

KIC 003749508

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})
003749508-01	OBS	7544.02	1.065747	132.034968	176.6	0.910	32.2	35.9	10.11	6244	16.05	0.00
003749508-02	OBS	7544.01	2.403921	131.586727	41.7	13.450	10.0	7.5	10.11	6244	6.55	54938.48
003749508-03	OBS	No	70.444992	164.220847	184.1	1.045	14.2	3.1	10.11	6244	16.22	608.09
003749508-04	OBS	No	124.125001	214.471104	503.8	0.805	10.9	2.9	10.11	6244	26.95	285.73
003749508-05	OBS	No	124.139851	214.930752	420.0	12.892	11.0	9.5	10.11	6244	24.10	285.69
003749508-06	OBS	No	33.583321	142.235014	52.7	11.521	8.9	2.3	10.11	6244	8.21	1632.82
003749508-07	OBS	No	454.561847	534.062004	419.5	8.543	9.4	8.6	10.11	6244	22.16	50.62
003749508-08	OBS	No	77.697273	157.170514	94.8	6.051	8.0	2.5	10.11	6244	10.62	533.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749508-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_ALT
003749508-02	OBS	FP	0.00	1	0	0	0	LPP_DV
003749508-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—HALO_GHOST
003749508-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
003749508-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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 003749508-01

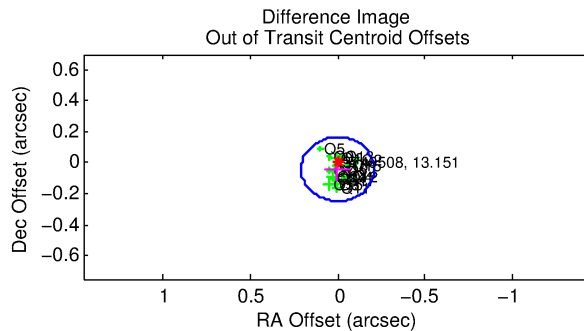
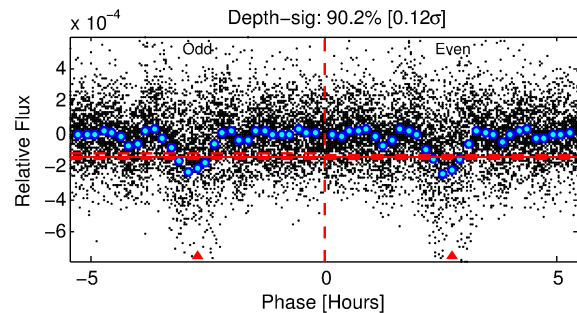
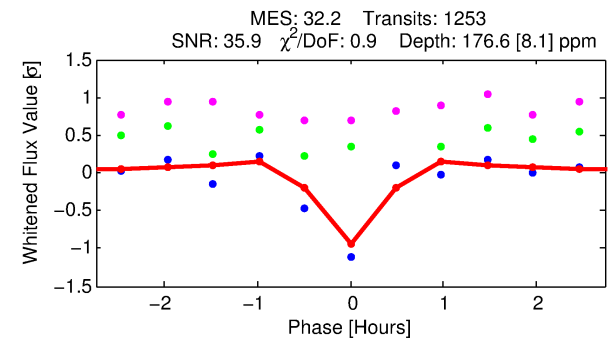
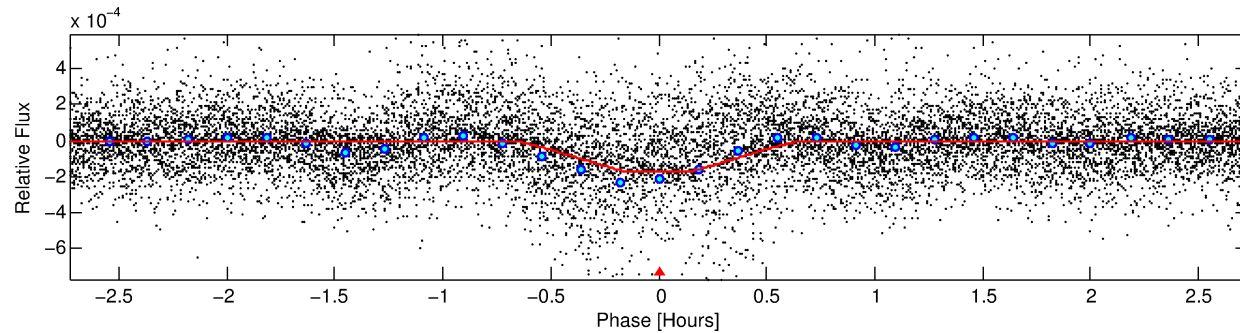
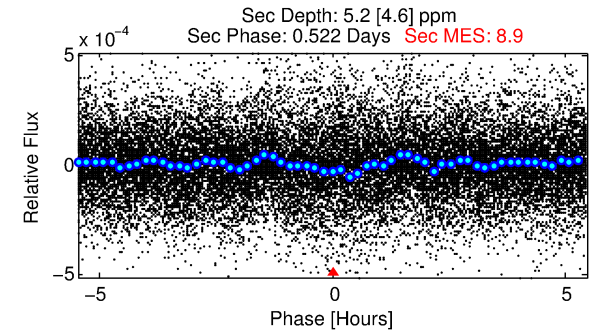
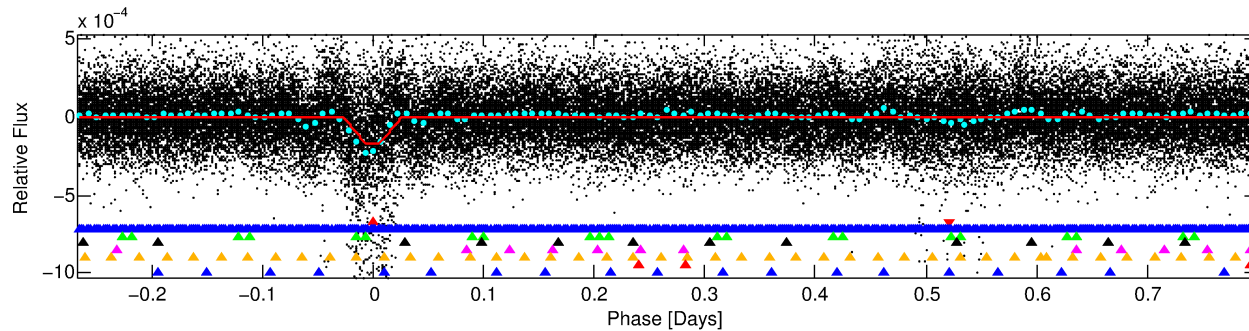
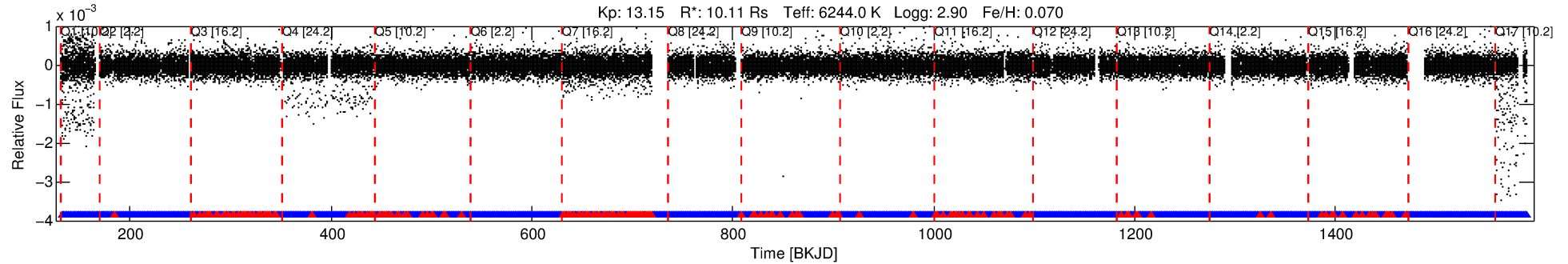
No Significant Match Found

DV One-Page Summary

KIC: 3749508 Candidate: 1 of 8 Period: 1.066 d

KOI: K07544 Corr: No Ephemeris Match

Kp: 13.15 R*: 10.11 Rs Teff: 6244.0 K Logg: 2.90 Fe/H: 0.070



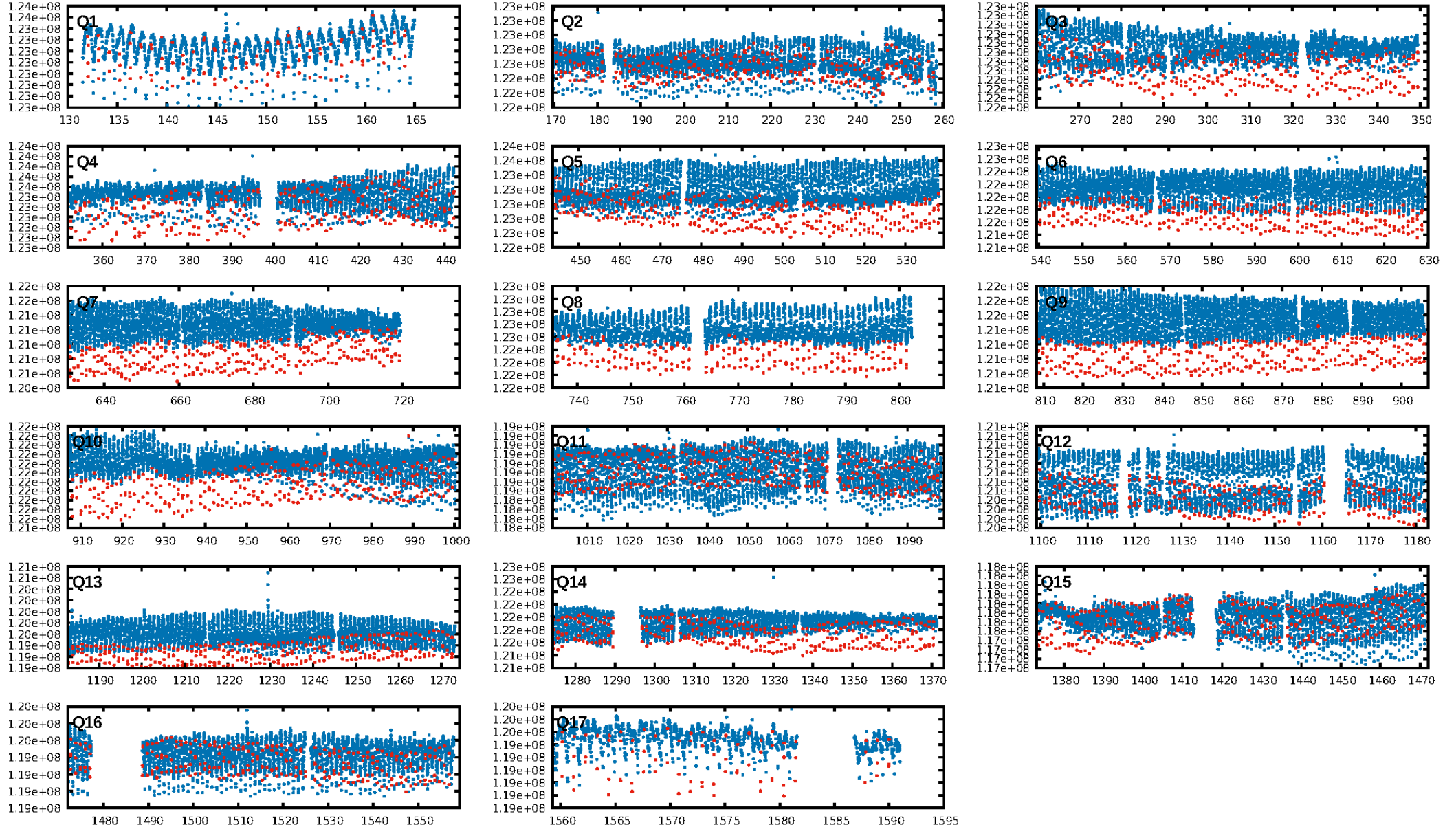
DV Fit Results:

Period = 1.06575 [0.00000] d
Epoch = 132.0350 [0.0004] BKJD
Rp/R* = 0.0146 [0.0028]
a/R* = 4.12 [4.10]
b = 0.91 [0.20]
Seff = N/A
Teq = N/A
Rp = 16.05 [9.61] Re
a = N/A
Ag = N/A
Teffp = N/A

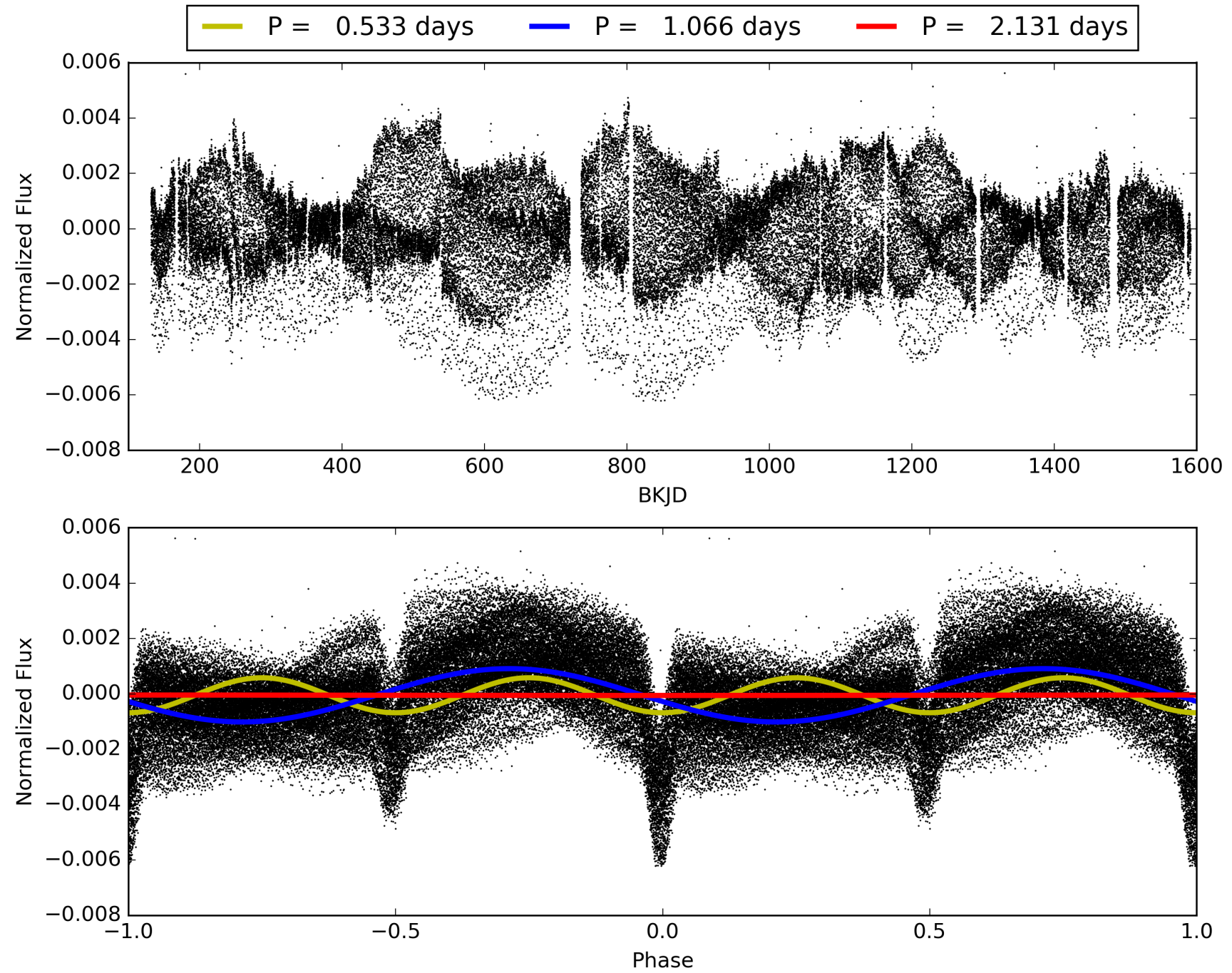
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 98.3% [2.38σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.60e-121
RollingBand-fgt: 0.85 [1017/1197]
GhostDiagnostic-chr: 0.3293
Centroid-sig: 0.0%
Centroid-so: 2.556 arcsec [8.07σ]
OotOffset-rm: 0.041 arcsec [0.59σ]
KicOffset-rm: 0.033 arcsec [0.48σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003749508-01, PDC Light Curves

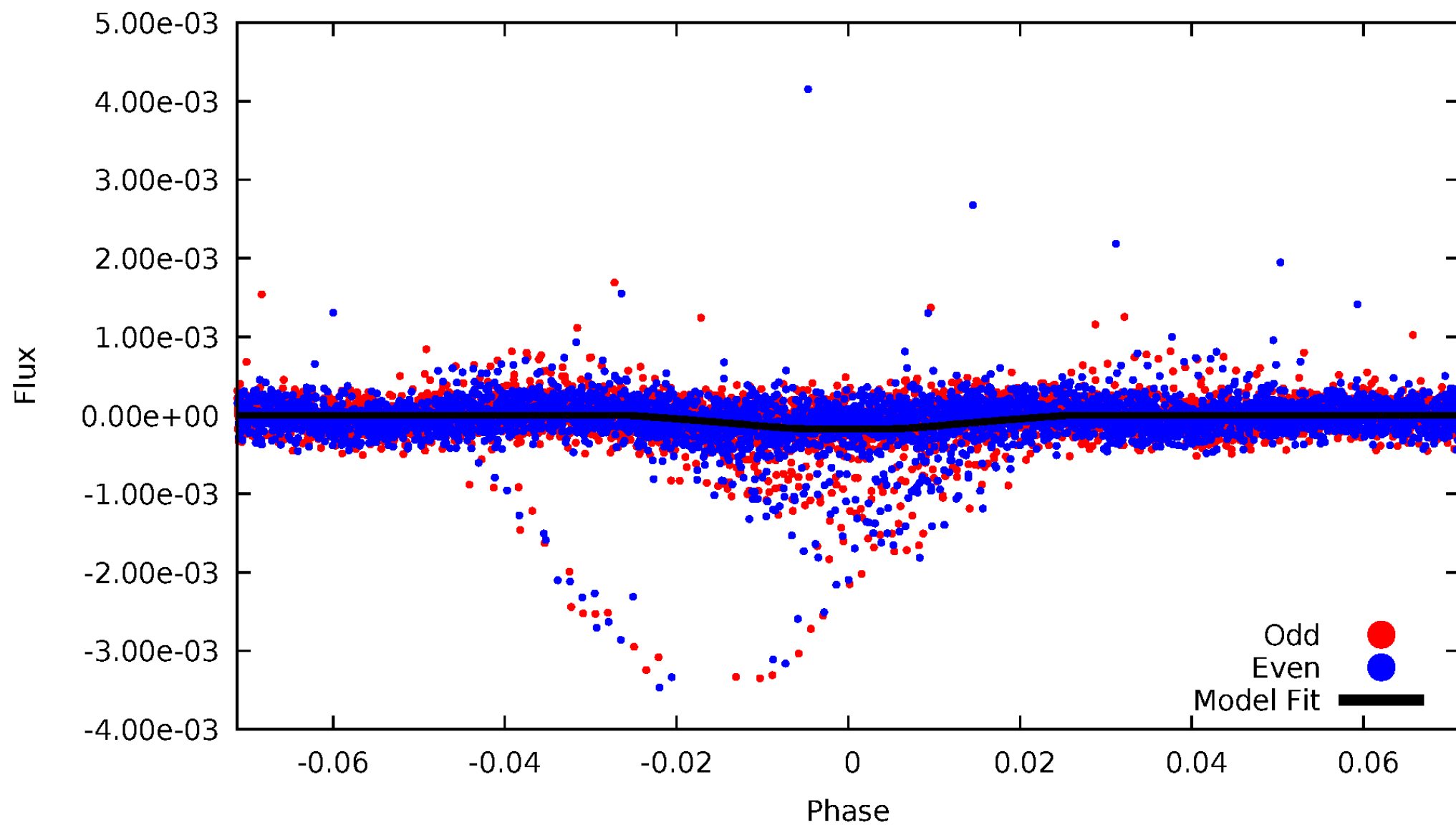


TCE 003749508-01



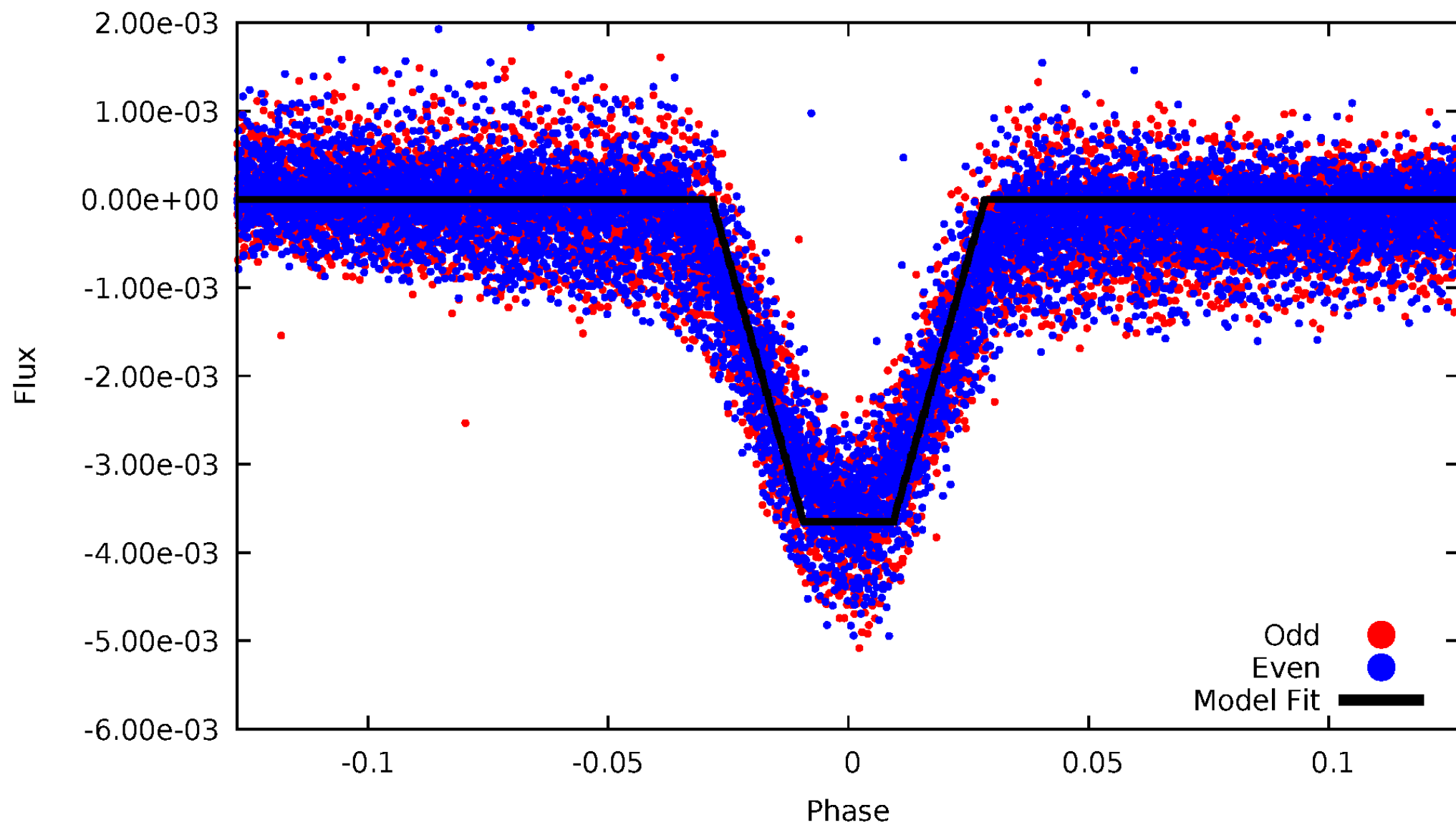
DV Odd/Even

TCE 003749508-01

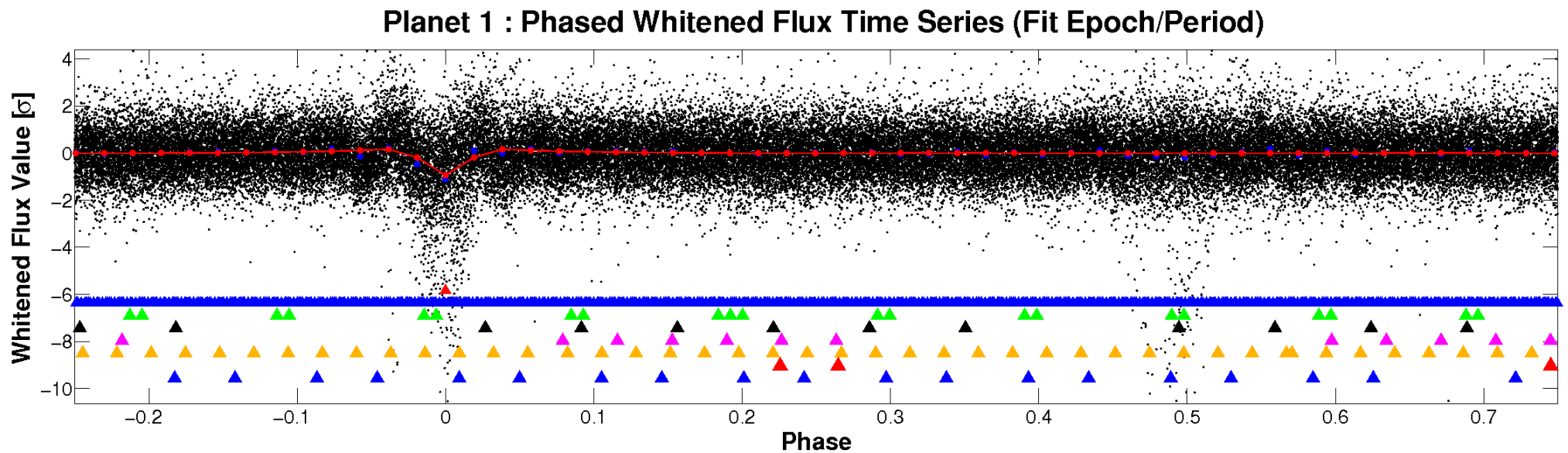
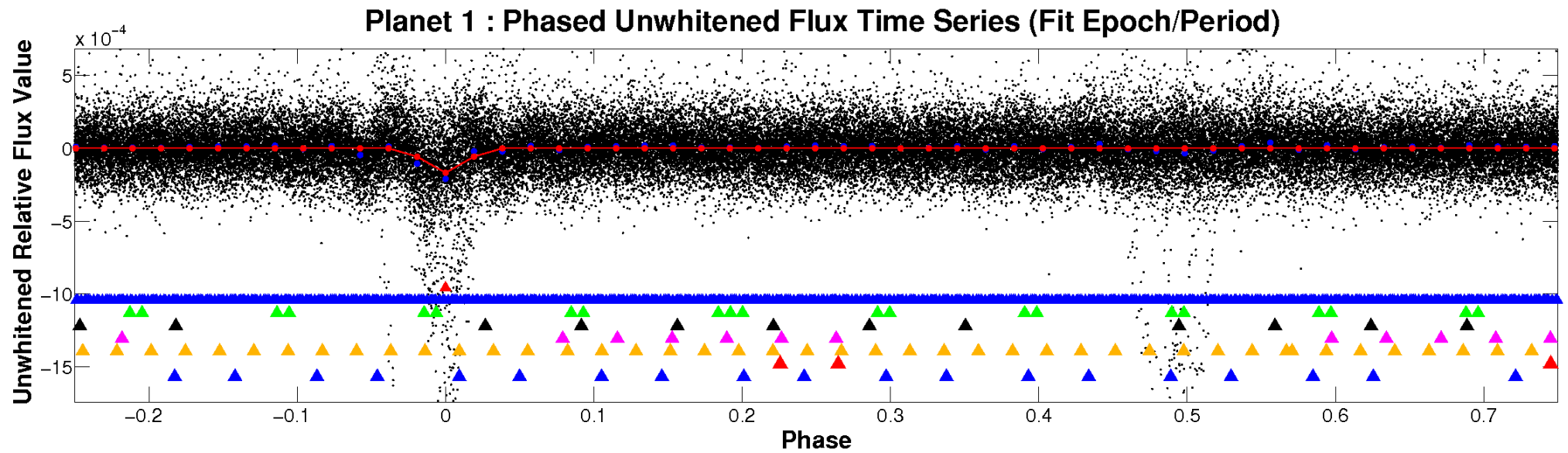


ALT Odd/Even

TCE 003749508-01

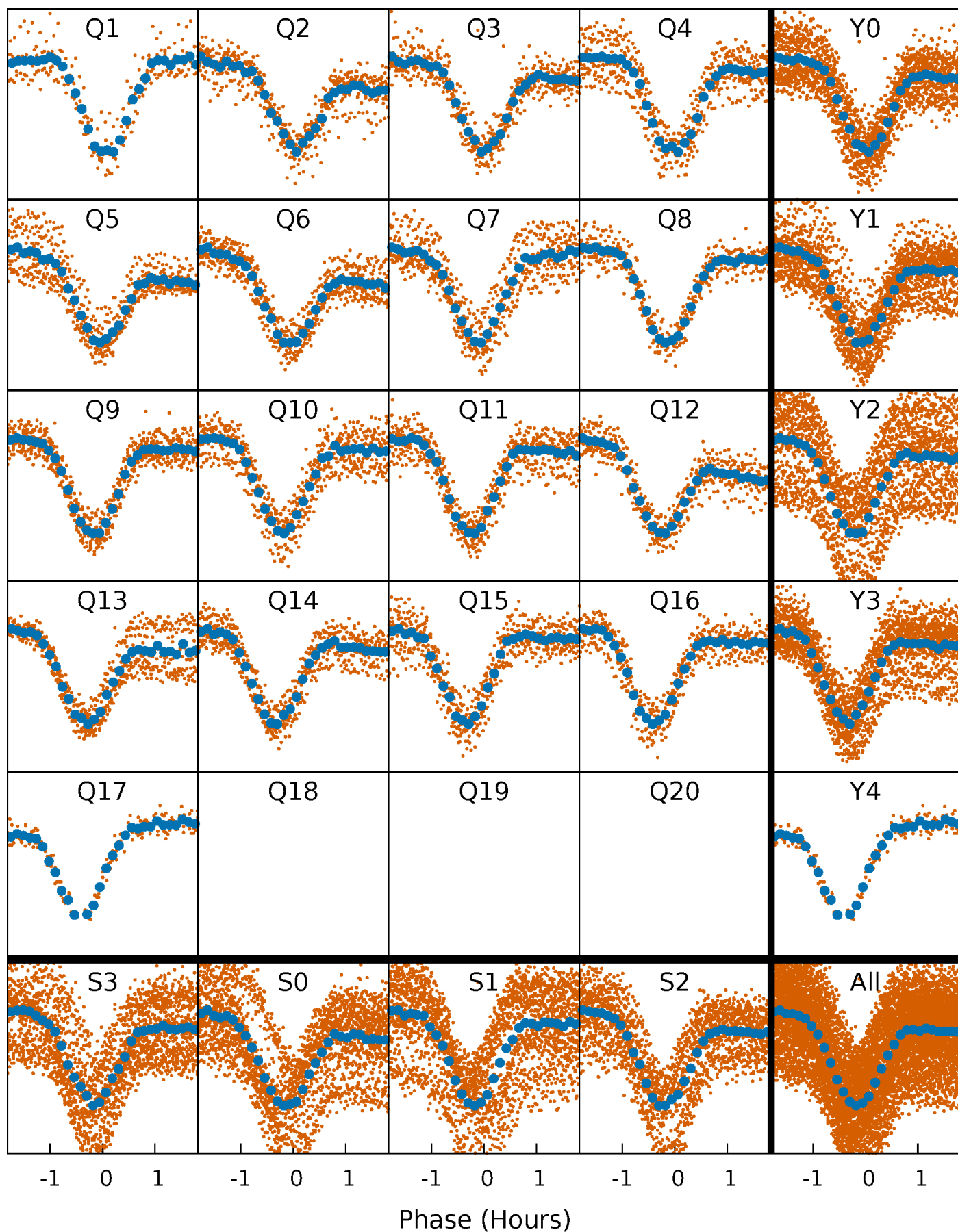


Non-Whitened Vs. Whitened Light Curve



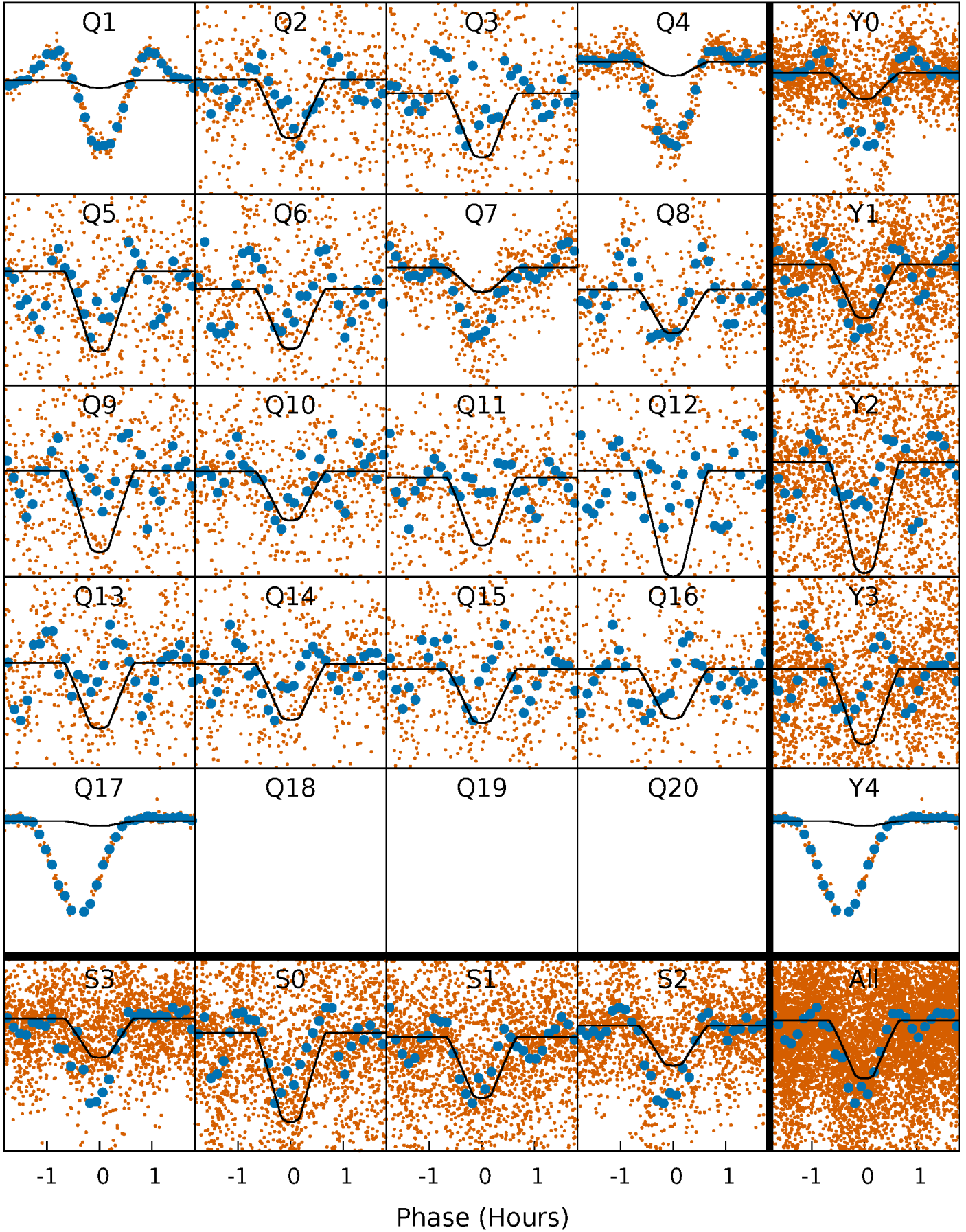
PDC Quarter-Phased Transit Curves

TCE 003749508-01 P= 1.065747 Days $T_0=132.034968$ (BKJD)



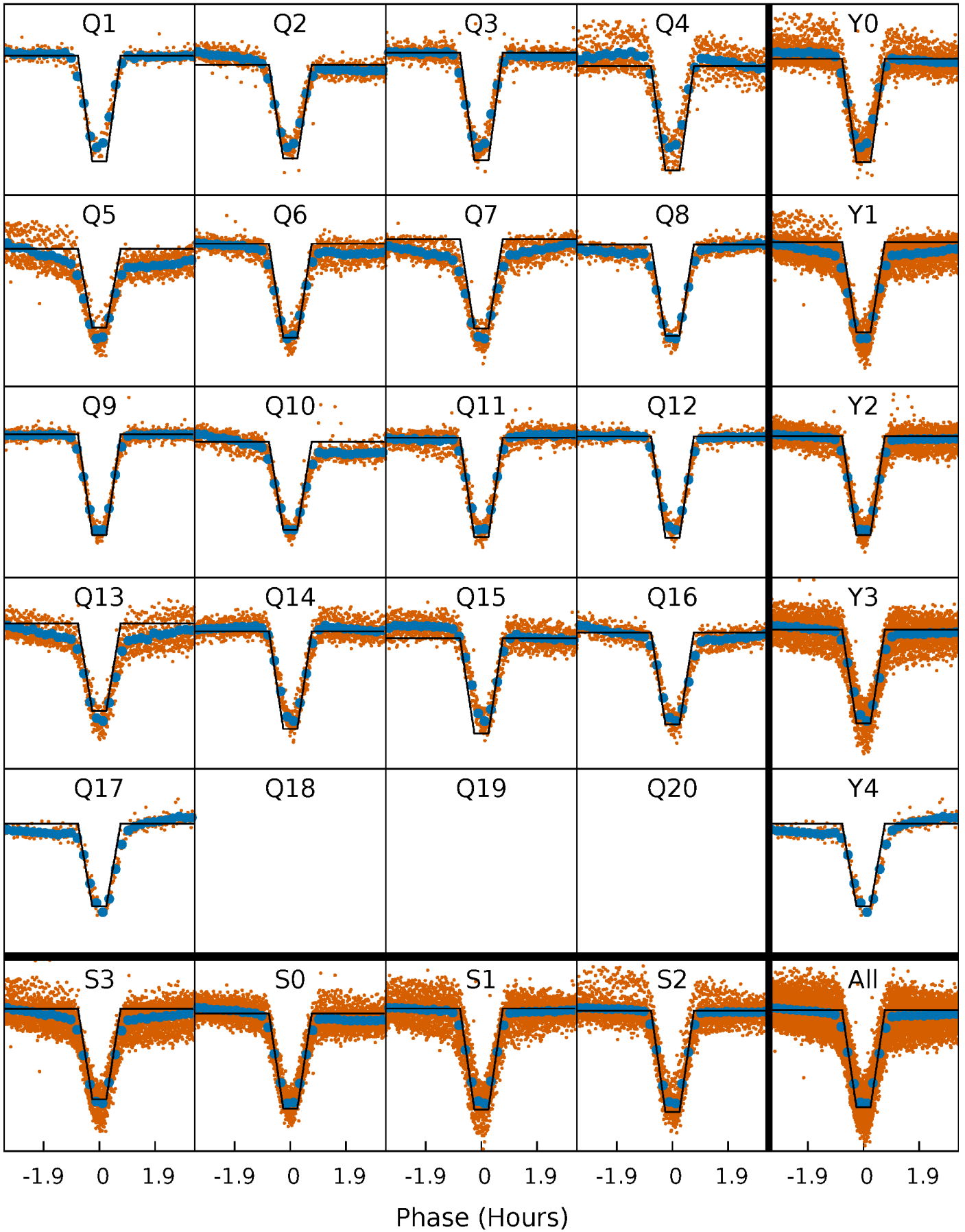
DV Quarter-Phased Transit Curves

TCE 003749508-01 P= 1.065747 Days $T_0=132.034968$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

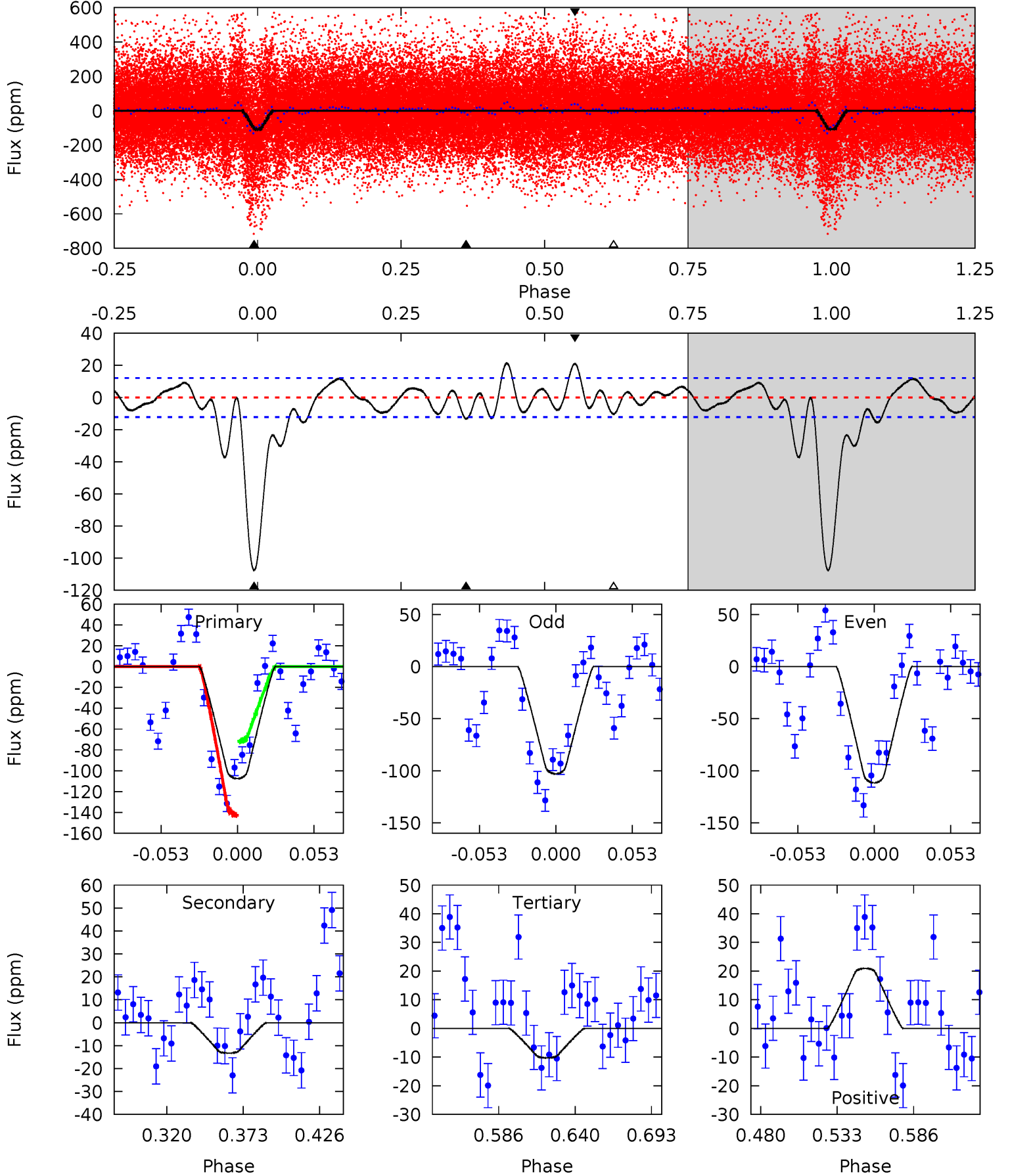
TCE 003749508-01 P= 1.065728 Days $T_0=132.040602$ (BKJD)



DV Model-Shift Uniqueness Test

003749508-01, P = 1.065747 Days, E = 130.969221 Days

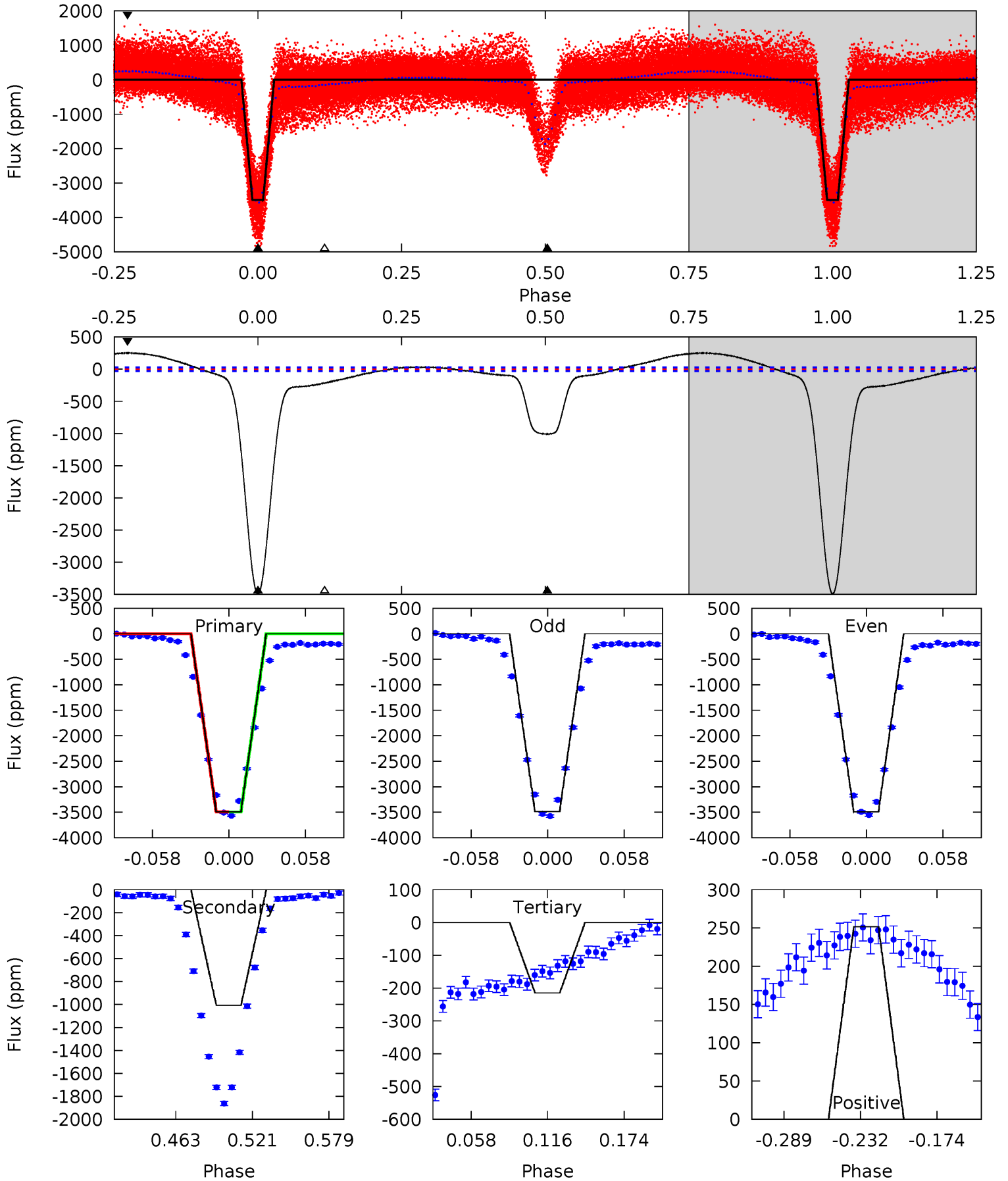
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.5	5.11	3.96	8.08	4.70	1.93	3.09	37.5	33.4	1.15	-2.97	1.67	1.81	0.17	14.0



Alt Model-Shift Uniqueness Test

003749508-01, P = 1.065728 Days, E = 130.974874 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
575.4	165.9	35.4	41.5	4.68	1.90	22.8	540.0	533.9	130.5	124.4	0.44	1.02	0.07	0.40



Stellar Parameters For KIC 003749508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6244^{+148}_{-204}	$2.897^{+0.512}_{-0.096}$	$0.070^{+0.200}_{-0.500}$	$10.105^{+1.910}_{-5.731}$	$2.936^{+0.284}_{-1.205}$	$0.004^{+0.029}_{-0.001}$
	+2%/-3%	+18%/-3%	+286%/-714%	+19%/-57%	+10%/-41%	+713%/-30%
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 003749508-01 / KOI 7544.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-13 ± 3	$14.49^{+4.36}_{-4.72}$	6863^{+552}_{-967}	-5512^{+816}_{-444}	$0.029^{+0.029}_{-0.012}$
Alt.	-1006 ± 6	$62.67^{+9.73}_{-17.69}$	6900^{+495}_{-889}	-5057^{+1052}_{-449}	$0.121^{+0.090}_{-0.027}$

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

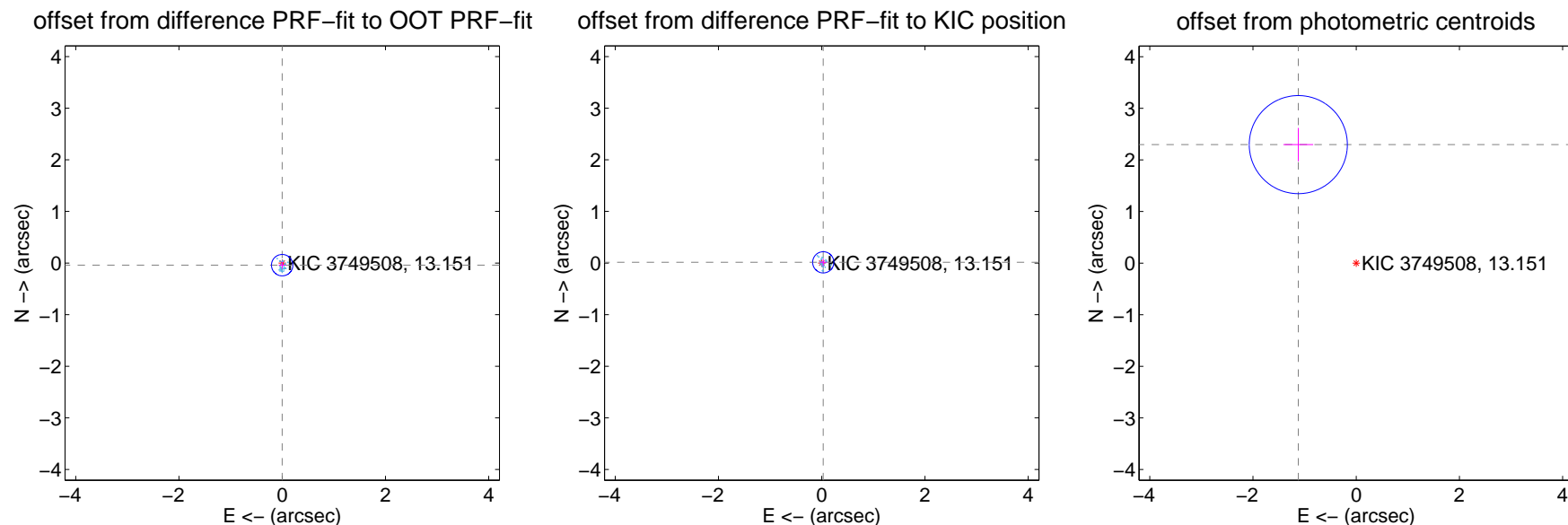
DV Centroid Data

Supplemental centroid analysis for 003749508-01. Kepler magnitude: 13.15. Transit SNR 35.86

There are 17 quarters with good PRF difference image offsets

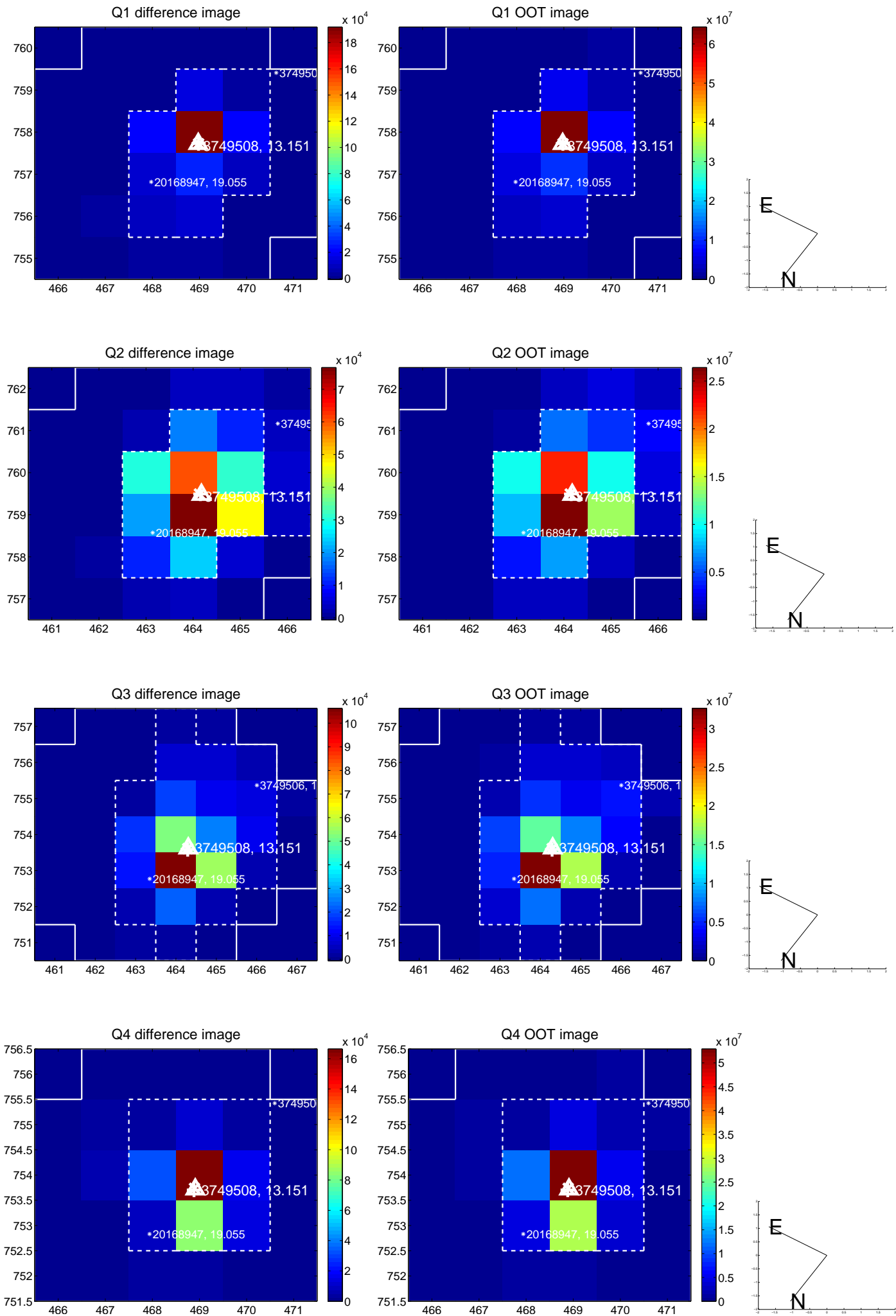
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.041 ± 0.069	0.59	0.001 ± 0.068	-0.041 ± 0.069
PRF-fit source offset from KIC position	0.033 ± 0.068	0.48	-0.030 ± 0.068	0.014 ± 0.070
photometric centroid source offset	2.56 ± 0.32	8.07	1.12 ± 0.29	2.30 ± 0.32

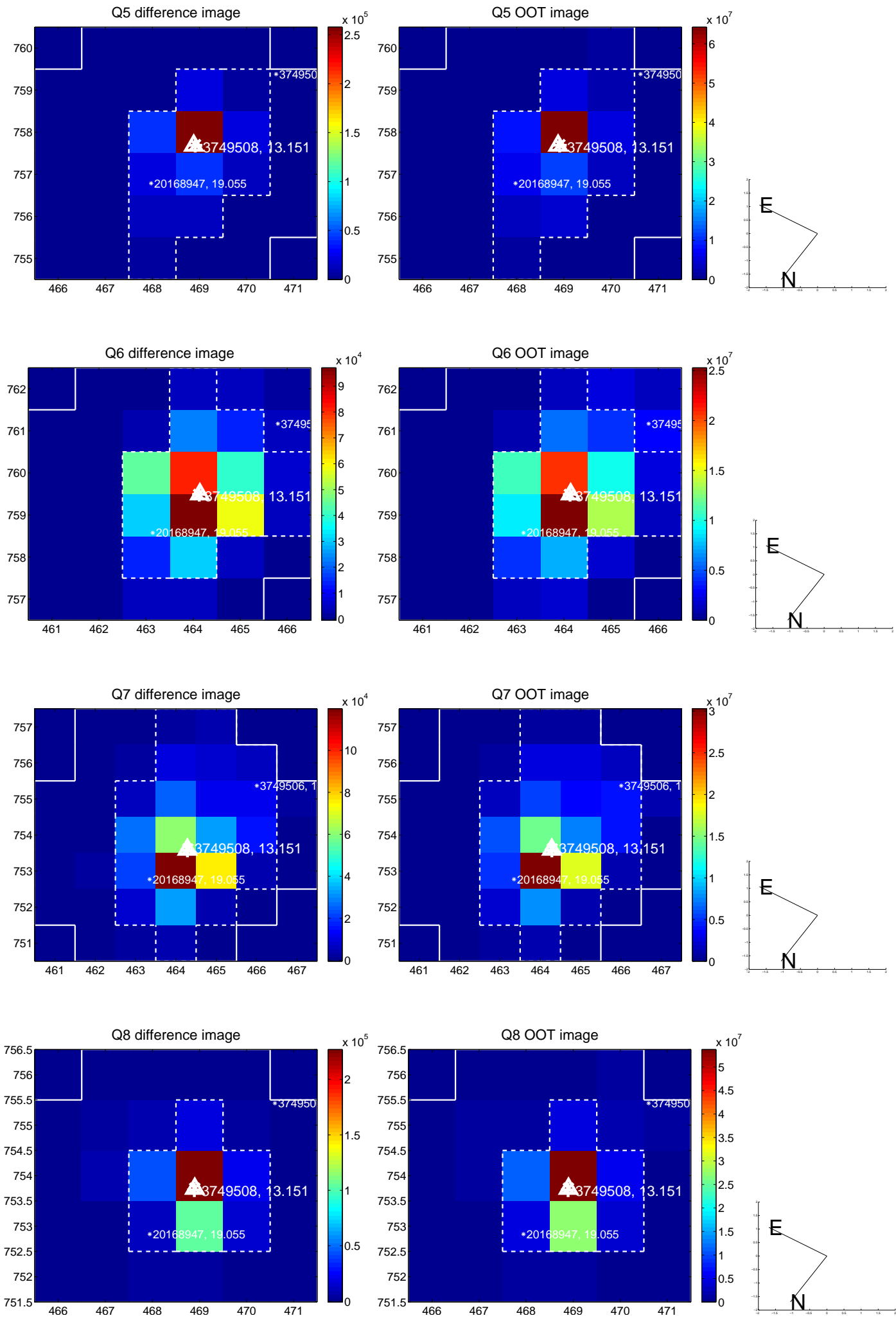


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

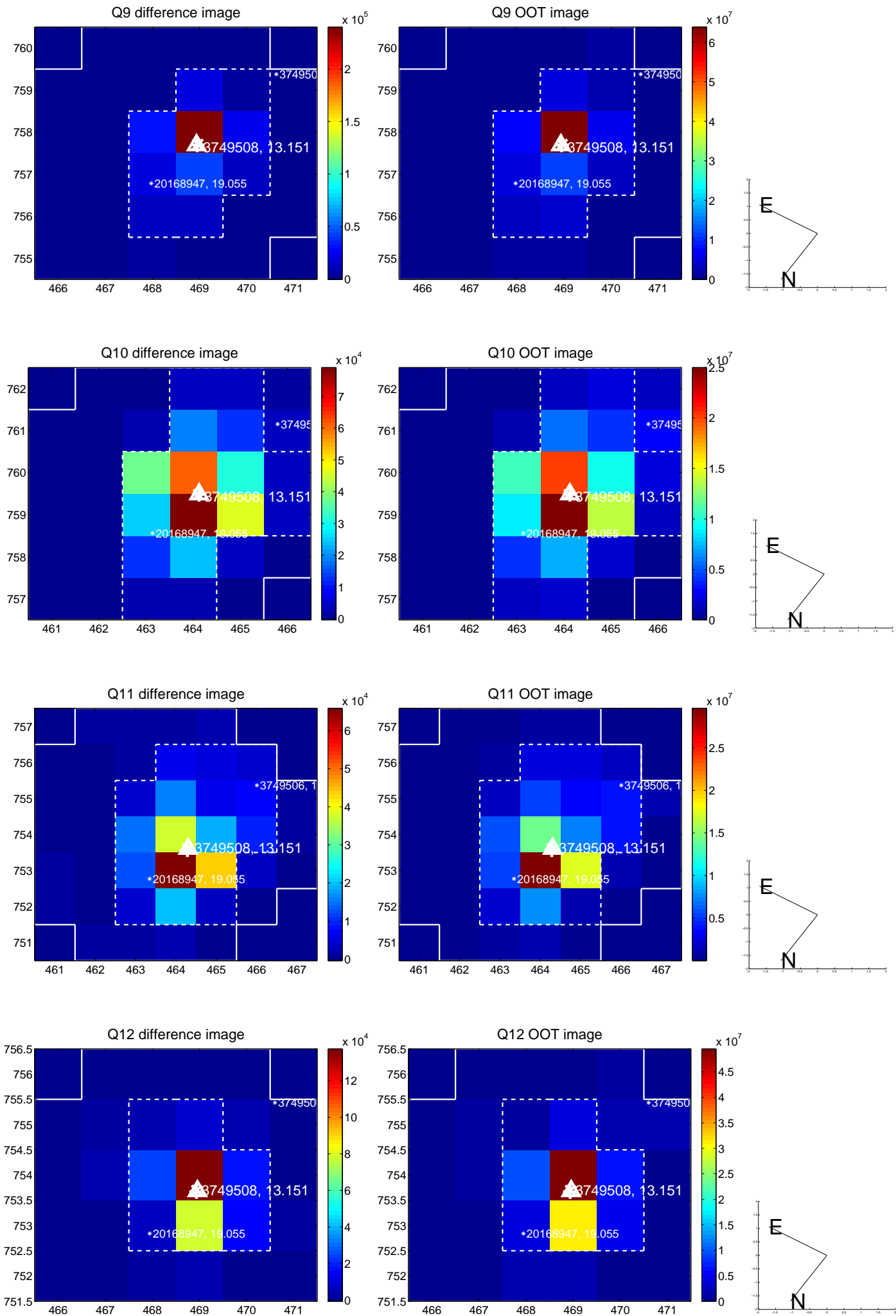
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



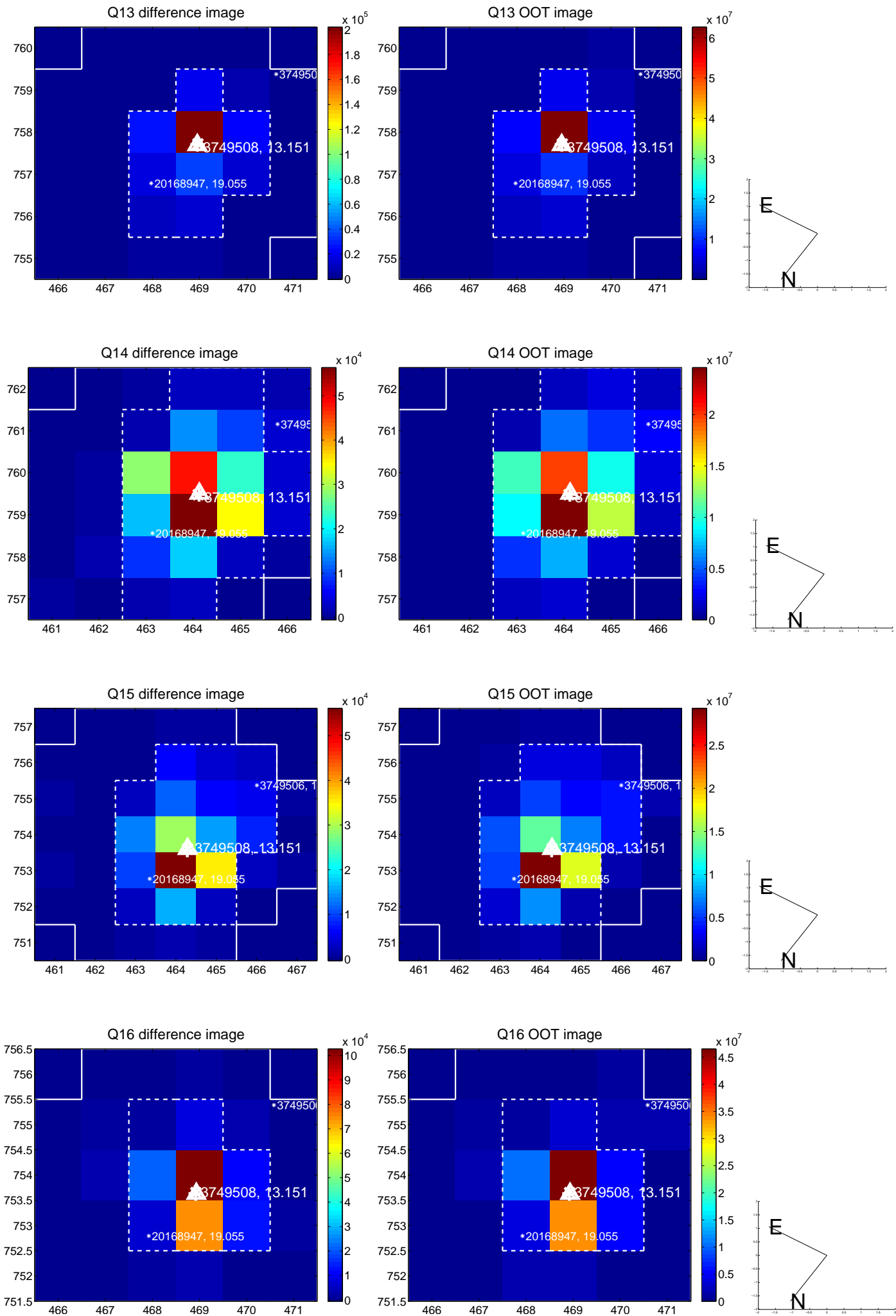
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



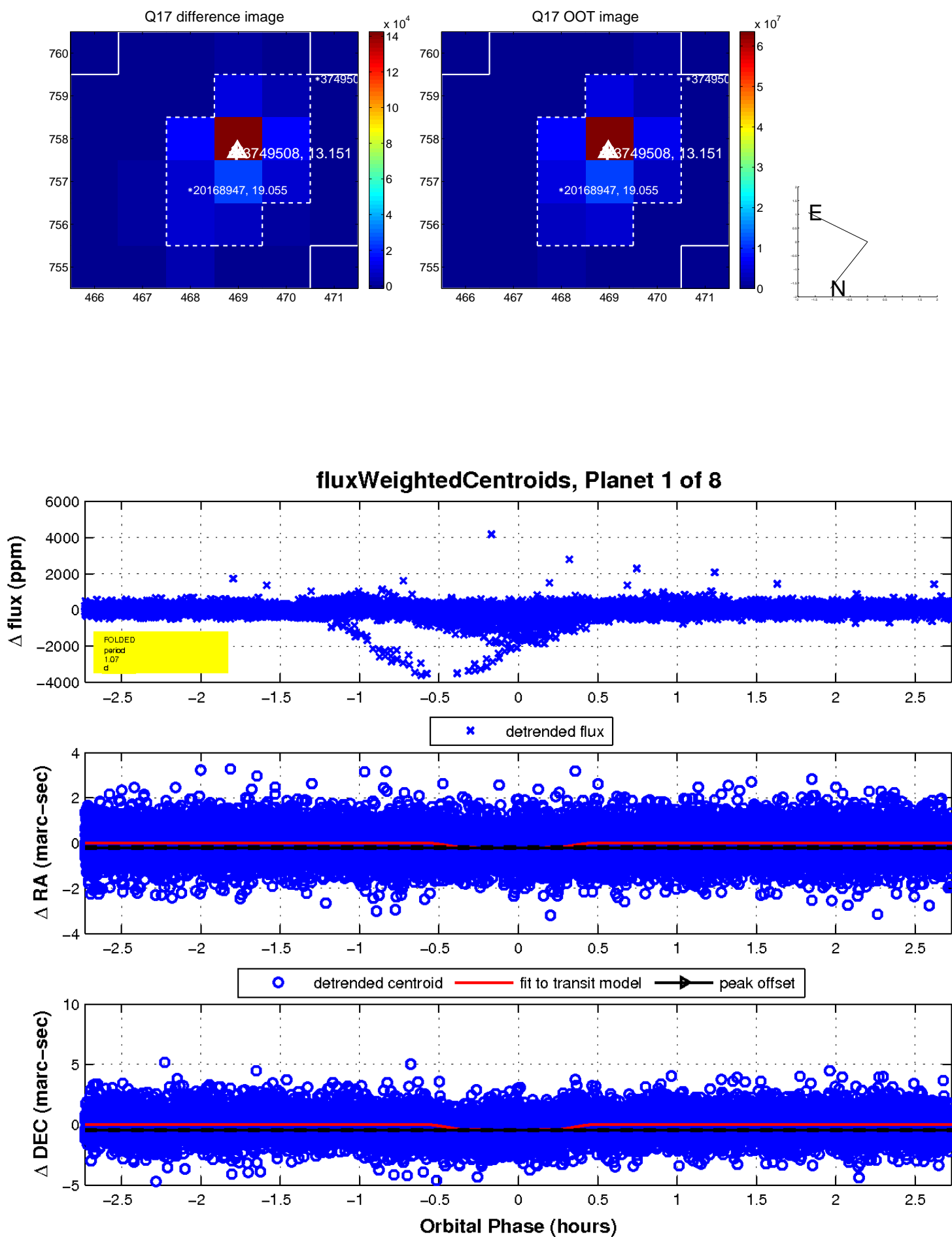
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

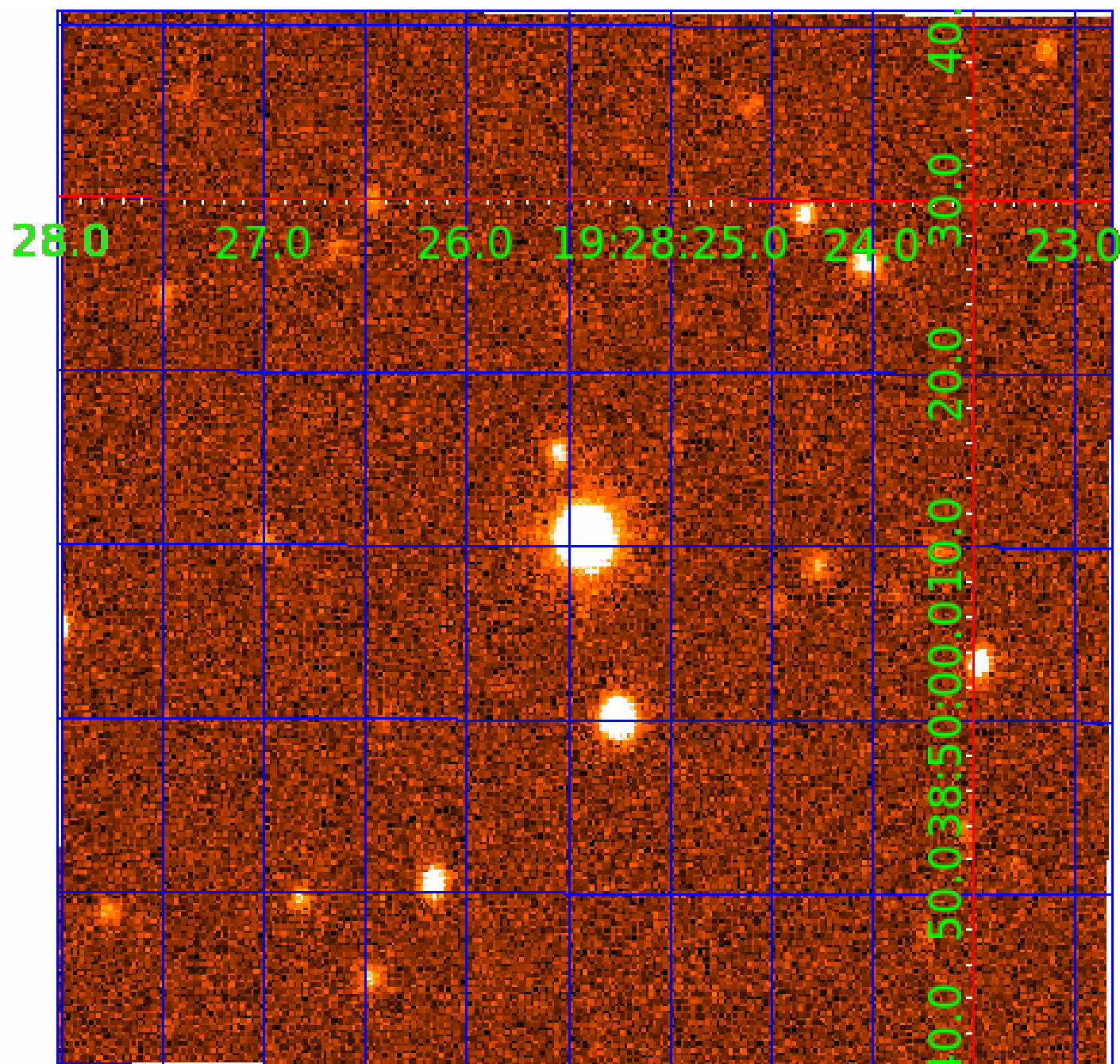


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003749508

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})
003749508-01	OBS	7544.02	1.065747	132.034968	176.6	0.910	32.2	35.9	10.11	6244	16.05	0.00
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749508-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_ALT
003749508-02	OBS	FP	0.00	1	0	0	0	LPP_DV
003749508-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—HALO_GHOST
003749508-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
003749508-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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.

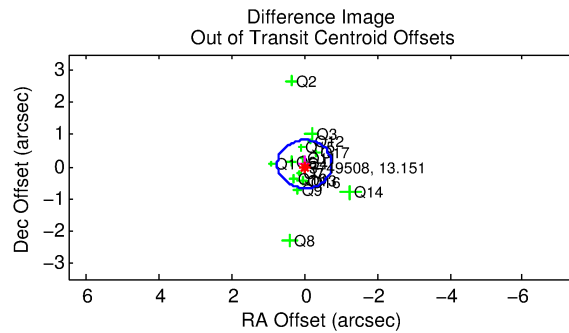
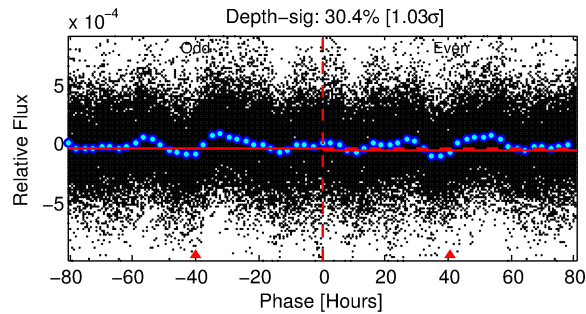
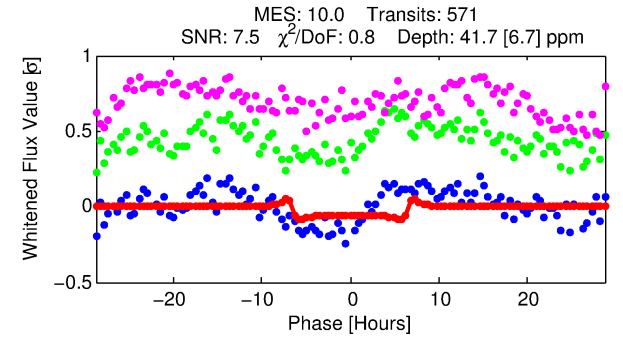
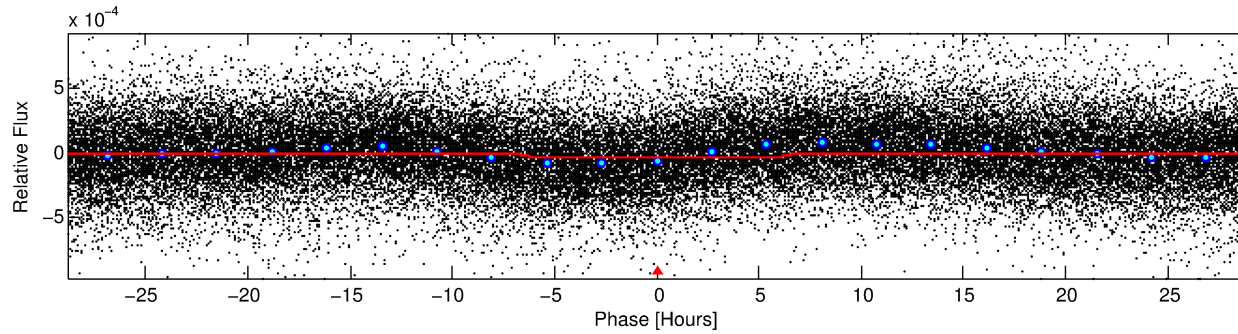
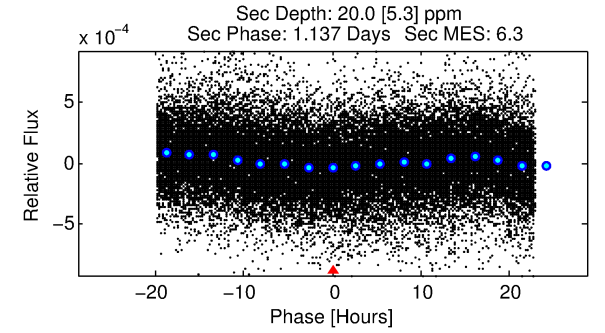
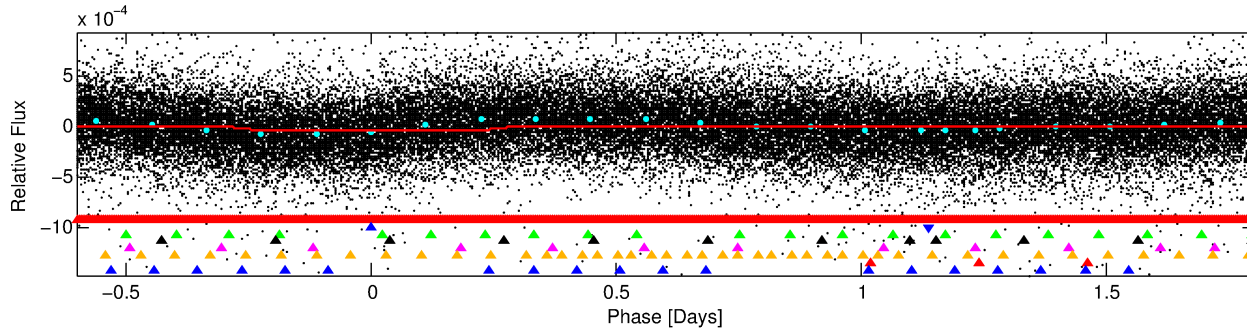
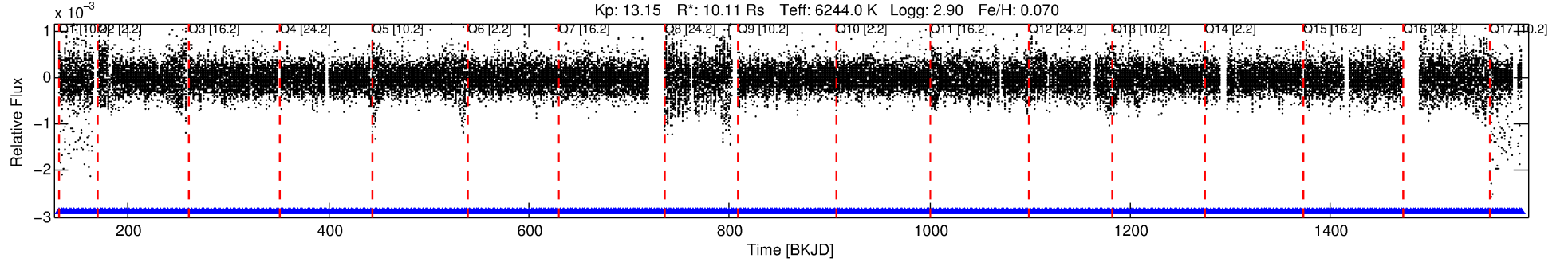
Ephemeris Match Information For 003749508-02

No Significant Match Found

DV One-Page Summary

KIC: 3749508 Candidate: 2 of 8 Period: 2.404 d
KOI: K07544 Corr: No Ephemeris Match

Kp: 13.15 R*: 10.11 Rs Teff: 6244.0 K Logg: 2.90 Fe/H: 0.070



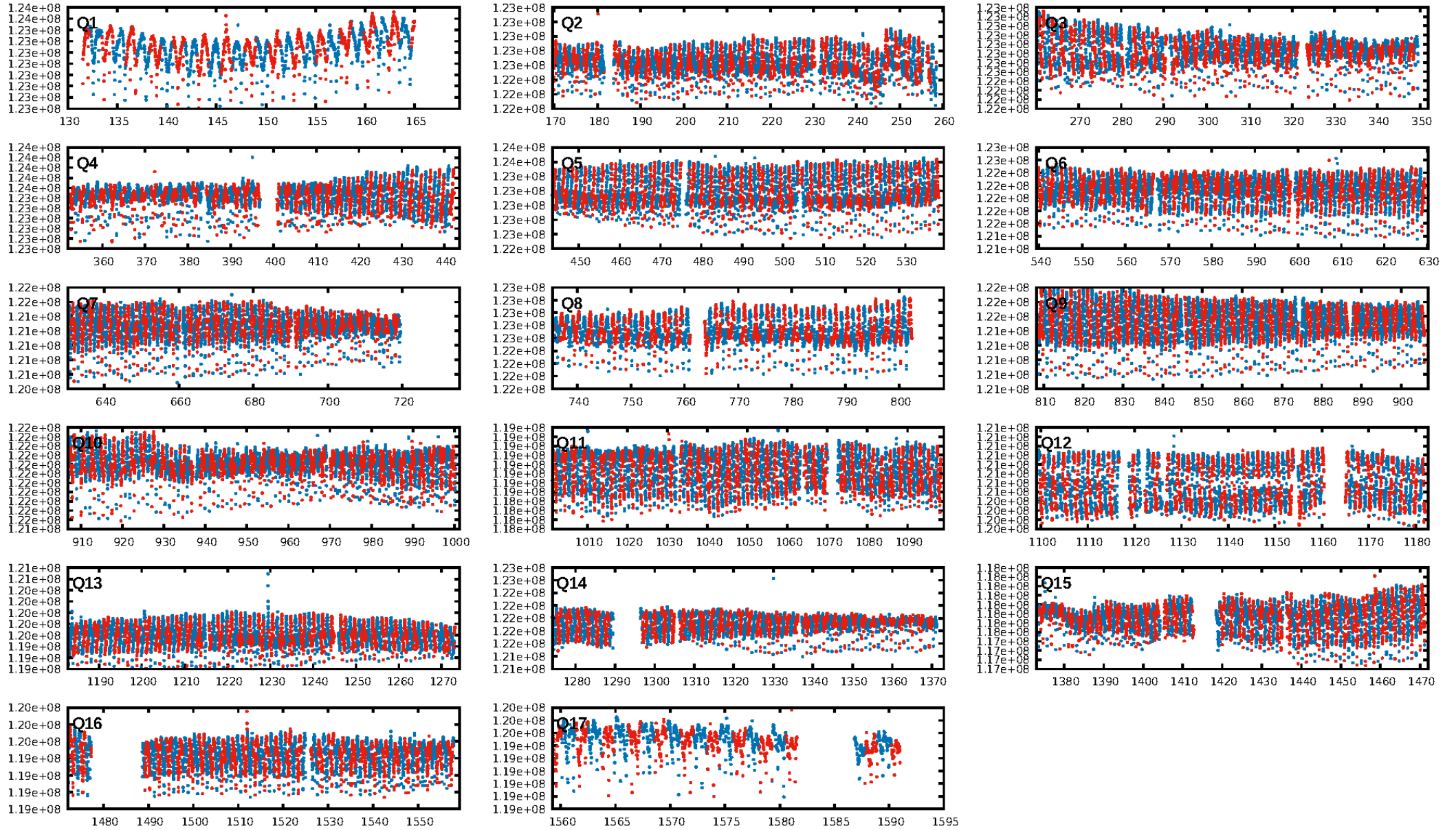
DV Fit Results:

Period = 2.40392 [0.00003] d
Epoch = 131.5867 [0.0055] BKJD
Rp/R* = 0.0059 [0.0039]
a/R* = 1.49 [2.77]
b = 0.18 [18.32]
Seff = 54938.48 [48450.37]
Teq = 3904 [861] K
Rp = 6.55 [5.71] Re
a = 0.0503 [0.0274] AU
Ag = 0.65 [1.04] [-0.34σ]
Teffp = 5418 [1835] K [0.75σ]

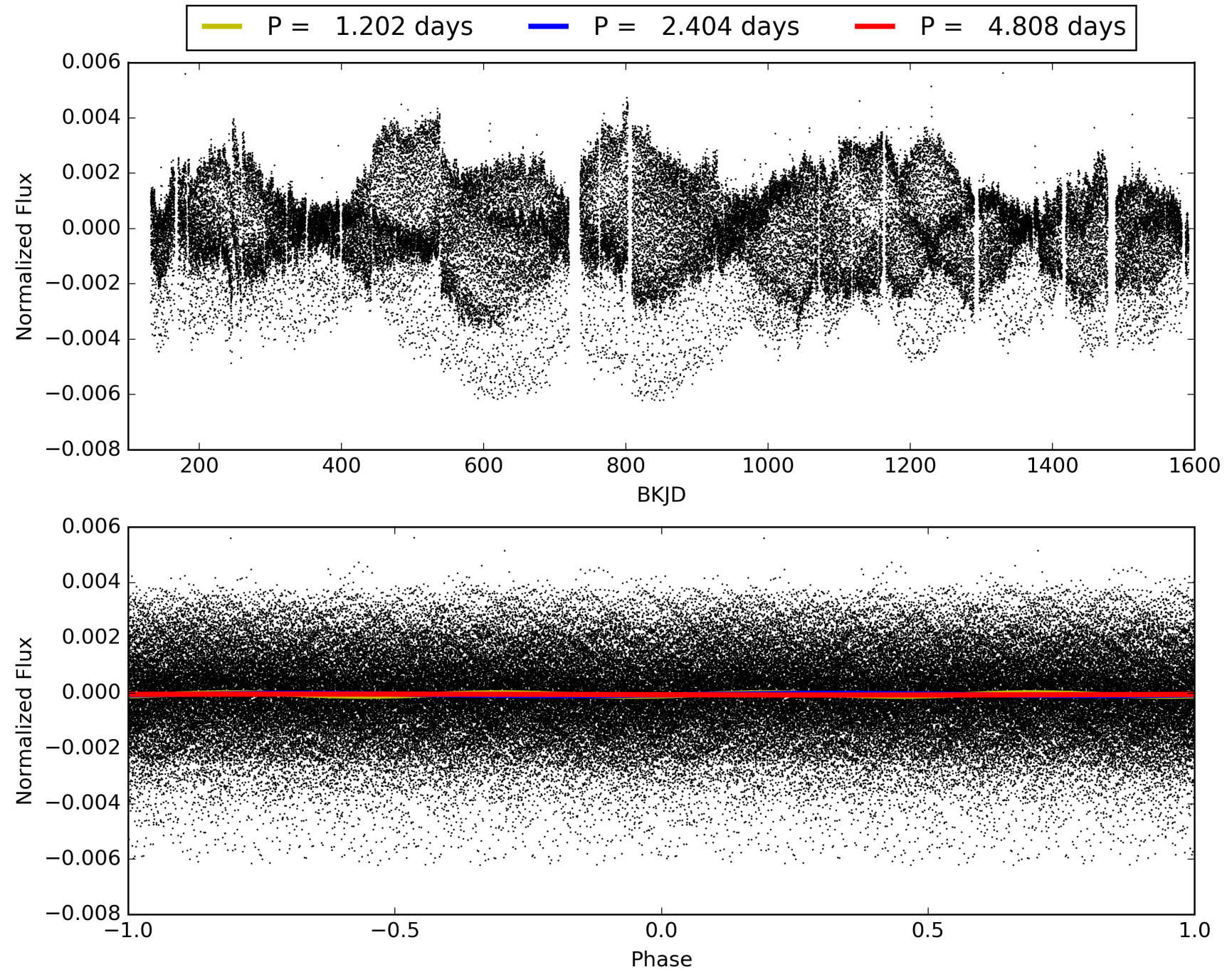
DV Diagnostic Results:

ShortPeriod-sig: 98.3% [2.38σ]
LongPeriod-sig: 100.0% [42.25σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.73e-09
RollingBand-fgt: 1.00 [544/544]
GhostDiagnostic-chr: 2.926
Centroid-sig: 2.4%
Centroid-so: 1.103 arcsec [1.80σ]
OotOffset-rm: 0.079 arcsec [0.32σ]
KicOffset-rm: 0.143 arcsec [0.58σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 003749508-02, PDC Light Curves

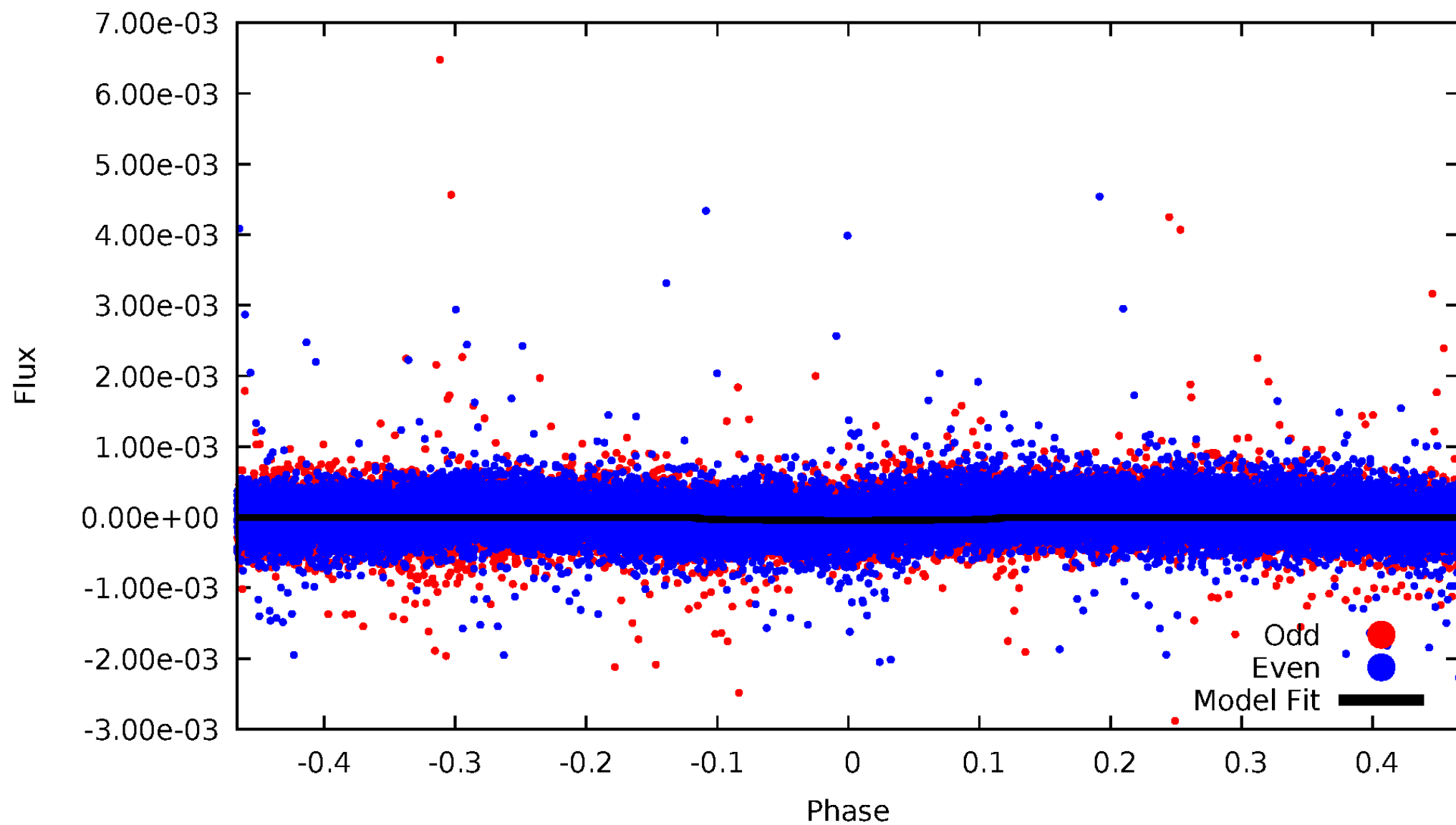


TCE 003749508-02



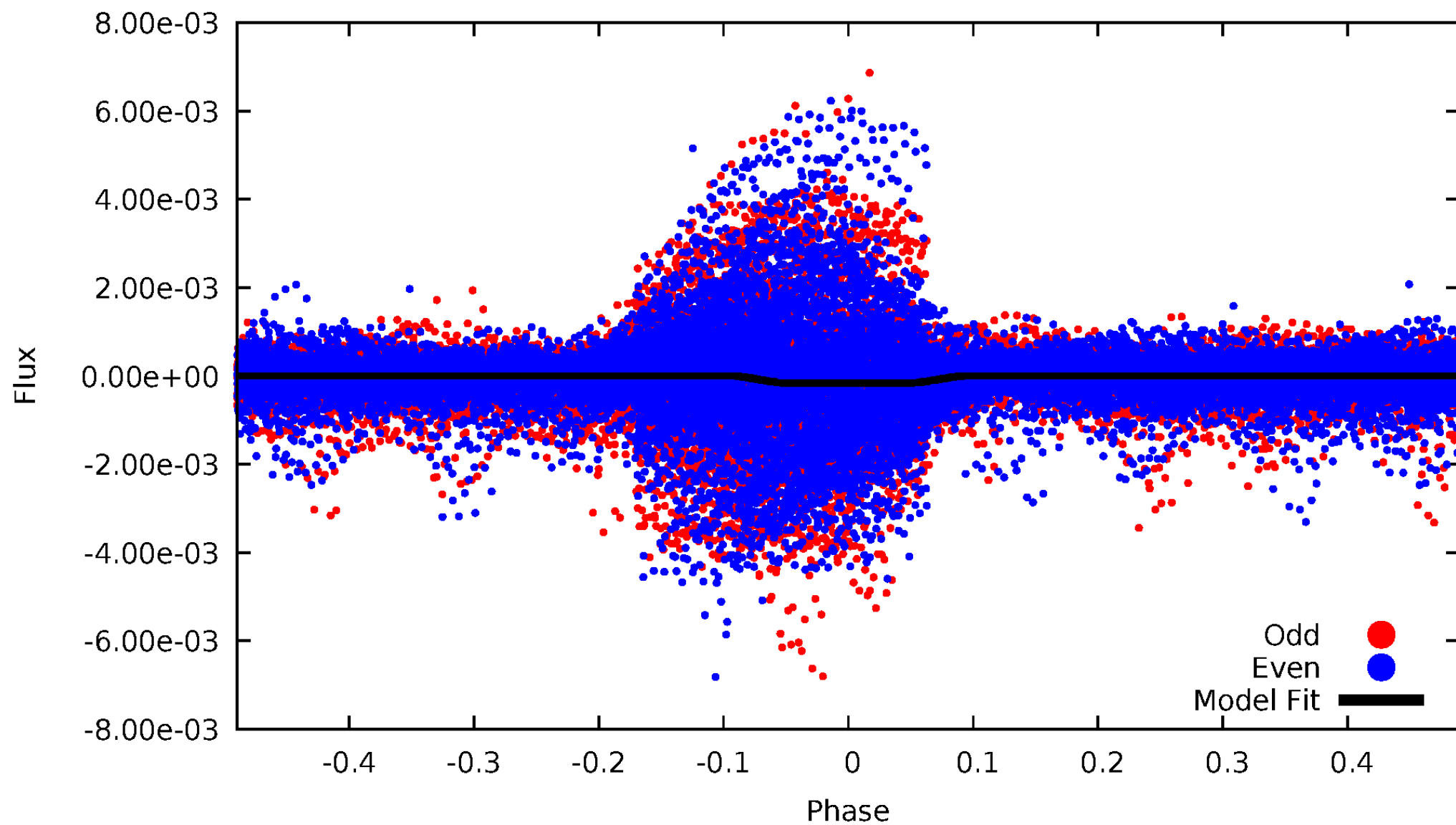
DV Odd/Even

TCE 003749508-02



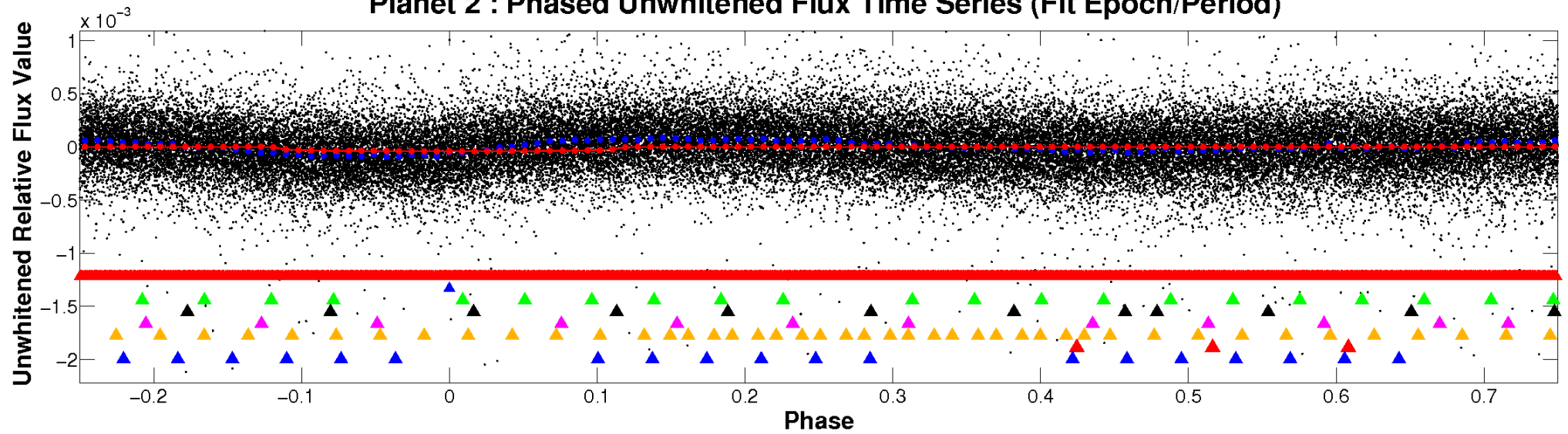
ALT Odd/Even

TCE 003749508-02

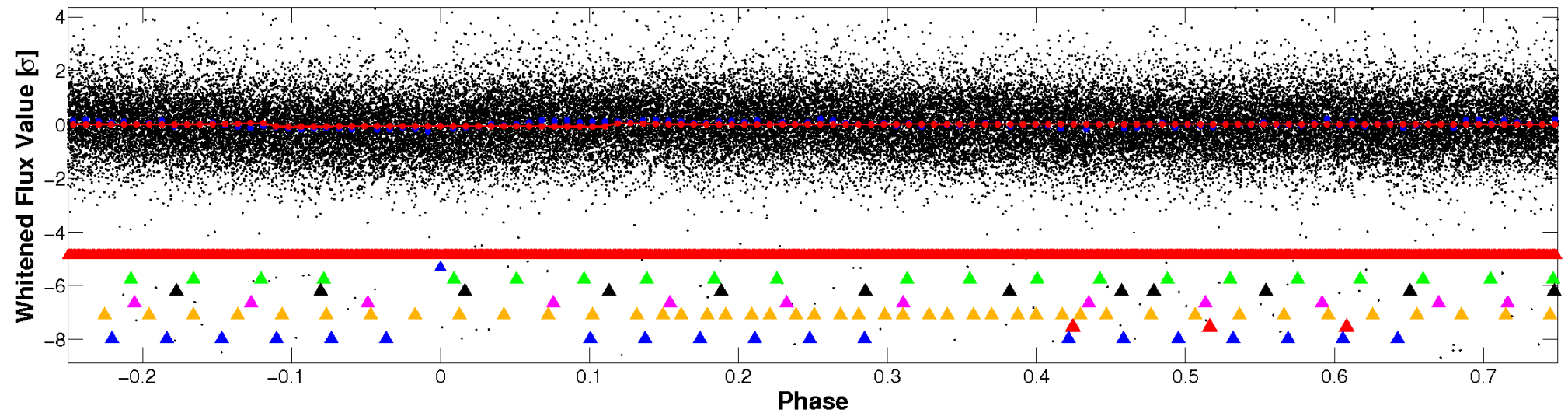


Non-Whitened Vs. Whitened Light Curve

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

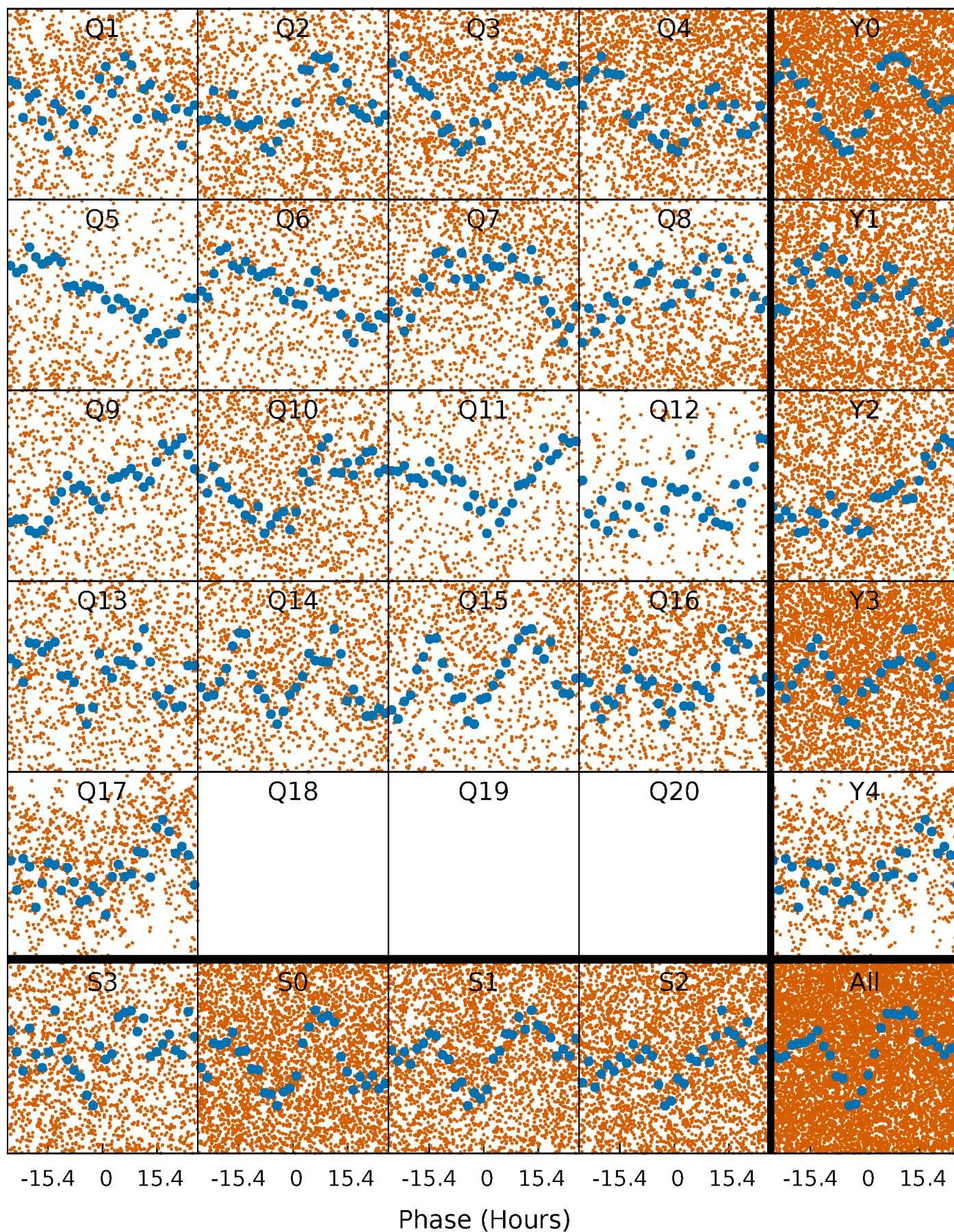


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



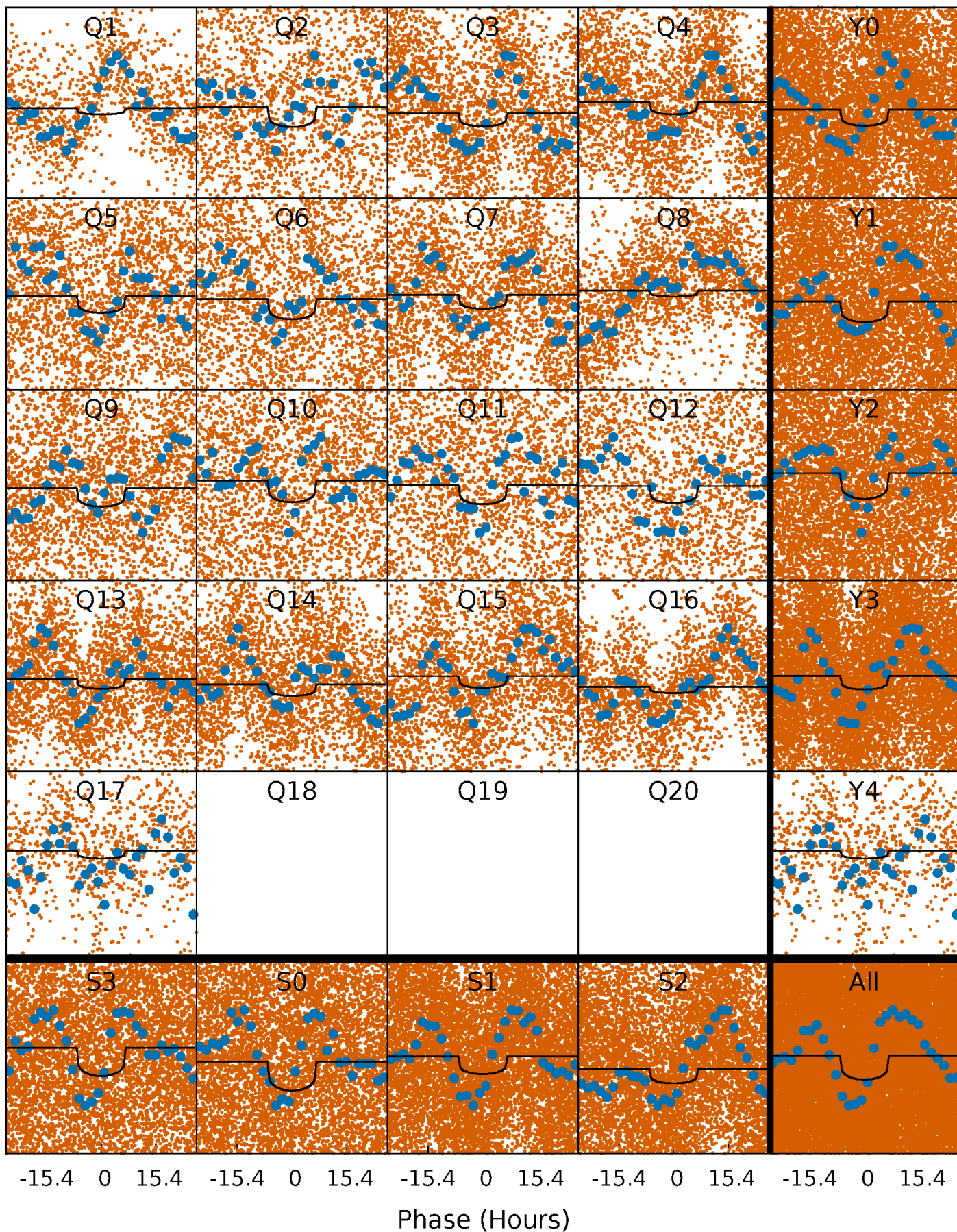
PDC Quarter-Phased Transit Curves

TCE 003749508-02 P= 2.403921 Days $T_0=131.586727$ (BKJD)



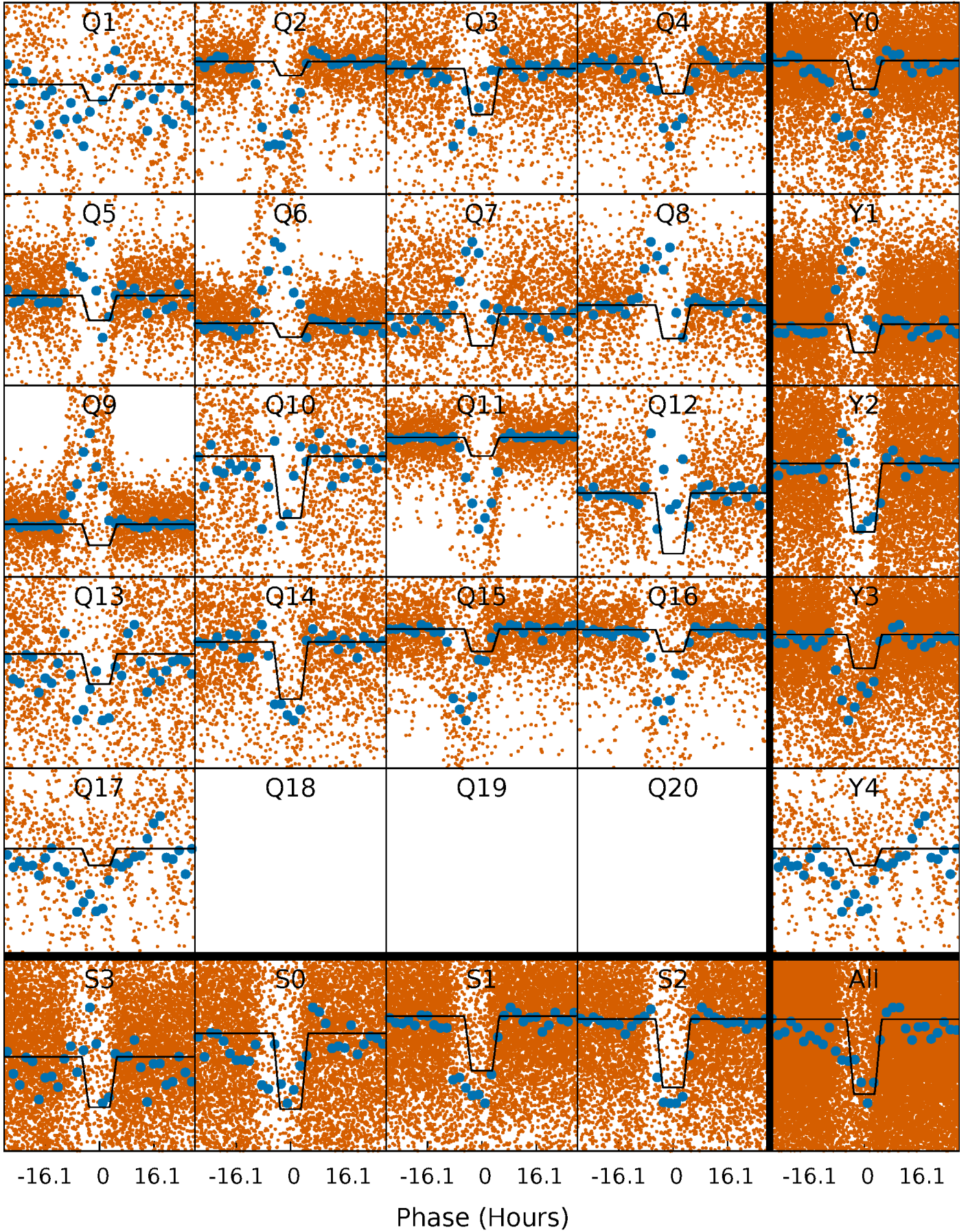
DV Quarter-Phased Transit Curves

TCE 003749508-02 P= 2.403921 Days $T_0=131.586727$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

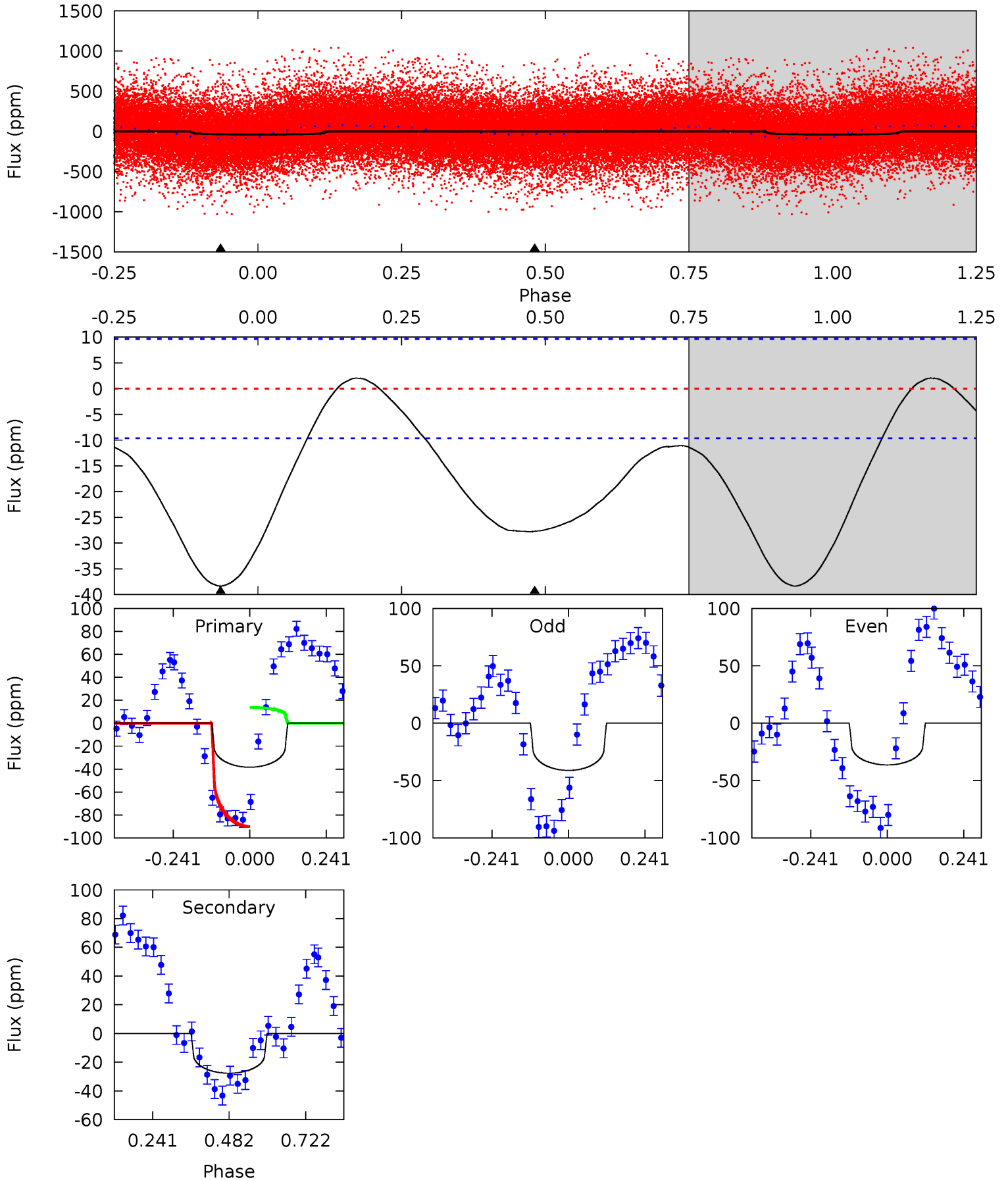
TCE 003749508-02 P= 2.403833 Days $T_0=131.662485$ (BKJD)



DV Model-Shift Uniqueness Test

003749508-02, P = 2.403921 Days, E = 129.182806 Days

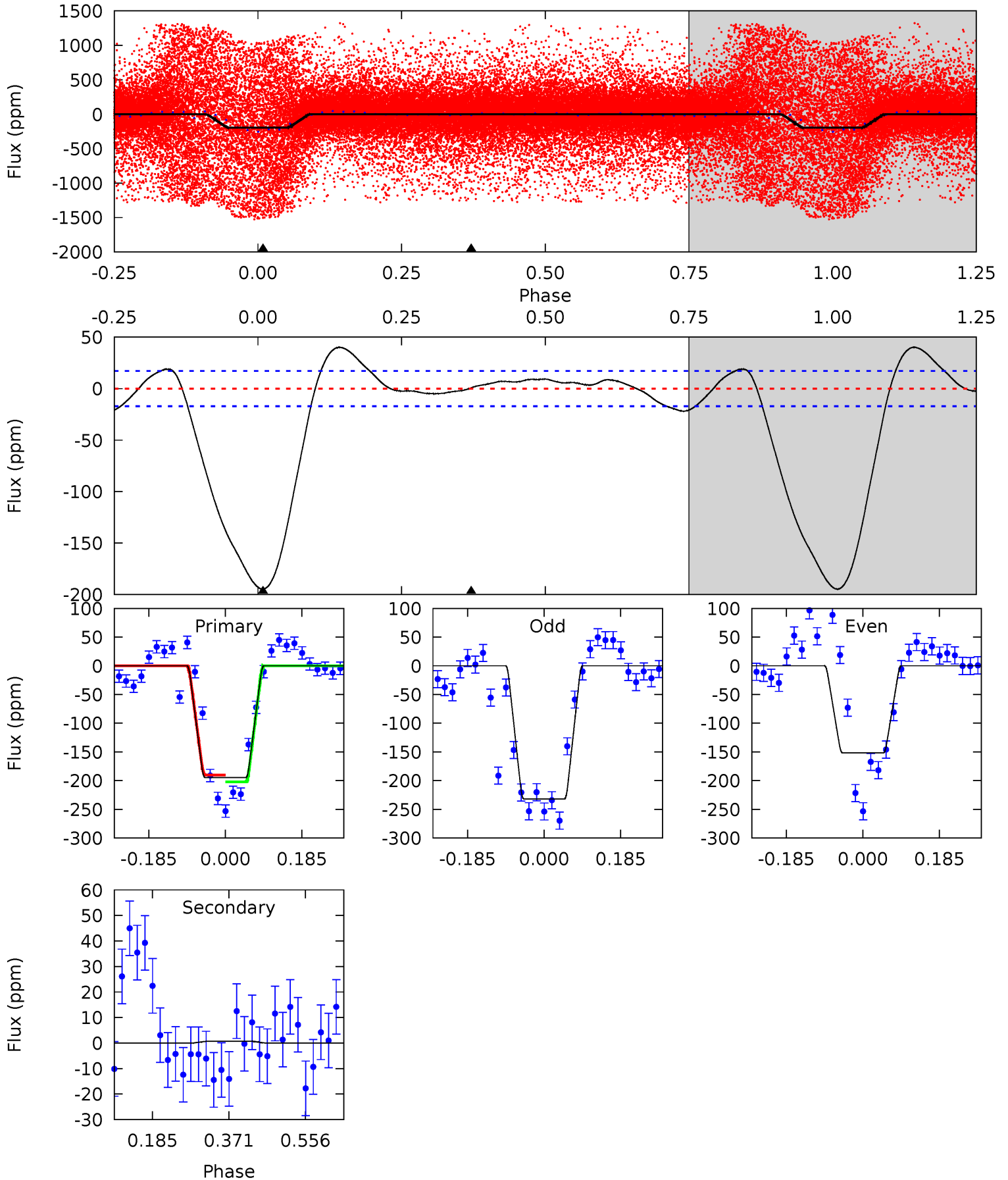
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	12.6	0	0	4.38	1.17	1.51	17.4	17.4	12.6	12.6	1.09	0.91	0.05	17.4



Alt Model-Shift Uniqueness Test

003749508-02, P = 2.403833 Days, E = 129.258652 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.4	-0.18	0	0	4.43	1.32	2.83	50.4	50.4	-0.18	-0.18	10.0	0.35	0.17	1.56



Stellar Parameters For KIC 003749508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6244^{+148}_{-204}	$2.897^{+0.512}_{-0.096}$	$0.070^{+0.200}_{-0.500}$	$10.105^{+1.910}_{-5.731}$	$2.936^{+0.284}_{-1.205}$	$0.004^{+0.029}_{-0.001}$
	+2%/-3%	+18%/-3%	+286%/-714%	+19%/-57%	+10%/-41%	+713%/-30%
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 003749508-02 / KOI 7544.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-28 ± 2	$5.68^{+4.05}_{-3.14}$	5260^{+391}_{-718}	5357^{+3238}_{-1720}	$1.172^{+4.300}_{-0.771}$
Alt.	1 ± 4	$12.11^{+4.94}_{-4.58}$	5250^{+391}_{-718}	-4498^{+442}_{-298}	$-0.006^{+0.037}_{-0.044}$

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 $A_{obs} \gg 1.0$

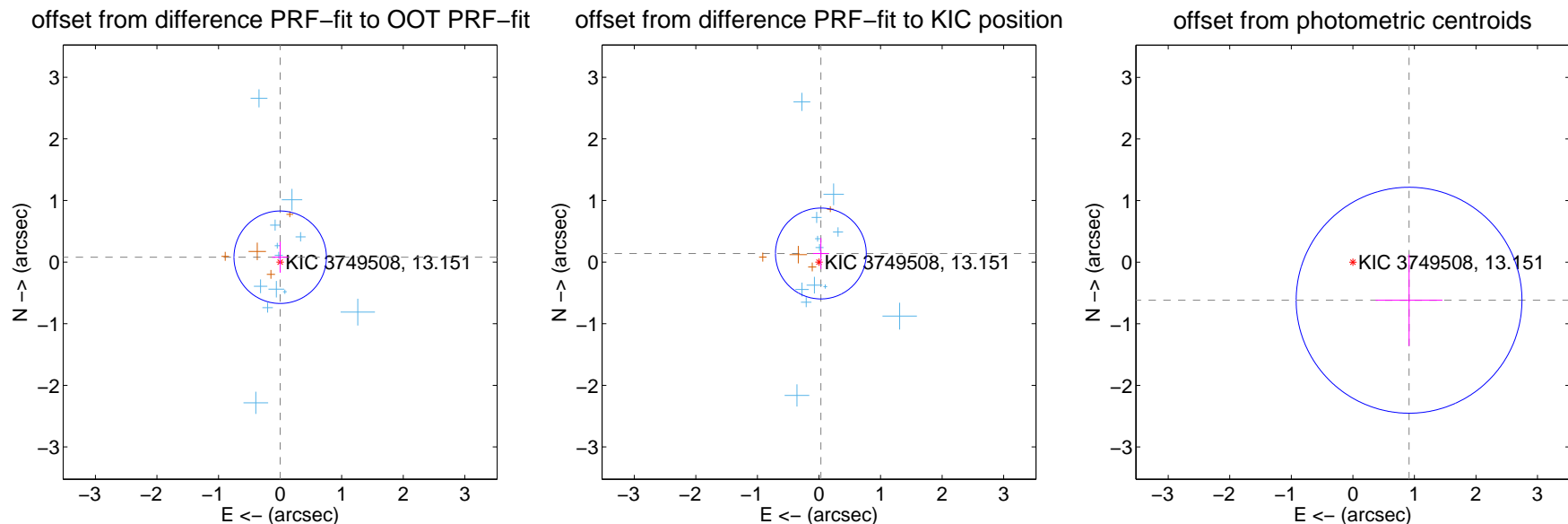
DV Centroid Data

Supplemental centroid analysis for 003749508-02. Kepler magnitude: 13.15. Transit SNR 7.54

There are 12 quarters with good PRF difference image offsets

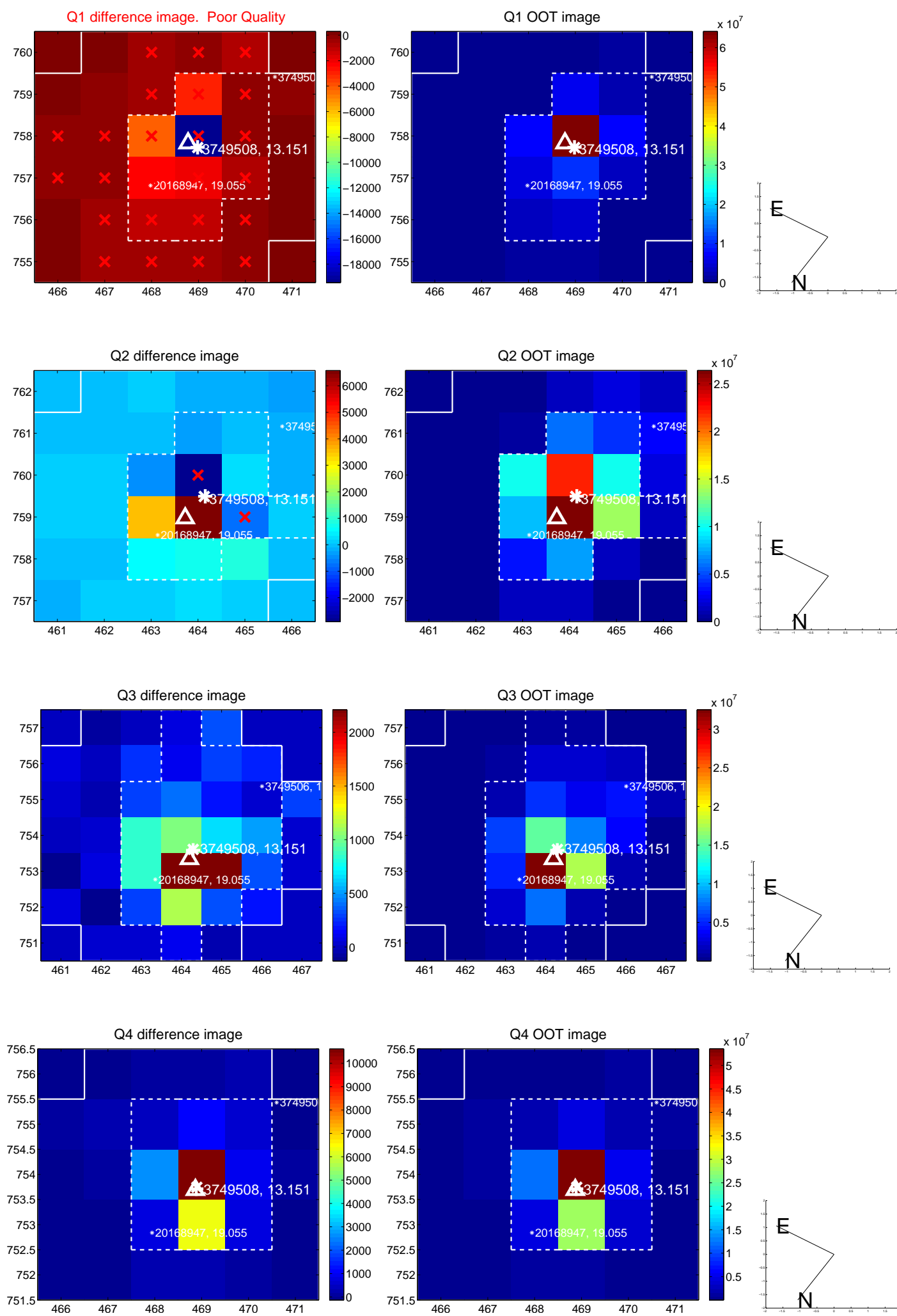
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.079 ± 0.250	0.32	-0.001 ± 0.130	0.079 ± 0.250
PRF-fit source offset from KIC position	0.143 ± 0.246	0.58	-0.031 ± 0.130	0.139 ± 0.252
photometric centroid source offset	1.10 ± 0.61	1.80	-0.91 ± 0.54	-0.62 ± 0.74

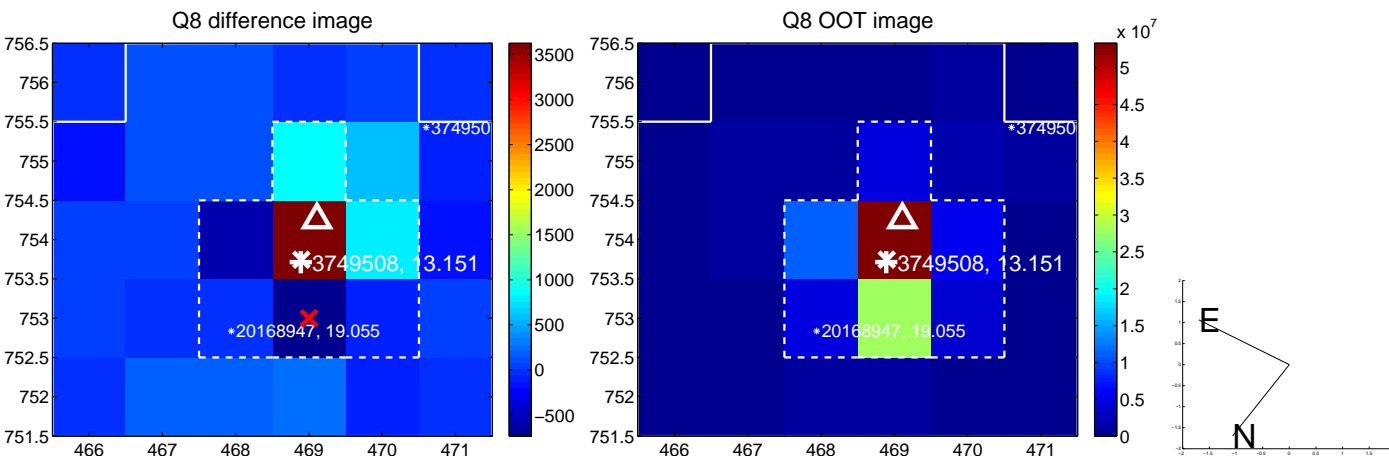
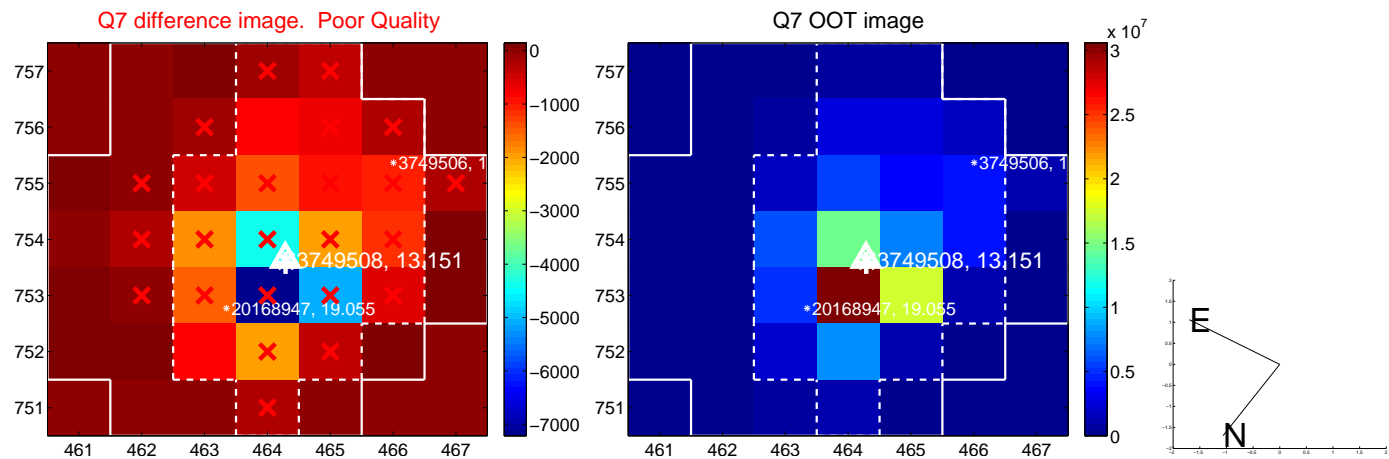
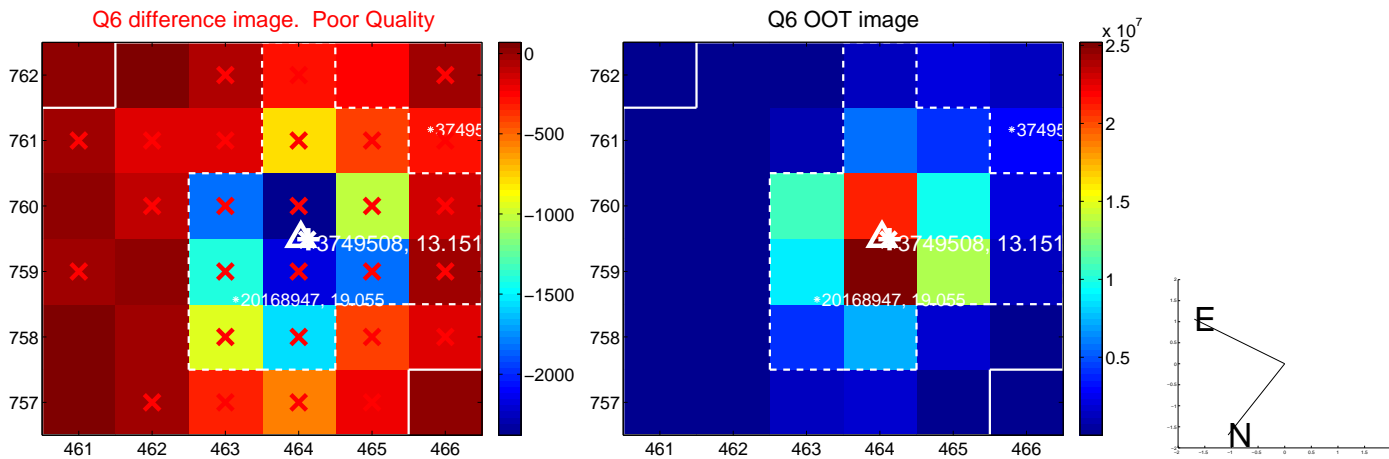
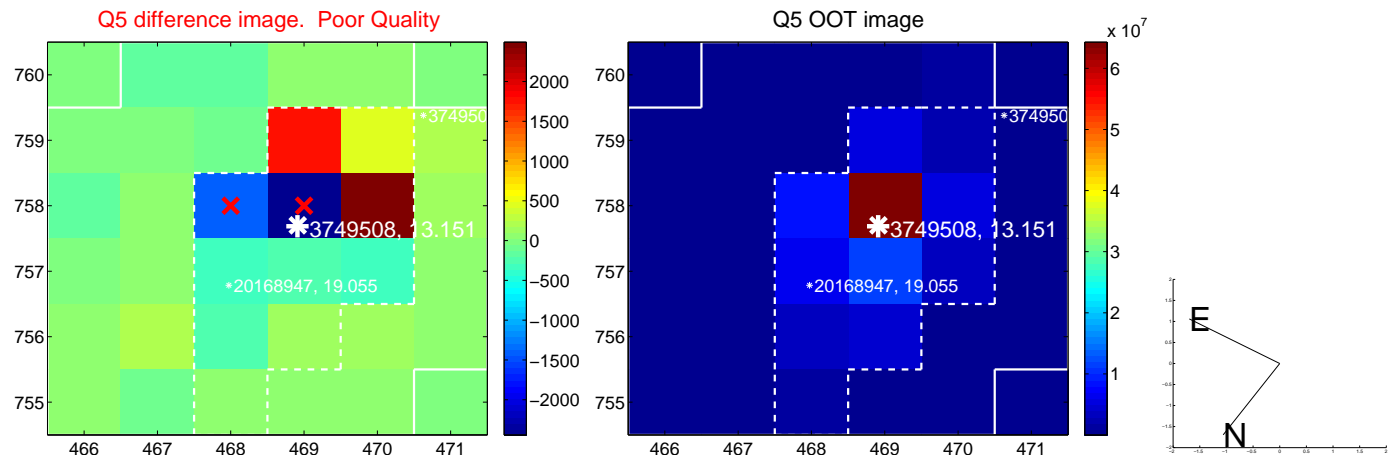


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

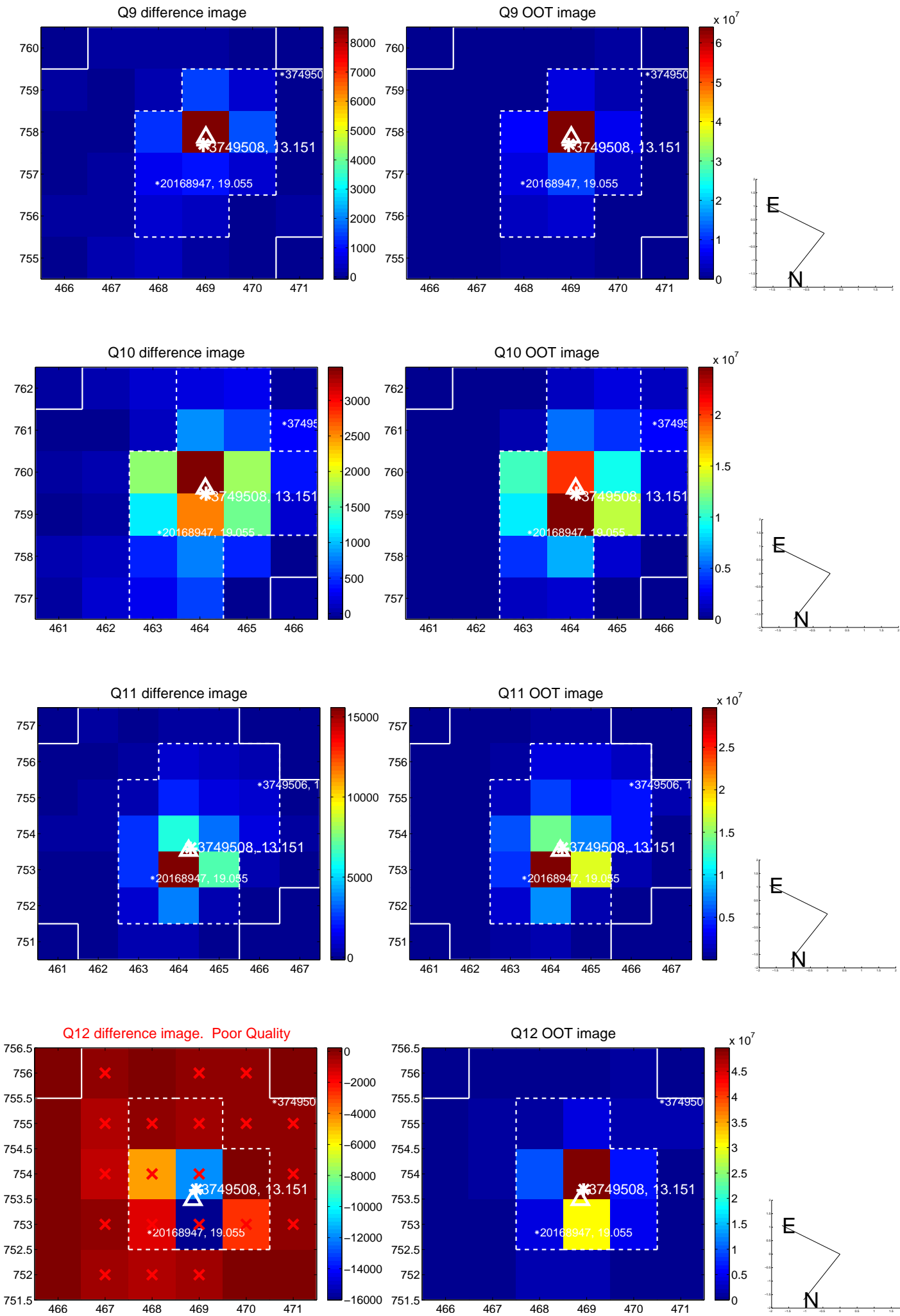
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



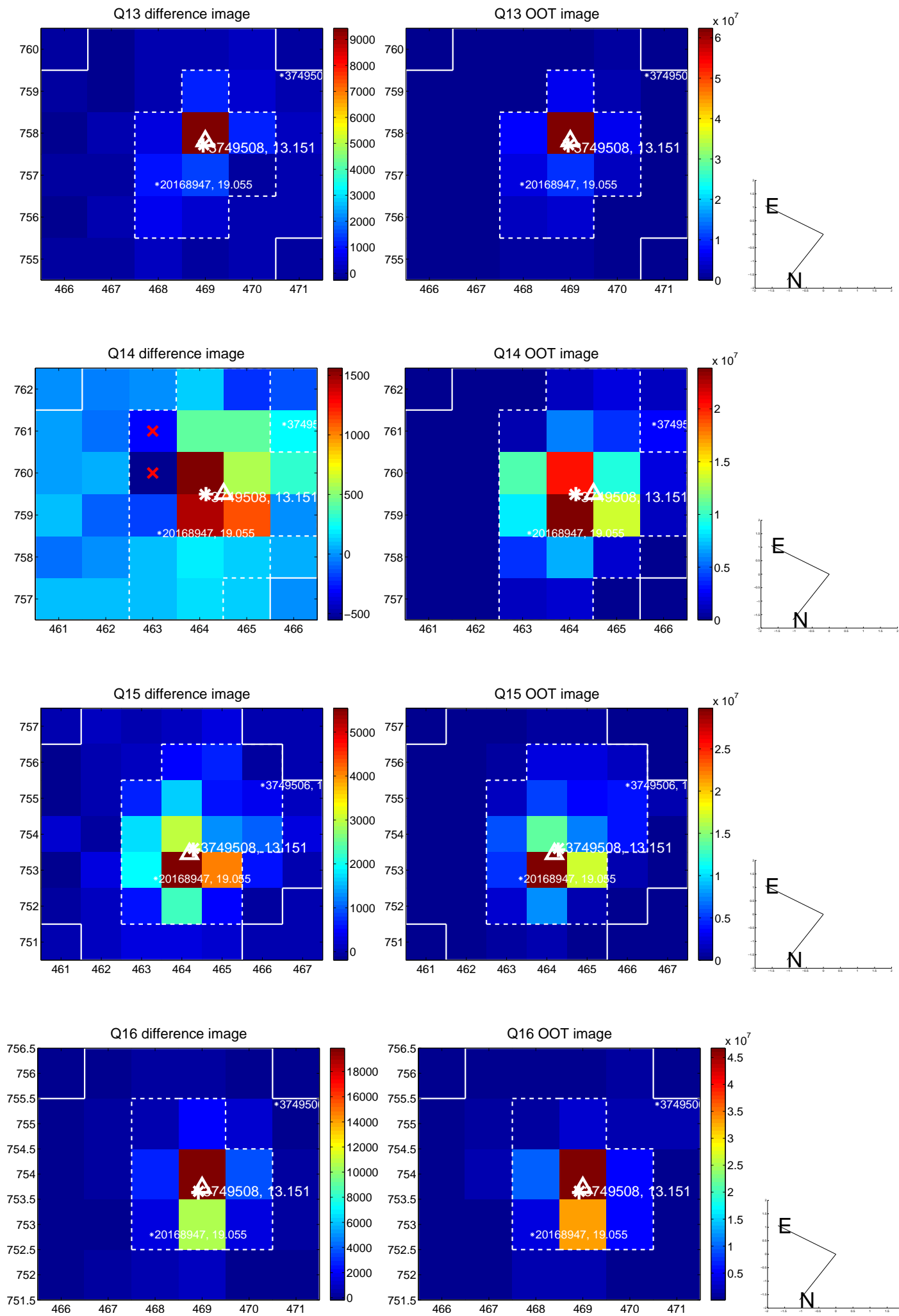
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



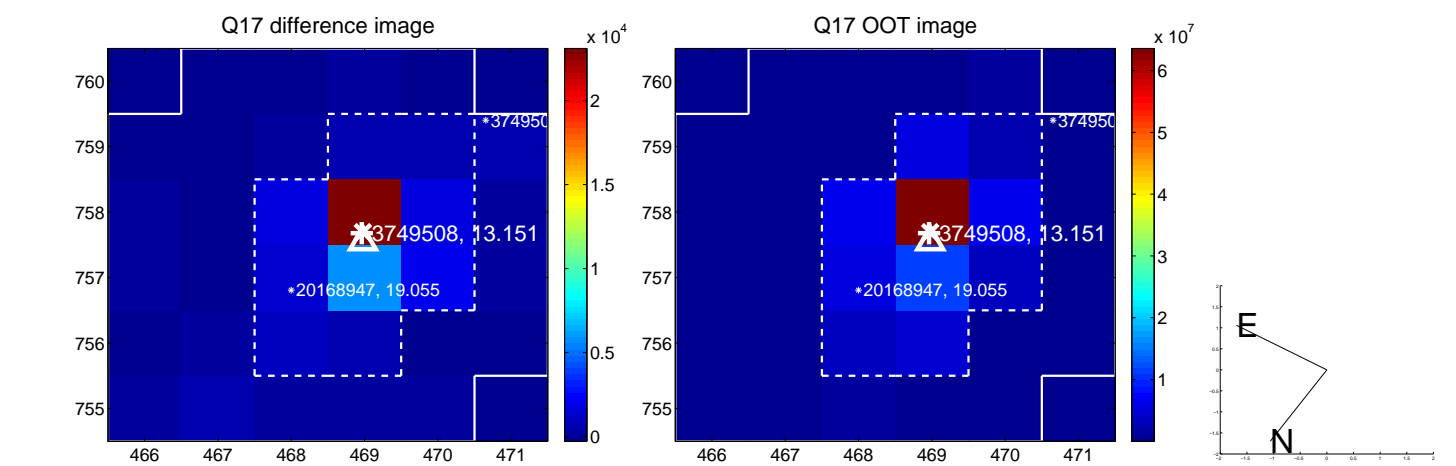
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



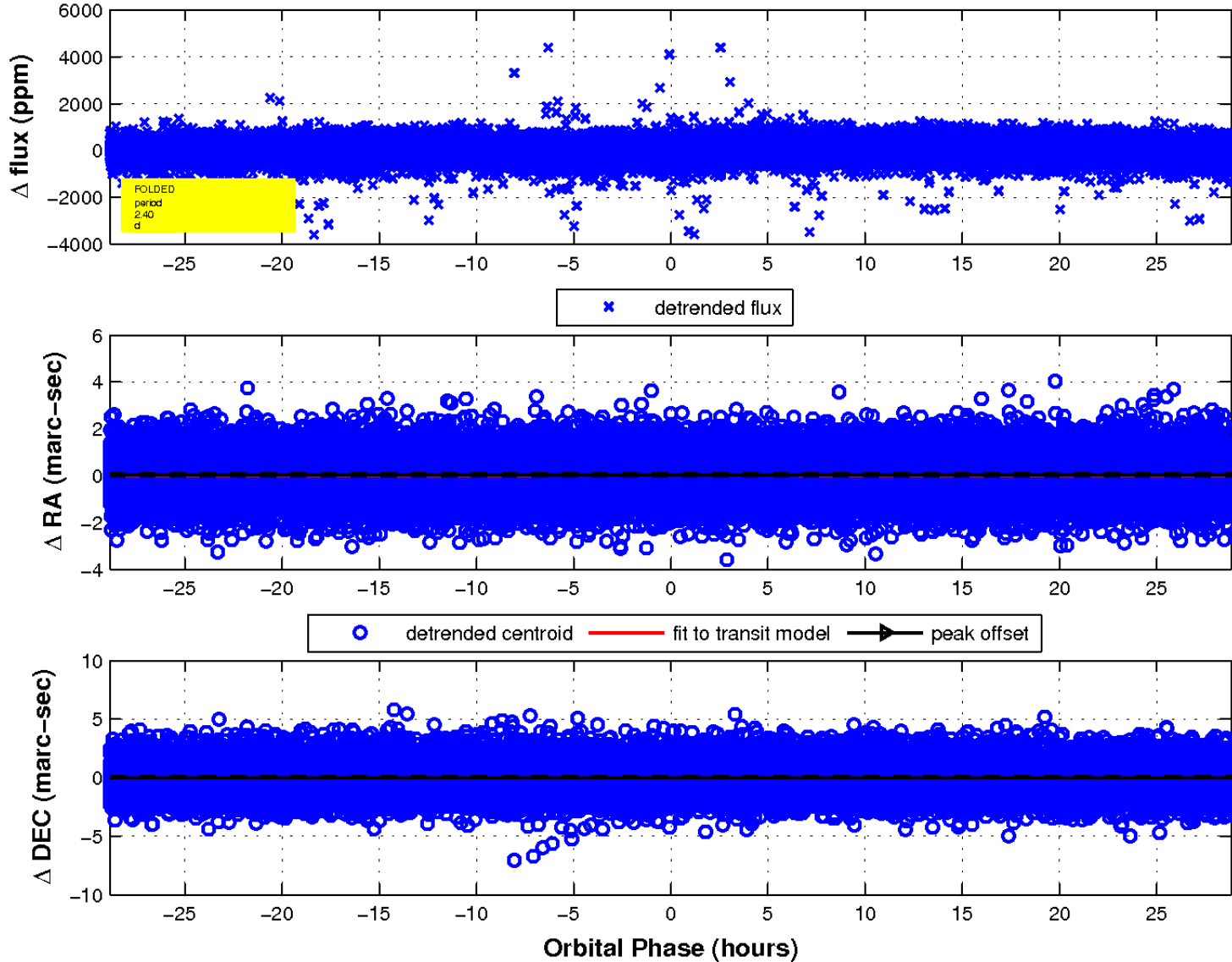
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

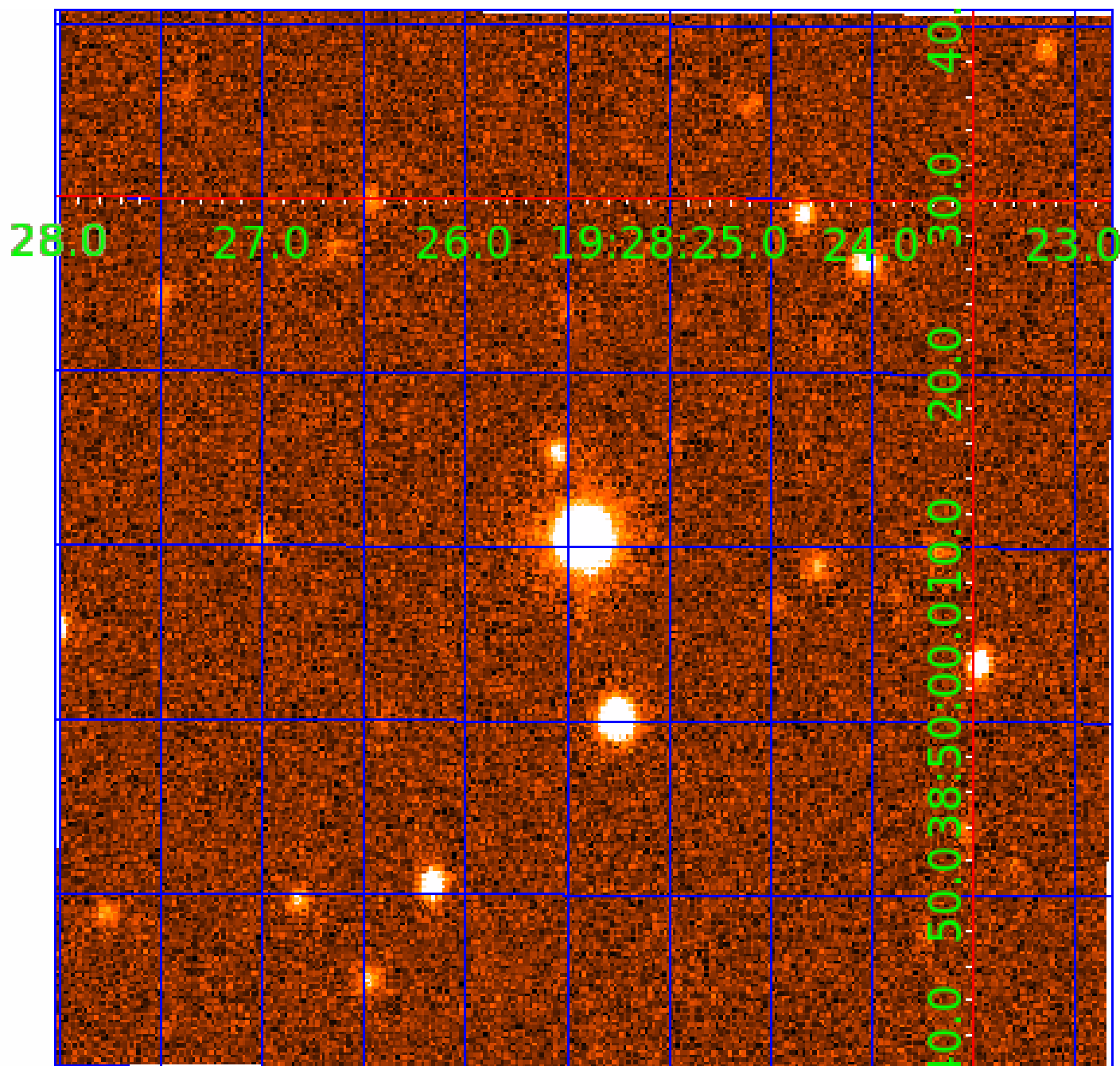


fluxWeightedCentroids, Planet 2 of 8



UKIRT Image

Declination



KIC 003749508

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})
003749508-01	OBS	7544.02	1.065747	132.034968	176.6	0.910	32.2	35.9	10.11	6244	16.05	0.00
003749508-02	OBS	7544.01	2.403921	131.586727	41.7	13.450	10.0	7.5	10.11	6244	6.55	54938.48
003749508-03	OBS	No	70.444992	164.220847	184.1	1.045	14.2	3.1	10.11	6244	16.22	608.09
003749508-04	OBS	No	124.125001	214.471104	503.8	0.805	10.9	2.9	10.11	6244	26.95	285.73
003749508-05	OBS	No	124.139851	214.930752	420.0	12.892	11.0	9.5	10.11	6244	24.10	285.69
003749508-06	OBS	No	33.583321	142.235014	52.7	11.521	8.9	2.3	10.11	6244	8.21	1632.82
003749508-07	OBS	No	454.561847	534.062004	419.5	8.543	9.4	8.6	10.11	6244	22.16	50.62
003749508-08	OBS	No	77.697273	157.170514	94.8	6.051	8.0	2.5	10.11	6244	10.62	533.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749508-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_ALT
003749508-02	OBS	FP	0.00	1	0	0	0	LPP_DV
003749508-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—HALO_GHOST
003749508-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
003749508-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

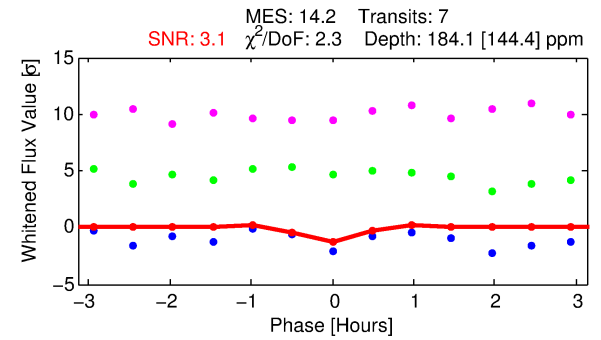
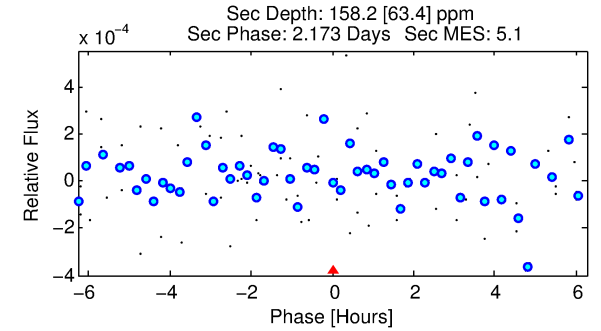
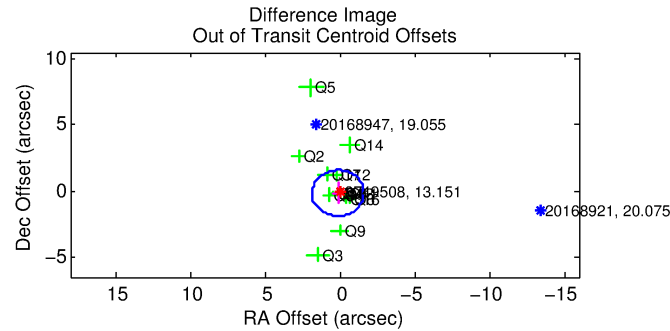
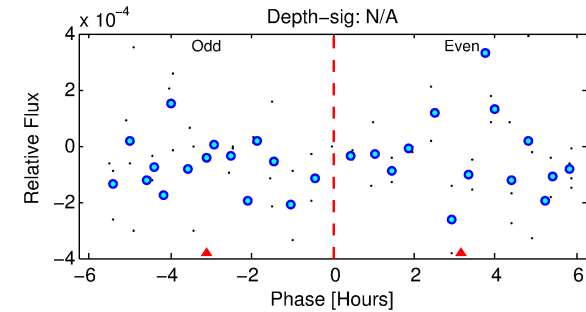
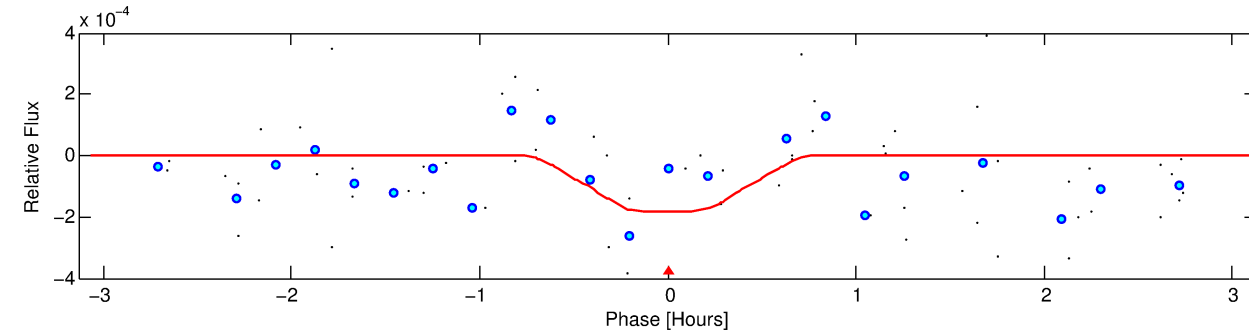
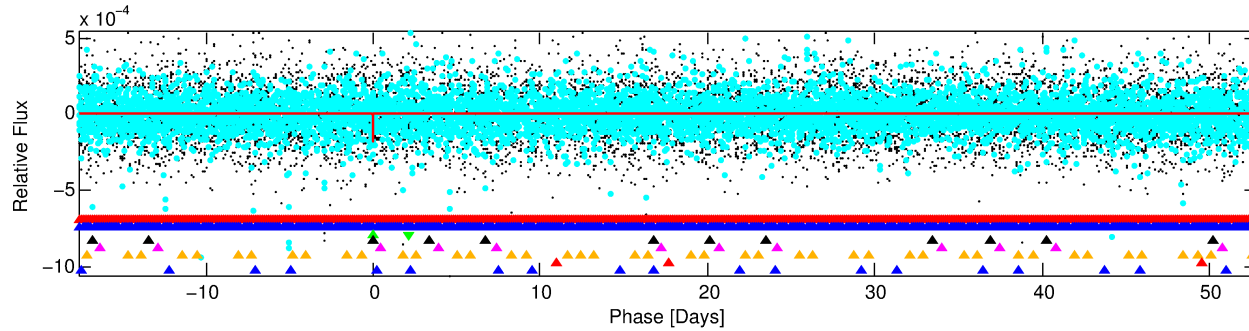
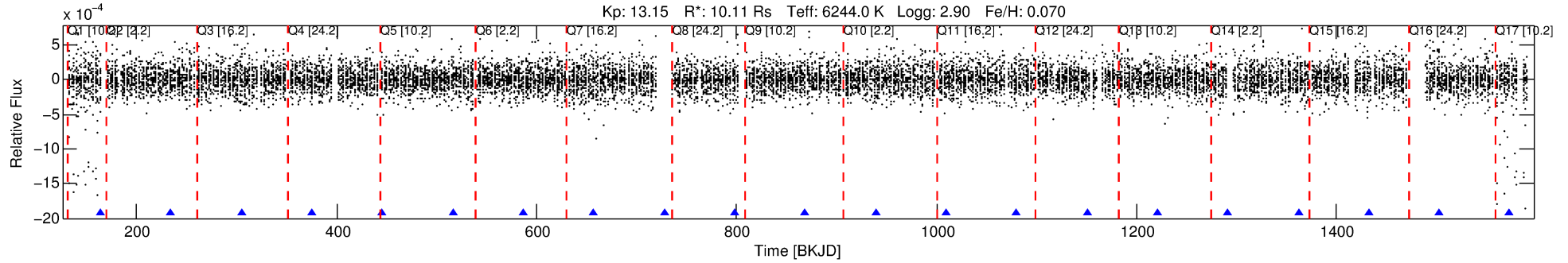
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003749508-03

No Significant Match Found

DV One-Page Summary

KIC: 3749508 Candidate: 3 of 8 Period: 70.445 d
KOI: K07544 Corr: No Ephemeris Match



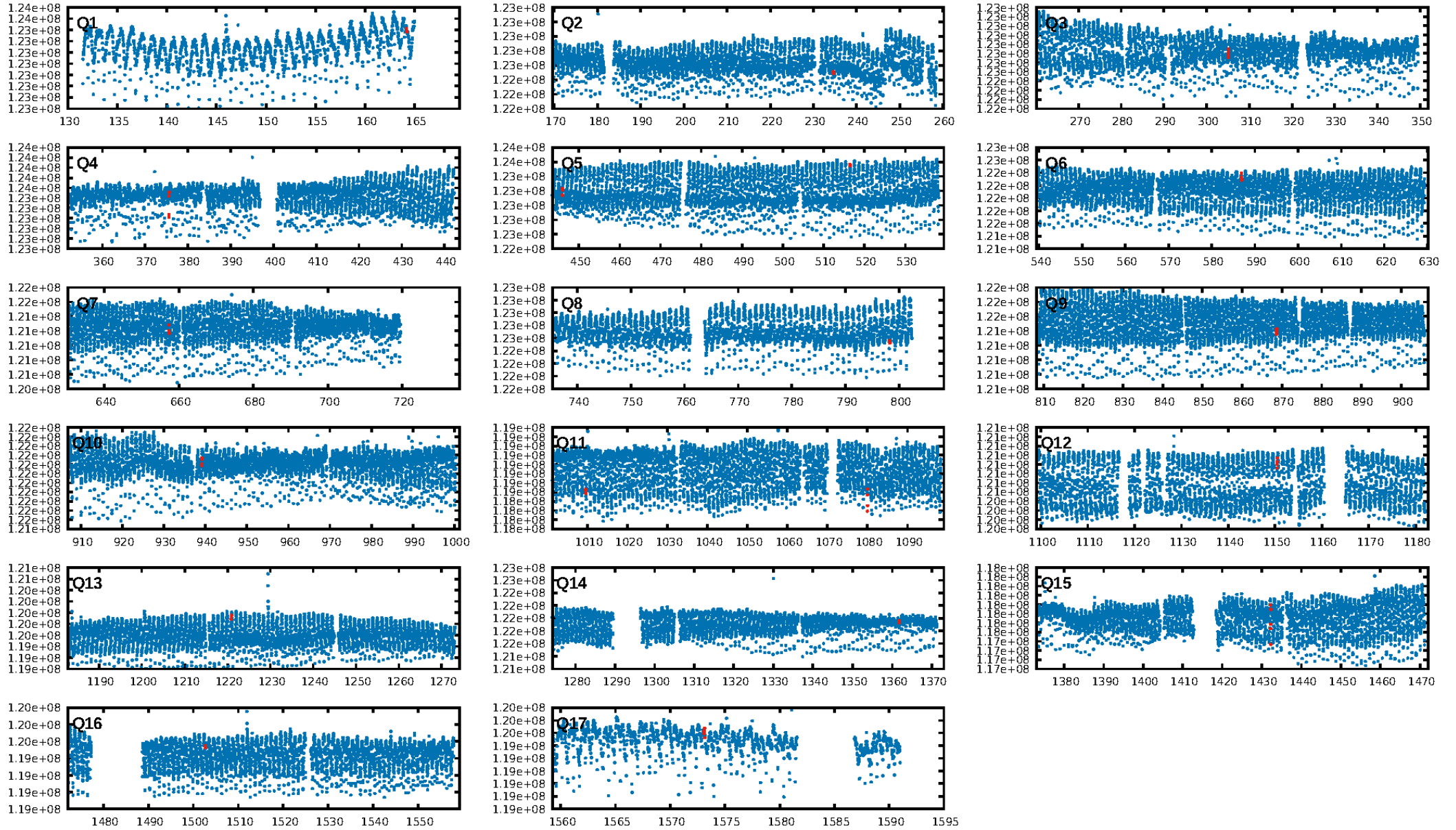
DV Fit Results:

Period = 70.44499 [0.00158] d
Epoch = 164.2208 [0.0163] BKJD
Rp/R* = 0.0147 [0.0640]
a/R* = 239.20 [5732.80]
b = 0.90 [5.03]
Seff = 608.09 [536.28]
Teq = 1266 [279] K
Rp = 16.22 [71.14] Re
a = 0.4782 [0.2608] AU
Ag = 75.61 [661.53] [0.11] σ
Teffp = 5773 [12566] K [0.36] σ

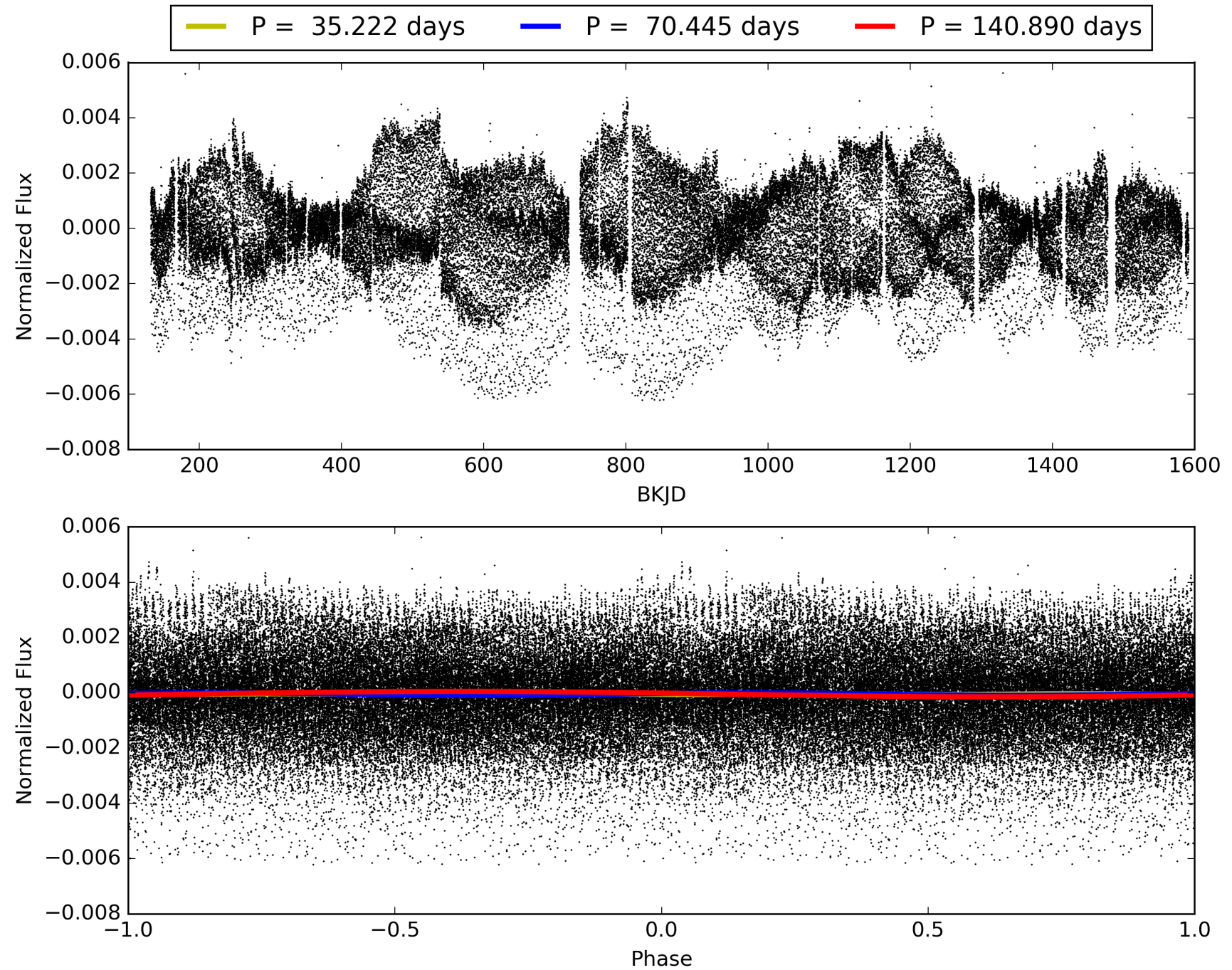
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [76.48] σ
LongPeriod-sig: 100.0% [28.35] σ
ModelChiSquare2-sig: 9.2%
ModelChiSquareGof-sig: 61.9%
Bootstrap-pfa: 2.07e-17
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -1.24
Centroid-sig: 4.0%
Centroid-so: 3.041 arcsec [1.32] σ
OotOffset-rm: 0.185 arcsec [0.32] σ
OotOffset-st: 3/3/4/4 [14]
KicOffset-rm: 0.102 arcsec [0.28] σ
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.21 [3/14]
DiffImageOverlap-fno: 0.18 [3/17]

TCE 003749508-03, PDC Light Curves

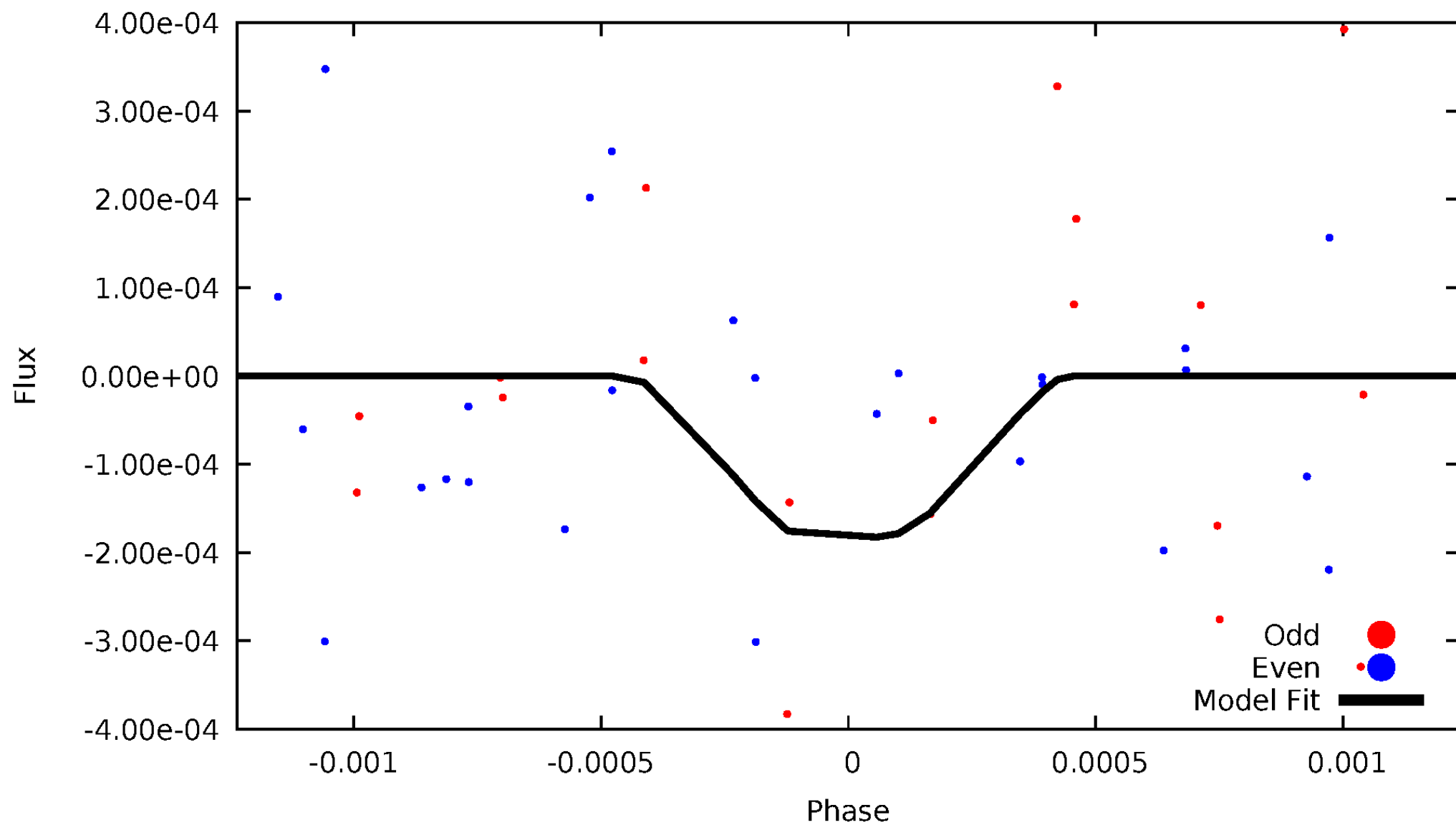


TCE 003749508-03



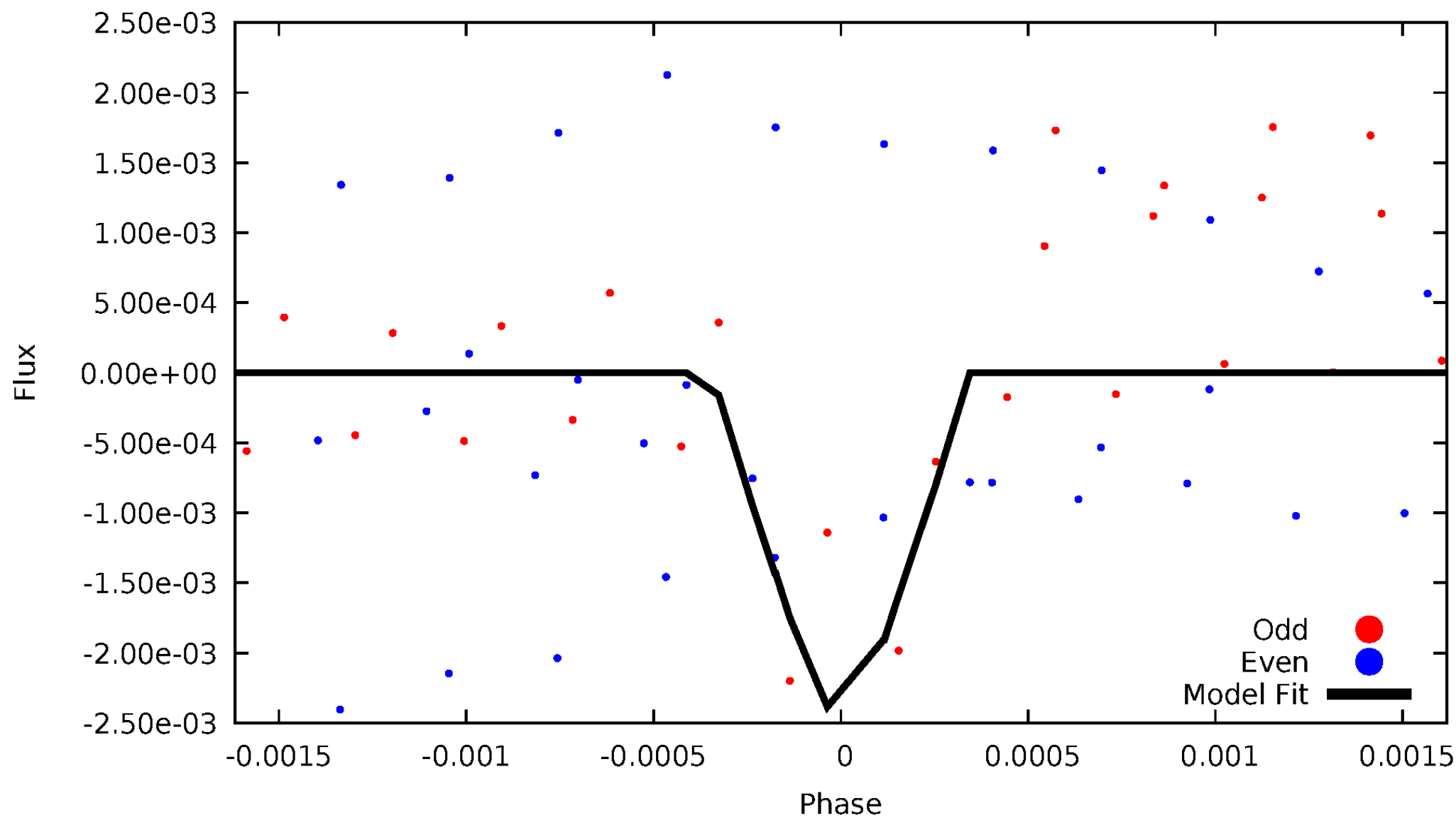
DV Odd/Even

TCE 003749508-03

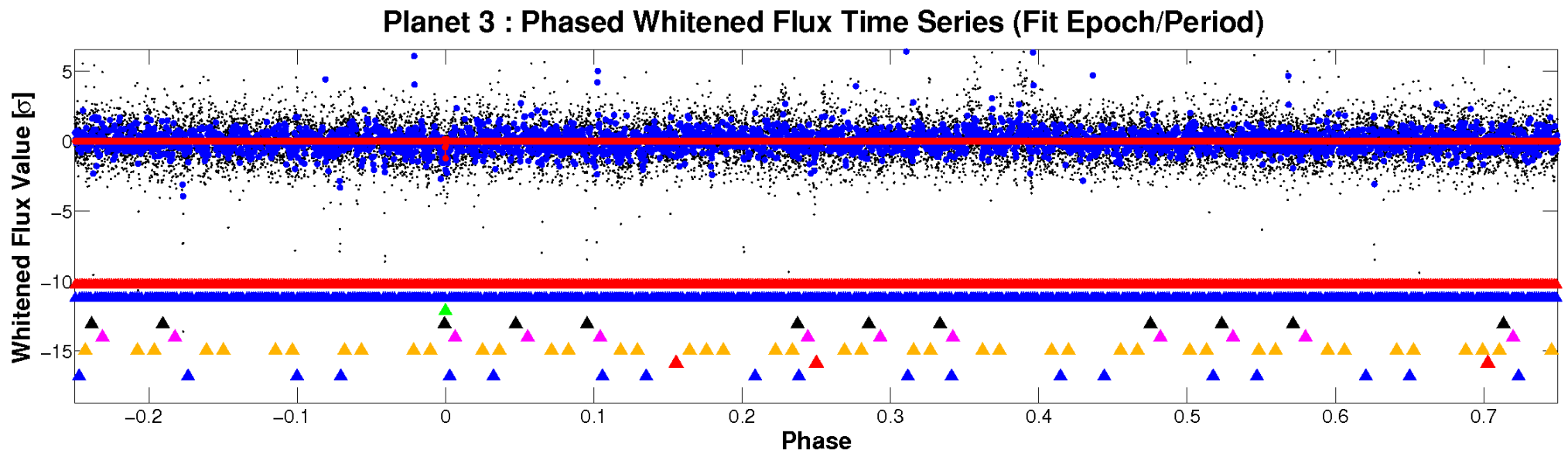
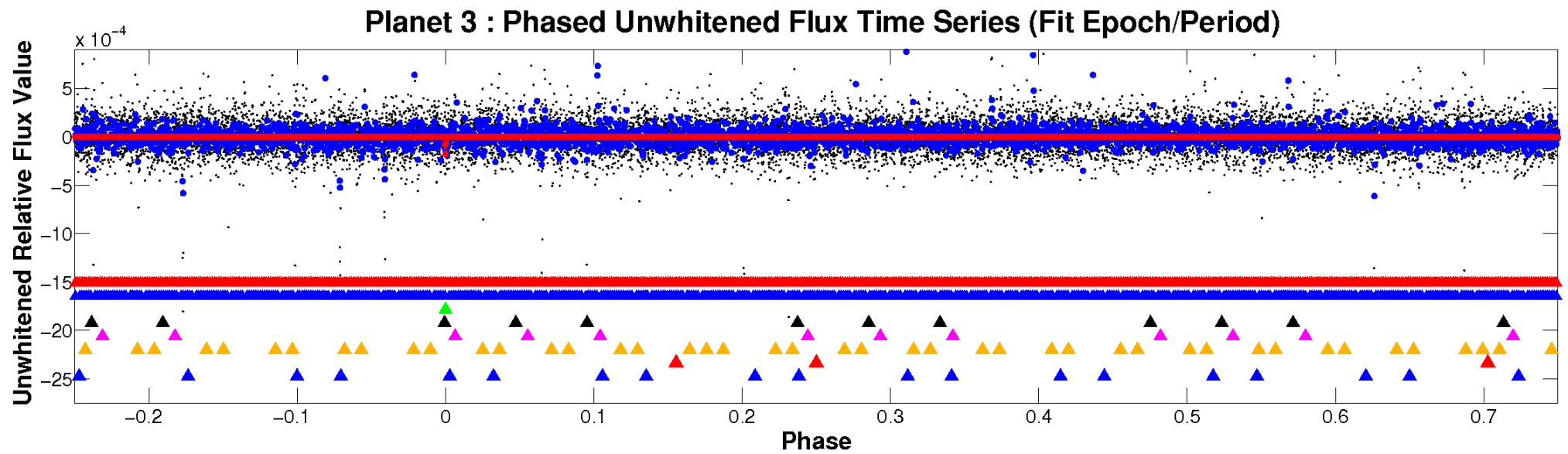


ALT Odd/Even

TCE 003749508-03

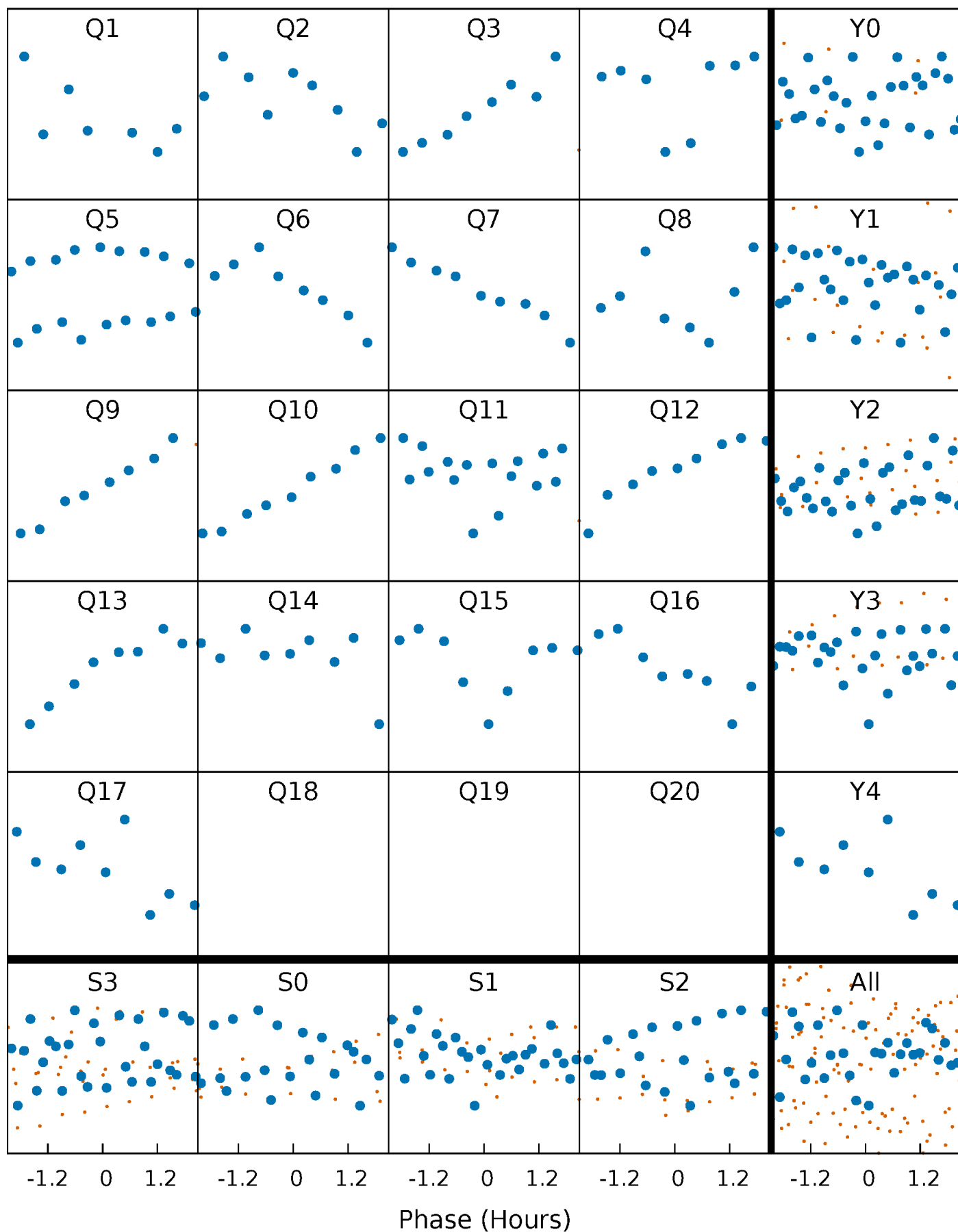


Non-Whitened Vs. Whitened Light Curve



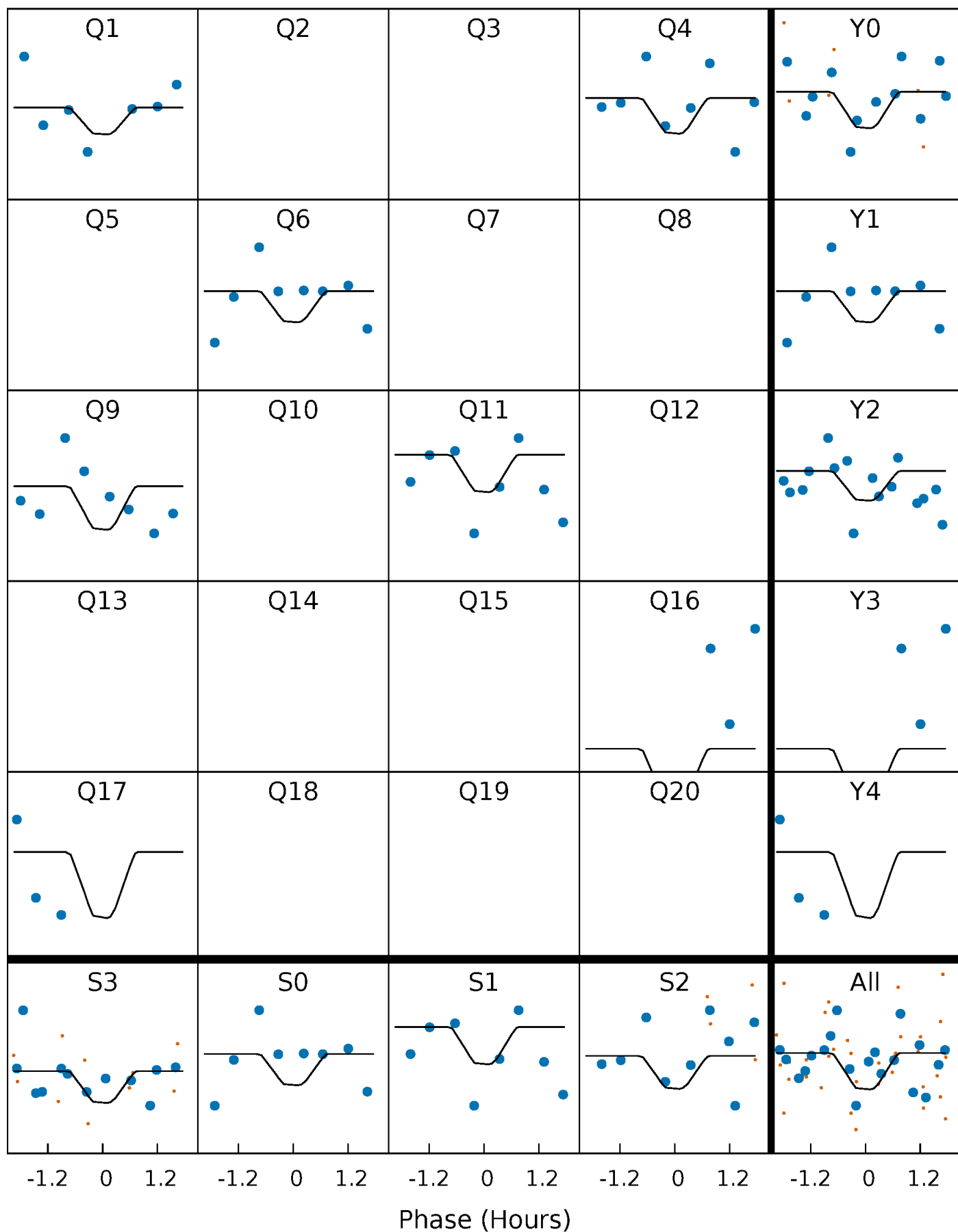
PDC Quarter-Phased Transit Curves

TCE 003749508-03 P= 70.444992 Days $T_0=164.220847$ (BKJD)



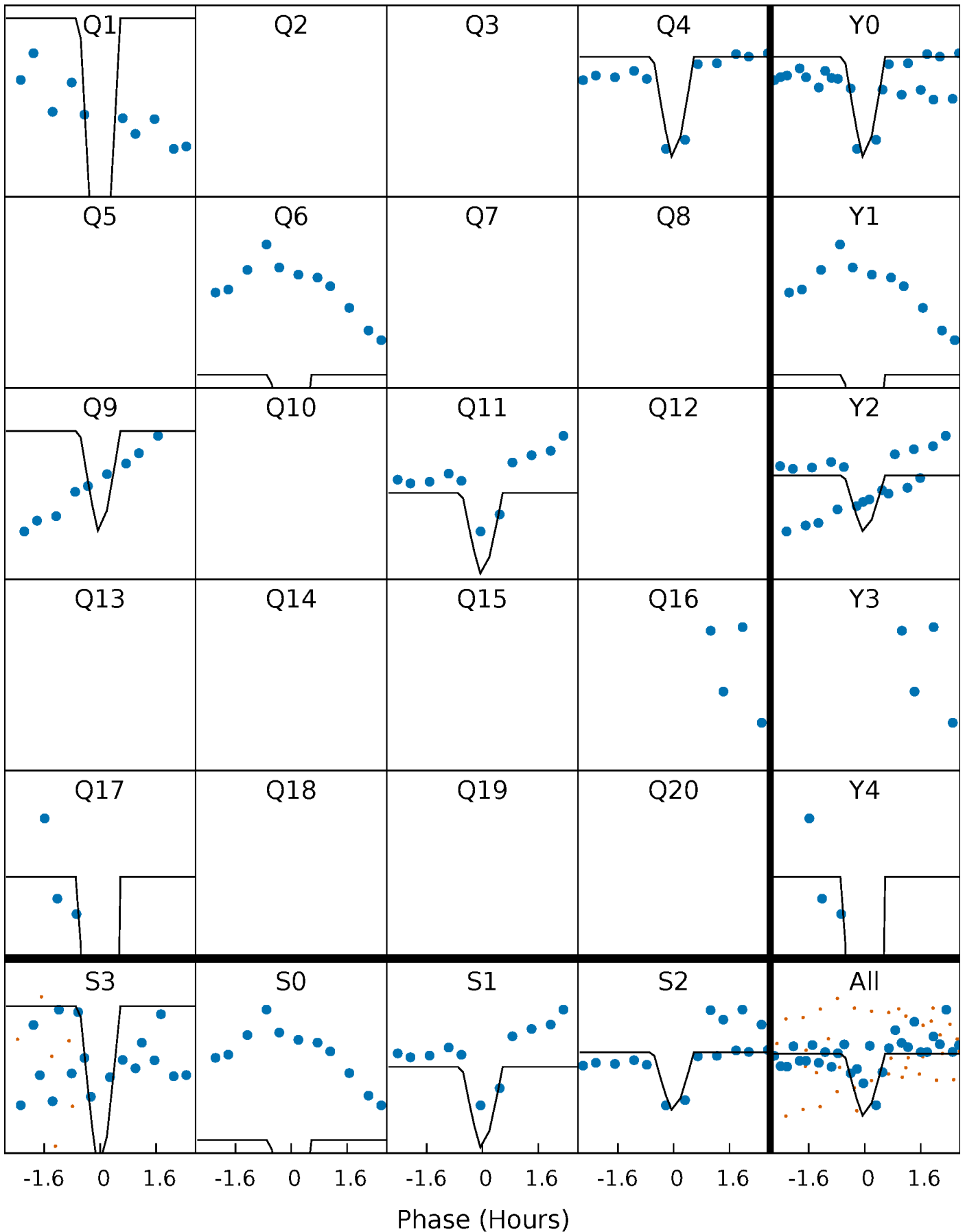
DV Quarter-Phased Transit Curves

TCE 003749508-03 P= 70.444992 Days $T_0=164.220847$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

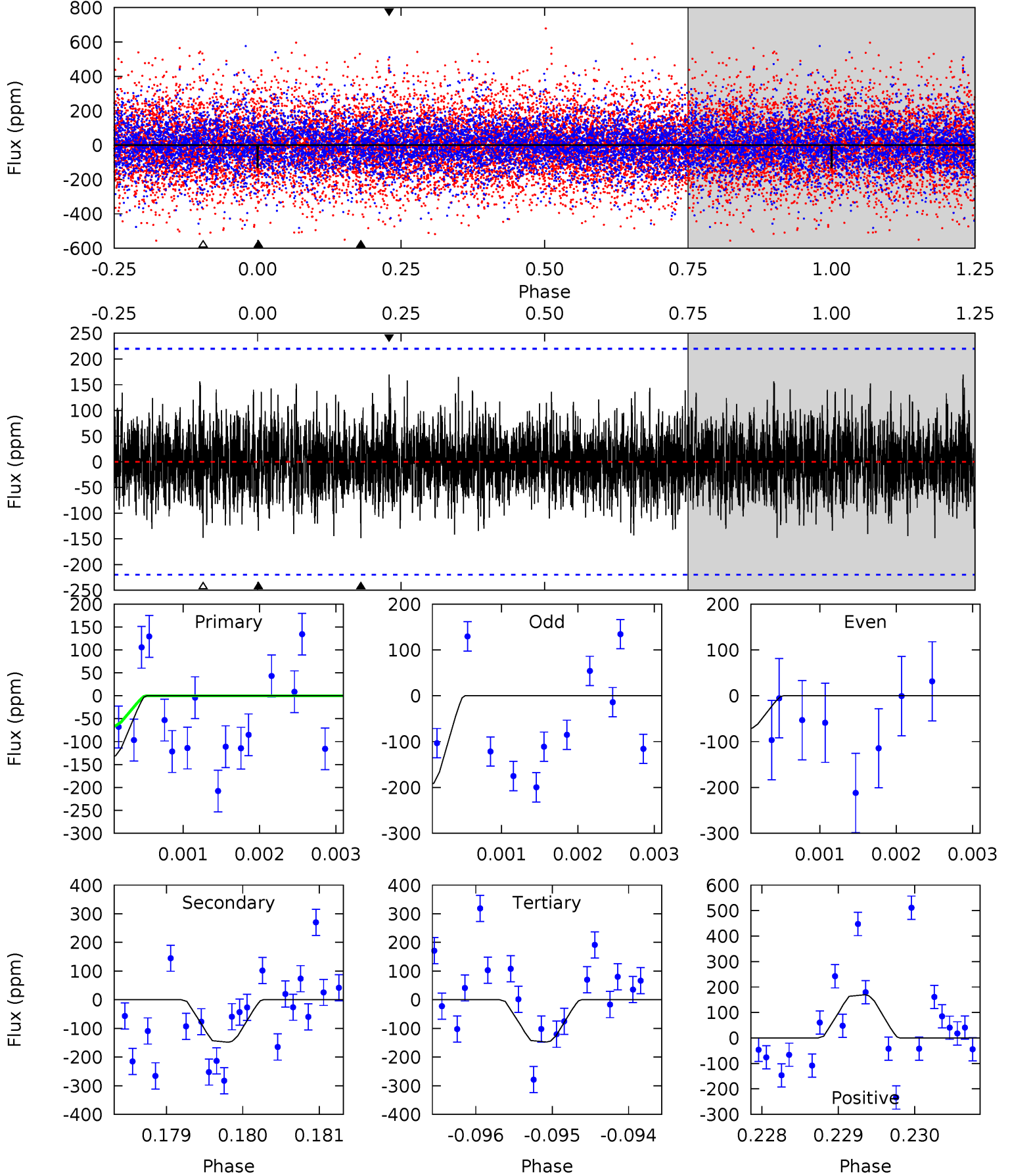
TCE 003749508-03 $P = 70.444254$ Days $T_0 = 164.224264$ (BKJD)



DV Model-Shift Uniqueness Test

003749508-03, P = 70.444992 Days, E = 93.775855 Days

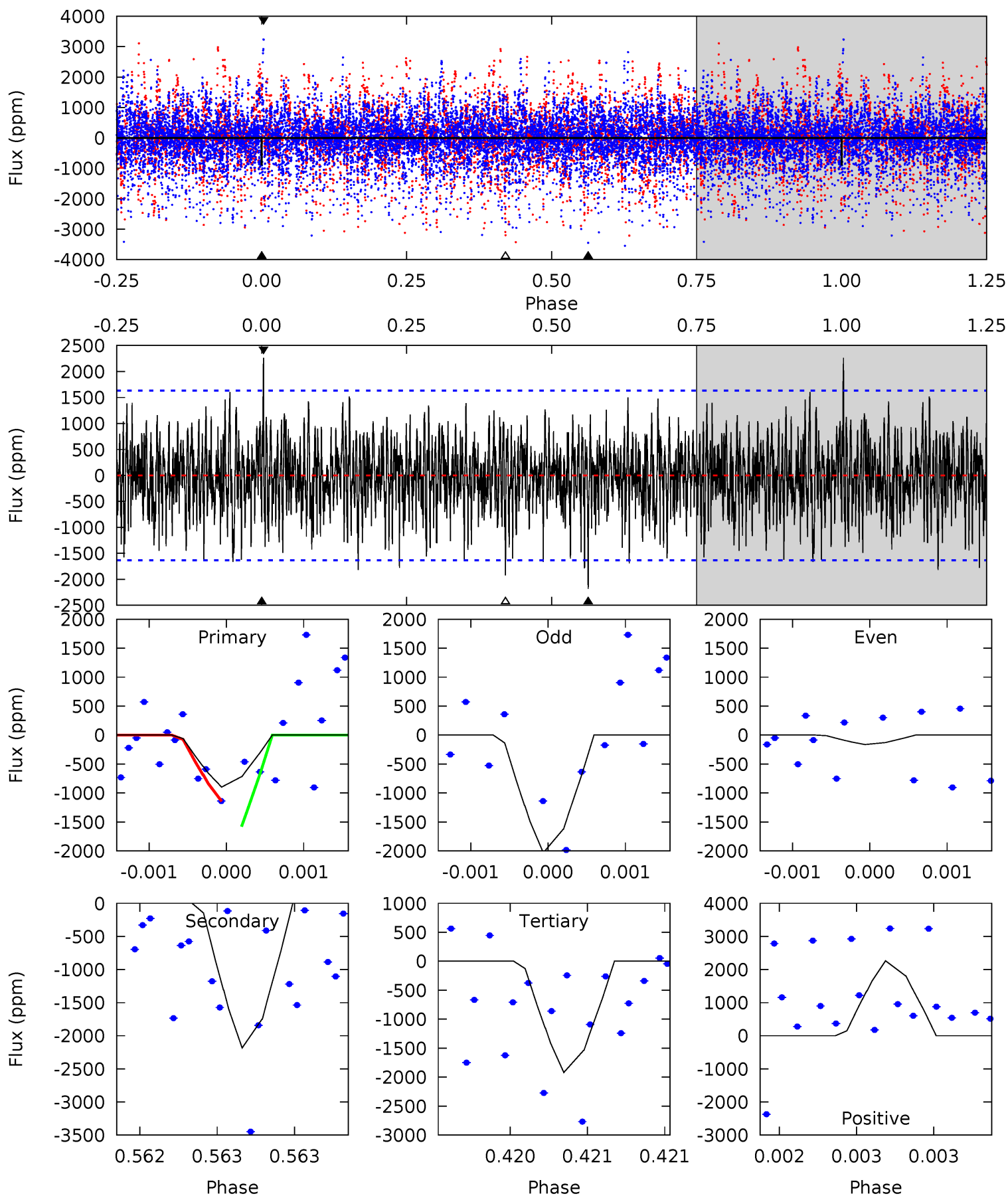
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.34	3.69	3.67	4.23	5.48	3.33	1.12	-0.34	-0.89	0.02	-0.54	1.52	1.55	0.53	1.57



Alt Model-Shift Uniqueness Test

003749508-03, P = 70.444254 Days, E = 93.780010 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.05	7.42	6.52	7.69	5.55	3.44	1.77	-3.47	-4.64	0.90	-0.27	3.04	0.61	0.51	0.63



Stellar Parameters For KIC 003749508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6244^{+148}_{-204}	$2.897^{+0.512}_{-0.096}$	$0.070^{+0.200}_{-0.500}$	$10.105^{+1.910}_{-5.731}$	$2.936^{+0.284}_{-1.205}$	$0.004^{+0.029}_{-0.001}$
	+2%/-3%	+18%/-3%	+286%/-714%	+19%/-57%	+10%/-41%	+713%/-30%
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 003749508-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-148 ± 40	$46.99^{+50.93}_{-32.57}$	1707^{+123}_{-234}	3509^{+1843}_{-701}	$8.384^{+72.912}_{-6.565}$
Alt.	-2184 ± 294	$61.57^{+58.37}_{-41.16}$	1706^{+126}_{-240}	5356^{+4183}_{-1238}	71^{+534}_{-53}

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

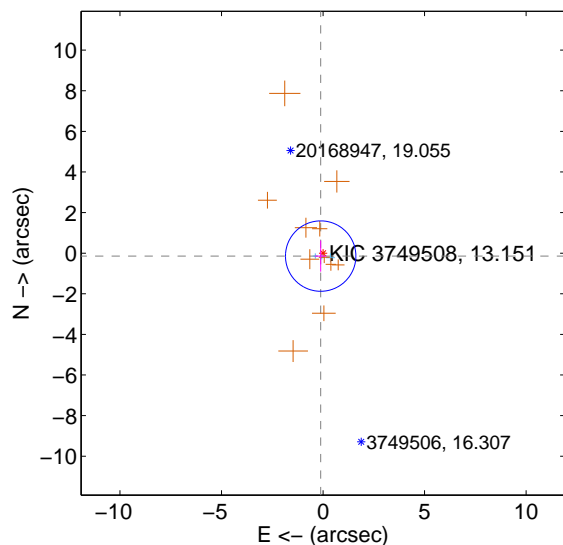
Supplemental centroid analysis for 003749508-03. Kepler magnitude: 13.15. Transit SNR 3.14

There are 3 quarters with good PRF difference image offsets

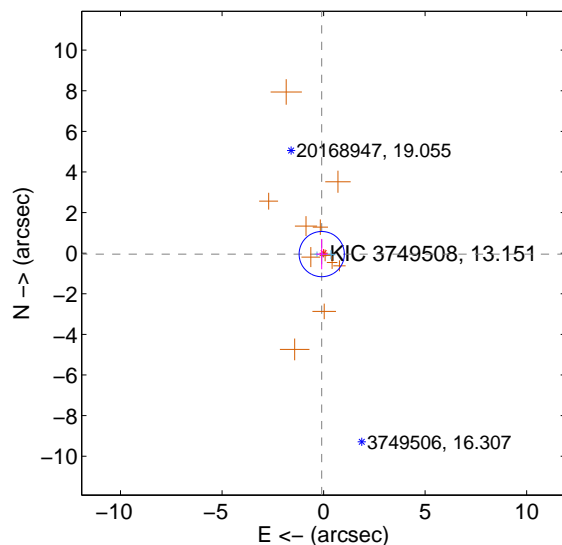
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.185 ± 0.578	0.32	0.116 ± 0.285	-0.143 ± 0.768
PRF-fit source offset from KIC position	0.102 ± 0.371	0.28	0.091 ± 0.269	-0.046 ± 0.746
photometric centroid source offset	3.04 ± 2.30	1.32	-1.51 ± 2.13	2.64 ± 2.35

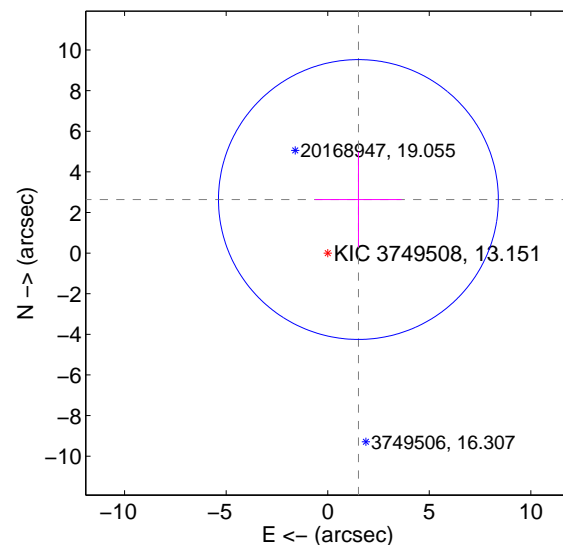
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

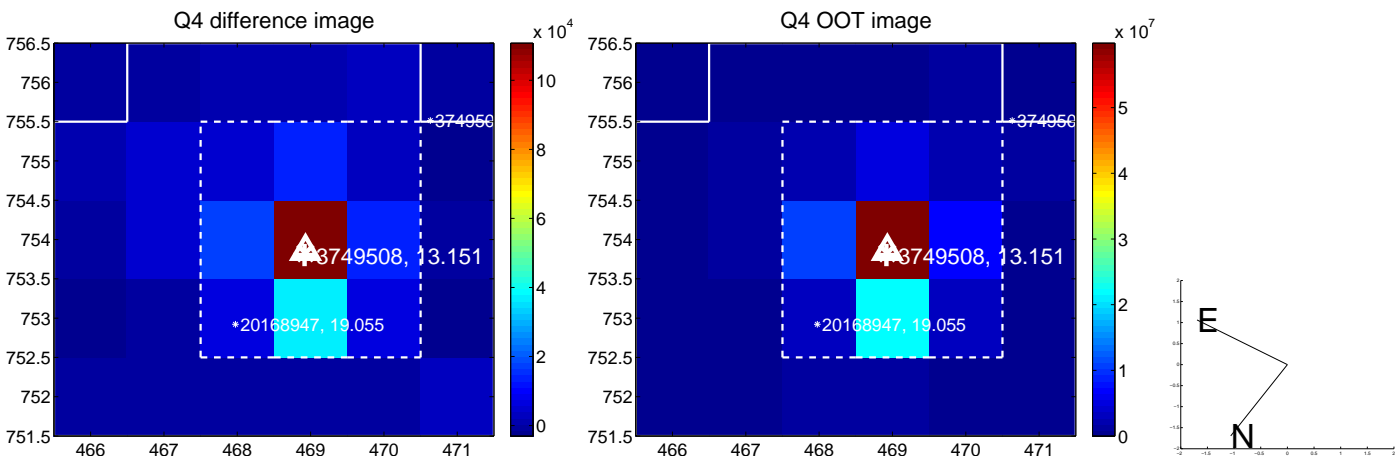
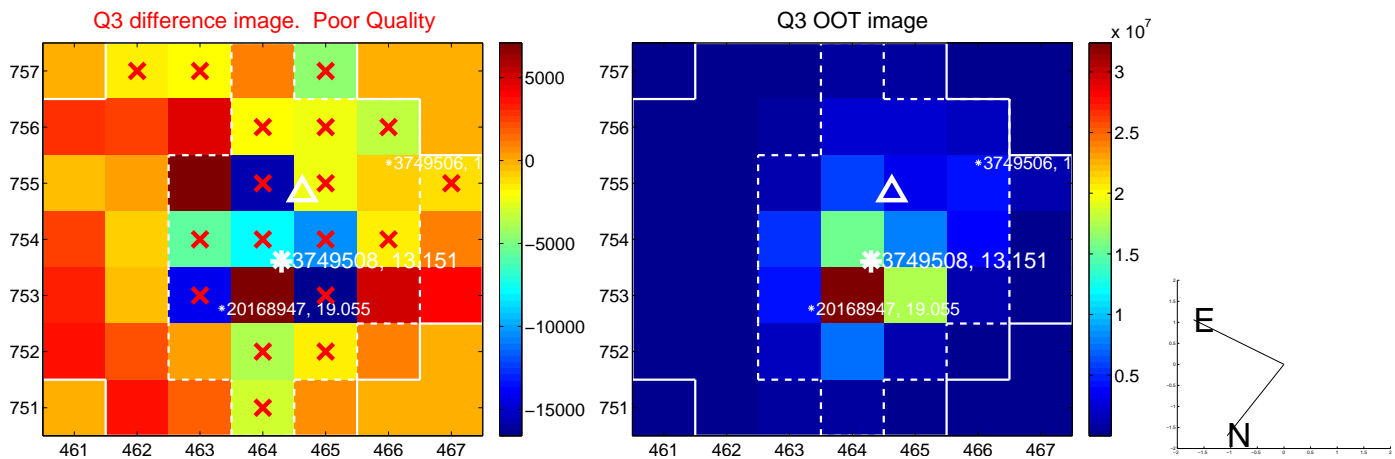
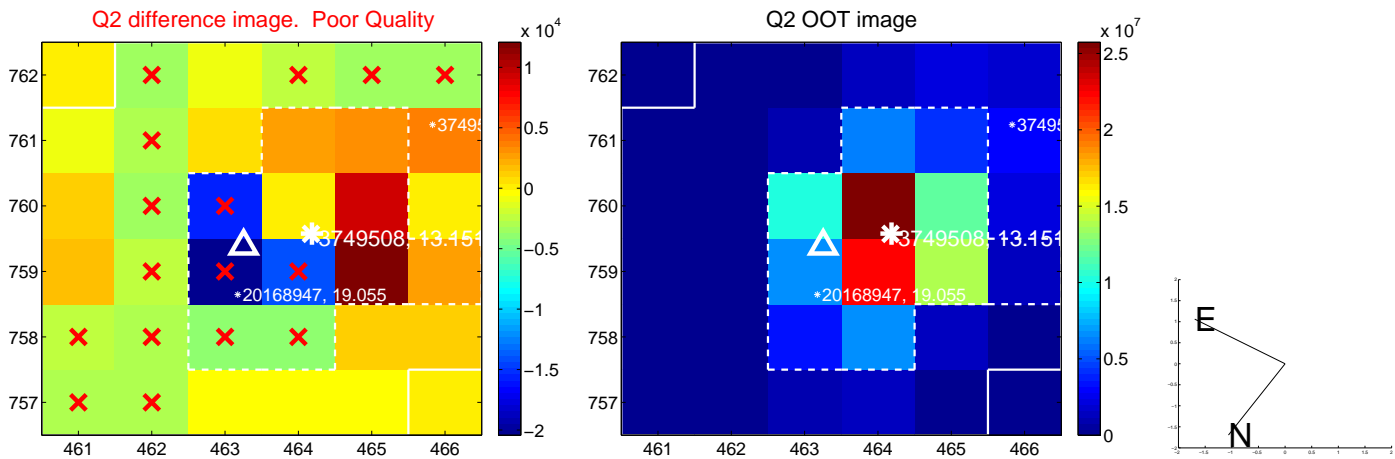
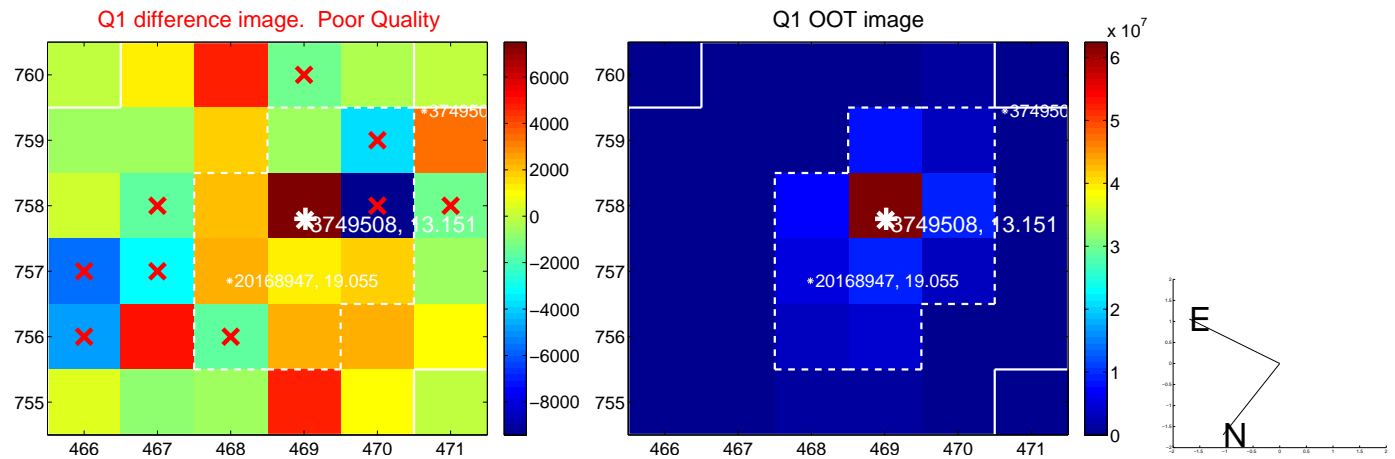


offset from photometric centroids

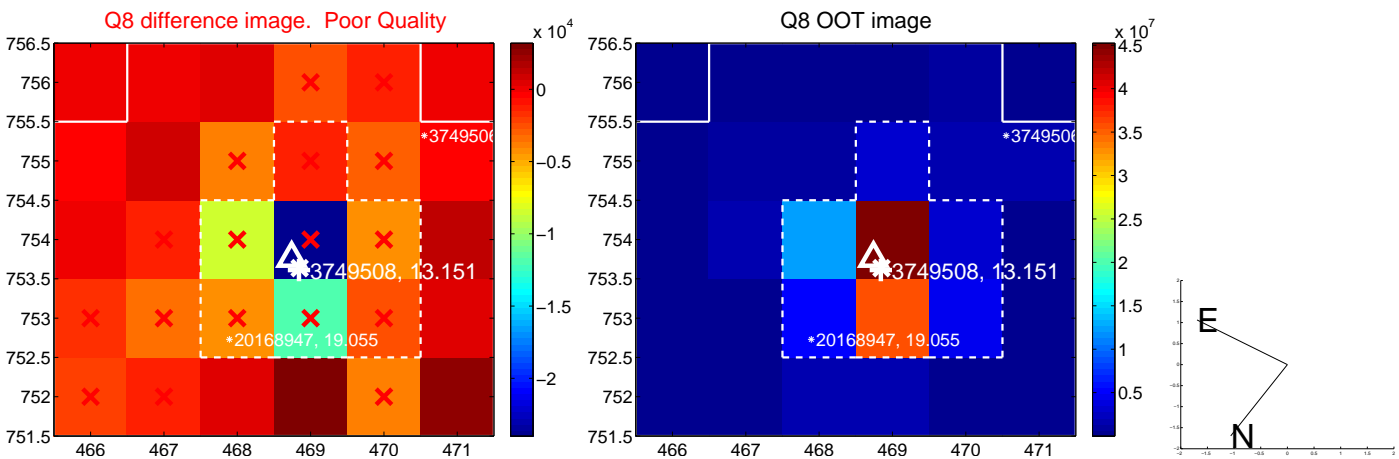
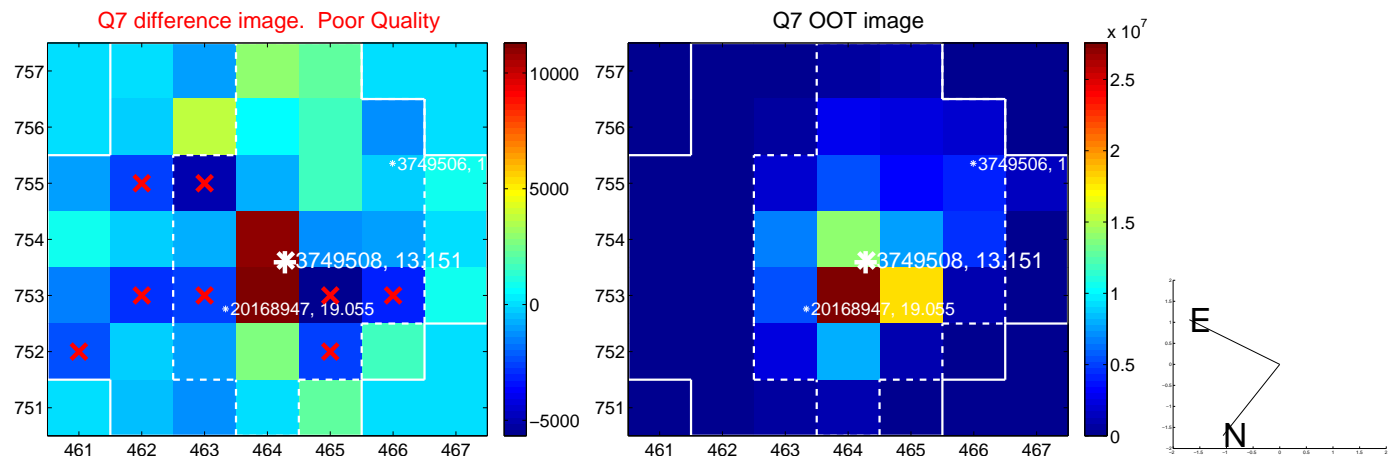
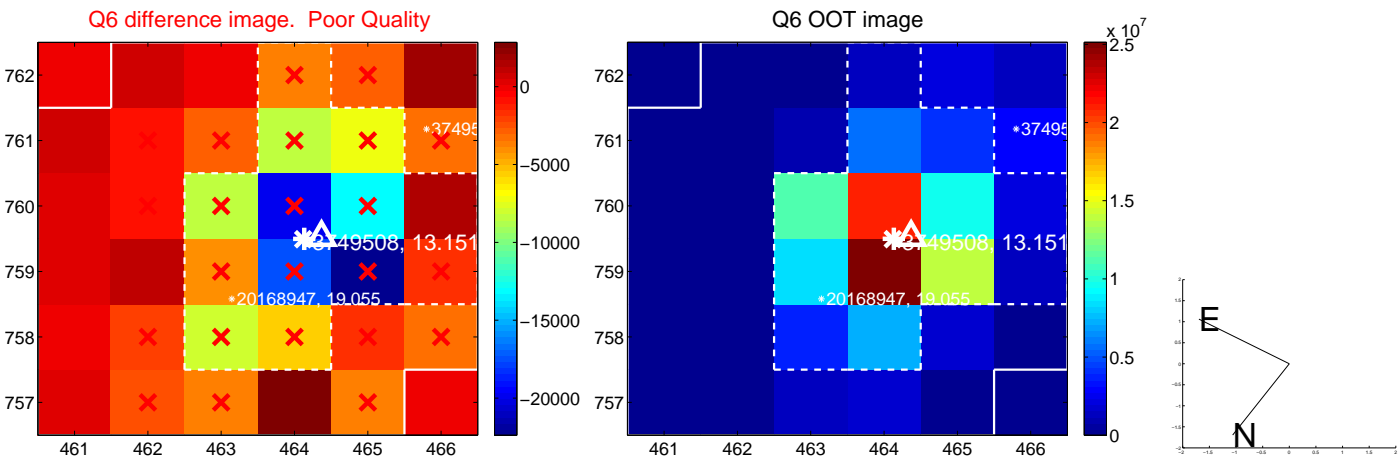
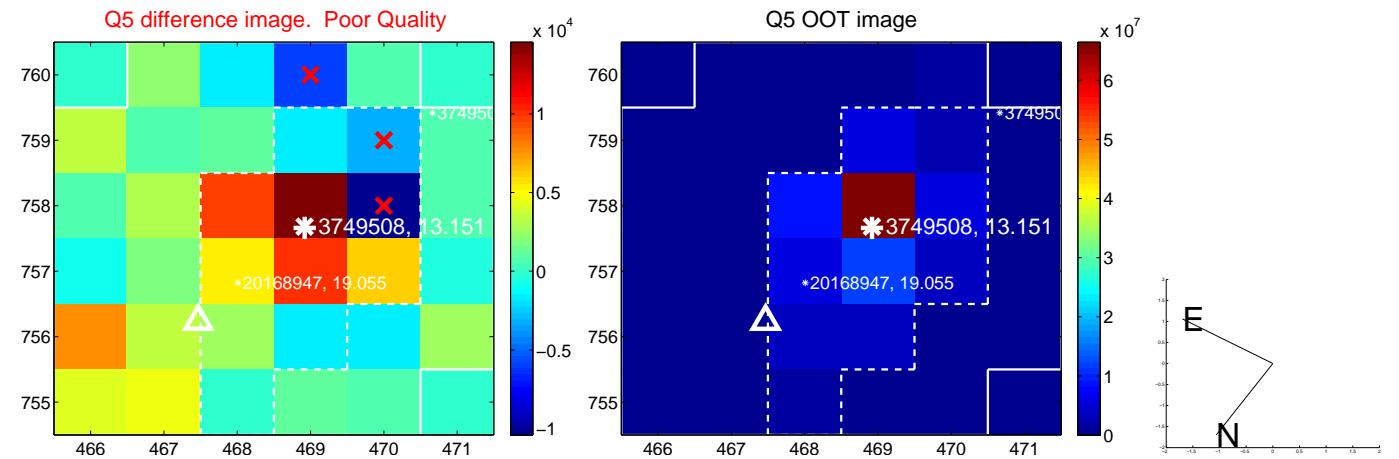


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

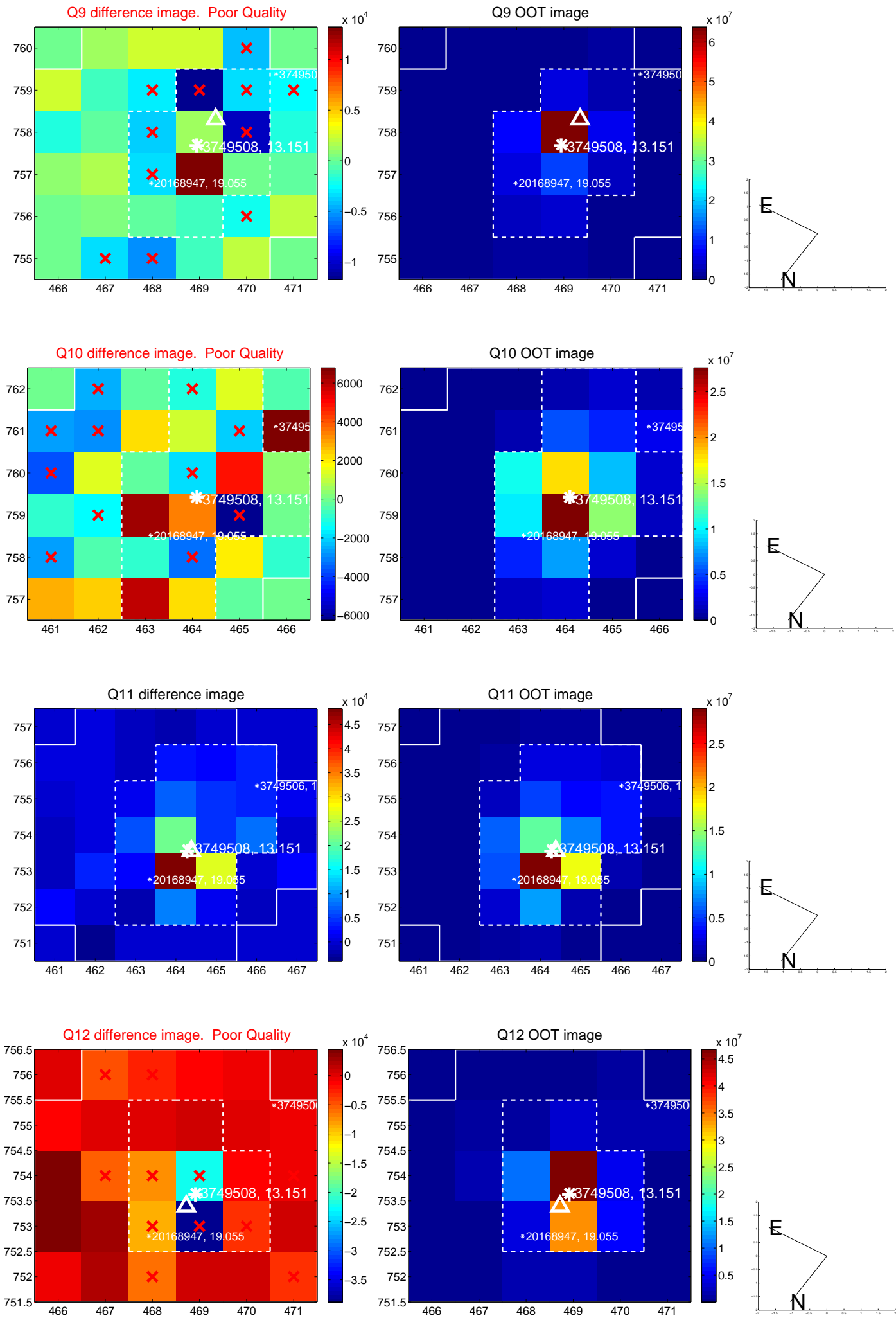
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



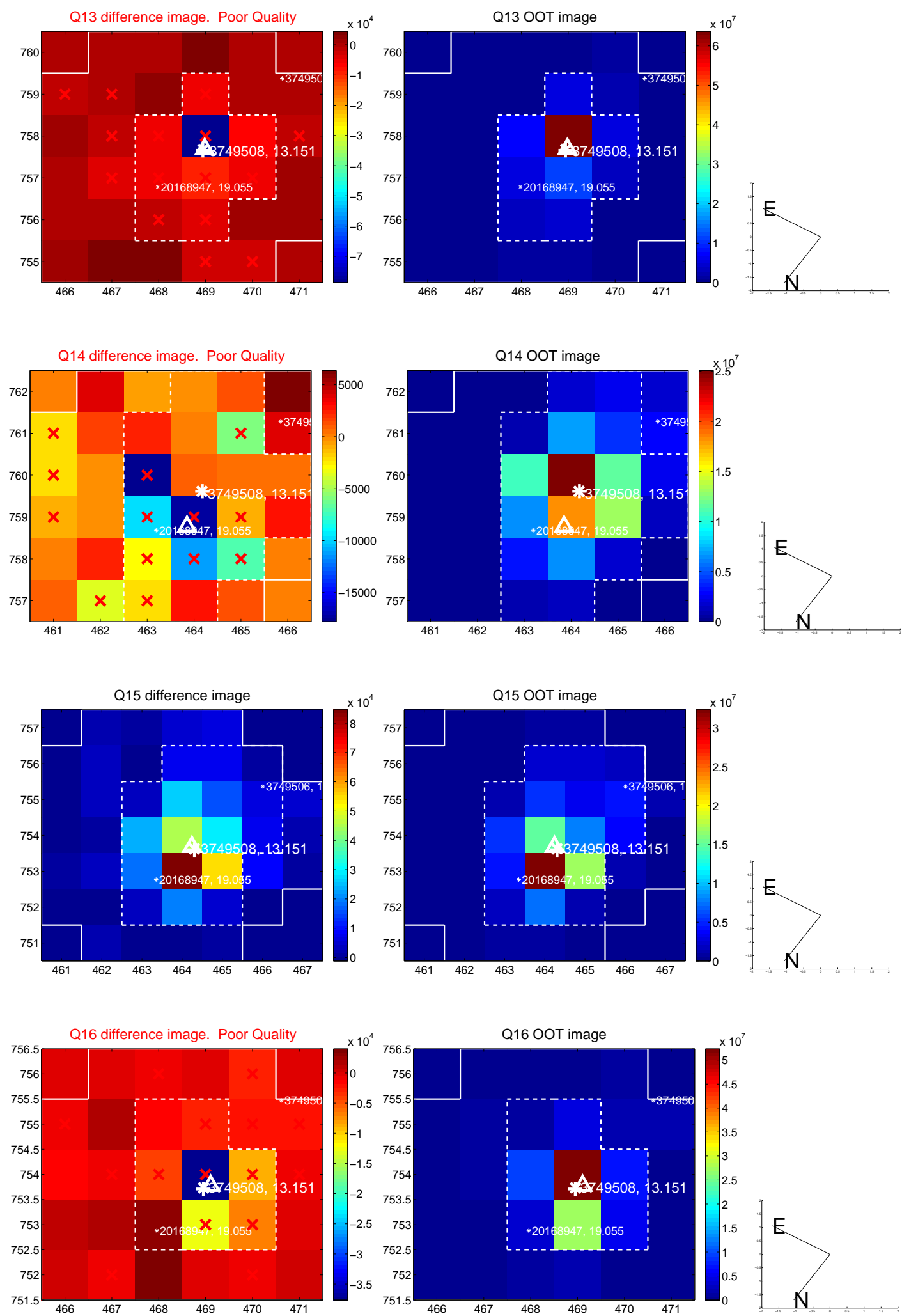
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



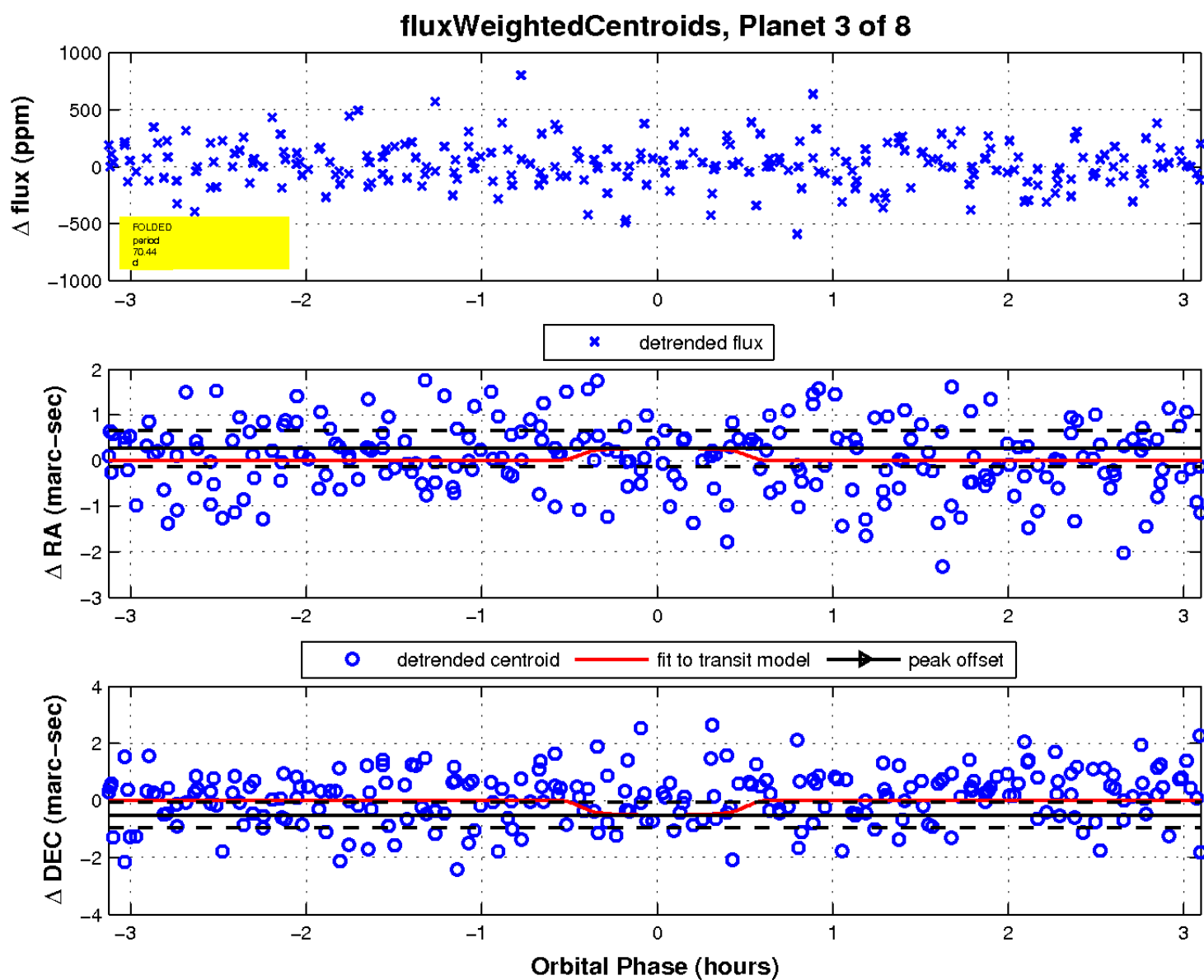
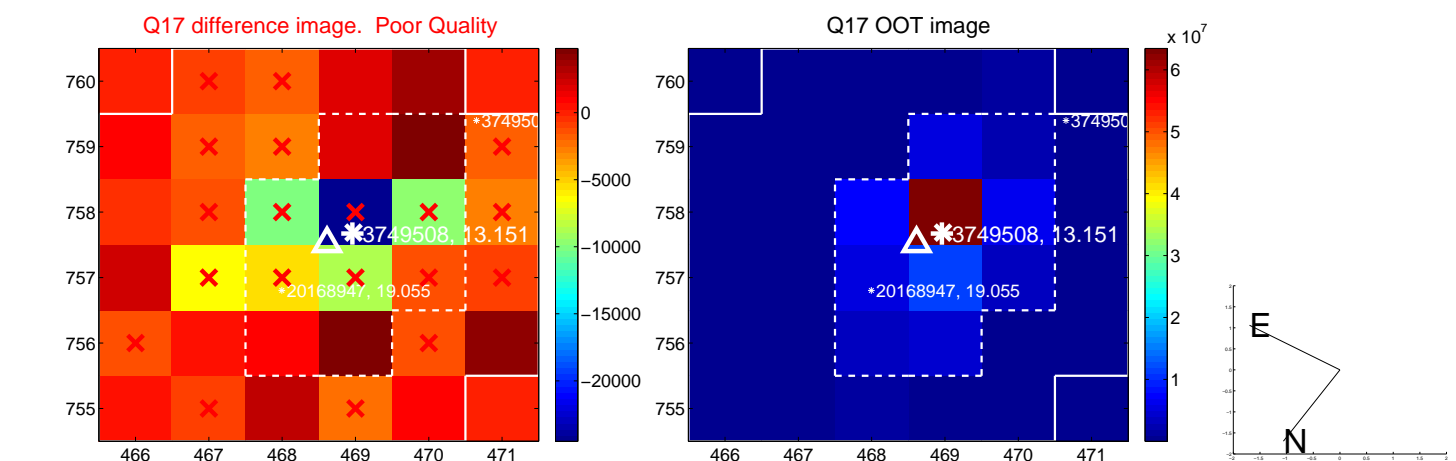
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

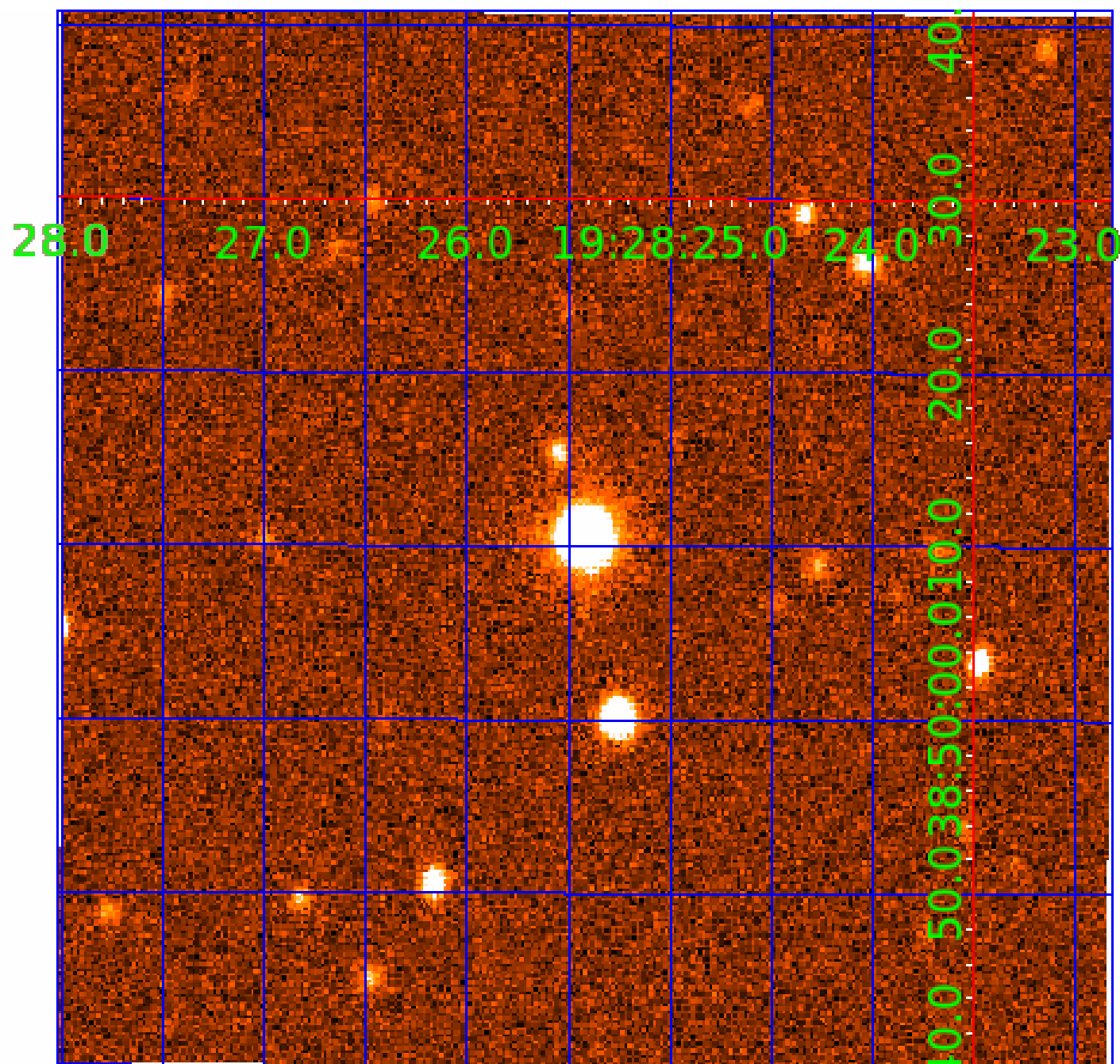


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003749508

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})
003749508-01	OBS	7544.02	1.065747	132.034968	176.6	0.910	32.2	35.9	10.11	6244	16.05	0.00
003749508-02	OBS	7544.01	2.403921	131.586727	41.7	13.450	10.0	7.5	10.11	6244	6.55	54938.48
003749508-03	OBS	No	70.444992	164.220847	184.1	1.045	14.2	3.1	10.11	6244	16.22	608.09
003749508-04	OBS	No	124.125001	214.471104	503.8	0.805	10.9	2.9	10.11	6244	26.95	285.73
003749508-05	OBS	No	124.139851	214.930752	420.0	12.892	11.0	9.5	10.11	6244	24.10	285.69
003749508-06	OBS	No	33.583321	142.235014	52.7	11.521	8.9	2.3	10.11	6244	8.21	1632.82
003749508-07	OBS	No	454.561847	534.062004	419.5	8.543	9.4	8.6	10.11	6244	22.16	50.62
003749508-08	OBS	No	77.697273	157.170514	94.8	6.051	8.0	2.5	10.11	6244	10.62	533.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749508-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_ALT
003749508-02	OBS	FP	0.00	1	0	0	0	LPP_DV
003749508-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—HALO_GHOST
003749508-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
003749508-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

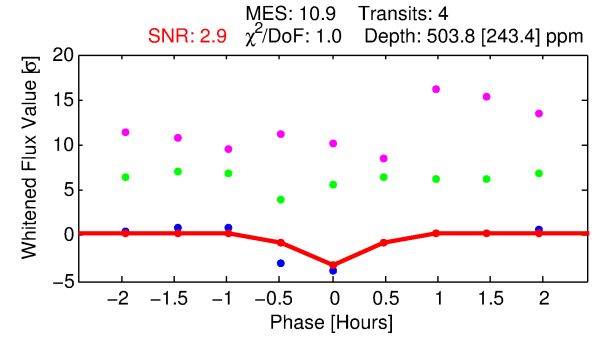
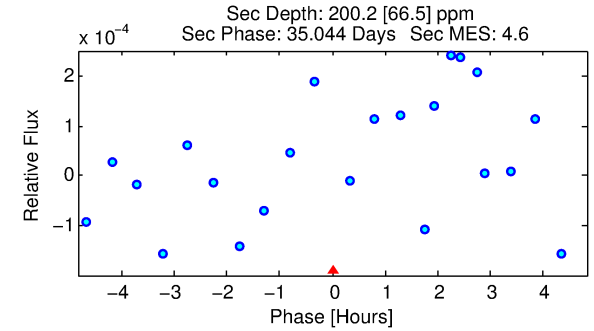
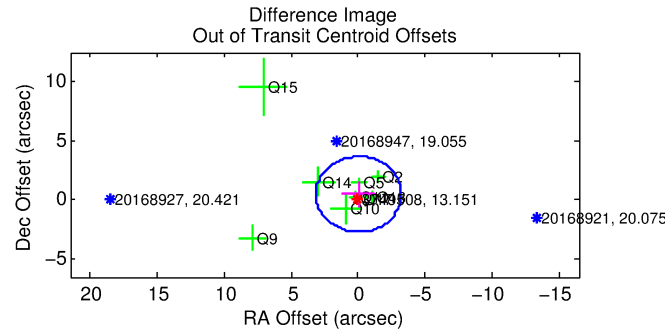
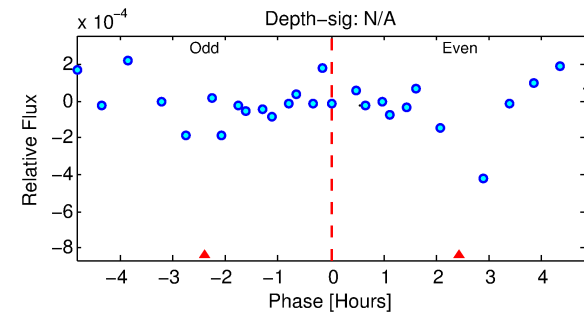
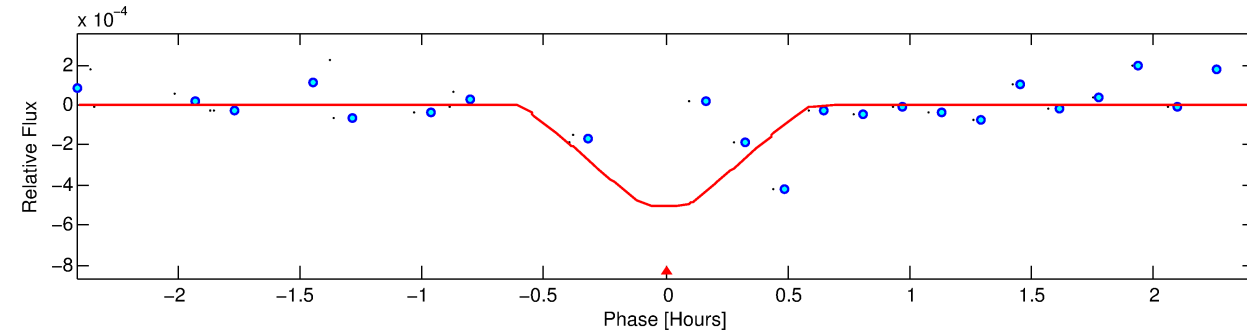
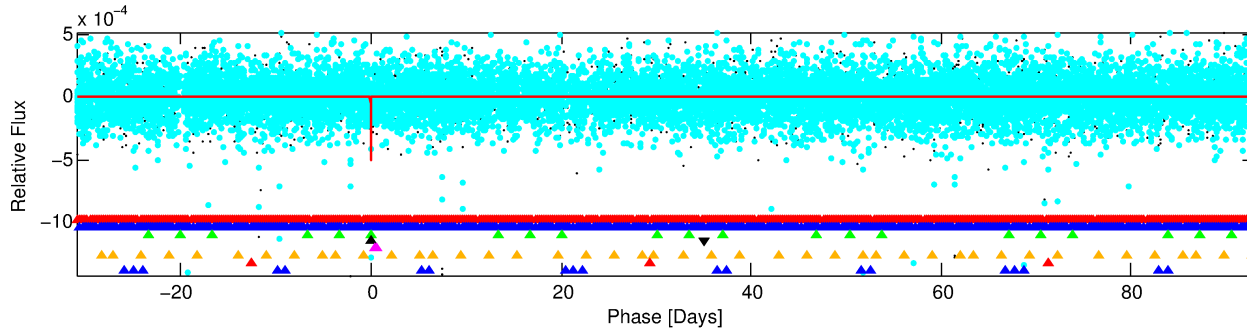
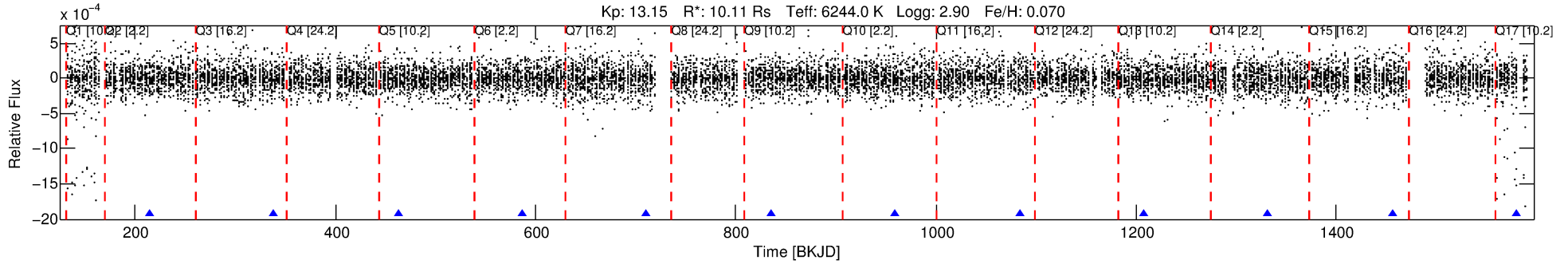
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003749508-04

No Significant Match Found

DV One-Page Summary

KIC: 3749508 Candidate: 4 of 8 Period: 124.125 d
KOI: K07544 Corr: No Ephemeris Match



DV Fit Results:

Period = 124.12500 [0.00089] d
Epoch = 214.4711 [0.0064] BKJD
Rp/R* = 0.0244 [0.0374]
a/R* = 588.49 [4510.10]
b = 0.89 [1.75]
Seff = 285.73 [251.99]
Teff = 1048 [231] K
Rp = 26.94 [43.96] Re
a = 0.6976 [0.3804] AU
Ag = 73.82 [236.14] [0.31] σ
Teffp = 4751 [3659] K [1.01] σ

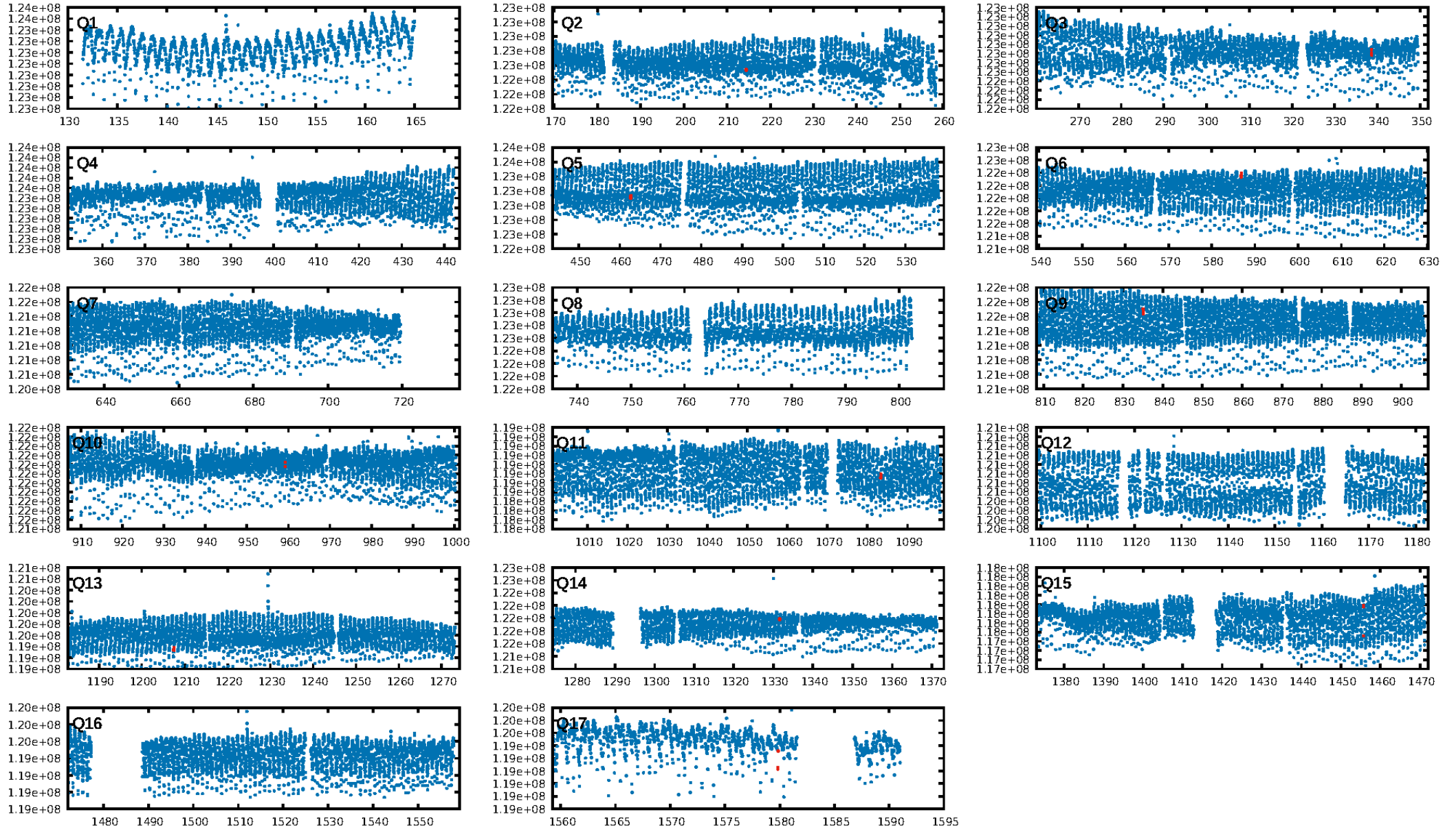
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [182.54] σ
LongPeriod-sig: 2.2% [0.03] σ
ModelChiSquare2-sig: 93.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.24e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.5597
Centroid-sig: 83.5%
Centroid-so: 0.590 arcsec [0.43] σ
OotOffset-rm: 0.493 arcsec [0.46] σ
KicOffset-rm: 0.553 arcsec [0.54] σ
OotOffset-st: 3/2/0/4 [9]
KicOffset-st: 3/2/0/4 [9]
DiffImageQuality-fgm: 0.22 [2/9]
DiffImageOverlap-fno: 0.20 [2/10]

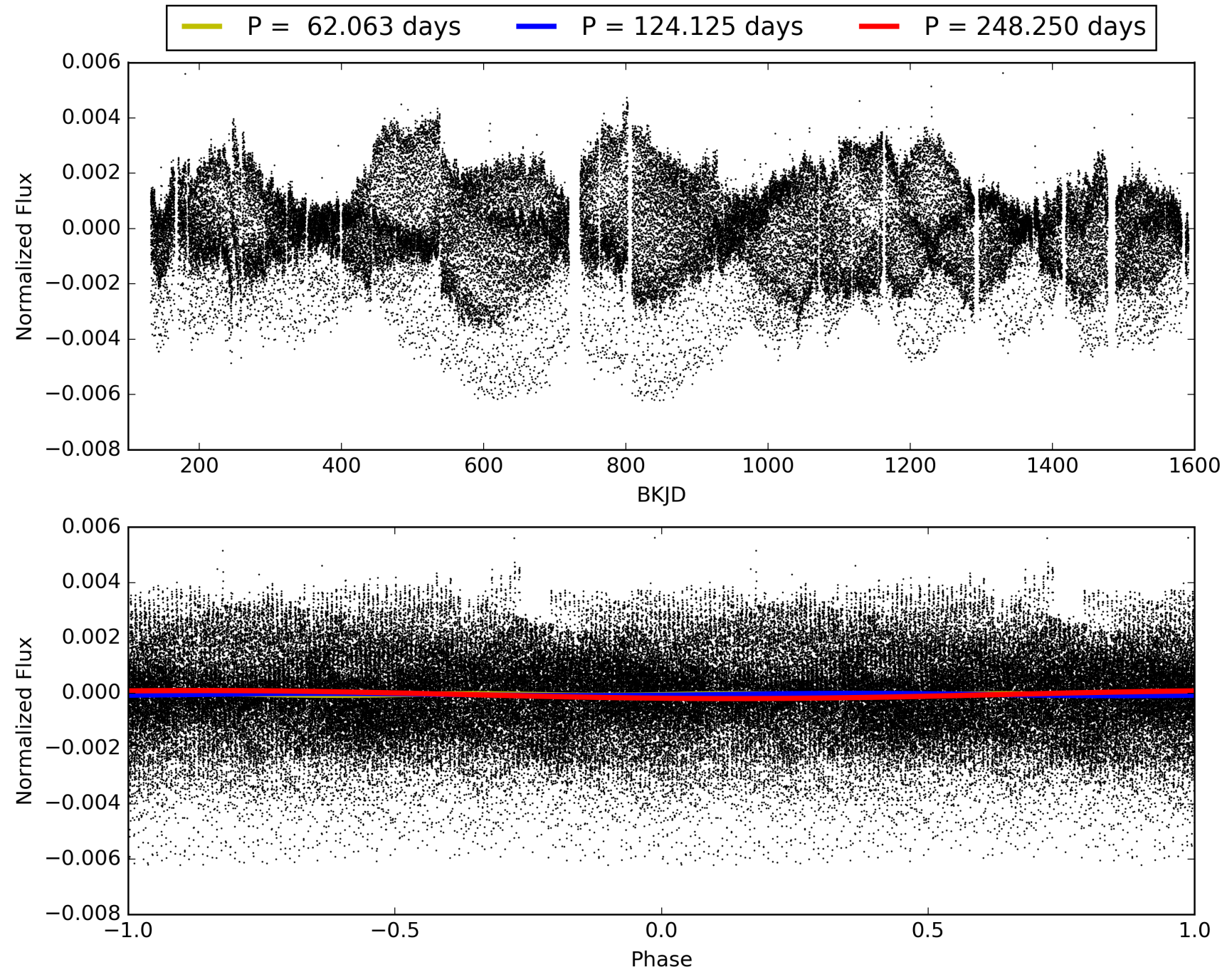
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:55:56 Z

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

TCE 003749508-04, PDC Light Curves

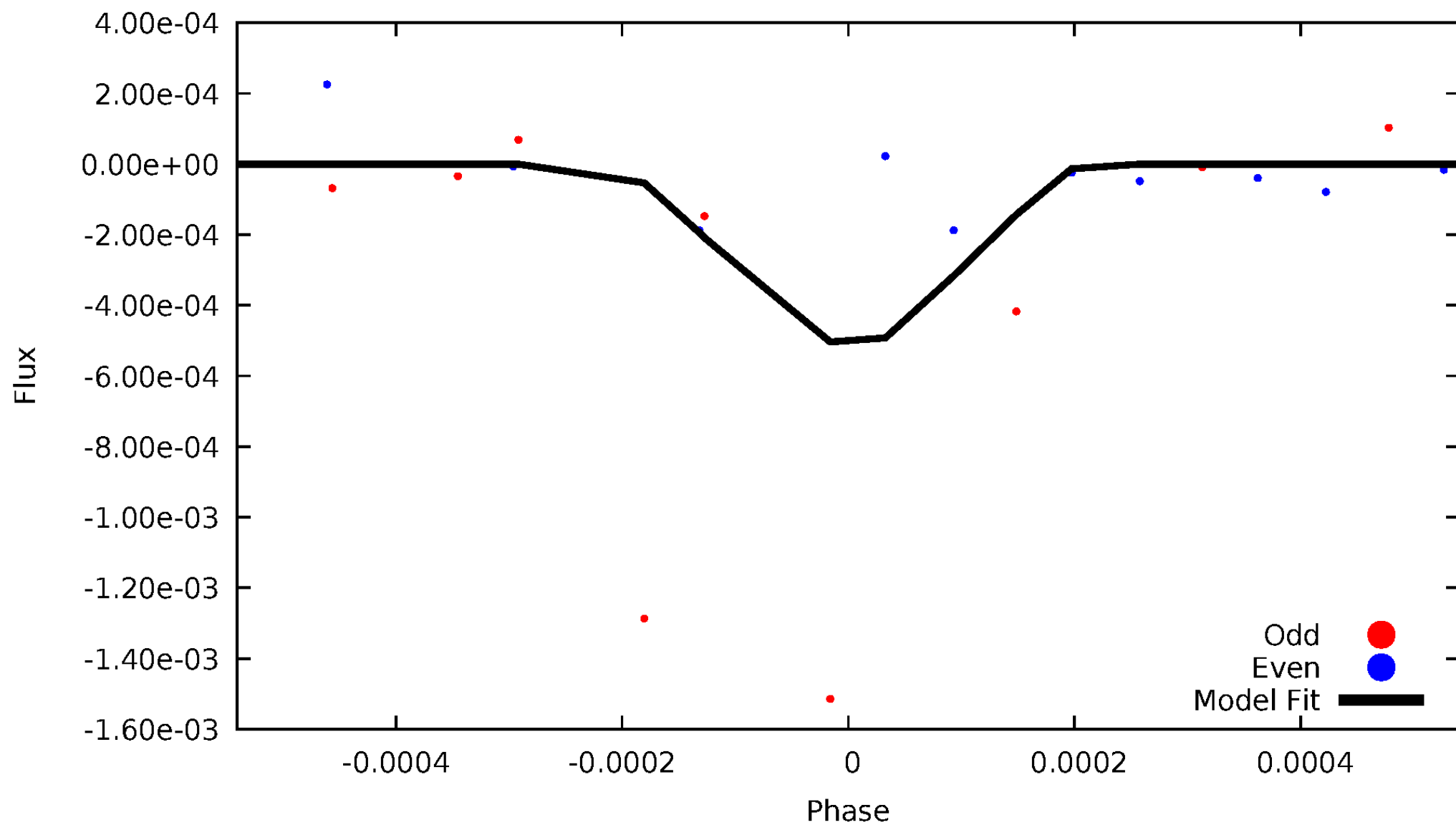


TCE 003749508-04



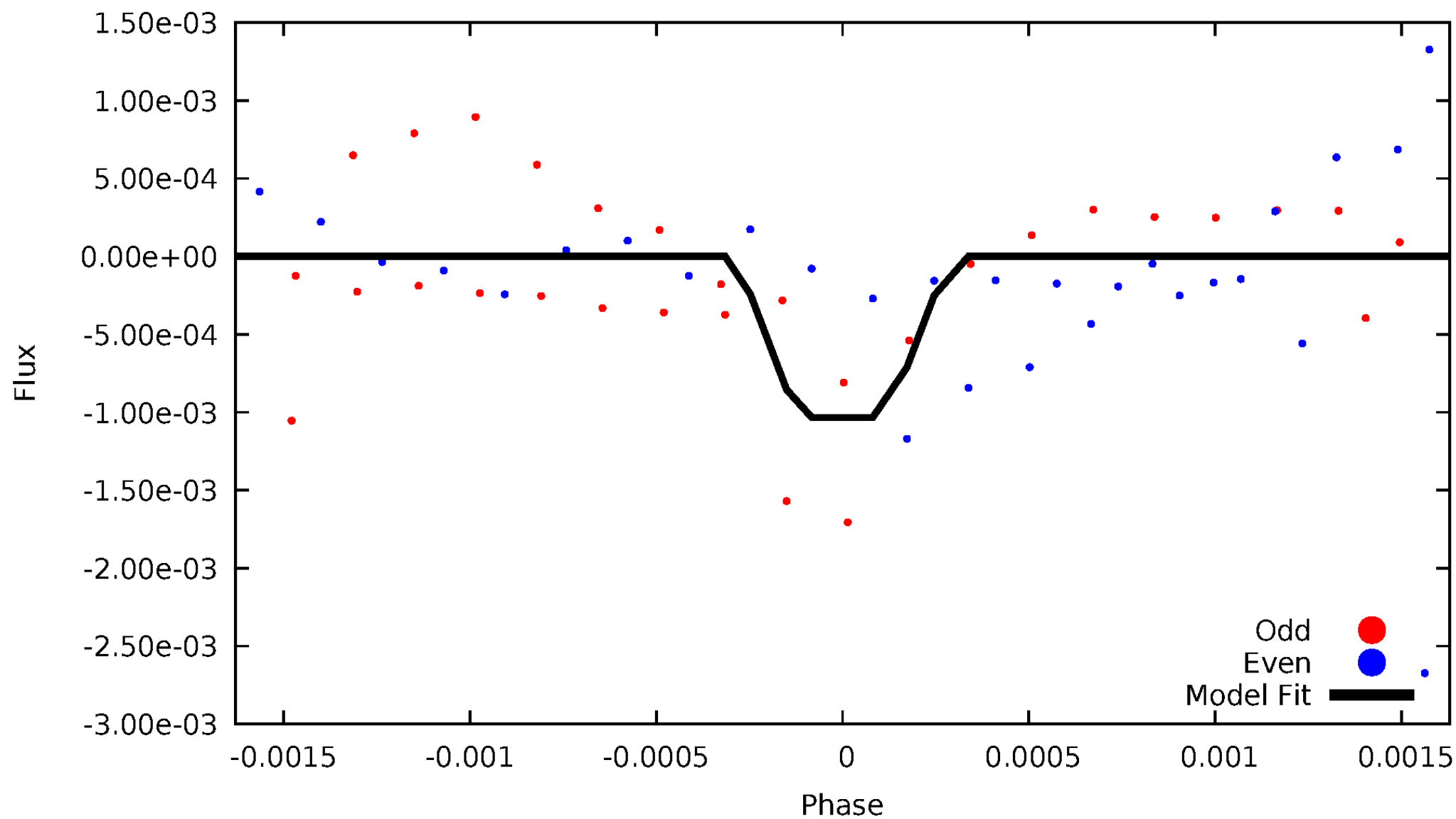
DV Odd/Even

TCE 003749508-04



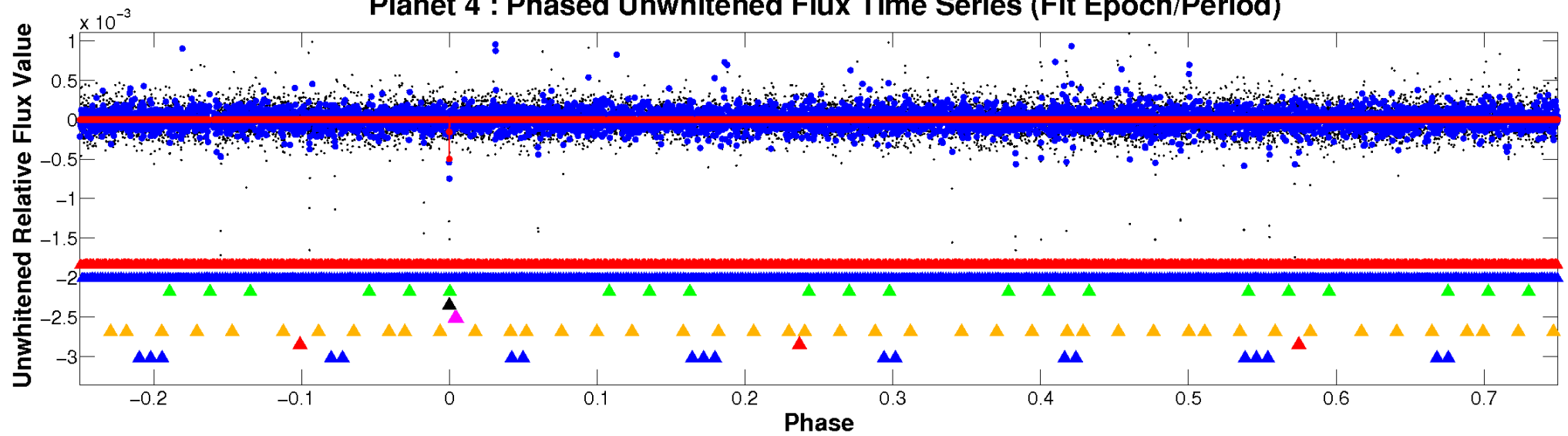
ALT Odd/Even

TCE 003749508-04

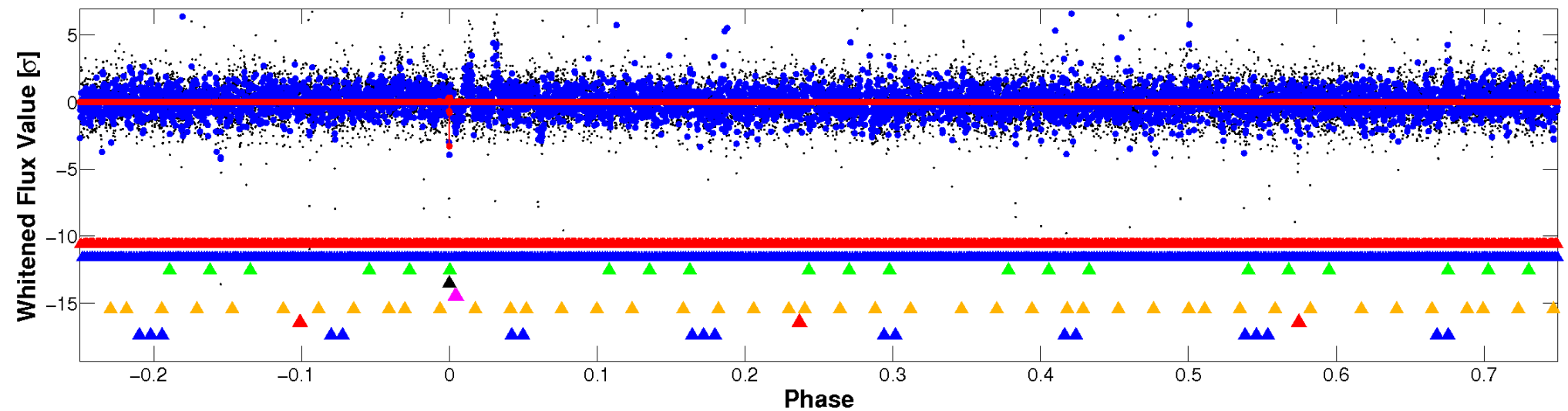


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

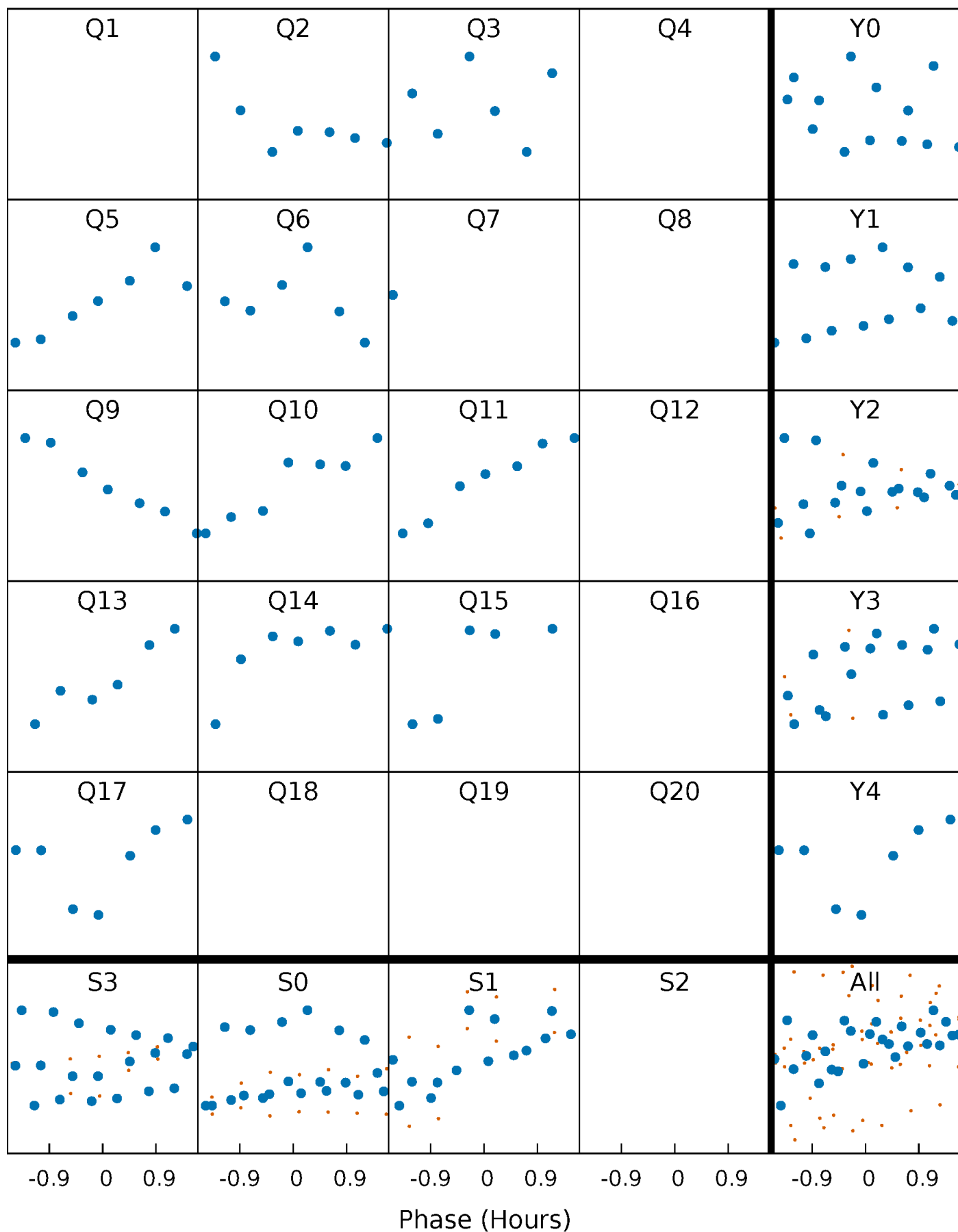


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



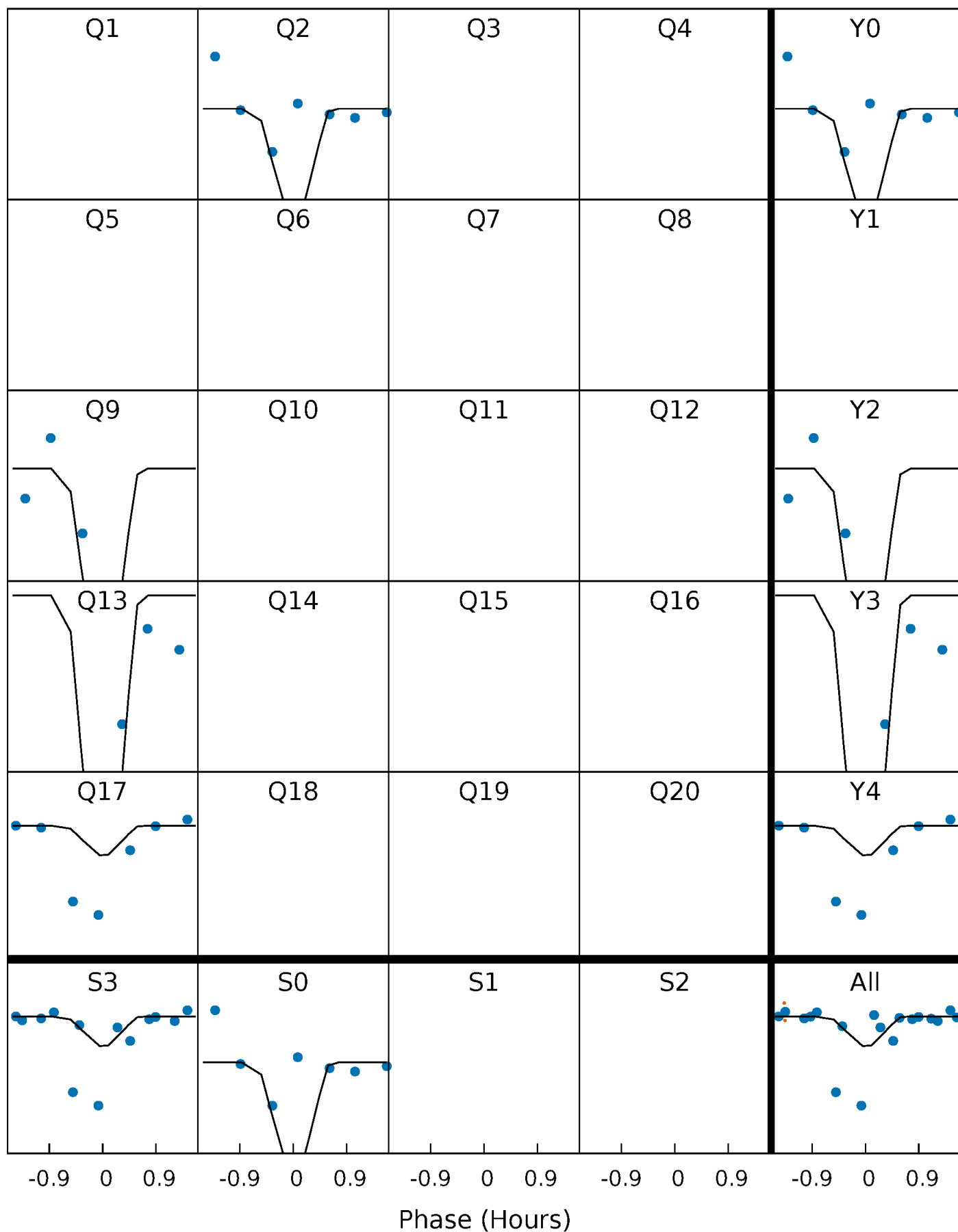
PDC Quarter-Phased Transit Curves

TCE 003749508-04 P=124.125001 Days $T_0=214.471104$ (BKJD)



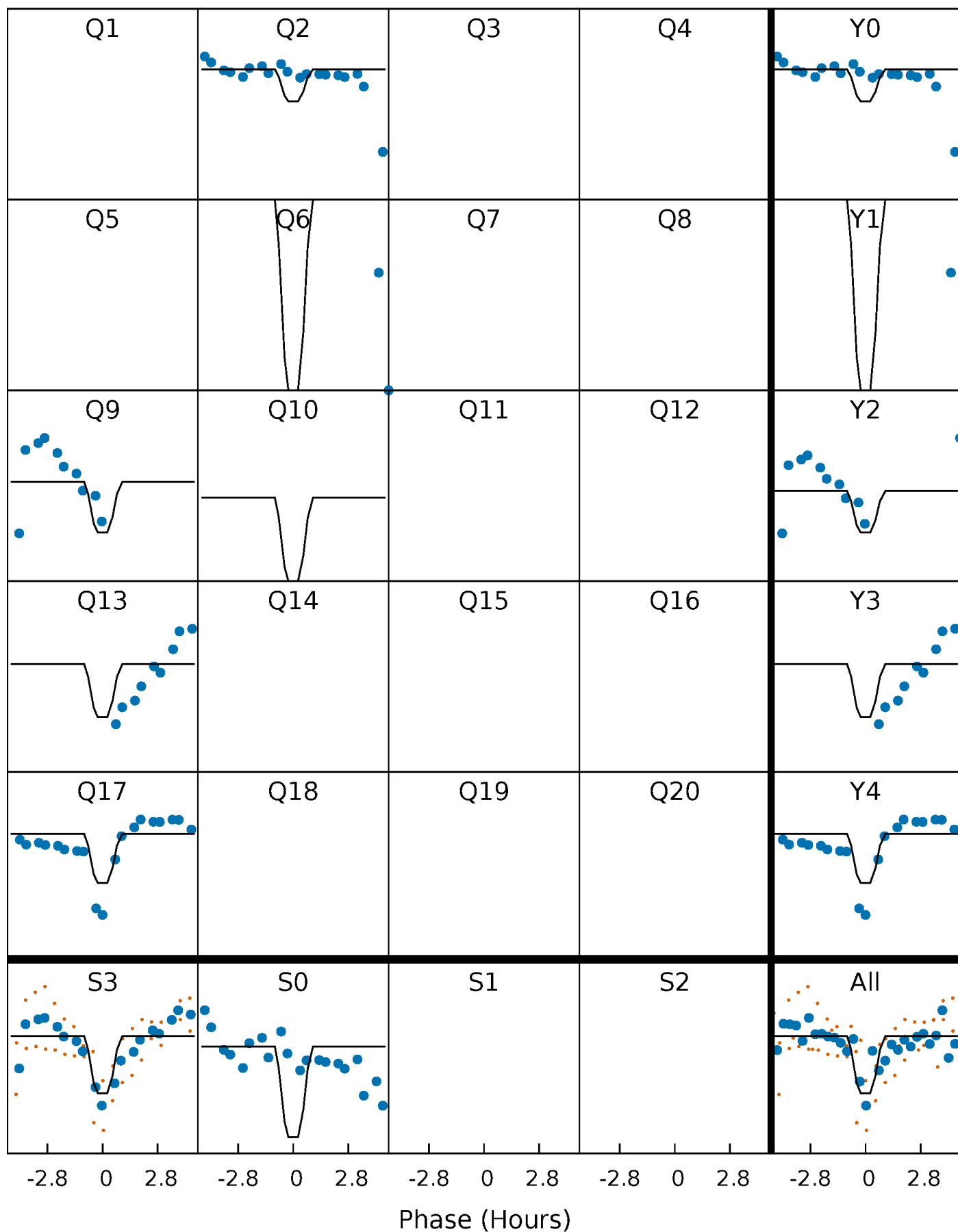
DV Quarter-Phased Transit Curves

TCE 003749508-04 P=124.125001 Days $T_0=214.471104$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

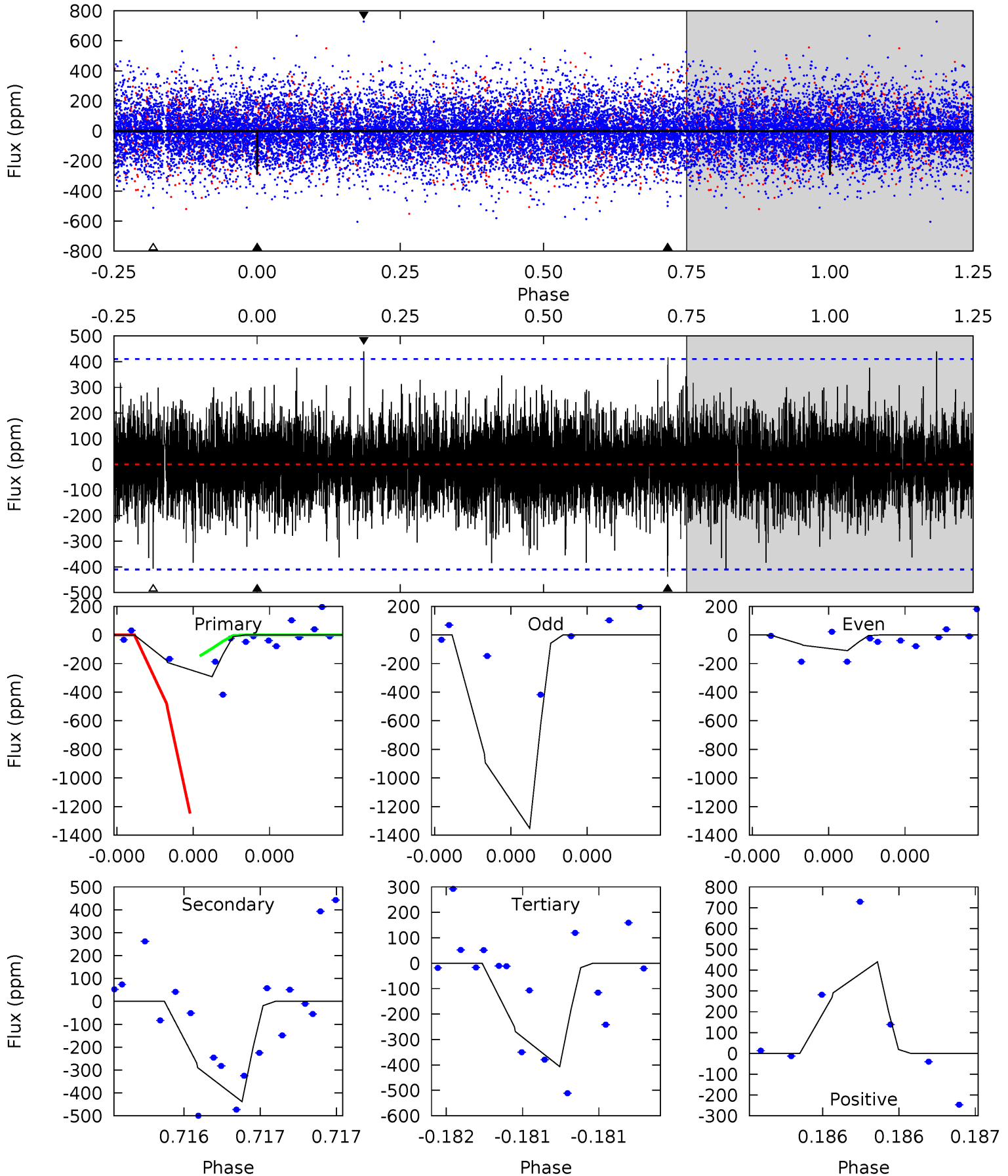
TCE 003749508-04 P=124.127066 Days $T_0=214.444637$ (BKJD)



DV Model-Shift Uniqueness Test

003749508-04, P = 124.125001 Days, E = 90.346103 Days

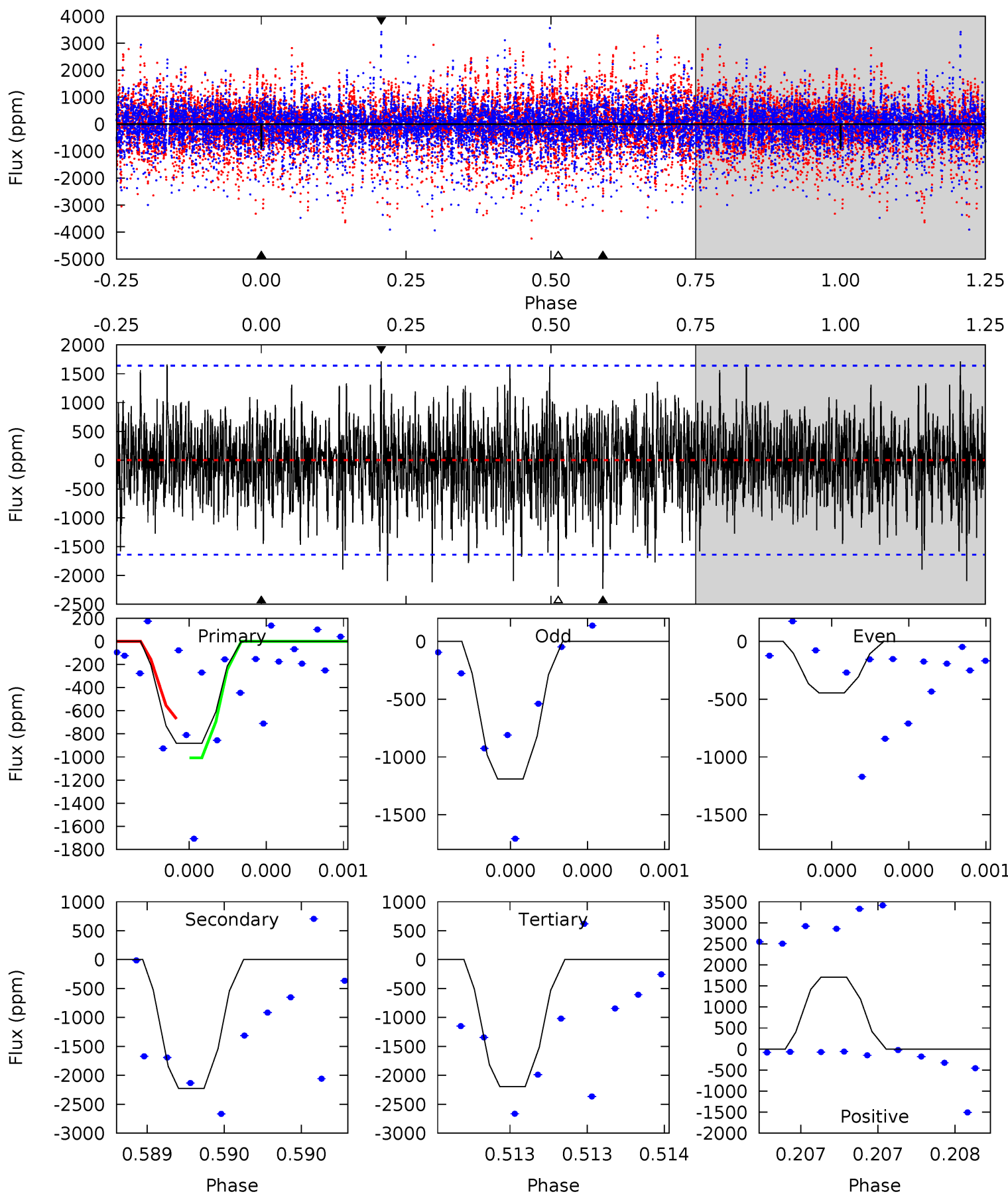
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.00	6.00	5.58	6.03	5.62	3.55	1.29	-1.57	-2.03	0.43	-0.03	10.6	1.00	0.50	9.30



Alt Model-Shift Uniqueness Test

003749508-04, P = 124.127066 Days, E = 90.317571 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.00	7.58	7.47	5.82	5.57	3.48	1.74	-4.46	-2.82	0.11	1.76	1.25	1.23	0.43	0.50



Stellar Parameters For KIC 003749508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6244^{+148}_{-204}	$2.897^{+0.512}_{-0.096}$	$0.070^{+0.200}_{-0.500}$	$10.105^{+1.910}_{-5.731}$	$2.936^{+0.284}_{-1.205}$	$0.004^{+0.029}_{-0.001}$
	+2%/-3%	+18%/-3%	+286%/-714%	+19%/-57%	+10%/-41%	+713%/-30%
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 003749508-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-438 ± 73	$35.38^{+37.08}_{-22.10}$	1410^{+104}_{-191}	4726^{+2795}_{-992}	90^{+521}_{-67}
Alt.	-2228 ± 294	$38.89^{+36.04}_{-25.79}$	1420^{+101}_{-201}	6825^{+6733}_{-1820}	399^{+2776}_{-294}

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

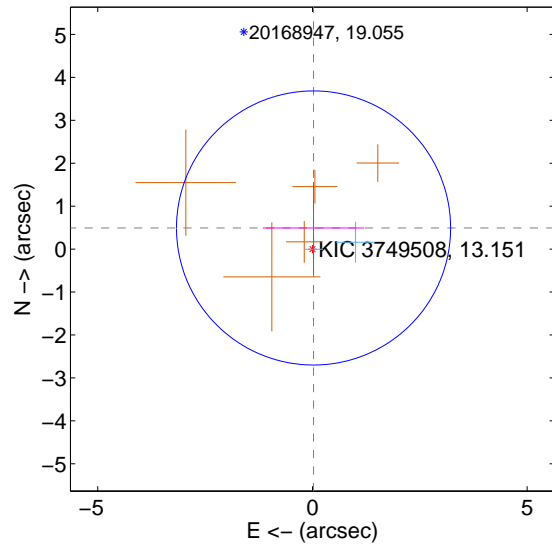
Supplemental centroid analysis for 003749508-04. Kepler magnitude: 13.15. Transit SNR 2.89

There are 2 quarters with good PRF difference image offsets

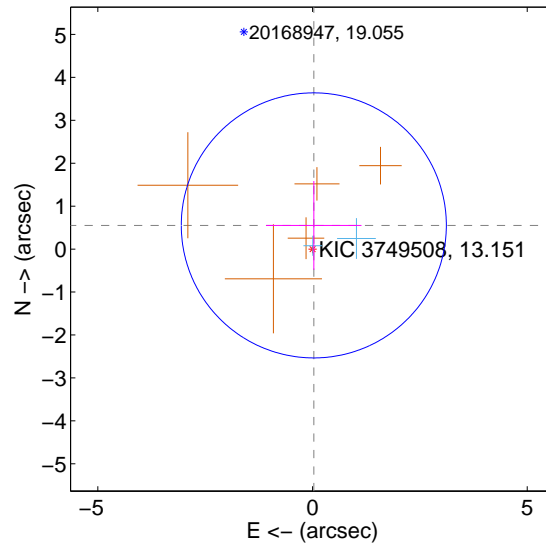
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.493 ± 1.064	0.46	-0.026 ± 1.181	0.492 ± 1.071
PRF-fit source offset from KIC position	0.553 ± 1.029	0.54	-0.030 ± 1.111	0.552 ± 1.034
photometric centroid source offset	0.59 ± 1.37	0.43	-0.21 ± 1.20	-0.55 ± 1.39

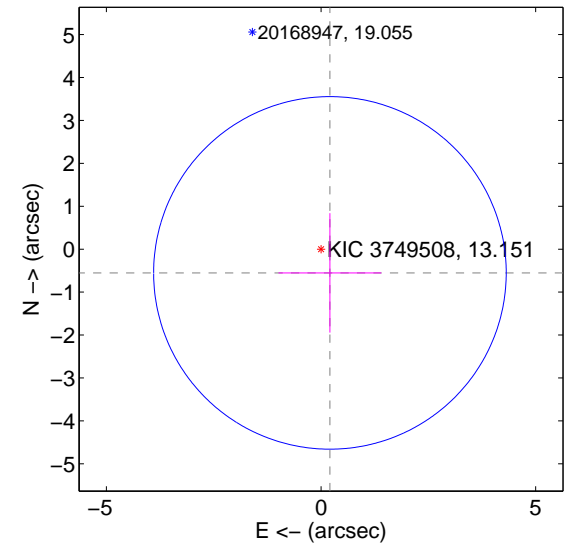
offset from difference PRF-fit to OOT PRF-fit



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.

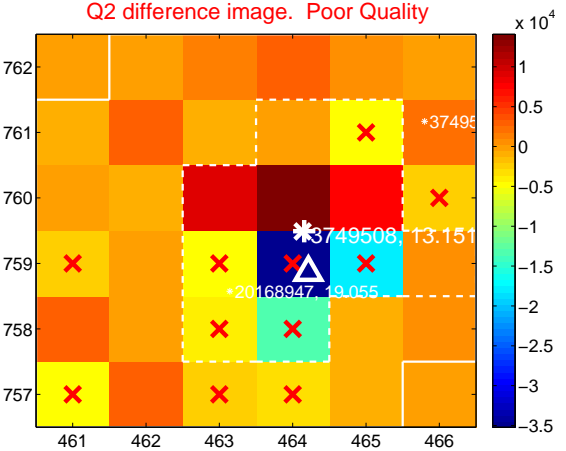
Q1 no difference image



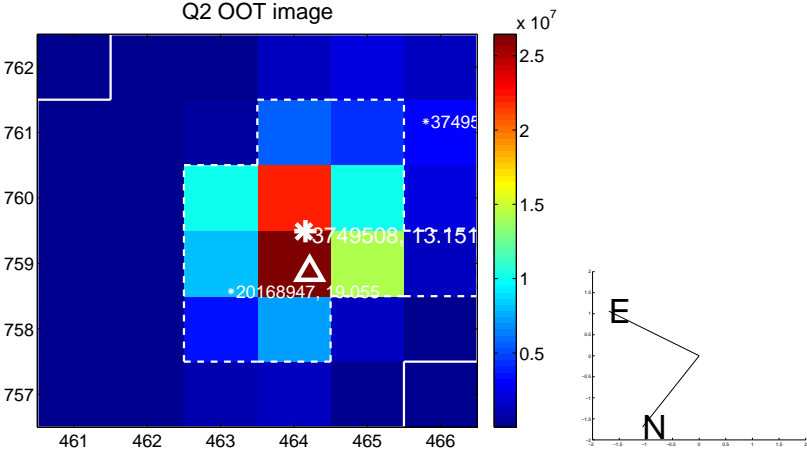
Q1 no OOT image



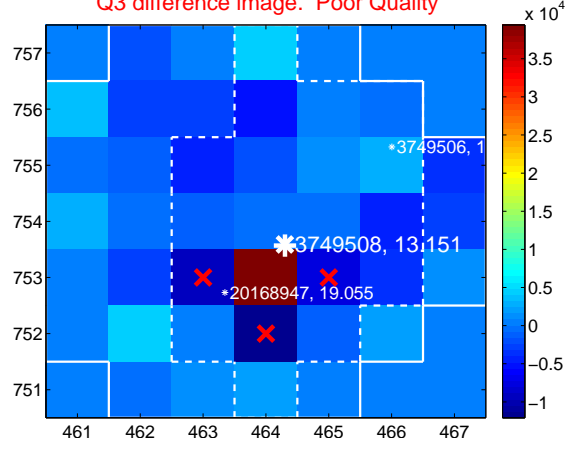
Q2 difference image. Poor Quality



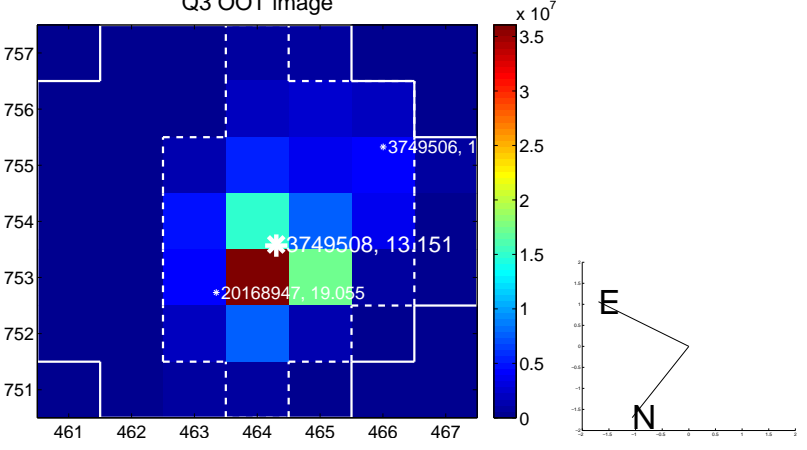
Q2 OOT image



Q3 difference image. Poor Quality



Q3 OOT image



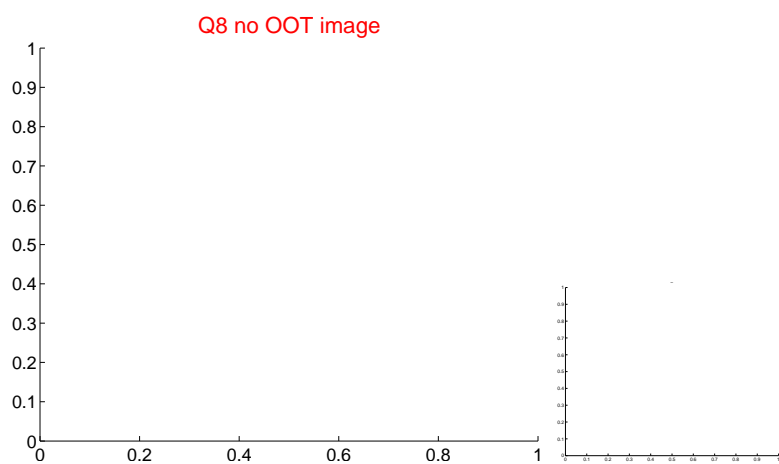
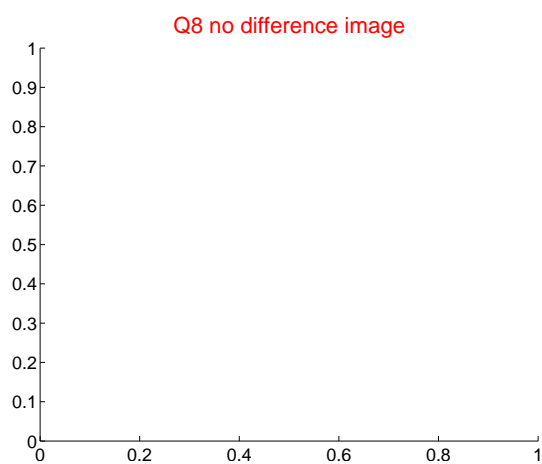
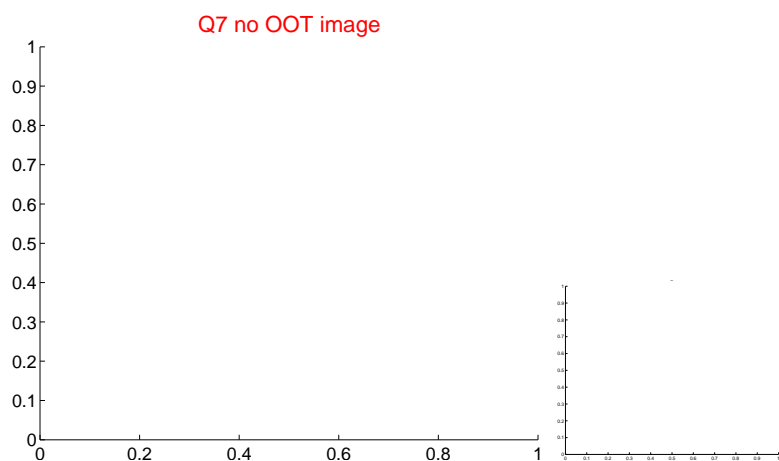
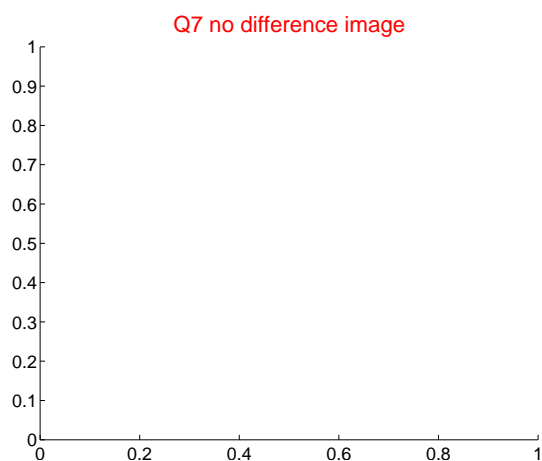
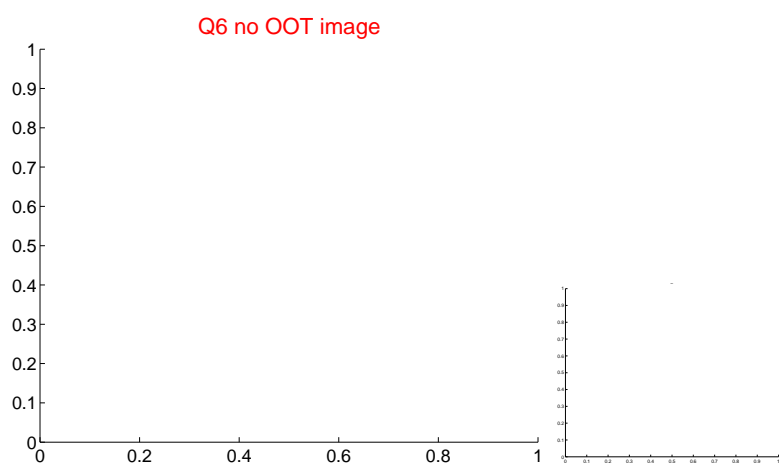
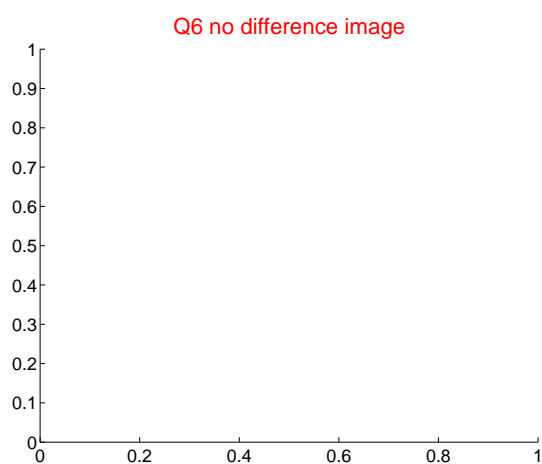
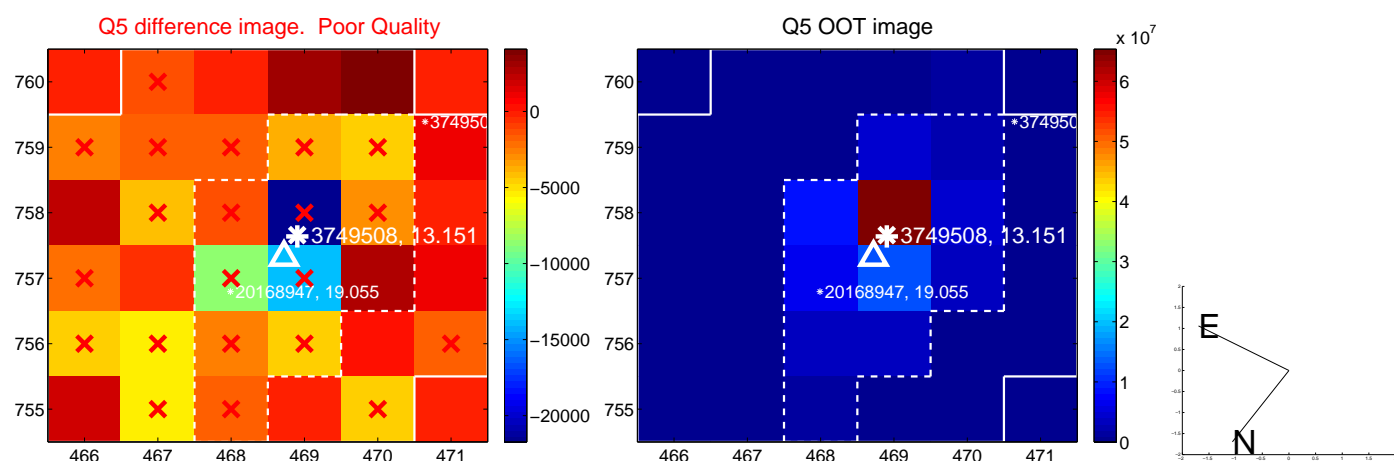
Q4 no difference image



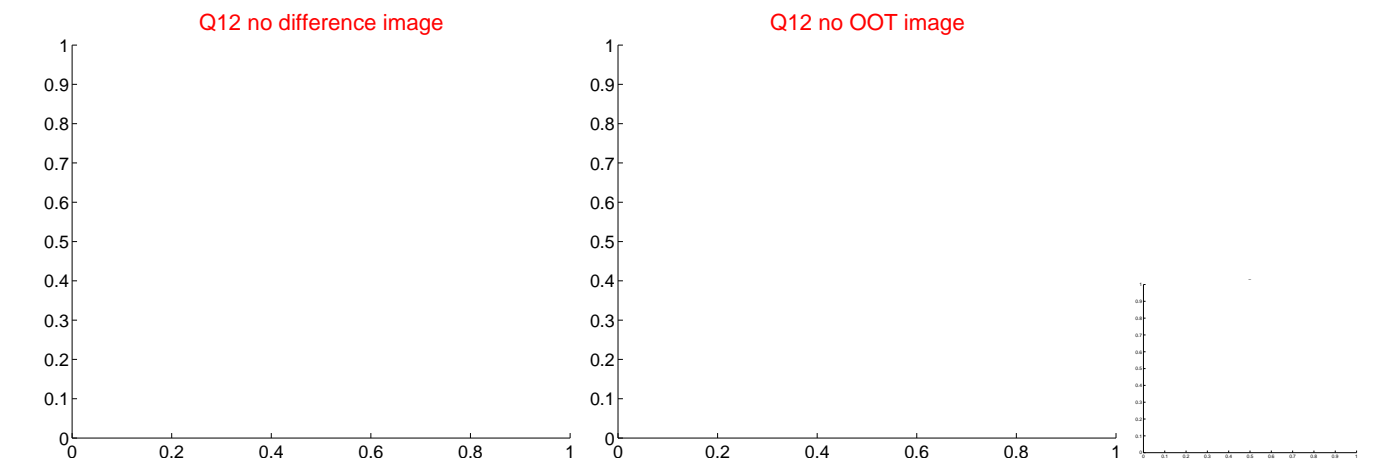
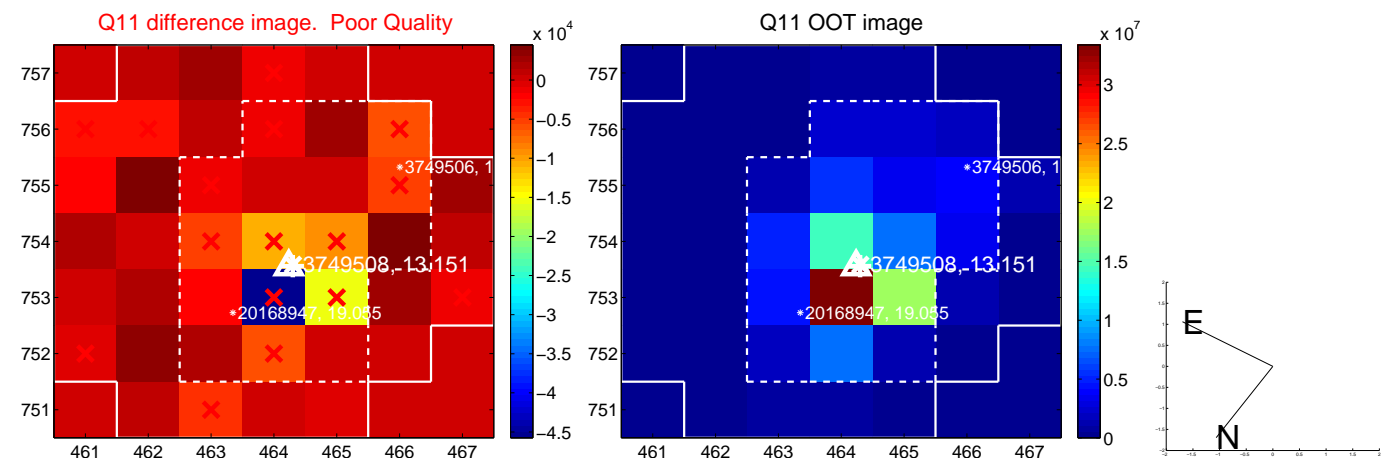
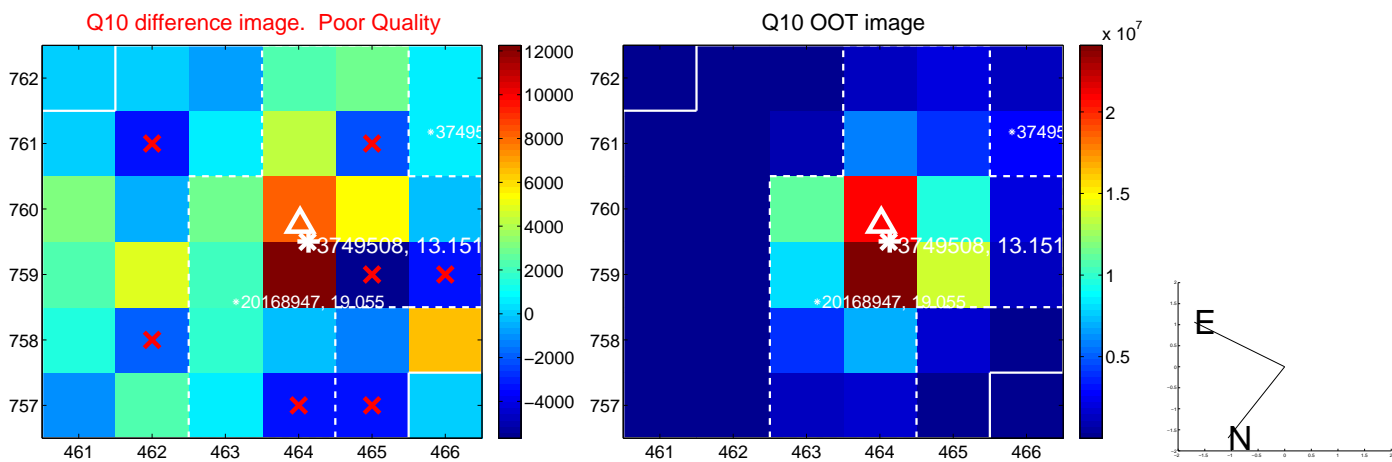
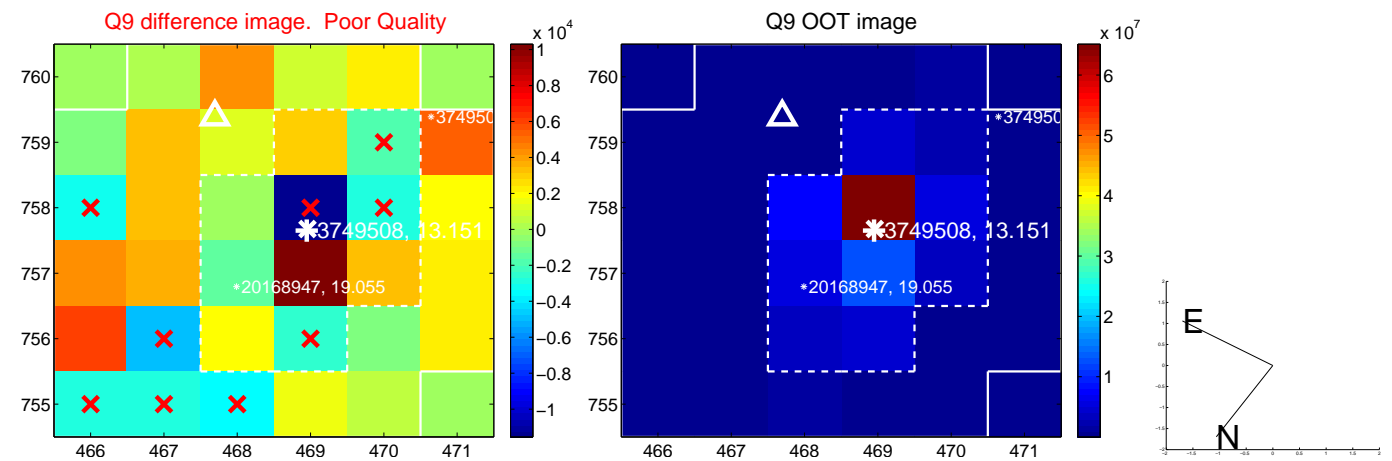
Q4 no OOT image



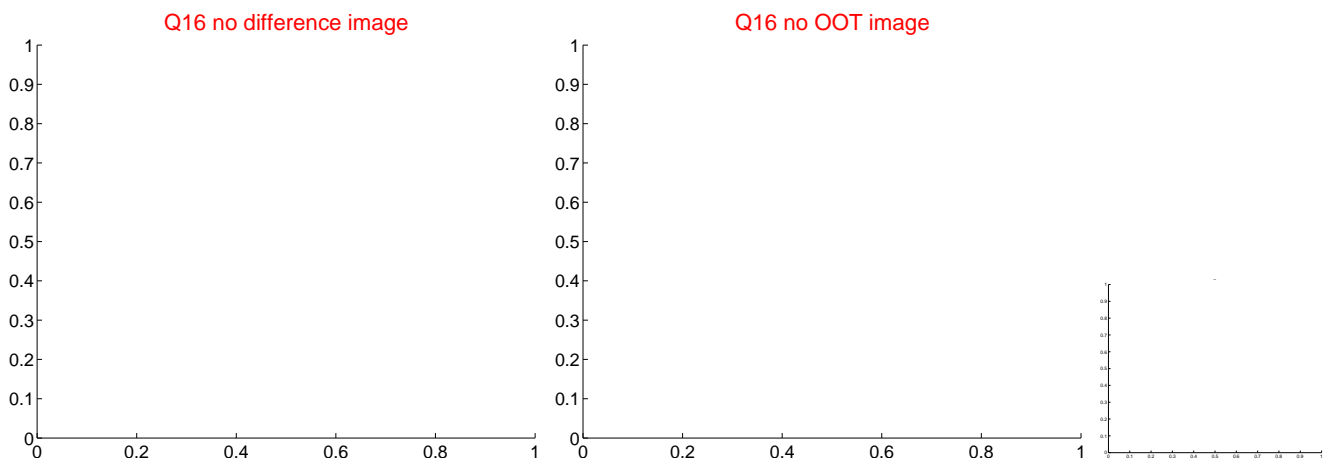
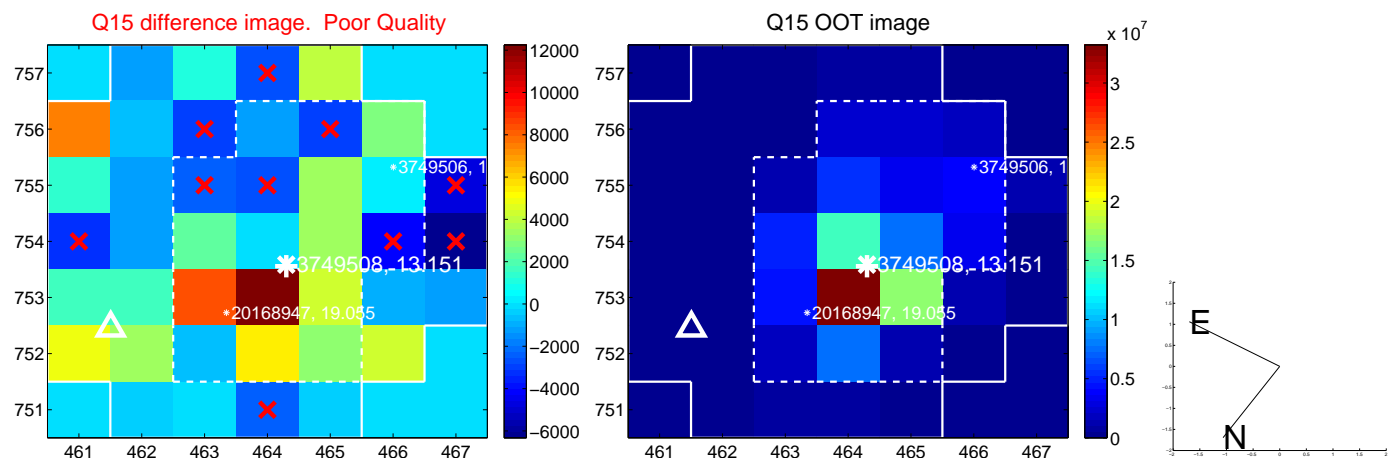
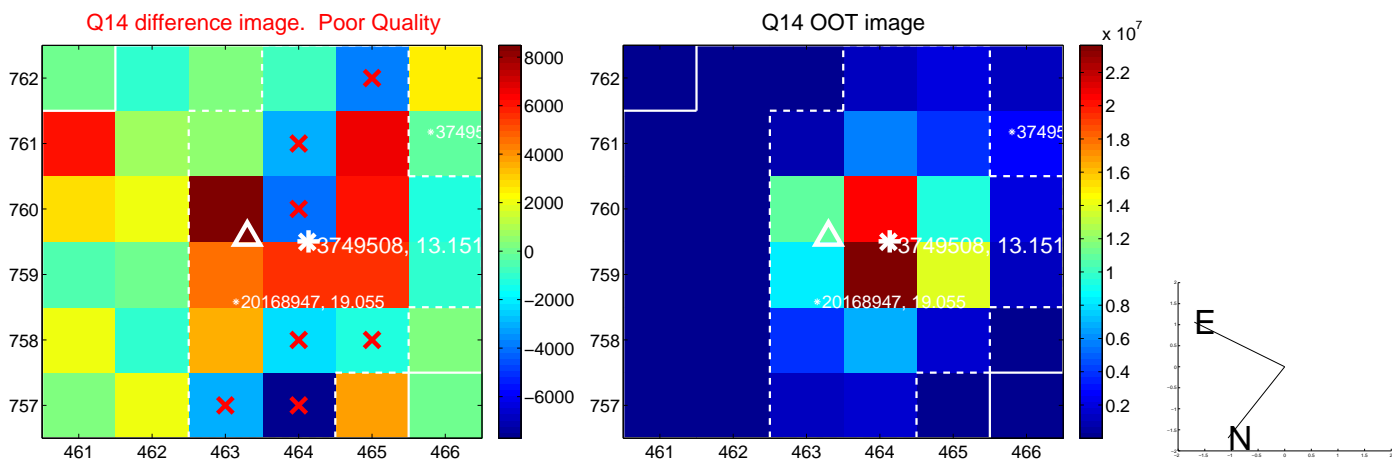
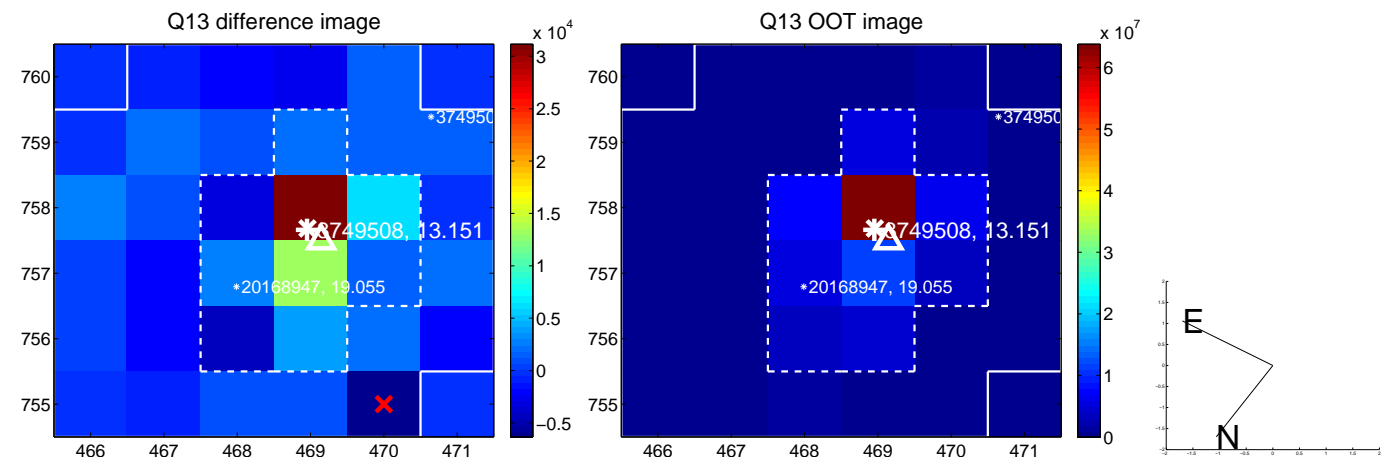
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



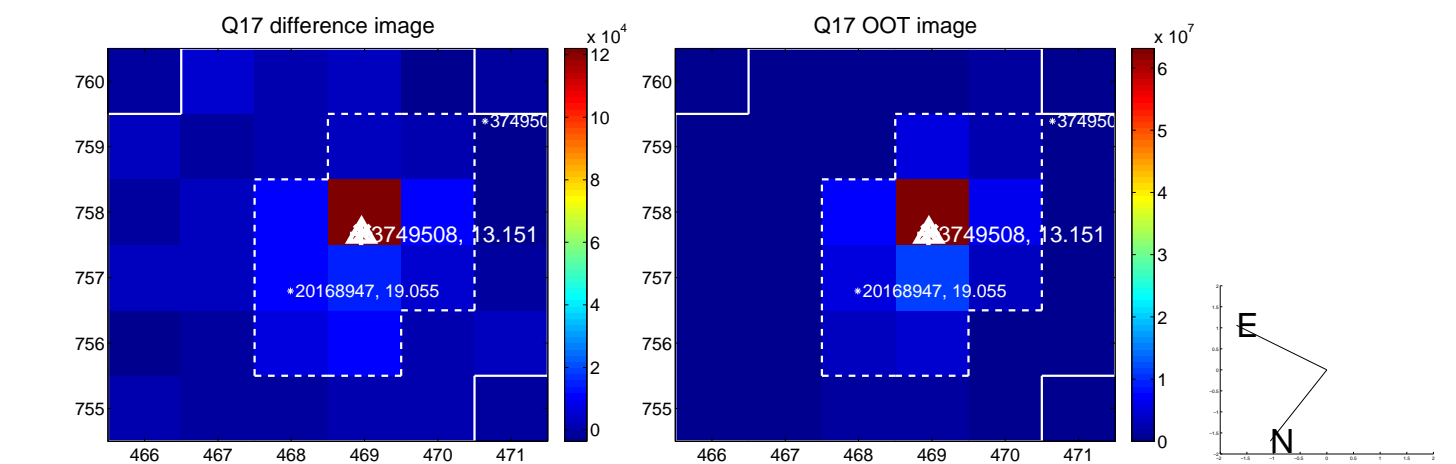
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



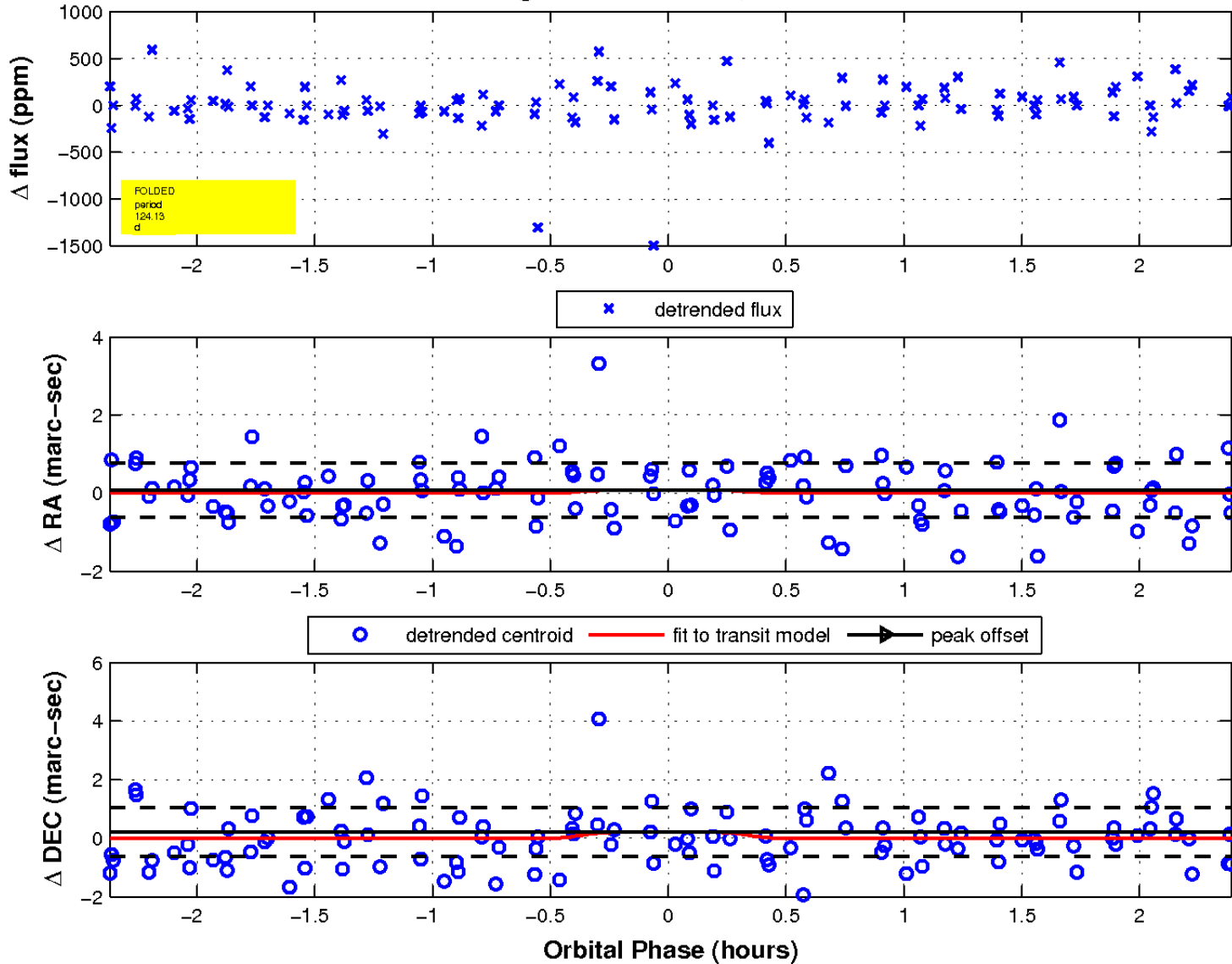
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



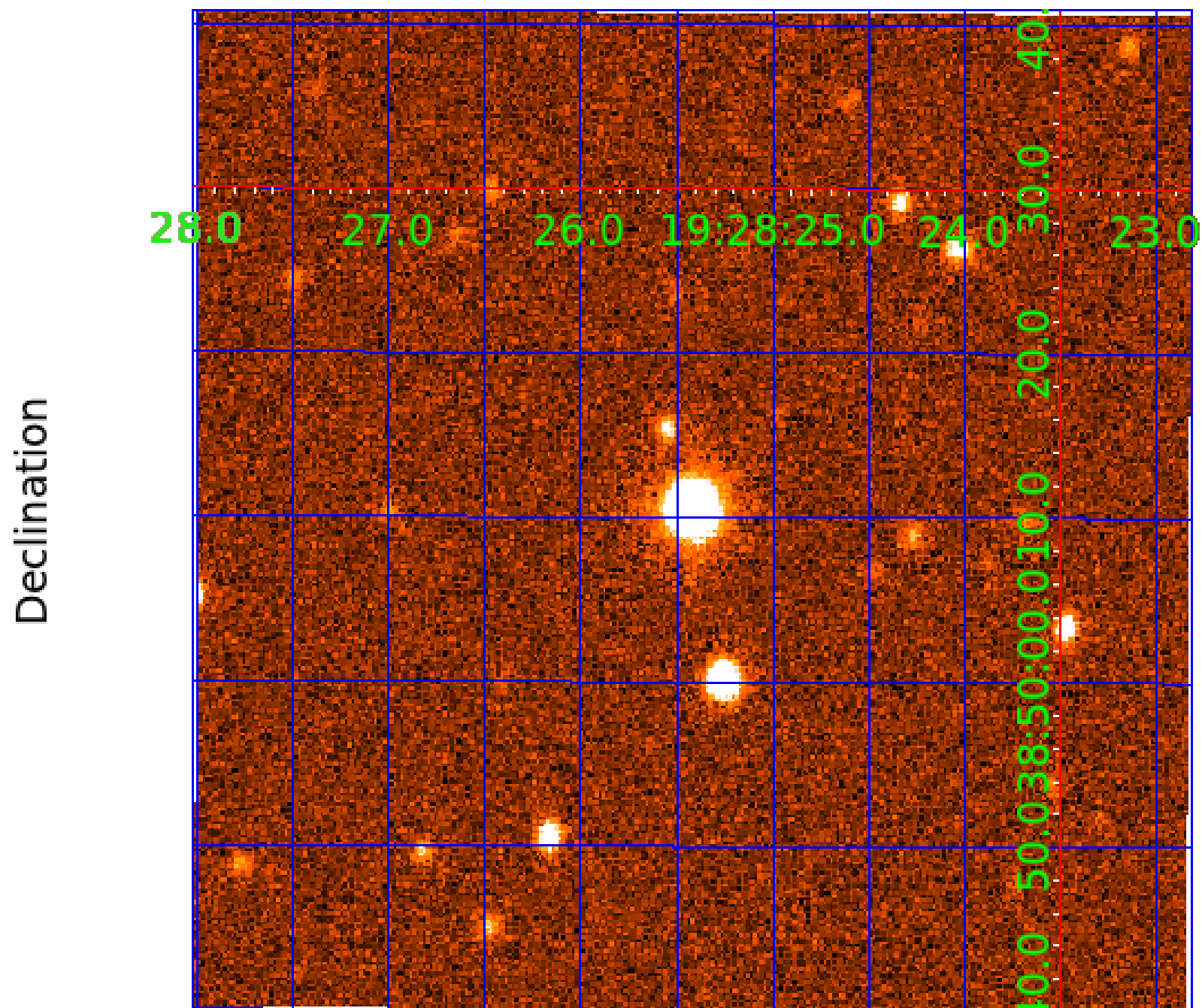
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 4 of 8



UKIRT Image



KIC 003749508

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})
003749508-01	OBS	7544.02	1.065747	132.034968	176.6	0.910	32.2	35.9	10.11	6244	16.05	0.00
003749508-02	OBS	7544.01	2.403921	131.586727	41.7	13.450	10.0	7.5	10.11	6244	6.55	54938.48
003749508-03	OBS	No	70.444992	164.220847	184.1	1.045	14.2	3.1	10.11	6244	16.22	608.09
003749508-04	OBS	No	124.125001	214.471104	503.8	0.805	10.9	2.9	10.11	6244	26.95	285.73
003749508-05	OBS	No	124.139851	214.930752	420.0	12.892	11.0	9.5	10.11	6244	24.10	285.69
003749508-06	OBS	No	33.583321	142.235014	52.7	11.521	8.9	2.3	10.11	6244	8.21	1632.82
003749508-07	OBS	No	454.561847	534.062004	419.5	8.543	9.4	8.6	10.11	6244	22.16	50.62
003749508-08	OBS	No	77.697273	157.170514	94.8	6.051	8.0	2.5	10.11	6244	10.62	533.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749508-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_ALT
003749508-02	OBS	FP	0.00	1	0	0	0	LPP_DV
003749508-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—HALO_GHOST
003749508-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
003749508-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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.

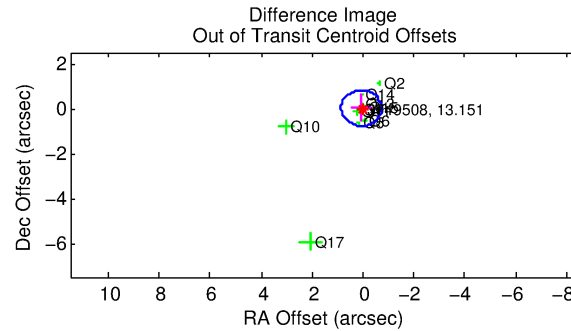
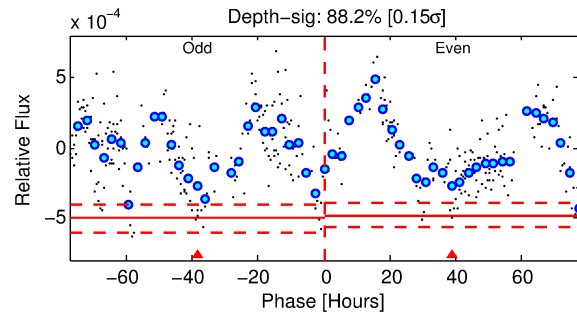
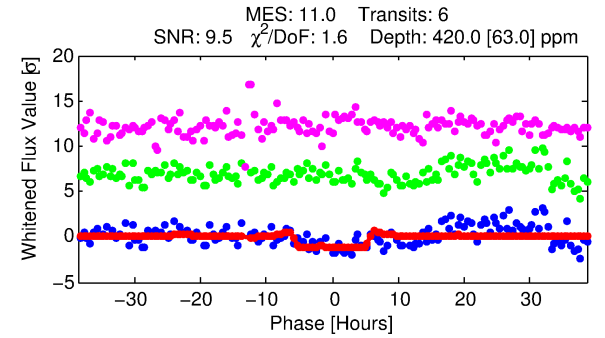
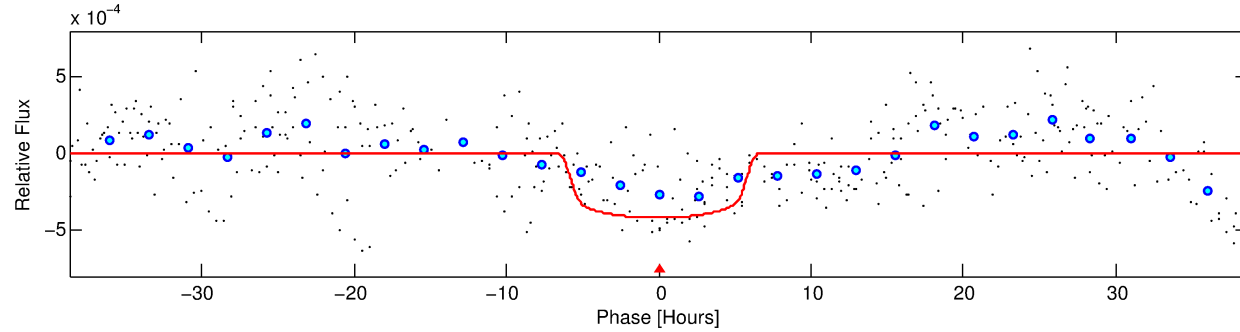
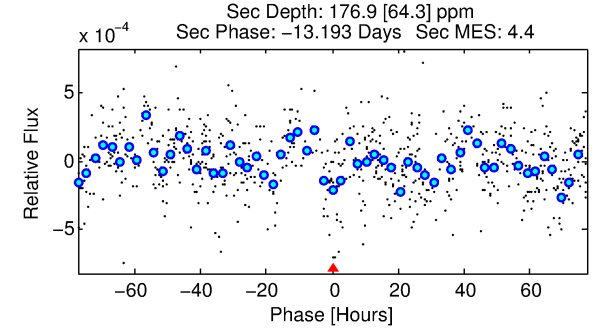
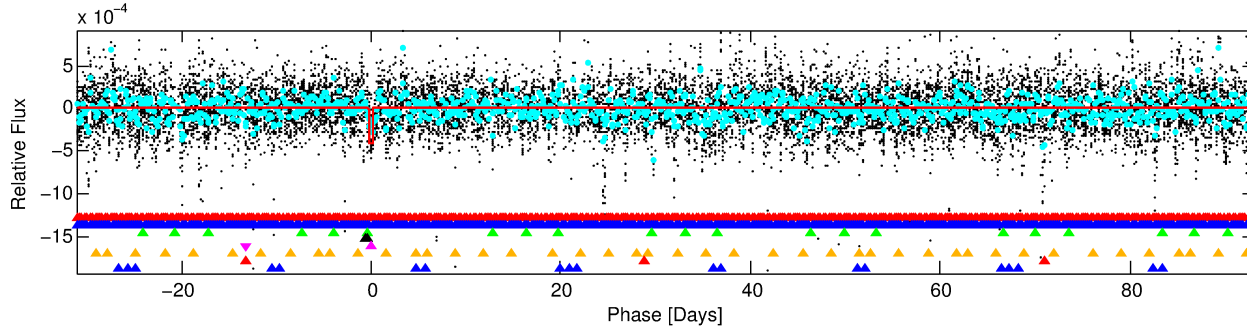
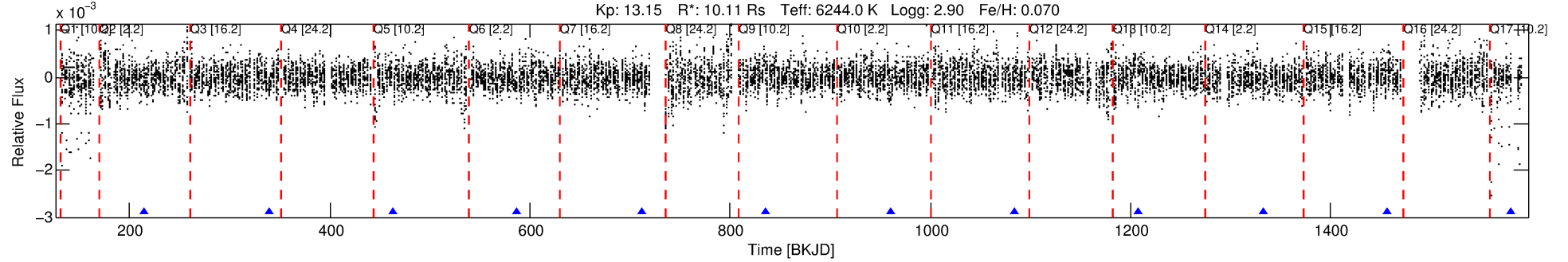
Ephemeris Match Information For 003749508-05

No Significant Match Found

DV One-Page Summary

KIC: 3749508 Candidate: 5 of 8 Period: 124.140 d
KOI: K07544 Corr: No Ephemeris Match

Kp: 13.15 R*: 10.11 Rs Teff: 6244.0 K Logg: 2.90 Fe/H: 0.070



DV Fit Results:

Period = 124.13985 [0.00260] d
Epoch = 214.9308 [0.0175] BKJD
Rp/R* = 0.0219 [0.0025]
a/R* = 36.80 [15.96]
b = 0.89 [0.10]
Seff = 285.69 [251.95]
Teff = 1048 [231] K
Rp = 24.10 [13.95] Re
a = 0.6977 [0.3805] AU
Ag = 81.60 [79.38] [1.02σ]
Teffp = 4871 [548] K [6.42σ]

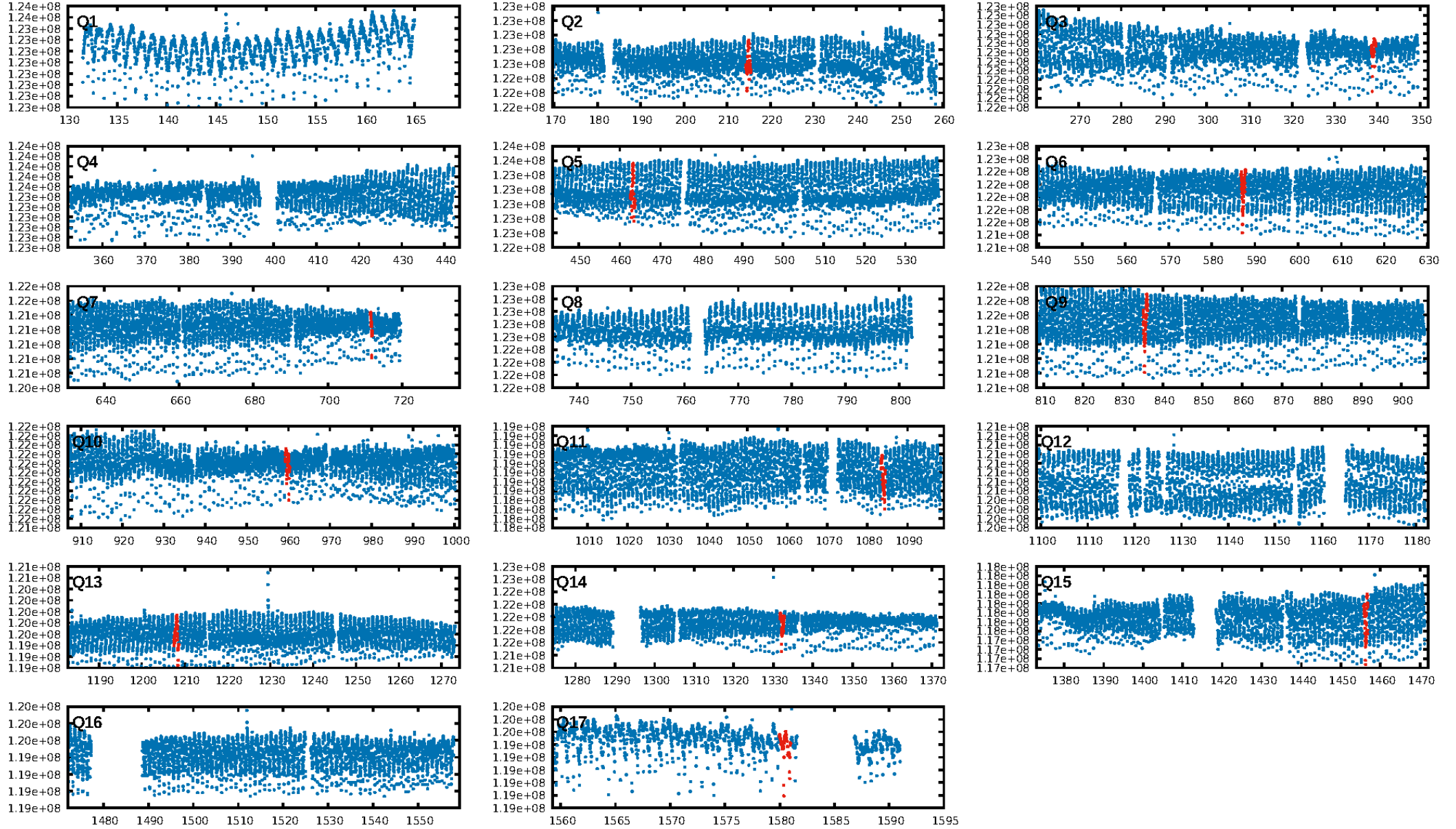
DV Diagnostic Results:

ShortPeriod-sig: 2.2% [0.03σ]
LongPeriod-sig: 100.0% [512.78σ]
ModelChiSquare2-sig: 20.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.98e-12
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.2432
Centroid-sig: 1.8%
Centroid-so: 0.952 arcsec [1.87σ]
OotOffset-rm: 0.067 arcsec [0.25σ]
OotOffset-st: 4/2/0/4 [10]
KicOffset-rm: 0.072 arcsec [0.15σ]
KicOffset-st: 4/2/0/4 [10]
DiffImageQuality-fgm: 0.60 [6/10]
DiffImageOverlap-fno: 0.00 [0/11]

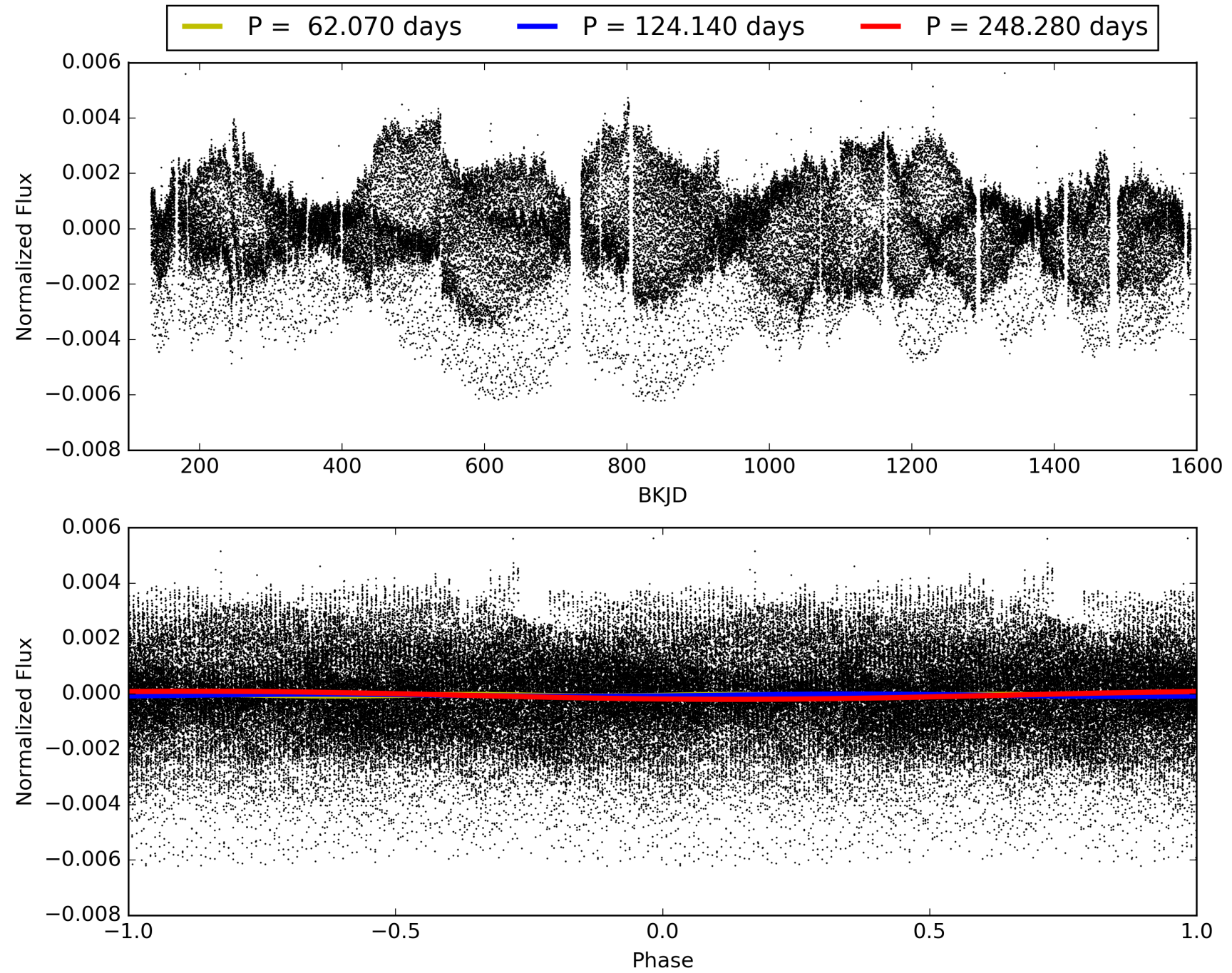
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:56:00 Z

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

TCE 003749508-05, PDC Light Curves

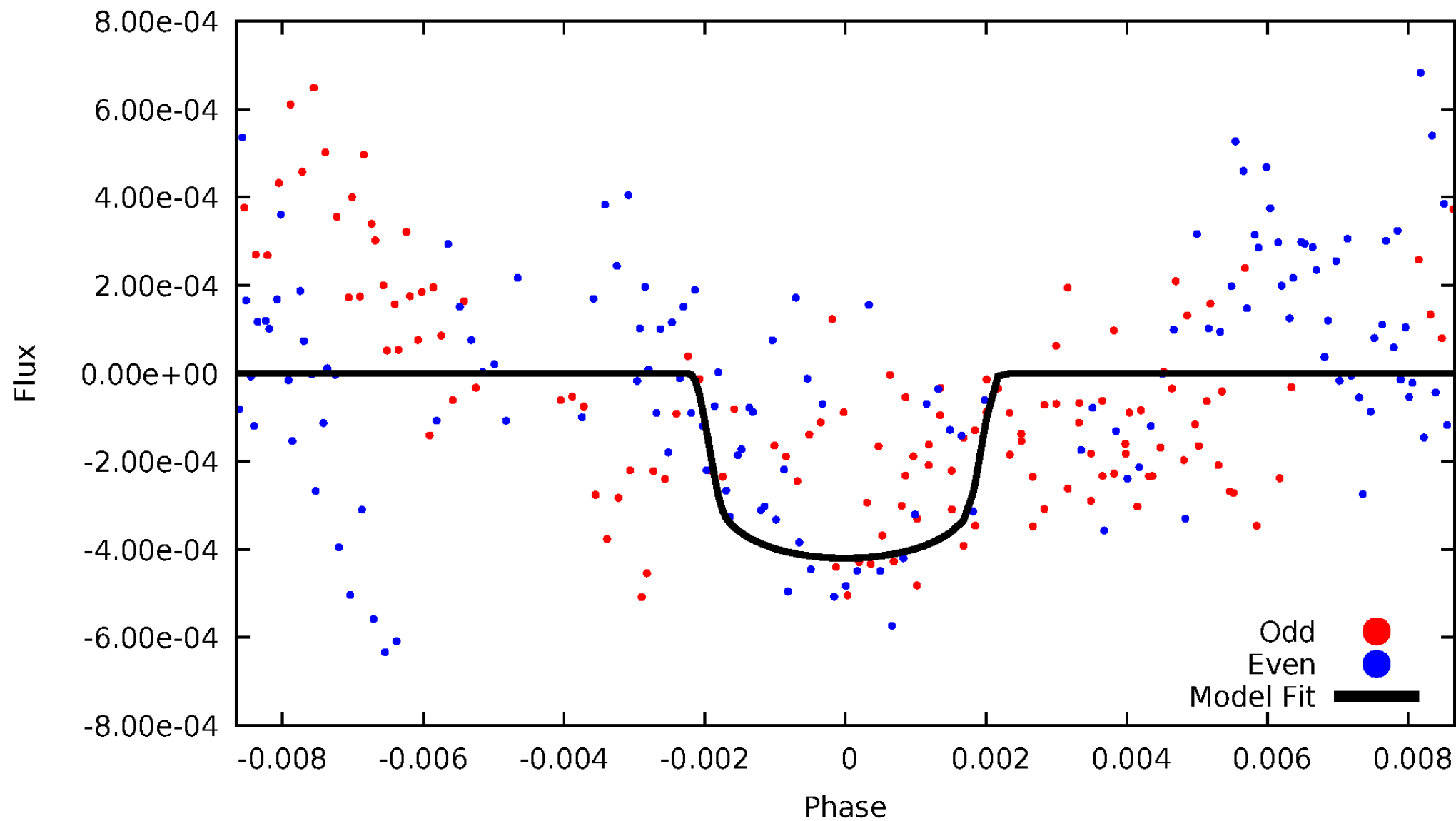


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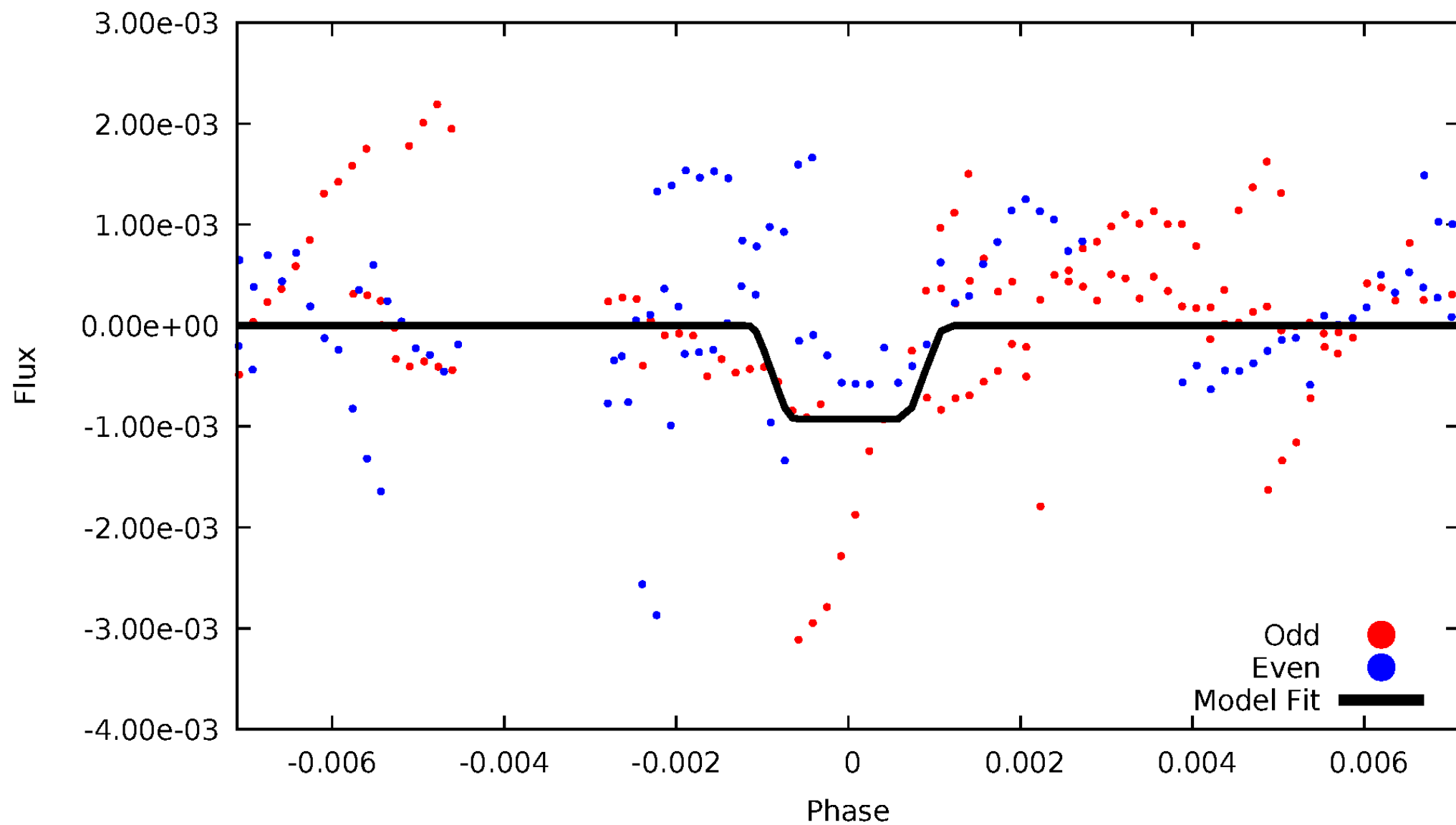
DV Odd/Even

TCE 003749508-05



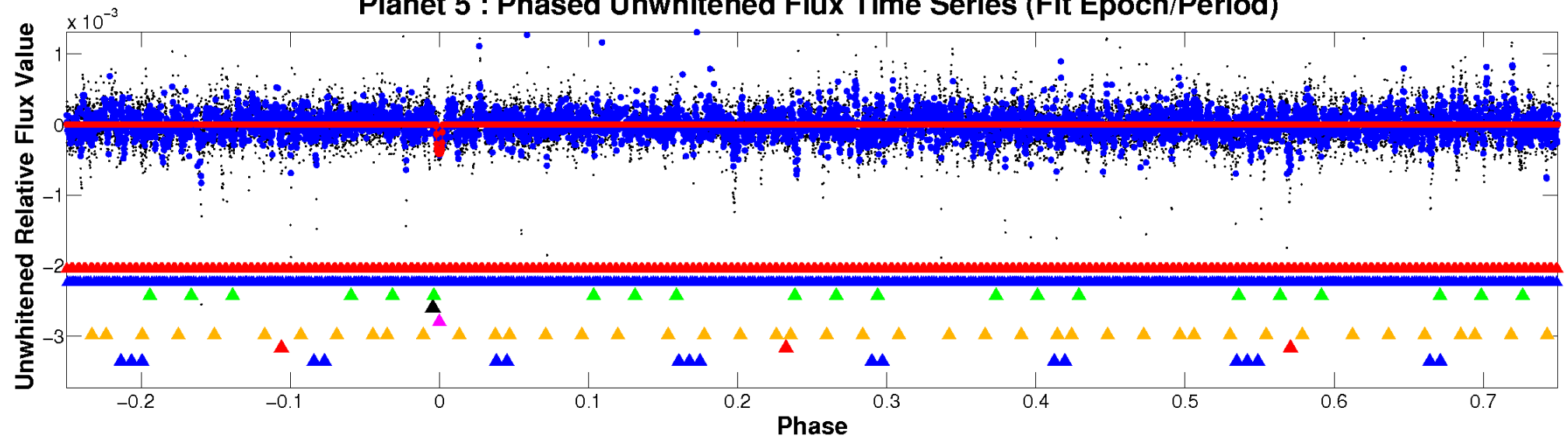
ALT Odd/Even

TCE 003749508-05

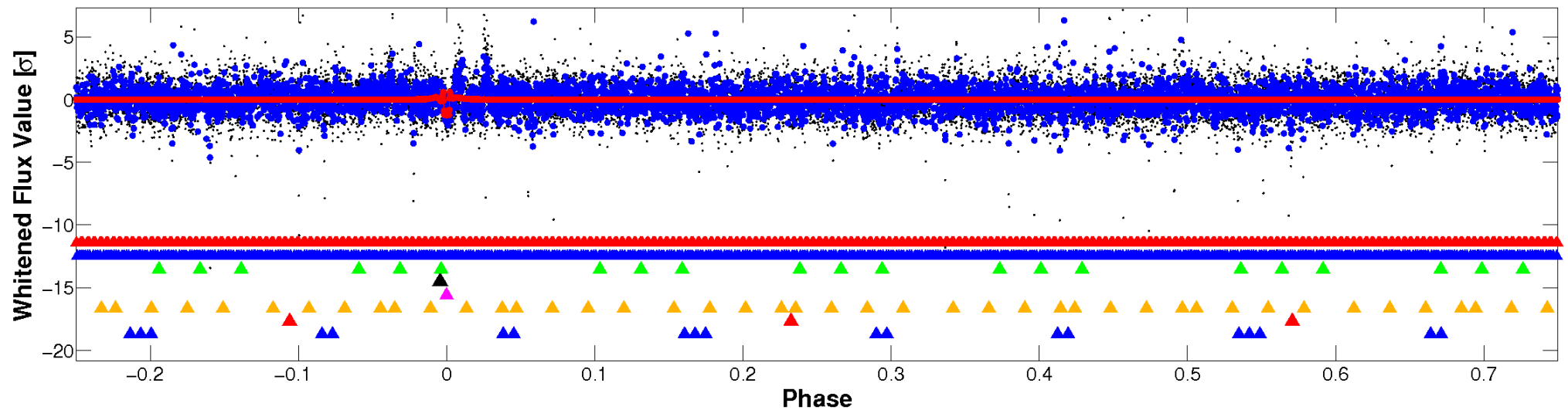


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

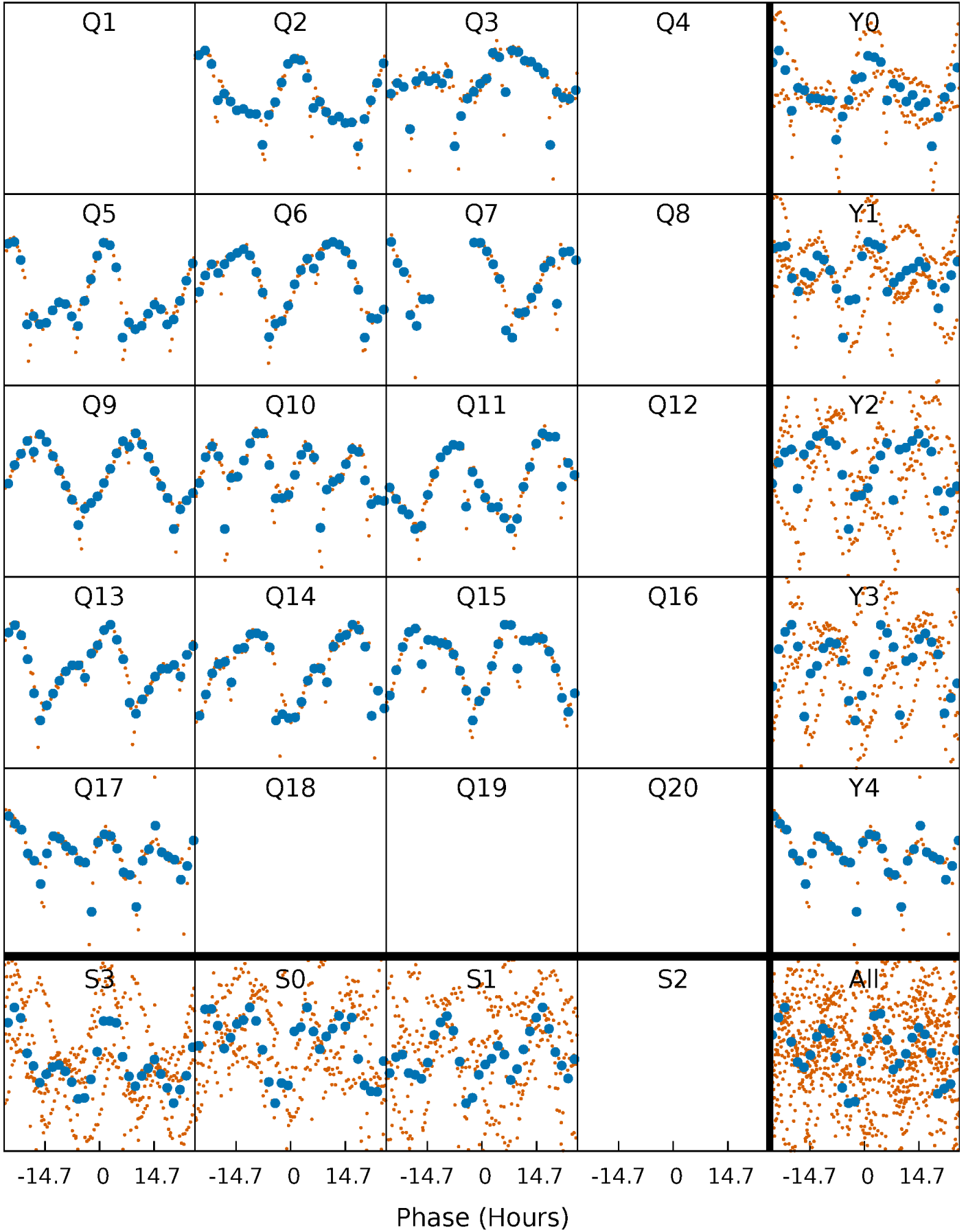


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



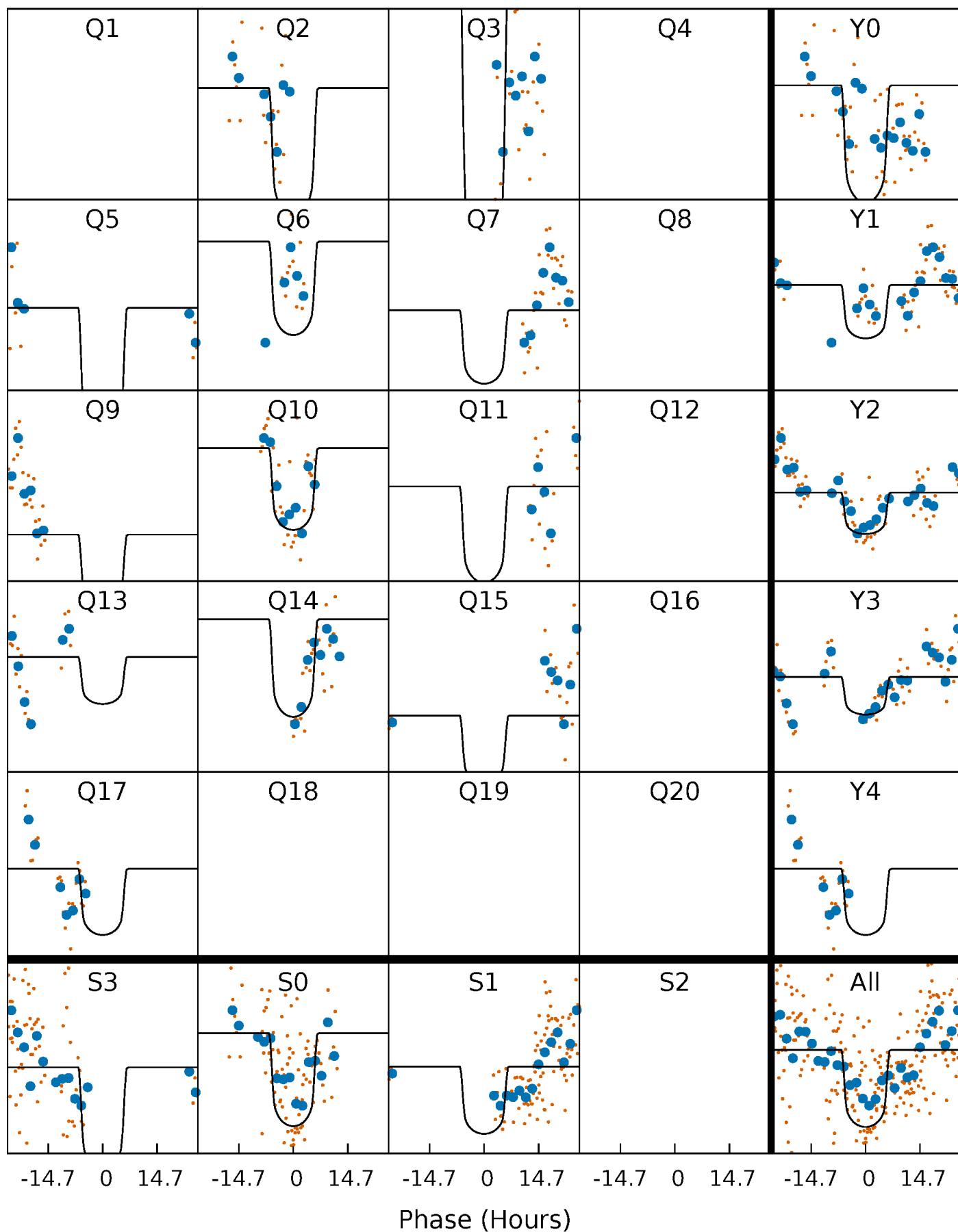
PDC Quarter-Phased Transit Curves

TCE 003749508-05 $P=124.139851$ Days $T_0=214.930752$ (BKJD)



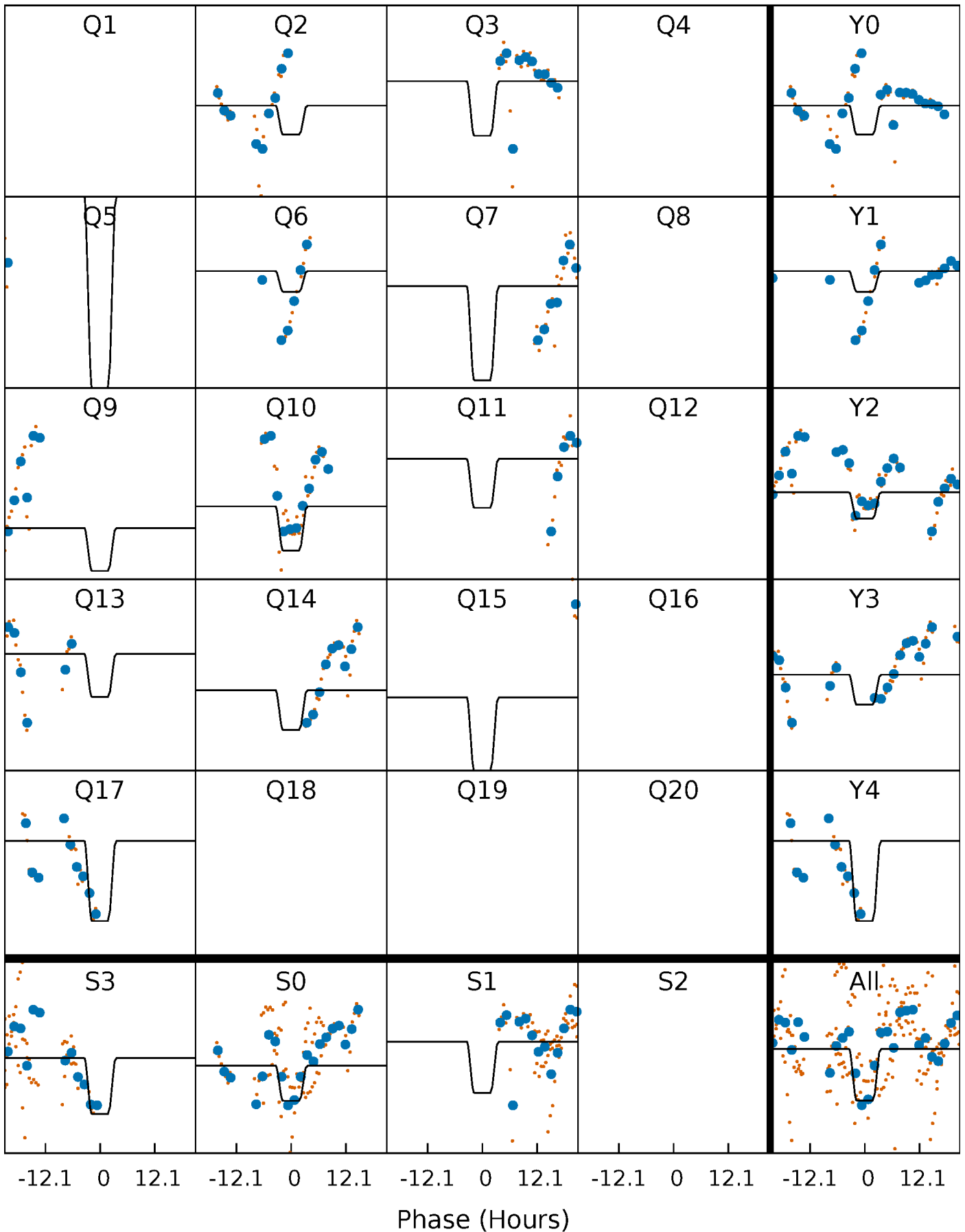
DV Quarter-Phased Transit Curves

TCE 003749508-05 $P=124.139851$ Days $T_0=214.930752$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

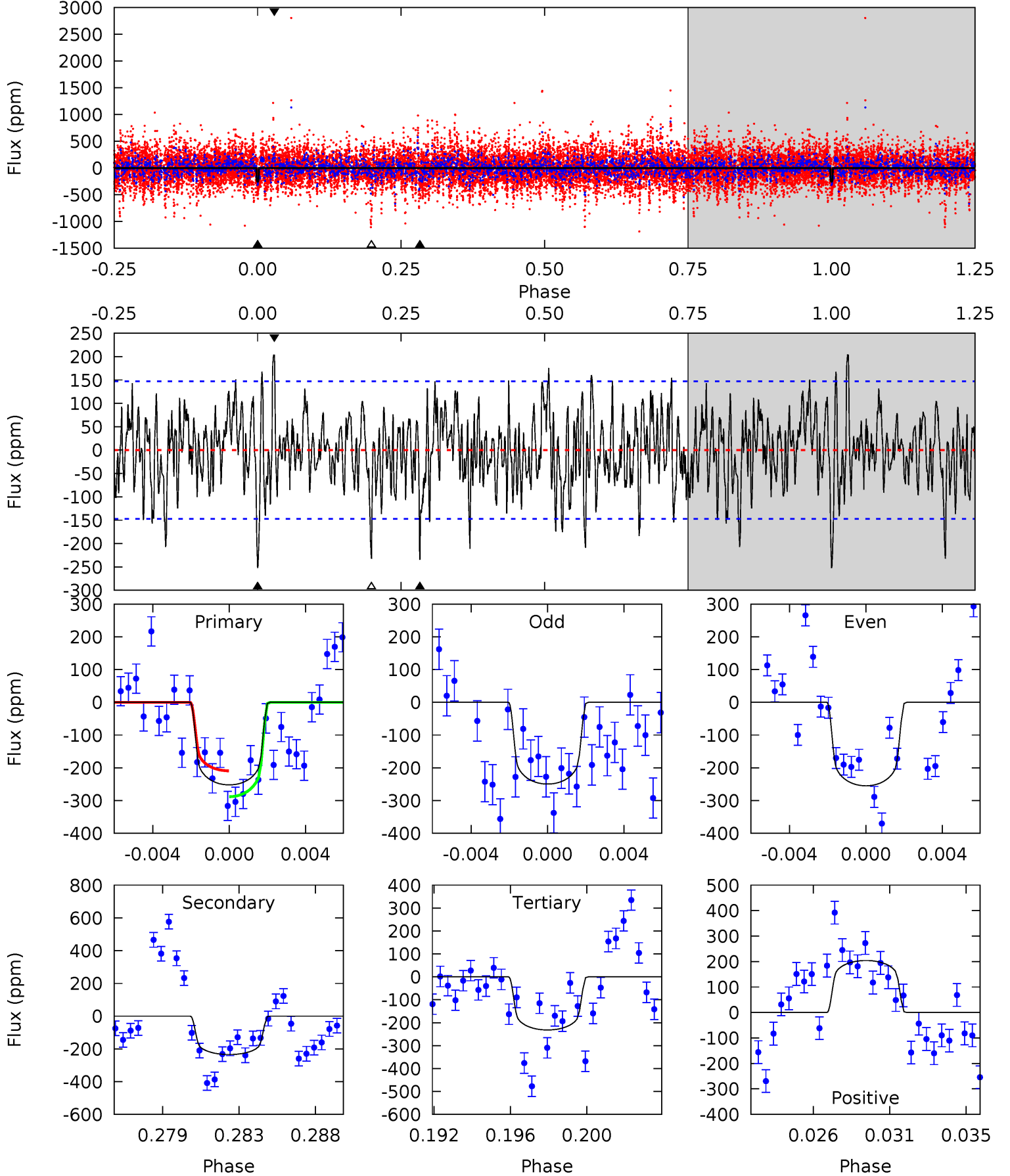
TCE 003749508-05 $P=124.127066$ Days $T_0=214.915496$ (BKJD)



DV Model-Shift Uniqueness Test

003749508-05, P = 124.139851 Days, E = 90.790901 Days

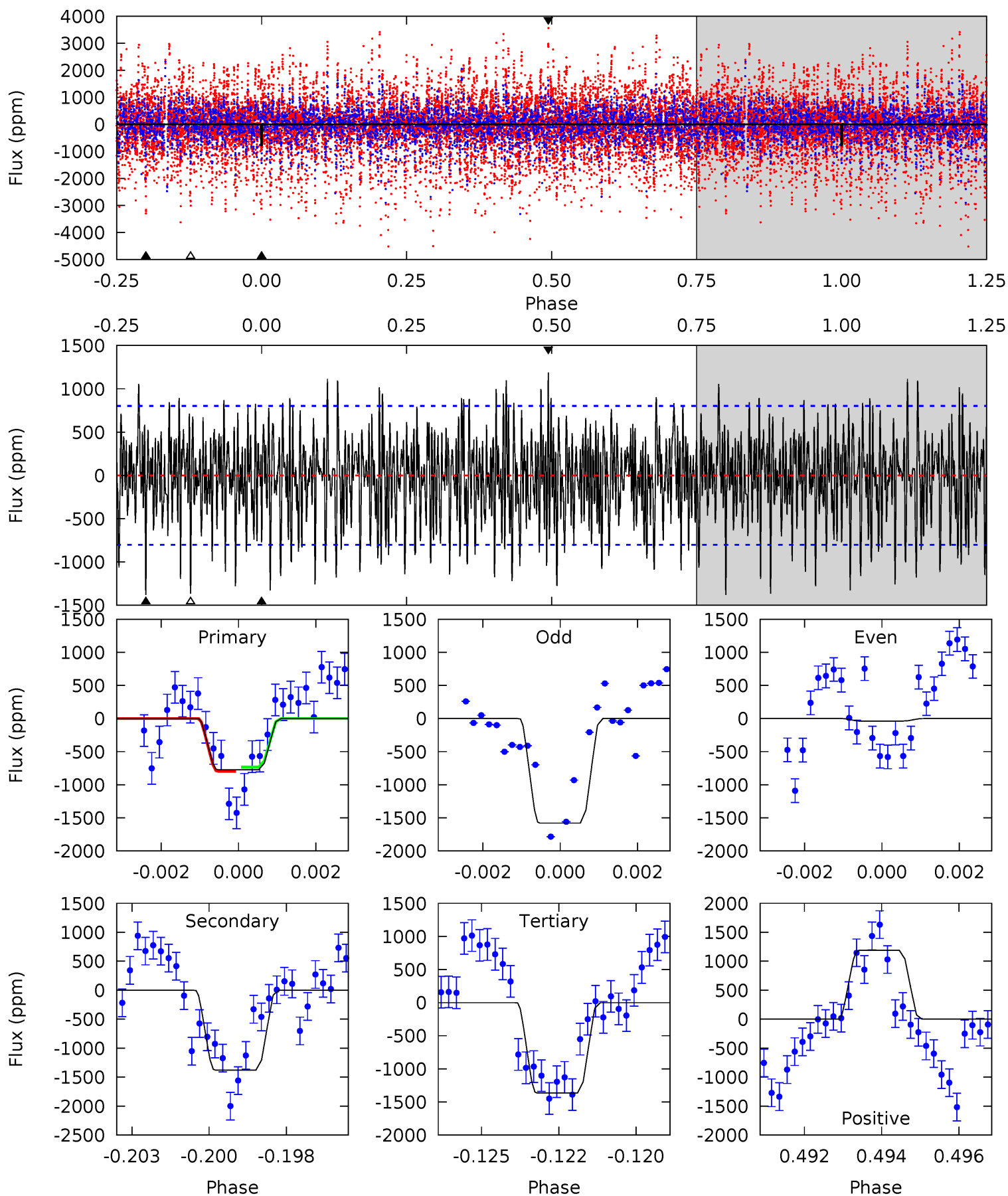
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.88	8.26	8.17	7.19	5.18	2.85	2.40	0.72	1.70	0.09	1.07	0.09	0.96	0.45	1.40



Alt Model-Shift Uniqueness Test

003749508-05, P = 124.127066 Days, E = 90.788430 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.11	9.12	9.02	7.85	5.31	3.06	2.81	-3.91	-2.74	0.09	1.27	5.02	0.84	0.46	0.21



Stellar Parameters For KIC 003749508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6244^{+148}_{-204}	$2.897^{+0.512}_{-0.096}$	$0.070^{+0.200}_{-0.500}$	$10.105^{+1.910}_{-5.731}$	$2.936^{+0.284}_{-1.205}$	$0.004^{+0.029}_{-0.001}$
	+2%/-3%	+18%/-3%	+286%/-714%	+19%/-57%	+10%/-41%	+713%/-30%
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 003749508-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-234 ± 28	$22.09^{+4.90}_{-6.40}$	1412^{+101}_{-183}	5245^{+385}_{-297}	127^{+104}_{-42}
Alt.	-1379 ± 151	$30.91^{+6.38}_{-9.13}$	1410^{+108}_{-192}	6920^{+416}_{-439}	384^{+319}_{-113}

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 $A_{obs} \gg 1.0$

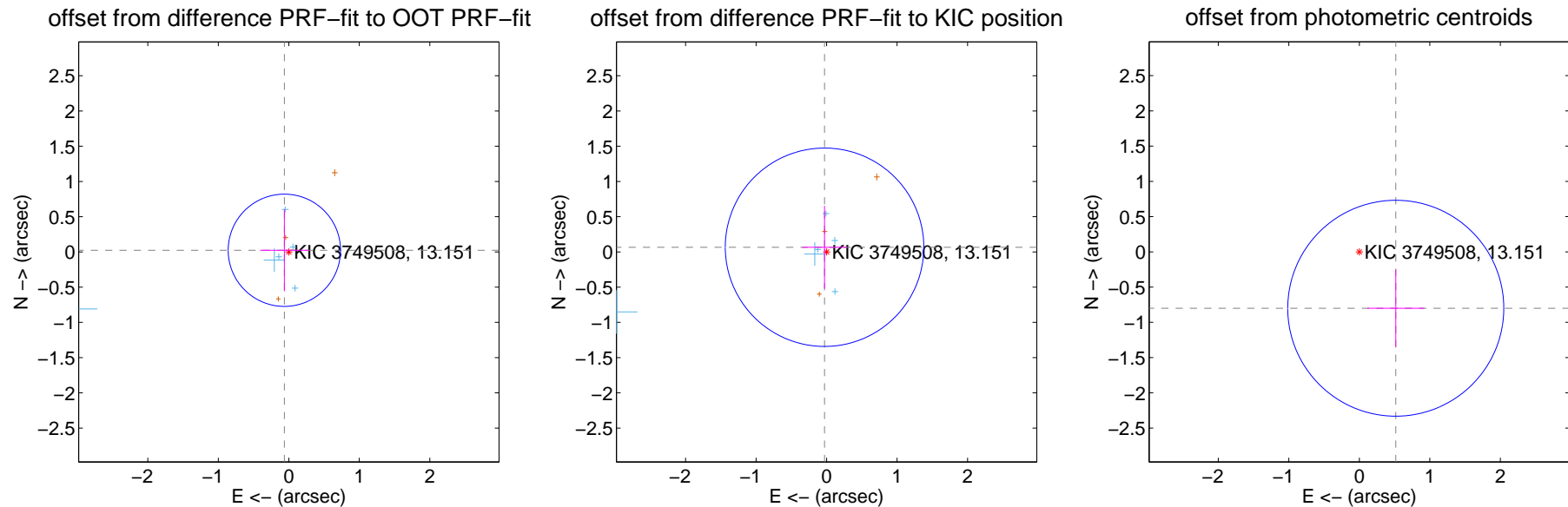
DV Centroid Data

Supplemental centroid analysis for 003749508-05. Kepler magnitude: 13.15. Transit SNR 9.54

There are 6 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.067 ± 0.265	0.25	0.063 ± 0.343	0.023 ± 0.581
PRF-fit source offset from KIC position	0.072 ± 0.469	0.15	0.029 ± 0.315	0.066 ± 0.587
photometric centroid source offset	0.95 ± 0.51	1.87	-0.52 ± 0.40	-0.80 ± 0.55



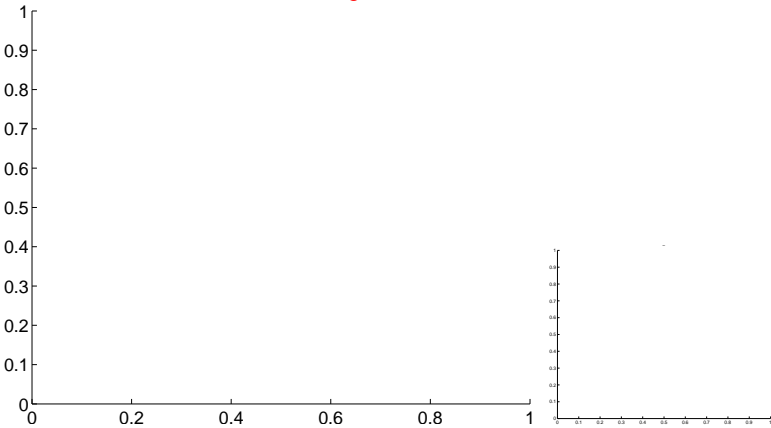
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

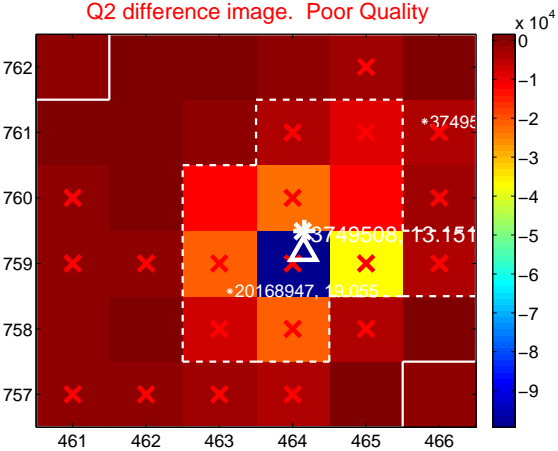
Q1 no difference image



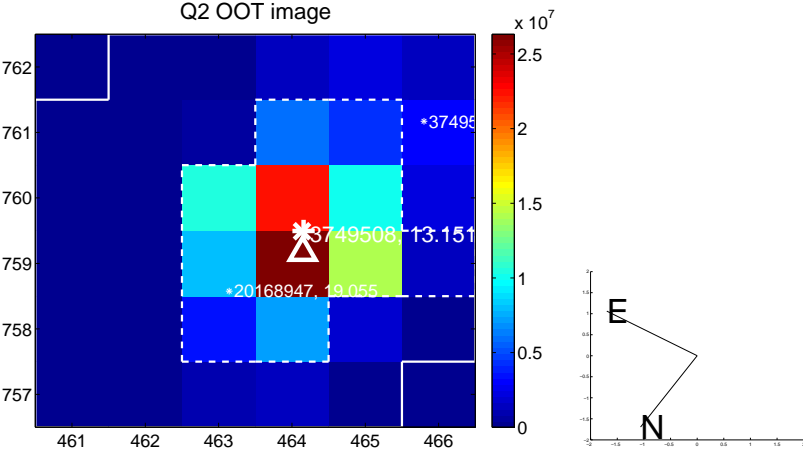
Q1 no OOT image



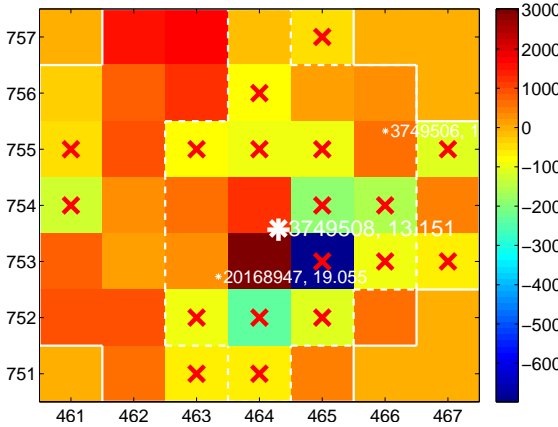
Q2 difference image. Poor Quality



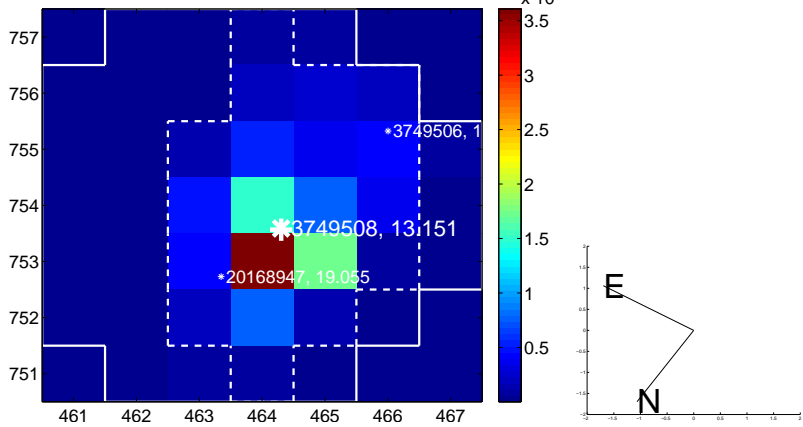
Q2 OOT image



Q3 difference image. Poor Quality



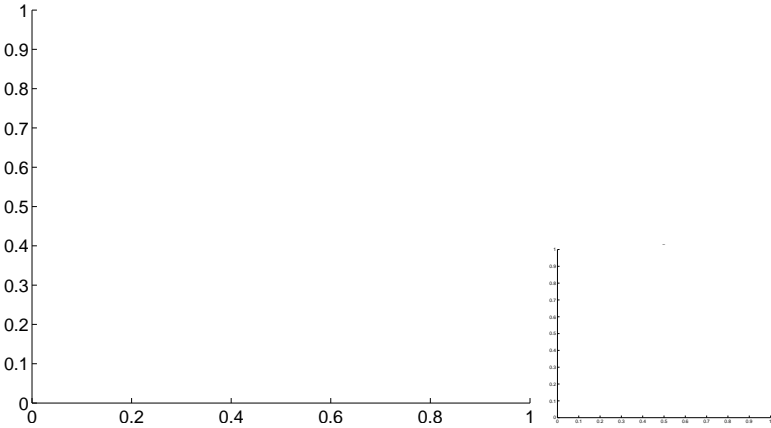
Q3 OOT image



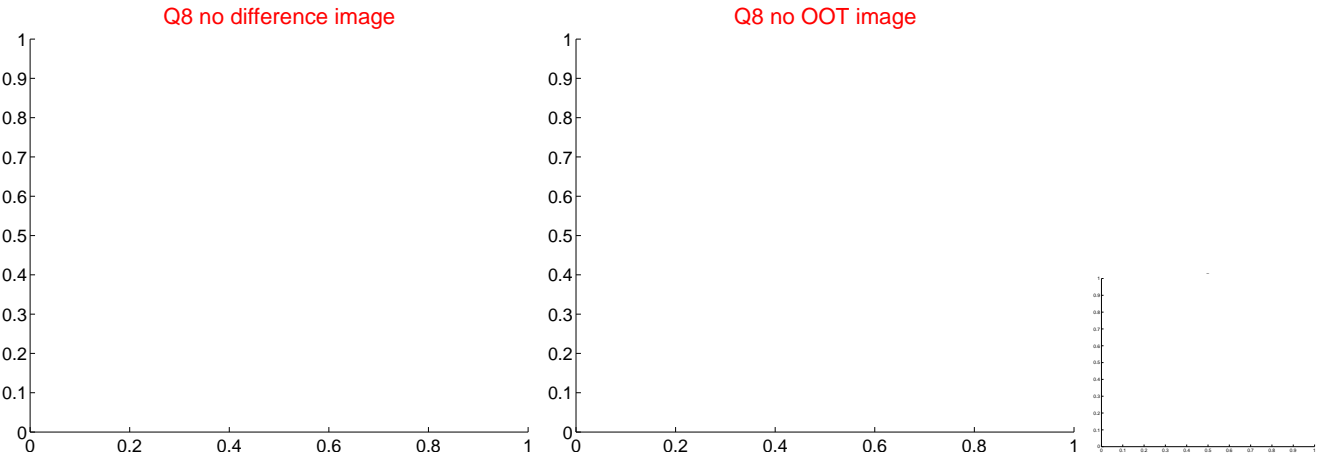
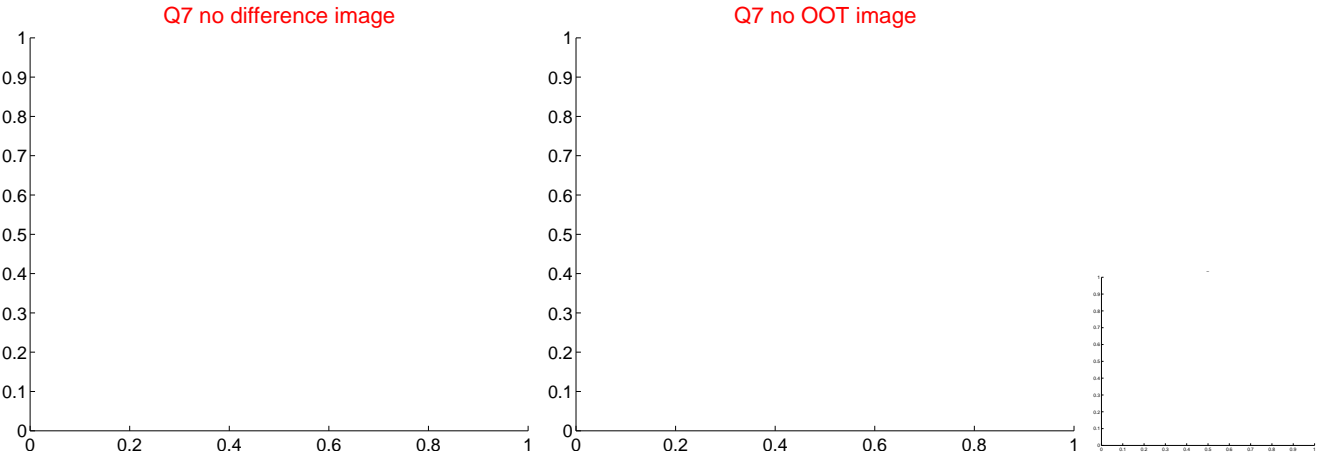
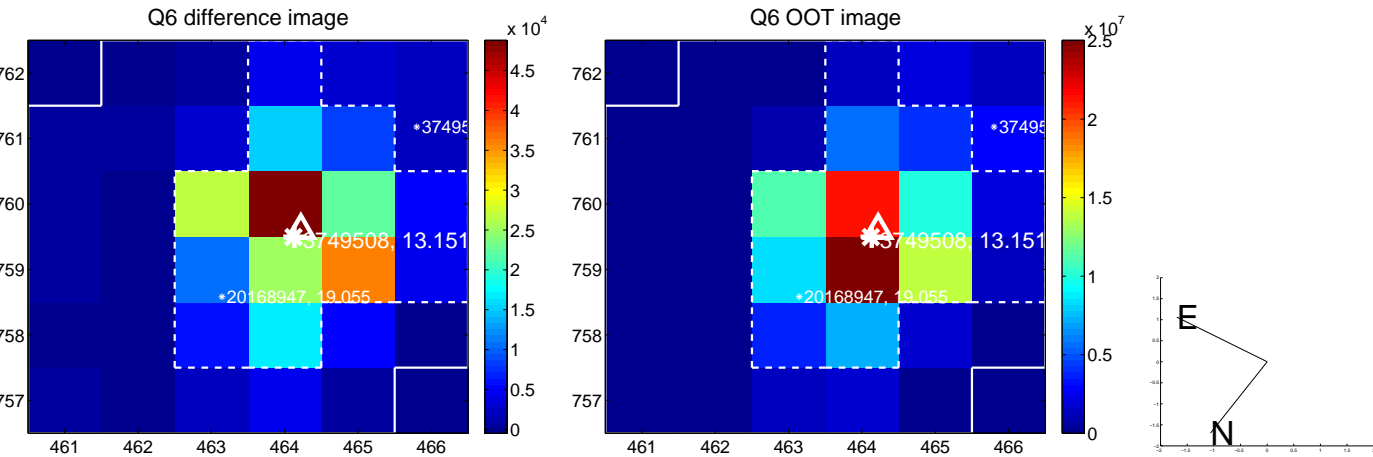
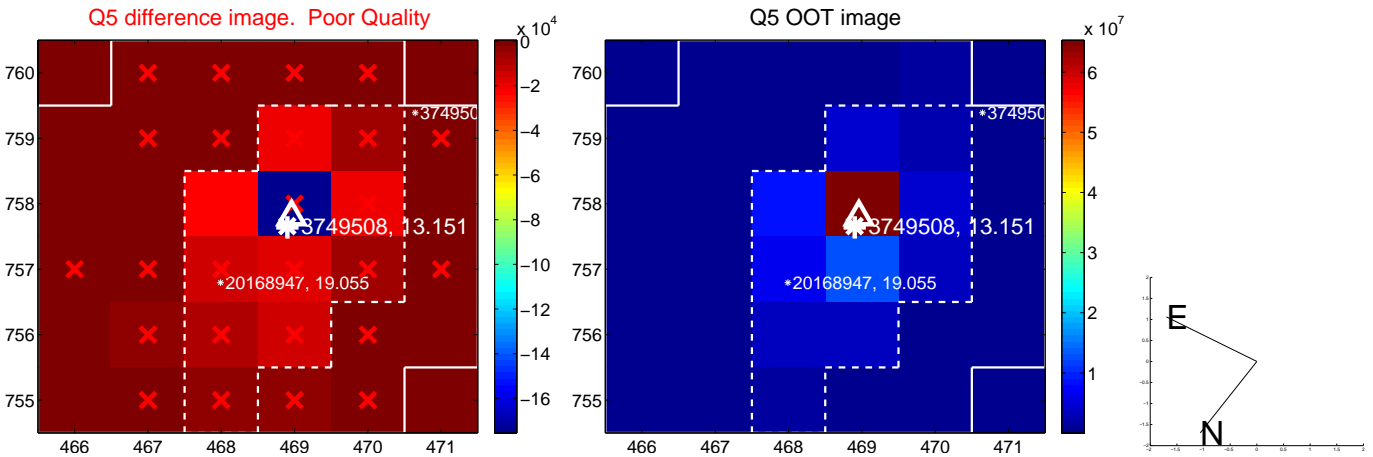
Q4 no difference image



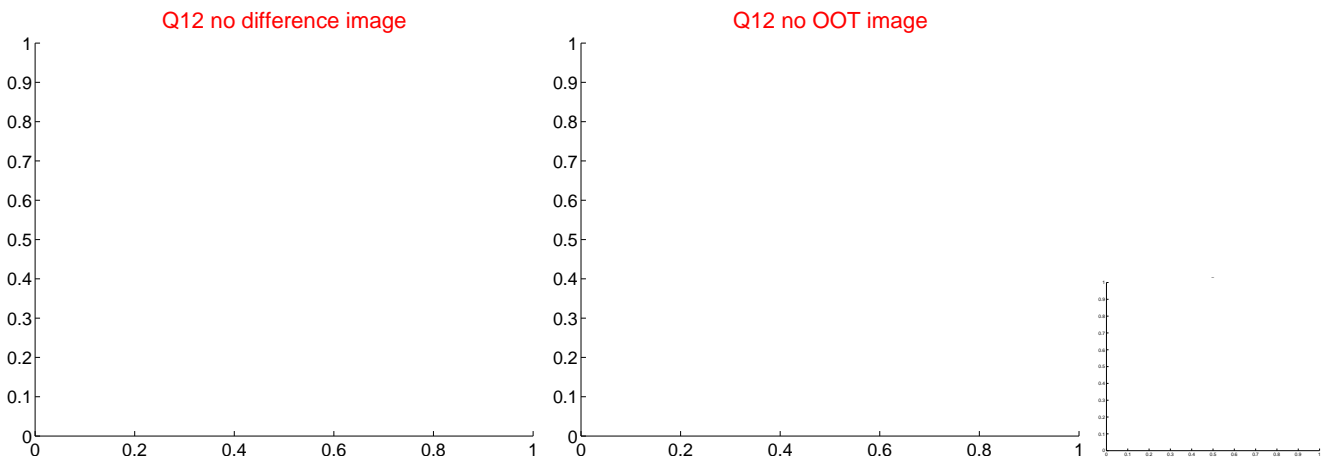
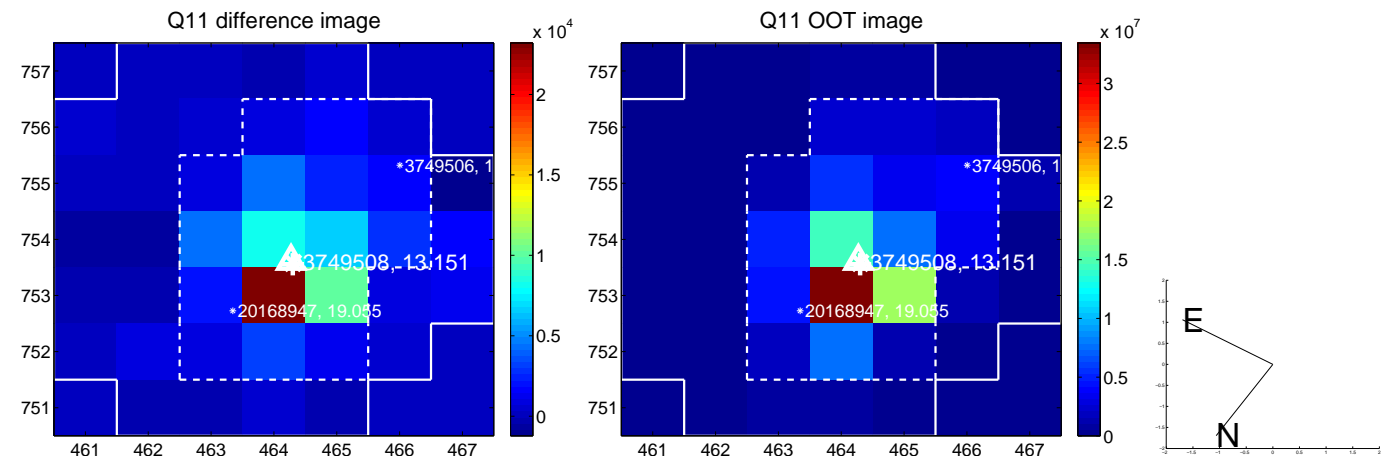
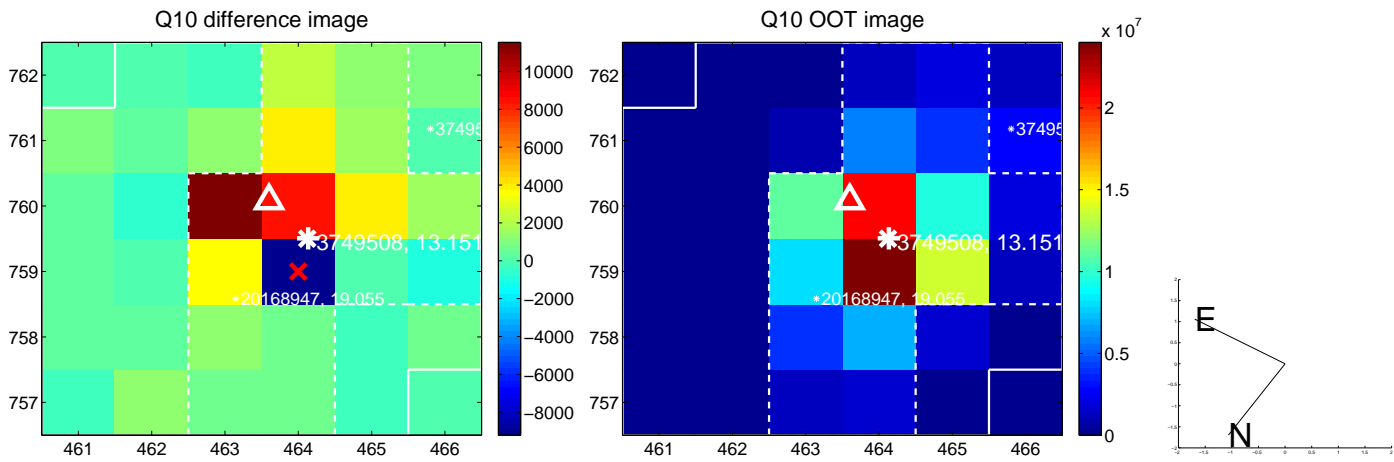
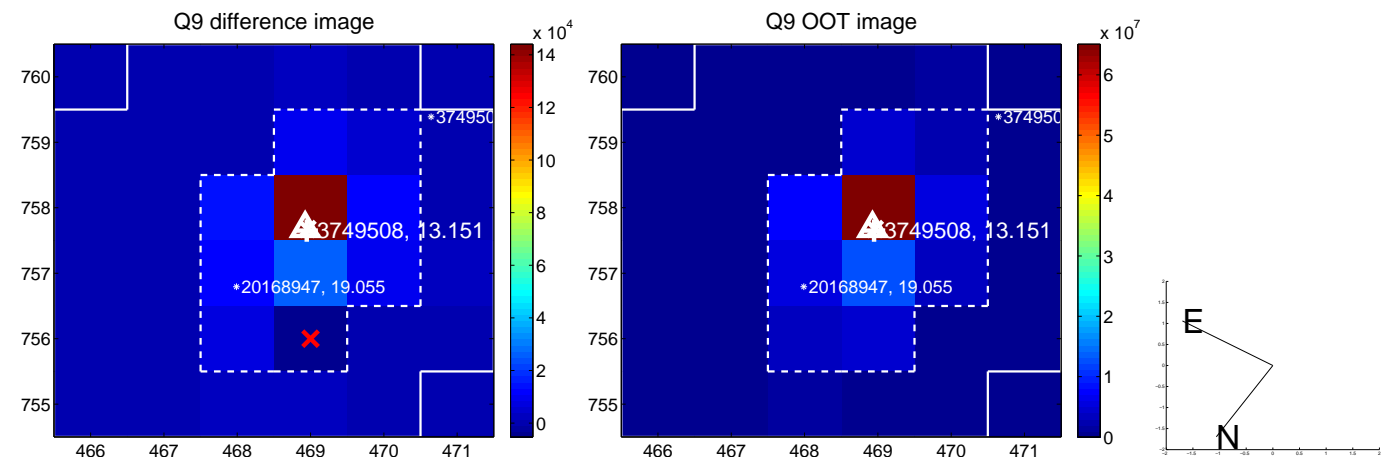
Q4 no OOT image



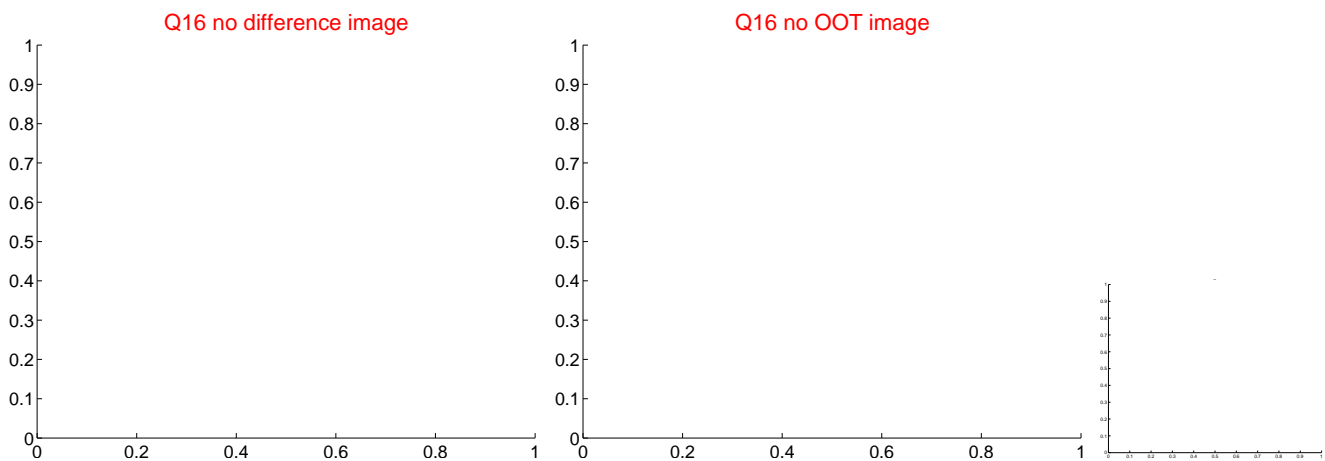
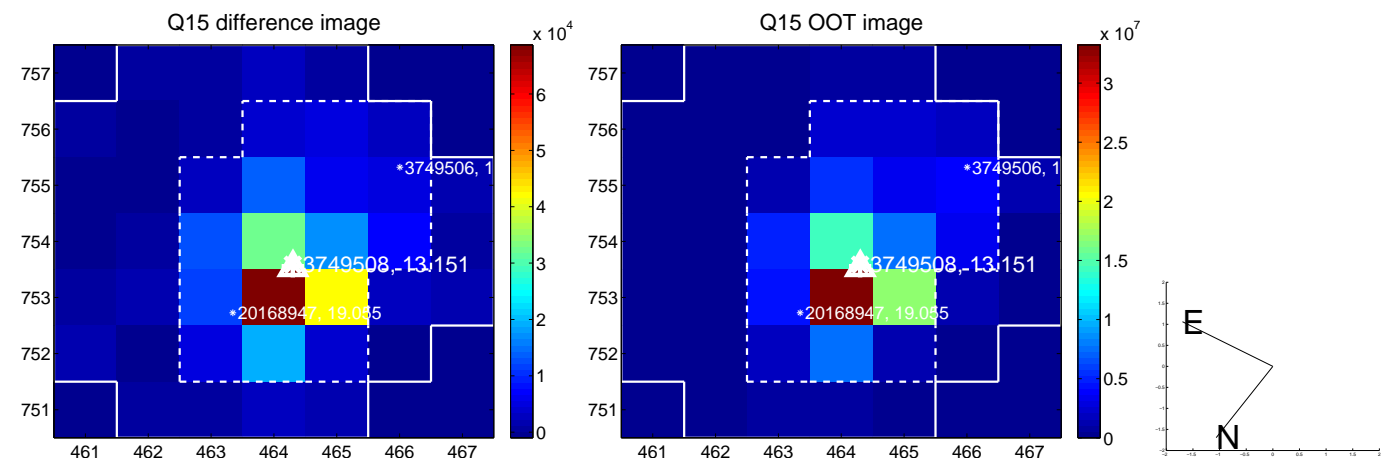
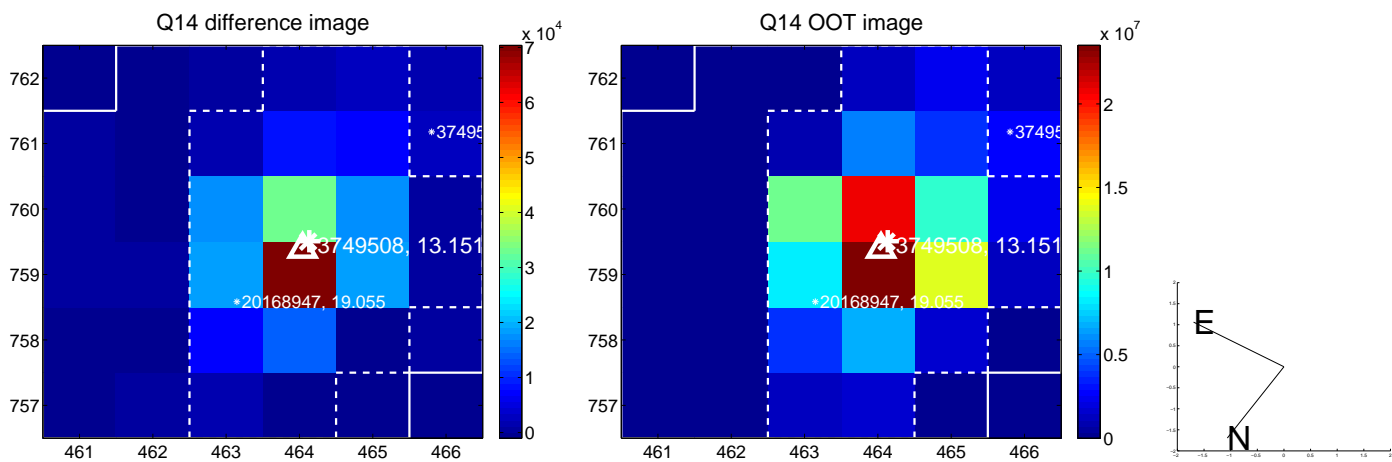
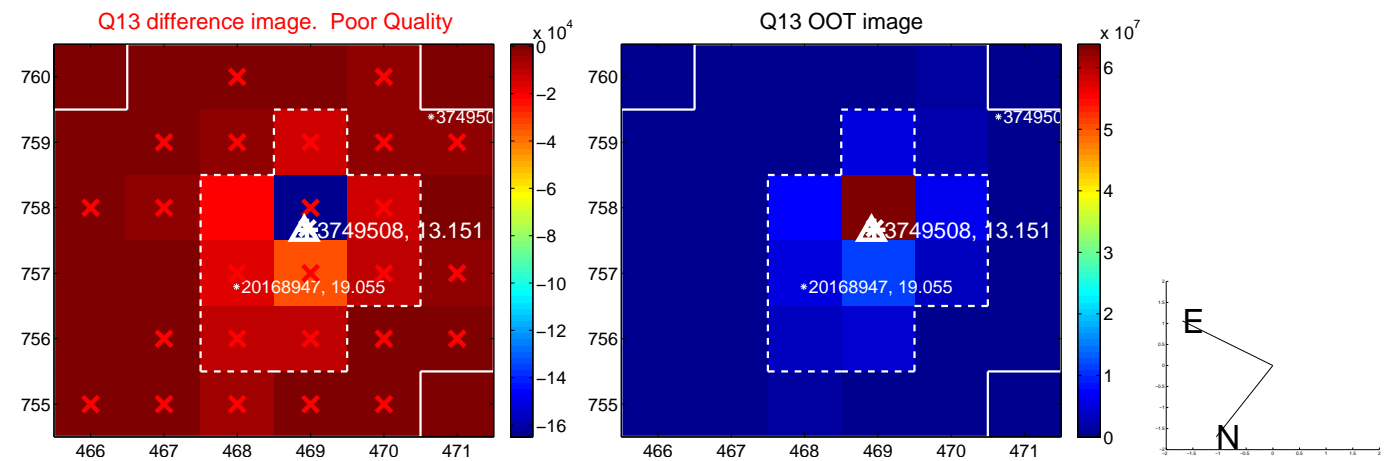
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

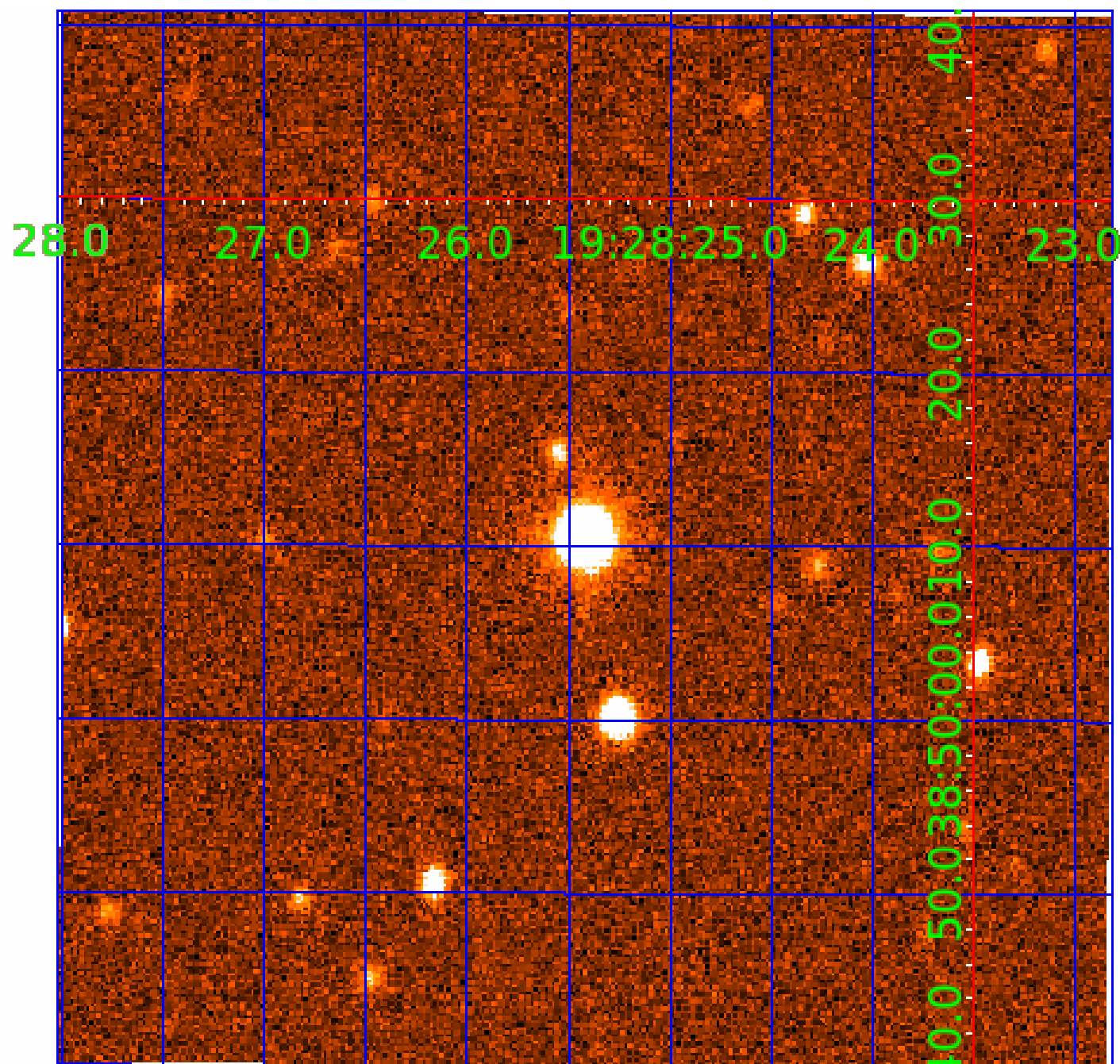


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003749508

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})
003749508-01	OBS	7544.02	1.065747	132.034968	176.6	0.910	32.2	35.9	10.11	6244	16.05	0.00
003749508-02	OBS	7544.01	2.403921	131.586727	41.7	13.450	10.0	7.5	10.11	6244	6.55	54938.48
003749508-03	OBS	No	70.444992	164.220847	184.1	1.045	14.2	3.1	10.11	6244	16.22	608.09
003749508-04	OBS	No	124.125001	214.471104	503.8	0.805	10.9	2.9	10.11	6244	26.95	285.73
003749508-05	OBS	No	124.139851	214.930752	420.0	12.892	11.0	9.5	10.11	6244	24.10	285.69
003749508-06	OBS	No	33.583321	142.235014	52.7	11.521	8.9	2.3	10.11	6244	8.21	1632.82
003749508-07	OBS	No	454.561847	534.062004	419.5	8.543	9.4	8.6	10.11	6244	22.16	50.62
003749508-08	OBS	No	77.697273	157.170514	94.8	6.051	8.0	2.5	10.11	6244	10.62	533.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749508-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_ALT
003749508-02	OBS	FP	0.00	1	0	0	0	LPP_DV
003749508-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—HALO_GHOST
003749508-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
003749508-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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 003749508-06

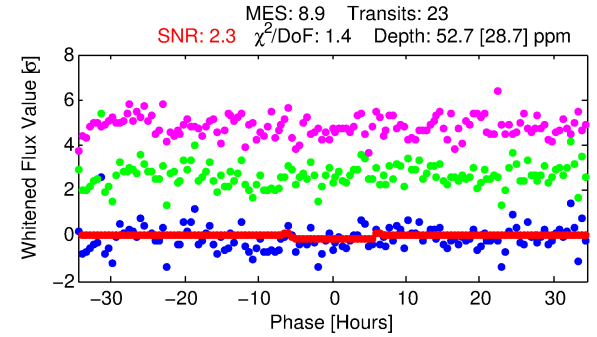
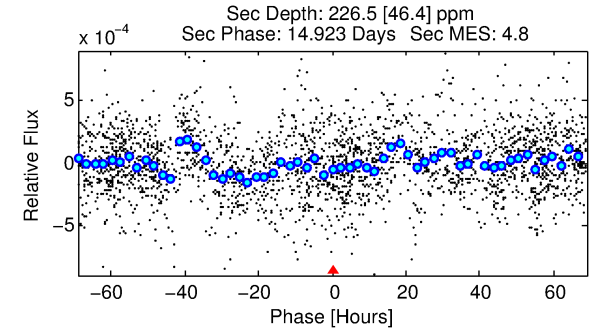
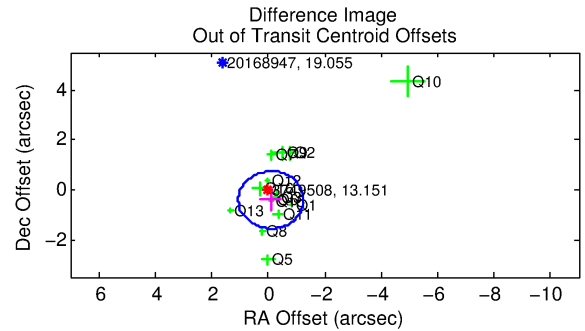
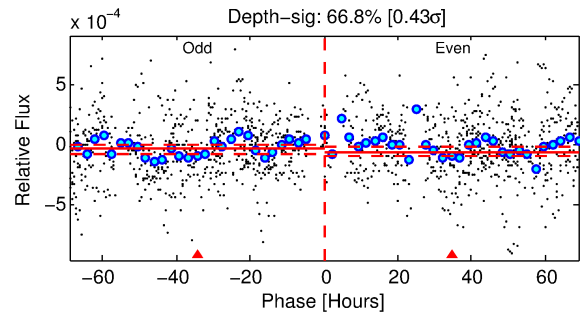
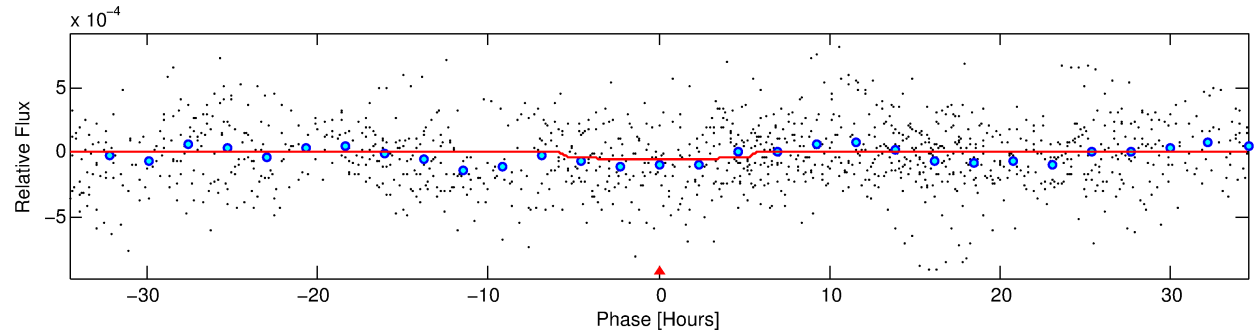
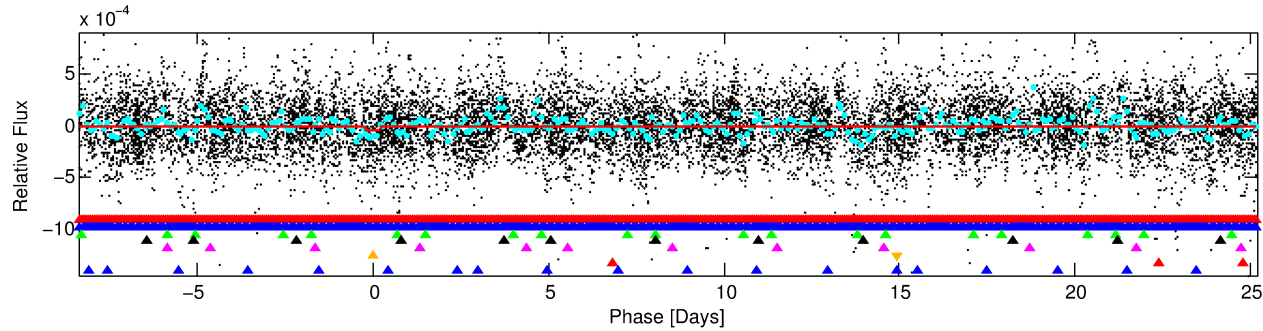
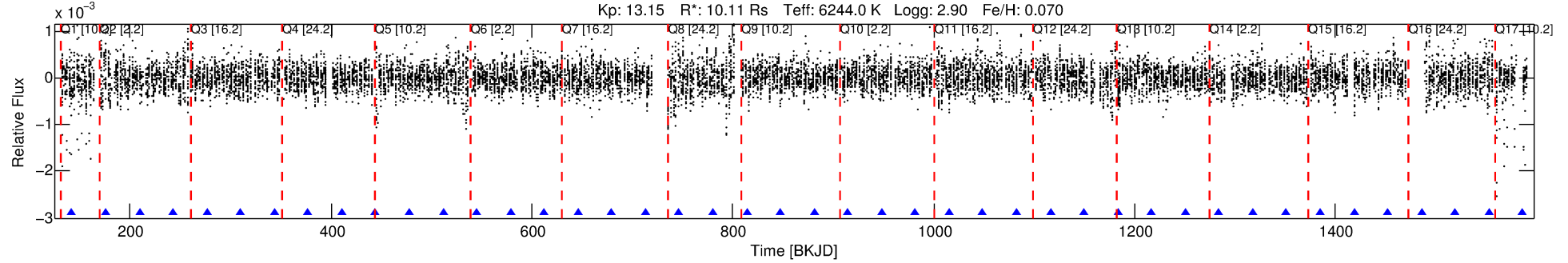
No Significant Match Found

DV One-Page Summary

KIC: 3749508 Candidate: 6 of 8 Period: 33.583 d

KOI: K07544 Corr: No Ephemeris Match

Kp: 13.15 R*: 10.11 Rs Teff: 6244.0 K Logg: 2.90 Fe/H: 0.070



DV Fit Results:

Period = 33.58332 [0.00192] d
Epoch = 142.2350 [0.0535] BKJD
Rp/R* = 0.0074 [0.0055]
a/R* = 12.83 [45.59]
b = 0.83 [1.37]
Seff = 1632.82 [1439.99]
Teq = 1621 [357] K
Rp = 8.21 [7.62] Re
a = 0.2918 [0.1591] AU
Ag = 157.44 [270.80] [0.58σ]
Teffp = 8877 [3303] K [2.18σ]

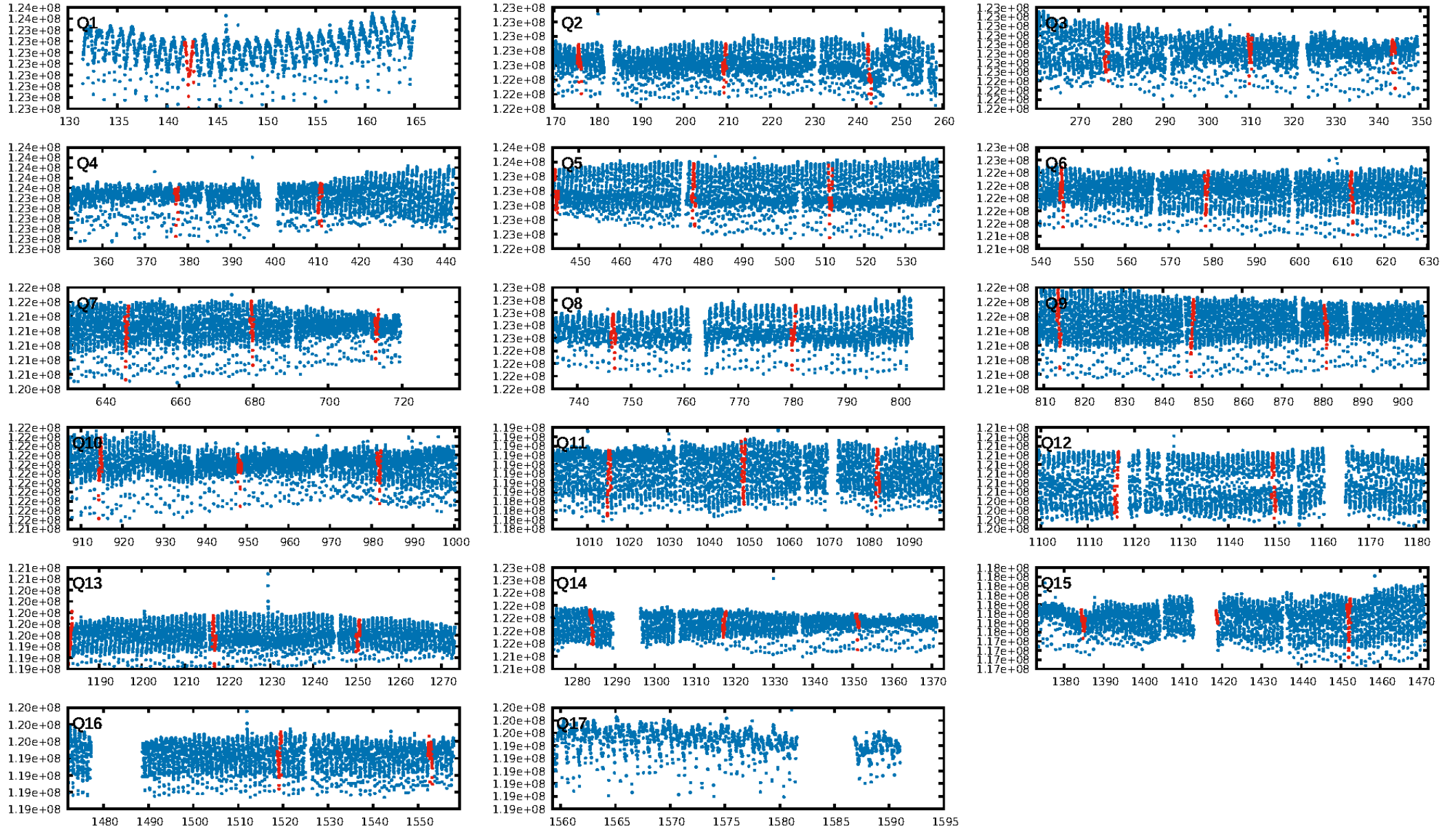
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [42.25σ]
LongPeriod-sig: 100.0% [76.48σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 5.36e-08
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: 1.1
Centroid-sig: 0.5%
Centroid-so: 3.912 arcsec [1.63σ]
OotOffset-rm: 0.425 arcsec [1.11σ]
KicOffset-rm: 0.394 arcsec [1.13σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 0.00 [0/16]

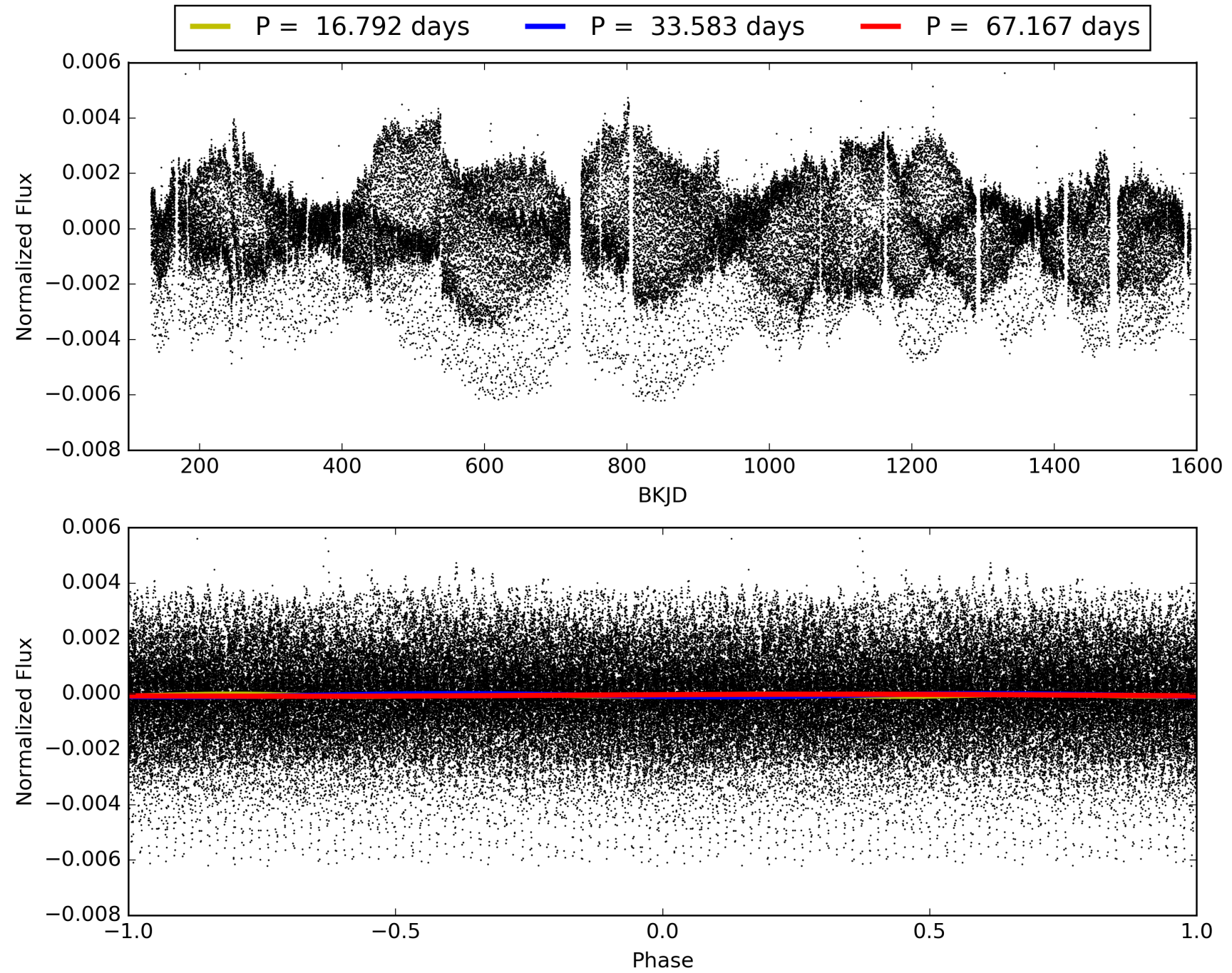
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:56:04 Z

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

TCE 003749508-06, PDC Light Curves

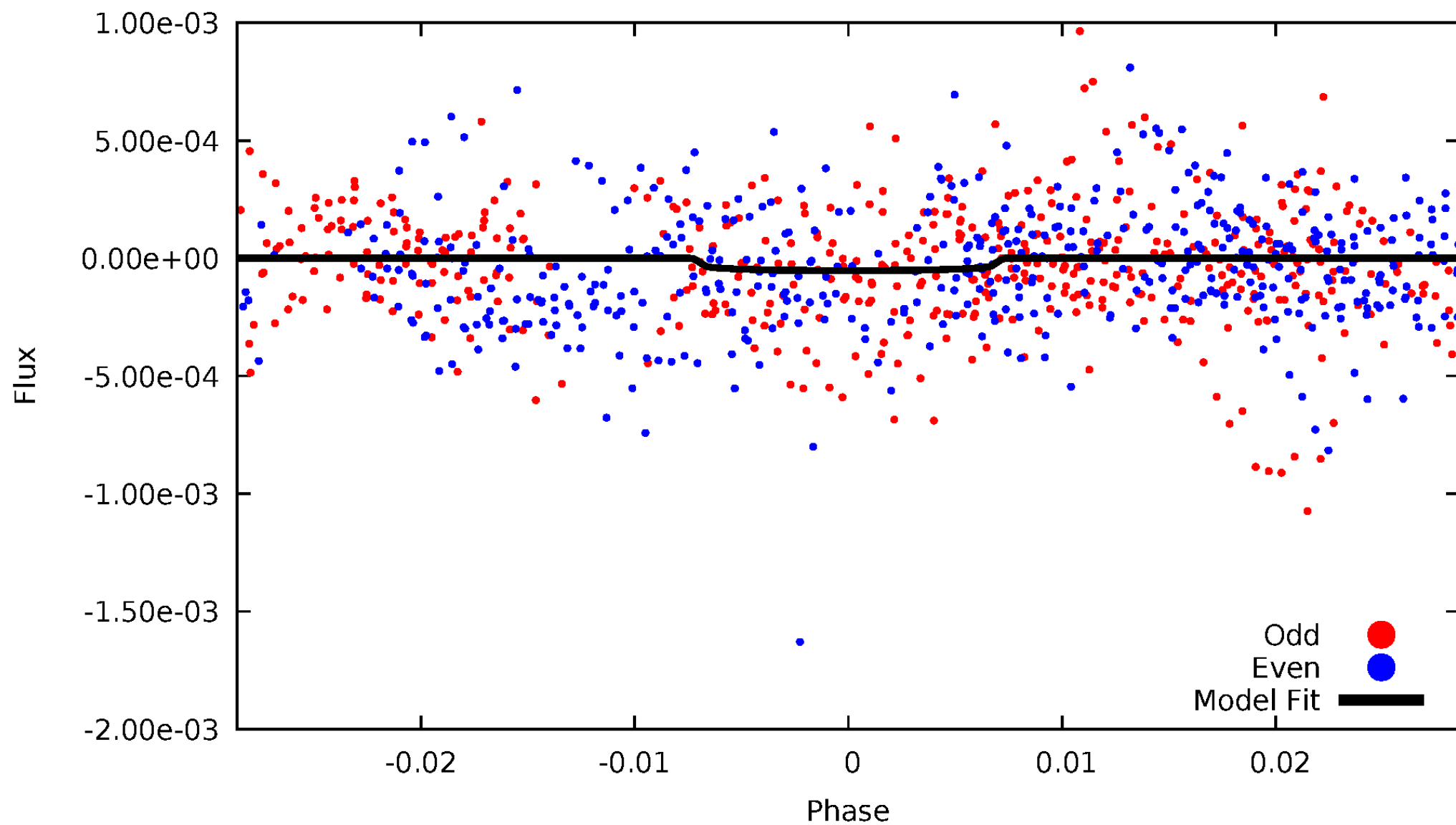


TCE 003749508-06



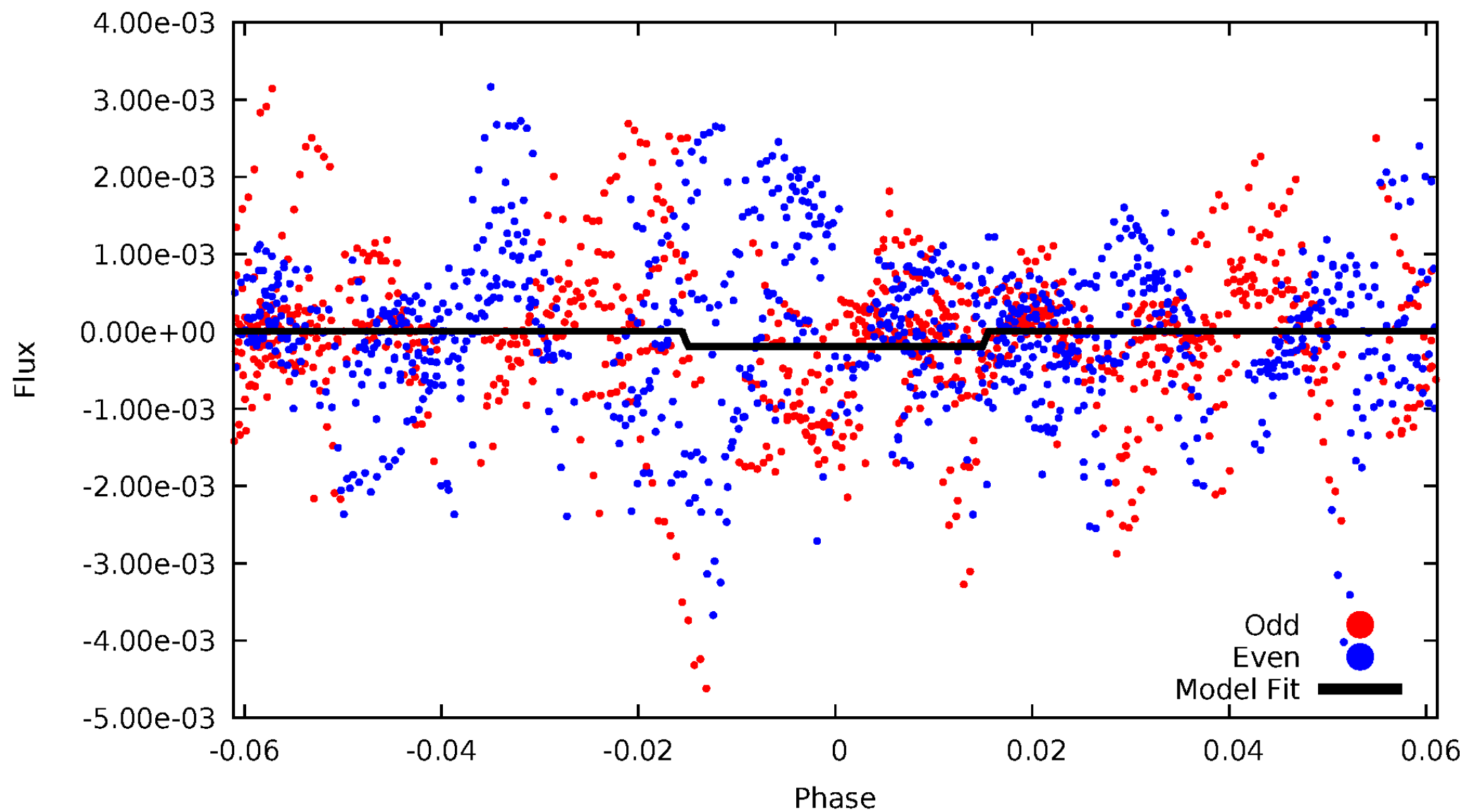
DV Odd/Even

TCE 003749508-06



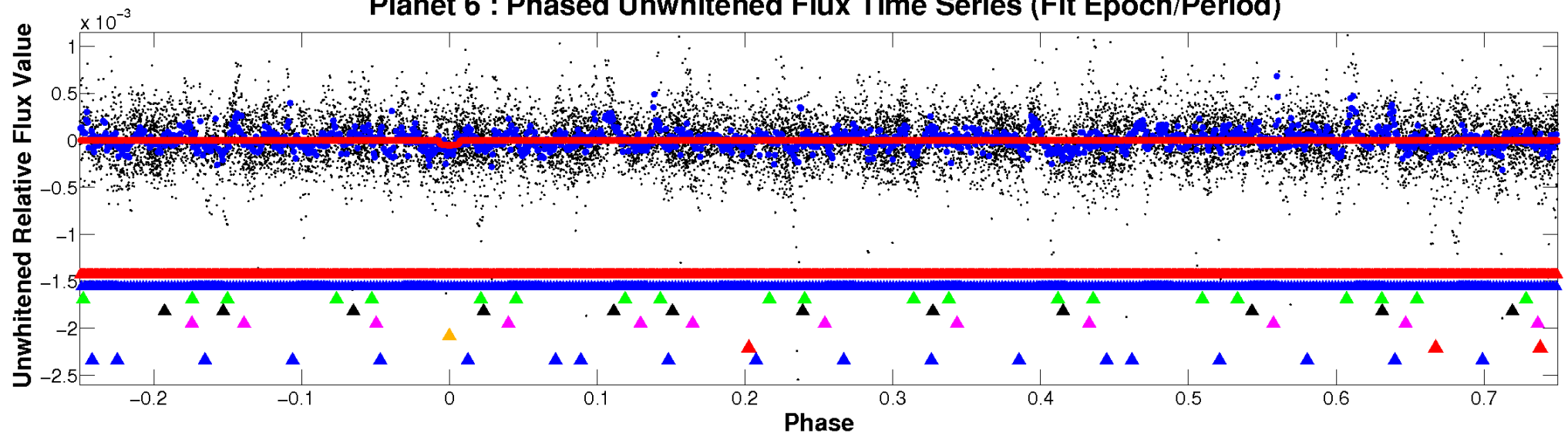
ALT Odd/Even

TCE 003749508-06

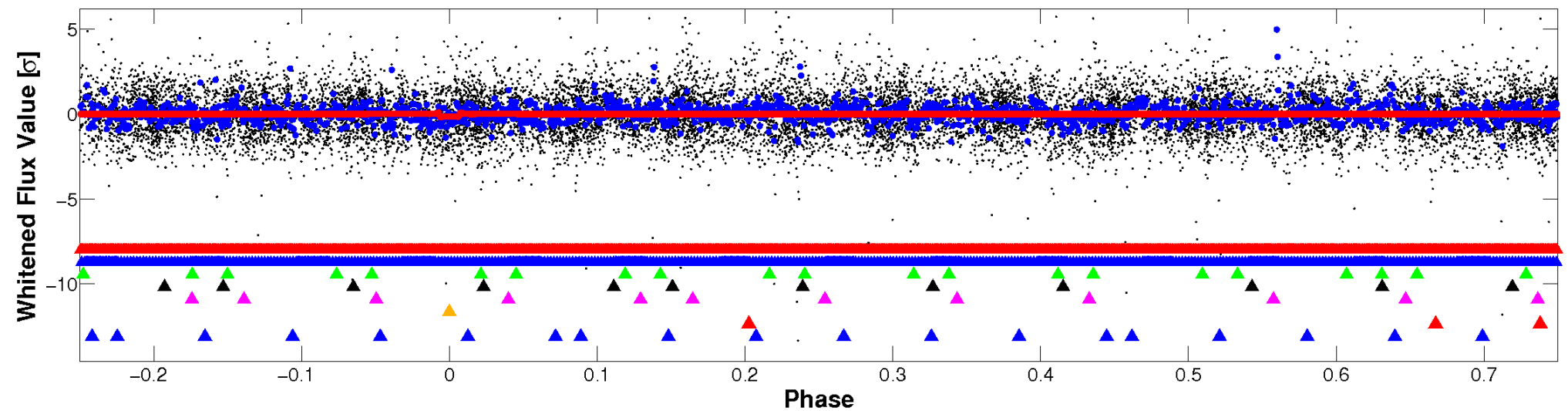


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

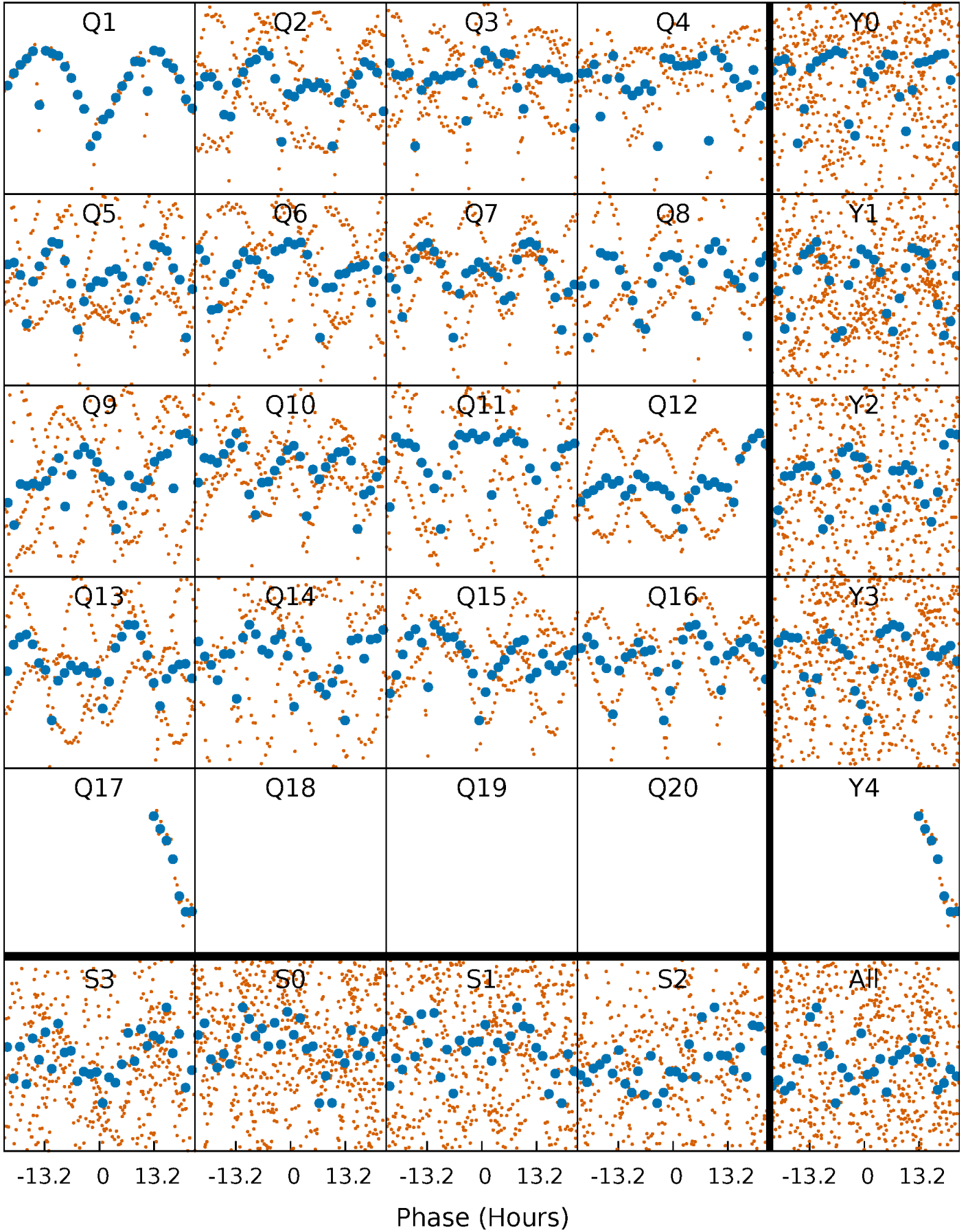


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



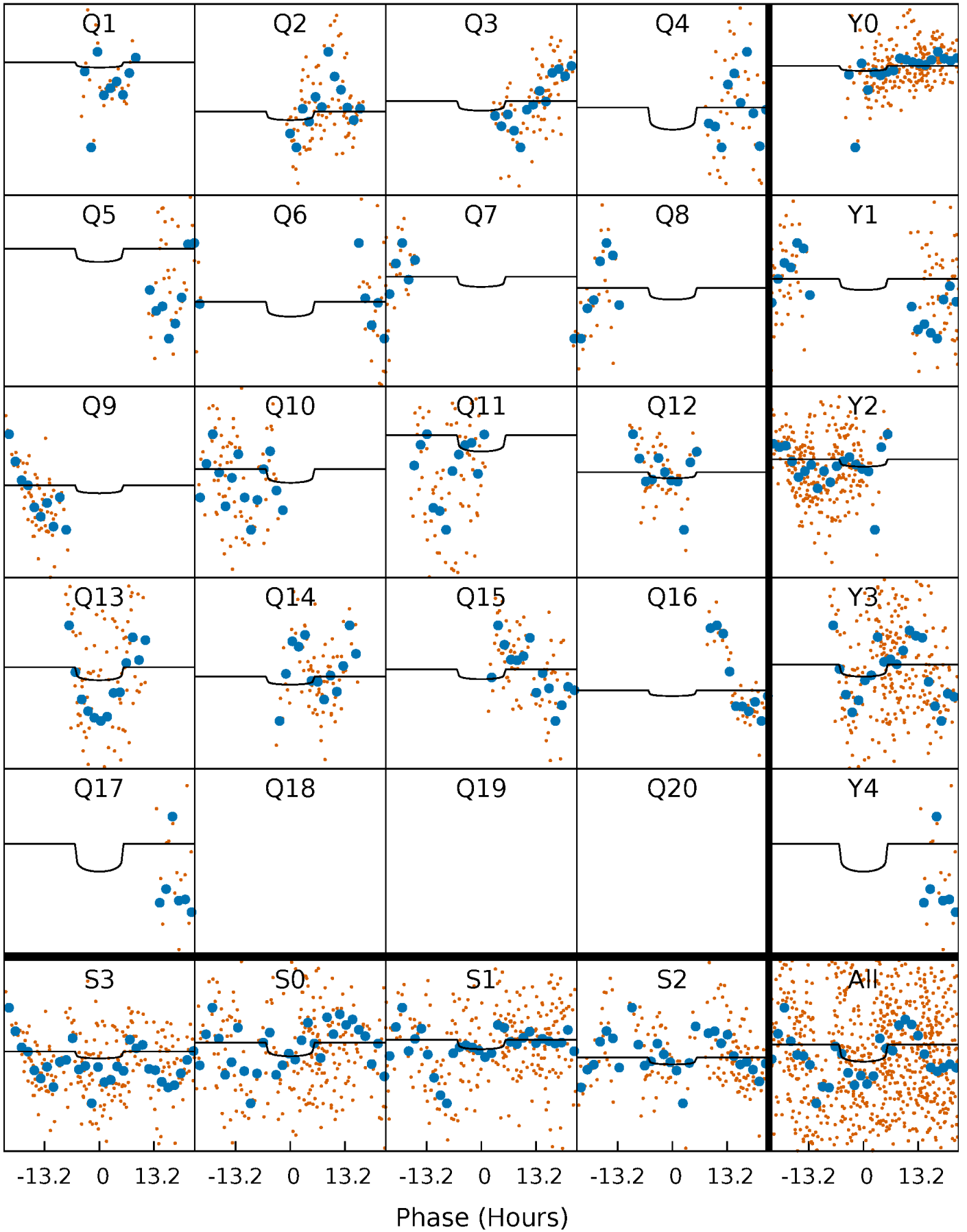
PDC Quarter-Phased Transit Curves

TCE 003749508-06 P= 33.583321 Days $T_0=142.235014$ (BKJD)



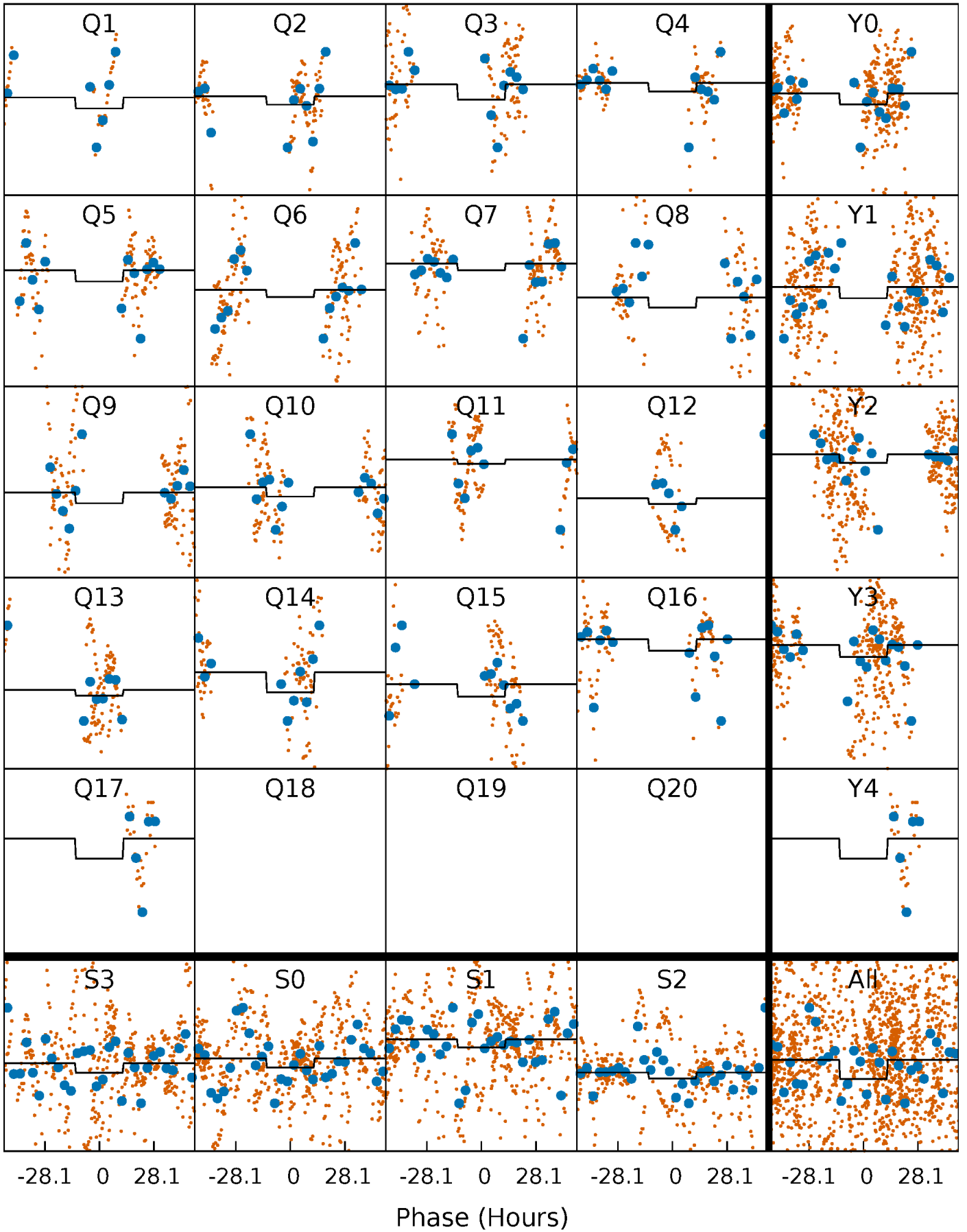
DV Quarter-Phased Transit Curves

TCE 003749508-06 P= 33.583321 Days $T_0=142.235014$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

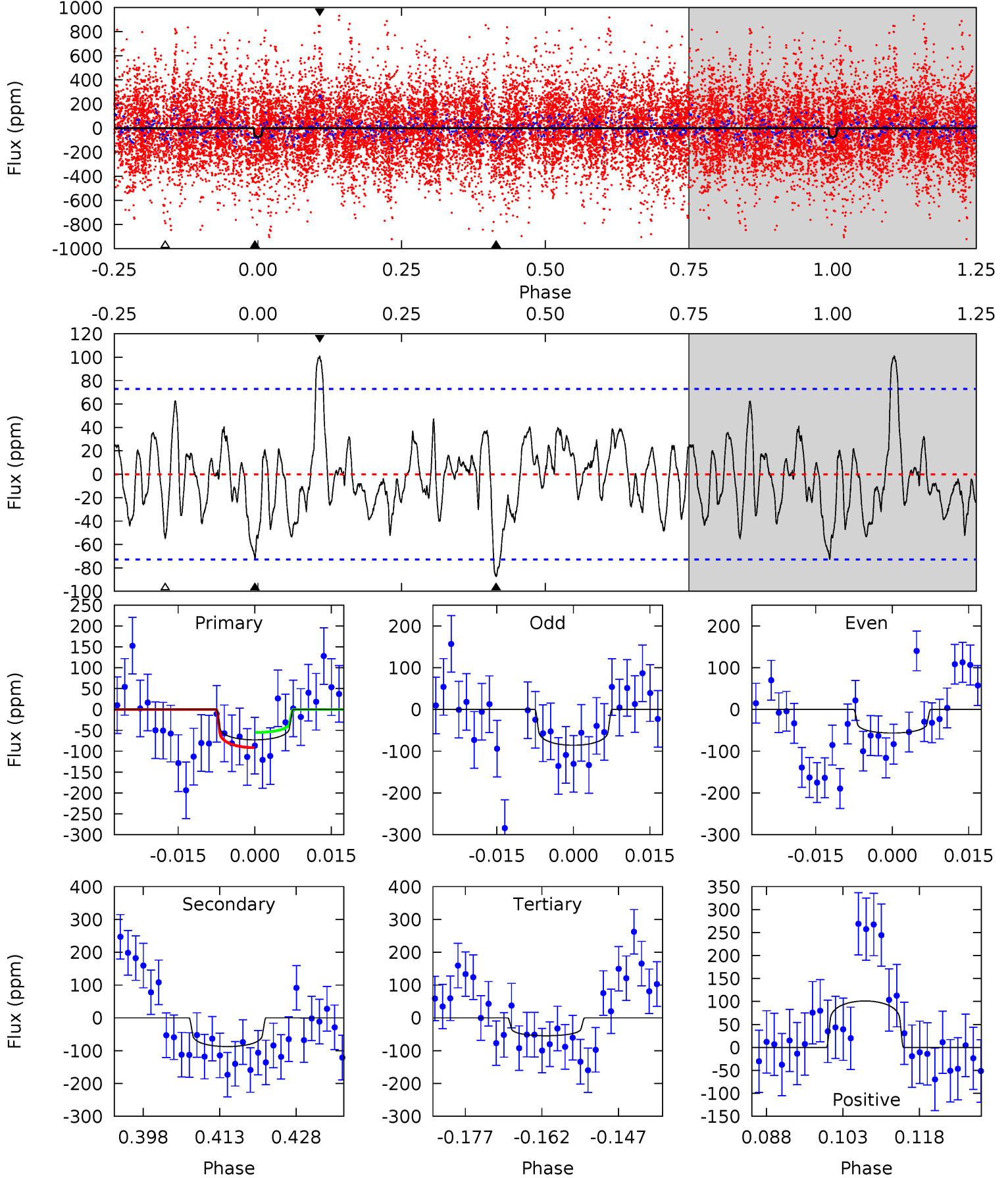
TCE 003749508-06 P= 33.583499 Days $T_0=142.220821$ (BKJD)



DV Model-Shift Uniqueness Test

003749508-06, P = 33.583321 Days, E = 108.651693 Days

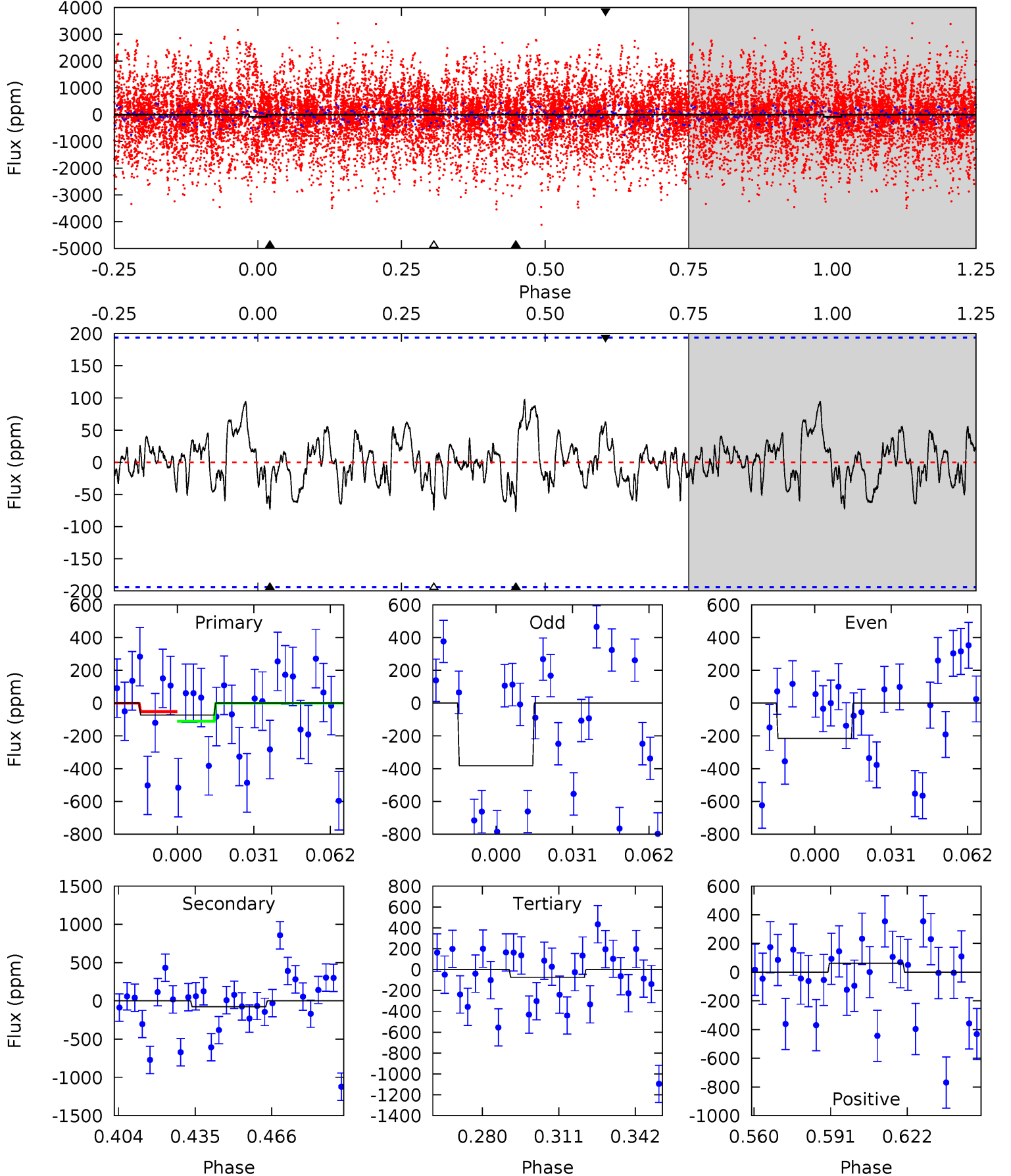
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.95	5.95	3.71	6.86	4.95	2.44	1.73	1.24	-1.91	2.24	-0.92	1.00	0.24	0.54	1.24



Alt Model-Shift Uniqueness Test

003749508-06, P = 33.583499 Days, E = 108.637322 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.81	1.91	1.85	1.56	4.80	2.16	0.71	-0.04	0.25	0.06	0.35	2.11	0.91	0.56	0.72



Stellar Parameters For KIC 003749508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6244^{+148}_{-204}	$2.897^{+0.512}_{-0.096}$	$0.070^{+0.200}_{-0.500}$	$10.105^{+1.910}_{-5.731}$	$2.936^{+0.284}_{-1.205}$	$0.004^{+0.029}_{-0.001}$
	+2%/-3%	+18%/-3%	+286%/-714%	+19%/-57%	+10%/-41%	+713%/-30%
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 003749508-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-88 ± 15	$7.55^{+5.85}_{-4.31}$	2187^{+162}_{-294}	6703^{+4902}_{-1496}	69^{+296}_{-48}
Alt.	-77 ± 40	$13.34^{+6.71}_{-5.57}$	2192^{+152}_{-286}	4902^{+1430}_{-853}	18^{+41}_{-11}

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

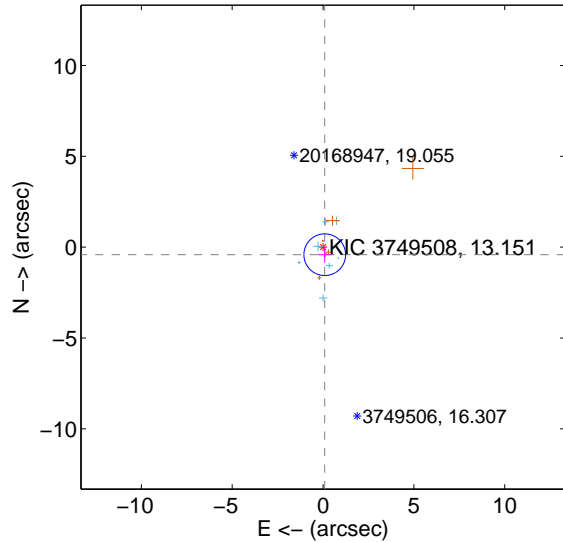
Supplemental centroid analysis for 003749508-06. Kepler magnitude: 13.15. Transit SNR 2.31

There are 8 quarters with good PRF difference image offsets

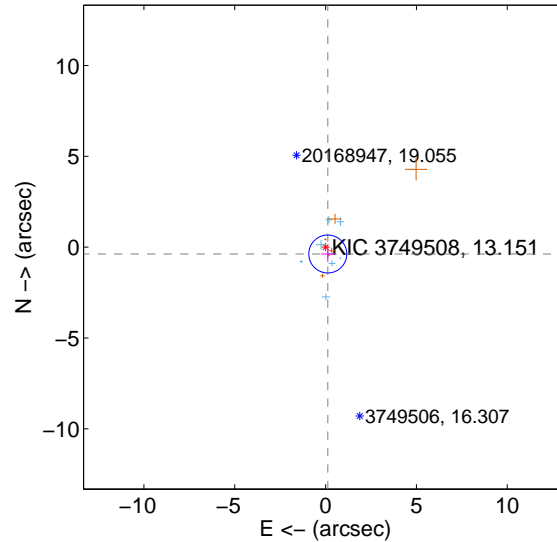
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.425 ± 0.382	1.11	-0.094 ± 0.372	-0.414 ± 0.449
PRF-fit source offset from KIC position	0.394 ± 0.348	1.13	-0.120 ± 0.364	-0.375 ± 0.435
photometric centroid source offset	3.91 ± 2.40	1.63	1.09 ± 1.82	3.76 ± 2.44

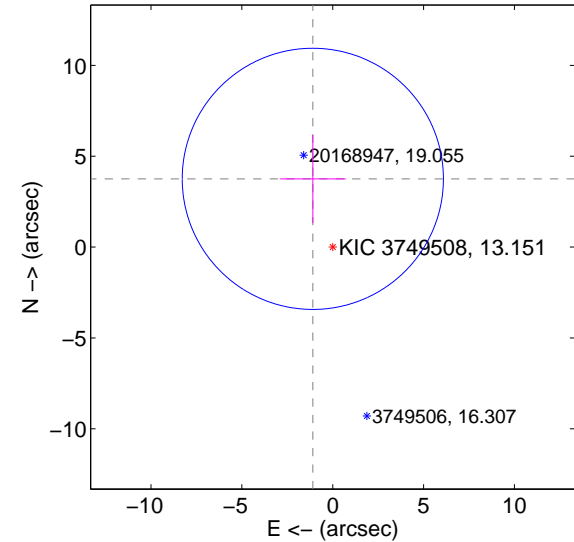
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

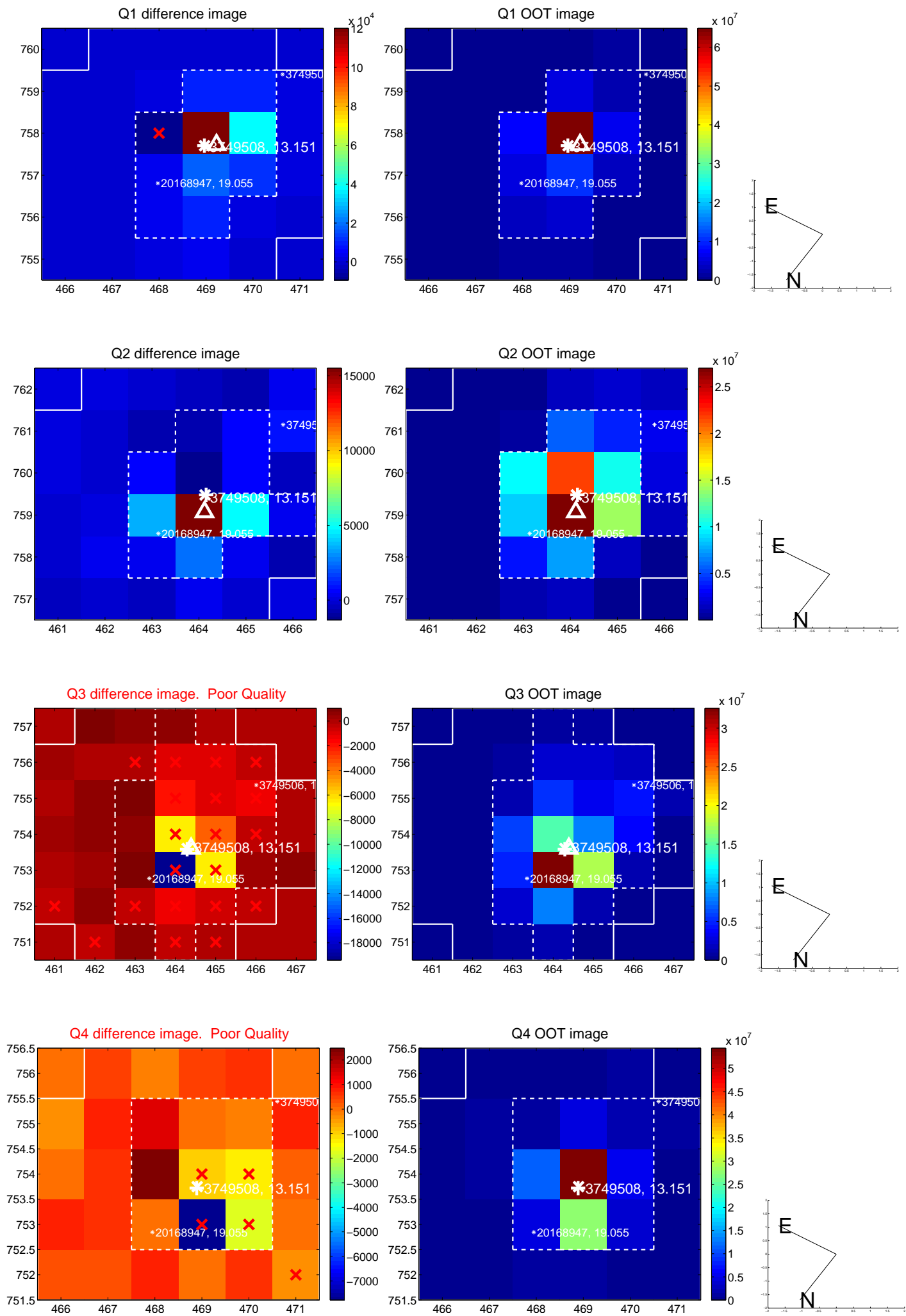


offset from photometric centroids

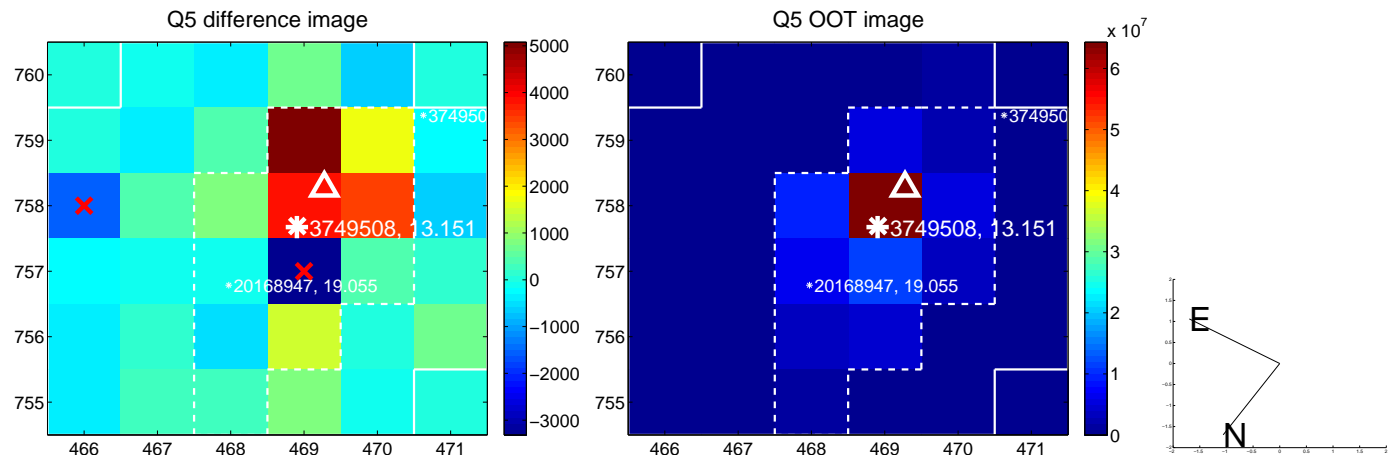


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

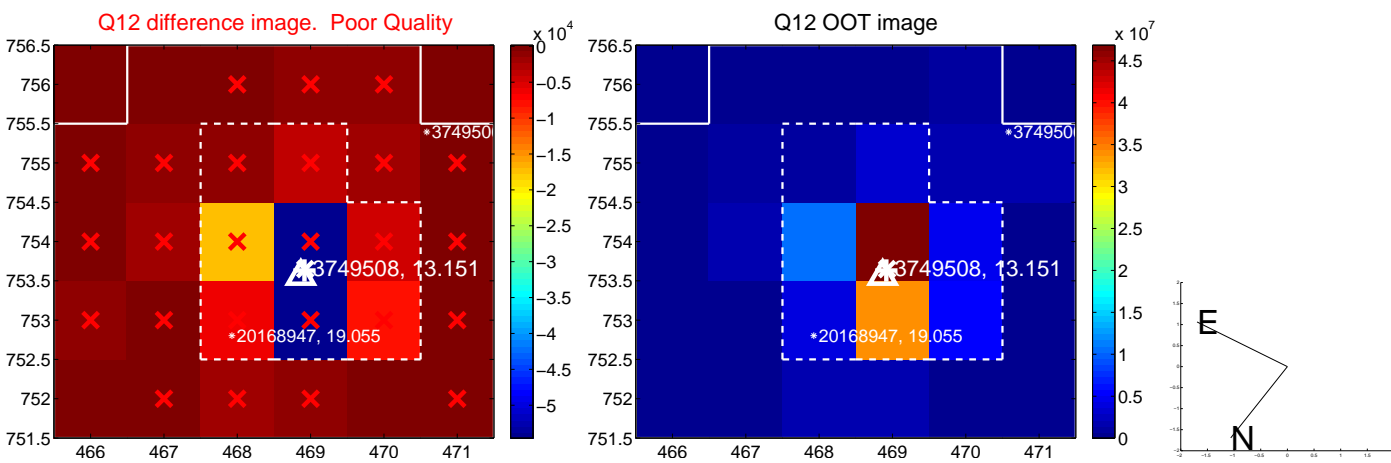
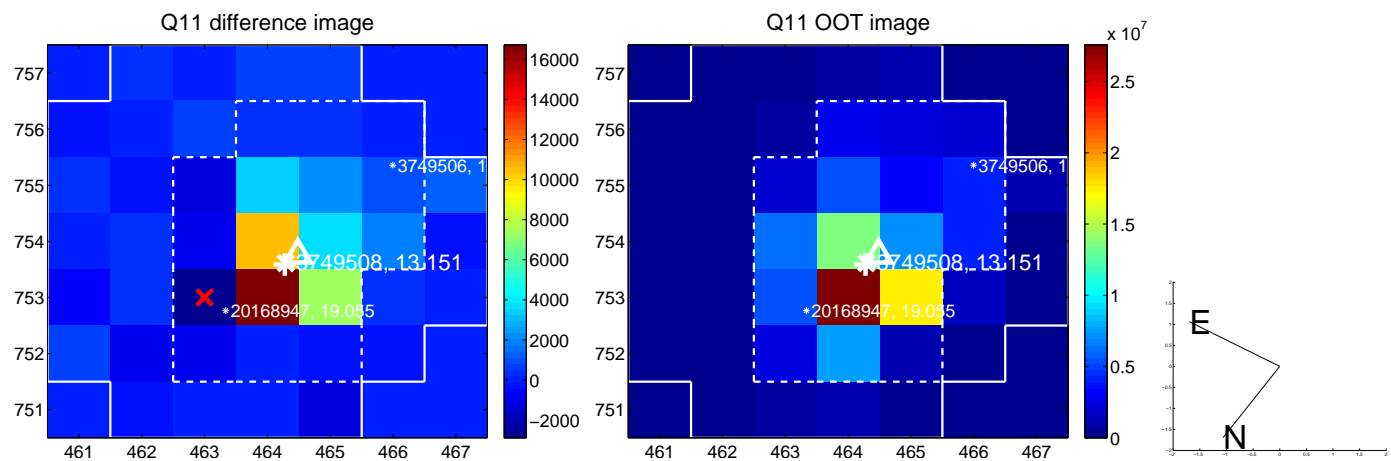
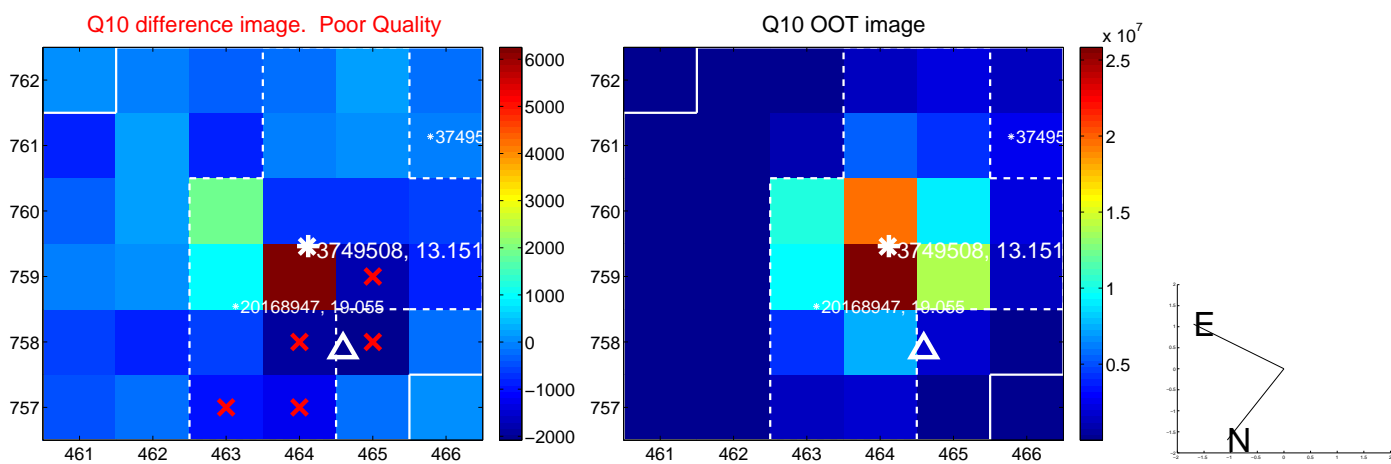
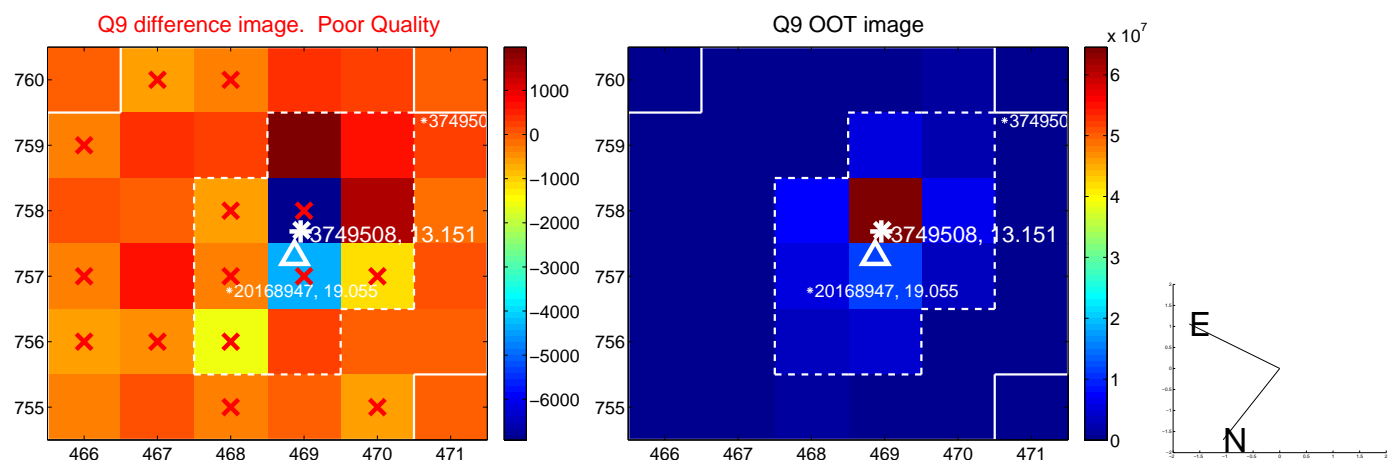
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



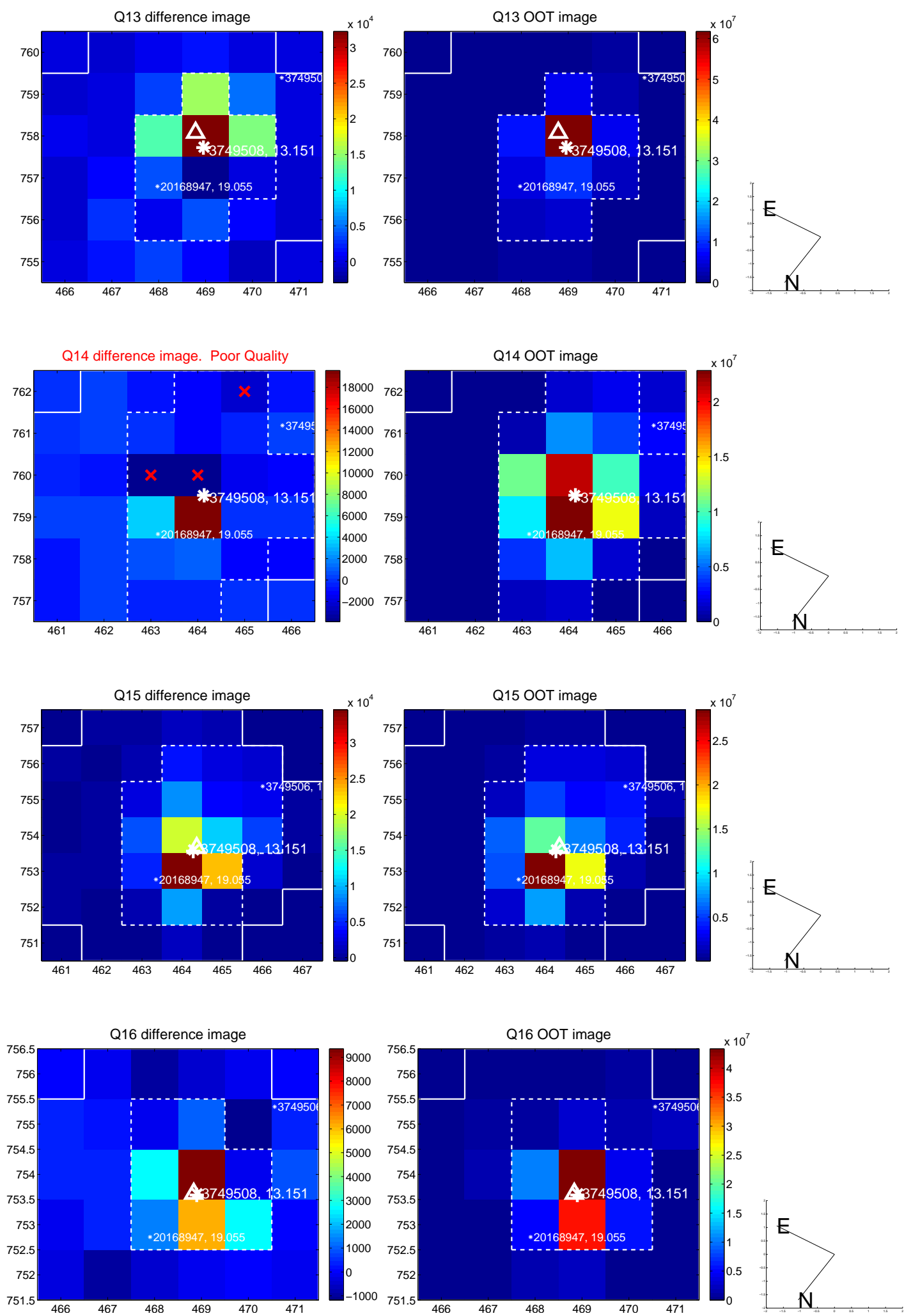
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



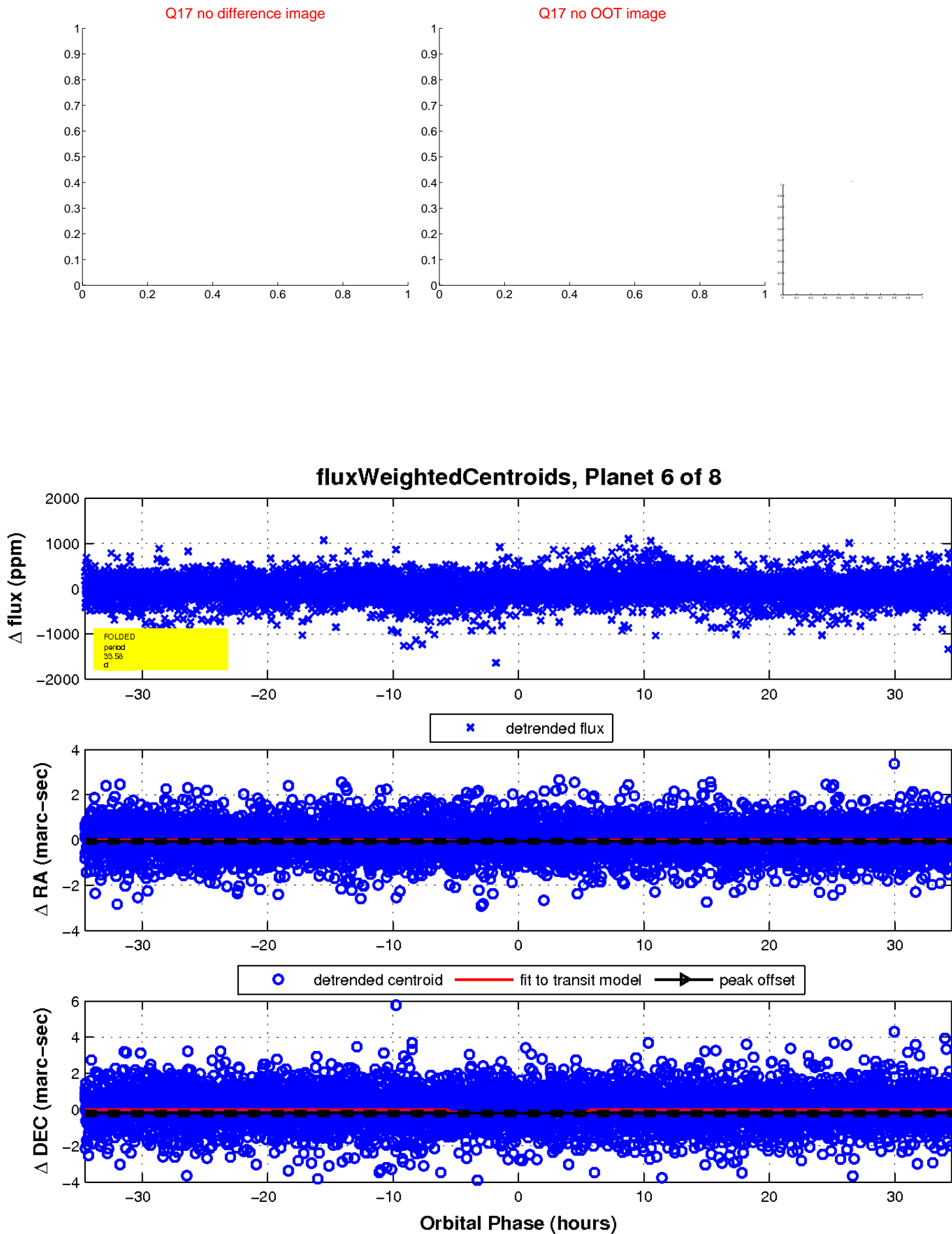
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

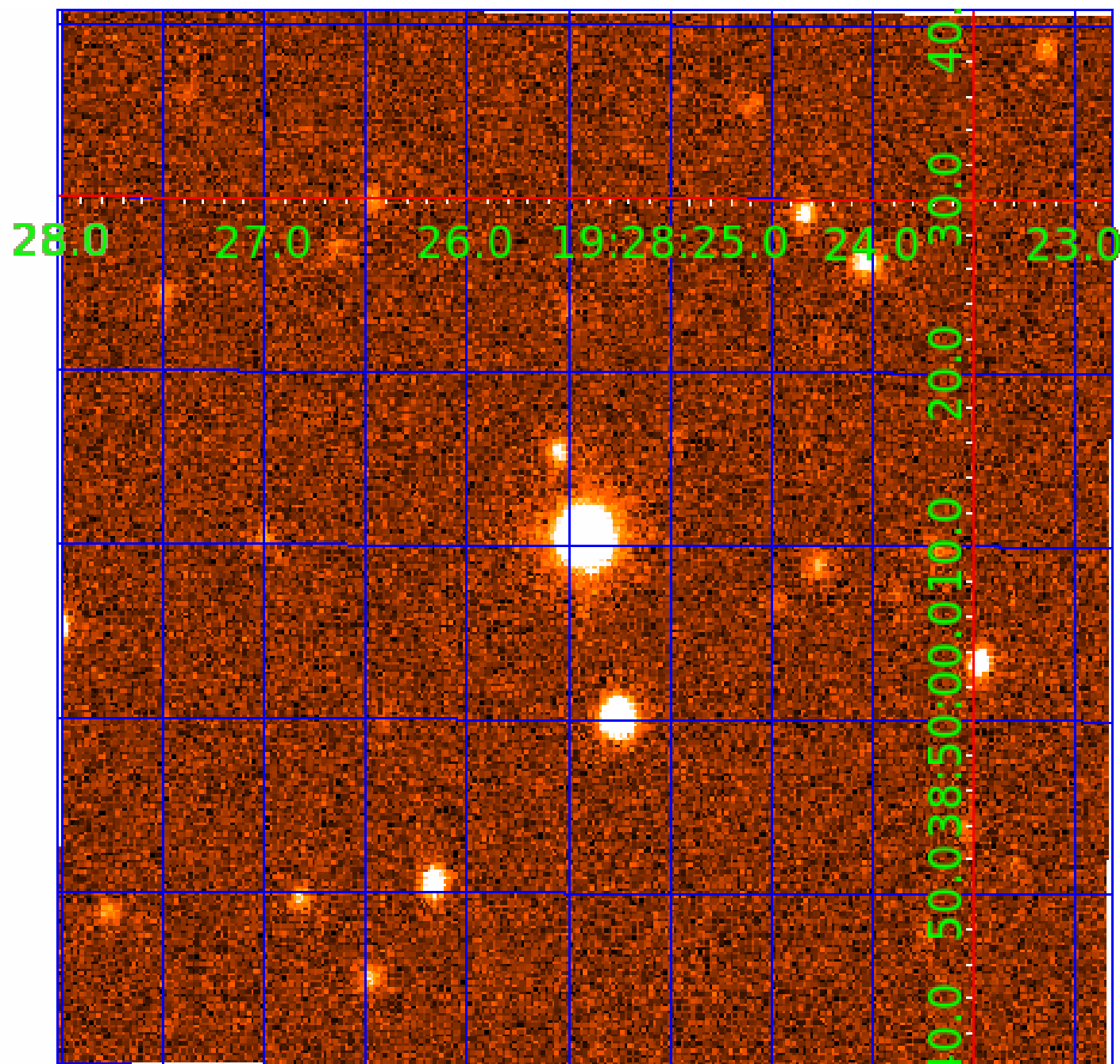


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003749508

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})
003749508-01	OBS	7544.02	1.065747	132.034968	176.6	0.910	32.2	35.9	10.11	6244	16.05	0.00
003749508-02	OBS	7544.01	2.403921	131.586727	41.7	13.450	10.0	7.5	10.11	6244	6.55	54938.48
003749508-03	OBS	No	70.444992	164.220847	184.1	1.045	14.2	3.1	10.11	6244	16.22	608.09
003749508-04	OBS	No	124.125001	214.471104	503.8	0.805	10.9	2.9	10.11	6244	26.95	285.73
003749508-05	OBS	No	124.139851	214.930752	420.0	12.892	11.0	9.5	10.11	6244	24.10	285.69
003749508-06	OBS	No	33.583321	142.235014	52.7	11.521	8.9	2.3	10.11	6244	8.21	1632.82
003749508-07	OBS	No	454.561847	534.062004	419.5	8.543	9.4	8.6	10.11	6244	22.16	50.62
003749508-08	OBS	No	77.697273	157.170514	94.8	6.051	8.0	2.5	10.11	6244	10.62	533.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749508-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_ALT
003749508-02	OBS	FP	0.00	1	0	0	0	LPP_DV
003749508-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—HALO_GHOST
003749508-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
003749508-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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 003749508-07

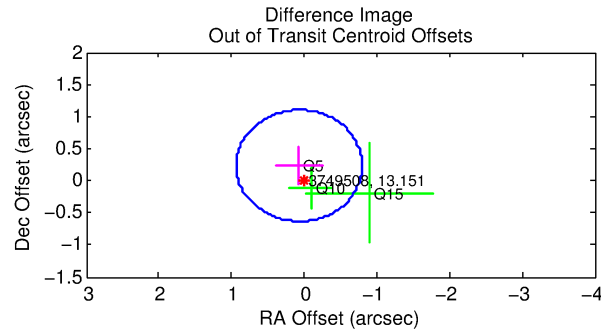
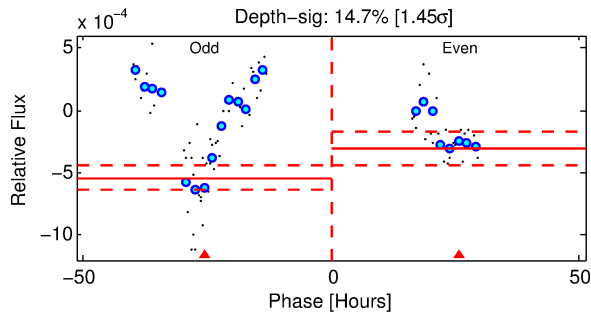
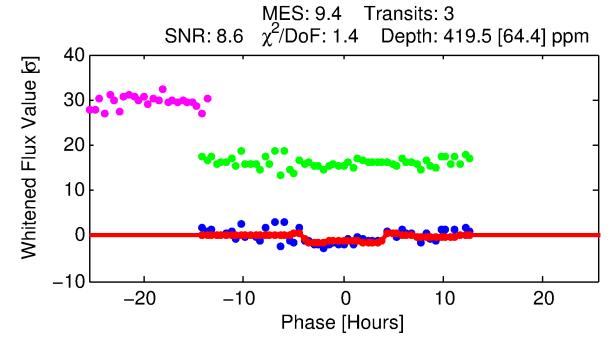
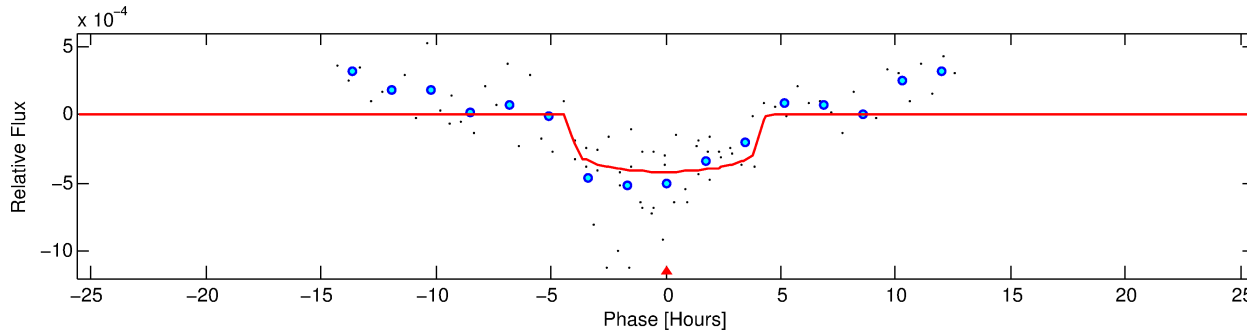
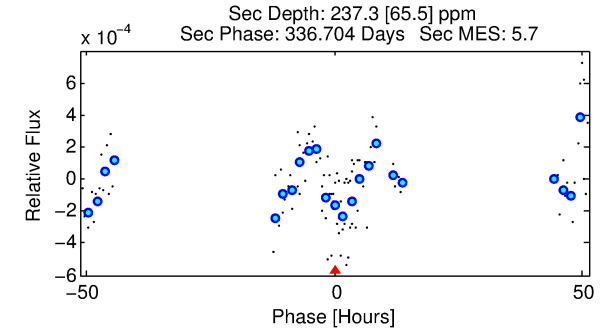
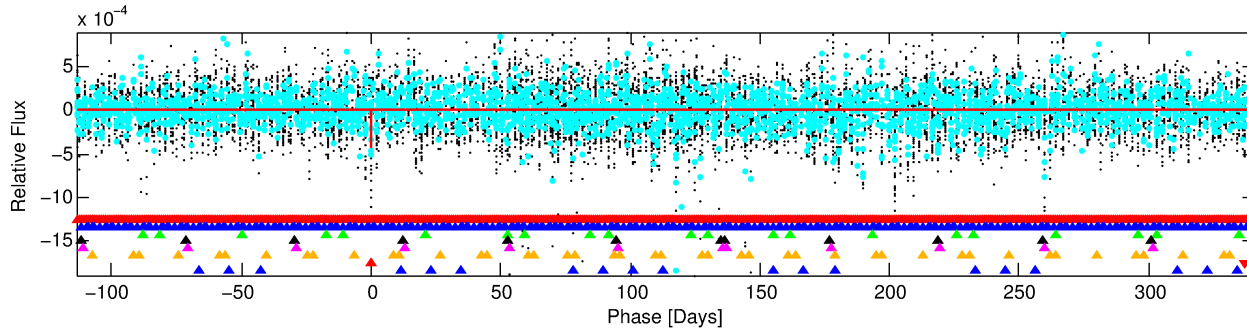
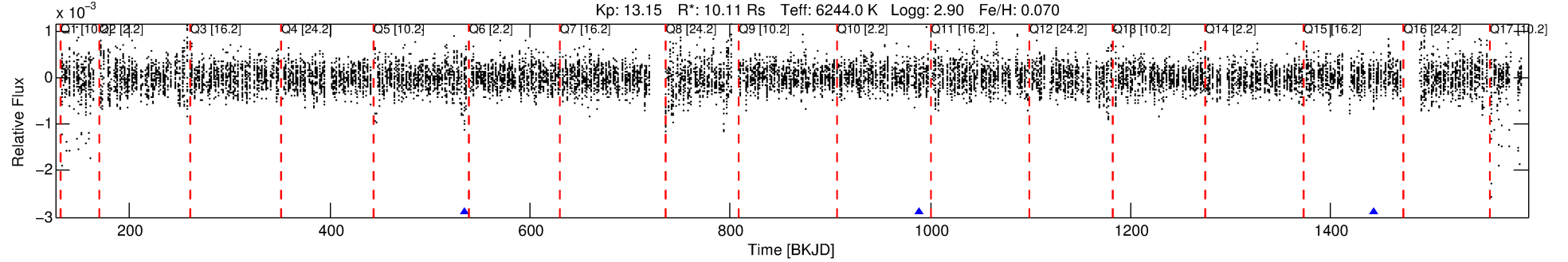
No Significant Match Found

DV One-Page Summary

KIC: 3749508 Candidate: 7 of 8 Period: 454.562 d

KOI: K07544 Corr: No Ephemeris Match

Kp: 13.15 R*: 10.11 Rs Teff: 6244.0 K Logg: 2.90 Fe/H: 0.070



DV Fit Results:

Period = 454.56185 [0.01743] d
Epoch = 534.0620 [0.0188] BKJD
Rp/R* = 0.0201 [0.0131]
a/R* = 300.82 [1021.32]
b = 0.70 [2.43]
Seff = 50.62 [44.64]
Teq = 680 [150] K
Rp = 22.16 [19.16] Re
a = 1.6575 [0.9039] AU
Ag = 730.55 [1164.59] [0.63σ]
Teffp = 5467 [1833] K [2.60σ]

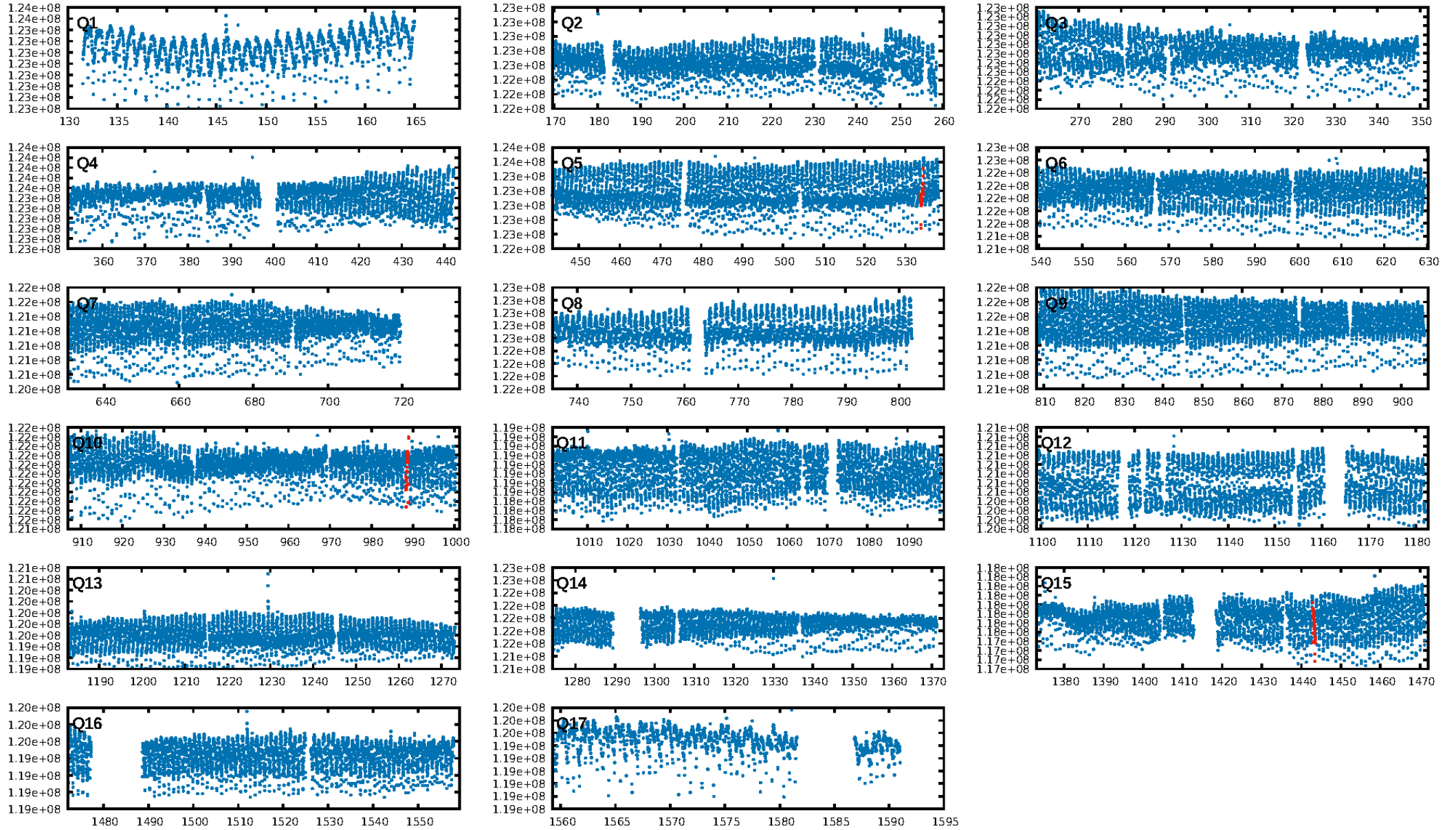
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [512.78σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 11.4%
ModelChiSquareGof-sig: 90.2%
Bootstrap-pfa: 2.82e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.683
Centroid-sig: 55.2%
Centroid-so: 0.632 arcsec [0.49σ]
OotOffset-rm: 0.245 arcsec [0.85σ]
KicOffset-rm: 0.258 arcsec [0.88σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/3]

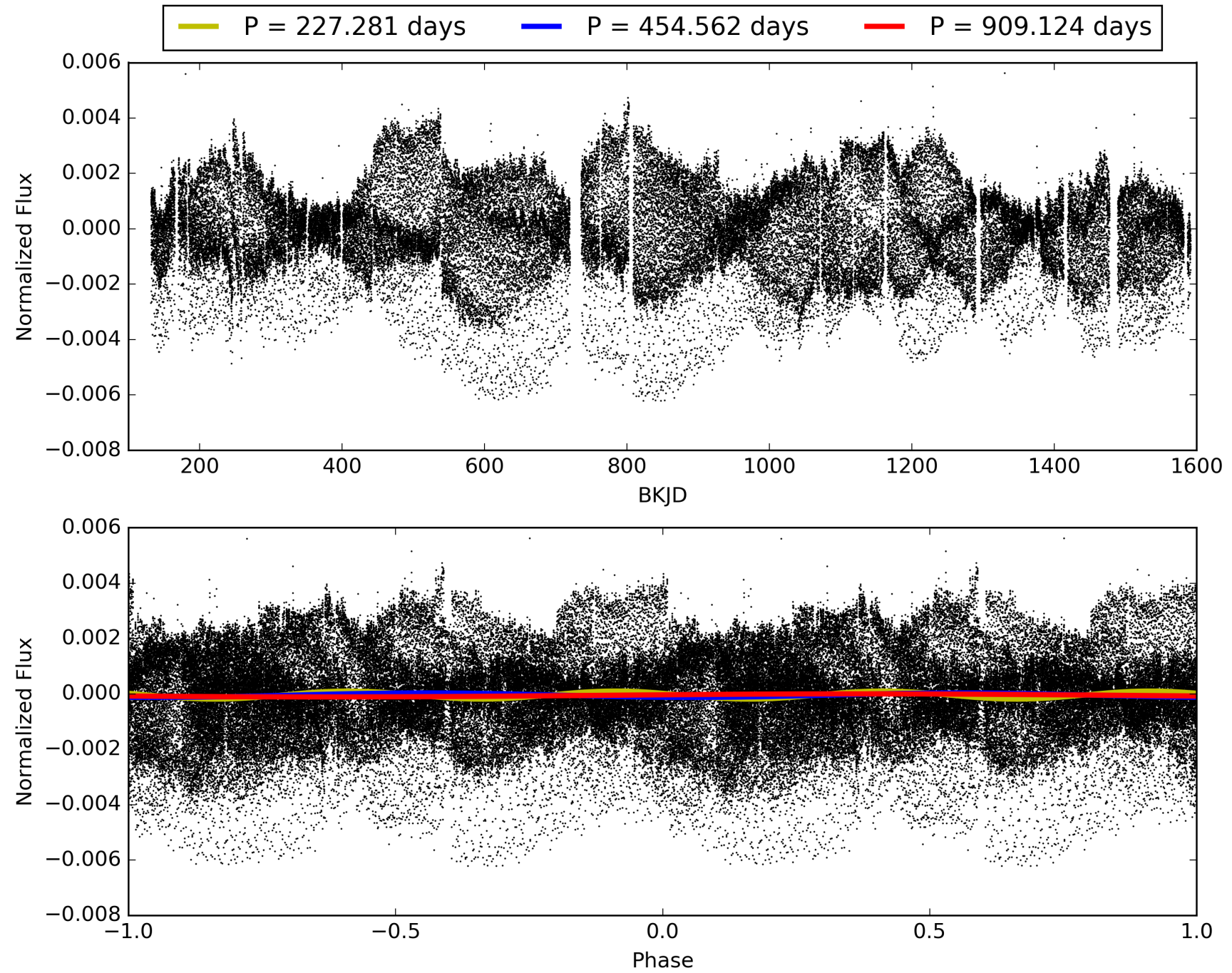
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:56:09 Z

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

TCE 003749508-07, PDC Light Curves

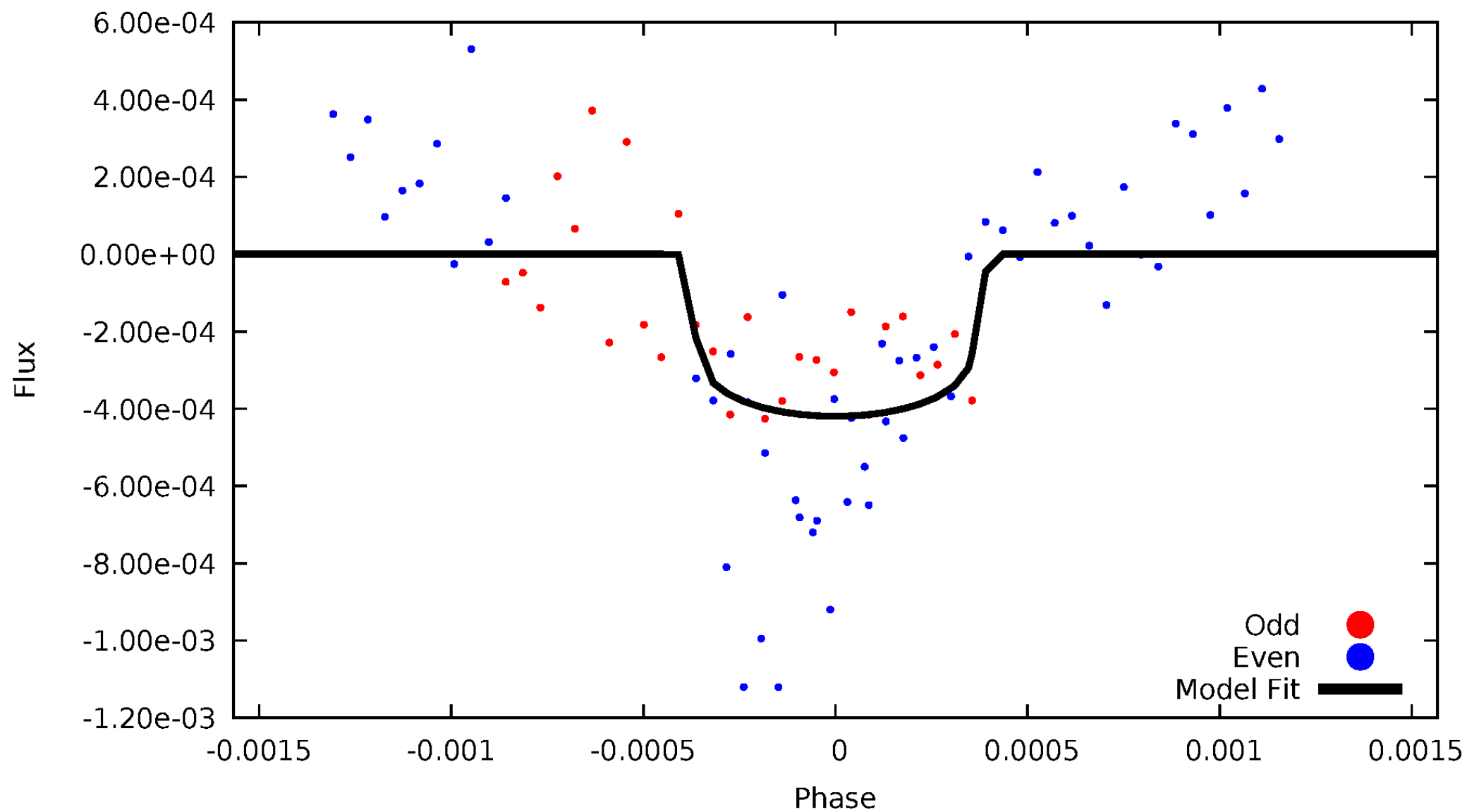


TCE 003749508-07



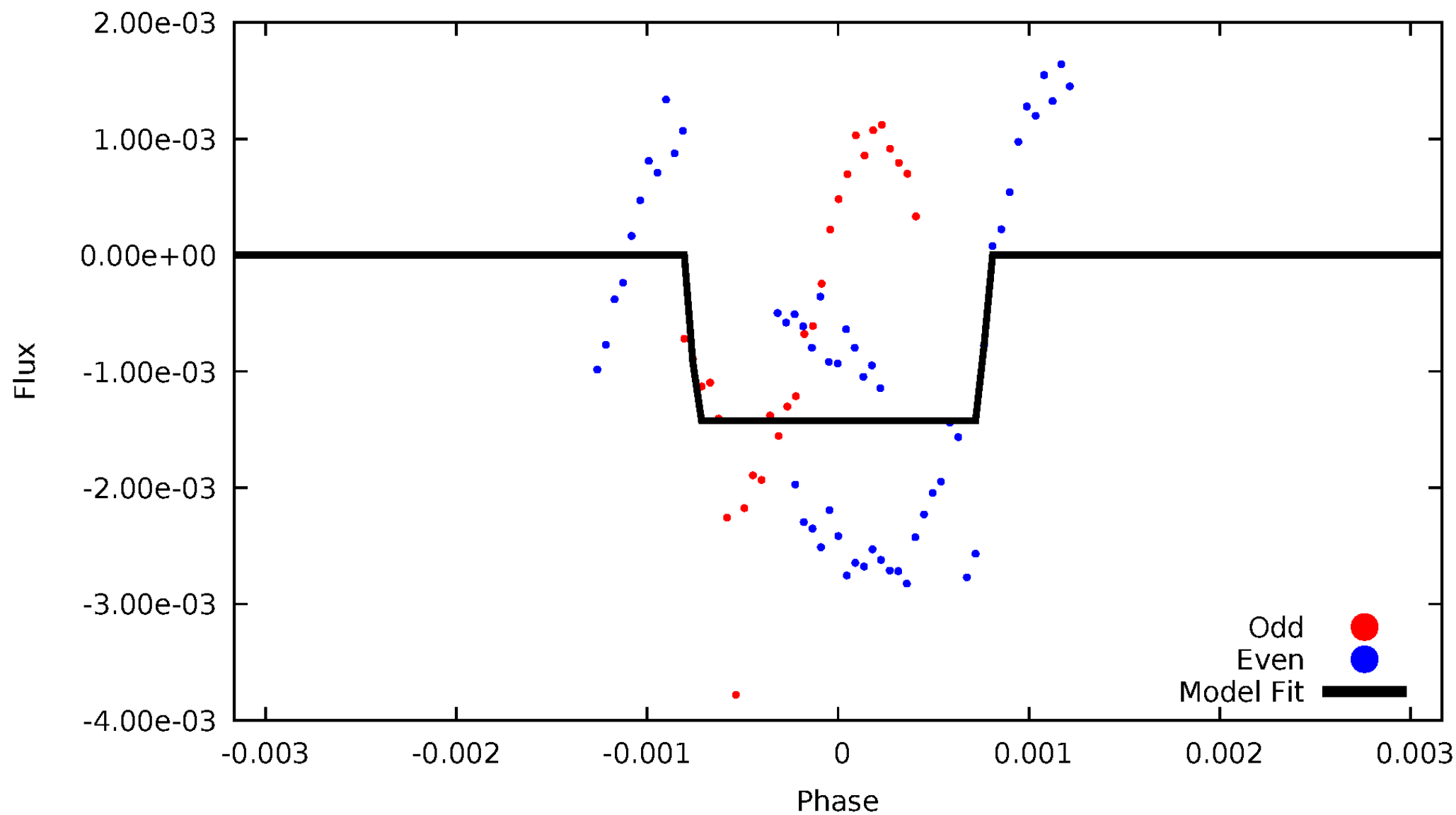
DV Odd/Even

TCE 003749508-07



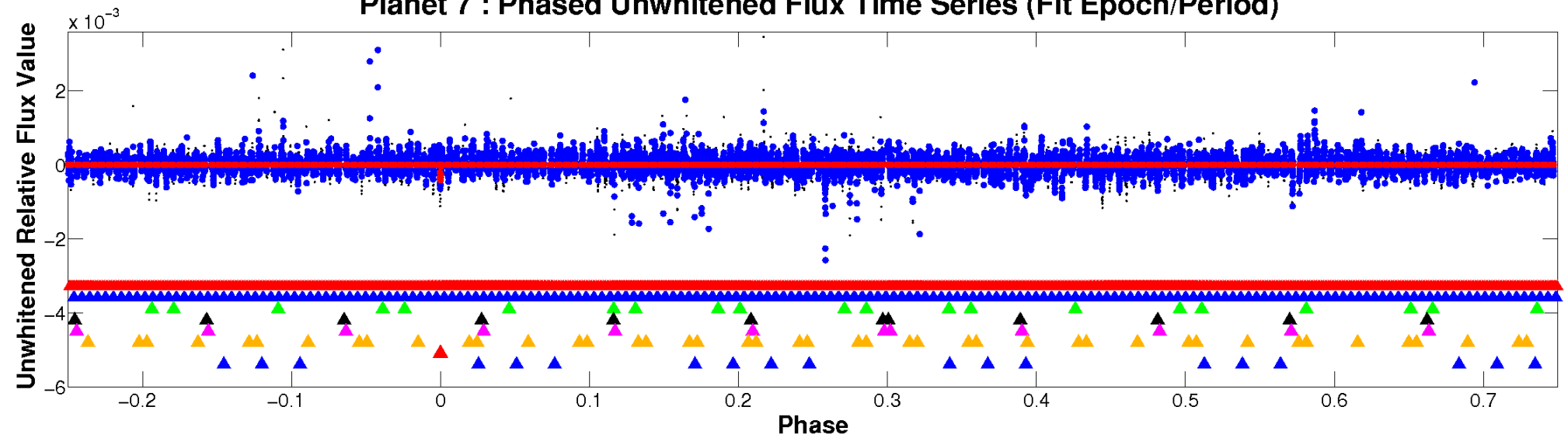
ALT Odd/Even

TCE 003749508-07

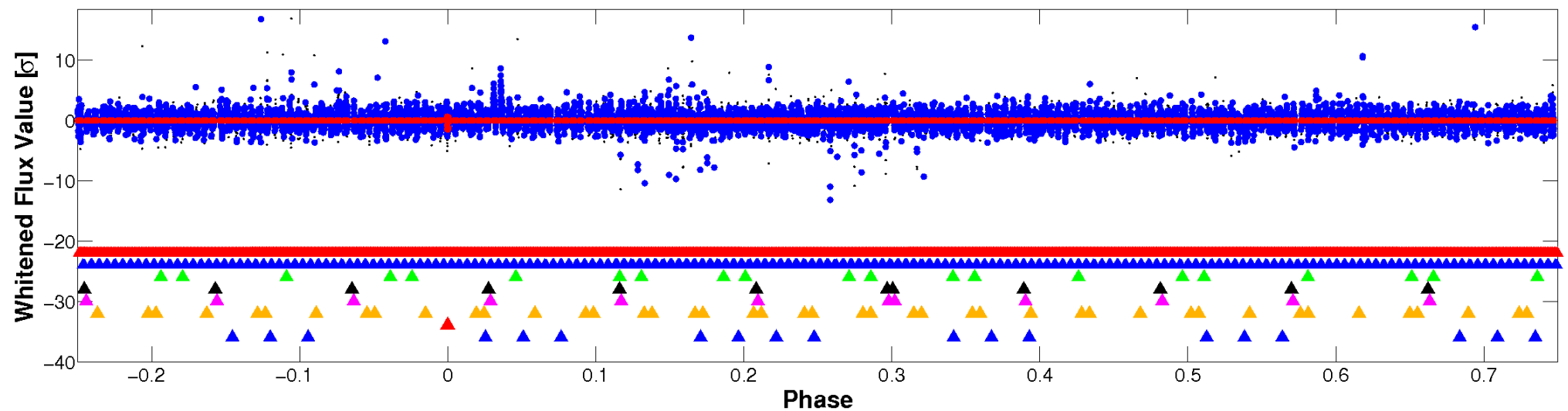


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

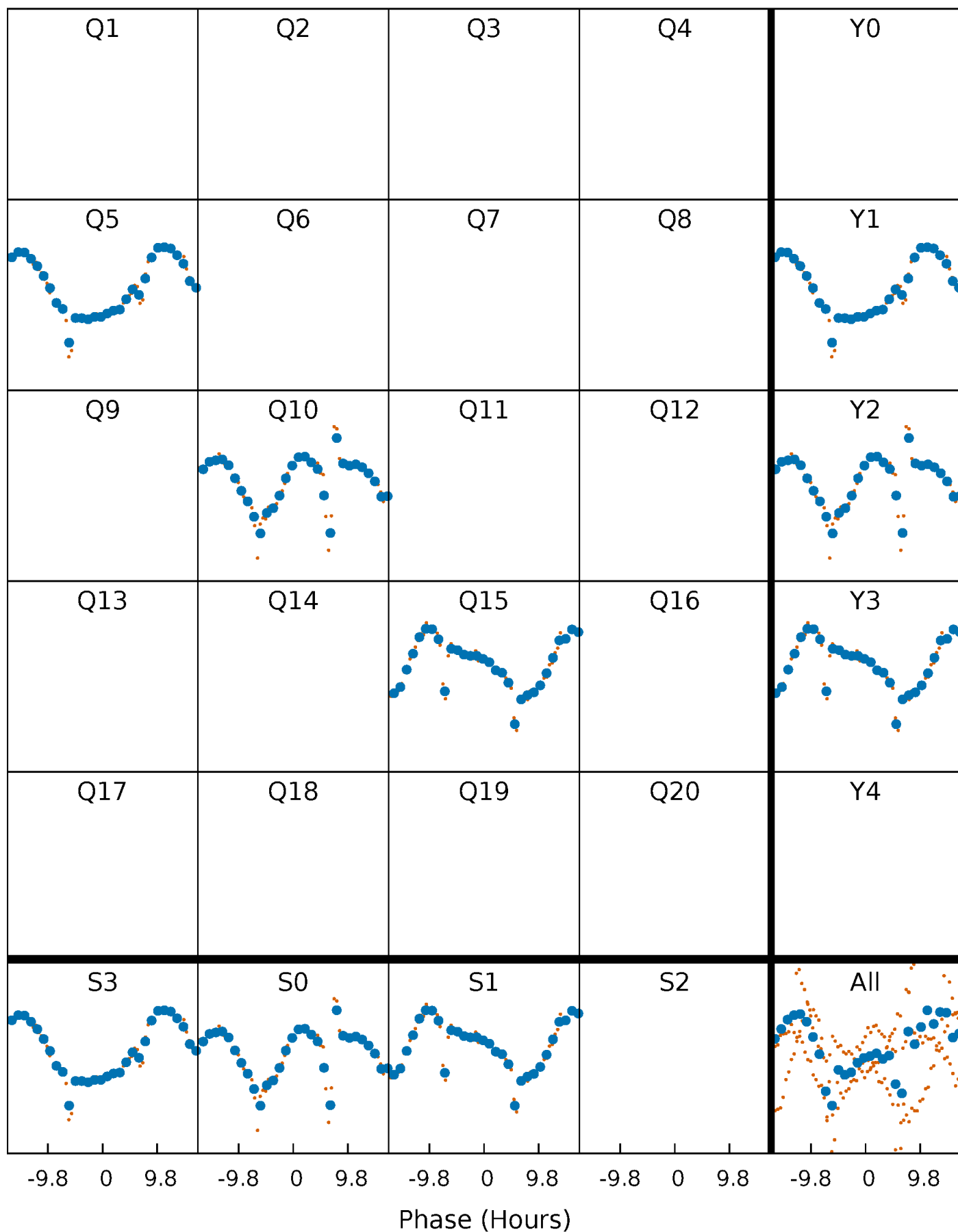


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



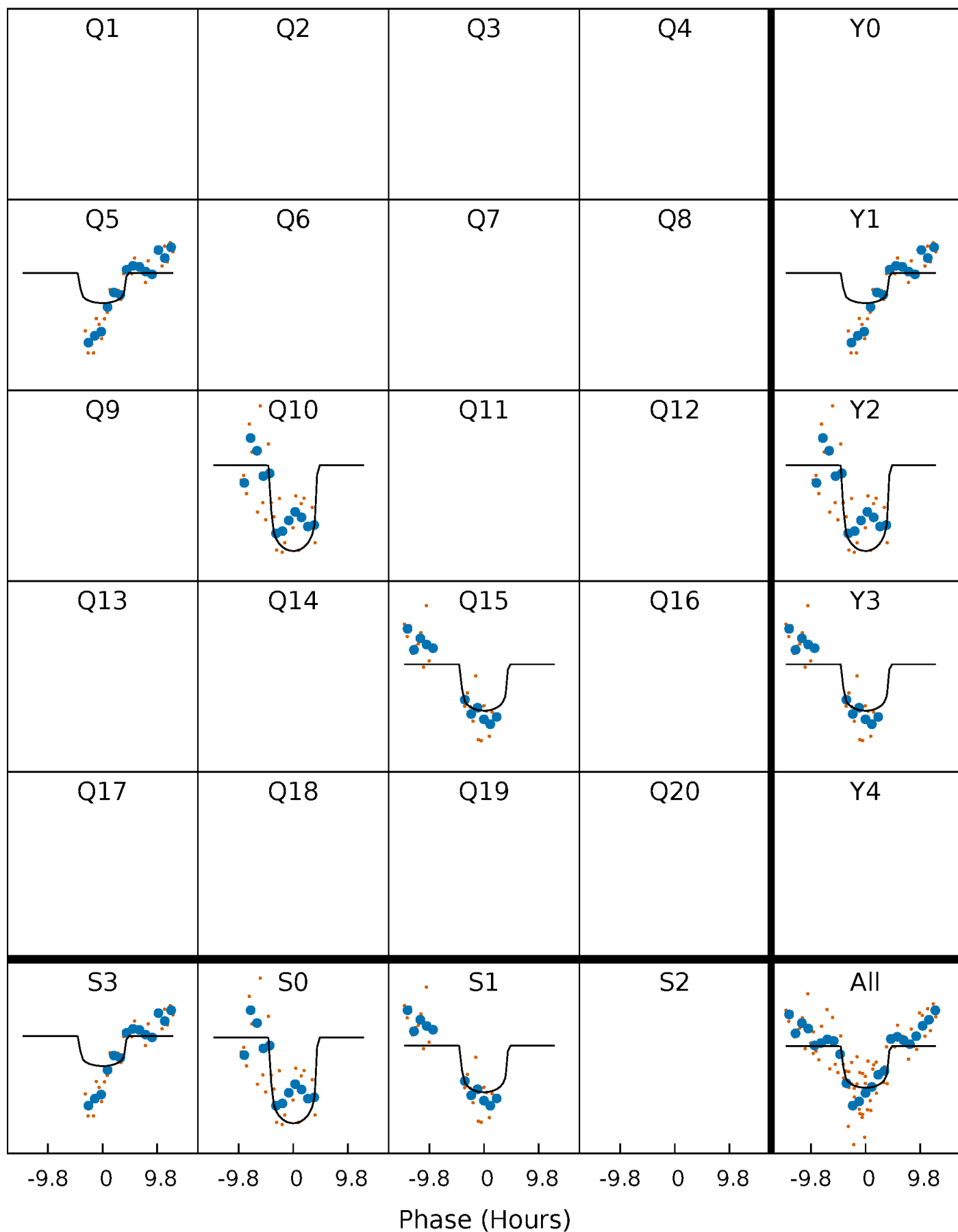
PDC Quarter-Phased Transit Curves

TCE 003749508-07 $P=454.561847$ Days $T_0=534.062004$ (BKJD)



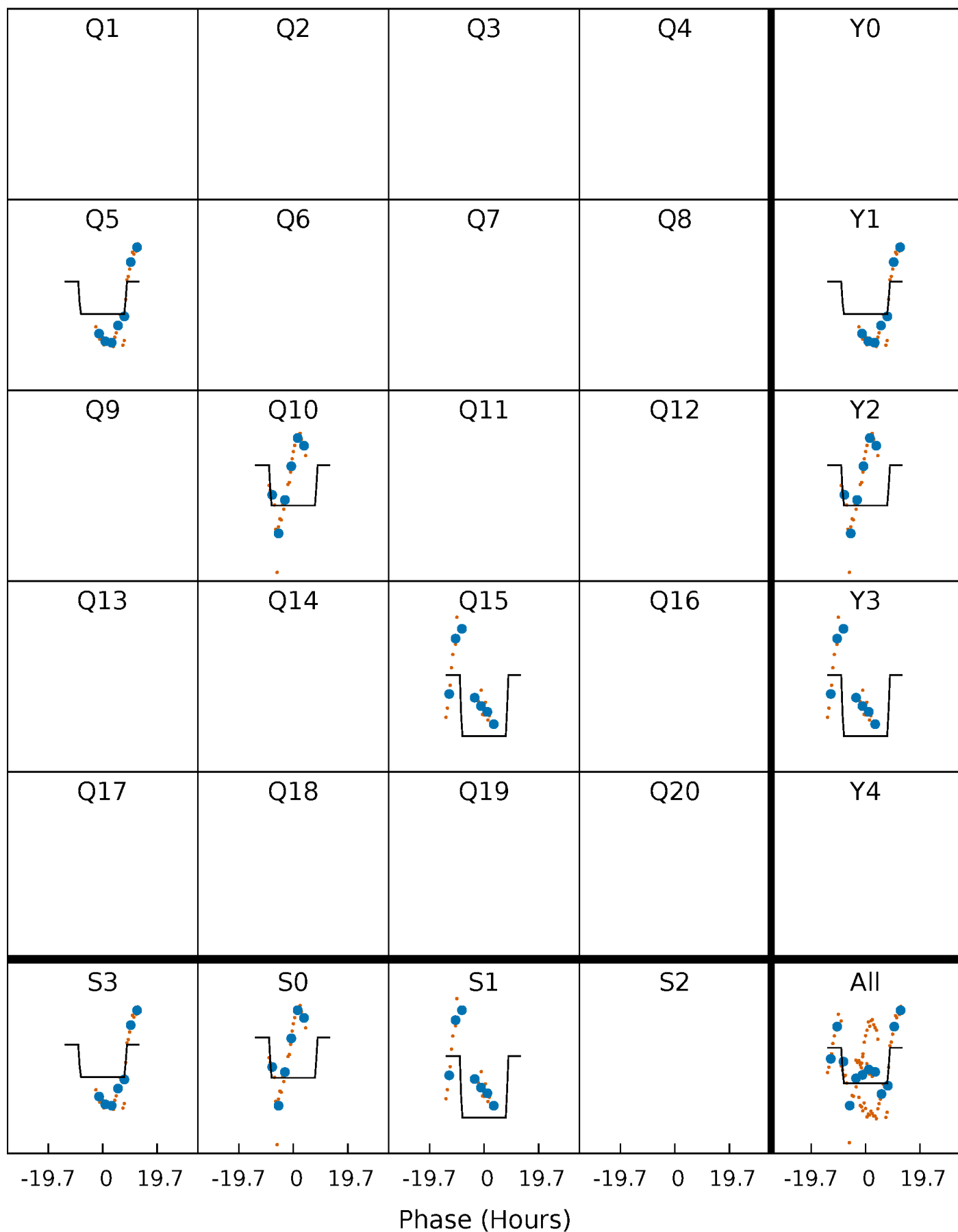
DV Quarter-Phased Transit Curves

TCE 003749508-07 P=454.561847 Days $T_0=534.062004$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

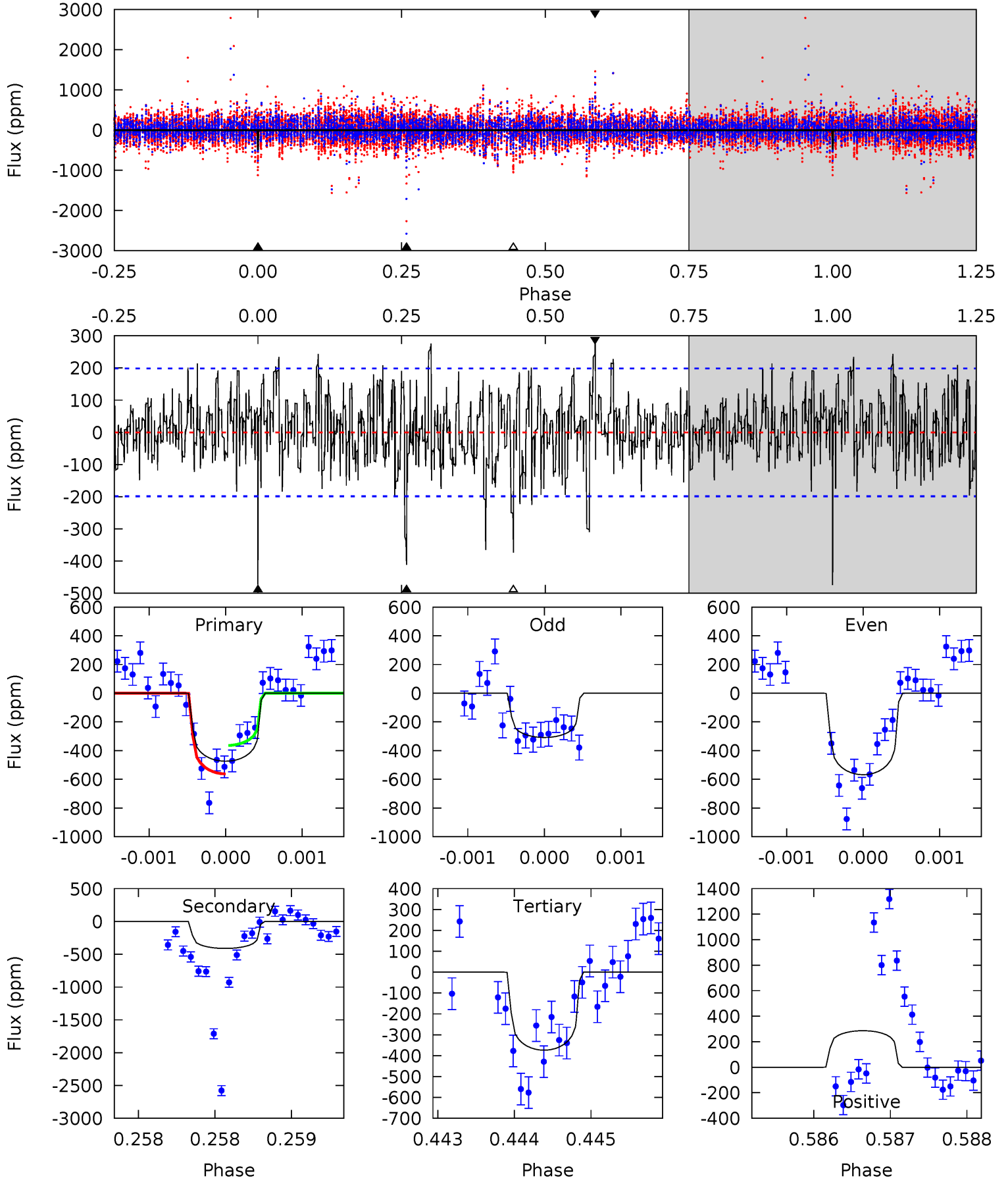
TCE 003749508-07 $P=454.564976$ Days $T_0=534.034983$ (BKJD)



DV Model-Shift Uniqueness Test

003749508-07, $P = 454.561847$ Days, $E = 79.500157$ Days

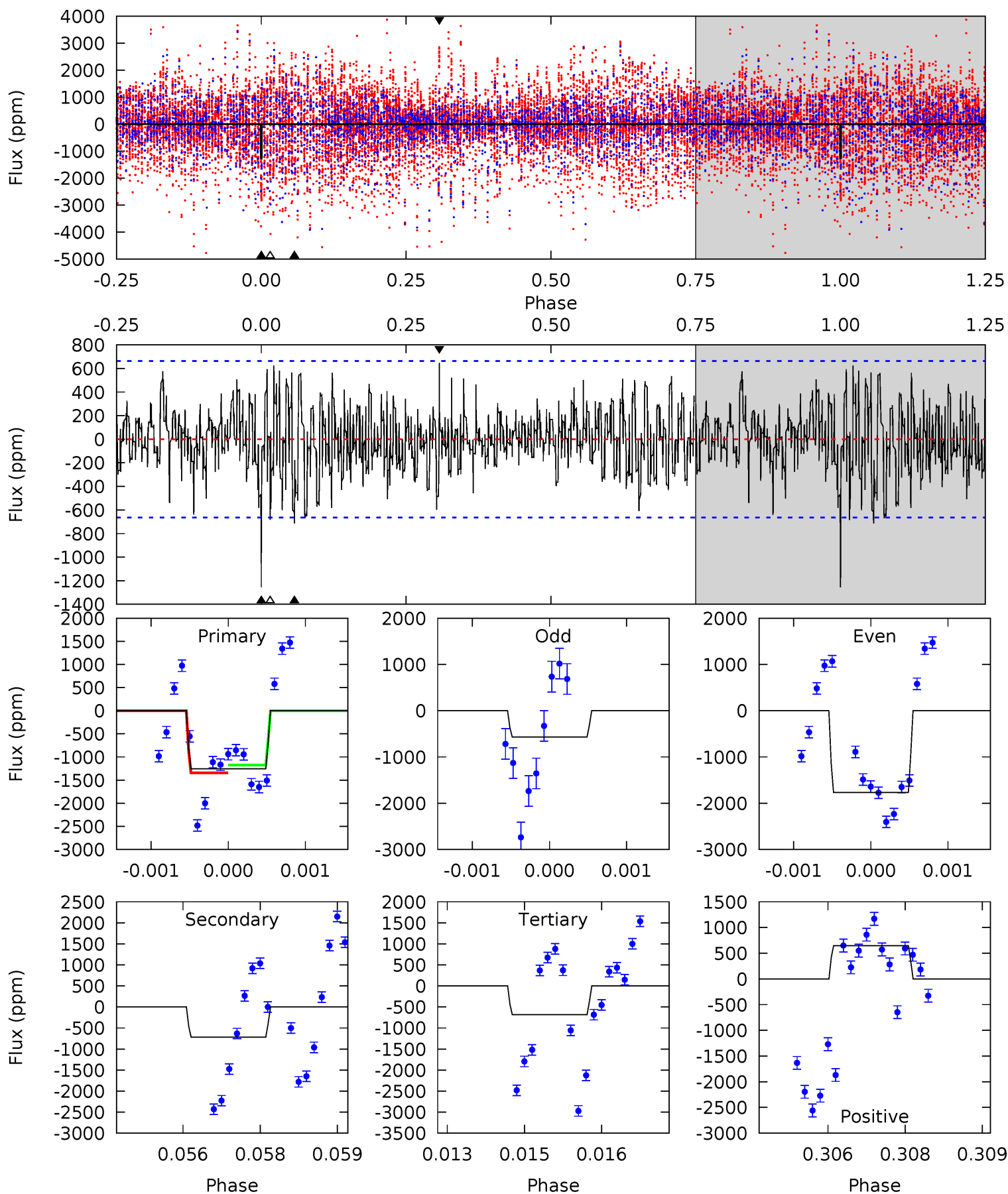
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	11.4	10.3	7.90	5.48	3.34	2.32	2.76	5.17	1.04	3.45	3.36	1.00	0.38	2.71



Alt Model-Shift Uniqueness Test

003749508-07, P = 454.564976 Days, E = 79.470007 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	5.79	5.55	5.24	5.38	3.18	1.61	4.62	4.93	0.25	0.55	4.66	1.63	0.34	0.70



Stellar Parameters For KIC 003749508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6244^{+148}_{-204}	$2.897^{+0.512}_{-0.096}$	$0.070^{+0.200}_{-0.500}$	$10.105^{+1.910}_{-5.731}$	$2.936^{+0.284}_{-1.205}$	$0.004^{+0.029}_{-0.001}$
	+2%/-3%	+18%/-3%	+286%/-714%	+19%/-57%	+10%/-41%	+713%/-30%
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 003749508-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-411 ± 36	$19.61^{+14.82}_{-11.04}$	919^{+66}_{-126}	6148^{+4014}_{-1186}	1523^{+6578}_{-988}
Alt.	-715 ± 123	$35.87^{+17.94}_{-14.32}$	917^{+66}_{-133}	5249^{+1257}_{-674}	804^{+1268}_{-443}

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 $A_{obs} \gg 1.0$

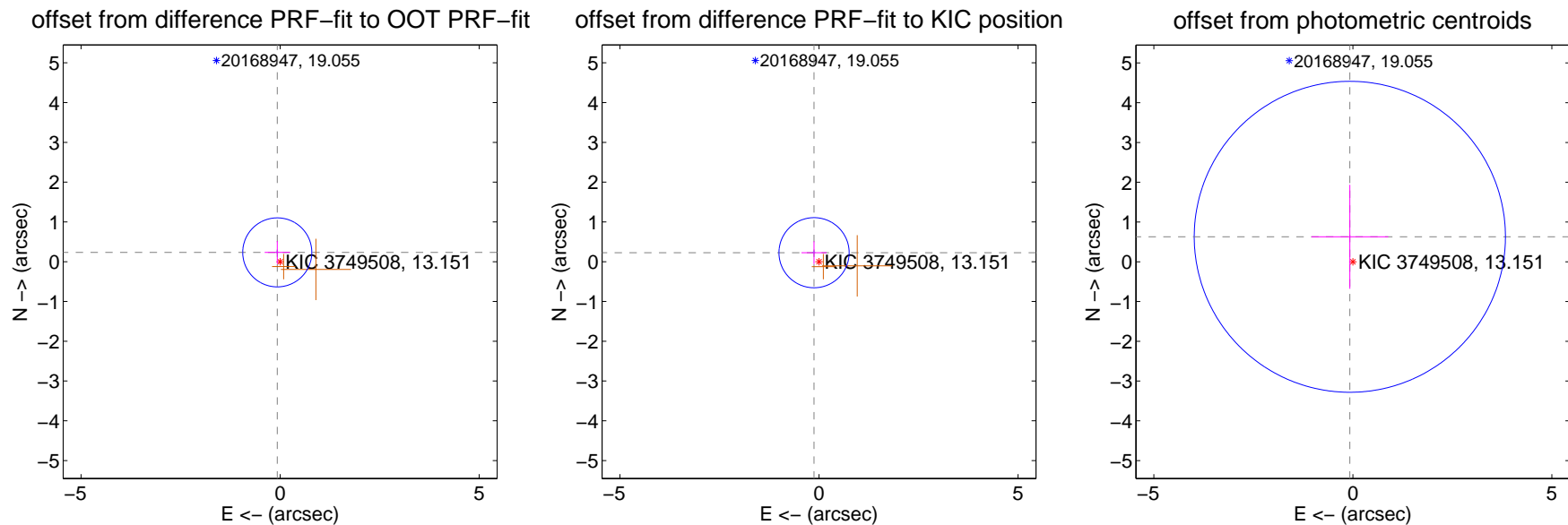
DV Centroid Data

Supplemental centroid analysis for 003749508-07. Kepler magnitude: 13.15. Transit SNR 8.59

There are 1 quarters with good PRF difference image offsets

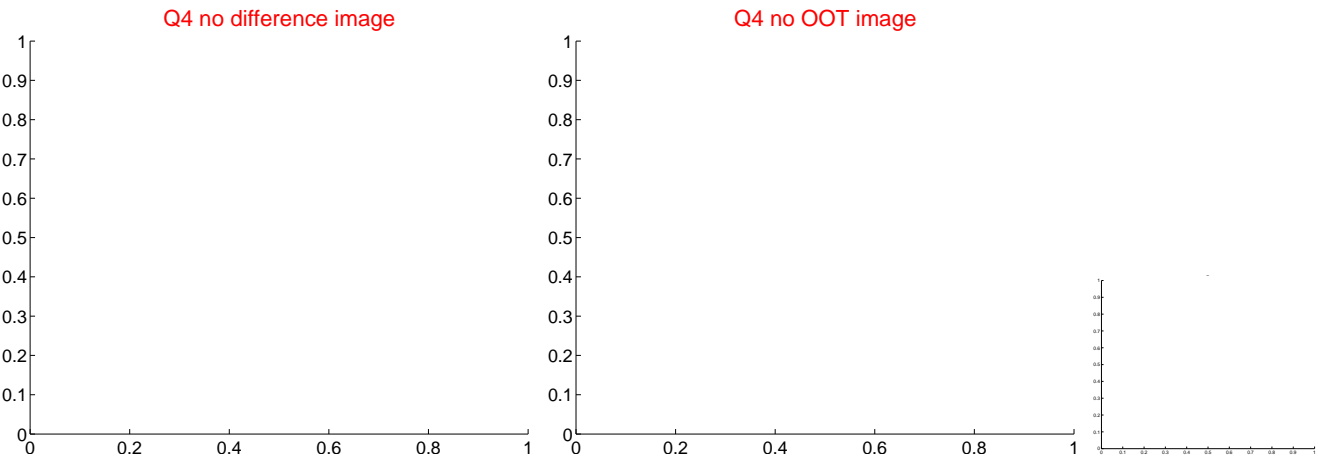
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.245 ± 0.289	0.85	0.071 ± 0.317	0.234 ± 0.287
PRF-fit source offset from KIC position	0.258 ± 0.294	0.88	0.124 ± 0.317	0.226 ± 0.287
photometric centroid source offset	0.63 ± 1.30	0.49	0.08 ± 0.96	0.63 ± 1.31

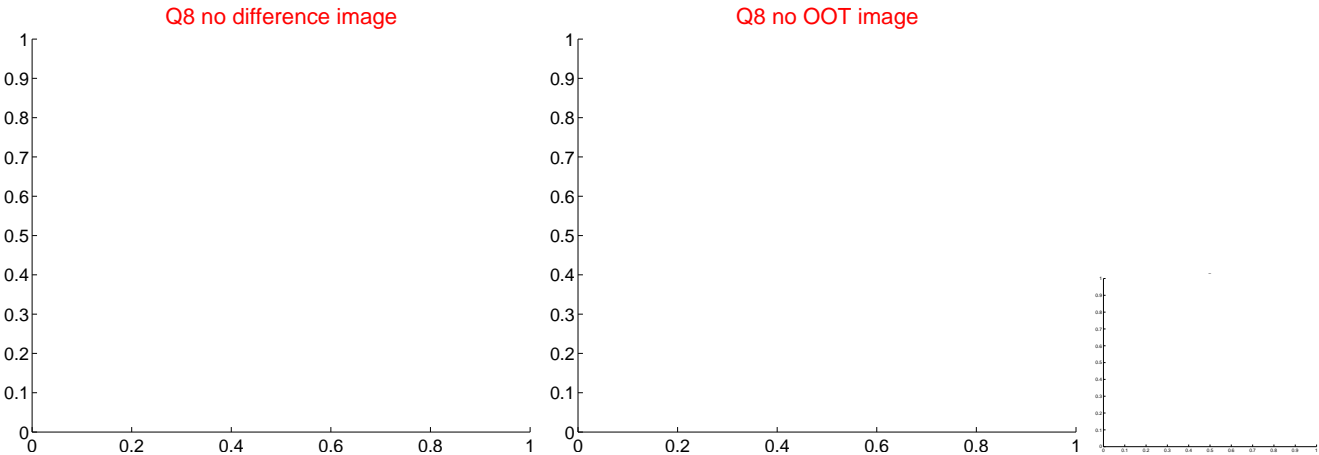
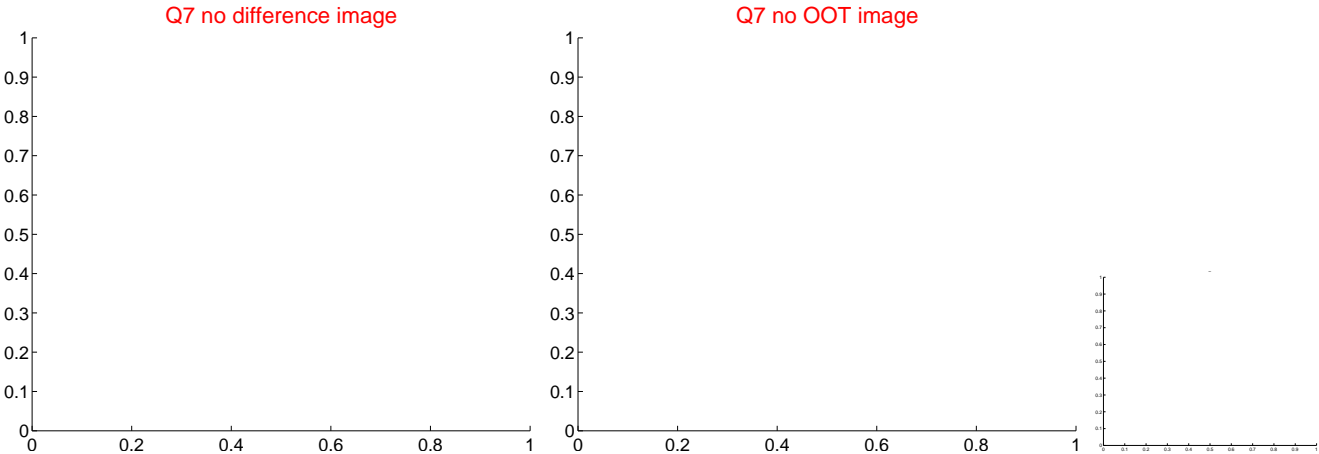
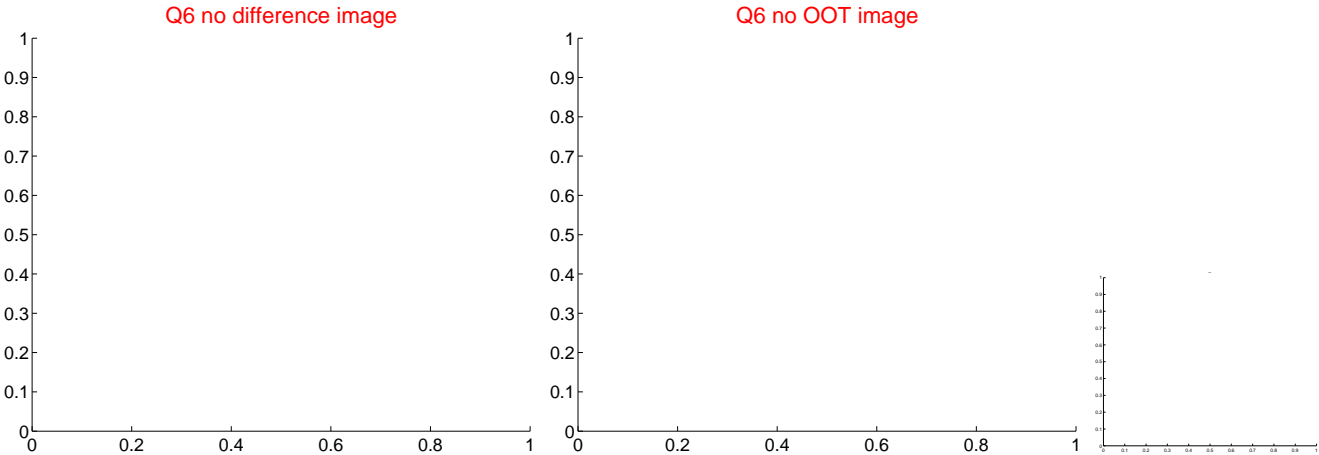
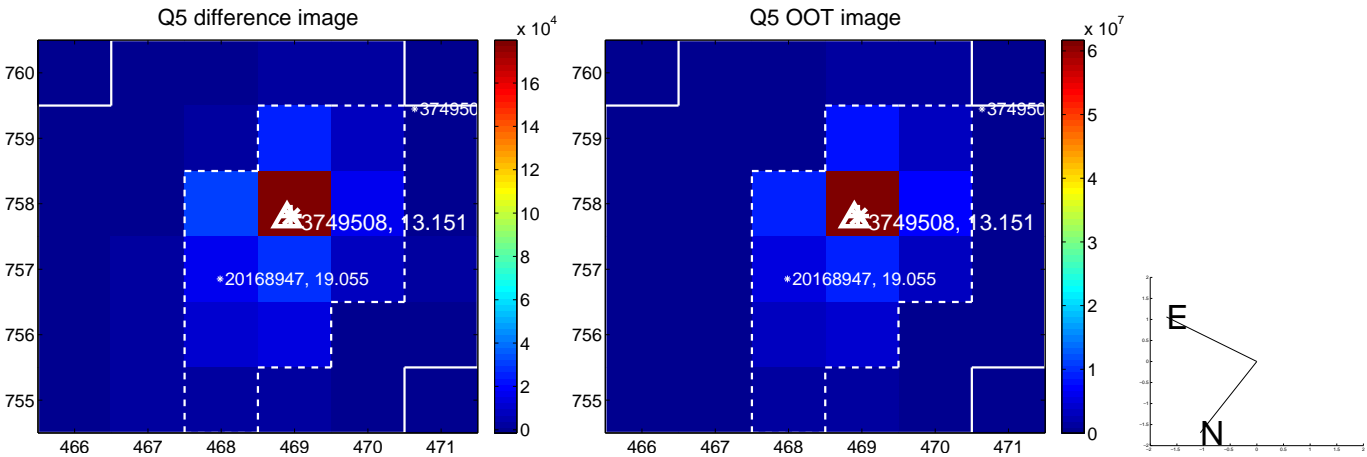


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

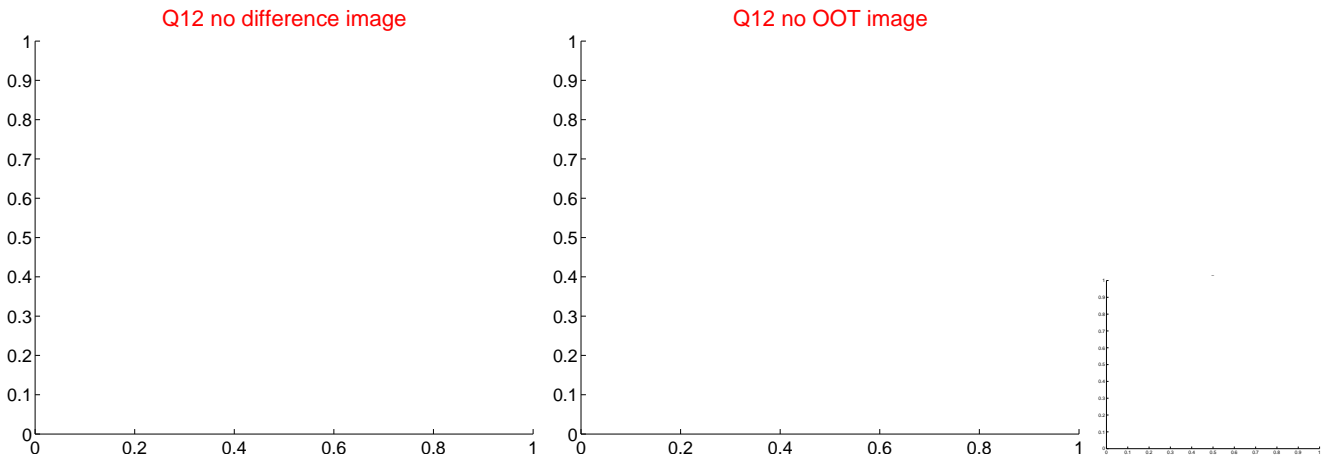
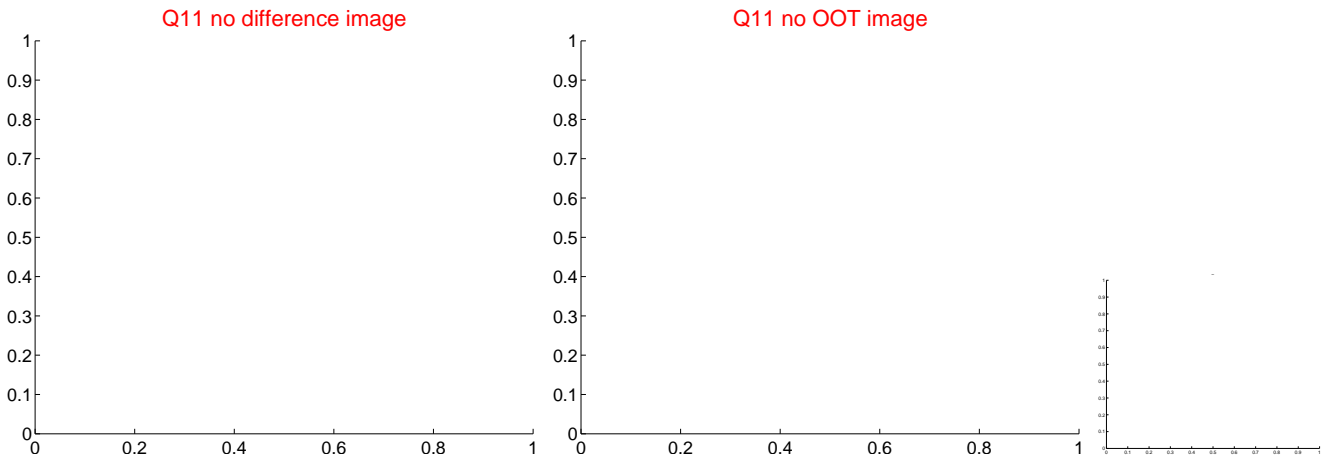
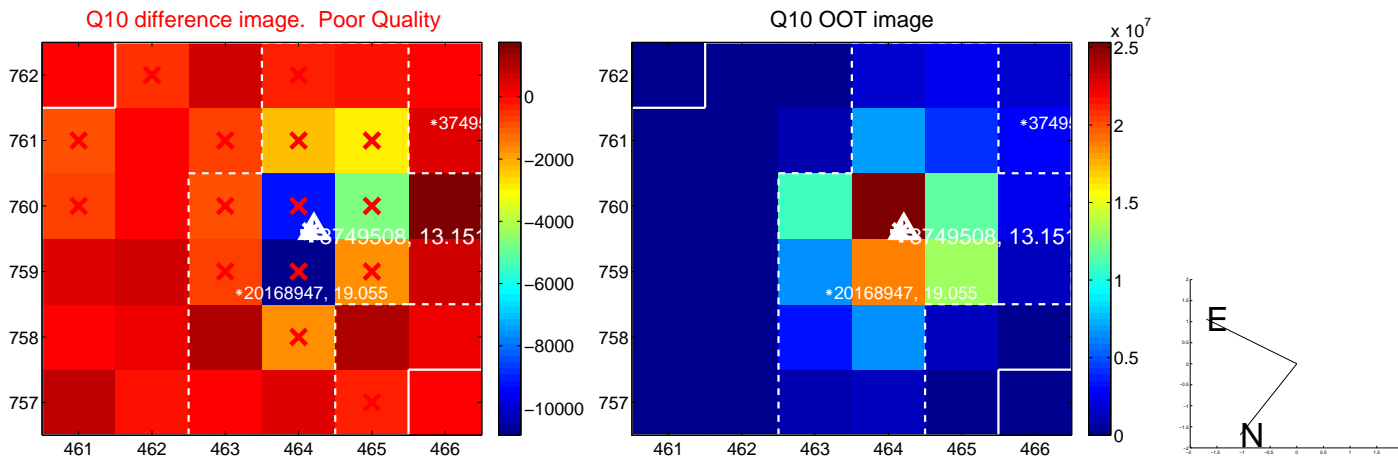
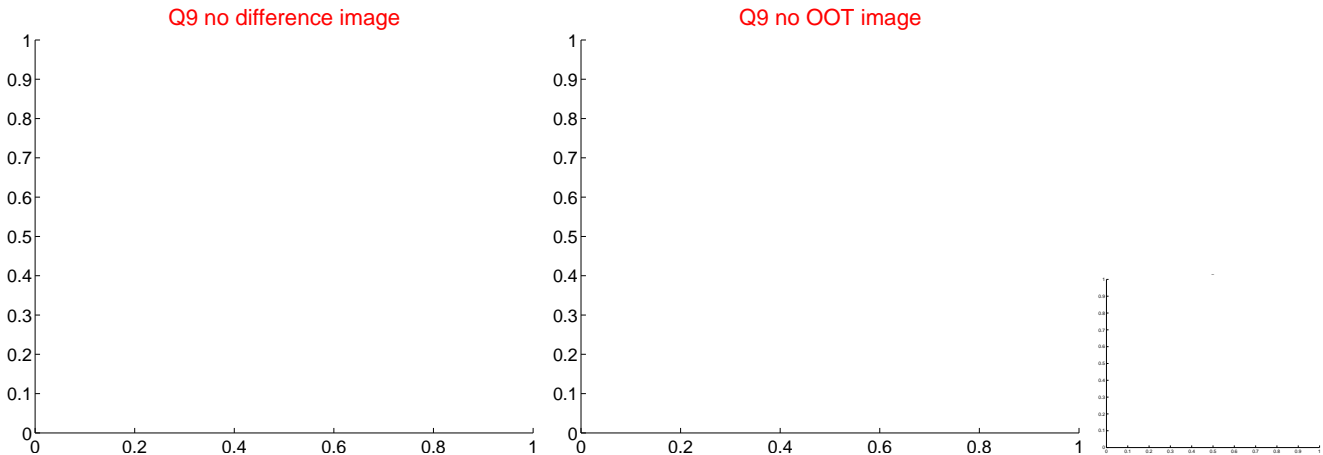
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



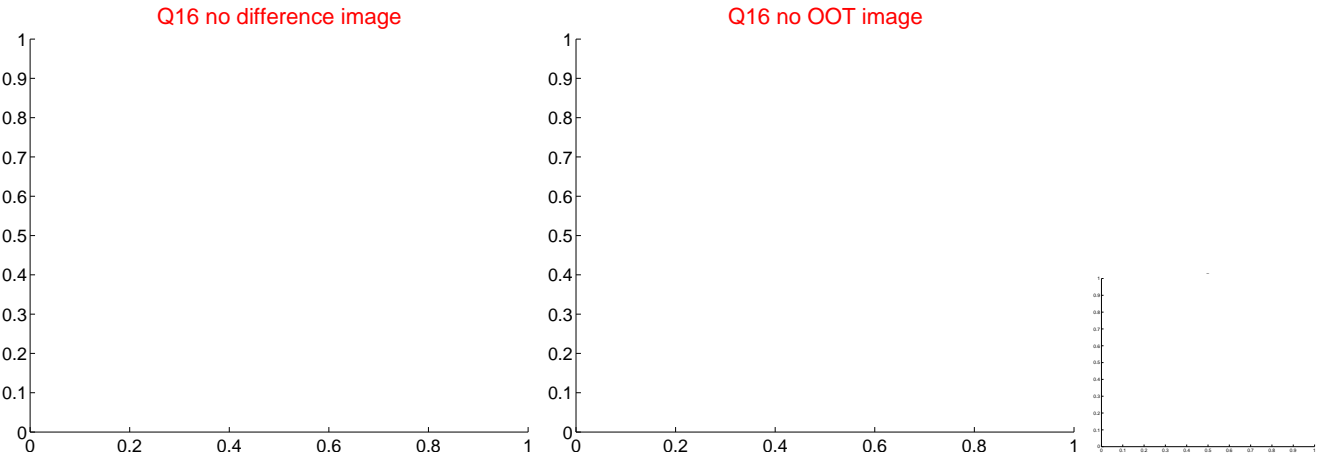
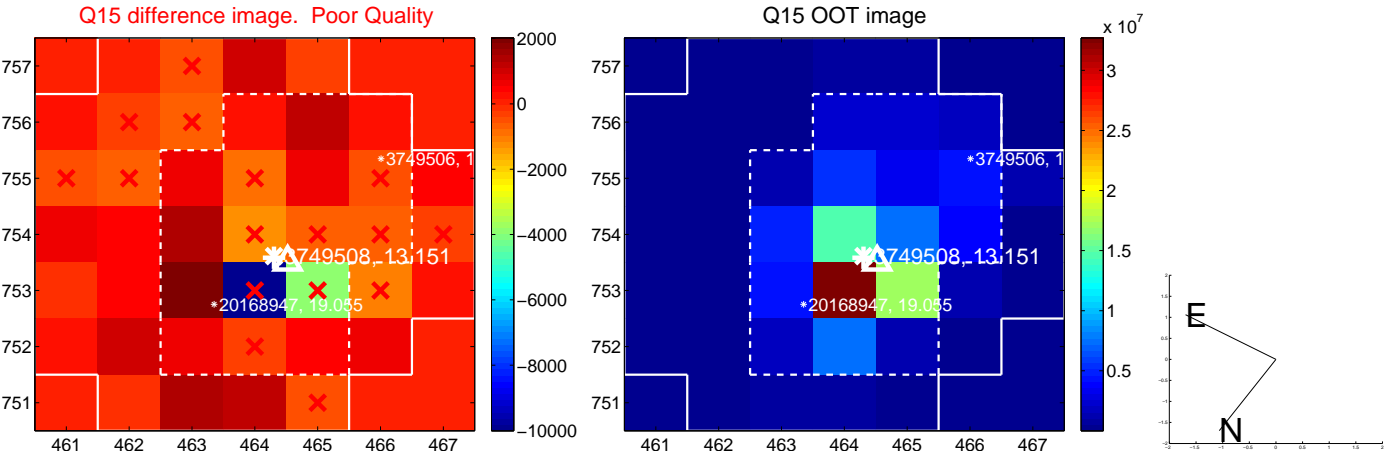
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



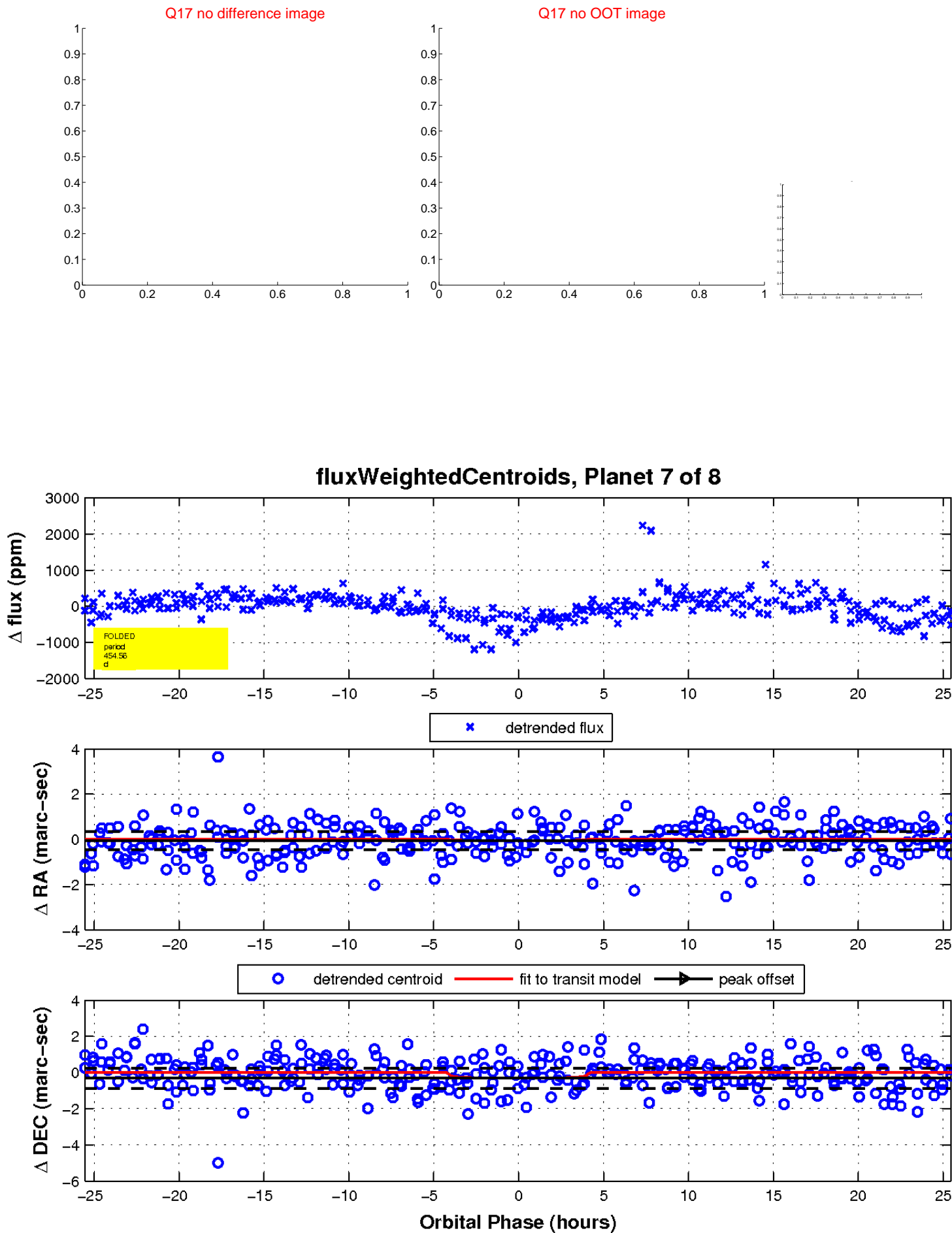
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

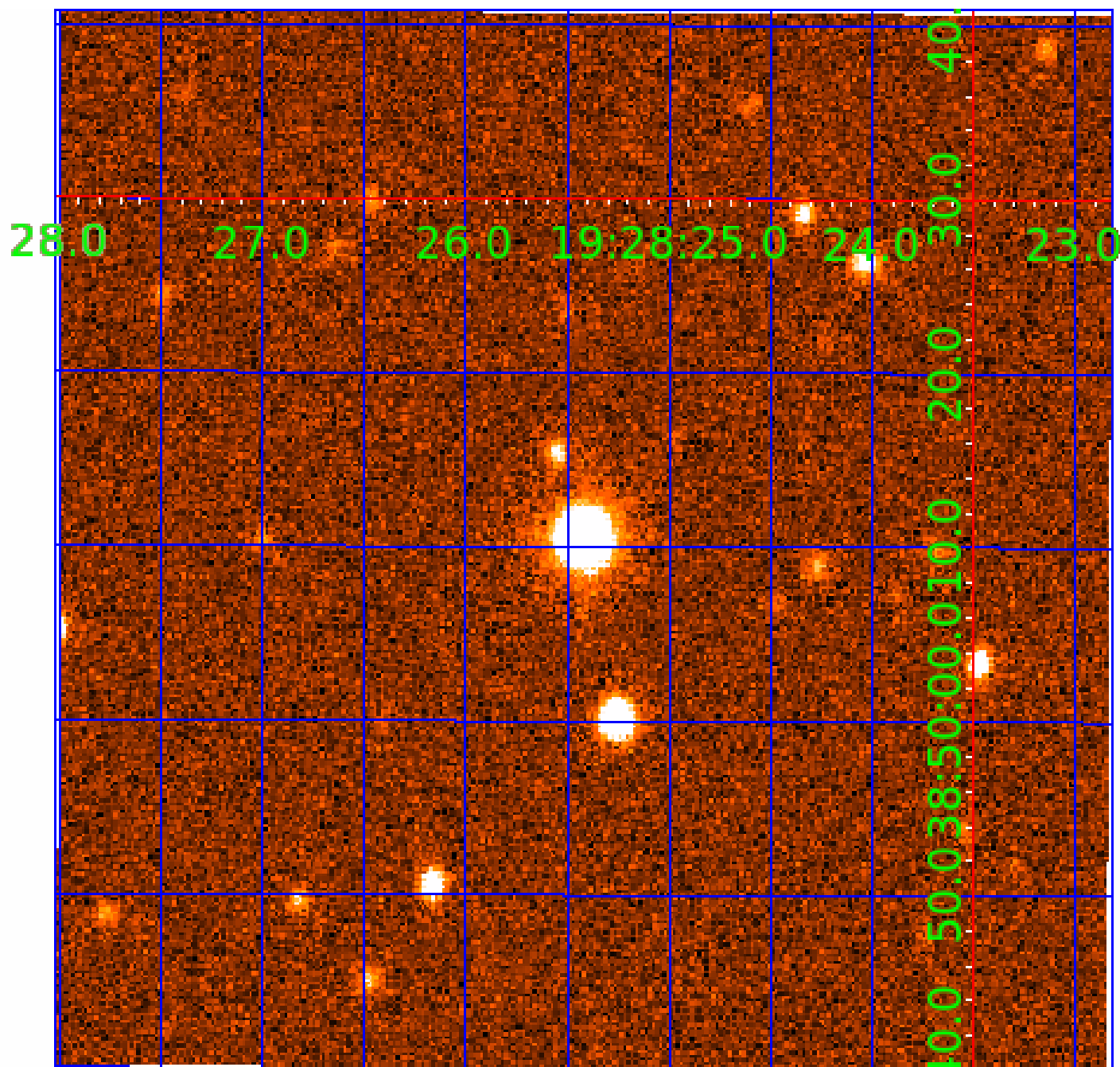


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003749508

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})
003749508-01	OBS	7544.02	1.065747	132.034968	176.6	0.910	32.2	35.9	10.11	6244	16.05	0.00
003749508-02	OBS	7544.01	2.403921	131.586727	41.7	13.450	10.0	7.5	10.11	6244	6.55	54938.48
003749508-03	OBS	No	70.444992	164.220847	184.1	1.045	14.2	3.1	10.11	6244	16.22	608.09
003749508-04	OBS	No	124.125001	214.471104	503.8	0.805	10.9	2.9	10.11	6244	26.95	285.73
003749508-05	OBS	No	124.139851	214.930752	420.0	12.892	11.0	9.5	10.11	6244	24.10	285.69
003749508-06	OBS	No	33.583321	142.235014	52.7	11.521	8.9	2.3	10.11	6244	8.21	1632.82
003749508-07	OBS	No	454.561847	534.062004	419.5	8.543	9.4	8.6	10.11	6244	22.16	50.62
003749508-08	OBS	No	77.697273	157.170514	94.8	6.051	8.0	2.5	10.11	6244	10.62	533.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749508-01	OBS	FP	0.00	0	1	0	0	PLANET_IN_STAR—MOD_SEC_ALT
003749508-02	OBS	FP	0.00	1	0	0	0	LPP_DV
003749508-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—HALO_GHOST
003749508-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003749508-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
003749508-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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 003749508-08

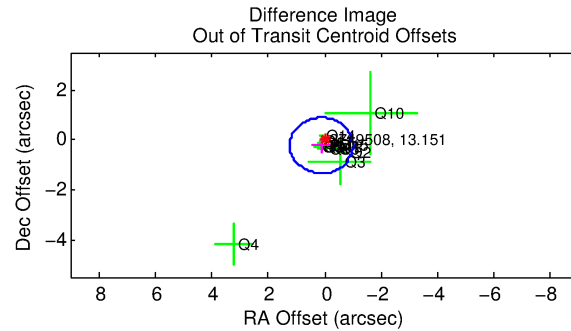
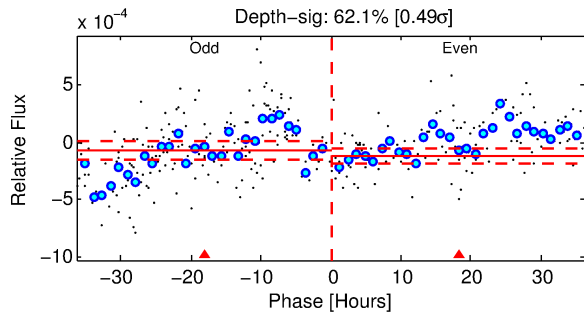
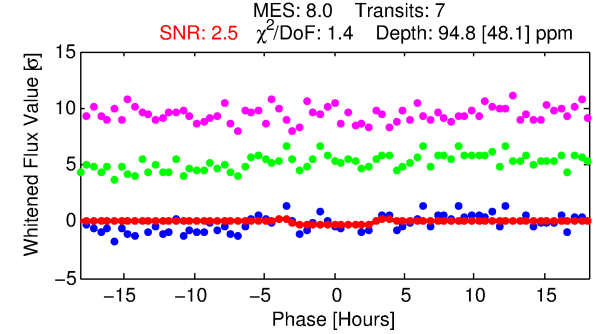
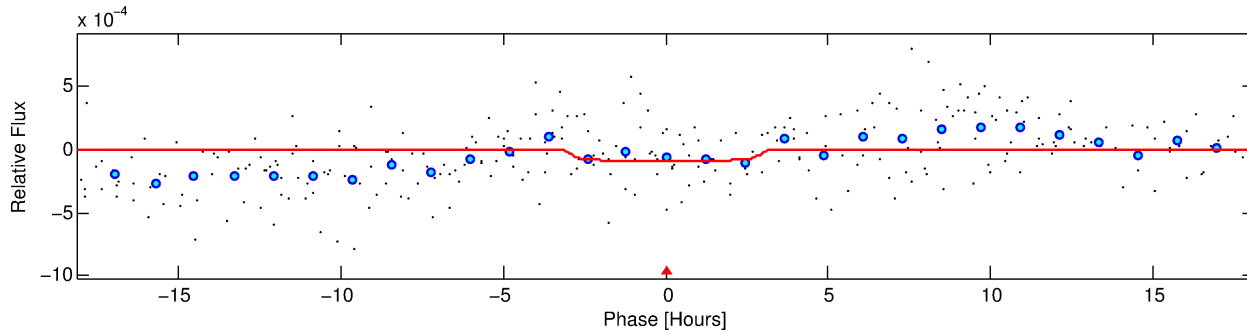
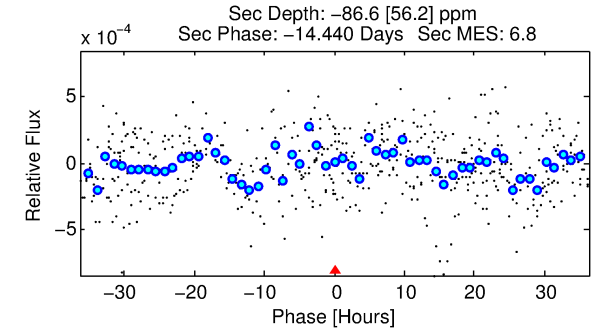
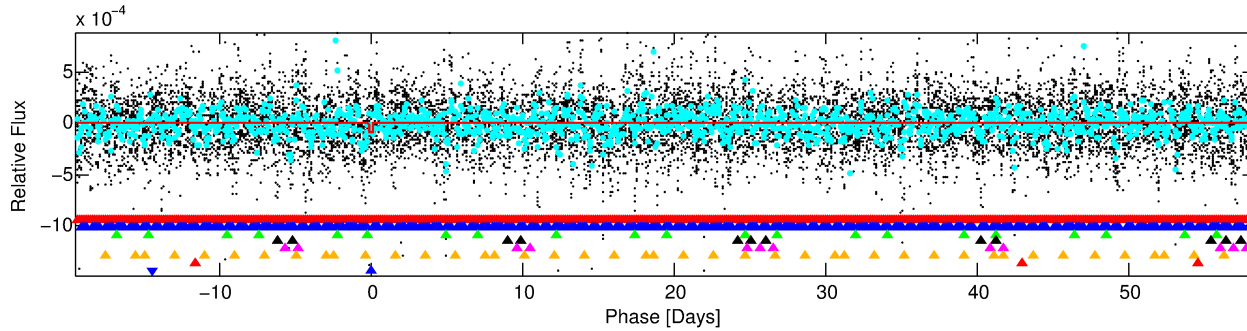
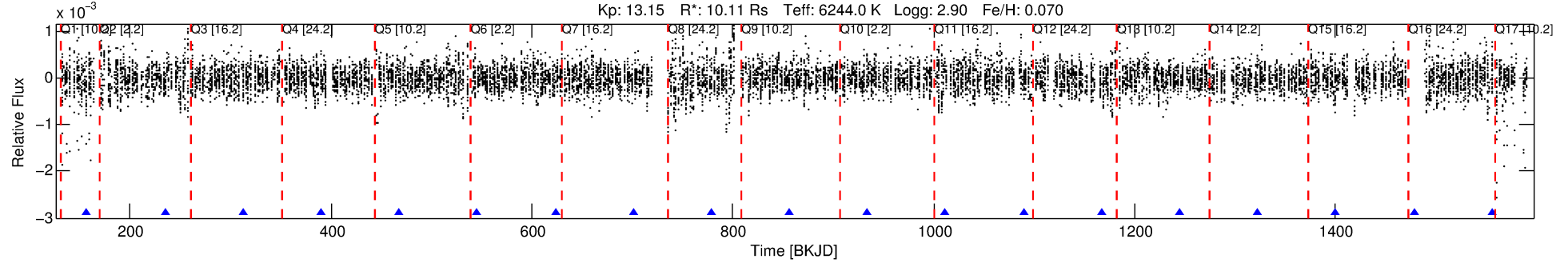
No Significant Match Found

DV One-Page Summary

KIC: 3749508 Candidate: 8 of 8 Period: 77.697 d

KOI: K07544 Corr: No Ephemeris Match

Kp: 13.15 R*: 10.11 Rs Teff: 6244.0 K Logg: 2.90 Fe/H: 0.070



DV Fit Results:

Period = 77.69727 [0.00406] d
Epoch = 157.1705 [0.0409] BKJD
Rp/R* = 0.0096 [0.0131]
a/R* = 68.46 [471.30]
b = 0.73 [4.45]
Seff = 533.62 [470.60]
Teff = 1226 [270] K
Rp = 10.62 [15.65] Re
a = 0.5105 [0.2784] AU
Ag = N/A
Teffp = N/A

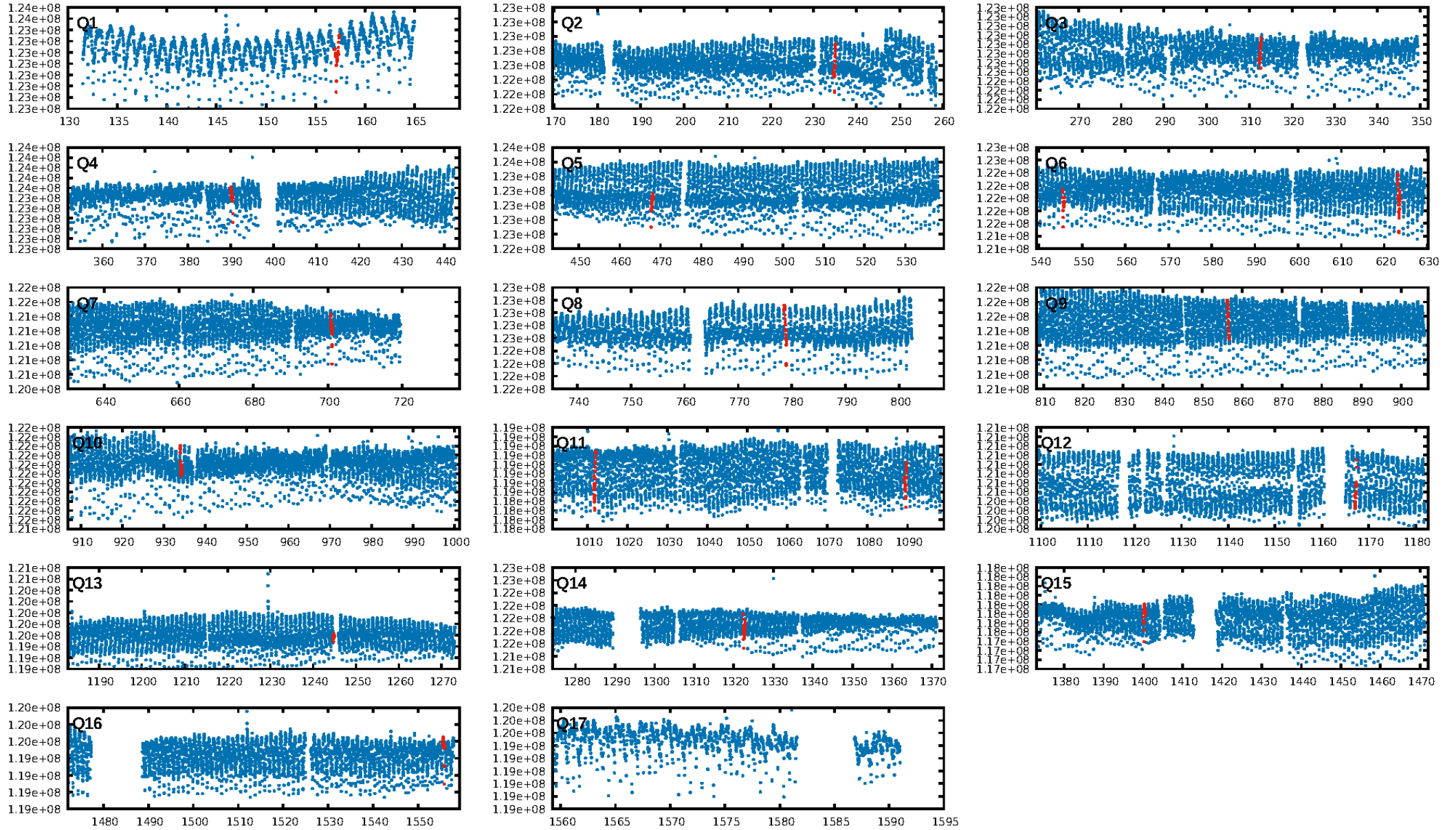
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.35σ]
LongPeriod-sig: 100.0% [182.54σ]
ModelChiSquare2-sig: 41.8%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 4.17e-07
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -1.719
Centroid-sig: 8.8%
Centroid-so: 2.562 arcsec [1.14σ]
OotOffset-rm: 0.259 arcsec [0.69σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-rm: 0.234 arcsec [0.70σ]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.53 [8/15]
DiffImageOverlap-fno: 0.00 [0/15]

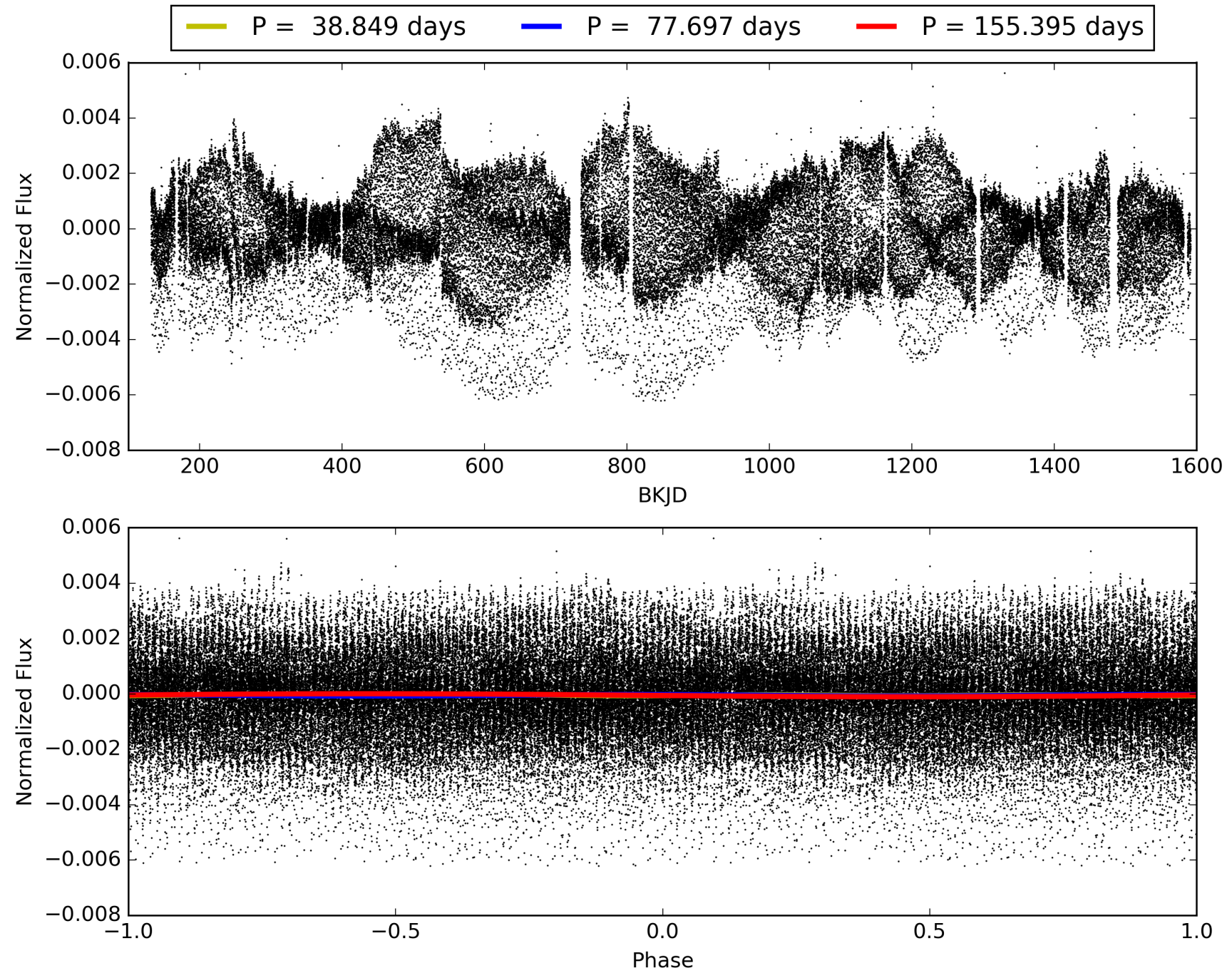
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:56:13 Z

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

TCE 003749508-08, PDC Light Curves

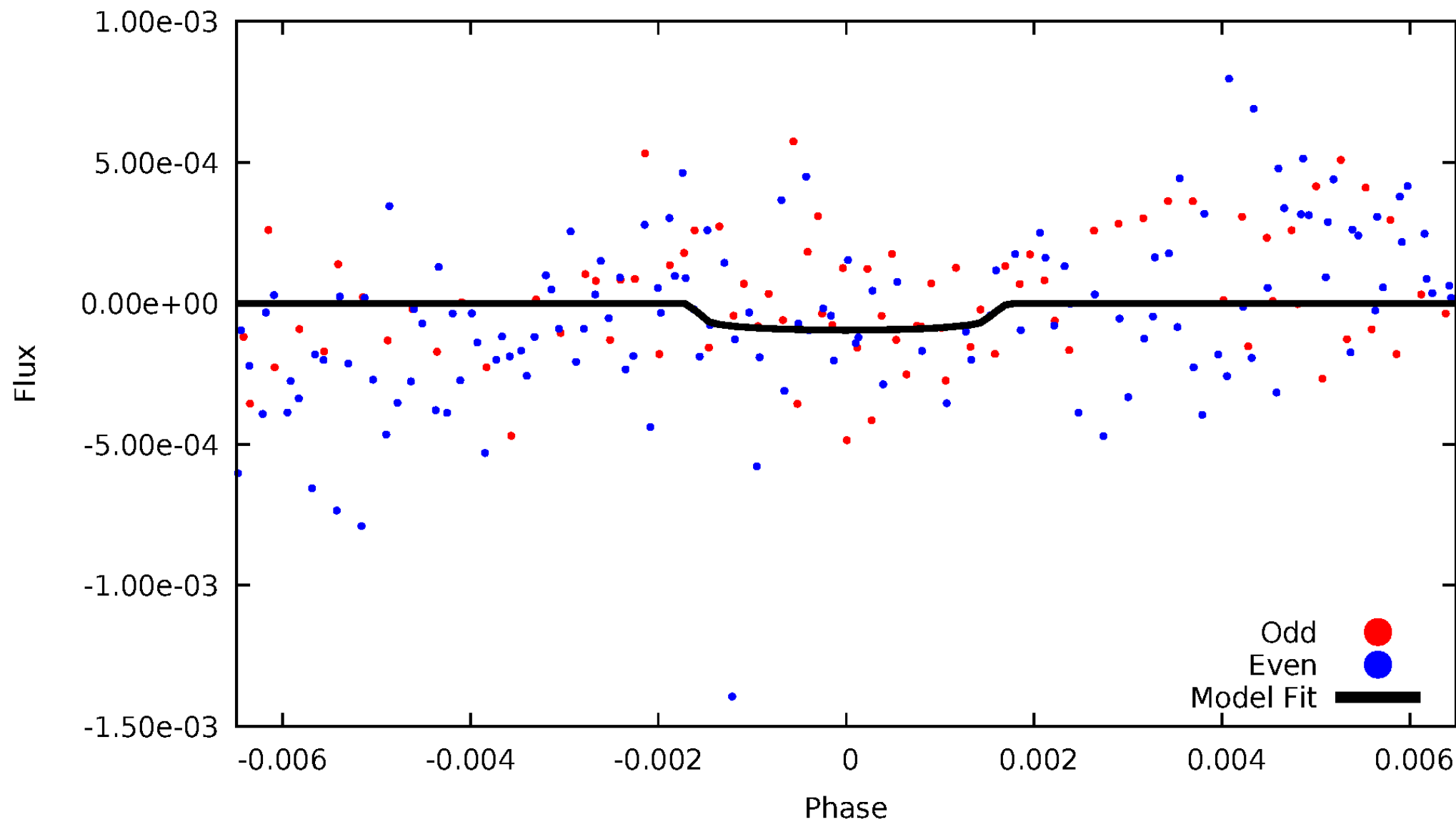


TCE 003749508-08



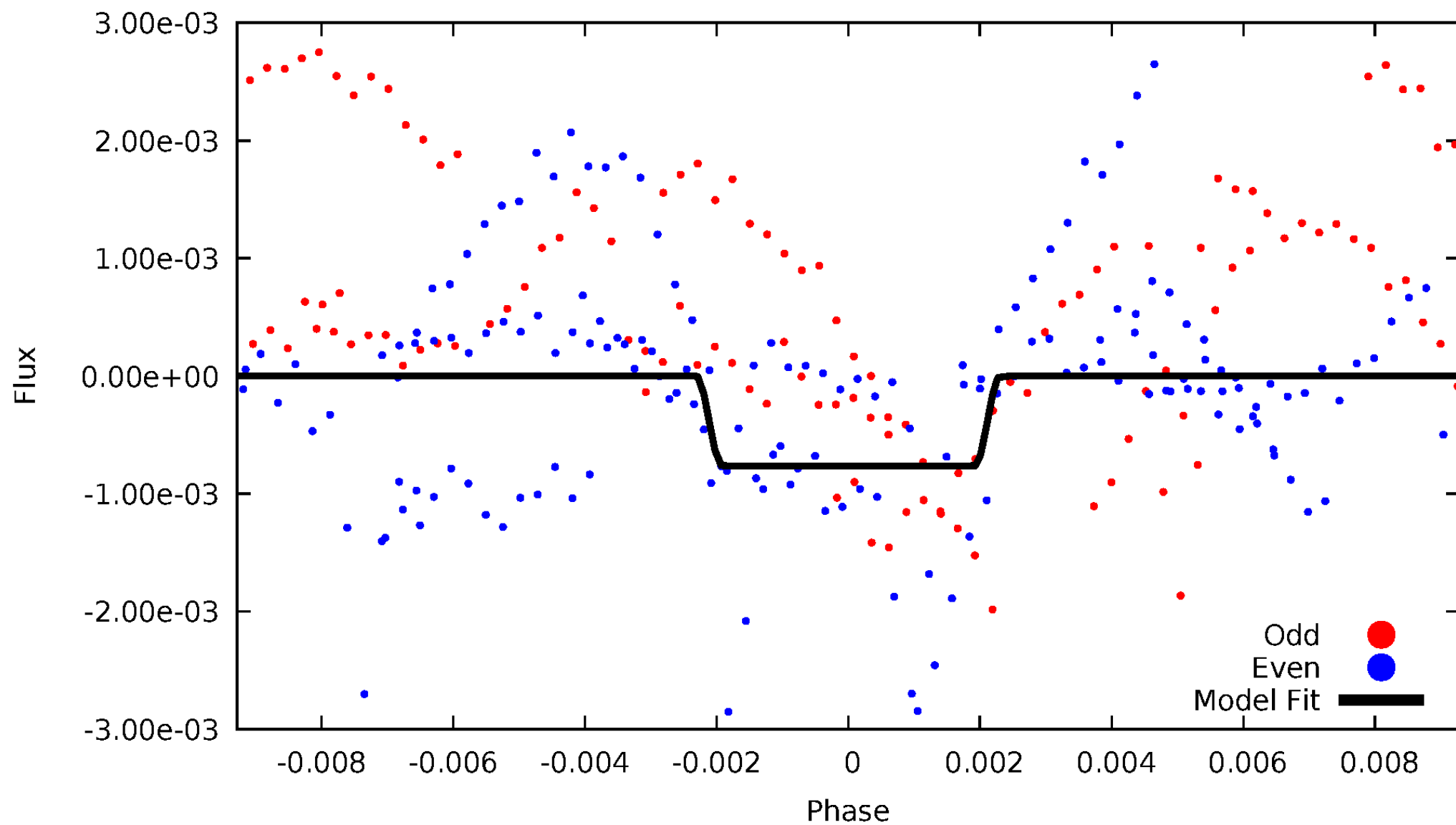
DV Odd/Even

TCE 003749508-08



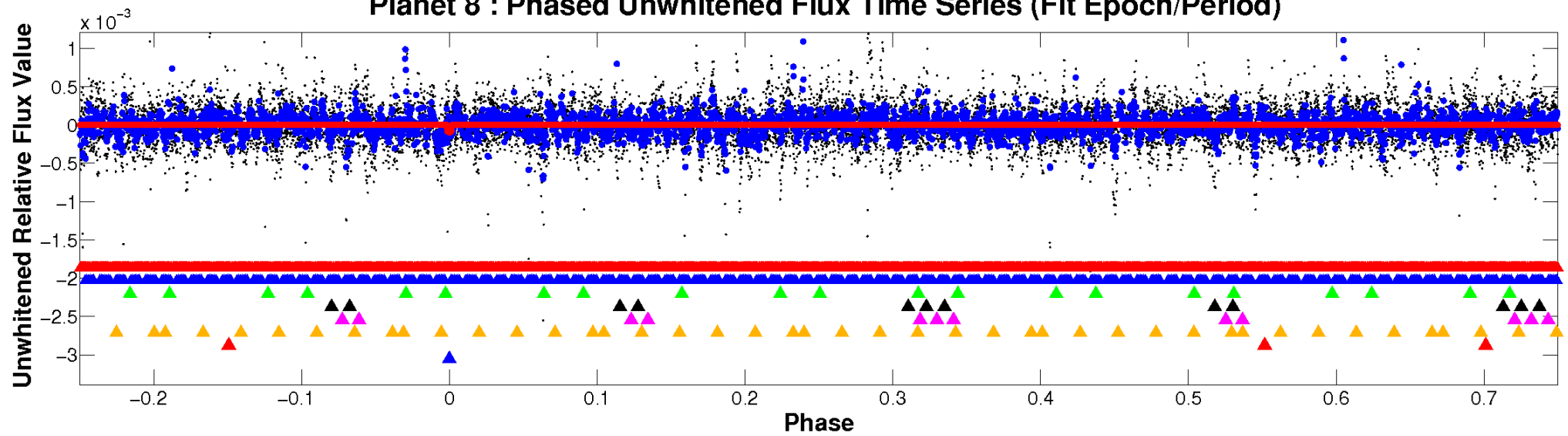
ALT Odd/Even

TCE 003749508-08

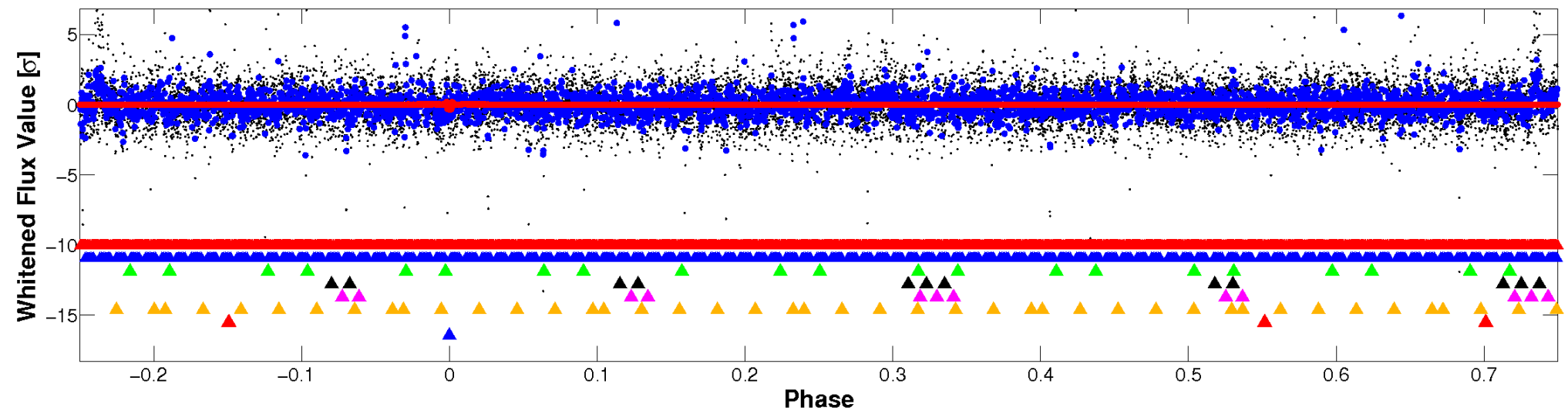


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

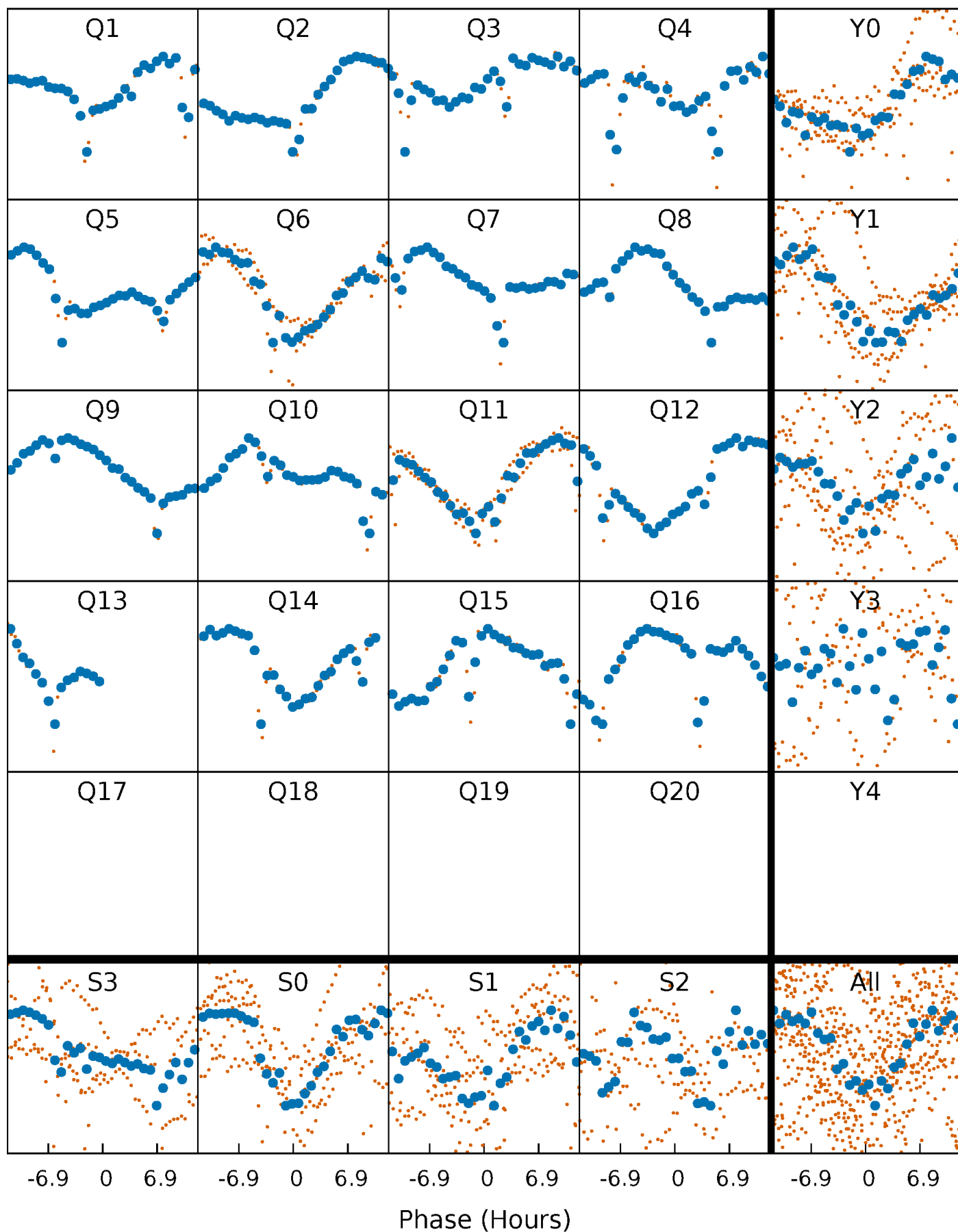


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



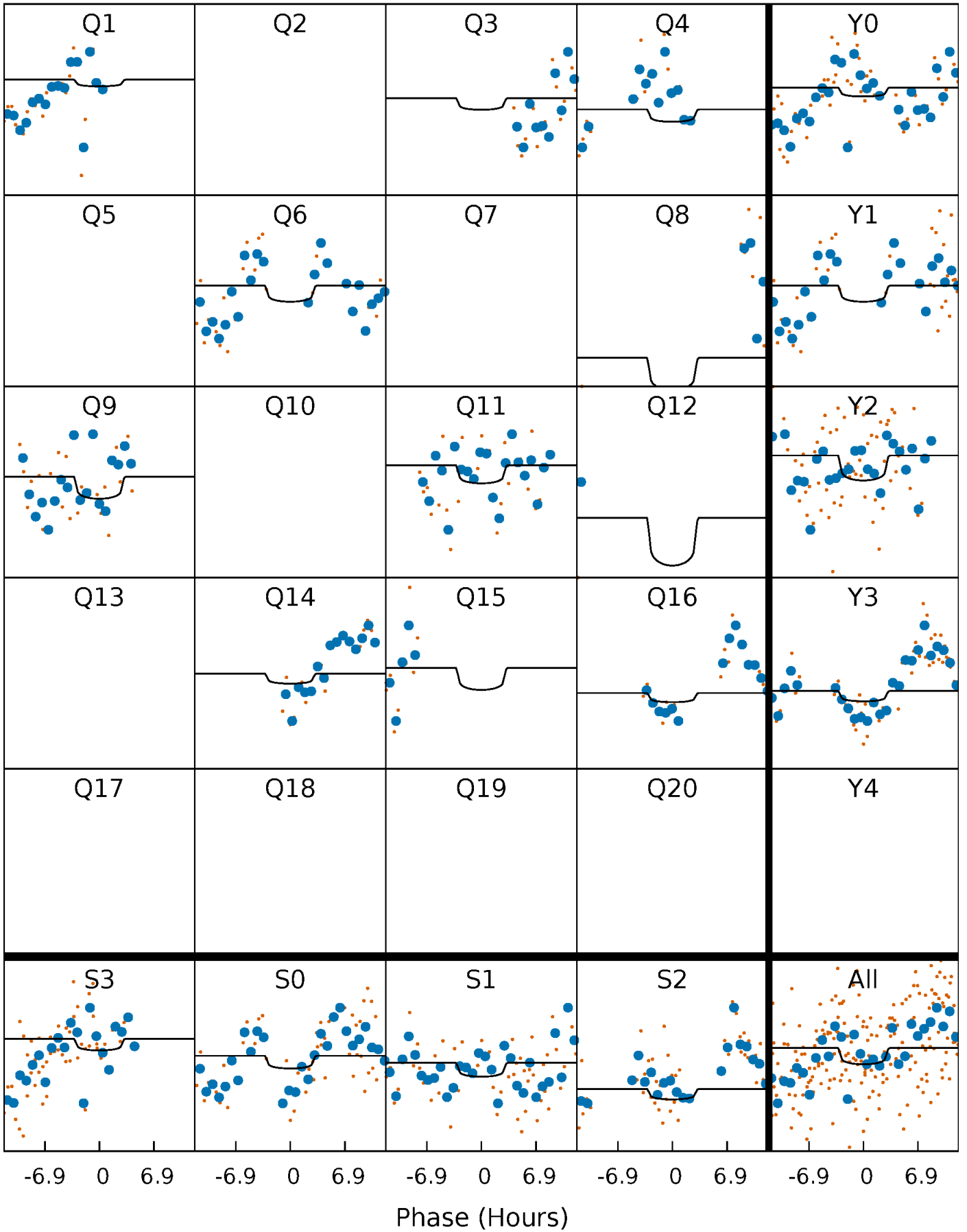
PDC Quarter-Phased Transit Curves

TCE 003749508-08 P= 77.697273 Days $T_0=157.170514$ (BKJD)



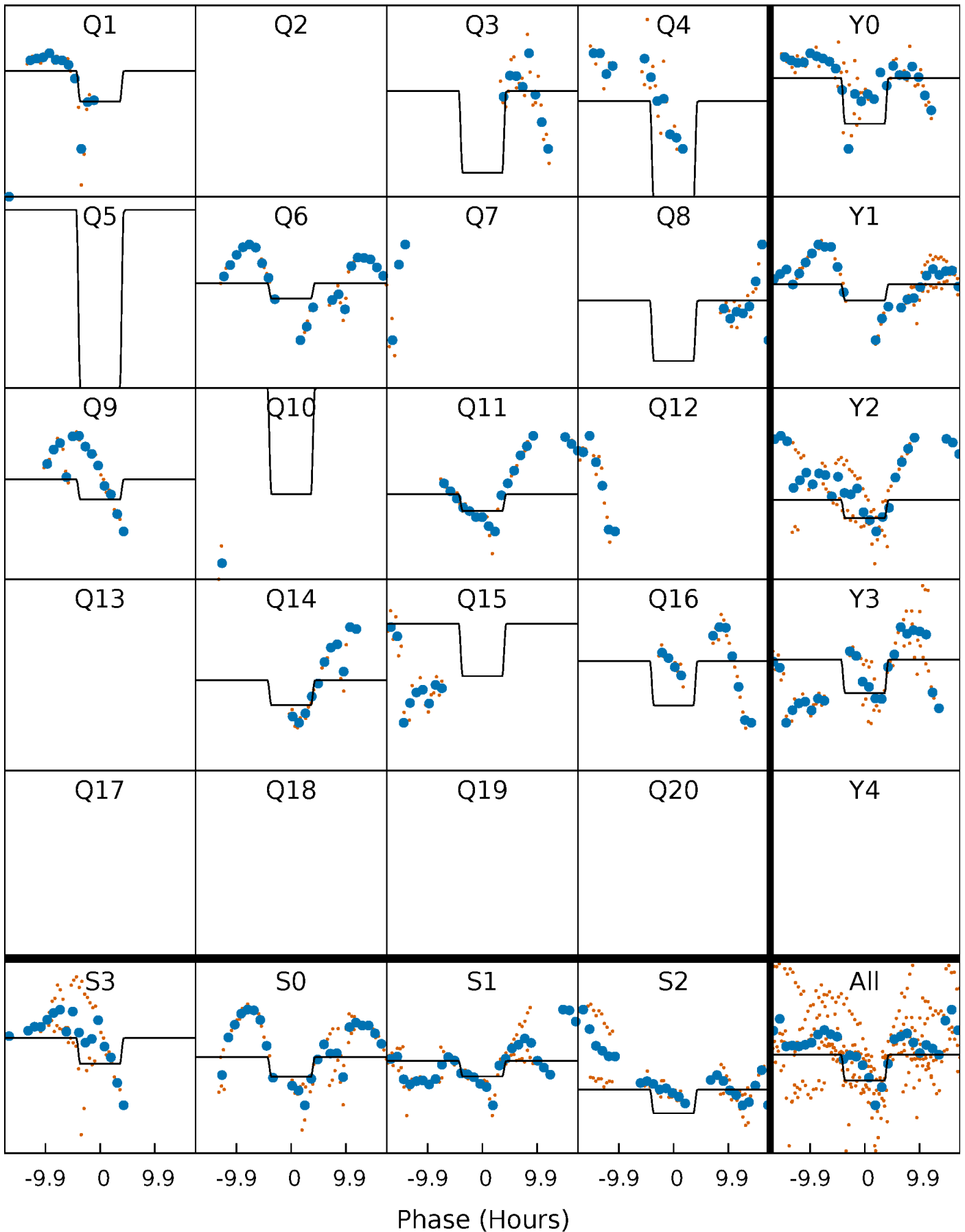
DV Quarter-Phased Transit Curves

TCE 003749508-08 P= 77.697273 Days $T_0=157.170514$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

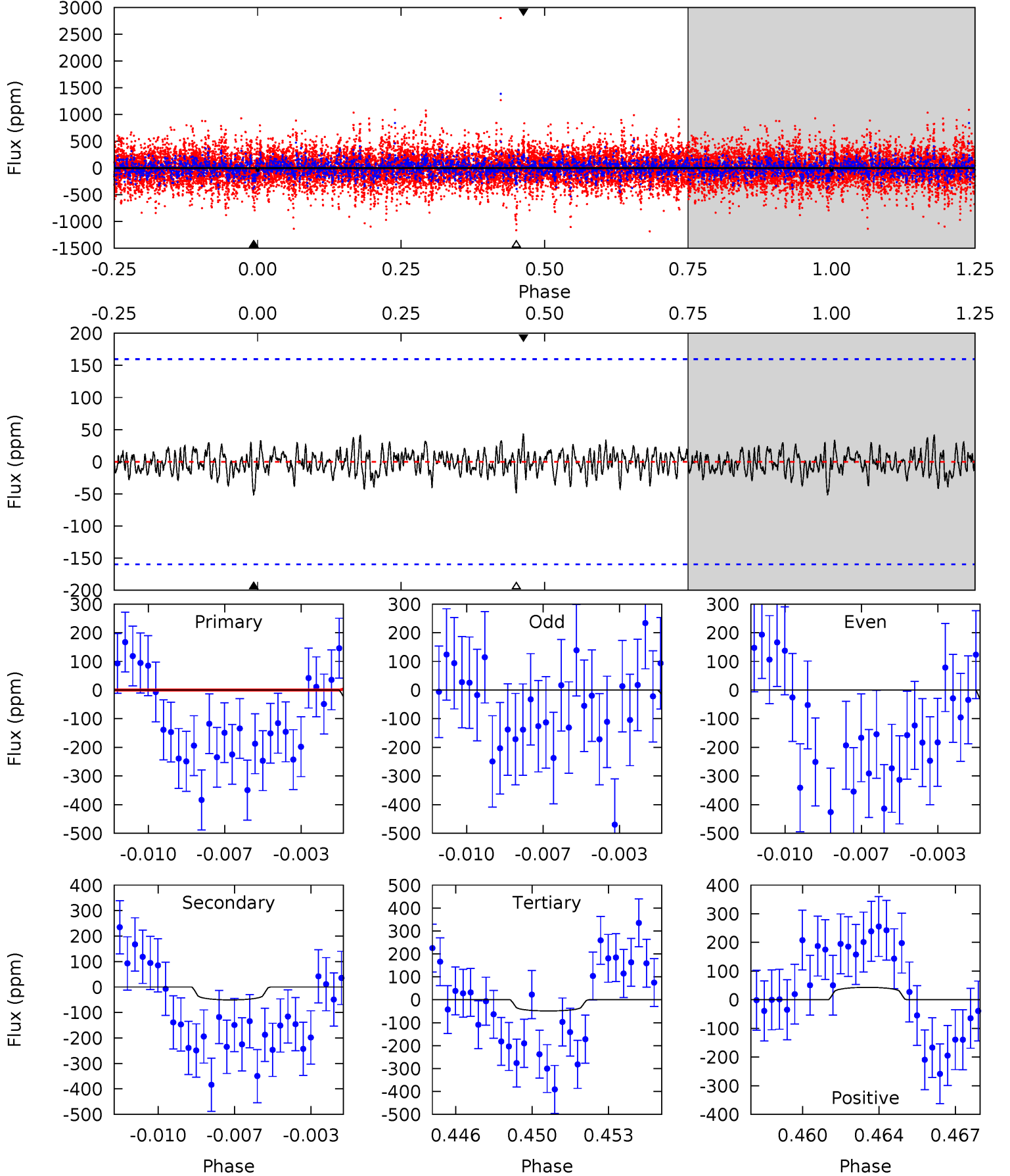
TCE 003749508-08 $P = 77.692346$ Days $T_0 = 157.217390$ (BKJD)



DV Model-Shift Uniqueness Test

003749508-08, P = 77.697273 Days, E = 79.473241 Days

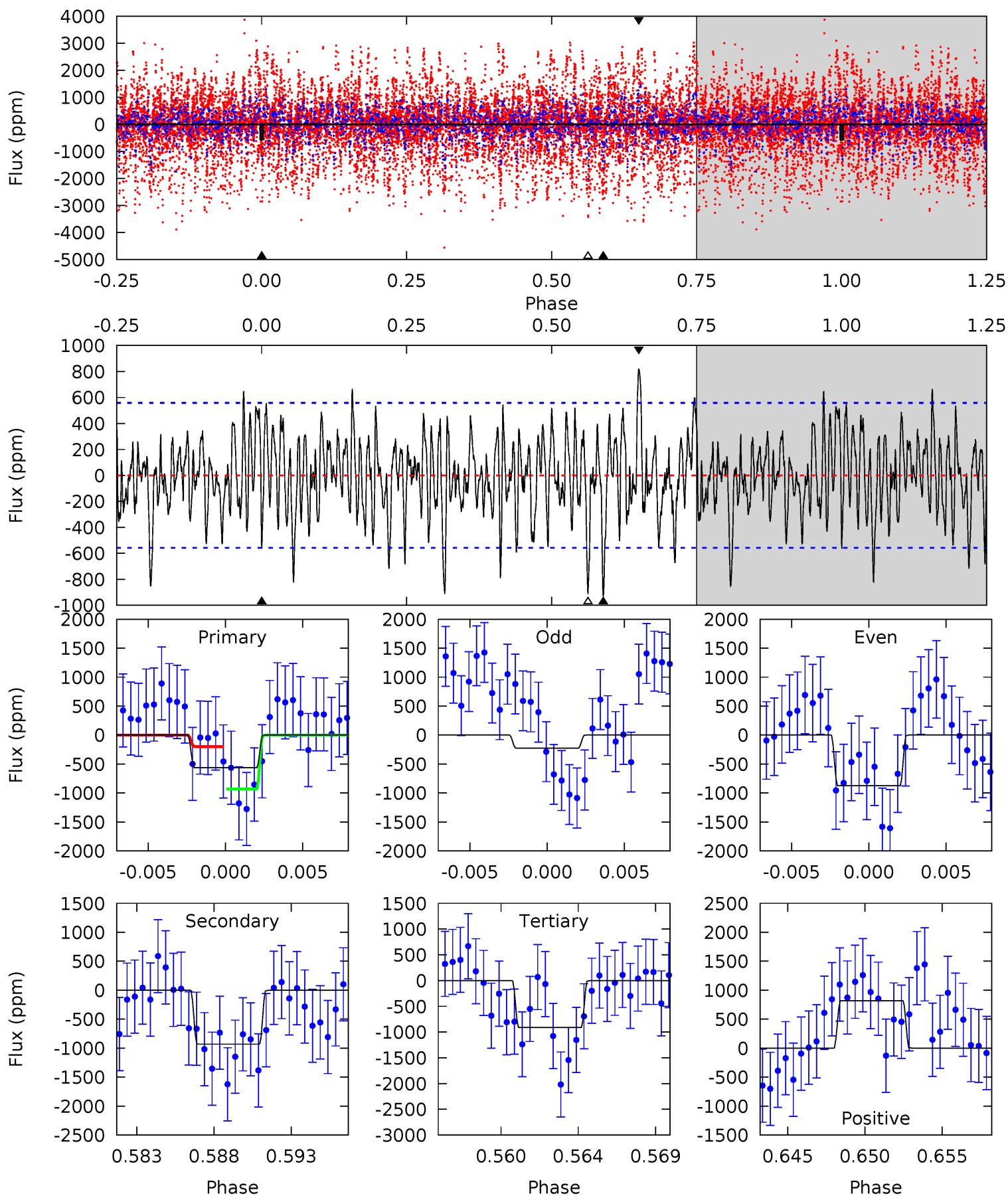
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.67	1.66	1.60	1.42	5.23	2.93	0.48	0.07	0.25	0.06	0.24	0.65	0.82	0.46	1.74



Alt Model-Shift Uniqueness Test

003749508-08, P = 77.692346 Days, E = 79.525044 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.23	8.61	8.45	7.59	5.17	2.82	2.50	-3.23	-2.36	0.16	1.03	2.92	1.15	0.47	3.43



Stellar Parameters For KIC 003749508

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6244^{+148}_{-204}	$2.897^{+0.512}_{-0.096}$	$0.070^{+0.200}_{-0.500}$	$10.105^{+1.910}_{-5.731}$	$2.936^{+0.284}_{-1.205}$	$0.004^{+0.029}_{-0.001}$
	+2%/-3%	+18%/-3%	+286%/-714%	+19%/-57%	+10%/-41%	+713%/-30%
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 003749508-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-51±31	$11.81^{+12.66}_{-7.99}$	1649^{+127}_{-211}	4620^{+3607}_{-1202}	44^{+351}_{-37}
Alt.	-930±108	$27.10^{+15.63}_{-12.97}$	1652^{+117}_{-228}	6440^{+2818}_{-1109}	175^{+473}_{-101}

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

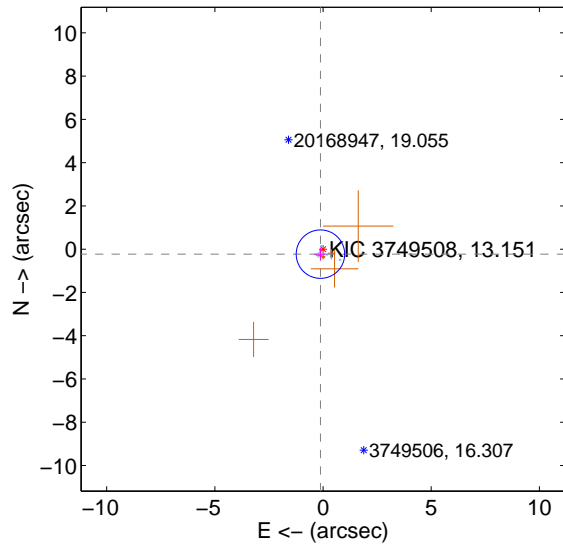
Supplemental centroid analysis for 003749508-08. Kepler magnitude: 13.15. Transit SNR 2.50

There are 8 quarters with good PRF difference image offsets

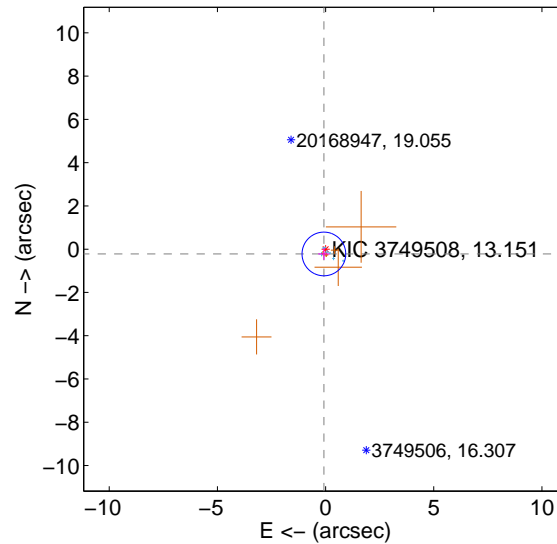
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.259 ± 0.373	0.69	0.120 ± 0.278	-0.230 ± 0.290
PRF-fit source offset from KIC position	0.234 ± 0.337	0.70	0.078 ± 0.261	-0.221 ± 0.274
photometric centroid source offset	2.56 ± 2.25	1.14	-1.09 ± 1.88	2.32 ± 2.33

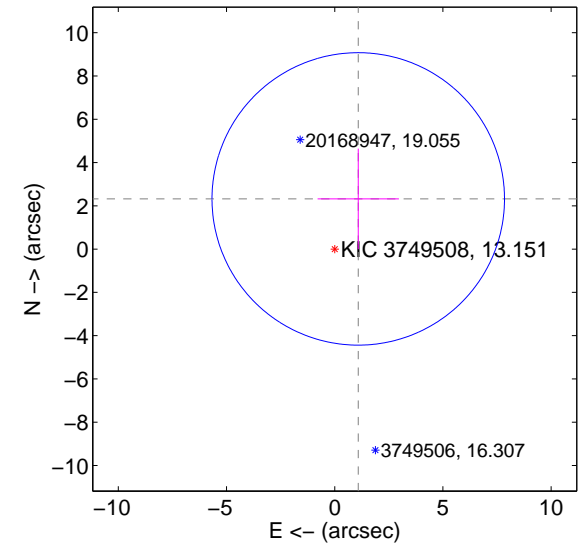
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

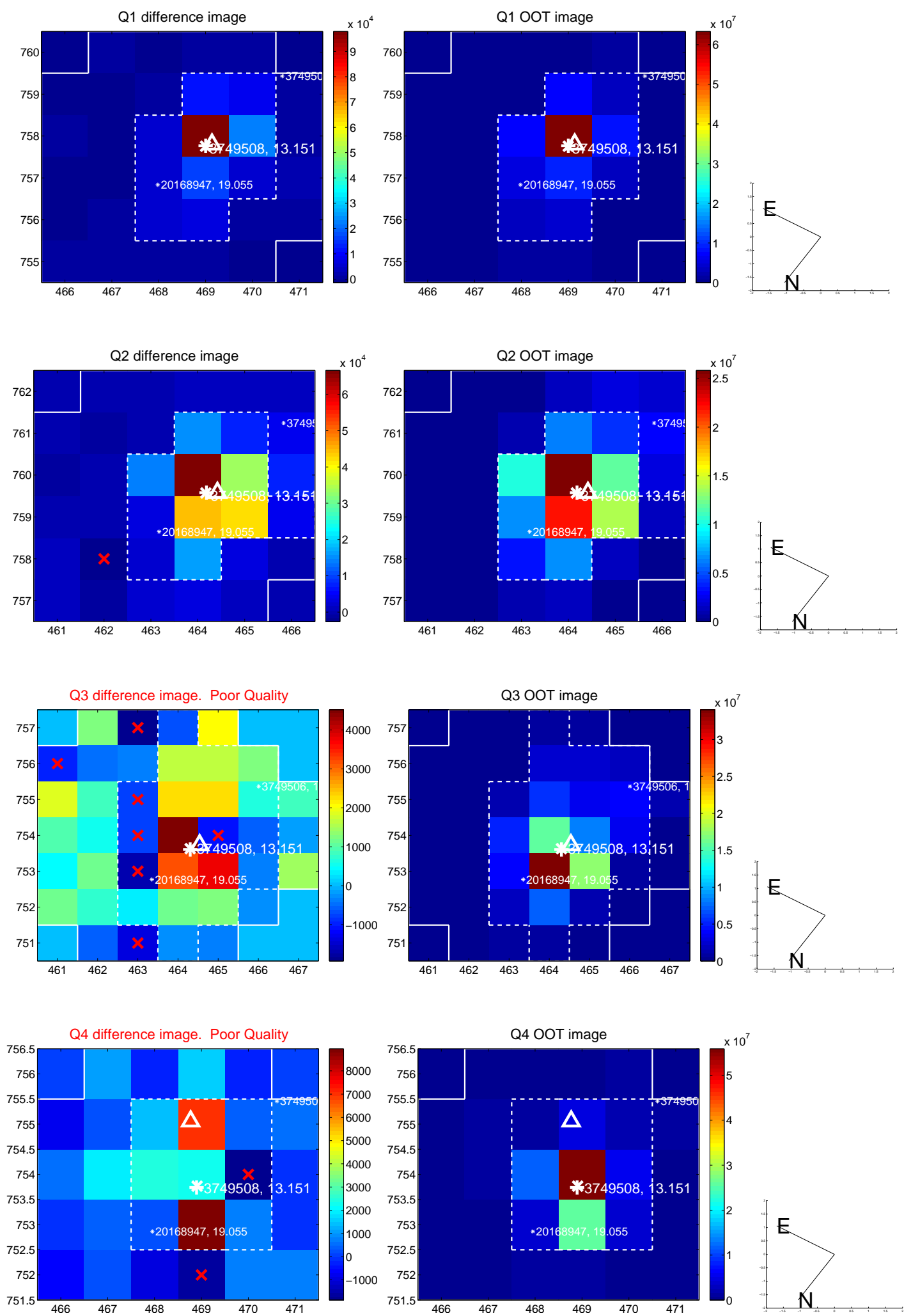


offset from photometric centroids

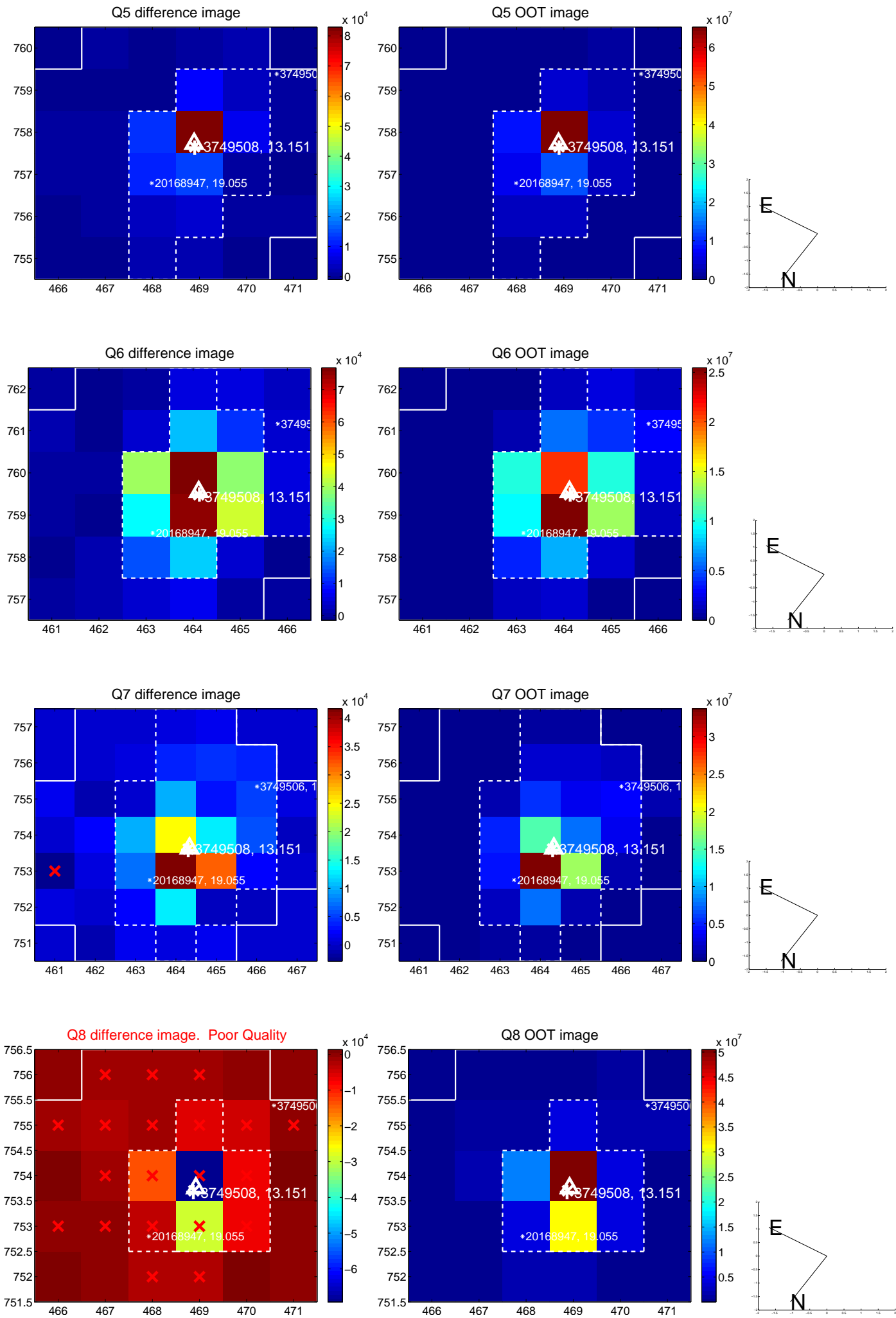


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

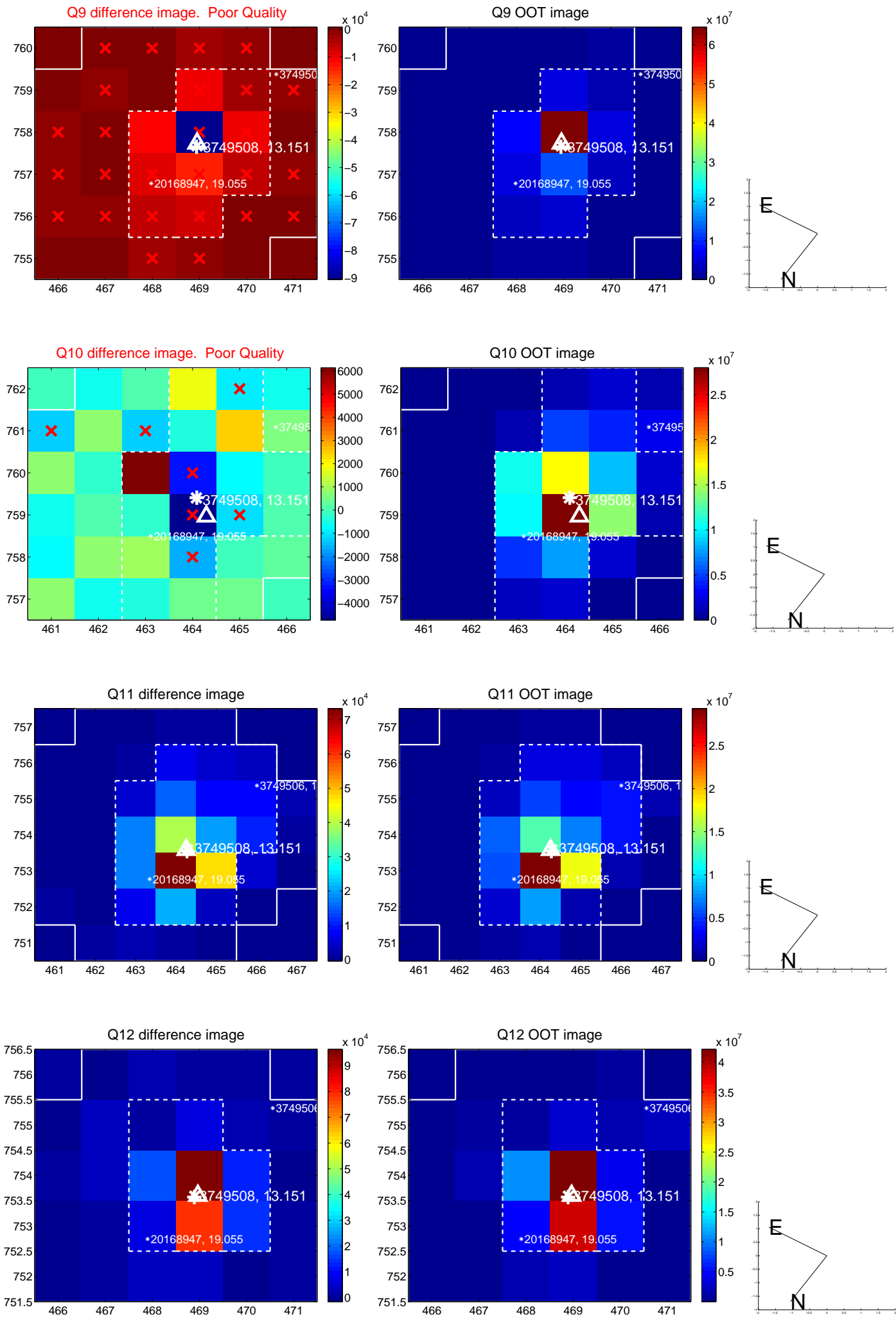
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



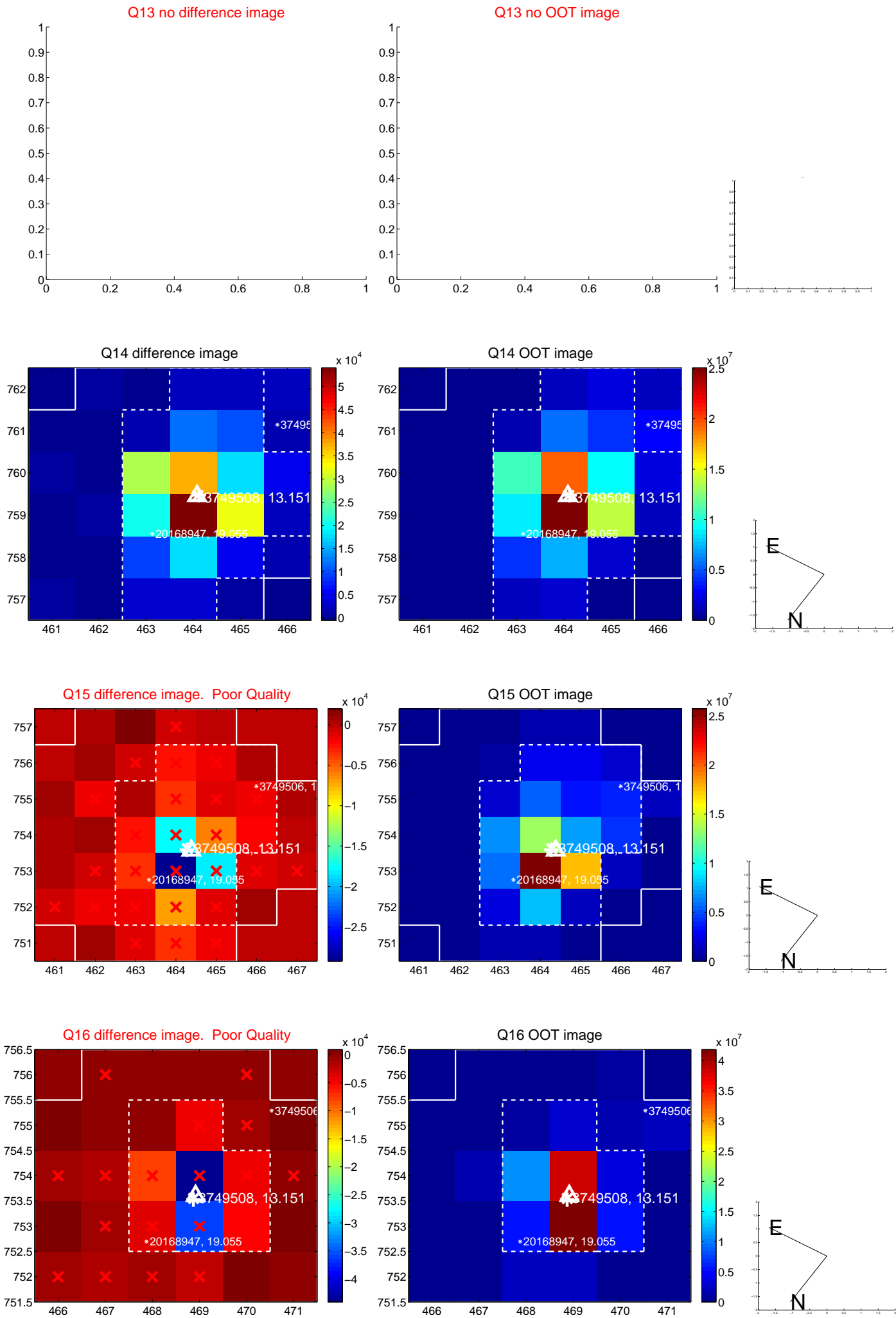
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



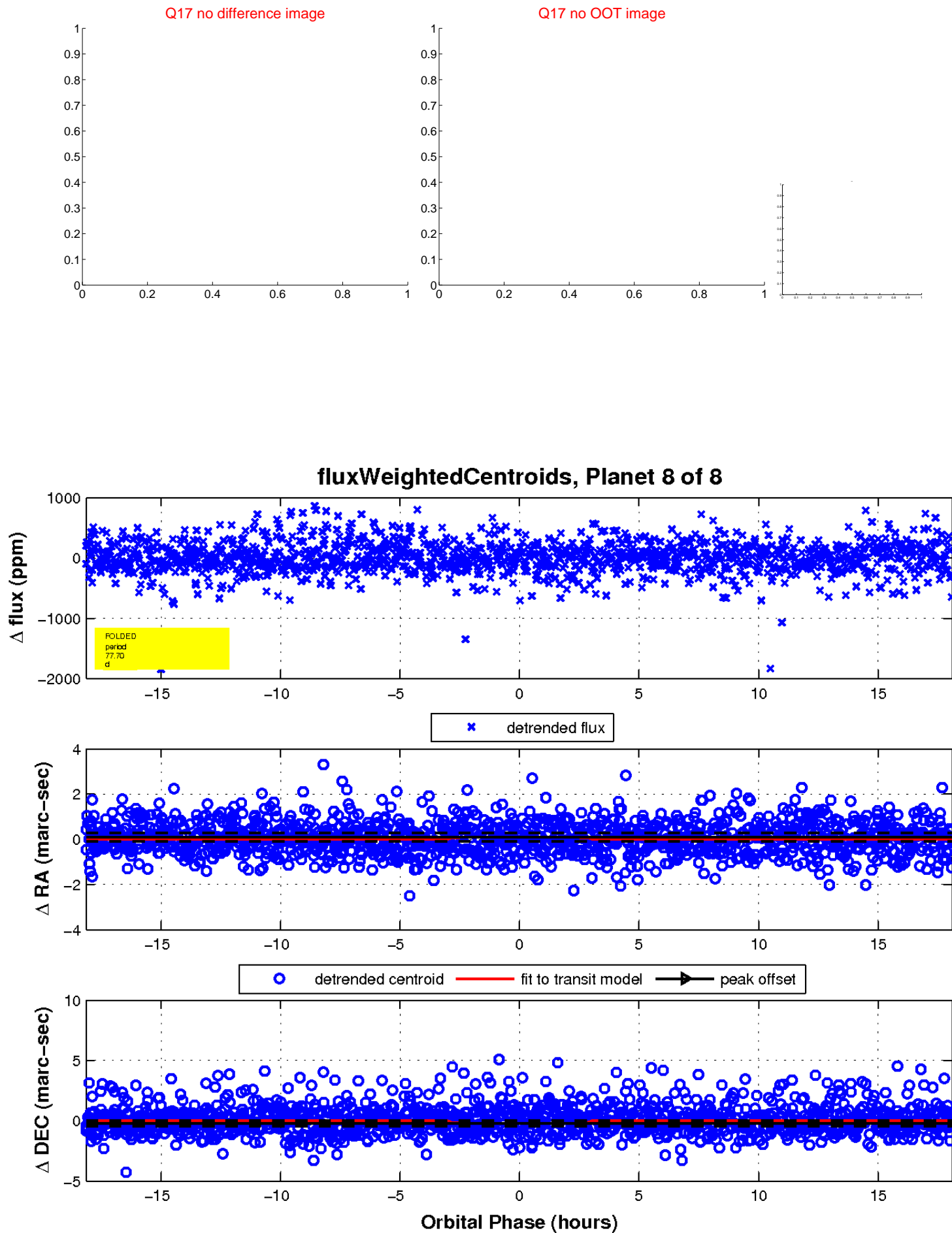
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

