

KIC 004764774

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})
004764774-01	OBS	4825.01	1.290174	132.122004	76.2	3.963	9.9	9.9	0.84	5693	0.84	1296.99
004764774-02	OBS	No	347.862451	355.240611	544.0	61.712	7.7	6.1	0.84	5693	2.54	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004764774-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET
004764774-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

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

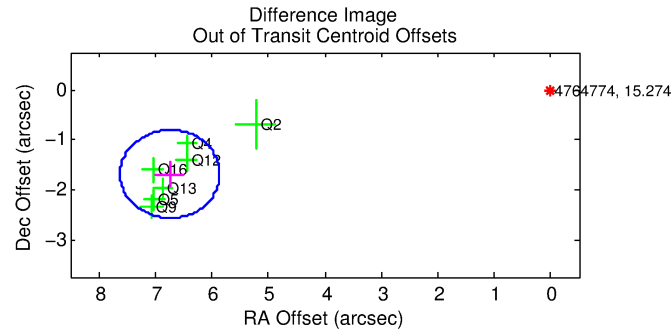
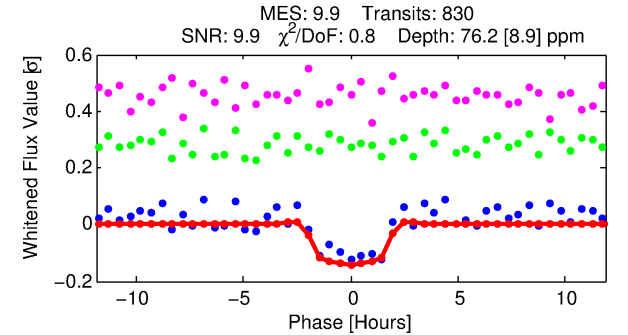
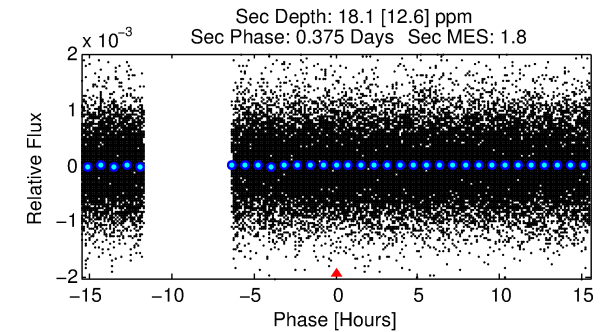
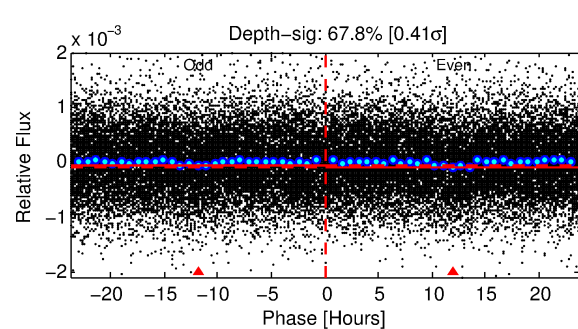
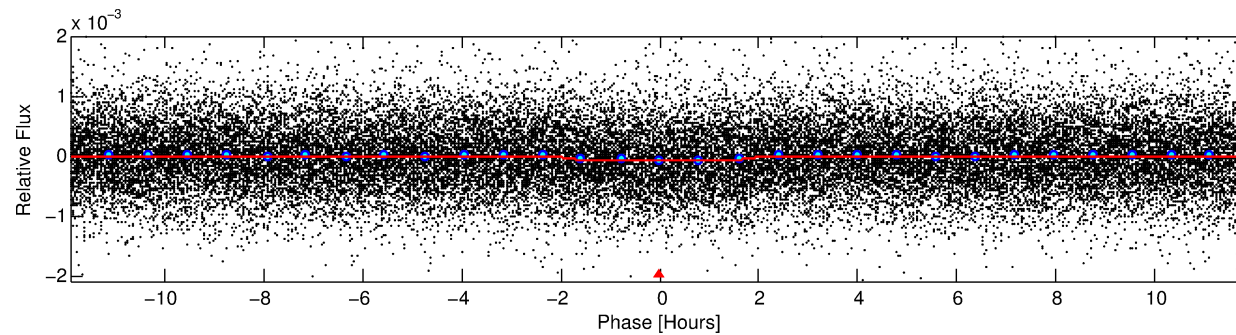
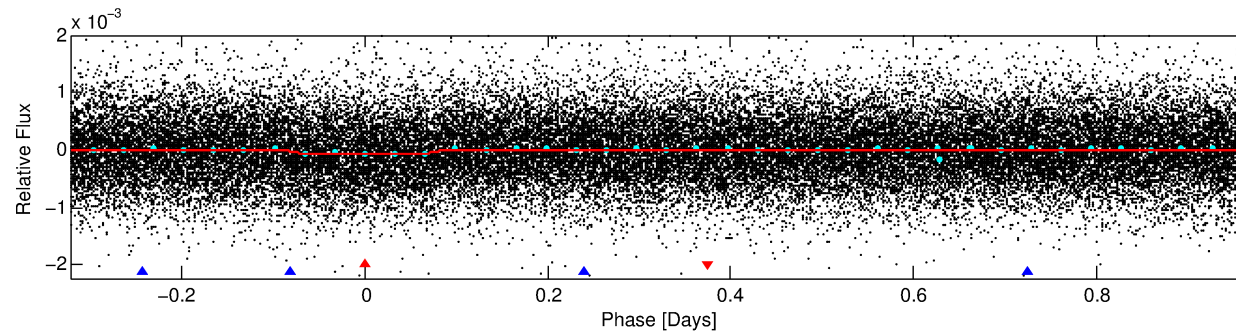
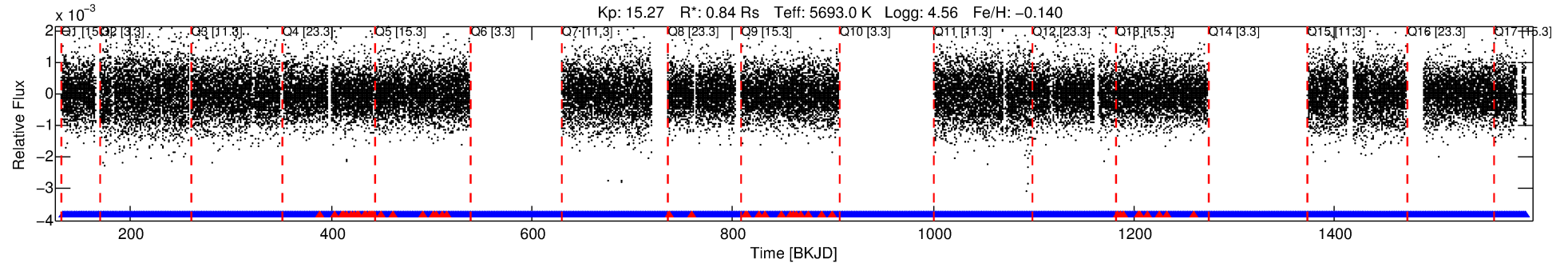
Ephemeris Match Information For 004764774-01

No Significant Match Found

DV One-Page Summary

KIC: 4764774 Candidate: 1 of 2 Period: 1.290 d
KOI: K04825.01 Corr: 0.956

Kp: 15.27 R*: 0.84 Rs Teff: 5693.0 K Logg: 4.56 Fe/H: -0.140



DV Fit Results:

Period = 1.29017 [0.00001] d
Epoch = 132.1220 [0.0052] BKJD
Rp/R* = 0.0092 [0.0071]
a/R* = 1.61 [3.55]
b = 0.86 [1.13]
Seff = 1296.99 [467.31]
Teq = 1530 [138] K
Rp = 0.84 [0.69] Re
a = 0.0227 [0.0051] AU
Ag = 7.19 [12.44] [0.50σ]
Teff = 3874 [1649] K [1.42σ]

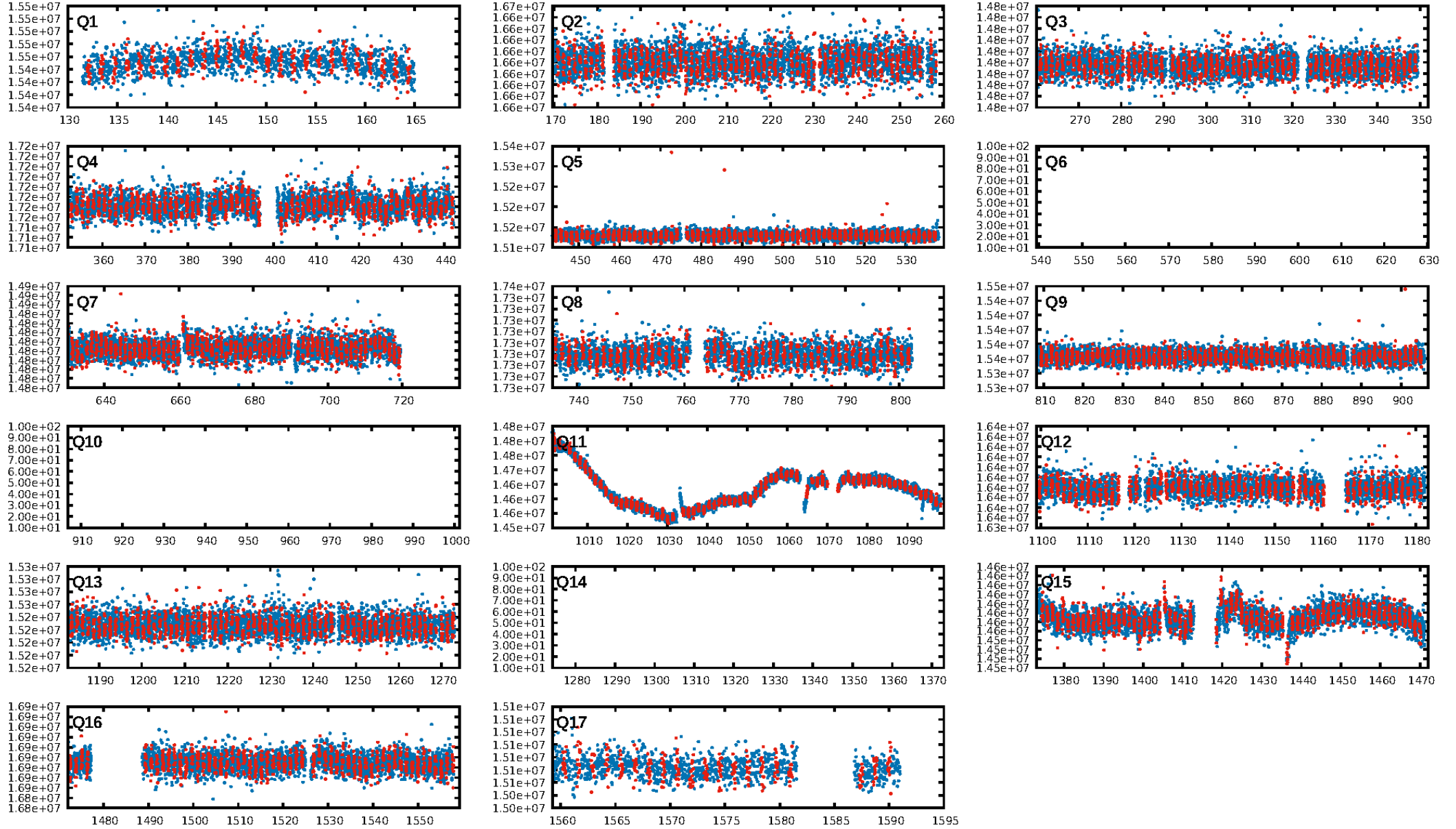
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [134.51σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.22e-22
RollingBand-fgt: 0.94 [739/784]
GhostDiagnostic-chr: -0.2501
Centroid-sig: 0.0%
Centroid-so: 11.592 arcsec [10.98σ]
OotOffset-rm: 6.949 arcsec [23.65σ]
KicOffset-rm: 6.847 arcsec [22.43σ]
OotOffset-st: 1/0/3/3 [7]
KicOffset-st: 1/0/3/3 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 1.00 [14/14]

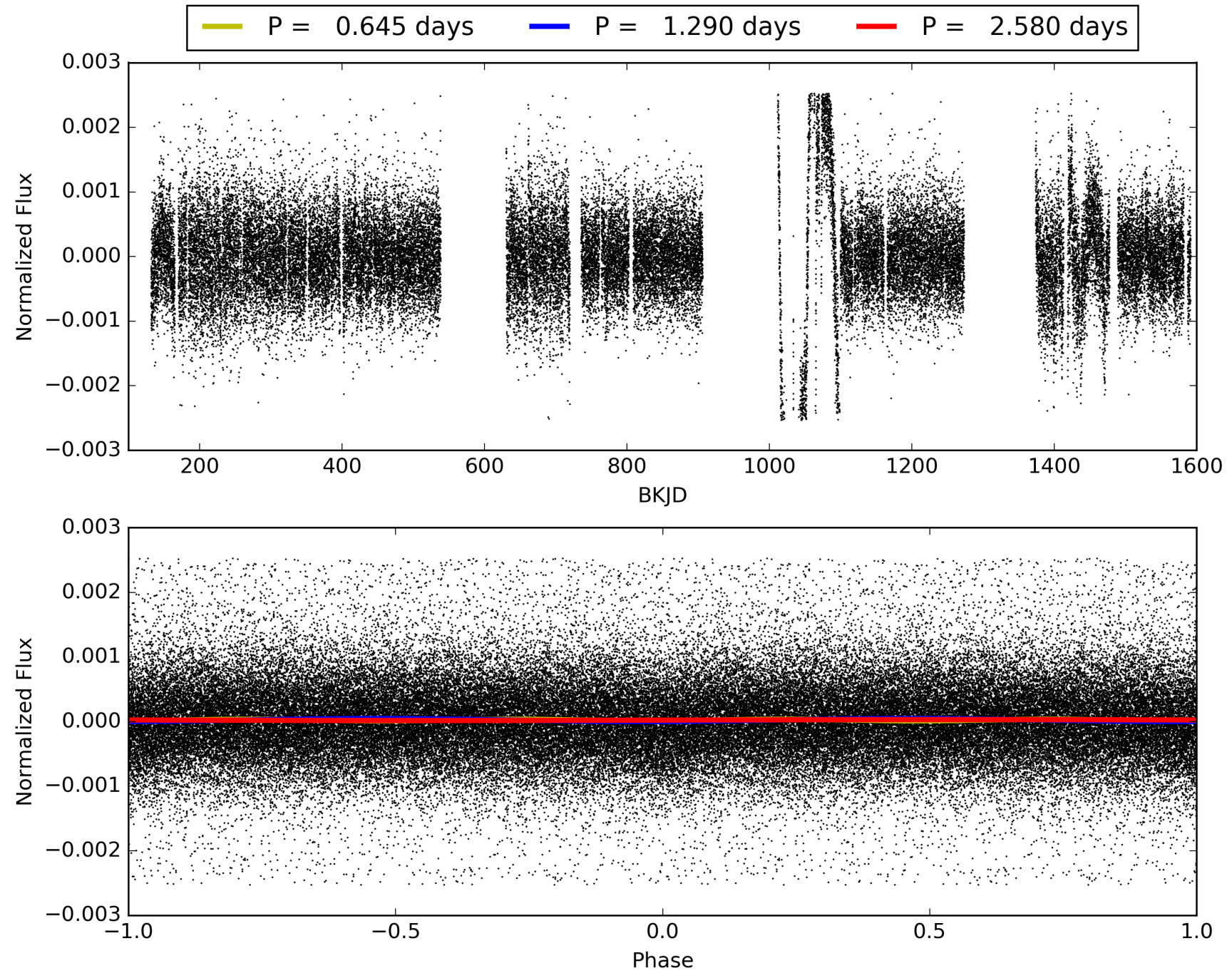
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004764774-01, PDC Light Curves

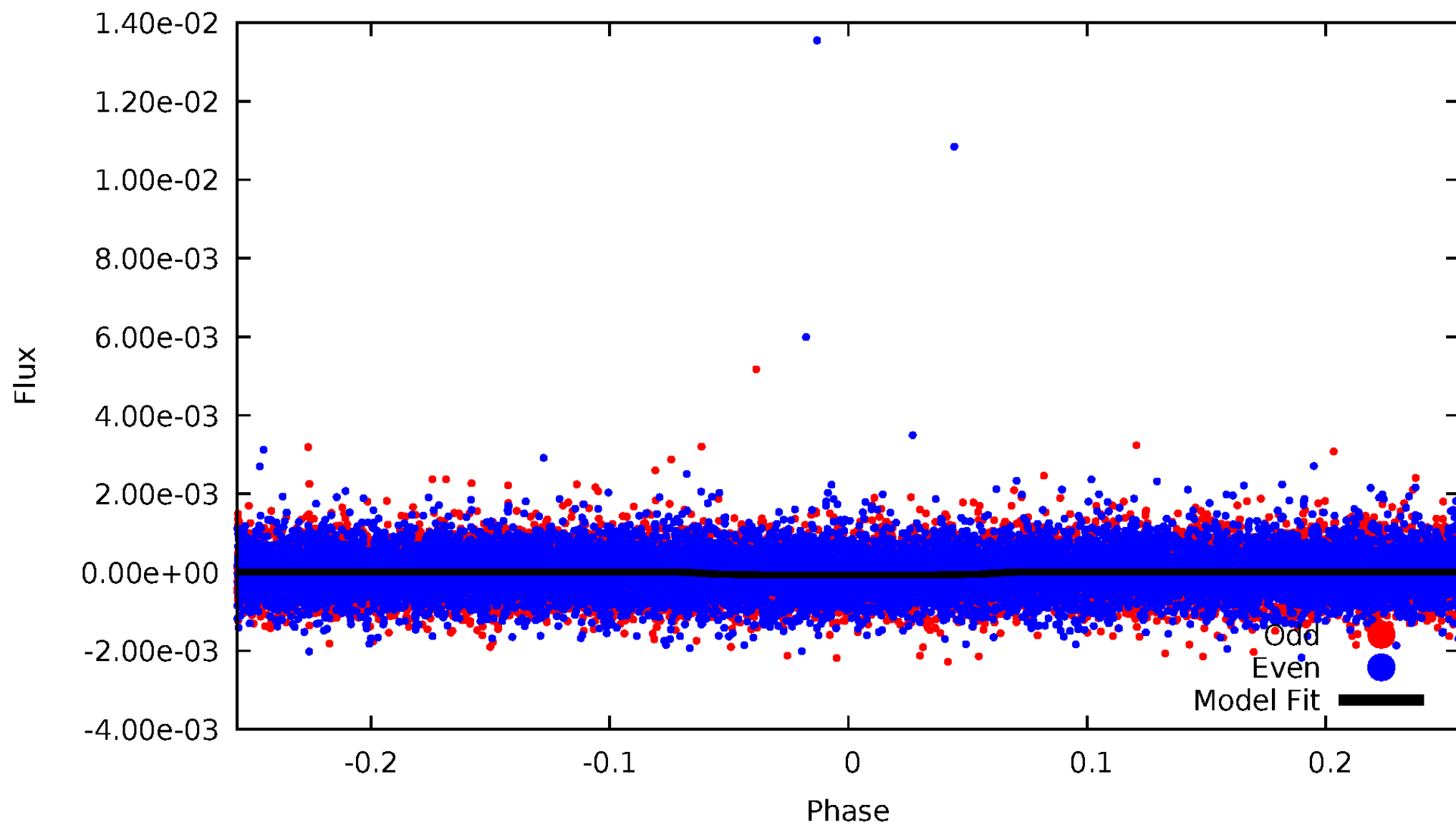


TCE 004764774-01



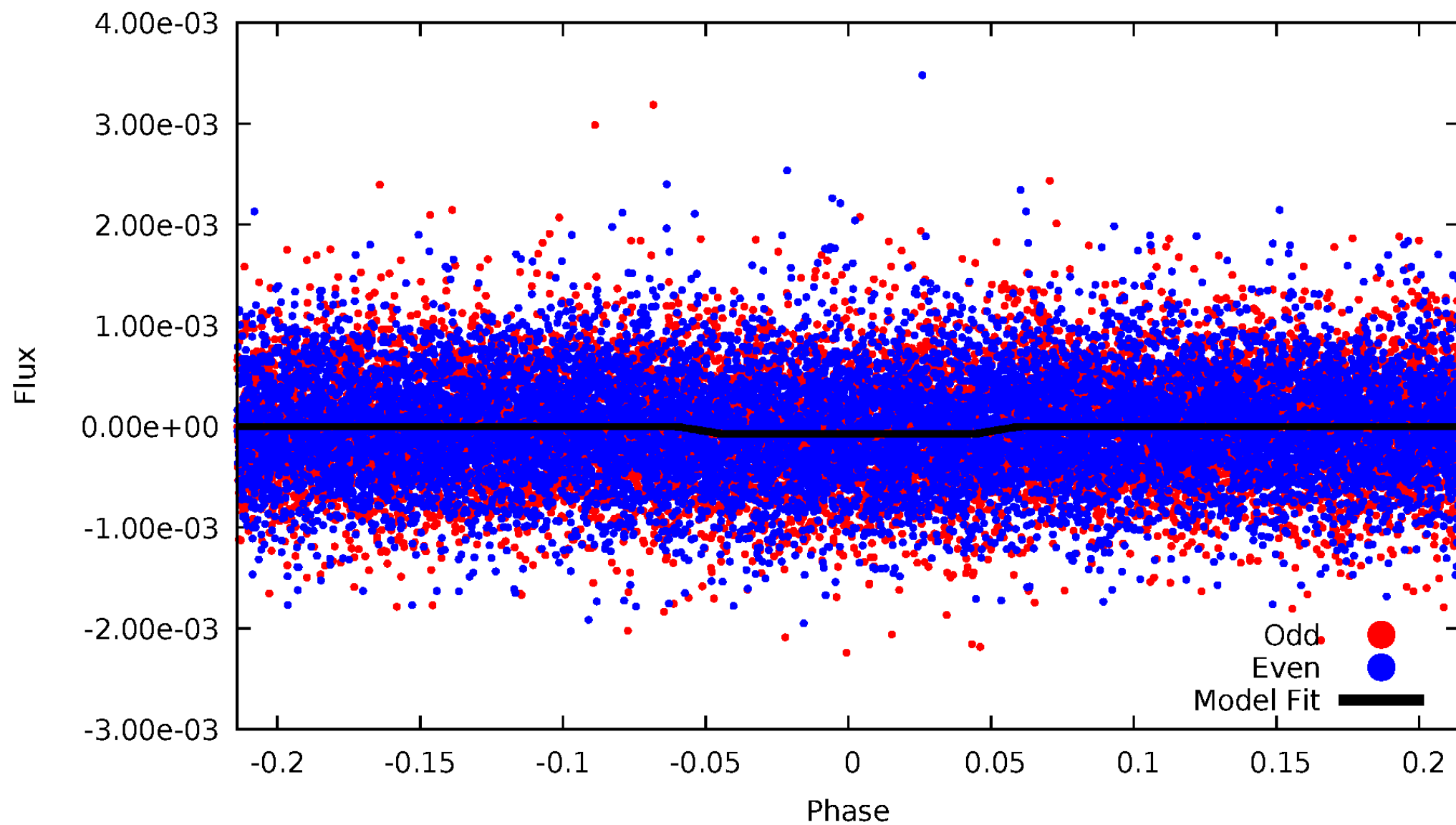
DV Odd/Even

TCE 004764774-01

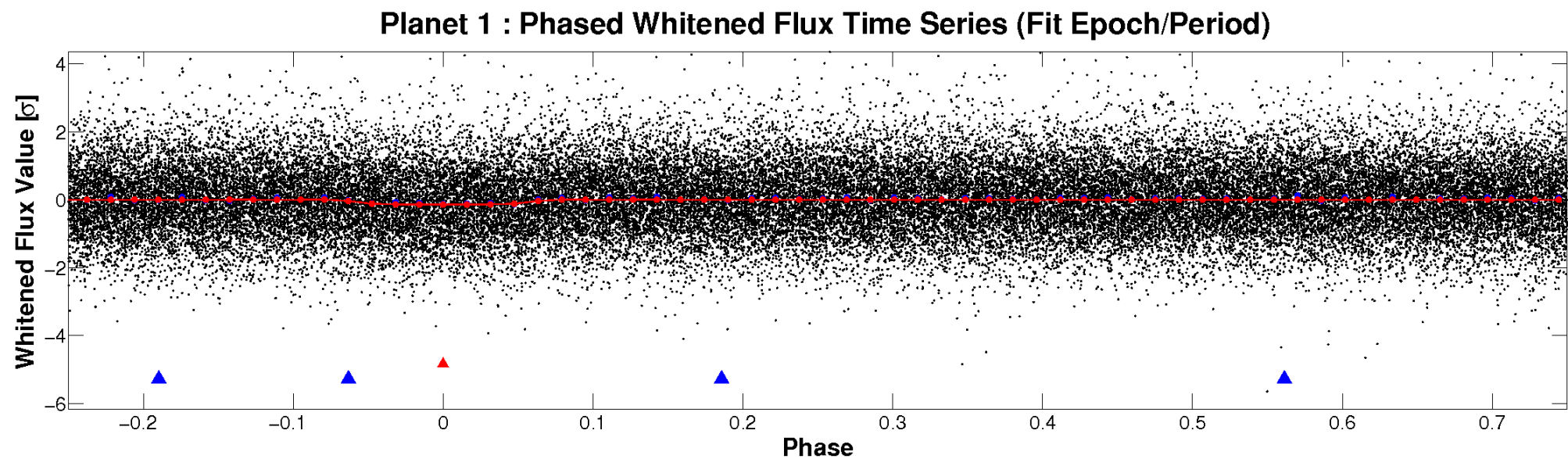
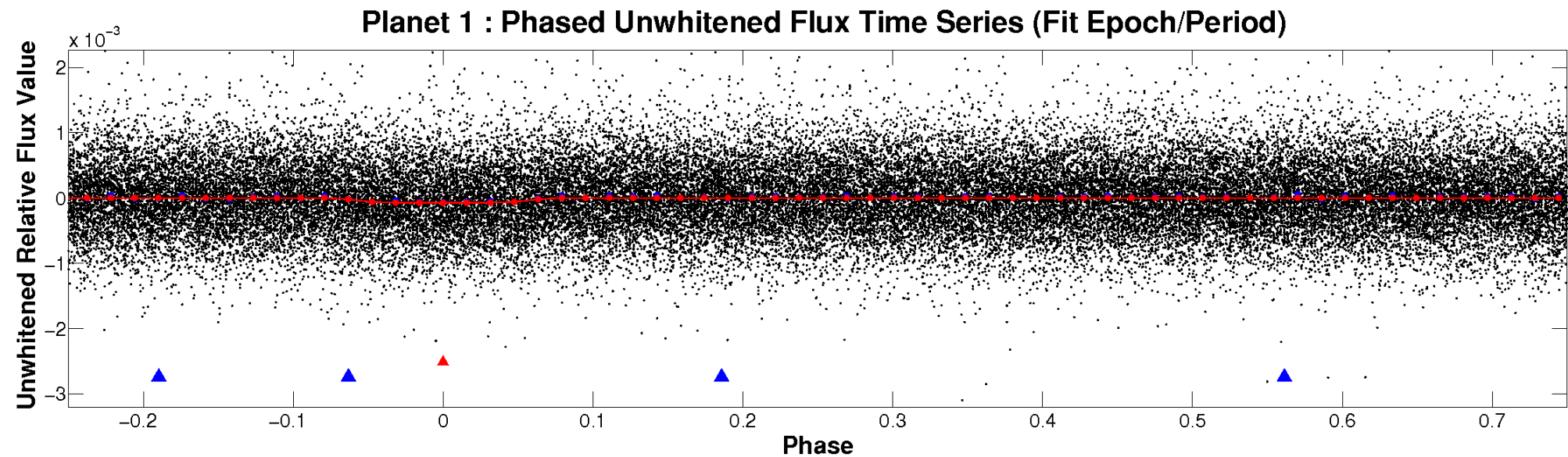


ALT Odd/Even

TCE 004764774-01

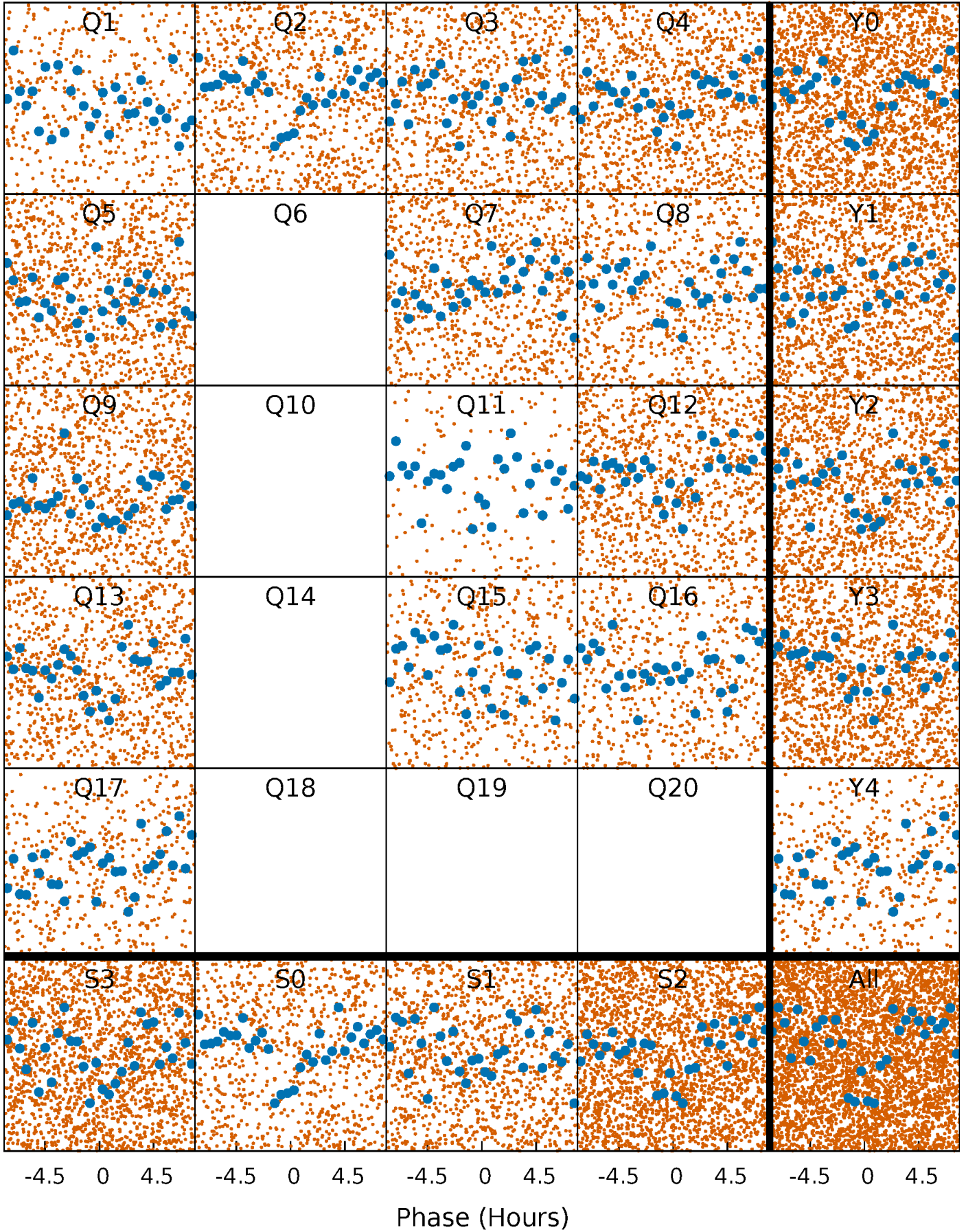


Non-Whitened Vs. Whitened Light Curve



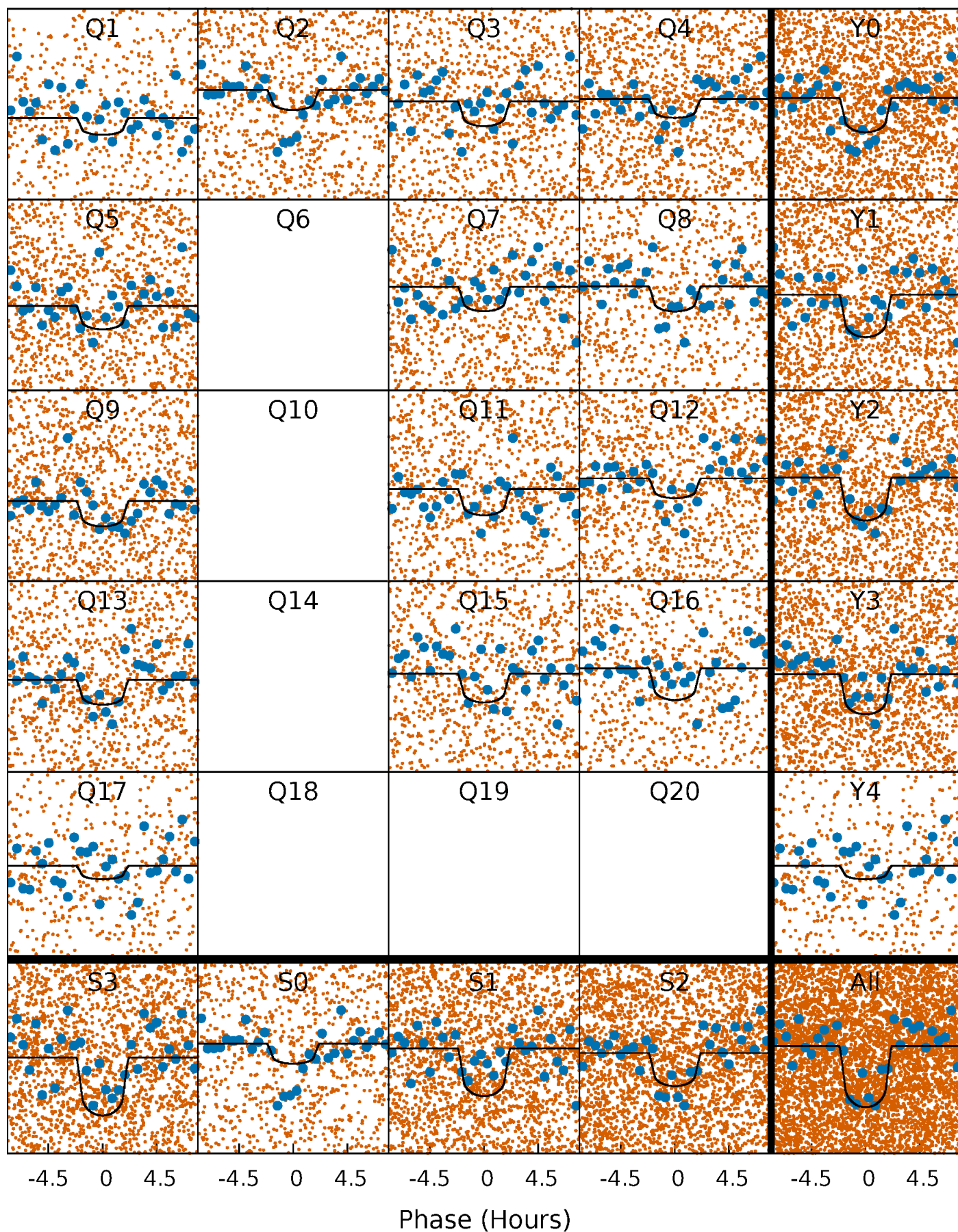
PDC Quarter-Phased Transit Curves

TCE 004764774-01 P= 1.290174 Days $T_0=132.122004$ (BKJD)



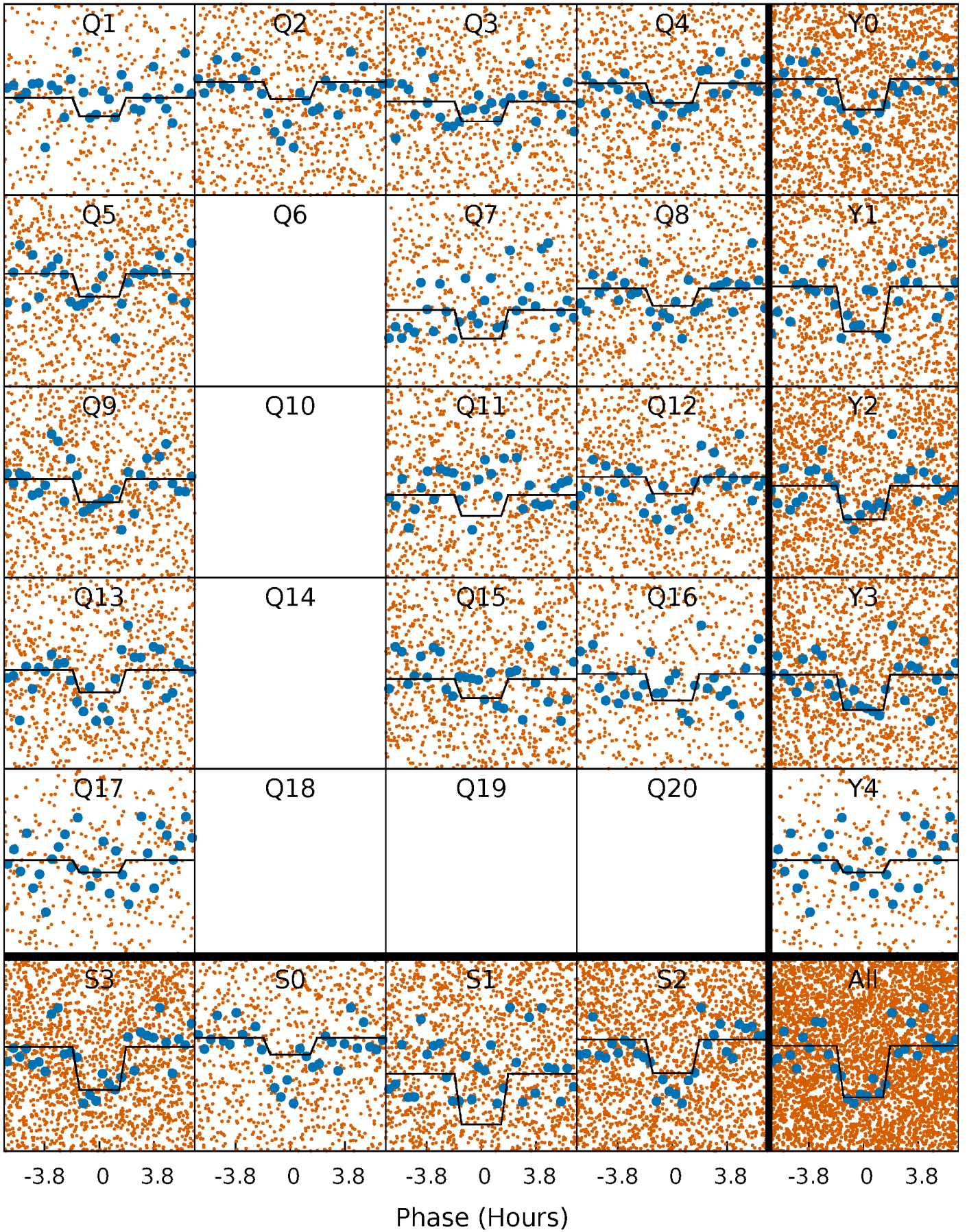
DV Quarter-Phased Transit Curves

TCE 004764774-01 P= 1.290174 Days $T_0=132.122004$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

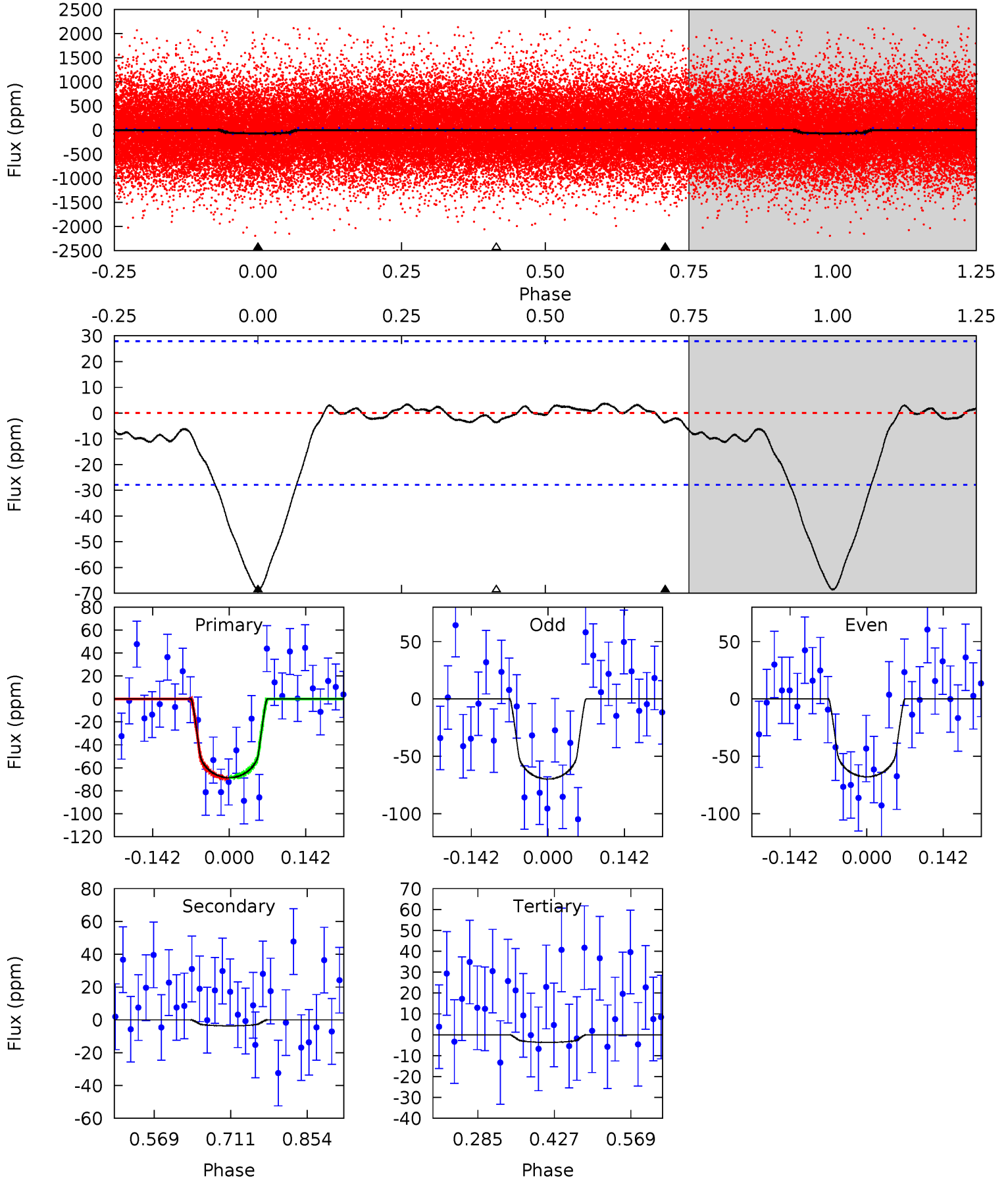
TCE 004764774-01 P= 1.290200 Days $T_0=132.115298$ (BKJD)



DV Model-Shift Uniqueness Test

004764774-01, P = 1.290174 Days, E = 130.831830 Days

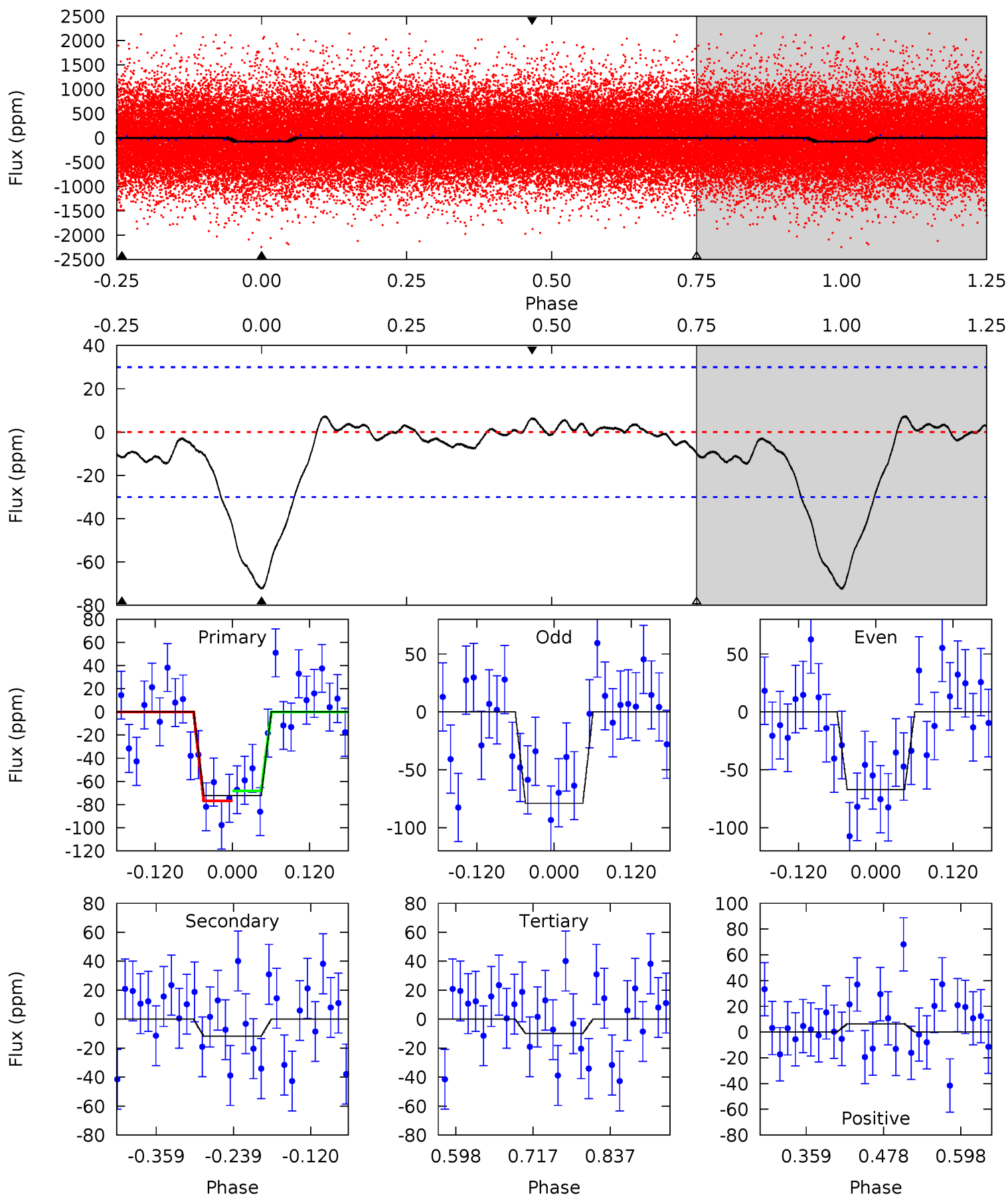
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	0.59	0.58	0	4.49	1.47	0.36	10.5	11.0	0.01	0.59	0.16	0.78	0.05	0.07



Alt Model-Shift Uniqueness Test

004764774-01, P = 1.290200 Days, E = 130.825098 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	1.78	1.49	0.96	4.53	1.56	0.51	9.42	9.95	0.29	0.82	0.89	0.87	0.09	0.64



Stellar Parameters For KIC 004764774

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5693^{+152}_{-186}	$4.558^{+0.033}_{-0.187}$	$-0.140^{+0.300}_{-0.300}$	$0.842^{+0.220}_{-0.073}$	$0.938^{+0.094}_{-0.115}$	$2.217^{+0.414}_{-1.053}$
	+3%/-3%	+1%/-4%	+214%/-214%	+26%/-9%	+10%/-12%	+19%/-47%
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 004764774-01 / KOI 4825.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4 ± 6	$1.02^{+0.66}_{-0.58}$	2189^{+142}_{-100}	2674^{+1190}_{-5844}	$0.674^{+4.064}_{-1.463}$
Alt.	-12 ± 7	$0.93^{+0.64}_{-0.56}$	2186^{+136}_{-96}	3660^{+1637}_{-798}	$3.371^{+19.140}_{-2.476}$

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 $A_{obs} \gg 1.0$

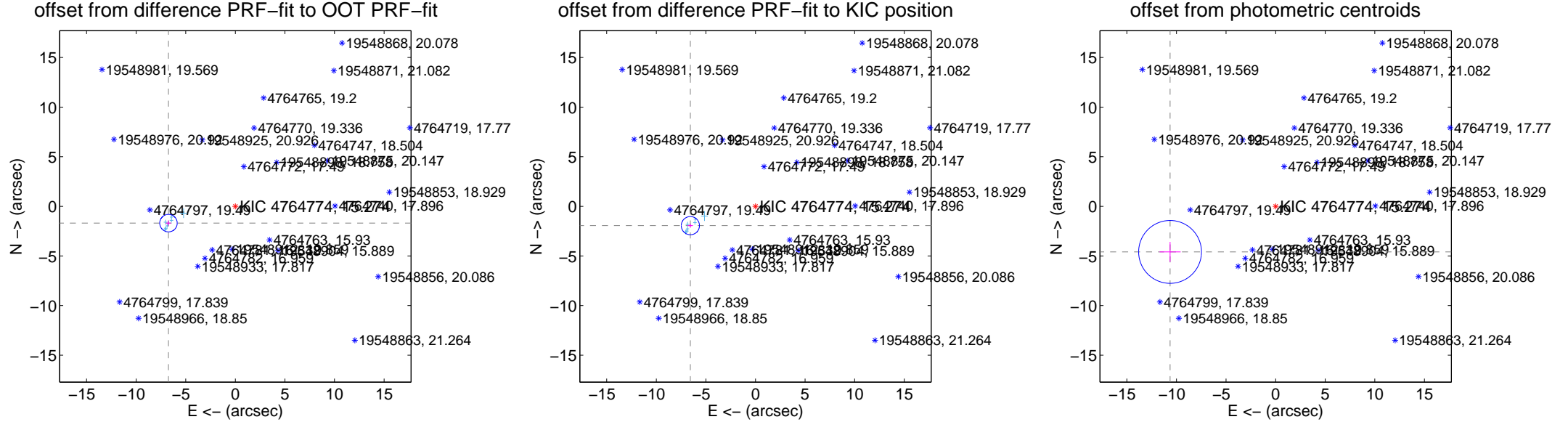
DV Centroid Data

Supplemental centroid analysis for 004764774-01. Kepler magnitude: 15.27. Transit SNR 9.85

There are 7 quarters with good PRF difference image offsets

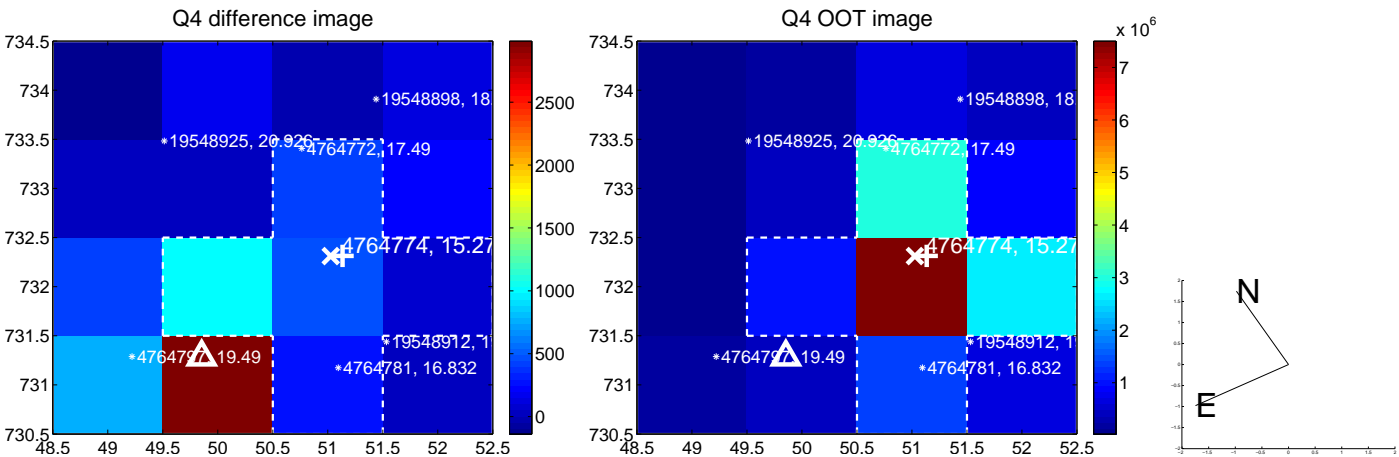
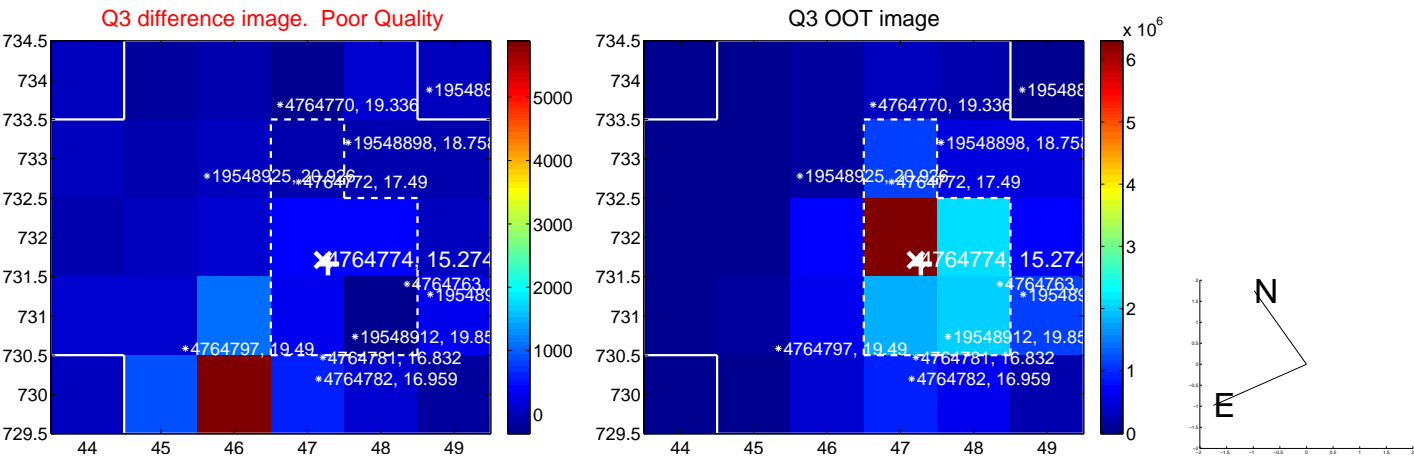
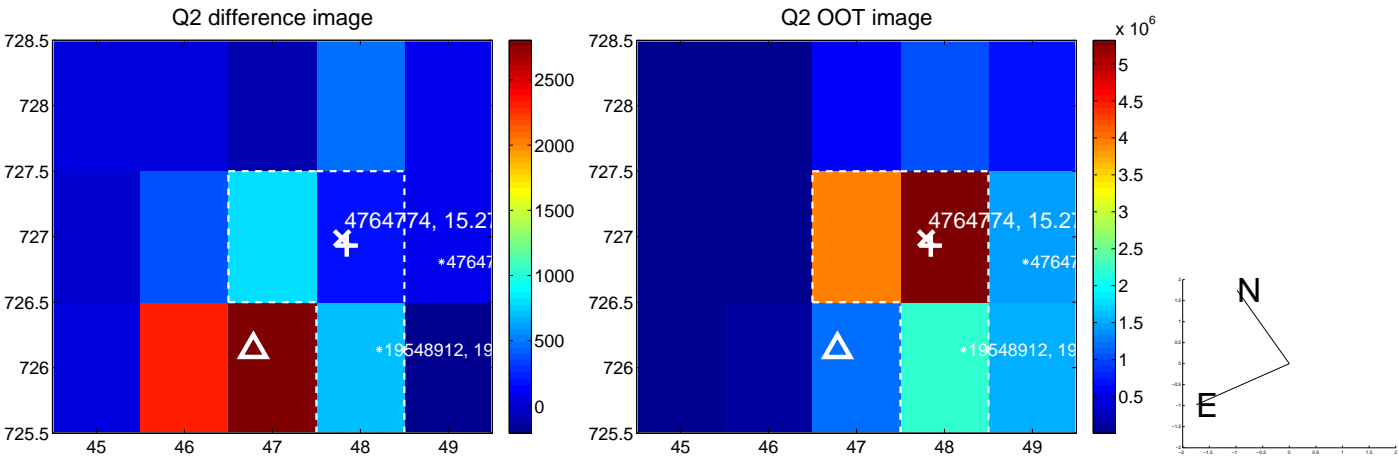
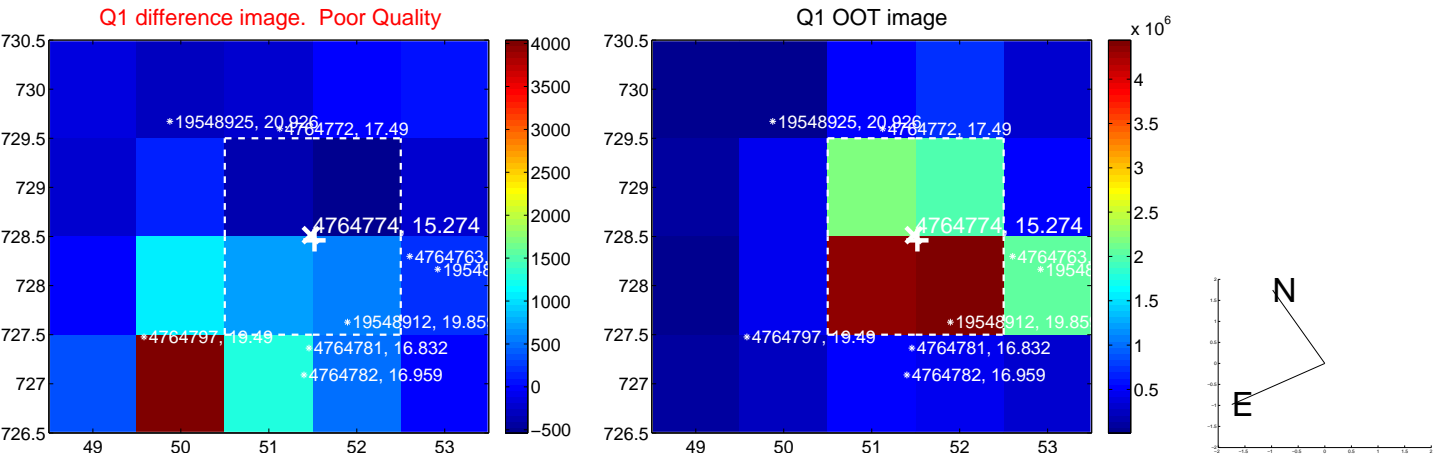
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.949 \pm 0.294	23.65	6.741 \pm 0.249	-1.690 \pm 0.249
PRF-fit source offset from KIC position	6.847 \pm 0.305	22.43	6.565 \pm 0.262	-1.944 \pm 0.216
photometric centroid source offset	11.59 \pm 1.06	10.98	10.64 \pm 1.07	-4.59 \pm 1.00

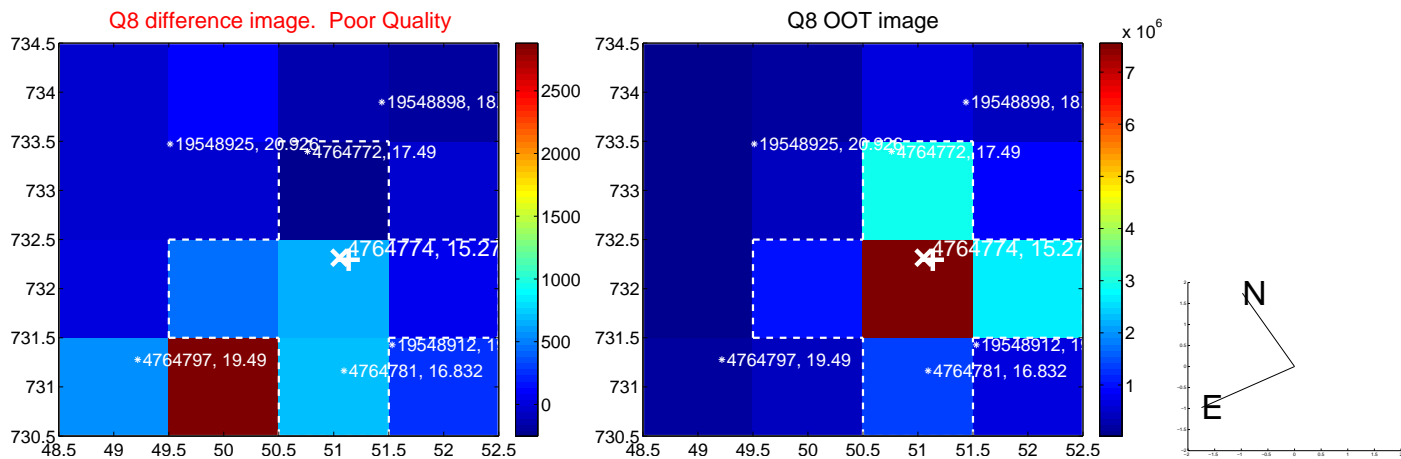
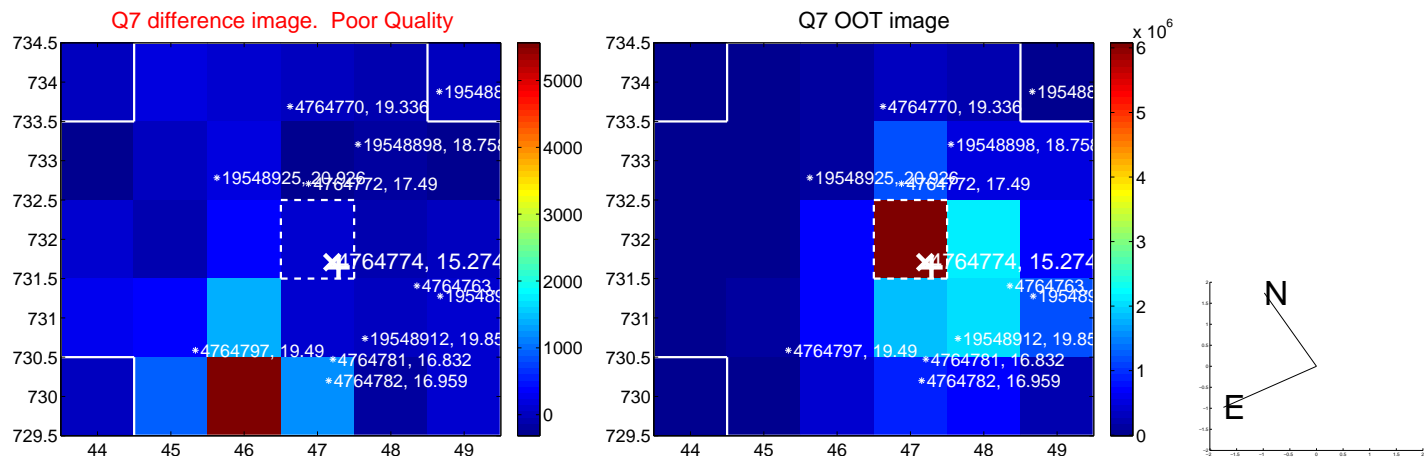
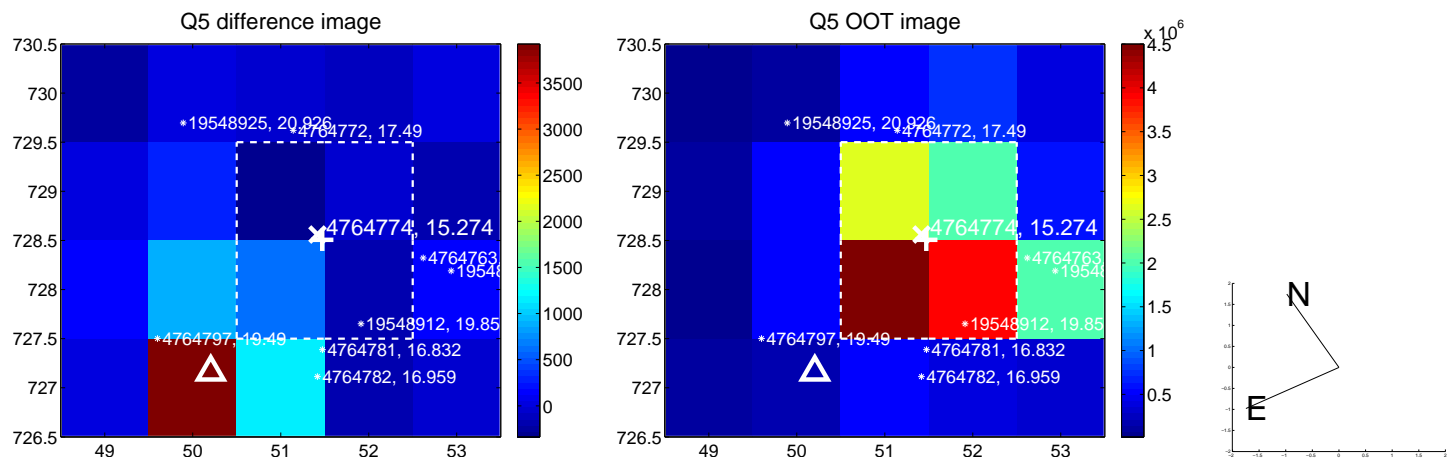


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

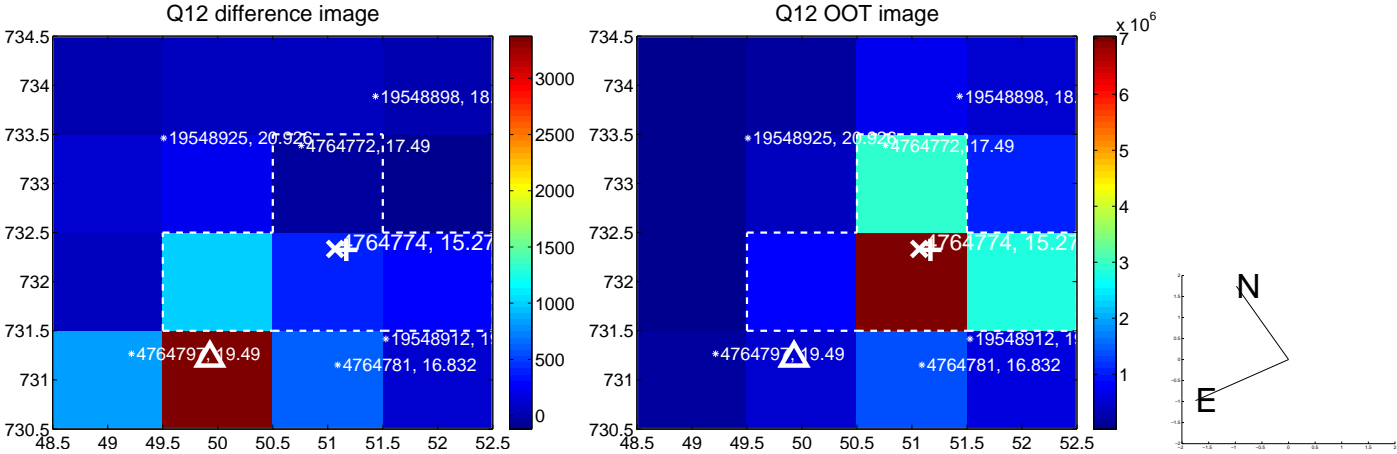
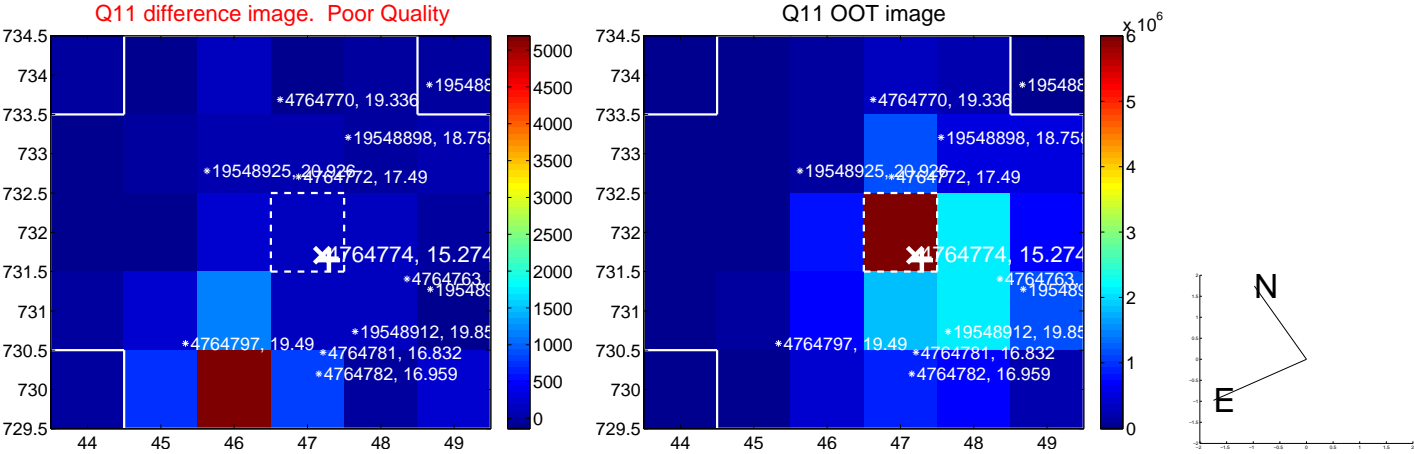
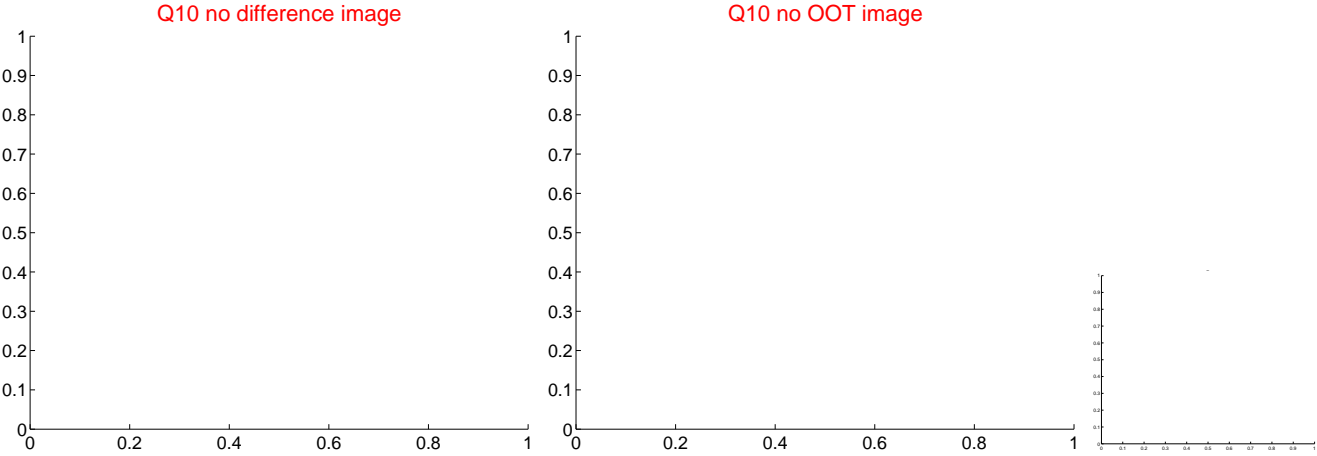
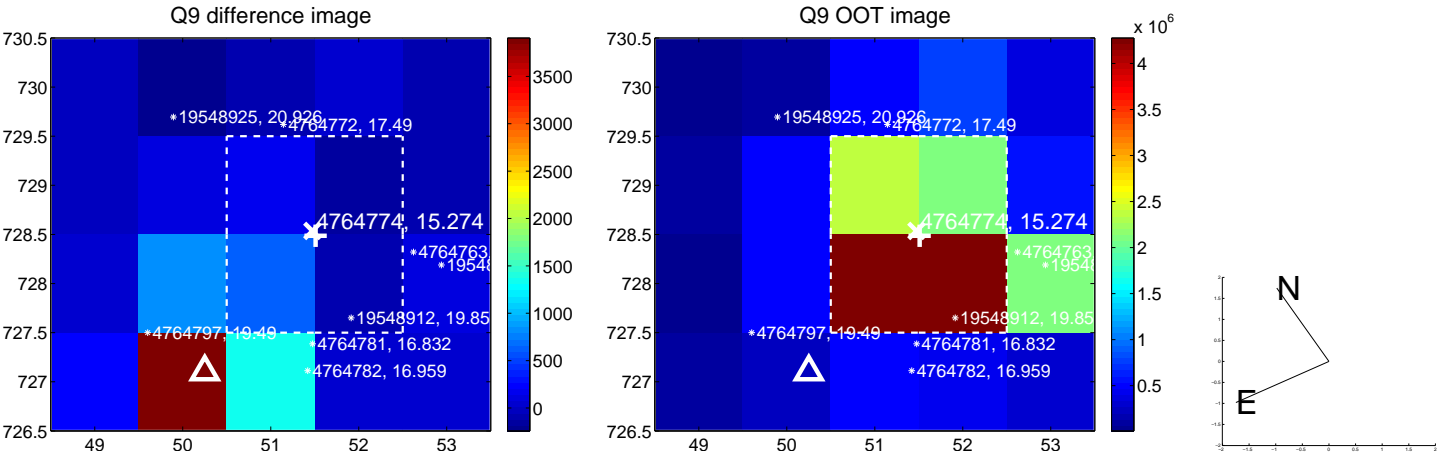
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



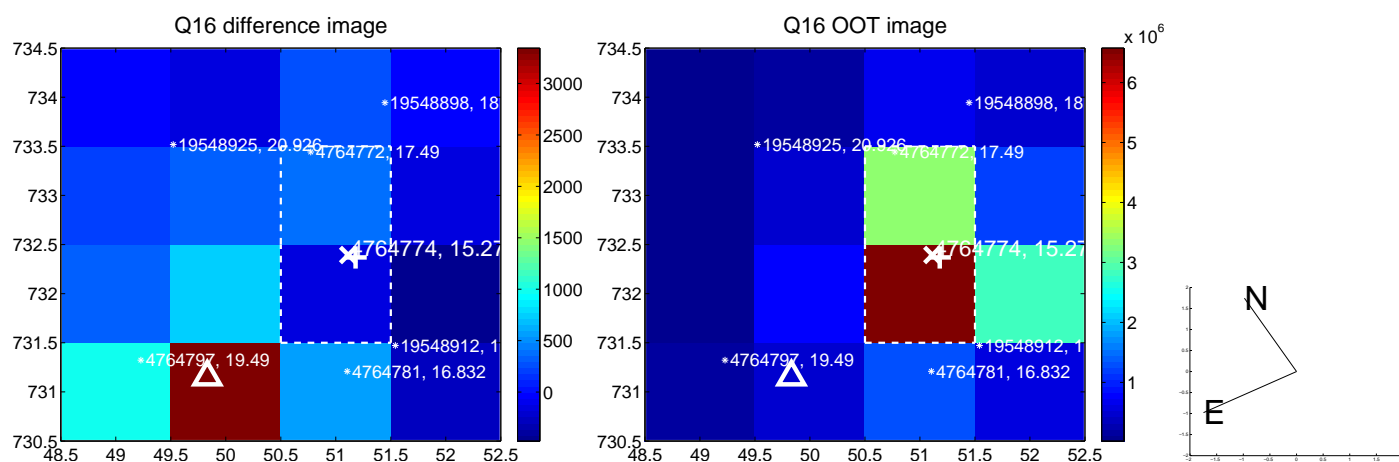
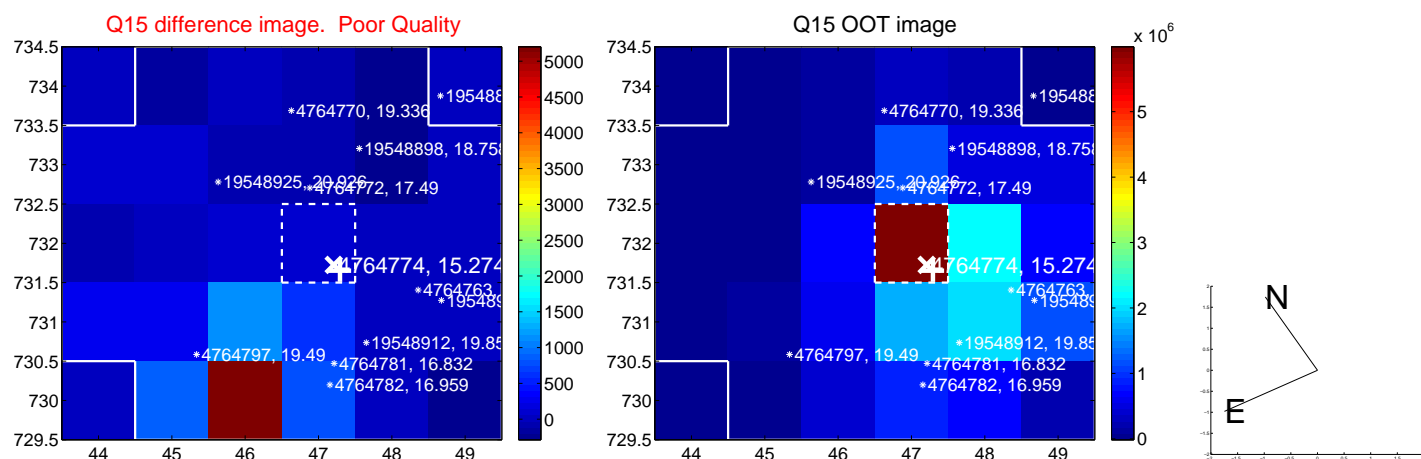
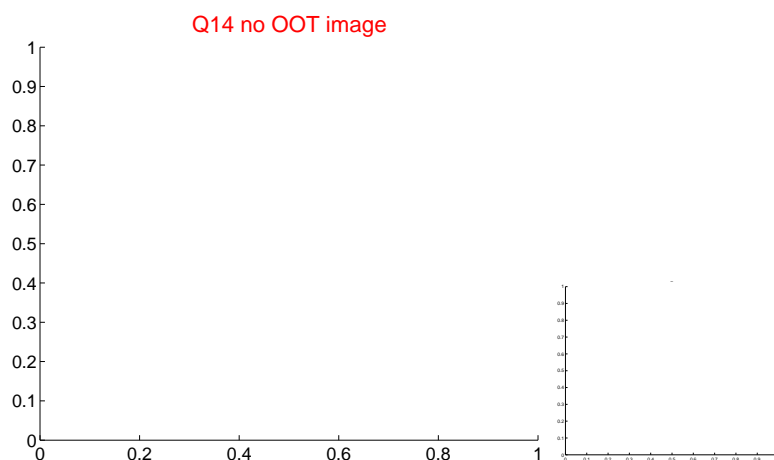
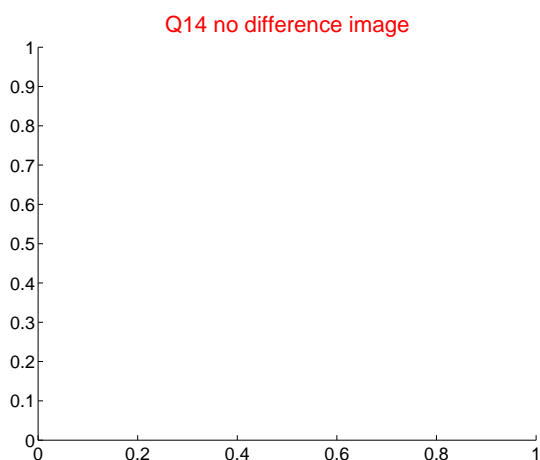
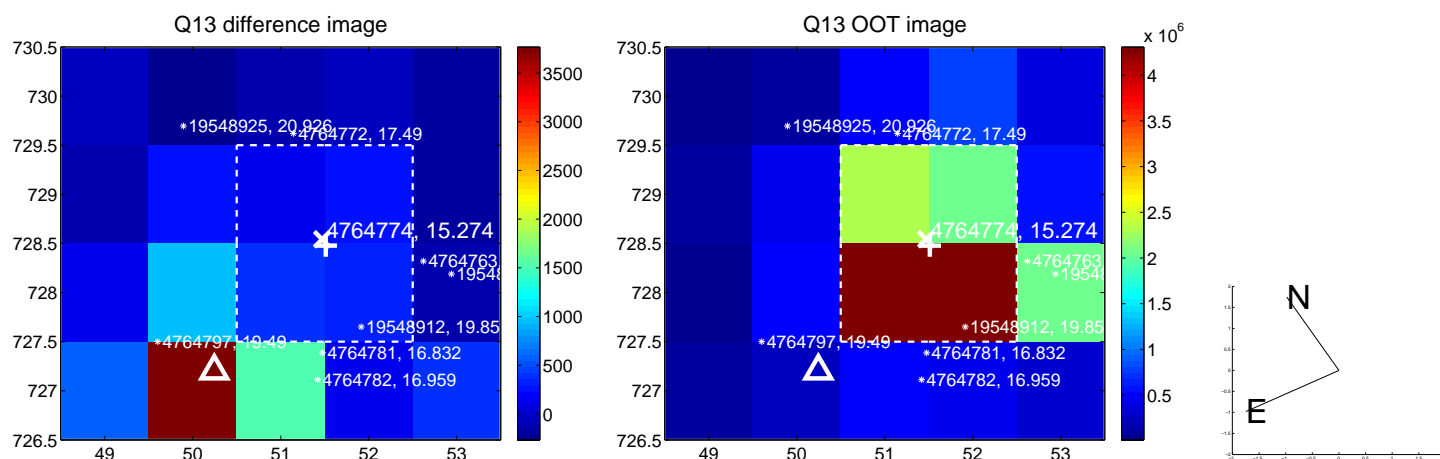
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



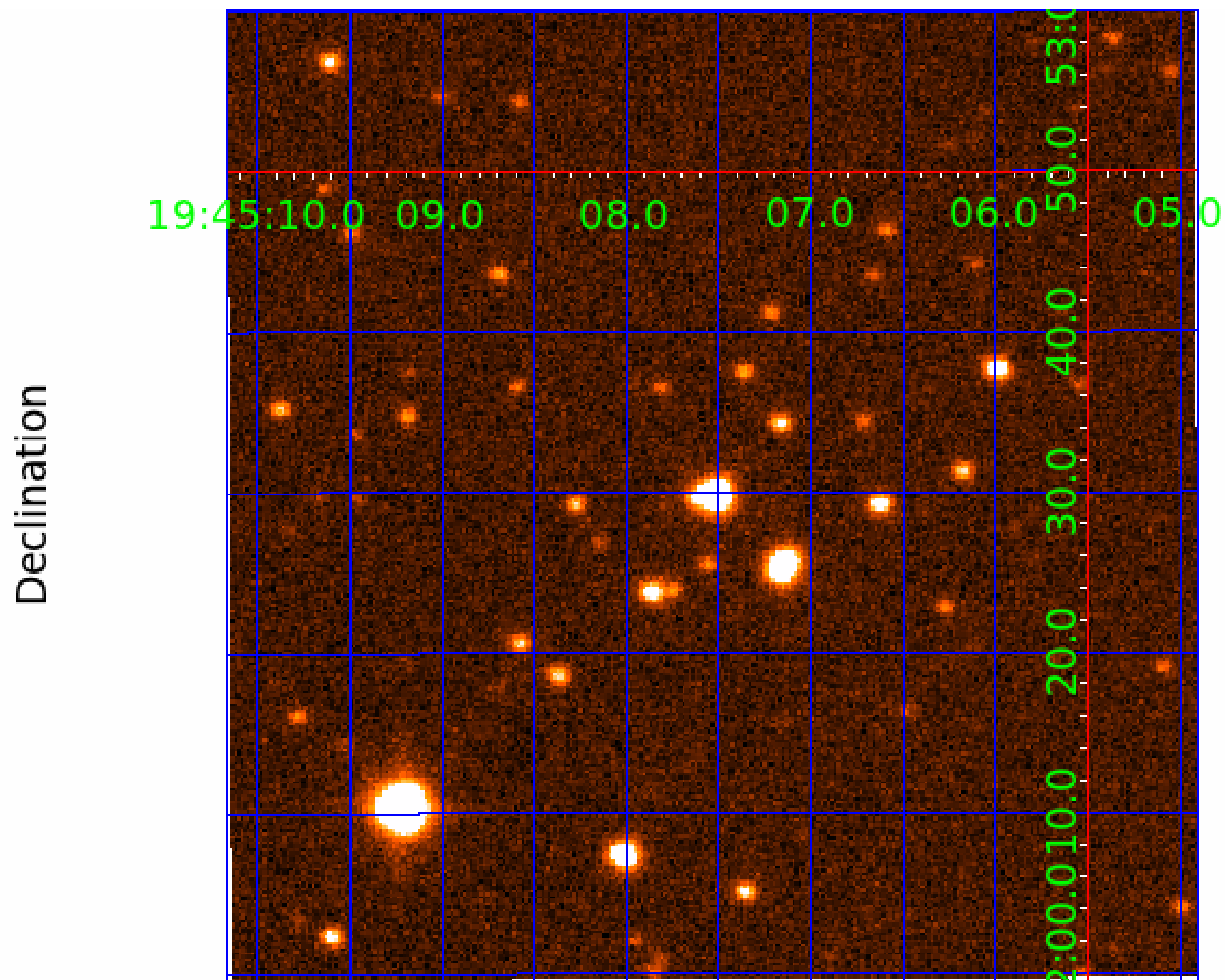
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004764774

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})
004764774-01	OBS	4825.01	1.290174	132.122004	76.2	3.963	9.9	9.9	0.84	5693	0.84	1296.99
004764774-02	OBS	No	347.862451	355.240611	544.0	61.712	7.7	6.1	0.84	5693	2.54	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004764774-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET
004764774-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS— HALO_GHOST

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

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

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

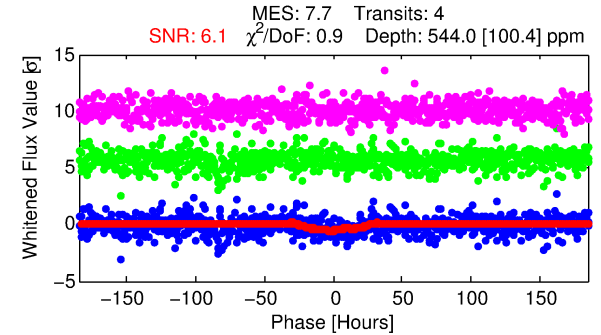
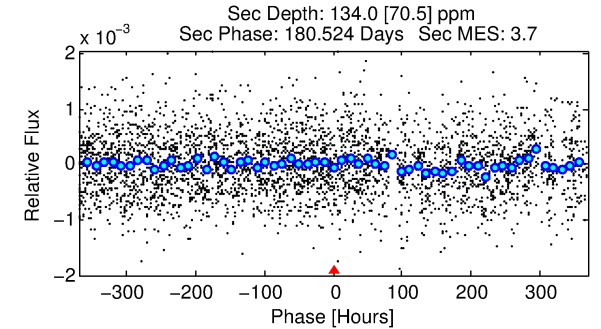
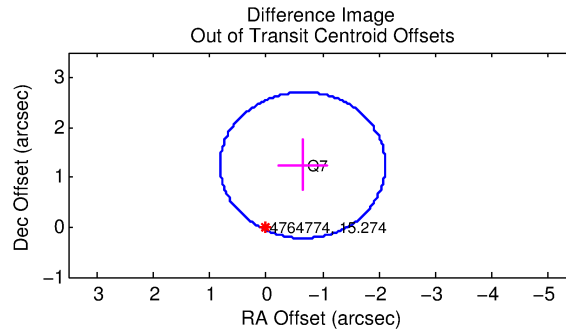
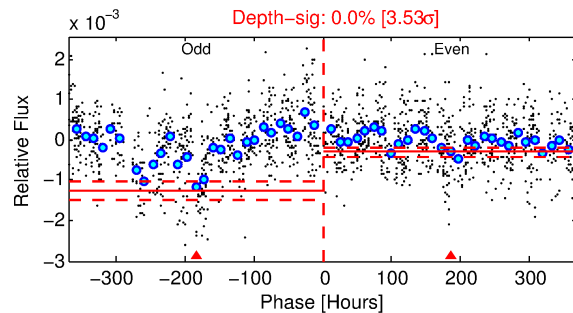
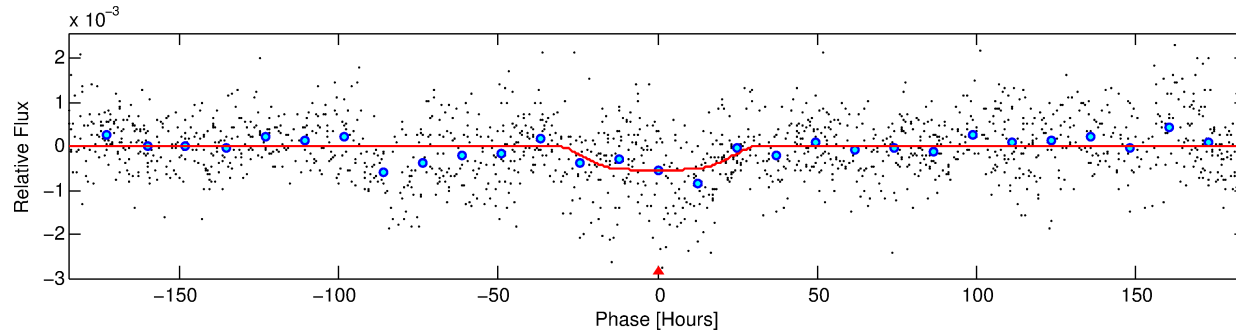
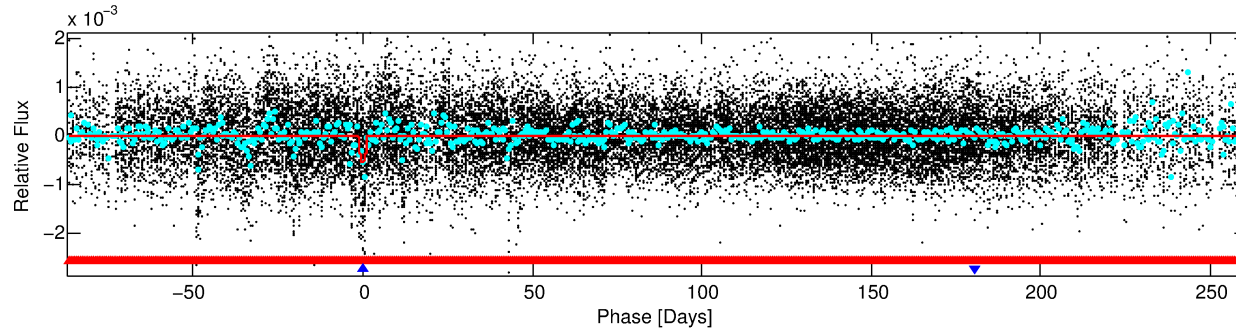
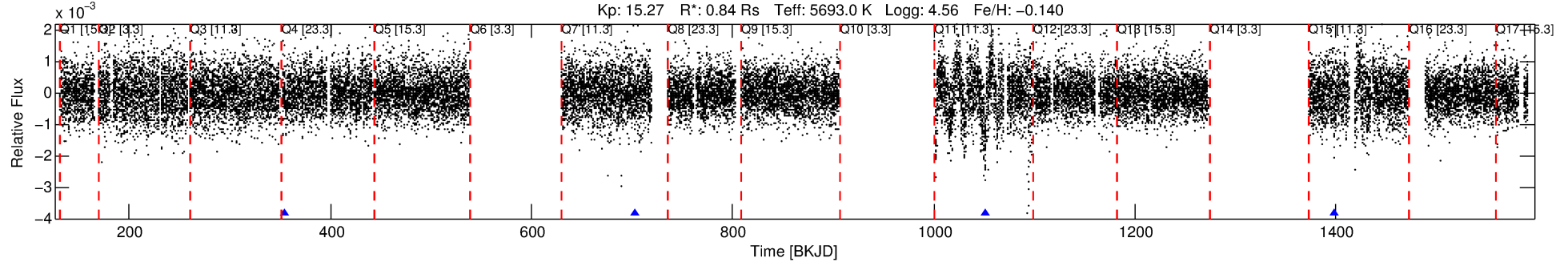
Ephemeris Match Information For 004764774-02

No Significant Match Found

DV One-Page Summary

KIC: 4764774 Candidate: 2 of 2 Period: 347.862 d
KOI: K04825 Corr: No Ephemeris Match

Kp: 15.27 R*: 0.84 Rs Teff: 5693.0 K Logg: 4.56 Fe/H: -0.140



DV Fit Results:

Period = 347.86245 [0.08570] d
Epoch = 355.2406 [0.1425] BKJD
Rp/R* = 0.0277 [0.0033]
a/R* = 16.02 [4.24]
b = 0.96 [0.02]
Seff = 0.74 [0.27]
Teq = 237 [21] K
Rp = 2.54 [0.73] Re
a = 0.9466 [0.2137] AU
Ag = 10217.19 [6820.86] [1.50σ]
Teffp = 3682 [545] K [6.32σ]

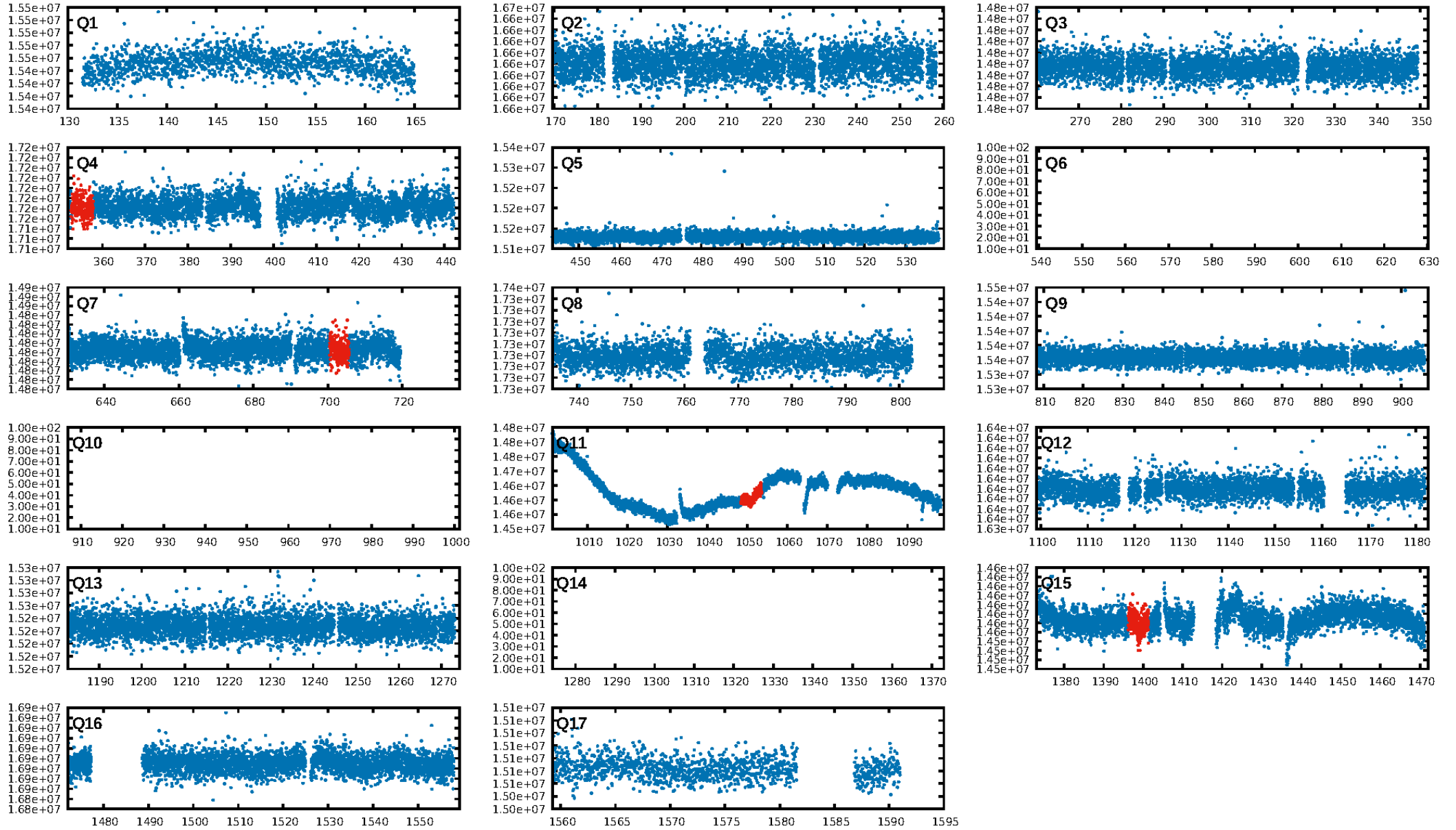
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [134.51σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.08e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.0401
Centroid-sig: 68.1%
Centroid-so: 0.847 arcsec [1.25σ]
OotOffset-rm: 1.398 arcsec [2.87σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-rm: 1.157 arcsec [2.45σ]
KicOffset-st: 0/1/0/0 [1]
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DiffImageOverlap-fno: 0.00 [0/2]

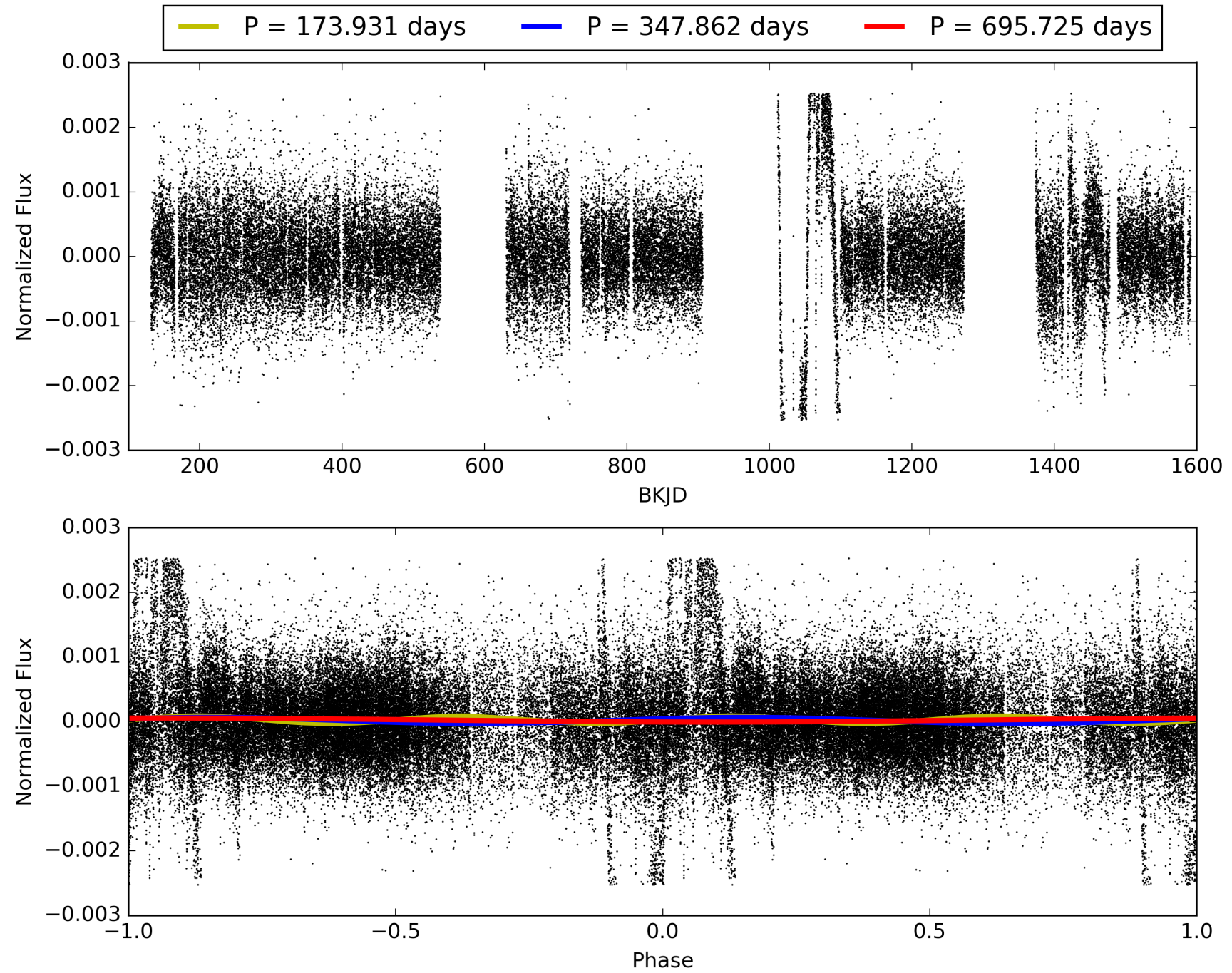
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:06:32 Z

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

TCE 004764774-02, PDC Light Curves

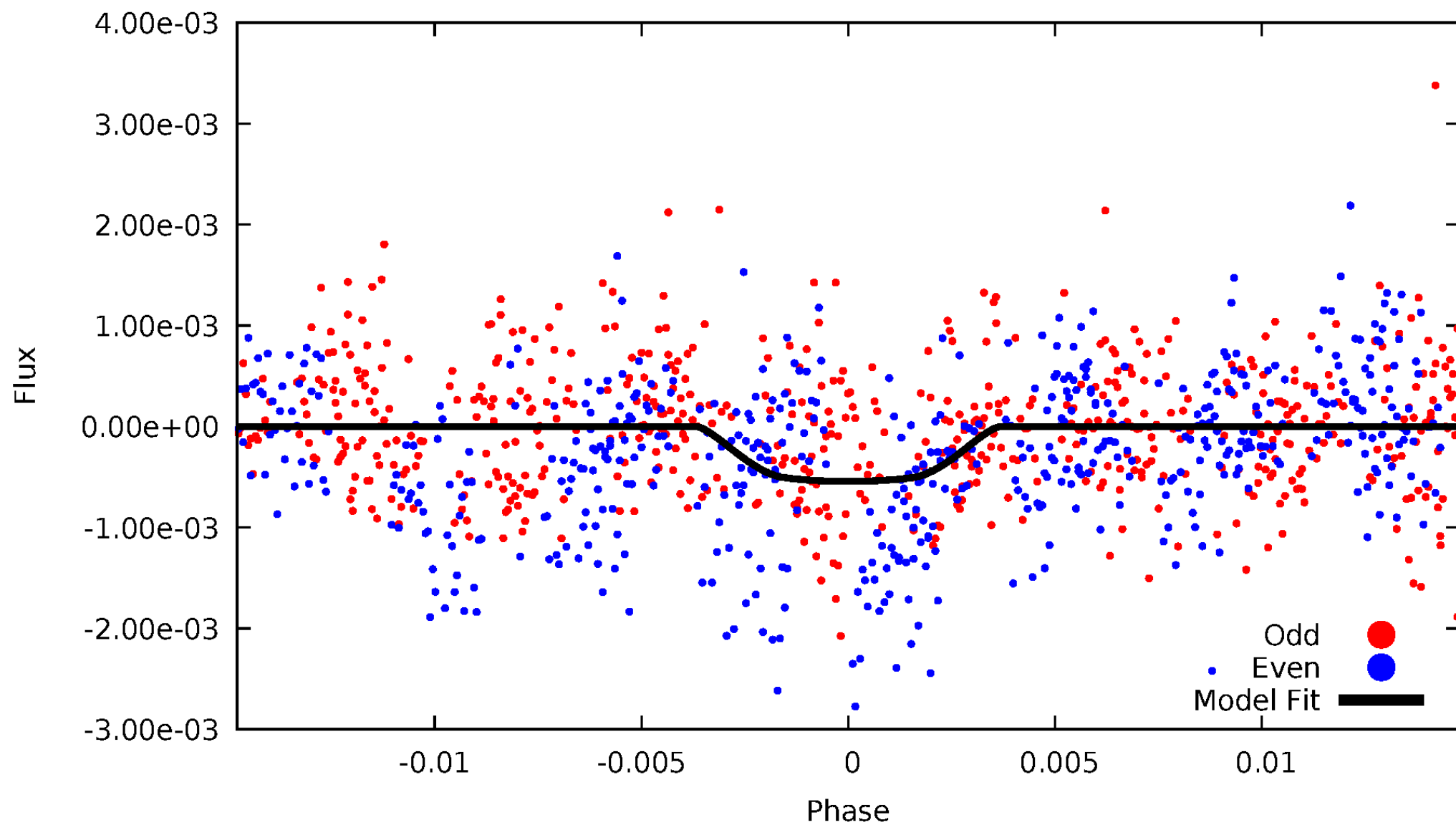


TCE 004764774-02



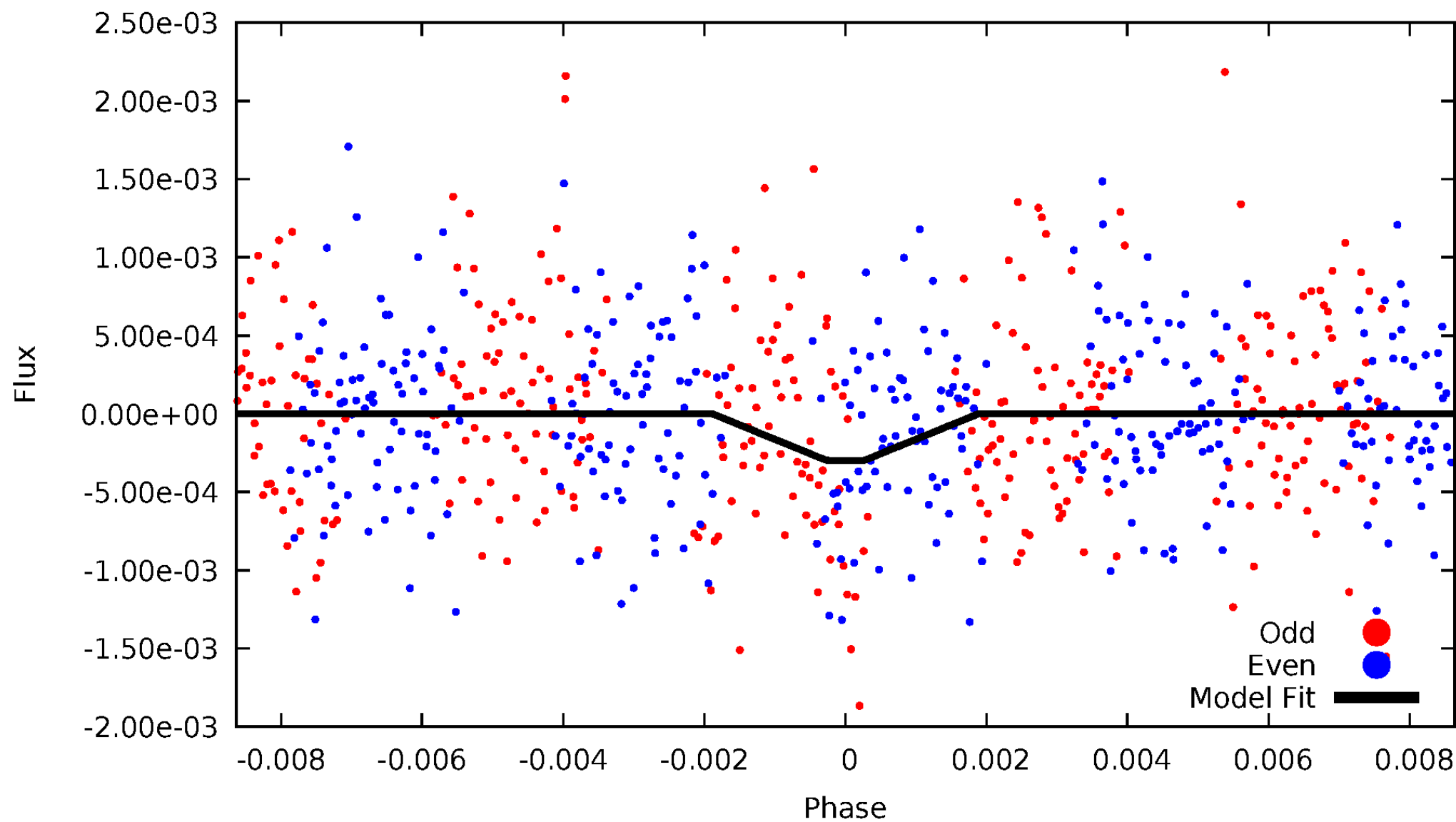
DV Odd/Even

TCE 004764774-02



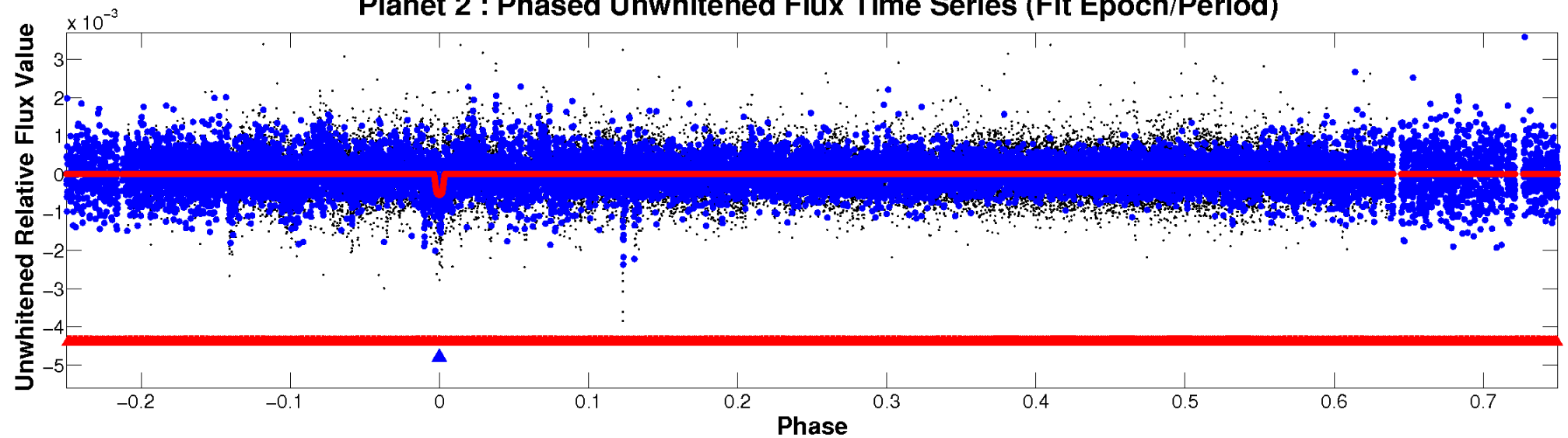
ALT Odd/Even

TCE 004764774-02

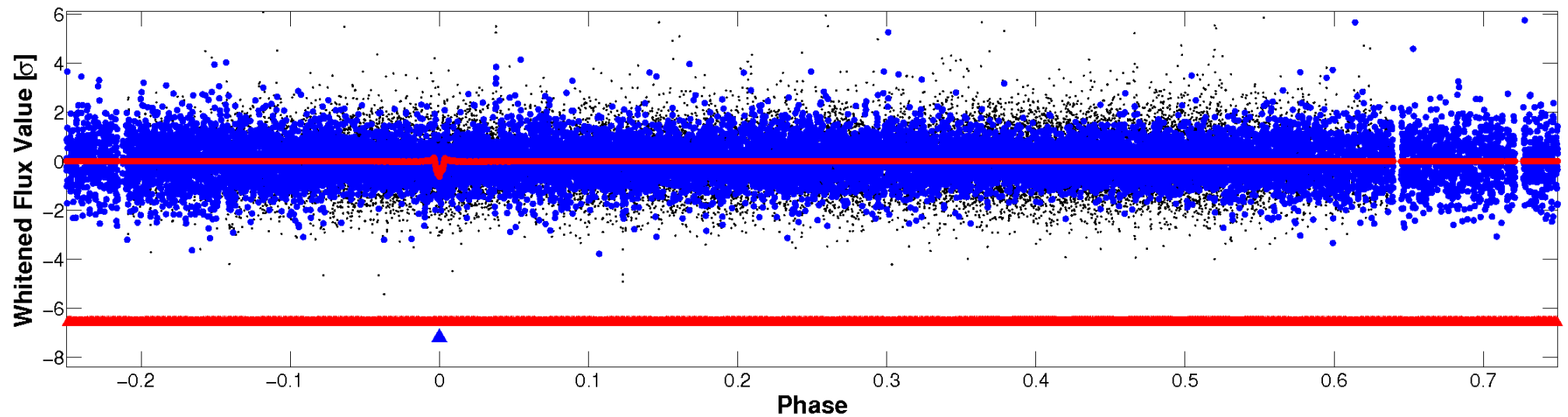


Non-Whitened Vs. Whitened Light Curve

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

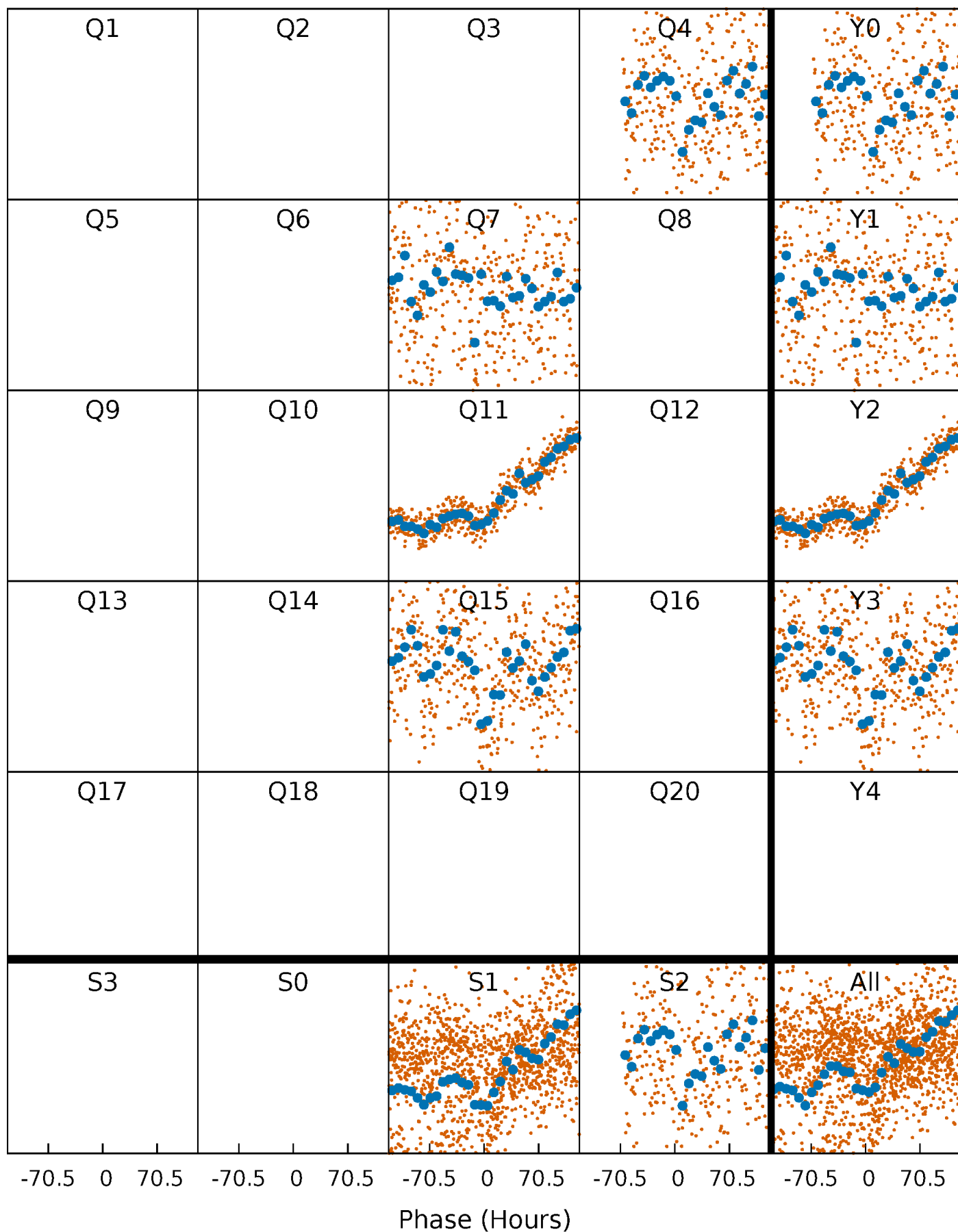


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



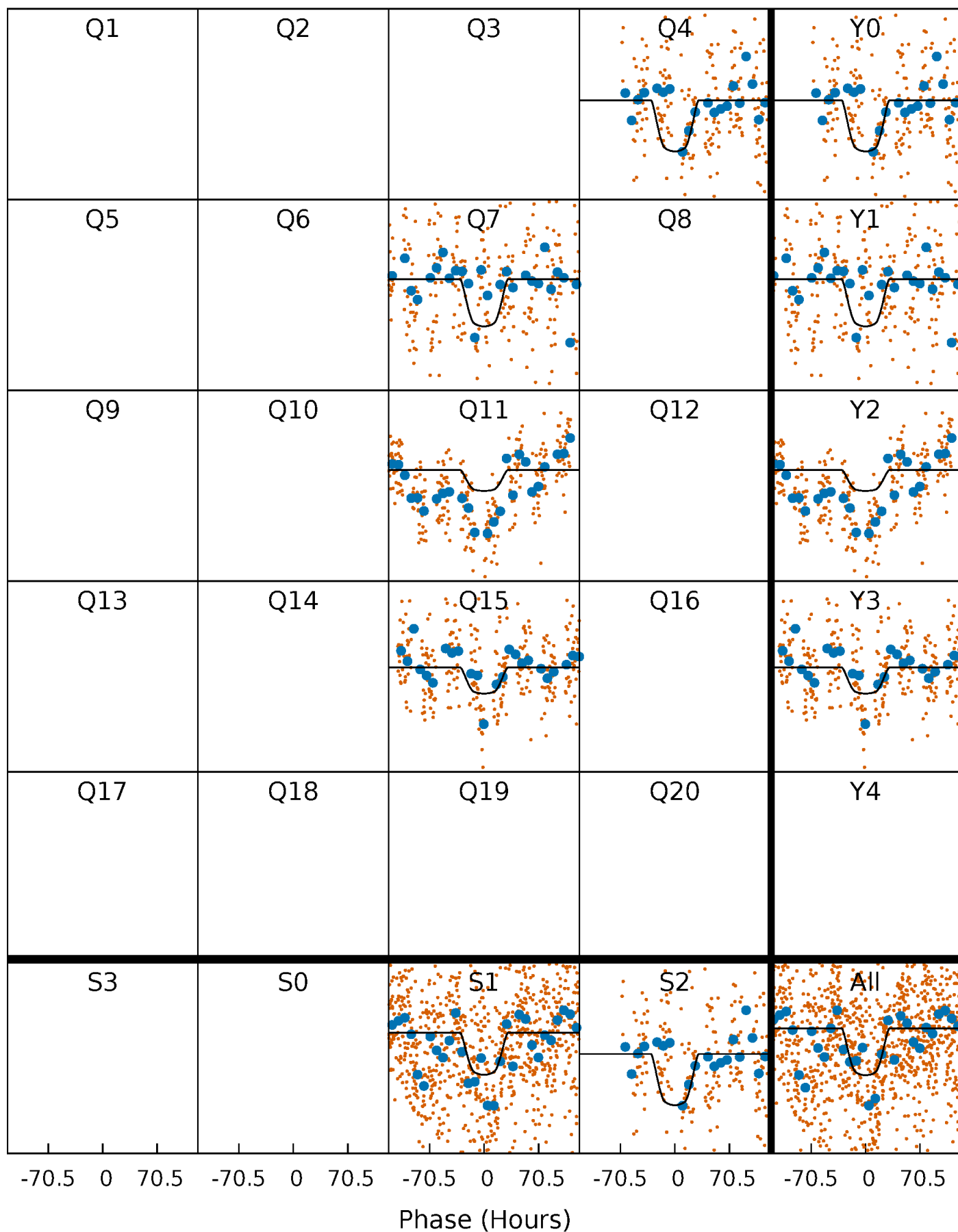
PDC Quarter-Phased Transit Curves

TCE 004764774-02 P=347.862451 Days $T_0=355.240611$ (BKJD)



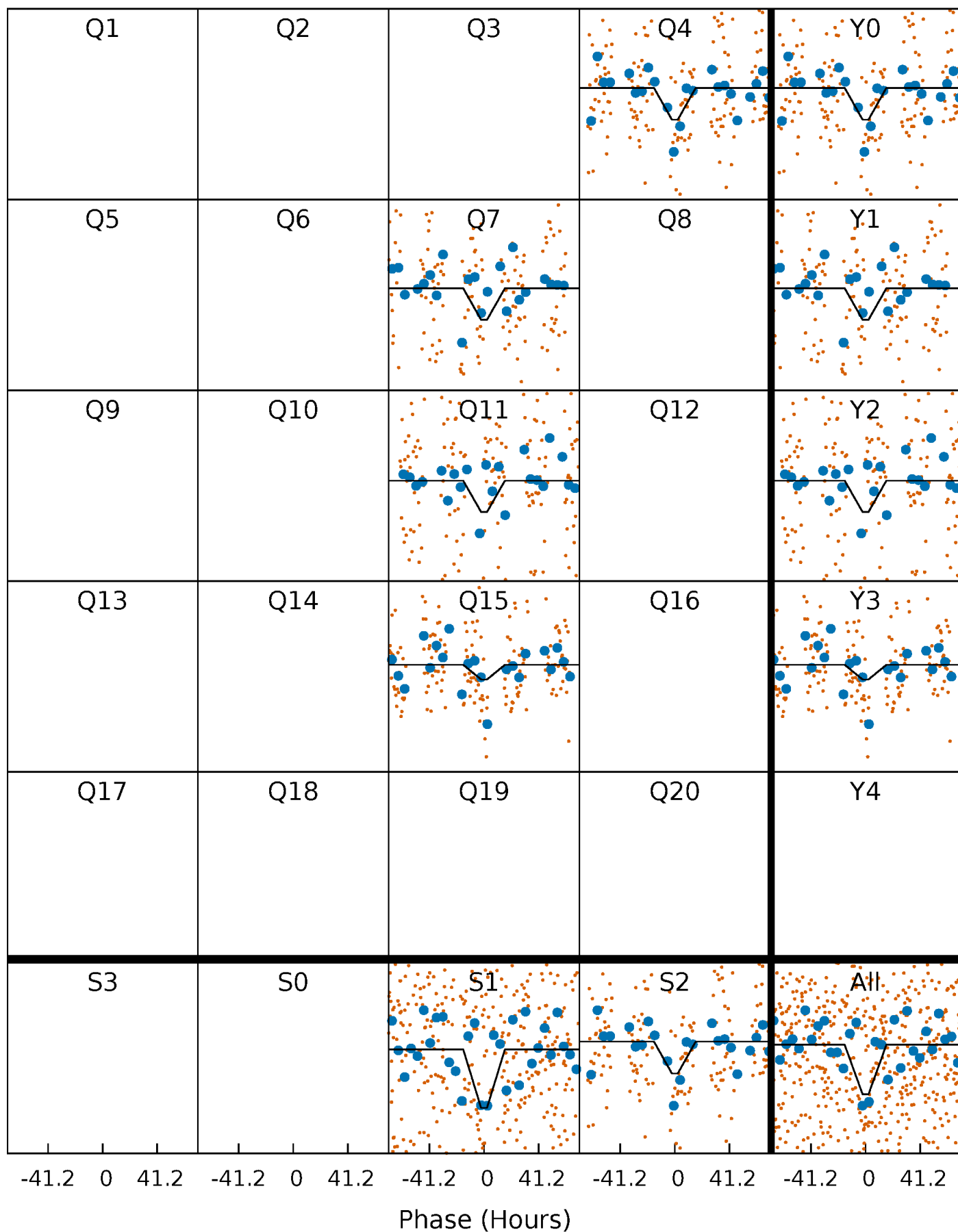
DV Quarter-Phased Transit Curves

TCE 004764774-02 $P=347.862451$ Days $T_0=355.240611$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

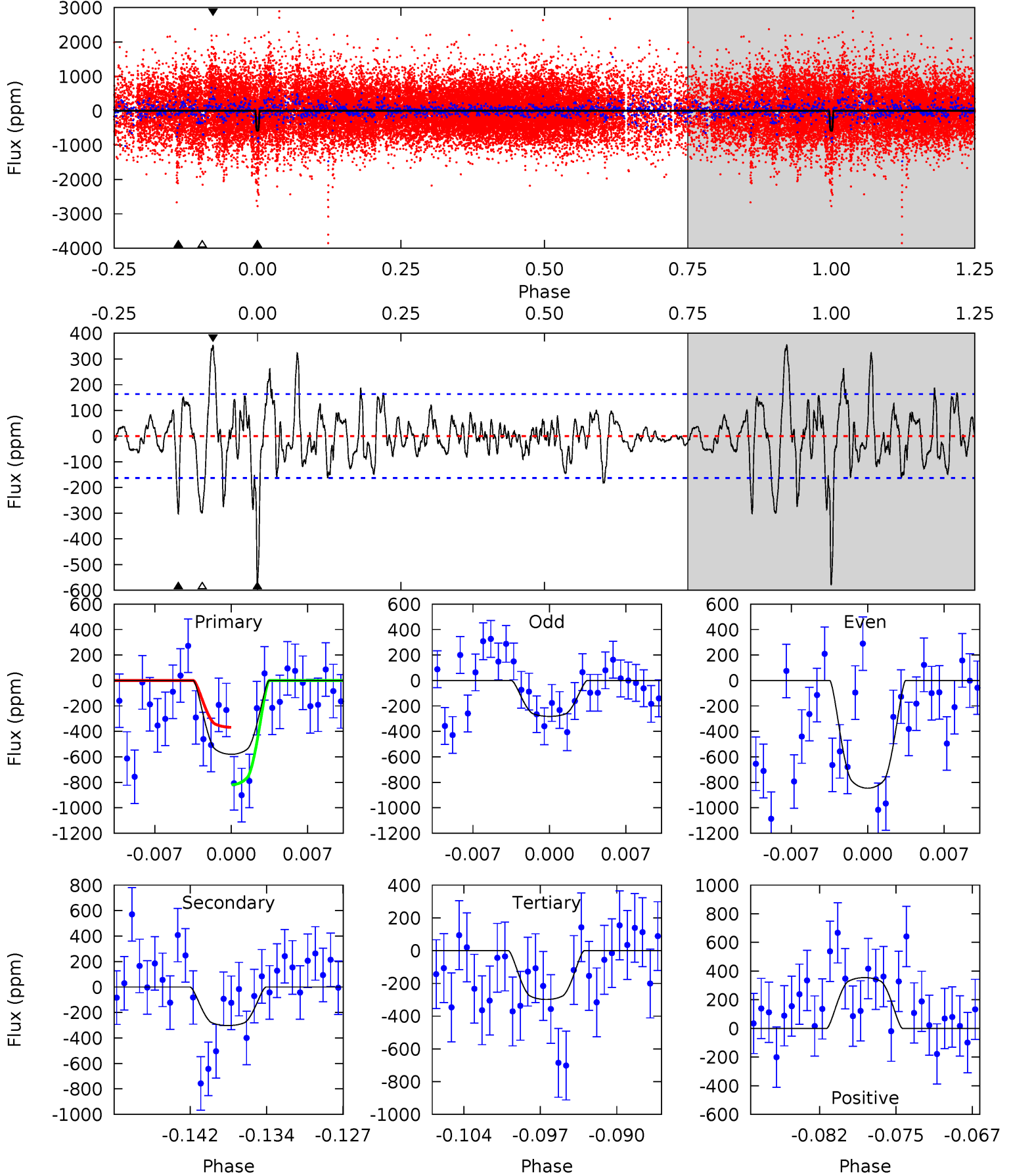
TCE 004764774-02 P=347.649779 Days $T_0=355.745609$ (BKJD)



DV Model-Shift Uniqueness Test

004764774-02, P = 347.862451 Days, E = 7.378160 Days

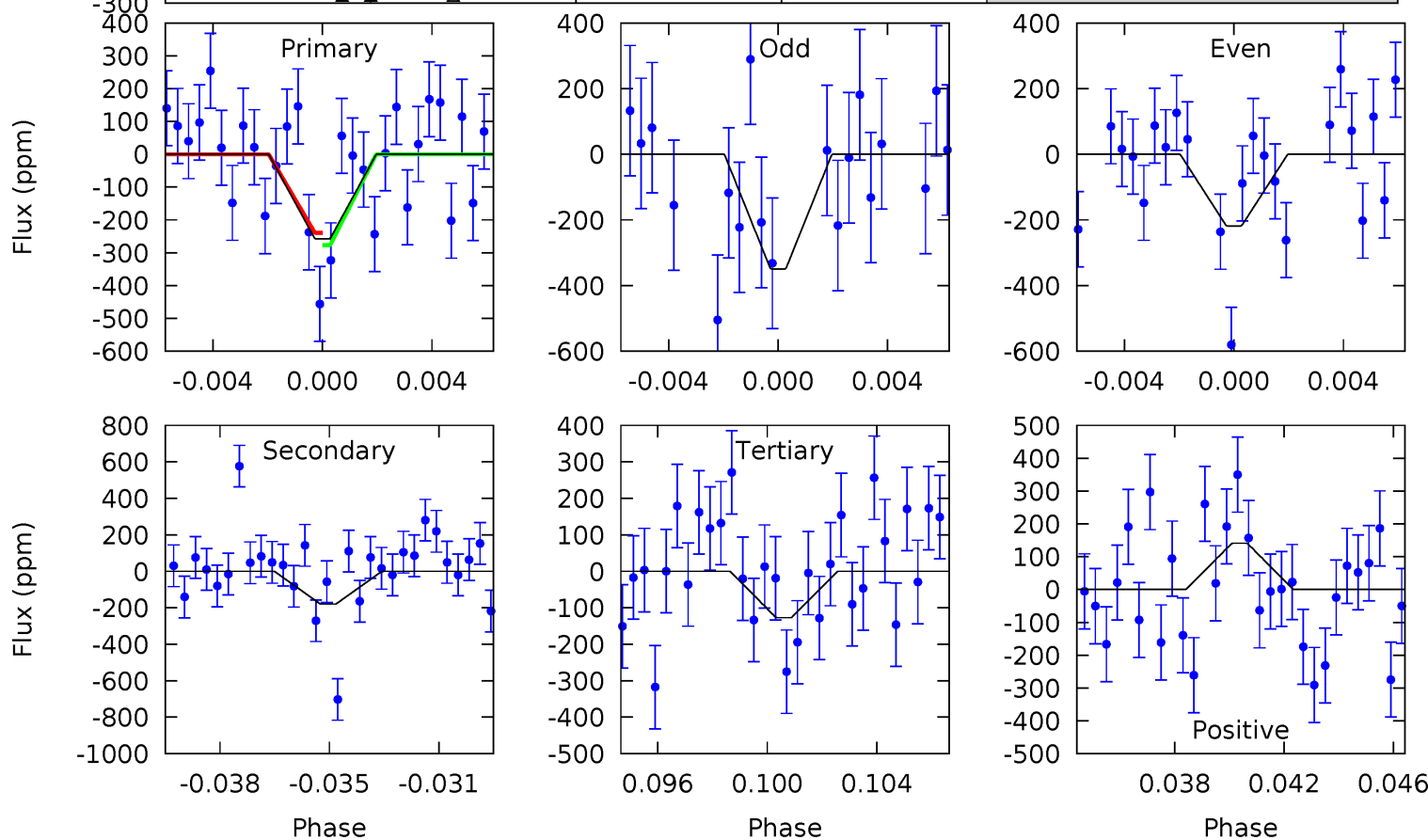
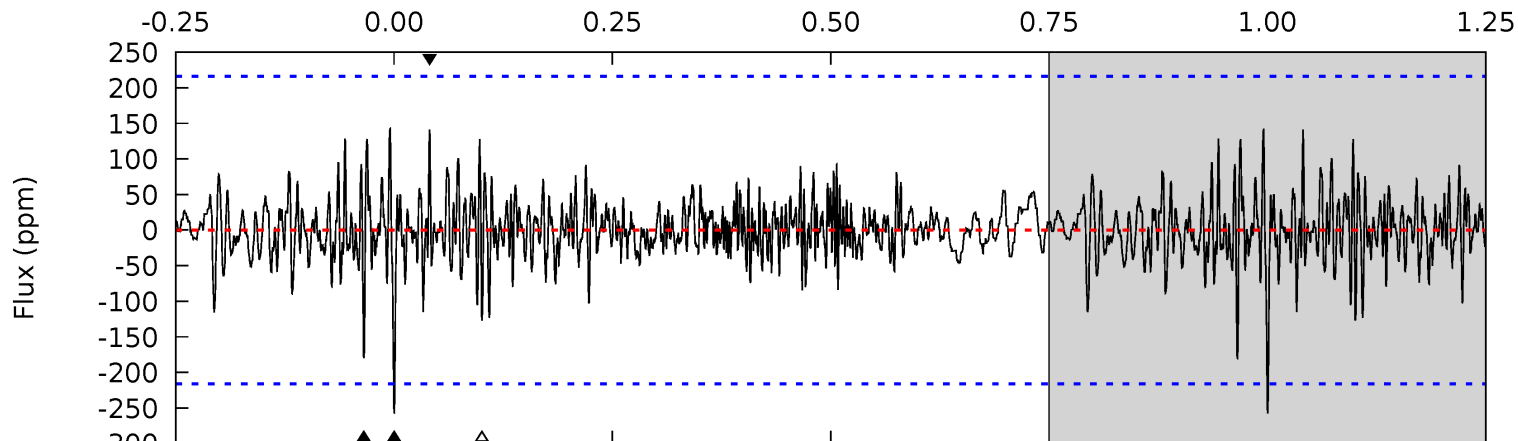
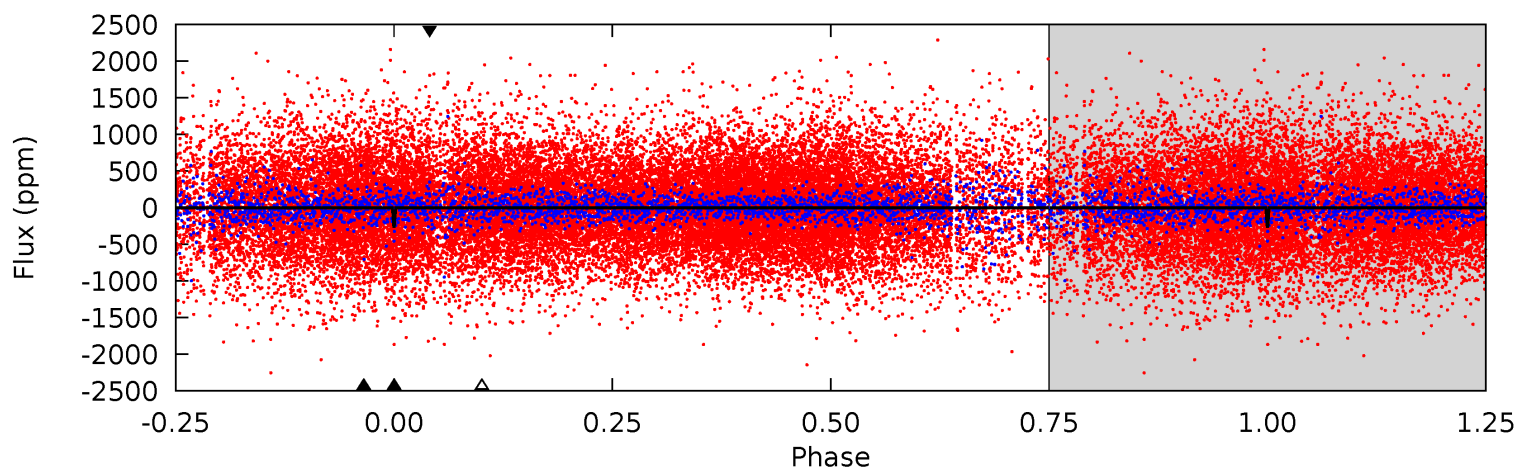
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	9.41	9.28	11.0	5.08	2.68	2.63	8.75	7.01	0.13	-1.62	8.83	1.99	0.38	6.96



Alt Model-Shift Uniqueness Test

004764774-02, P = 347.649779 Days, E = 8.095830 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.20	4.34	3.07	3.40	5.21	2.89	0.84	3.14	2.80	1.27	0.94	1.58	0.95	0.36	0.45



Stellar Parameters For KIC 004764774

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5693^{+152}_{-186}	$4.558^{+0.033}_{-0.187}$	$-0.140^{+0.300}_{-0.300}$	$0.842^{+0.220}_{-0.073}$	$0.938^{+0.094}_{-0.115}$	$2.217^{+0.414}_{-1.053}$
	+3%/-3%	+1%/-4%	+214%/-214%	+26%/-9%	+10%/-12%	+19%/-47%
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 004764774-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-303 ± 32	$2.65^{+0.46}_{-0.35}$	338^{+20}_{-14}	4641^{+290}_{-254}	20371^{+7506}_{-5675}
Alt.	-180 ± 41	$1.65^{+0.38}_{-0.35}$	338^{+22}_{-14}	5066^{+618}_{-461}	30617^{+19823}_{-11213}

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 $A_{\text{obs}} \gg 1.0$

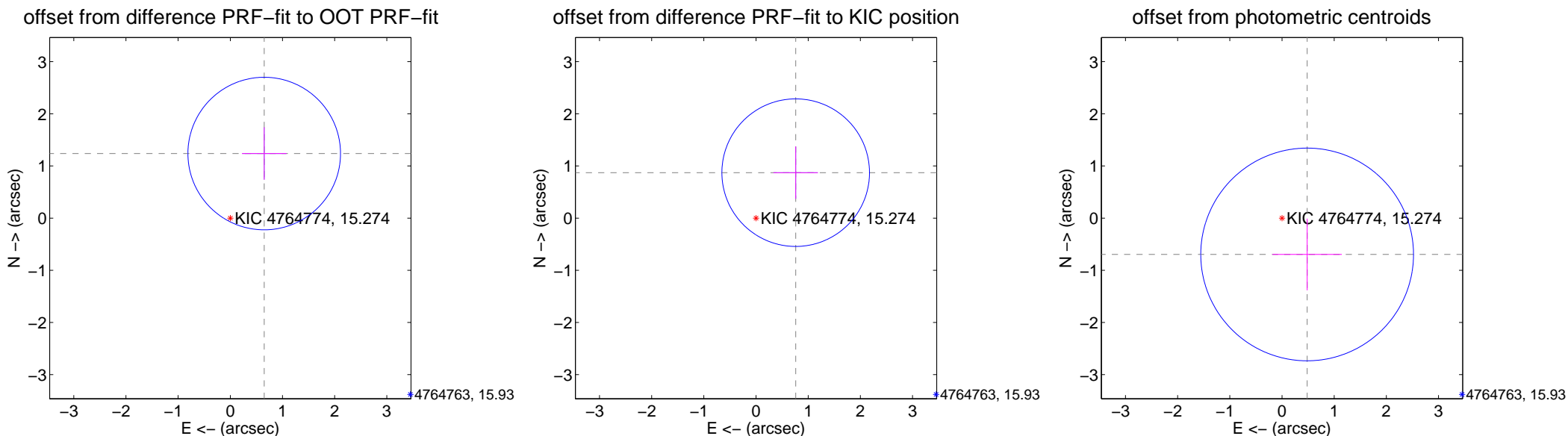
DV Centroid Data

Supplemental centroid analysis for 004764774-02. Kepler magnitude: 15.27. Transit SNR 6.12

There are 1 quarters with good PRF difference image offsets

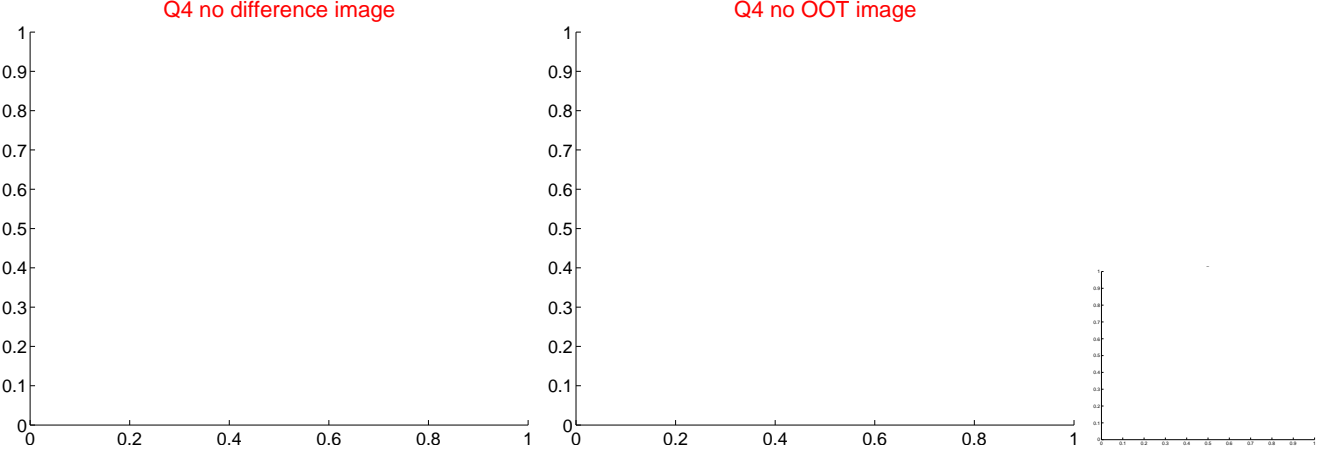
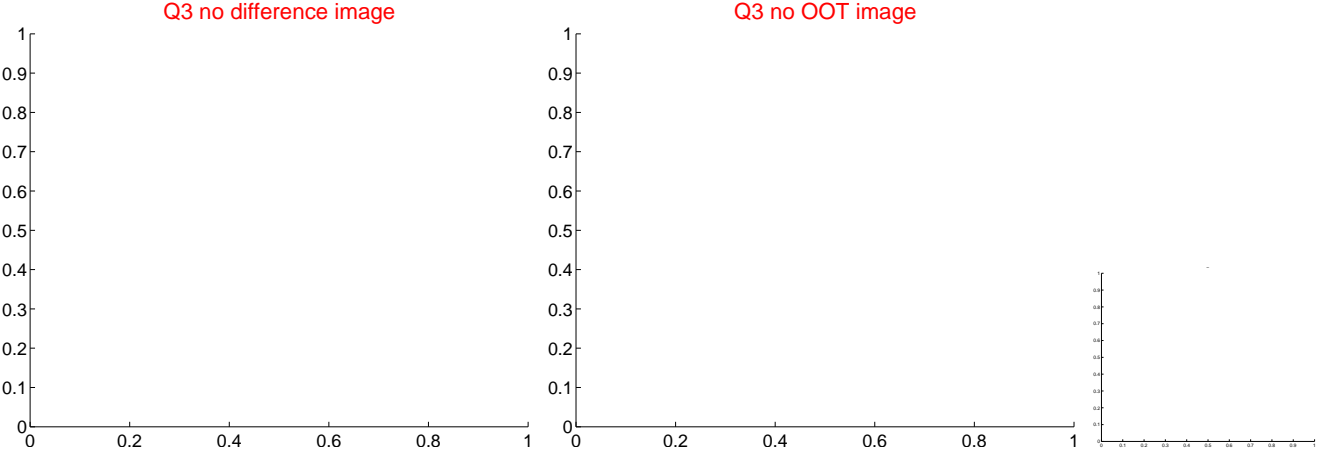
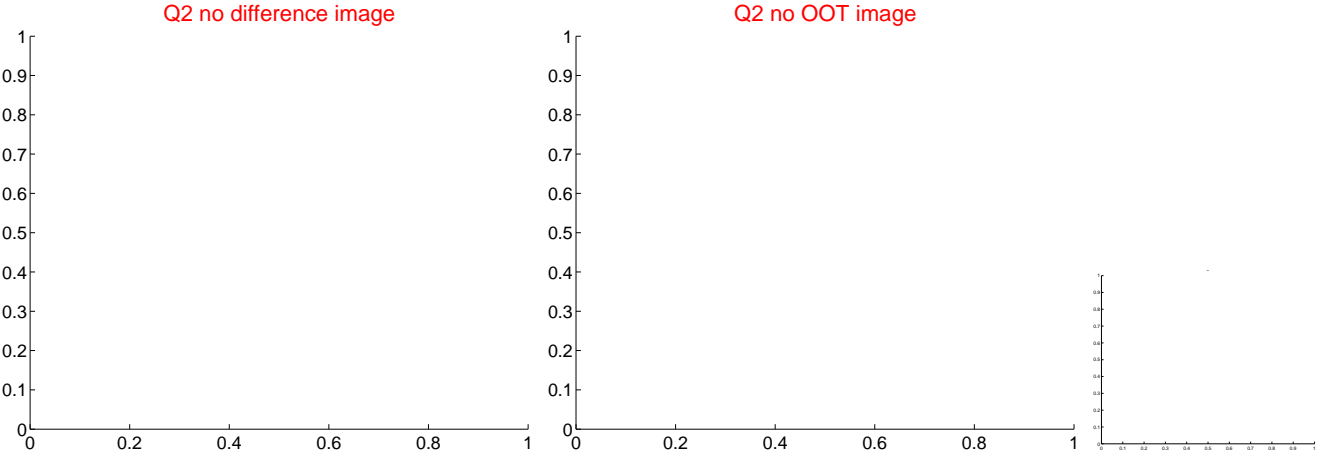
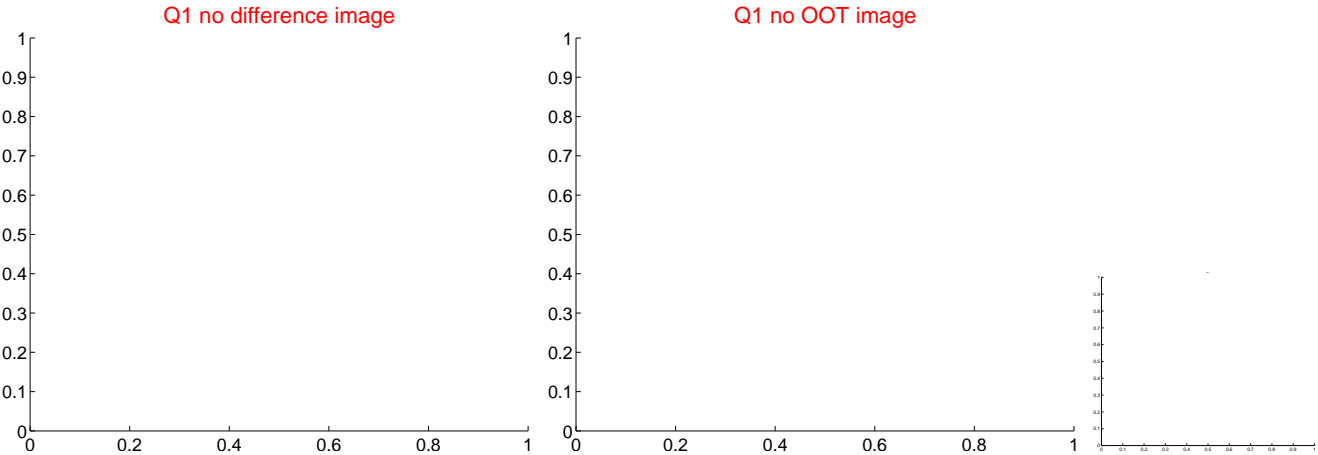
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.398 ± 0.487	2.87	-0.650 ± 0.427	1.238 ± 0.503
PRF-fit source offset from KIC position	1.157 ± 0.471	2.45	-0.760 ± 0.427	0.872 ± 0.503
photometric centroid source offset	0.85 ± 0.68	1.25	-0.48 ± 0.66	-0.70 ± 0.69



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

Q5 no difference image



Q5 no OOT image



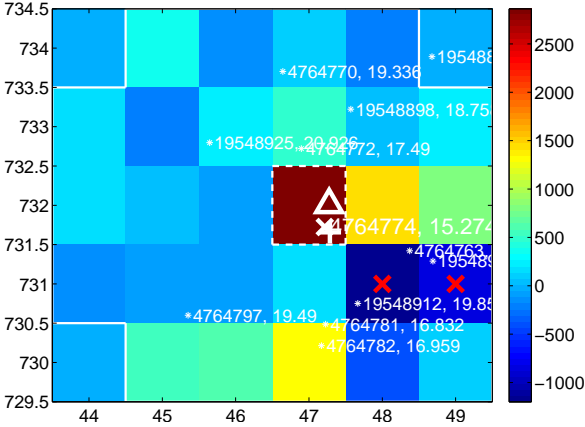
Q6 no difference image



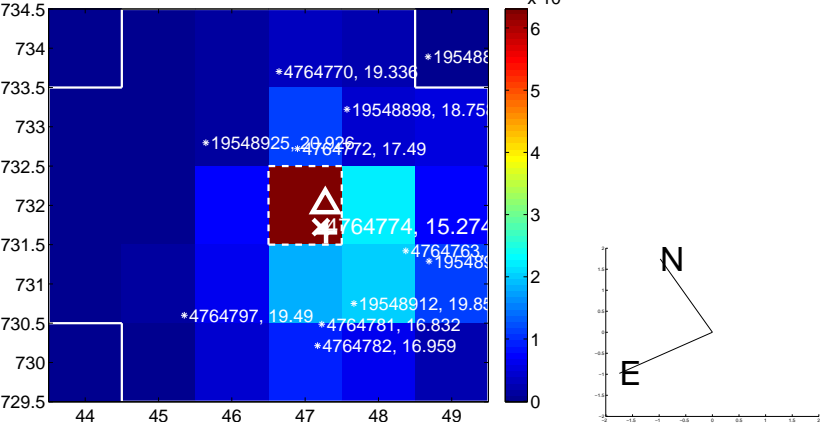
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



Q9 no OOT image



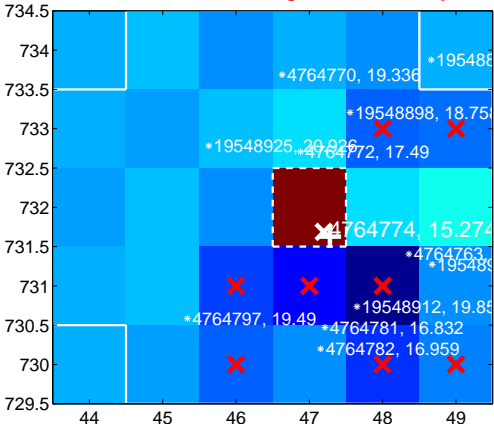
Q10 no difference image



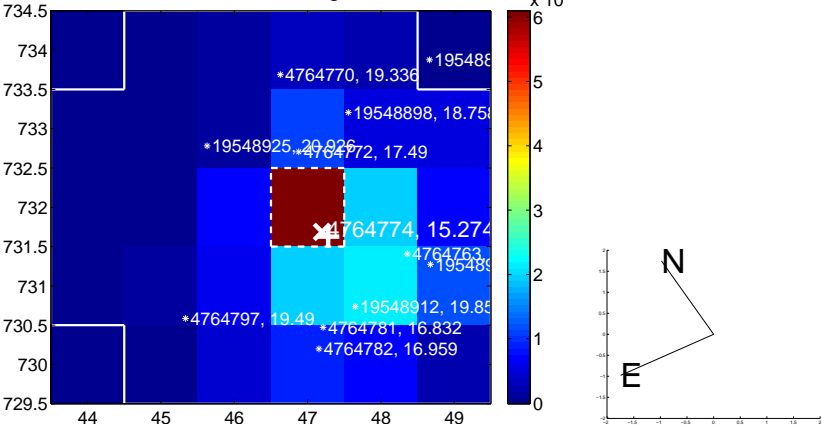
Q10 no OOT image



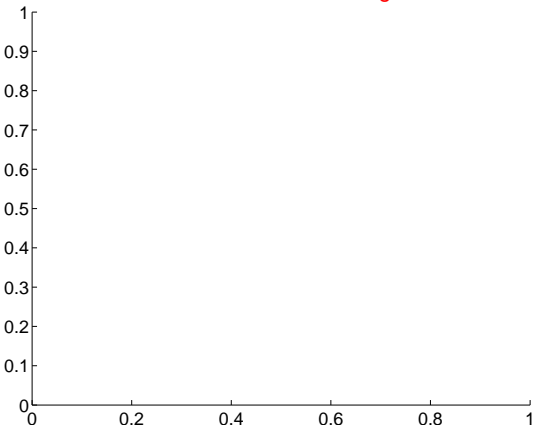
Q11 difference image. Poor Quality



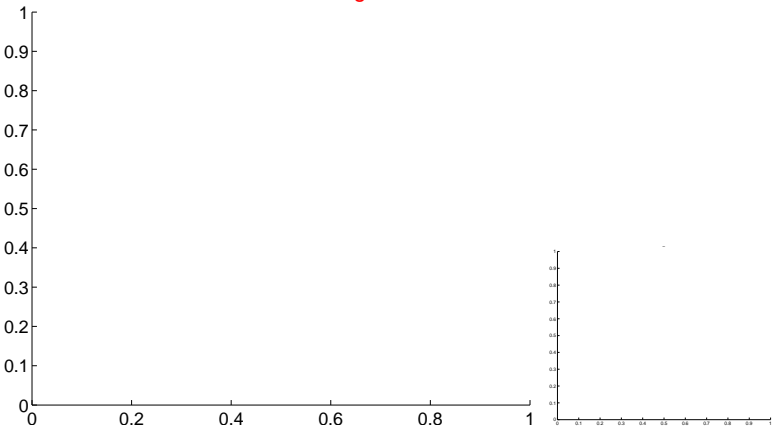
Q11 OOT image



Q12 no difference image



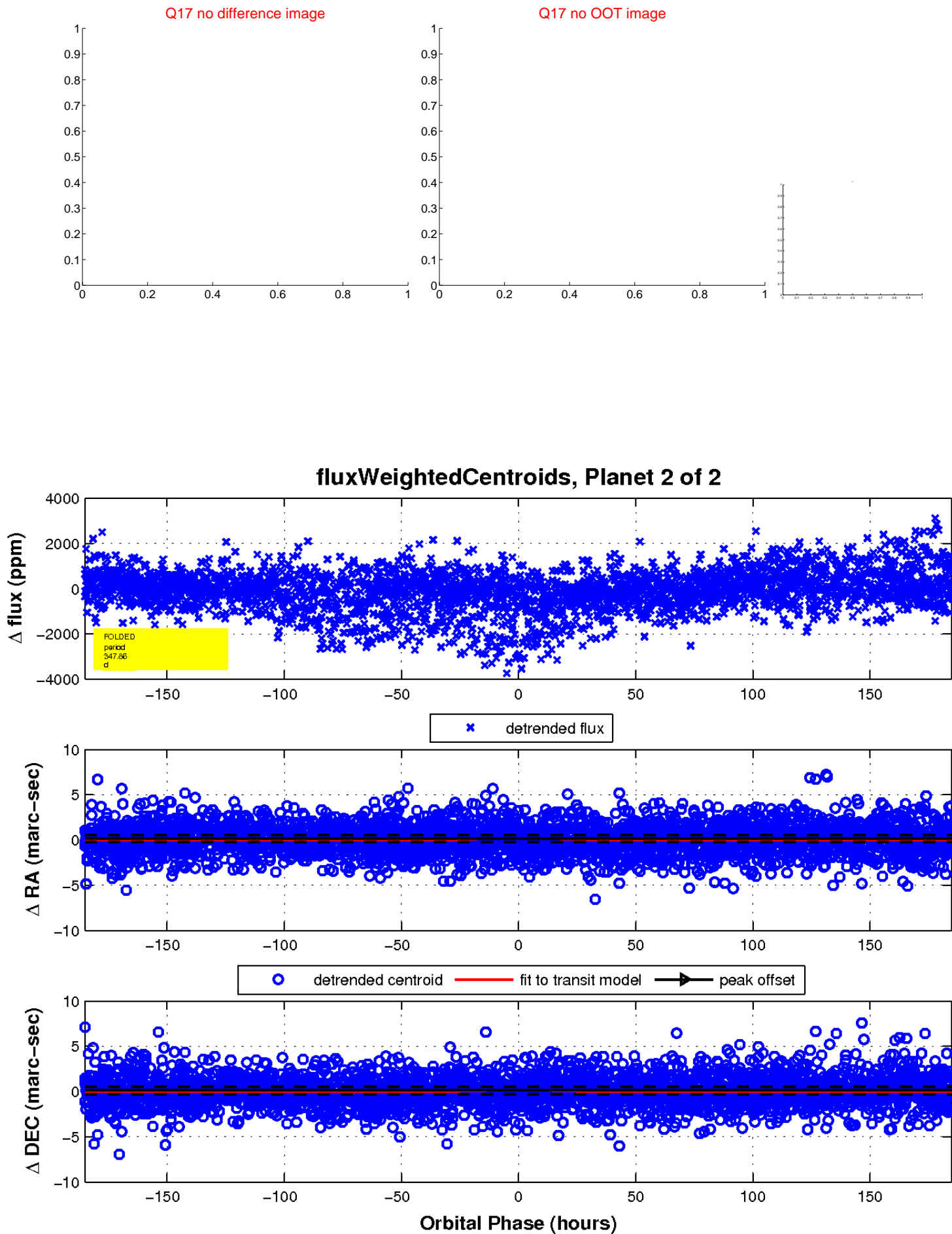
Q12 no OOT image



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

