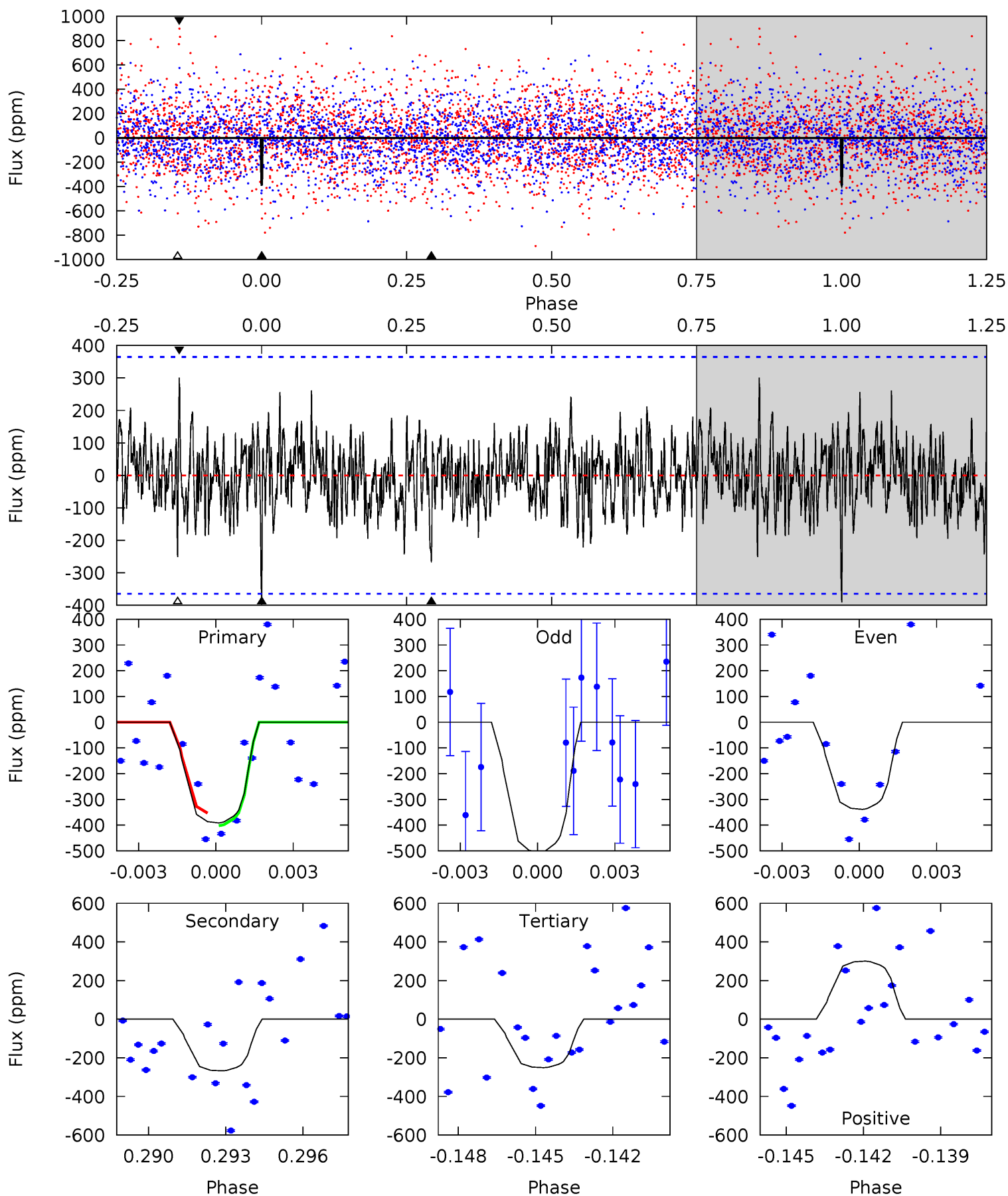


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

010226488-02, $P = 37.153693$ Days, $E = 122.782967$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.64	3.86	3.62	4.34	5.26	2.98	1.19	2.02	1.31	0.24	-0.48	1.12	1.08	0.43	0.27



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 010226488

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5638^{+152}_{-152}	$4.587^{+0.036}_{-0.135}$	$-0.340^{+0.300}_{-0.300}$	$0.780^{+0.169}_{-0.056}$	$0.872^{+0.088}_{-0.097}$	$2.585^{+0.476}_{-1.032}$
	+3%/-3%	+1%/-3%	+88%/-88%	+22%/-7%	+10%/-11%	+18%/-40%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010226488-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-268 ± 69	$6.38^{+7.42}_{-4.45}$	687^{+32}_{-28}	3225^{+1680}_{-613}	144^{+1514}_{-113}
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

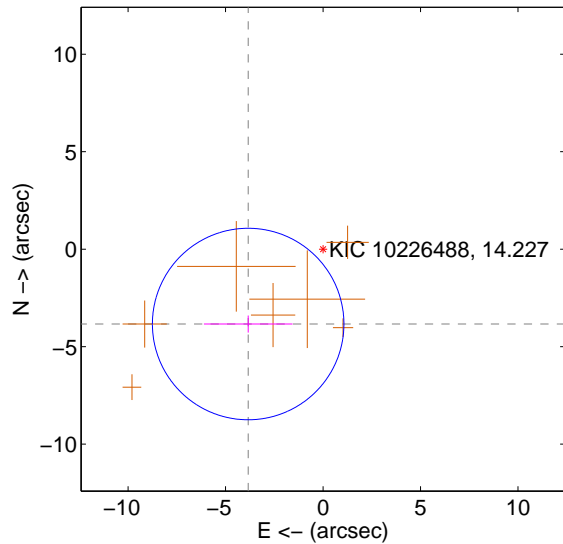
Supplemental centroid analysis for 010226488-02. Kepler magnitude: 14.23. Transit SNR 9.98

There are 0 quarters with good PRF difference image offsets

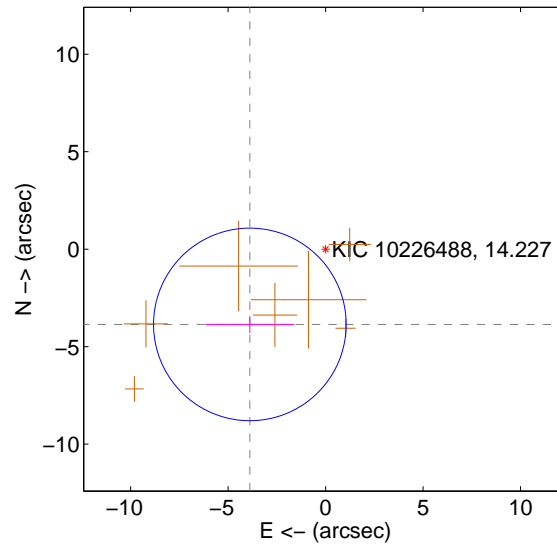
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.431 ± 1.637	3.32	3.841 ± 2.273	-3.839 ± 0.439
PRF-fit source offset from KIC position	5.476 ± 1.646	3.33	3.884 ± 2.279	-3.859 ± 0.441
photometric centroid source offset	0.34 ± 0.93	0.37	-0.28 ± 0.94	0.21 ± 0.91

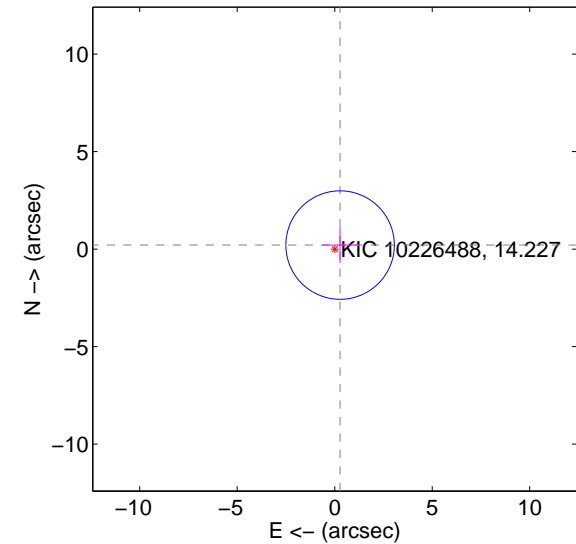
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

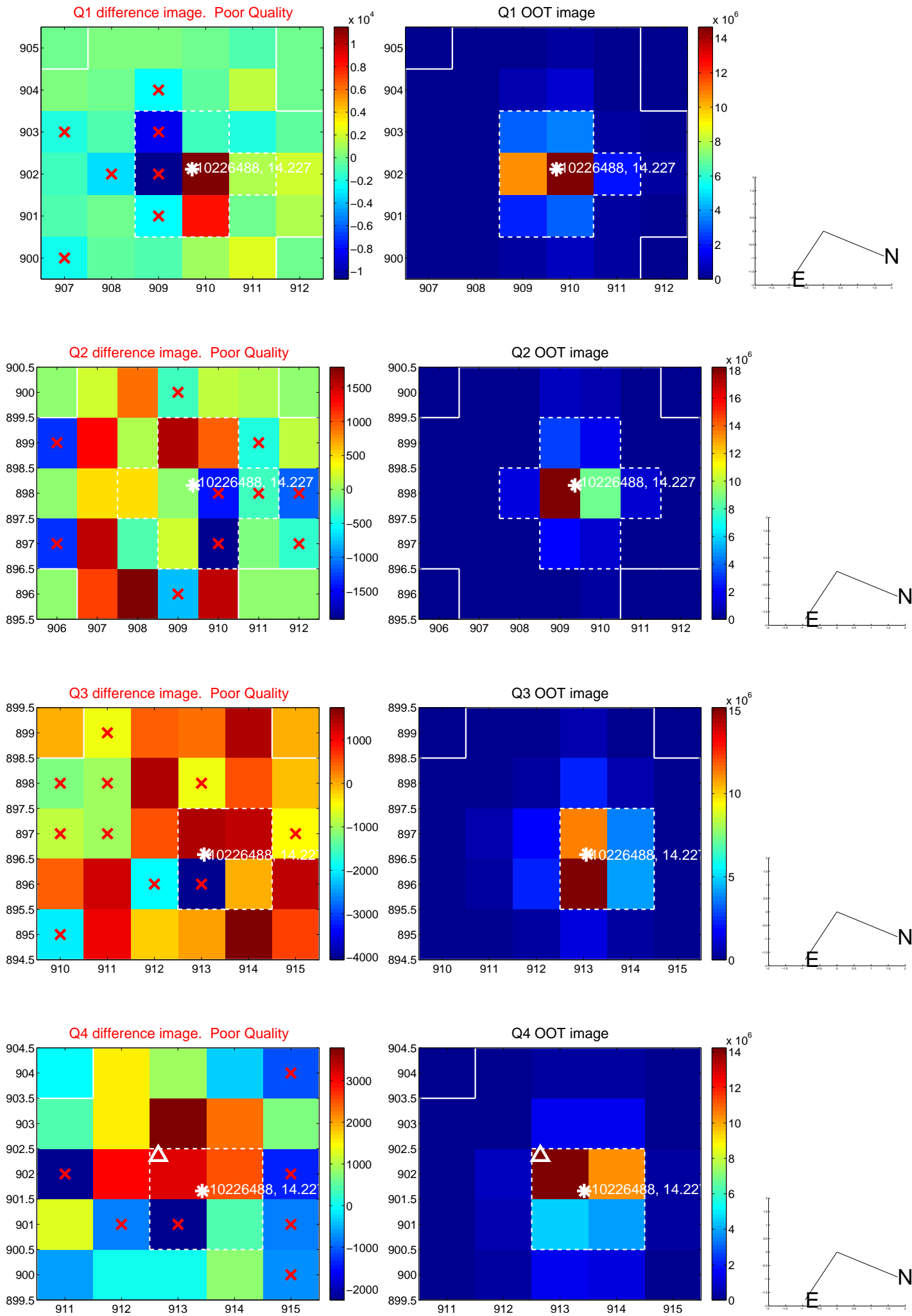


offset from photometric centroids

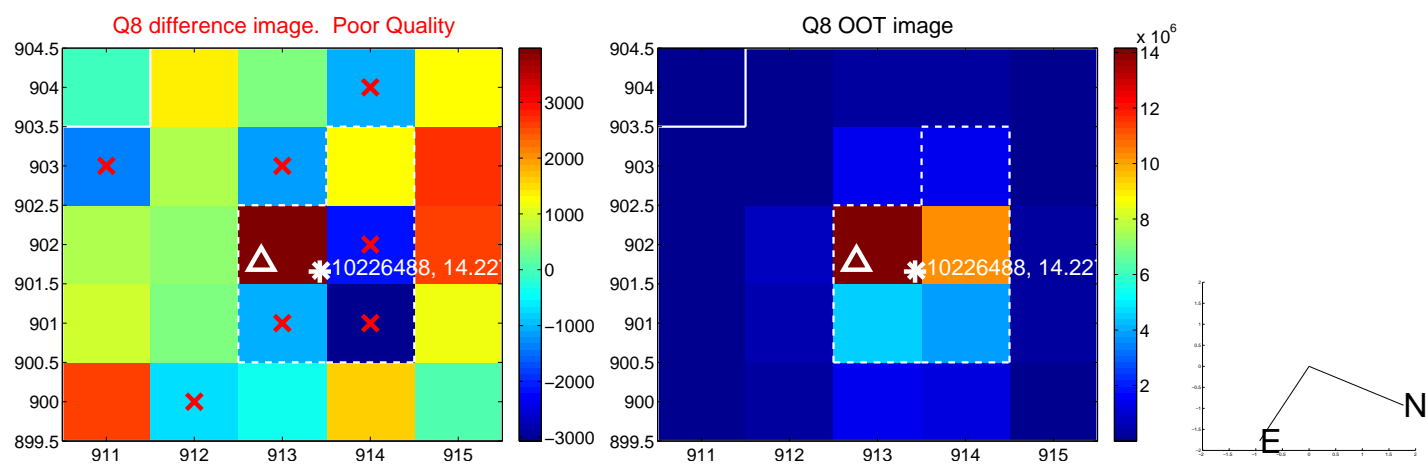
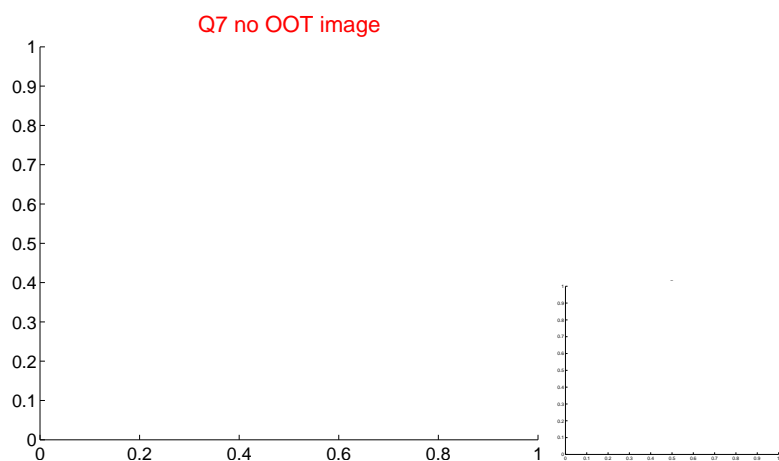
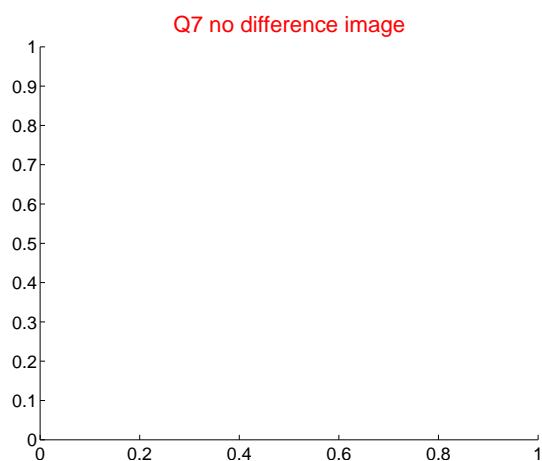
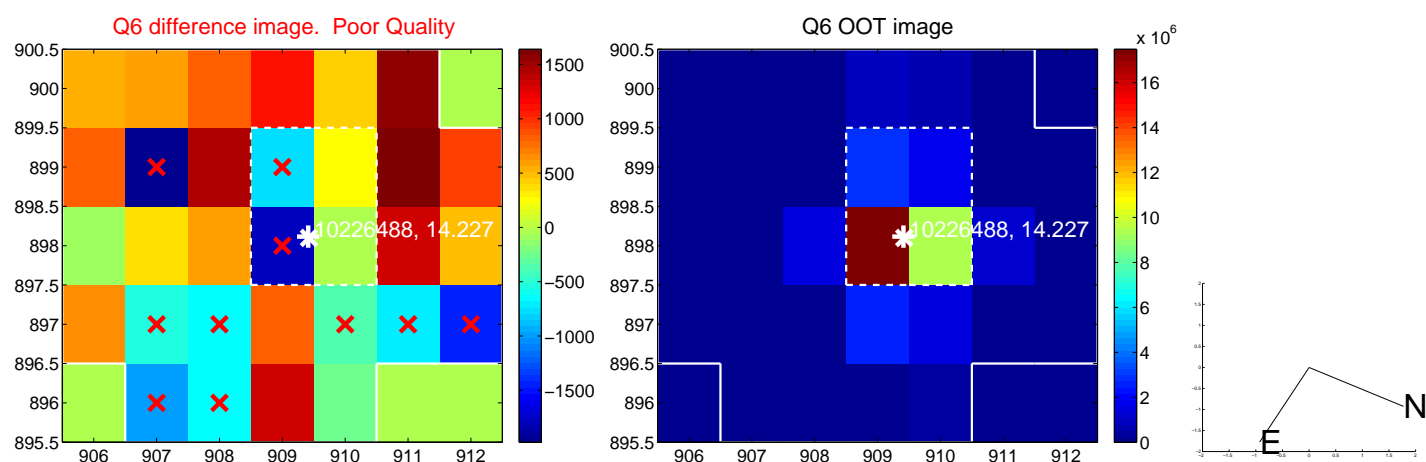
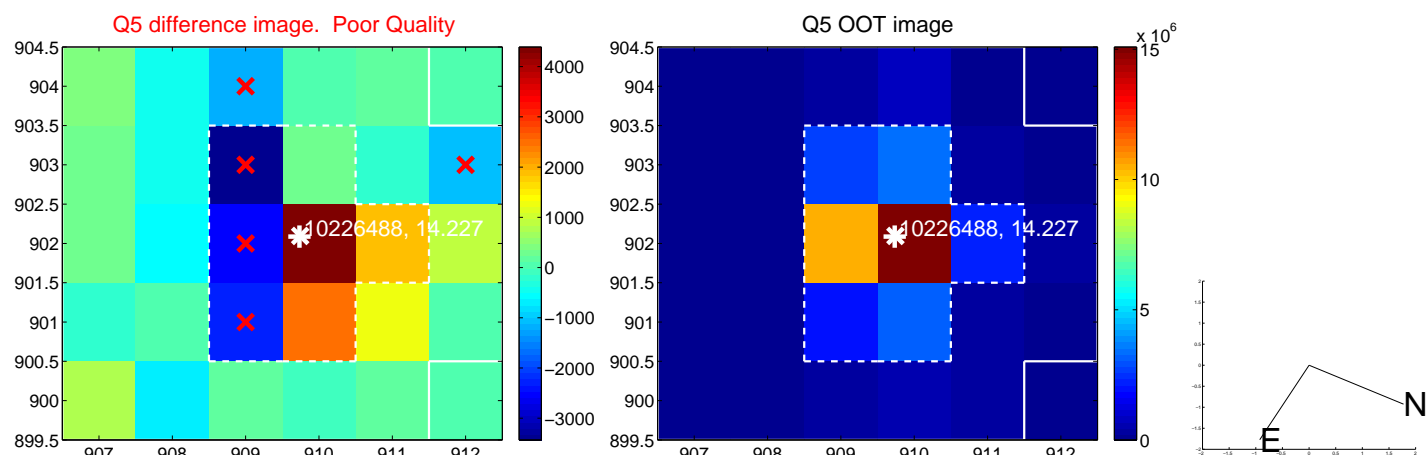


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

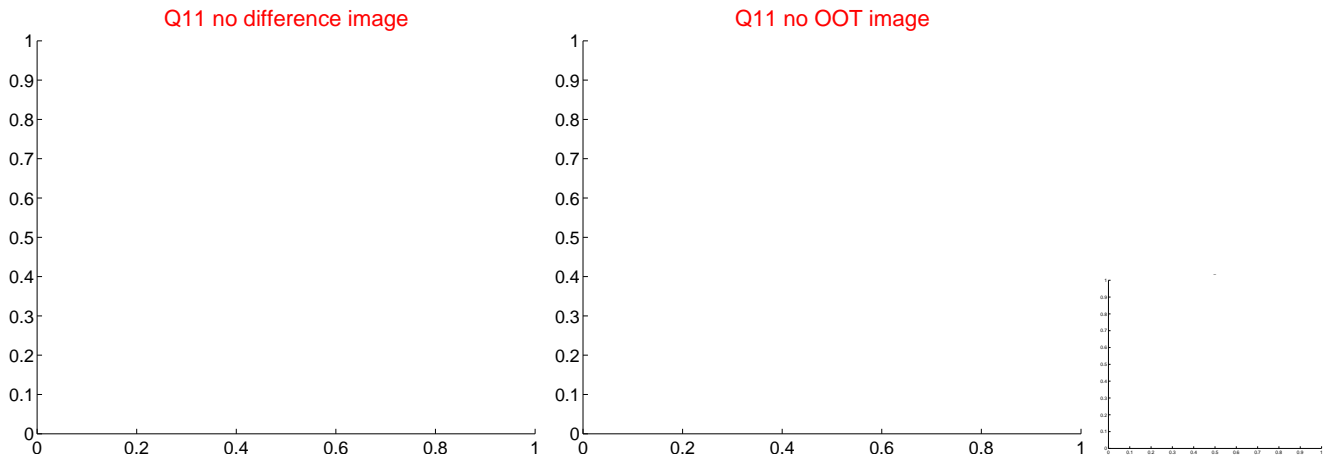
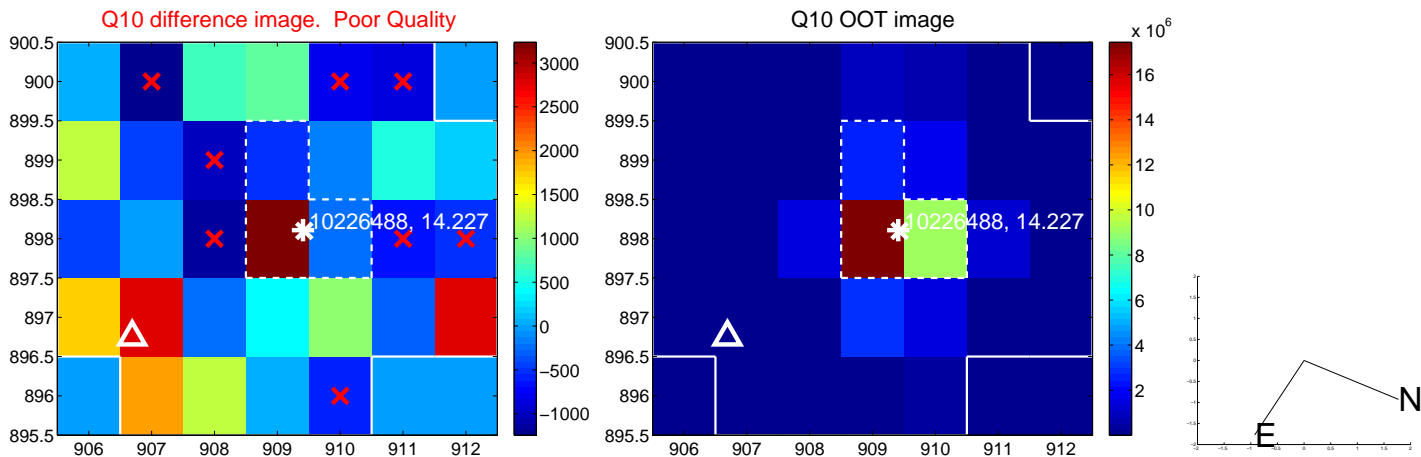
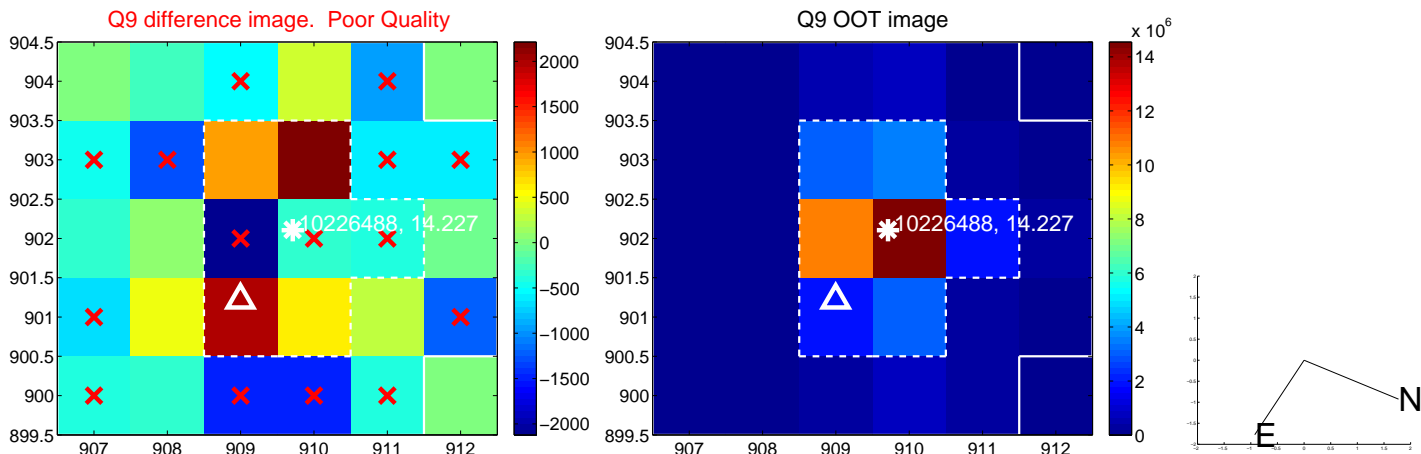
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



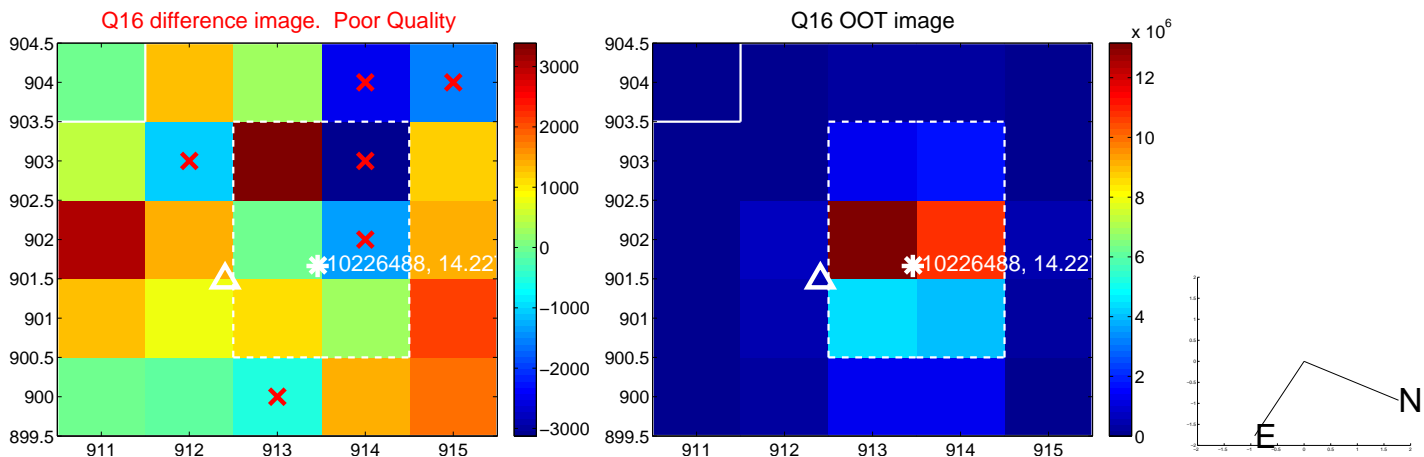
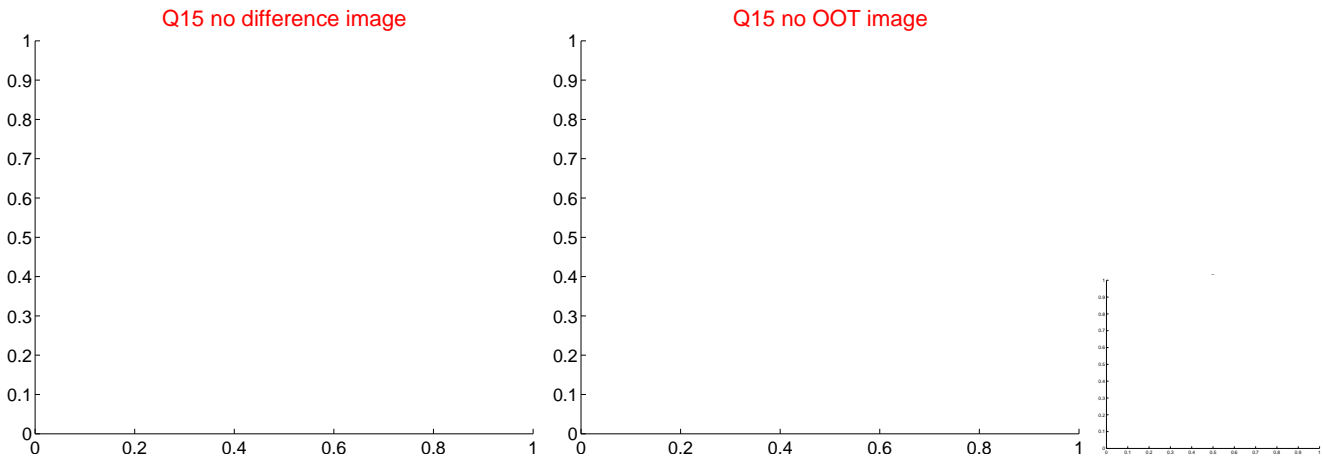
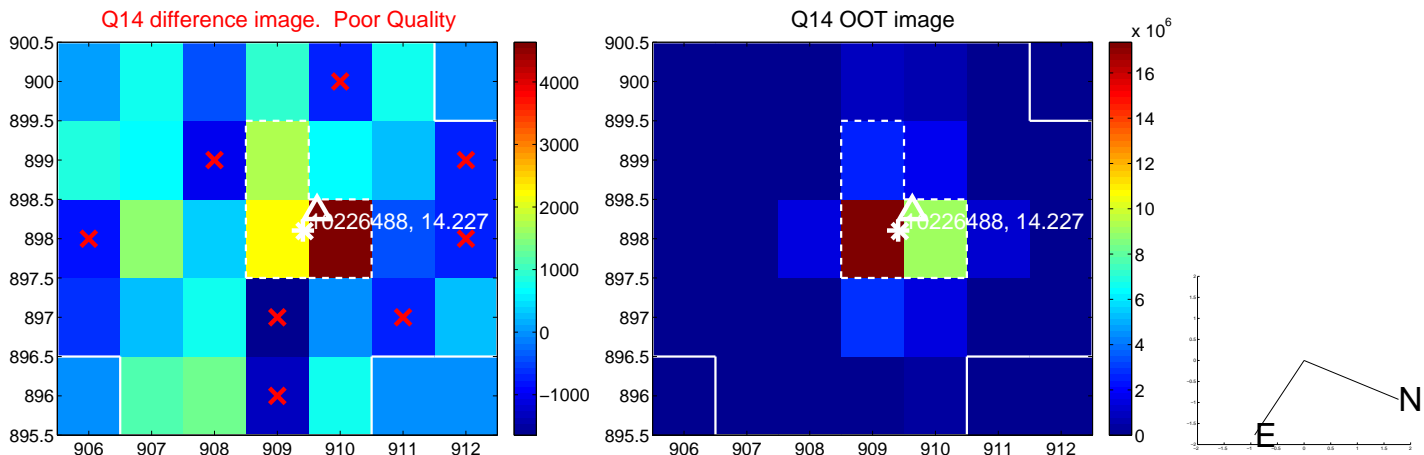
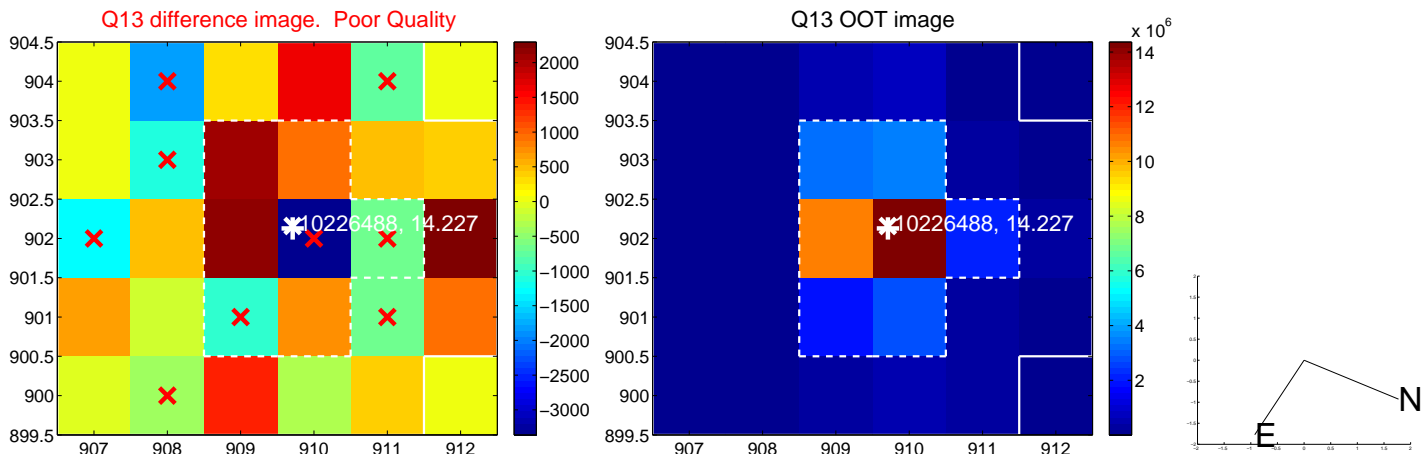
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



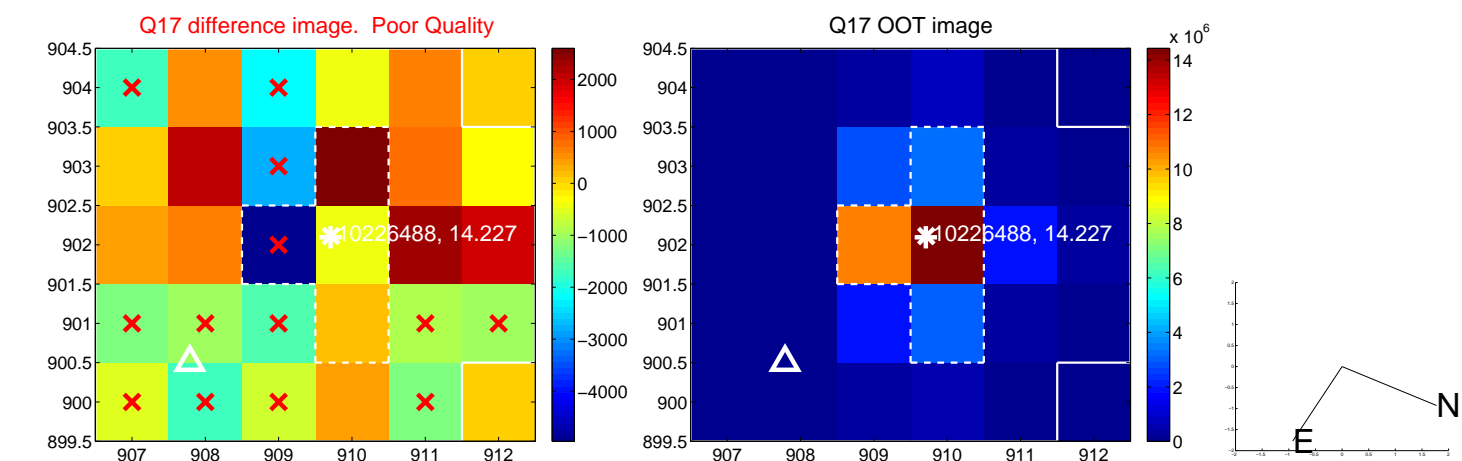
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



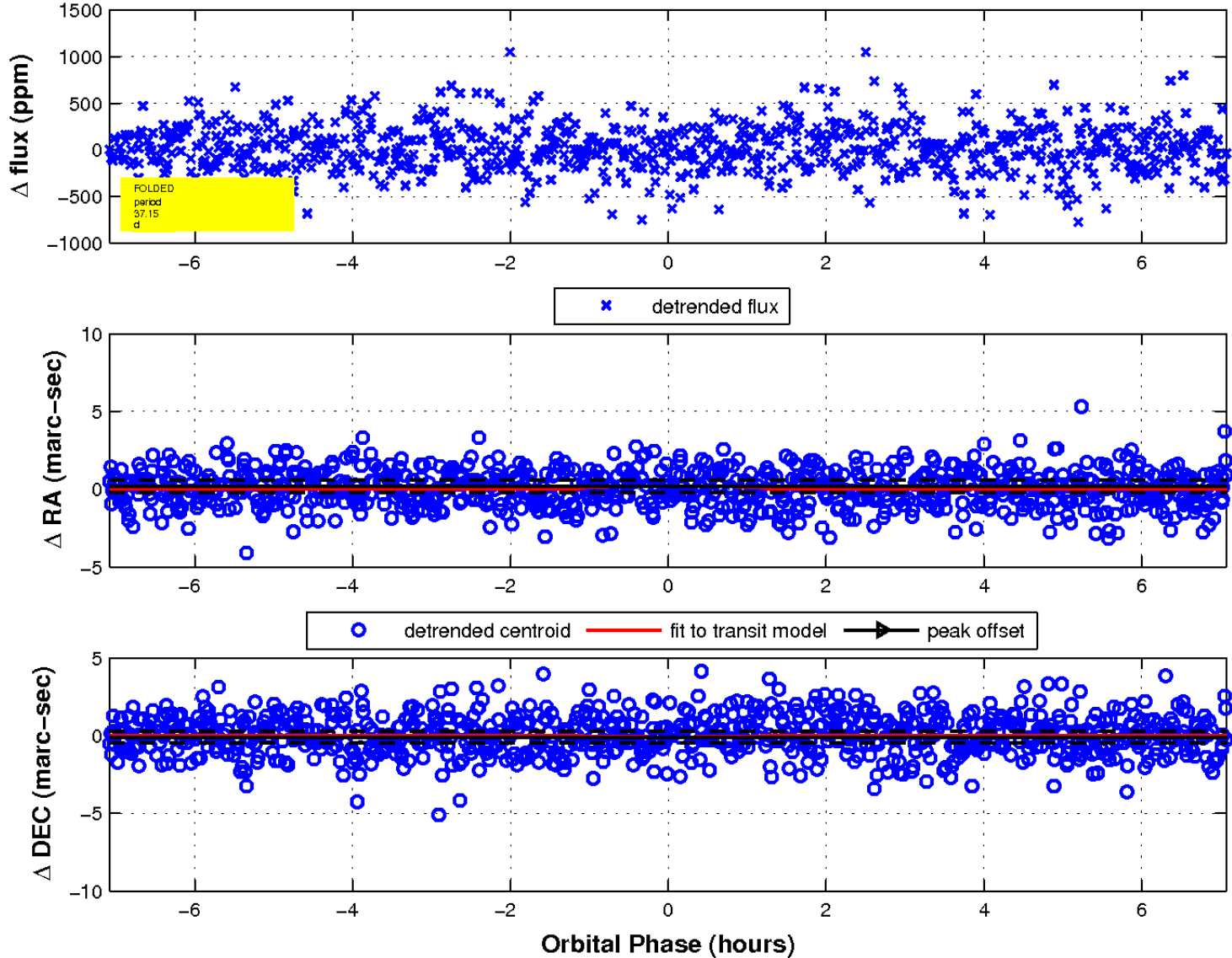
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

