

KIC 005556769

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})
005556769-01	OBS	No	12.426554	141.504103	52.2	18.844	9.0	8.9	0.88	5853	0.73	81.52
005556769-02	OBS	No	12.425437	134.063470	48.8	26.234	9.3	10.0	0.88	5853	0.68	81.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005556769-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNCERTAIN—HALO_GHOST—EPHEM_MATCH
005556769-02	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—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.

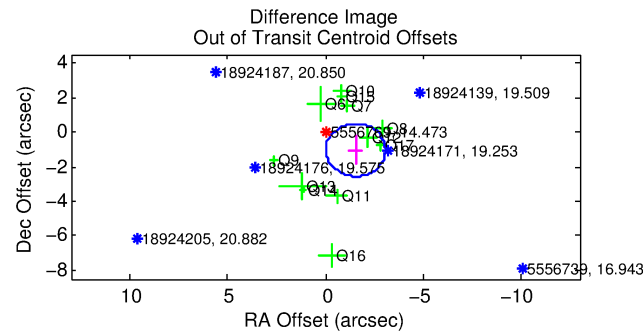
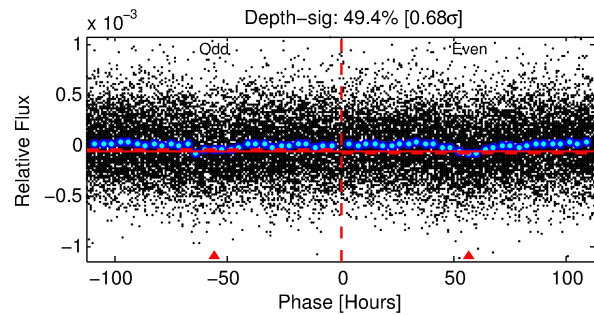
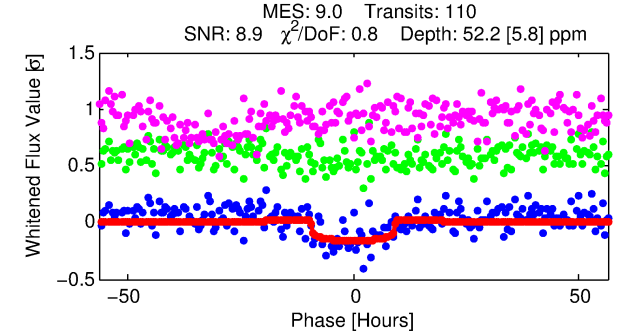
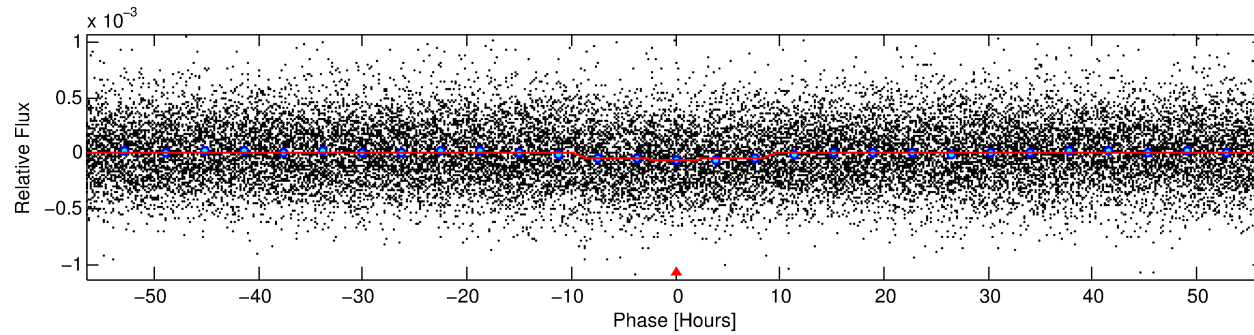
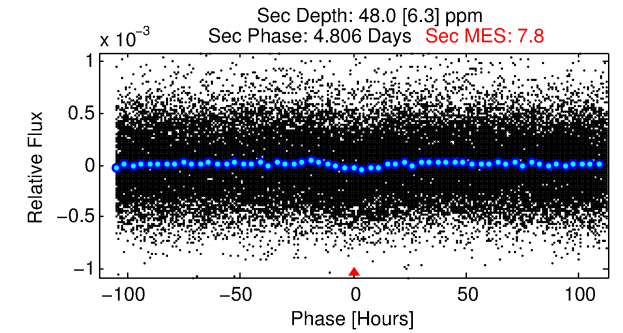
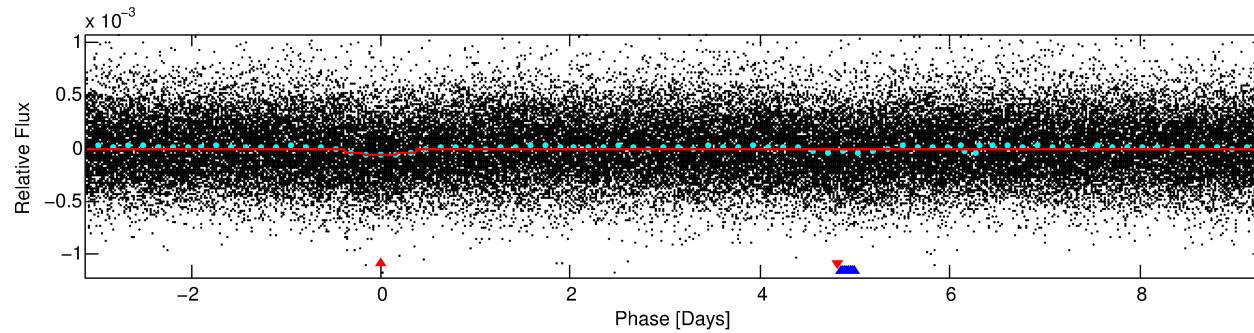
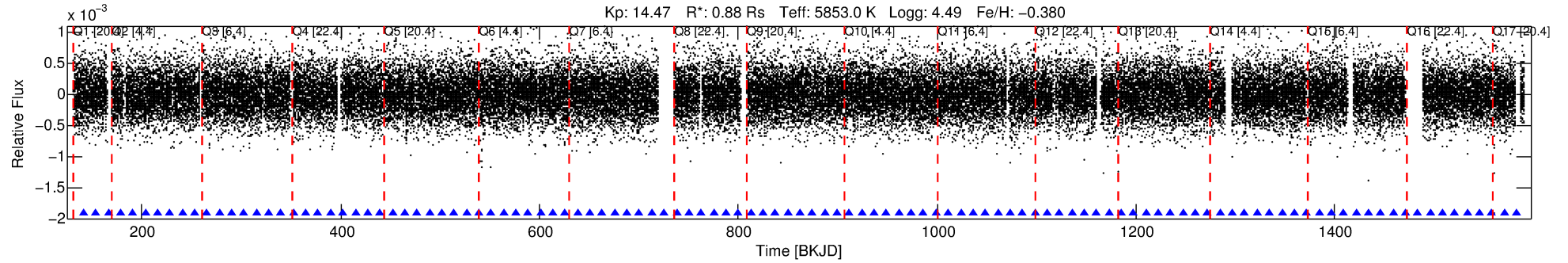
Ephemeris Match Information For 005556769-01

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
005556769-01	5556769	V380-Cyg-pri	5385723	1:1	421.9	101	32	5.77	14.47	2787.20	Direct-PRF	0	2.39	1.14

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: 5556769 Candidate: 1 of 2 Period: 12.427 d



DV Fit Results:

Period = 12.42655 [0.00041] d
Epoch = 141.5041 [0.0265] BKJD
Rp/R* = 0.0075 [0.0017]
a/R* = 2.86 [2.81]
b = 0.85 [0.36]
Seff = 81.52 [28.56]
Teq = 766 [67] K
Rp = 0.73 [0.25] Re
a = 0.1003 [0.0224] AU
Ag = 503.36 [291.61] [1.72σ]
Teffp = 5611 [689] K [7.00σ]

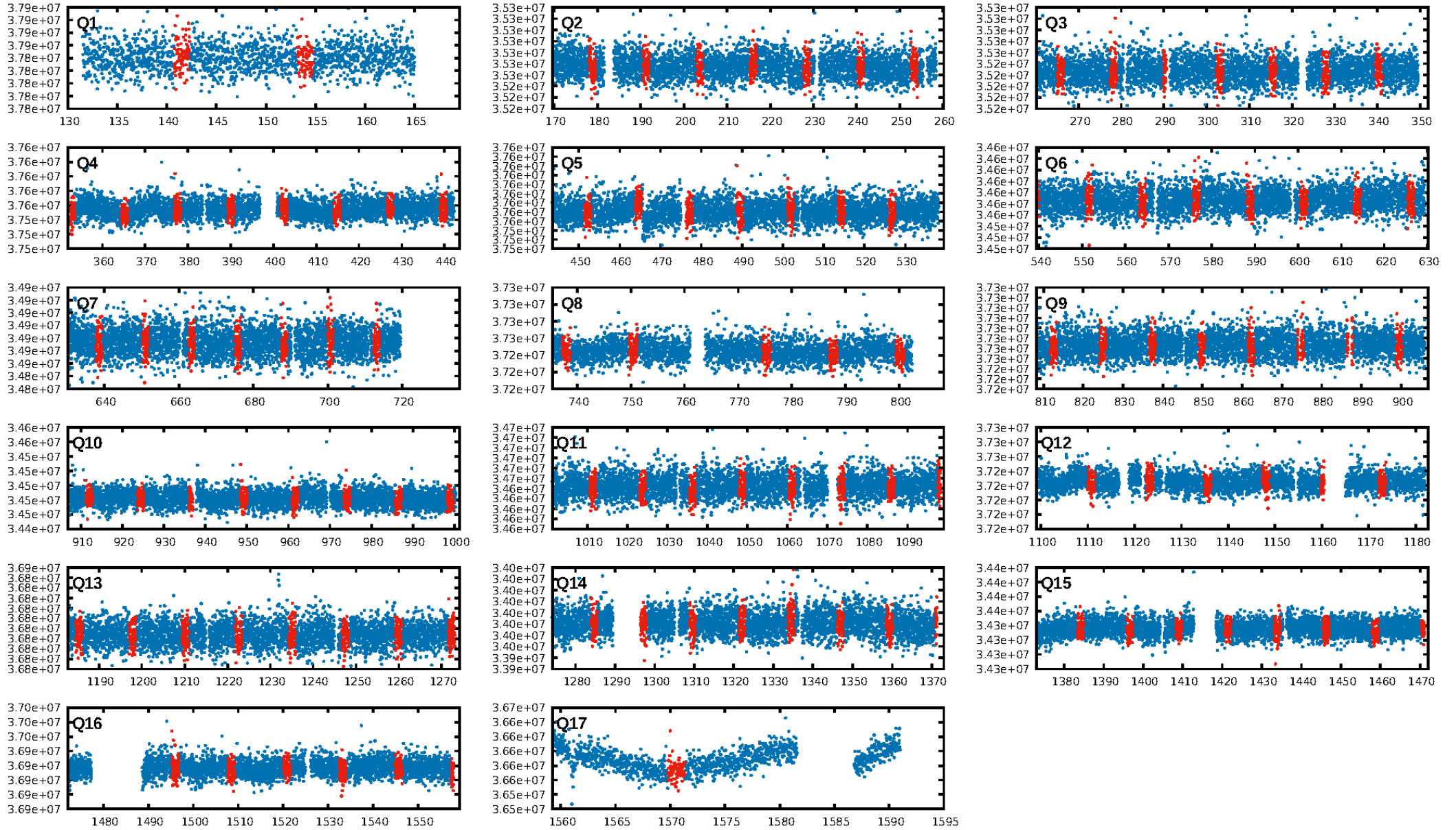
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 84.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.58e-21
RollingBand-fgt: 1.00 [107/107]
GhostDiagnostic-chr: -0.08045
Centroid-sig: 0.0%
Centroid-so: 4.945 arcsec [3.08σ]
OotOffset-rm: 1.857 arcsec [3.66σ]
KicOffset-rm: 1.900 arcsec [4.13σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 1.00 [17/17]

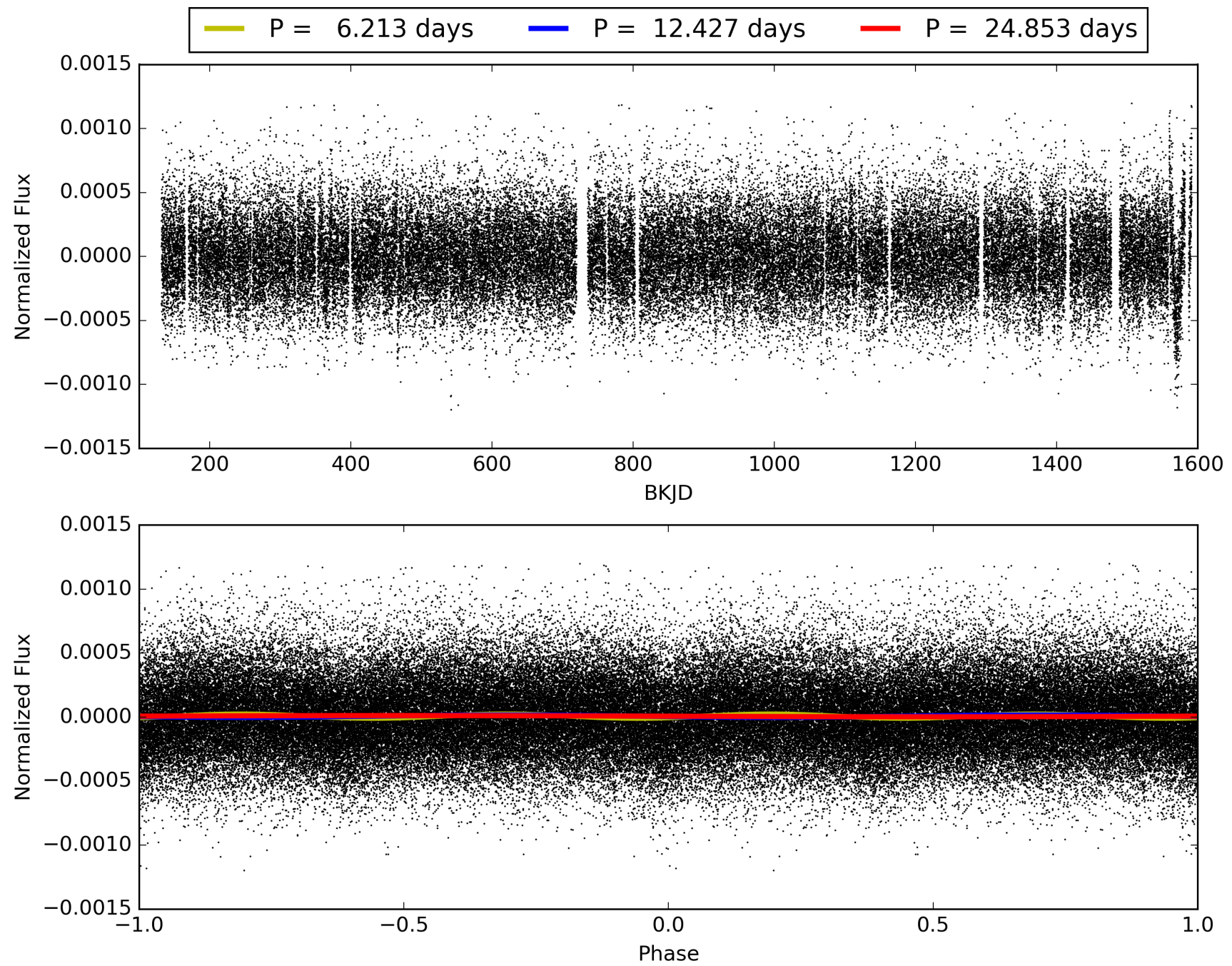
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:26:55 Z

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

TCE 005556769-01, PDC Light Curves

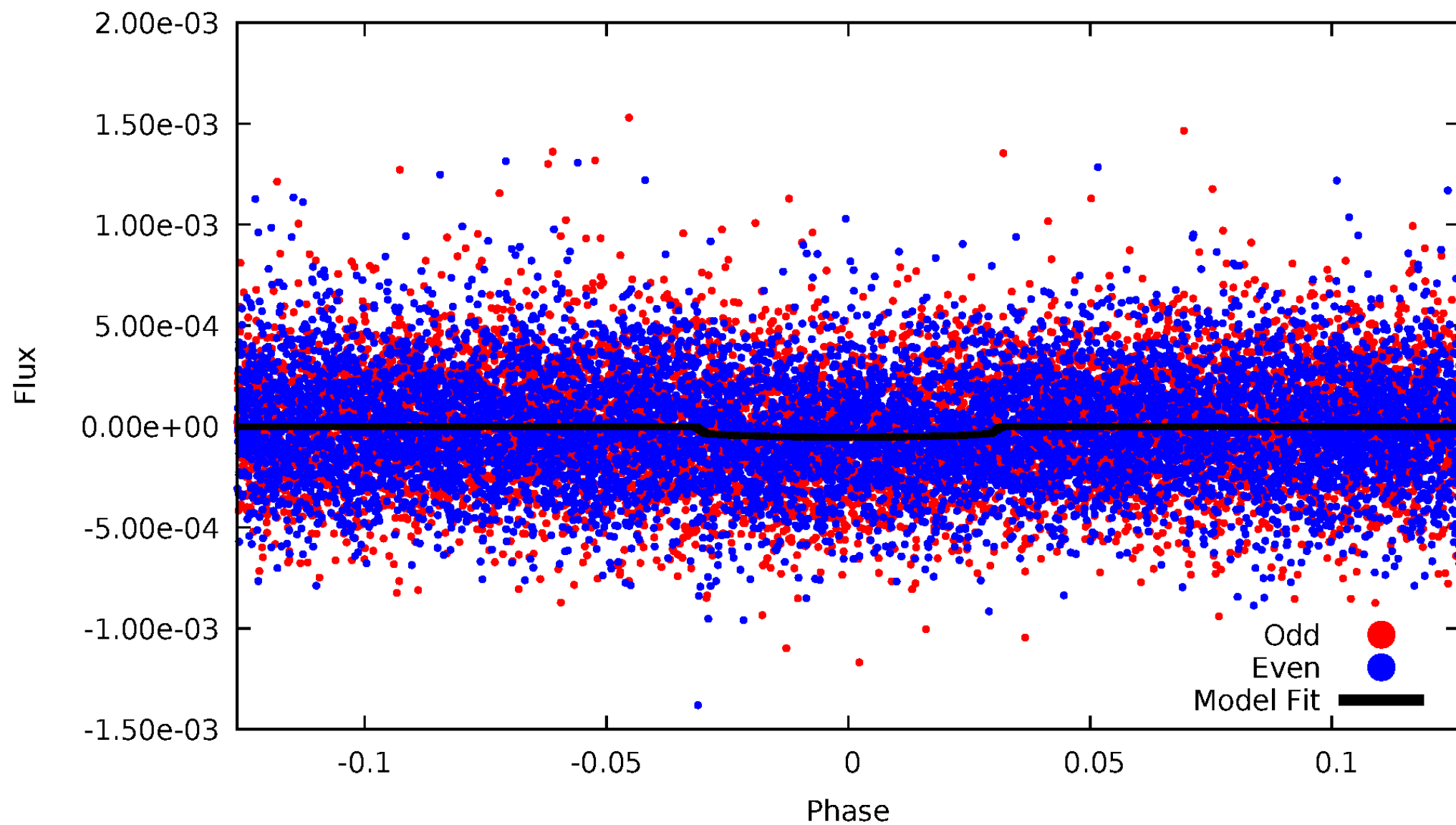


TCE 005556769-01



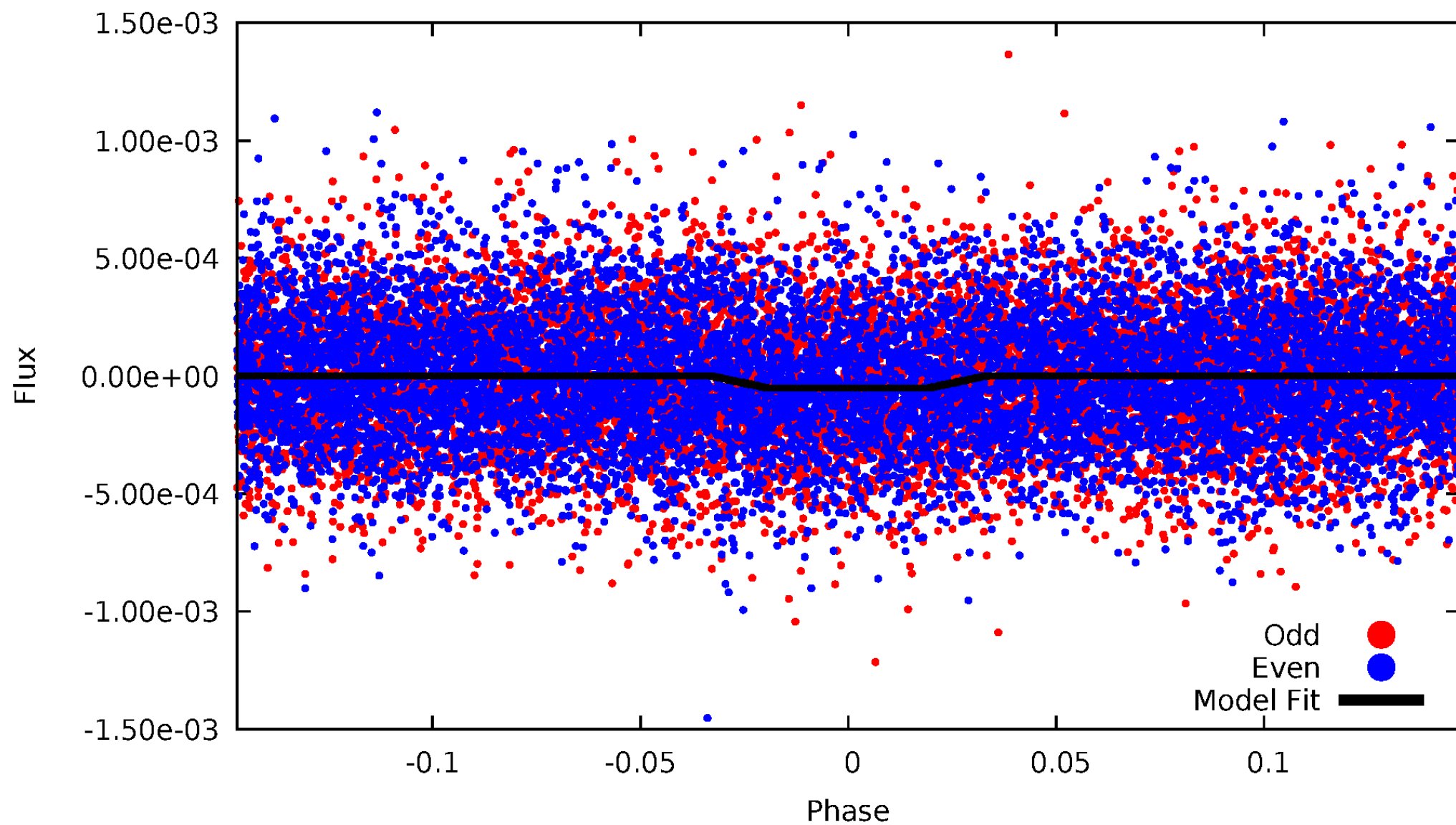
DV Odd/Even

TCE 005556769-01

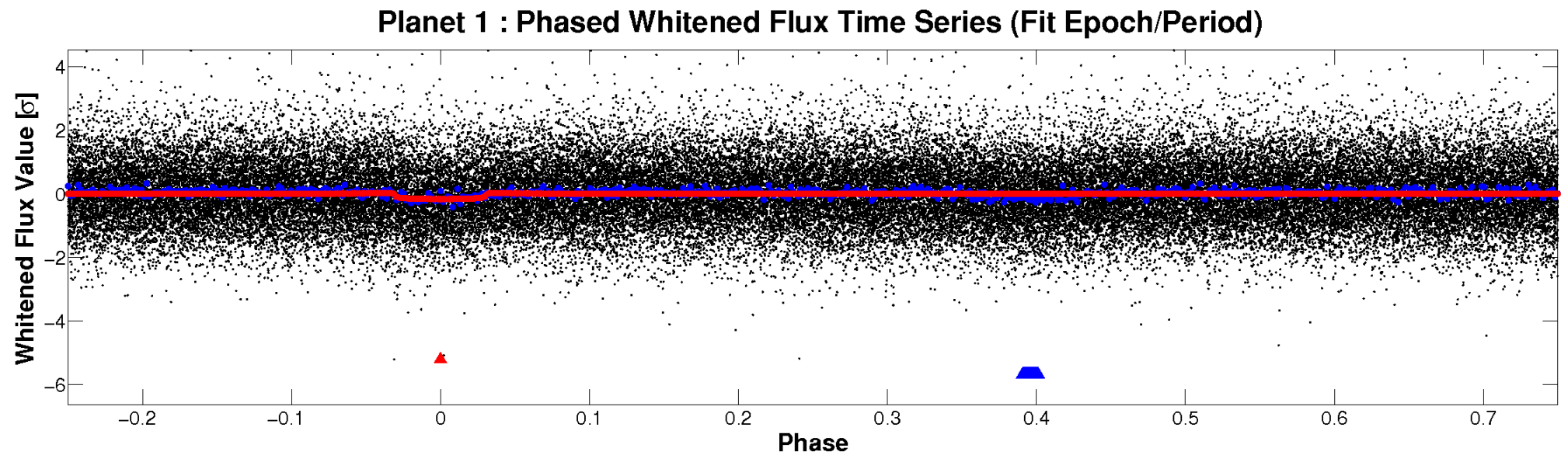
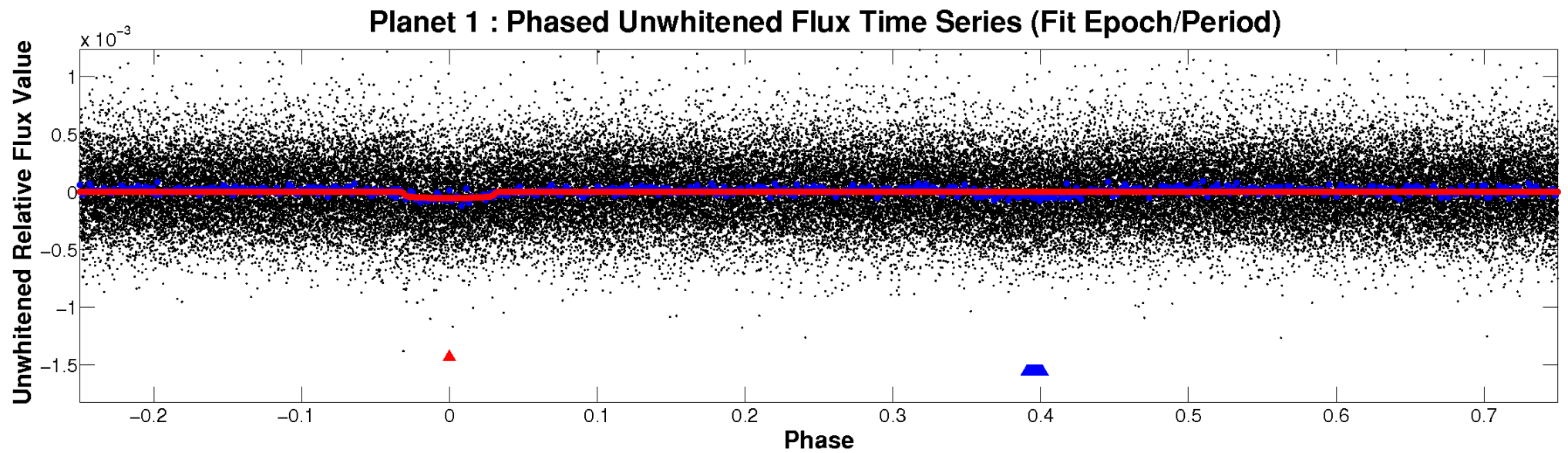


ALT Odd/Even

TCE 005556769-01

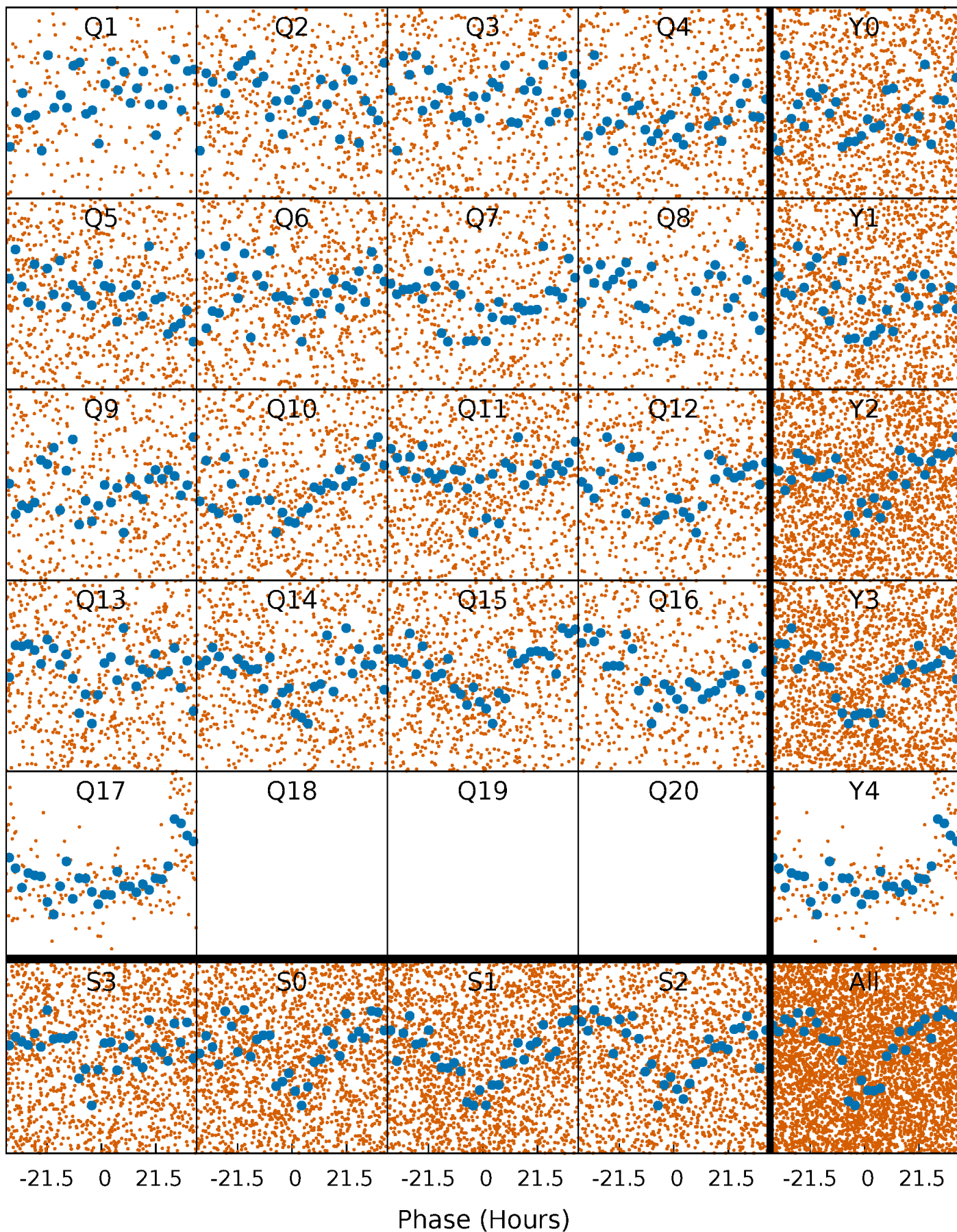


Non-Whitened Vs. Whitened Light Curve



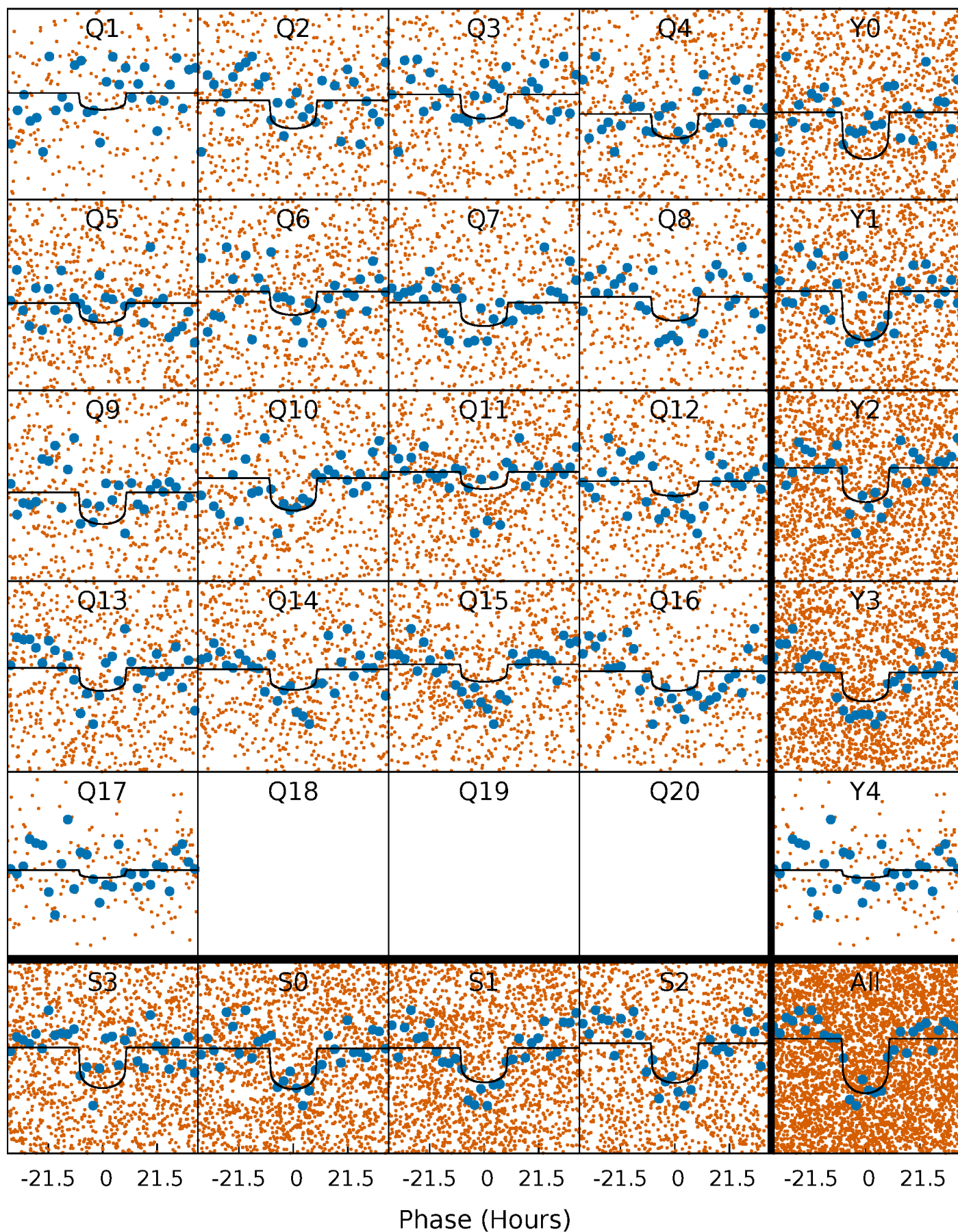
PDC Quarter-Phased Transit Curves

TCE 005556769-01 P= 12.426554 Days $T_0=141.504103$ (BKJD)



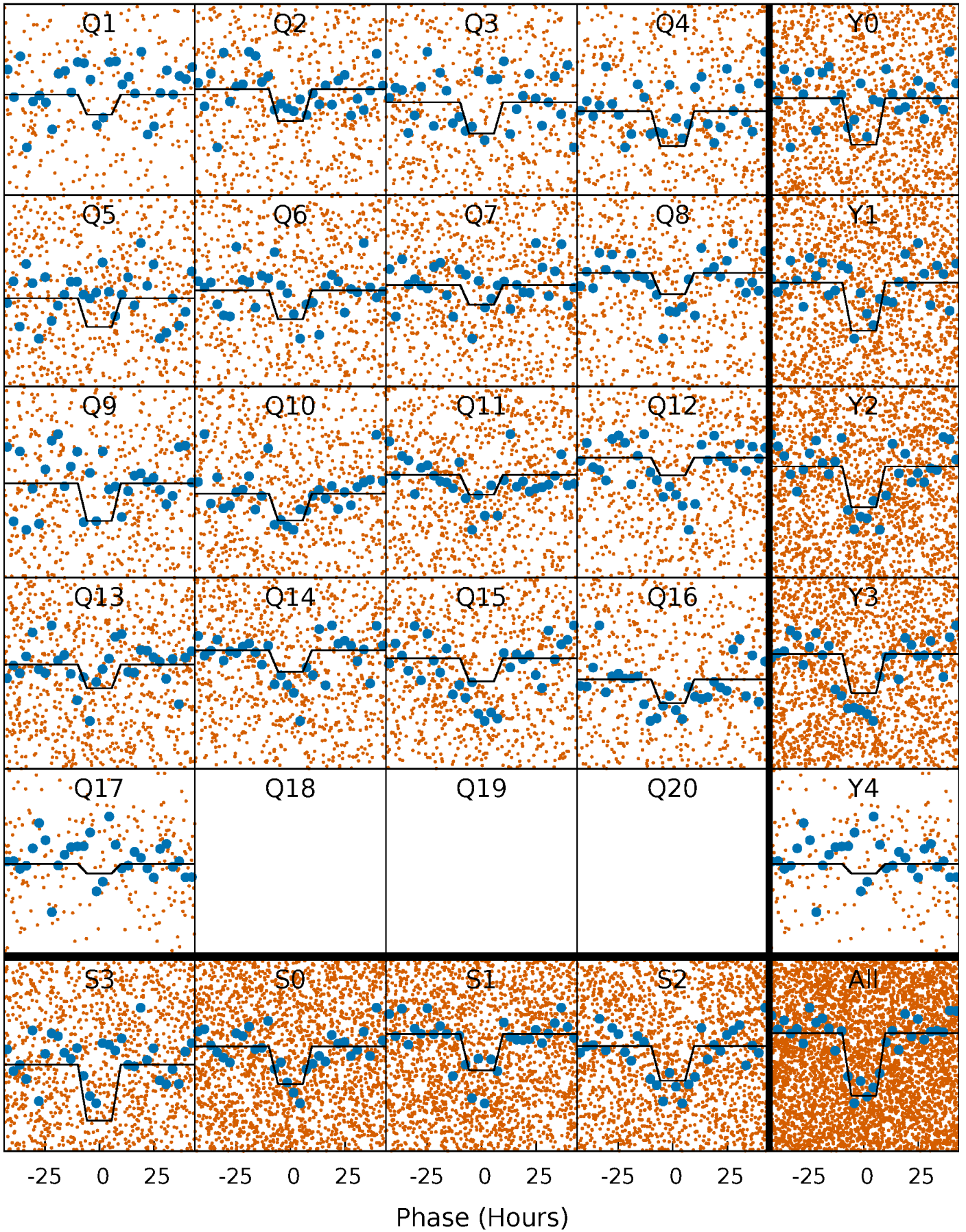
DV Quarter-Phased Transit Curves

TCE 005556769-01 P= 12.426554 Days $T_0=141.504103$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

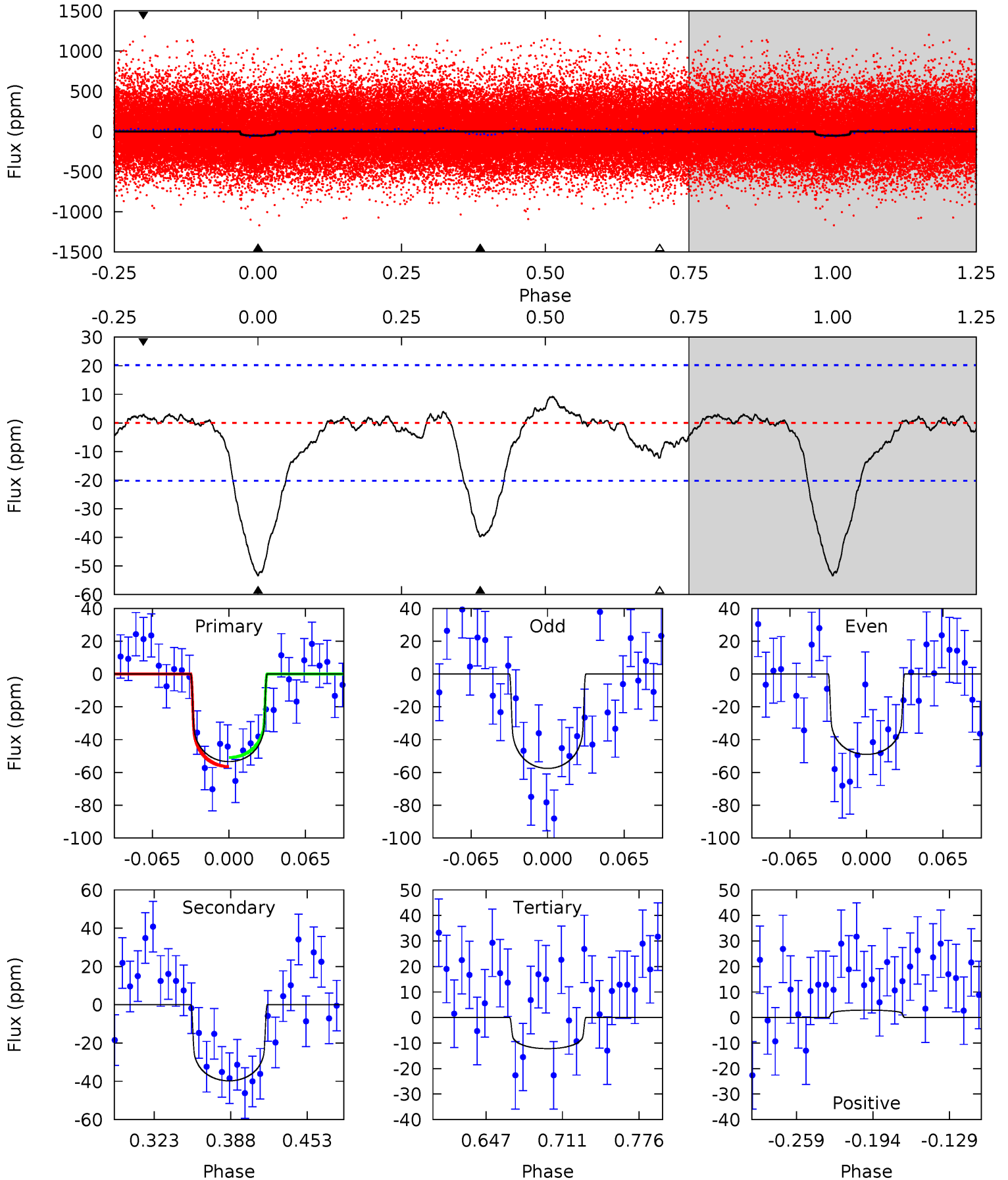
TCE 005556769-01 P= 12.427791 Days $T_0=141.410273$ (BKJD)



DV Model-Shift Uniqueness Test

005556769-01, P = 12.426554 Days, E = 129.077549 Days

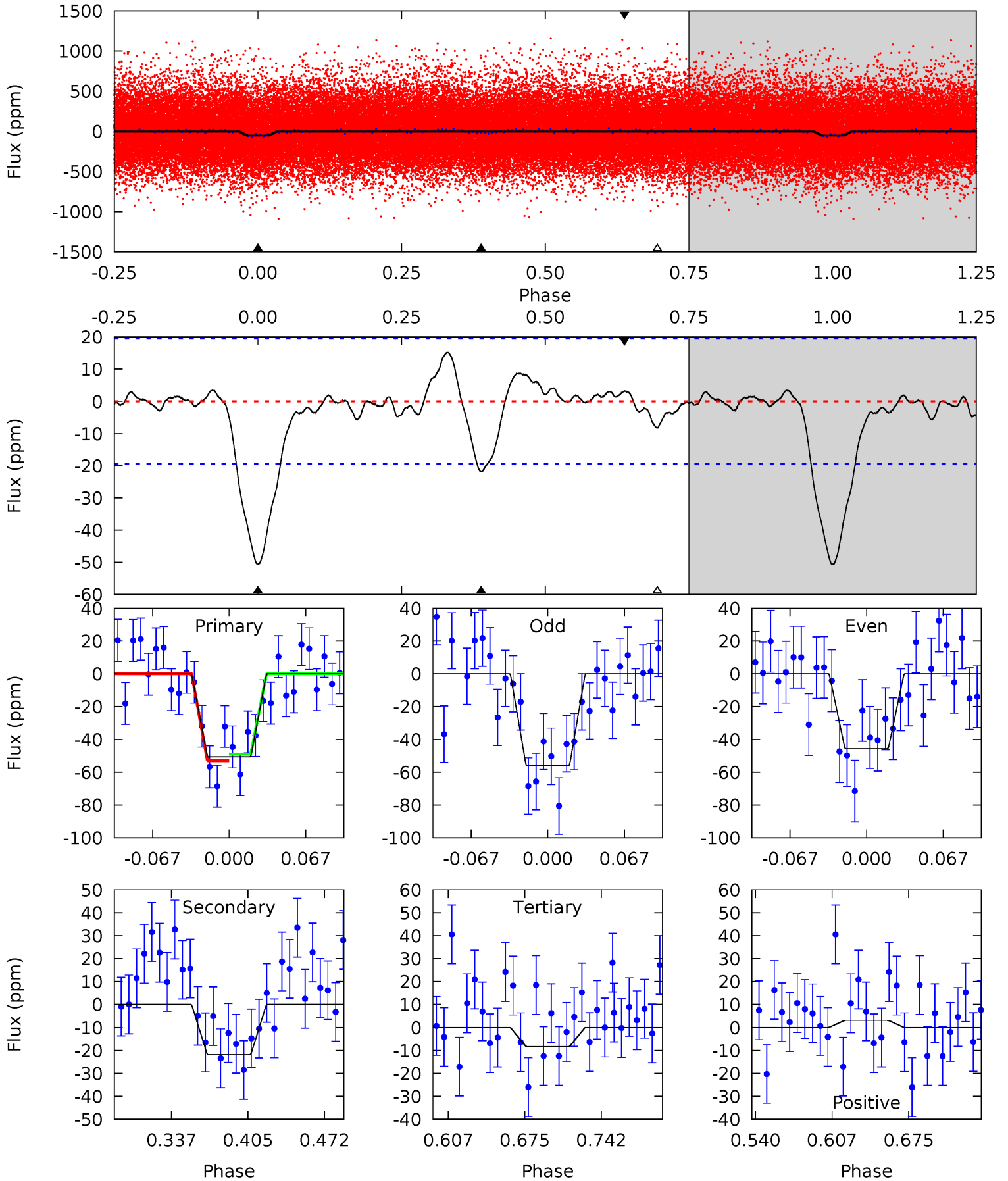
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	9.15	2.81	0.67	4.66	1.85	1.00	9.49	11.6	6.34	8.48	0.98	1.03	0.15	0.64



Alt Model-Shift Uniqueness Test

005556769-01, $P = 12.427791$ Days, $E = 128.982482$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	5.22	1.99	0.74	4.65	1.83	0.79	10.1	11.3	3.24	4.48	1.24	0.97	0.23	0.47



Stellar Parameters For KIC 005556769

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5853^{+158}_{-175}	$4.486^{+0.078}_{-0.182}$	$-0.380^{+0.300}_{-0.300}$	$0.883^{+0.231}_{-0.099}$	$0.872^{+0.109}_{-0.089}$	$1.783^{+0.687}_{-0.849}$
	+3%/-3%	+2%/-4%	+79%/-79%	+26%/-11%	+12%/-10%	+39%/-48%
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 005556769-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-40 ± 4	$0.75^{+0.21}_{-0.17}$	1085^{+64}_{-49}	5343^{+767}_{-492}	375^{+293}_{-143}
Alt.	-22 ± 4	$0.72^{+0.19}_{-0.18}$	1085^{+69}_{-55}	4811^{+622}_{-441}	234^{+175}_{-93}

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

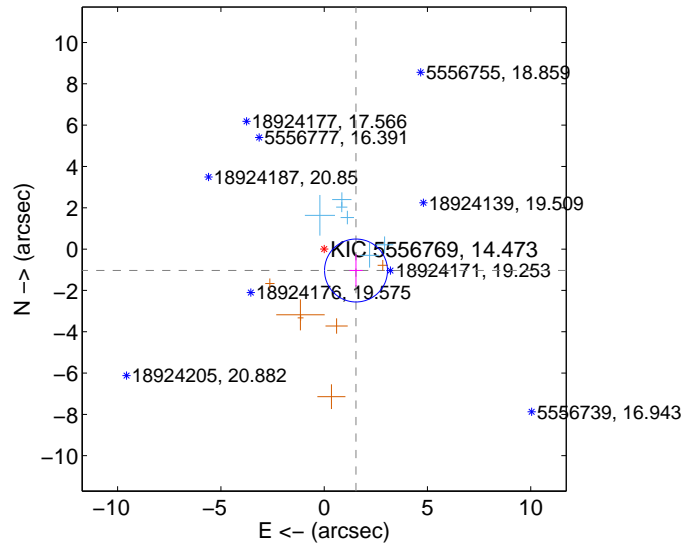
Supplemental centroid analysis for 005556769-01. Kepler magnitude: 14.47. Transit SNR 8.88

There are 6 quarters with good PRF difference image offsets

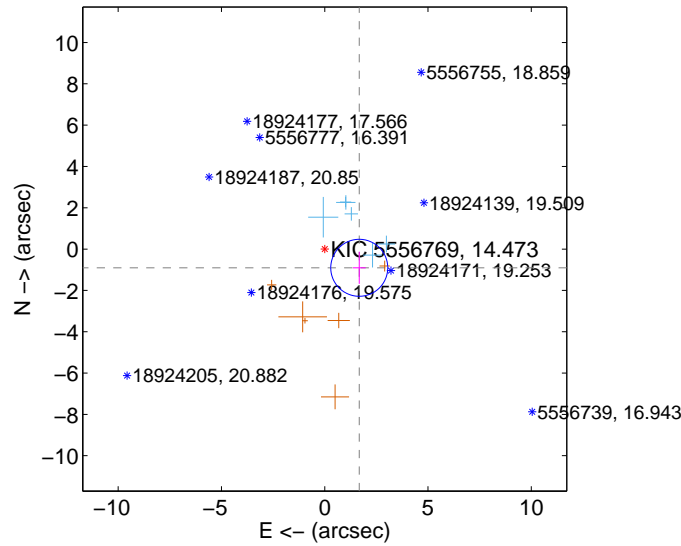
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.857 ± 0.508	3.66	-1.541 ± 0.317	-1.036 ± 0.778
PRF-fit source offset from KIC position	1.900 ± 0.460	4.13	-1.671 ± 0.309	-0.905 ± 0.779
photometric centroid source offset	4.94 ± 1.61	3.08	3.98 ± 1.67	-2.94 ± 1.49

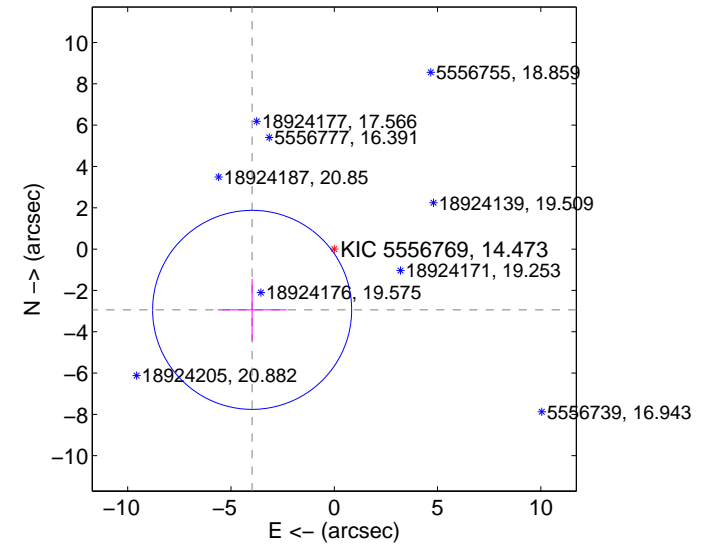
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

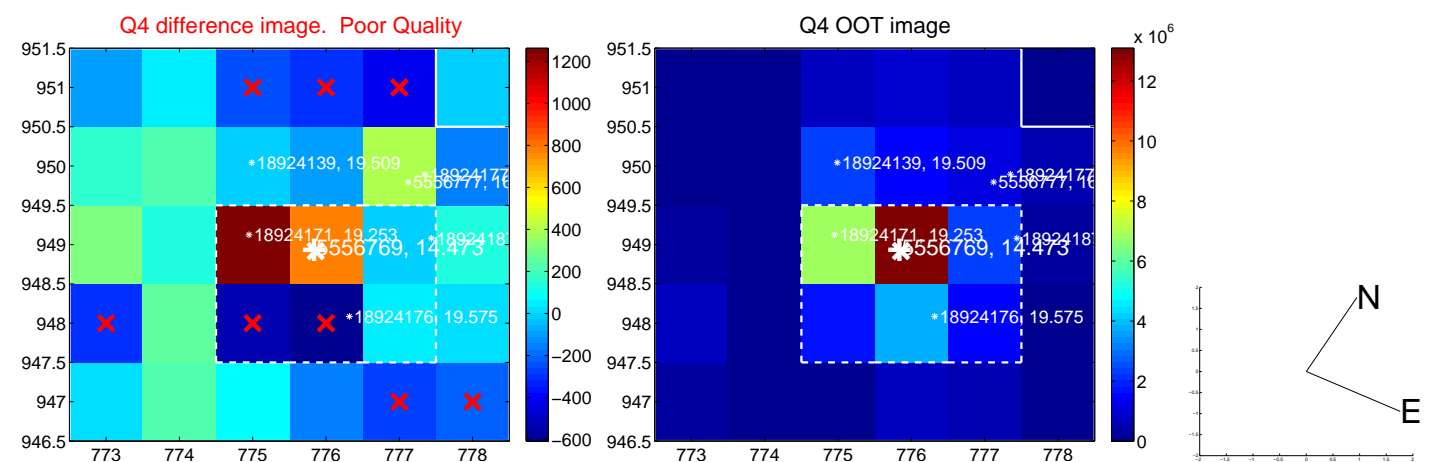
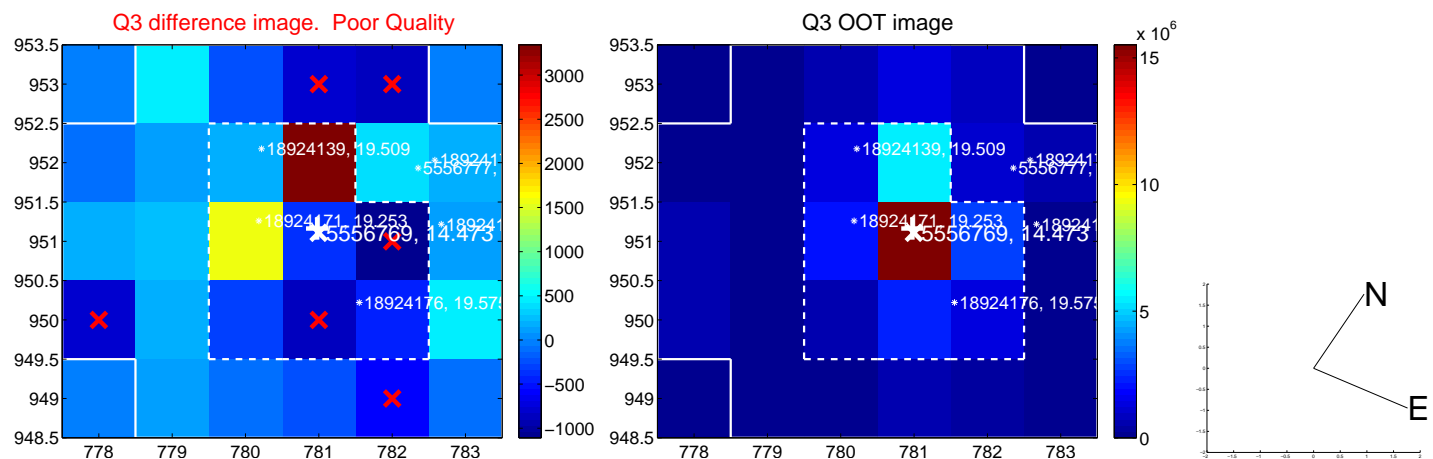
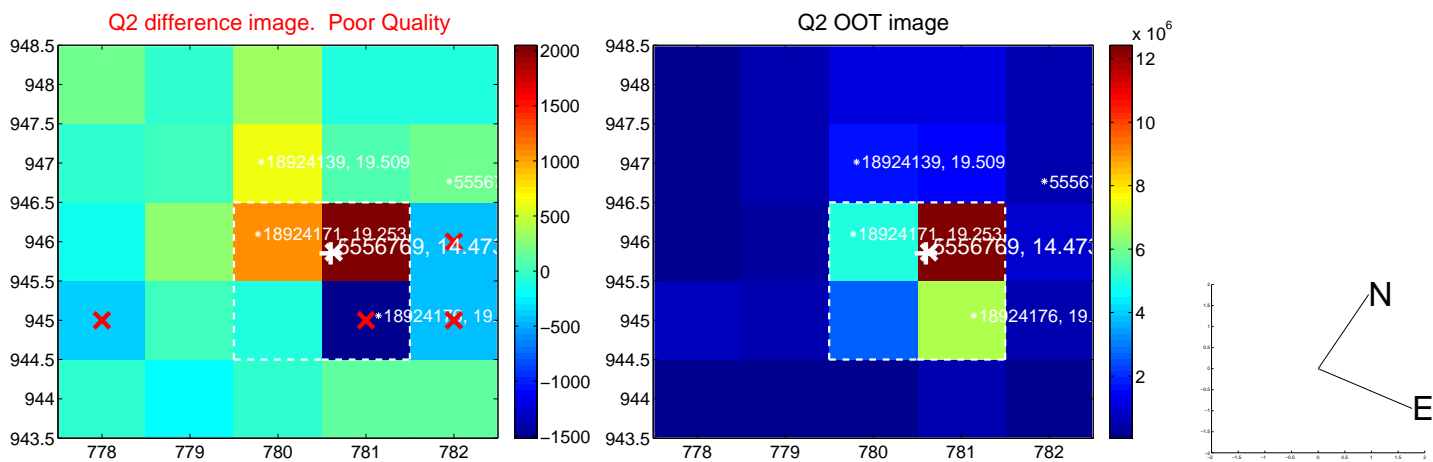
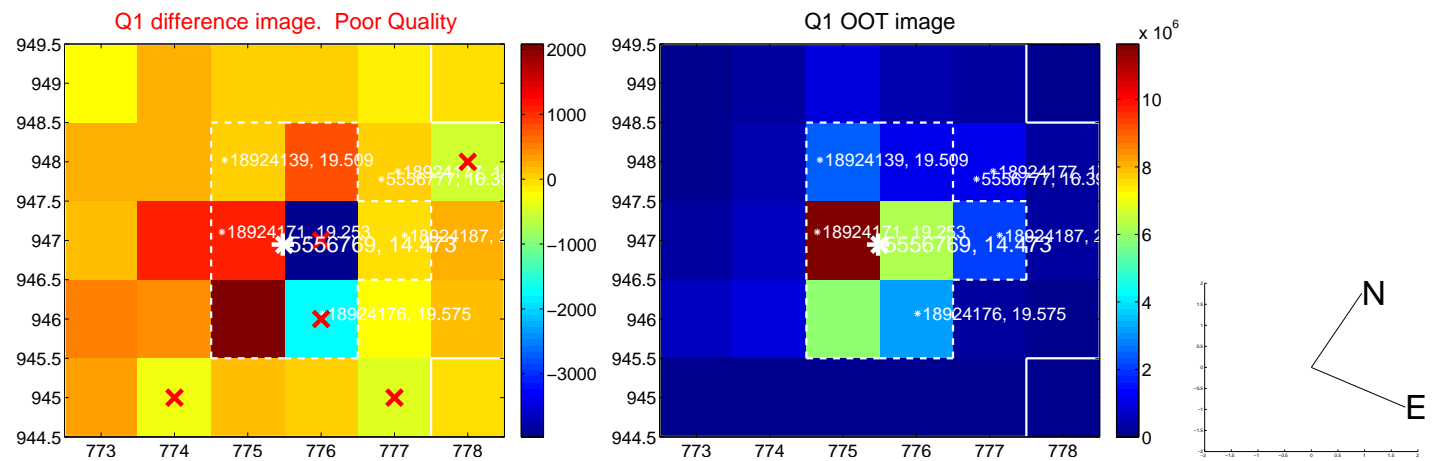


offset from photometric centroids

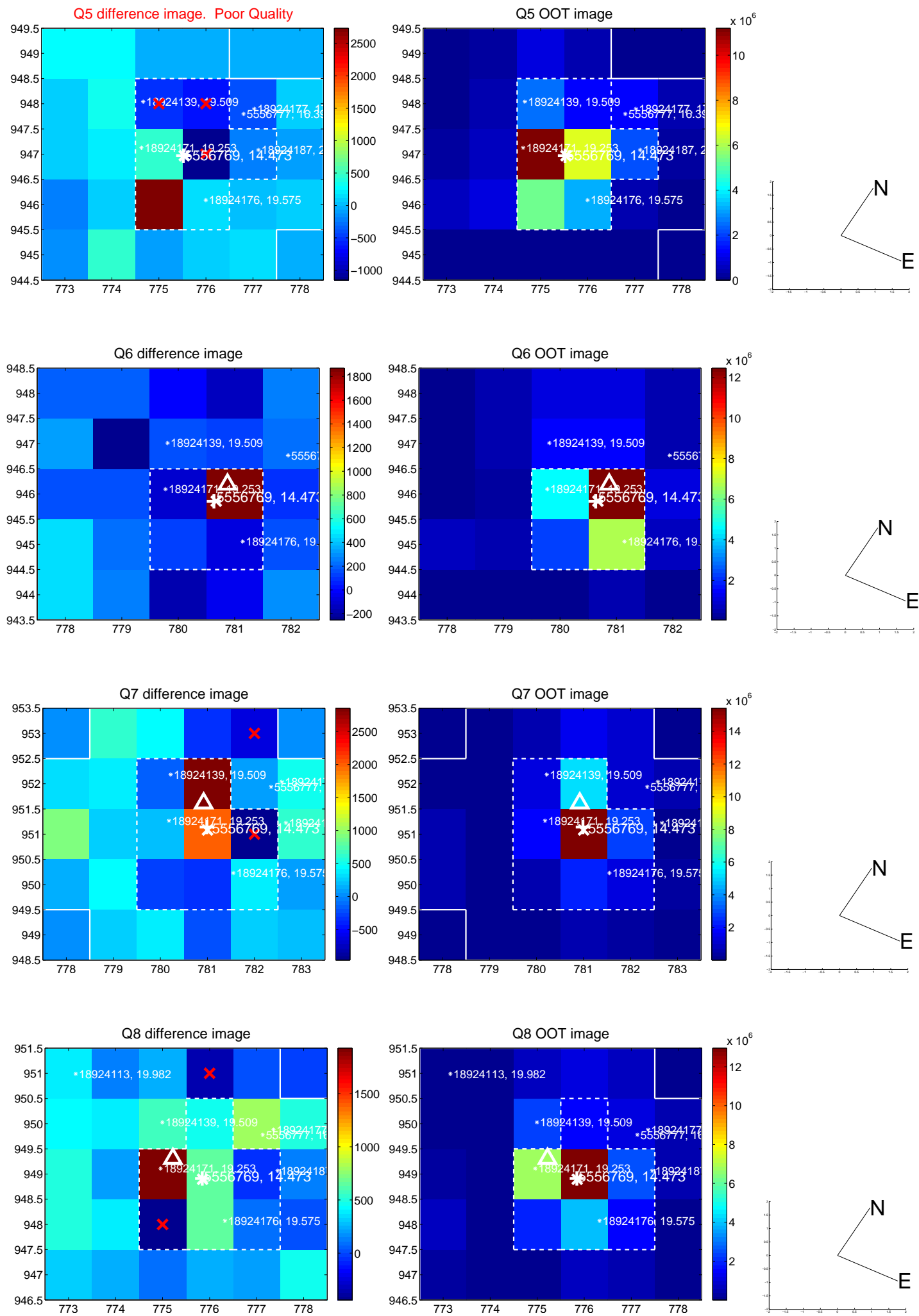


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

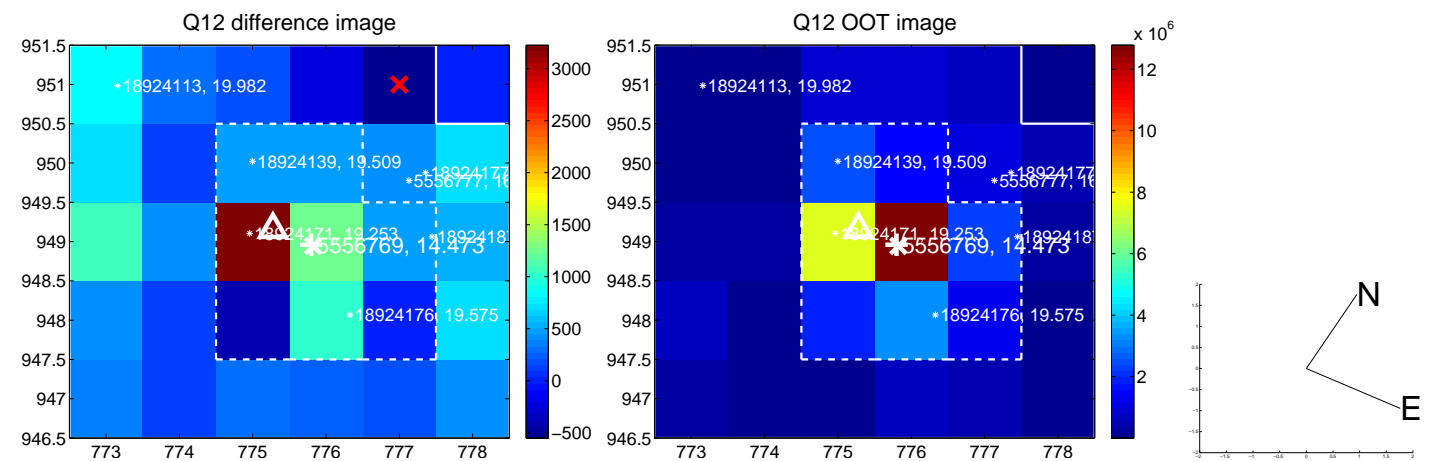
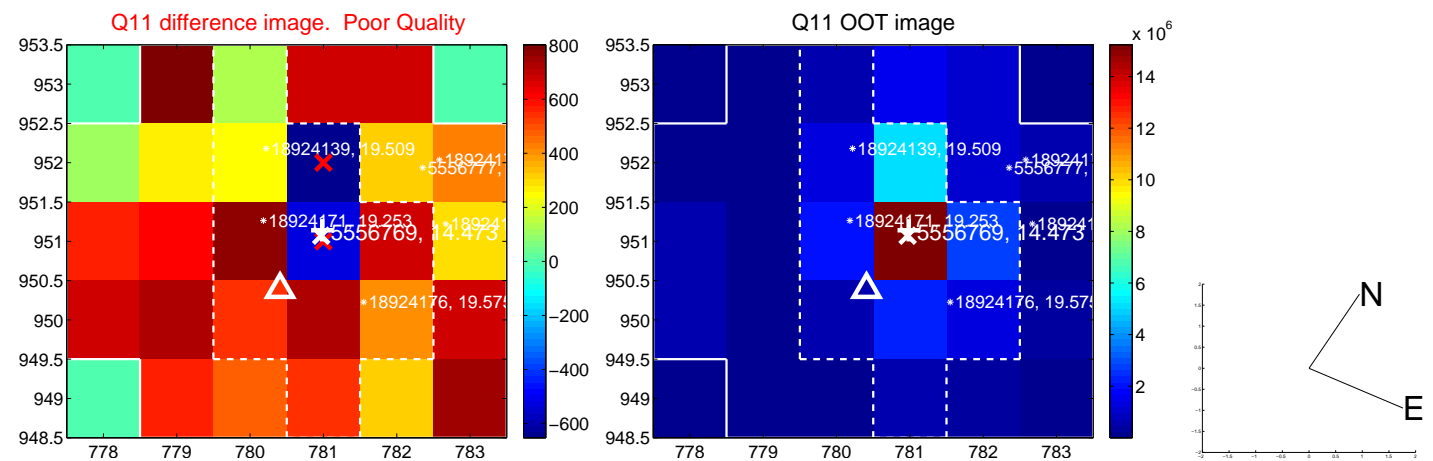
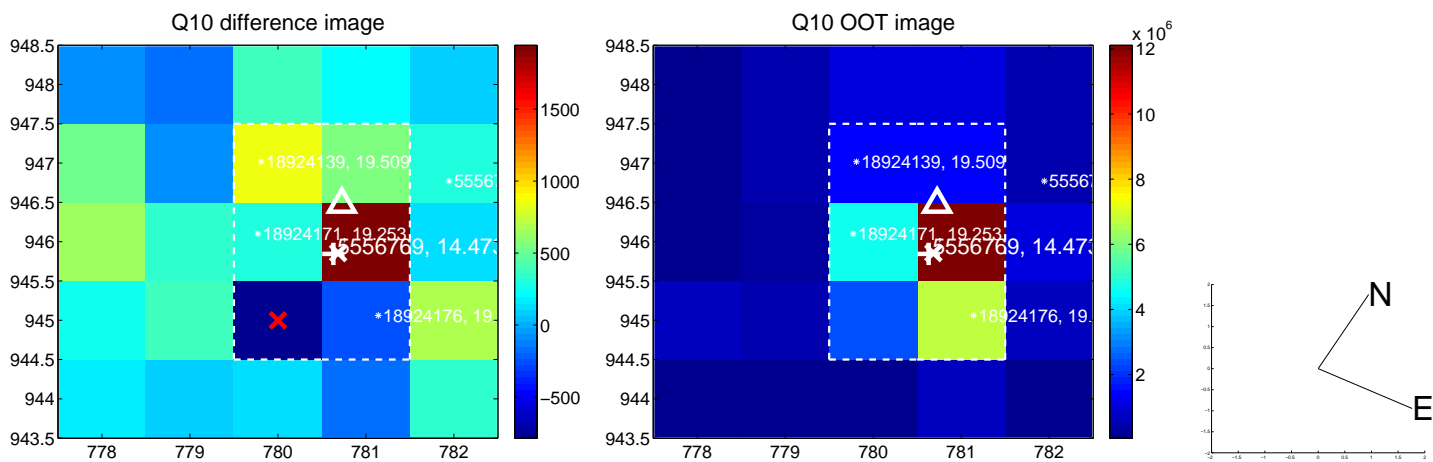
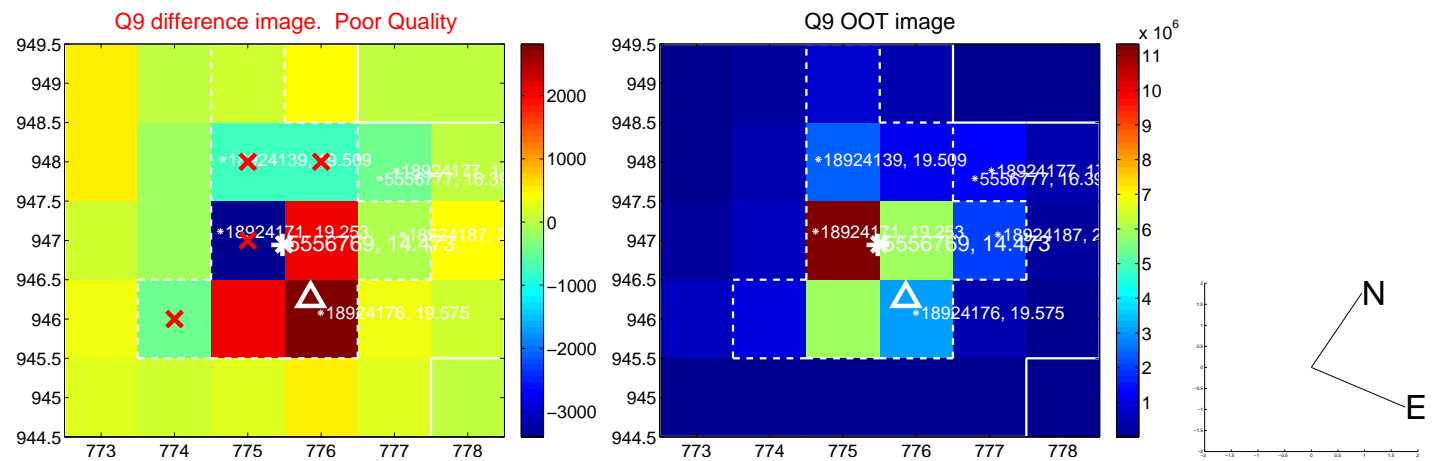
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



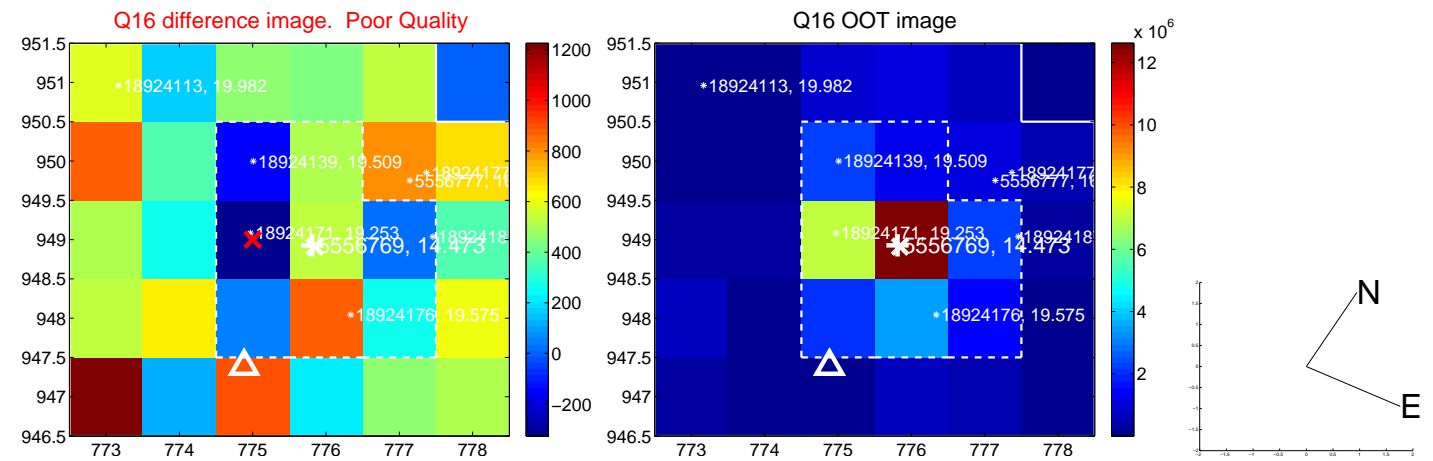
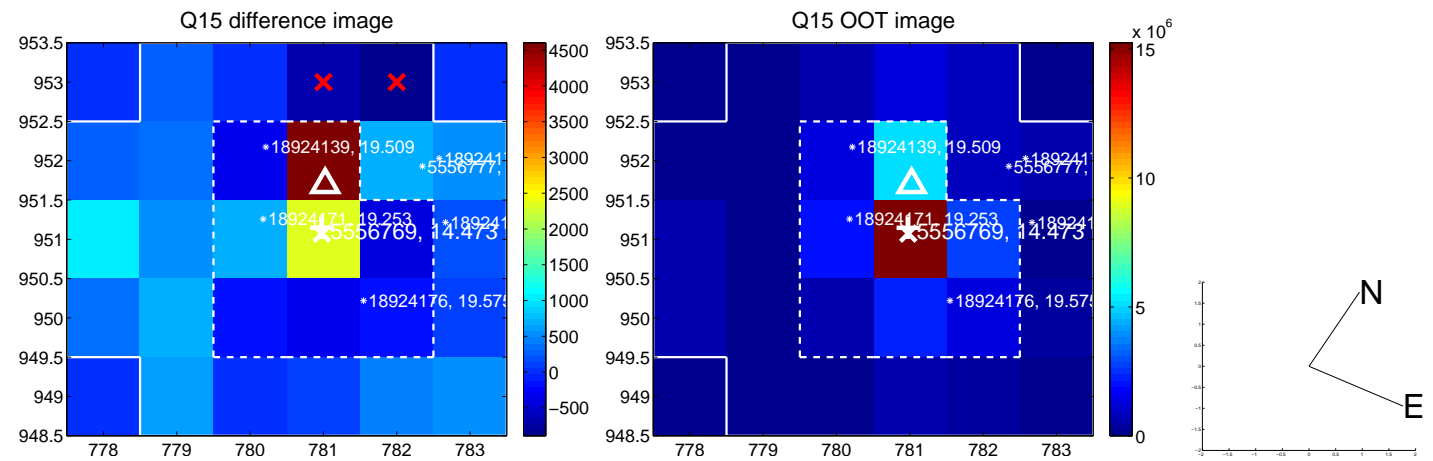
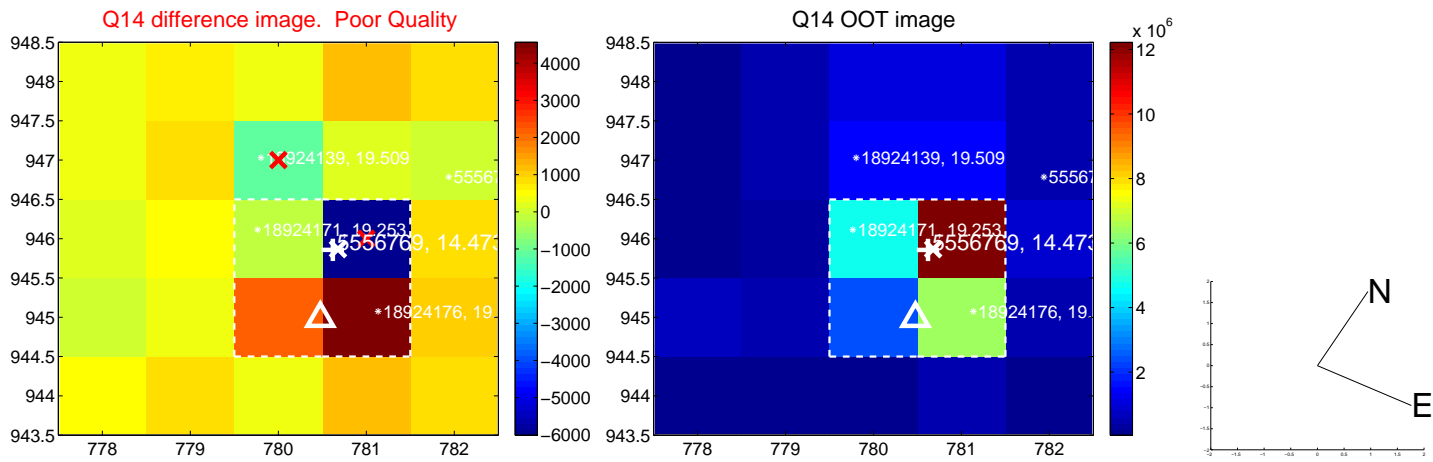
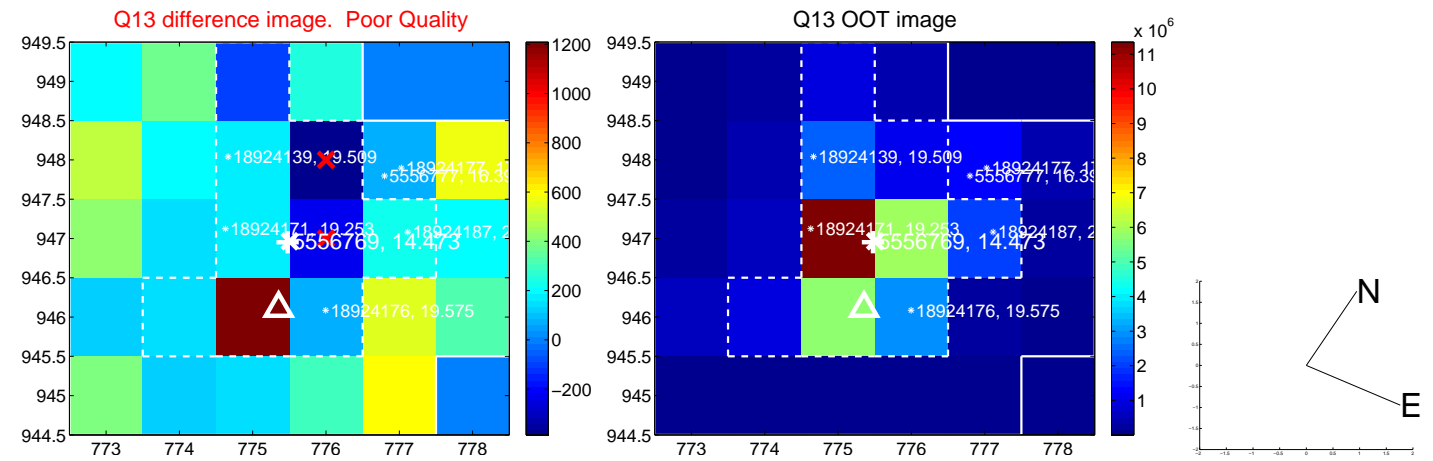
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



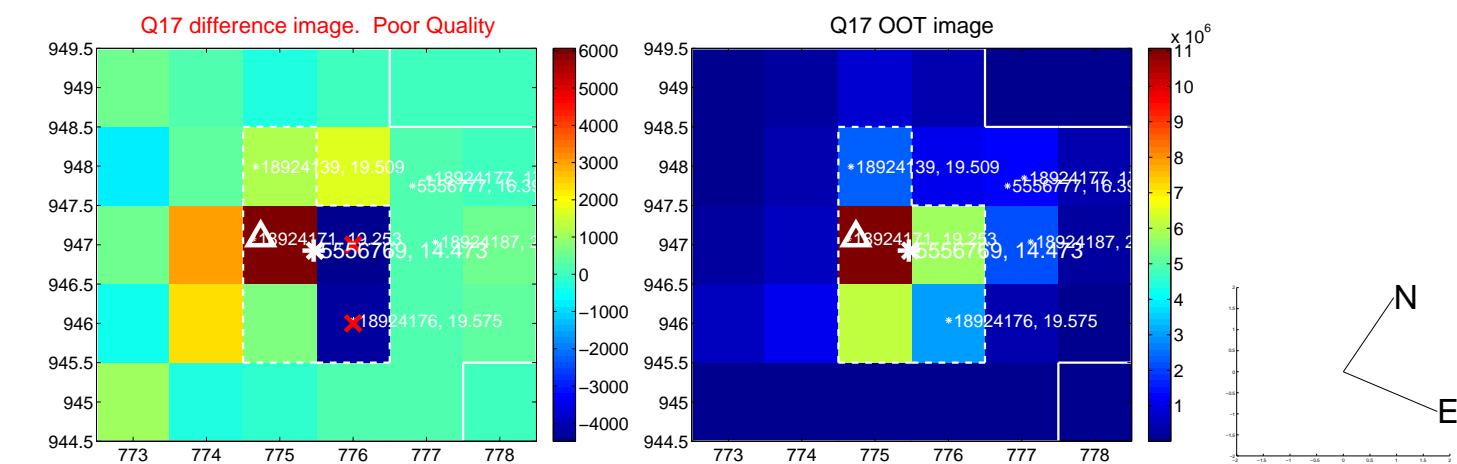
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



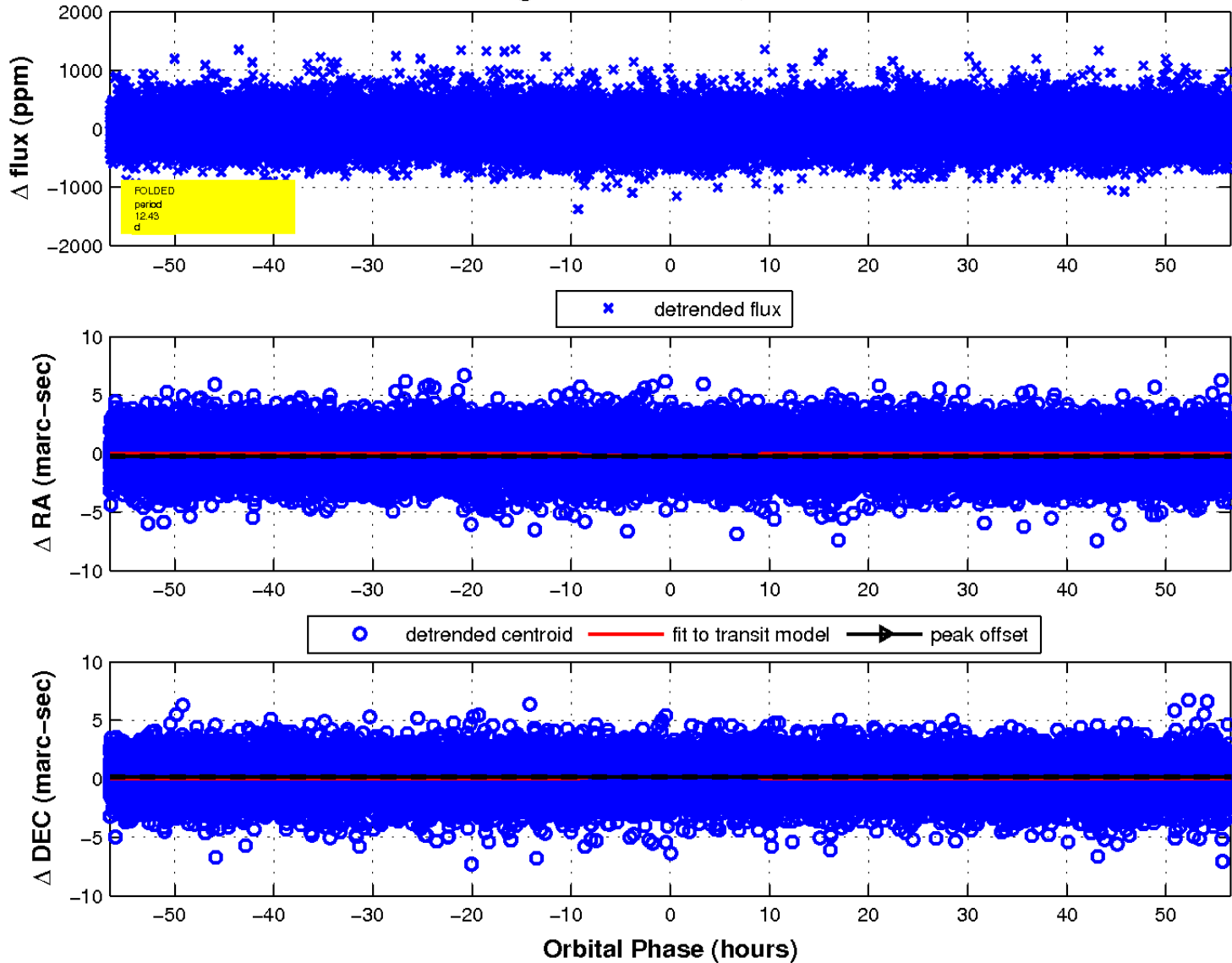
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

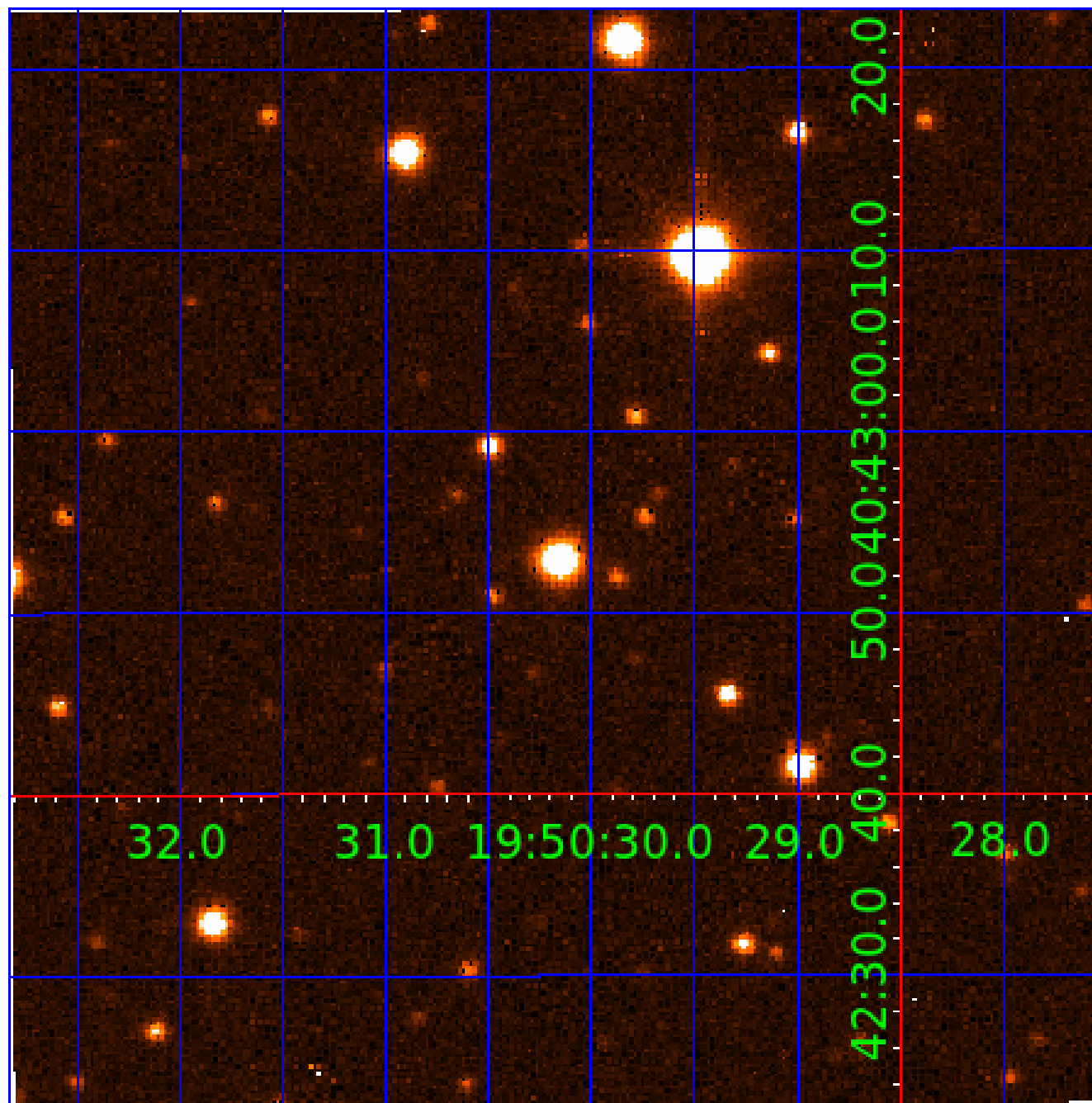


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005556769

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})
005556769-01	OBS	No	12.426554	141.504103	52.2	18.844	9.0	8.9	0.88	5853	0.73	81.52
005556769-02	OBS	No	12.425437	134.063470	48.8	26.234	9.3	10.0	0.88	5853	0.68	81.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005556769-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNCERTAIN—HALO_GHOST—EPHEM_MATCH
005556769-02	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—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.

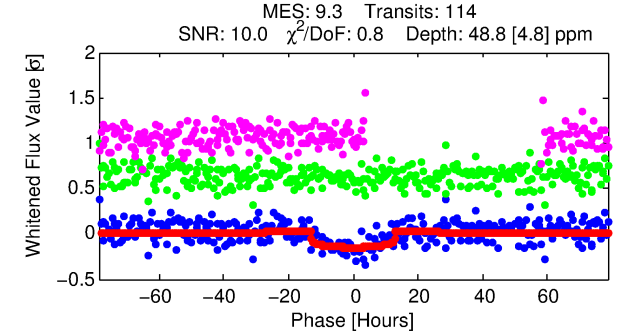
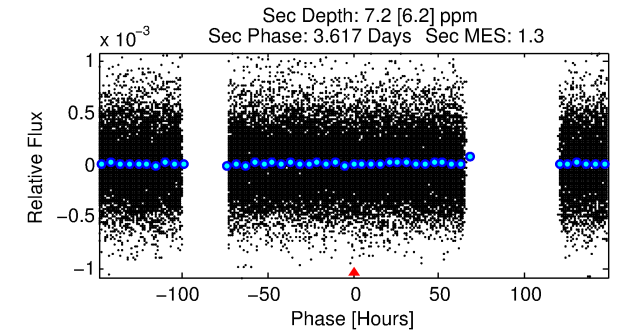
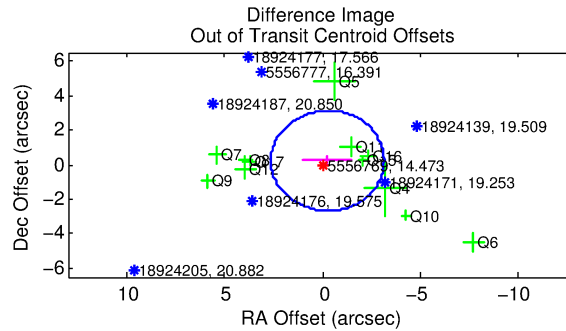
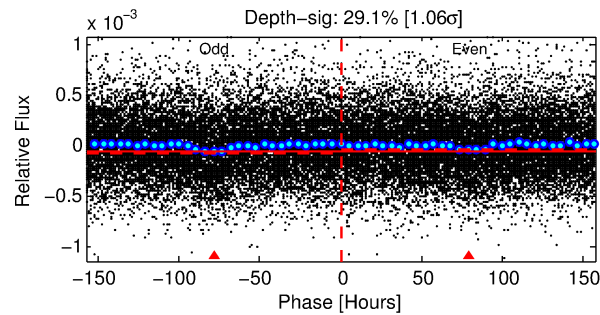
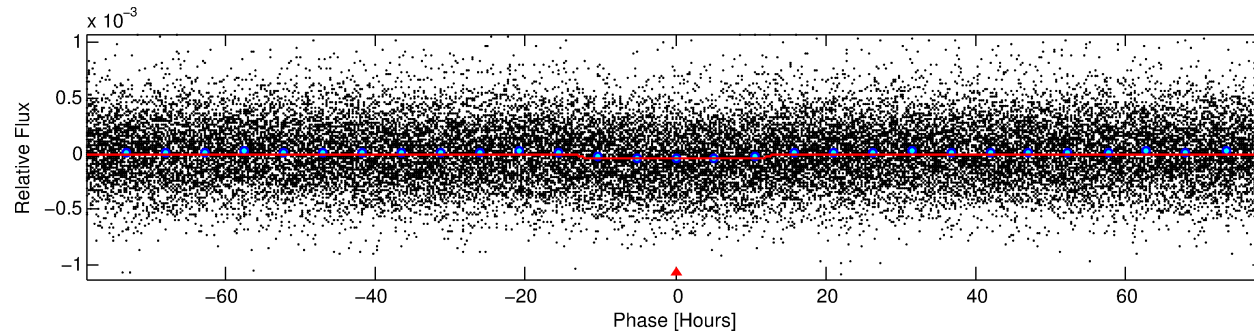
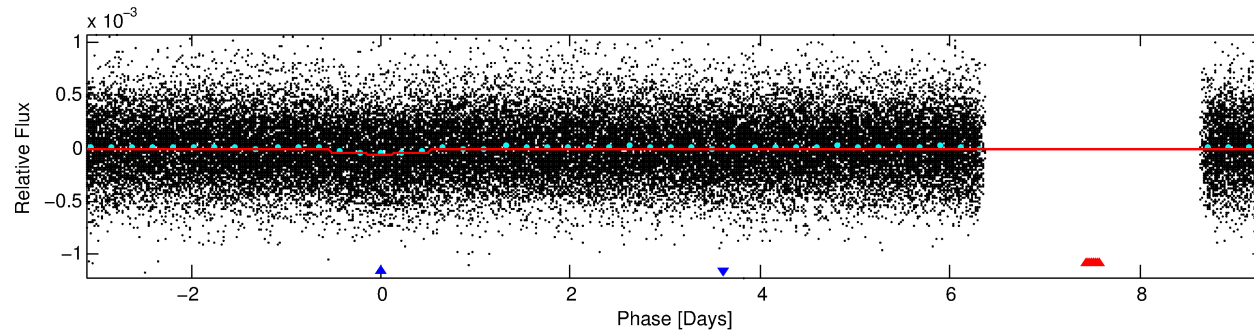
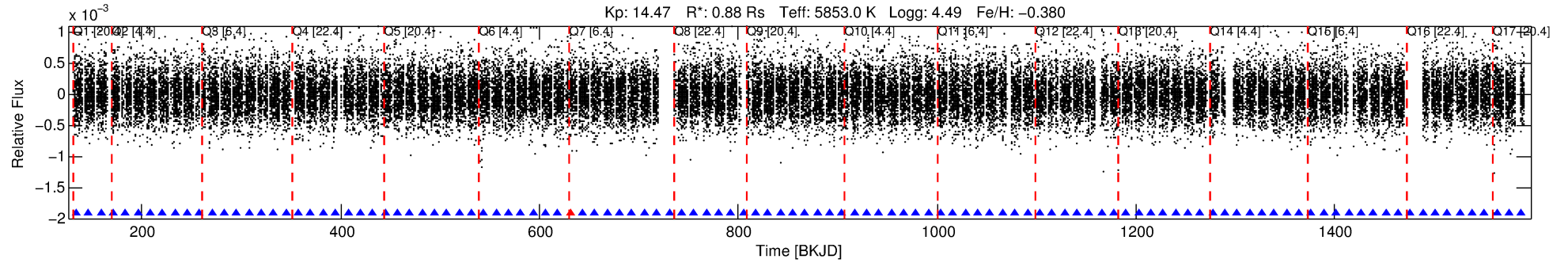
Ephemeris Match Information For 005556769-02

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
005556769-02	5556769	V380-Cyg-sec	5385723	1:1	421.9	101	32	5.77	14.47	2633.40	Direct-PRF	0	0.14	3.42

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: 5556769 Candidate: 2 of 2 Period: 12.425 d



DV Fit Results:

Period = 12.42544 [0.00045] d
Epoch = 134.0635 [0.0288] BKJD
Rp/R* = 0.0070 [0.0016]
a/R* = 2.49 [2.33]
b = 0.77 [0.59]
Seff = 81.53 [28.57]
Teff = 766 [67] K
Rp = 0.68 [0.24] Re
a = 0.1003 [0.0224] AU
Ag = 87.36 [90.36] [0.96σ]
Teffp = 3622 [894] K [3.18σ]

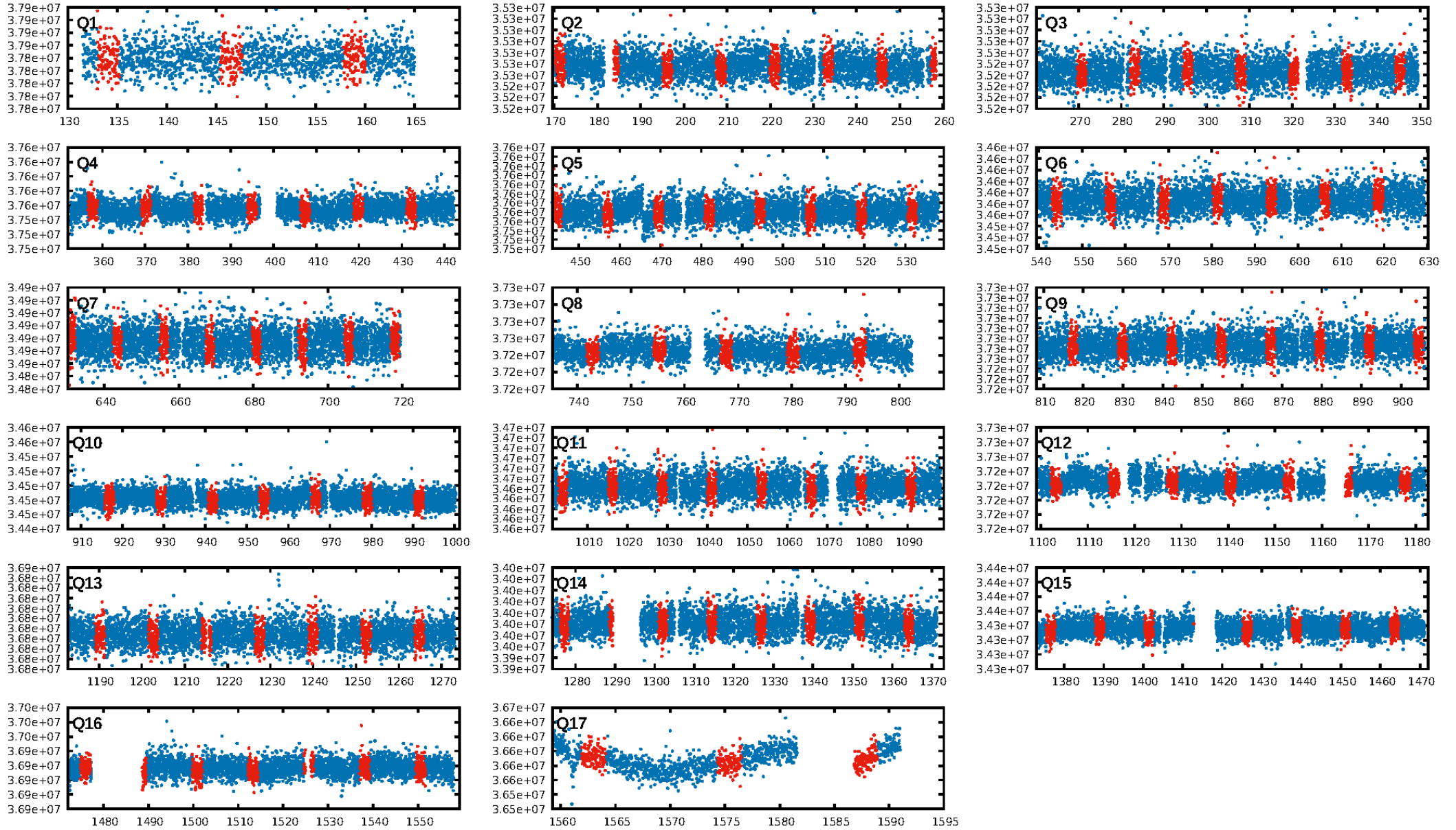
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 19.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.28e-22
RollingBand-fgt: 0.99 [107/108]
GhostDiagnostic-chr: -0.1799
Centroid-sig: 3.8%
Centroid-so: 1.764 arcsec [1.31σ]
OotOffset-rm: 0.341 arcsec [0.35σ]
KicOffset-rm: 0.500 arcsec [0.50σ]
OotOffset-st: 2/3/4/3 [12]
KicOffset-st: 2/3/4/3 [12]
DiffImageQuality-fgm: 0.08 [1/12]
DiffImageOverlap-fno: 1.00 [17/17]

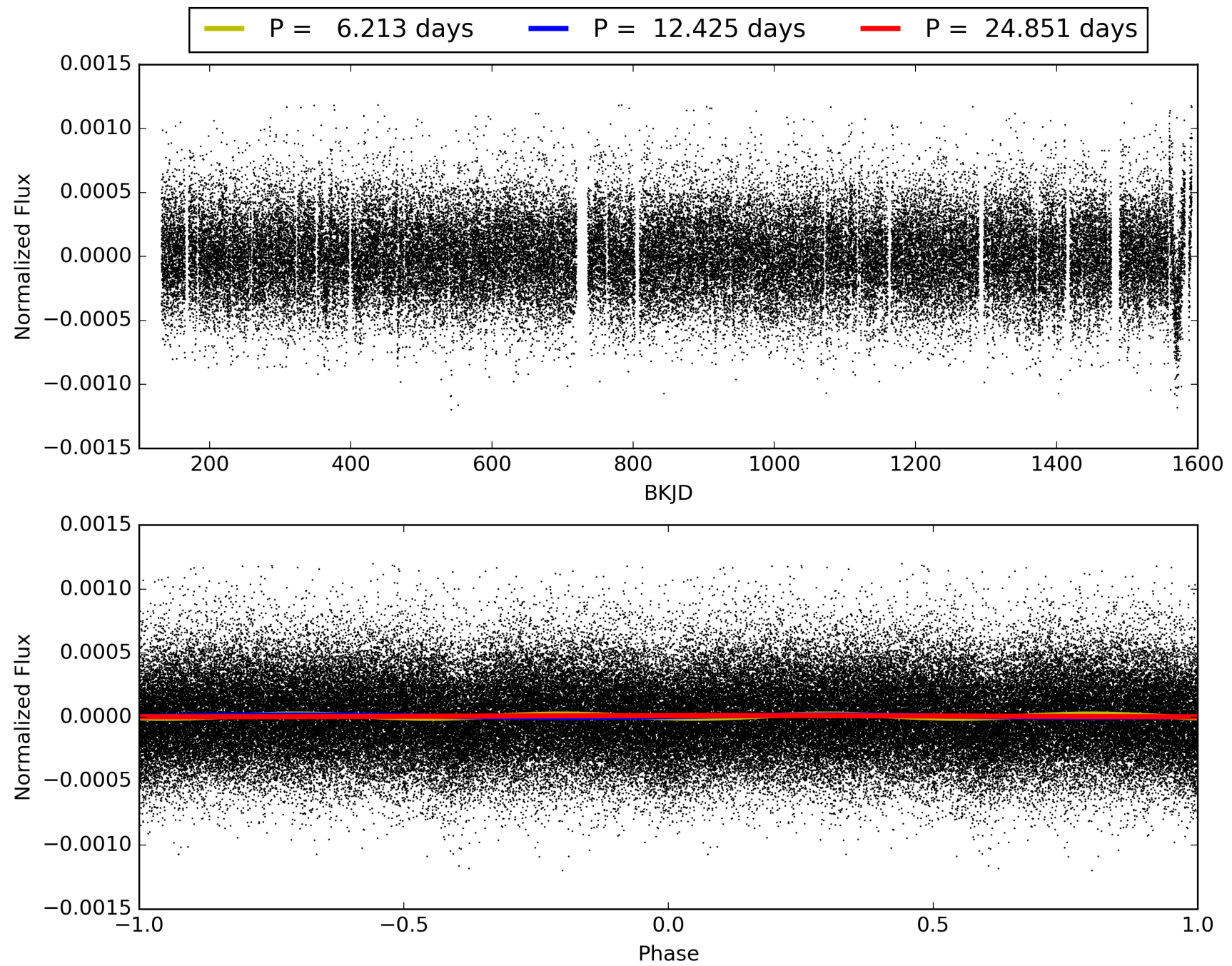
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:27:05 Z

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

TCE 005556769-02, PDC Light Curves

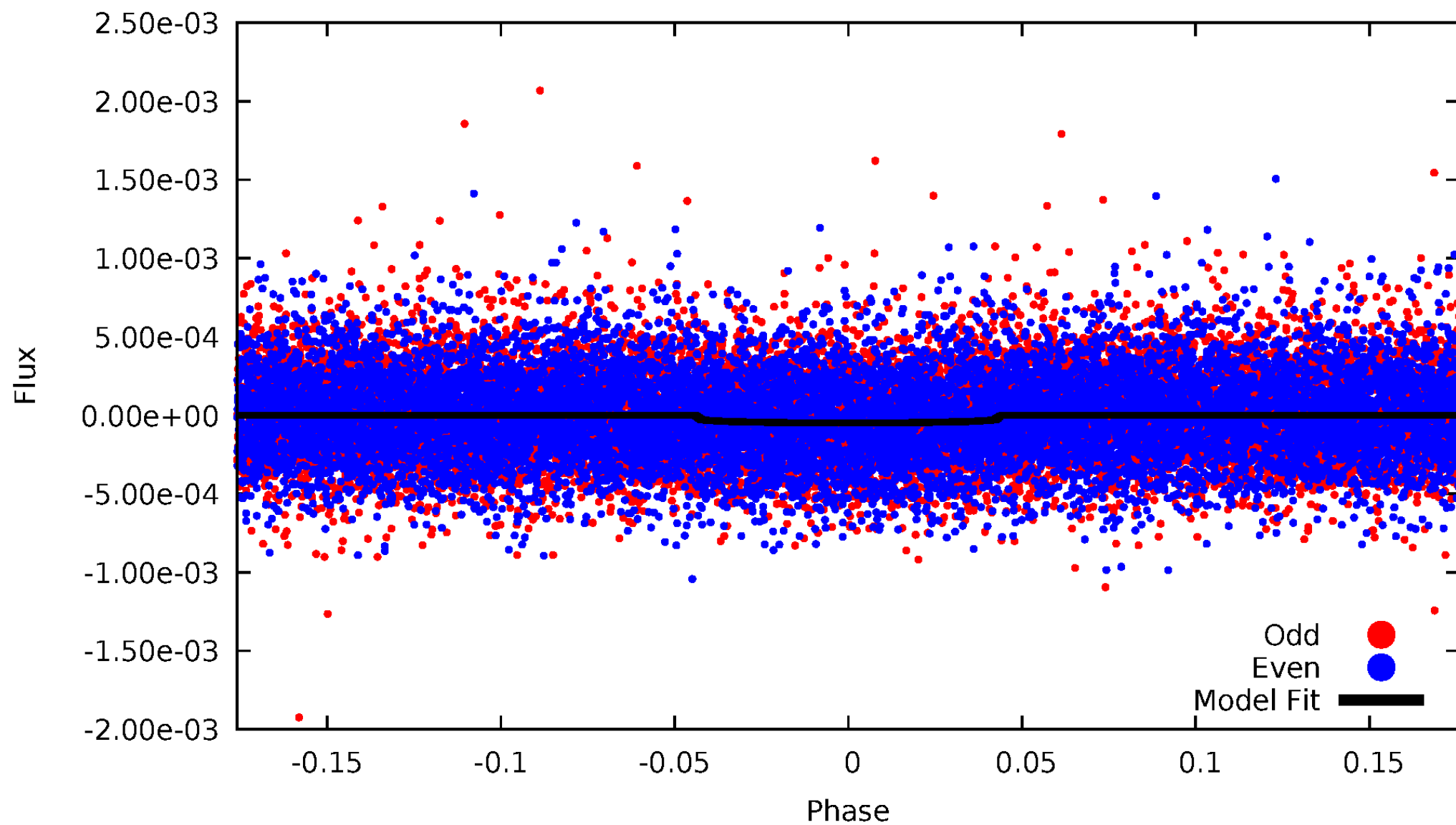


TCE 005556769-02



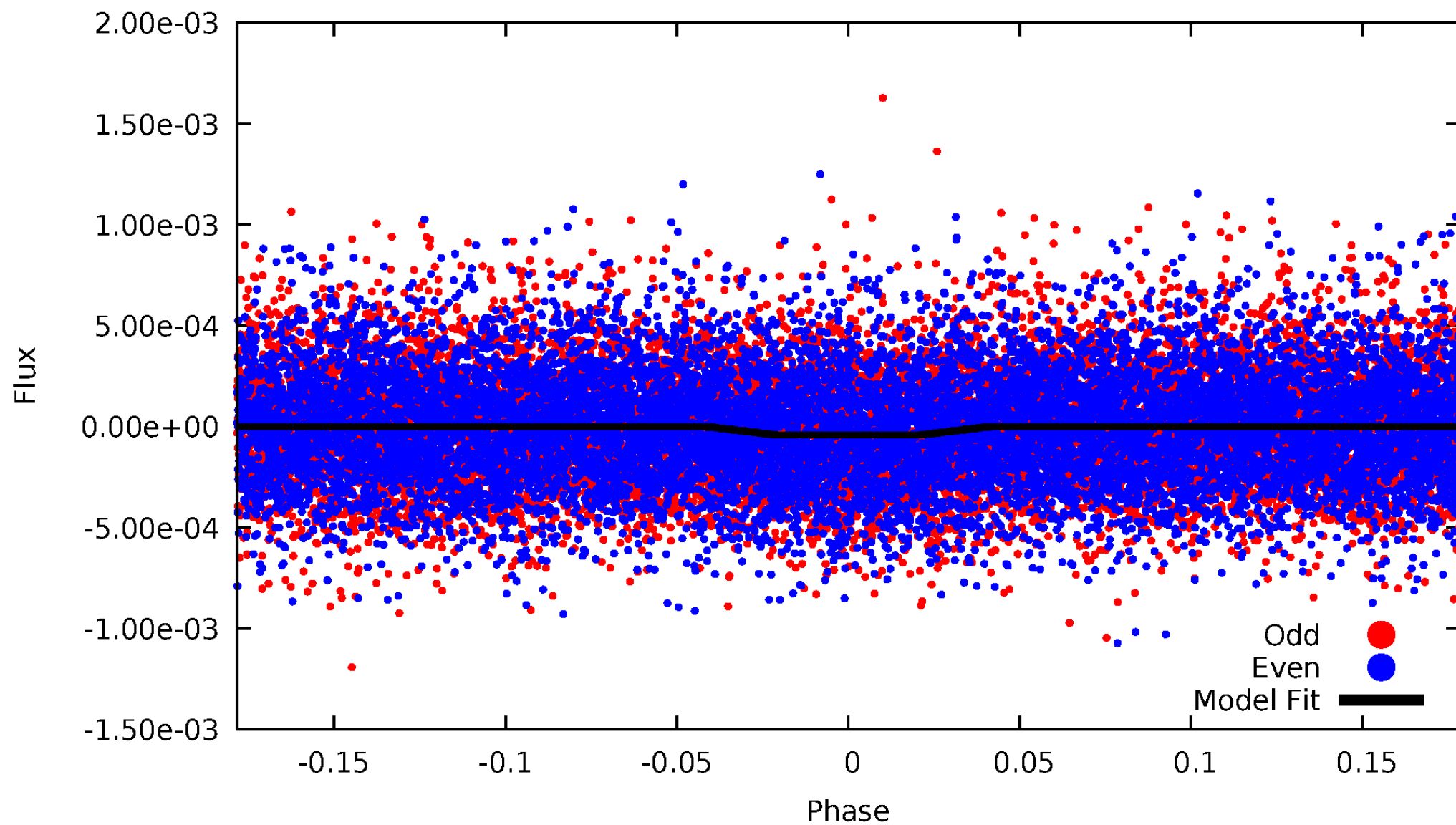
DV Odd/Even

TCE 005556769-02



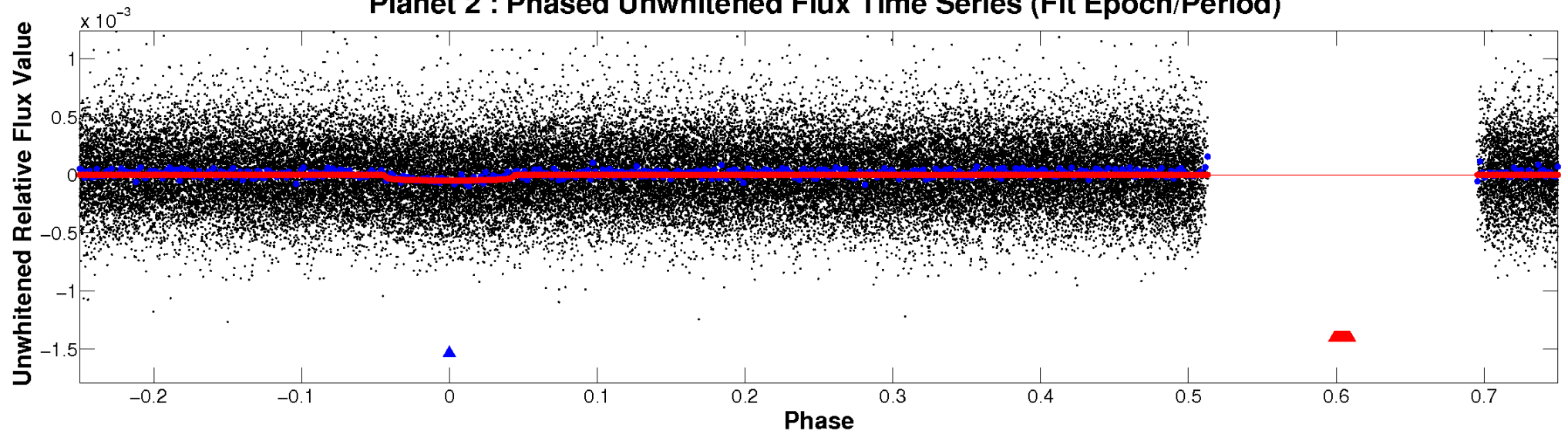
ALT Odd/Even

TCE 005556769-02

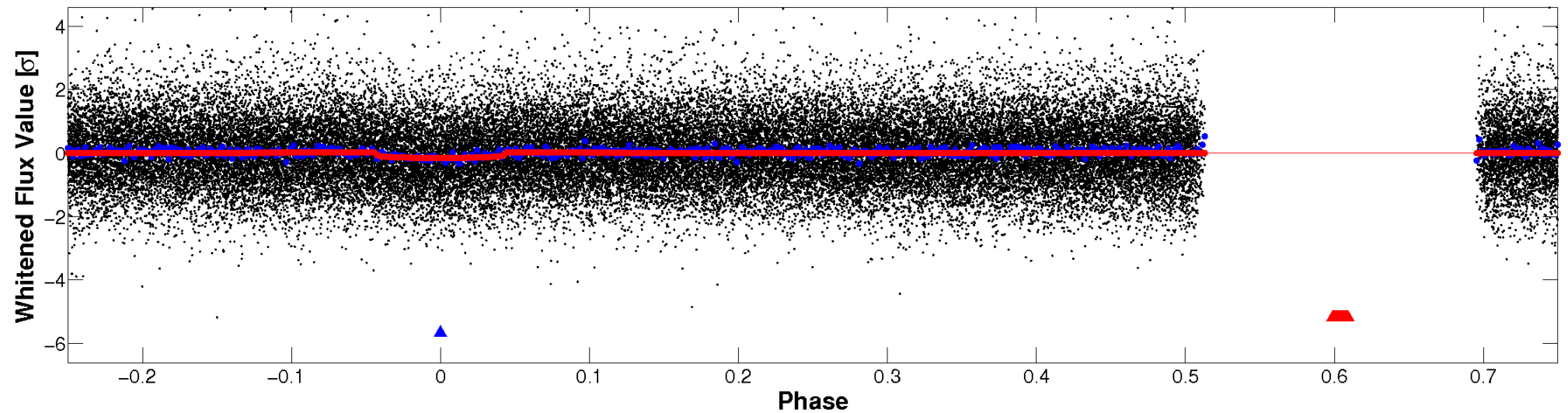


Non-Whitened Vs. Whitened Light Curve

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

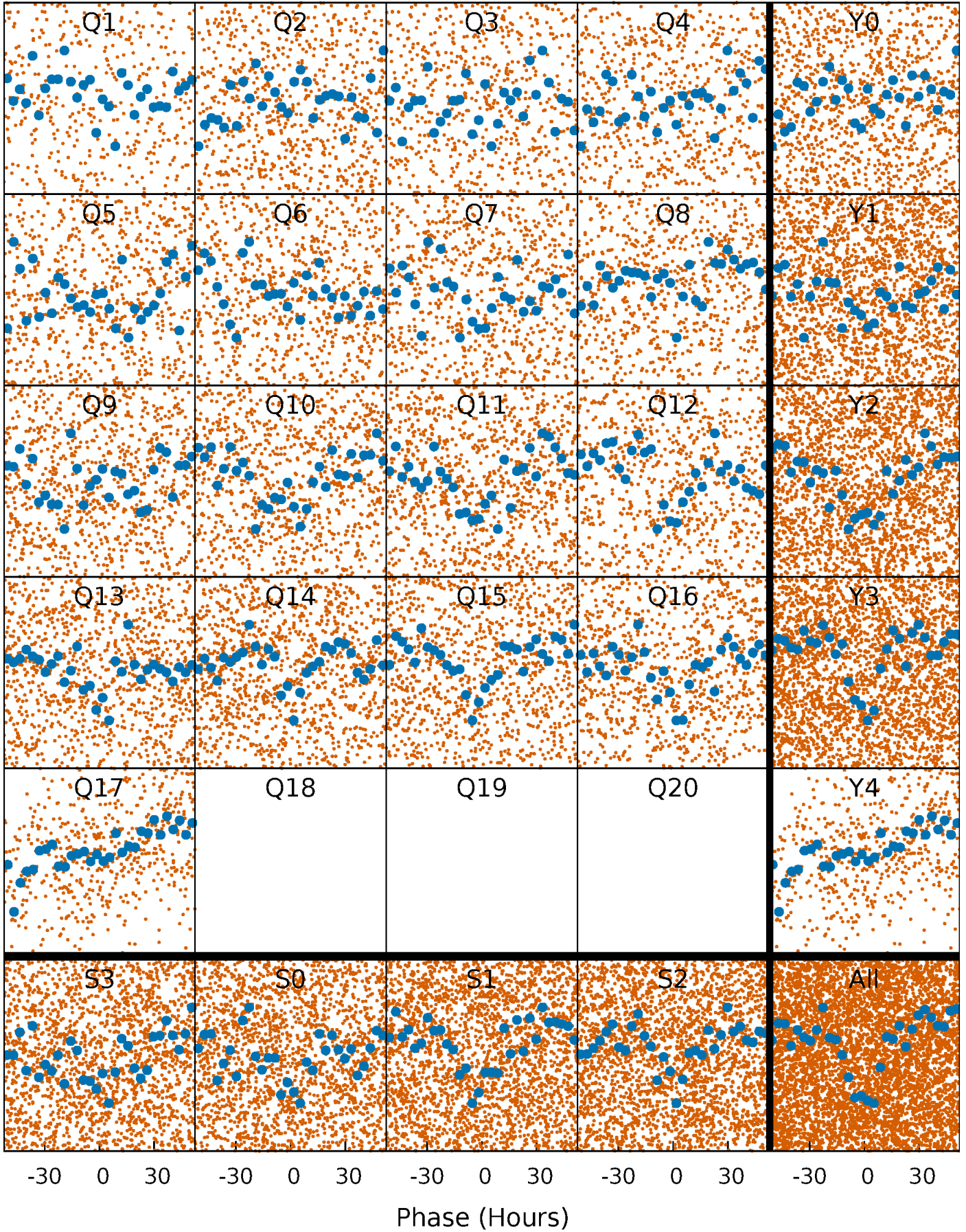


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



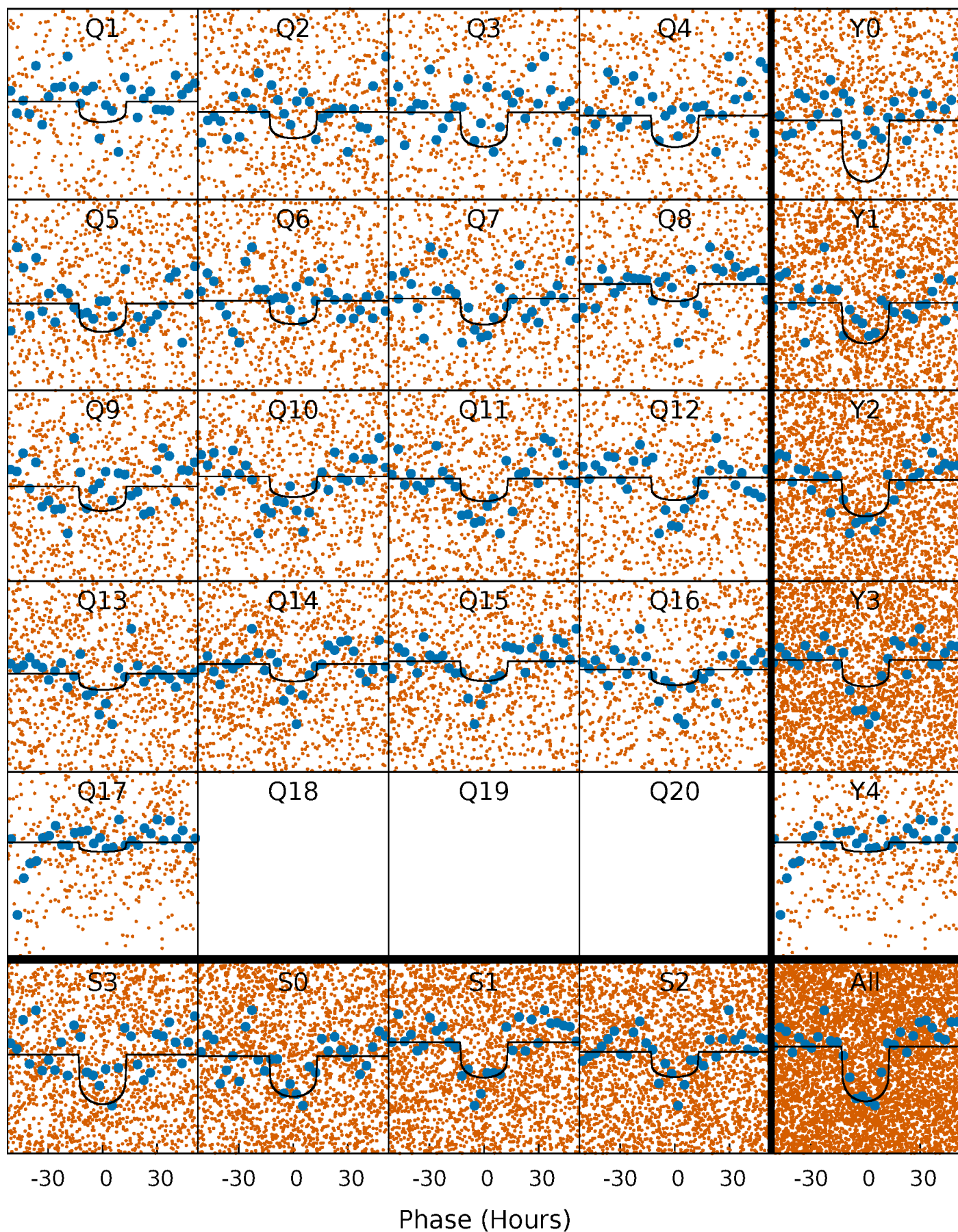
PDC Quarter-Phased Transit Curves

TCE 005556769-02 P= 12.425437 Days $T_0=134.063470$ (BKJD)



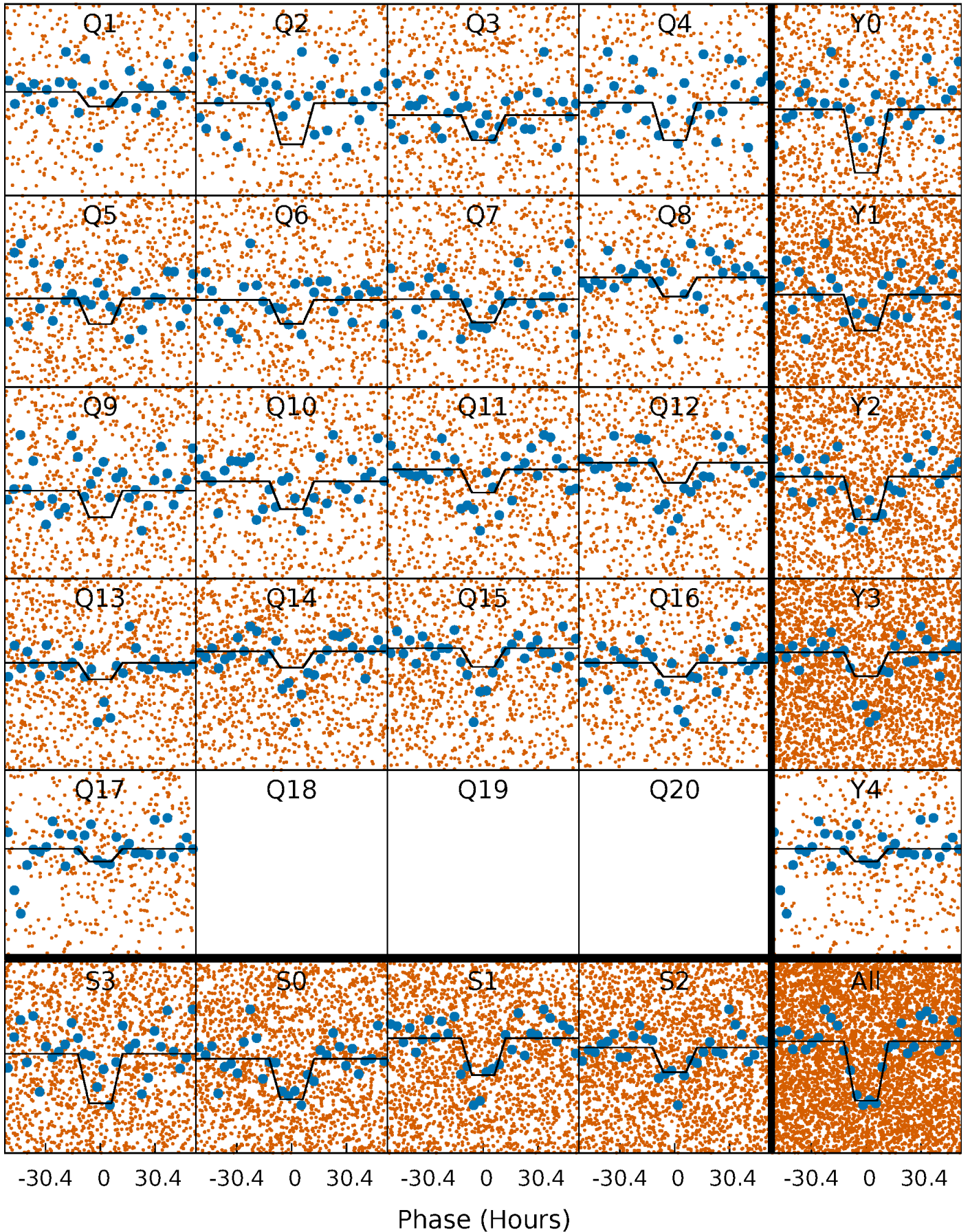
DV Quarter-Phased Transit Curves

TCE 005556769-02 P= 12.425437 Days $T_0=134.063470$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

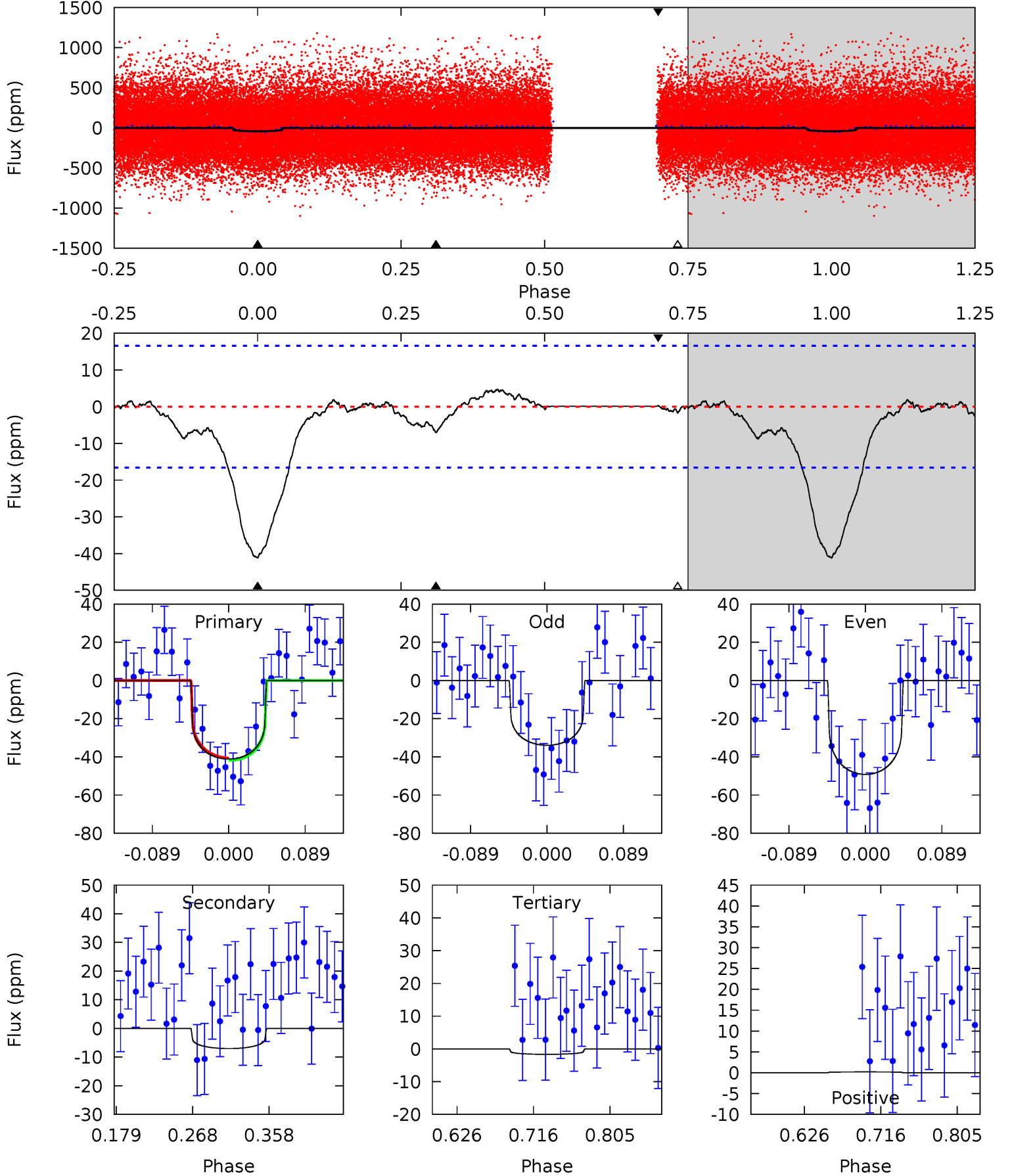
TCE 005556769-02 P= 12.424613 Days $T_0=134.094554$ (BKJD)



DV Model-Shift Uniqueness Test

005556769-02, P = 12.425437 Days, E = 121.638033 Days

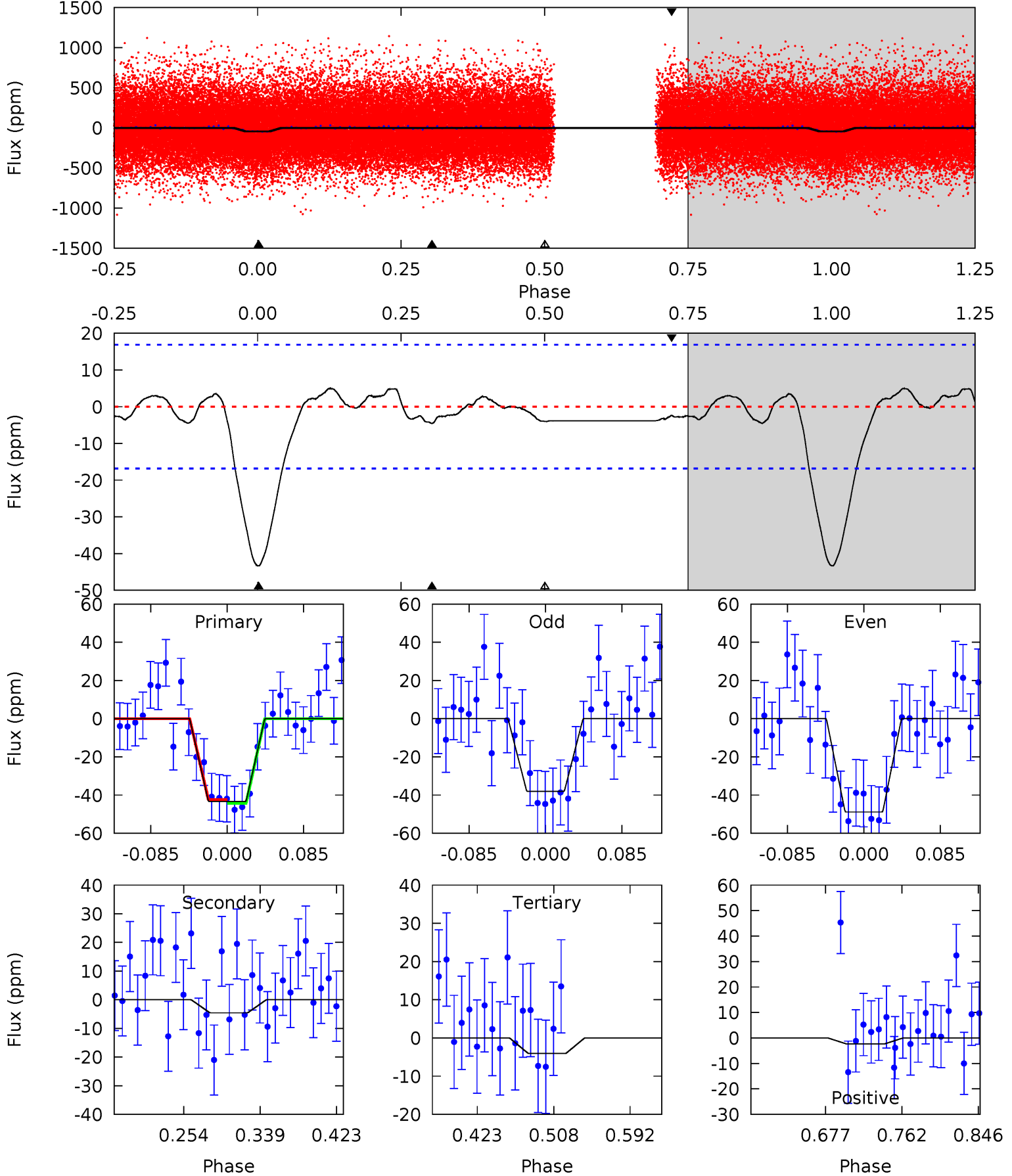
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	1.94	0.46	0.05	4.59	1.70	0.84	10.9	11.3	1.49	1.89	2.11	0.99	0.10	0.16



Alt Model-Shift Uniqueness Test

005556769-02, P = 12.424613 Days, E = 121.669941 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	1.25	1.11	-0.65	4.60	1.72	0.70	10.7	12.5	0.14	1.90	1.48	1.20	0.10	0.27



Stellar Parameters For KIC 005556769

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5853^{+158}_{-175}	$4.486^{+0.078}_{-0.182}$	$-0.380^{+0.300}_{-0.300}$	$0.883^{+0.231}_{-0.099}$	$0.872^{+0.109}_{-0.089}$	$1.783^{+0.687}_{-0.849}$
	+3%/-3%	+2%/-4%	+79%/-79%	+26%/-11%	+12%/-10%	+39%/-48%
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 005556769-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 4	$0.69^{+0.18}_{-0.17}$	1081^{+66}_{-54}	3895^{+541}_{-494}	77^{+80}_{-45}
Alt.	-5 ± 4	$0.65^{+0.20}_{-0.17}$	1078^{+75}_{-50}	3670^{+637}_{-797}	52^{+87}_{-42}

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

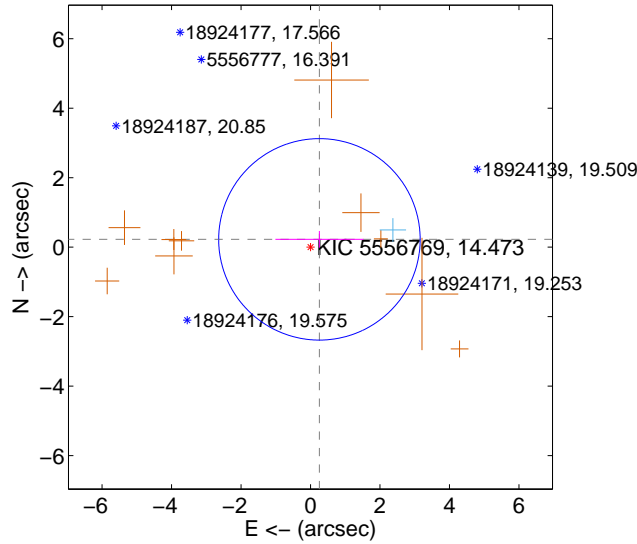
Supplemental centroid analysis for 005556769-02. Kepler magnitude: 14.47. Transit SNR 10.00

There are 1 quarters with good PRF difference image offsets

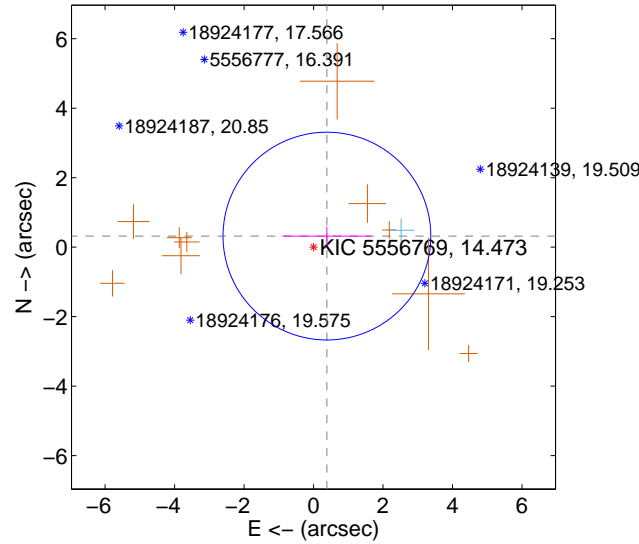
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.341 ± 0.967	0.35	-0.257 ± 1.267	0.225 ± 0.241
PRF-fit source offset from KIC position	0.500 ± 0.997	0.50	-0.385 ± 1.275	0.319 ± 0.271
photometric centroid source offset	1.76 ± 1.35	1.31	0.15 ± 1.50	-1.76 ± 1.35

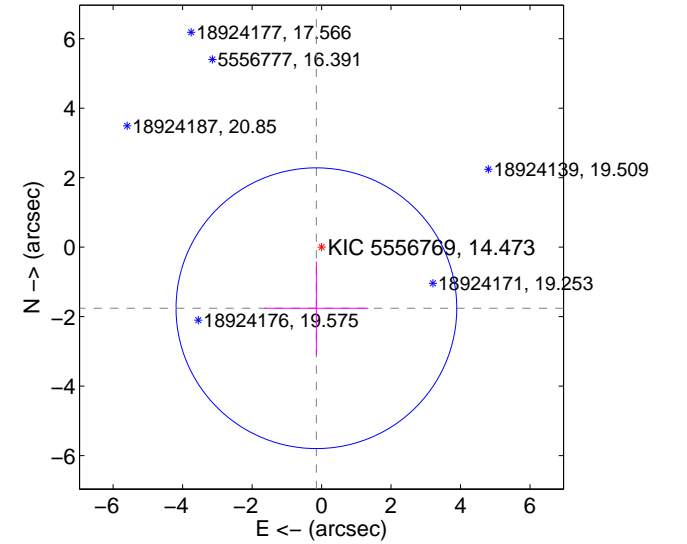
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

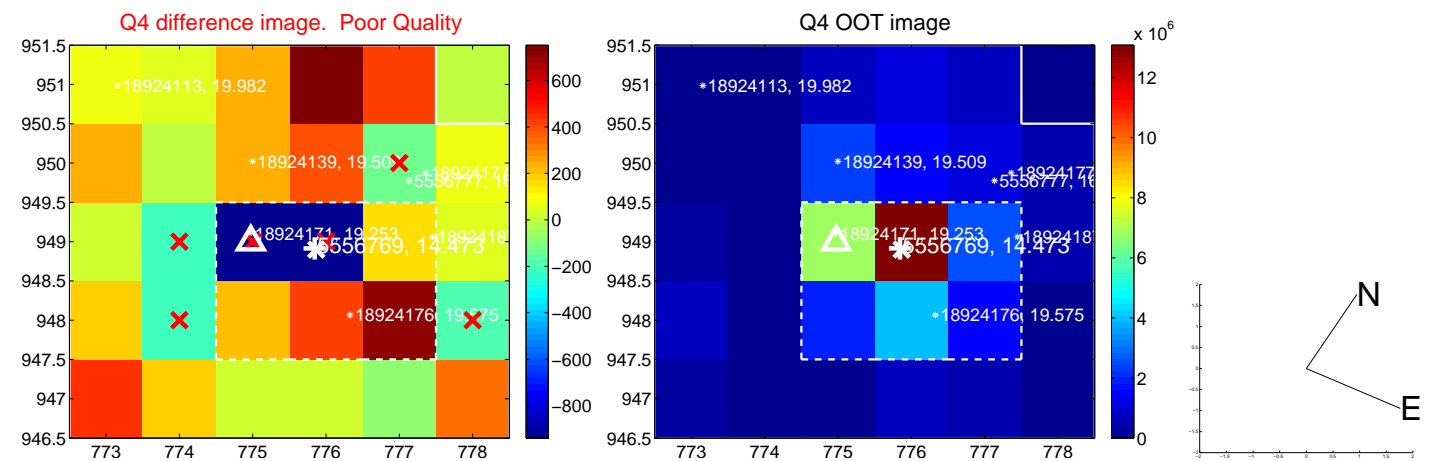
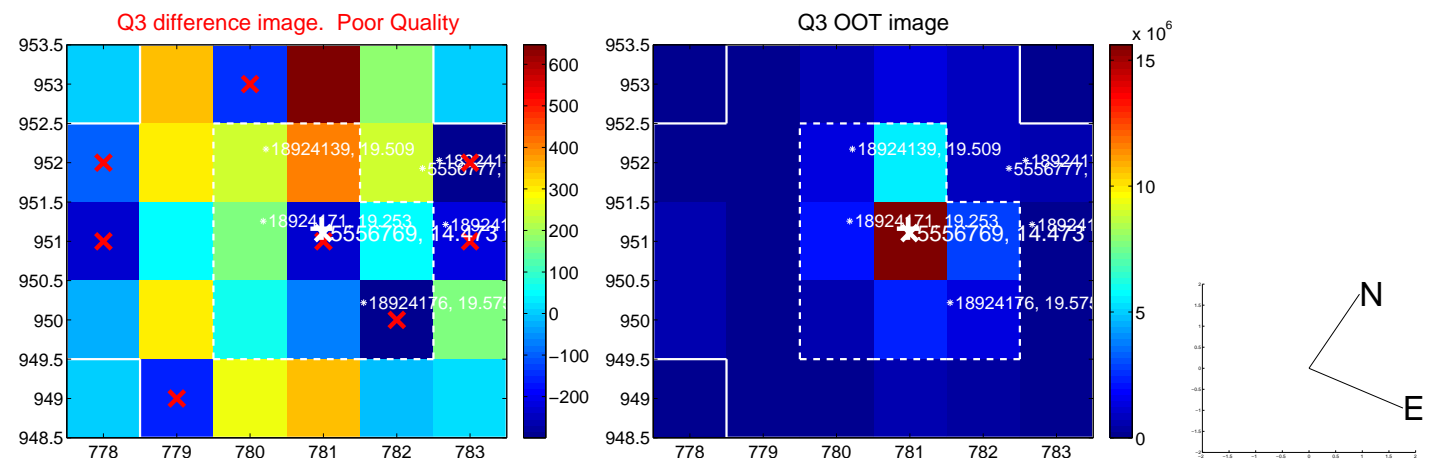
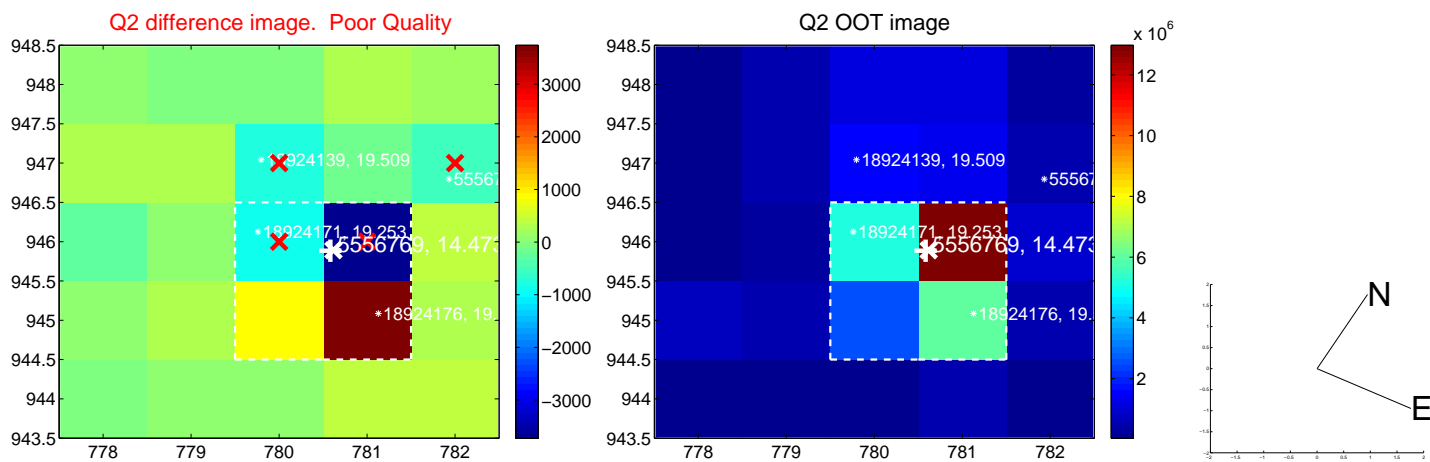
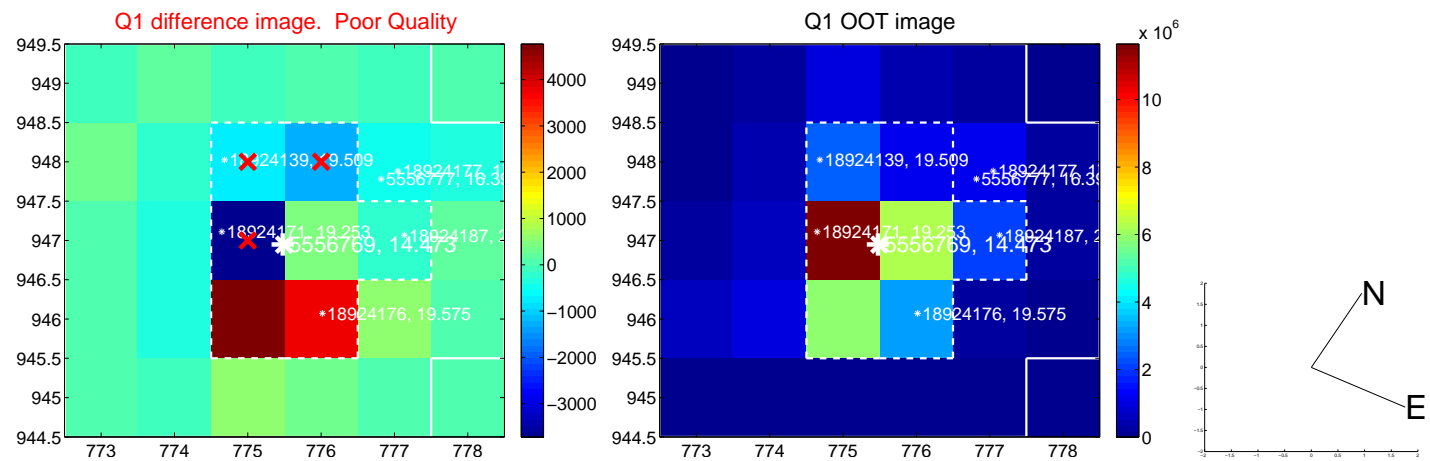


offset from photometric centroids

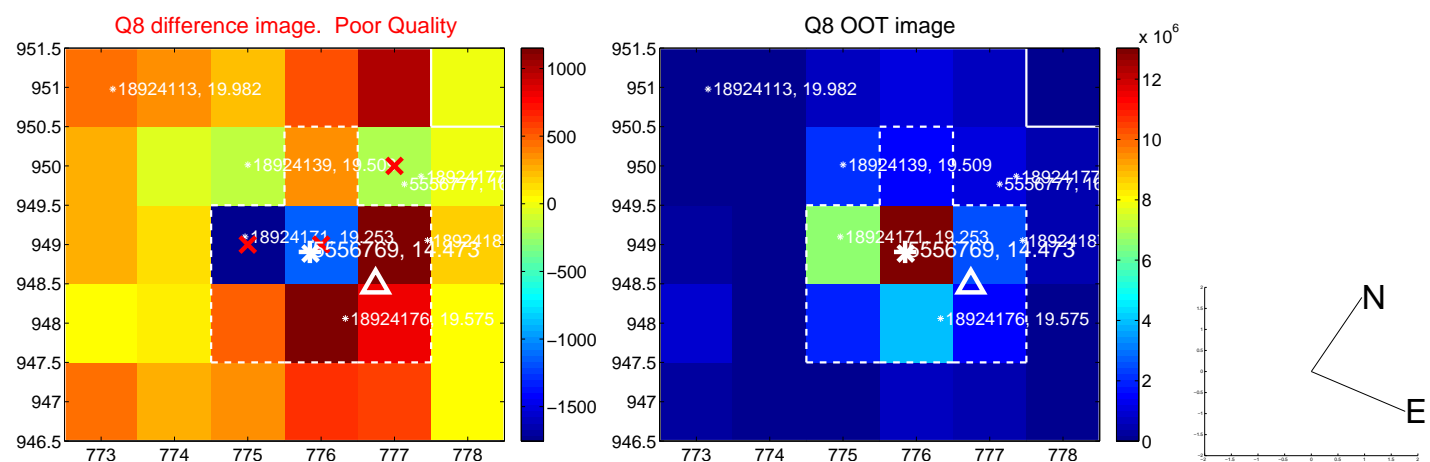
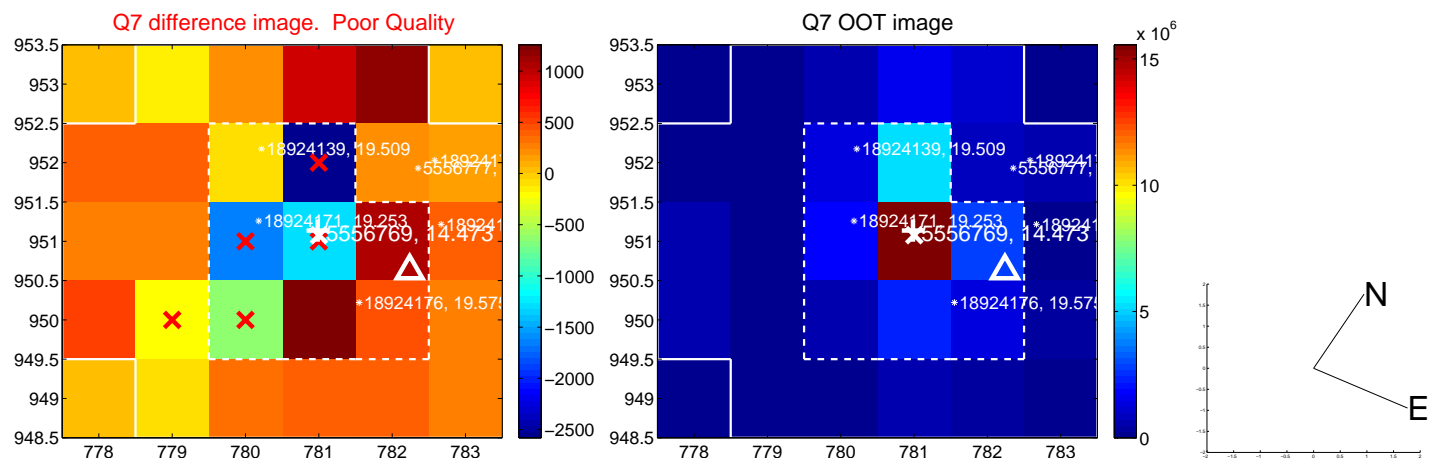
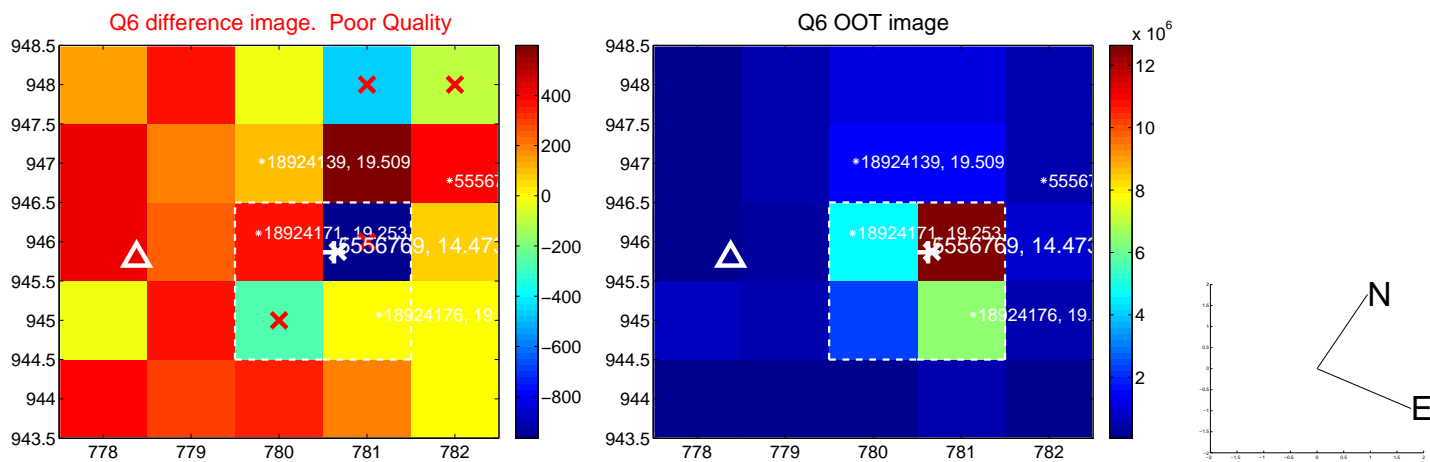
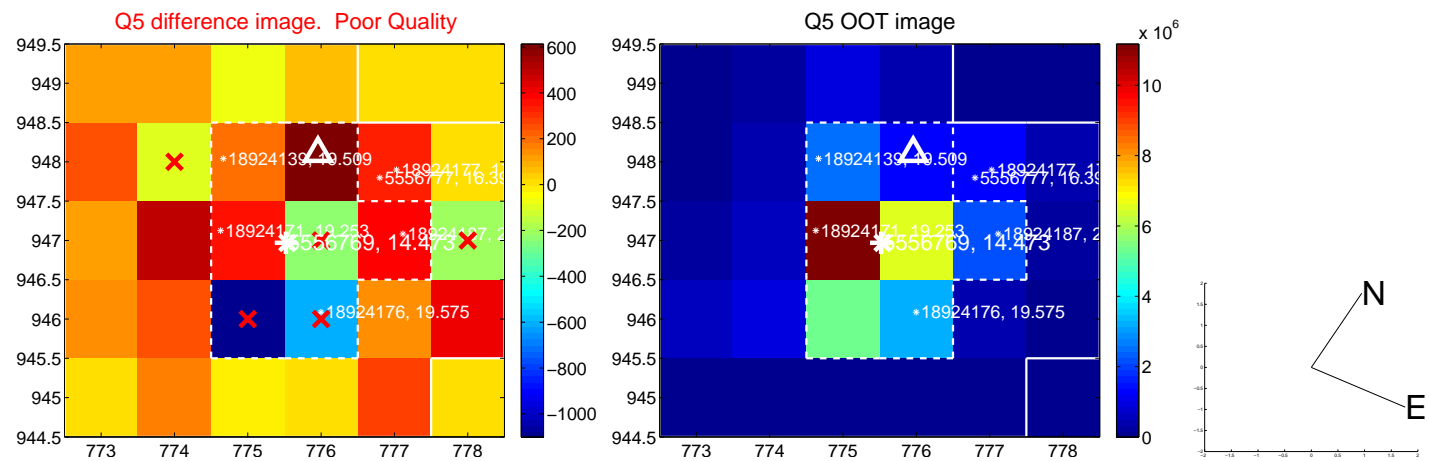


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

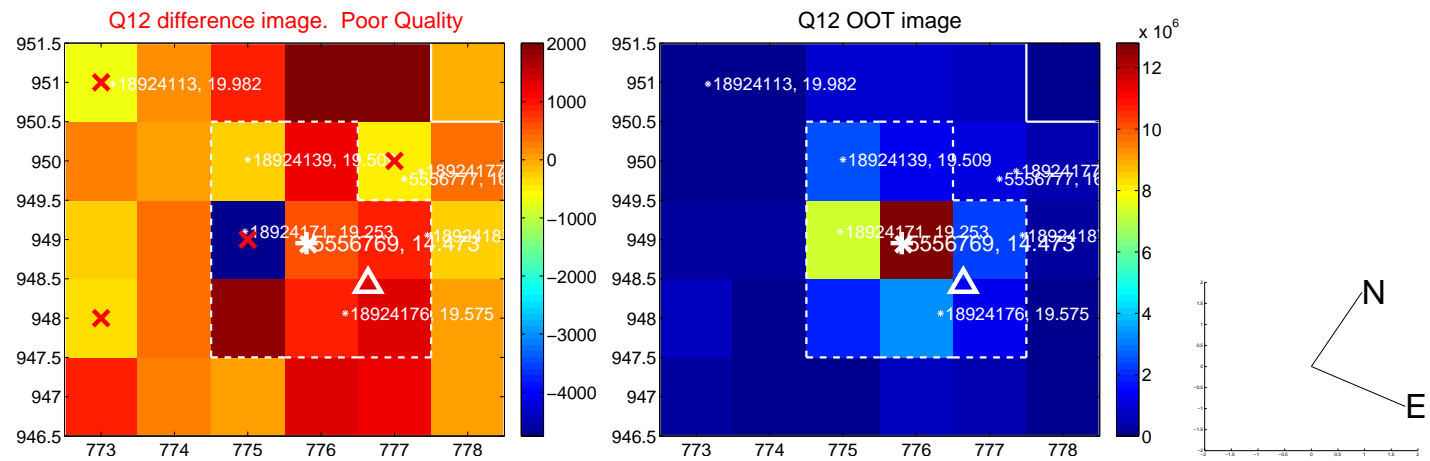
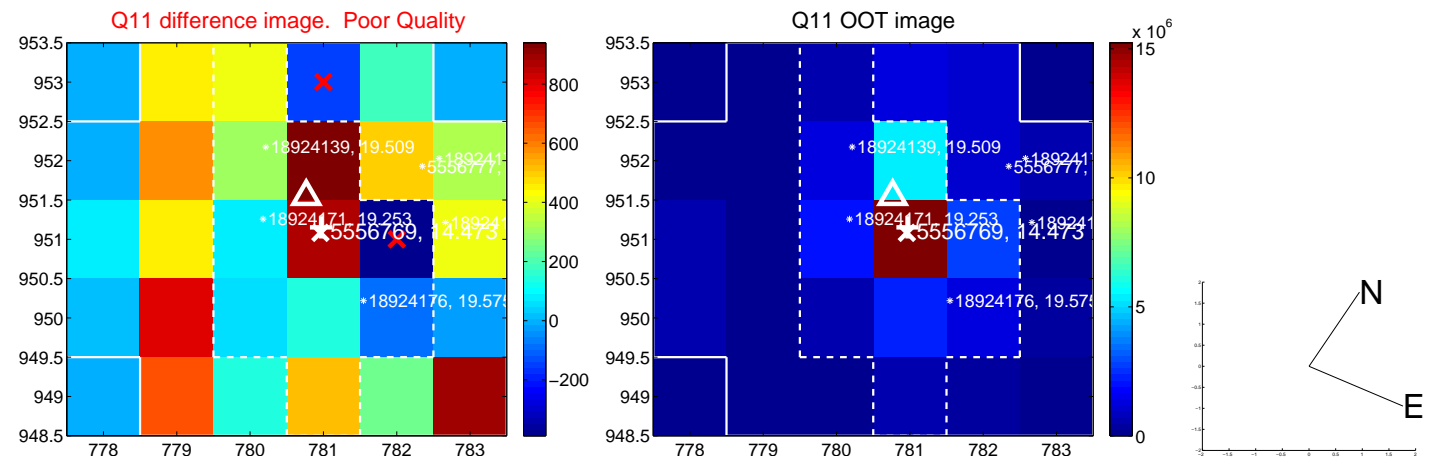
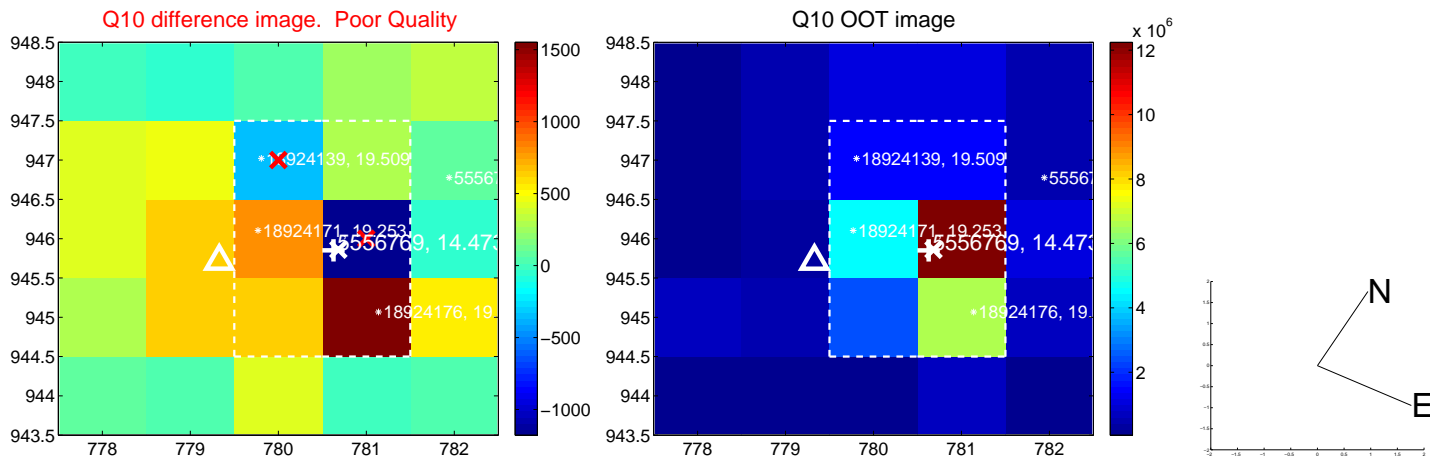
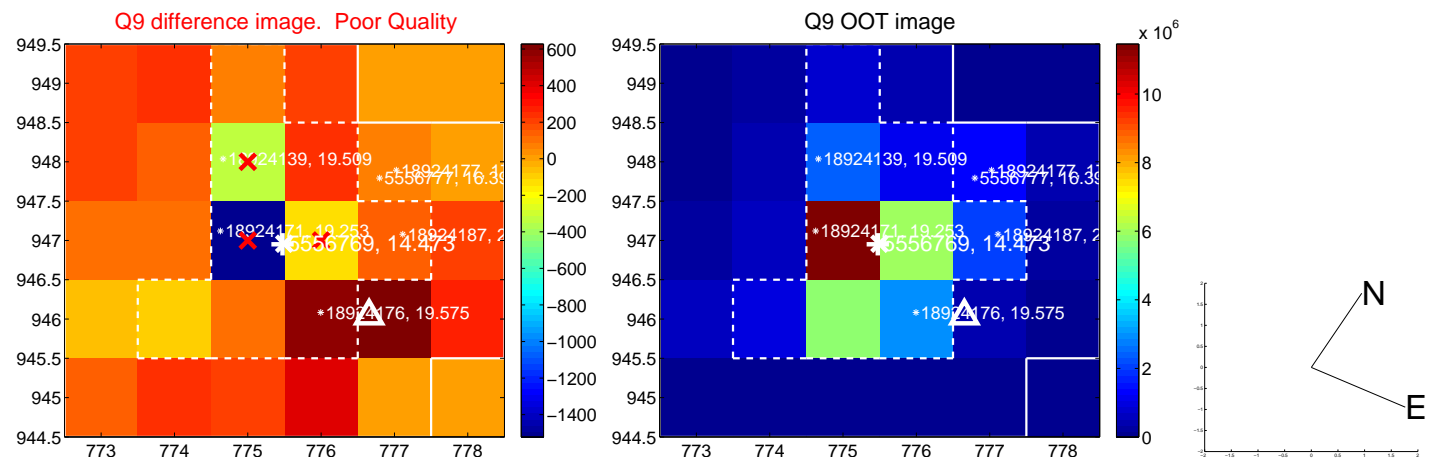
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



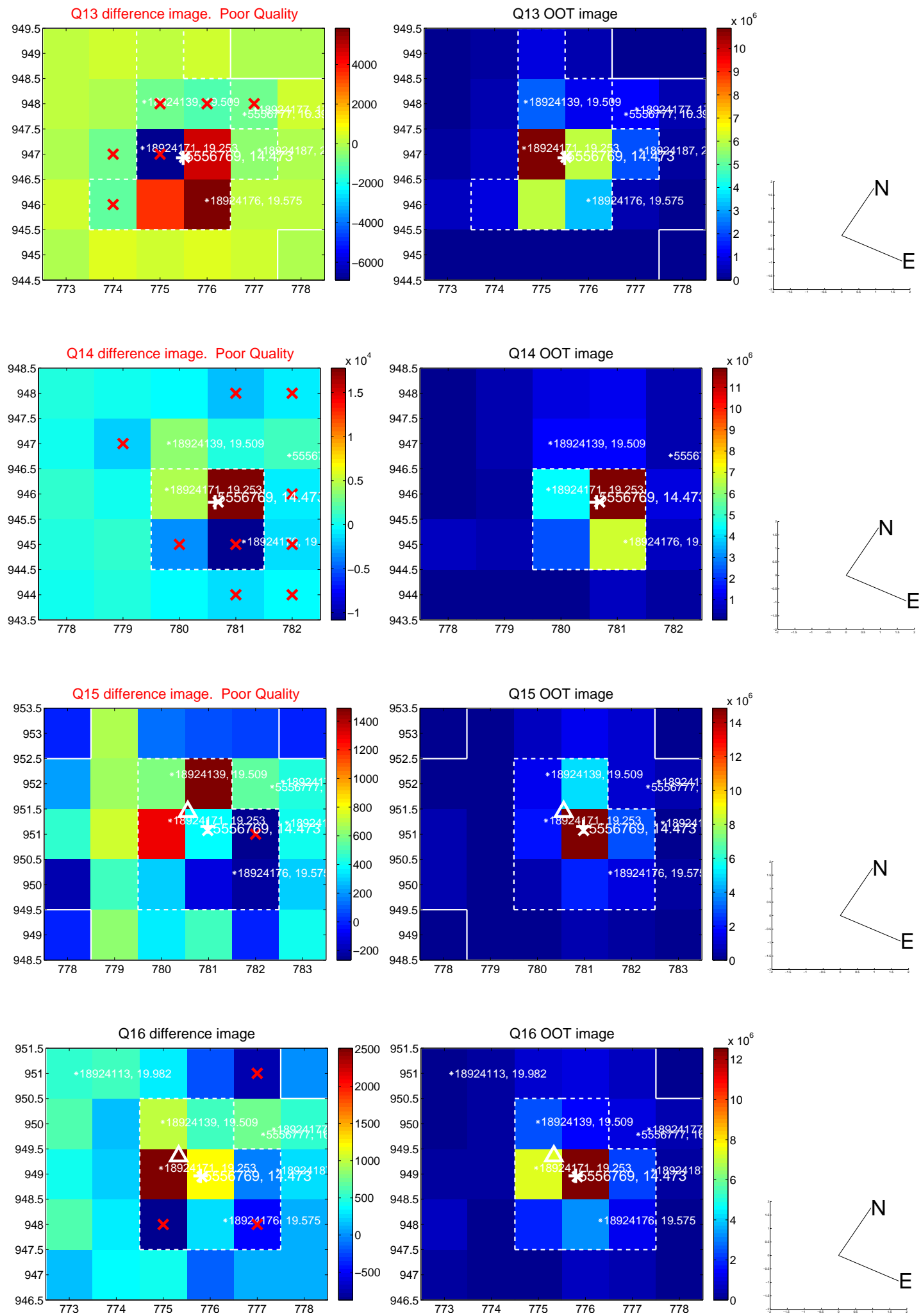
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



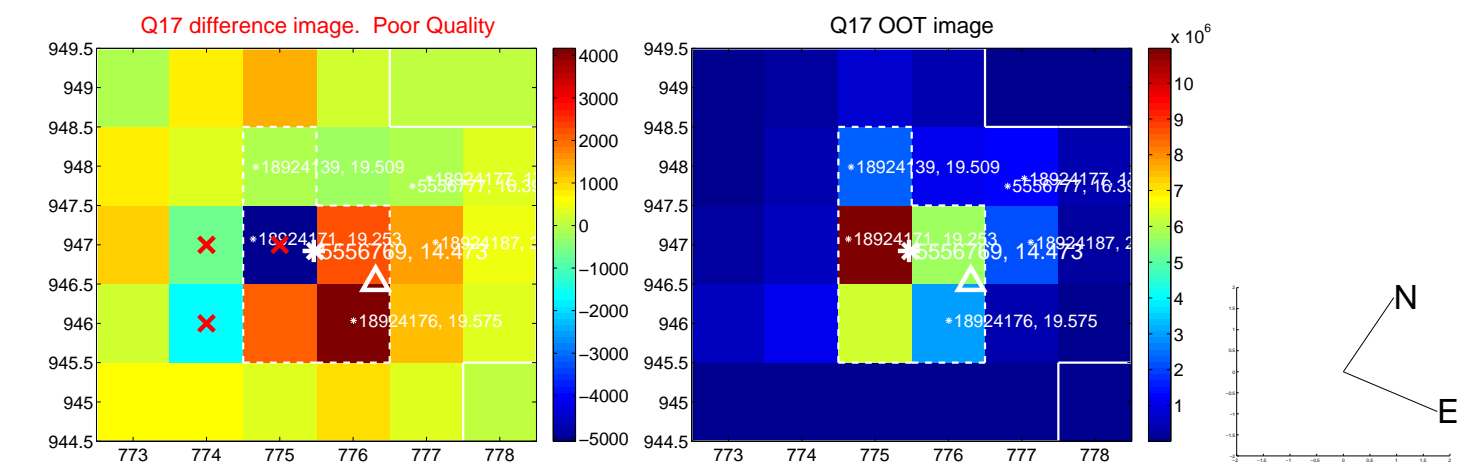
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



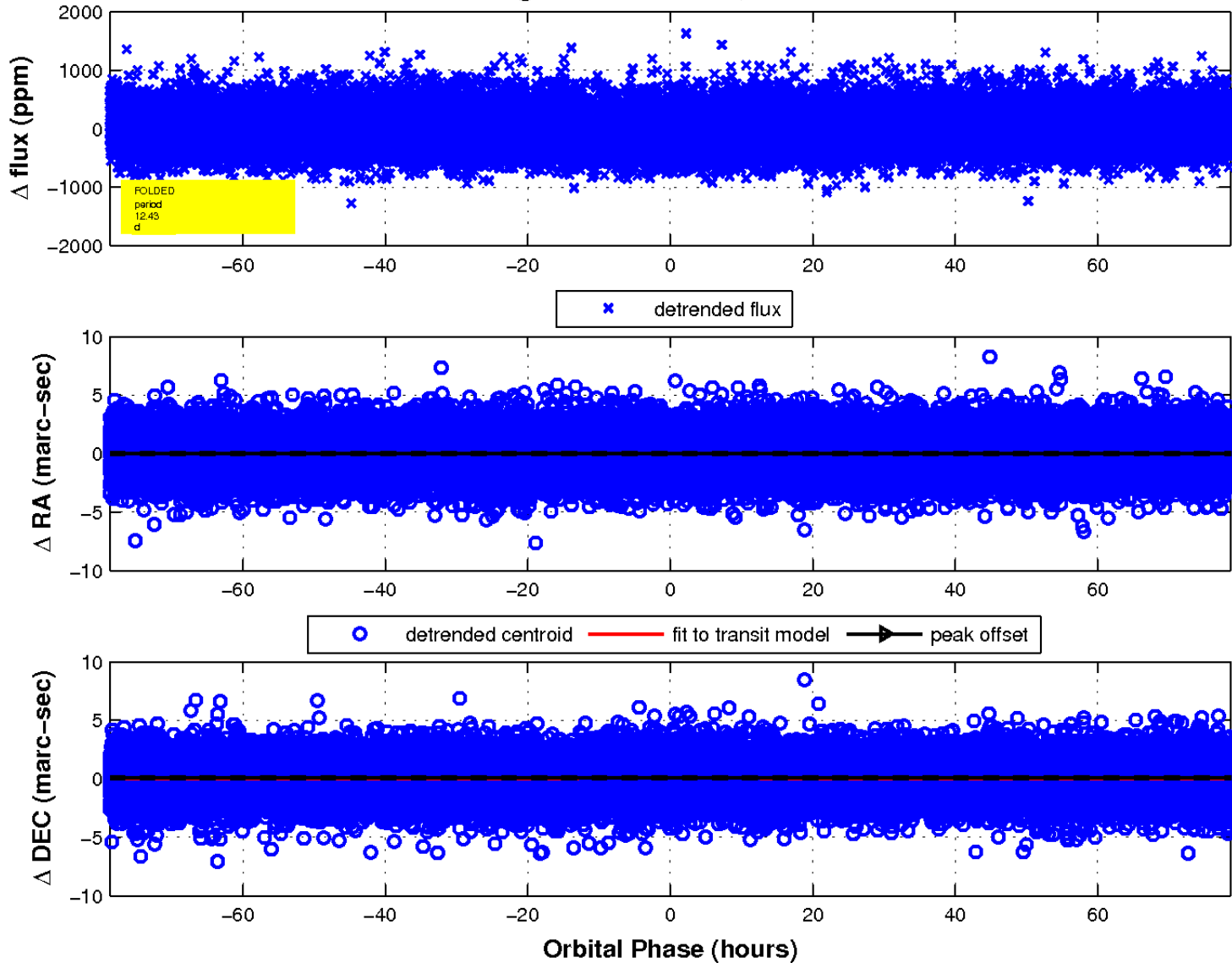
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

