

KIC 006126076

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})
006126076-01	OBS	4553.01	0.909276	131.749443	10.4	2.466	8.6	8.1	1.45	6508	0.55	9291.14
006126076-02	OBS	No	0.909277	132.183740	5.4	3.618	9.1	5.3	1.45	6508	0.35	9291.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006126076-01	OBS	FP	0.00	1	0	0	1	LPP_DV—EPHEM_MATCH
006126076-02	OBS	FP	0.00	1	0	0	1	LPP_DV—SAME_NTL_PERIOD—EPHEM_MATCH

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 006126076-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
006126076-01	6126076	006045264-pri	6045264	1:1	432.0	109	1	13.44	12.73	36010.00	Col-Anomaly	0	3.60	1.85

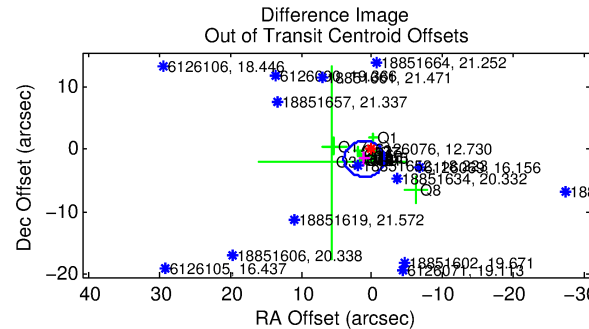
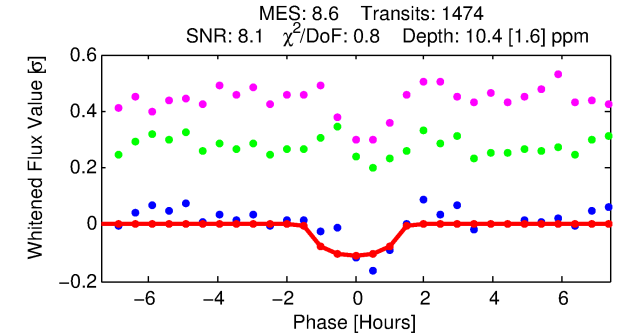
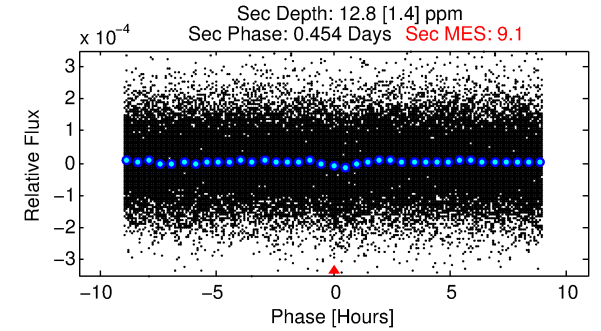
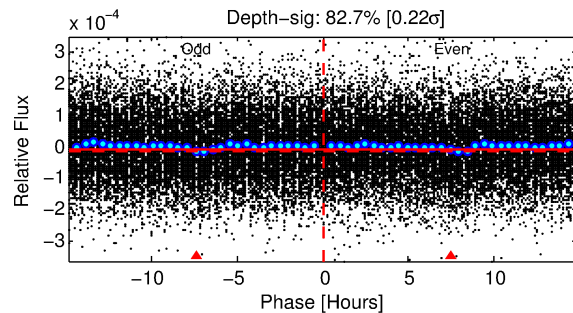
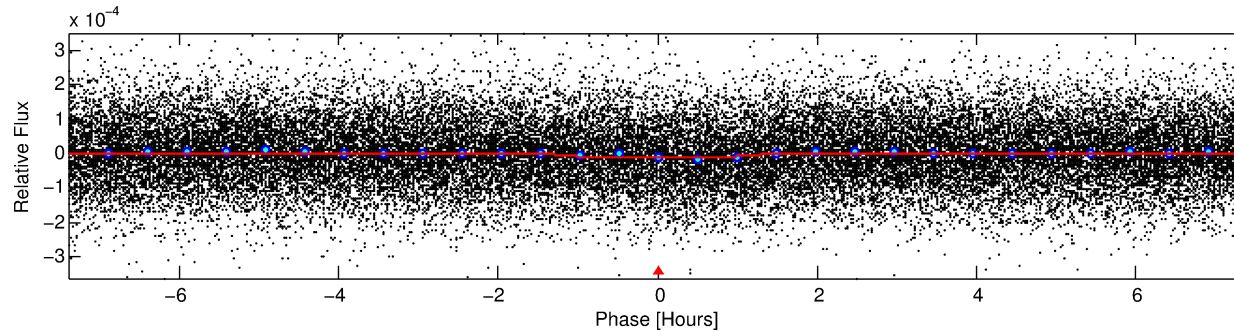
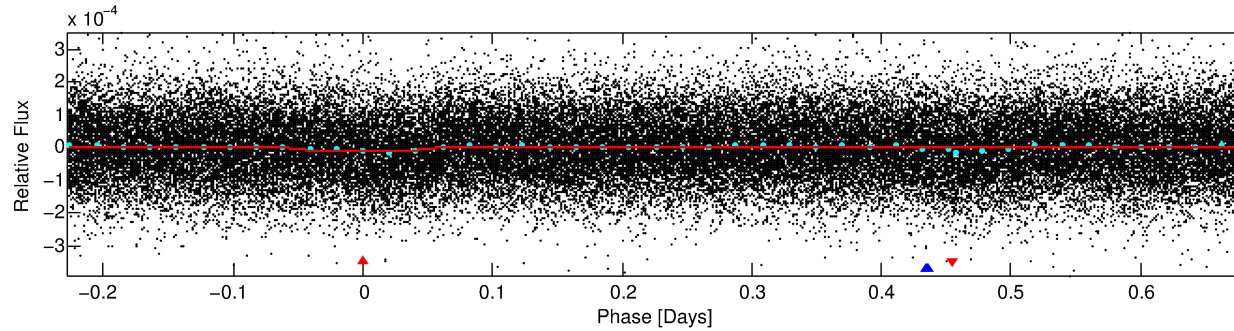
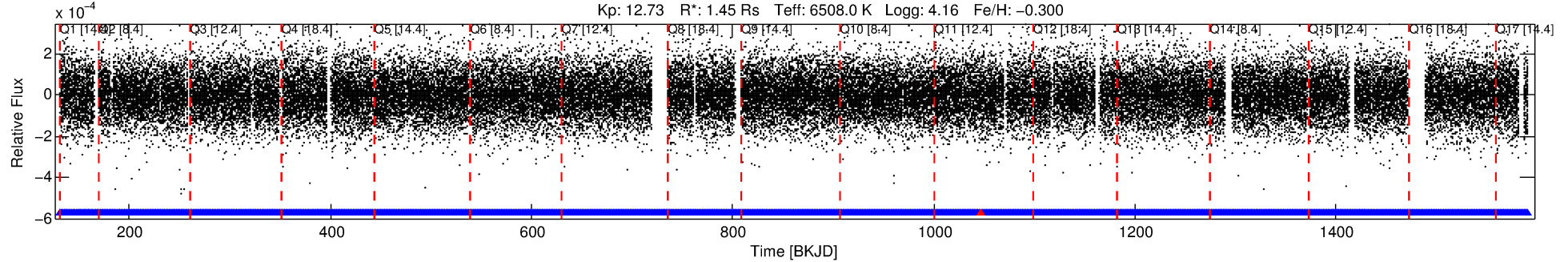
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 6126076 Candidate: 1 of 2 Period: 0.909 d

KOI: K04553.01 Corr: 0.830

Kp: 12.73 R*: 1.45 Rs Teff: 6508.0 K Logg: 4.16 Fe/H: -0.300



DV Fit Results:

Period = 0.90928 [0.00001] d
Epoch = 131.7494 [0.0040] BKJD
Rp/R* = 0.0035 [0.0010]
a/R* = 1.56 [1.43]
b = 0.90 [0.33]
Seff = 9291.14 [2958.66]
Teq = 2503 [199] K
Rp = 0.55 [0.19] Re
a = 0.0190 [0.0037] AU
Ag = 8.60 [5.47] [1.39σ]
Teffp = 6628 [947] K [4.26σ]

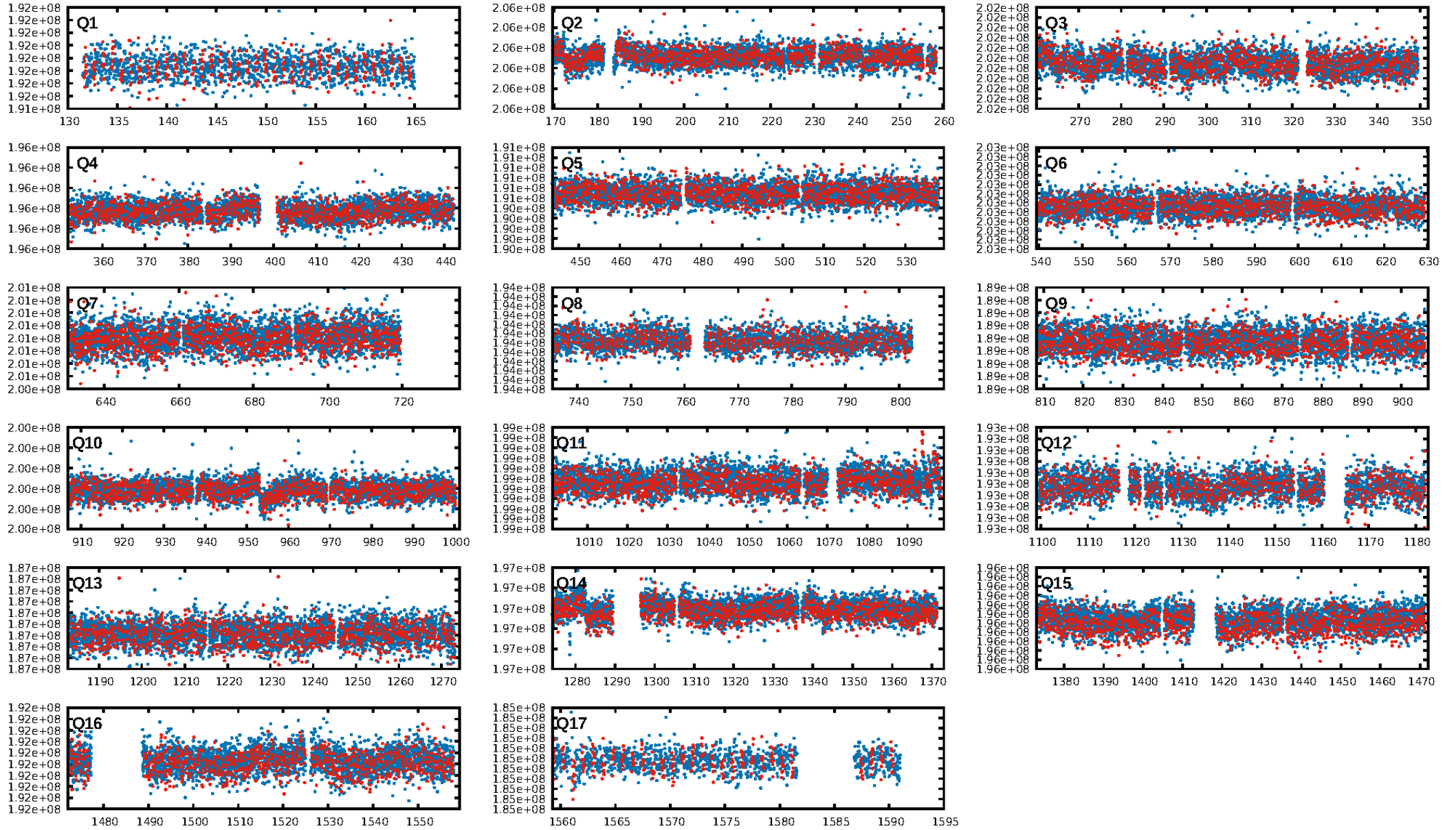
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.17e-20
RollingBand-fgt: 1.00 [1407/1408]
GhostDiagnostic-chr: 191.8
Centroid-sig: 0.0%
Centroid-so: 4.971 arcsec [3.66σ]
OotOffset-rm: 1.925 arcsec [2.01σ]
KicOffset-rm: 1.923 arcsec [2.07σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 1.00 [17/17]

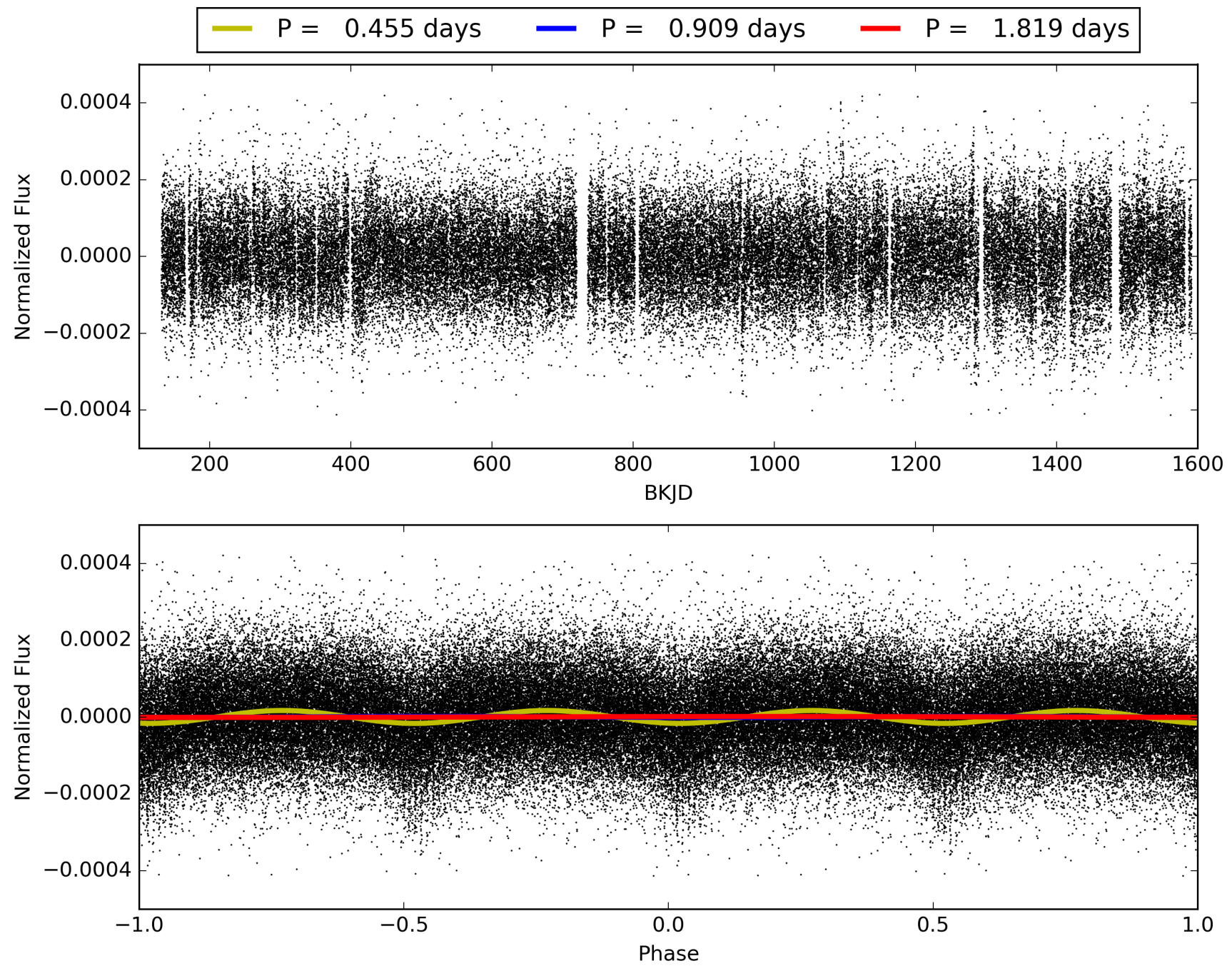
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:01:18 Z

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

TCE 006126076-01, PDC Light Curves

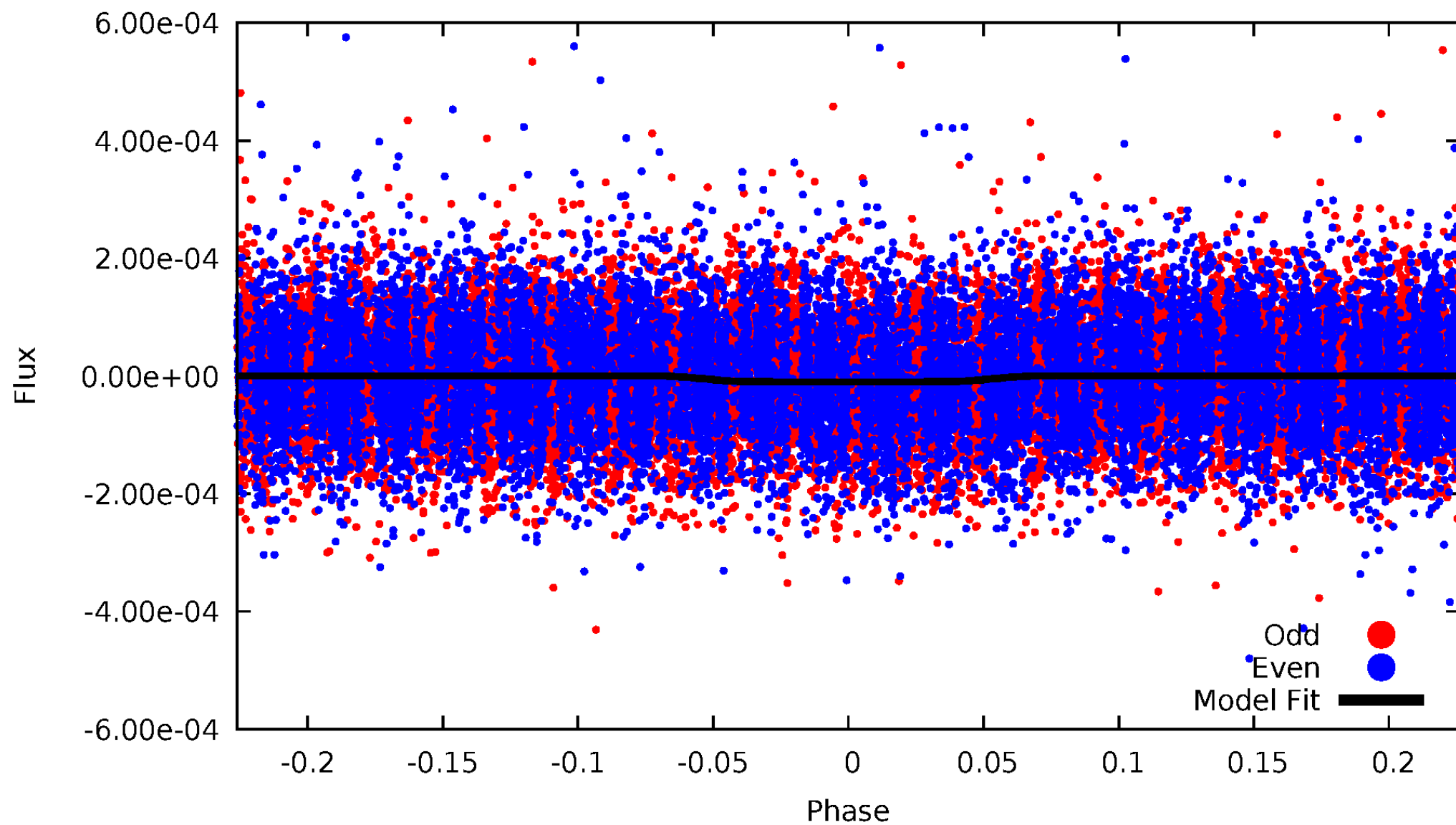


TCE 006126076-01



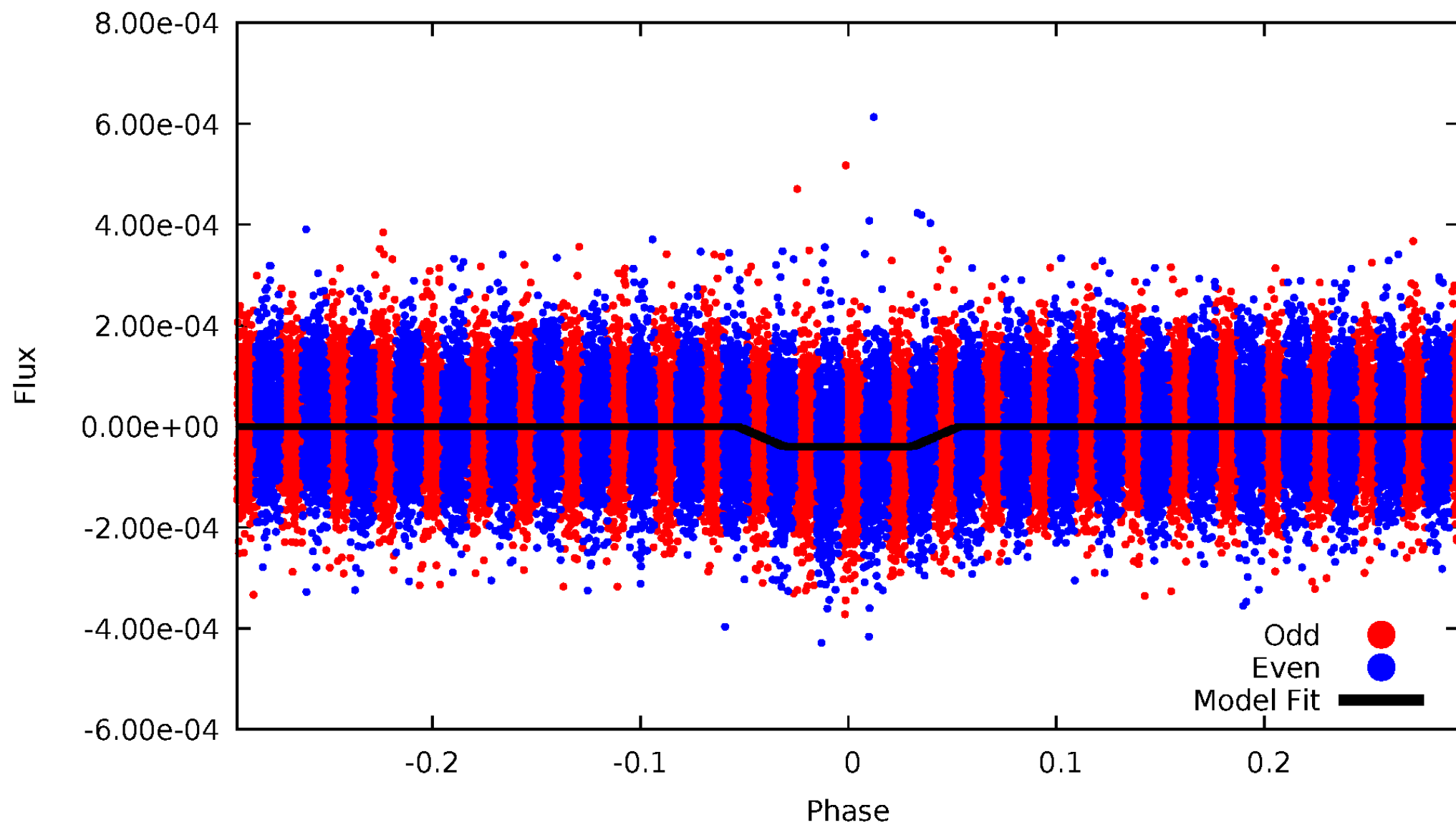
DV Odd/Even

TCE 006126076-01



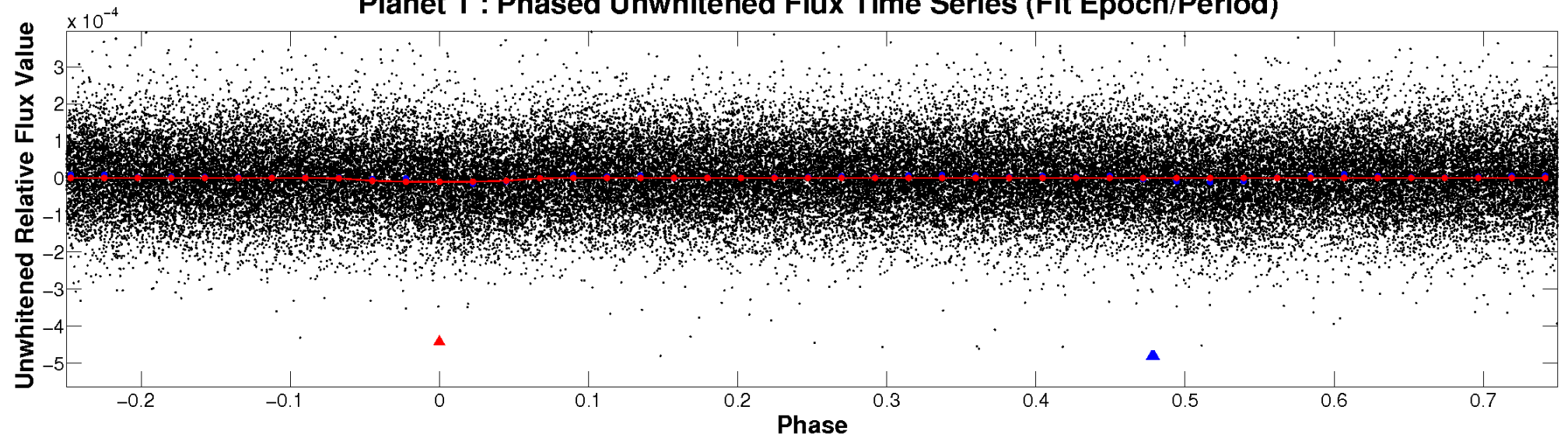
ALT Odd/Even

TCE 006126076-01

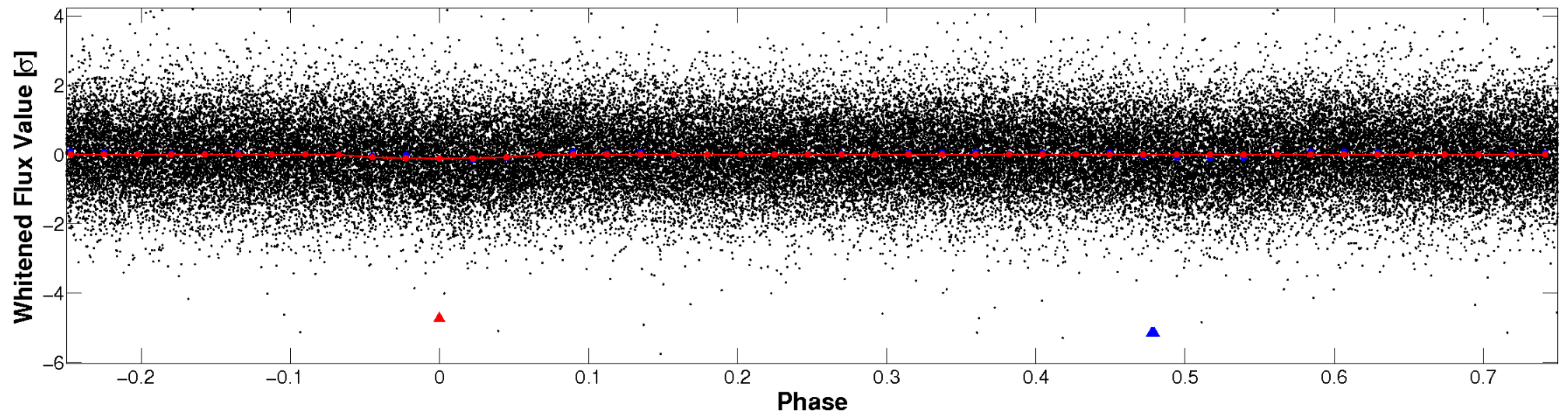


Non-Whitened Vs. Whitened Light Curve

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

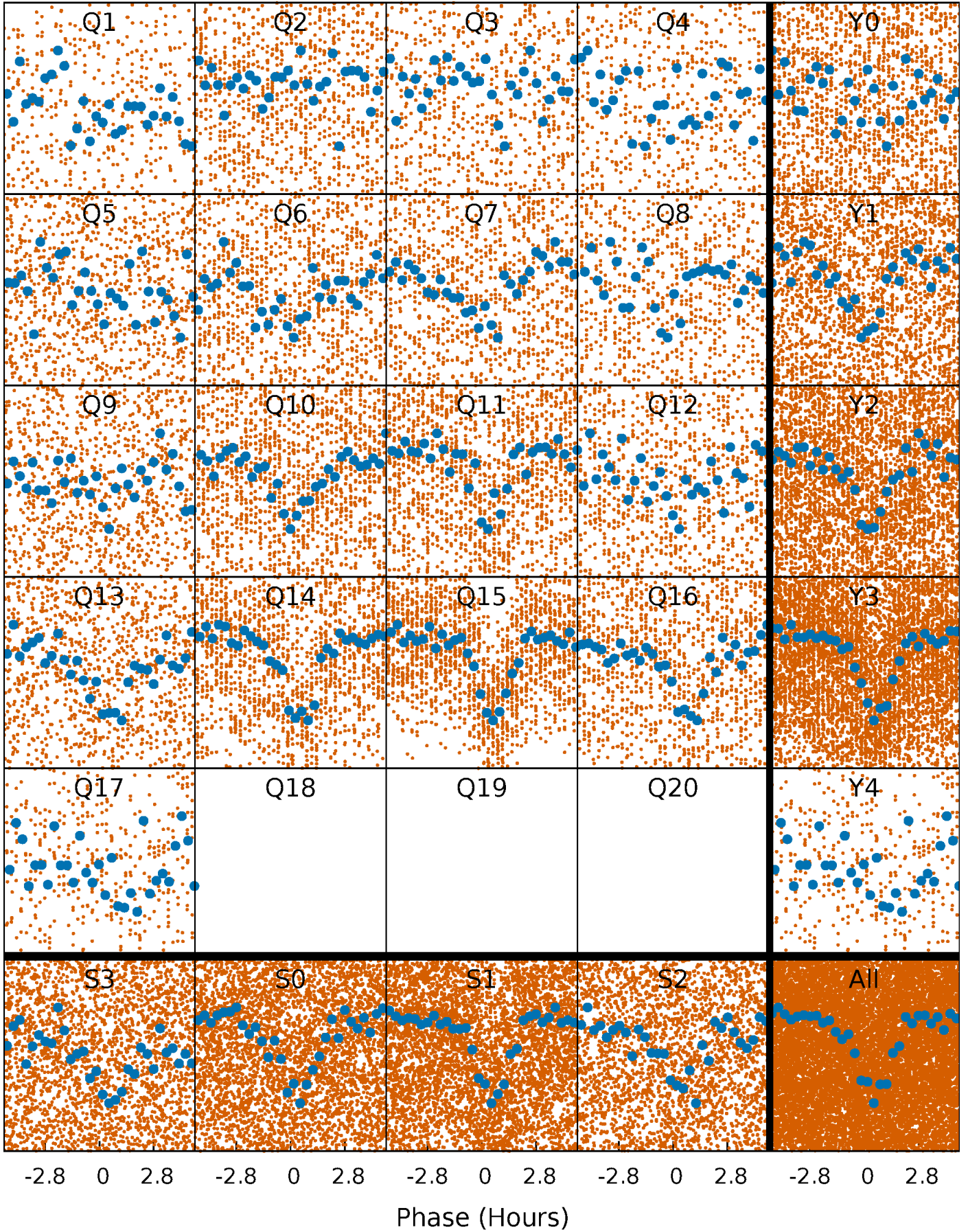


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



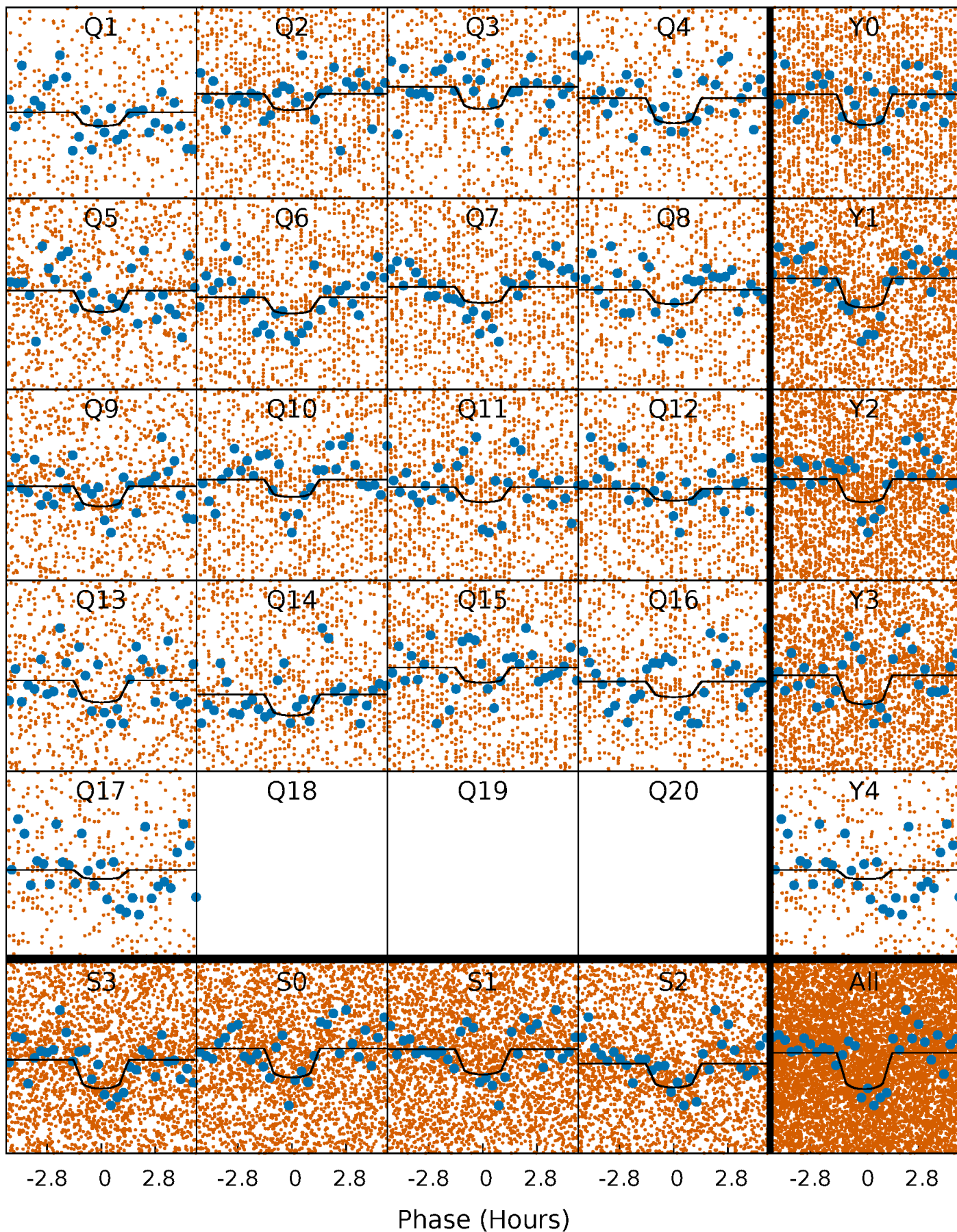
PDC Quarter-Phased Transit Curves

TCE 006126076-01 P= 0.909276 Days $T_0=131.749443$ (BKJD)



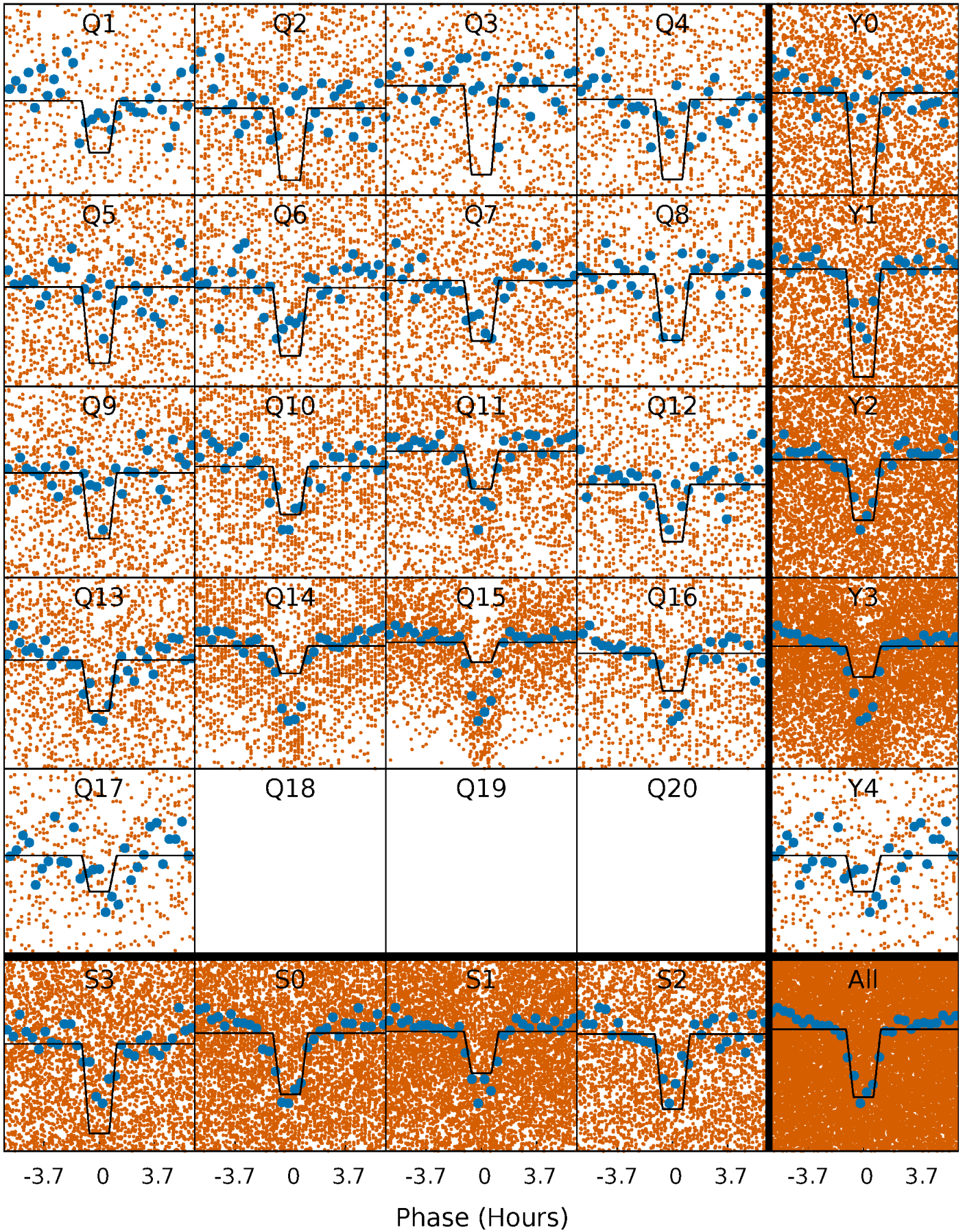
DV Quarter-Phased Transit Curves

TCE 006126076-01 P= 0.909276 Days $T_0=131.749443$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

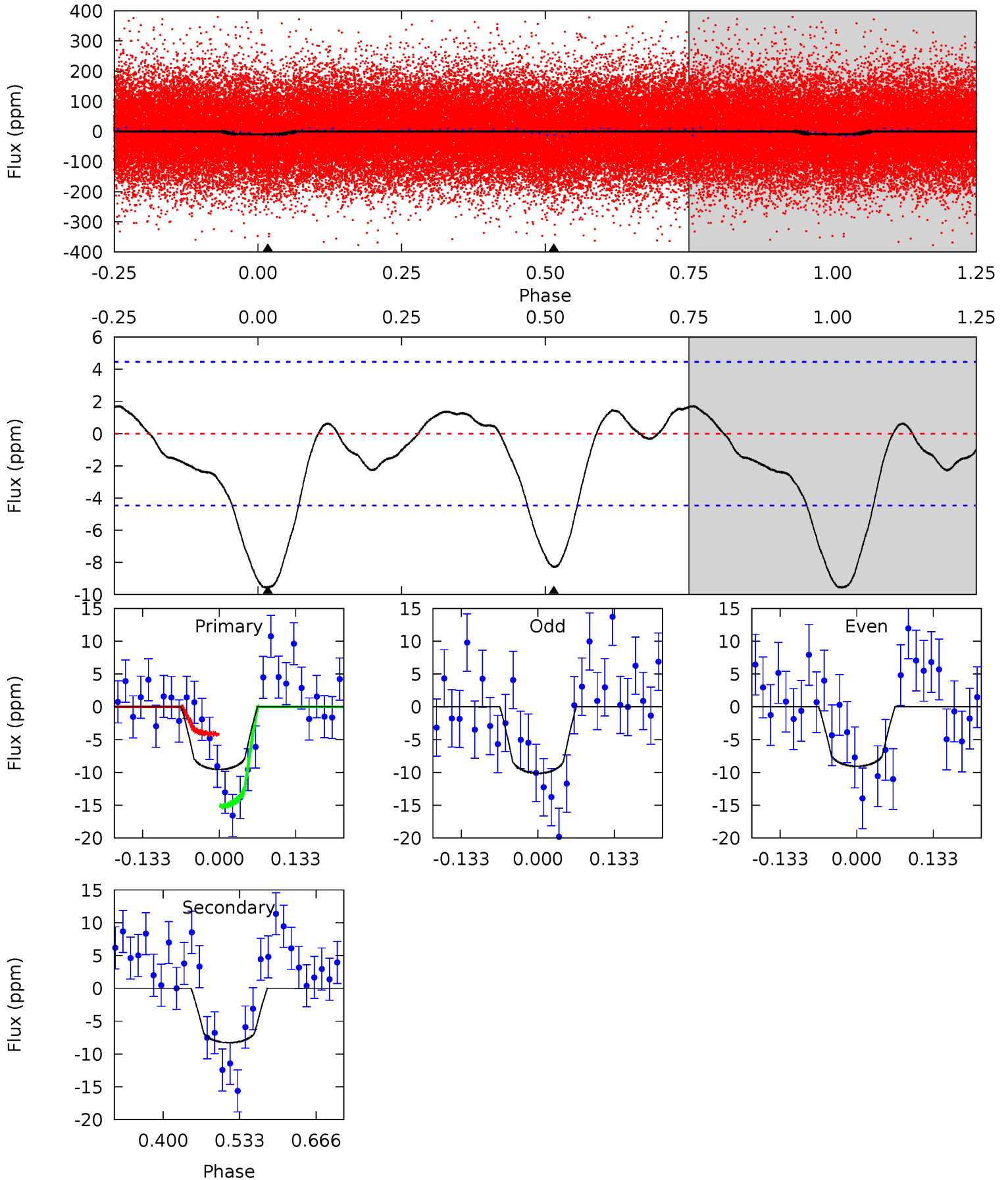
TCE 006126076-01 P= 0.909299 Days $T_0=131.742083$ (BKJD)



DV Model-Shift Uniqueness Test

006126076-01, P = 0.909276 Days, E = 130.840167 Days

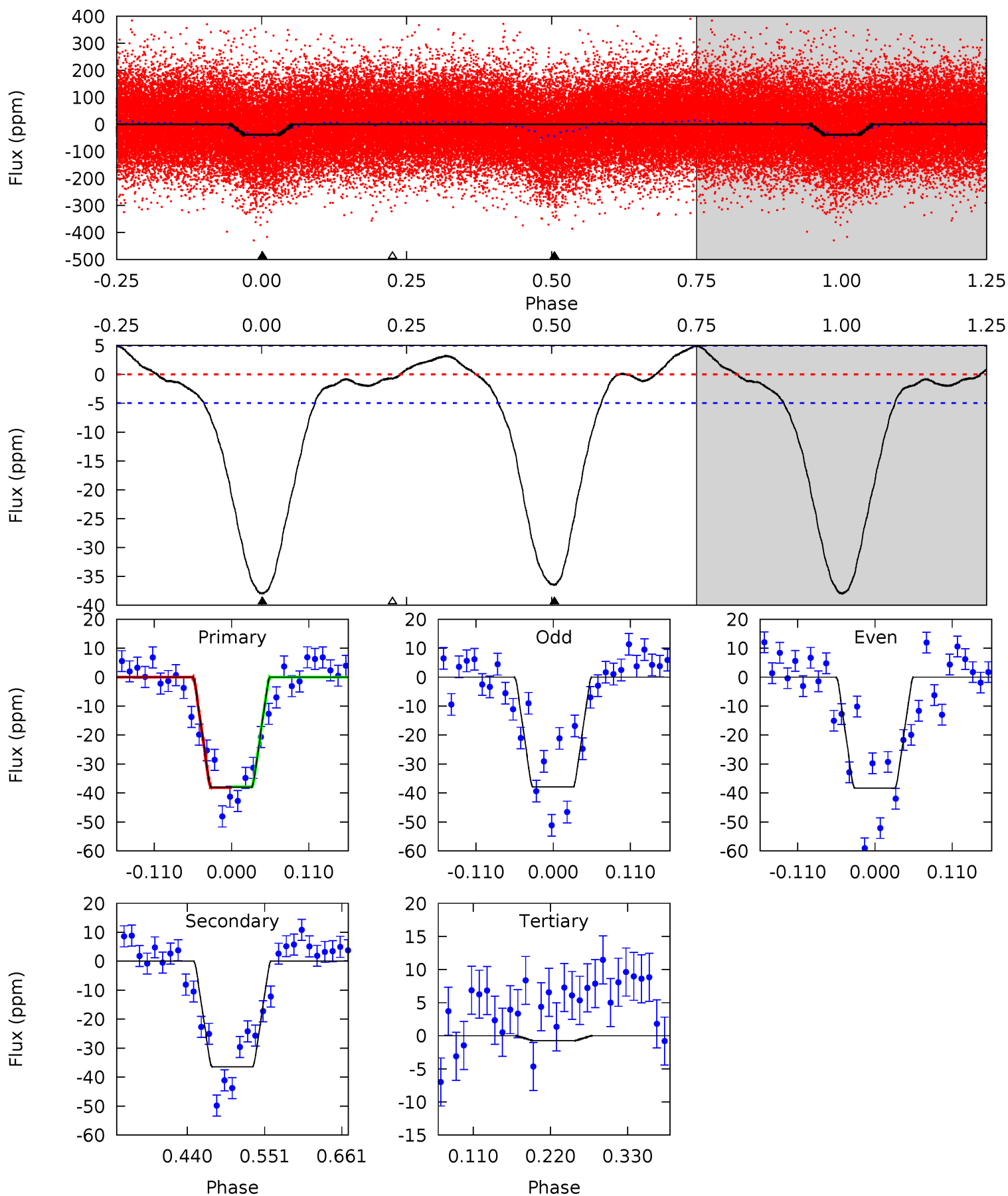
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.65	8.36	0	0	4.50	1.50	1.25	9.65	9.65	8.36	8.36	0.54	1.01	0.15	5.57



Alt Model-Shift Uniqueness Test

006126076-01, P = 0.909299 Days, E = 130.832784 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.7	33.3	0.68	0	4.54	1.60	1.88	34.0	34.7	32.6	33.3	0.15	1.11	0.12	0.15



Stellar Parameters For KIC 006126076

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6508^{+146}_{-178}	$4.163^{+0.171}_{-0.140}$	$-0.300^{+0.250}_{-0.300}$	$1.447^{+0.311}_{-0.311}$	$1.111^{+0.177}_{-0.118}$	$0.517^{+0.455}_{-0.211}$
	+2%/-3%	+4%/-3%	+83%/-100%	+21%/-21%	+16%/-11%	+88%/-41%
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 006126076-01 / KOI 4553.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 1	$0.54^{+0.16}_{-0.16}$	3488^{+195}_{-219}	5874^{+1070}_{-711}	$5.781^{+5.829}_{-2.436}$
Alt.	-36 ± 1	$0.99^{+0.21}_{-0.19}$	3468^{+231}_{-213}	6277^{+613}_{-487}	$7.435^{+3.970}_{-2.373}$

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 $A_{obs} \gg 1.0$

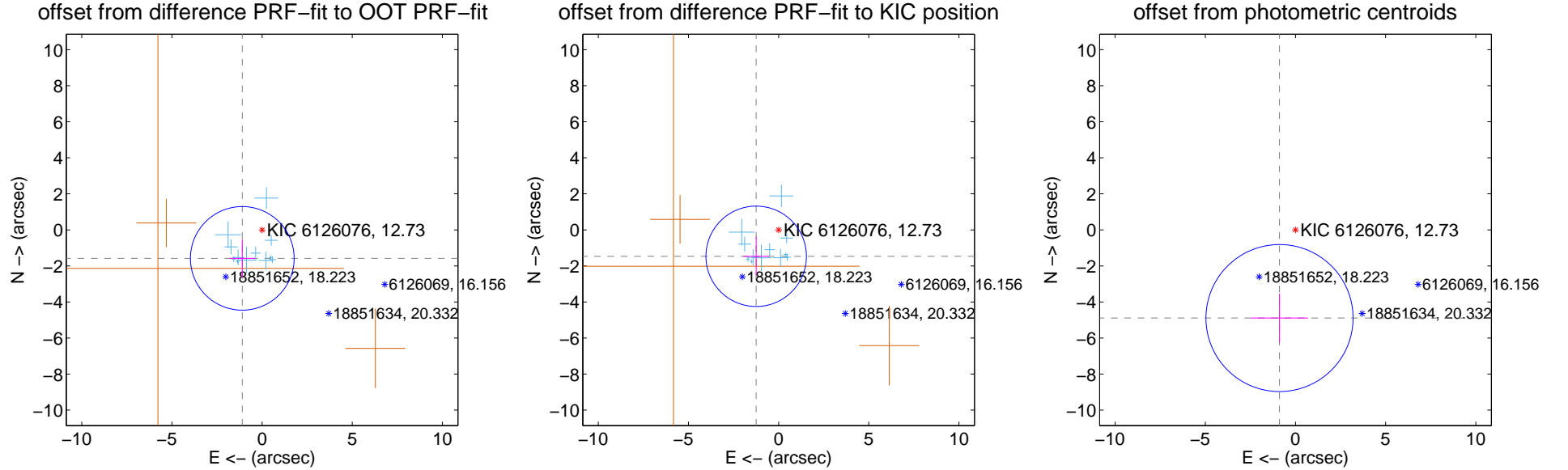
DV Centroid Data

Supplemental centroid analysis for 006126076-01. Kepler magnitude: 12.73. Transit SNR 8.10

There are 12 quarters with good PRF difference image offsets

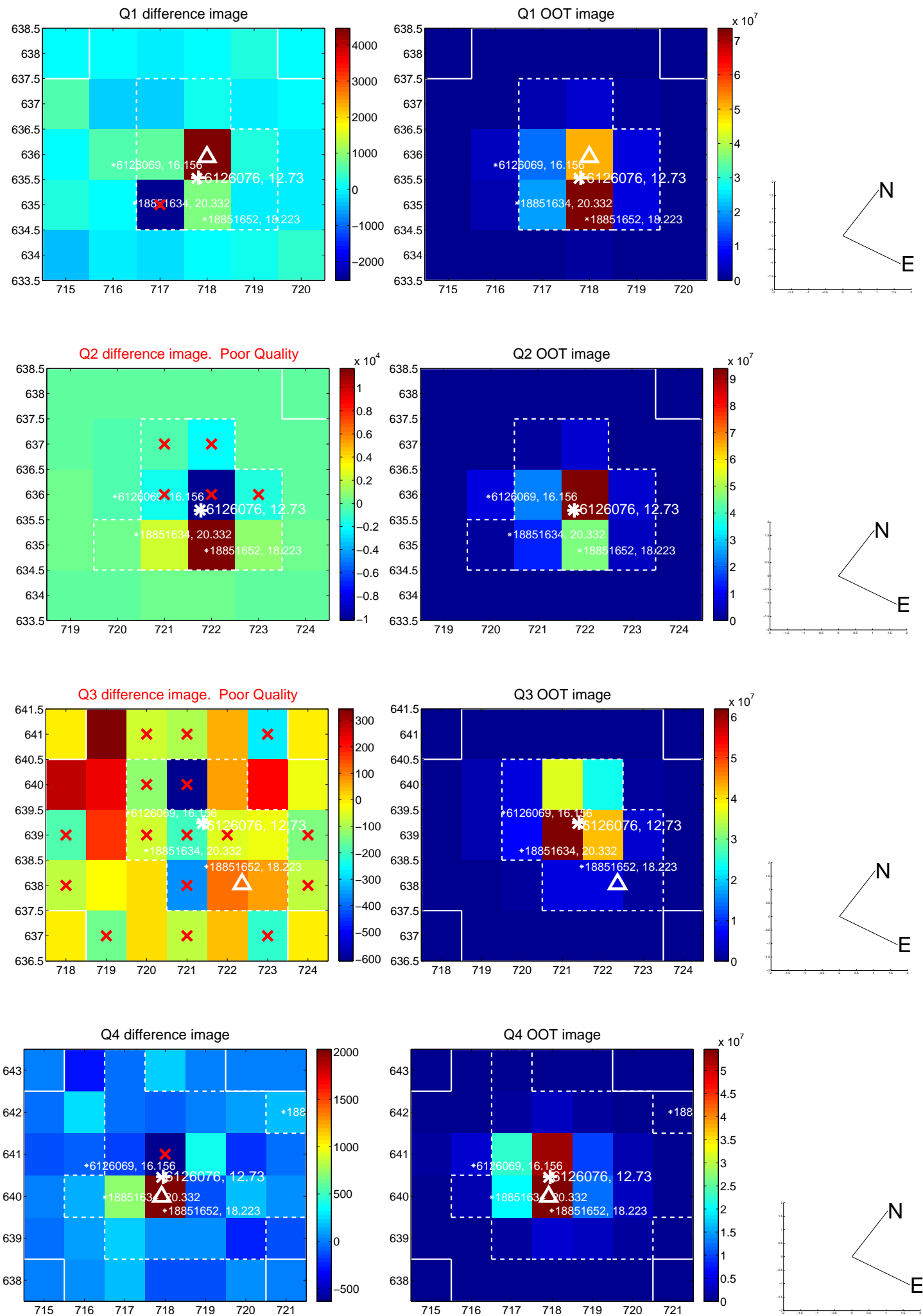
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.925 ± 0.958	2.01	1.098 ± 0.715	-1.581 ± 1.056
PRF-fit source offset from KIC position	1.923 ± 0.928	2.07	1.245 ± 0.715	-1.466 ± 1.056
photometric centroid source offset	4.97 ± 1.36	3.66	0.88 ± 1.59	-4.89 ± 1.35

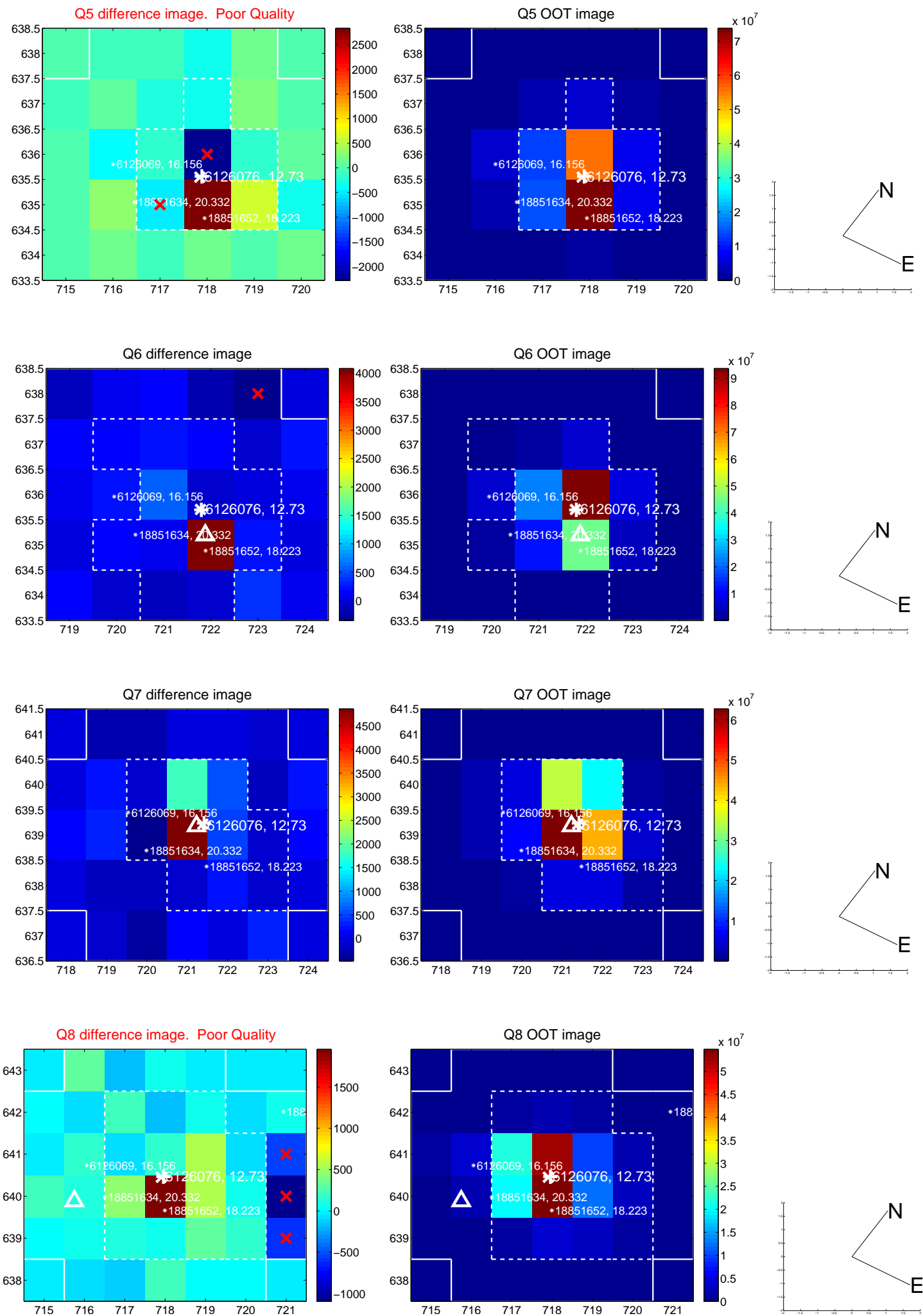


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

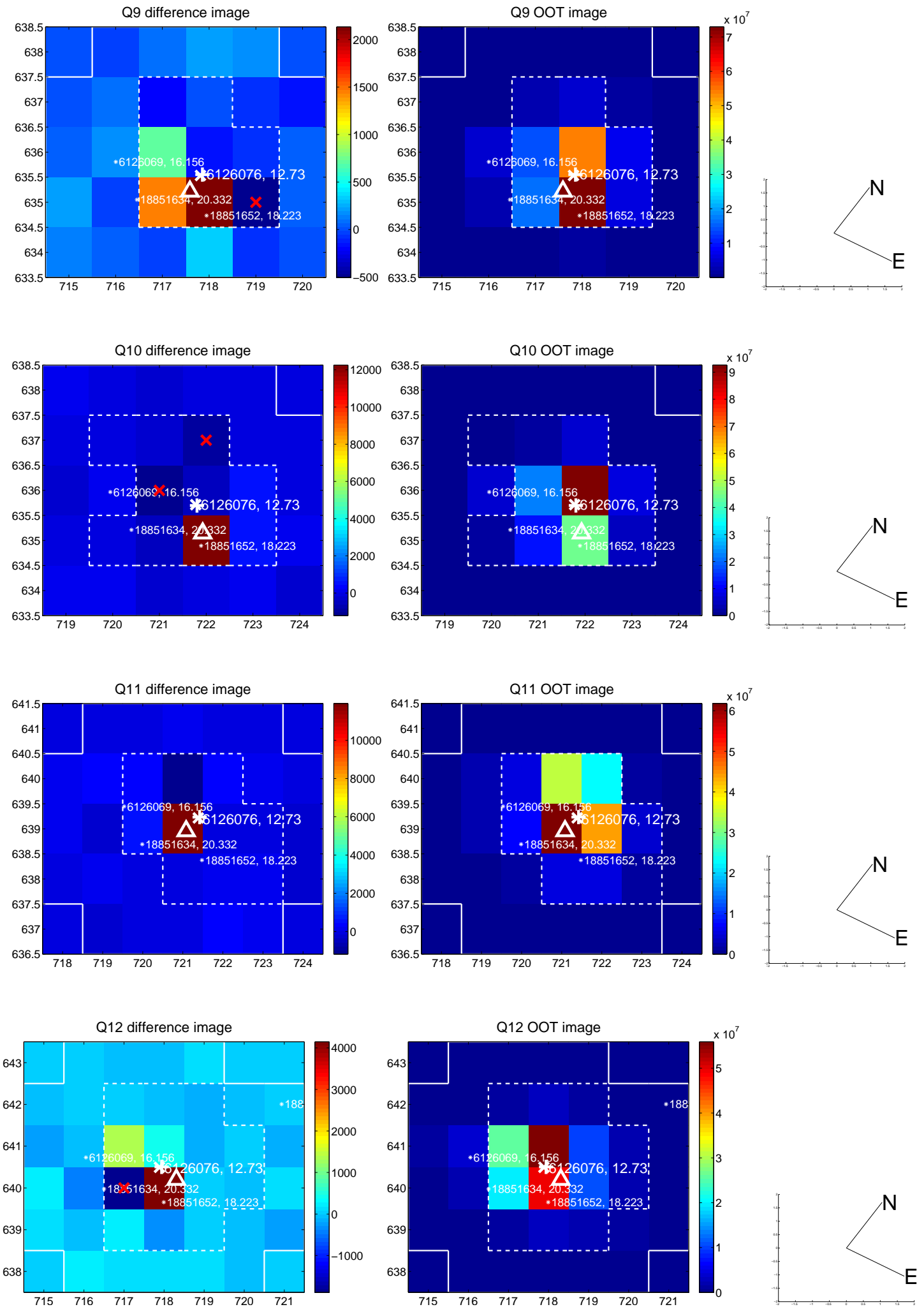
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



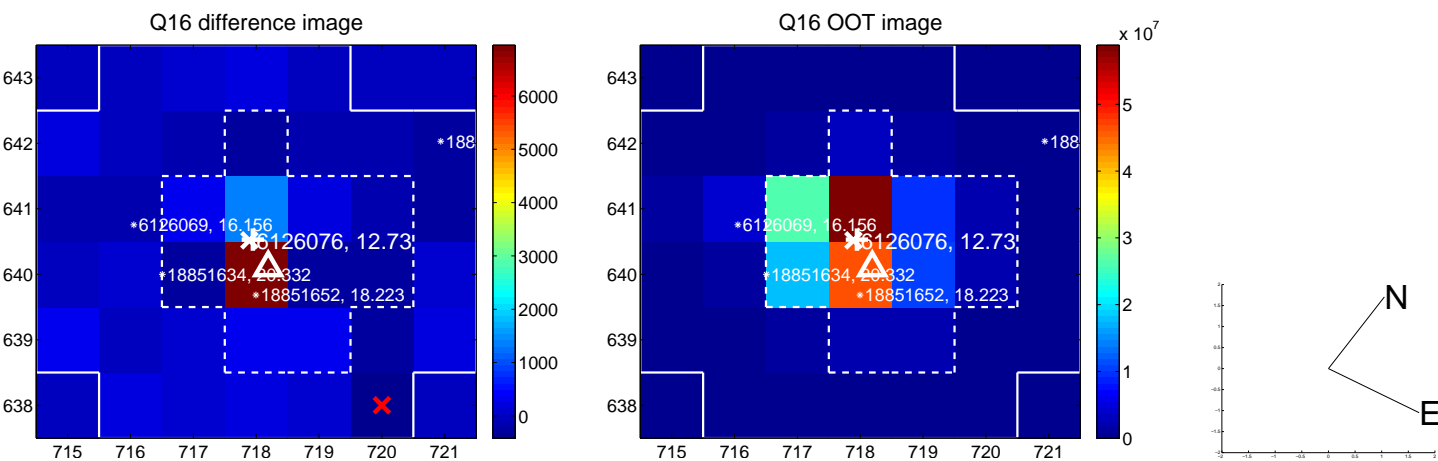
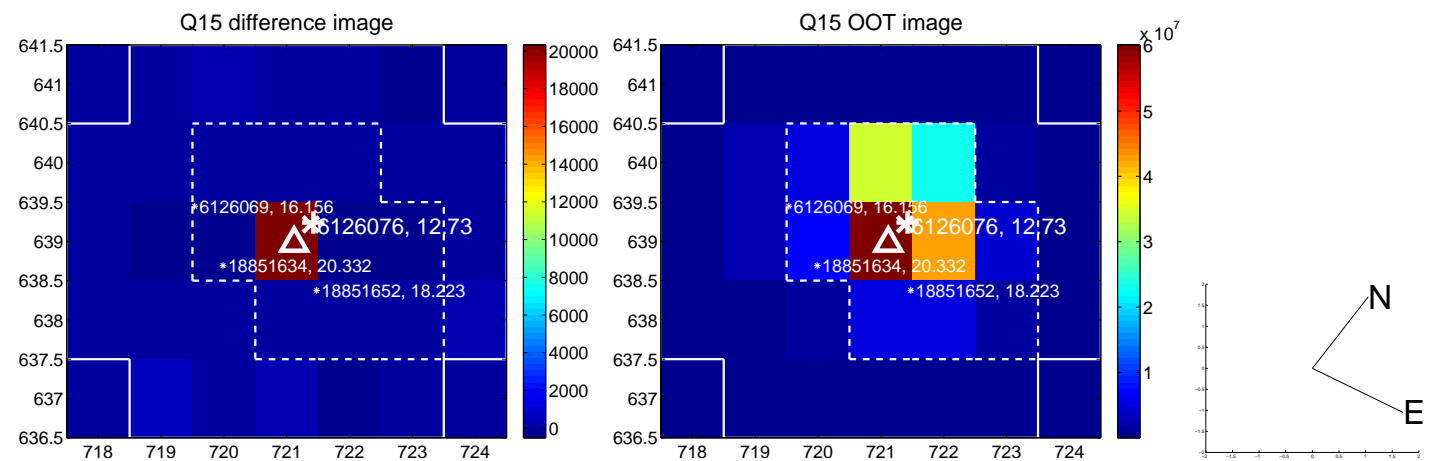
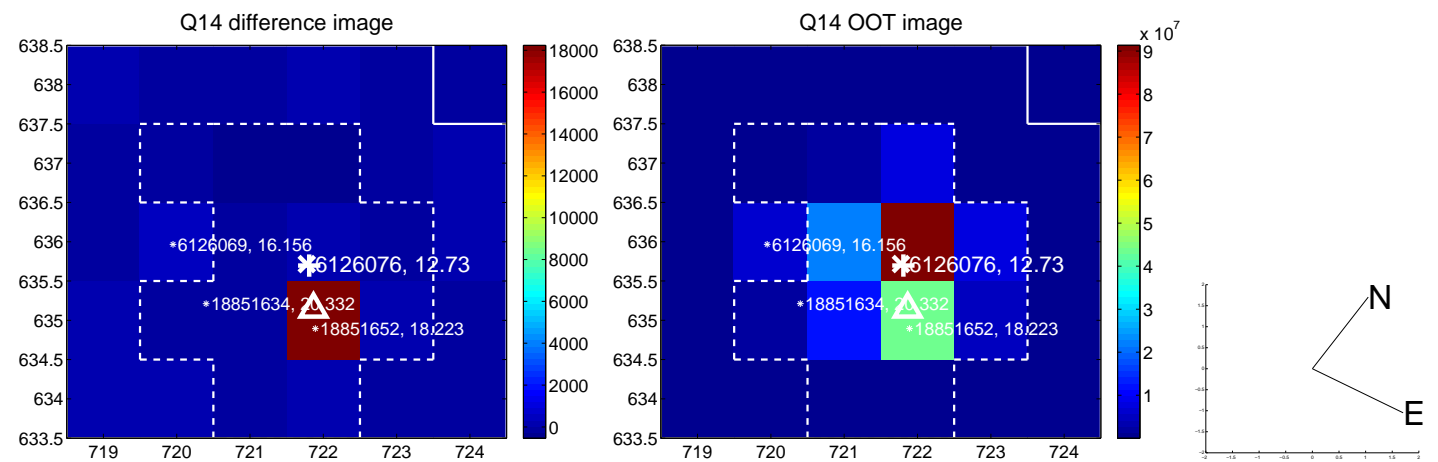
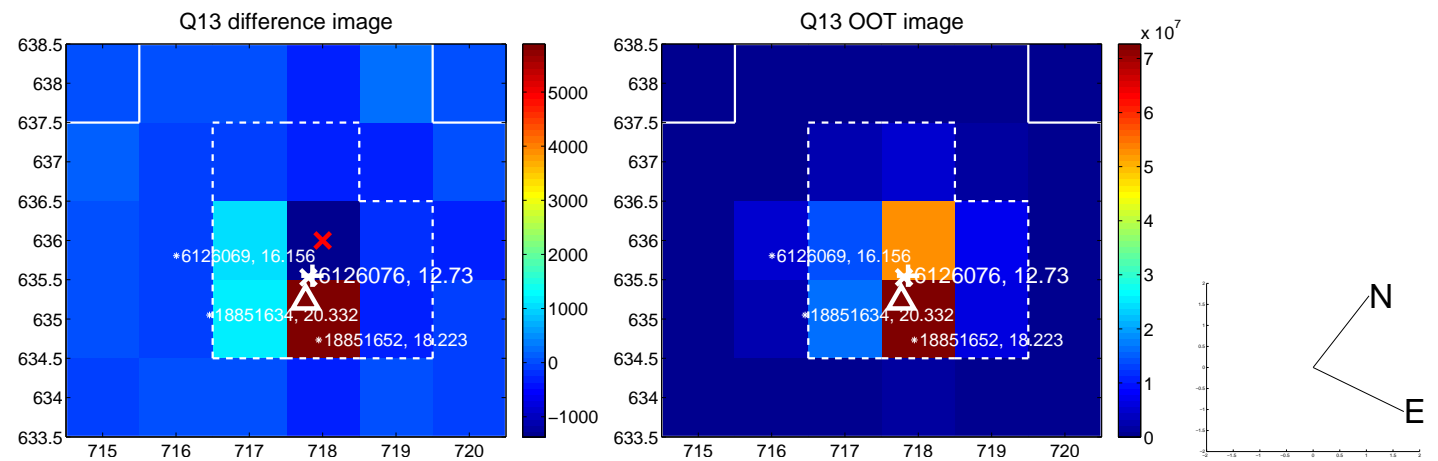
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



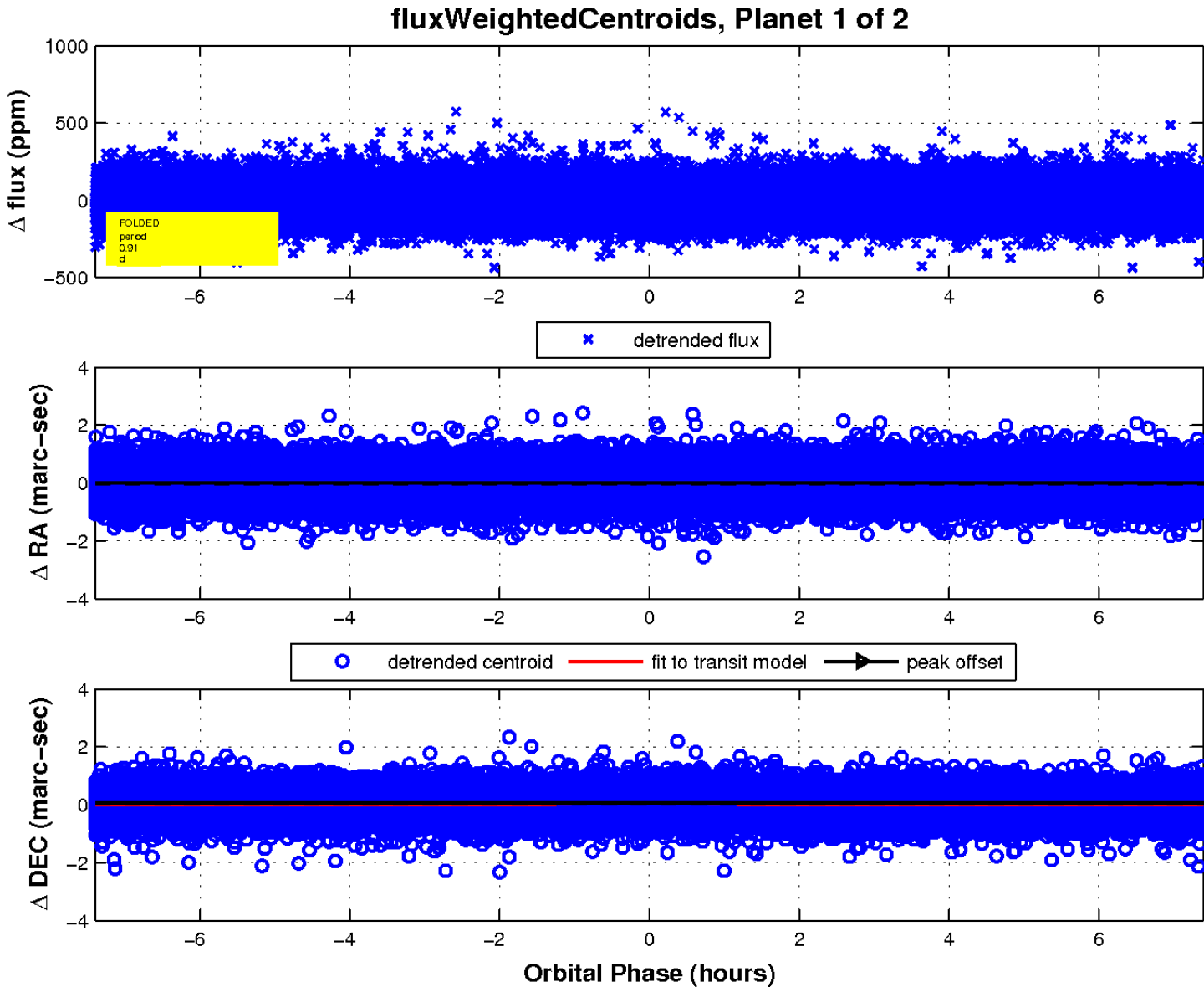
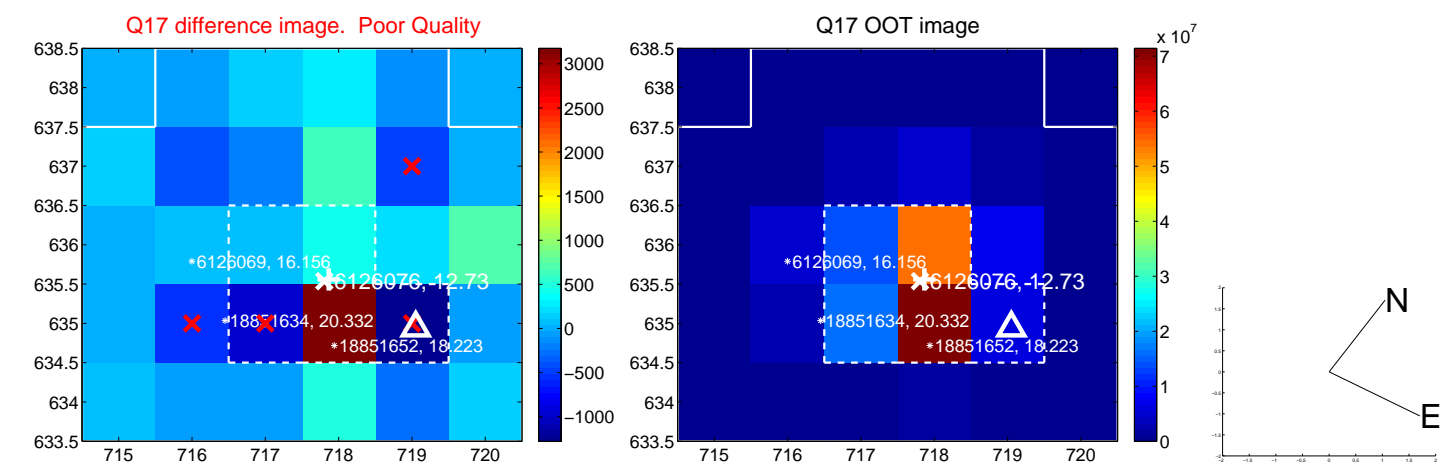
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

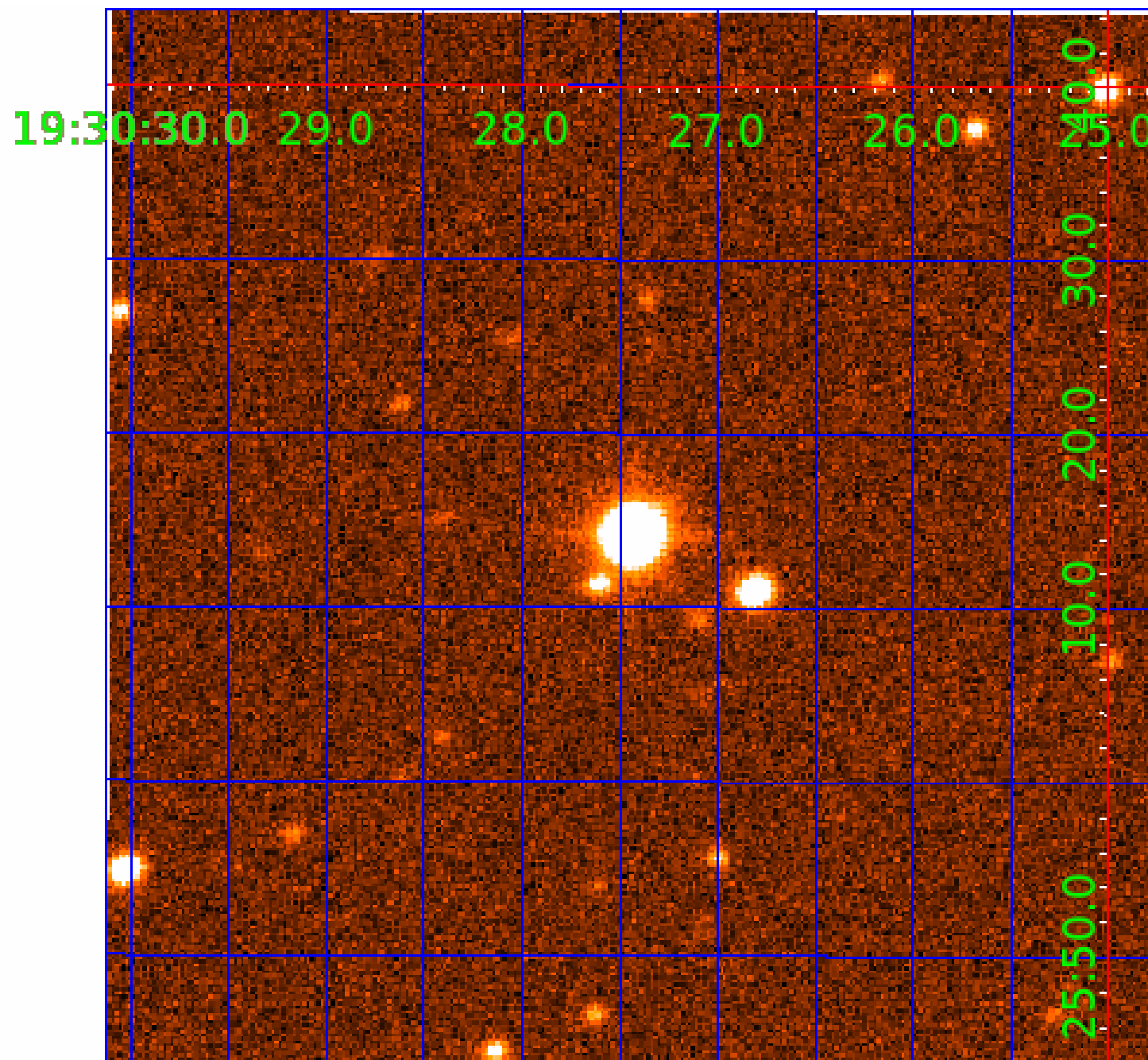


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006126076

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})
006126076-01	OBS	4553.01	0.909276	131.749443	10.4	2.466	8.6	8.1	1.45	6508	0.55	9291.14
006126076-02	OBS	No	0.909277	132.183740	5.4	3.618	9.1	5.3	1.45	6508	0.35	9291.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006126076-01	OBS	FP	0.00	1	0	0	1	LPP_DV—EPHEM_MATCH
006126076-02	OBS	FP	0.00	1	0	0	1	LPP_DV—SAME_NTL_PERIOD—EPHEM_MATCH

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 006126076-02

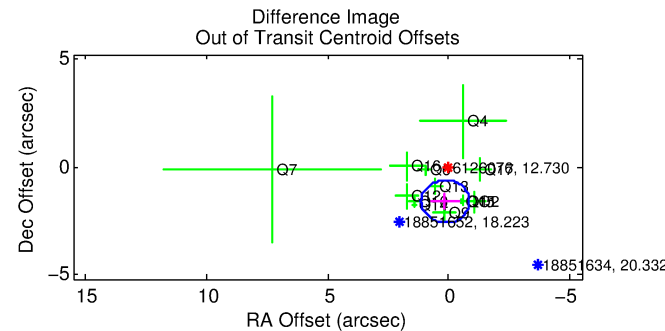
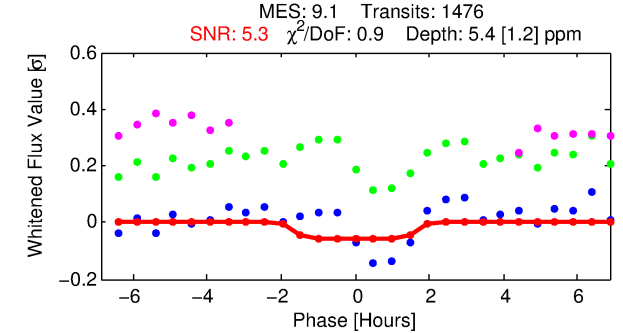
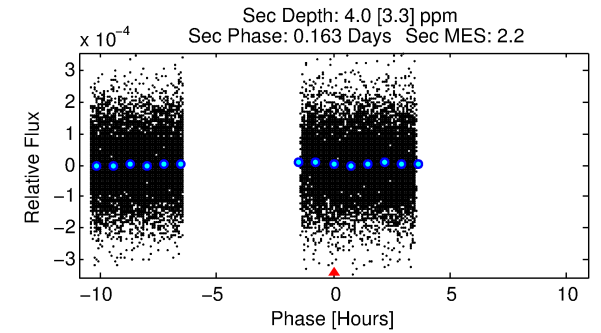
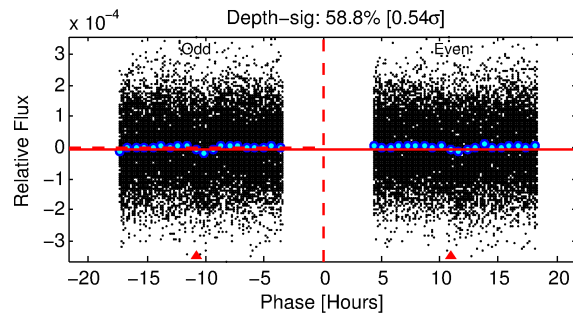
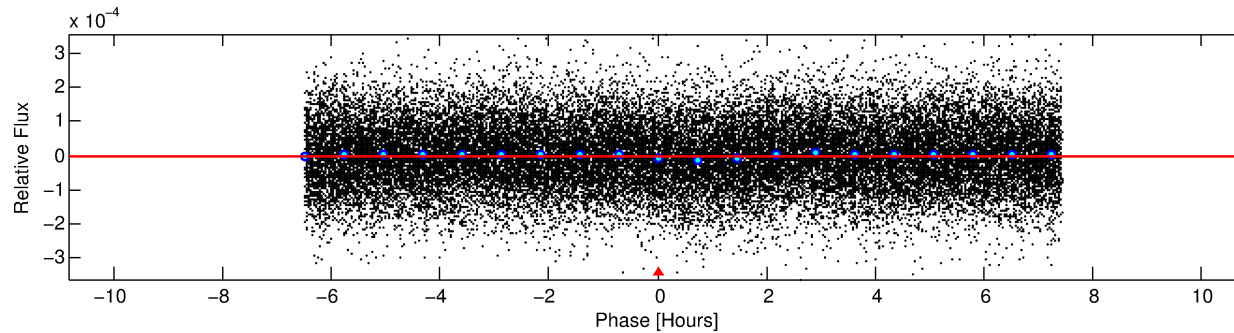
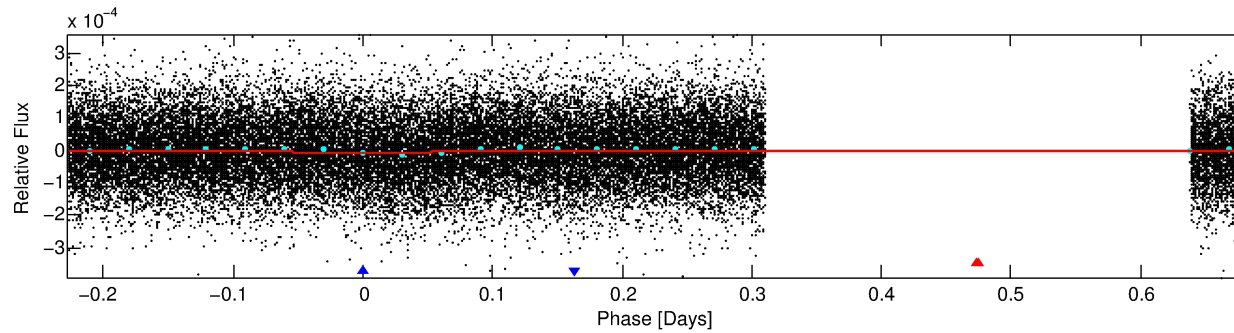
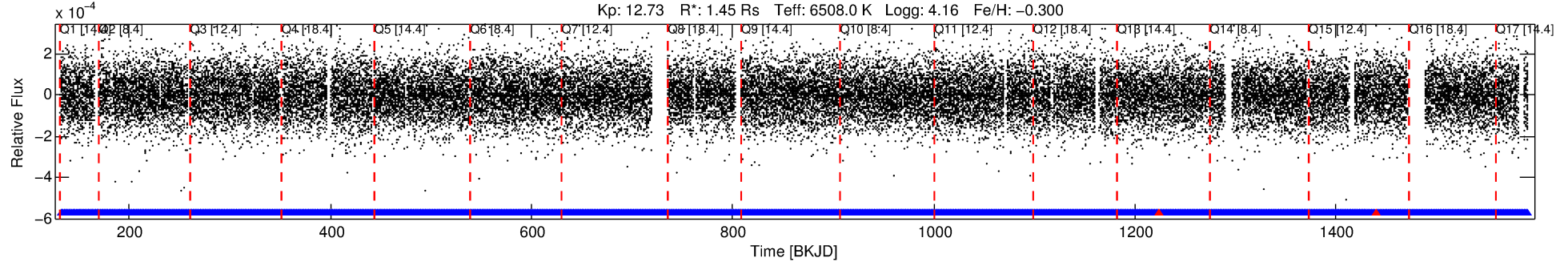
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
006126076-02	6126076	006045264-sec	6045264	1:1	432.0	109	1	13.44	12.73	70340.00	Col-Anomaly	0	3.50	0.24

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: 6126076 Candidate: 2 of 2 Period: 0.909 d
KOI: K04553 Corr: No Ephemeris Match

Kp: 12.73 R*: 1.45 Rs Teff: 6508.0 K Logg: 4.16 Fe/H: -0.300



DV Fit Results:

Period = 0.90928 [0.00002] d
Epoch = 132.1837 [0.0085] BKJD
Rp/R* = 0.0022 [0.0007]
a/R* = 1.72 [1.68]
b = 0.60 [1.60]
Seff = 9291.13 [2958.66]
Teq = 2503 [199] K
Rp = 0.35 [0.13] Re
a = 0.0190 [0.0037] AU
Ag = 6.47 [6.73] [0.81σ]
Teffp = 6172 [1548] K [2.35σ]

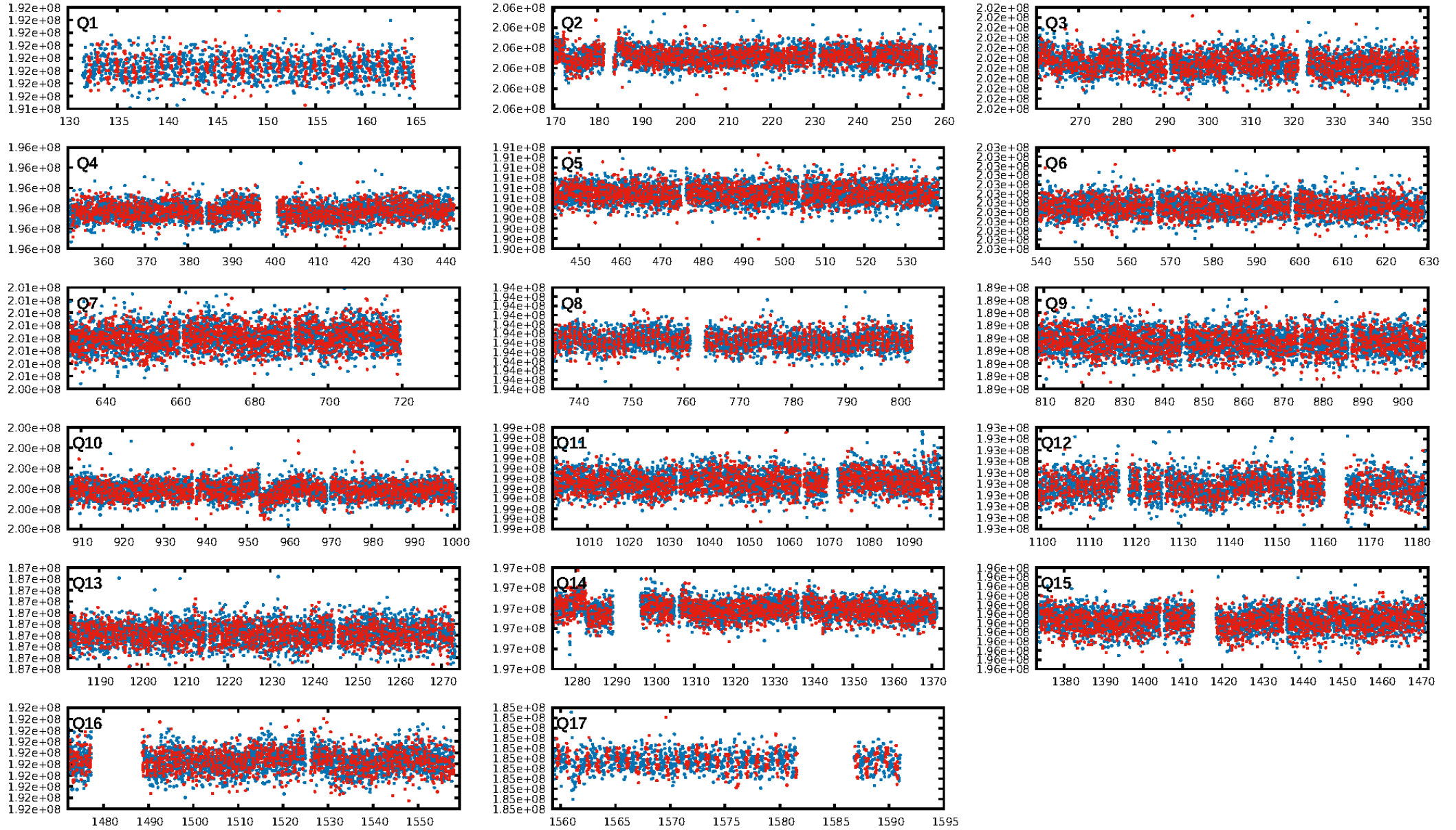
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.29e-21
RollingBand-fgt: 1.00 [1407/1409]
GhostDiagnostic-chr: 5.077
Centroid-sig: 0.0%
Centroid-so: 9.348 arcsec [4.25σ]
OotOffset-rm: 1.634 arcsec [4.93σ]
KicOffset-rm: 1.493 arcsec [4.32σ]
OotOffset-st: 4/3/3/3 [13]
KicOffset-st: 4/3/3/3 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [17/17]

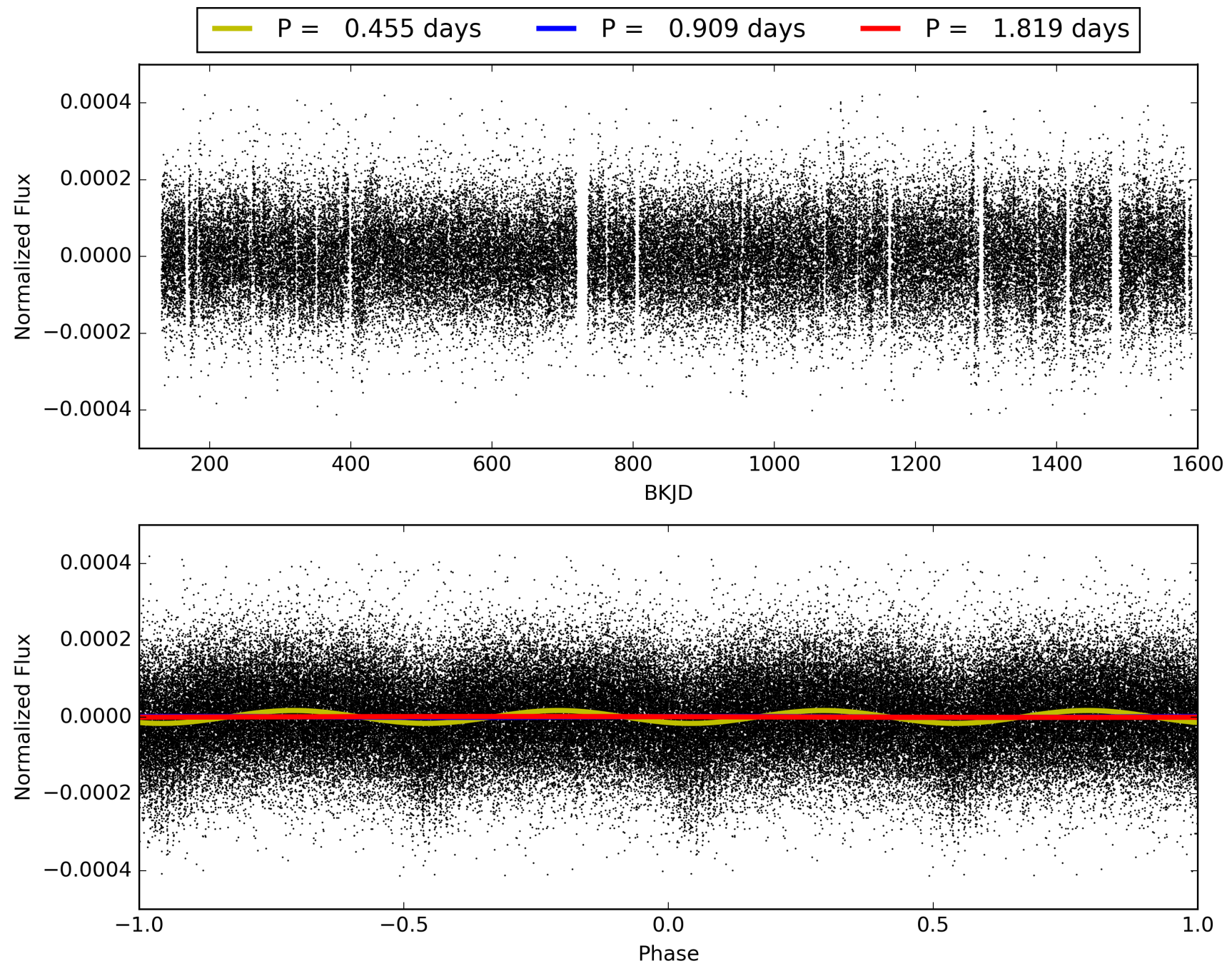
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:01:30 Z

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

TCE 006126076-02, PDC Light Curves

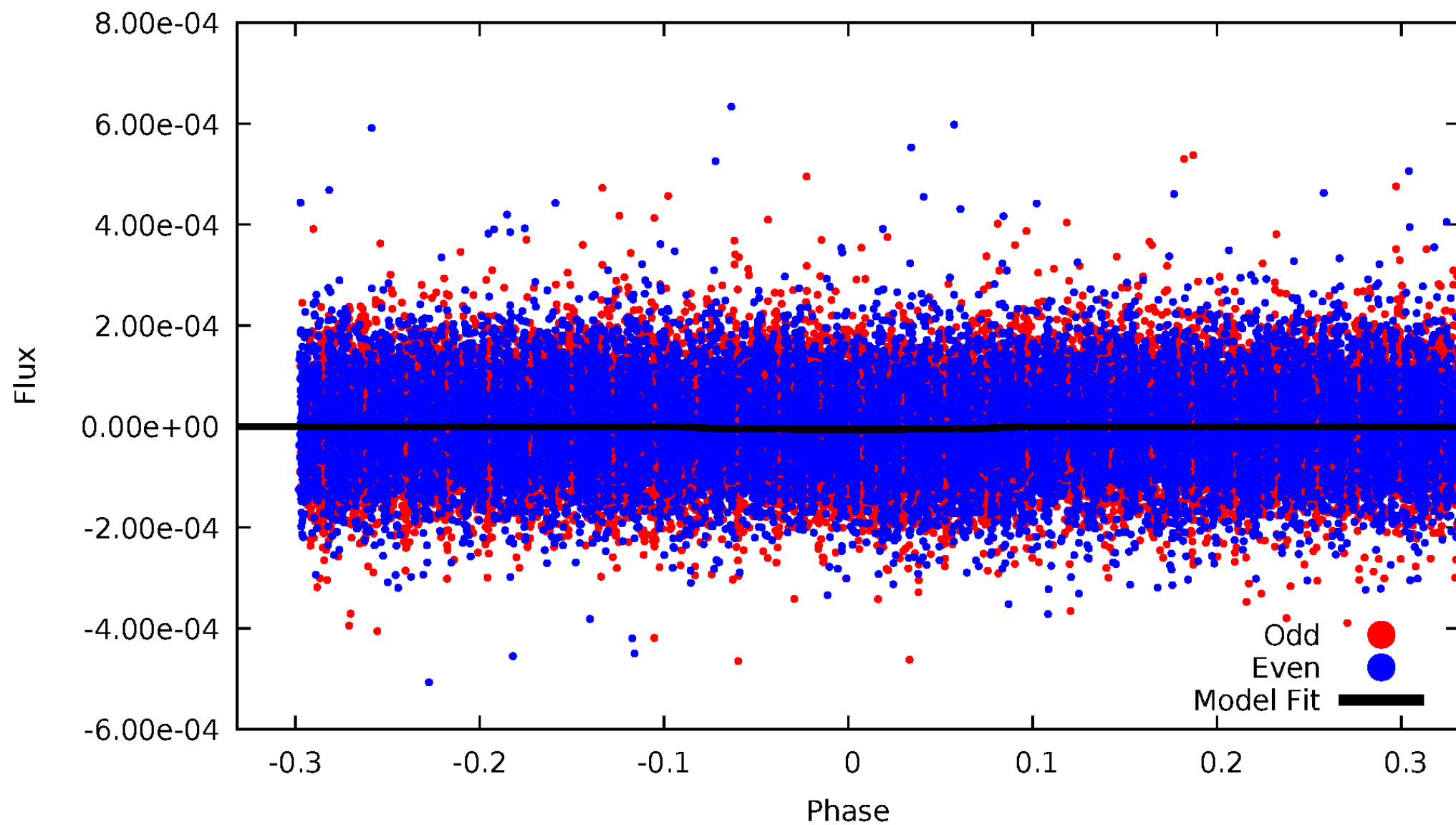


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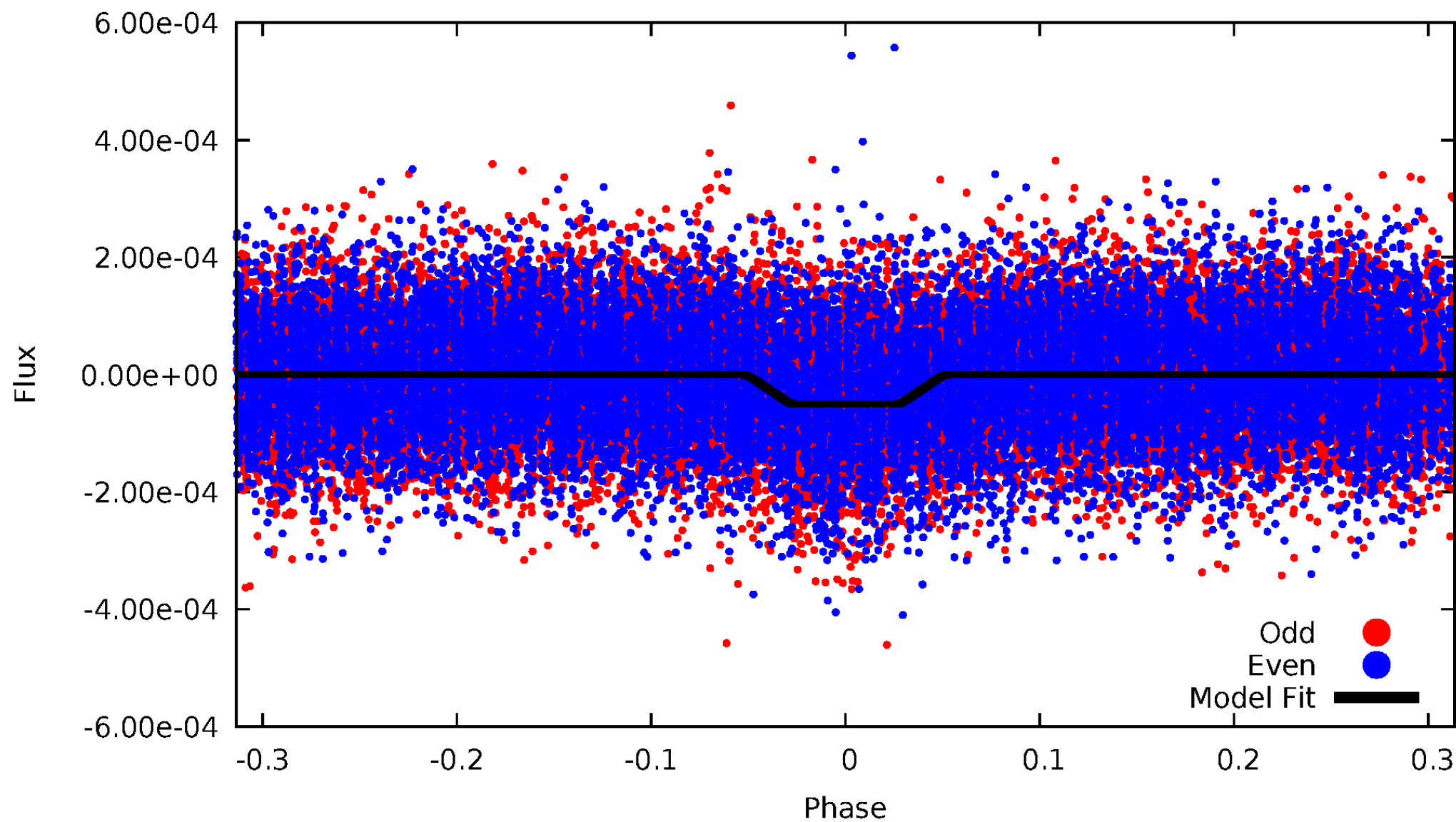
DV Odd/Even

TCE 006126076-02



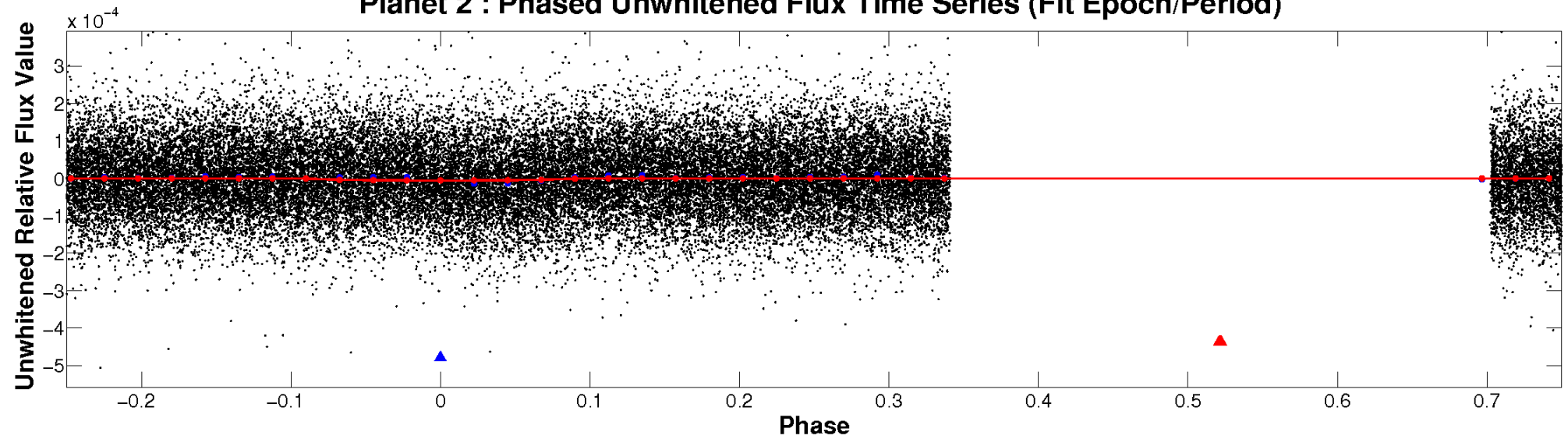
ALT Odd/Even

TCE 006126076-02

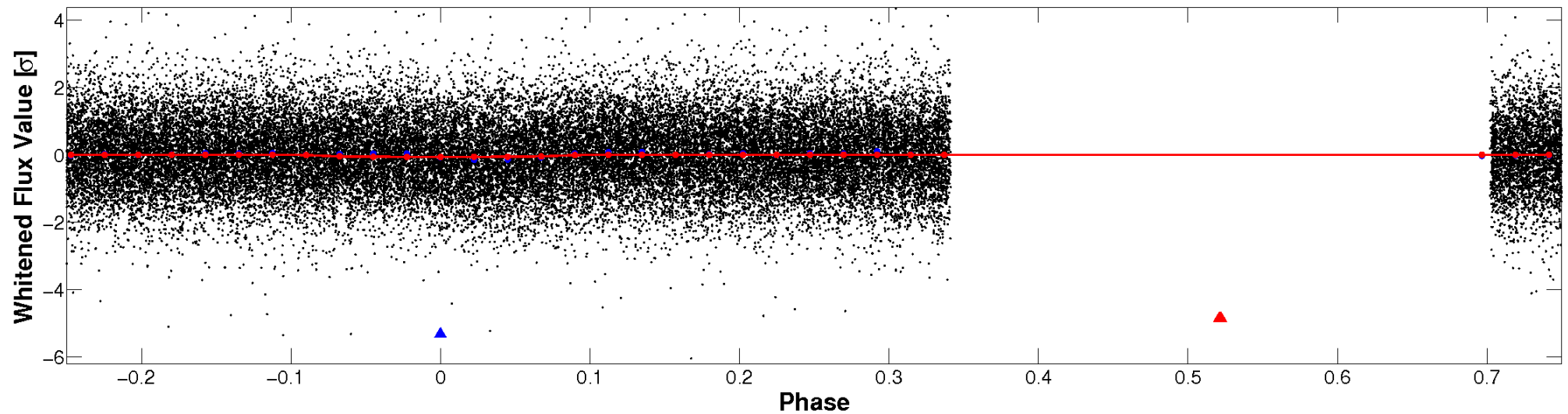


Non-Whitened Vs. Whitened Light Curve

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

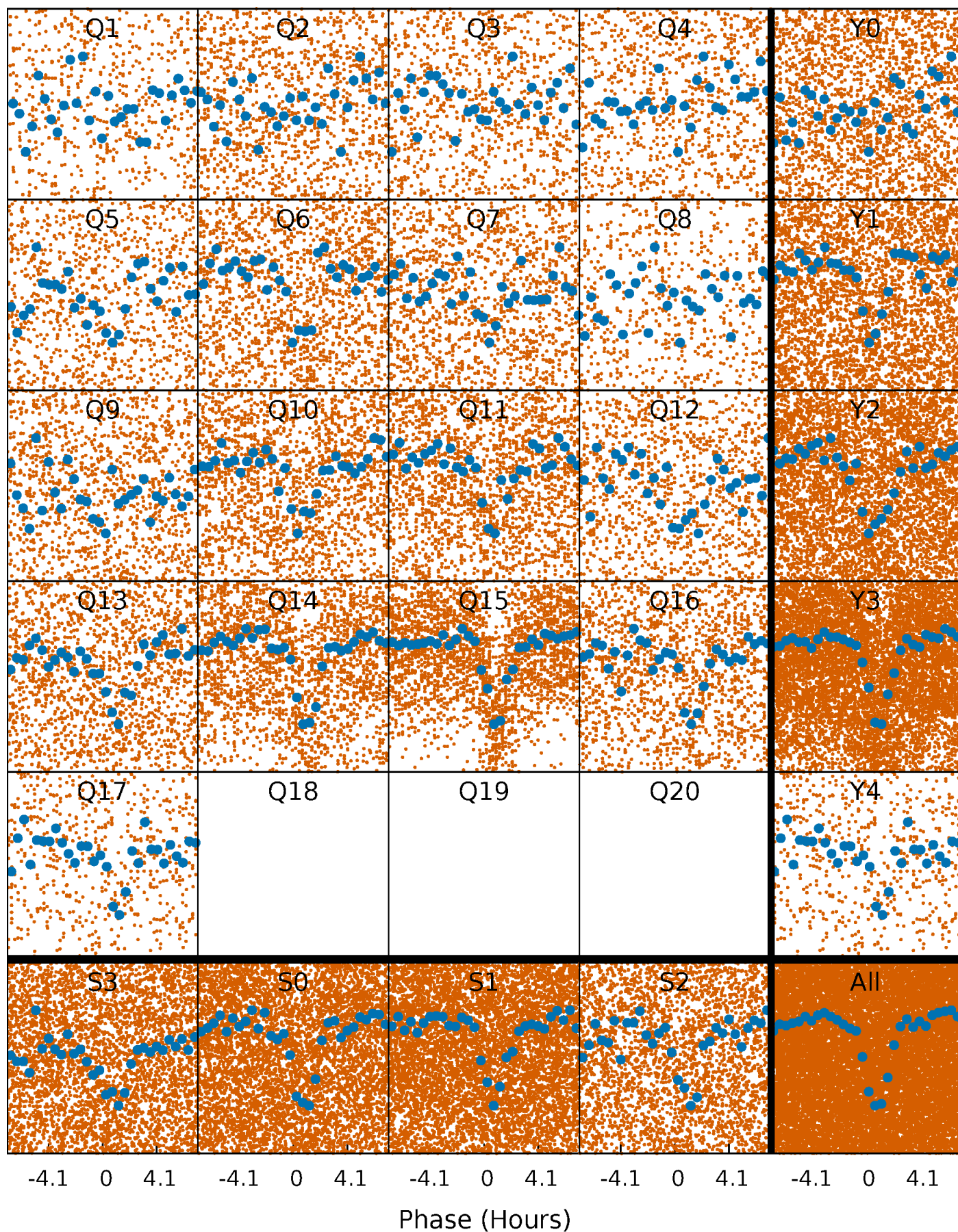


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



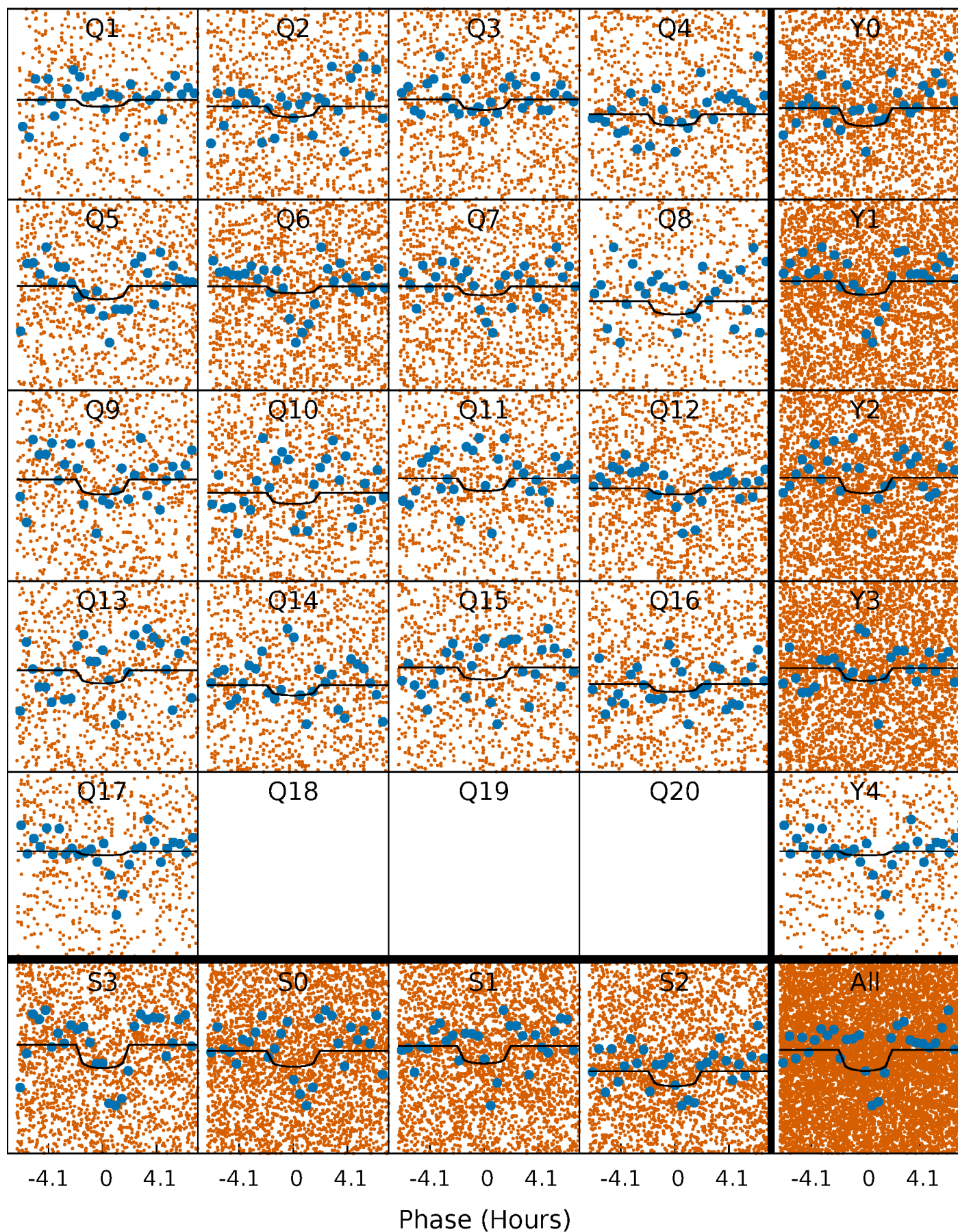
PDC Quarter-Phased Transit Curves

TCE 006126076-02 P= 0.909277 Days $T_0=132.183740$ (BKJD)



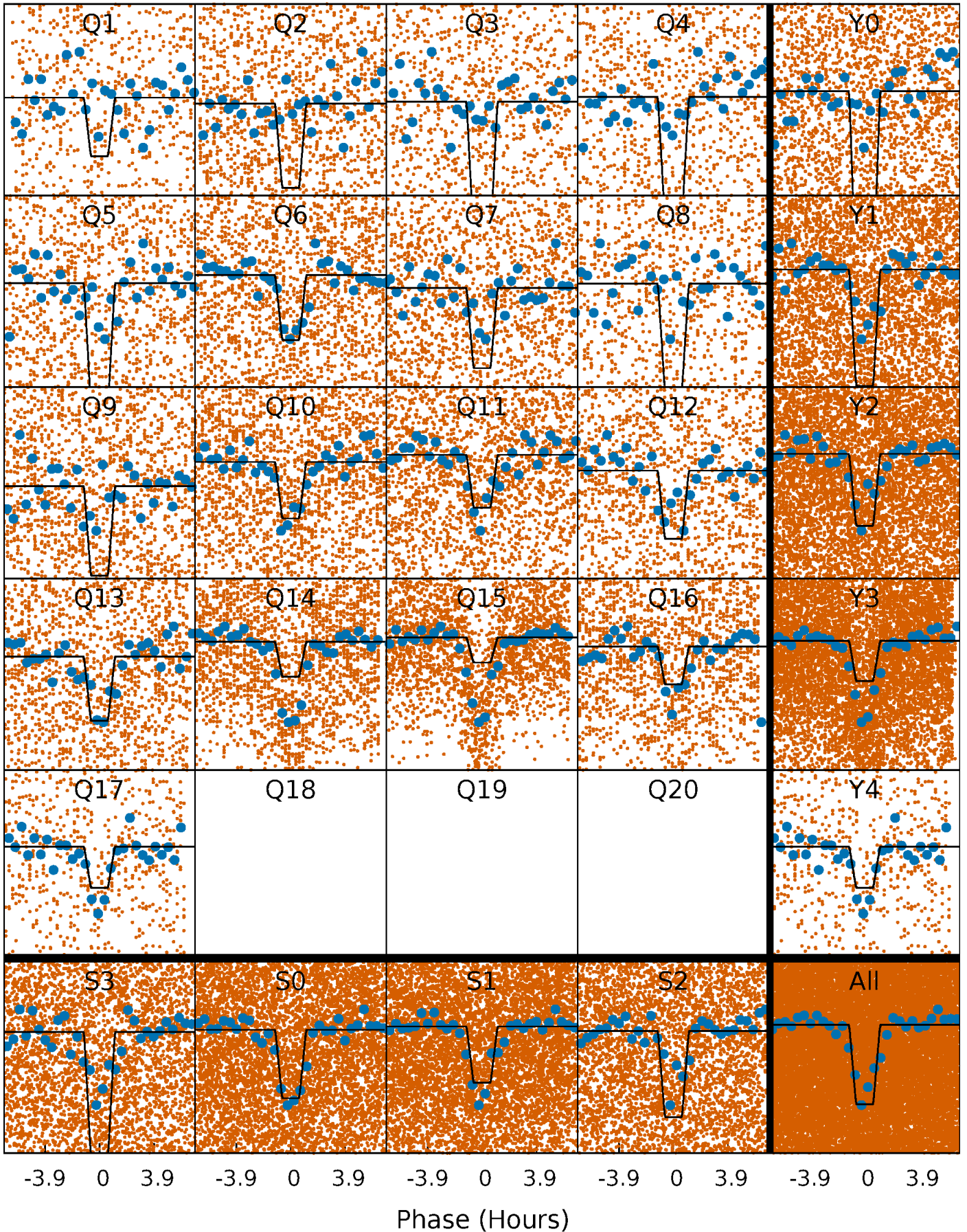
DV Quarter-Phased Transit Curves

TCE 006126076-02 P= 0.909277 Days $T_0=132.183740$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

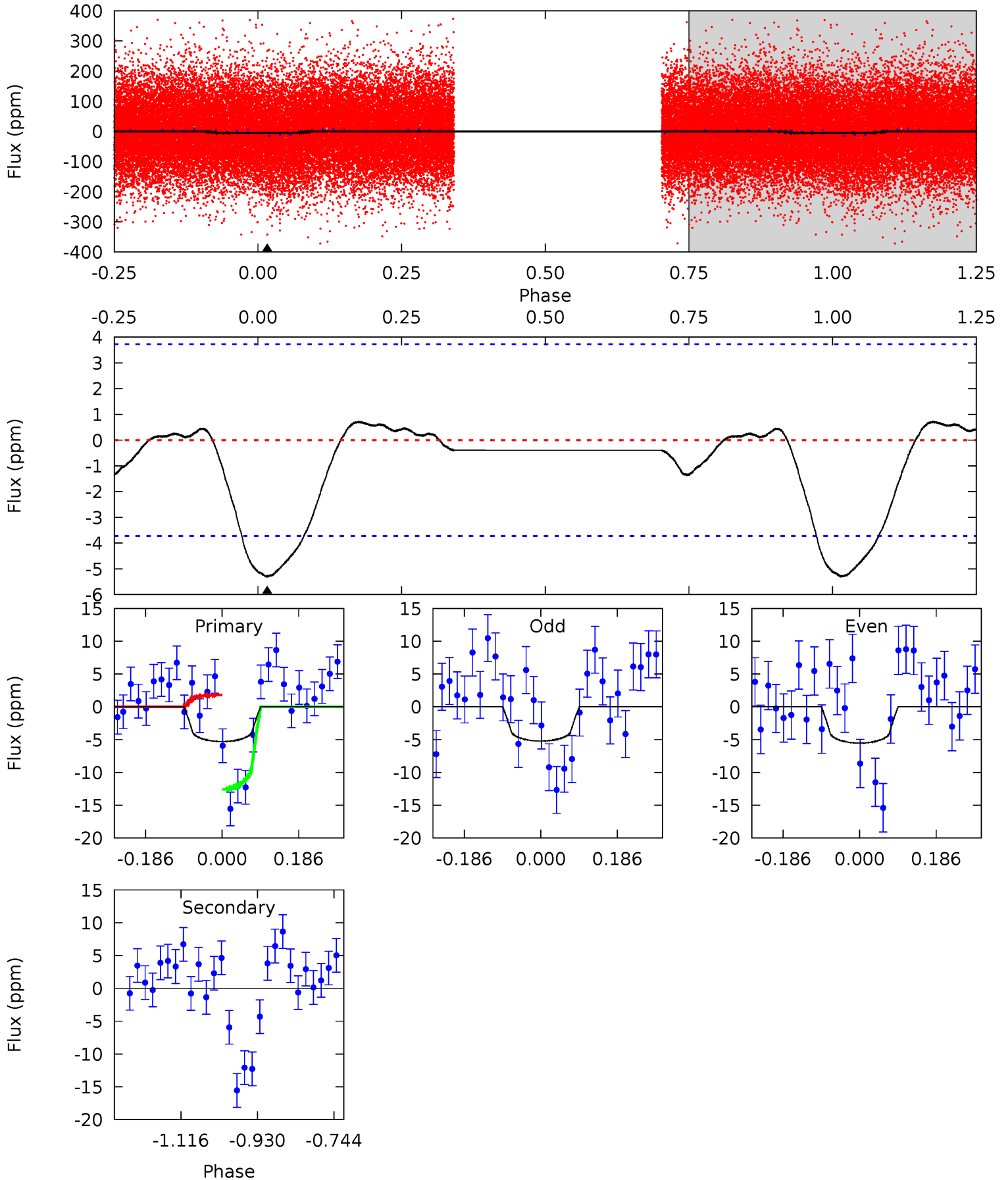
TCE 006126076-02 P= 0.909313 Days $T_0=132.180246$ (BKJD)



DV Model-Shift Uniqueness Test

006126076-02, P = 0.909277 Days, E = 131.274463 Days

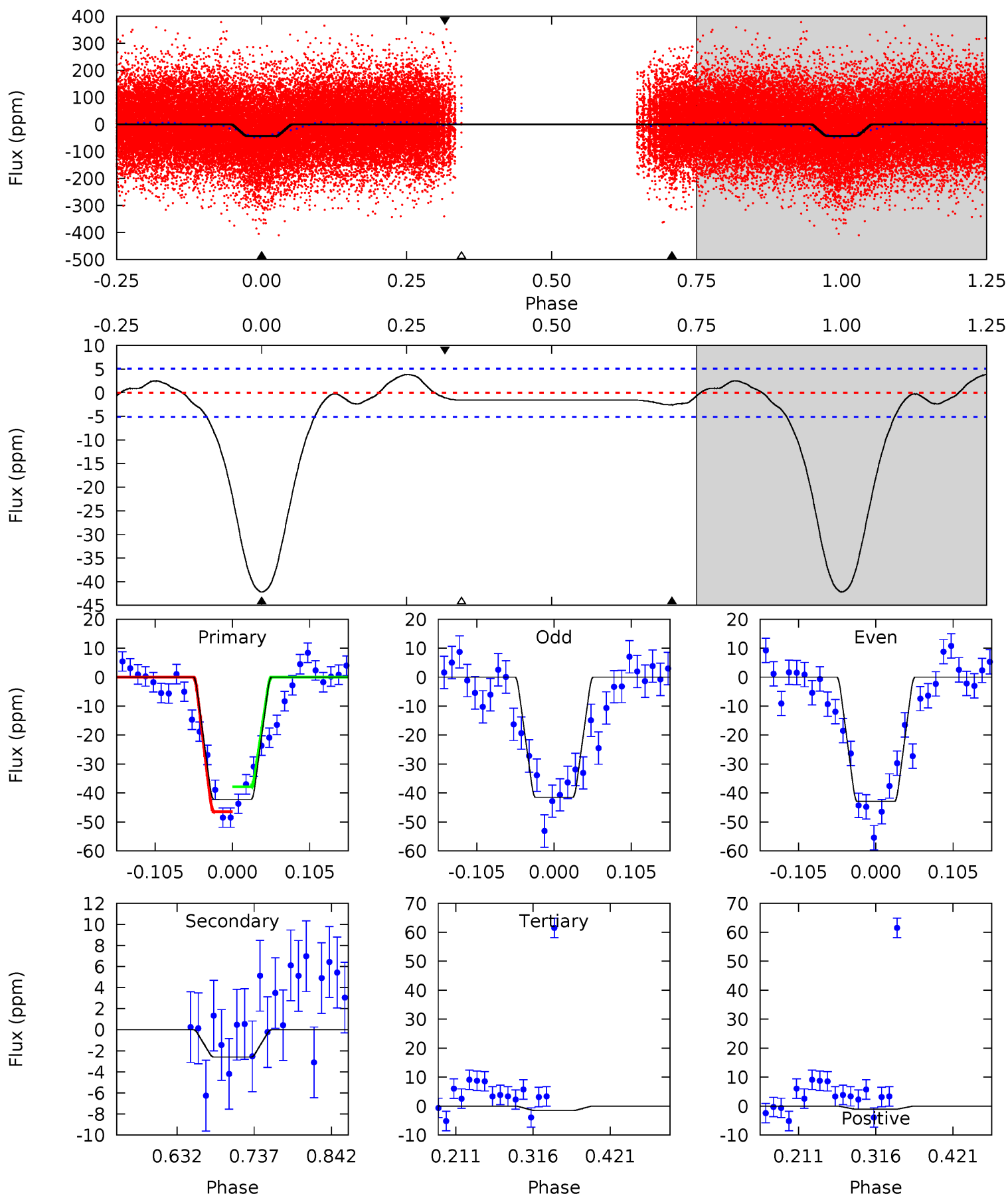
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.31	0	0	0	4.43	1.32	0.70	6.31	6.31	0	0	0.19	1.13	0.12	6.39



Alt Model-Shift Uniqueness Test

006126076-02, P = 0.909313 Days, E = 131.270933 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.6	2.31	1.38	-0.98	4.55	1.62	1.78	36.2	38.6	0.94	3.30	0.65	1.09	0.08	3.86



Stellar Parameters For KIC 006126076

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6508^{+146}_{-178}	$4.163^{+0.171}_{-0.140}$	$-0.300^{+0.250}_{-0.300}$	$1.447^{+0.311}_{-0.311}$	$1.111^{+0.177}_{-0.118}$	$0.517^{+0.455}_{-0.211}$
	+2%/-3%	+4%/-3%	+83%/-100%	+21%/-21%	+16%/-11%	+88%/-41%
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 006126076-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1	$0.35^{+0.11}_{-0.11}$	3467^{+212}_{-214}	-3341^{+7547}_{-1293}	$0.010^{+1.422}_{-1.584}$
Alt.	-3 ± 1	$1.12^{+0.17}_{-0.17}$	3475^{+216}_{-191}	2865^{+568}_{-5638}	$0.395^{+0.272}_{-0.165}$

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

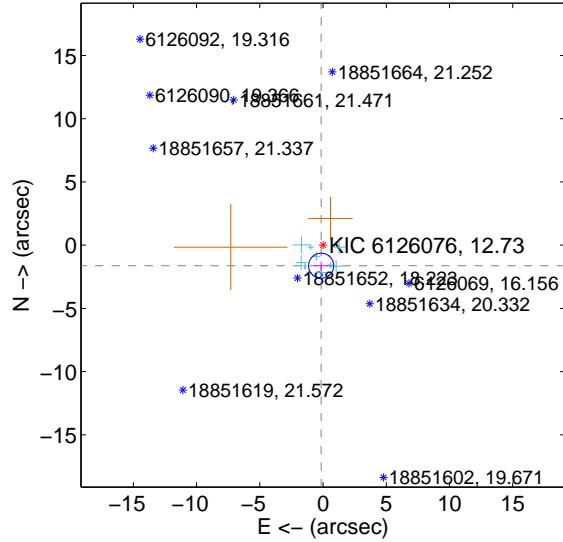
Supplemental centroid analysis for 006126076-02. Kepler magnitude: 12.73. Transit SNR 5.35

There are 11 quarters with good PRF difference image offsets

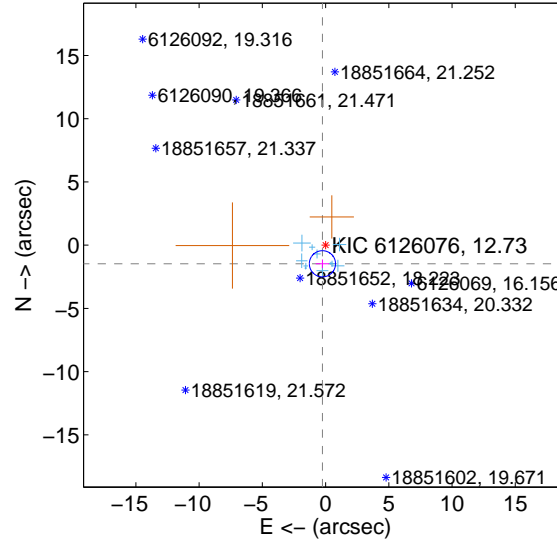
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.634 ± 0.331	4.93	0.149 ± 0.574	-1.628 ± 0.335
PRF-fit source offset from KIC position	1.493 ± 0.345	4.32	0.249 ± 0.536	-1.472 ± 0.346
photometric centroid source offset	9.35 ± 2.20	4.25	2.88 ± 2.54	-8.89 ± 2.16

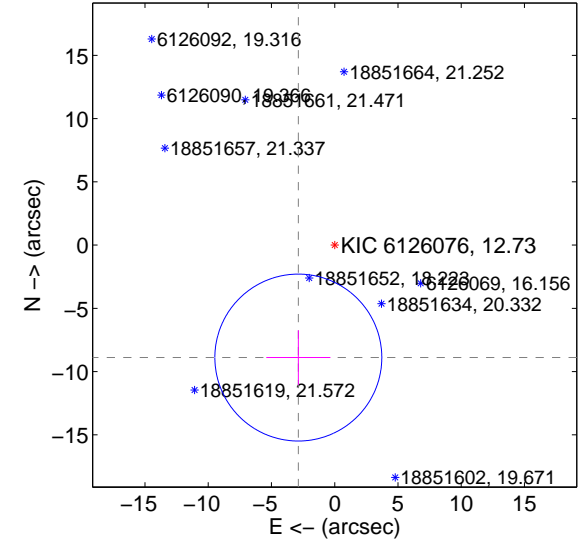
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

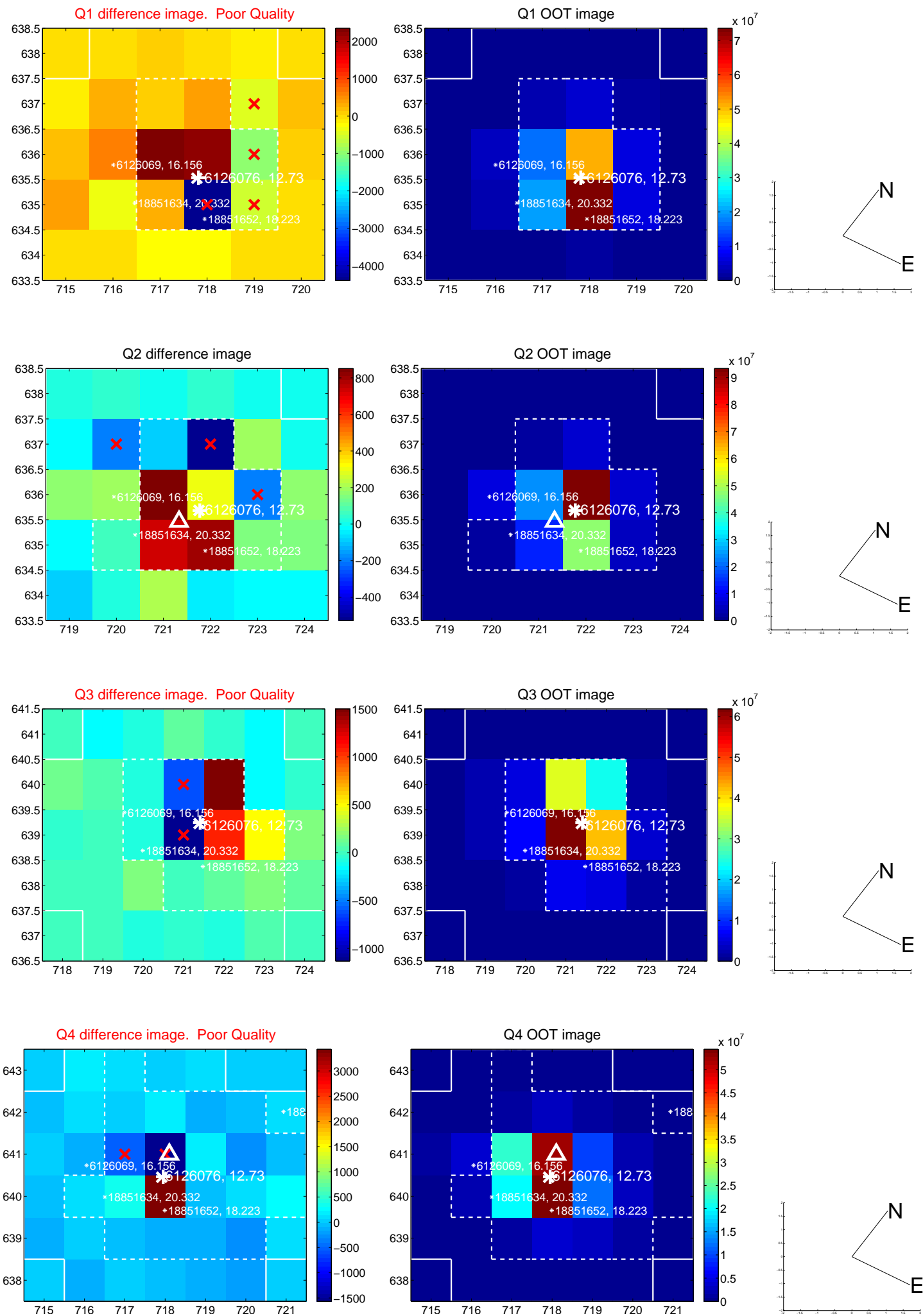


offset from photometric centroids

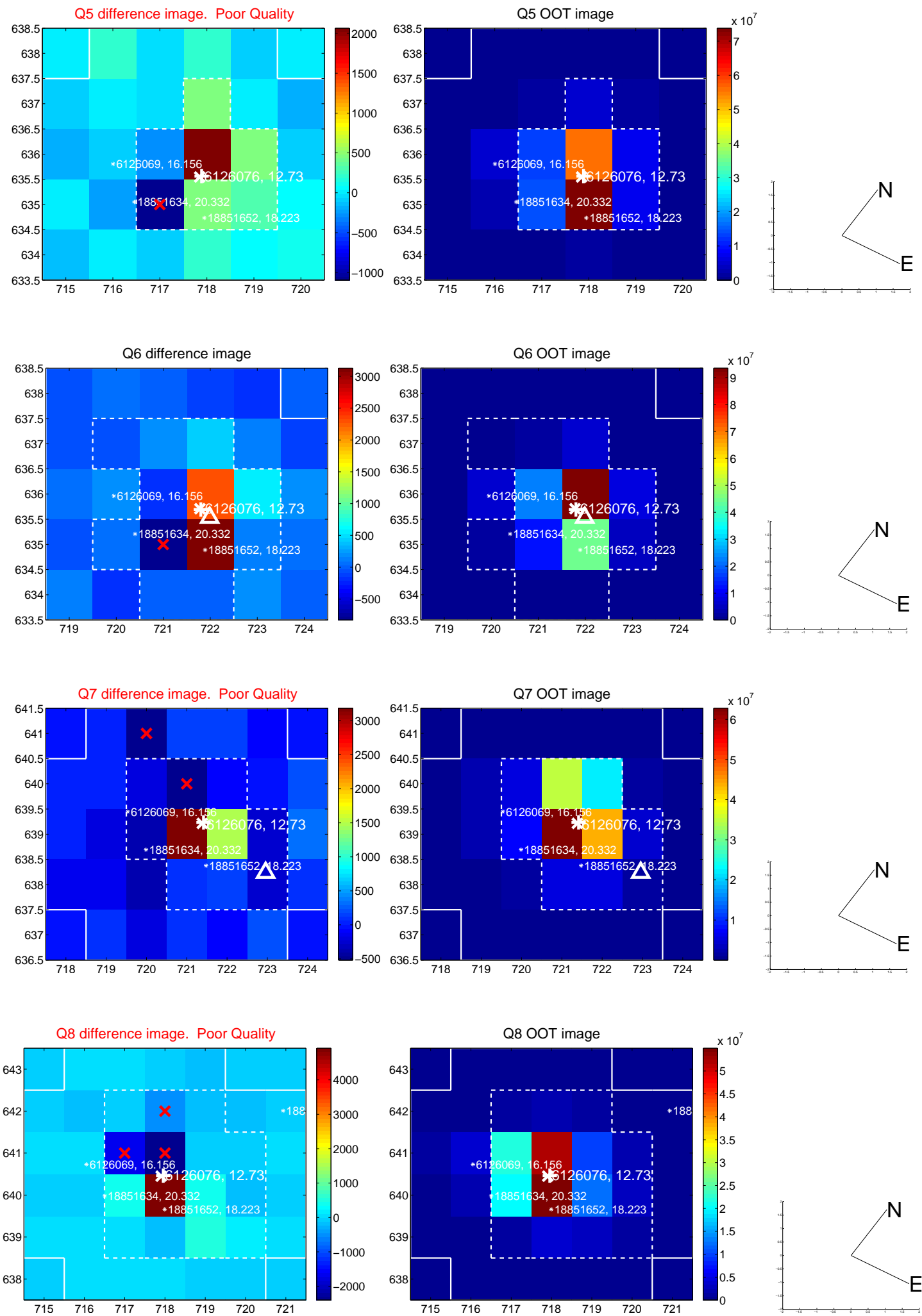


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

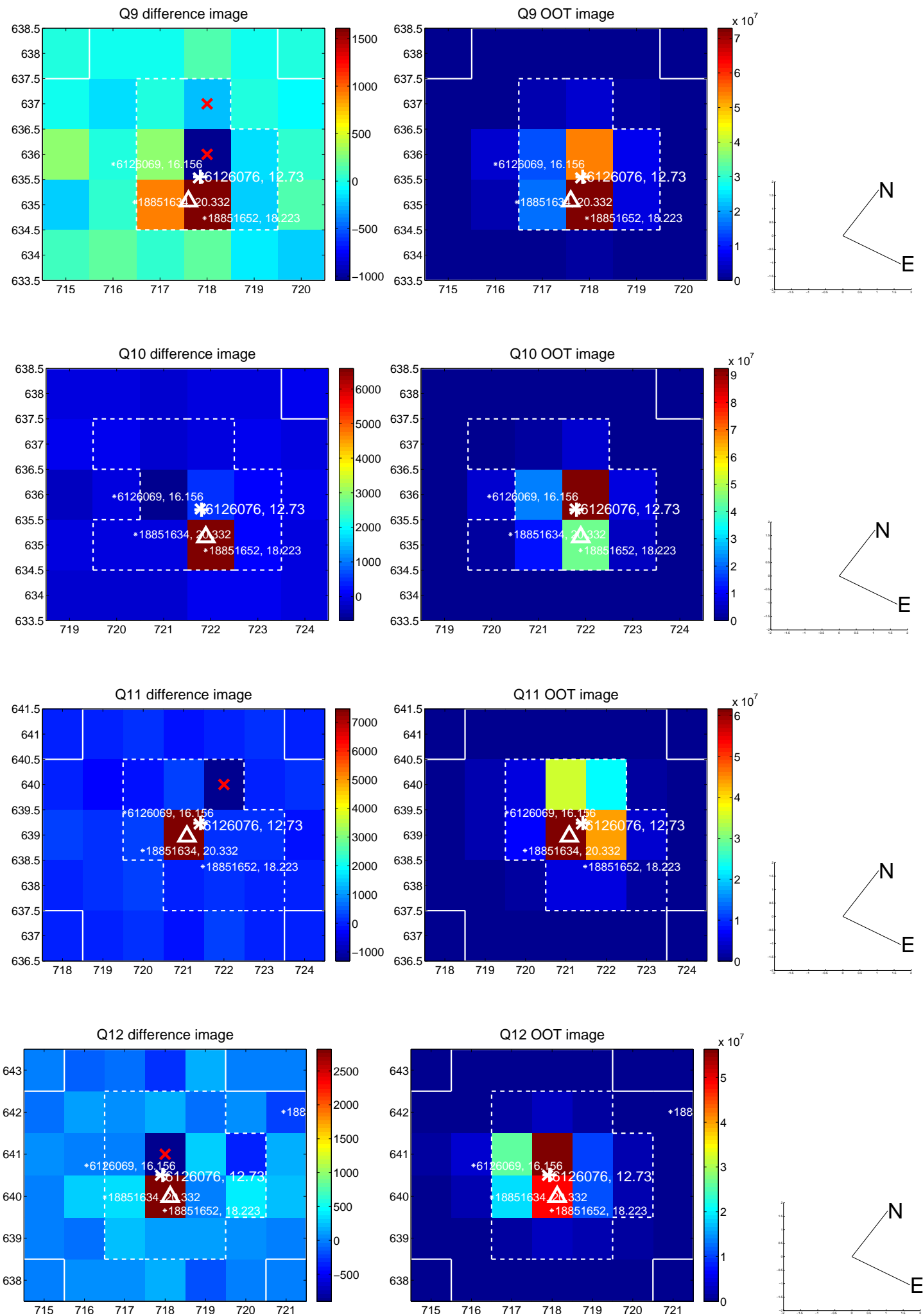
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



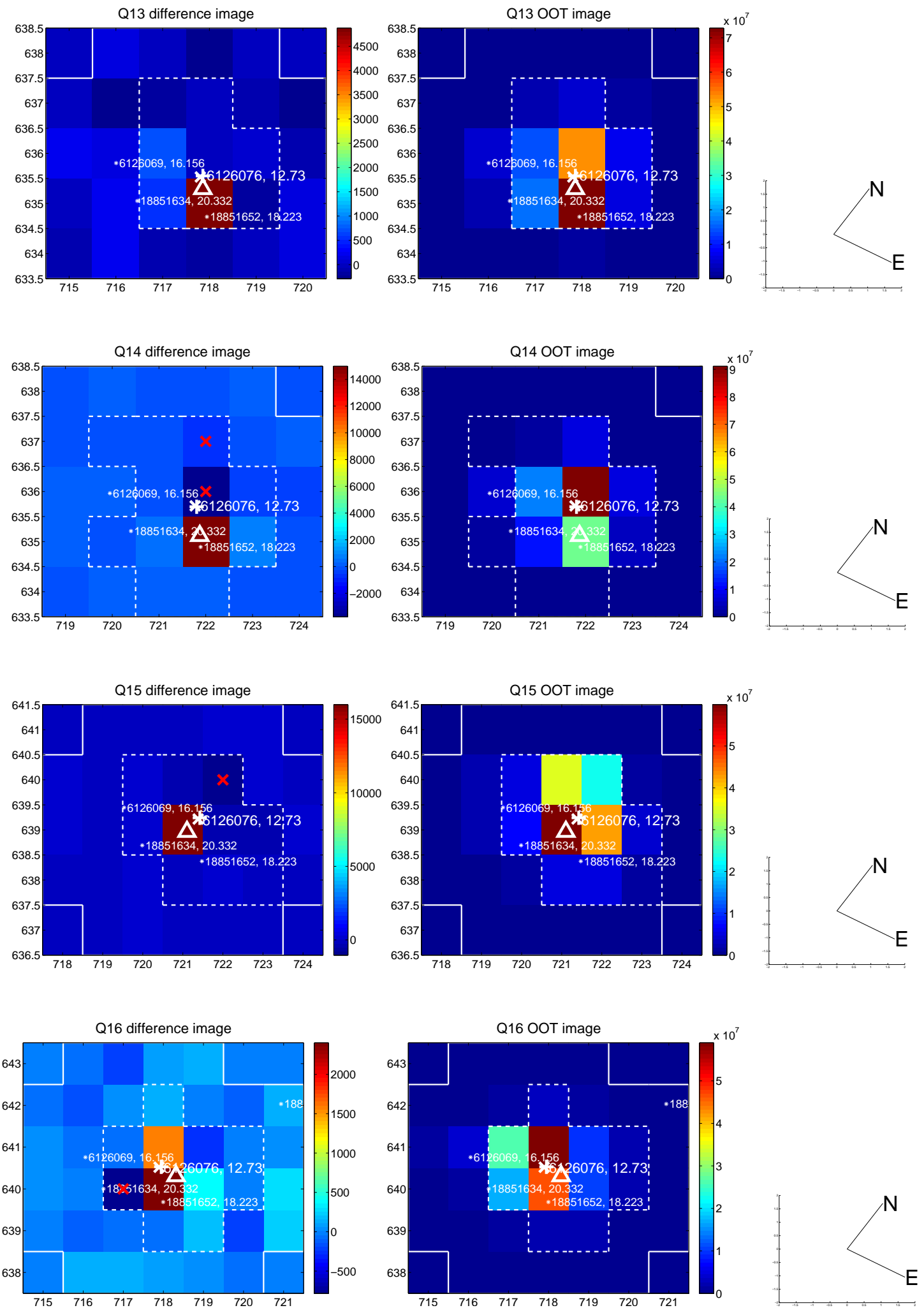
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



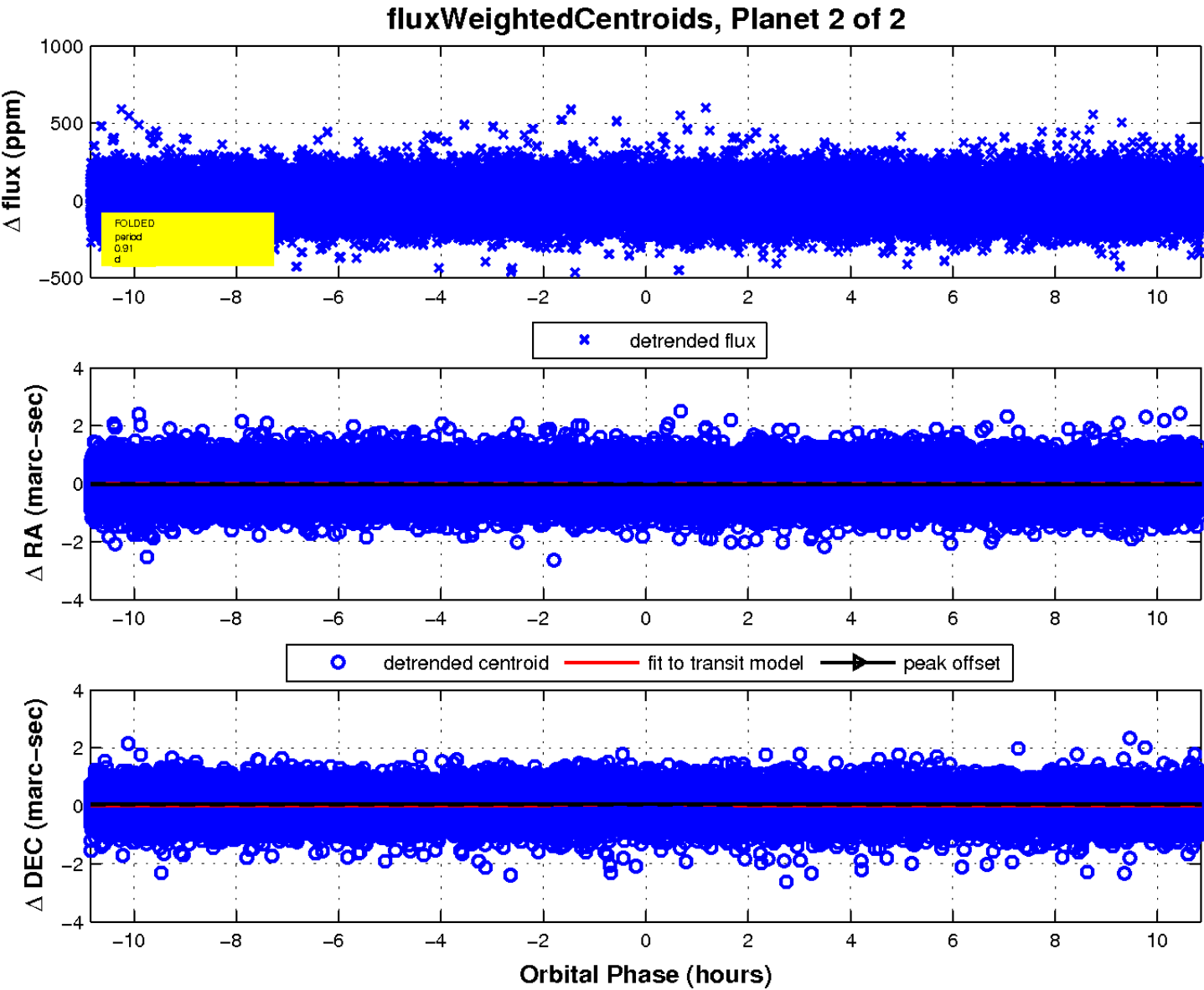
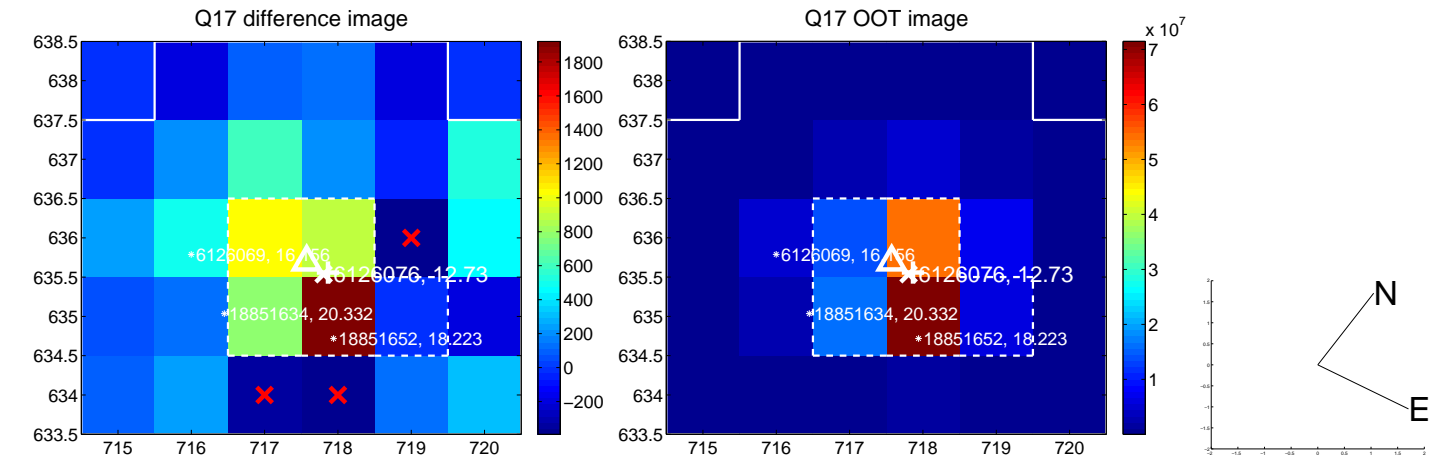
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

