

KIC 007538450

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})
007538450-01	OBS	5396.01	344.079737	451.402588	128.8	13.713	8.1	8.6	3.70	7664	4.68	28.47
007538450-02	OBS	No	502.107848	193.271855	120.2	13.640	7.9	7.8	3.70	7664	4.42	17.20
007538450-03	OBS	No	1.403775	132.479860	6.1	4.649	7.1	7.2	3.70	7664	1.08	43673.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007538450-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS
007538450-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007538450-03	OBS	FP	0.00	1	0	0	0	LPP_DV

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 007538450-01

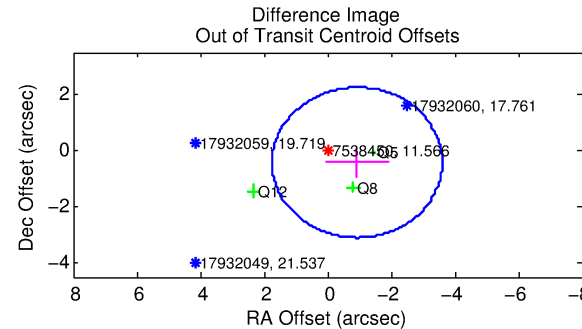
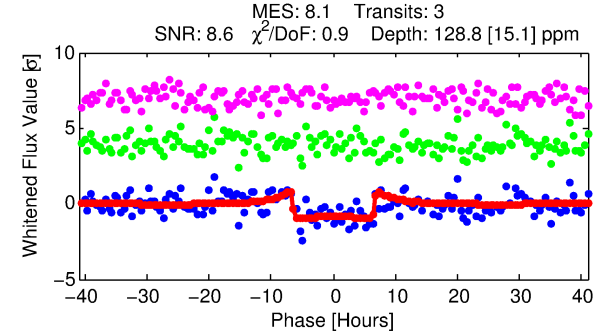
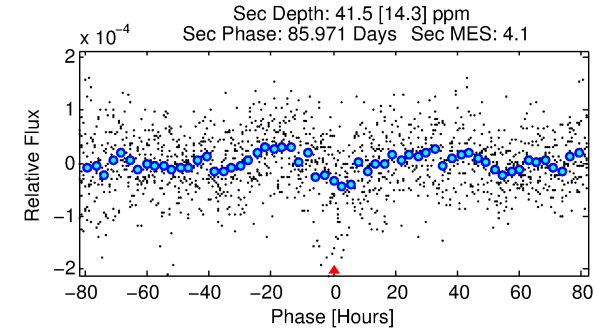
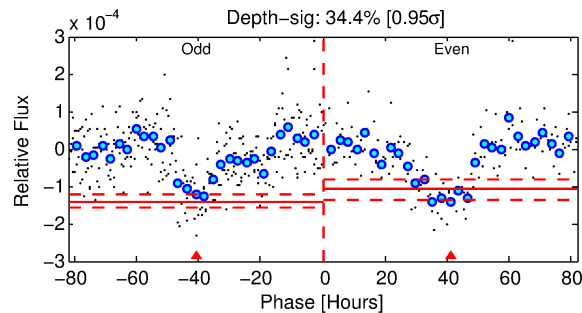
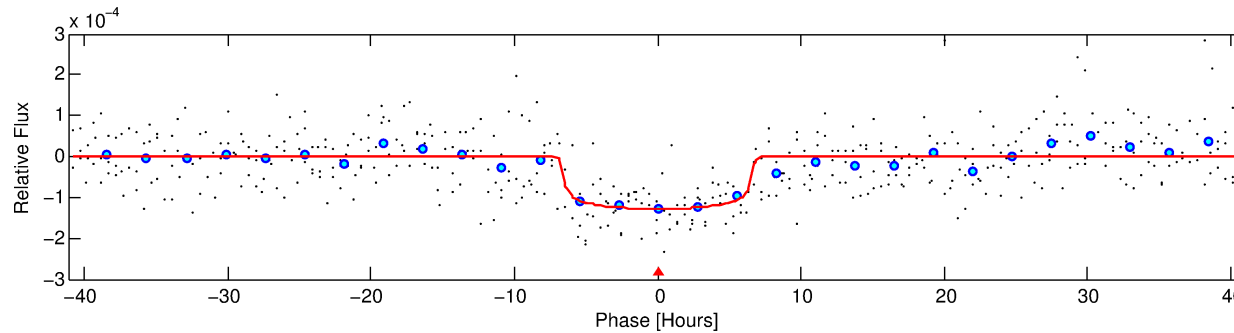
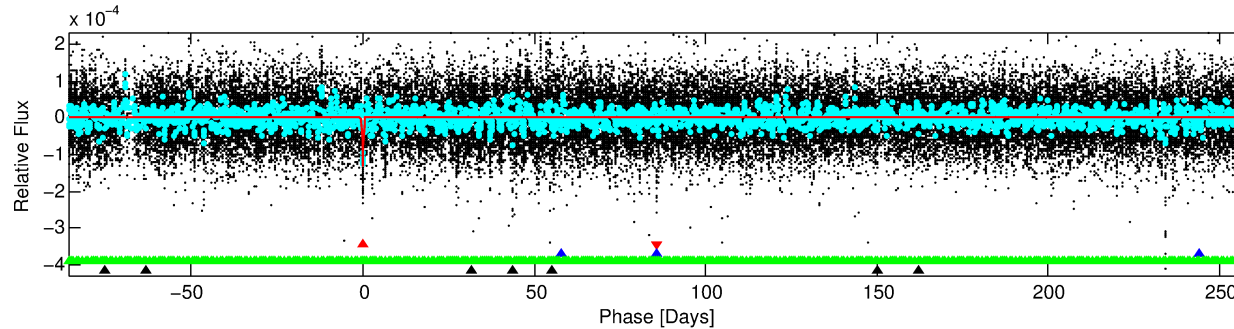
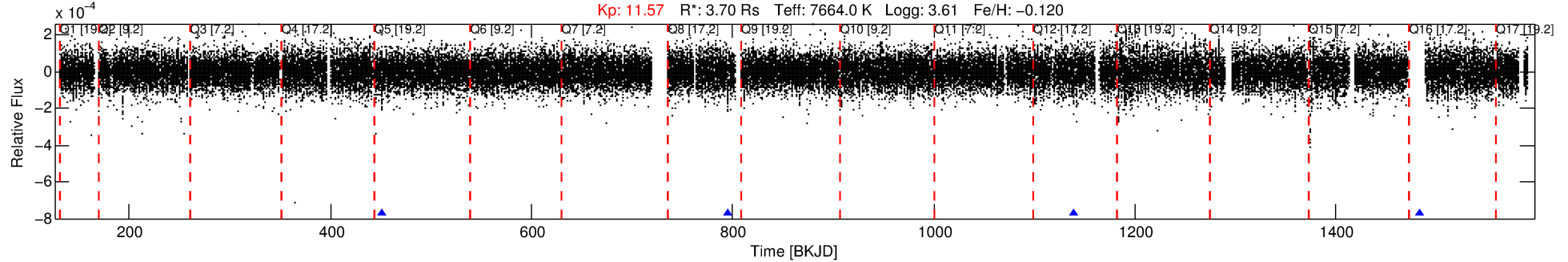
No Significant Match Found

DV One-Page Summary

KIC: 7538450 Candidate: 1 of 4 Period: 344.080 d

KOI: K05396.01 Corr: 0.990

Kp: 11.57 R*: 3.70 Rs Teff: 7664.0 K Logg: 3.61 Fe/H: -0.120



DV Fit Results:

Period = 344.07974 [0.00794] d
Epoch = 451.4026 [0.0106] BKJD
Rp/R* = 0.0116 [0.0018]
a/R* = 111.98 [91.60]
b = 0.83 [0.32]
Seff = 28.47 [25.26]
Teq = 589 [131] K
Rp = 4.68 [2.46] Re
a = 1.2182 [0.6365] AU
Ag = 1547.82 [1524.51] [1.01σ]
Teffp = 5712 [711] K [7.09σ]

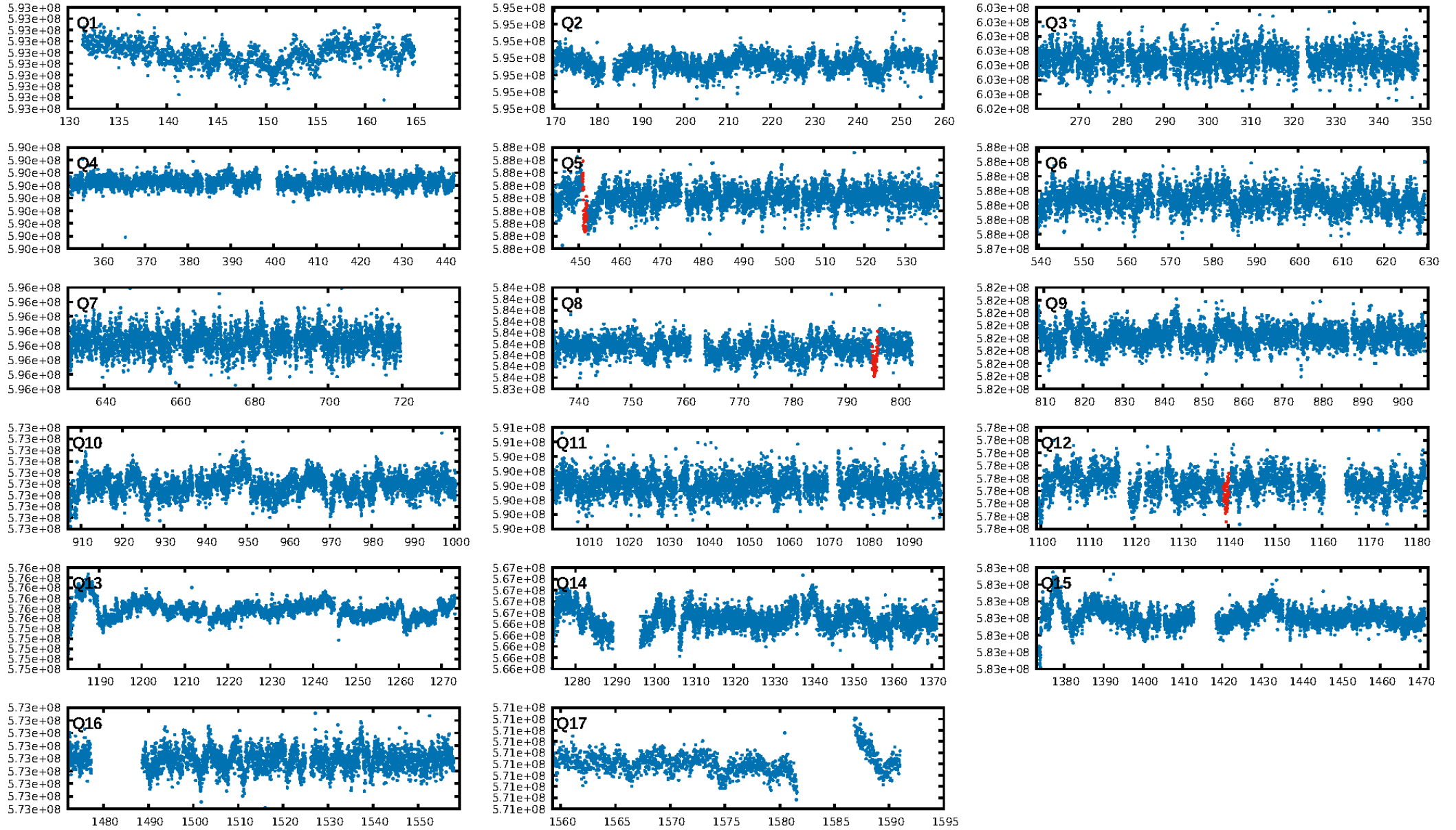
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [102.65σ]
LongPeriod-sig: 100.0% [196.09σ]
ModelChiSquare2-sig: 61.5%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 3.14e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.941
Centroid-sig: 95.8%
Centroid-so: 0.151 arcsec [0.18σ]
OotOffset-rm: 1.021 arcsec [1.14σ]
KicOffset-rm: 1.028 arcsec [1.08σ]
OotOffset-st: 0/0/2/1 [3]
KicOffset-st: 0/0/2/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]

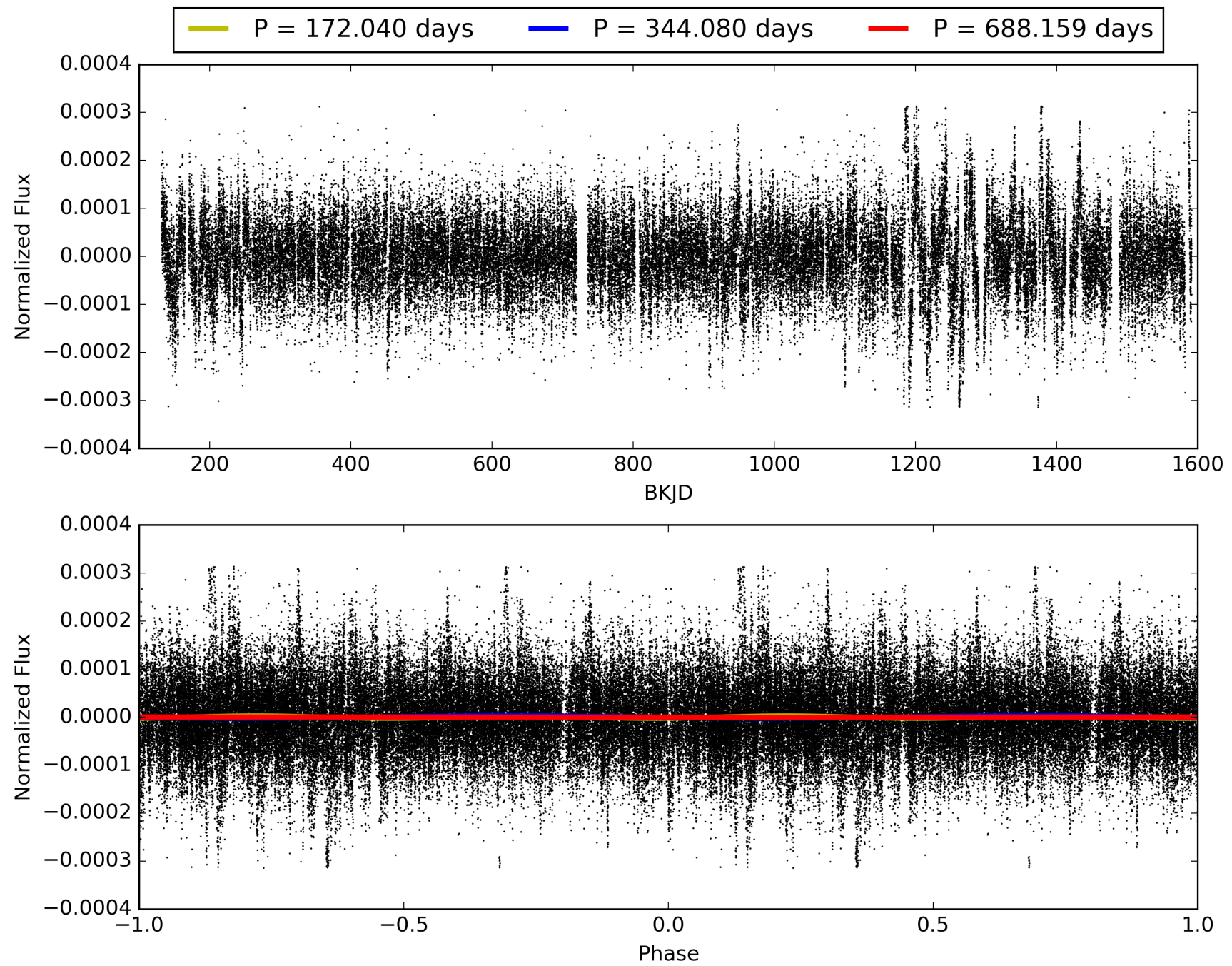
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:46:55 Z

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

TCE 007538450-01, PDC Light Curves

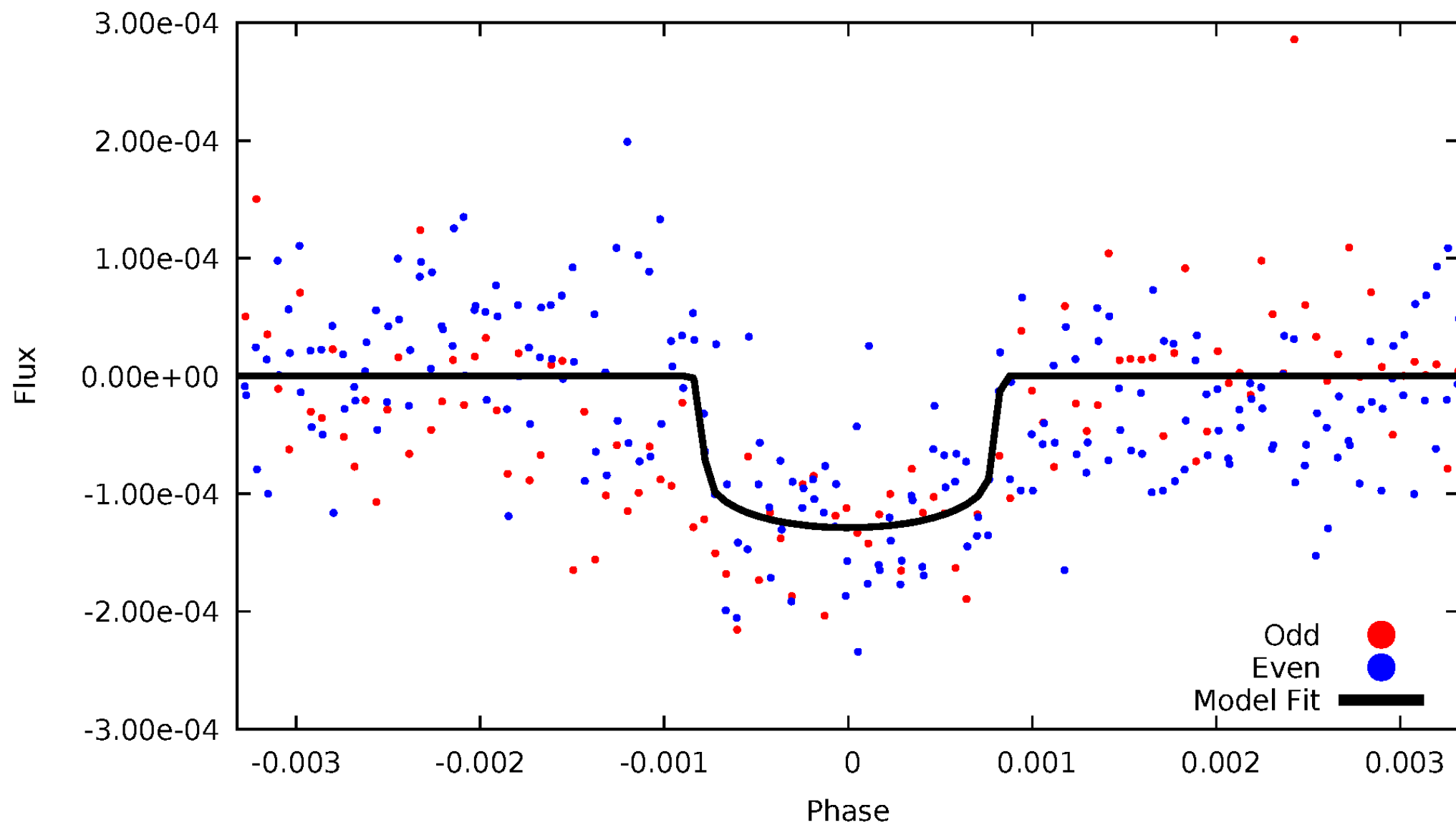


TCE 007538450-01



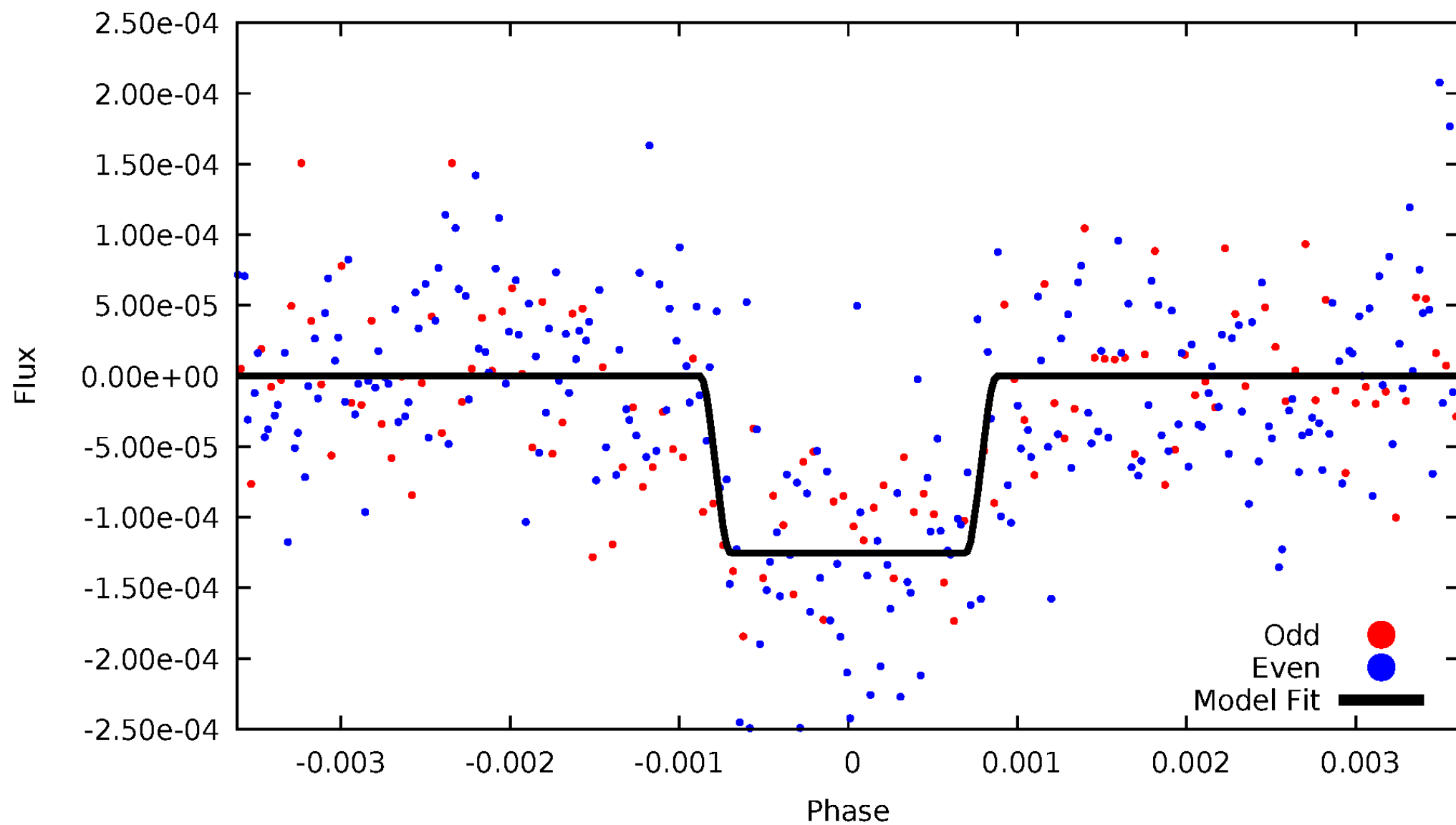
DV Odd/Even

TCE 007538450-01



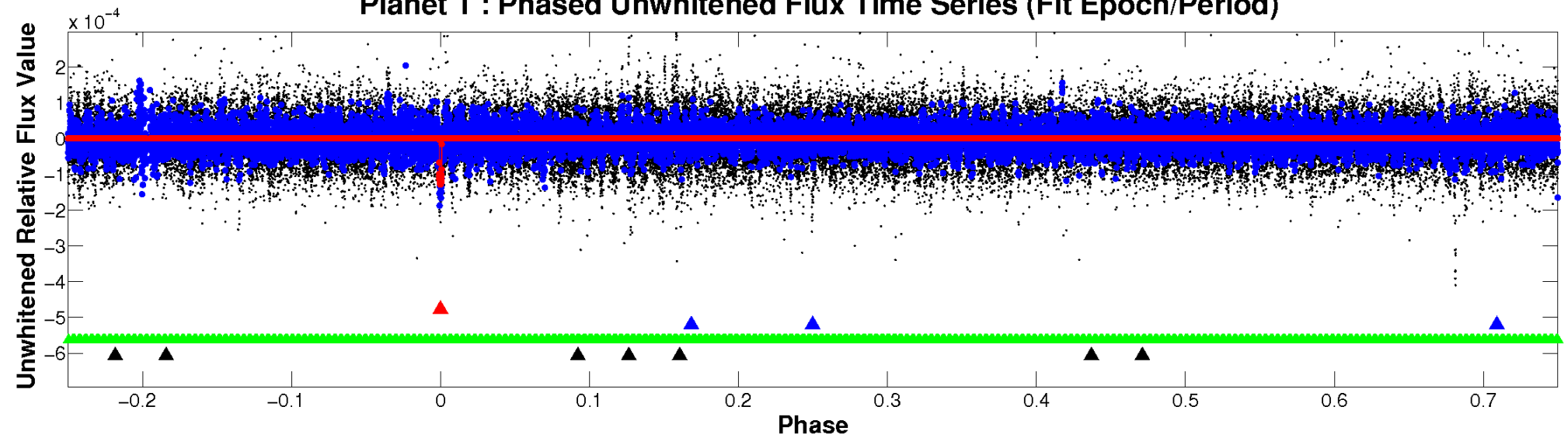
ALT Odd/Even

TCE 007538450-01

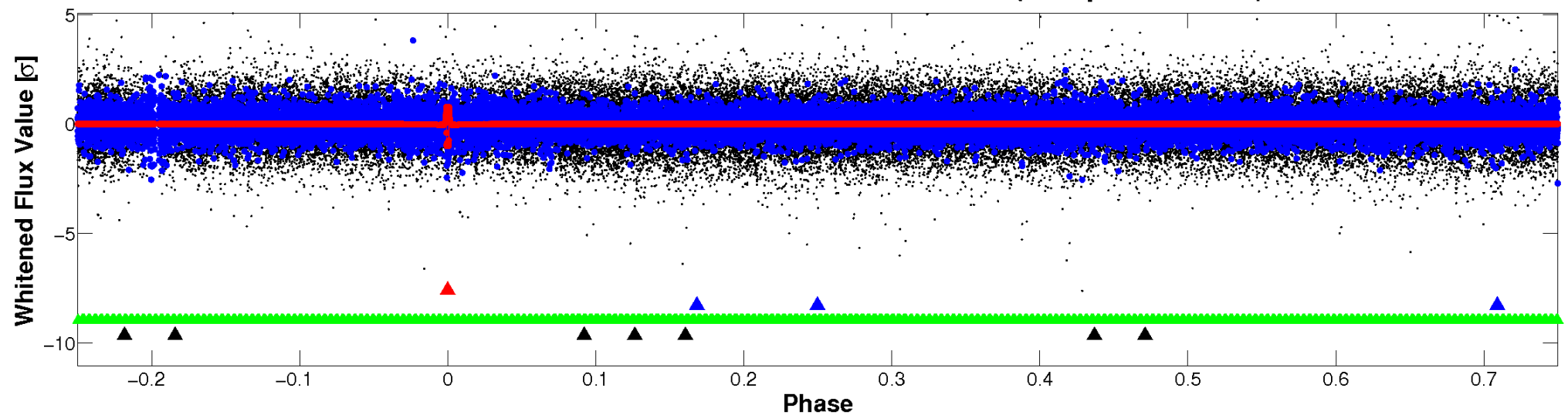


Non-Whitened Vs. Whitened Light Curve

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

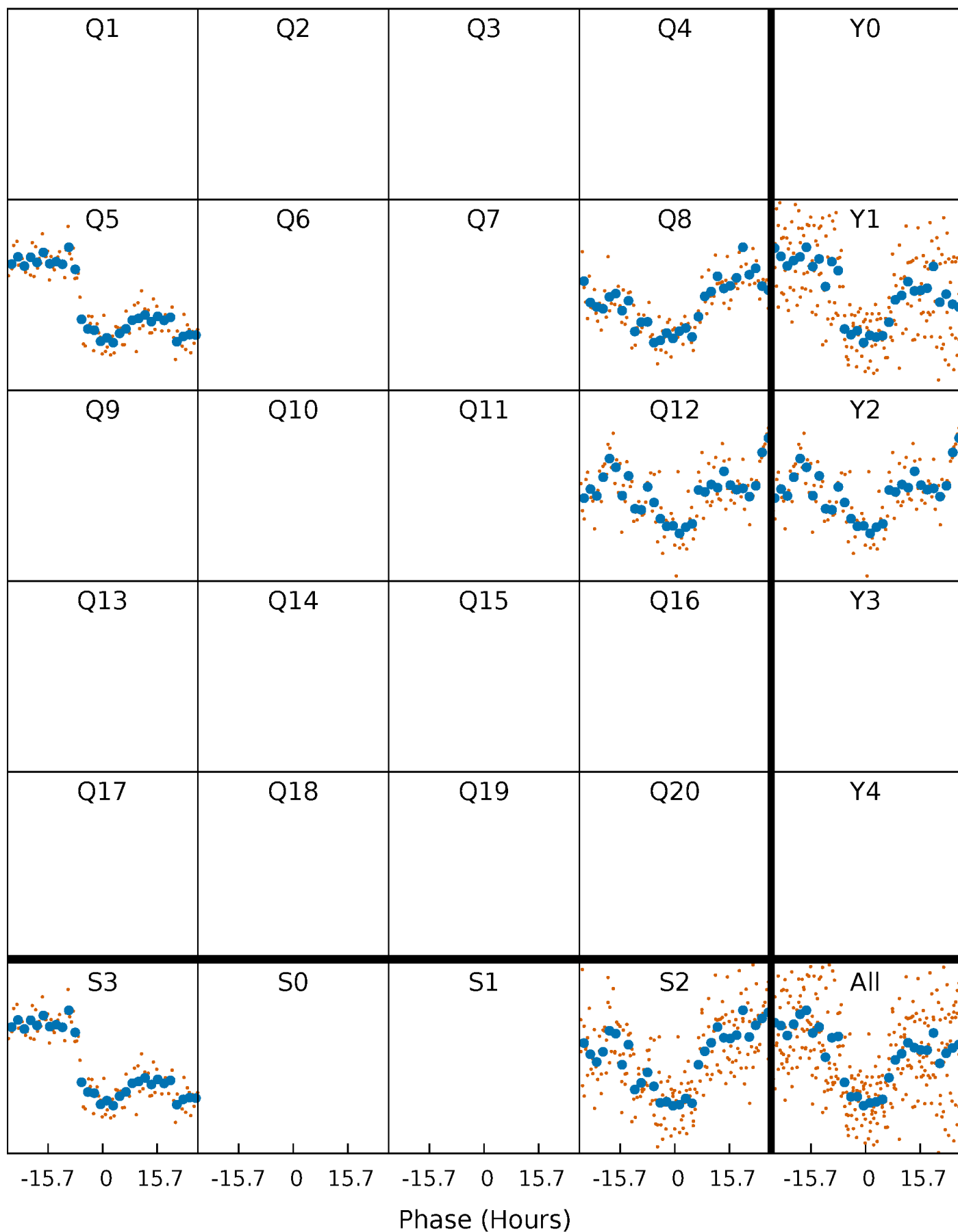


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



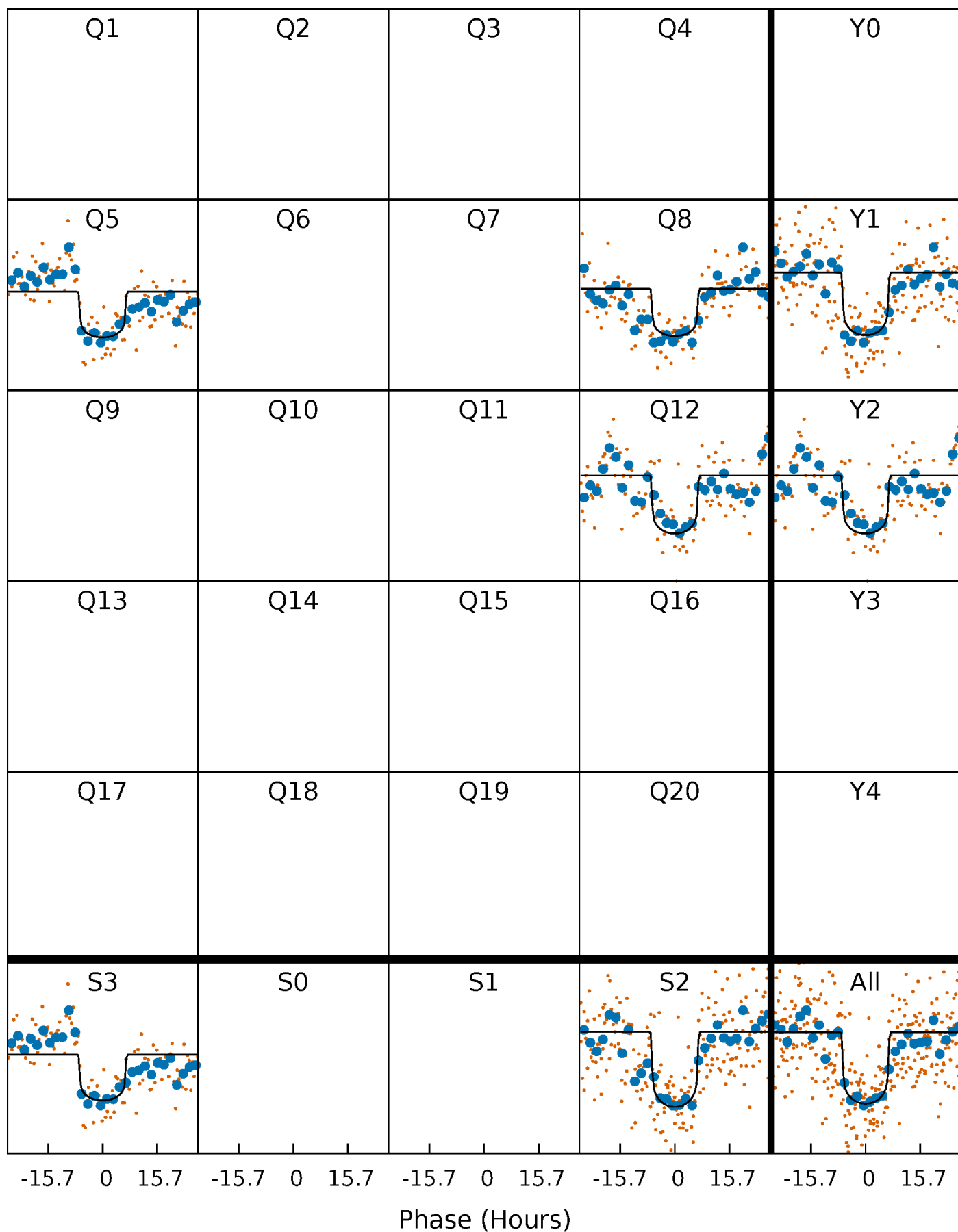
PDC Quarter-Phased Transit Curves

TCE 007538450-01 P=344.079737 Days $T_0=451.402588$ (BKJD)



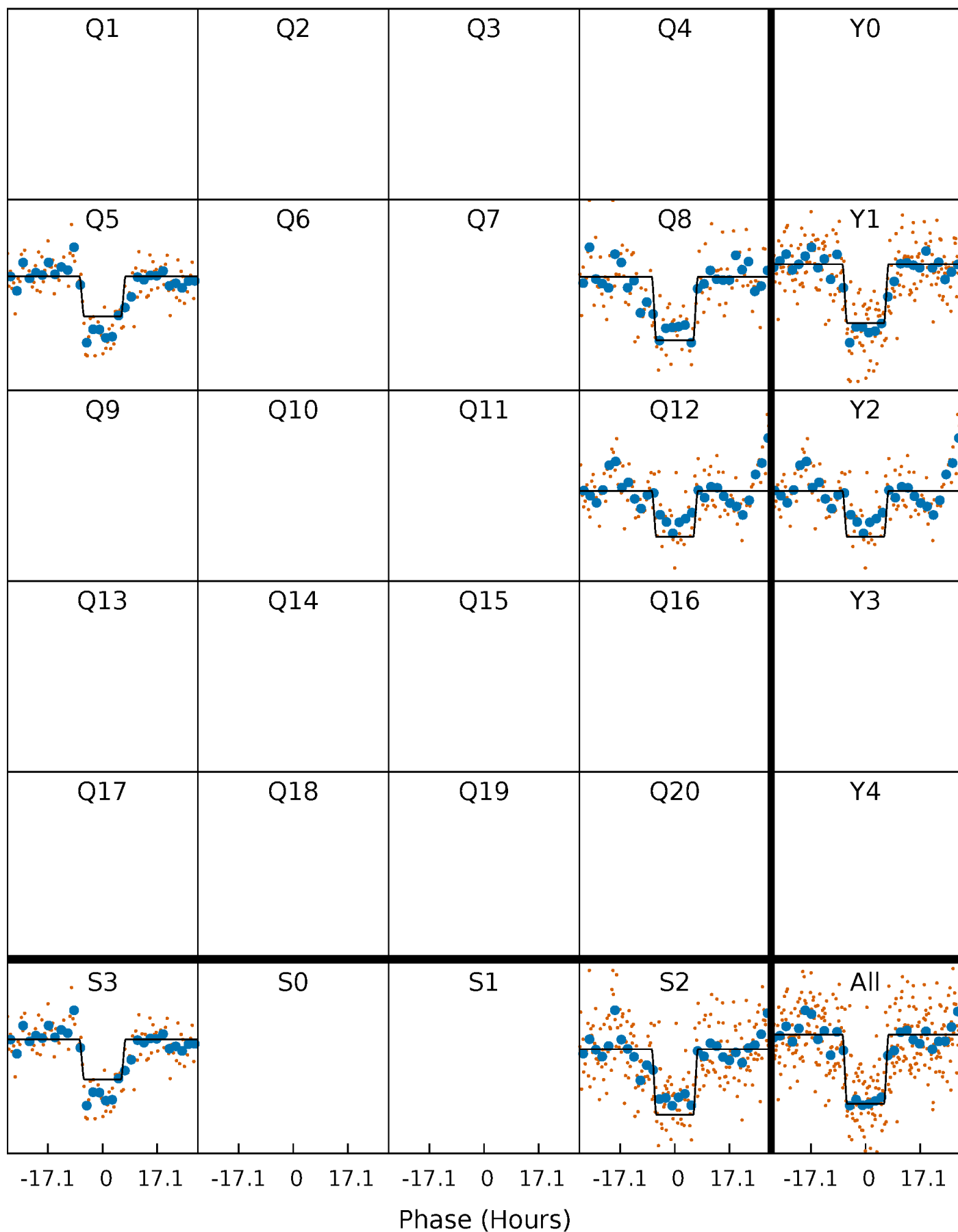
DV Quarter-Phased Transit Curves

TCE 007538450-01 P=344.079737 Days $T_0=451.402588$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

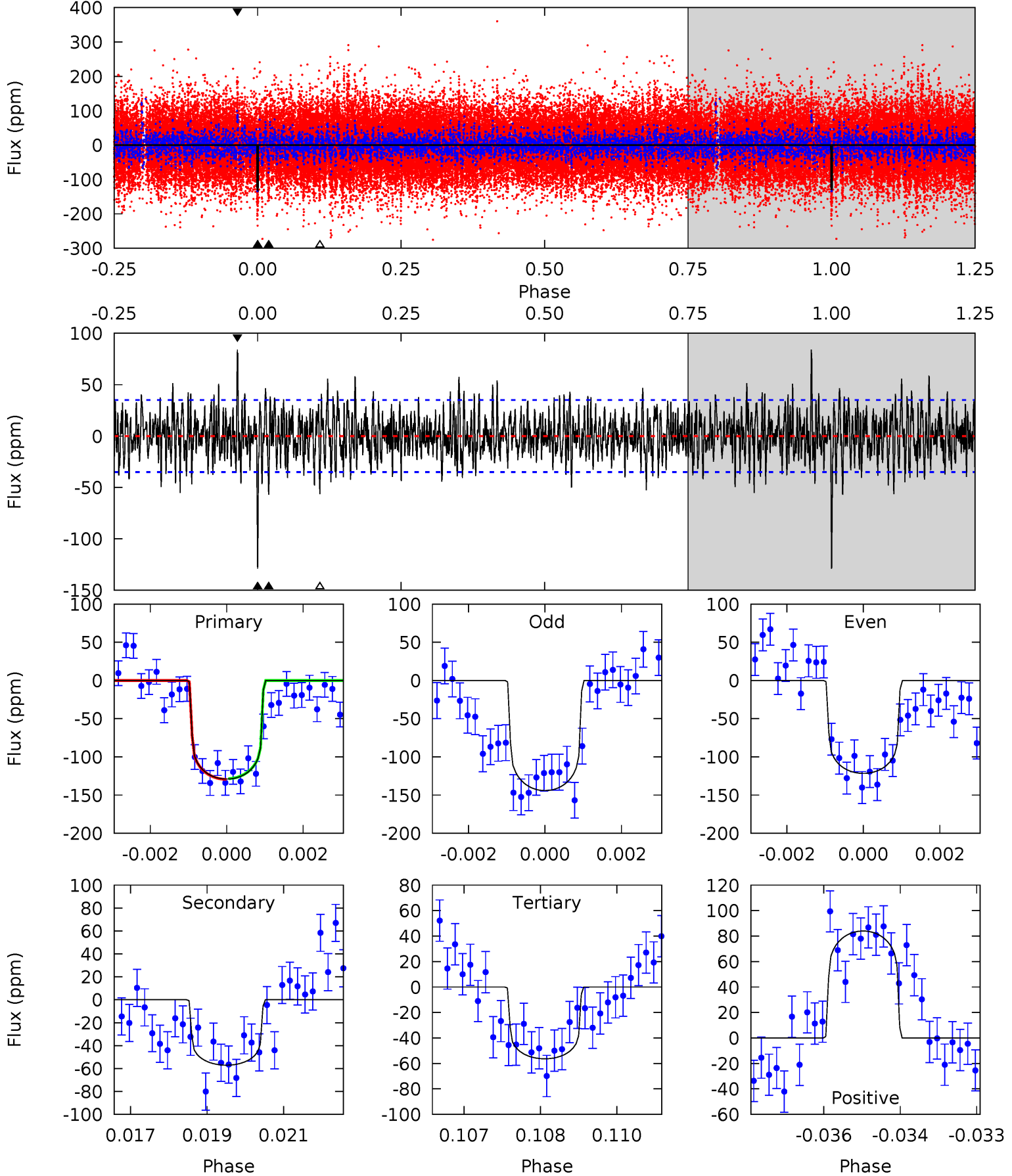
TCE 007538450-01 P=344.094339 Days $T_0=451.393983$ (BKJD)



DV Model-Shift Uniqueness Test

007538450-01, $P = 344.079737$ Days, $E = 107.322851$ Days

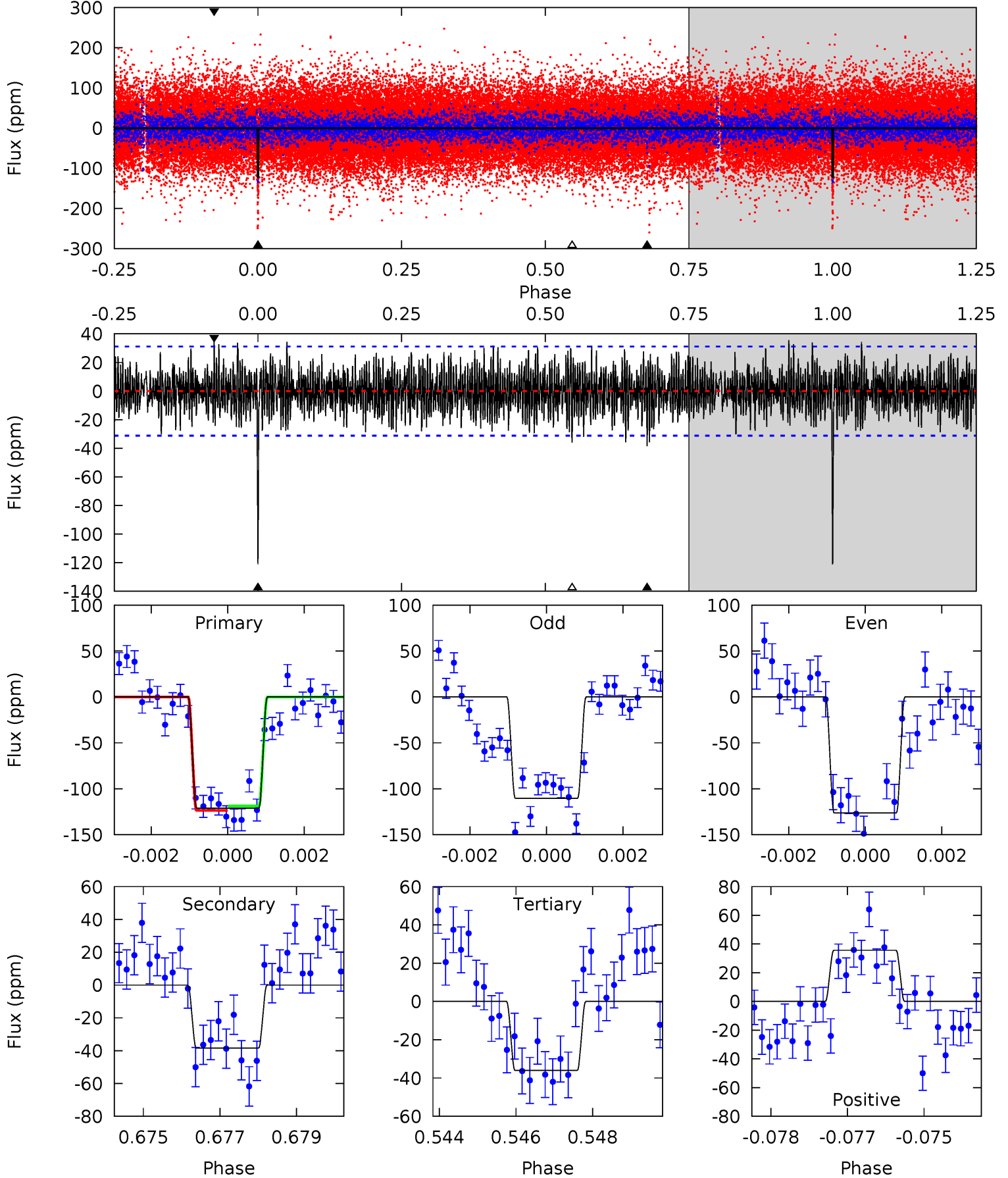
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	8.71	8.60	12.8	5.35	3.13	2.73	11.1	6.88	0.11	-4.10	1.61	0.97	0.39	0.07



Alt Model-Shift Uniqueness Test

007538450-01, $P = 344.094339$ Days, $E = 107.299644$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	6.61	6.20	6.12	5.36	3.14	2.03	14.6	14.7	0.41	0.48	1.28	1.10	0.23	0.42



Stellar Parameters For KIC 007538450

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7664^{+212}_{-345}	$3.611^{+0.522}_{-0.058}$	$-0.120^{+0.200}_{-0.300}$	$3.697^{+0.620}_{-1.860}$	$2.039^{+0.240}_{-0.519}$	$0.057^{+0.348}_{-0.016}$
	+3%/-5%	+14%/-2%	+167%/-250%	+17%/-50%	+12%/-25%	+613%/-27%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007538450-01 / KOI 5396.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-57 ± 7	$4.11^{+1.07}_{-1.14}$	776^{+63}_{-94}	6041^{+611}_{-481}	2719^{+2454}_{-957}
Alt.	-38 ± 6	$4.06^{+0.94}_{-1.17}$	782^{+58}_{-101}	5557^{+581}_{-415}	1900^{+1725}_{-680}

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 $A_{obs} \gg 1.0$

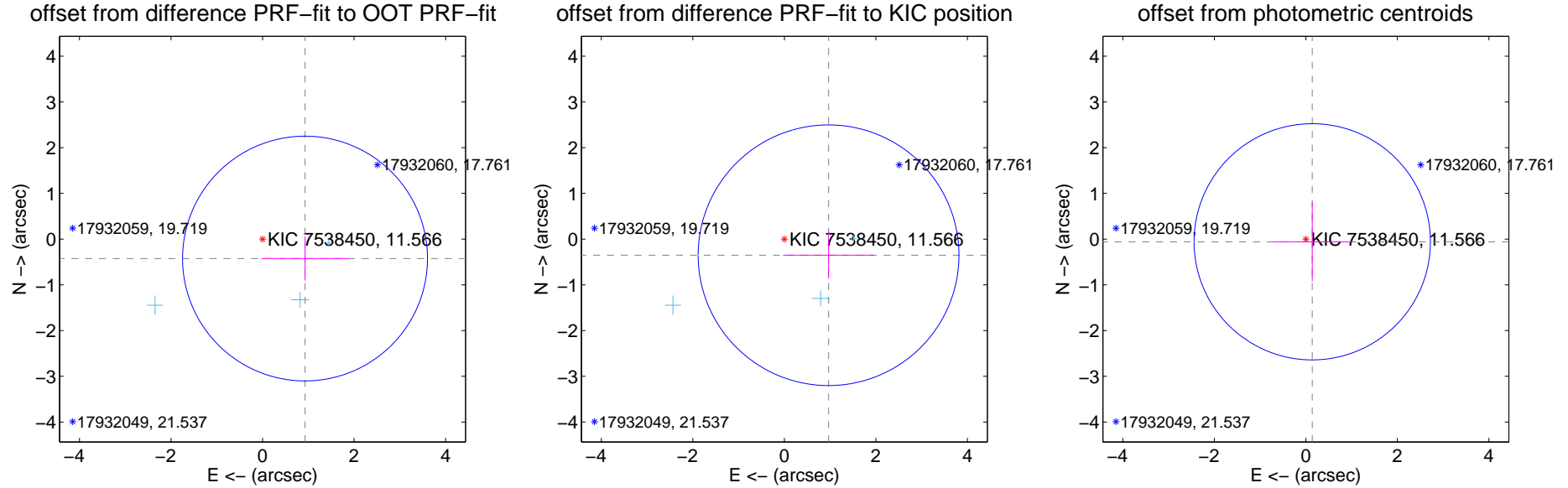
DV Centroid Data

Supplemental centroid analysis for 007538450-01. **Kepler magnitude: 11.57.** Transit SNR 8.60

There are 3 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.021 ± 0.892	1.14	-0.928 ± 0.956	-0.425 ± 0.482
PRF-fit source offset from KIC position	1.028 ± 0.950	1.08	-0.966 ± 0.994	-0.353 ± 0.512
photometric centroid source offset	0.15 ± 0.86	0.18	-0.14 ± 0.86	-0.06 ± 0.86

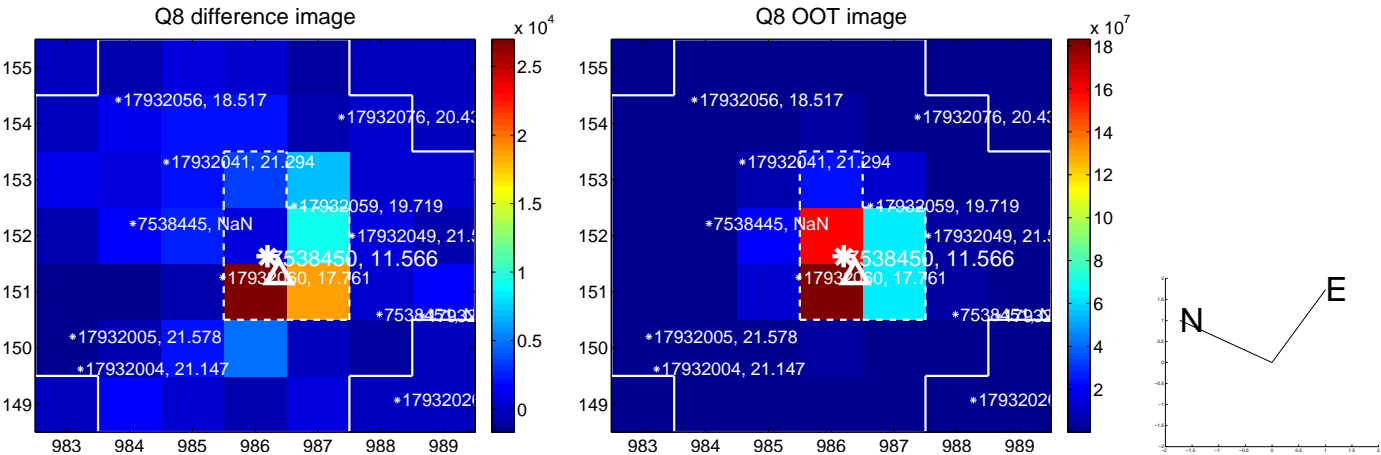
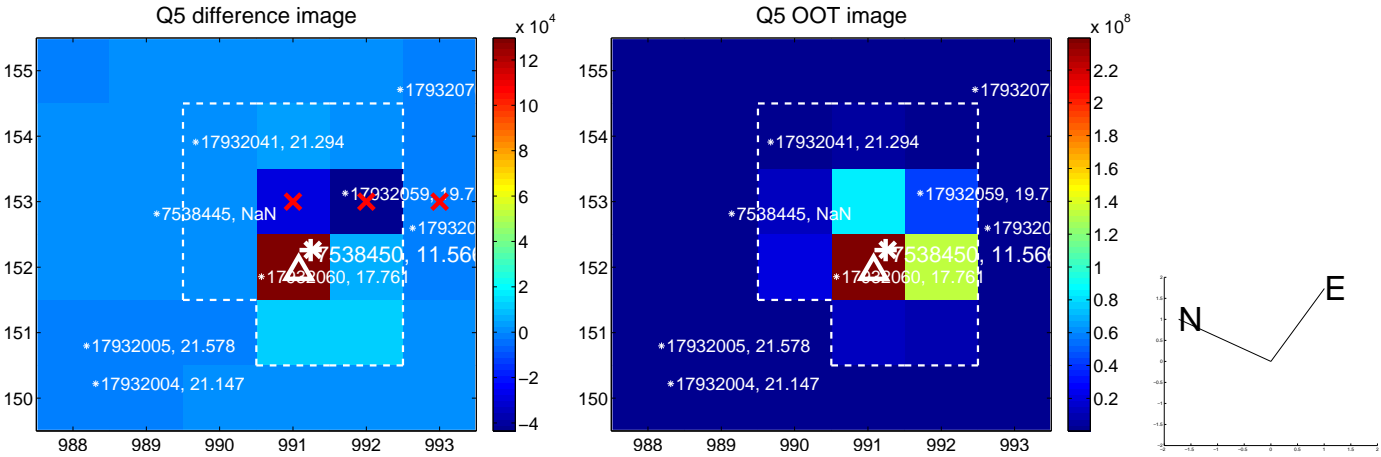


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

Q9 no difference image



Q9 no OOT image



Q10 no difference image



Q10 no OOT image



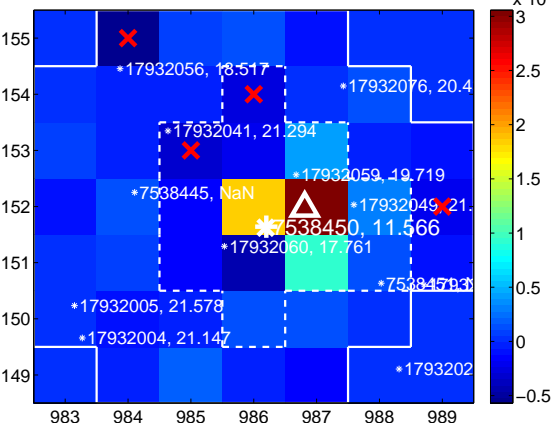
Q11 no difference image



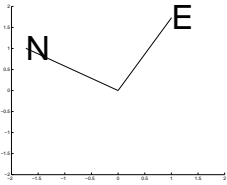
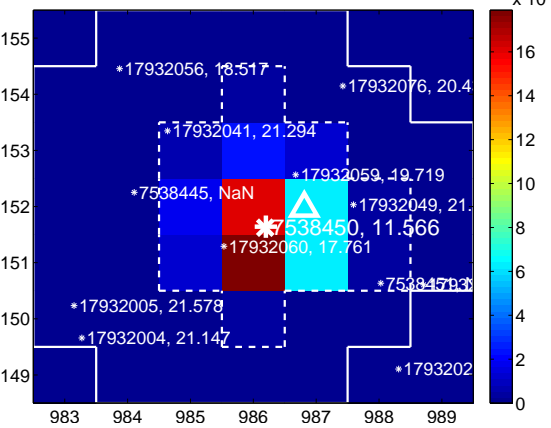
Q11 no OOT image



Q12 difference image



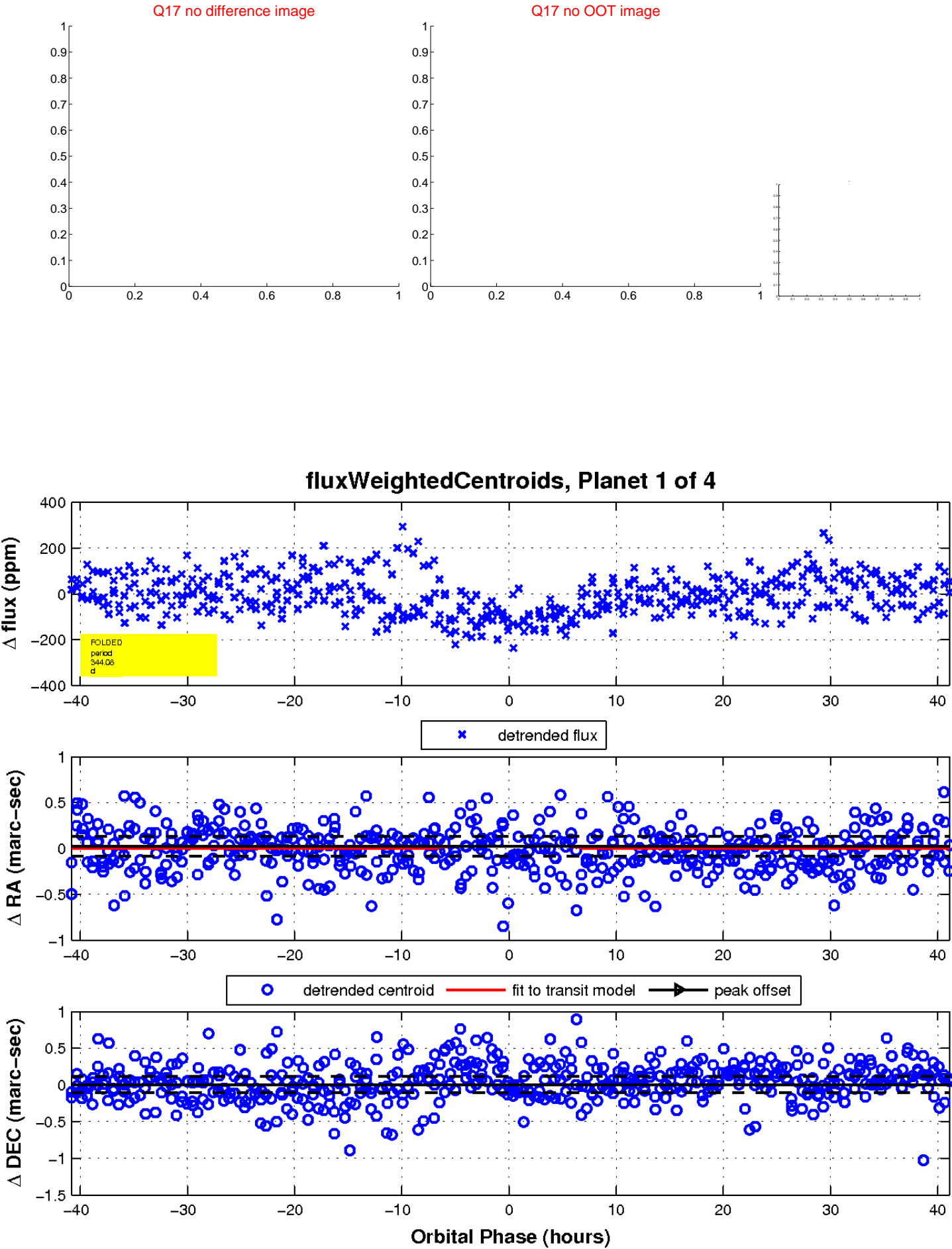
Q12 OOT image



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

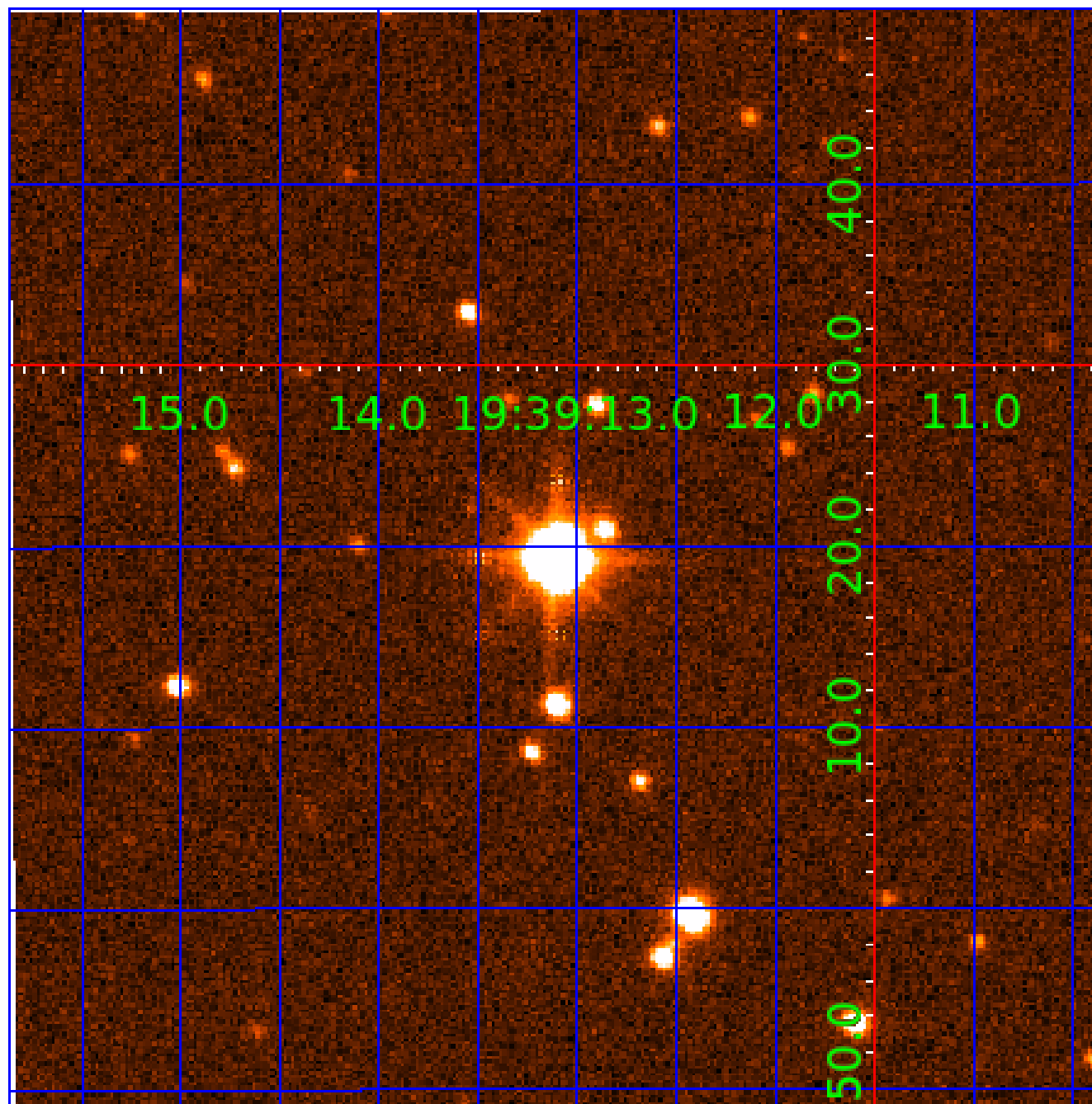


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007538450

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})
007538450-01	OBS	5396.01	344.079737	451.402588	128.8	13.713	8.1	8.6	3.70	7664	4.68	28.47
007538450-02	OBS	No	502.107848	193.271855	120.2	13.640	7.9	7.8	3.70	7664	4.42	17.20
007538450-03	OBS	No	1.403775	132.479860	6.1	4.649	7.1	7.2	3.70	7664	1.08	43673.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007538450-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS
007538450-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007538450-03	OBS	FP	0.00	1	0	0	0	LPP_DV

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 007538450-02

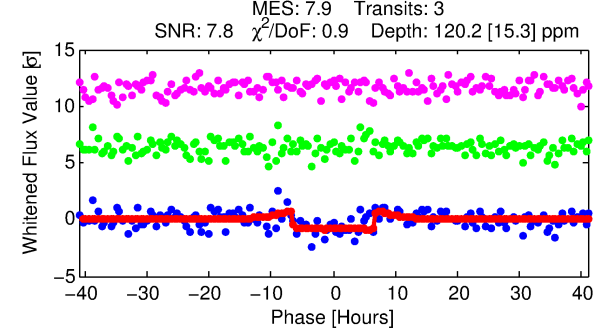
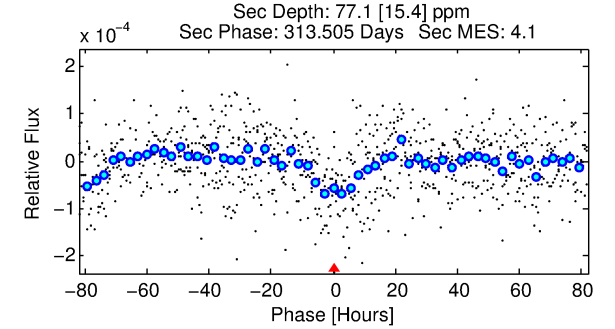
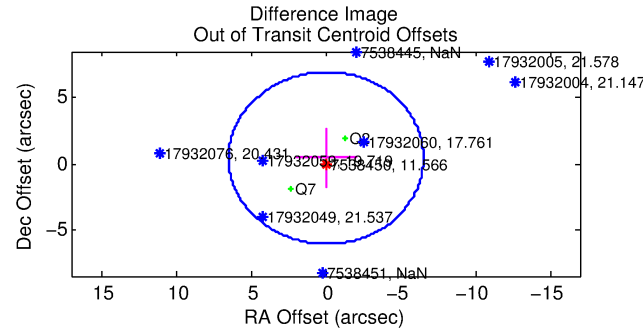
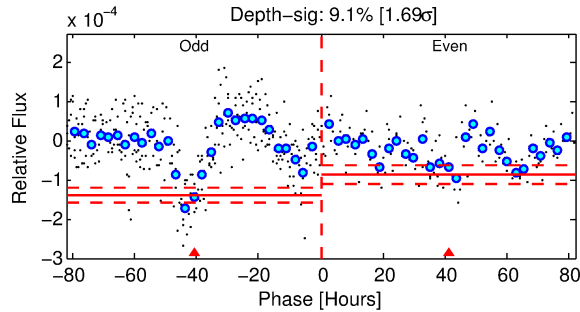
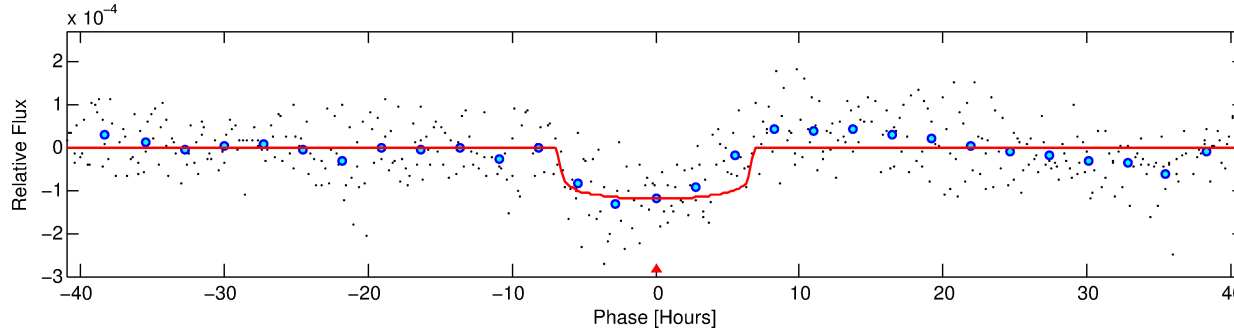
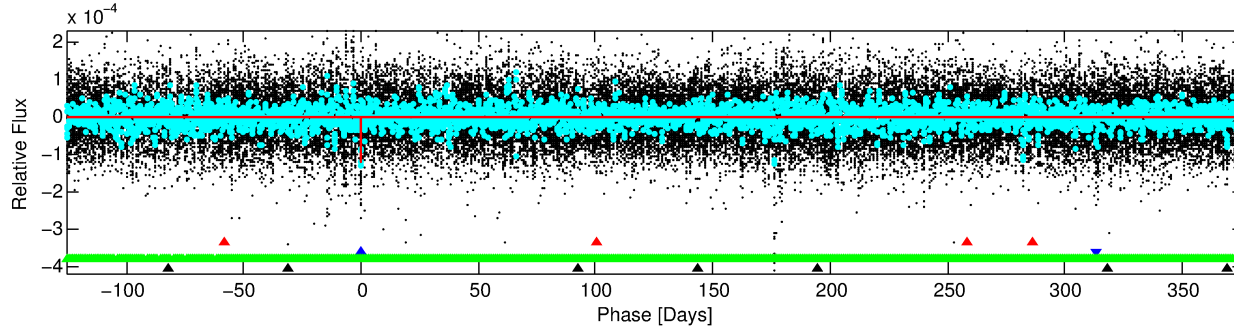
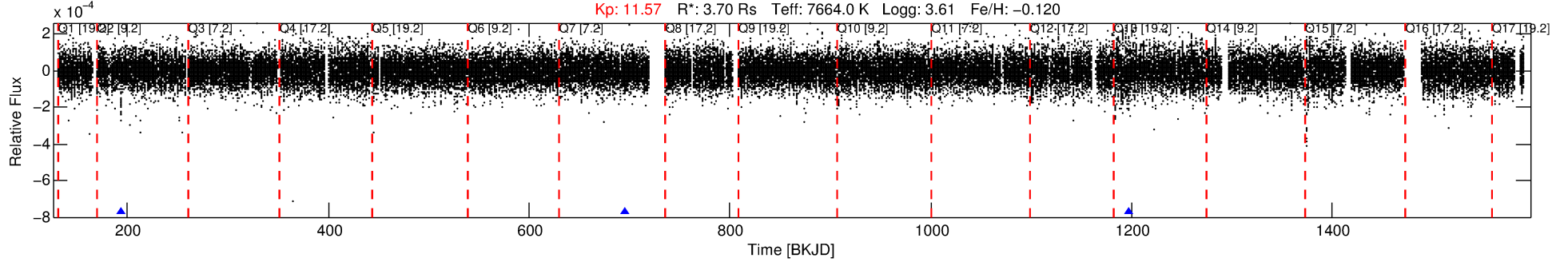
No Significant Match Found

DV One-Page Summary

KIC: 7538450 Candidate: 2 of 4 Period: 502.108 d

KOI: K05396 Corr: No Ephemeris Match

Kp: 11.57 R*: 3.70 Rs Teff: 7664.0 K Logg: 3.61 Fe/H: -0.120



DV Fit Results:

Period = 502.10785 [0.00784] d
Epoch = 193.2719 [0.0085] BKJD
Rp/R* = 0.0110 [0.0019]
a/R* = 185.20 [170.35]
b = 0.77 [0.50]
Seff = 17.20 [15.26]
Teq = 519 [115] K
Rp = 4.42 [2.36] Re
a = 1.5672 [0.8189] AU
Ag = 5328.98 [5107.53] [1.04σ]
Teffp = 6860 [760] K [8.25σ]

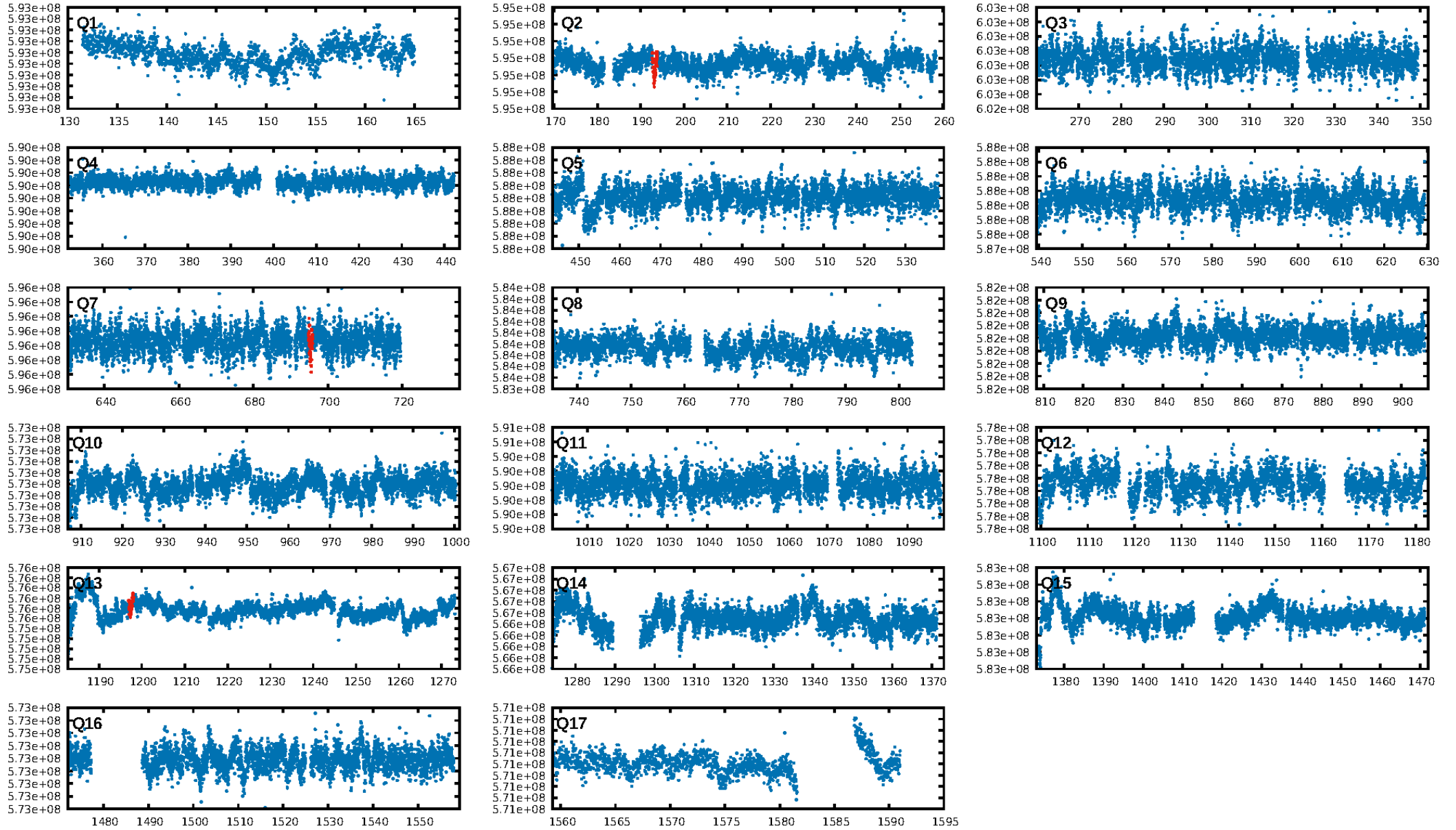
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [196.09σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 52.3%
ModelChiSquareGof-sig: 98.1%
Bootstrap-pfa: 7.84e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -5.035
Centroid-sig: 48.6%
Centroid-so: 0.698 arcsec [0.73σ]
OotOffset-rm: 0.430 arcsec [0.20σ]
KicOffset-rm: 0.368 arcsec [0.17σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/2]

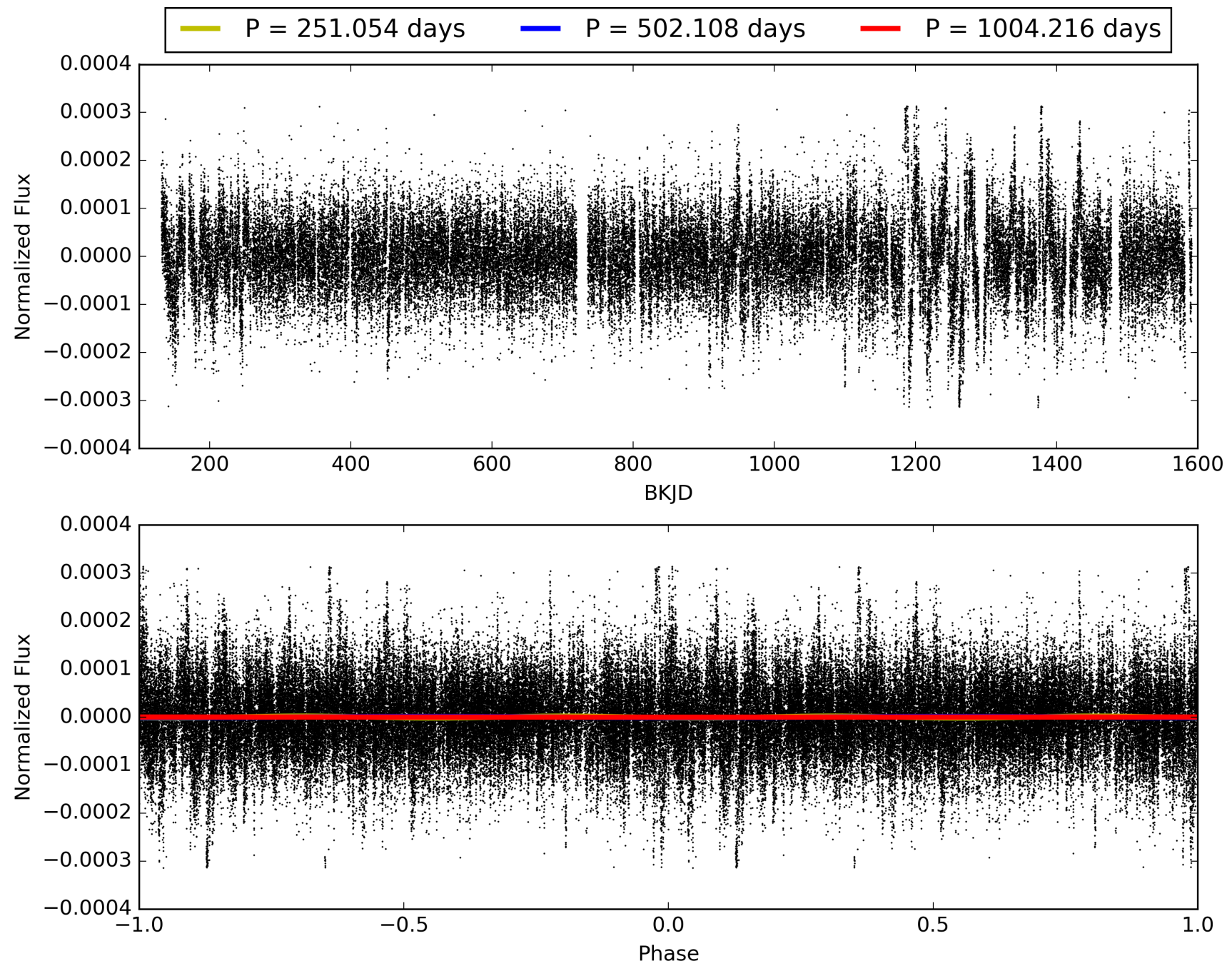
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:47:05 Z

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

TCE 007538450-02, PDC Light Curves

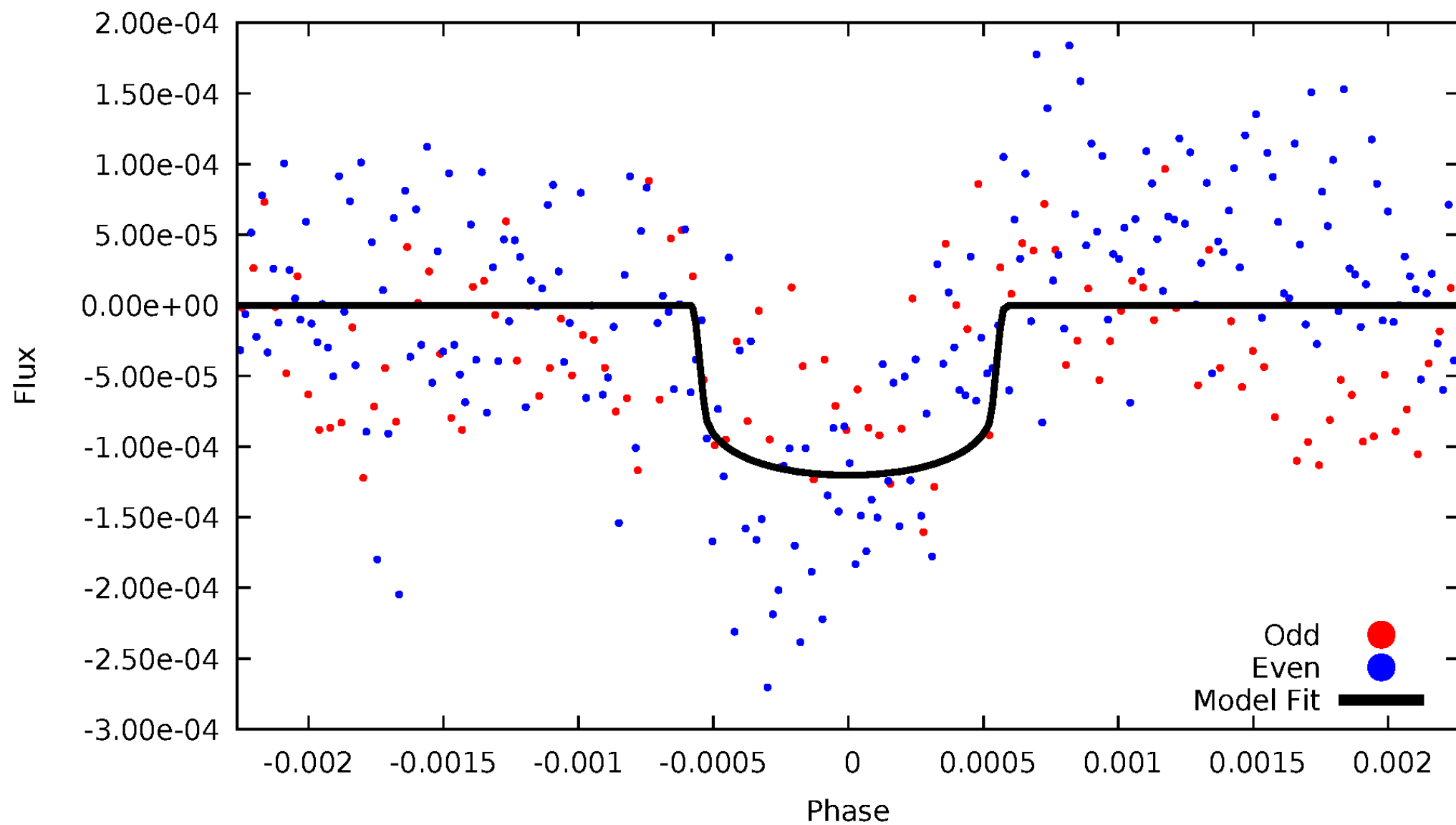


TCE 007538450-02



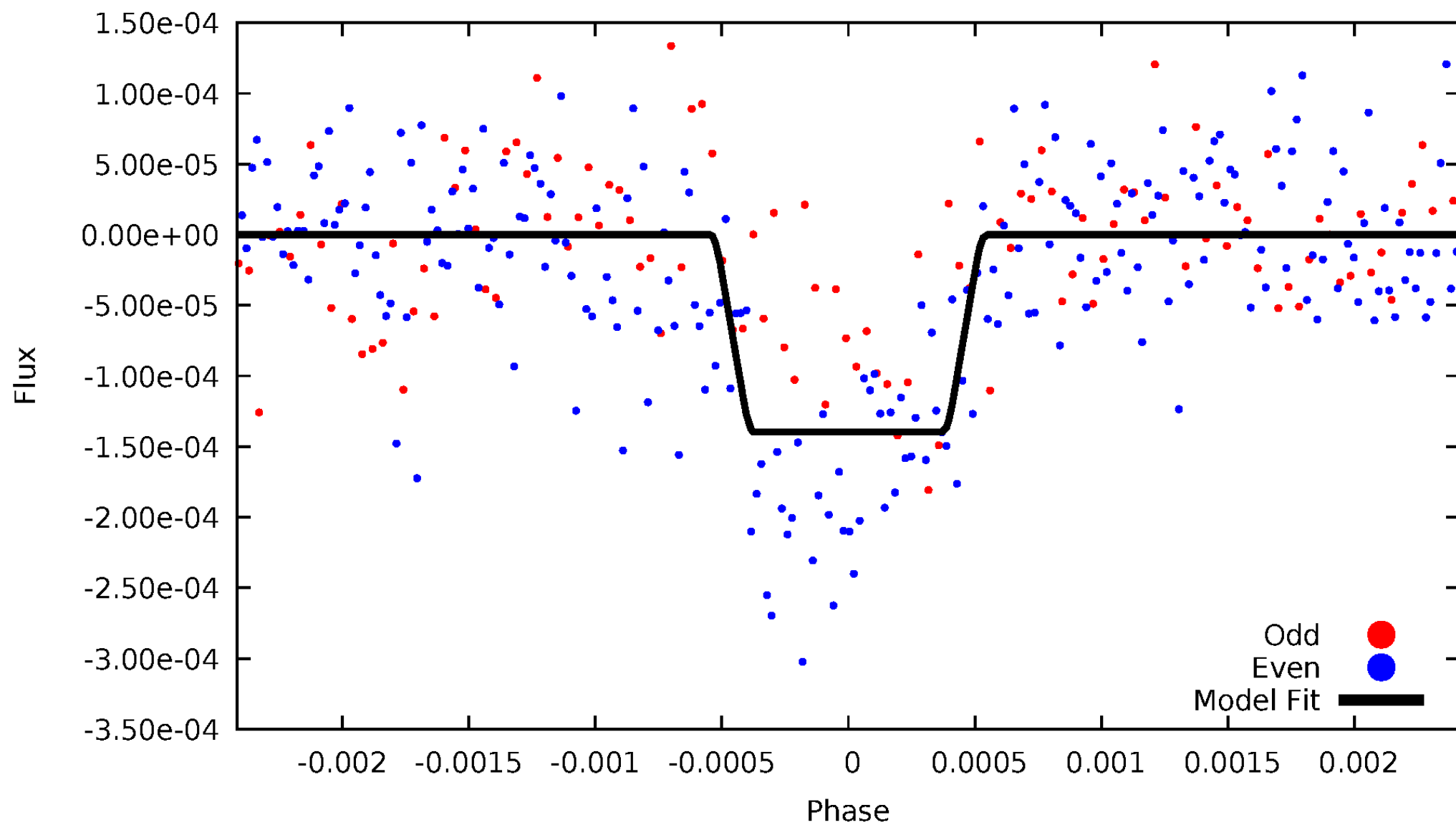
DV Odd/Even

TCE 007538450-02



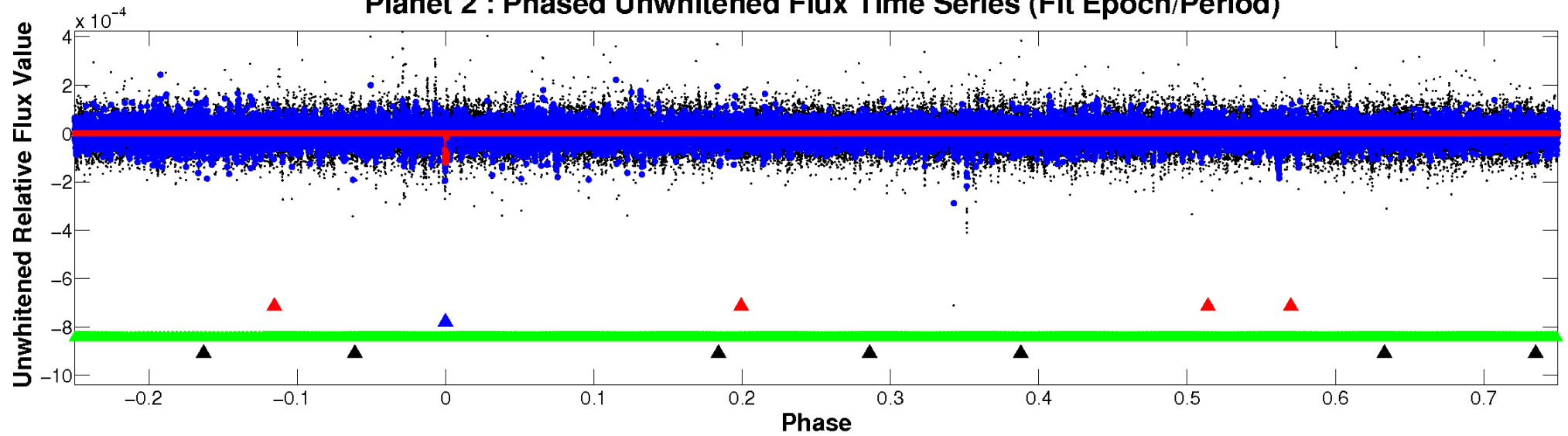
ALT Odd/Even

TCE 007538450-02

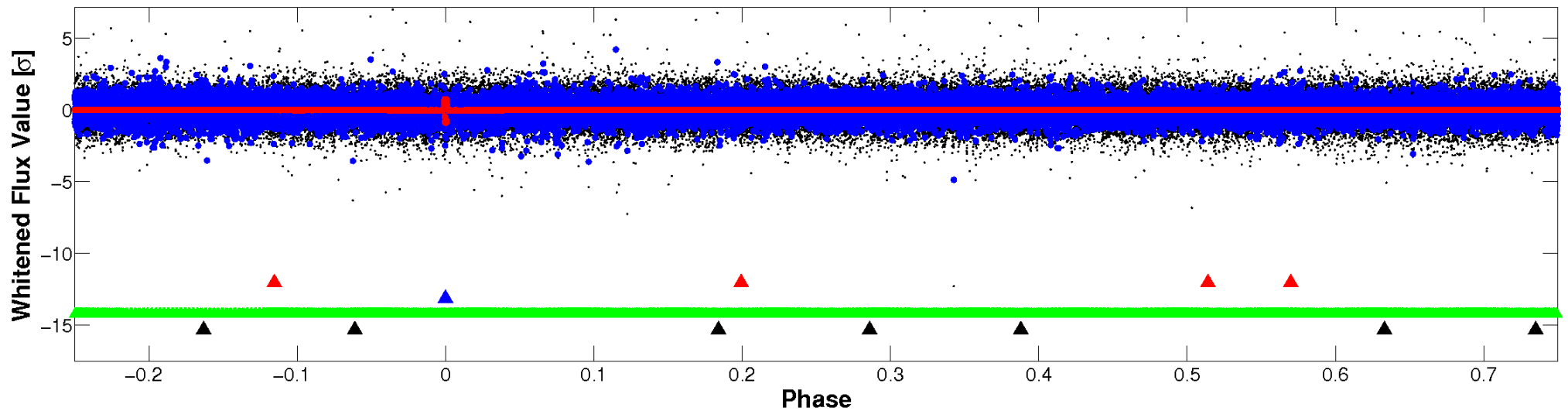


Non-Whitened Vs. Whitened Light Curve

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

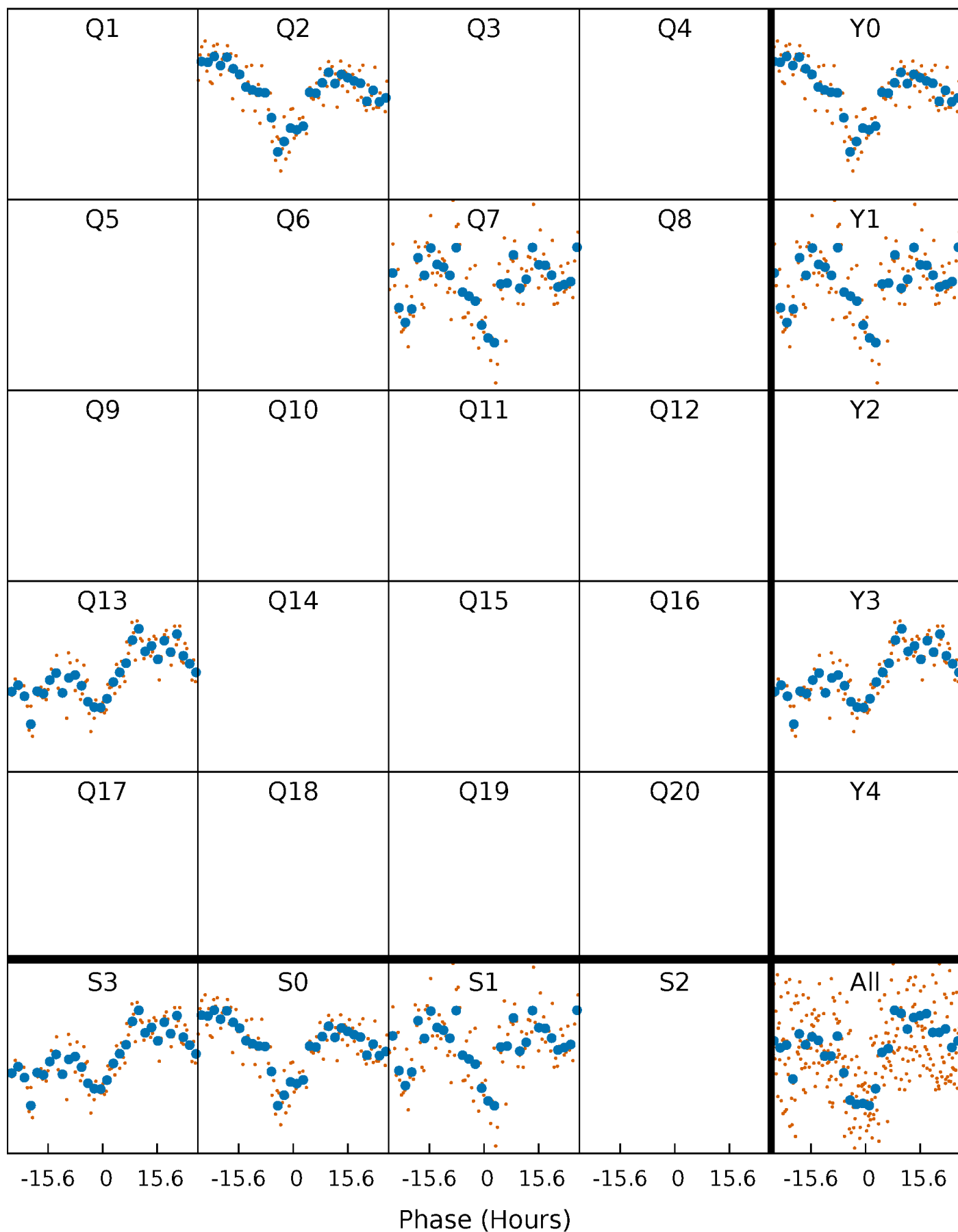


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



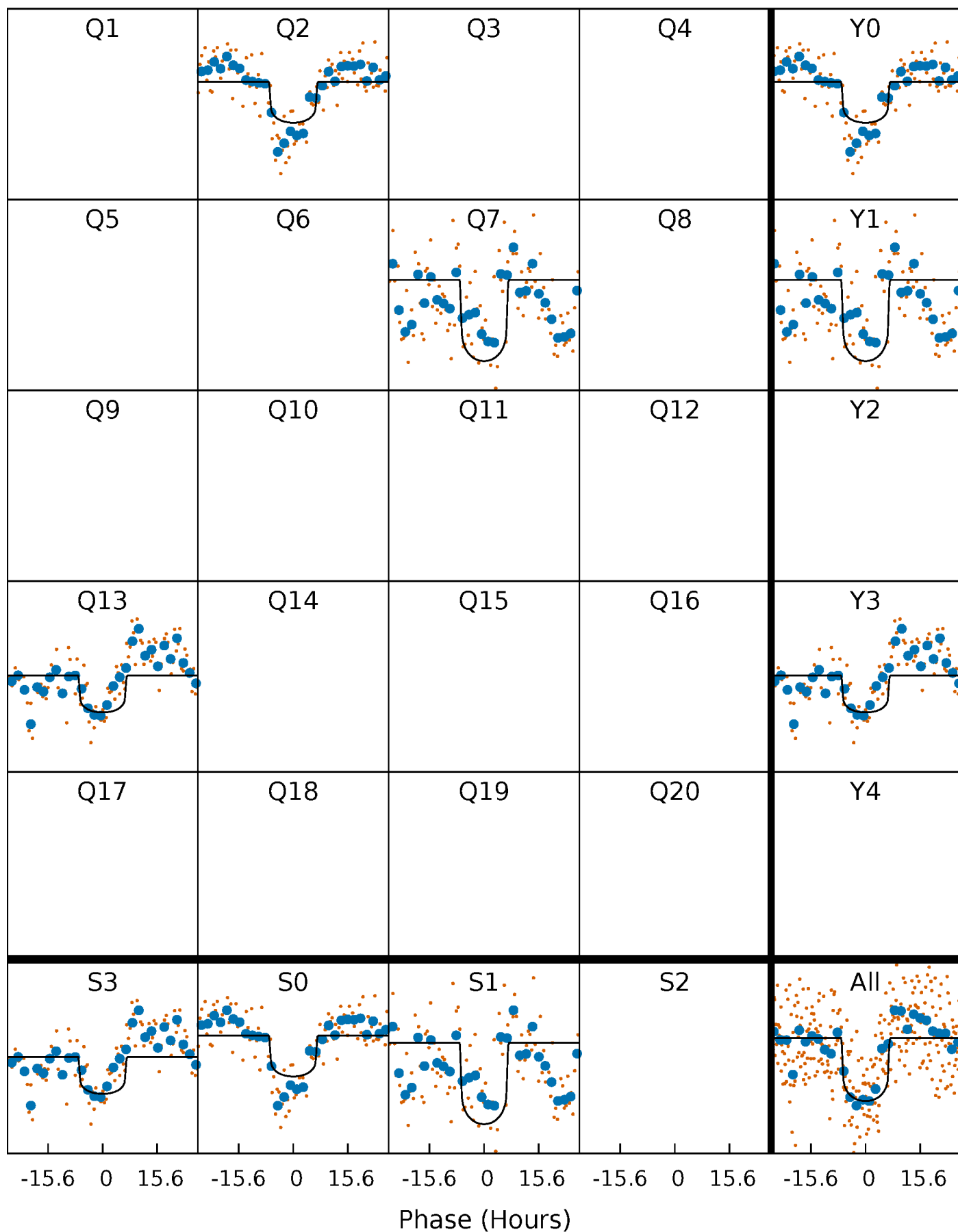
PDC Quarter-Phased Transit Curves

TCE 007538450-02 P=502.107848 Days $T_0=193.271855$ (BKJD)



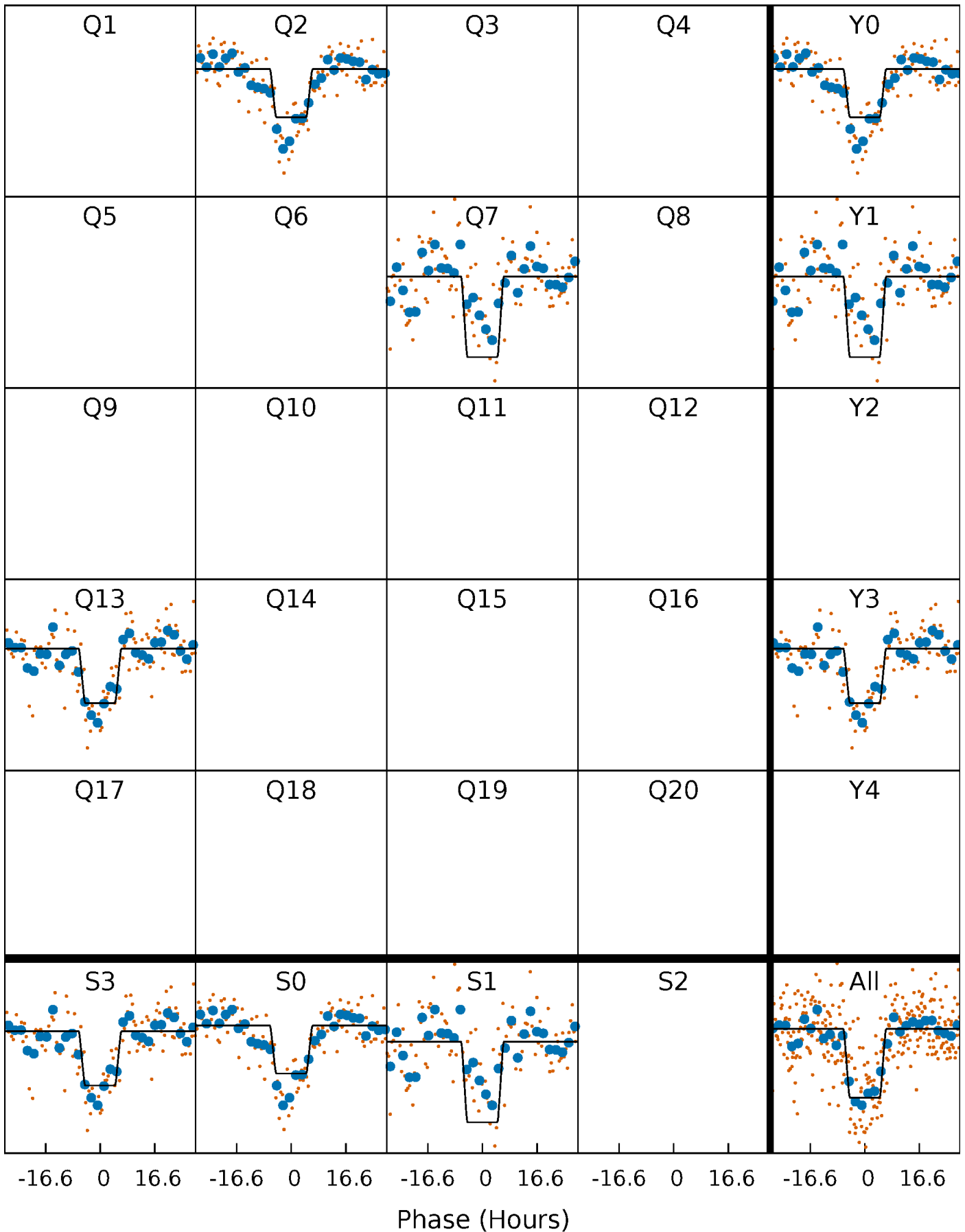
DV Quarter-Phased Transit Curves

TCE 007538450-02 P=502.107848 Days $T_0=193.271855$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

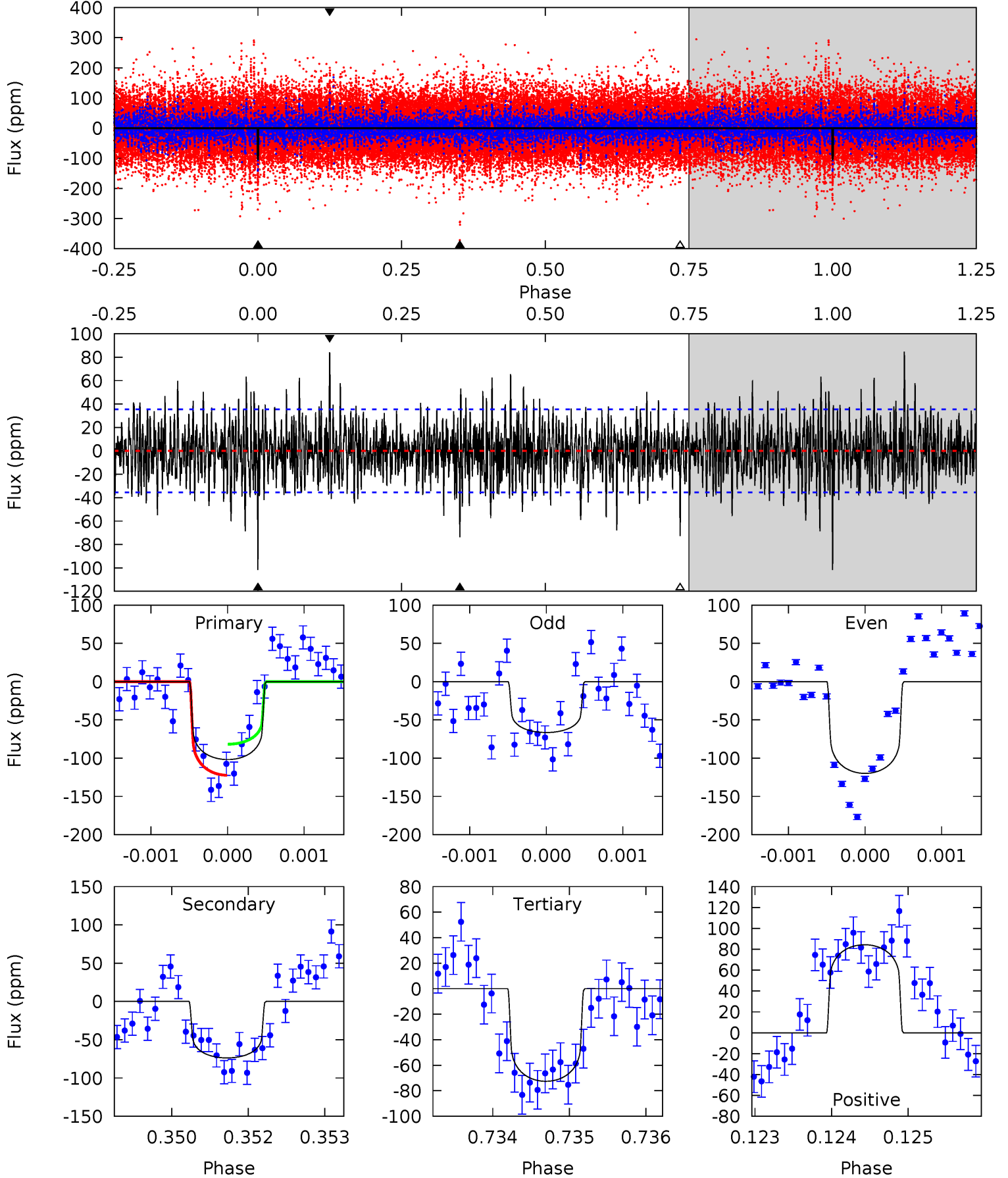
TCE 007538450-02 $P=502.147926$ Days $T_0=193.212640$ (BKJD)



DV Model-Shift Uniqueness Test

007538450-02, P = 502.107848 Days, E = 193.271855 Days

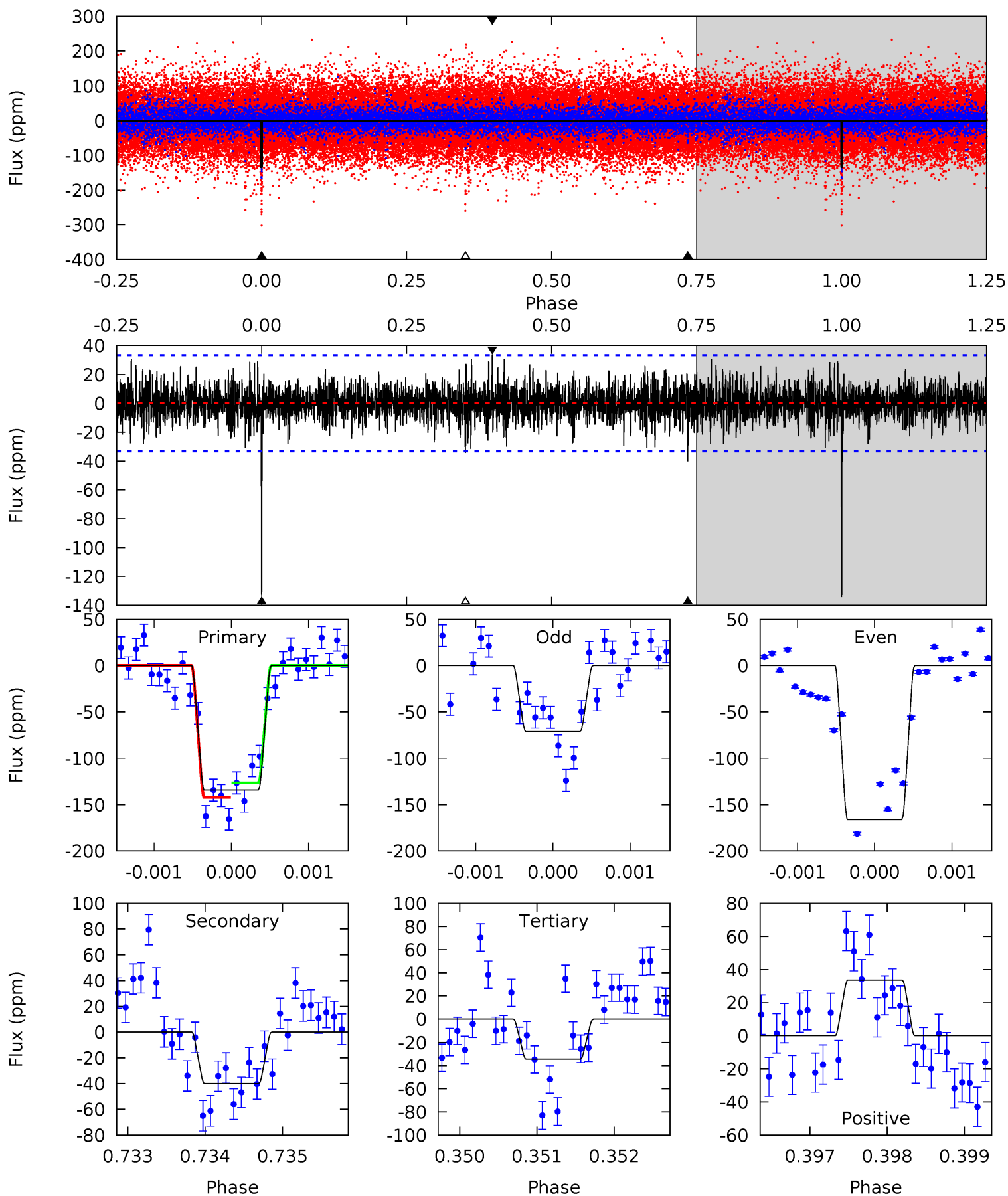
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	11.3	11.1	12.9	5.42	3.25	2.89	4.47	2.68	0.18	-1.61	3.89	1.21	0.45	3.10



Alt Model-Shift Uniqueness Test

007538450-02, P = 502.147926 Days, E = 193.212640 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	6.56	5.62	5.50	5.44	3.27	1.49	16.3	16.4	0.94	1.05	7.41	0.91	0.20	1.29



Stellar Parameters For KIC 007538450

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7664^{+212}_{-345}	$3.611^{+0.522}_{-0.058}$	$-0.120^{+0.200}_{-0.300}$	$3.697^{+0.620}_{-1.860}$	$2.039^{+0.240}_{-0.519}$	$0.057^{+0.348}_{-0.016}$
	+3%/-5%	+14%/-2%	+167%/-250%	+17%/-50%	+12%/-25%	+613%/-27%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007538450-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-74 ± 7	$3.90^{+1.11}_{-1.21}$	689^{+52}_{-94}	6665^{+821}_{-635}	6582^{+6541}_{-2483}
Alt.	-40 ± 6	$4.17^{+1.06}_{-1.23}$	681^{+60}_{-89}	5495^{+558}_{-425}	3131^{+3047}_{-1226}

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

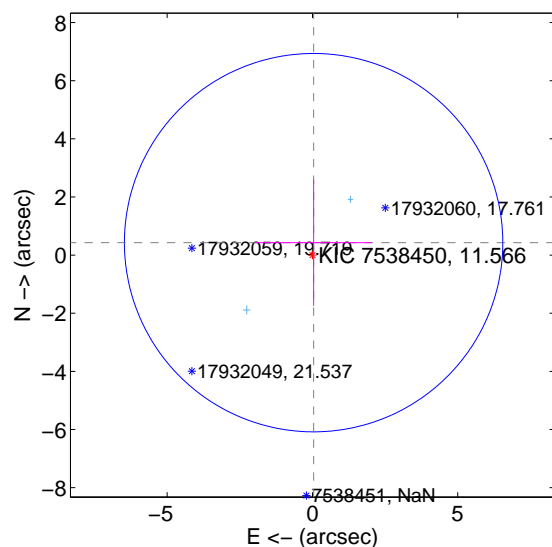
Supplemental centroid analysis for 007538450-02. **Kepler magnitude: 11.57.** Transit SNR 7.76

There are 2 quarters with good PRF difference image offsets

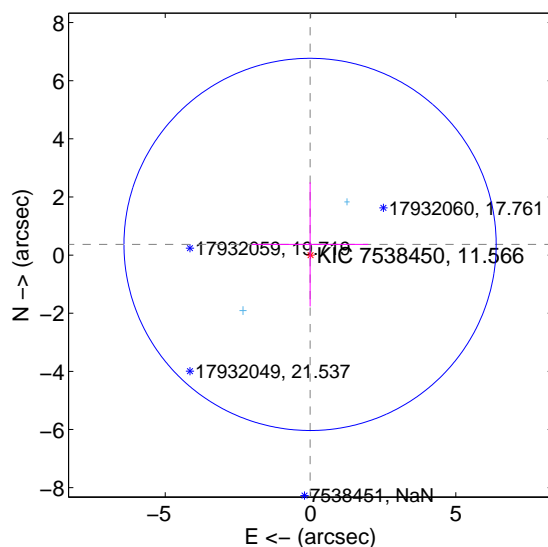
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.430 ± 2.170	0.20	-0.040 ± 1.996	0.428 ± 2.171
PRF-fit source offset from KIC position	0.368 ± 2.134	0.17	0.015 ± 2.003	0.368 ± 2.135
photometric centroid source offset	0.70 ± 0.96	0.73	-0.48 ± 0.88	-0.50 ± 1.02

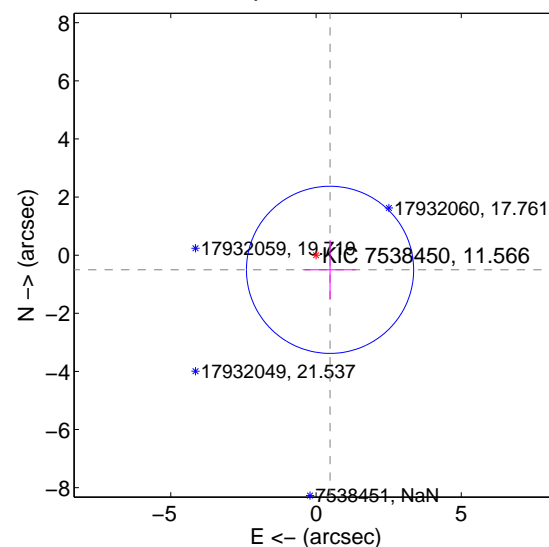
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



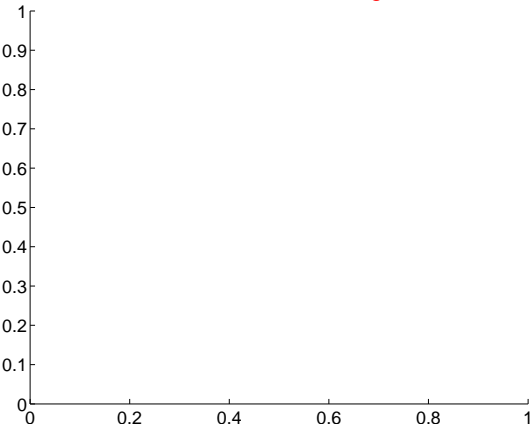
offset from photometric centroids



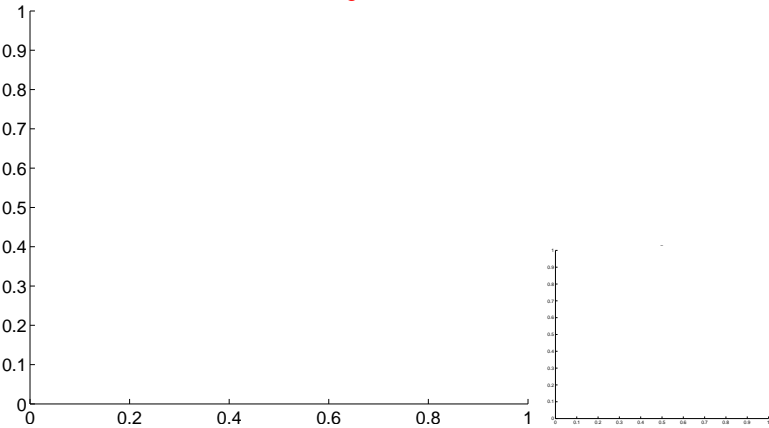
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

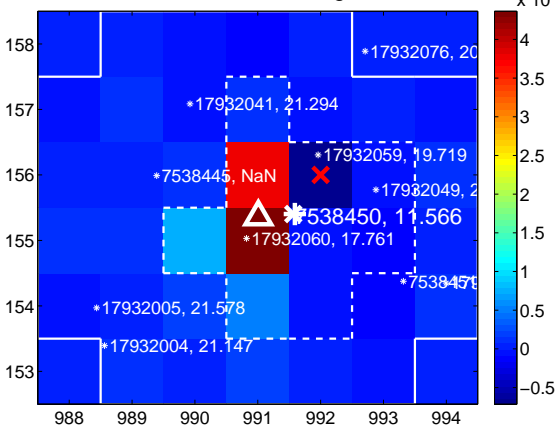
Q1 no difference image



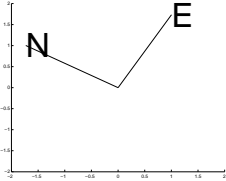
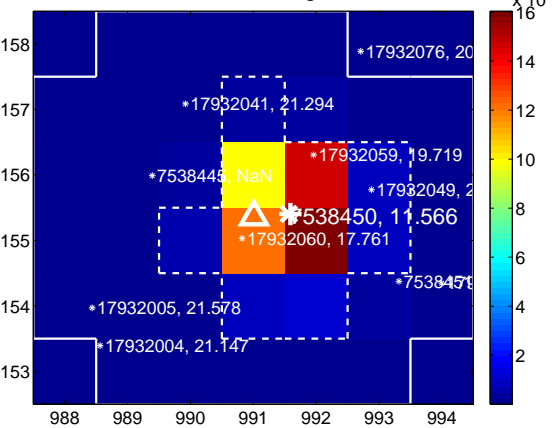
Q1 no OOT image



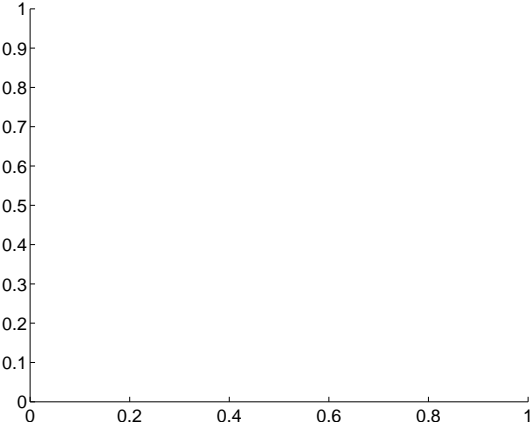
Q2 difference image



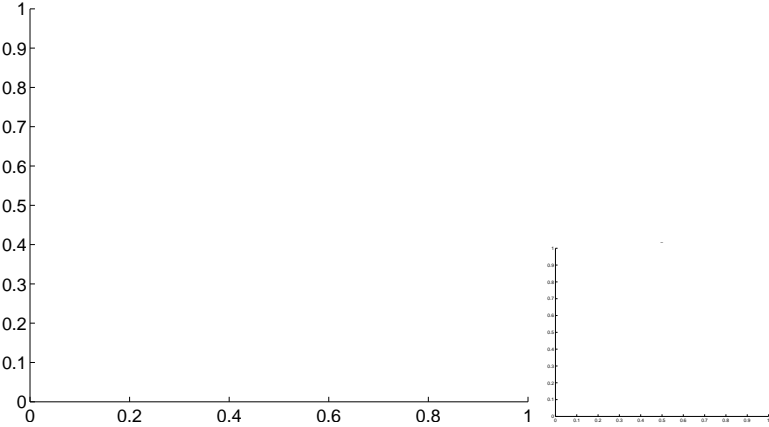
Q2 OOT image



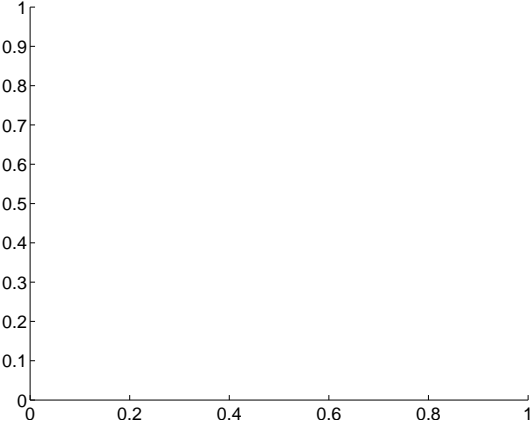
Q3 no difference image



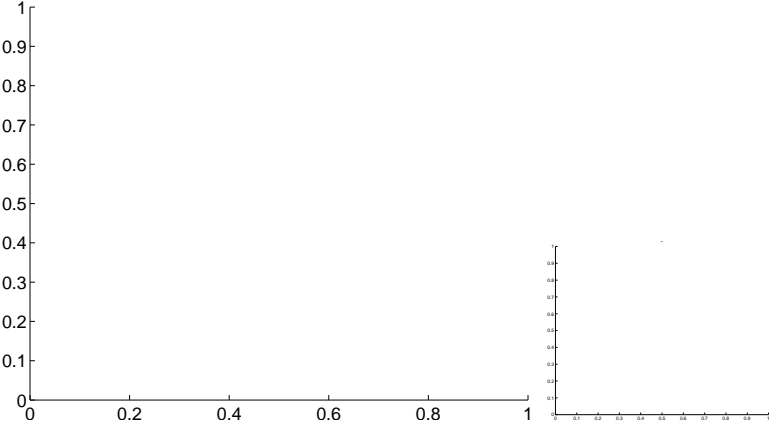
Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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

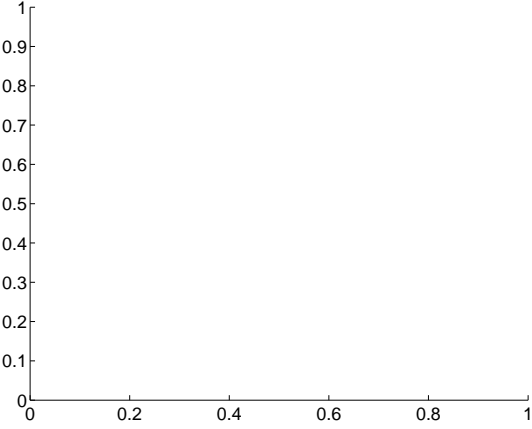
Q5 no difference image



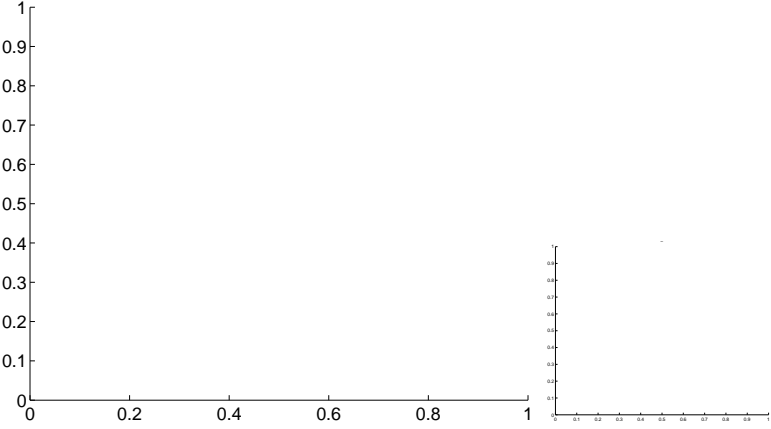
Q5 no OOT image



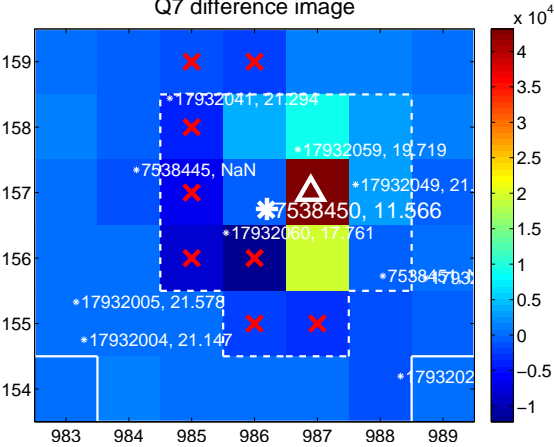
Q6 no difference image



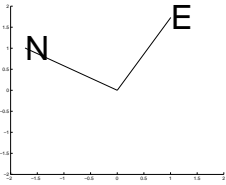
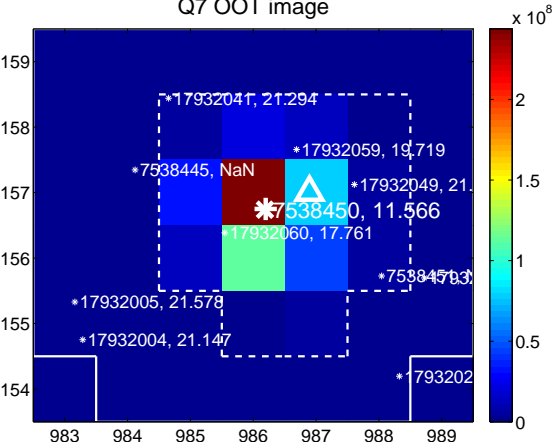
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



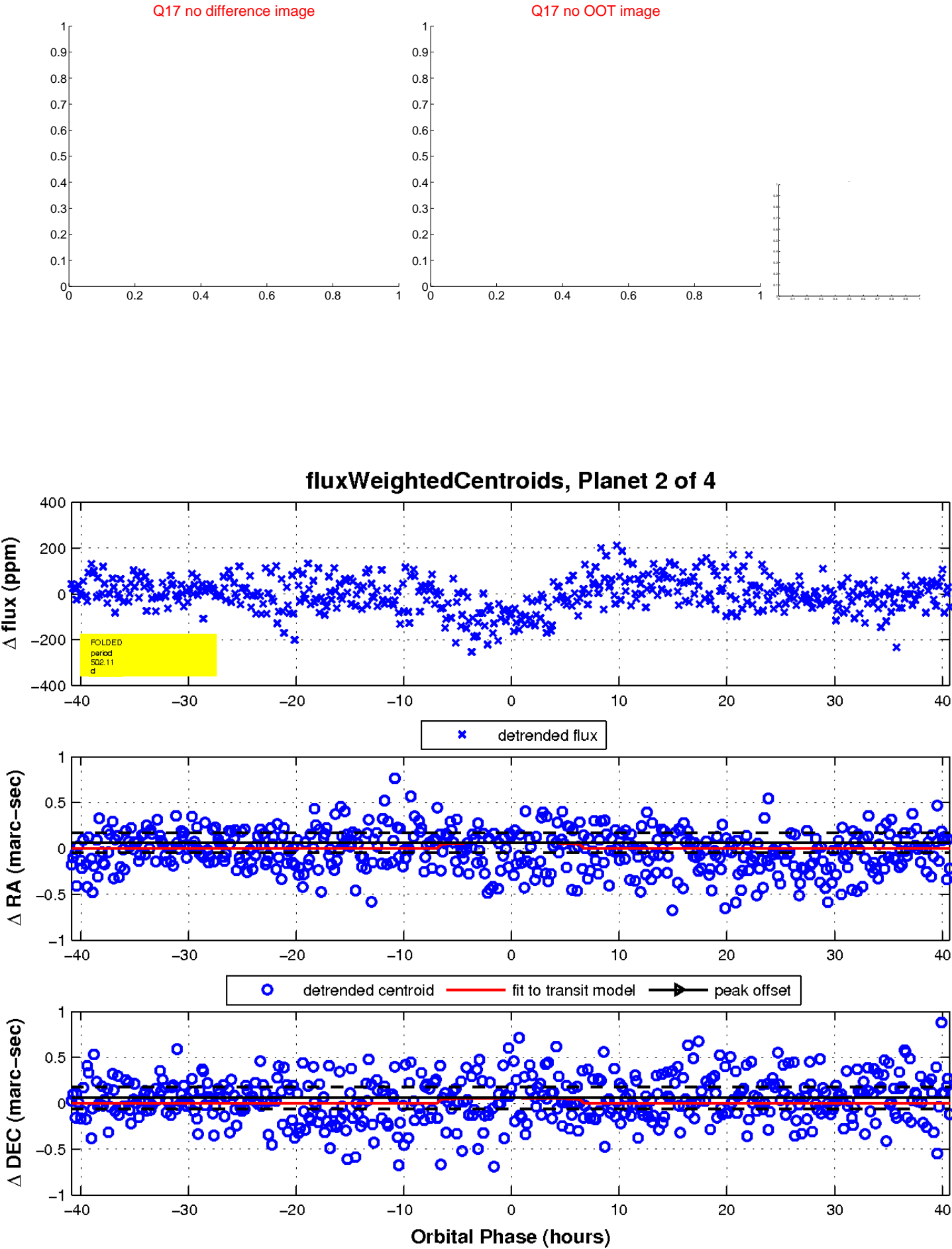
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

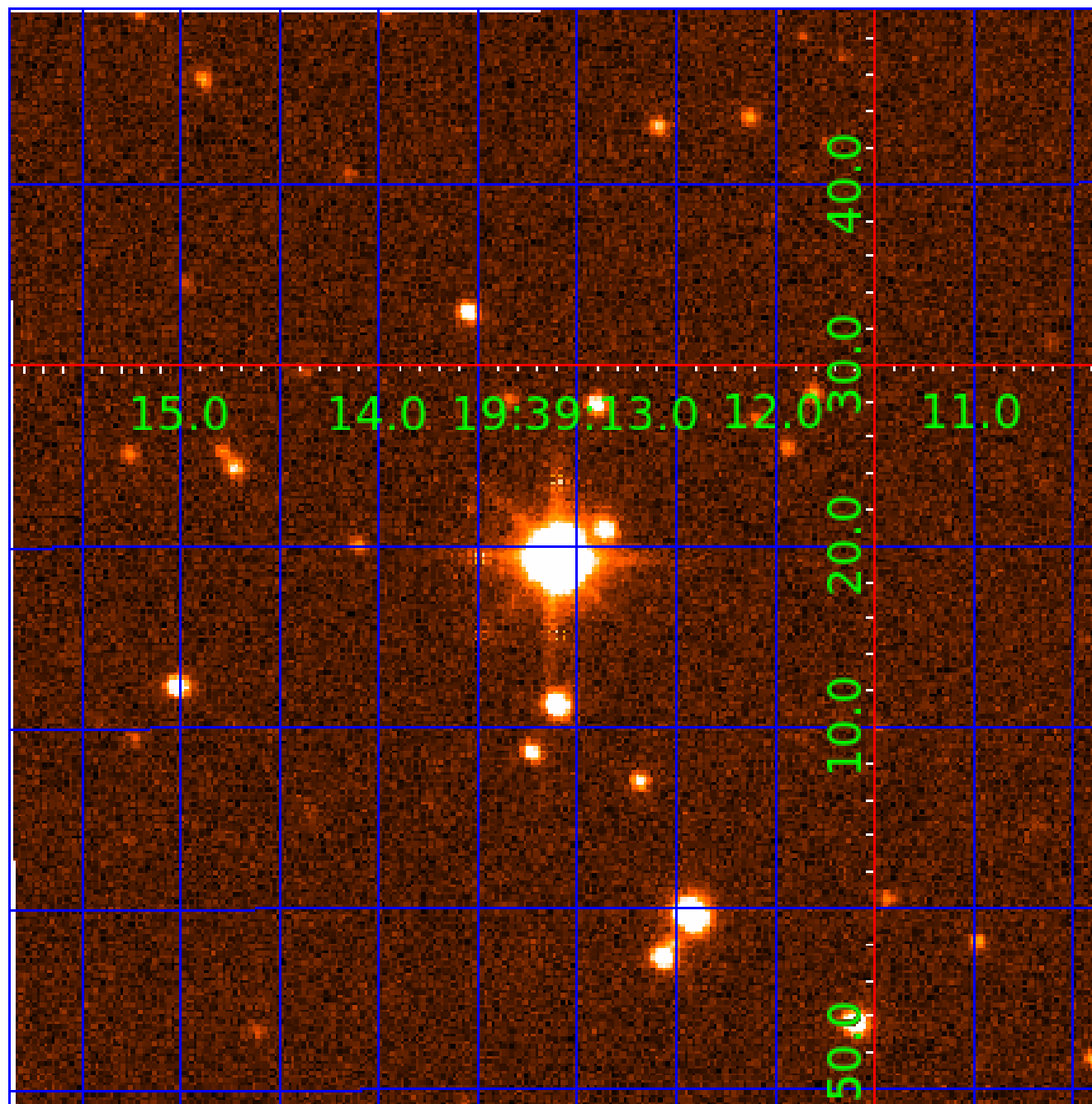


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007538450

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})
007538450-01	OBS	5396.01	344.079737	451.402588	128.8	13.713	8.1	8.6	3.70	7664	4.68	28.47
007538450-02	OBS	No	502.107848	193.271855	120.2	13.640	7.9	7.8	3.70	7664	4.42	17.20
007538450-03	OBS	No	1.403775	132.479860	6.1	4.649	7.1	7.2	3.70	7664	1.08	43673.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007538450-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS
007538450-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007538450-03	OBS	FP	0.00	1	0	0	0	LPP_DV

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.

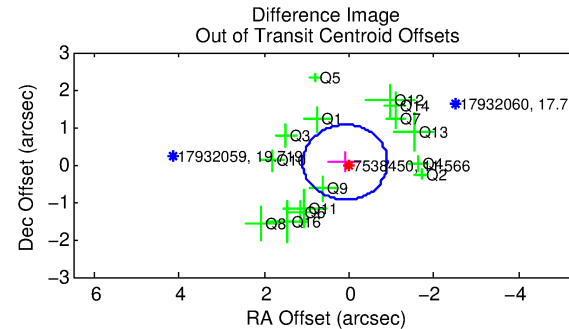
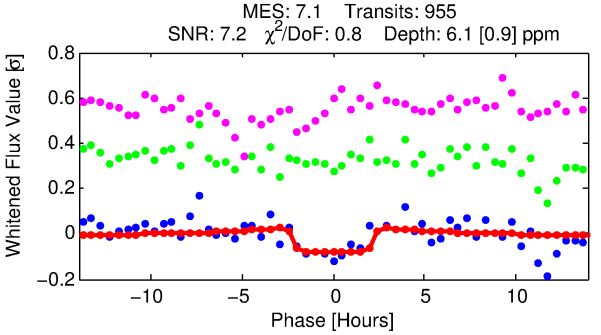
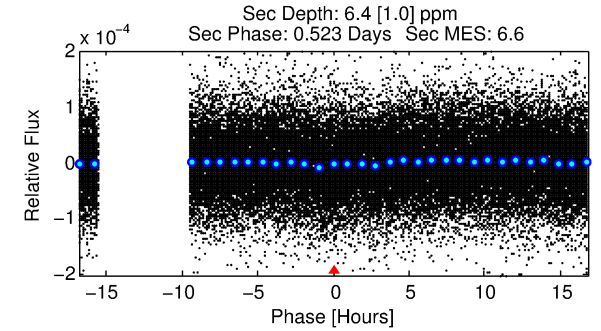
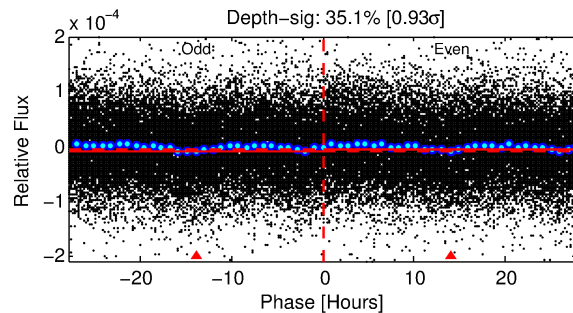
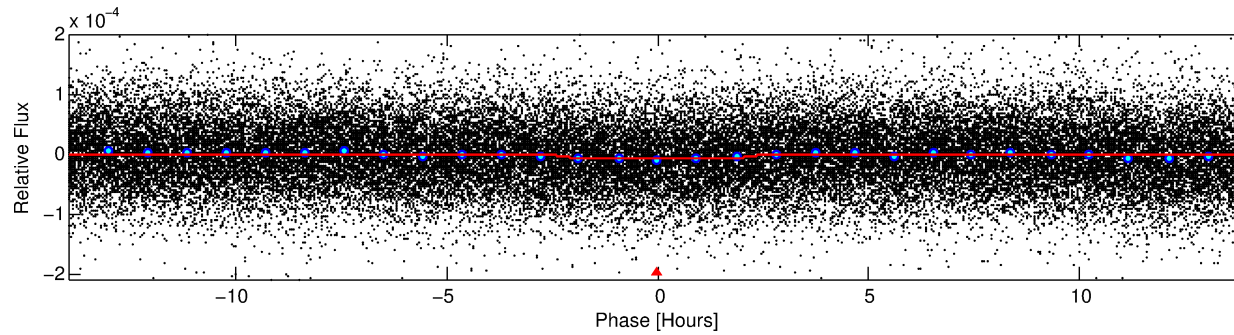
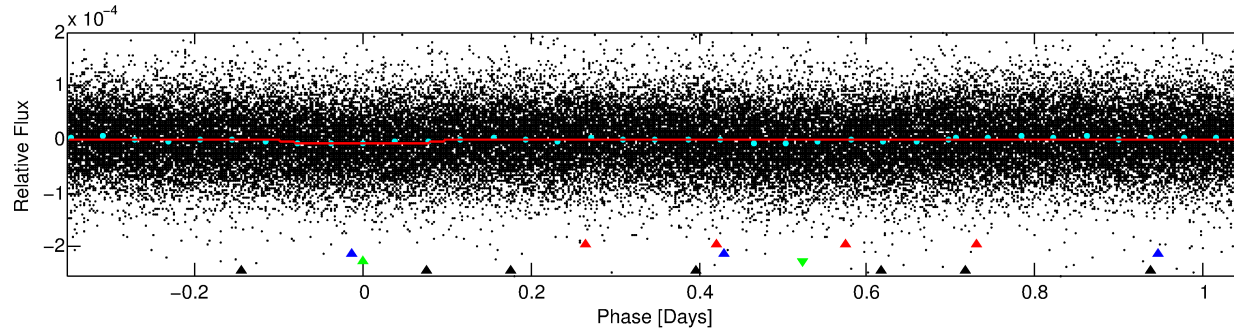
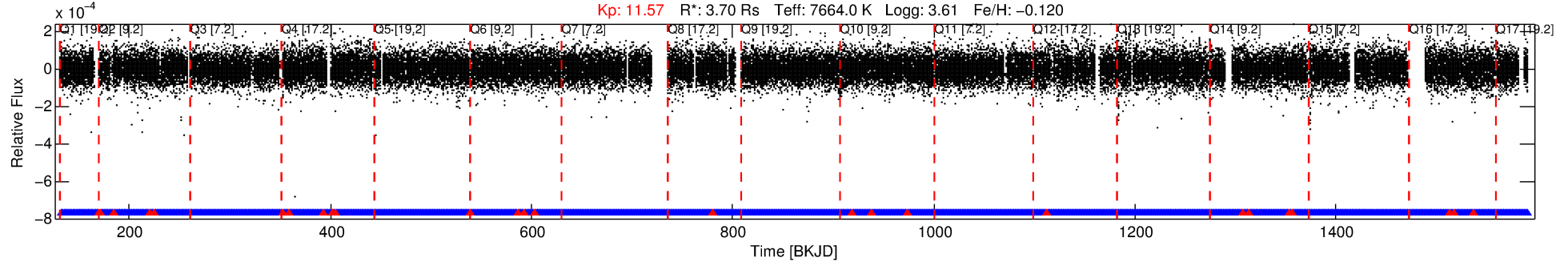
Ephemeris Match Information For 007538450-03

No Significant Match Found

DV One-Page Summary

KIC: 7538450 Candidate: 3 of 4 Period: 1.404 d
KOI: K05396 Corr: No Ephemeris Match

Kp: 11.57 R*: 3.70 Rs Teff: 7664.0 K Logg: 3.61 Fe/H: -0.120



DV Fit Results:

Period = 1.40378 [0.00002] d
Epoch = 132.4799 [0.0055] BKJD
Rp/R* = 0.0027 [0.0006]
a/R* = 1.30 [0.75]
b = 0.93 [0.22]
Seff = 43673.63 [38744.23]
Teq = 3686 [818] K
Rp = 1.09 [0.60] Re
a = 0.0311 [0.0163] AU
Ag = 2.91 [2.89] [0.66σ]
Teffp = 7441 [961] K [2.98σ]

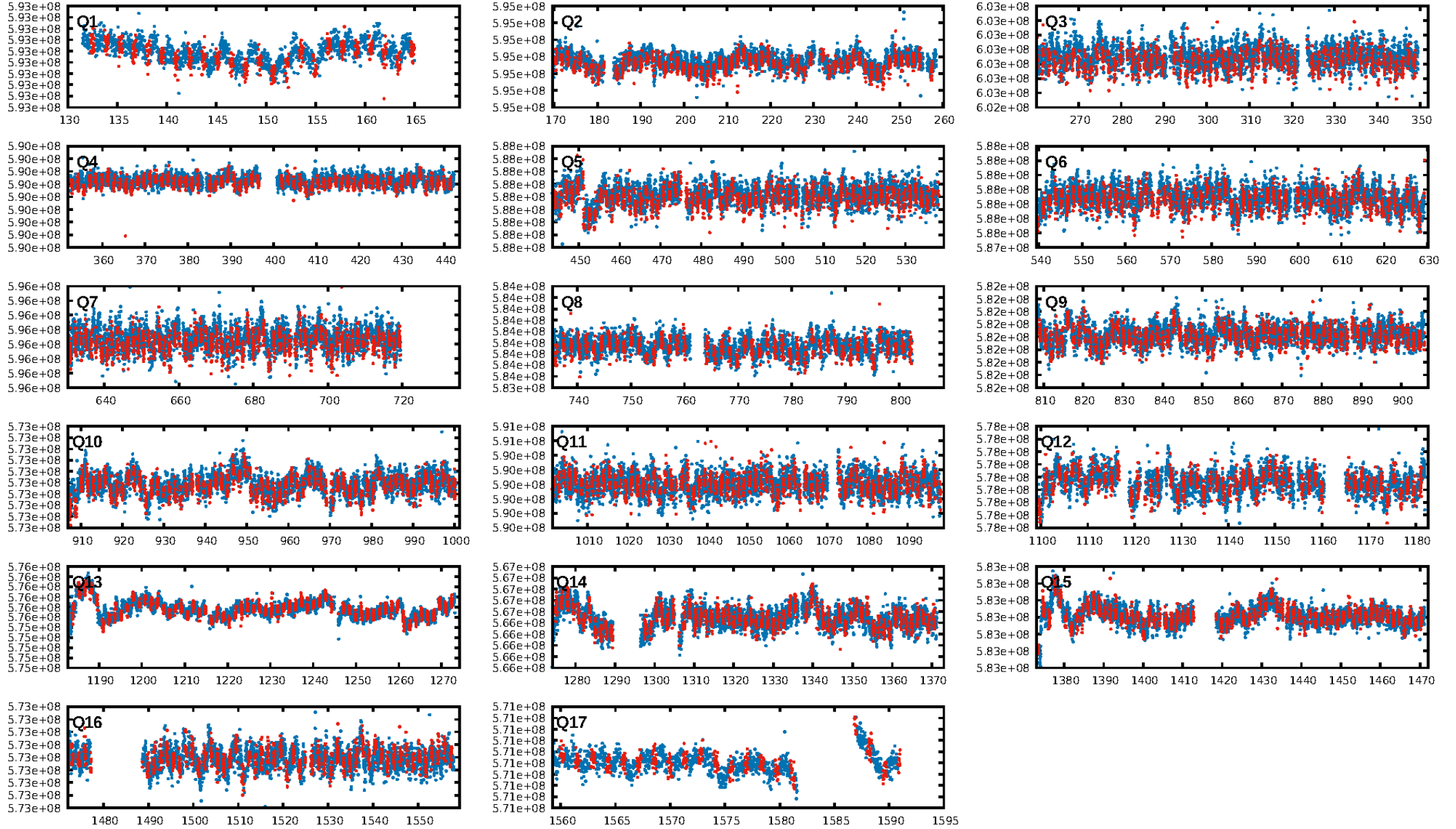
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [219.05σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.29e-10
RollingBand-fgt: 0.97 [885/911]
GhostDiagnostic-chr: 4.98
Centroid-sig: 3.8%
Centroid-so: 2.037 arcsec [1.61σ]
OotOffset-rm: 0.106 arcsec [0.32σ]
KicOffset-rm: 0.132 arcsec [0.38σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.93 [14/15]
DiffImageOverlap-fno: 1.00 [17/17]

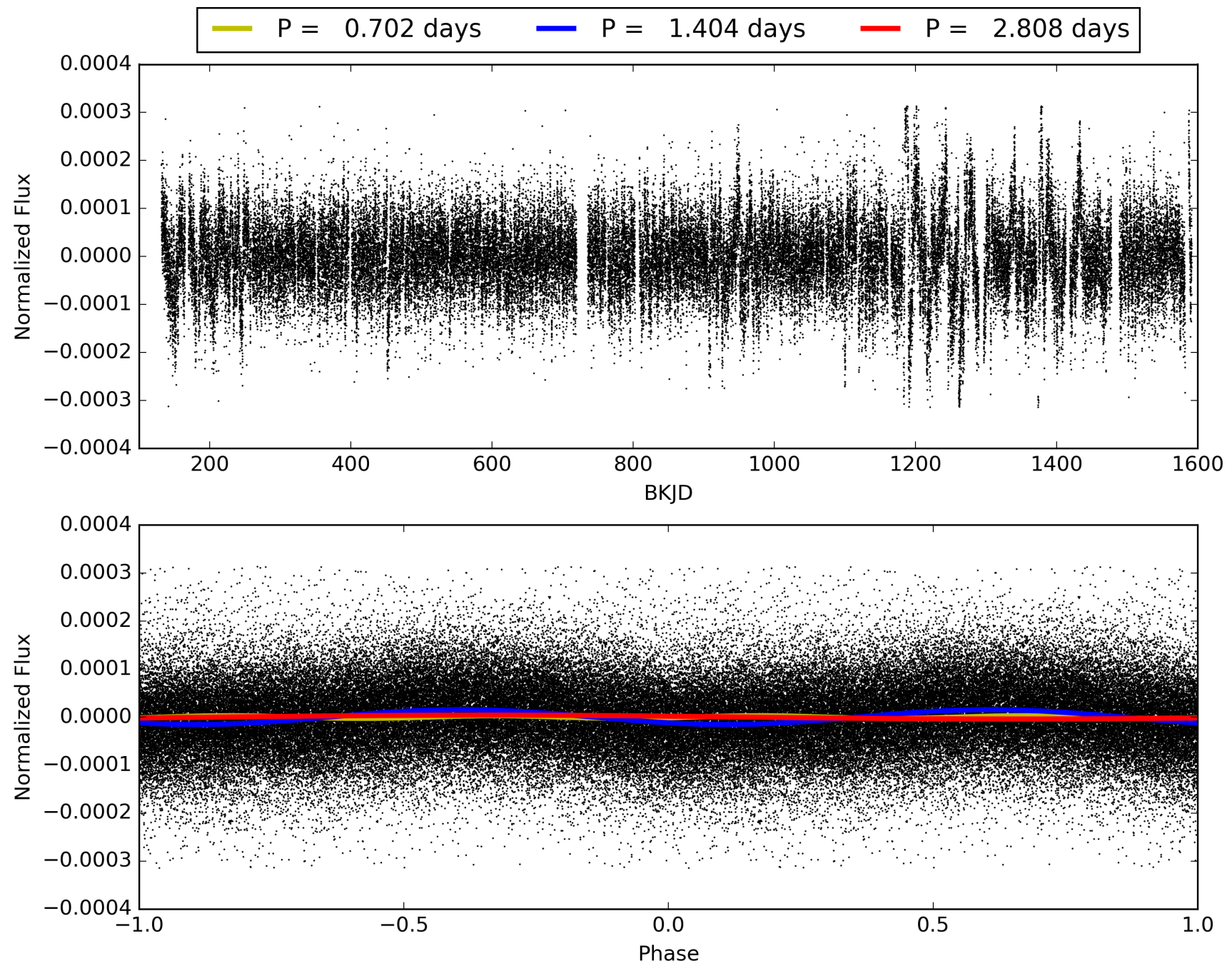
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:47:13 Z

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

TCE 007538450-03, PDC Light Curves

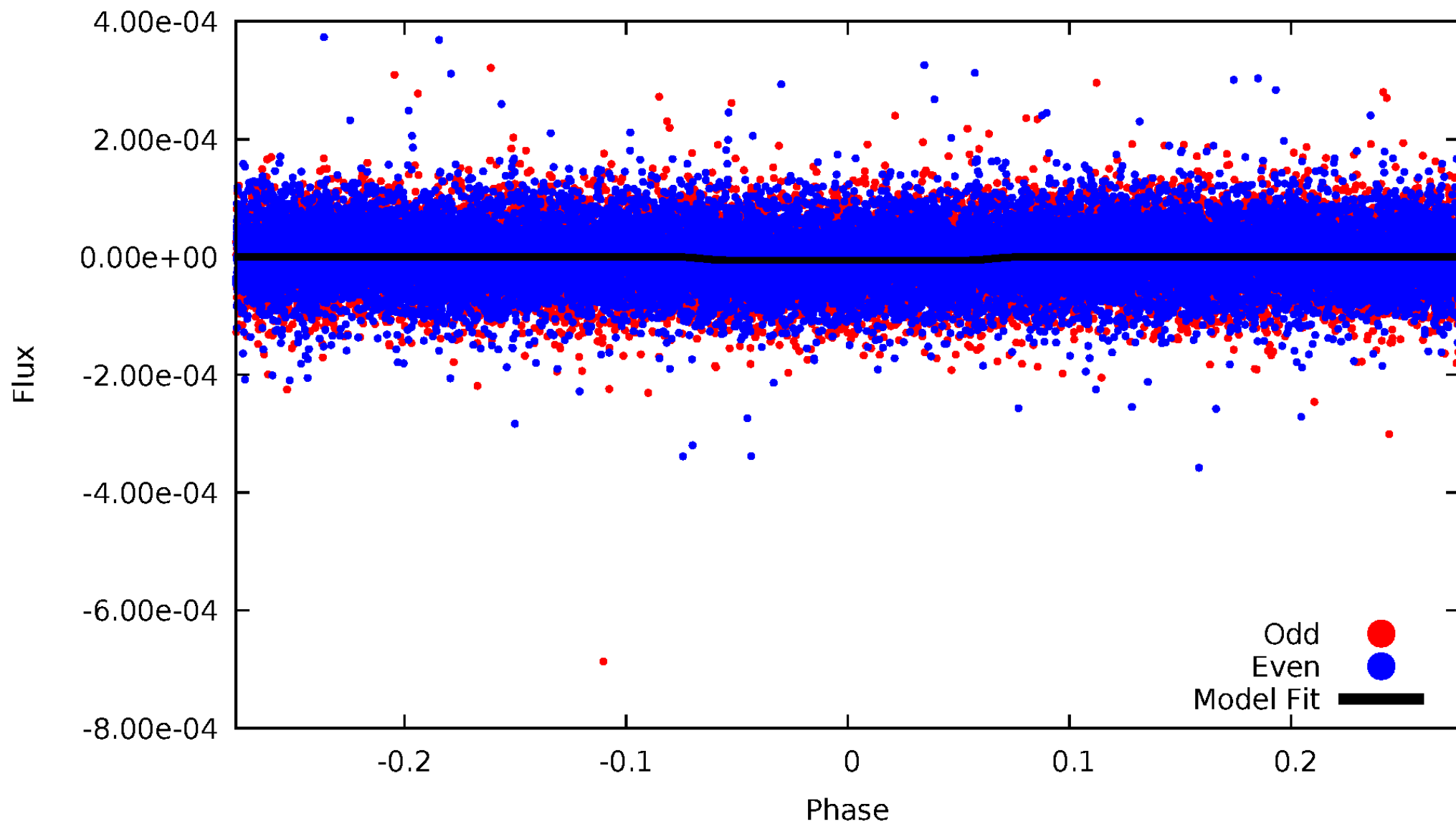


TCE 007538450-03



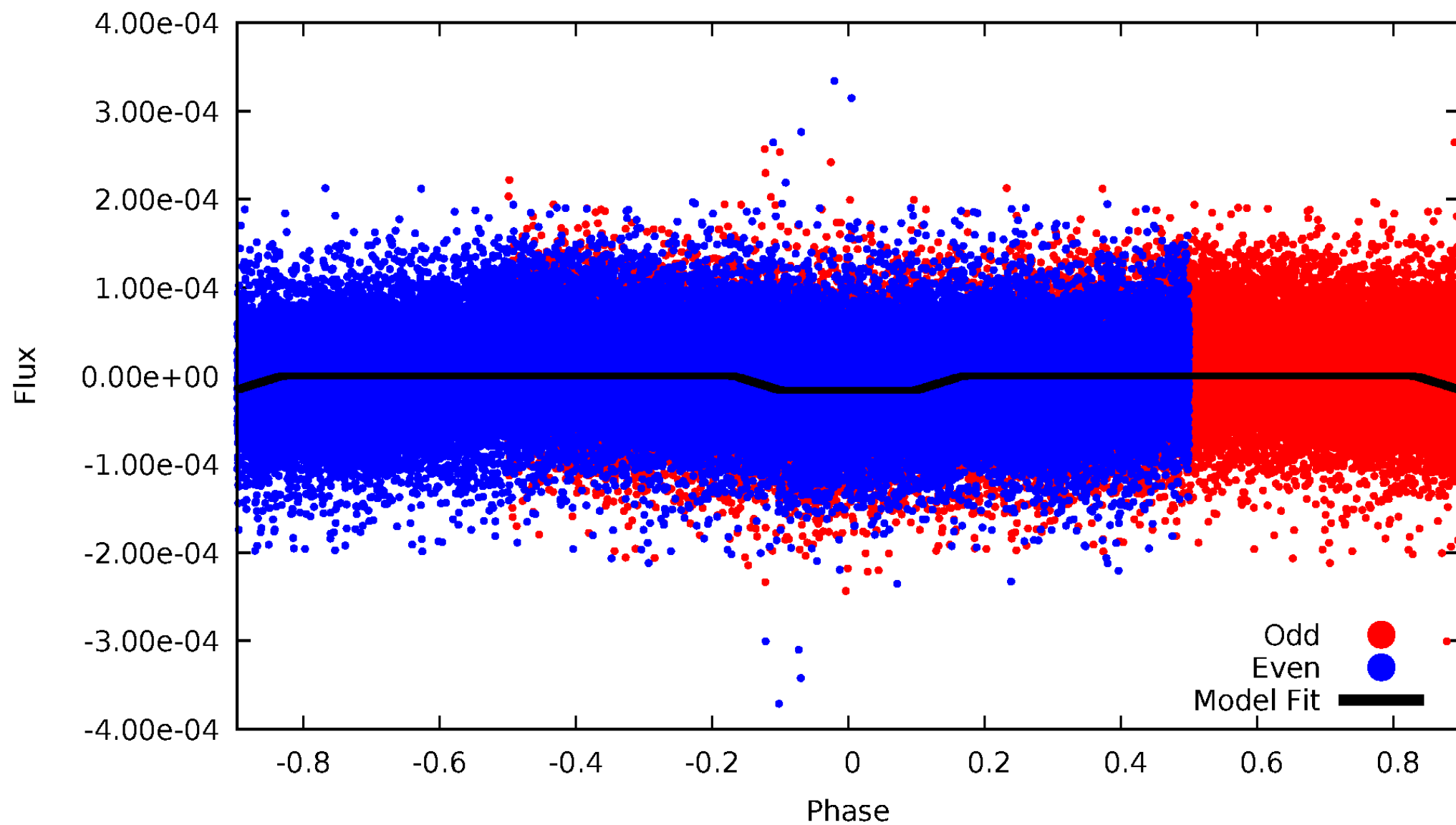
DV Odd/Even

TCE 007538450-03



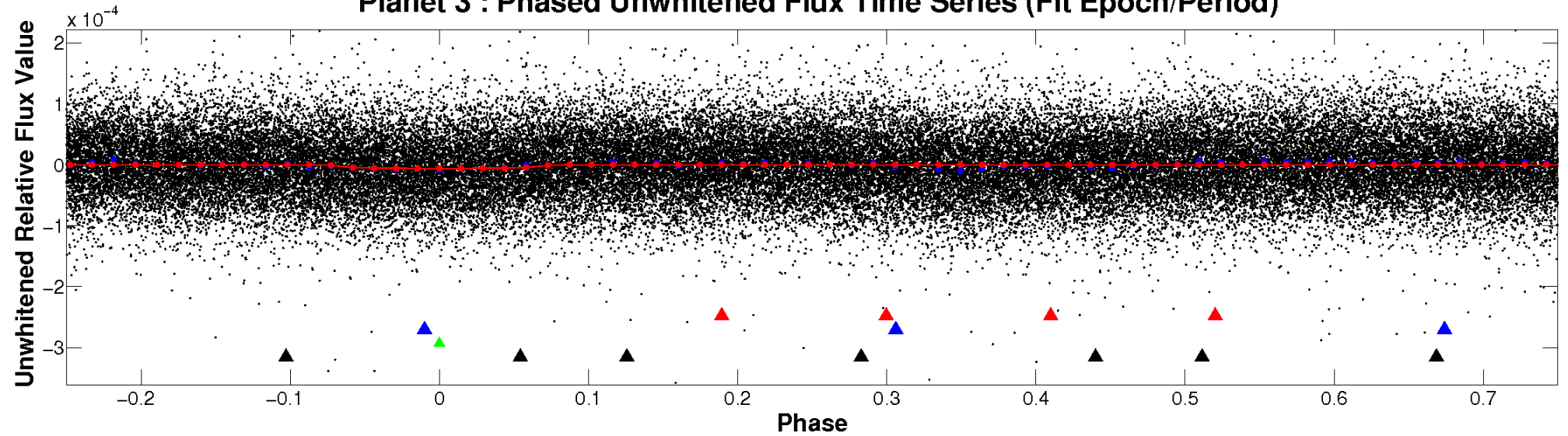
ALT Odd/Even

TCE 007538450-03

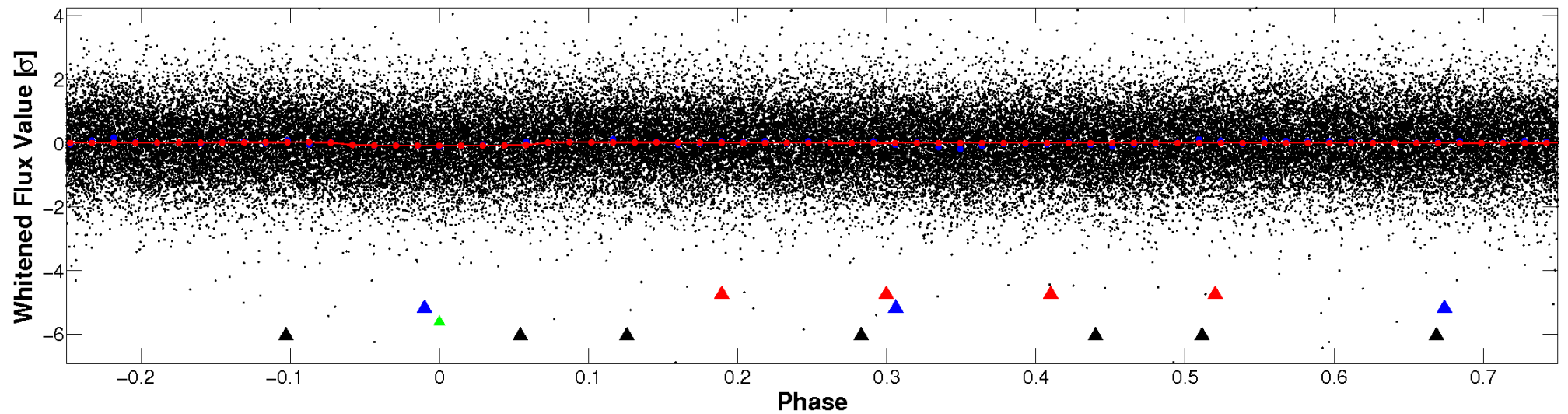


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

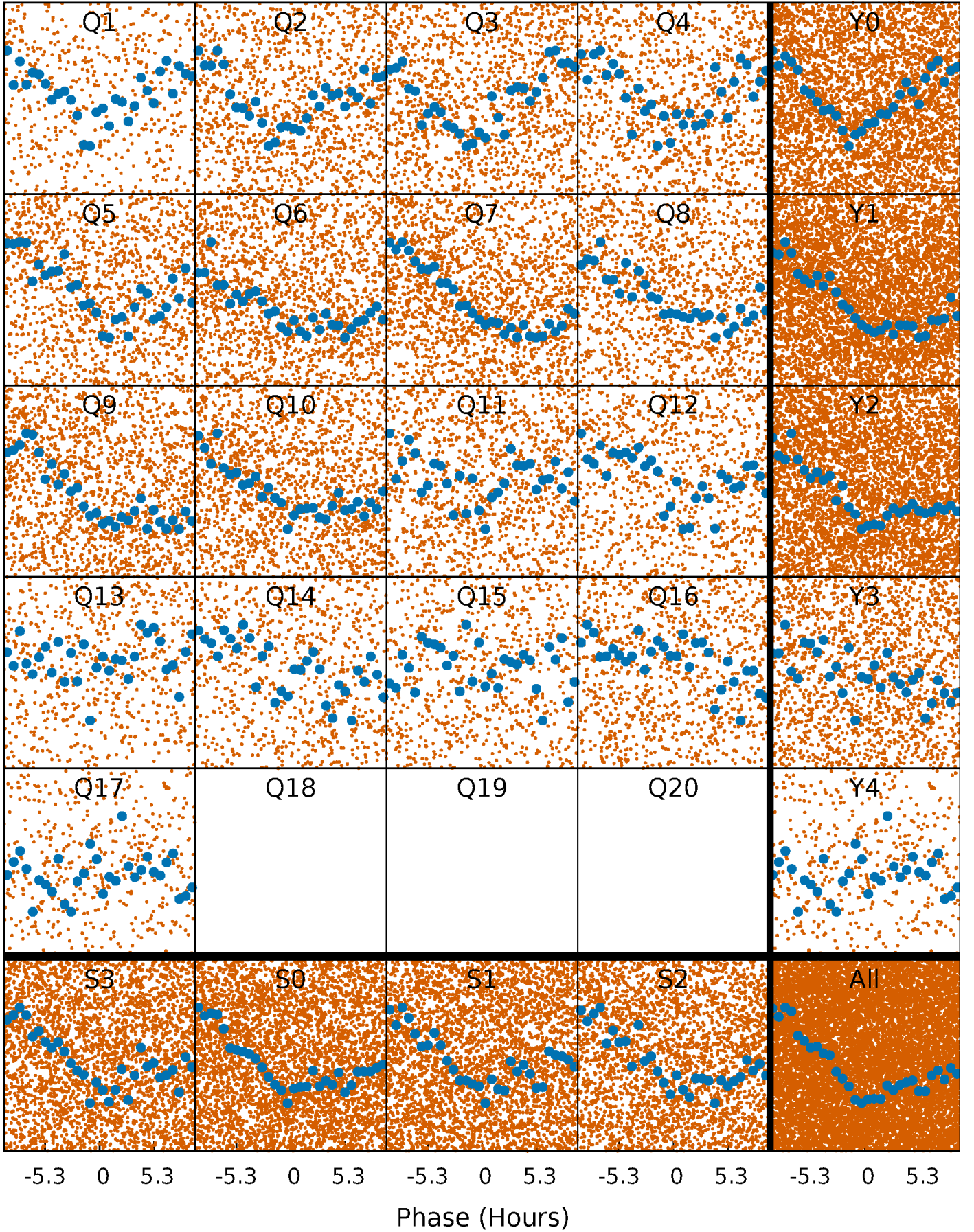


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



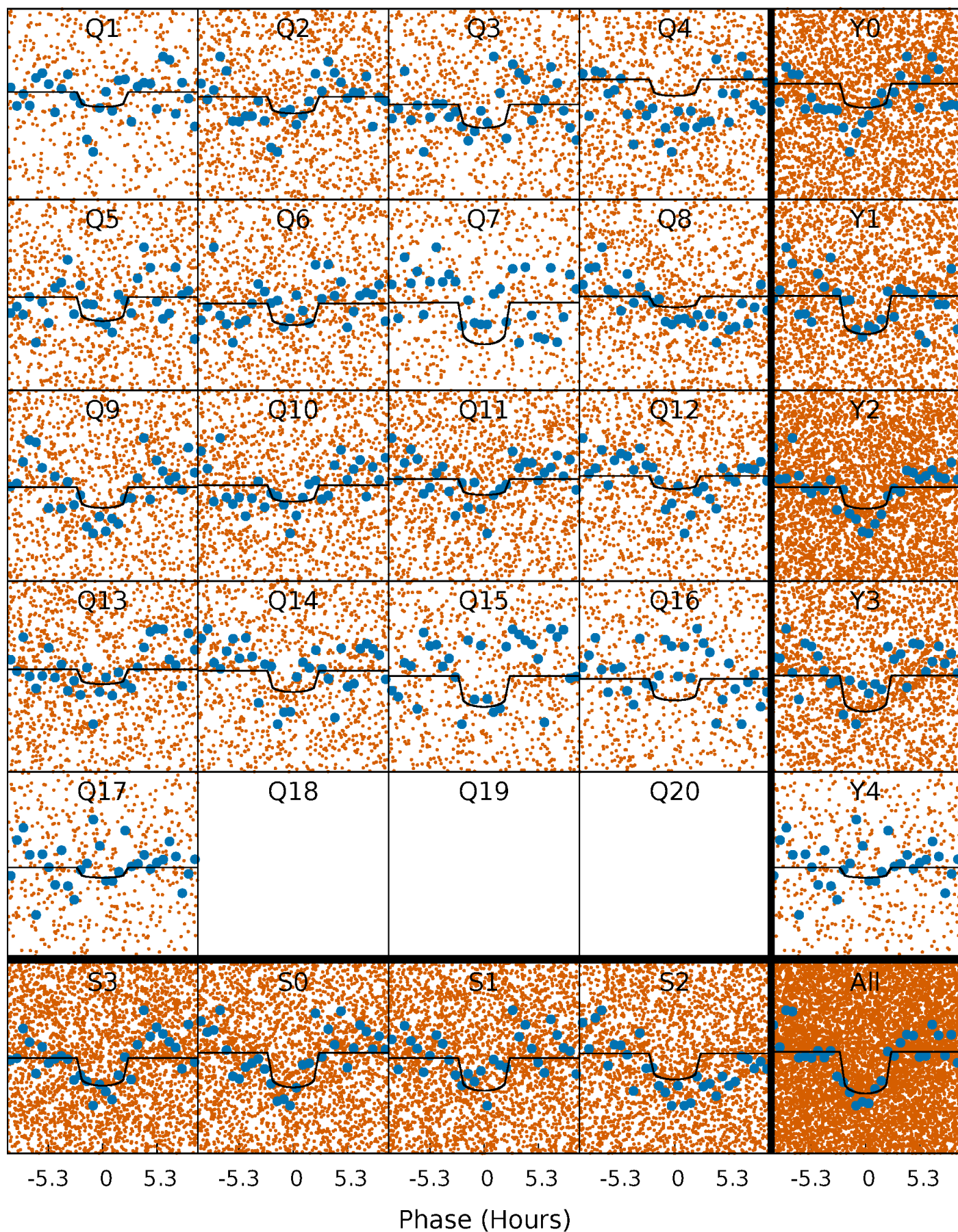
PDC Quarter-Phased Transit Curves

TCE 007538450-03 P= 1.403775 Days $T_0=132.479860$ (BKJD)



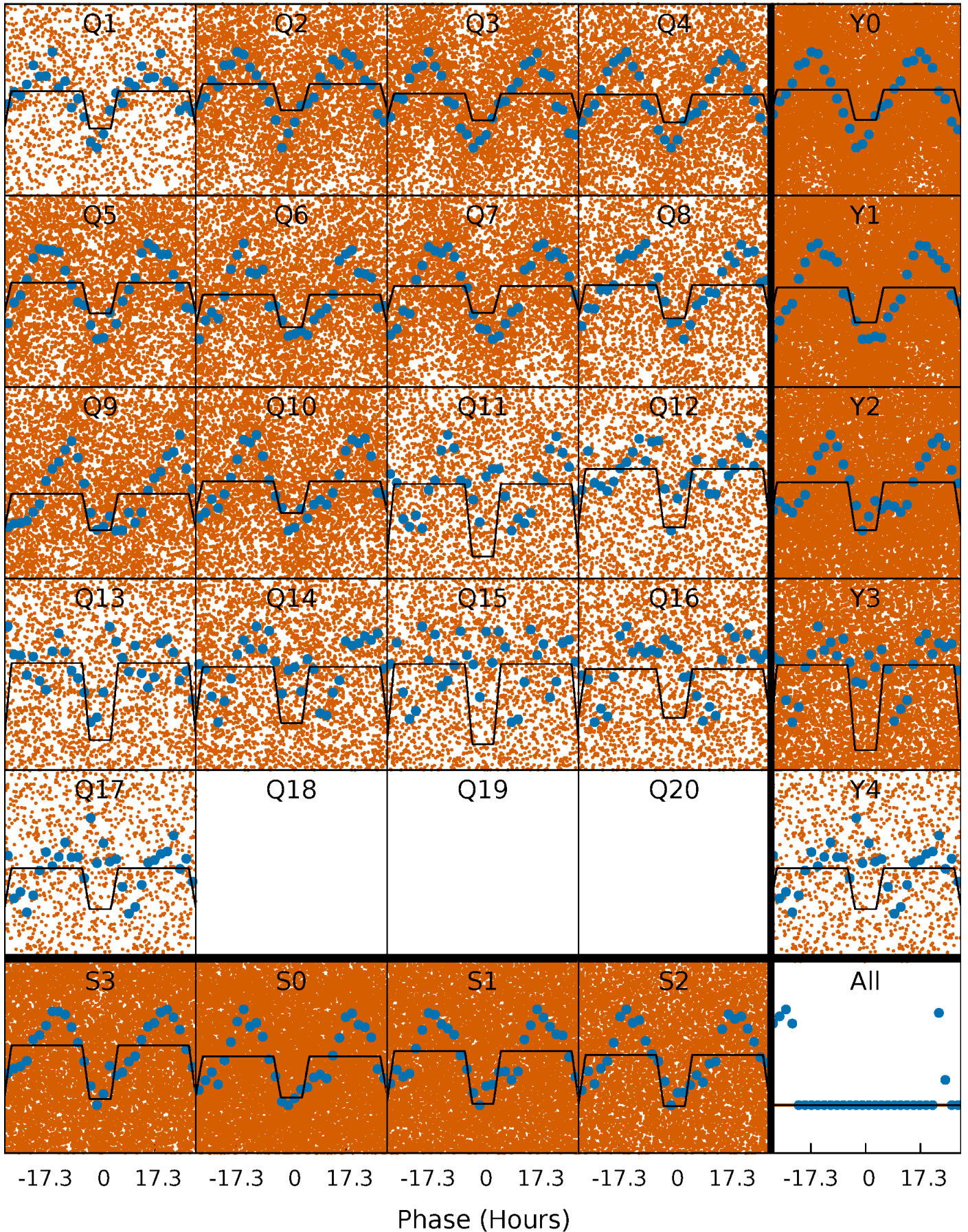
DV Quarter-Phased Transit Curves

TCE 007538450-03 P= 1.403775 Days $T_0=132.479860$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

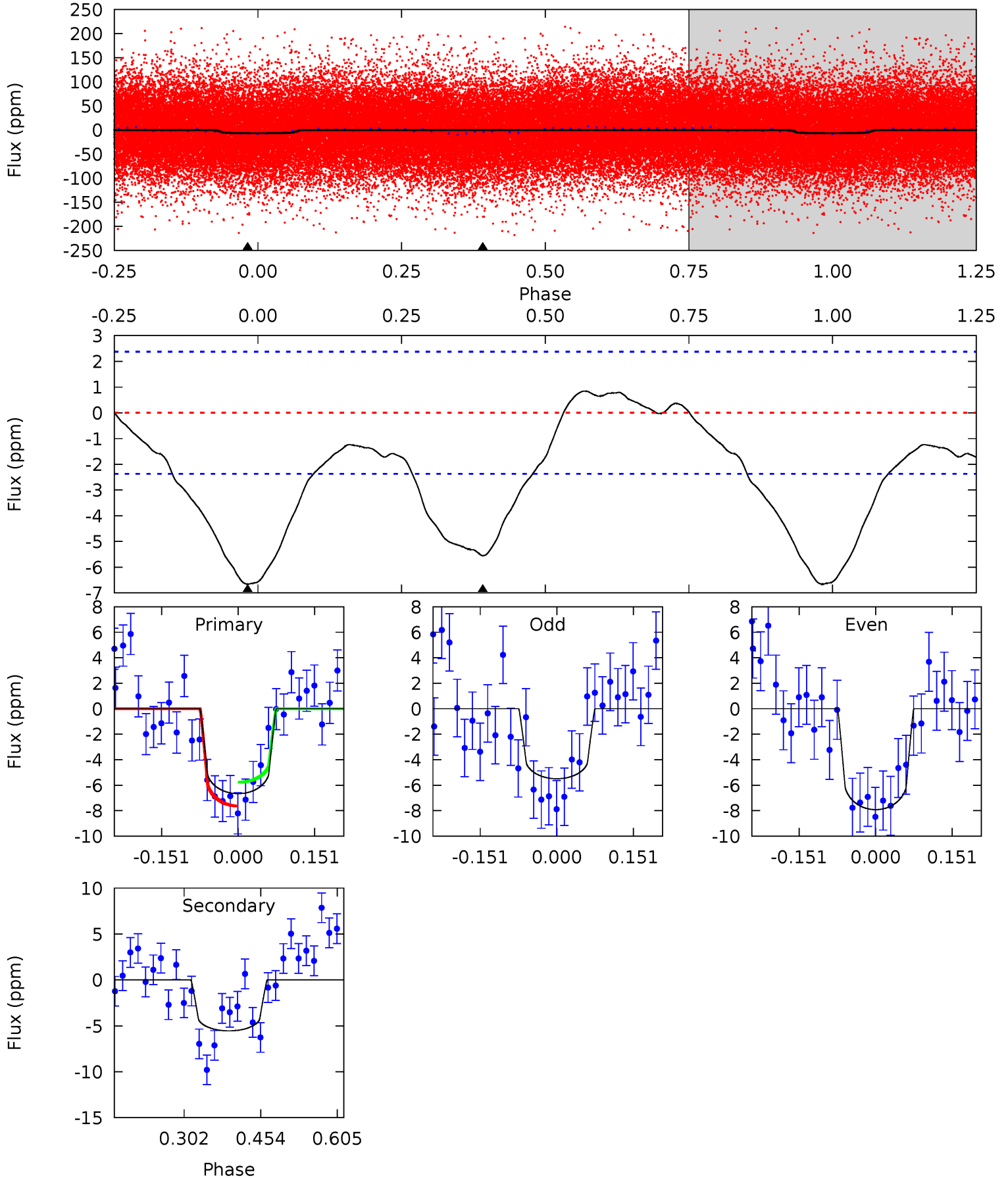
TCE 007538450-03 P= 1.403821 Days $T_0=132.515909$ (BKJD)



DV Model-Shift Uniqueness Test

007538450-03, P = 1.403775 Days, E = 131.076085 Days

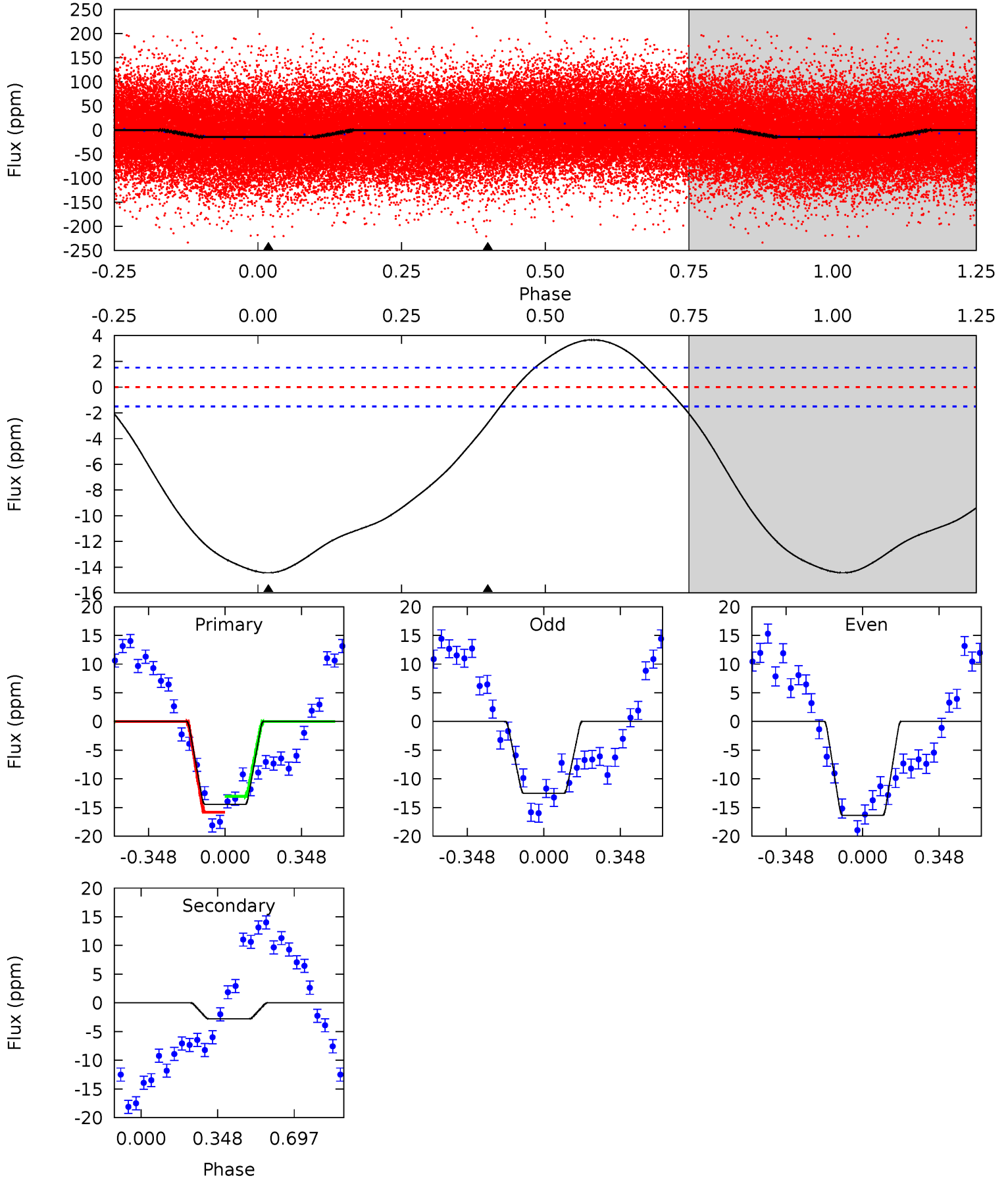
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	10.5	0	0	4.48	1.44	1.72	12.6	12.6	10.5	10.5	2.29	0.91	0.11	1.76



Alt Model-Shift Uniqueness Test

007538450-03, P = 1.403821 Days, E = 131.112088 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.0	7.94	0	0	4.30	0.94	4.03	41.0	41.0	7.94	7.94	5.45	0.96	0.20	3.95



Stellar Parameters For KIC 007538450

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7664^{+212}_{-345}	$3.611^{+0.522}_{-0.058}$	$-0.120^{+0.200}_{-0.300}$	$3.697^{+0.620}_{-1.860}$	$2.039^{+0.240}_{-0.519}$	$0.057^{+0.348}_{-0.016}$
	+3%/-5%	+14%/-2%	+167%/-250%	+17%/-50%	+12%/-25%	+613%/-27%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007538450-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-6 ± 1	$0.93^{+0.33}_{-0.30}$	4865^{+401}_{-633}	6855^{+1355}_{-834}	$3.346^{+3.761}_{-1.443}$
Alt.	-3 ± 0	$1.44^{+0.36}_{-0.39}$	4878^{+360}_{-640}	4366^{+593}_{-572}	$0.706^{+0.661}_{-0.250}$

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 $A_{obs} \gg 1.0$

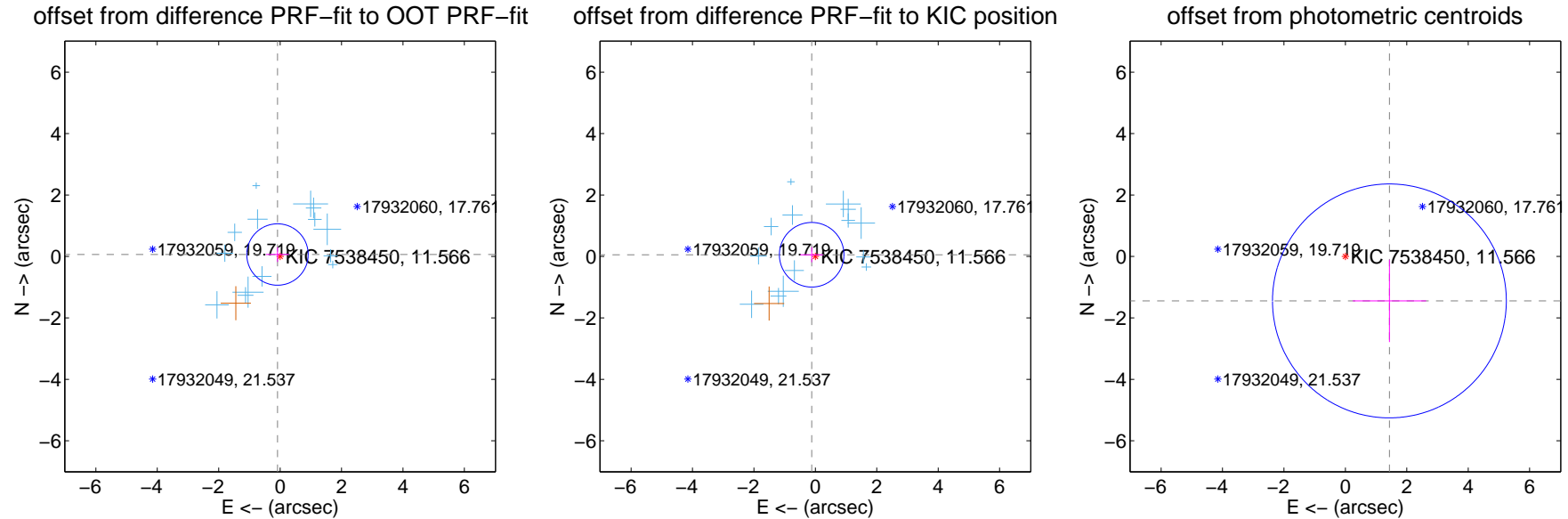
DV Centroid Data

Supplemental centroid analysis for 007538450-03. **Kepler magnitude: 11.57.** Transit SNR 7.18

There are 14 quarters with good PRF difference image offsets

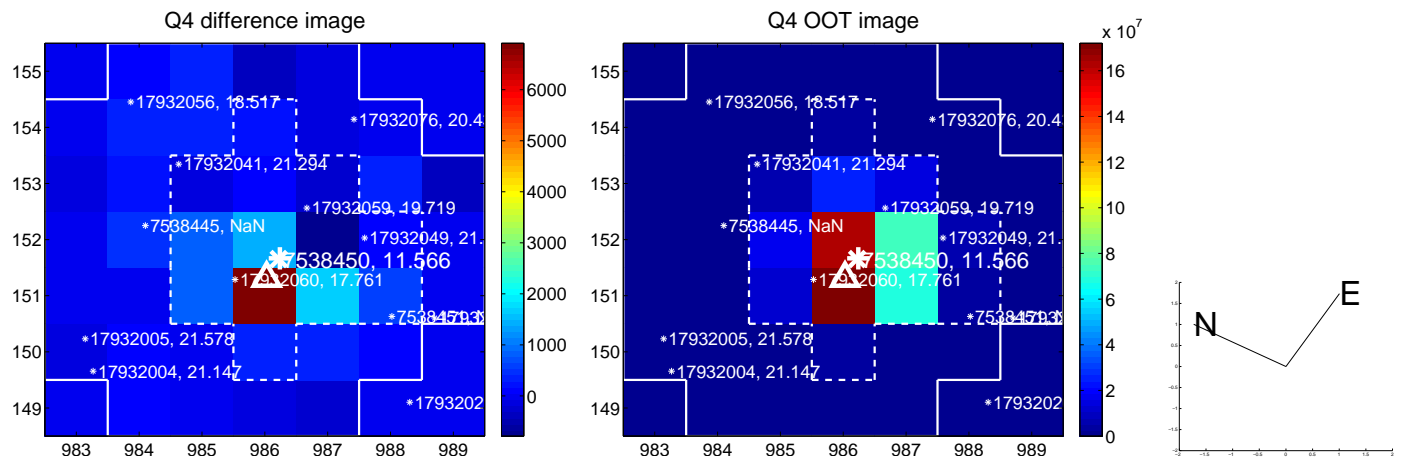
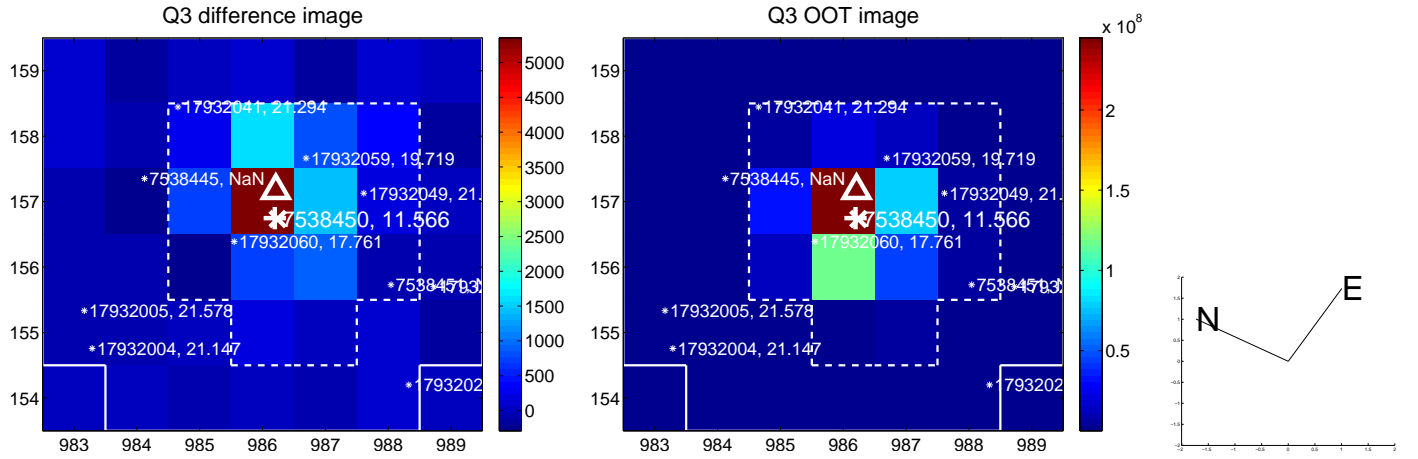
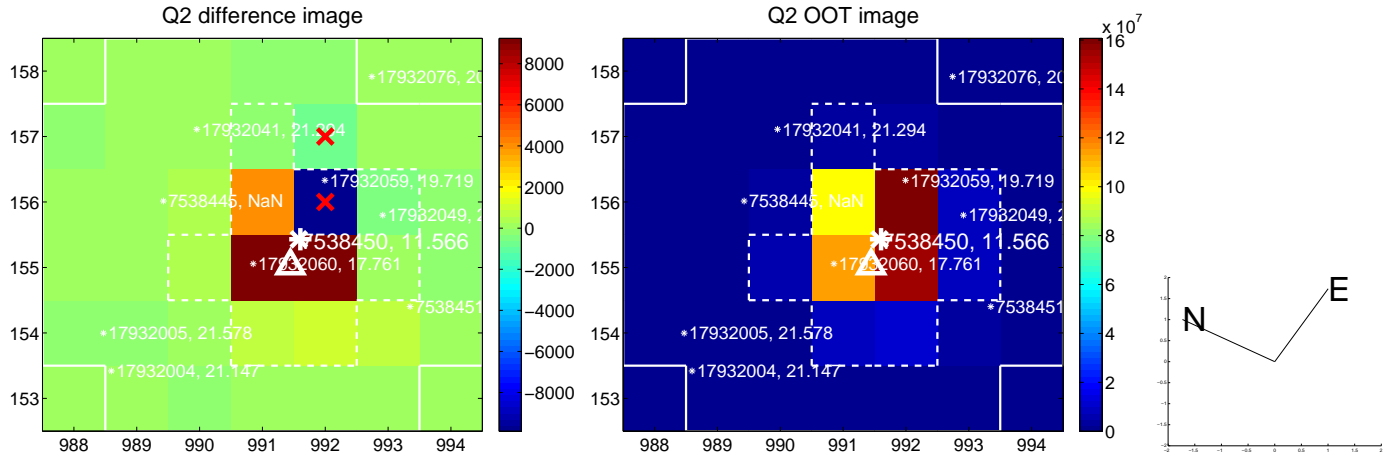
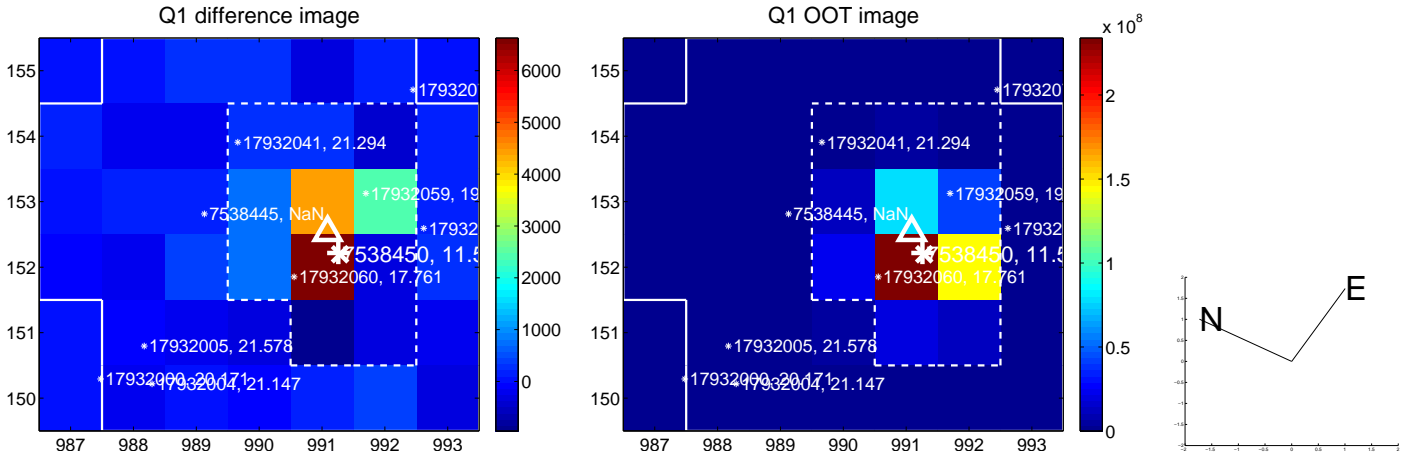
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.106 ± 0.333	0.32	0.085 ± 0.375	0.064 ± 0.241
PRF-fit source offset from KIC position	0.132 ± 0.350	0.38	0.119 ± 0.370	0.056 ± 0.244
photometric centroid source offset	2.04 ± 1.27	1.61	-1.43 ± 1.19	-1.45 ± 1.34

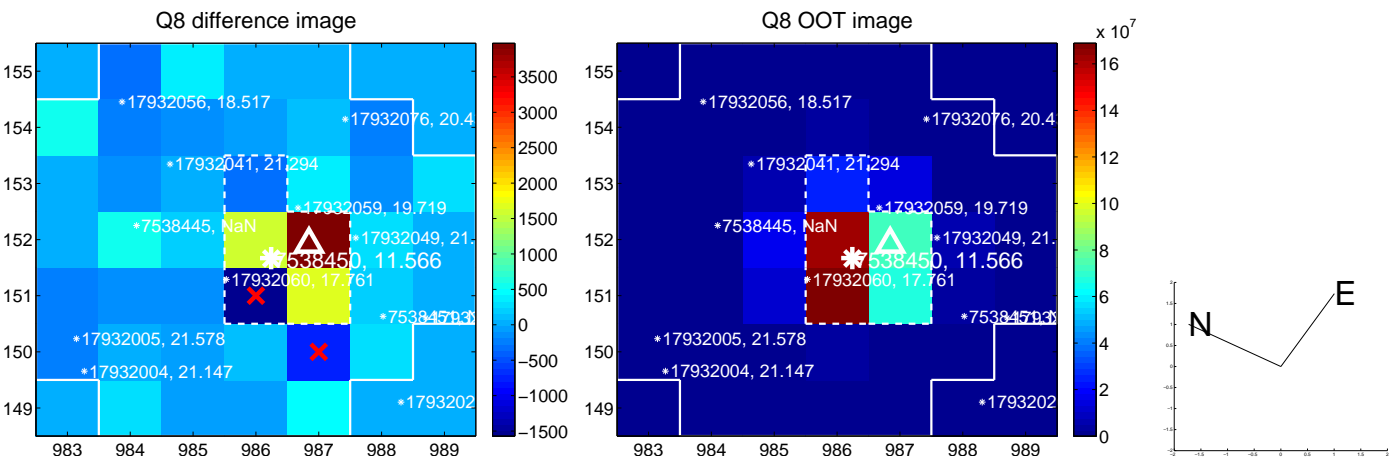
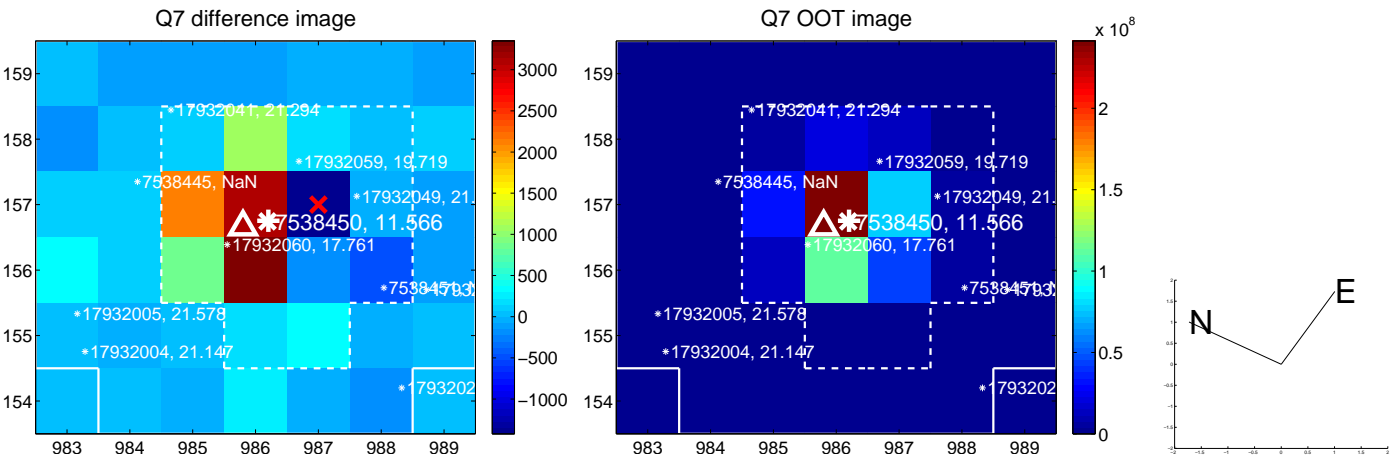
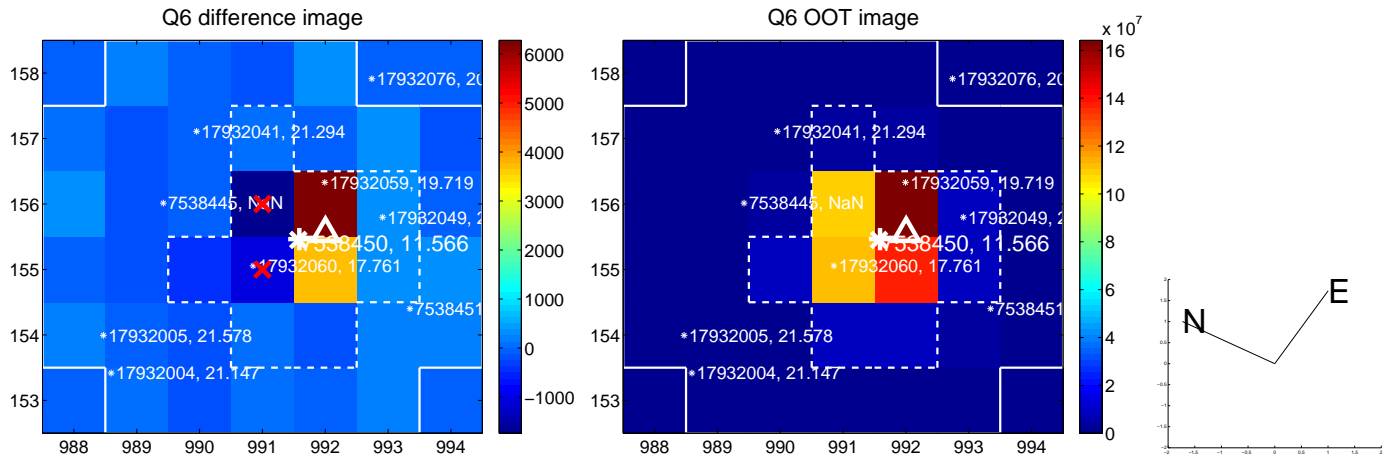
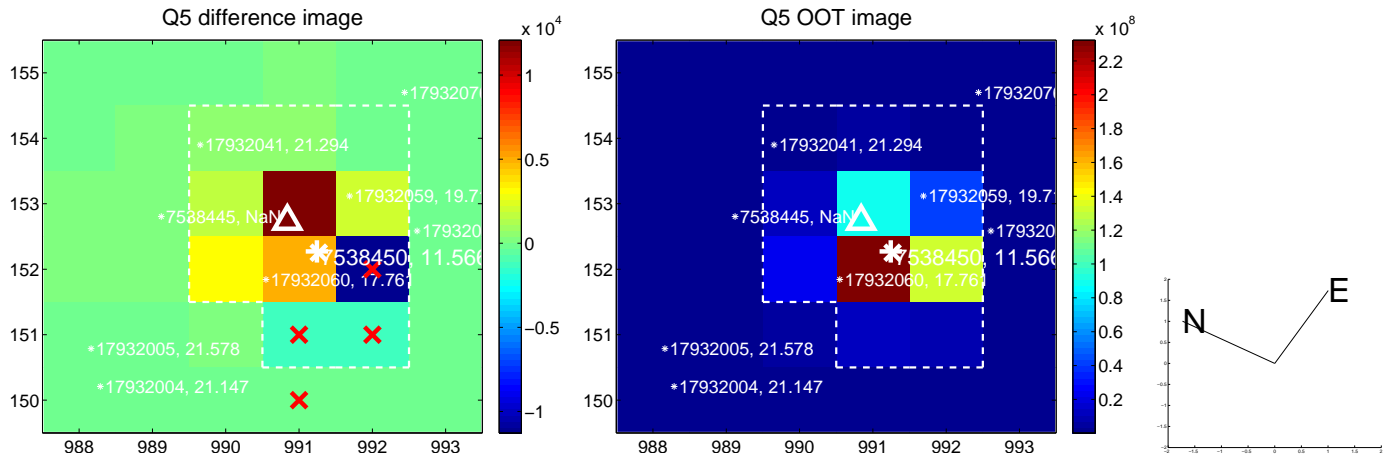


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

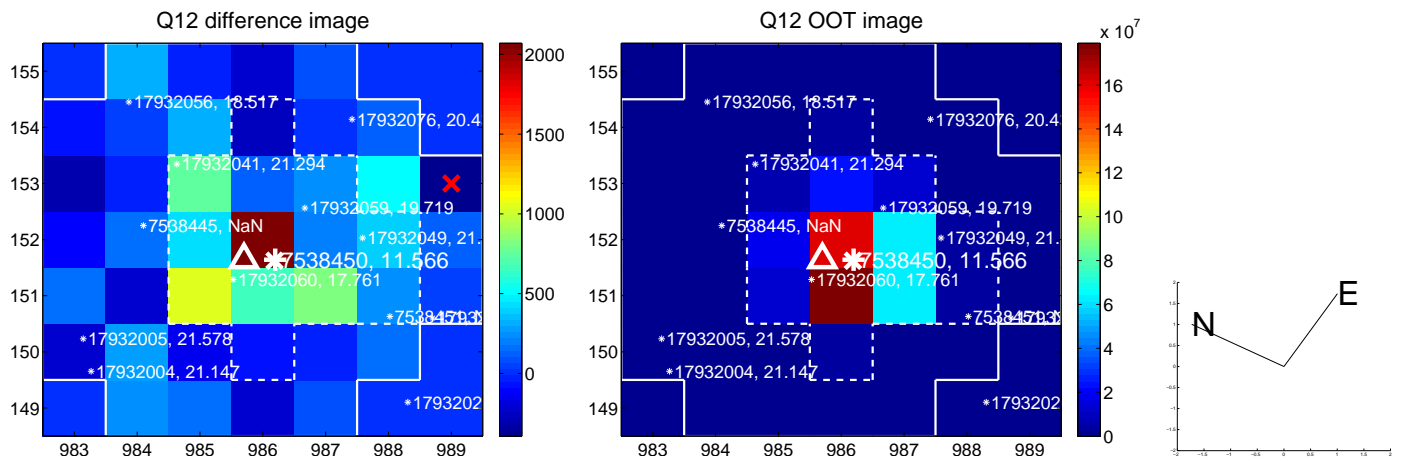
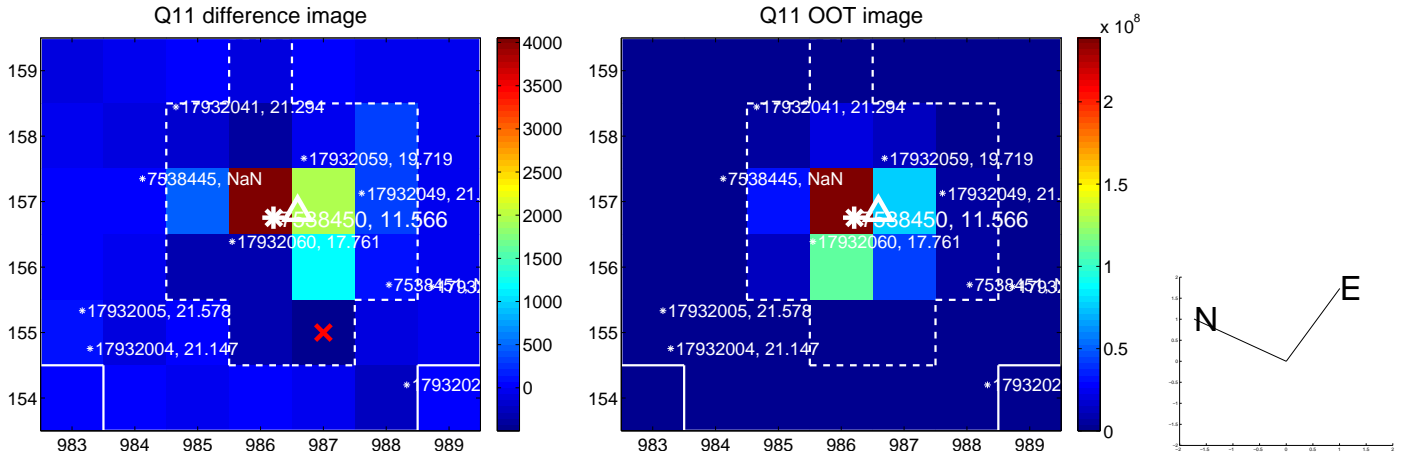
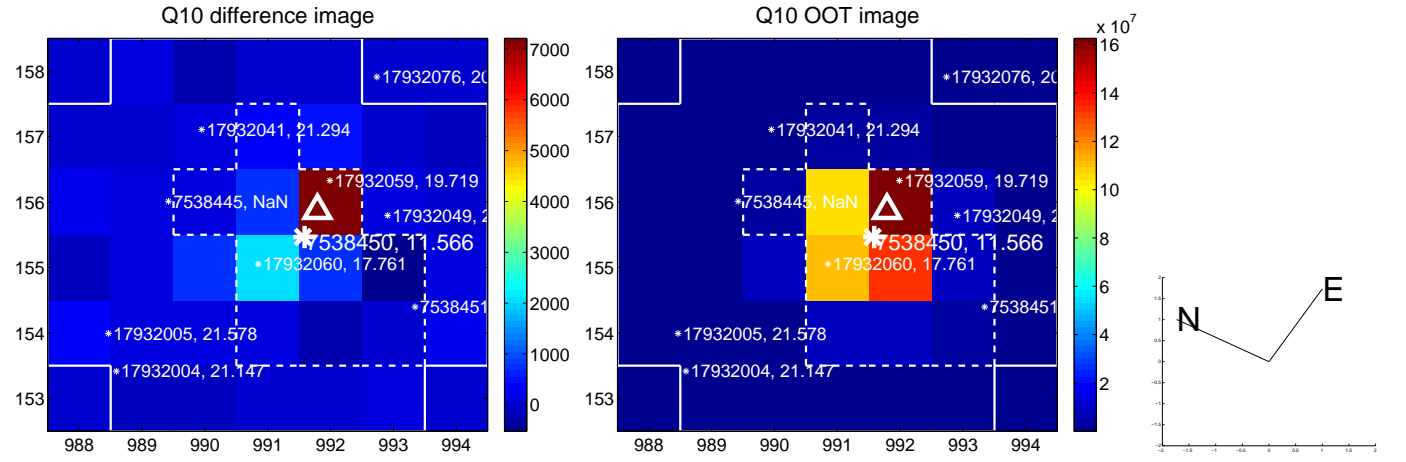
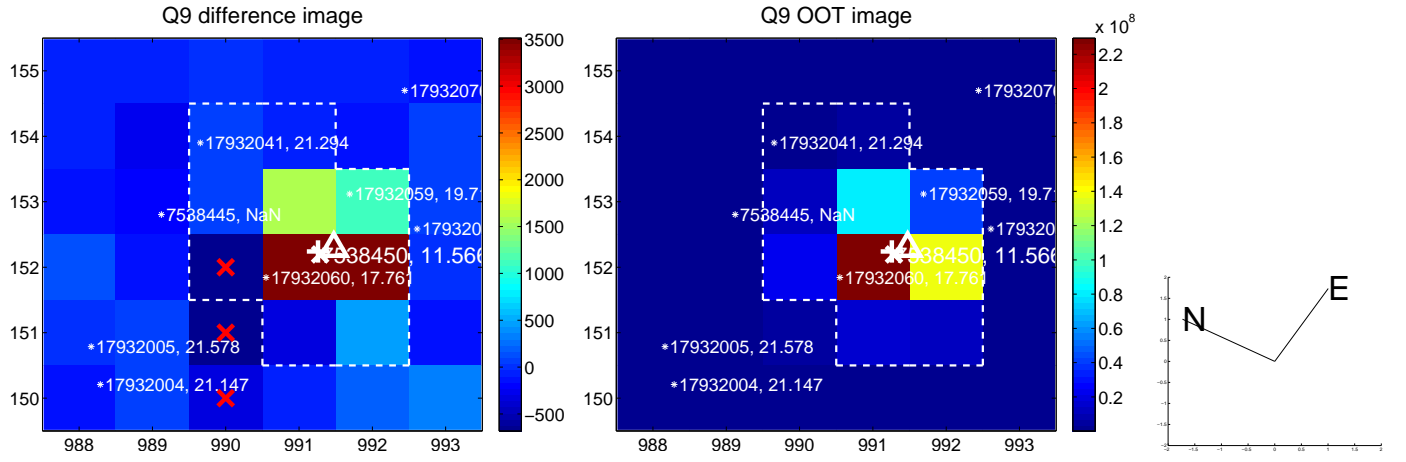
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



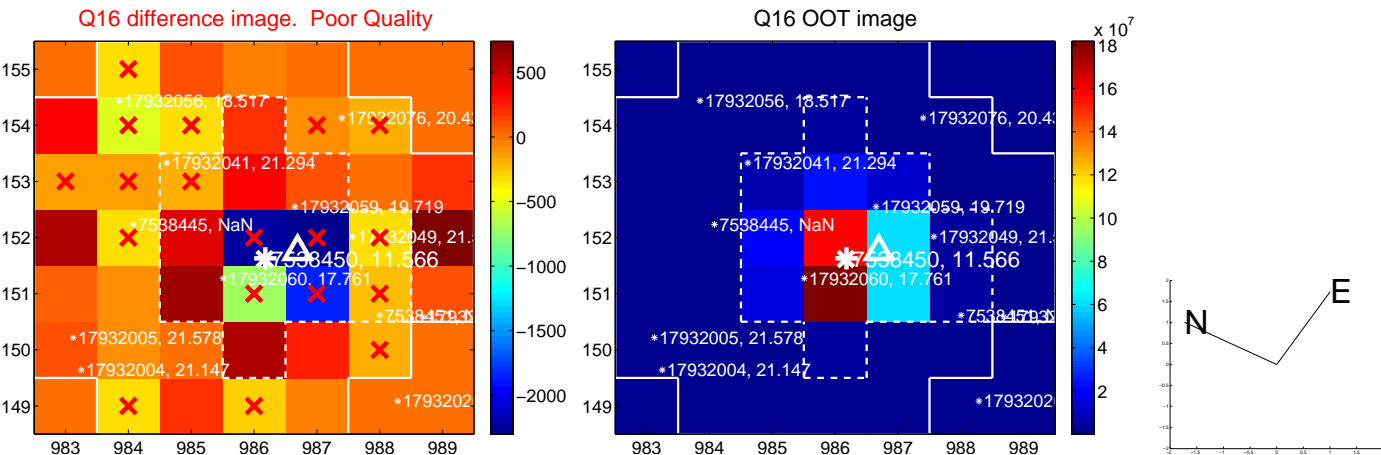
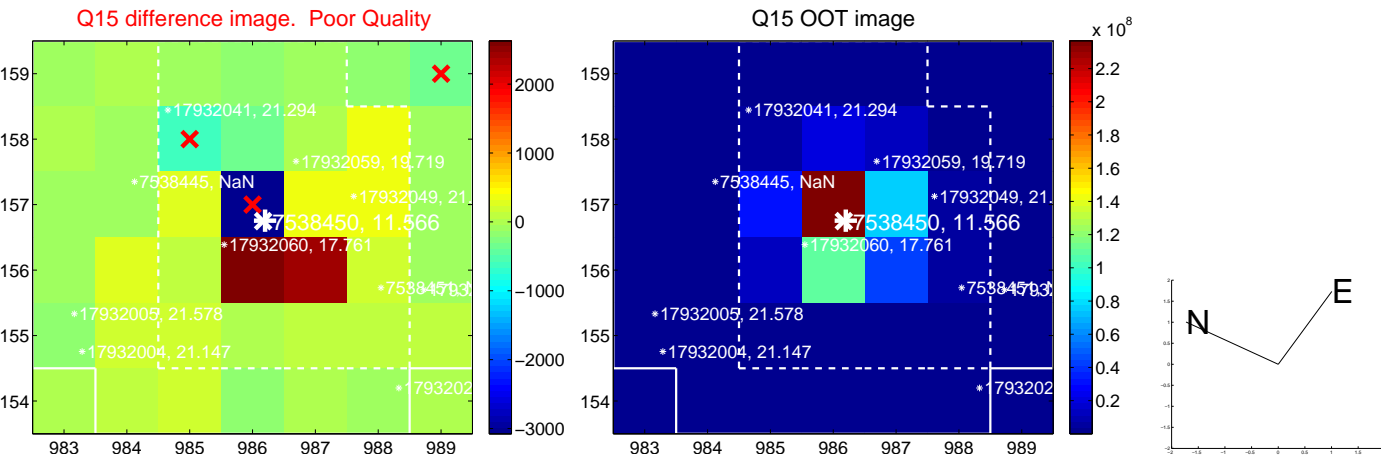
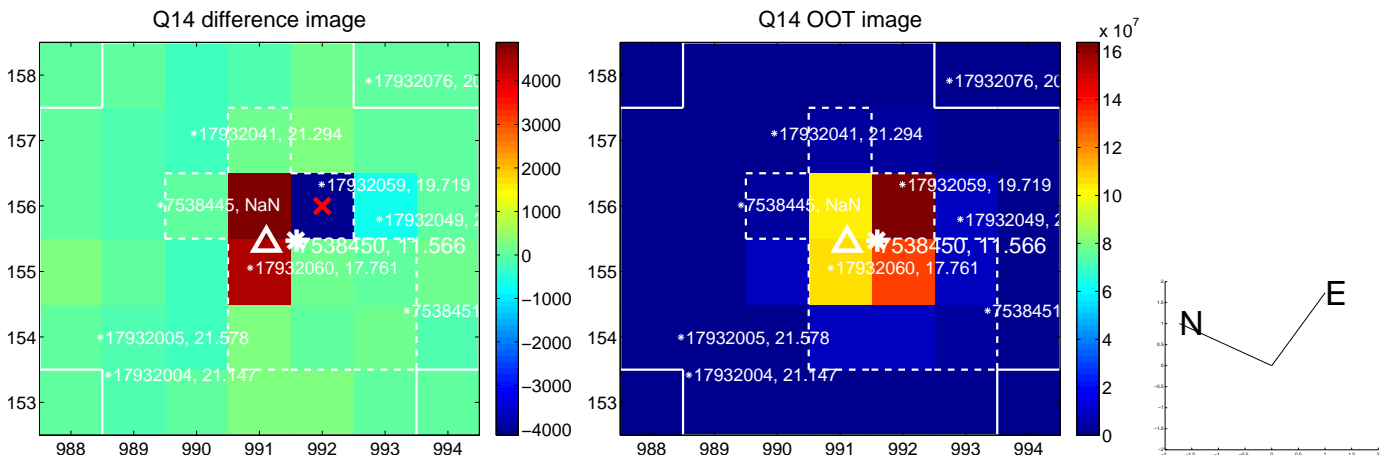
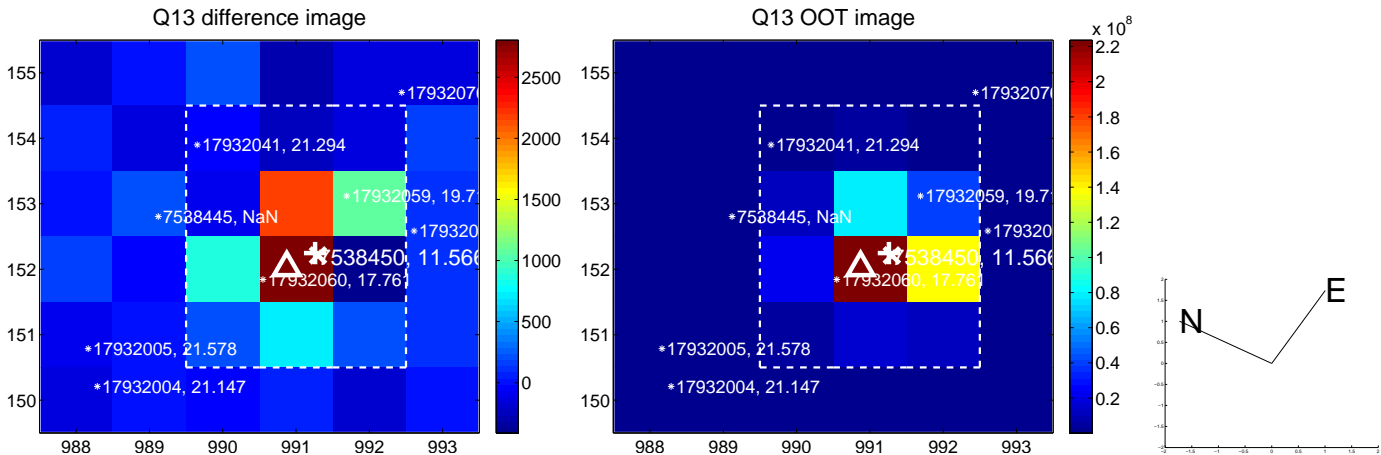
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



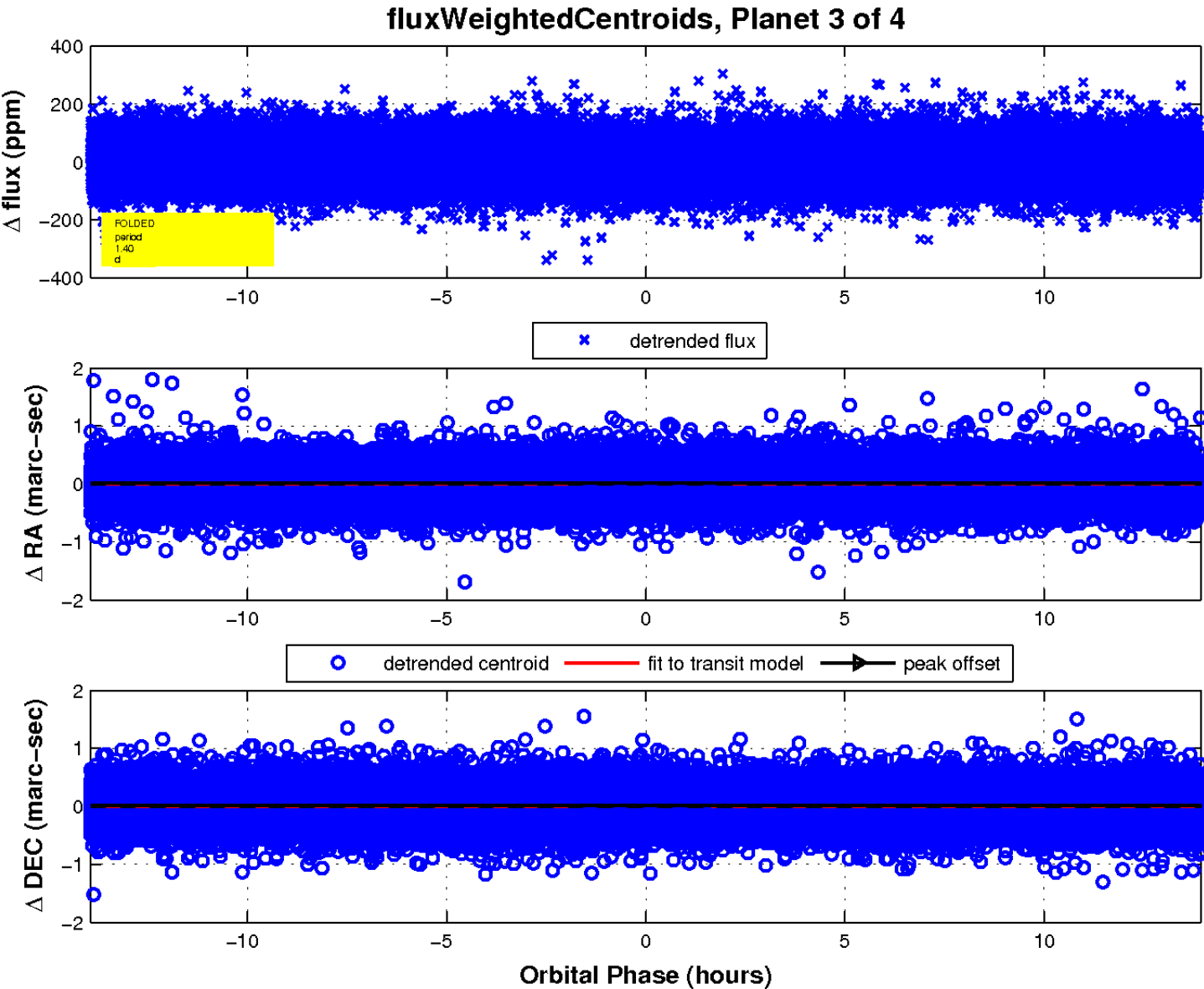
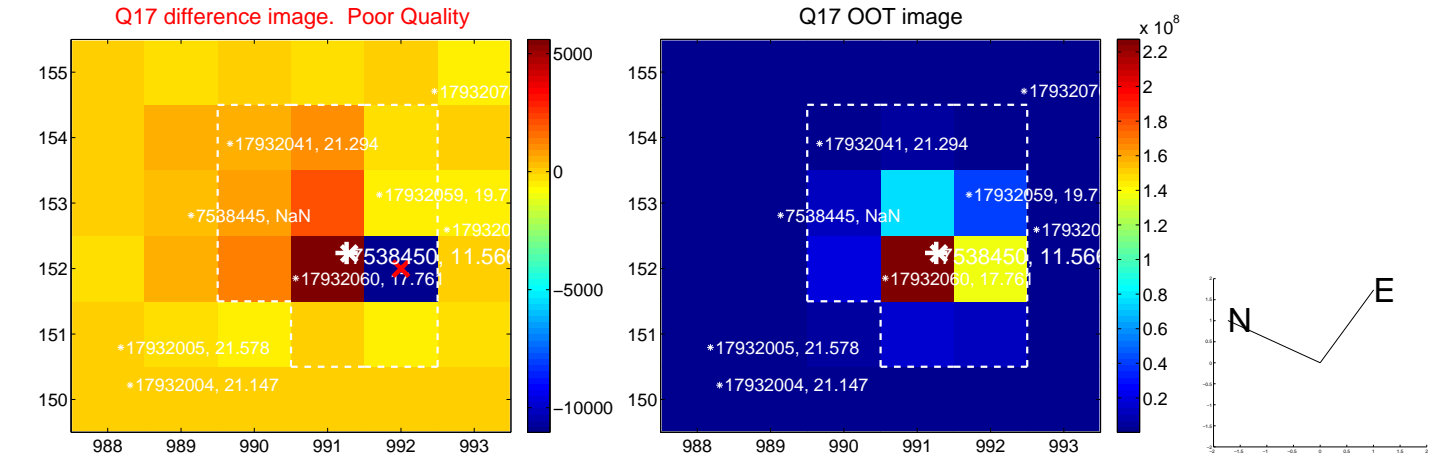
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

