

KIC 010749766

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})
010749766-01	OBS	No	0.890501	131.929646	34.4	5.154	9.0	9.9	1.02	6050	0.72	3775.71
010749766-02	OBS	No	121.214290	133.078131	407.7	4.016	7.3	7.7	1.02	6050	2.41	5.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010749766-01	OBS	FP	0.00	1	0	1	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
010749766-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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.

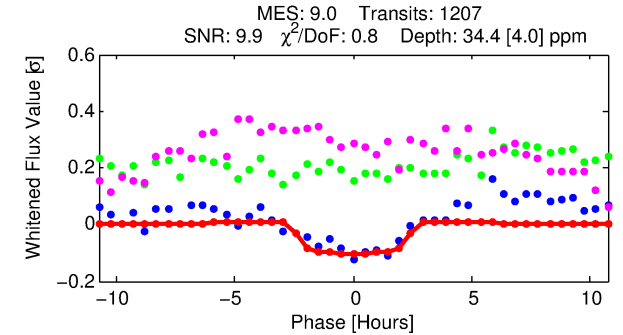
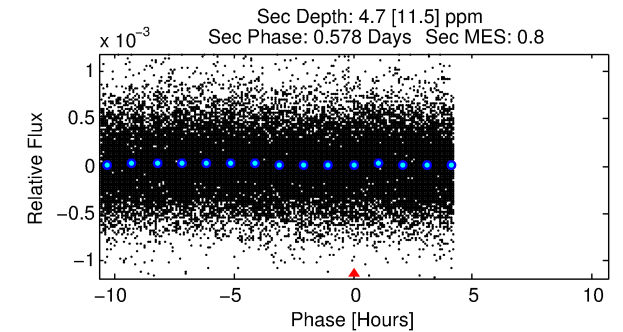
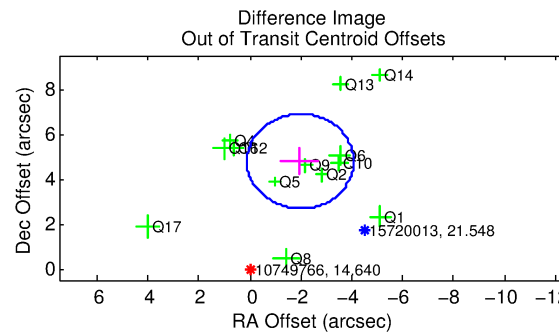
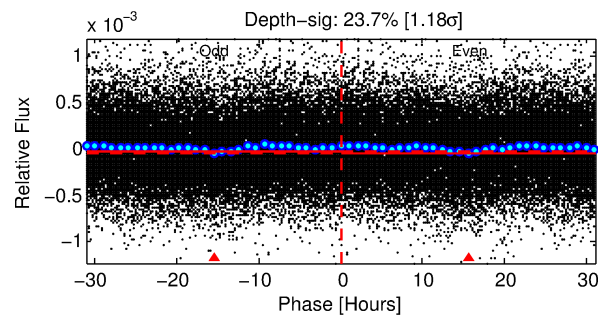
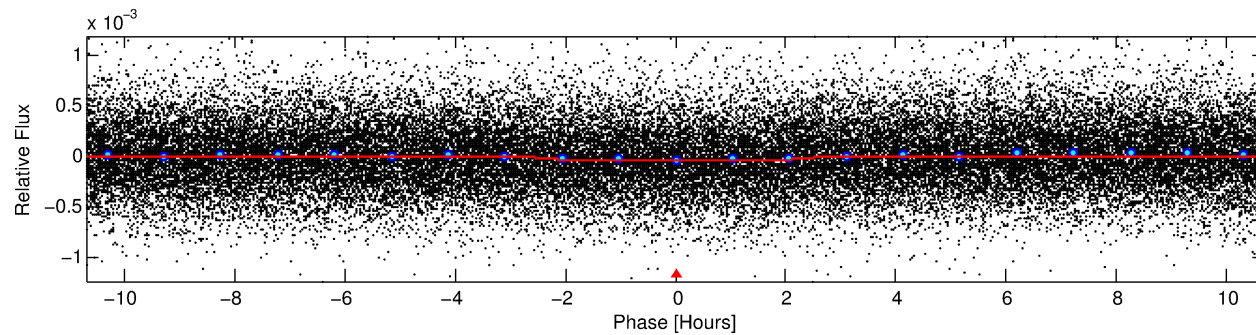
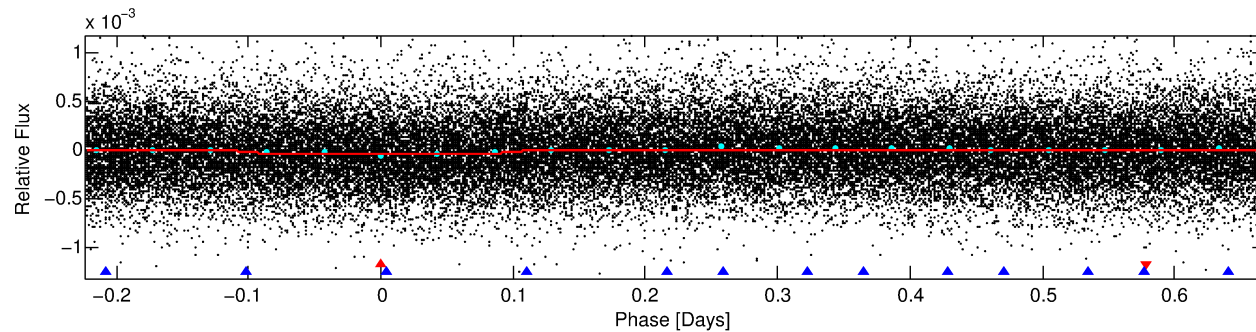
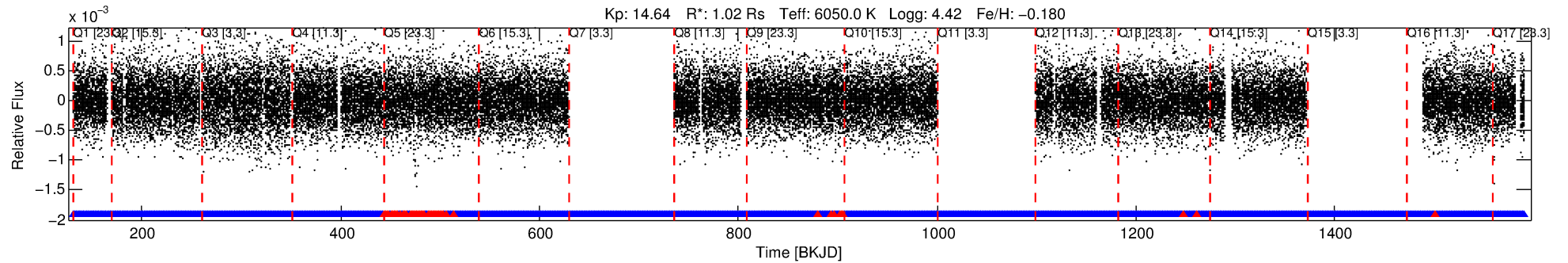
Ephemeris Match Information For 010749766-01

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
010749766-01	10749766	010815379-pri	10815379	1:1	59.9	15	3	11.24	14.64	2358.80	Direct-PRF	0	2.03	1.06

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: 10749766 Candidate: 1 of 2 Period: 0.891 d



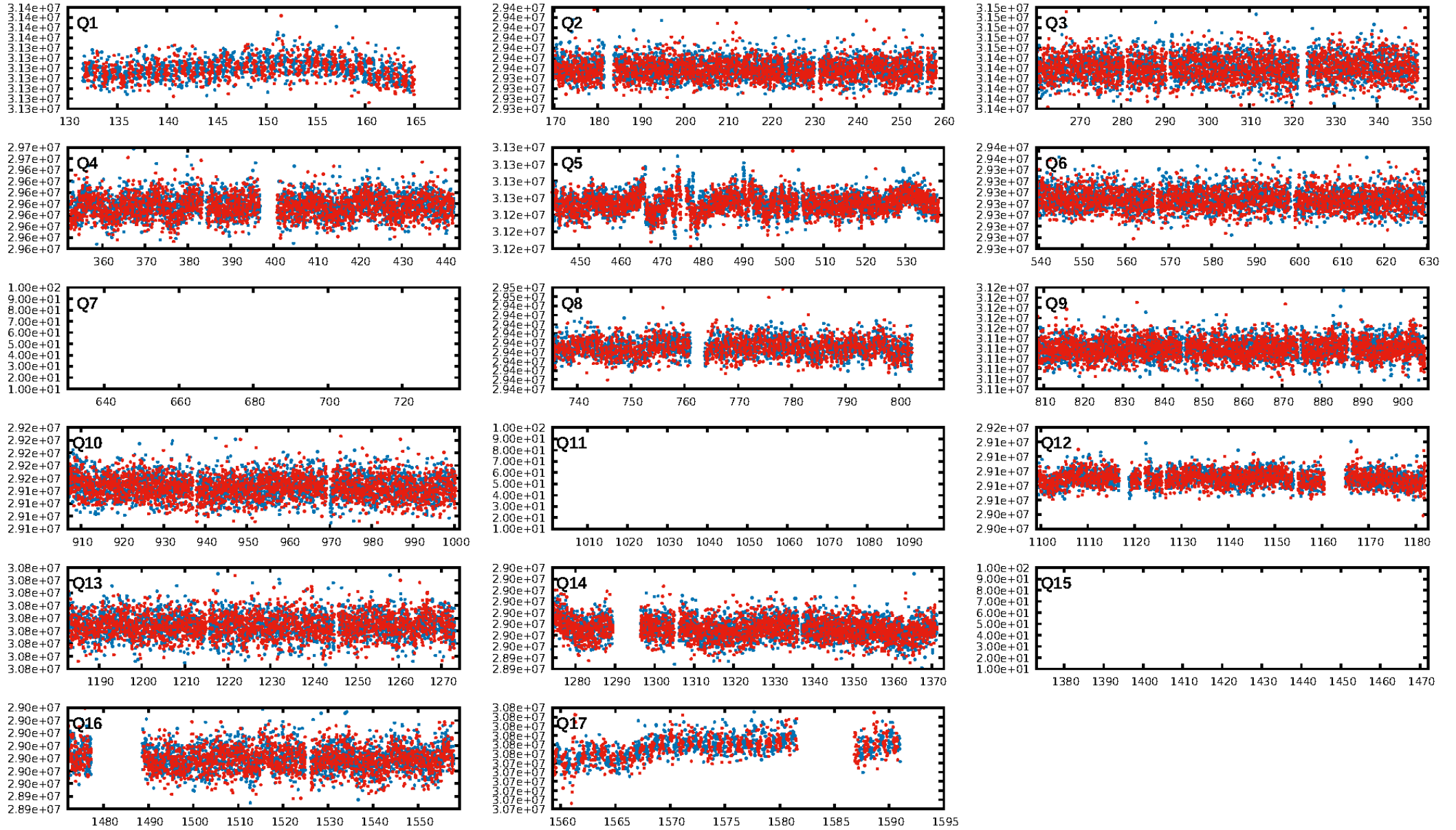
DV Fit Results:

Period = 0.89050 [0.00001] d
Epoch = 131.9296 [0.0057] BKJD
Rp/R* = 0.0065 [0.0032]
a/R* = 1.09 [0.47]
b = 0.92 [0.43]
Seff = 3775.71 [1490.74]
Teff = 1999 [197] K
Rp = 0.72 [0.41] Re
a = 0.0181 [0.0047] AU
Ag = 1.63 [4.36] [0.15 σ]
Teffp = 3494 [2309] K [0.64 σ]

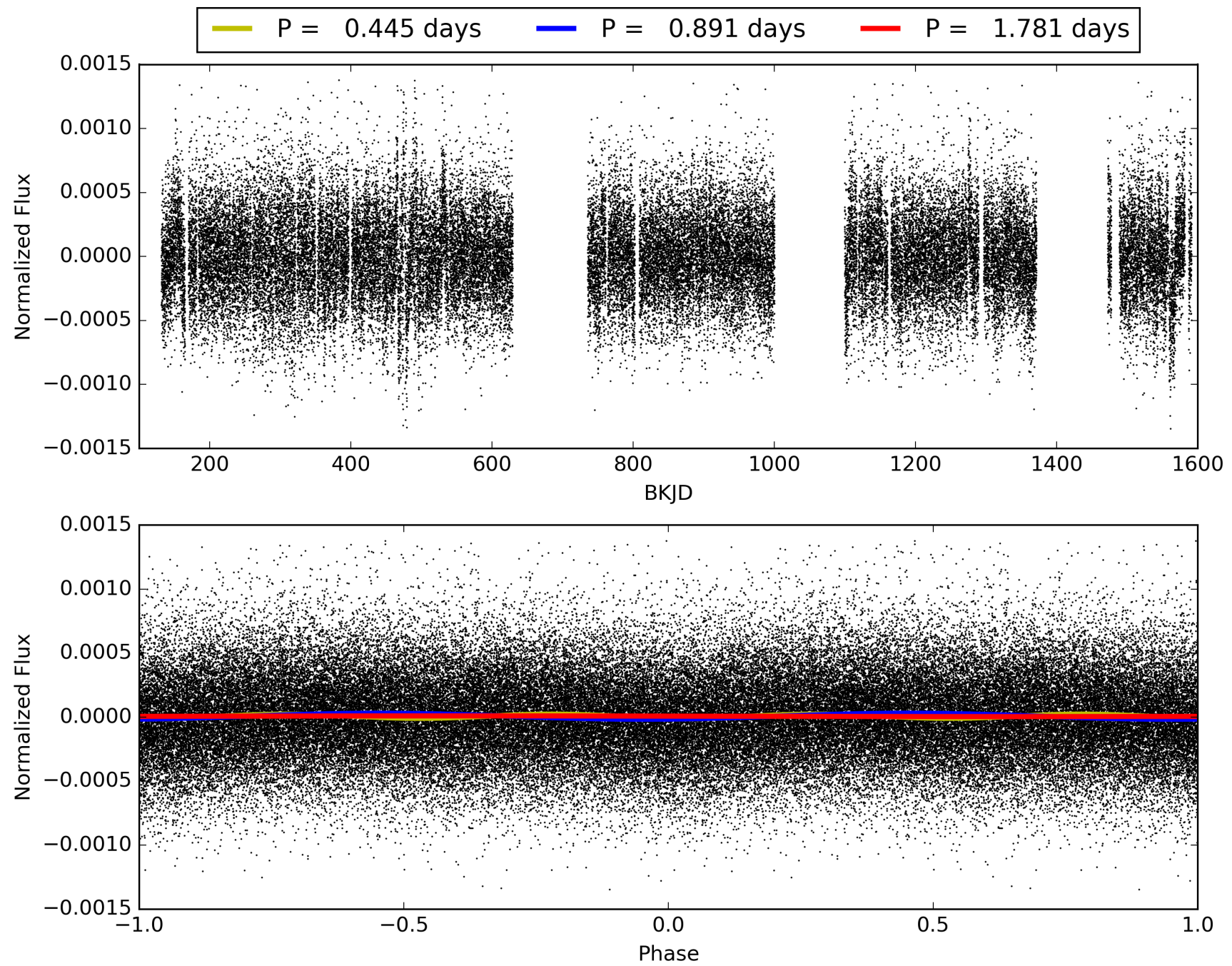
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [441.97 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.98e-13
RollingBand-fgt: 0.95 [1080/1138]
GhostDiagnostic-chr: -0.1856
Centroid-sig: 6.0%
Centroid-so: 2.383 arcsec [1.60 σ]
OotOffset-rm: 5.175 arcsec [7.39 σ]
KicOffset-rm: 5.224 arcsec [7.49 σ]
OotOffset-st: 4/0/4/5 [13]
KicOffset-st: 4/0/4/5 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010749766-01, PDC Light Curves

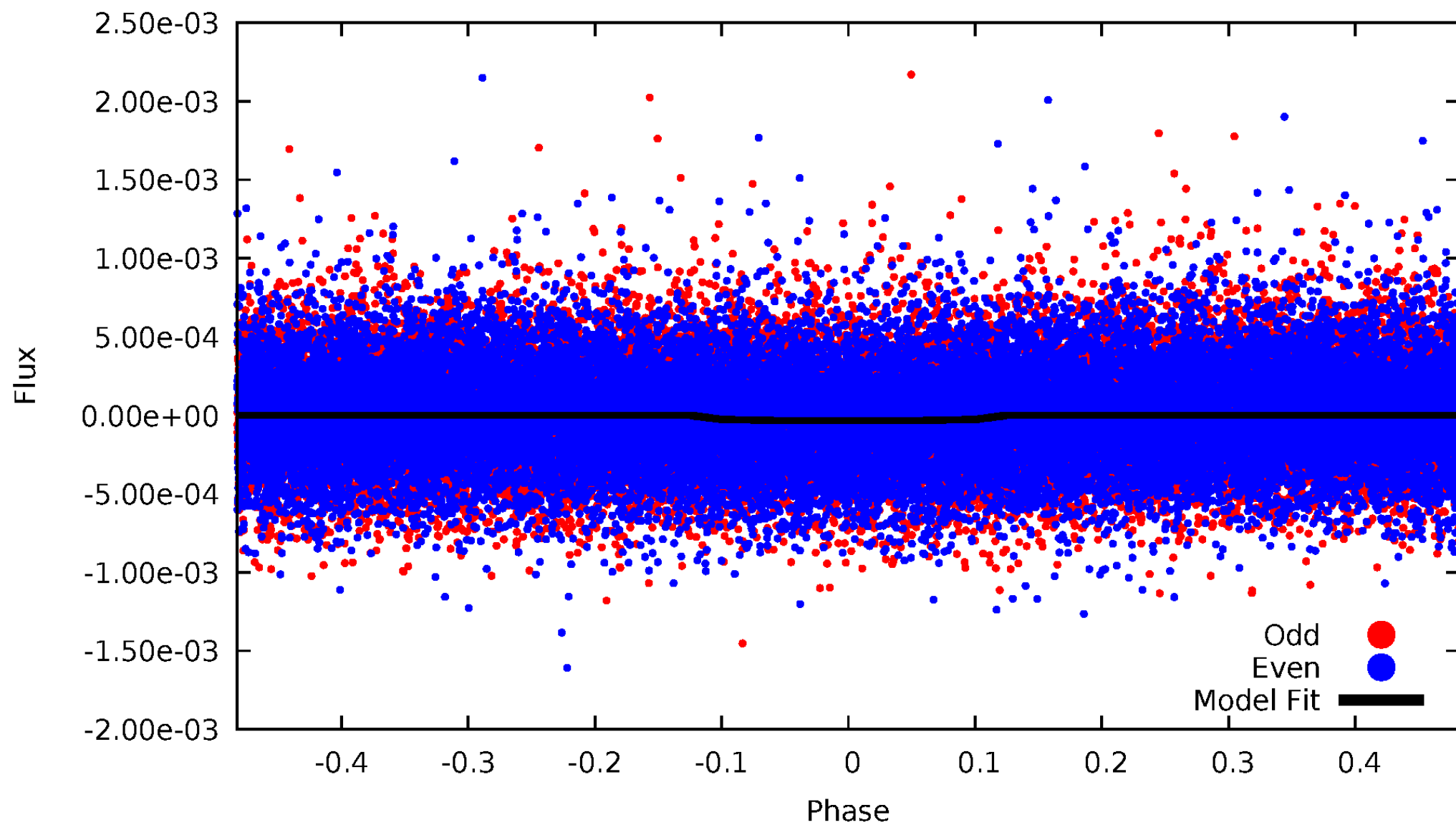


TCE 010749766-01



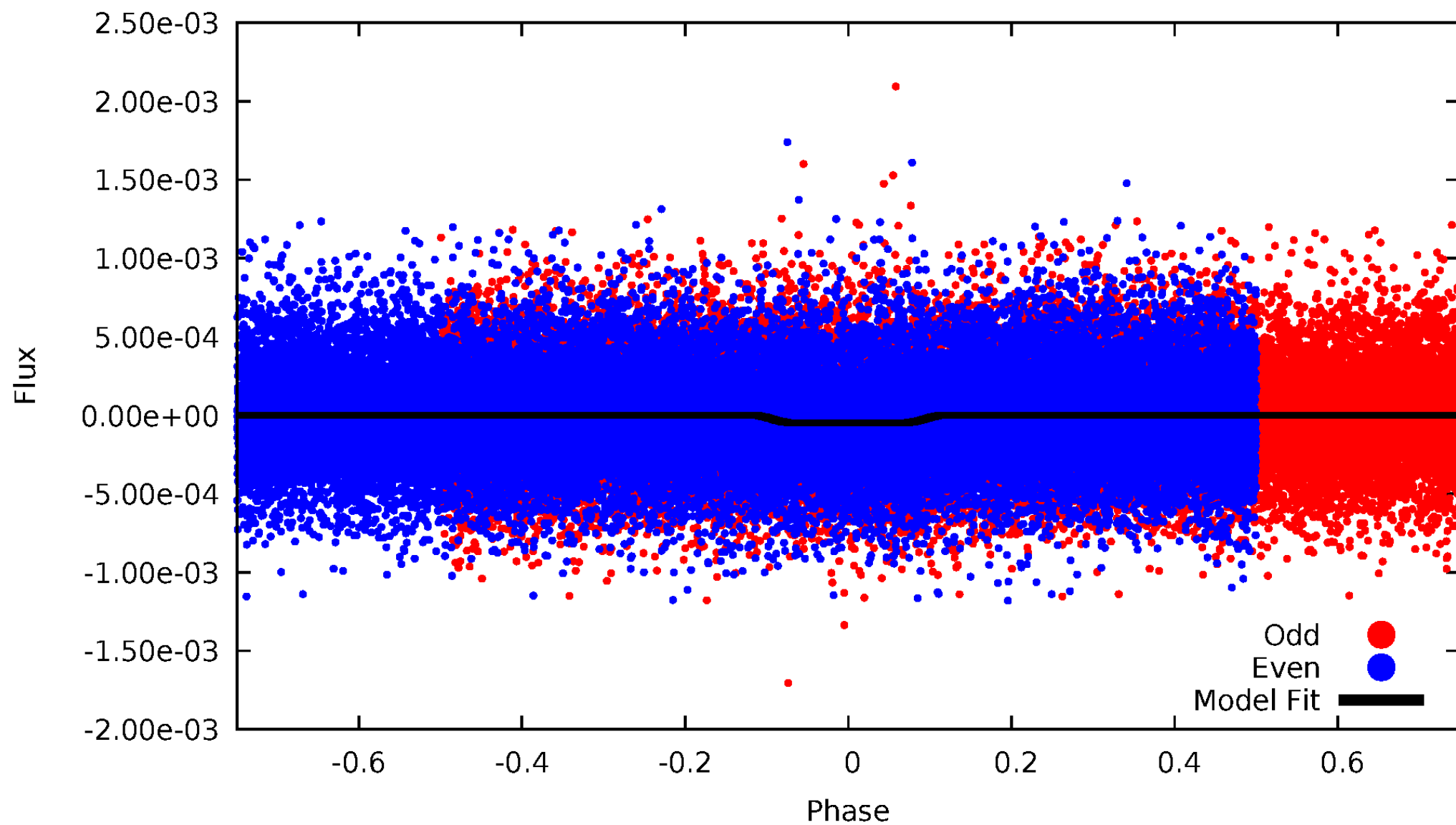
DV Odd/Even

TCE 010749766-01

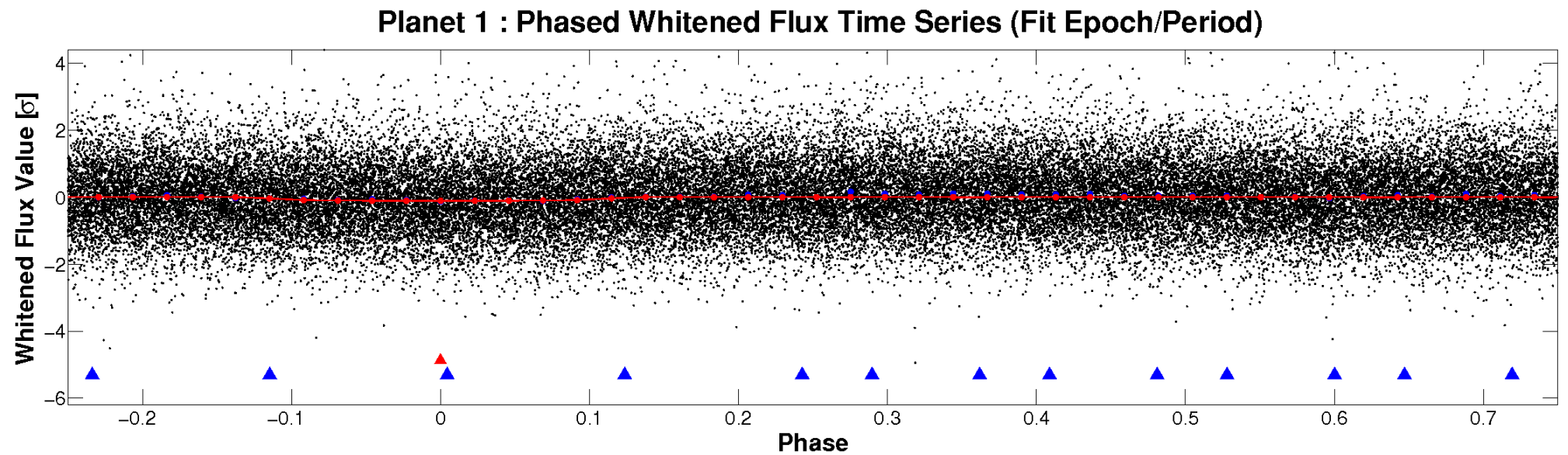
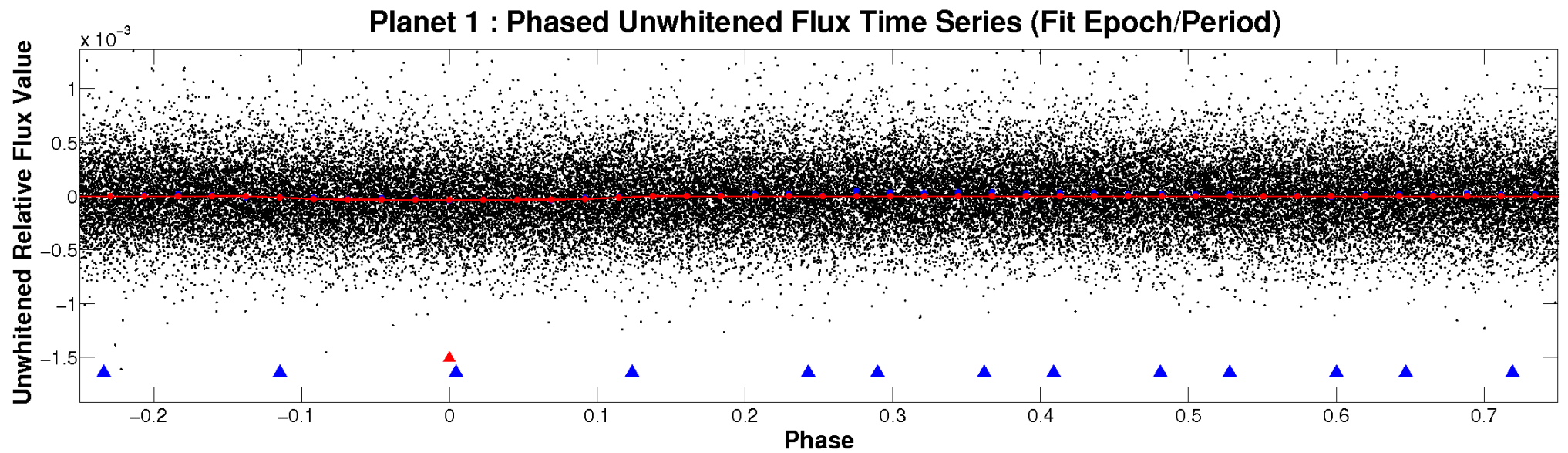


ALT Odd/Even

TCE 010749766-01

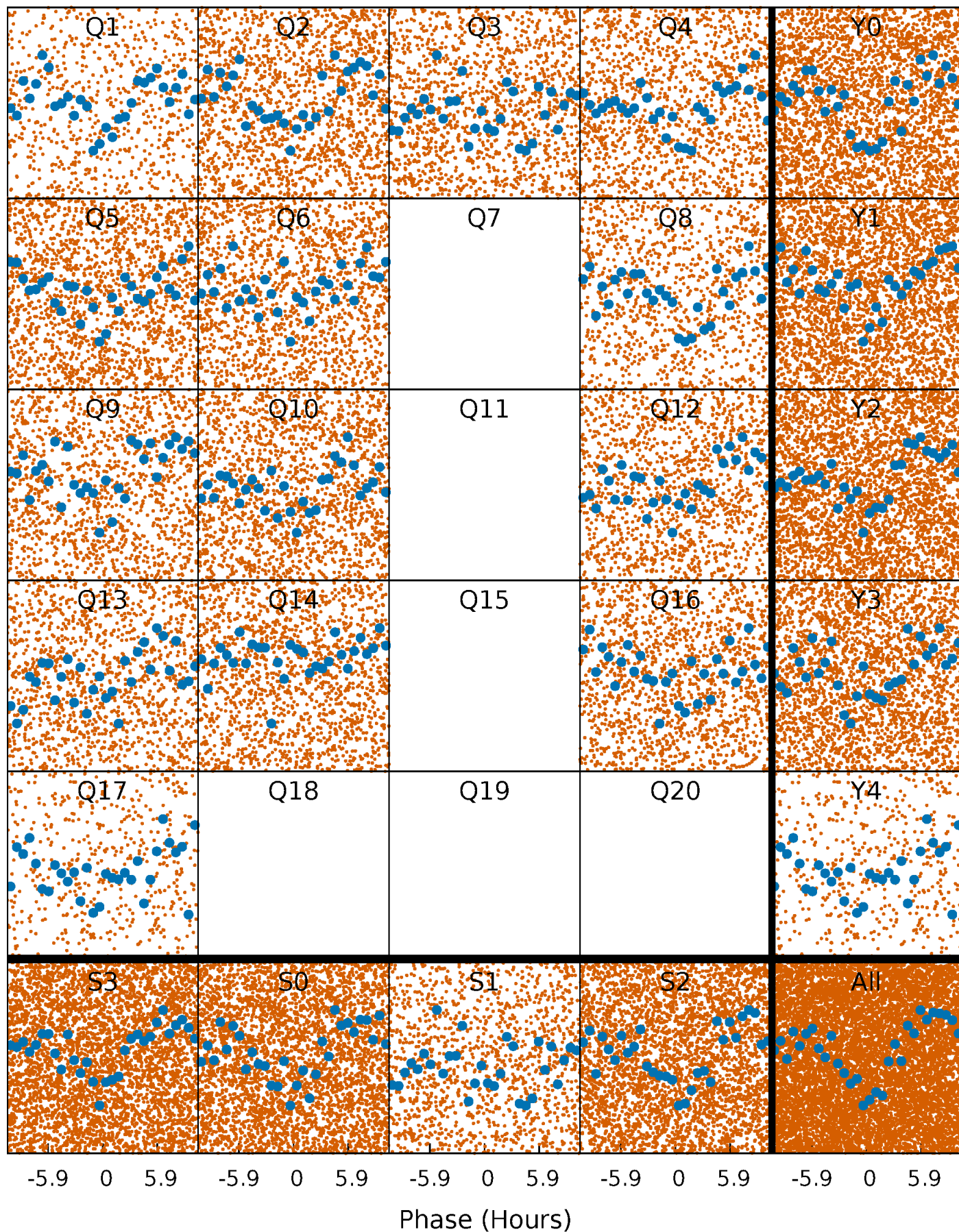


Non-Whitened Vs. Whitened Light Curve



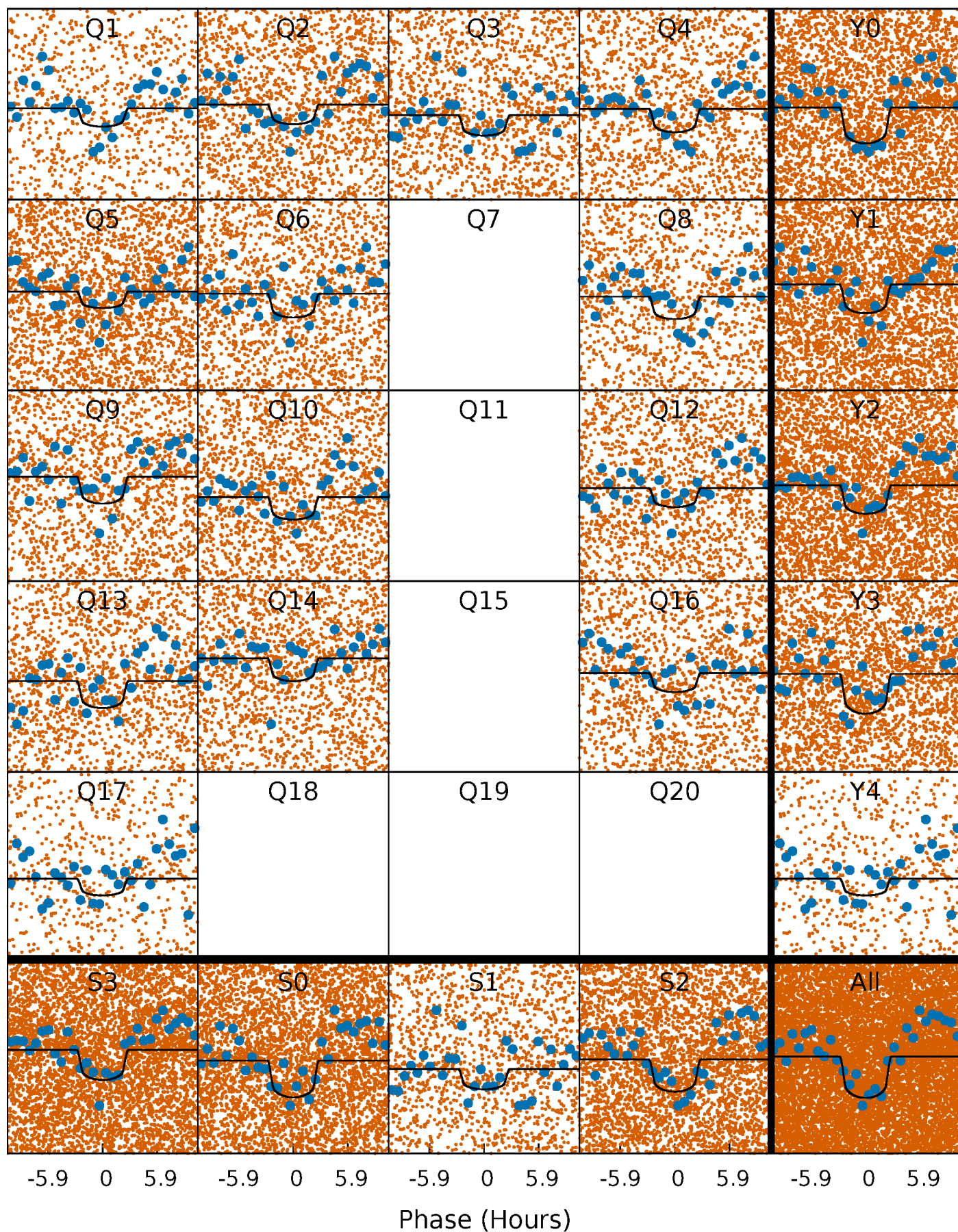
PDC Quarter-Phased Transit Curves

TCE 010749766-01 P= 0.890501 Days $T_0=131.929646$ (BKJD)



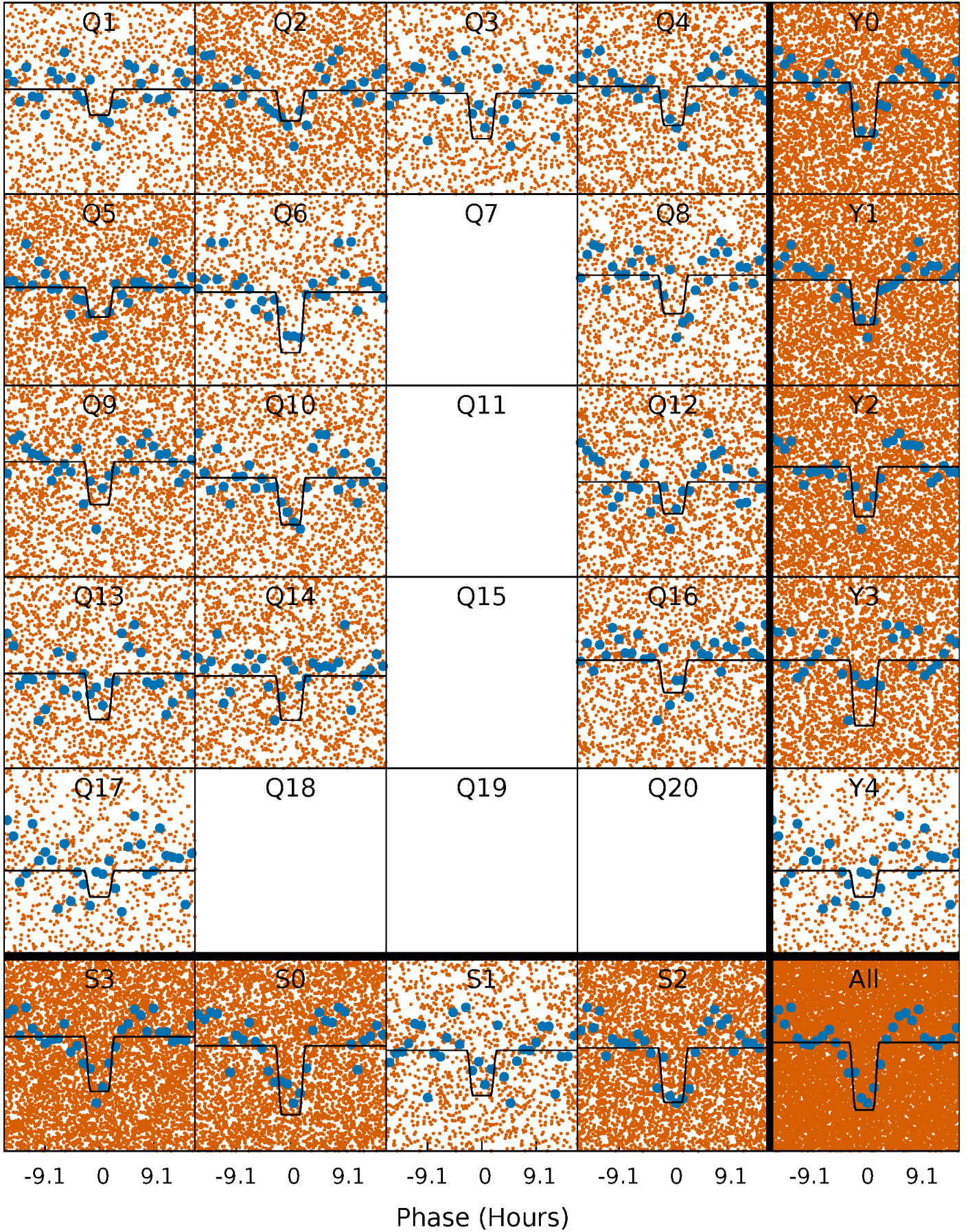
DV Quarter-Phased Transit Curves

TCE 010749766-01 P= 0.890501 Days $T_0=131.929646$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

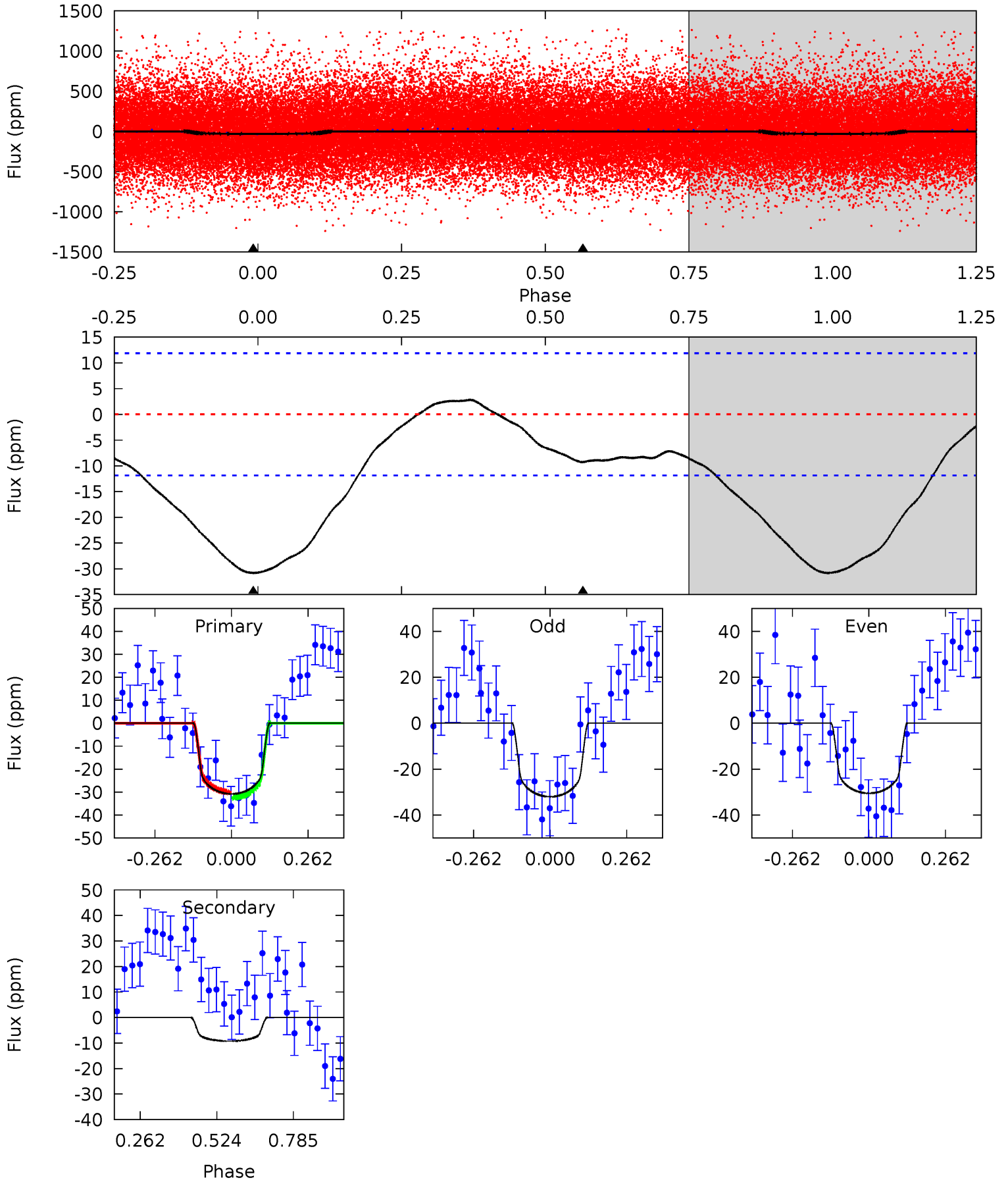
TCE 010749766-01 P= 0.890538 Days $T_0=131.906865$ (BKJD)



DV Model-Shift Uniqueness Test

010749766-01, P = 0.890501 Days, E = 131.039145 Days

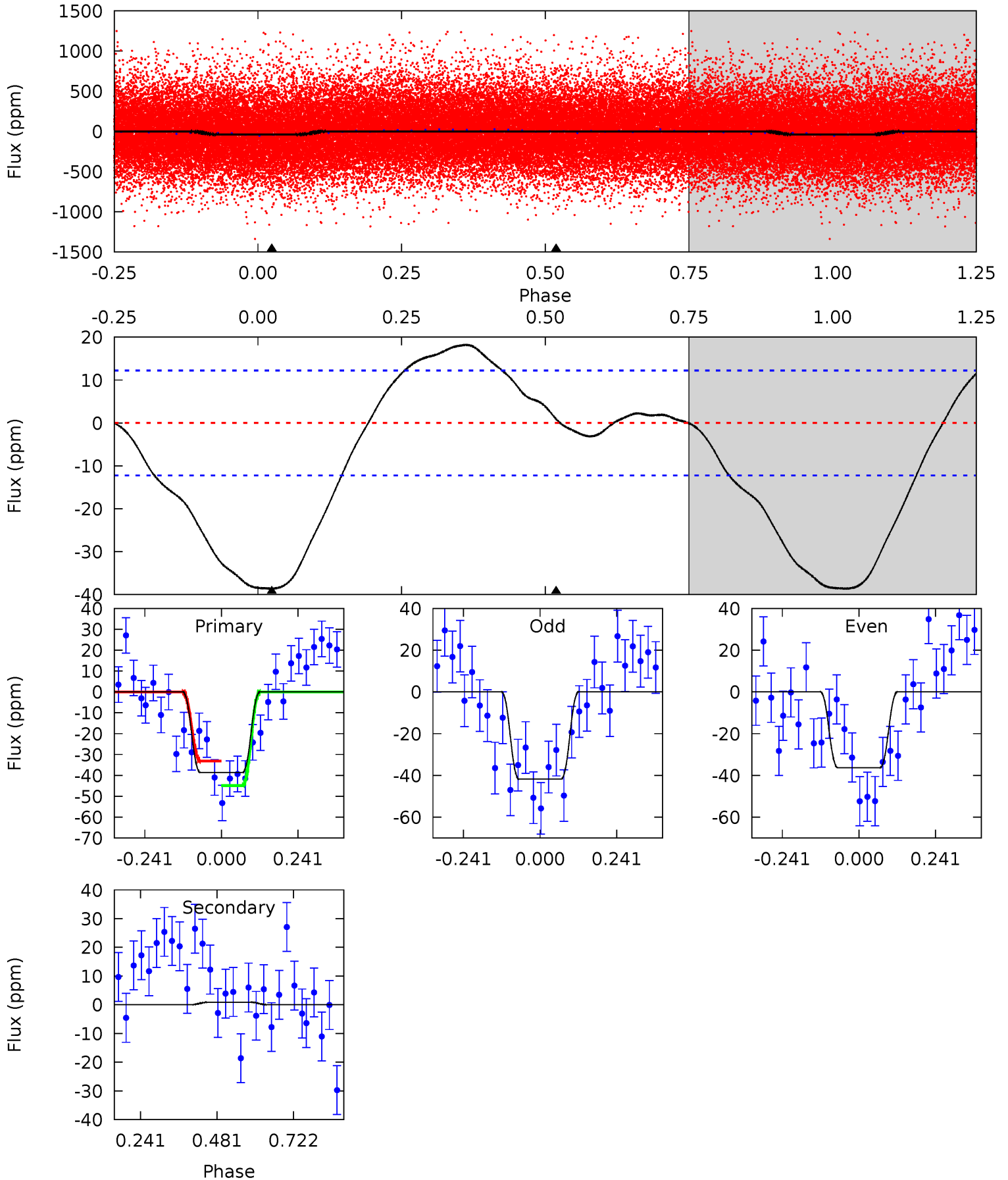
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	3.40	0	0	4.36	1.12	0.78	11.3	11.3	3.40	3.40	0.28	0.94	0.08	0.44



Alt Model-Shift Uniqueness Test

010749766-01, P = 0.890538 Days, E = 131.016327 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	-0.32	0	0	4.38	1.17	3.02	13.8	13.8	-0.32	-0.32	0.98	0.96	0.32	2.09



Stellar Parameters For KIC 010749766

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6050^{+180}_{-198}	$4.424^{+0.087}_{-0.203}$	$-0.180^{+0.300}_{-0.300}$	$1.016^{+0.311}_{-0.133}$	$0.997^{+0.143}_{-0.117}$	$1.341^{+0.521}_{-0.721}$
	+3%/-3%	+2%/-5%	+167%/-167%	+31%/-13%	+14%/-12%	+39%/-54%
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 010749766-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-9 ± 3	$0.73^{+0.40}_{-0.33}$	2814^{+198}_{-138}	4254^{+1253}_{-688}	$3.008^{+6.892}_{-1.780}$
Alt.	1 ± 3	$0.80^{+0.41}_{-0.38}$	2838^{+189}_{-157}	-3261^{+6143}_{-784}	$-0.229^{+0.768}_{-1.419}$

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 $A_{obs} \gg 1.0$

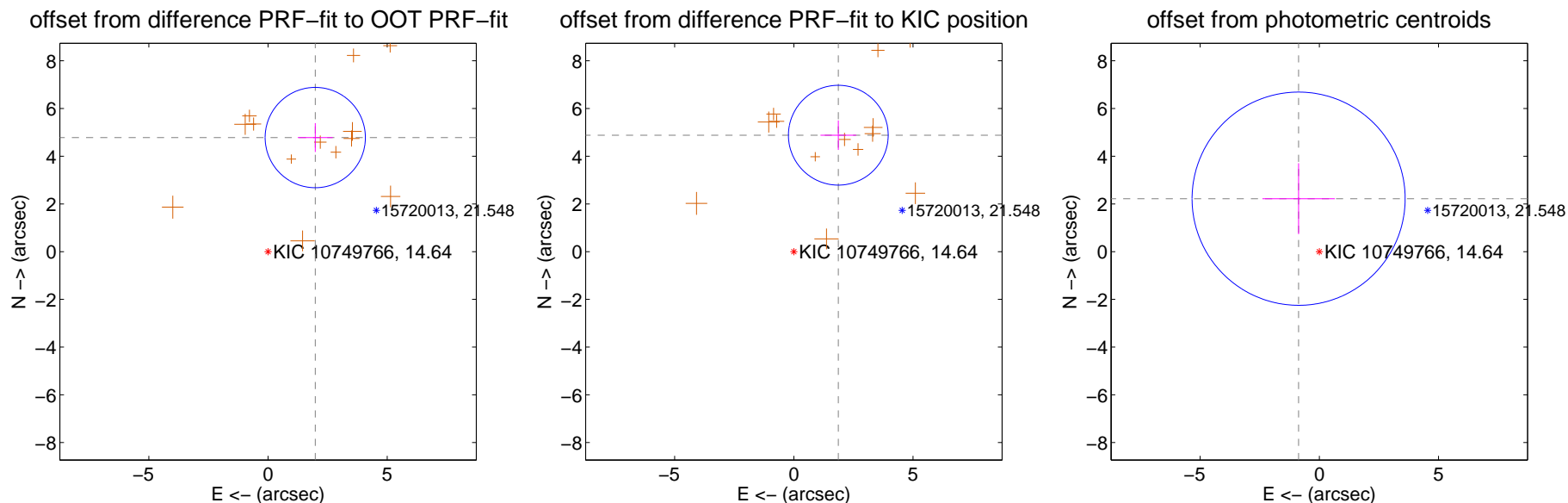
DV Centroid Data

Supplemental centroid analysis for 010749766-01. Kepler magnitude: 14.64. Transit SNR 9.94

There are 0 quarters with good PRF difference image offsets

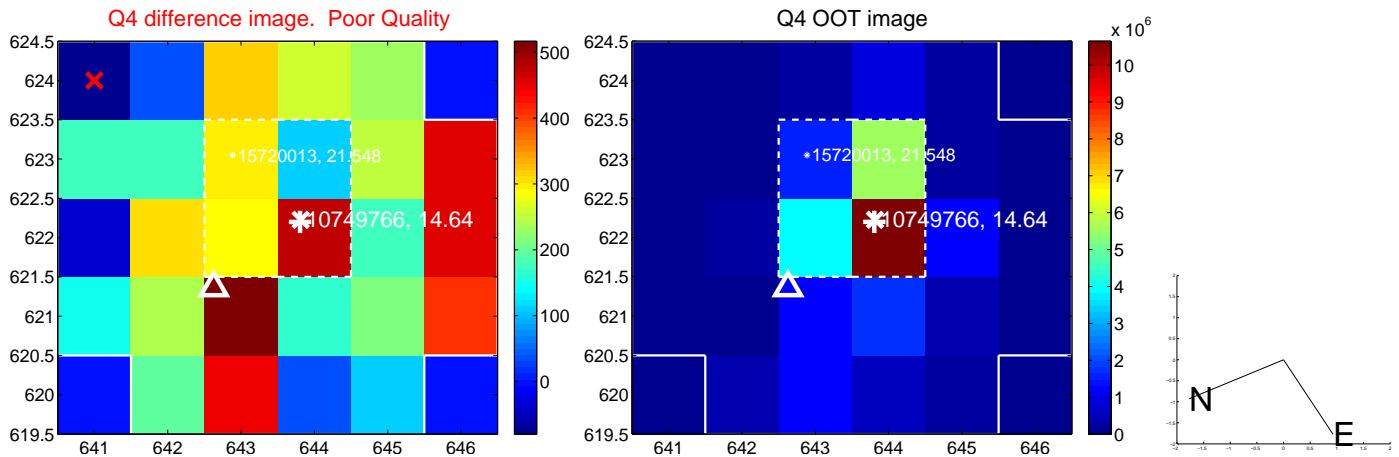
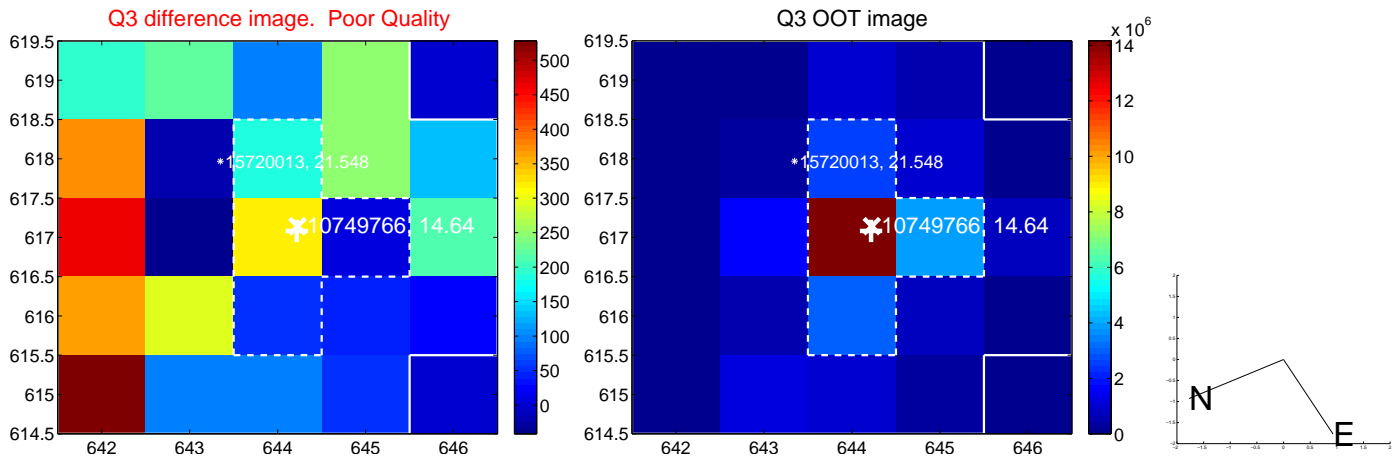
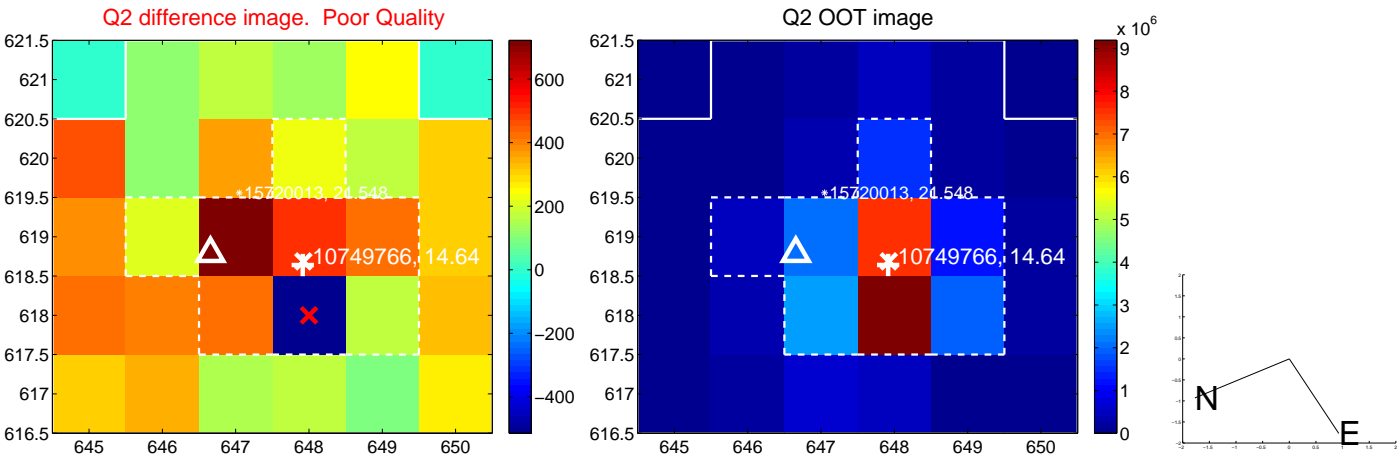
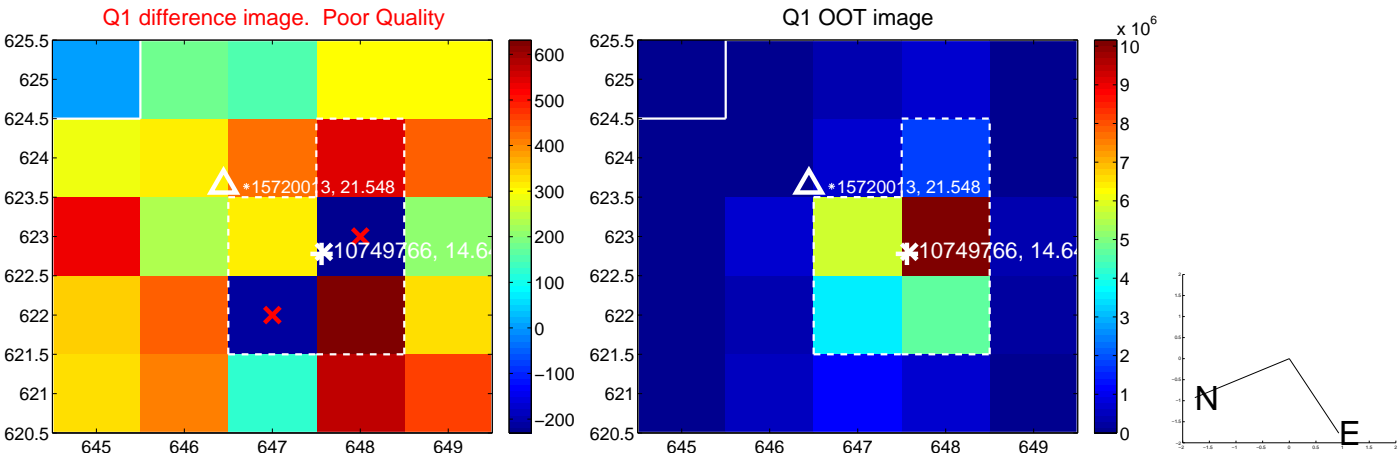
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.175 ± 0.701	7.39	-1.981 ± 0.734	4.781 ± 0.607
PRF-fit source offset from KIC position	5.224 ± 0.697	7.49	-1.865 ± 0.747	4.880 ± 0.618
photometric centroid source offset	2.38 ± 1.49	1.60	0.87 ± 1.52	2.22 ± 1.48

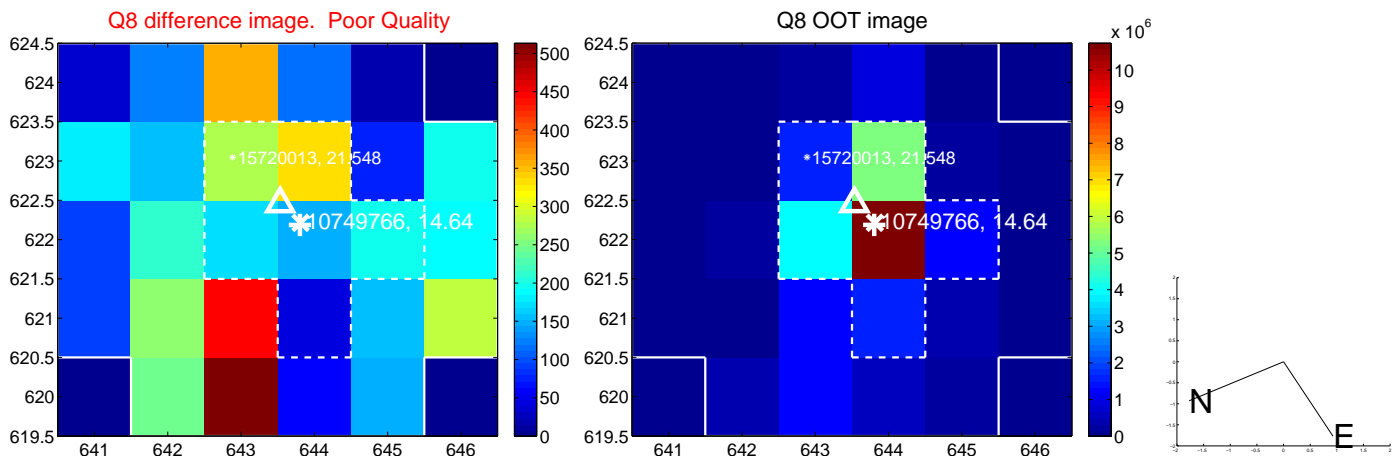
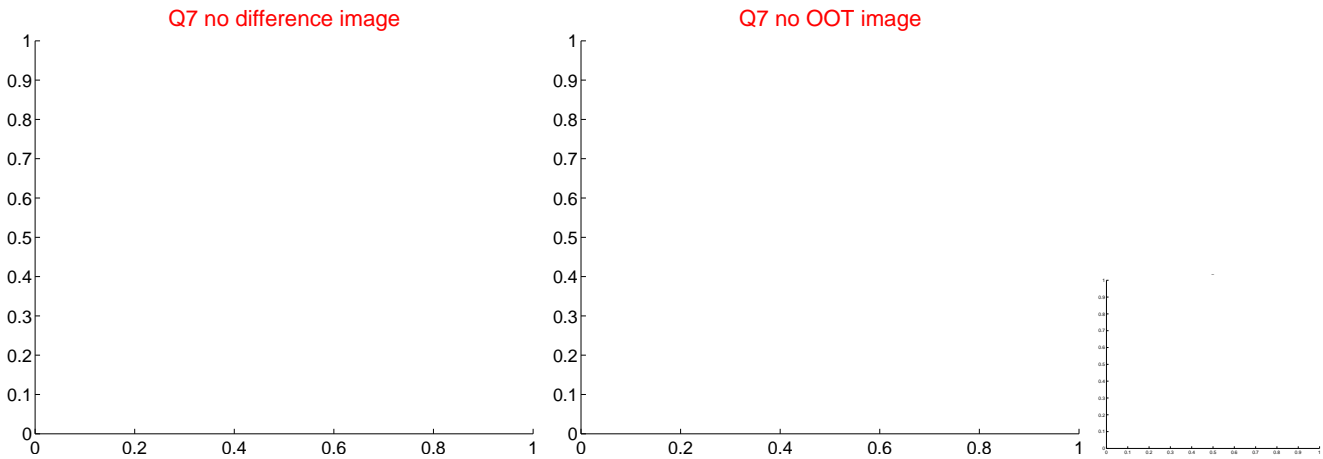
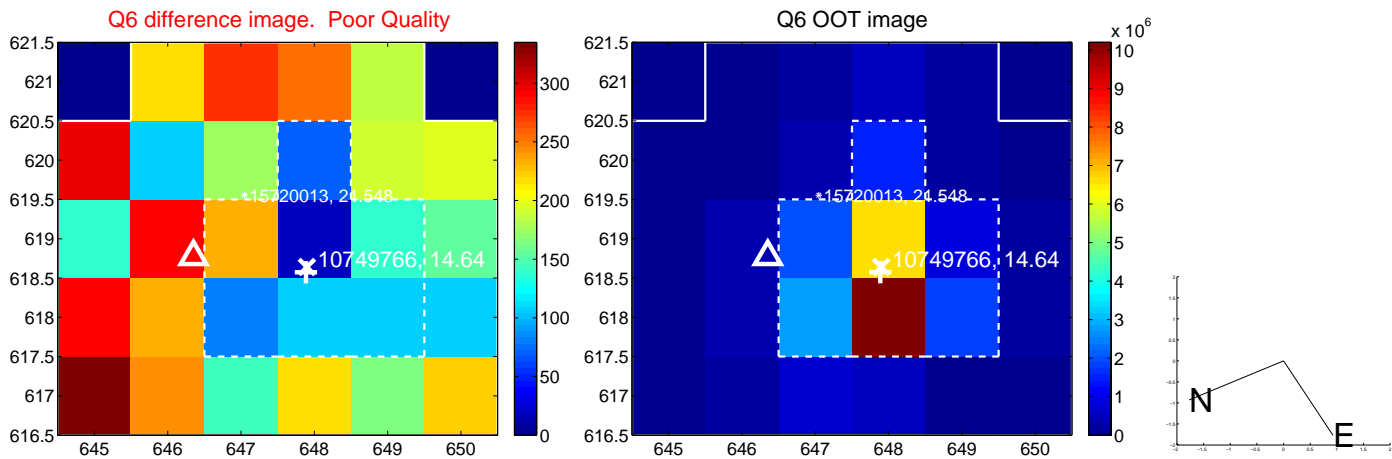
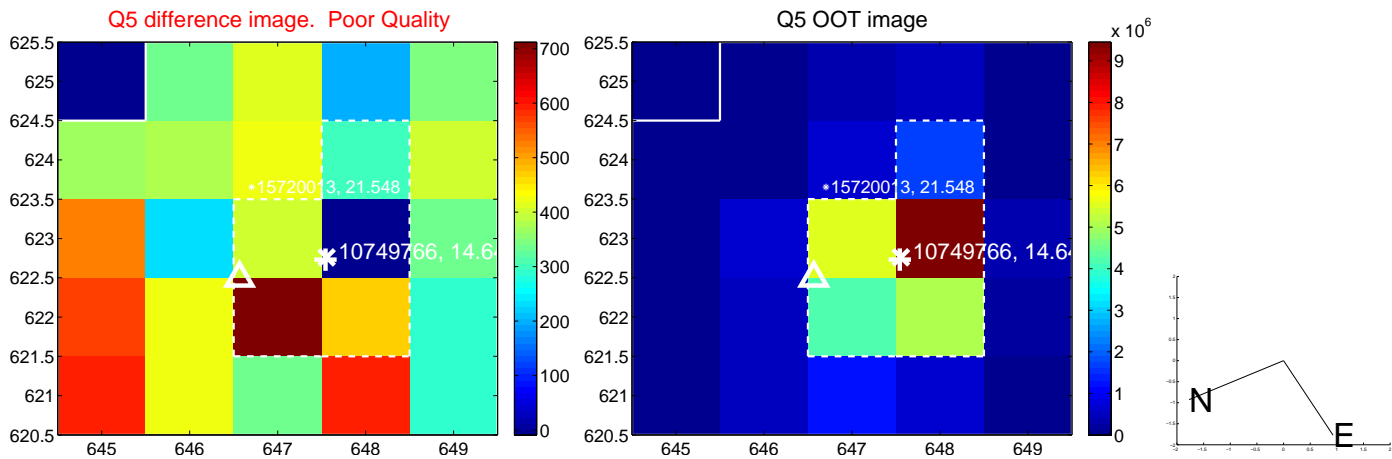


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

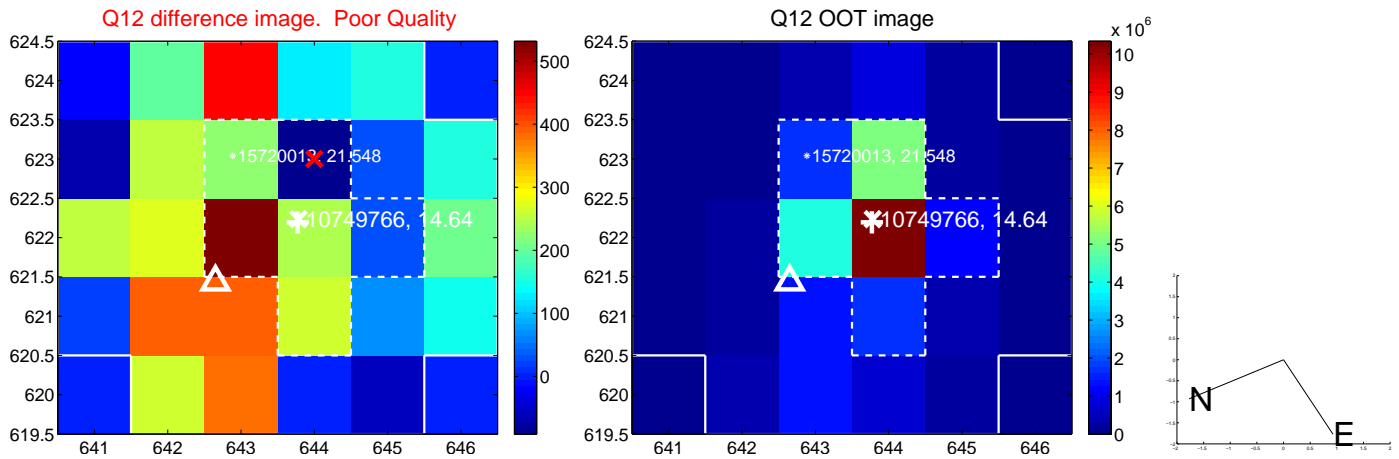
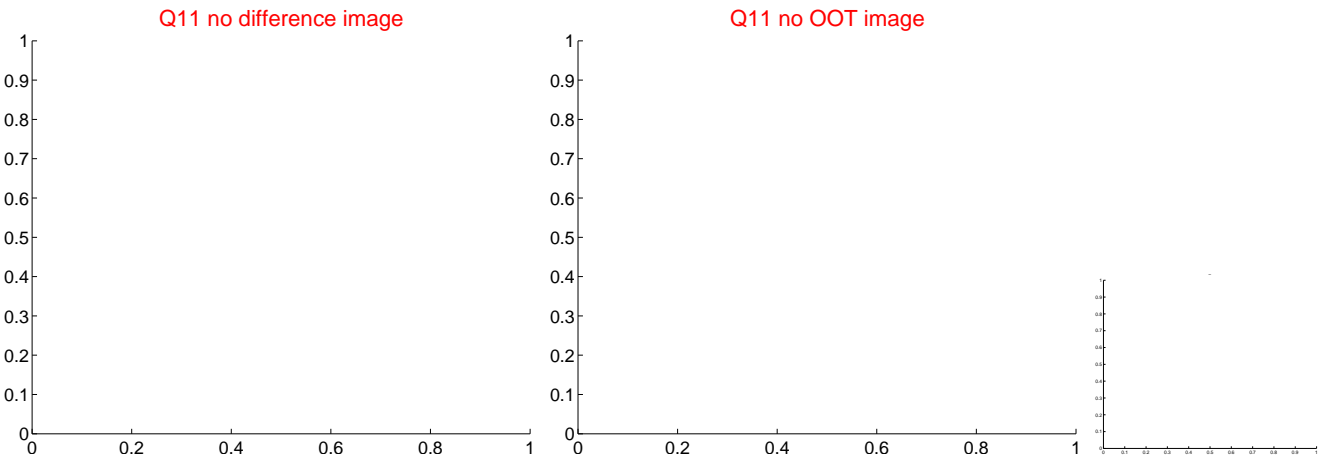
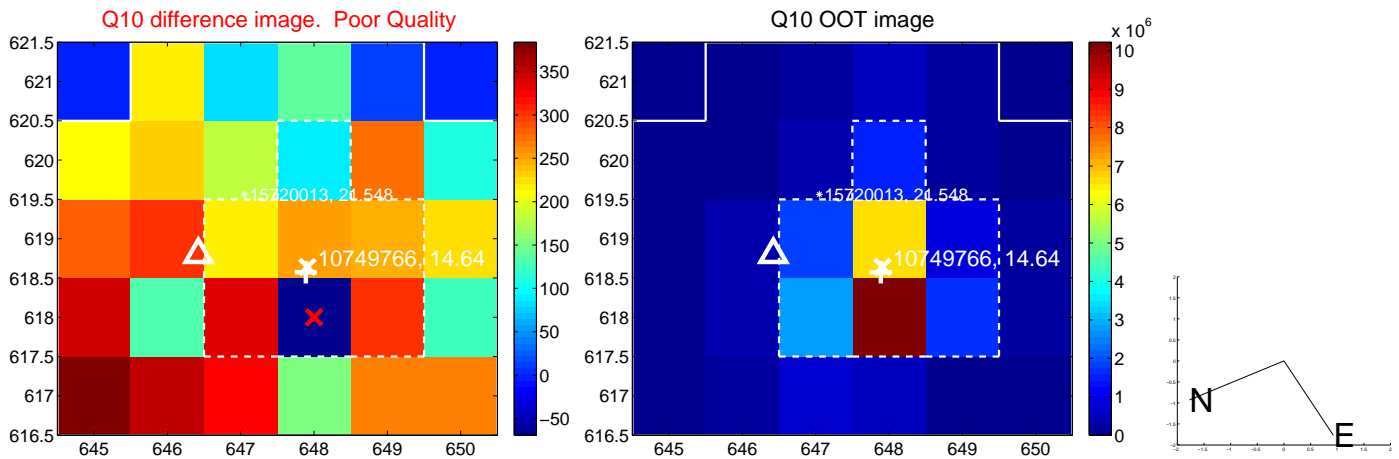
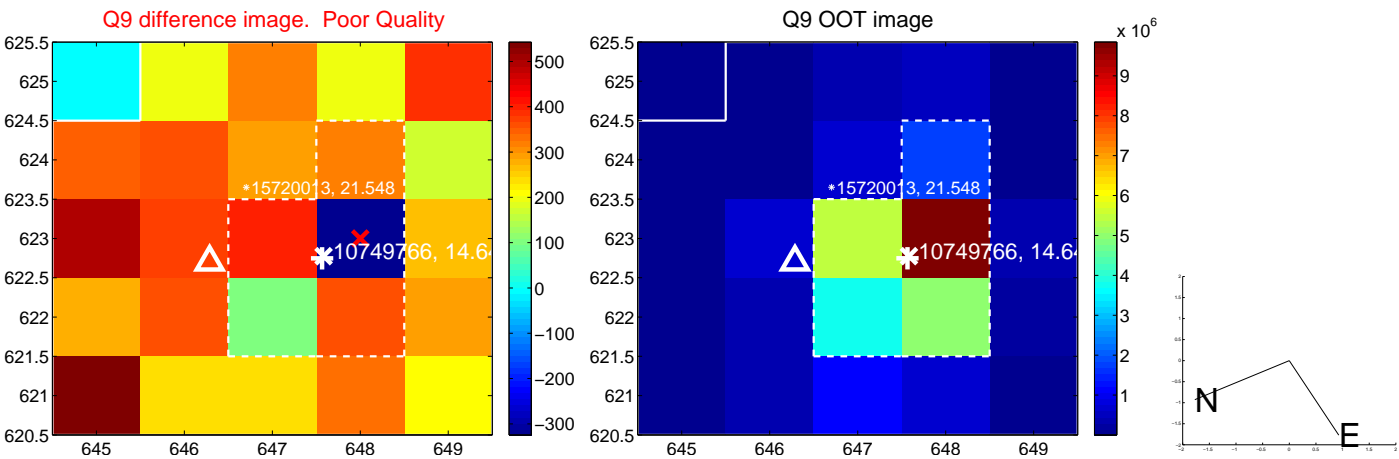
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



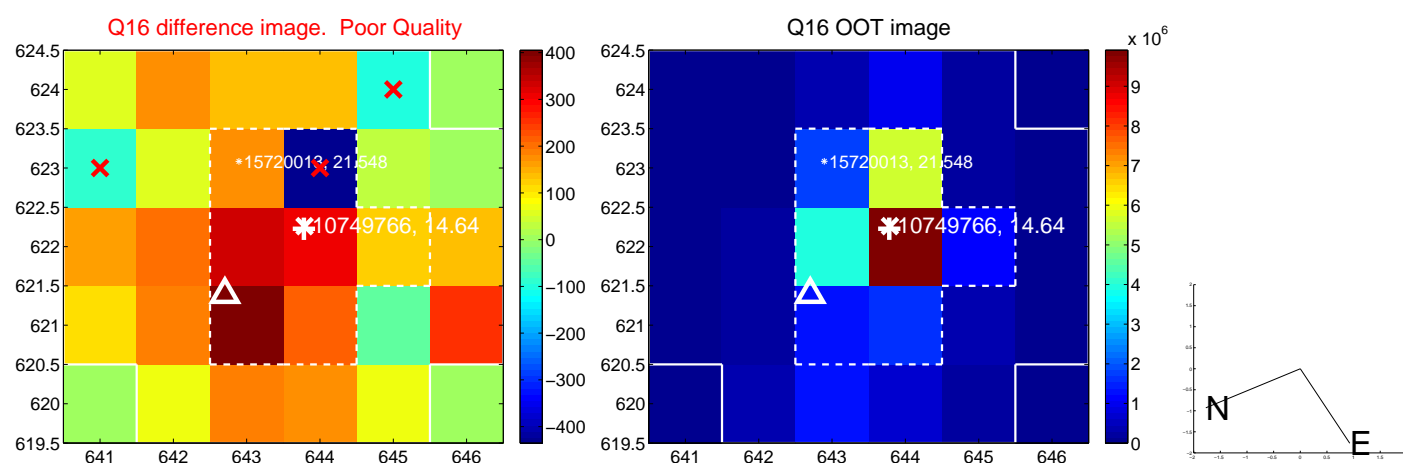
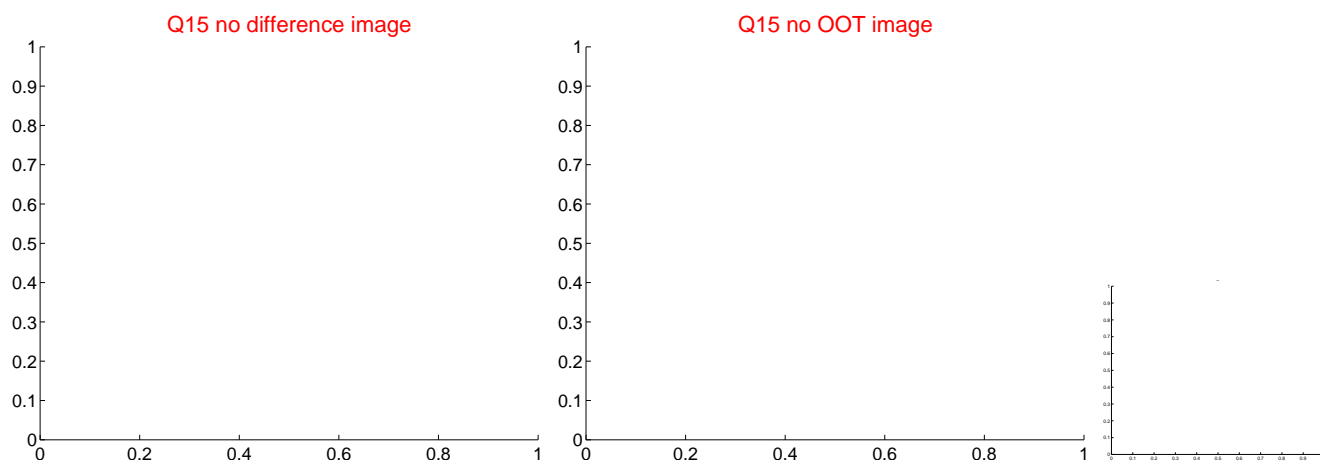
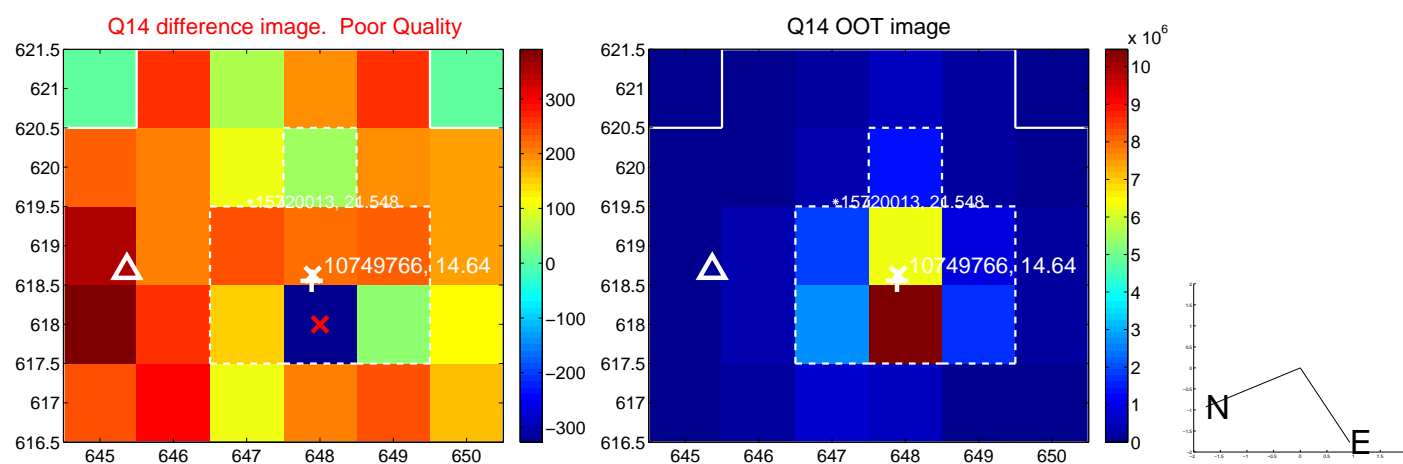
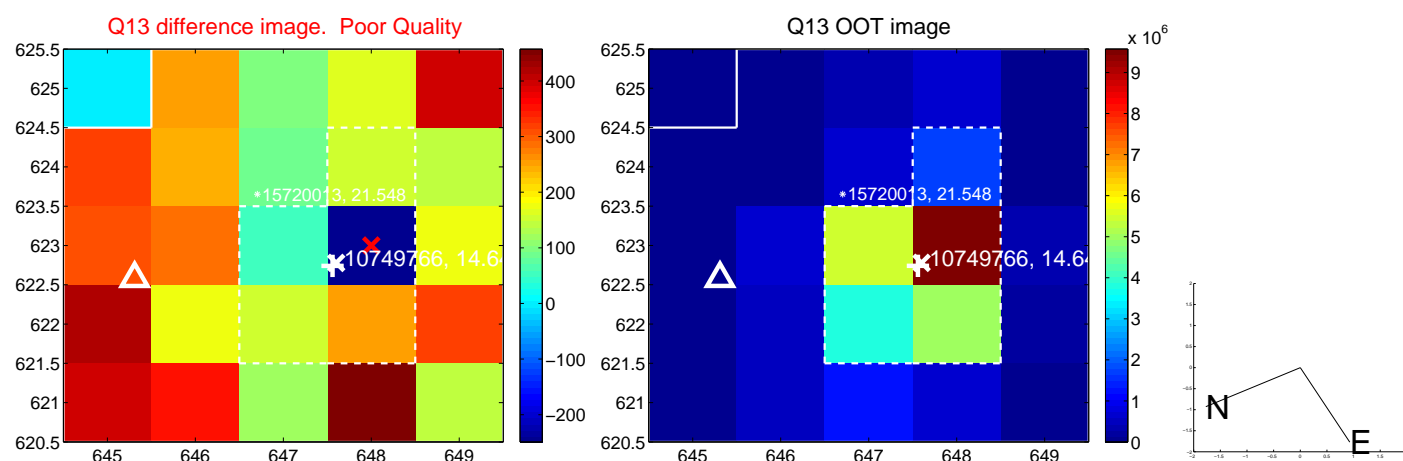
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



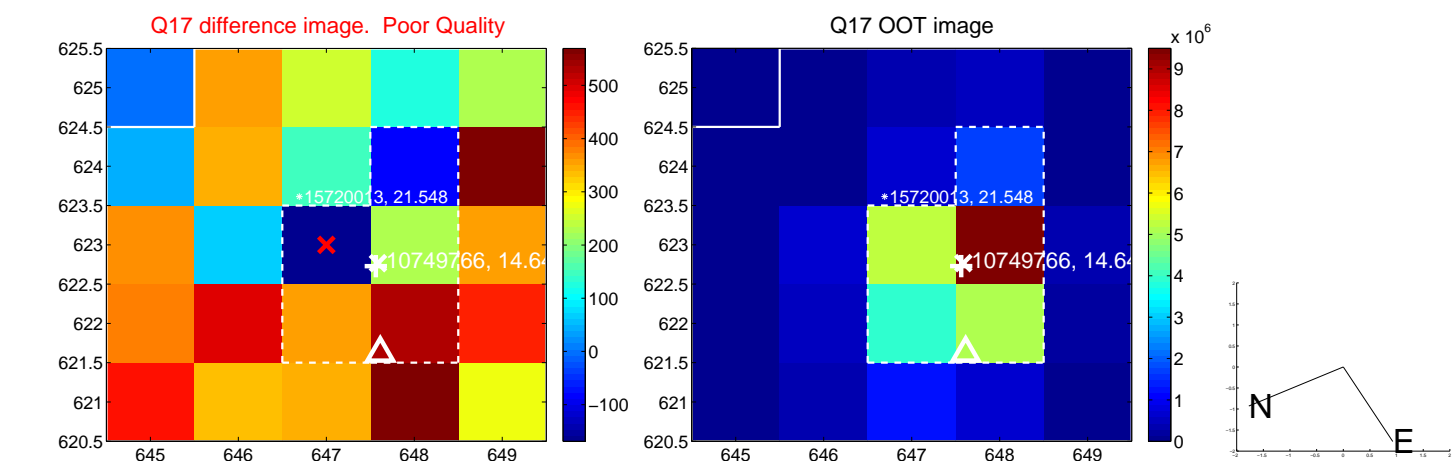
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



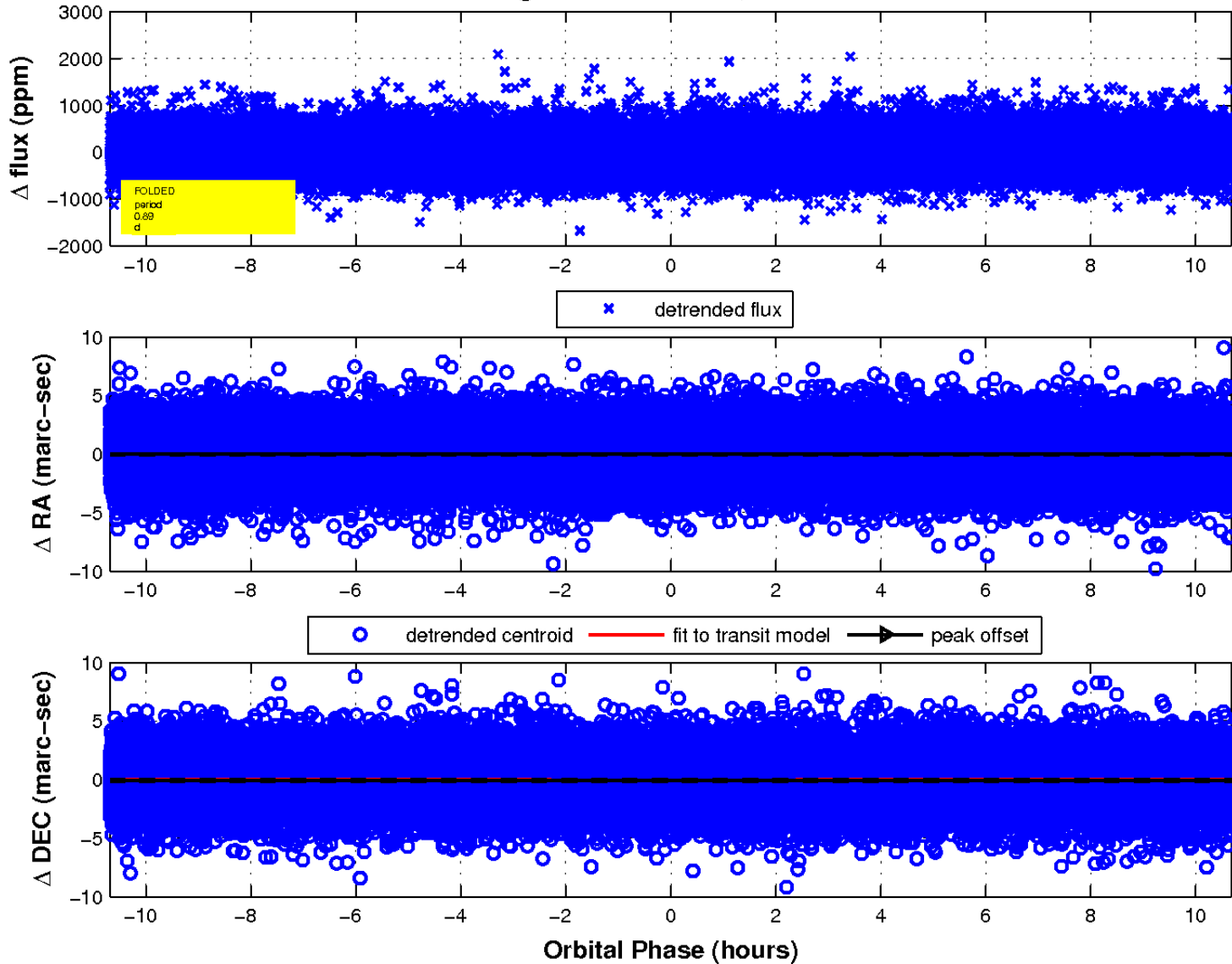
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

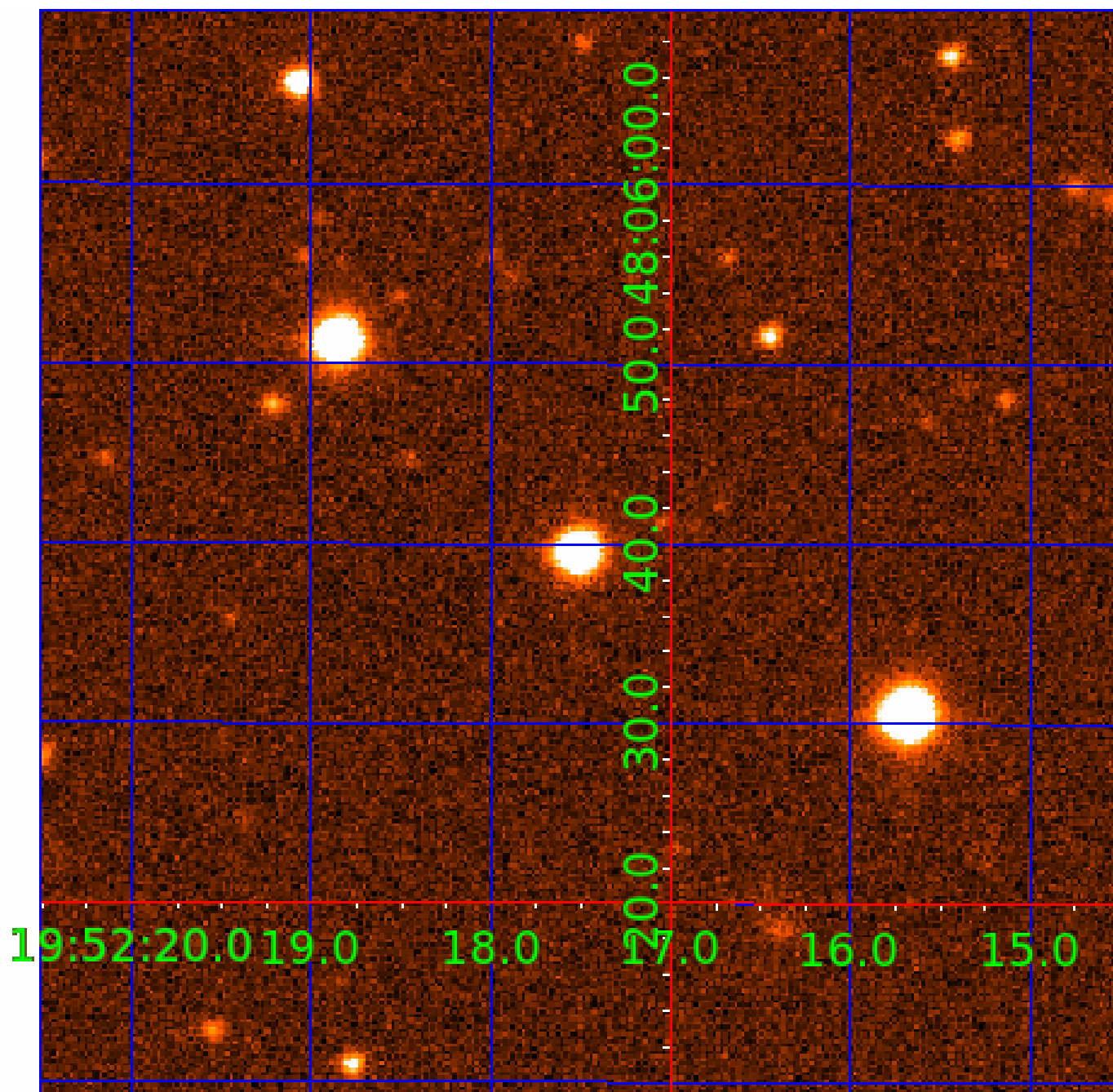


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010749766

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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Robovetter Results

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010749766-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

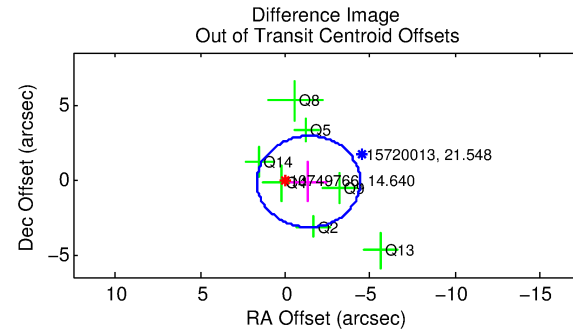
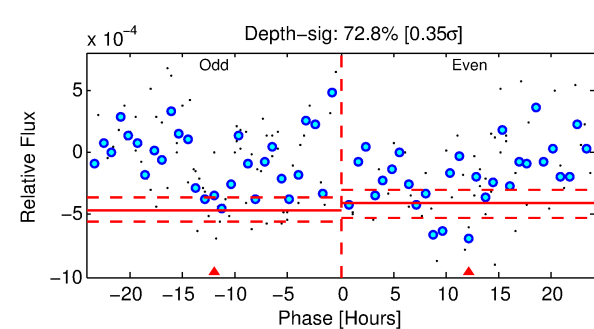
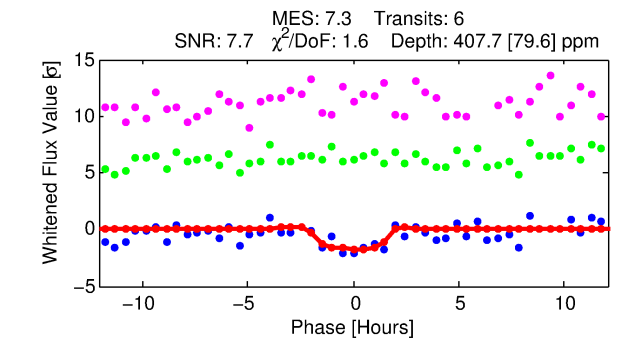
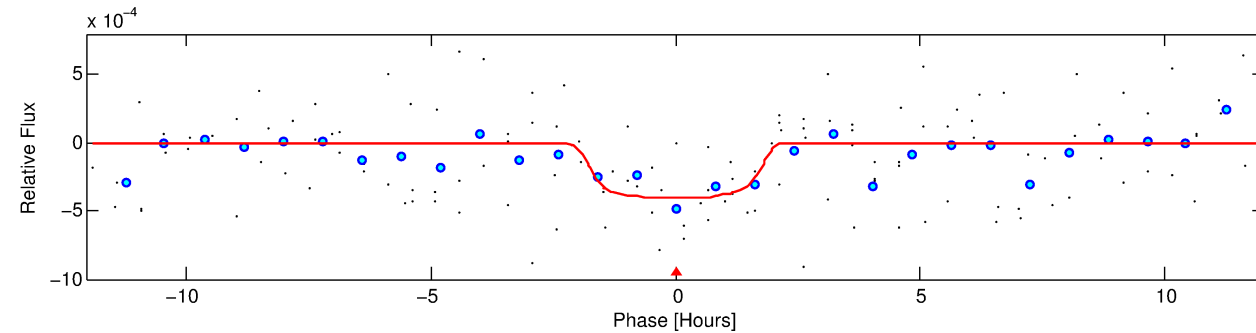
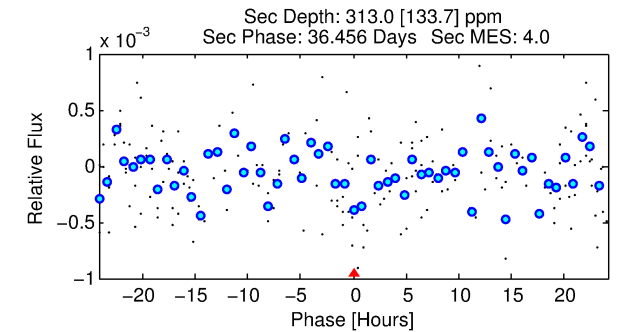
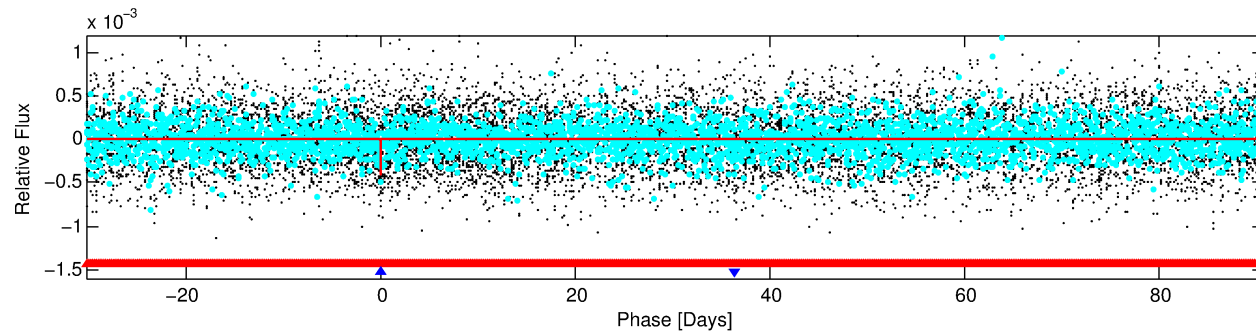
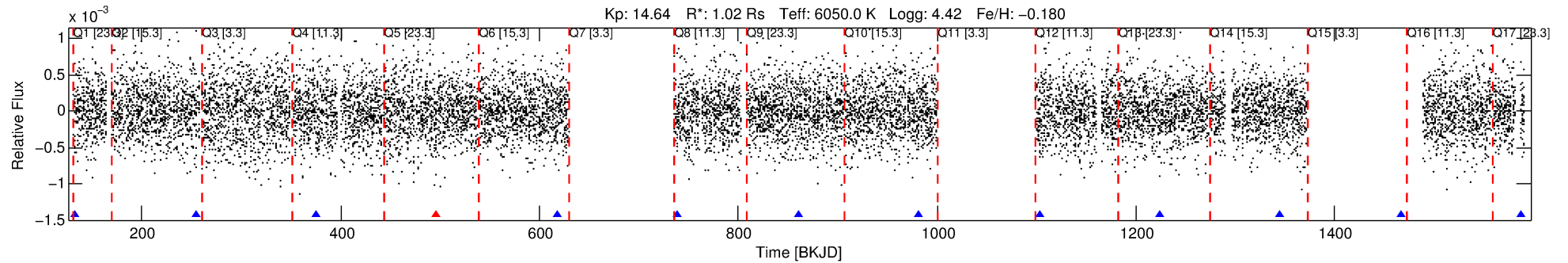
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010749766-02

No Significant Match Found

DV One-Page Summary

KIC: 10749766 Candidate: 2 of 2 Period: 121.214 d



DV Fit Results:

Period = 121.21429 [0.00239] d
Epoch = 133.0781 [0.0160] BKJD
Rp/R* = 0.0218 [0.0098]
a/R* = 112.55 [246.59]
b = 0.90 [0.48]
Seff = 5.39 [2.13]
Teff = 389 [38] K
Rp = 2.41 [1.31] Re
a = 0.4794 [0.1231] AU
Ag = 6802.30 [7216.72] [0.94 σ]
Teffp = 5456 [1367] K [3.71 σ]

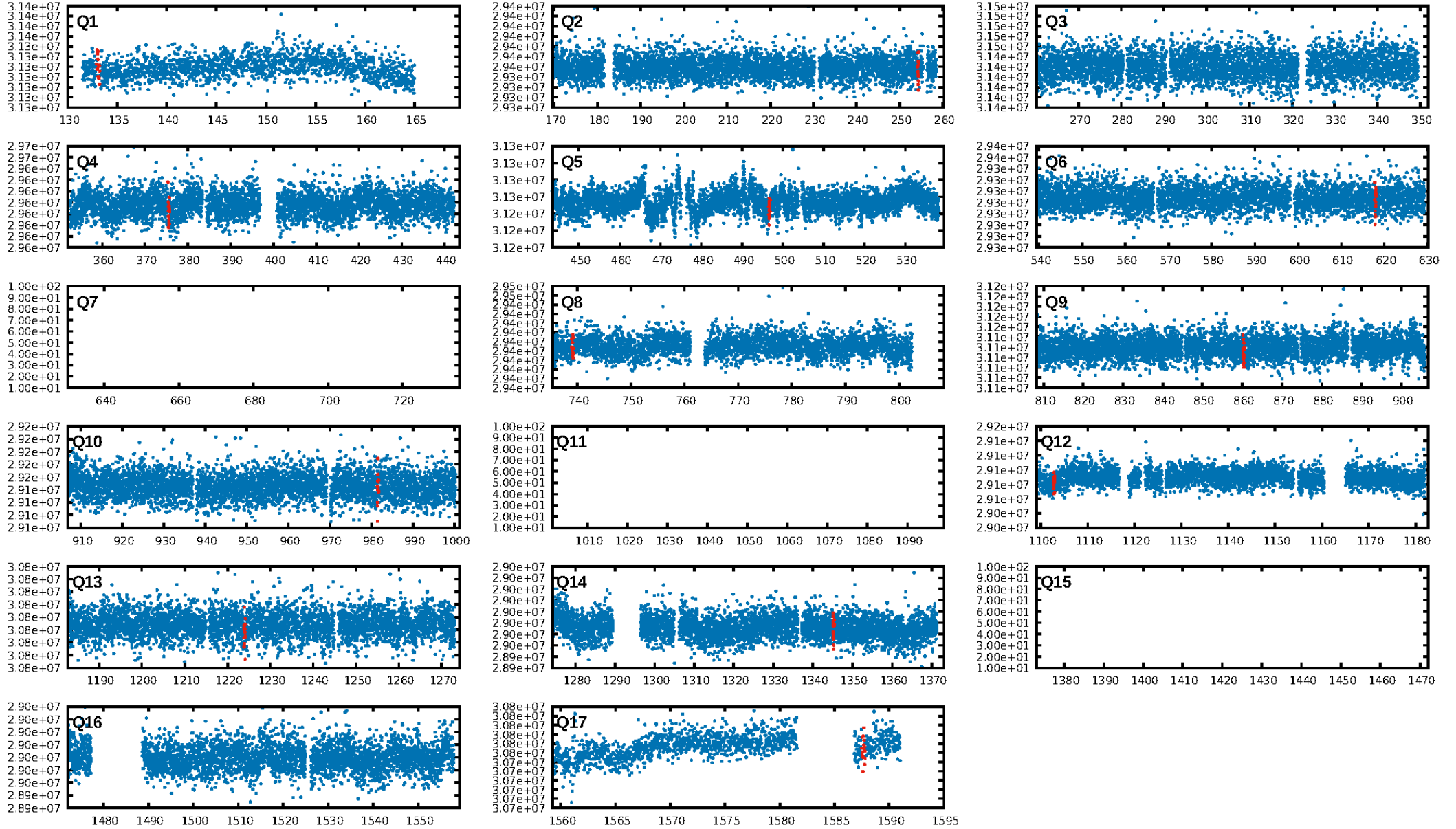
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [441.97 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 28.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.33e-09
RollingBand-fgt: 0.80 [4/5]
GhostDiagnostic-chr: -2.193
Centroid-sig: 56.8%
Centroid-so: 0.732 arcsec [0.51 σ]
OotOffset-rm: 1.387 arcsec [1.37 σ]
OotOffset-st: 2/0/2/3 [7]
KicOffset-rm: 1.247 arcsec [1.19 σ]
KicOffset-st: 2/0/2/3 [7]
DiffImageQuality-fgm: 0.14 [1/7]
DiffImageOverlap-fno: 0.00 [0/11]

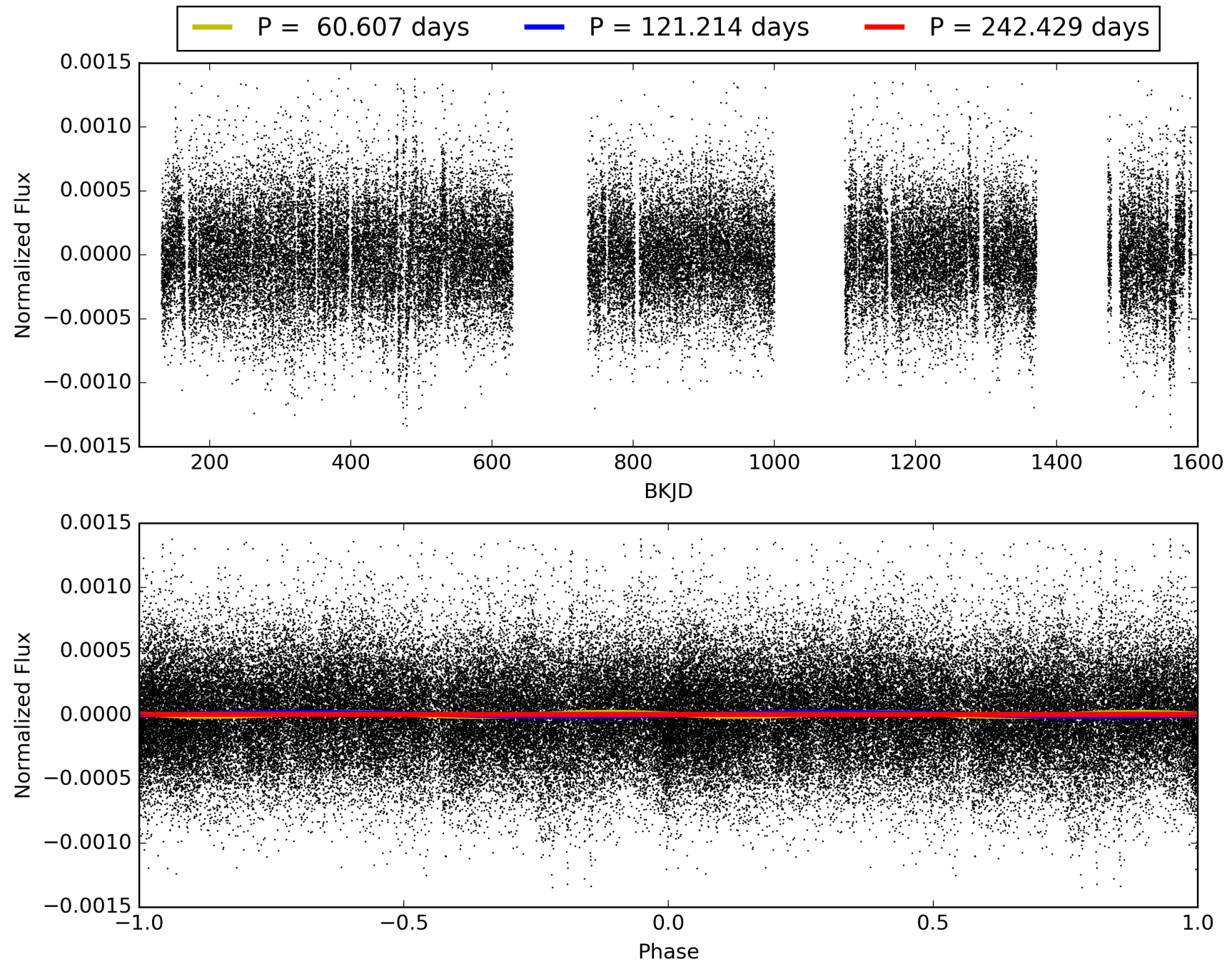
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:43:30 Z

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

TCE 010749766-02, PDC Light Curves

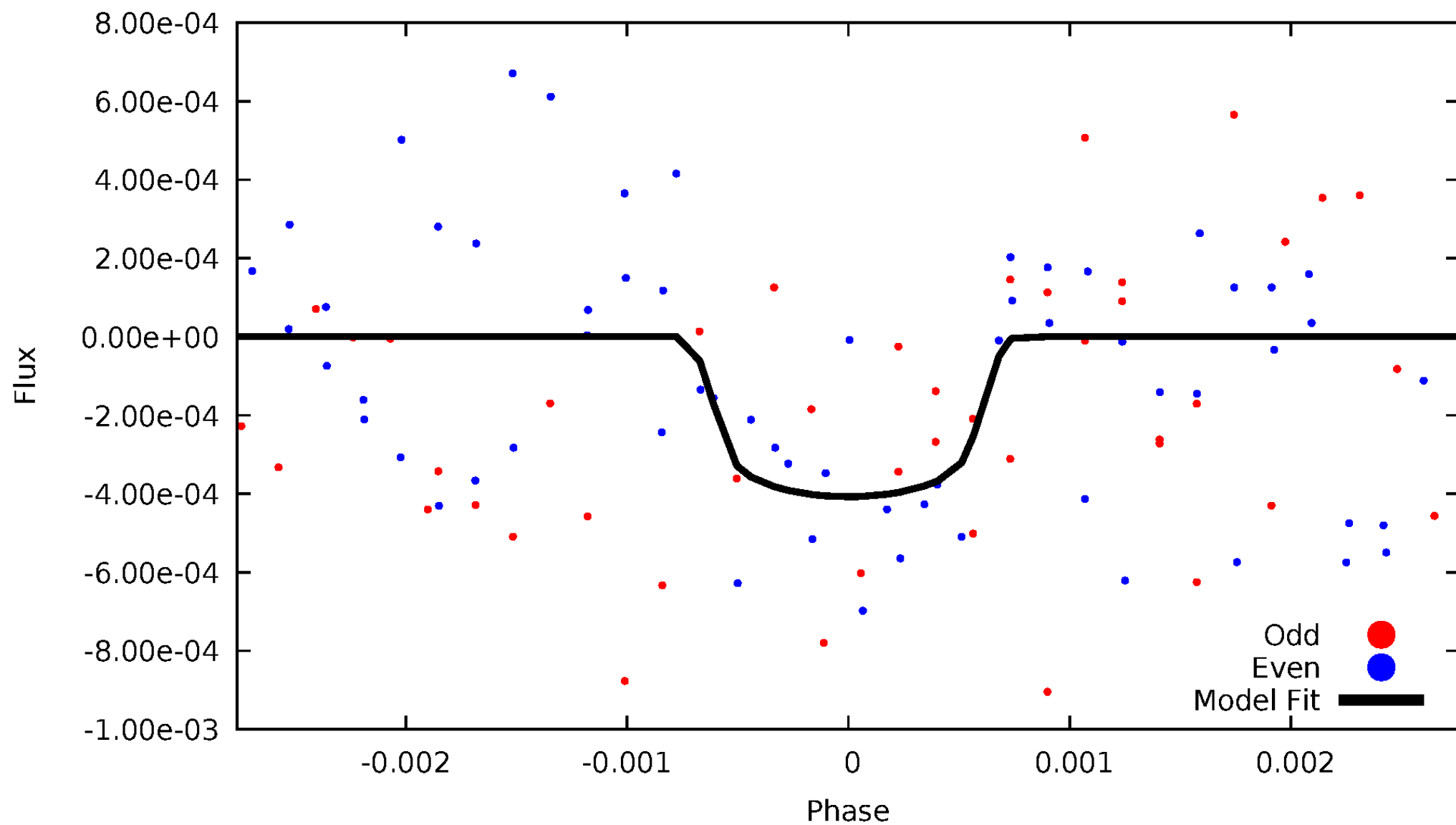


TCE 010749766-02



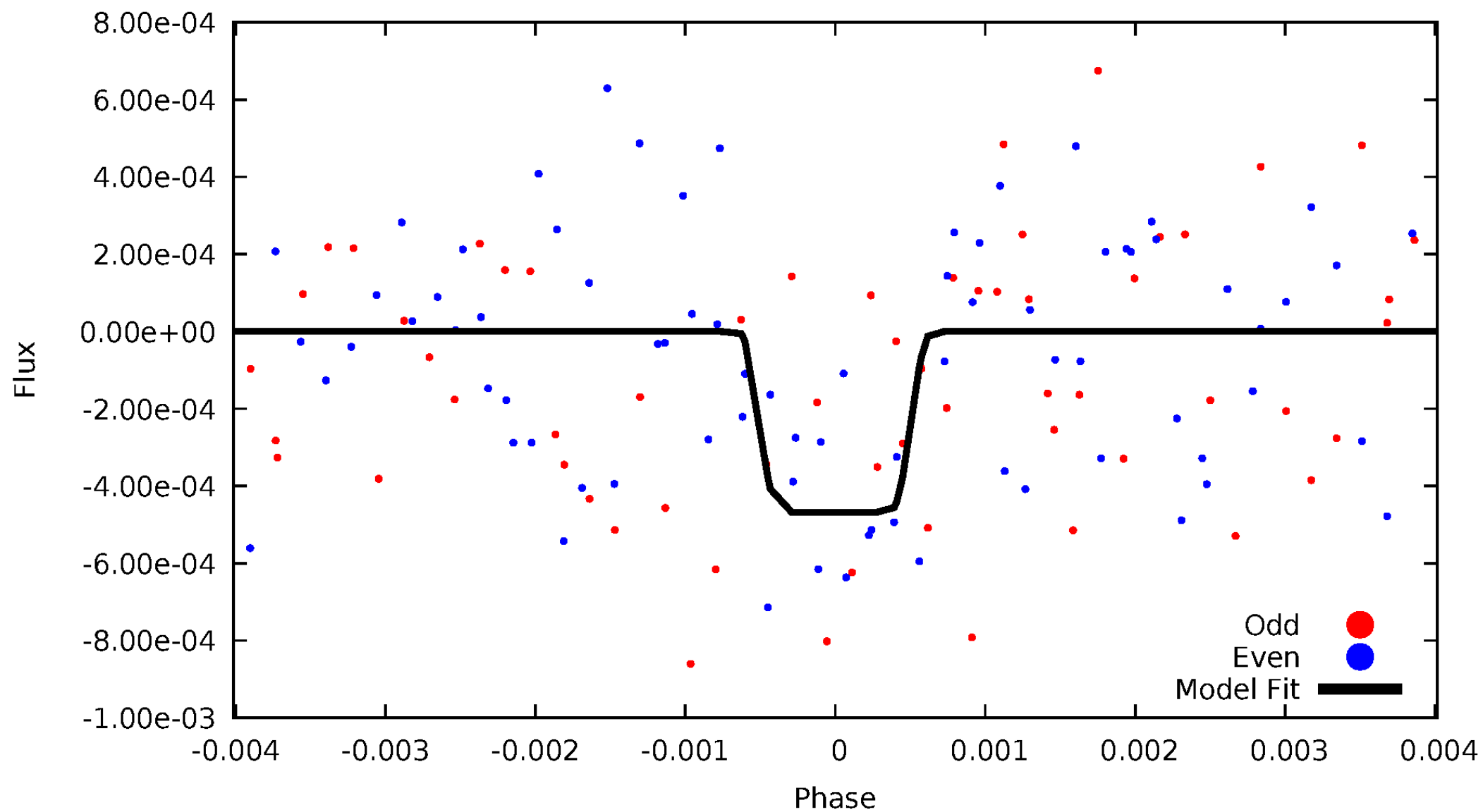
DV Odd/Even

TCE 010749766-02



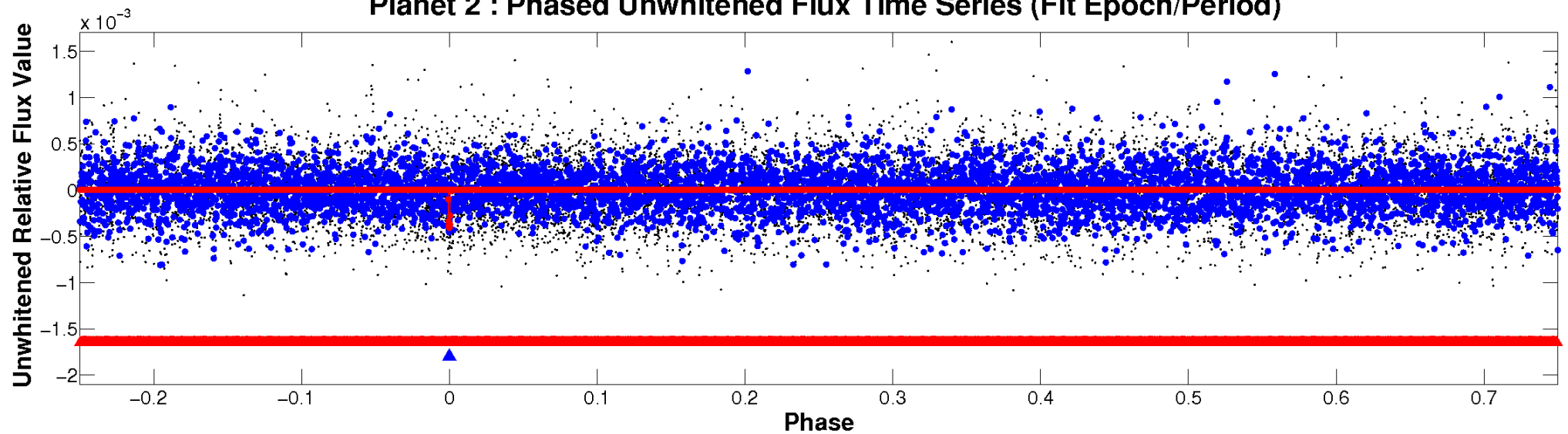
ALT Odd/Even

TCE 010749766-02

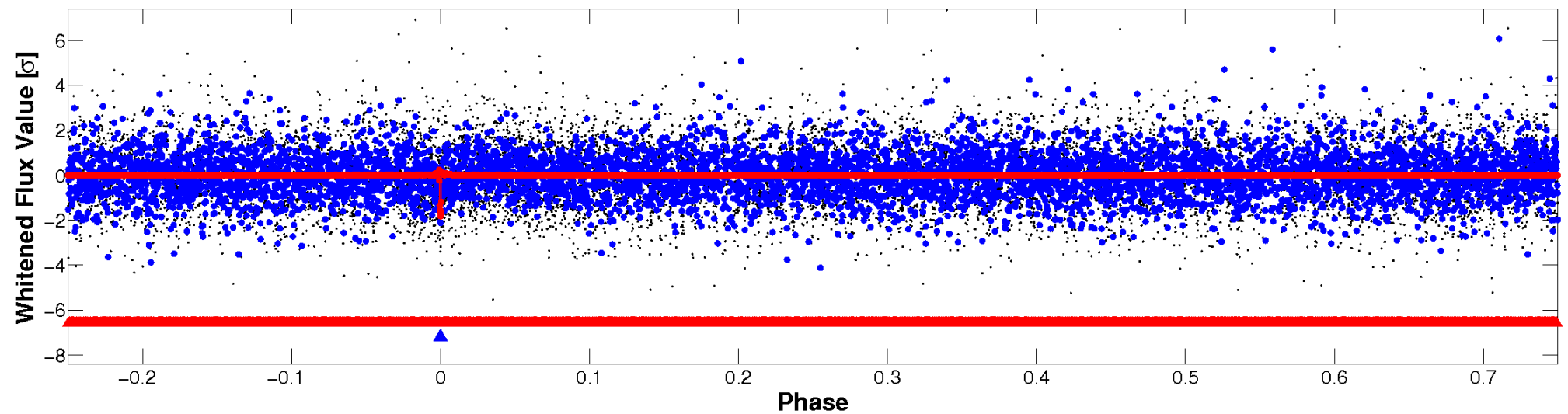


Non-Whitened Vs. Whitened Light Curve

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

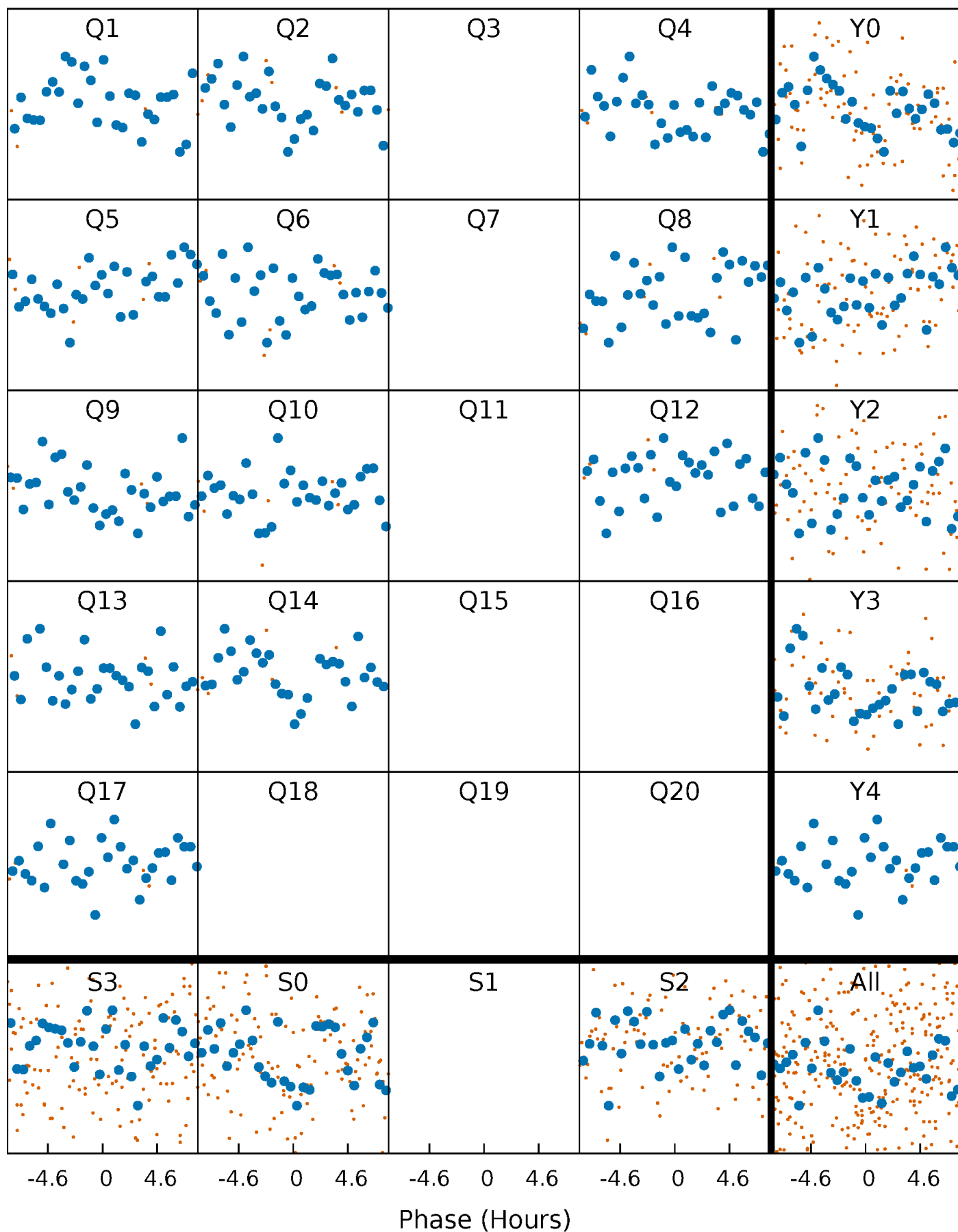


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



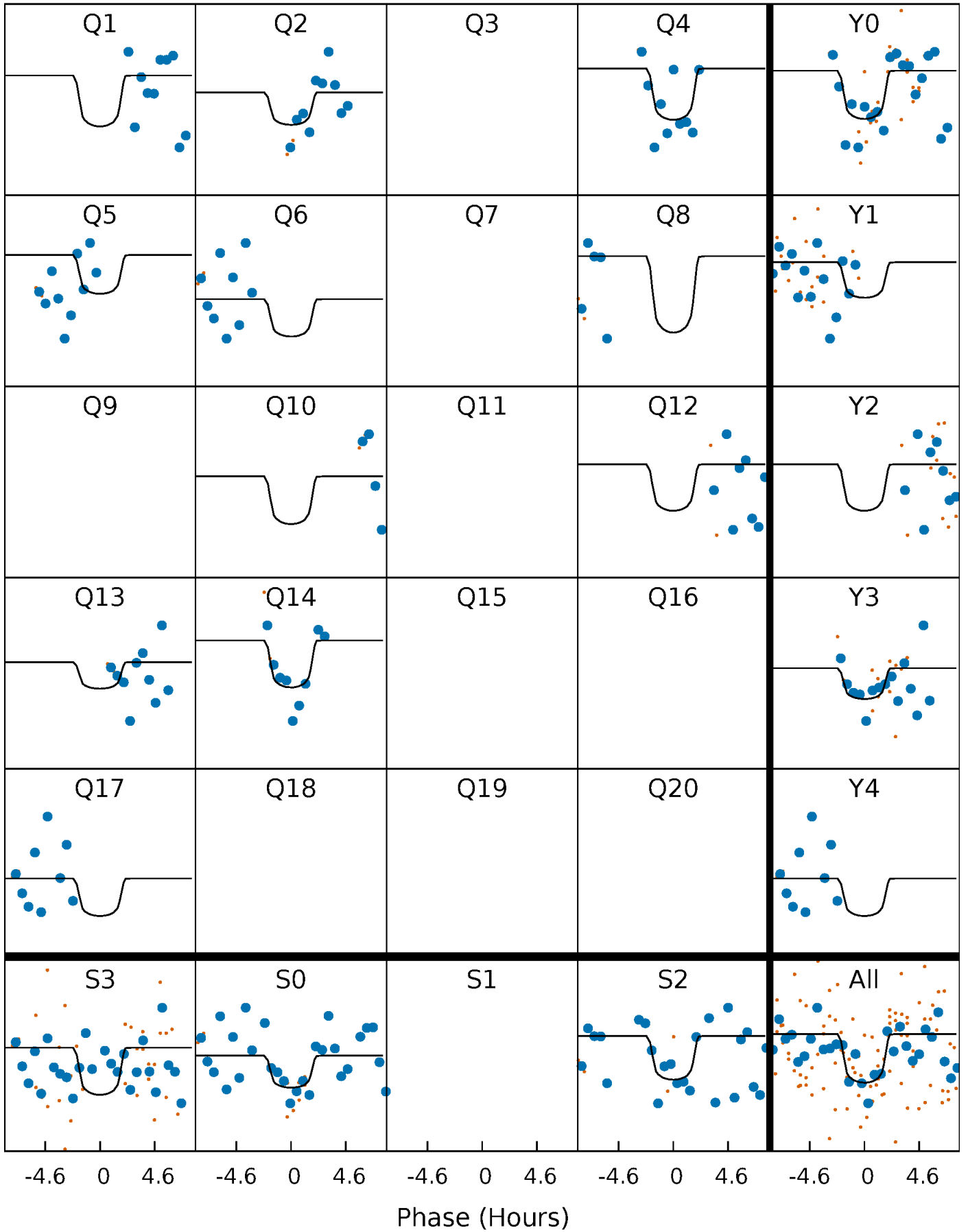
PDC Quarter-Phased Transit Curves

TCE 010749766-02 $P=121.214290$ Days $T_0=133.078131$ (BKJD)



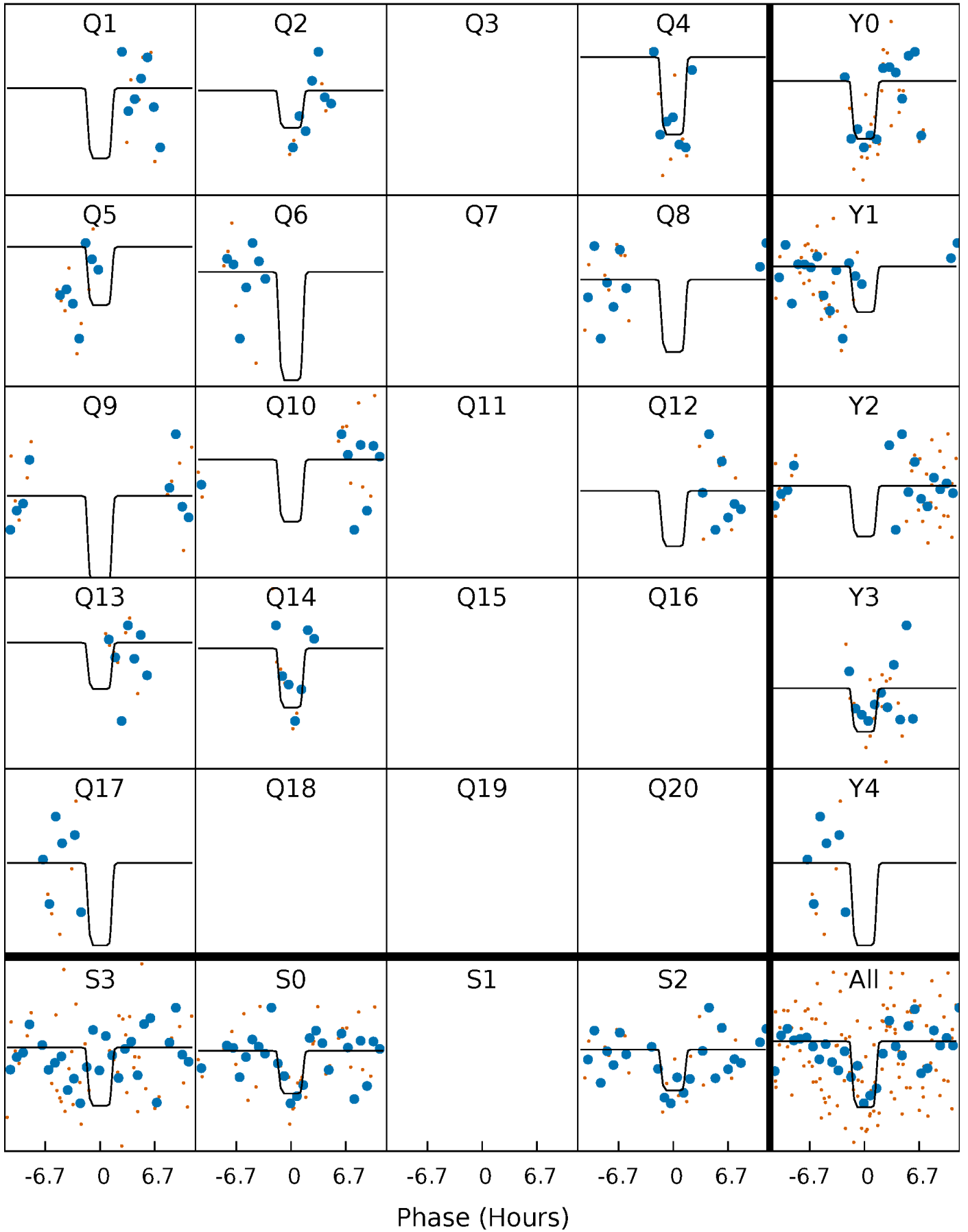
DV Quarter-Phased Transit Curves

TCE 010749766-02 P=121.214290 Days $T_0=133.078131$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

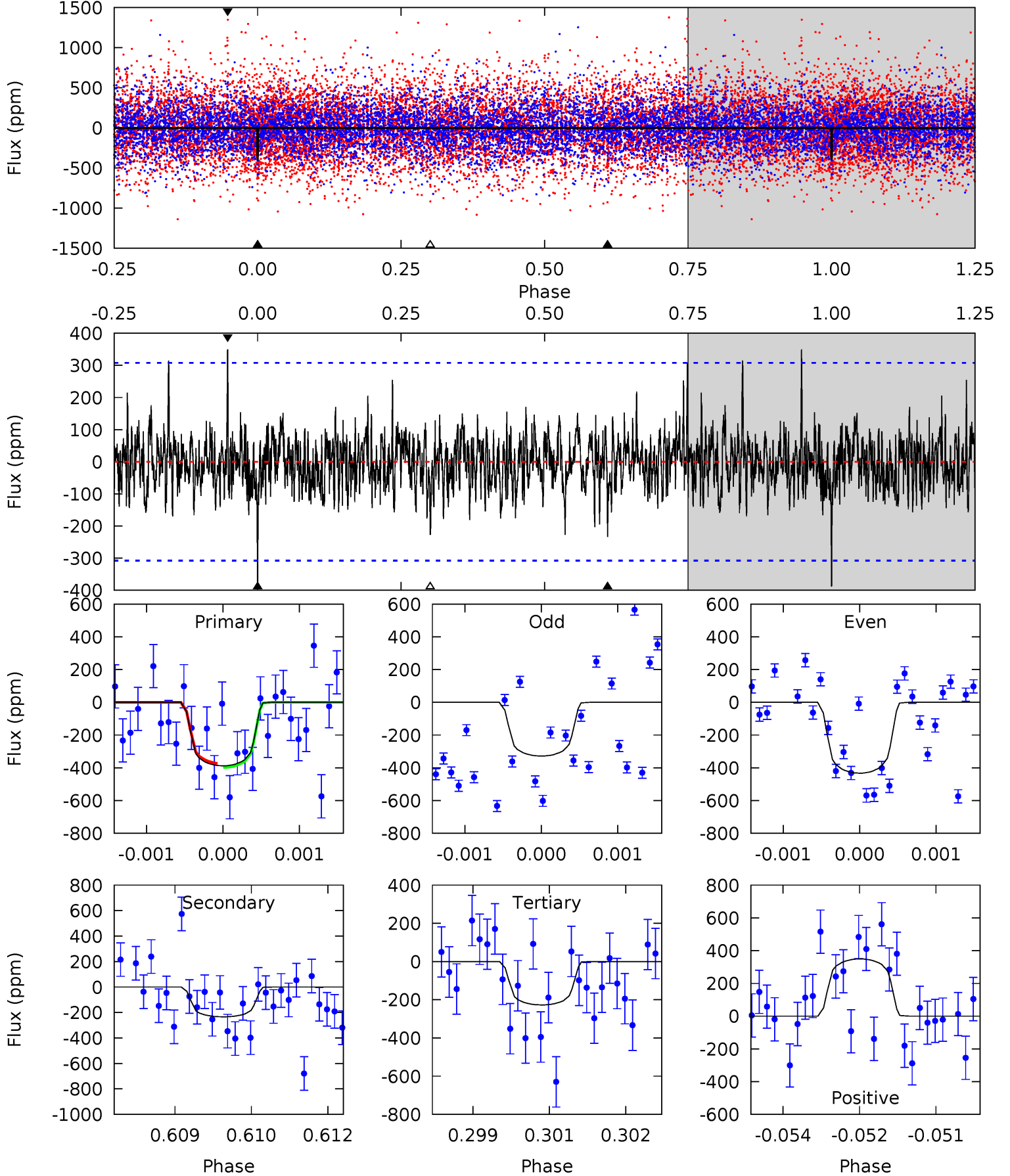
TCE 010749766-02 P=121.214936 Days $T_0=133.070844$ (BKJD)



DV Model-Shift Uniqueness Test

010749766-02, $P = 121.214290$ Days, $E = 11.863841$ Days

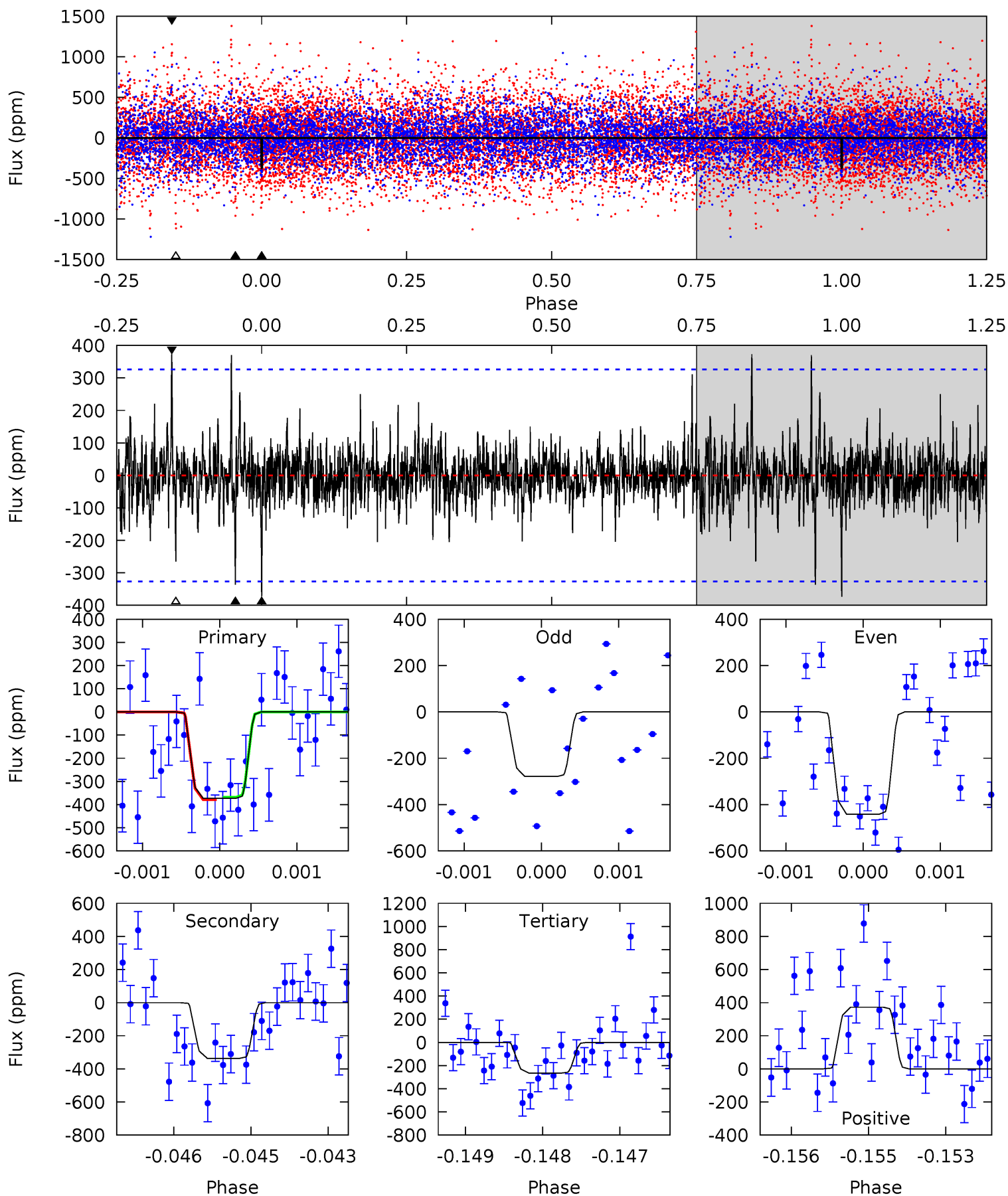
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.80	4.09	3.98	6.12	5.39	3.19	1.22	2.82	0.68	0.12	-2.03	0.91	0.80	0.47	0.21



Alt Model-Shift Uniqueness Test

010749766-02, P = 121.214936 Days, E = 11.855908 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.17	5.56	4.38	6.16	5.40	3.20	1.07	1.80	0.01	1.18	-0.60	1.33	0.80	0.50	0.07



Stellar Parameters For KIC 010749766

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6050^{+180}_{-198}	$4.424^{+0.087}_{-0.203}$	$-0.180^{+0.300}_{-0.300}$	$1.016^{+0.311}_{-0.133}$	$0.997^{+0.143}_{-0.117}$	$1.341^{+0.521}_{-0.721}$
	+3%/-3%	+2%/-5%	+167%/-167%	+31%/-13%	+14%/-12%	+39%/-54%
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 010749766-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-234 ± 57	$2.46^{+1.20}_{-1.05}$	551^{+38}_{-28}	5135^{+1704}_{-755}	4696^{+10574}_{-2635}
Alt.	-336 ± 61	$2.48^{+1.22}_{-1.09}$	548^{+44}_{-27}	5599^{+1855}_{-943}	6895^{+14658}_{-3954}

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 $A_{obs} \gg 1.0$

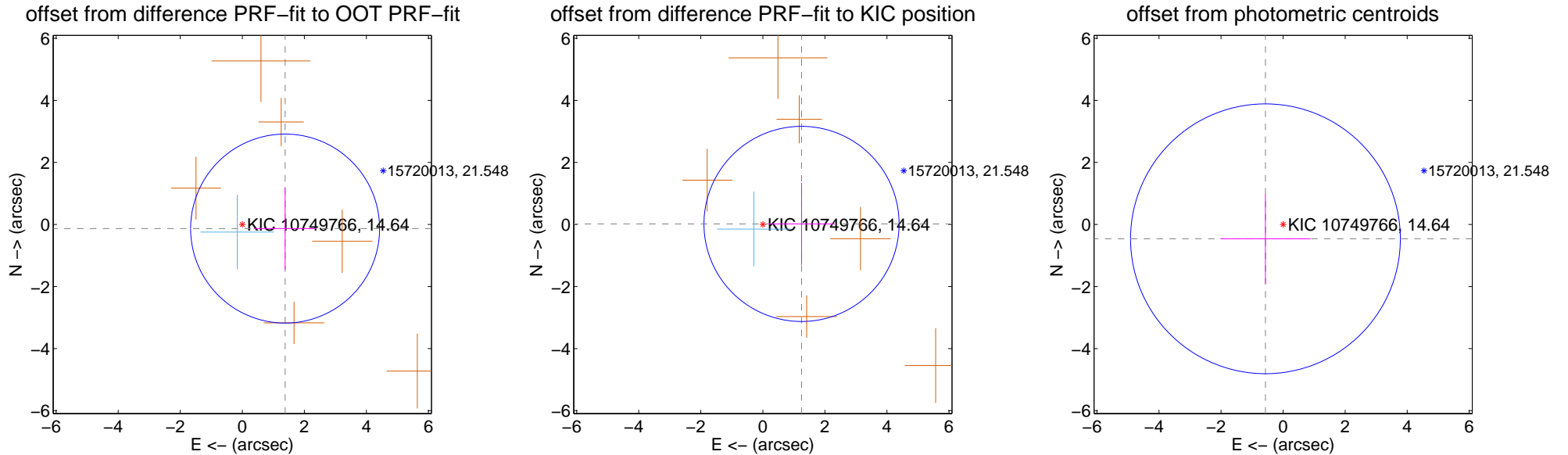
DV Centroid Data

Supplemental centroid analysis for 010749766-02. Kepler magnitude: 14.64. Transit SNR 7.70

There are 1 quarters with good PRF difference image offsets

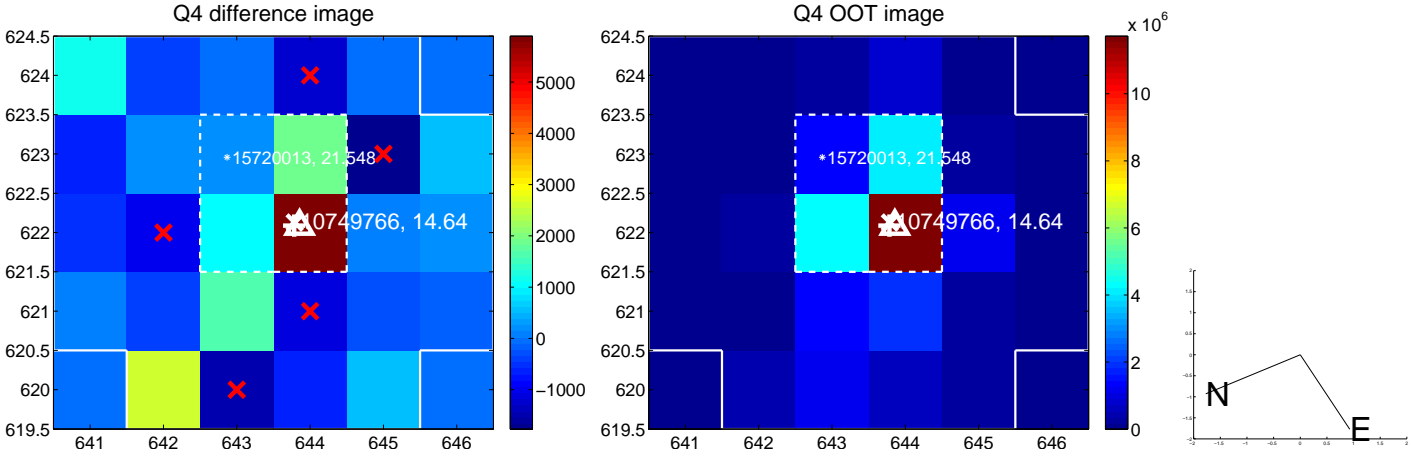
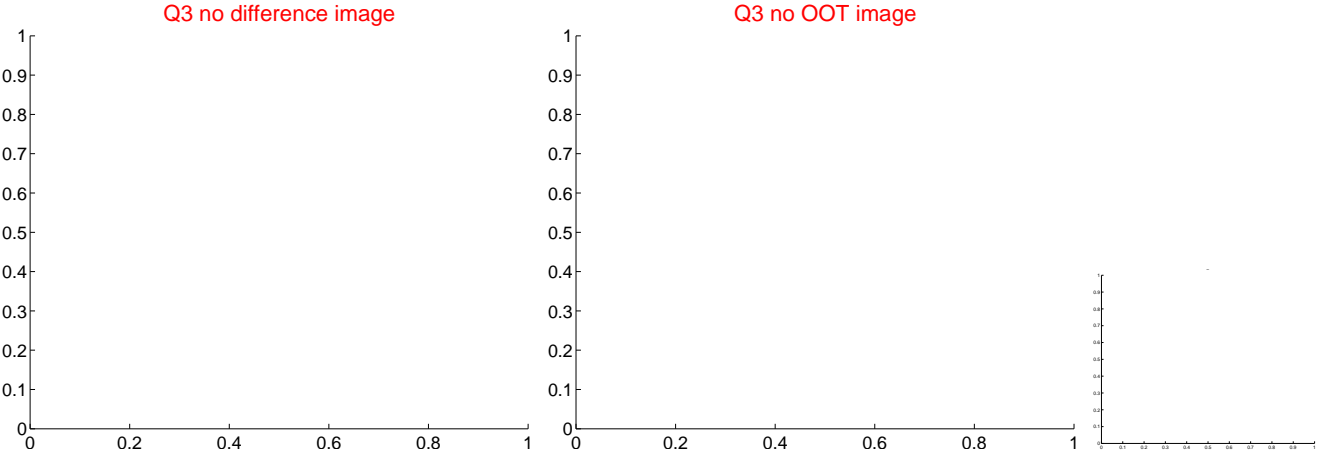
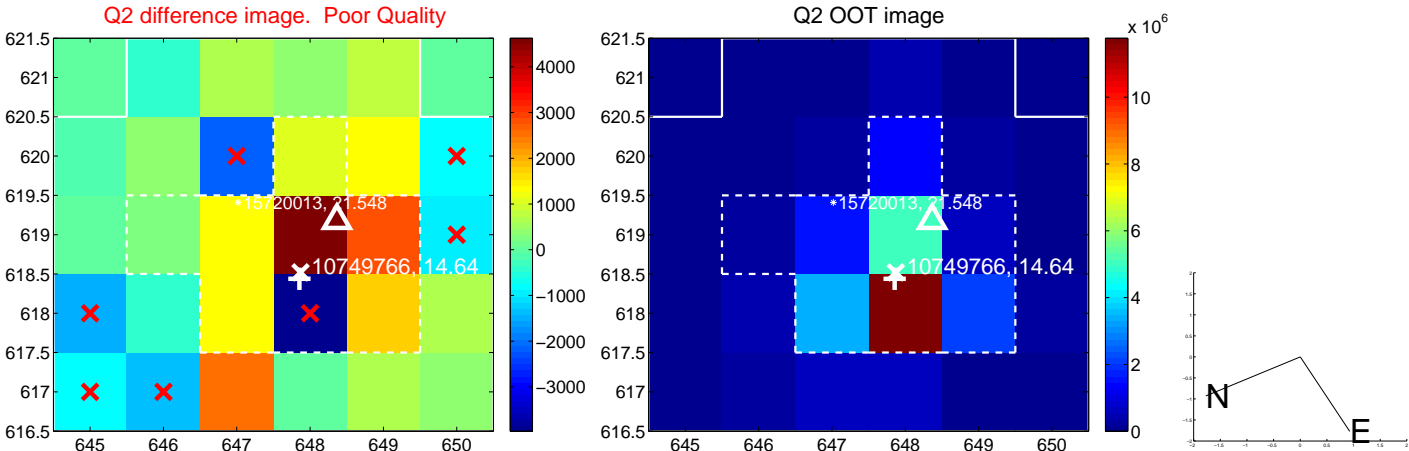
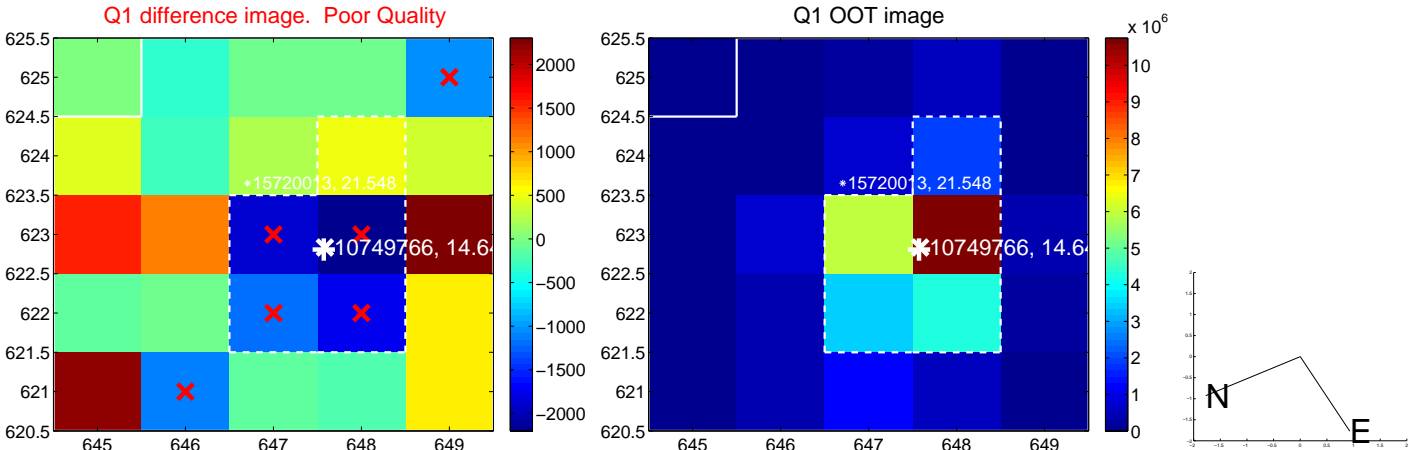
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.387 ± 1.015	1.37	-1.380 ± 1.012	-0.131 ± 1.330
PRF-fit source offset from KIC position	1.247 ± 1.048	1.19	-1.247 ± 1.048	0.019 ± 1.316
photometric centroid source offset	0.73 ± 1.45	0.51	0.57 ± 1.45	-0.46 ± 1.44

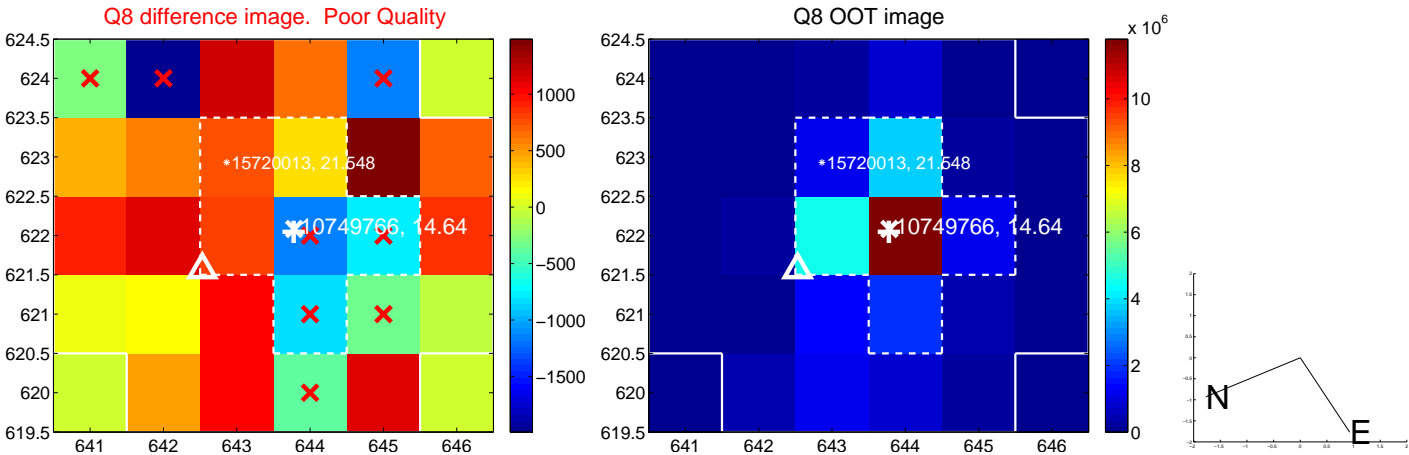
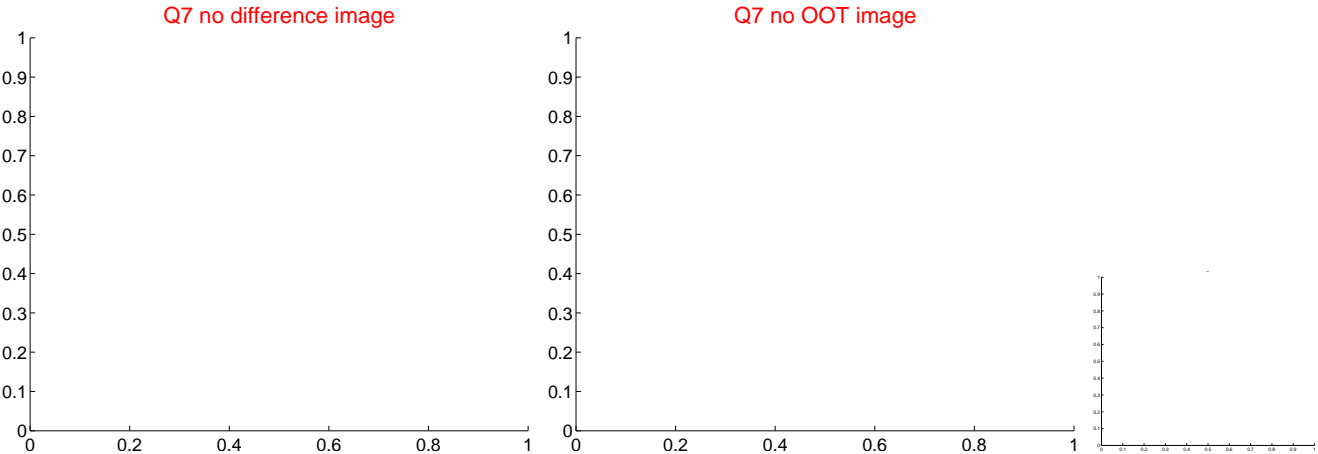
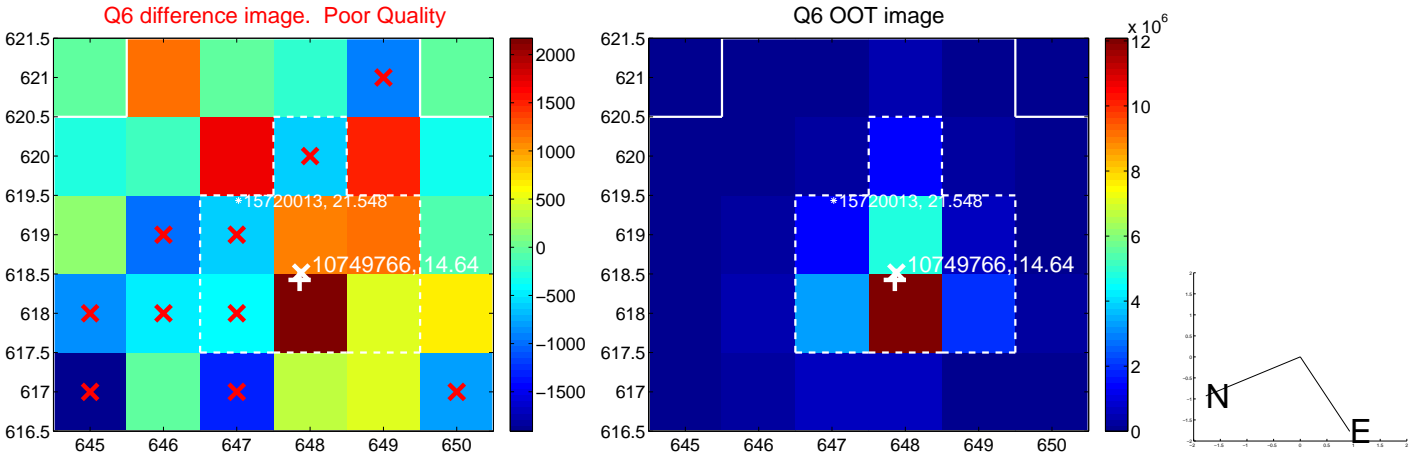
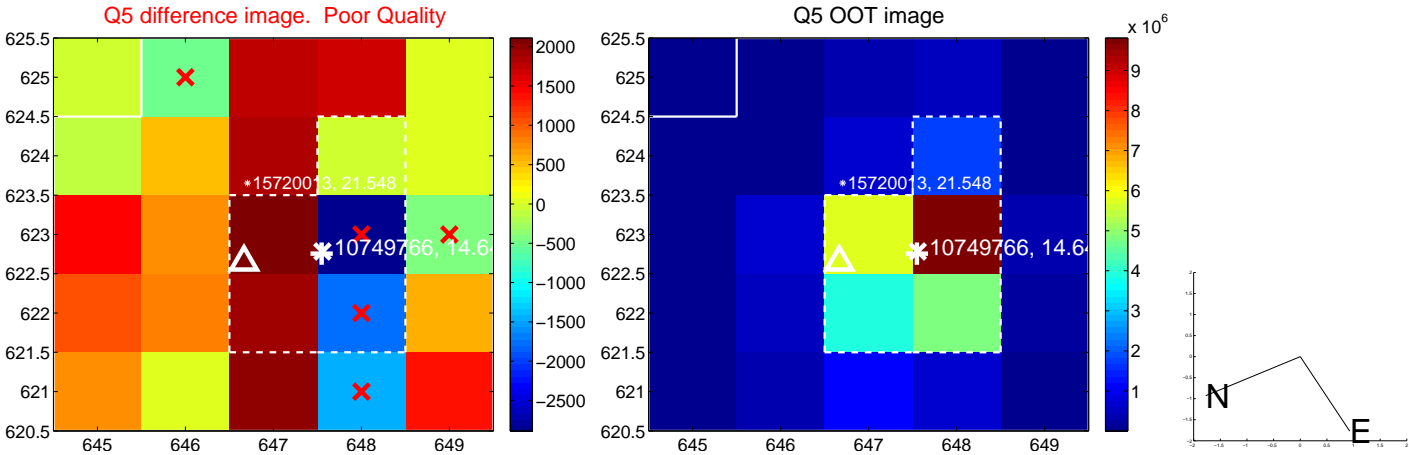


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

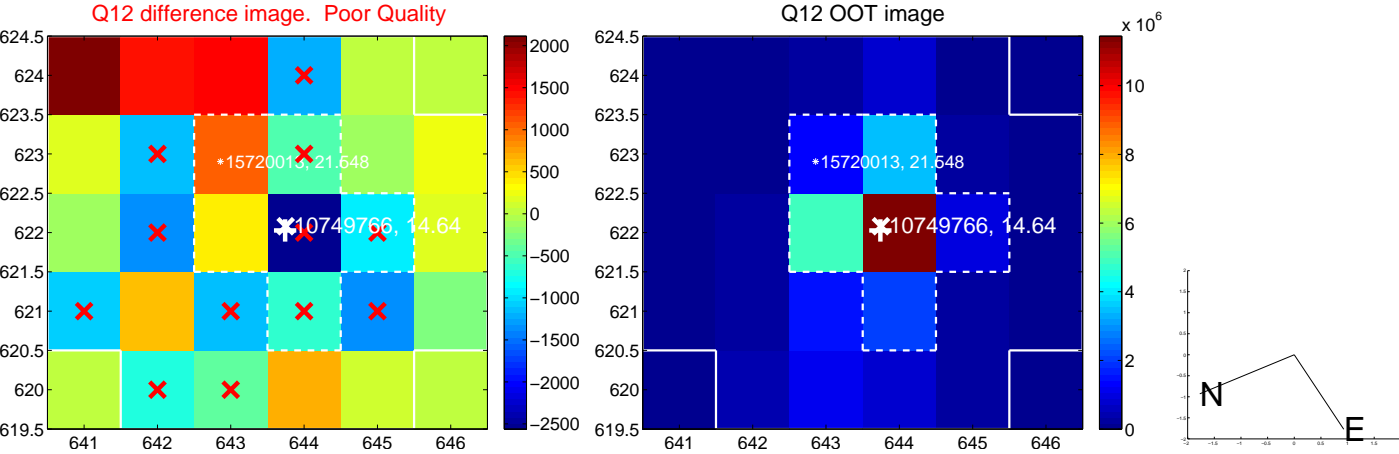
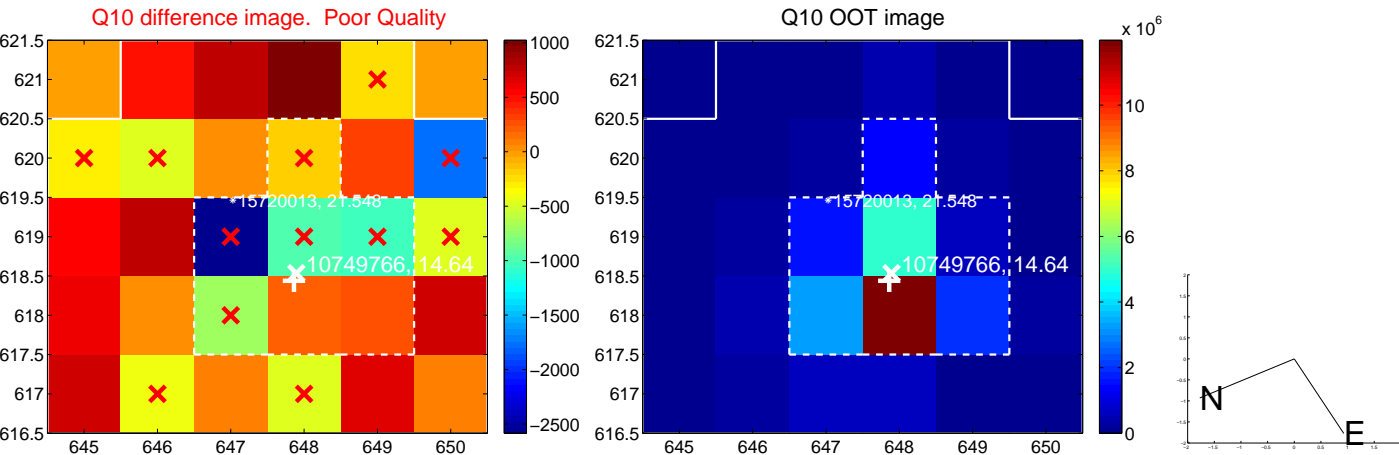
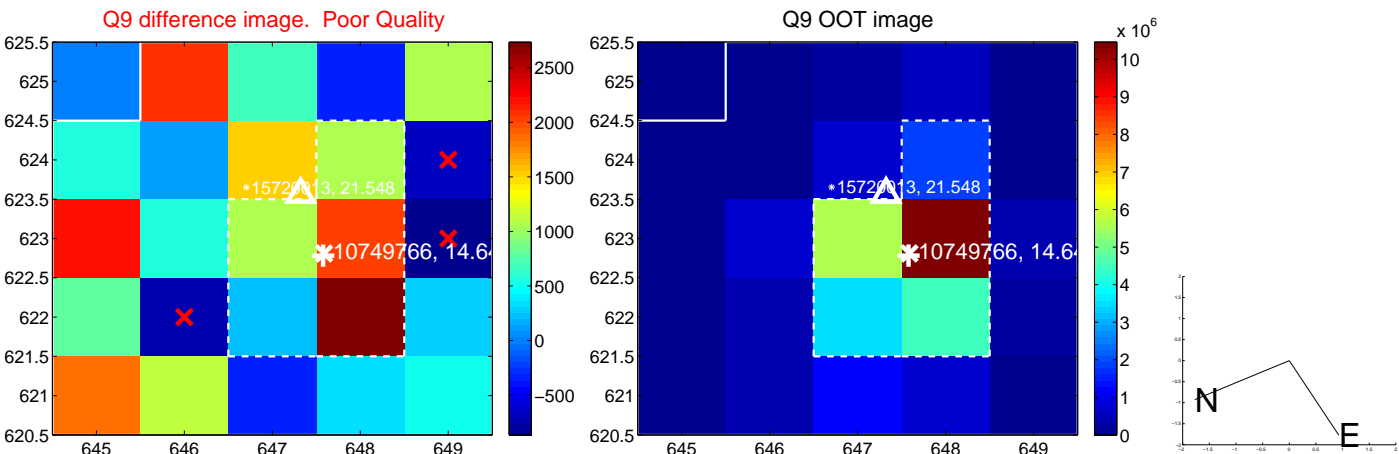
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



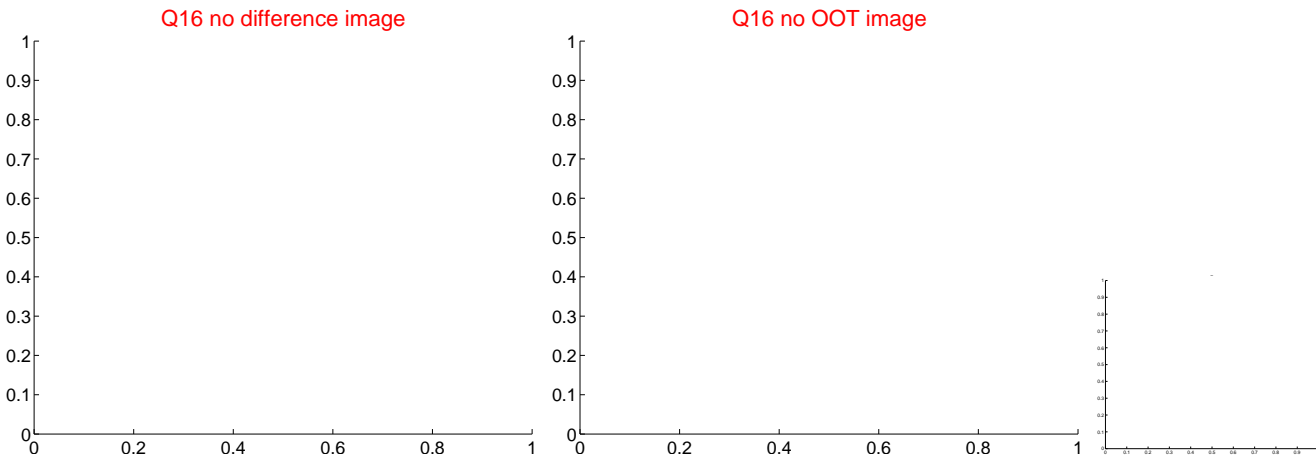
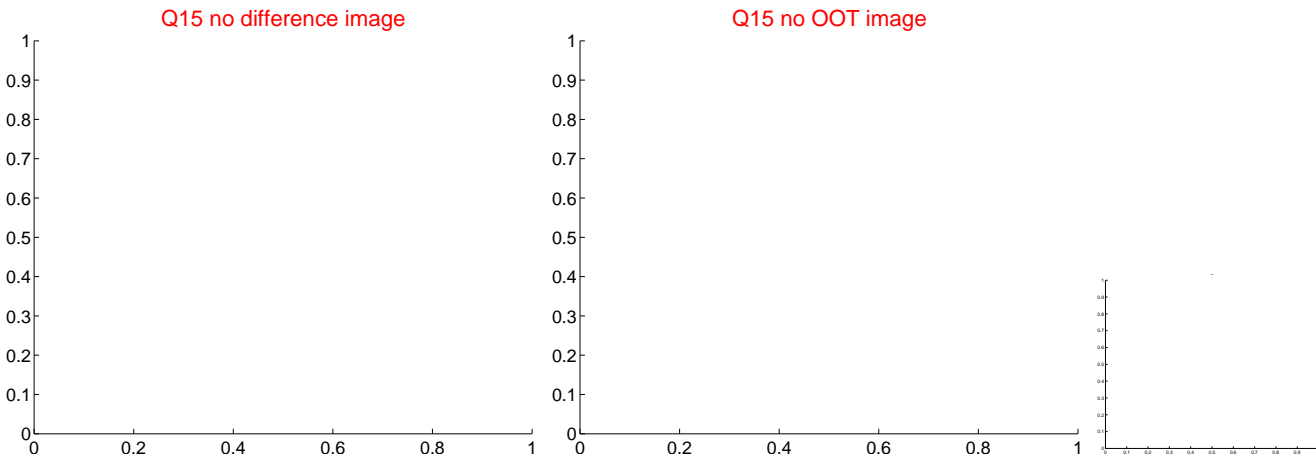
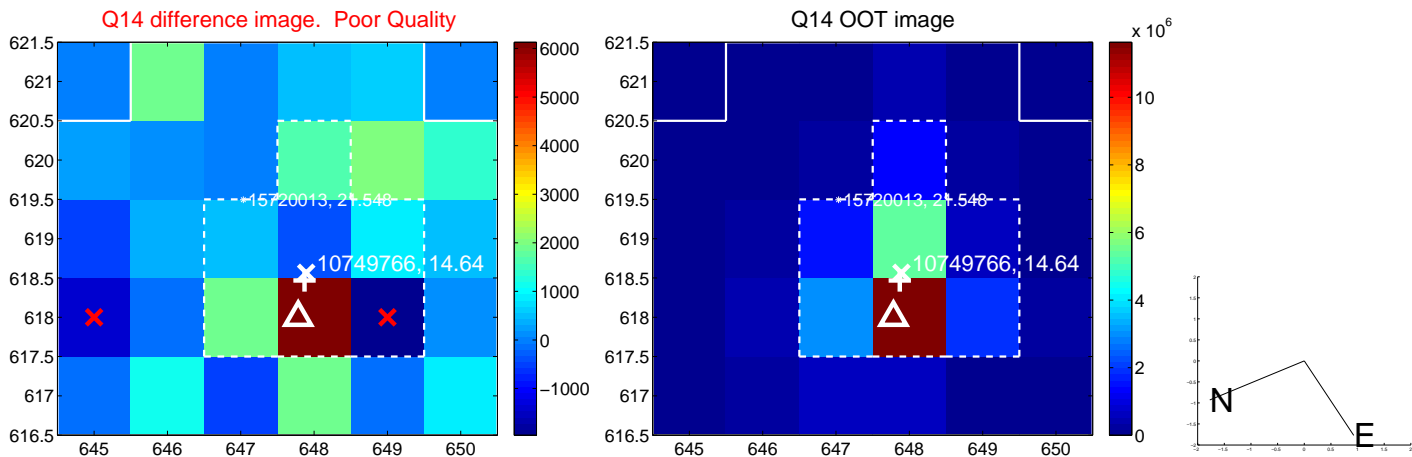
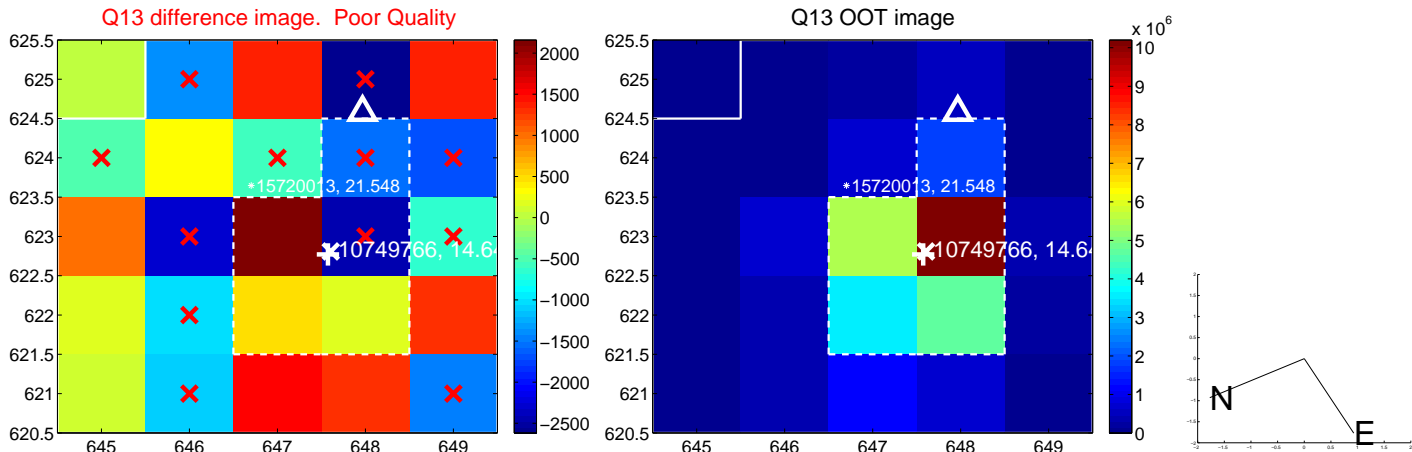
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



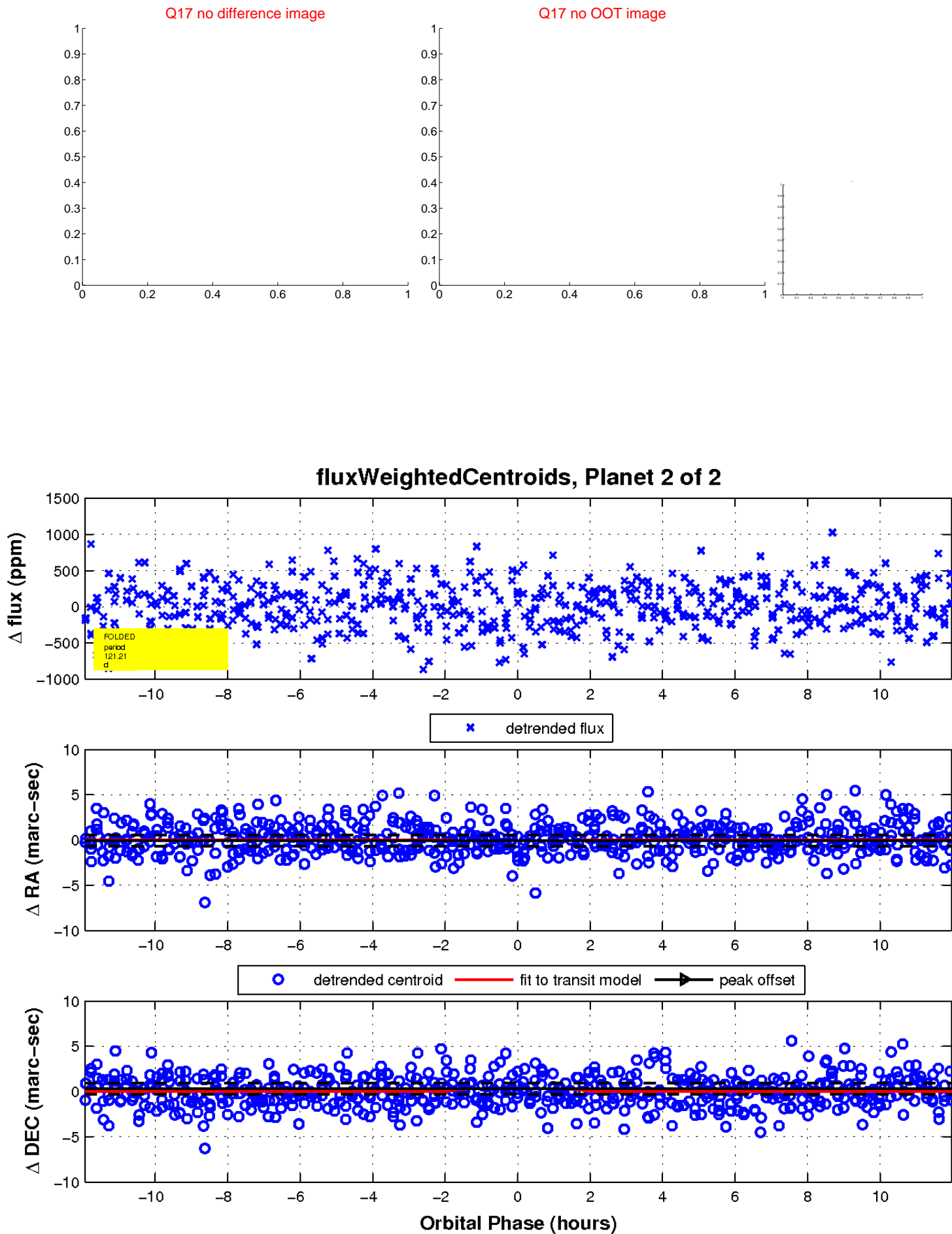
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

