

KIC 007538950

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})
007538950-01	OBS	No	0.944845	132.203856	38.0	4.747	10.3	5.1	4.62	8763	2.90	178552.61
007538950-02	OBS	No	0.944837	131.577100	80.7	2.137	10.0	7.5	4.62	8763	4.68	178554.60
007538950-04	OBS	No	389.329597	230.947670	1202.5	6.675	8.2	8.1	4.62	8763	18.45	58.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007538950-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
007538950-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED
007538950-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

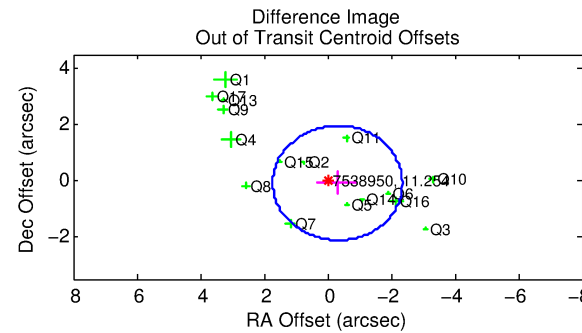
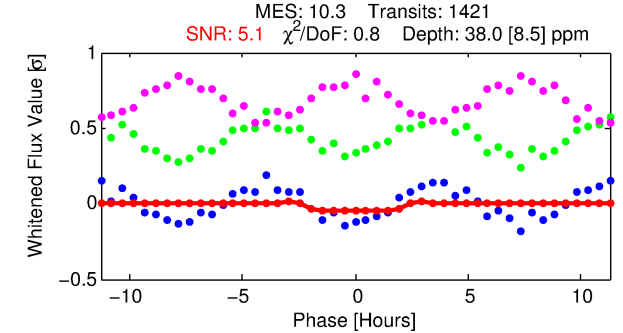
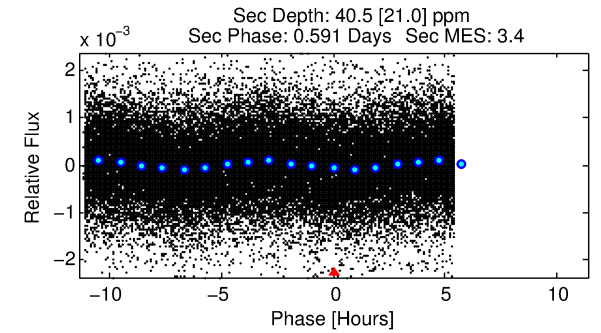
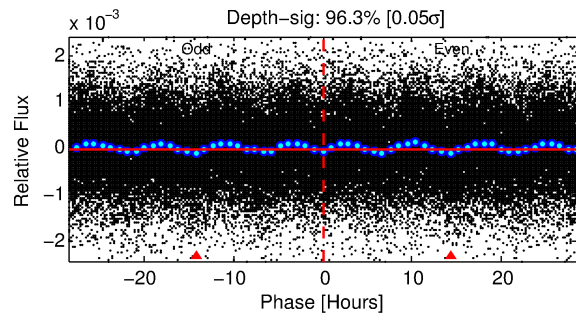
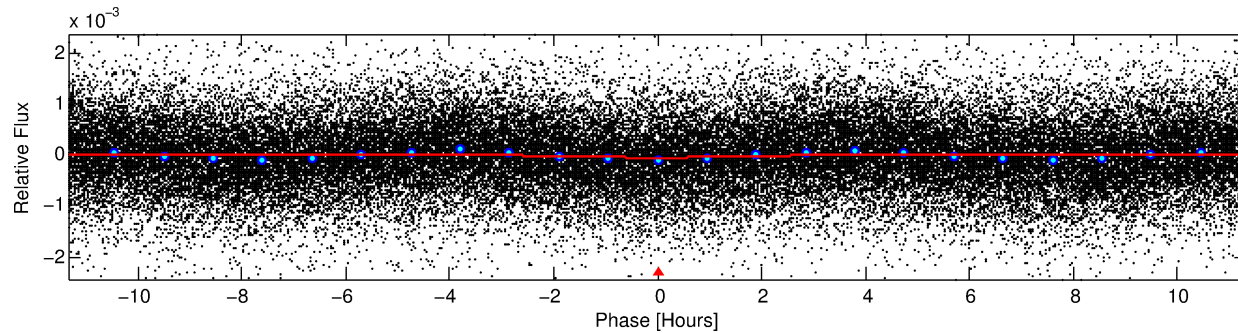
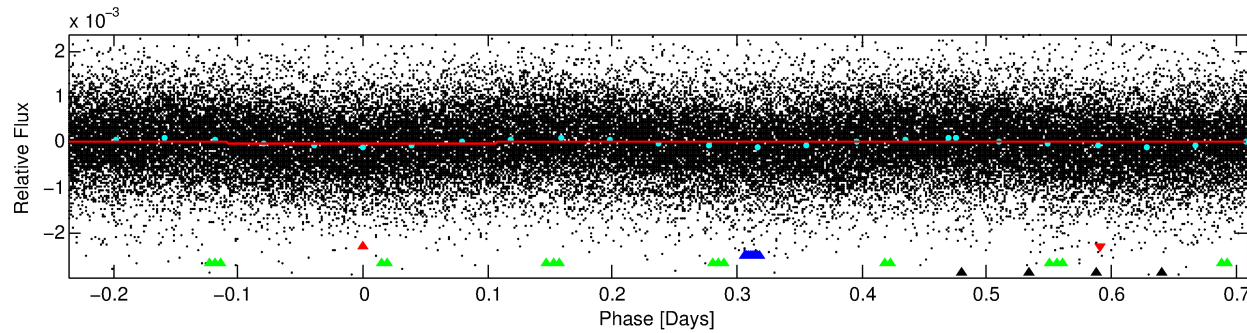
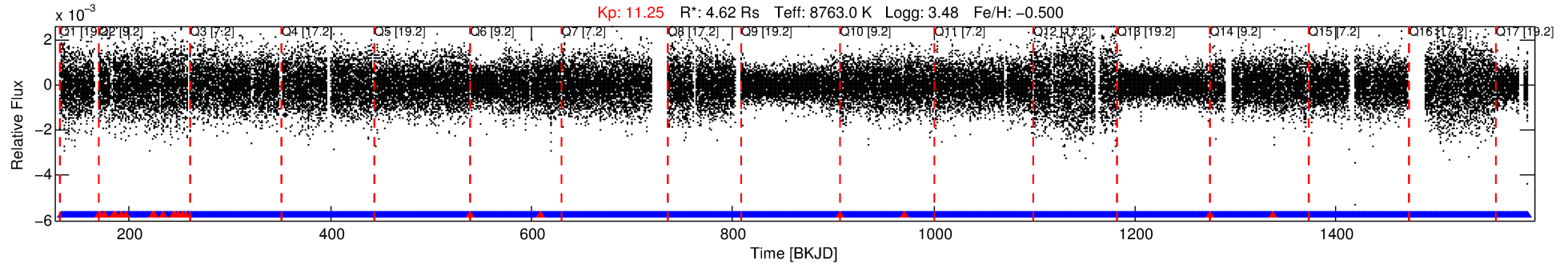
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007538950-01

No Significant Match Found

DV One-Page Summary

KIC: 7538950 Candidate: 1 of 4 Period: 0.945 d



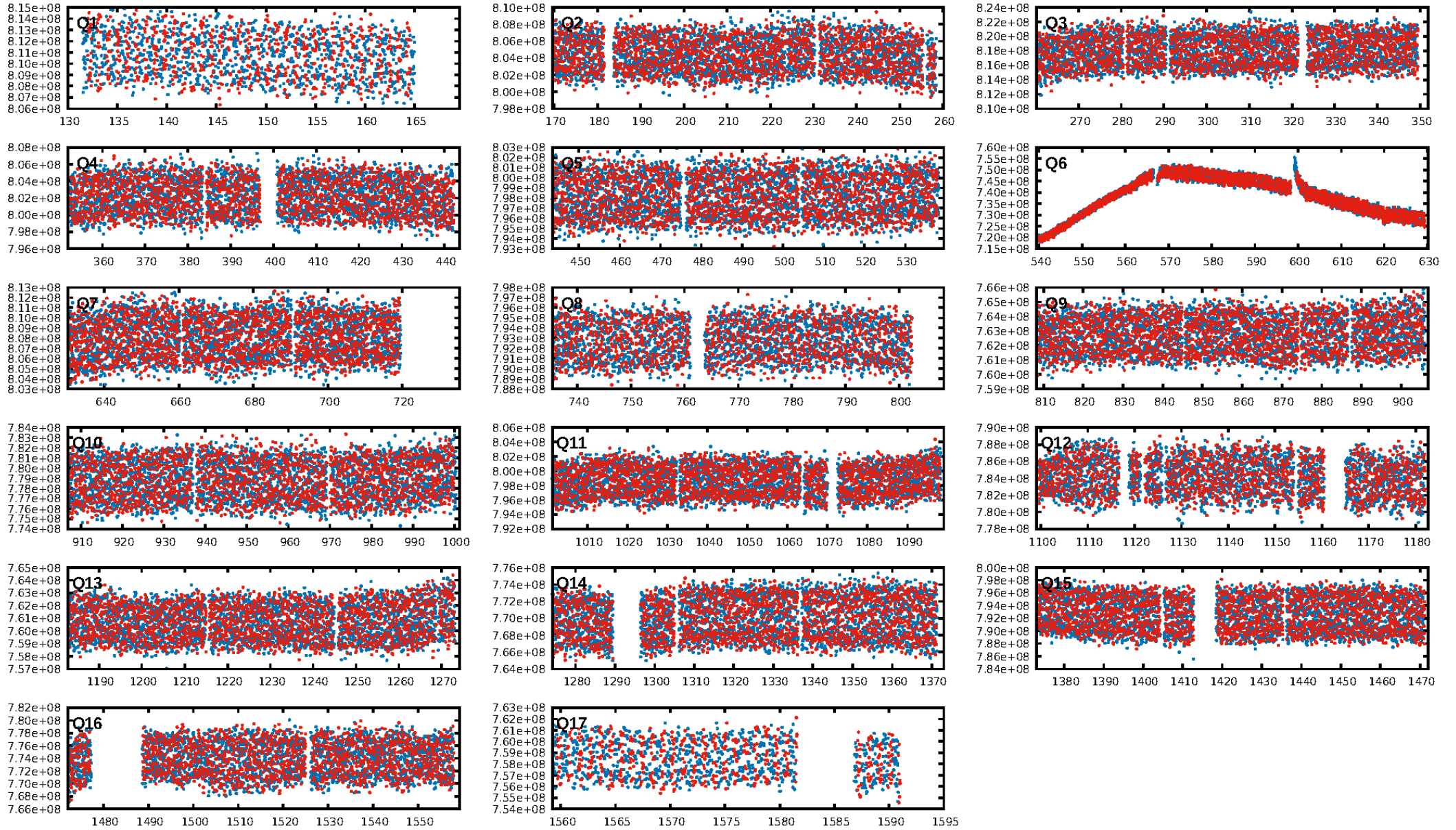
DV Fit Results:

Period = 0.94484 [0.00002] d
Epoch = 132.2039 [0.0074] BKJD
 $R_p/R^* = 0.0058$ [0.0079]
 $a/R^* = 1.63$ [8.67]
 $b = 0.18$ [45.42]
 $\text{Seff} = 178552.61$ [210624.49]
 $T_{\text{eq}} = 5242$ [1546] K
 $R_p = 2.91$ [4.41] R_{e}
 $a = 0.0252$ [0.0174] AU
 $A_g = 1.67$ [5.05] [0.13 σ]
 $T_{\text{eff}} = 9214$ [6441] K [0.60 σ]

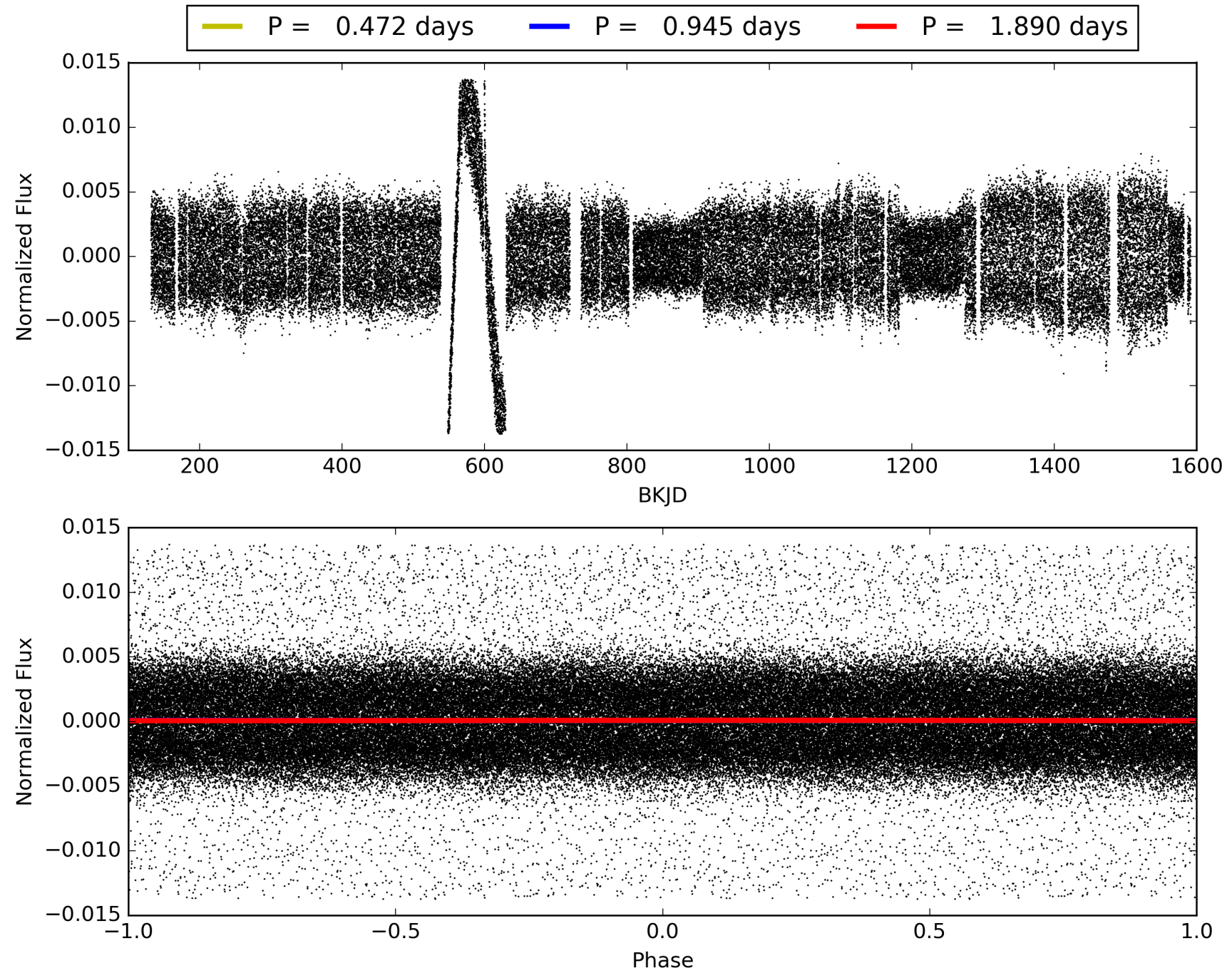
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 100.0% [384.12 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.43e-15
RollingBand-fgt: 0.98 [1335/1357]
GhostDiagnostic-chr: 1.985
Centroid-sig: 84.1%
Centroid-so: 0.119 arcsec [0.42 σ]
OotOffset-rm: 0.329 arcsec [0.48 σ]
KicOffset-rm: 0.340 arcsec [0.49 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 007538950-01, PDC Light Curves

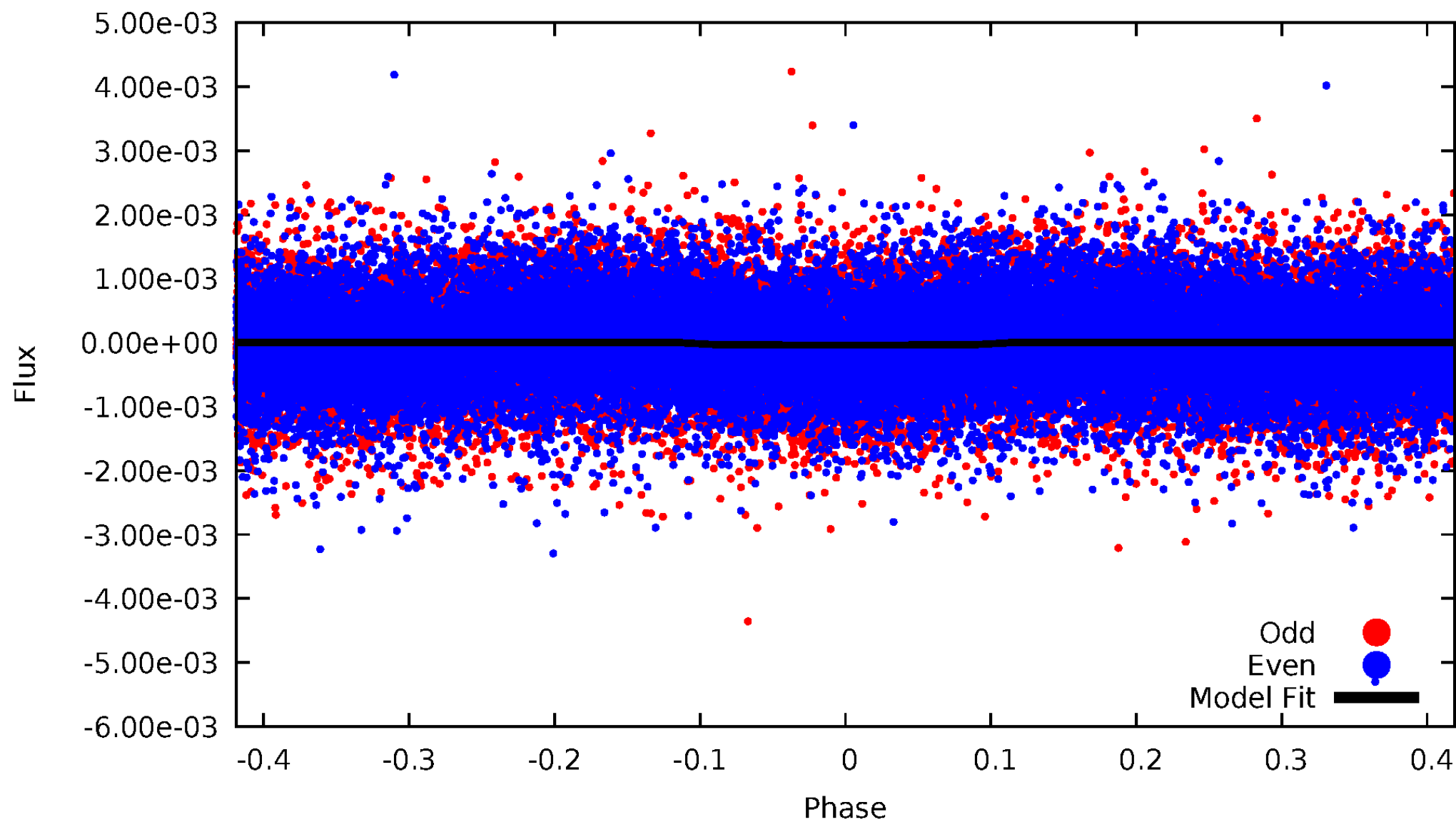


TCE 007538950-01



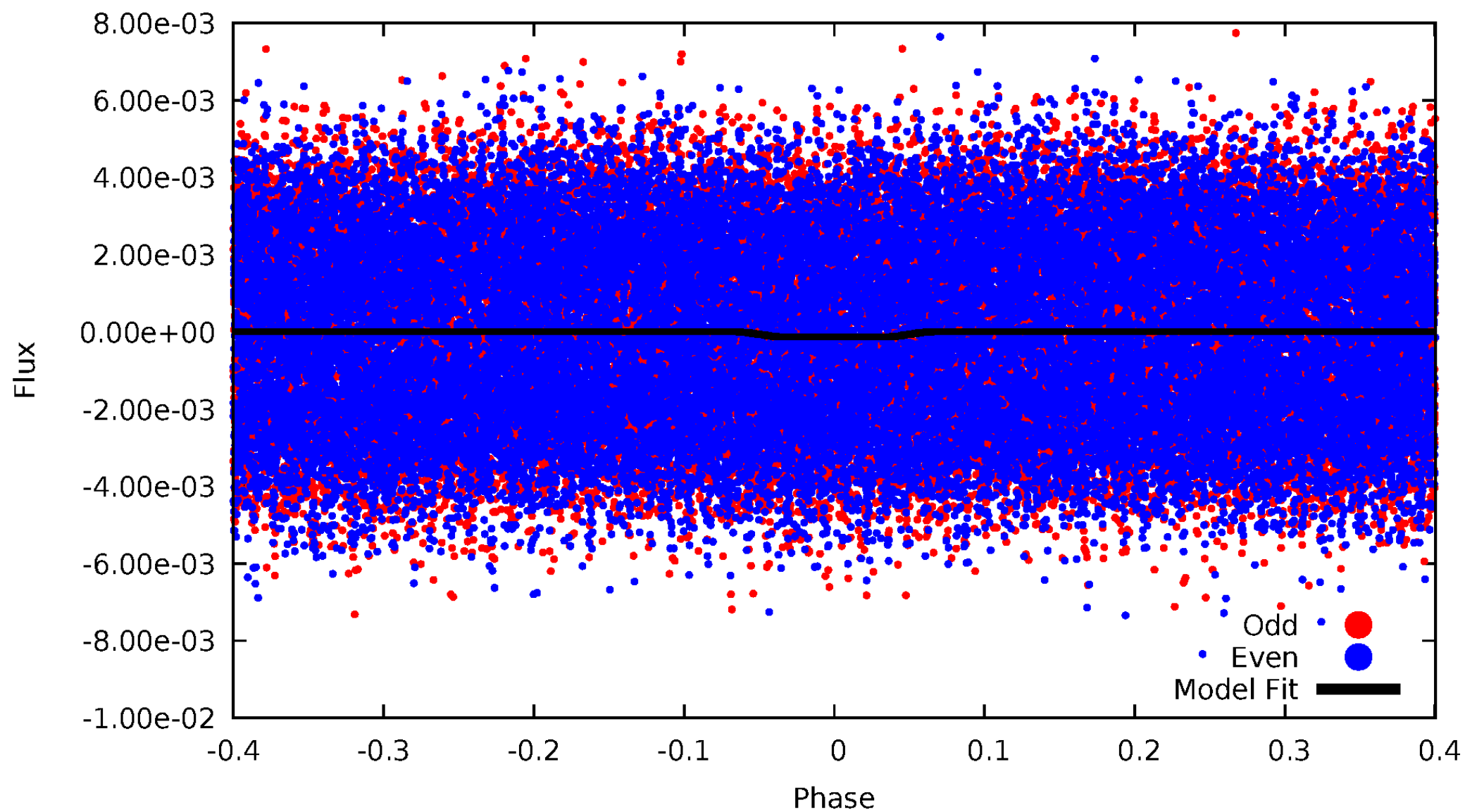
DV Odd/Even

TCE 007538950-01

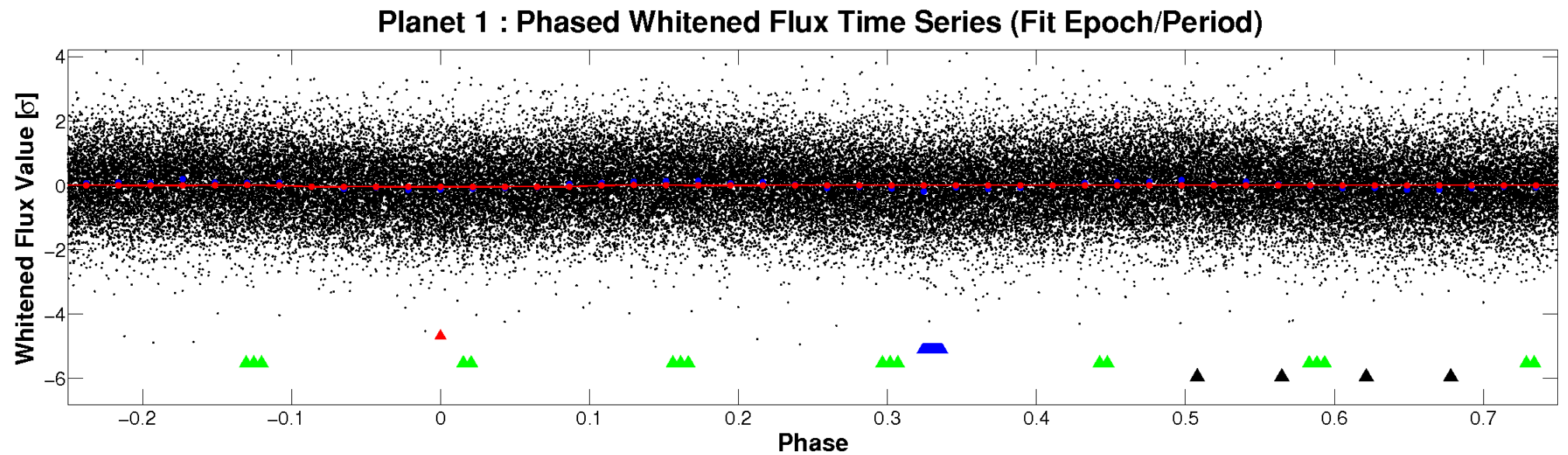
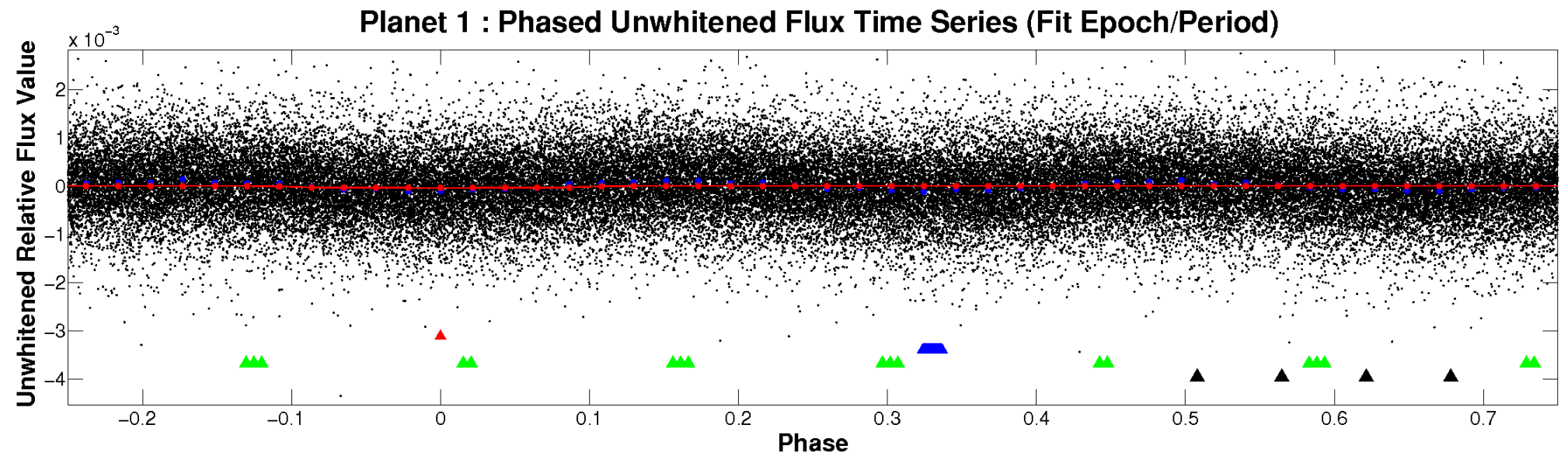


ALT Odd/Even

TCE 007538950-01

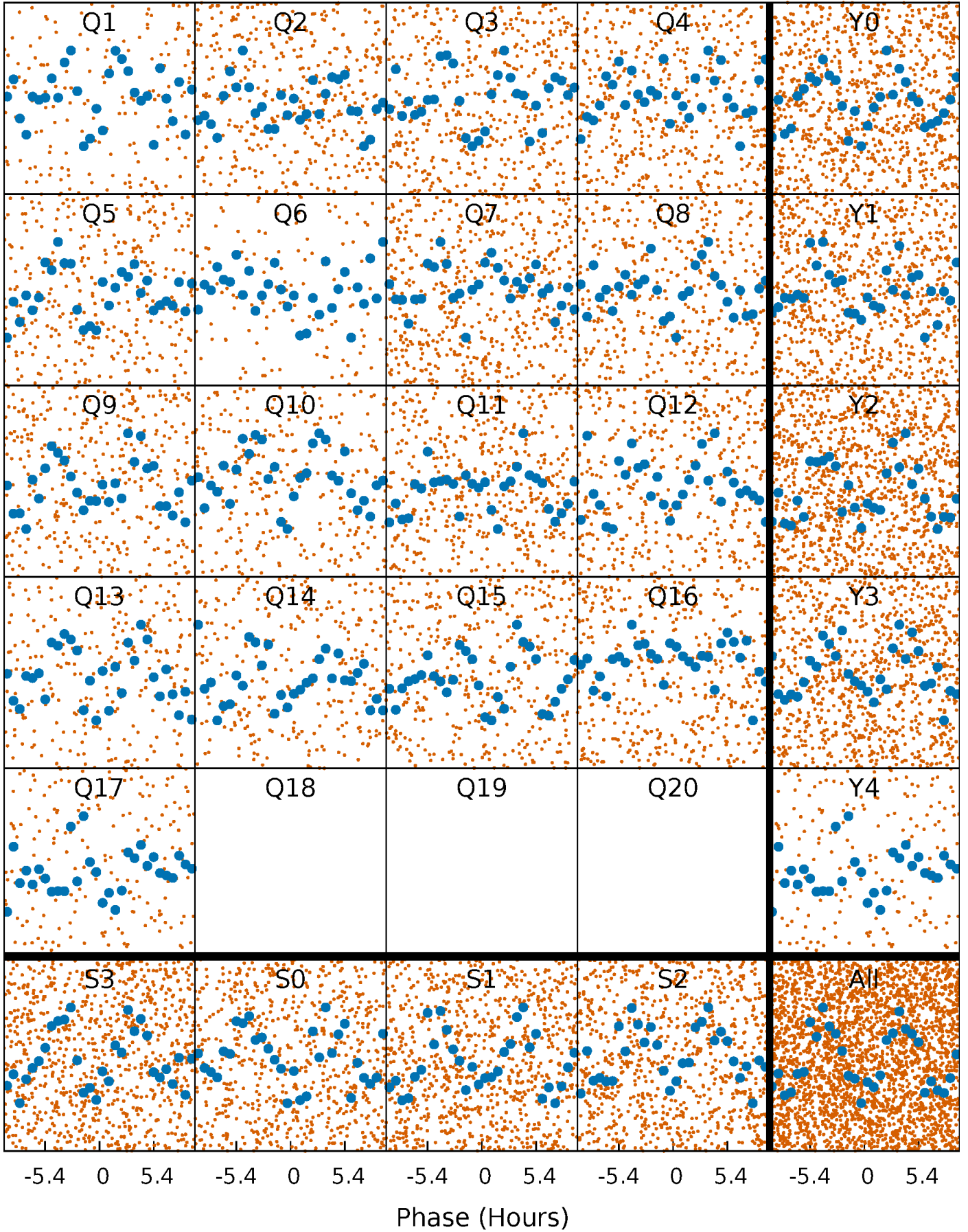


Non-Whitened Vs. Whitened Light Curve



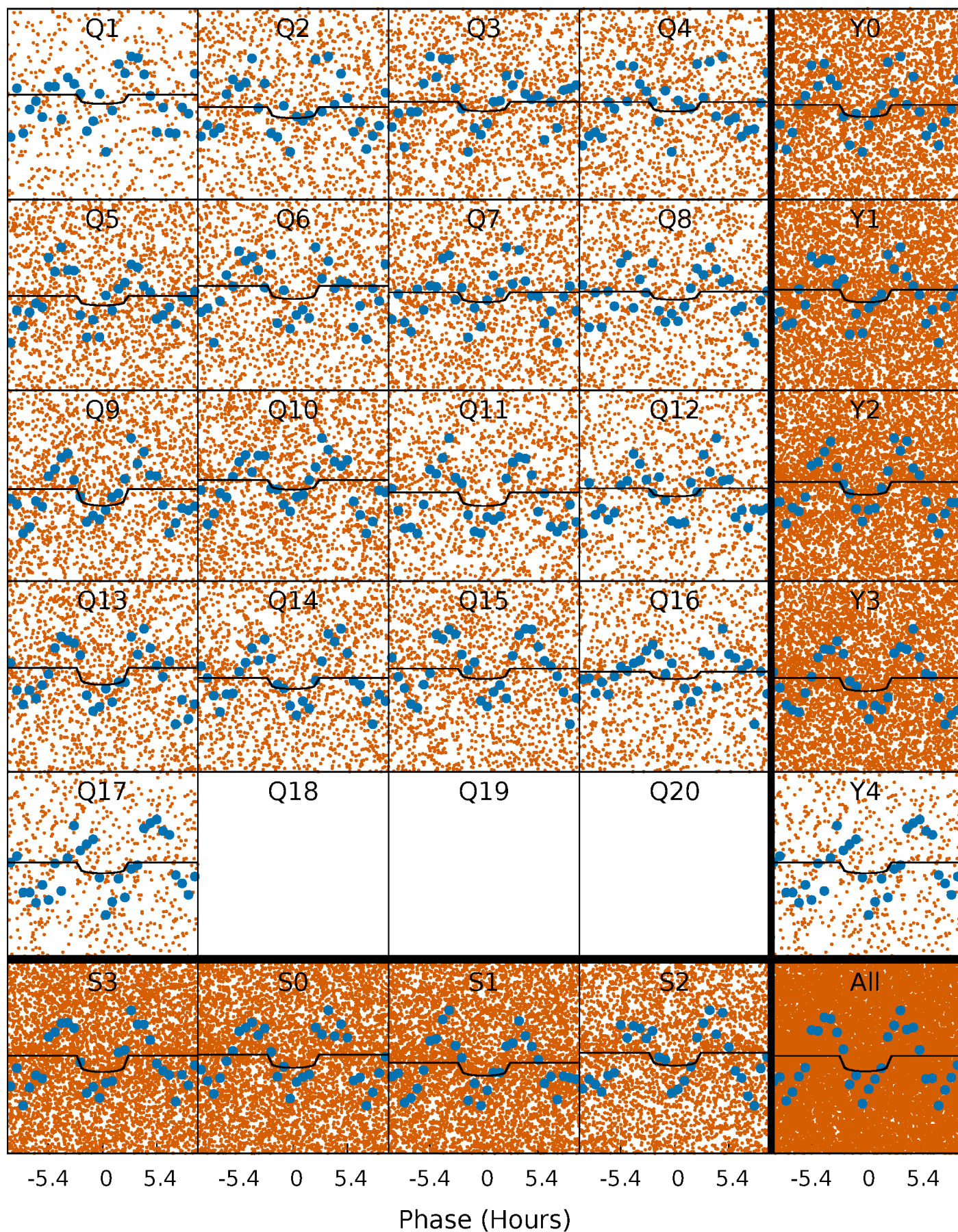
PDC Quarter-Phased Transit Curves

TCE 007538950-01 P= 0.944845 Days $T_0=132.203856$ (BKJD)



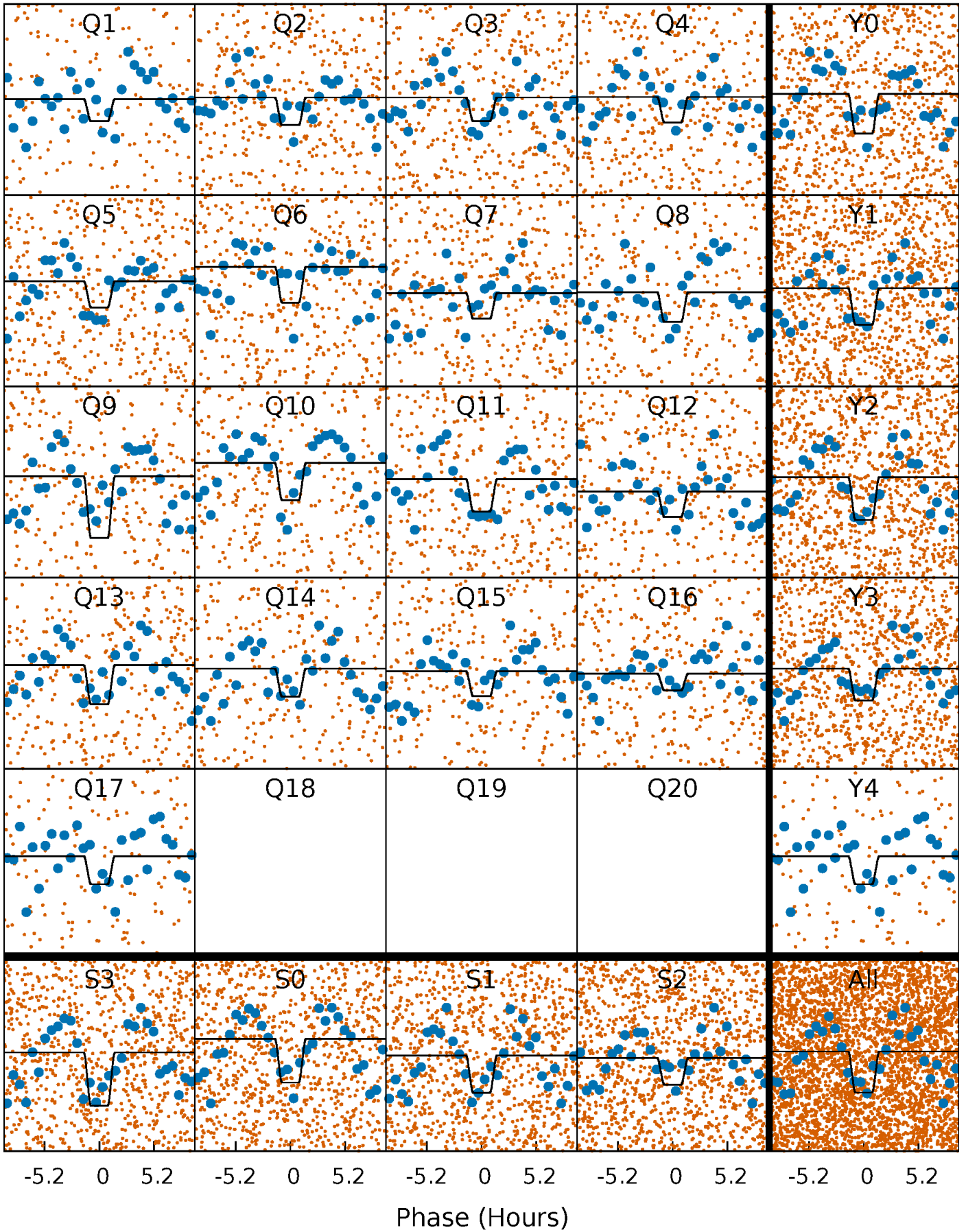
DV Quarter-Phased Transit Curves

TCE 007538950-01 P= 0.944845 Days $T_0=132.203856$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

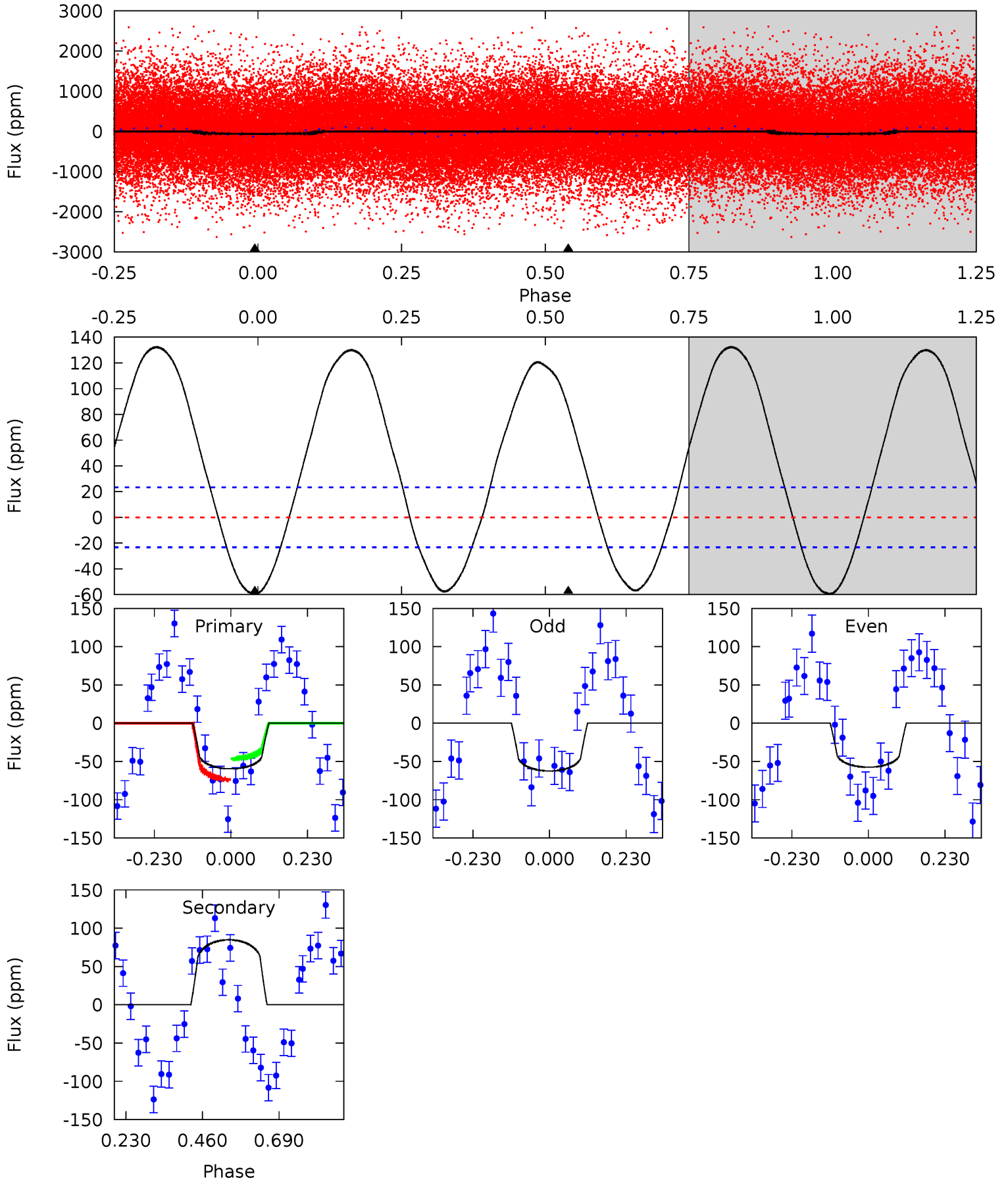
TCE 007538950-01 P= 0.944887 Days $T_0=132.166268$ (BKJD)



DV Model-Shift Uniqueness Test

007538950-01, P = 0.944845 Days, E = 131.259011 Days

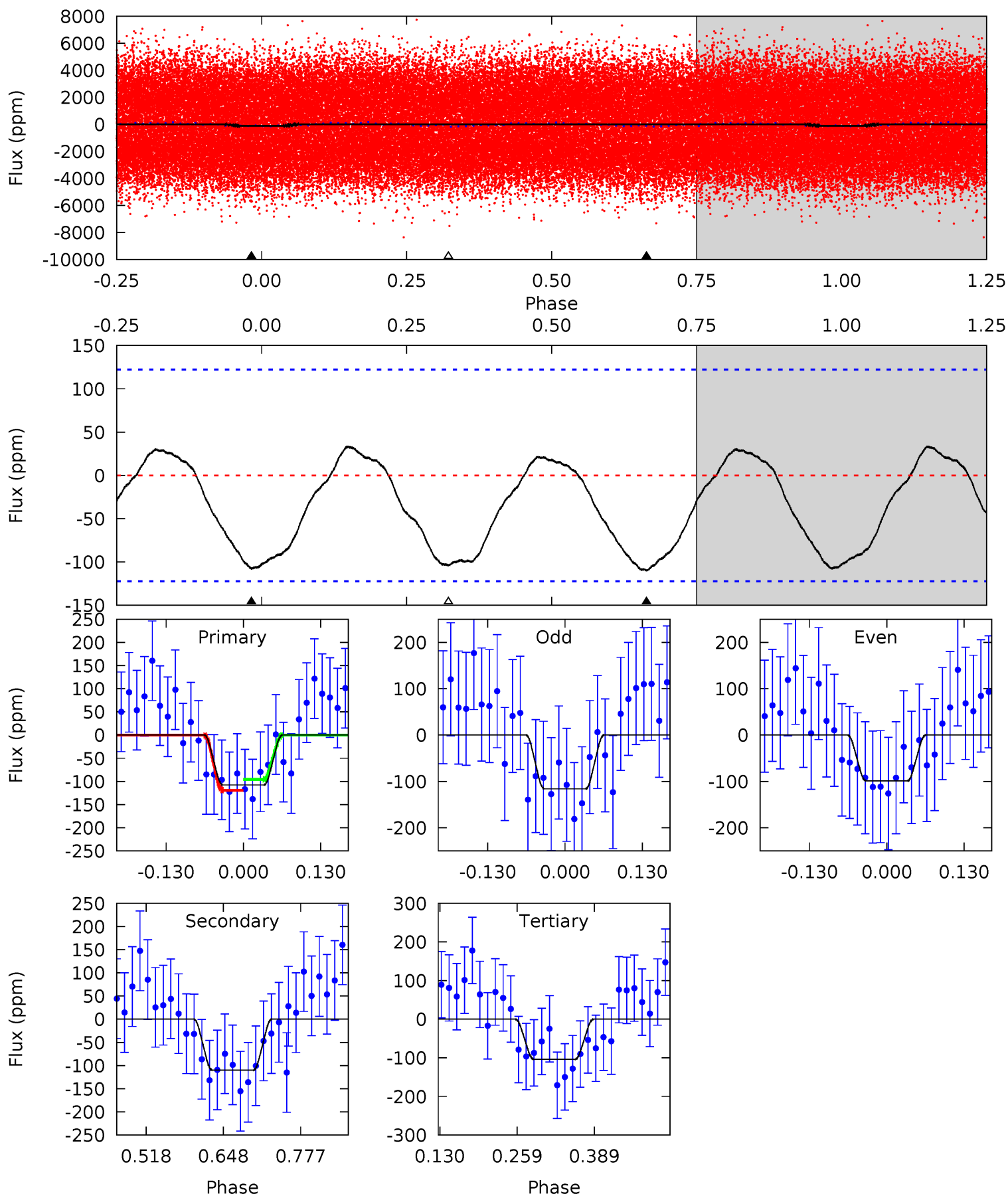
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	-16.0	0	0	4.39	1.20	8.31	11.2	11.2	-16.0	-16.0	0.47	1.01	0.69	2.57



Alt Model-Shift Uniqueness Test

007538950-01, P = 0.944887 Days, E = 131.221381 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.97	4.05	3.83	0	4.51	1.52	1.74	0.14	3.97	0.22	4.05	0.31	0.94	0.23	0.44



Stellar Parameters For KIC 007538950

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8763^{+237}_{-407}	$3.484^{+0.704}_{-0.176}$	$-0.500^{+0.150}_{-0.300}$	$4.625^{+0.532}_{-3.017}$	$2.379^{+0.372}_{-0.868}$	$0.034^{+0.437}_{-0.015}$
	+3%/-5%	+20%/-5%	+30%/-60%	+12%/-65%	+16%/-36%	+1289%/-44%
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 007538950-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	85 ± 5	$3.70^{+3.15}_{-2.37}$	7150^{+541}_{-1069}	-9954^{+2636}_{-12104}	$-2.202^{+1.570}_{-14.438}$
Alt.	-110 ± 27	$5.66^{+3.92}_{-3.38}$	7223^{+507}_{-1083}	7188^{+6690}_{-2778}	$1.209^{+5.863}_{-0.809}$

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 $A_{obs} \gg 1.0$

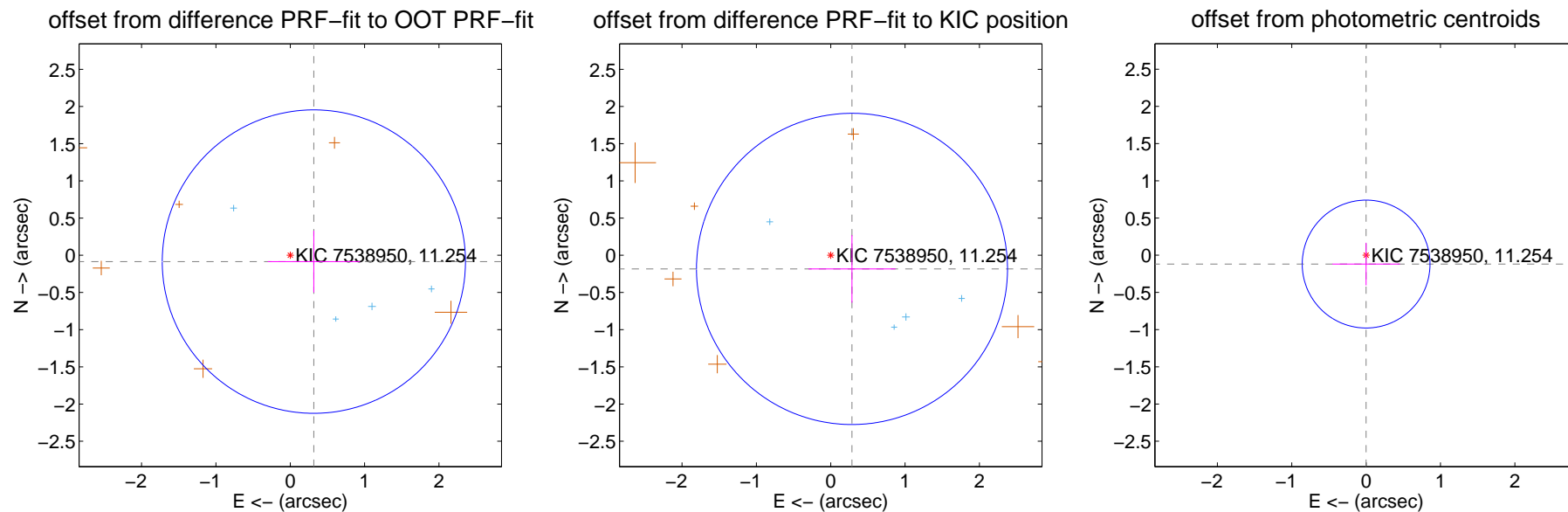
DV Centroid Data

Supplemental centroid analysis for 007538950-01. **Kepler magnitude: 11.25.** Transit SNR 5.09

There are 7 quarters with good PRF difference image offsets

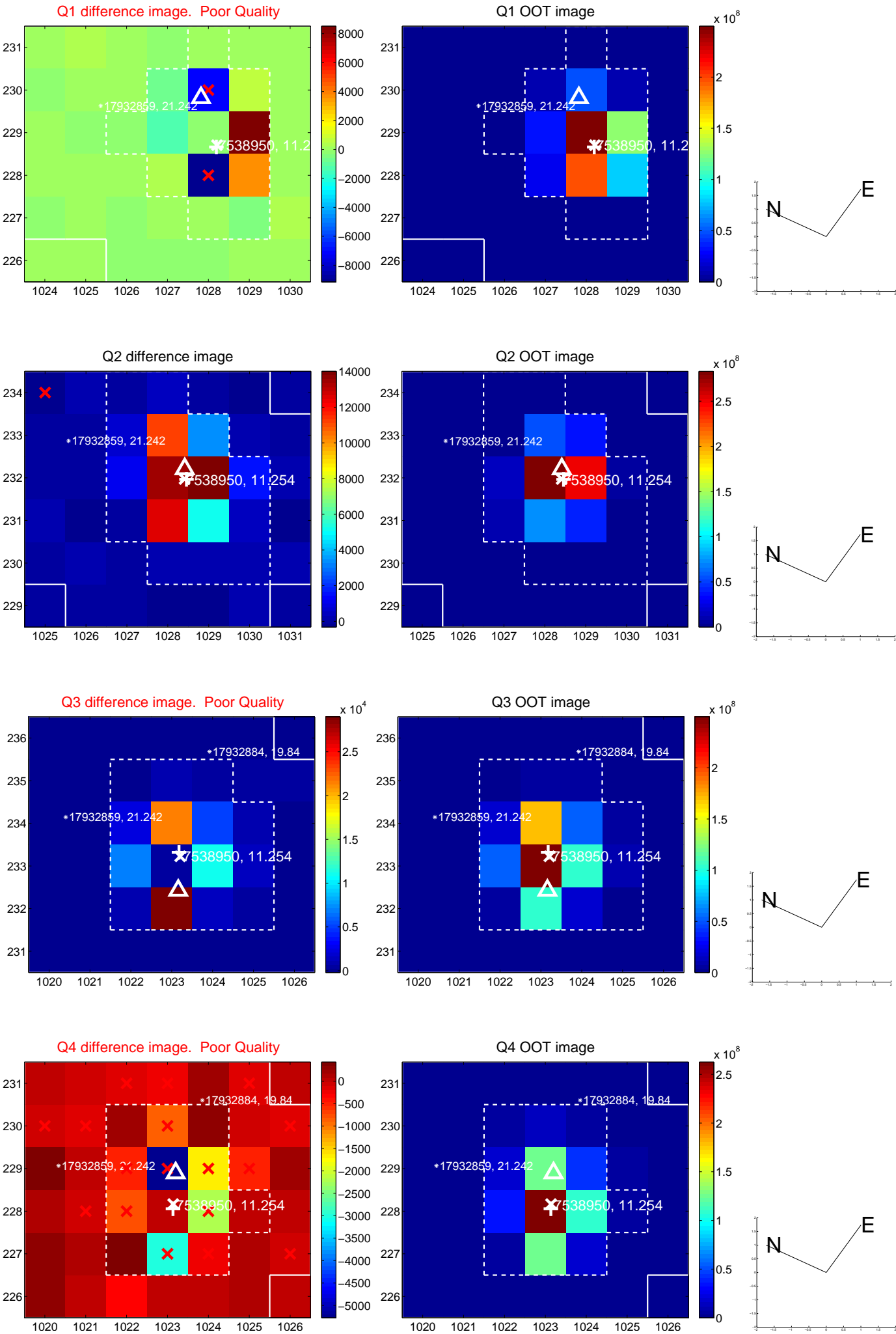
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.329 ± 0.680	0.48	-0.317 ± 0.619	-0.085 ± 0.414
PRF-fit source offset from KIC position	0.340 ± 0.697	0.49	-0.286 ± 0.586	-0.183 ± 0.454
photometric centroid source offset	0.12 ± 0.29	0.42	0.00 ± 0.45	-0.12 ± 0.29

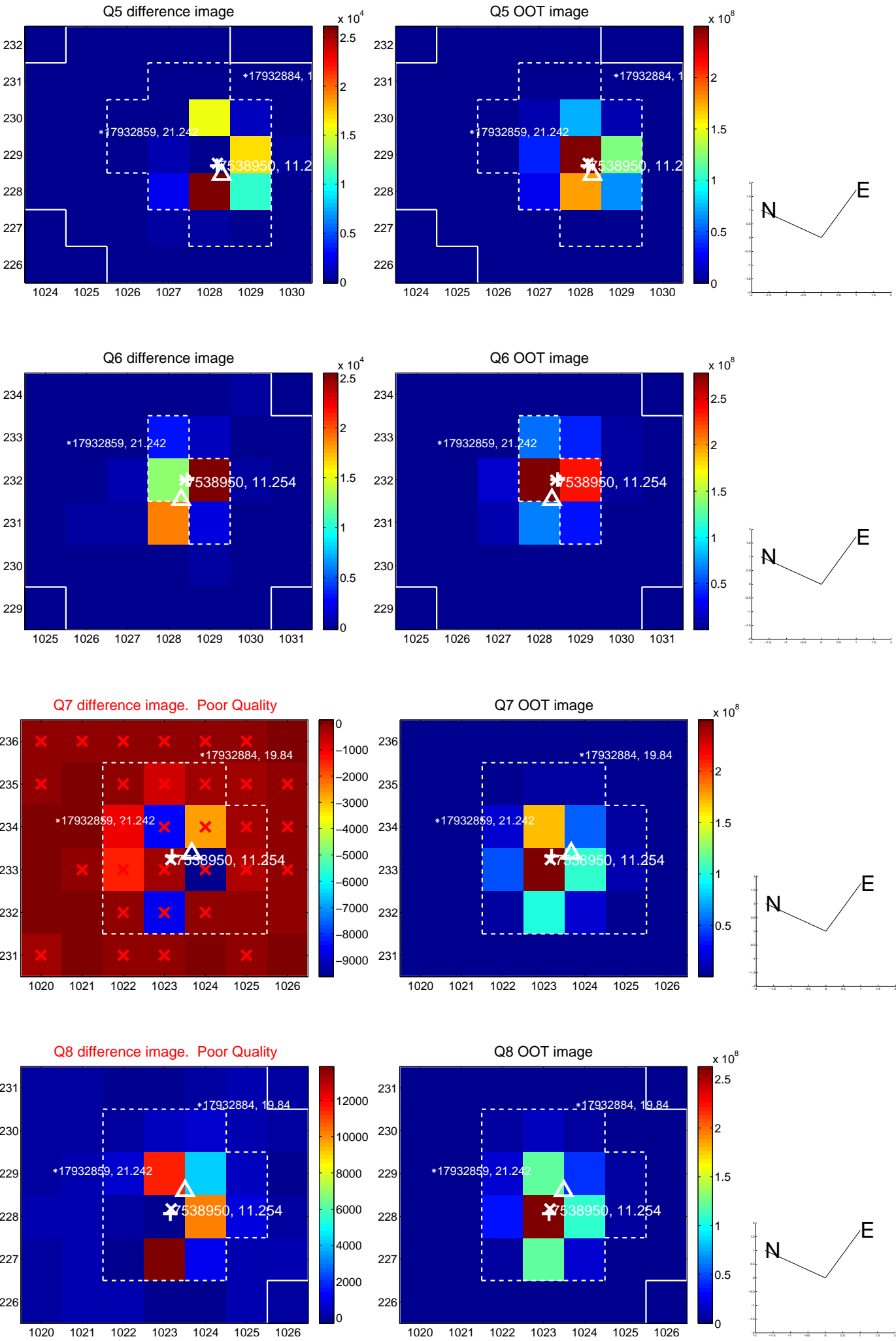


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

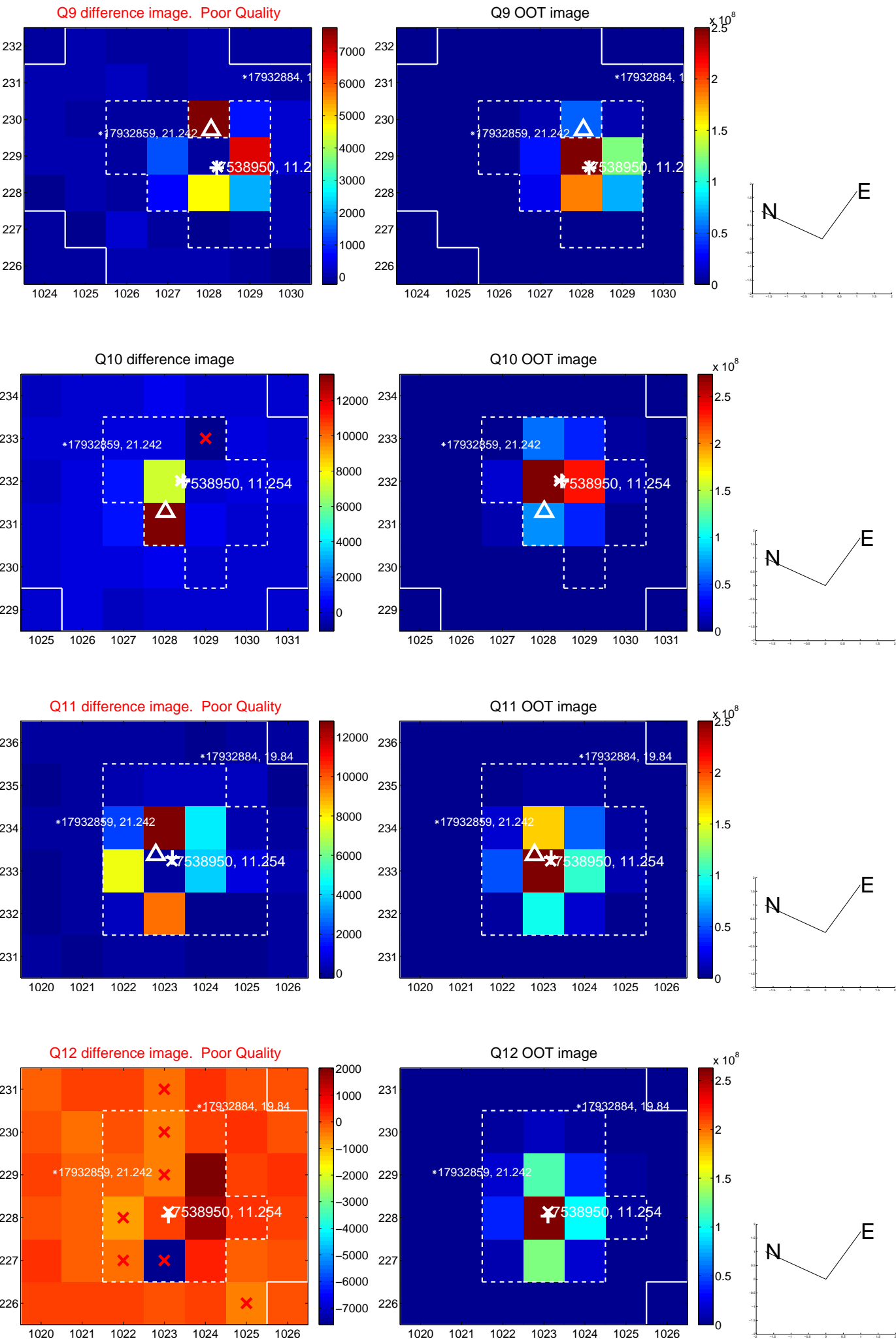
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



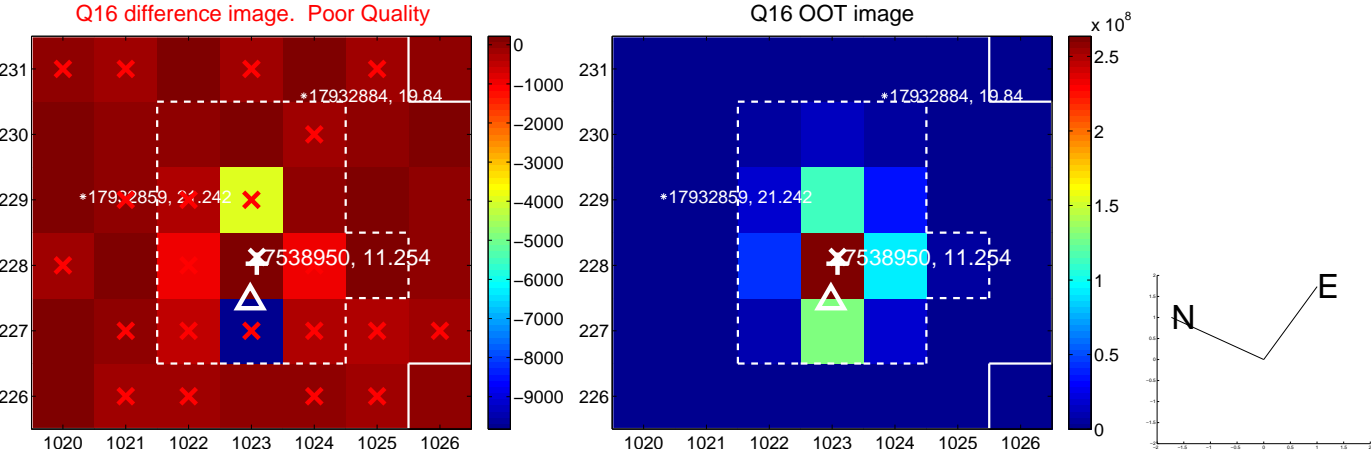
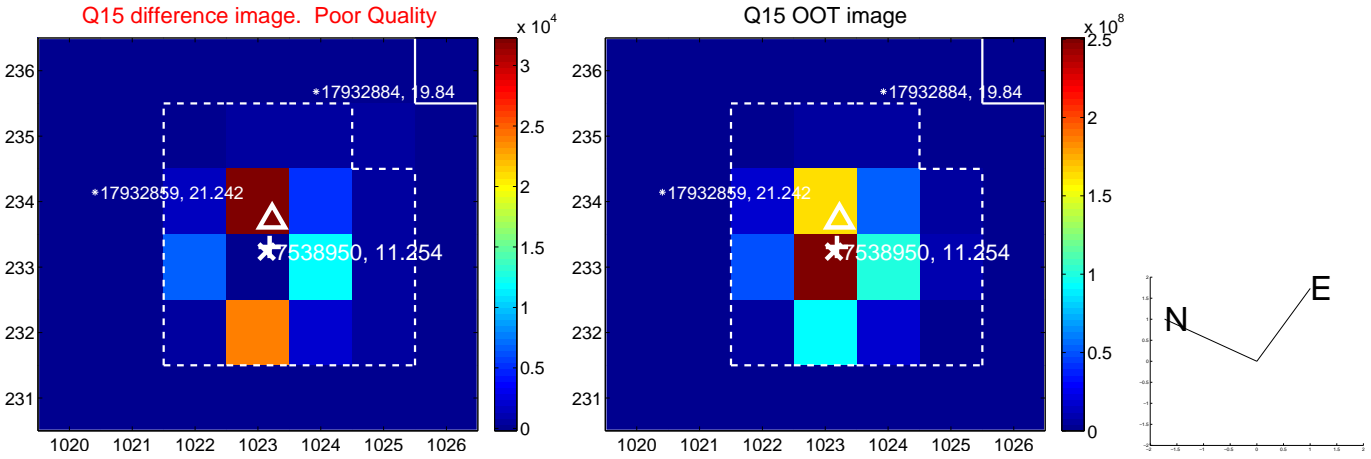
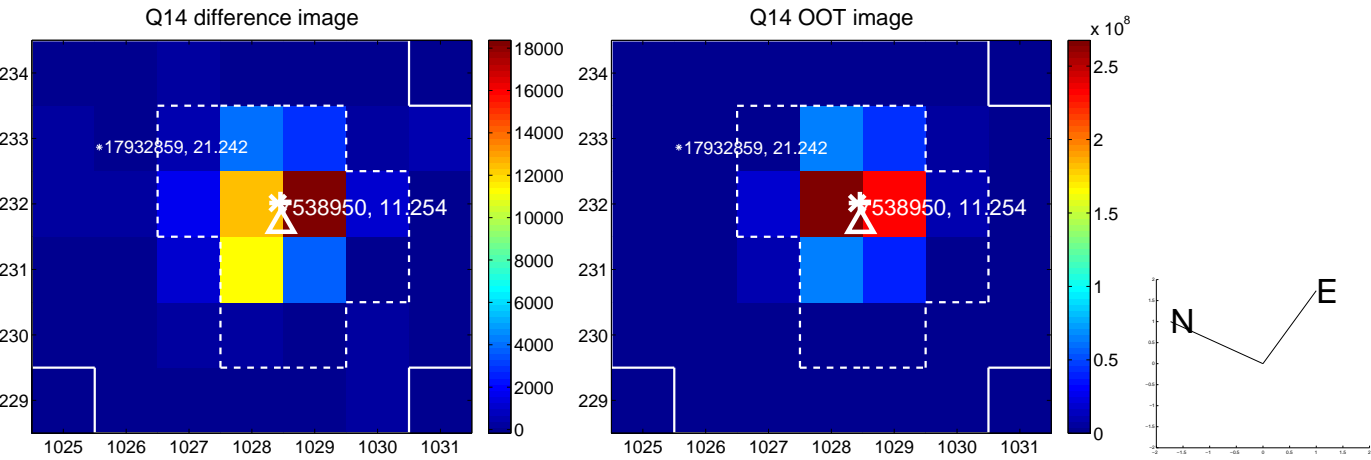
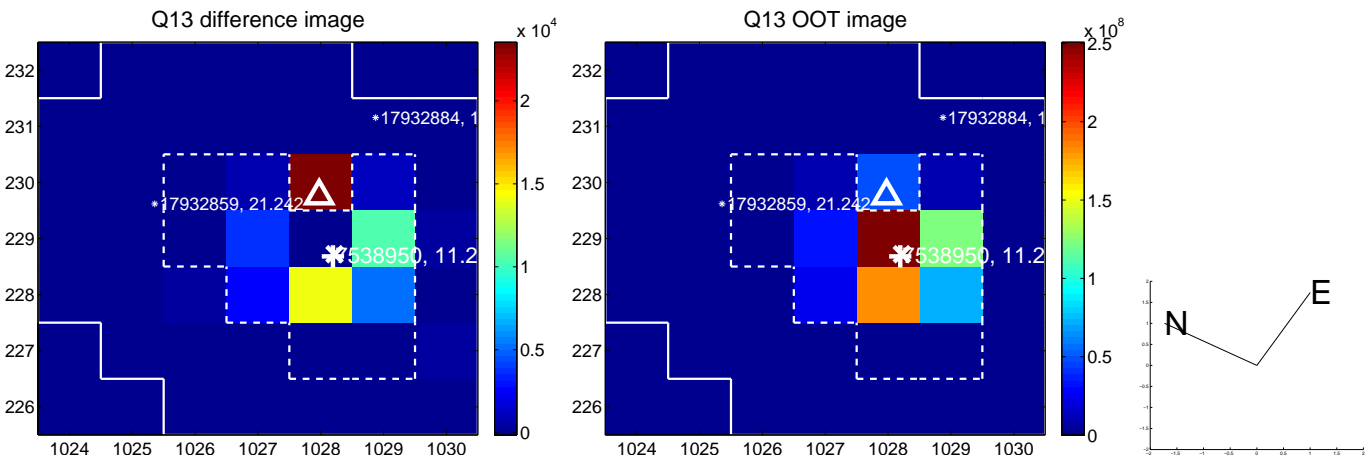
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



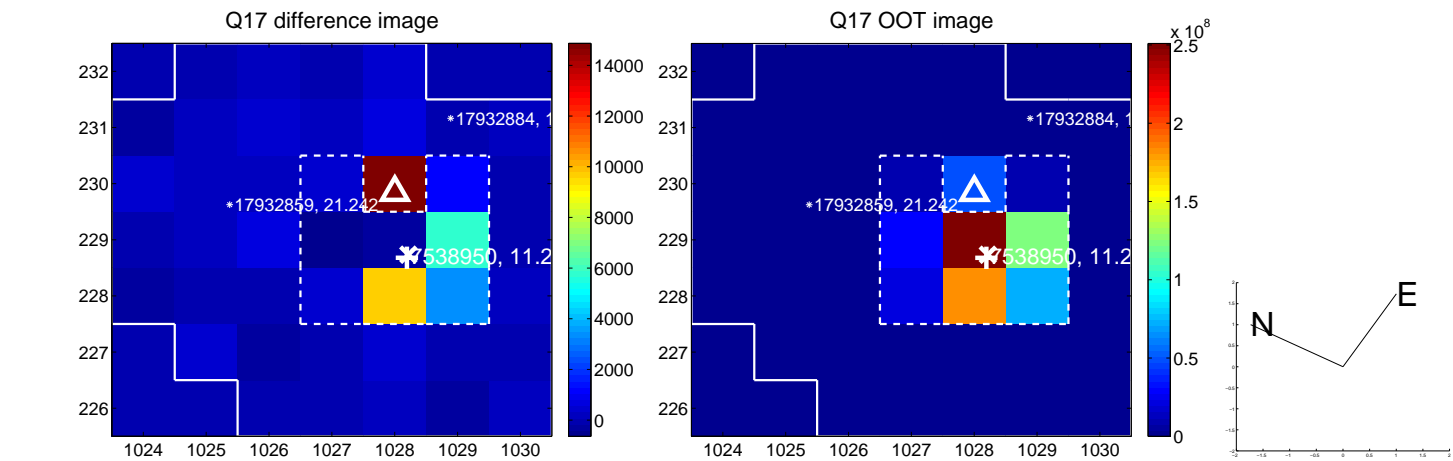
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



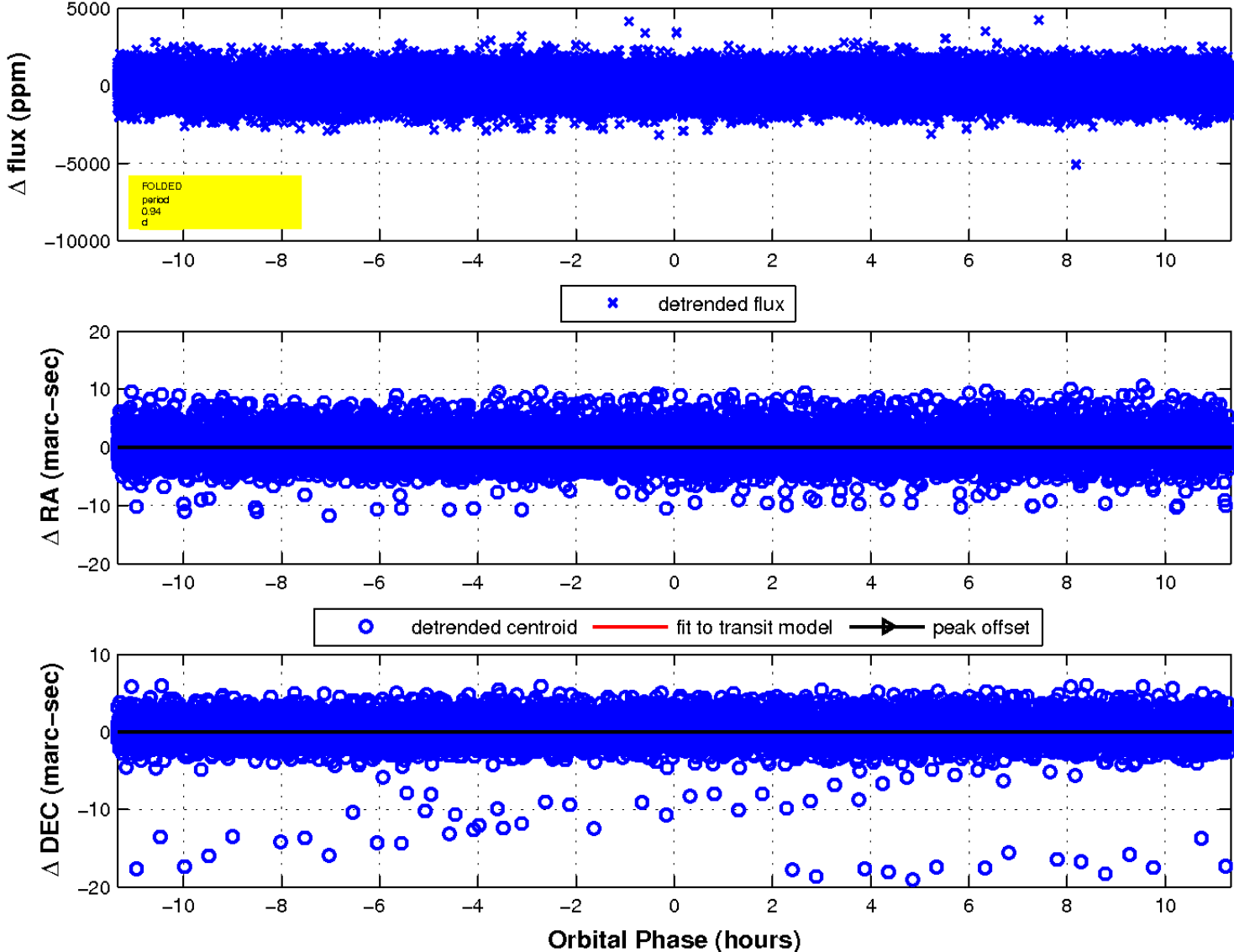
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

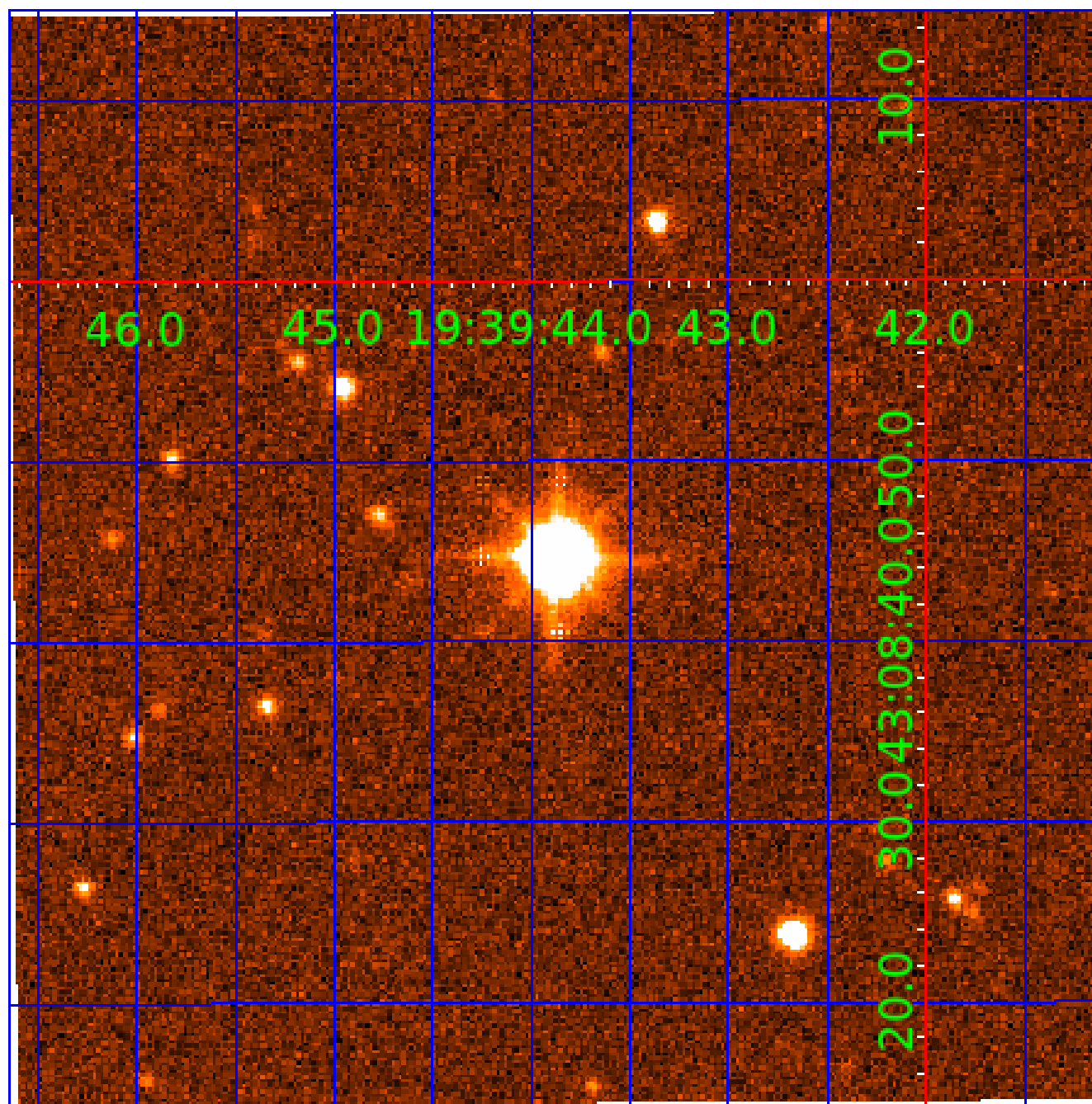


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 007538950

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})
007538950-01	OBS	No	0.944845	132.203856	38.0	4.747	10.3	5.1	4.62	8763	2.90	178552.61
007538950-02	OBS	No	0.944837	131.577100	80.7	2.137	10.0	7.5	4.62	8763	4.68	178554.60
007538950-04	OBS	No	389.329597	230.947670	1202.5	6.675	8.2	8.1	4.62	8763	18.45	58.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007538950-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
007538950-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED
007538950-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

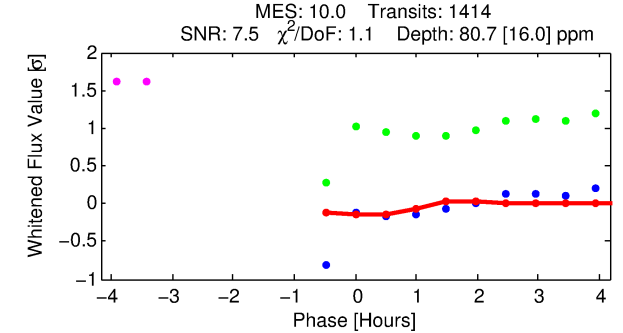
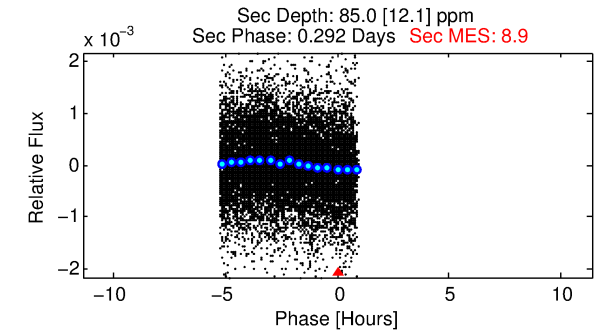
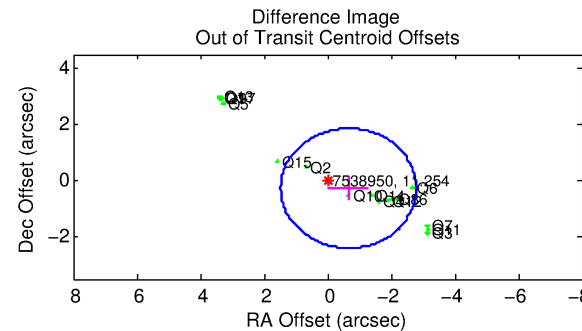
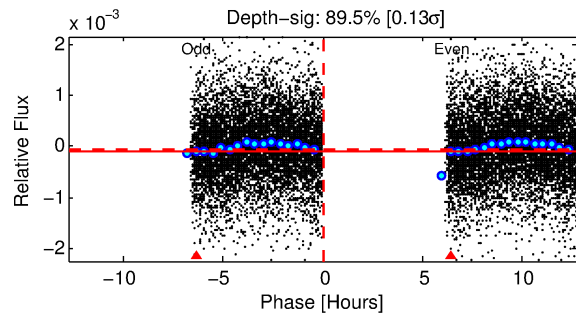
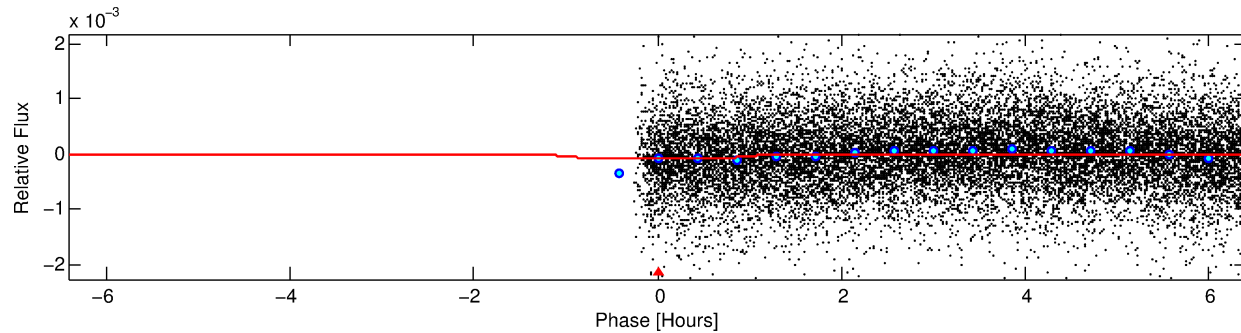
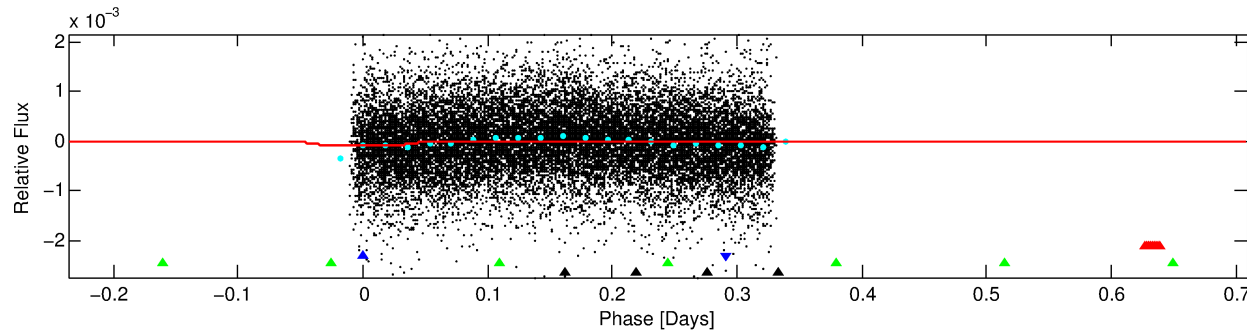
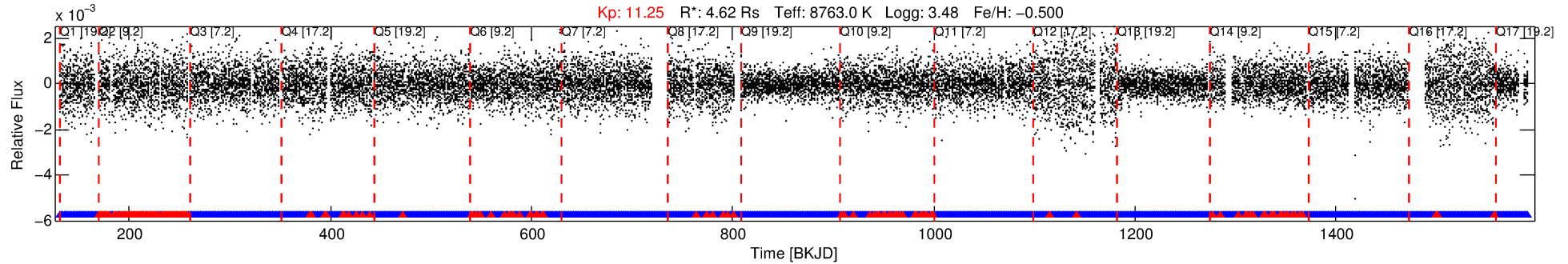
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007538950-02

No Significant Match Found

DV One-Page Summary

KIC: 7538950 Candidate: 2 of 4 Period: 0.945 d



DV Fit Results:

Period = 0.94484 [0.00001] d
Epoch = 131.5771 [0.0131] BKJD
Rp/R* = 0.0093 [0.0069]
a/R* = 2.05 [7.72]
b = 0.85 [1.62]
Seff = 178554.60 [210626.84]
Teq = 5242 [1546] K
Rp = 4.68 [4.63] Re
a = 0.0252 [0.0174] AU
Ag = 1.35 [2.57] [0.14 σ]
Teffp = 8742 [3292] K [0.96 σ]

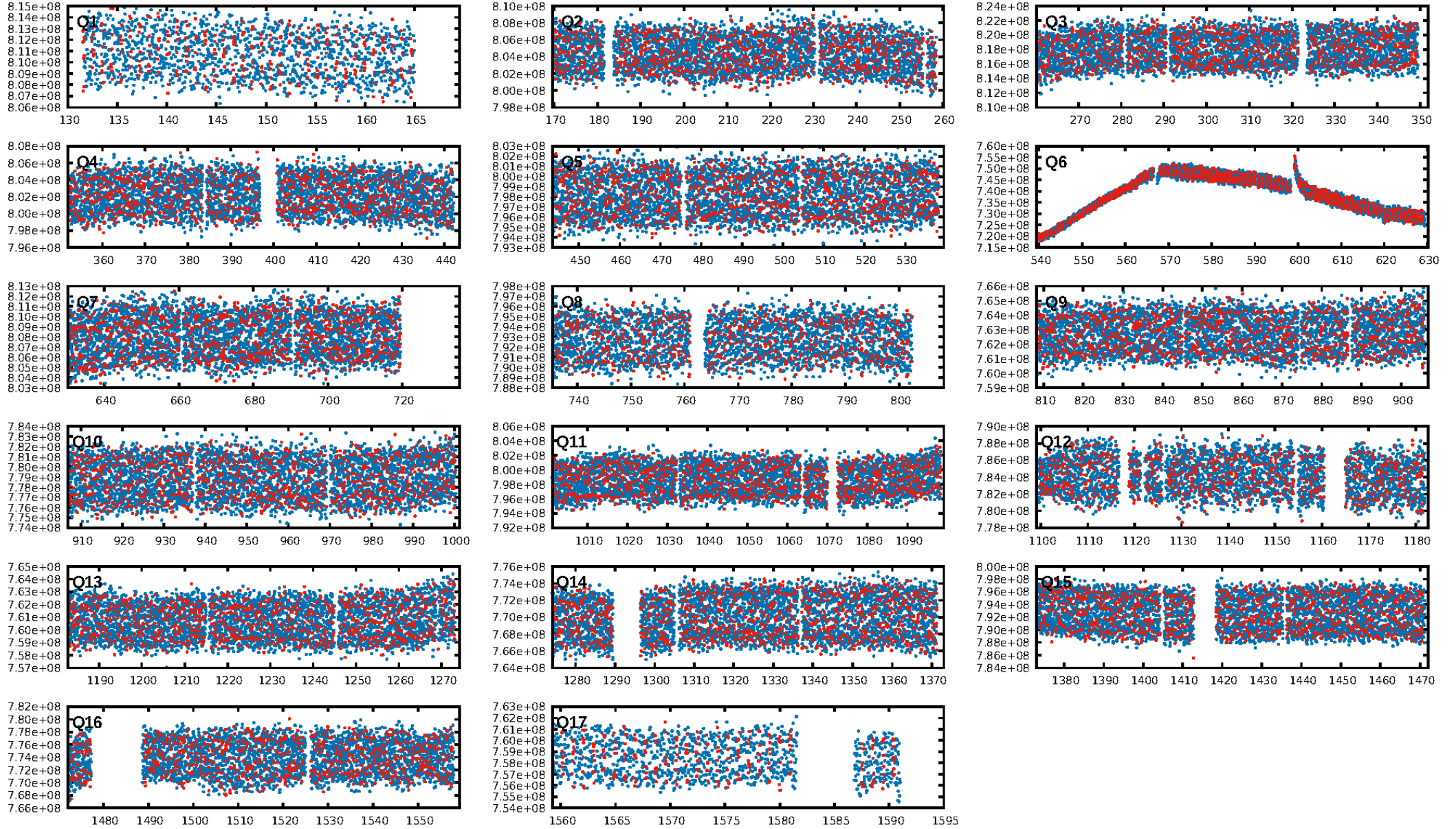
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.53e-16
RollingBand-fgt: 0.88 [1182/1350]
GhostDiagnostic-chr: 1.305
Centroid-sig: 12.1%
Centroid-so: 0.310 arcsec [1.34 σ]
OotOffset-rm: 0.710 arcsec [1.00 σ]
KicOffset-rm: 0.737 arcsec [1.03 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 0.00 [0/17]

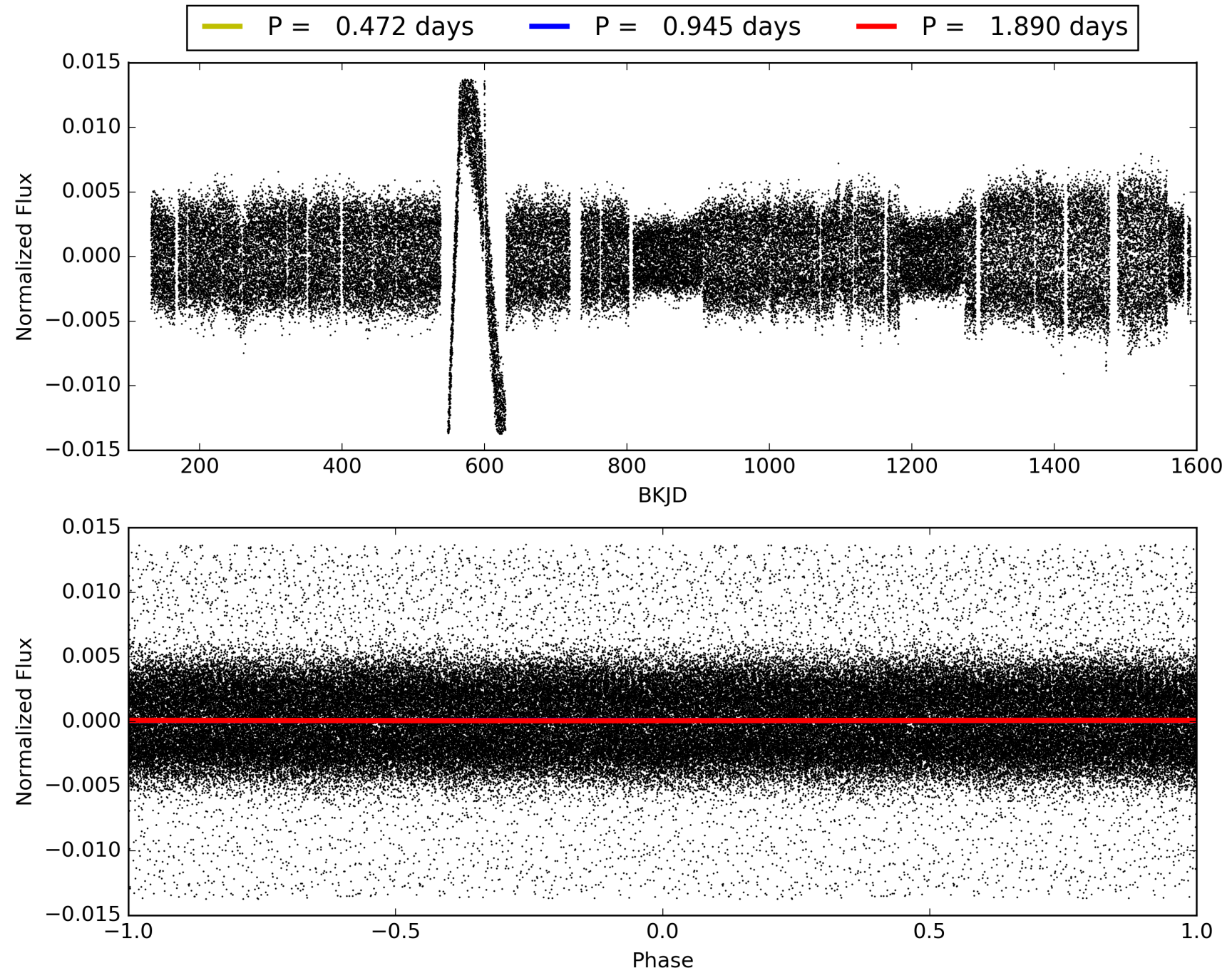
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:59:58 Z

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

TCE 007538950-02, PDC Light Curves

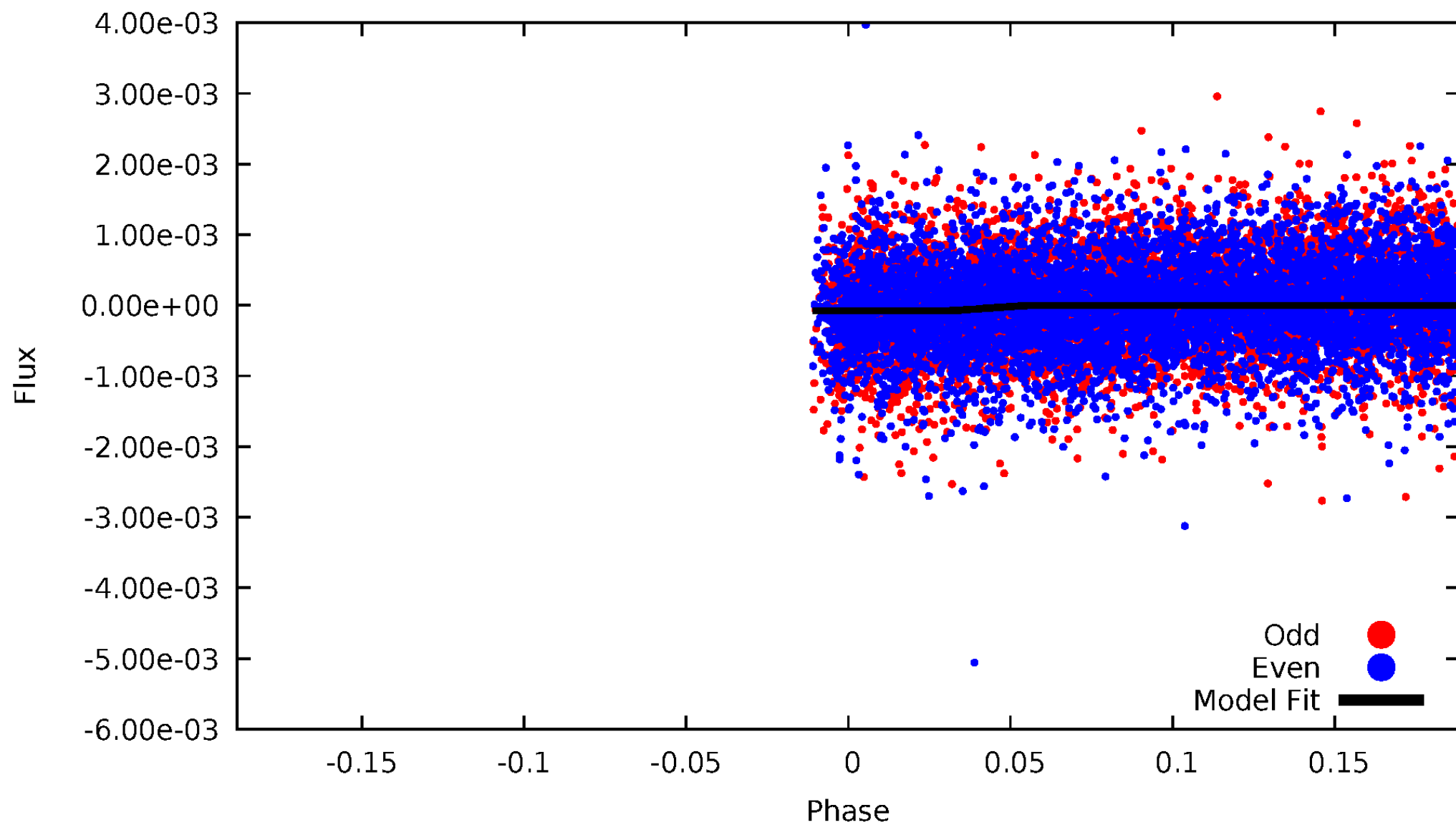


TCE 007538950-02



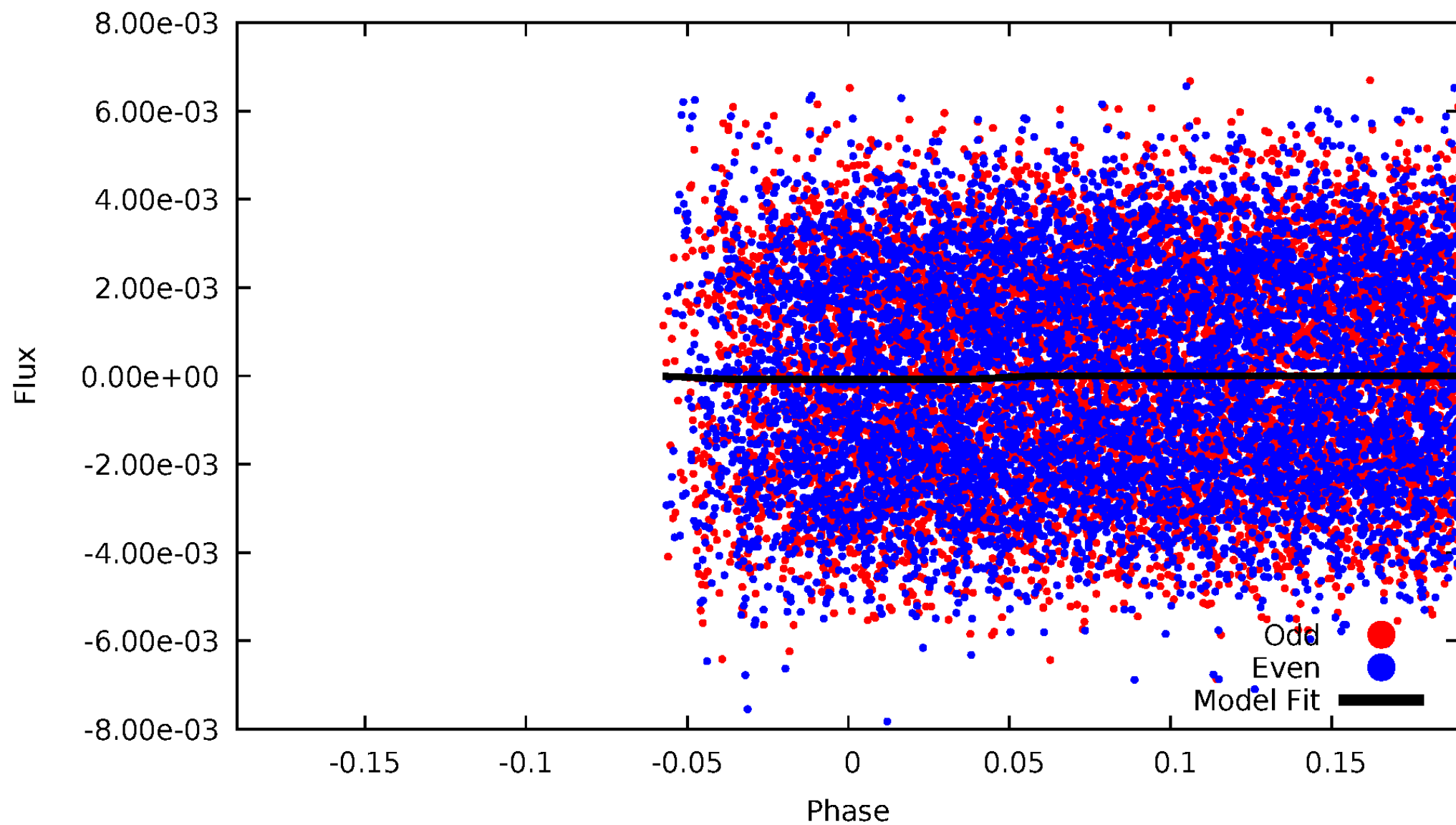
DV Odd/Even

TCE 007538950-02



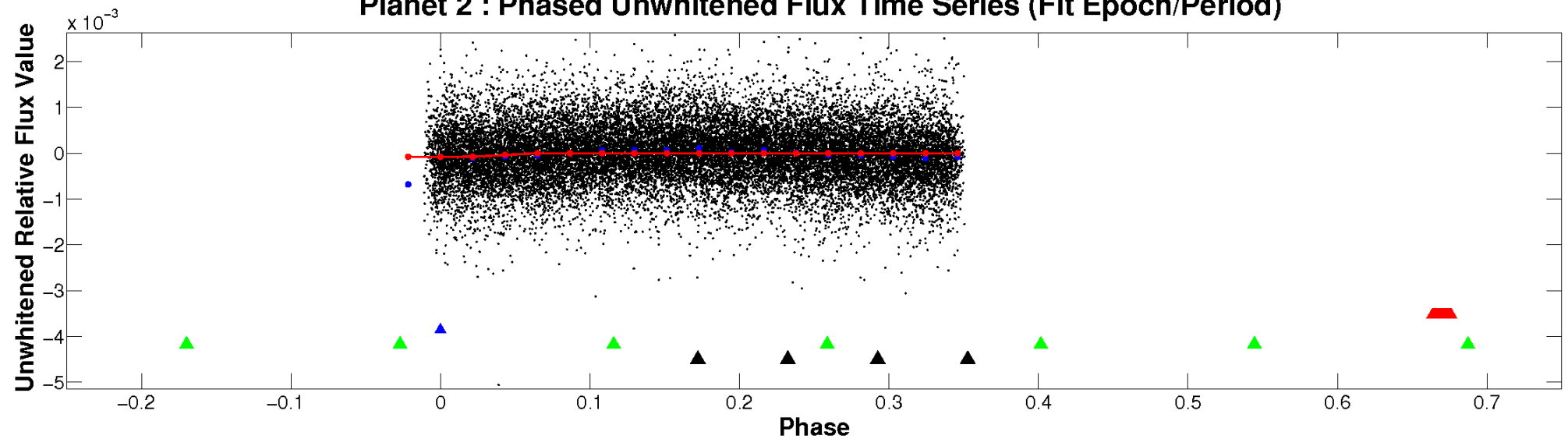
ALT Odd/Even

TCE 007538950-02

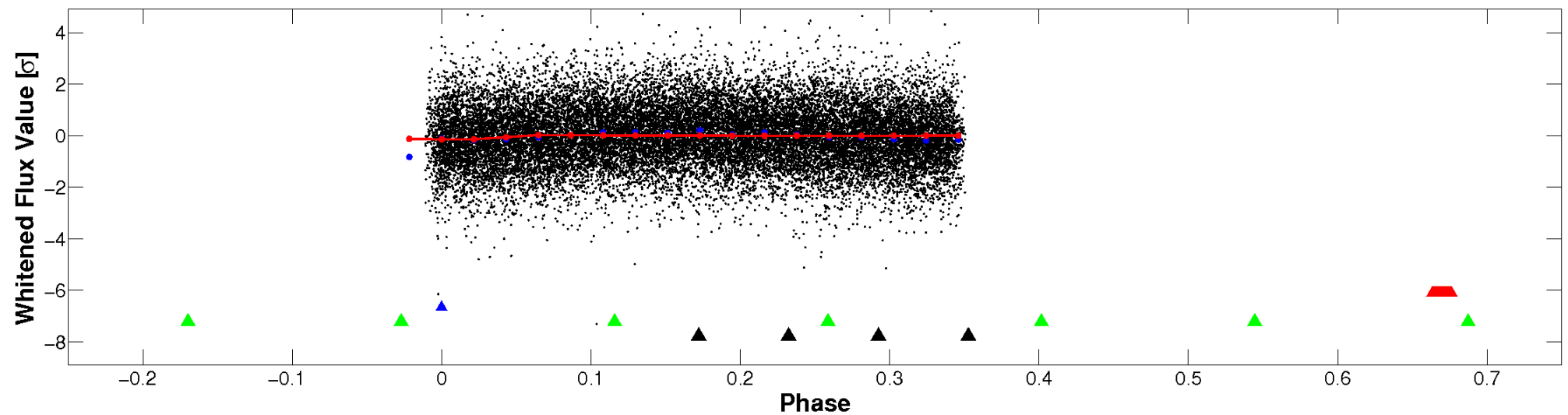


Non-Whitened Vs. Whitened Light Curve

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

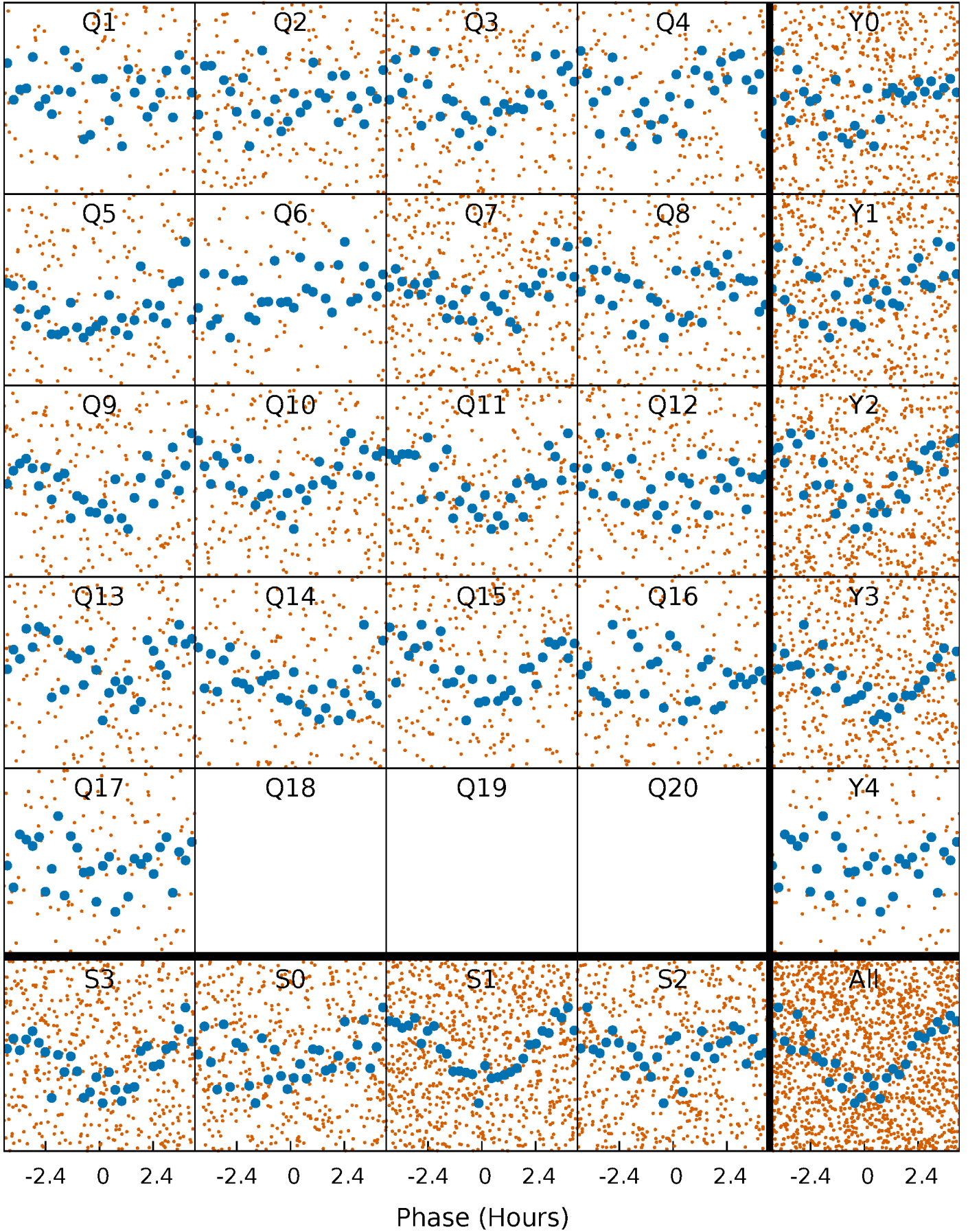


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



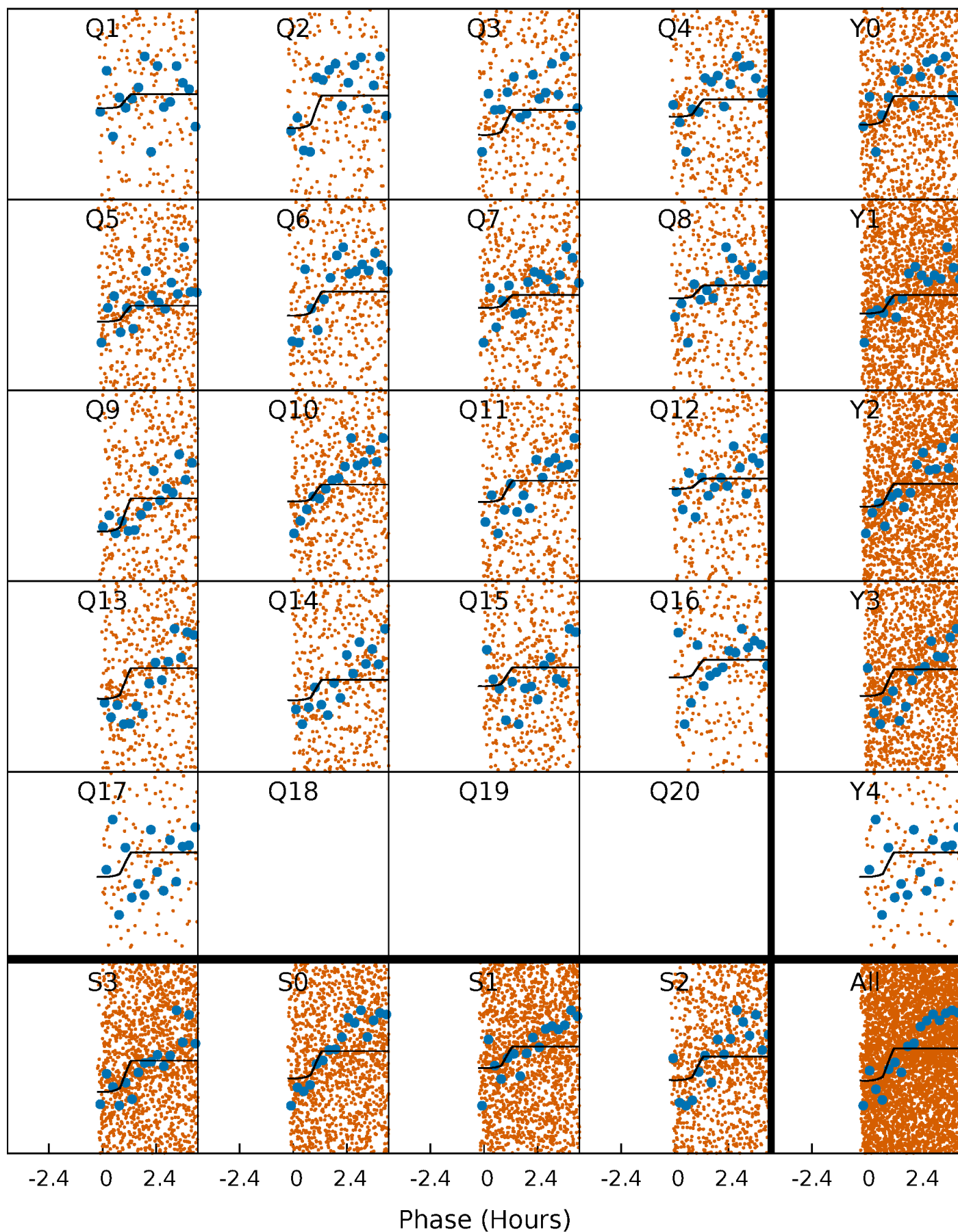
PDC Quarter-Phased Transit Curves

TCE 007538950-02 P= 0.944837 Days $T_0=131.577100$ (BKJD)



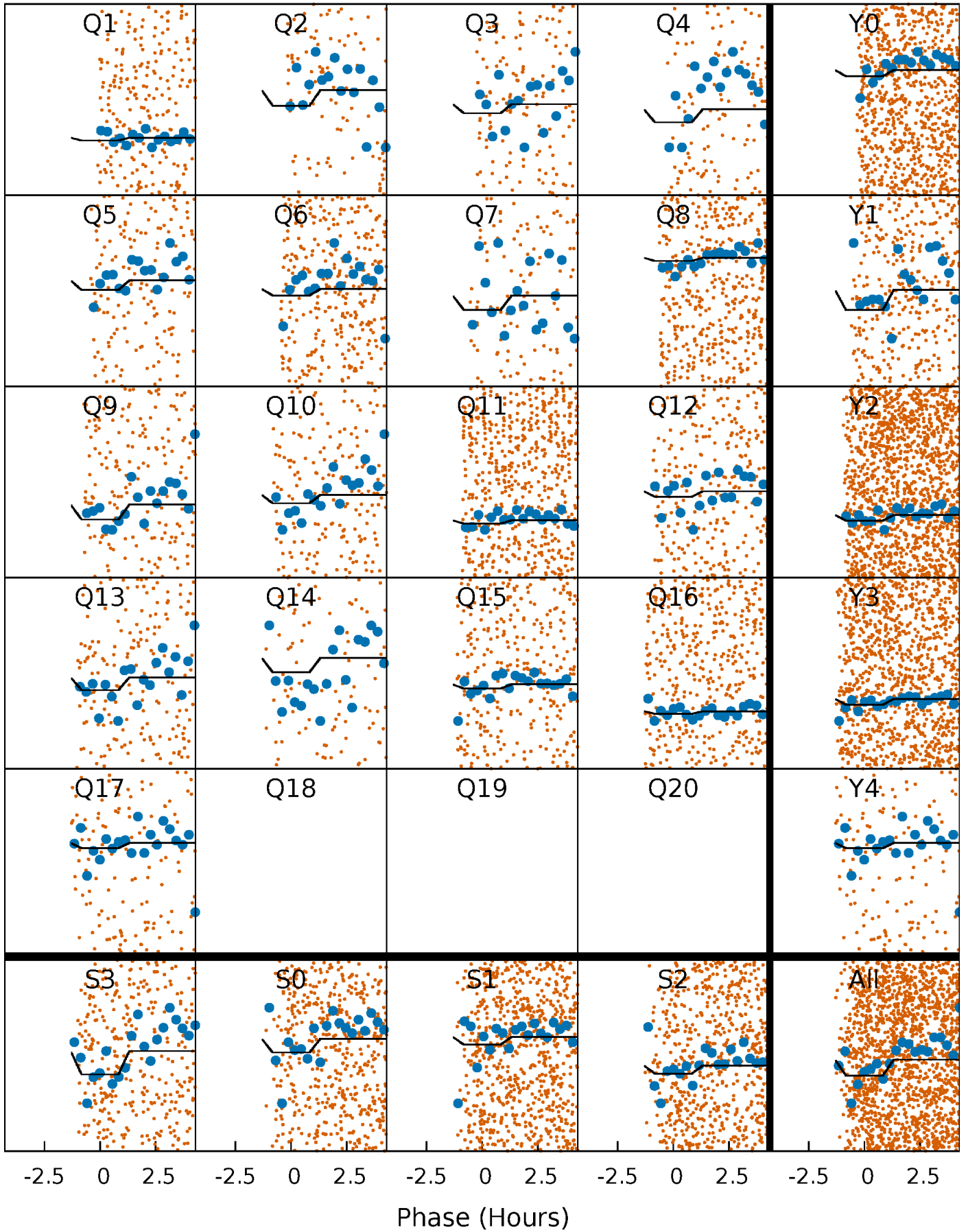
DV Quarter-Phased Transit Curves

TCE 007538950-02 $P = 0.944837$ Days $T_0 = 131.577100$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

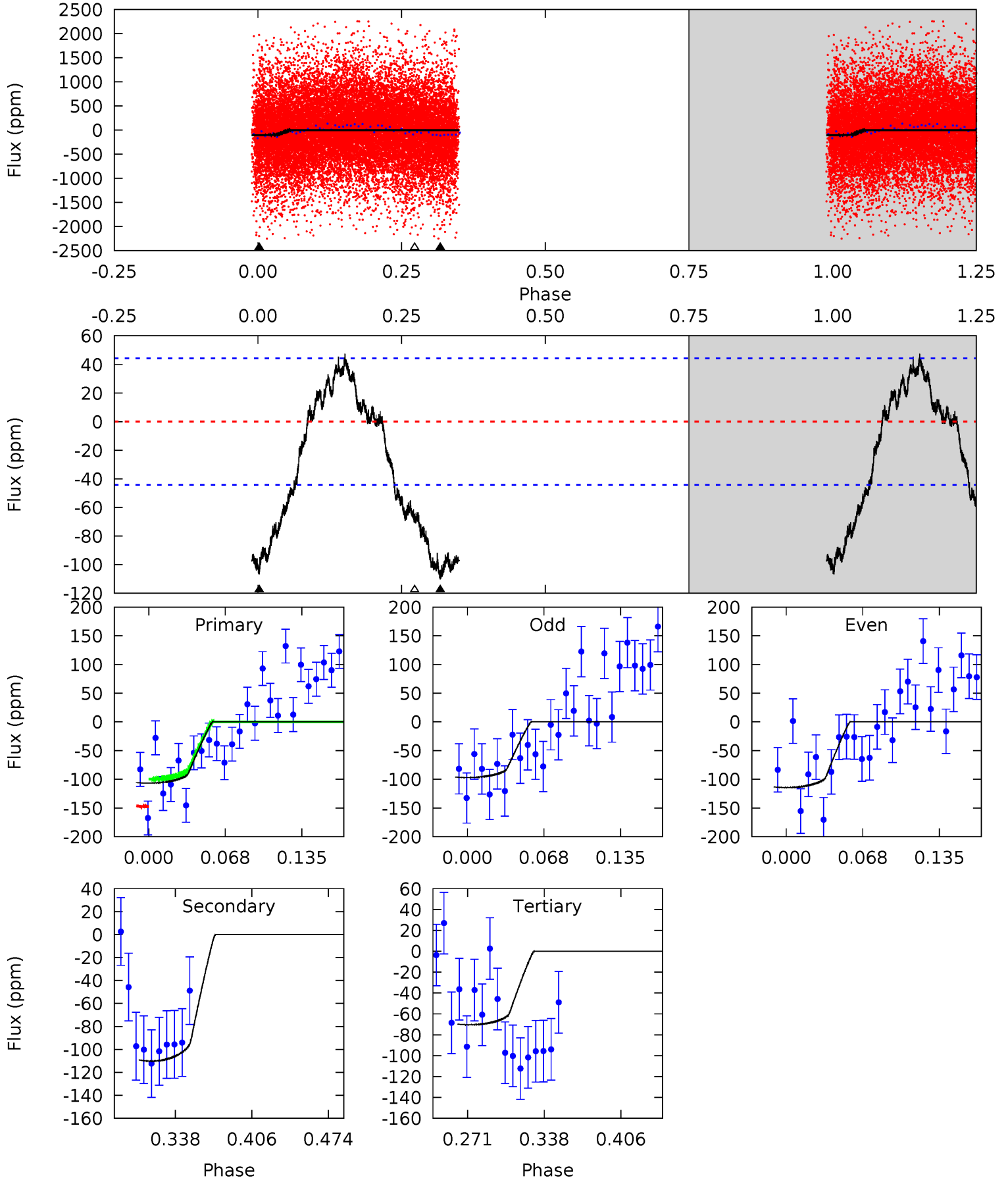
TCE 007538950-02 P= 0.944878 Days $T_0=131.569705$ (BKJD)



DV Model-Shift Uniqueness Test

007538950-02, P = 0.944837 Days, E = 130.632263 Days

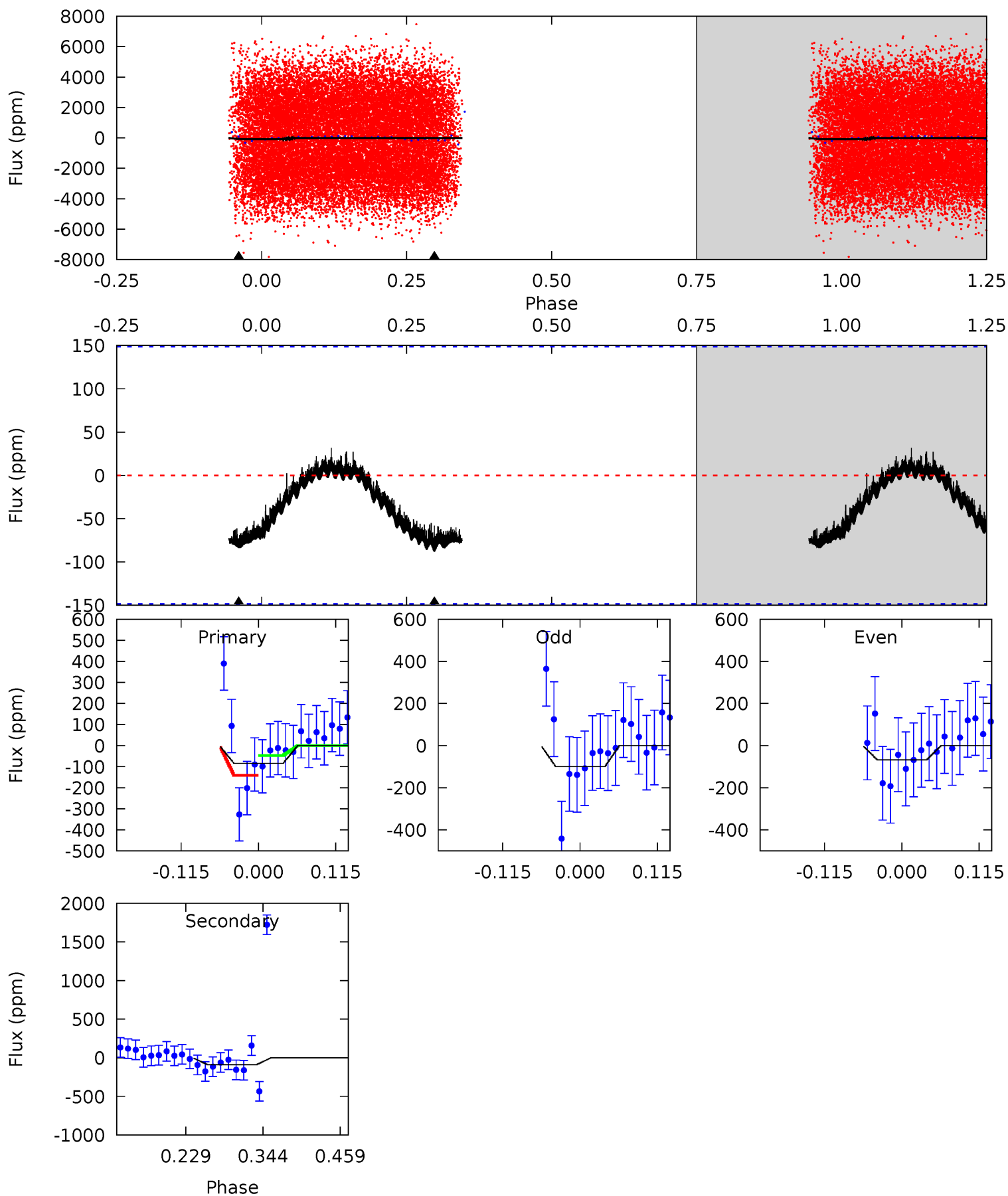
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	11.6	7.40	0	4.65	1.83	4.27	3.81	11.2	4.18	11.6	0.92	0.85	0.30	1.38



Alt Model-Shift Uniqueness Test

007538950-02, P = 0.944878 Days, E = 131.569705 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.56	2.69	0	0	4.54	1.58	0.19	2.56	2.56	2.69	2.69	0.48	0.86	0.27	1.26



Stellar Parameters For KIC 007538950

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8763^{+237}_{-407}	$3.484^{+0.704}_{-0.176}$	$-0.500^{+0.150}_{-0.300}$	$4.625^{+0.532}_{-3.017}$	$2.379^{+0.372}_{-0.868}$	$0.034^{+0.437}_{-0.015}$
	+3%/-5%	+20%/-5%	+30%/-60%	+12%/-65%	+16%/-36%	+1289%/-44%
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 007538950-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-110 ± 10	$4.48^{+3.29}_{-2.77}$	7158^{+524}_{-1090}	8358^{+10492}_{-2608}	$1.904^{+10.459}_{-1.255}$
Alt.	-88 ± 33	$4.48^{+3.31}_{-2.82}$	7174^{+491}_{-1053}	7565^{+8734}_{-2840}	$1.425^{+7.587}_{-0.985}$

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 $A_{obs} \gg 1.0$

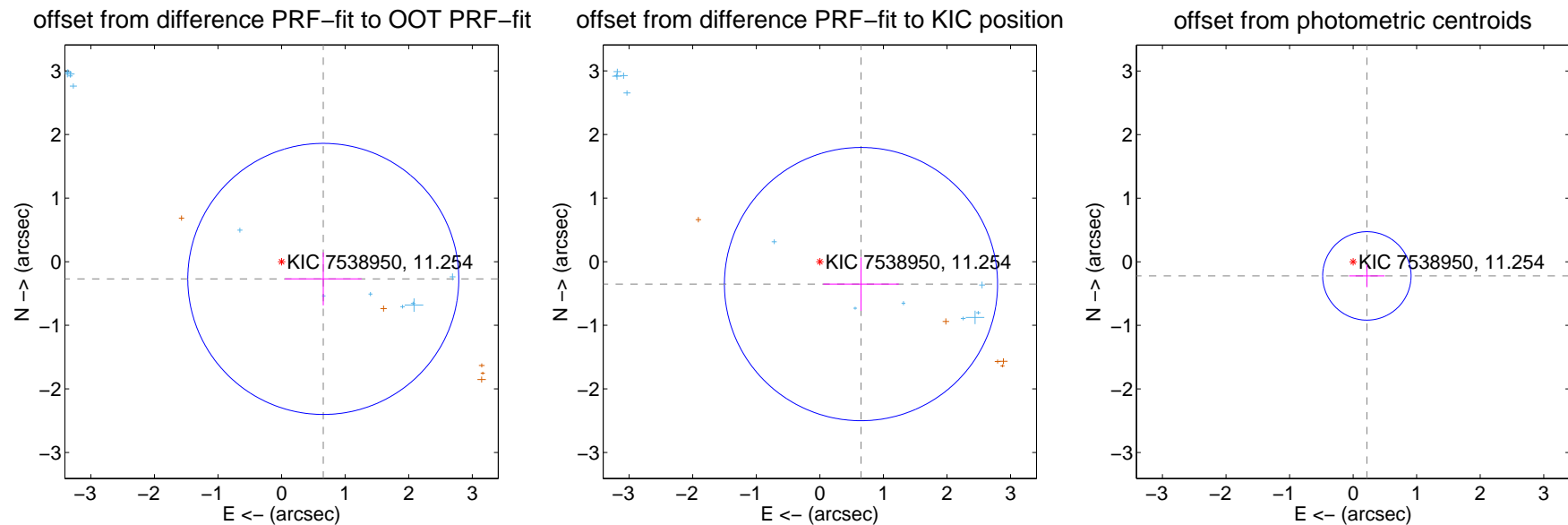
DV Centroid Data

Supplemental centroid analysis for 007538950-02. **Kepler magnitude: 11.25.** Transit SNR 7.49

There are 12 quarters with good PRF difference image offsets

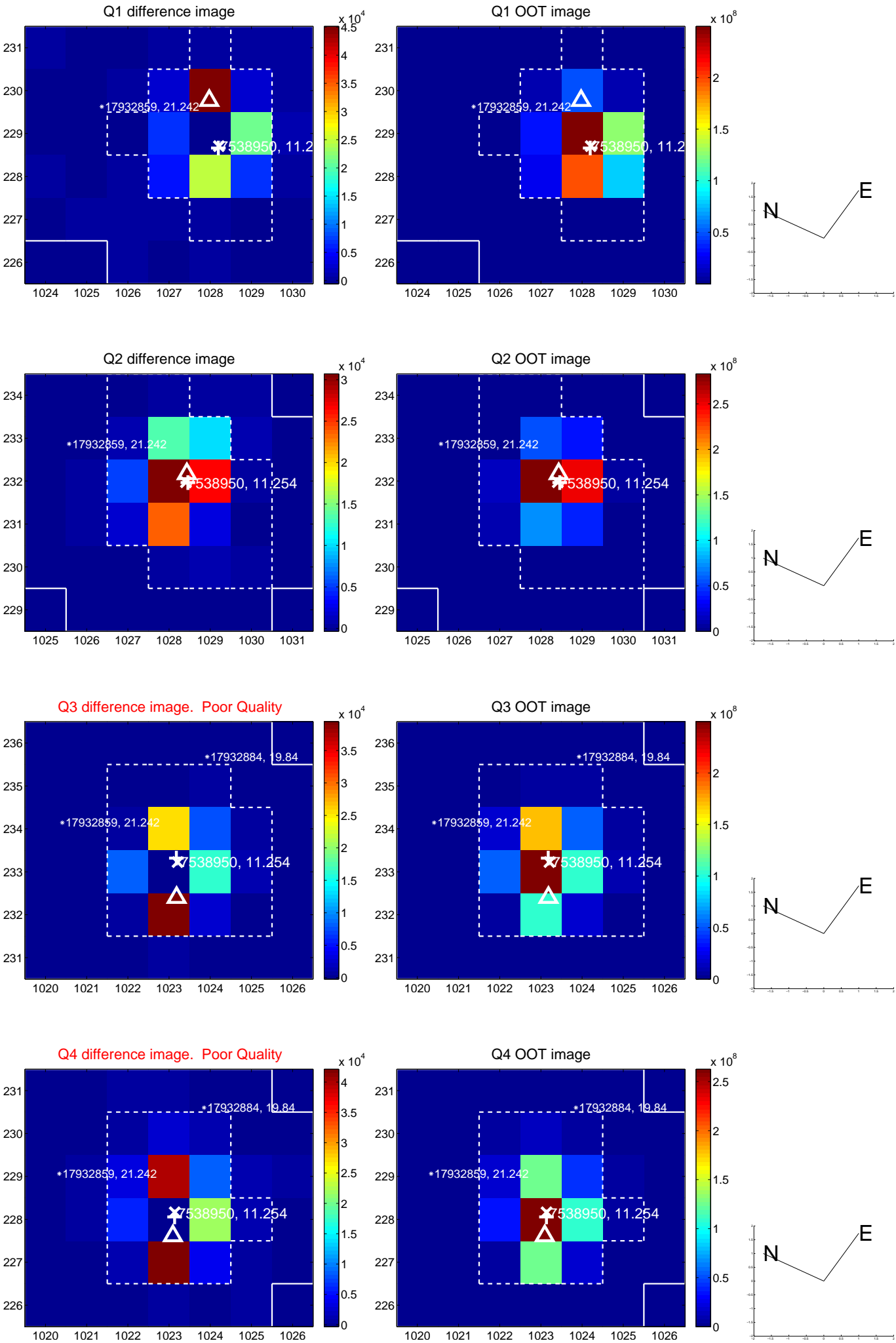
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.710 ± 0.711	1.00	-0.656 ± 0.604	-0.271 ± 0.417
PRF-fit source offset from KIC position	0.737 ± 0.716	1.03	-0.648 ± 0.595	-0.352 ± 0.421
photometric centroid source offset	0.31 ± 0.23	1.34	-0.22 ± 0.28	-0.22 ± 0.18

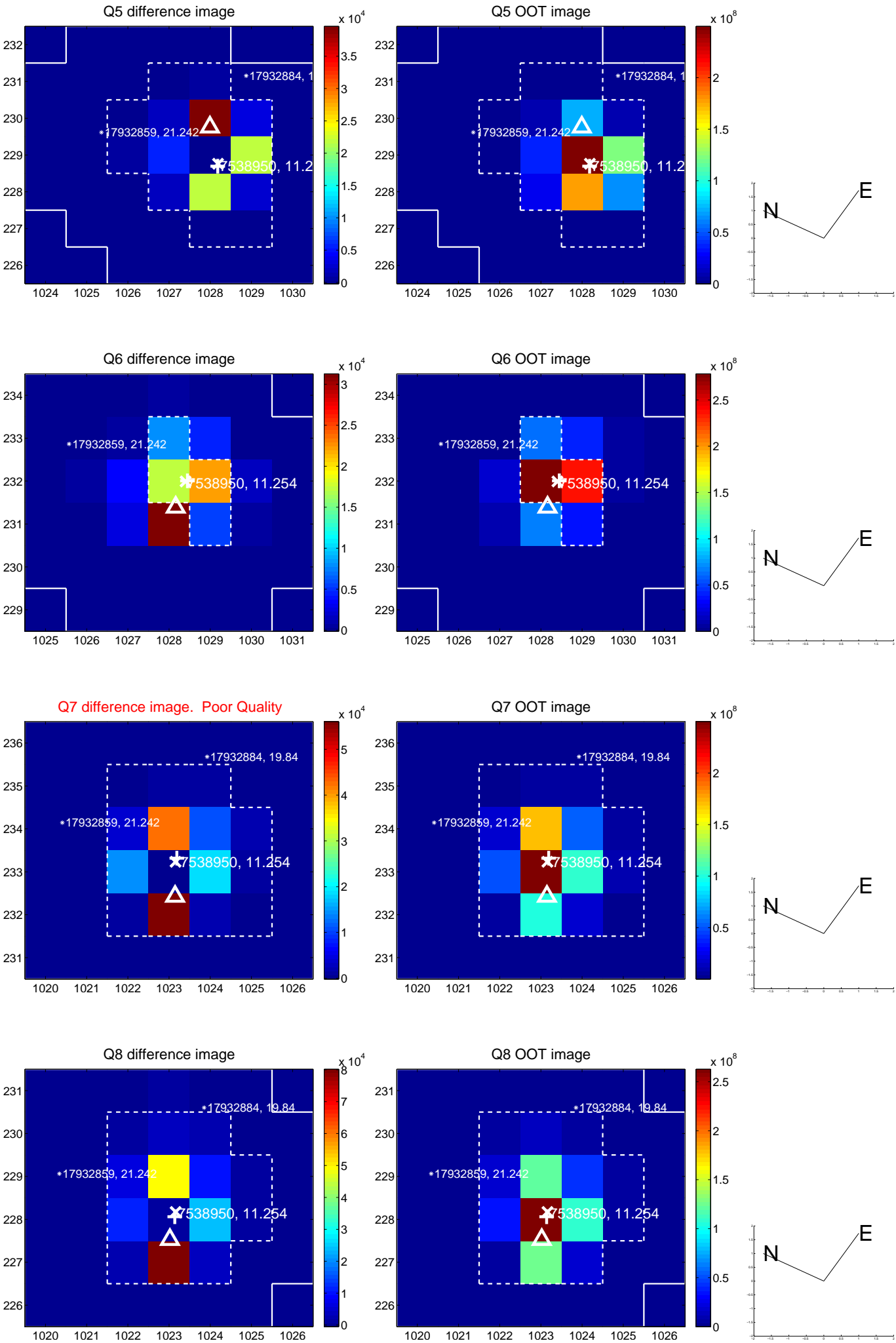


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

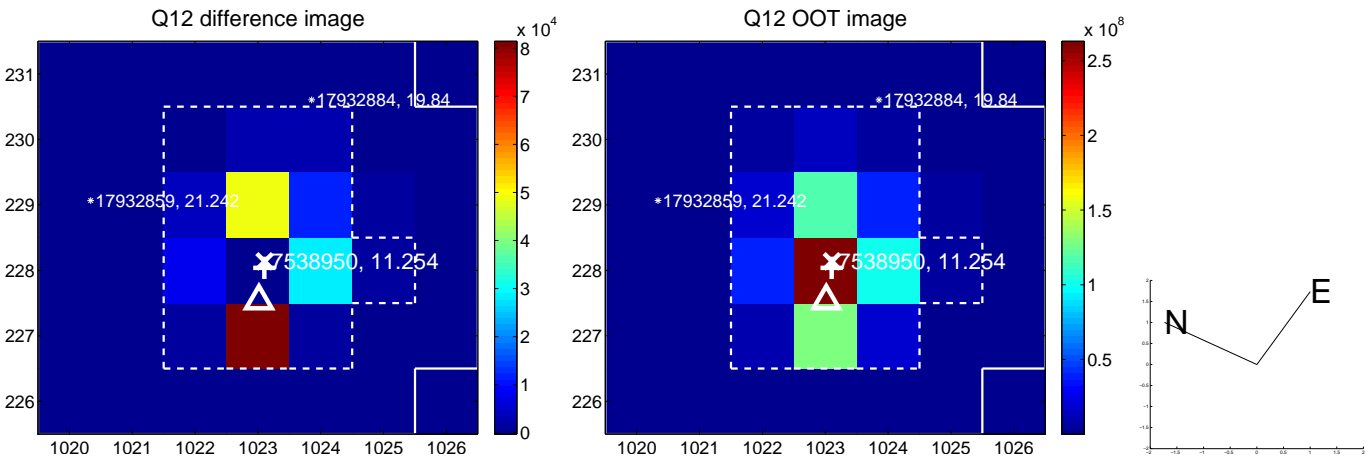
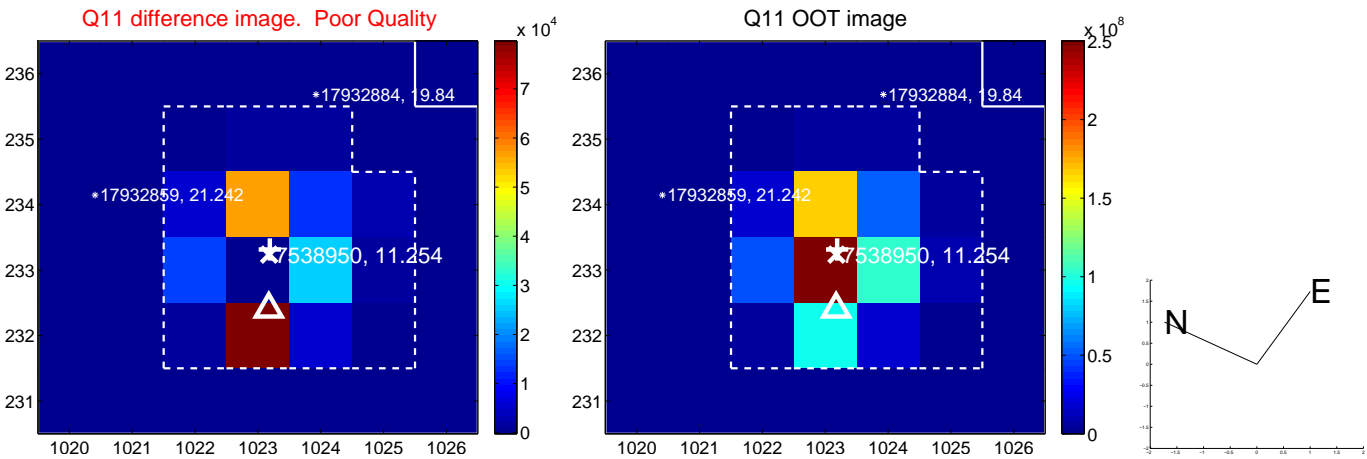
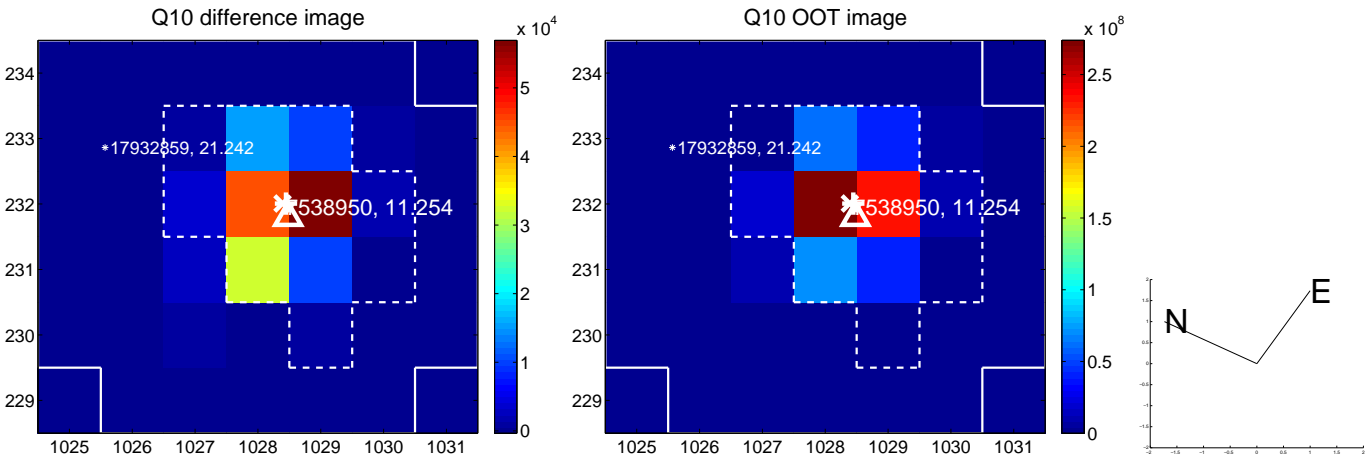
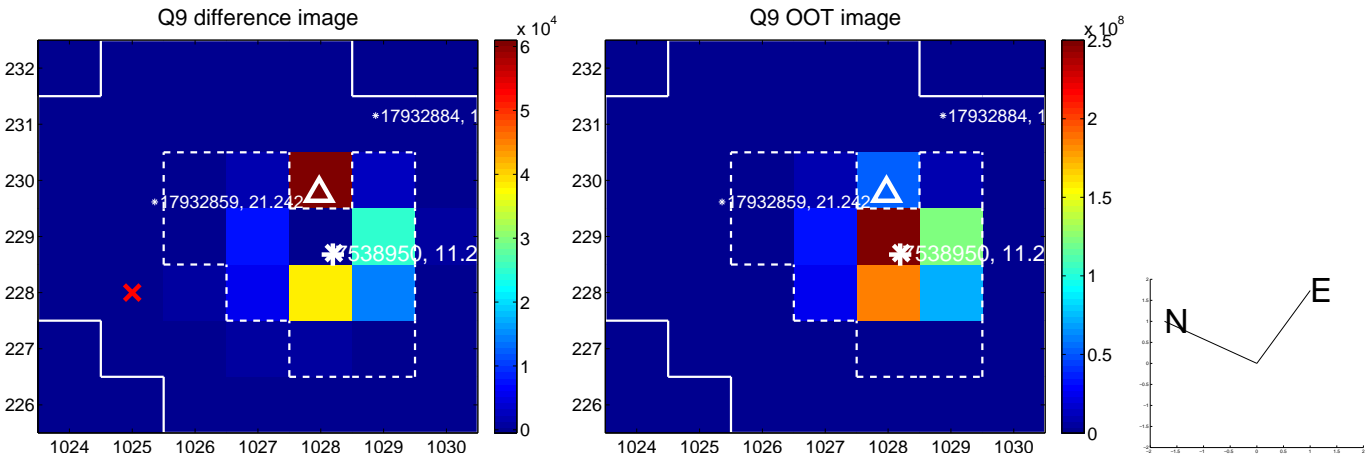
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



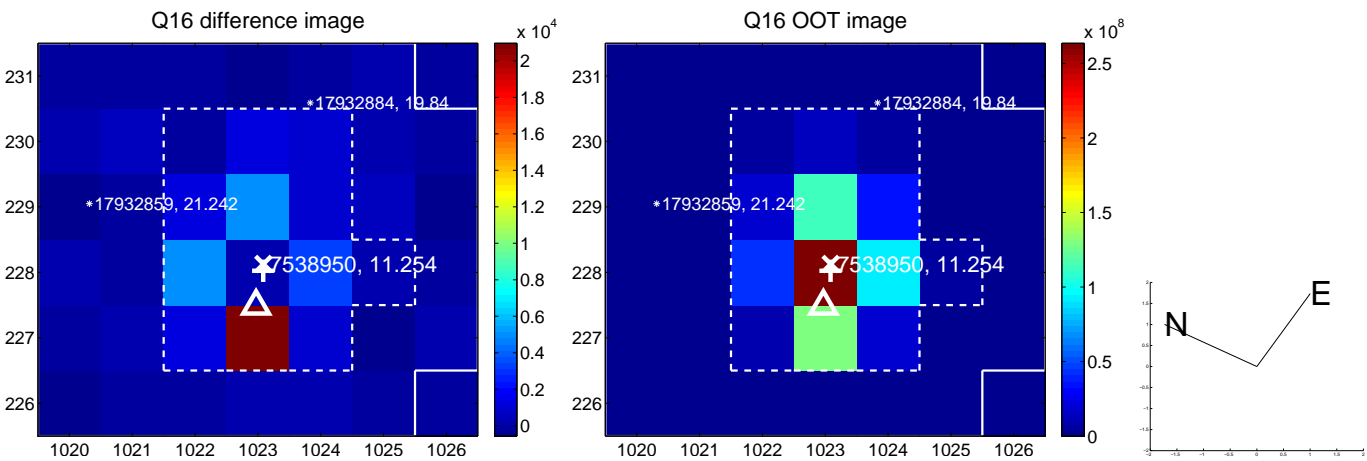
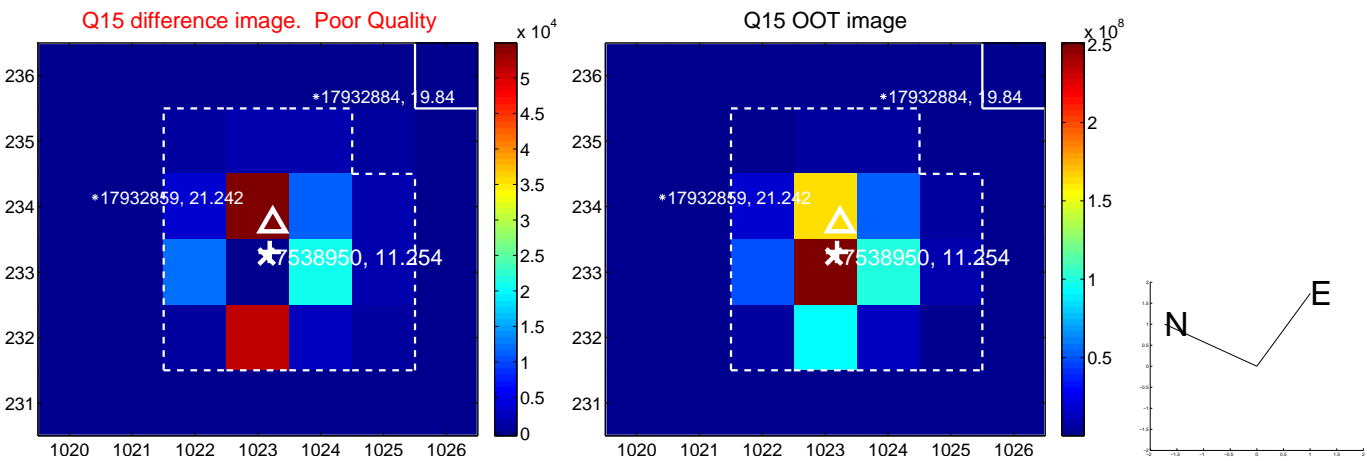
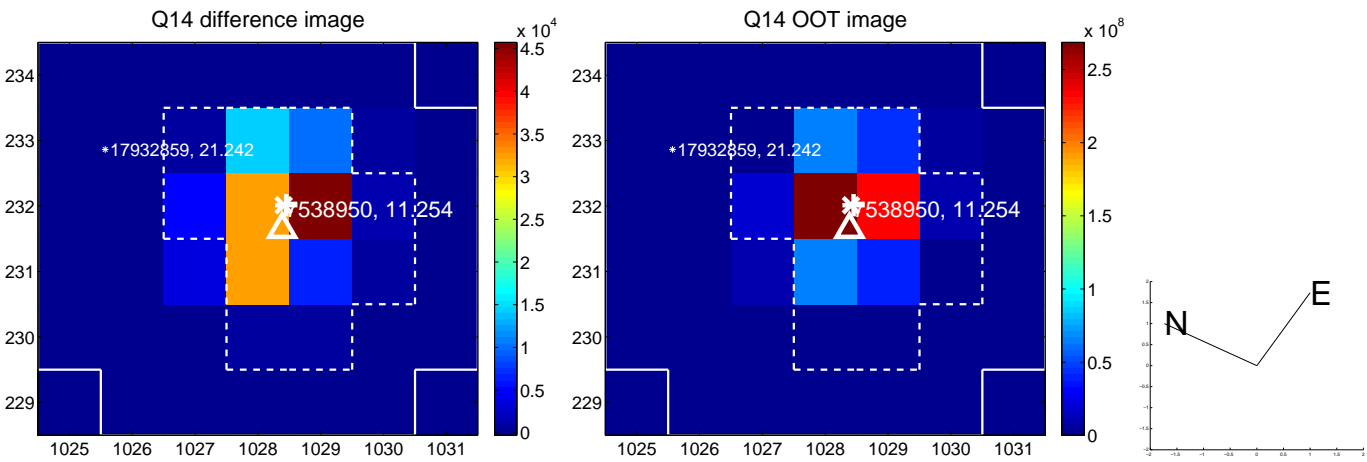
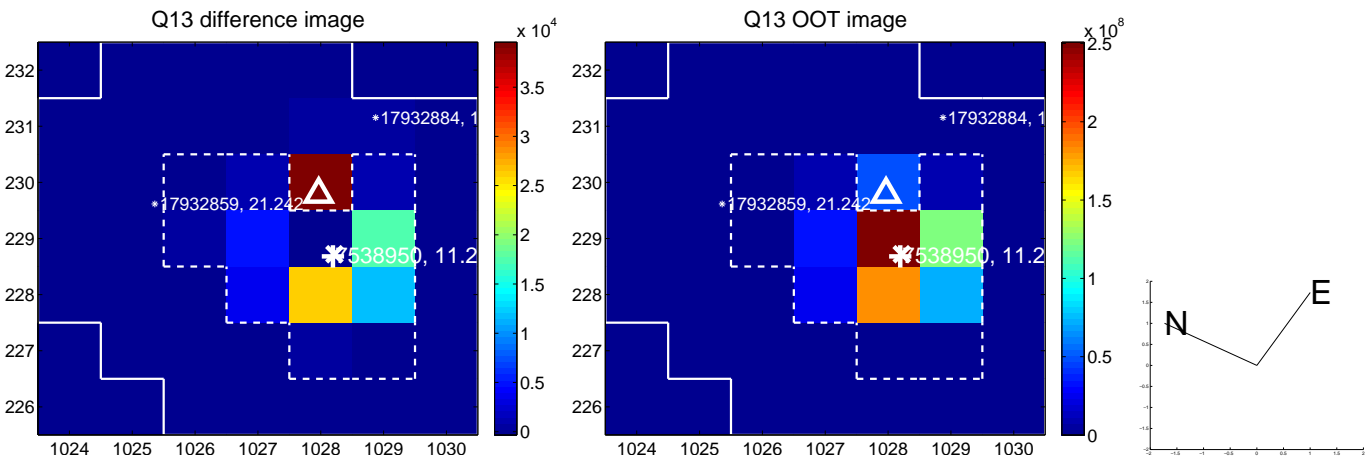
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



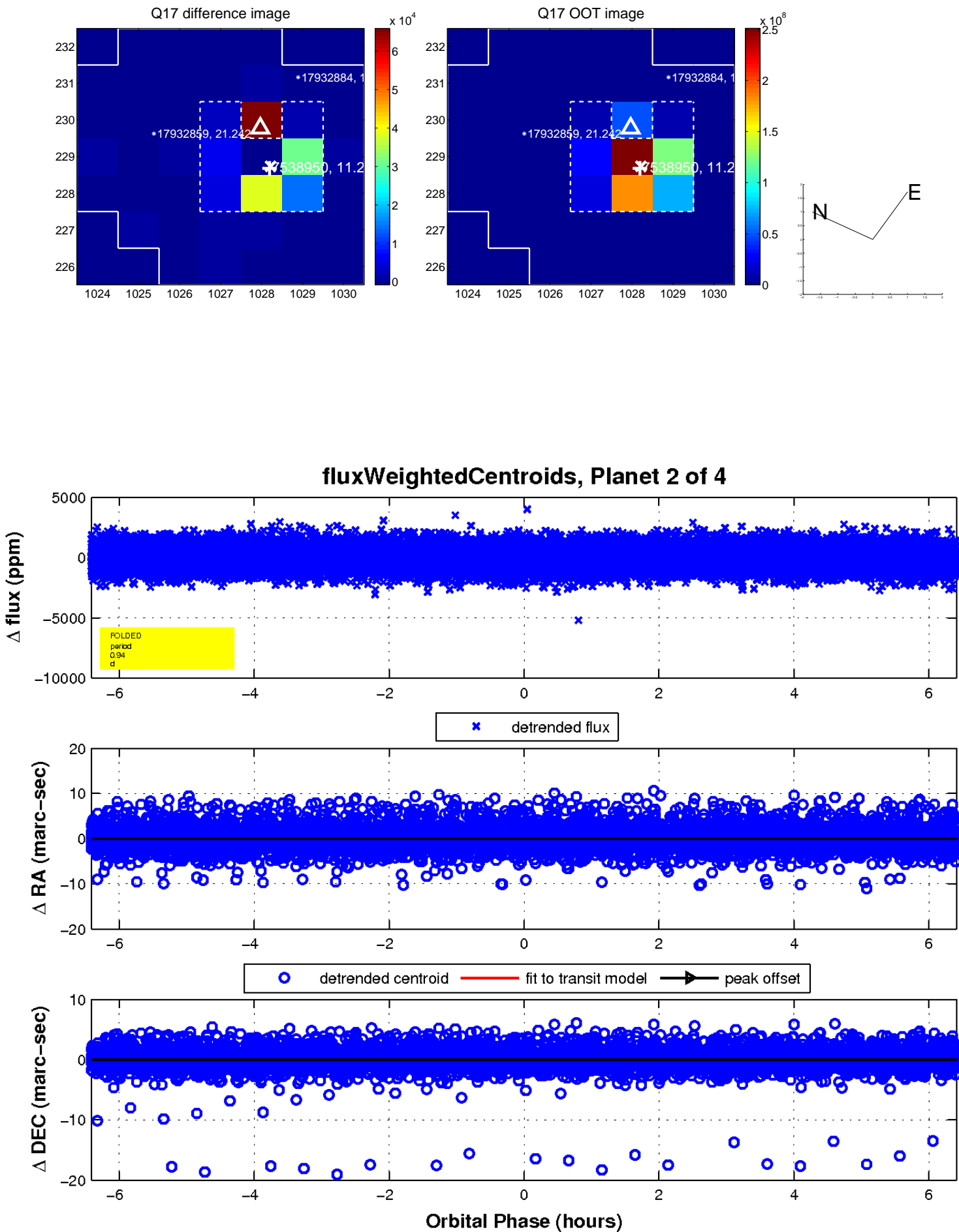
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

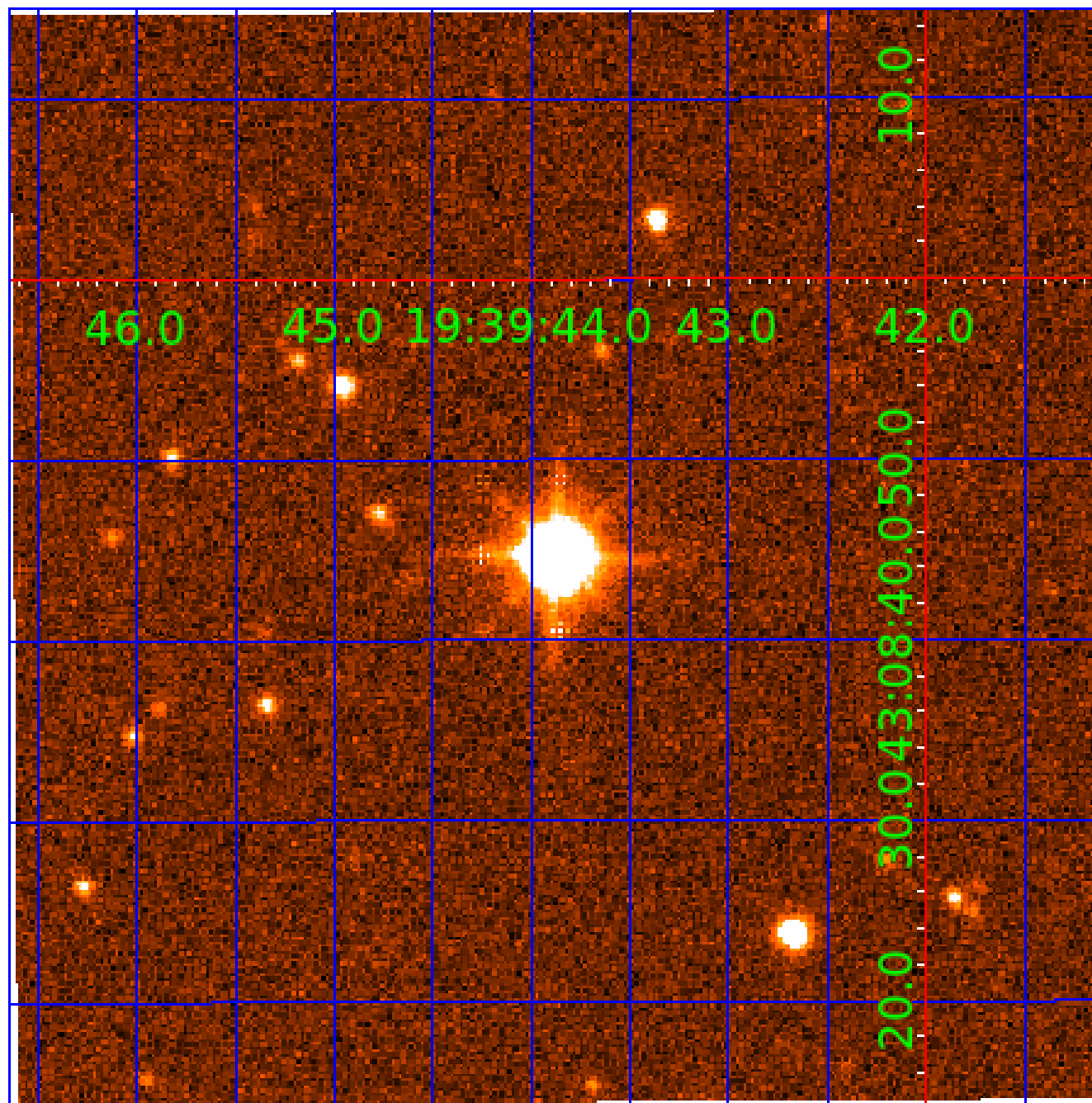


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007538950

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})
007538950-01	OBS	No	0.944845	132.203856	38.0	4.747	10.3	5.1	4.62	8763	2.90	178552.61
007538950-02	OBS	No	0.944837	131.577100	80.7	2.137	10.0	7.5	4.62	8763	4.68	178554.60
007538950-04	OBS	No	389.329597	230.947670	1202.5	6.675	8.2	8.1	4.62	8763	18.45	58.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007538950-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
007538950-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED
007538950-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

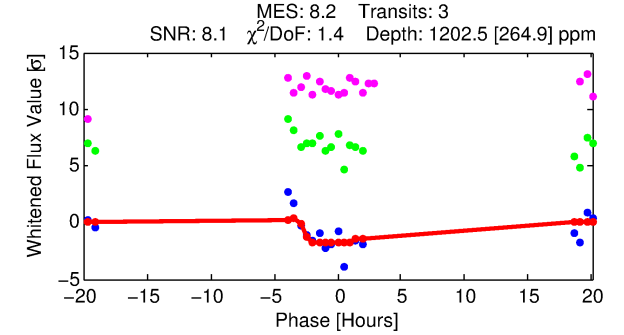
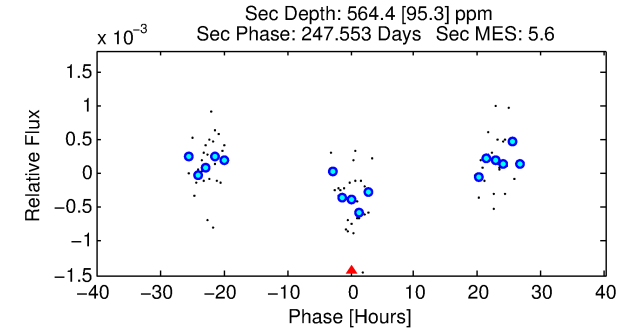
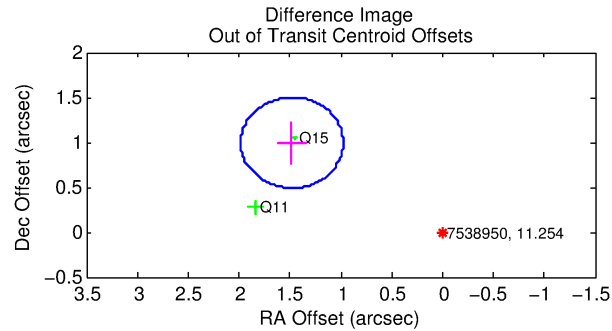
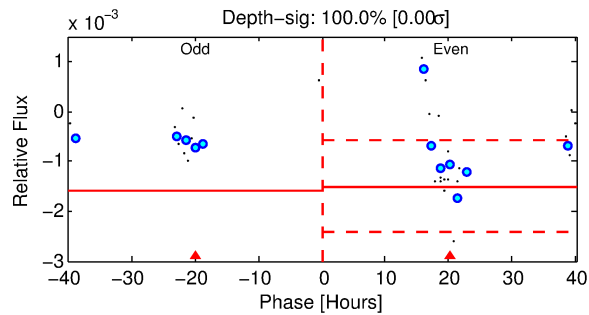
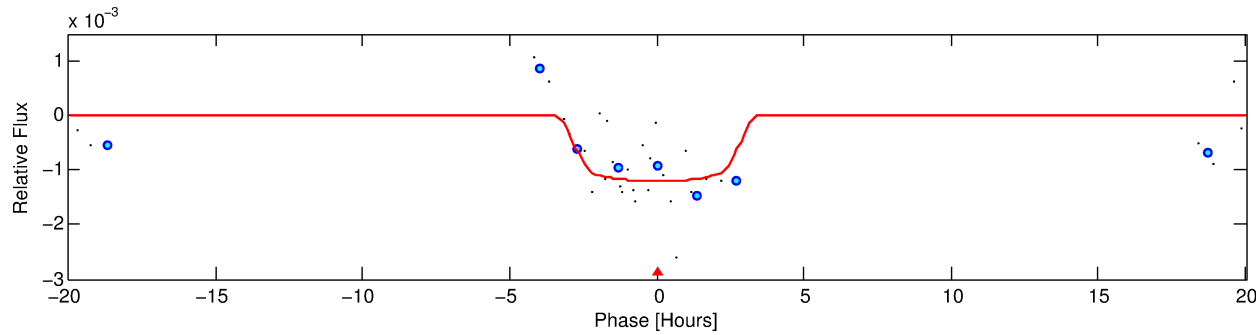
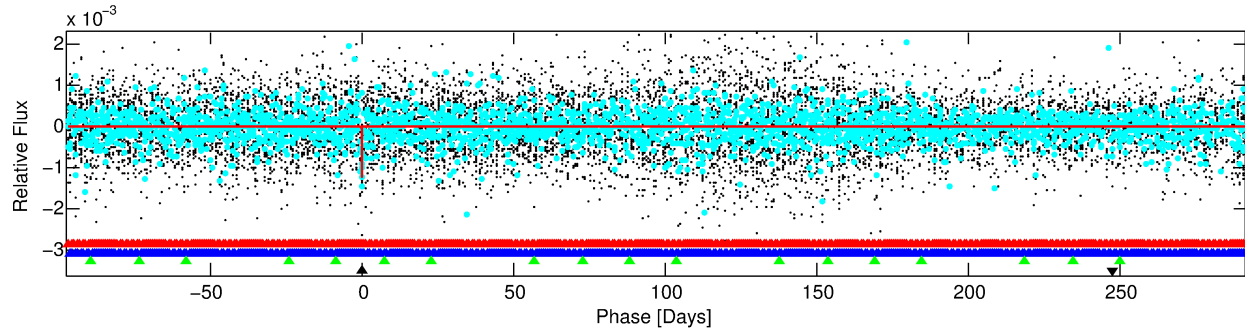
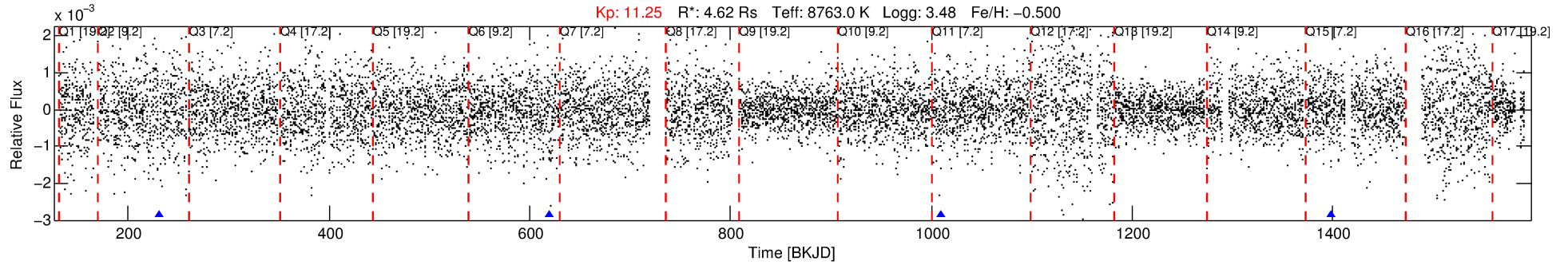
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007538950-04

No Significant Match Found

DV One-Page Summary

KIC: 7538950 Candidate: 4 of 4 Period: 389.330 d



DV Fit Results:

Period = 389.32960 [0.02416] d
Epoch = 230.9477 [0.1229] BKJD
Rp/R* = 0.0366 [0.0063]
a/R* = 235.76 [208.70]
b = 0.89 [0.29]
Seff = 58.23 [68.69]
Teq = 704 [208] K
Rp = 18.45 [12.45] Re
a = 1.3931 [0.9663] AU
Ag = 1770.21 [2170.90] [0.81σ]
Teff = 7064 [752] K [8.15σ]

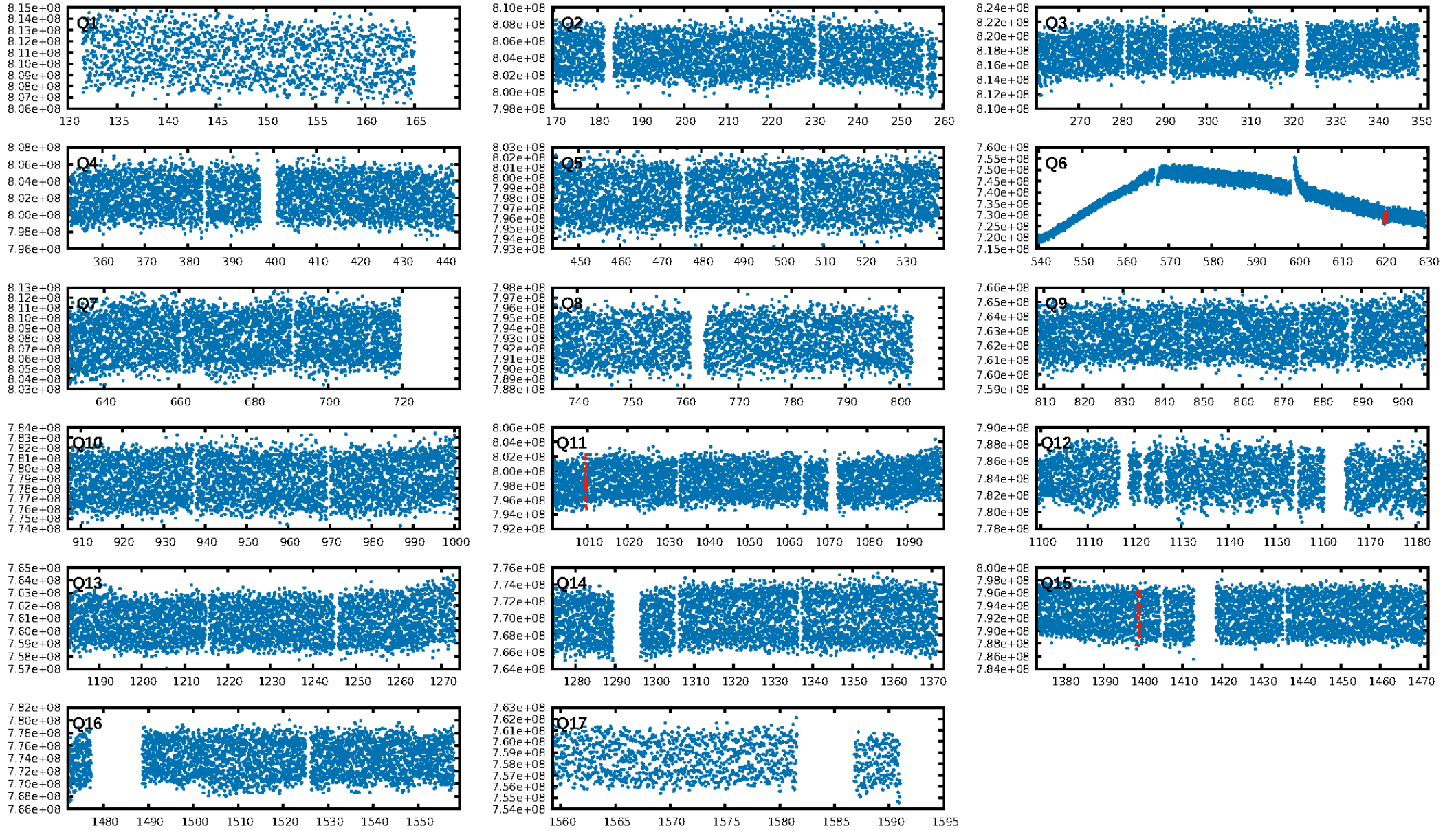
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1079.08σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.2%
ModelChiSquareGoF-sig: 99.9%
Bootstrap-pfa: 7.12e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.97
Centroid-sig: 6.9%
Centroid-so: 0.326 arcsec [1.35σ]
OotOffset-rm: 1.783 arcsec [10.62σ]
KicOffset-rm: 2.054 arcsec [14.39σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/3]

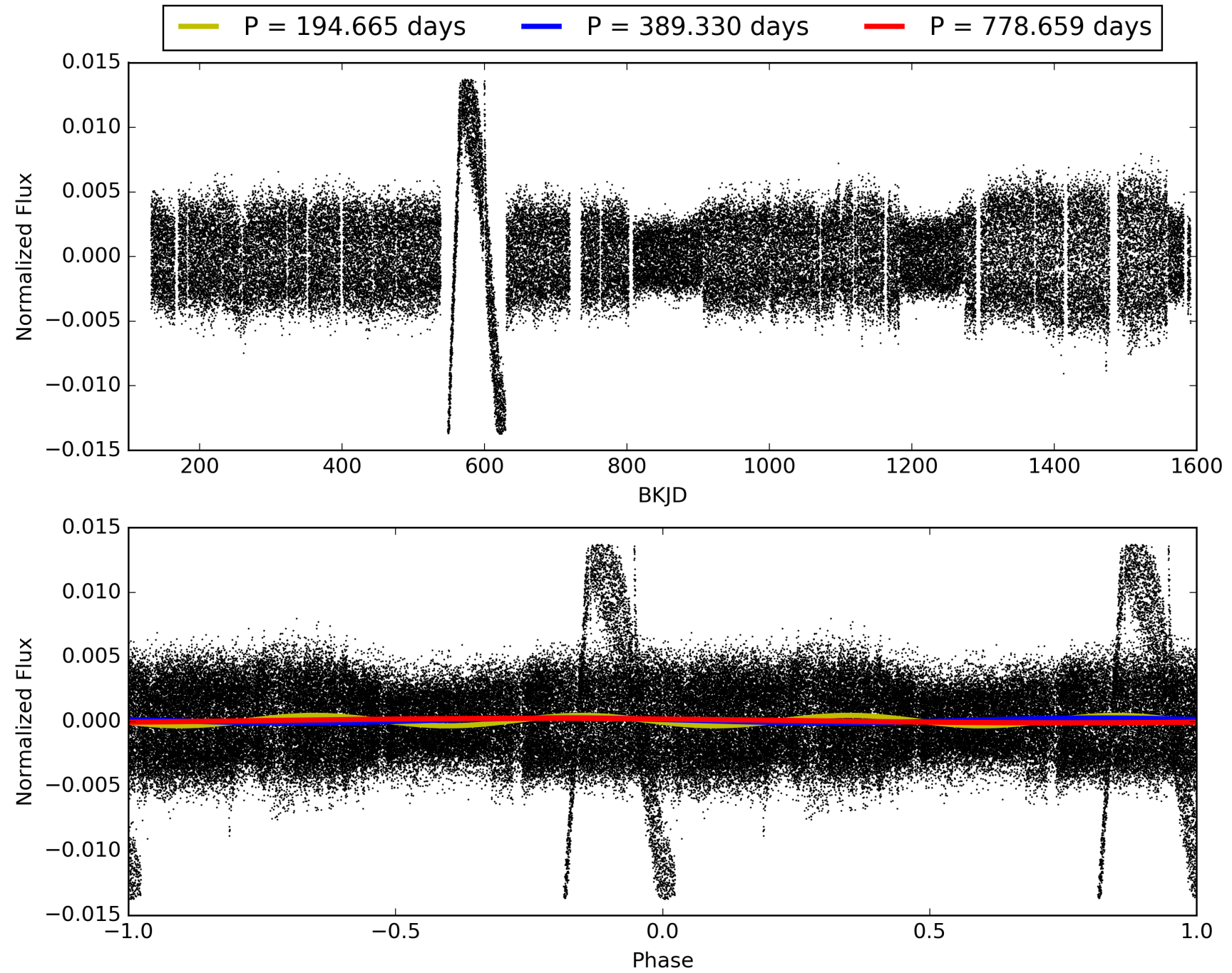
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:00:09 Z

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

TCE 007538950-04, PDC Light Curves

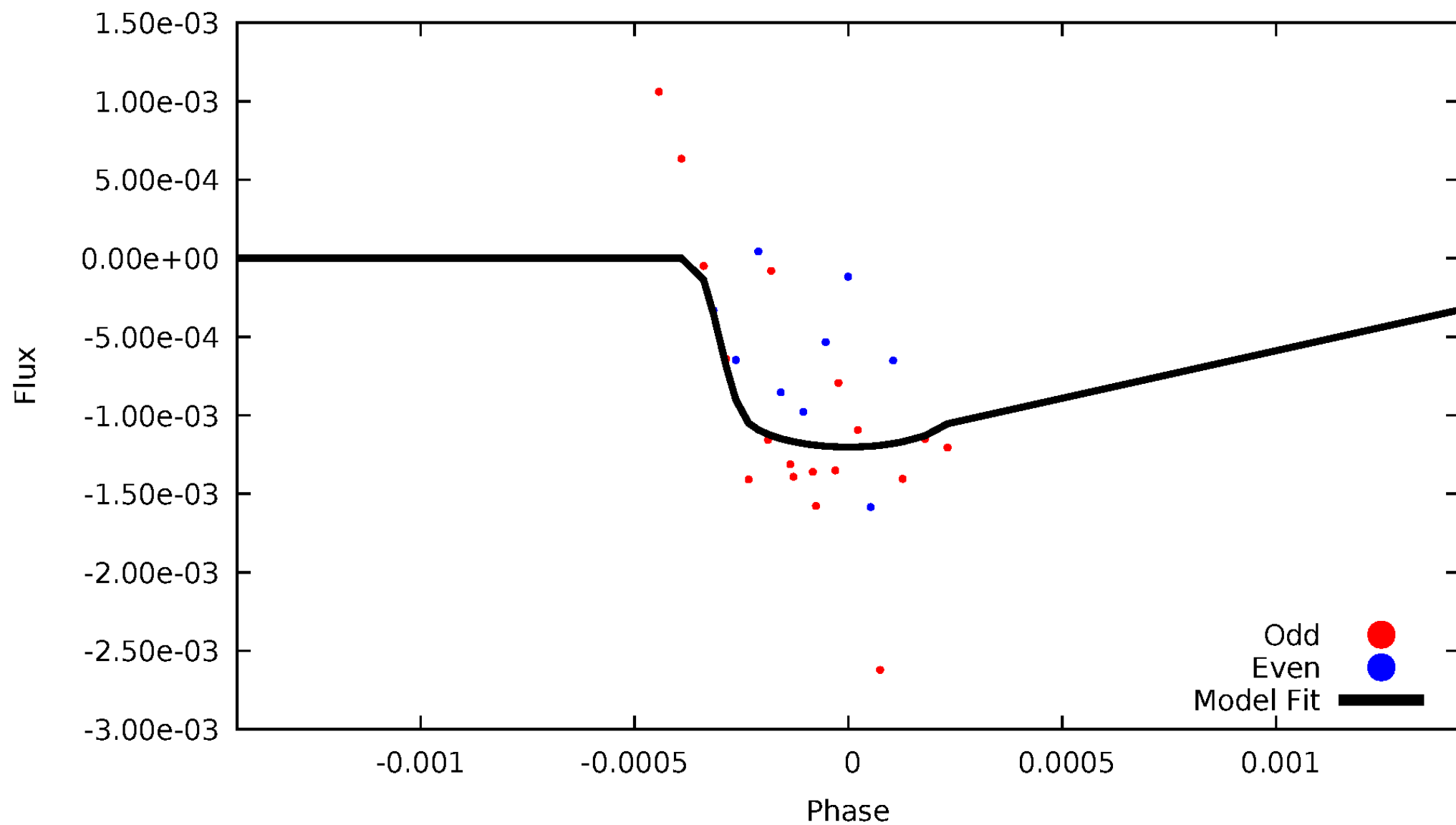


TCE 007538950-04



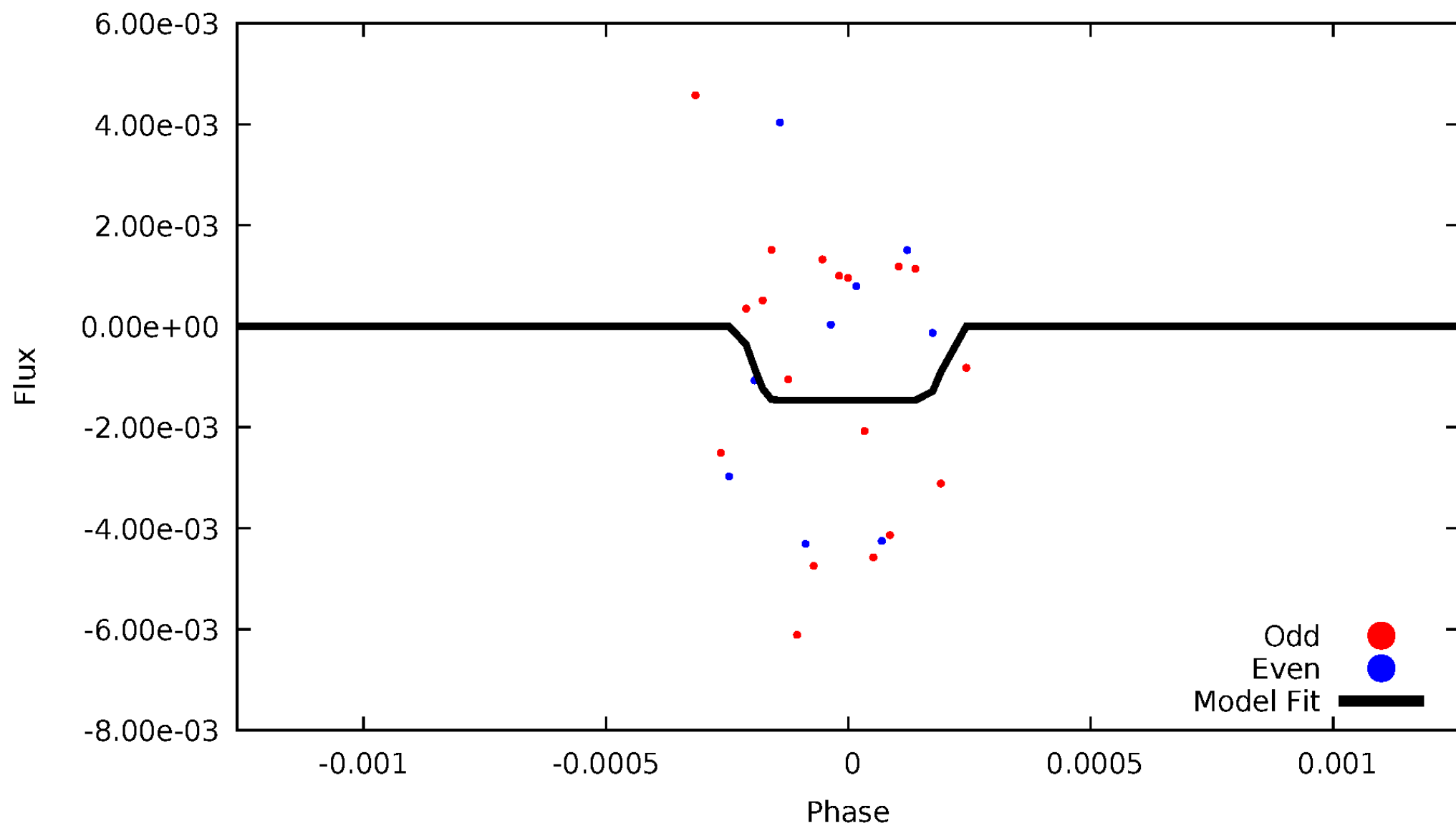
DV Odd/Even

TCE 007538950-04



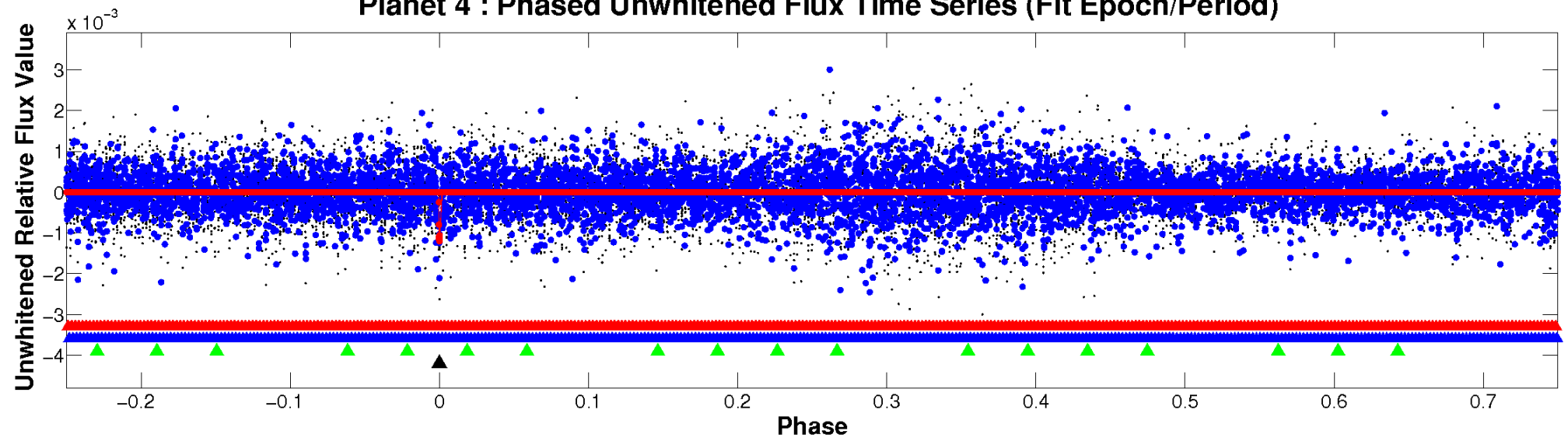
ALT Odd/Even

TCE 007538950-04

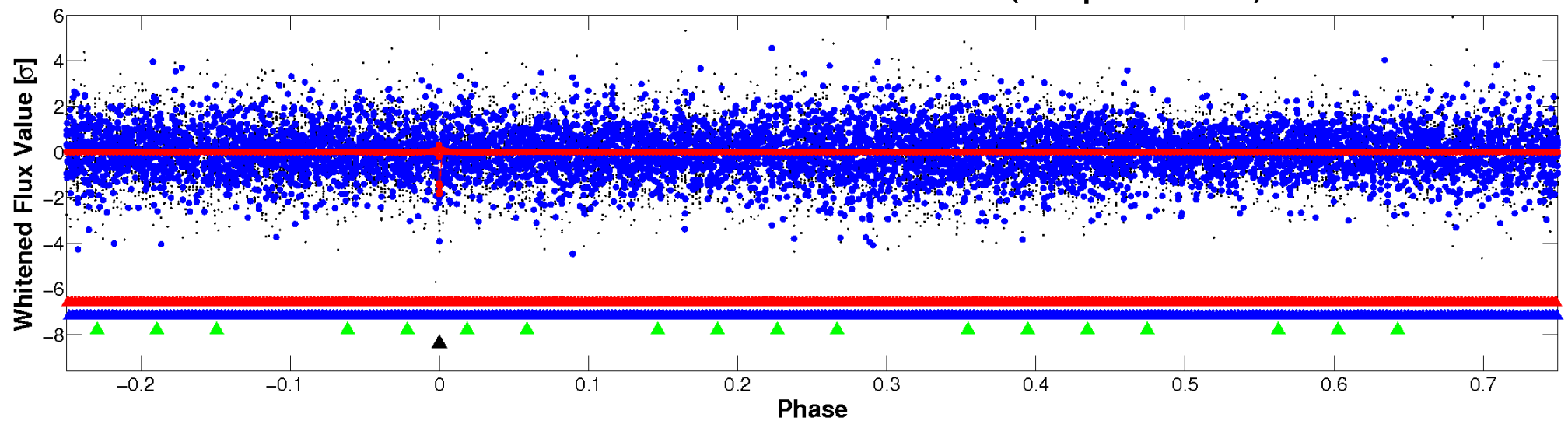


Non-Whitened Vs. Whitened Light Curve

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

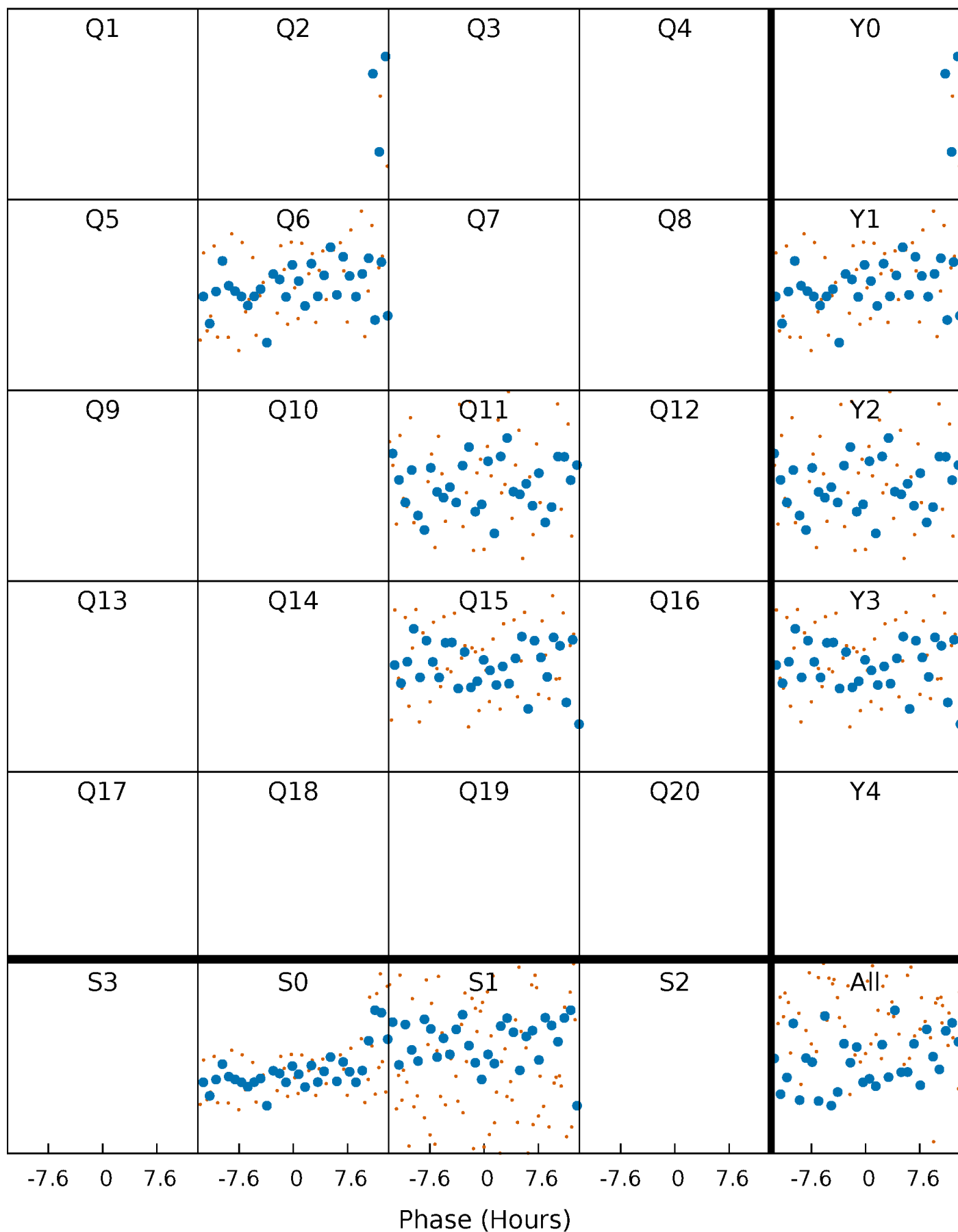


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



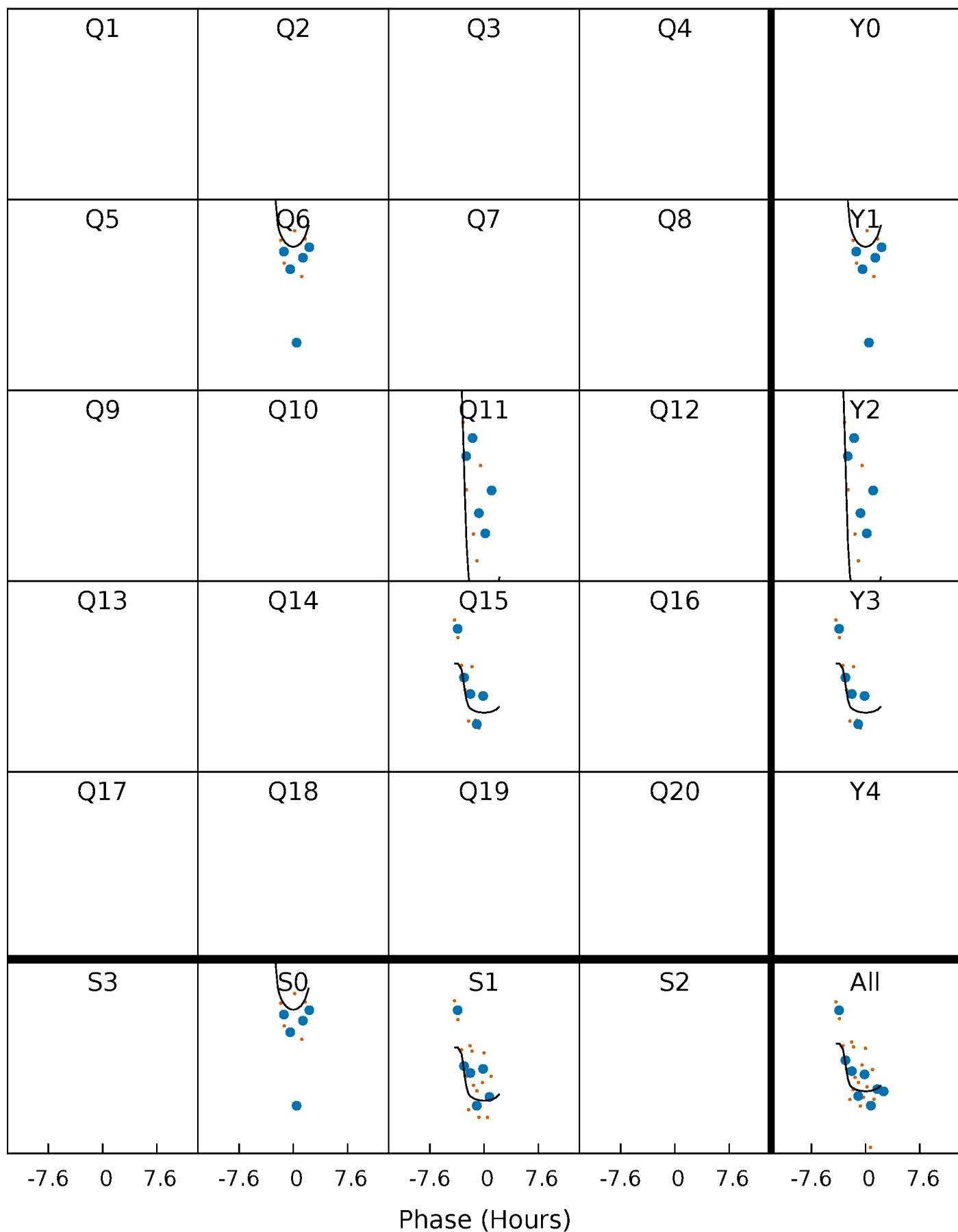
PDC Quarter-Phased Transit Curves

TCE 007538950-04 P=389.329597 Days $T_0=230.947670$ (BKJD)



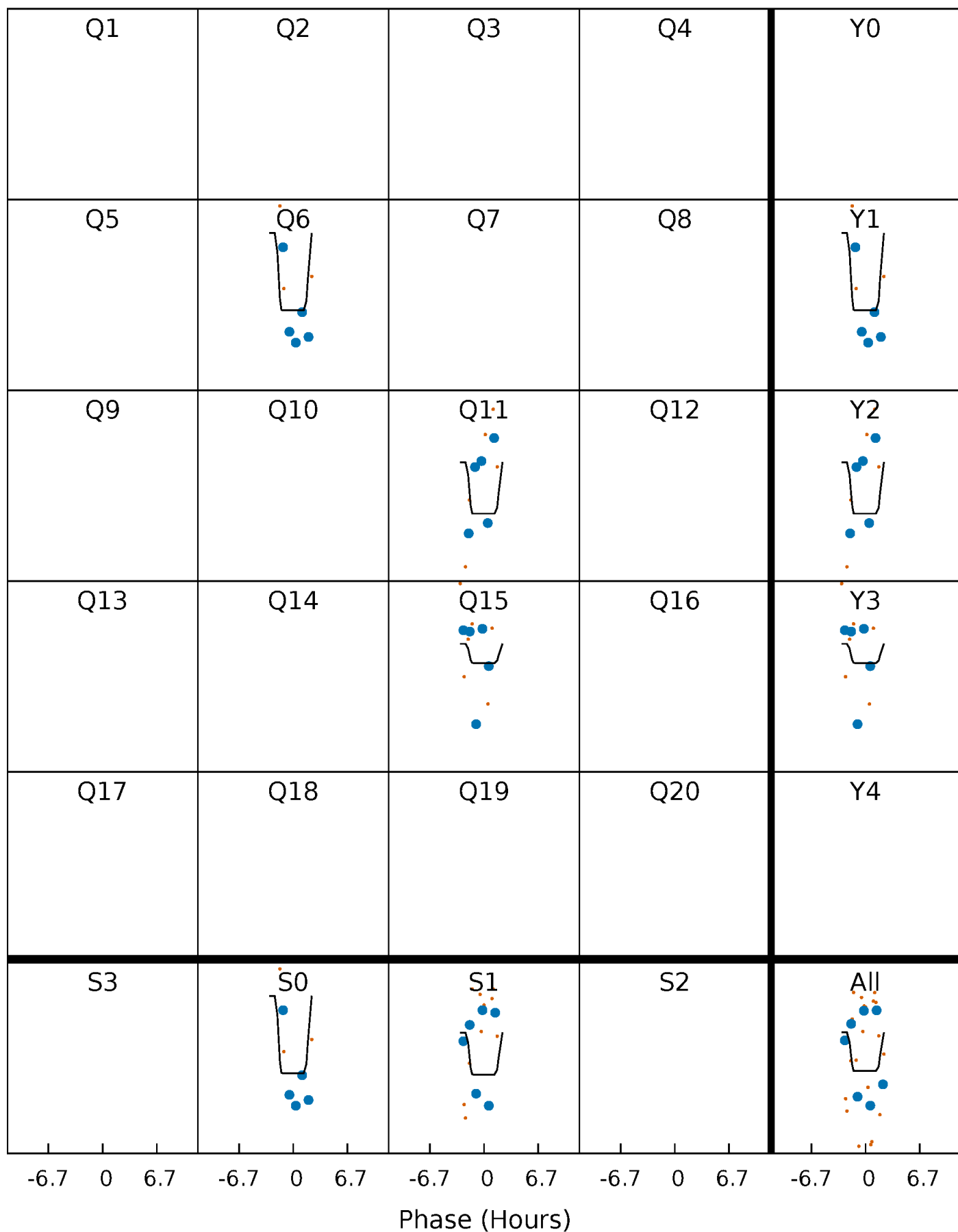
DV Quarter-Phased Transit Curves

TCE 007538950-04 P=389.329597 Days $T_0=230.947670$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

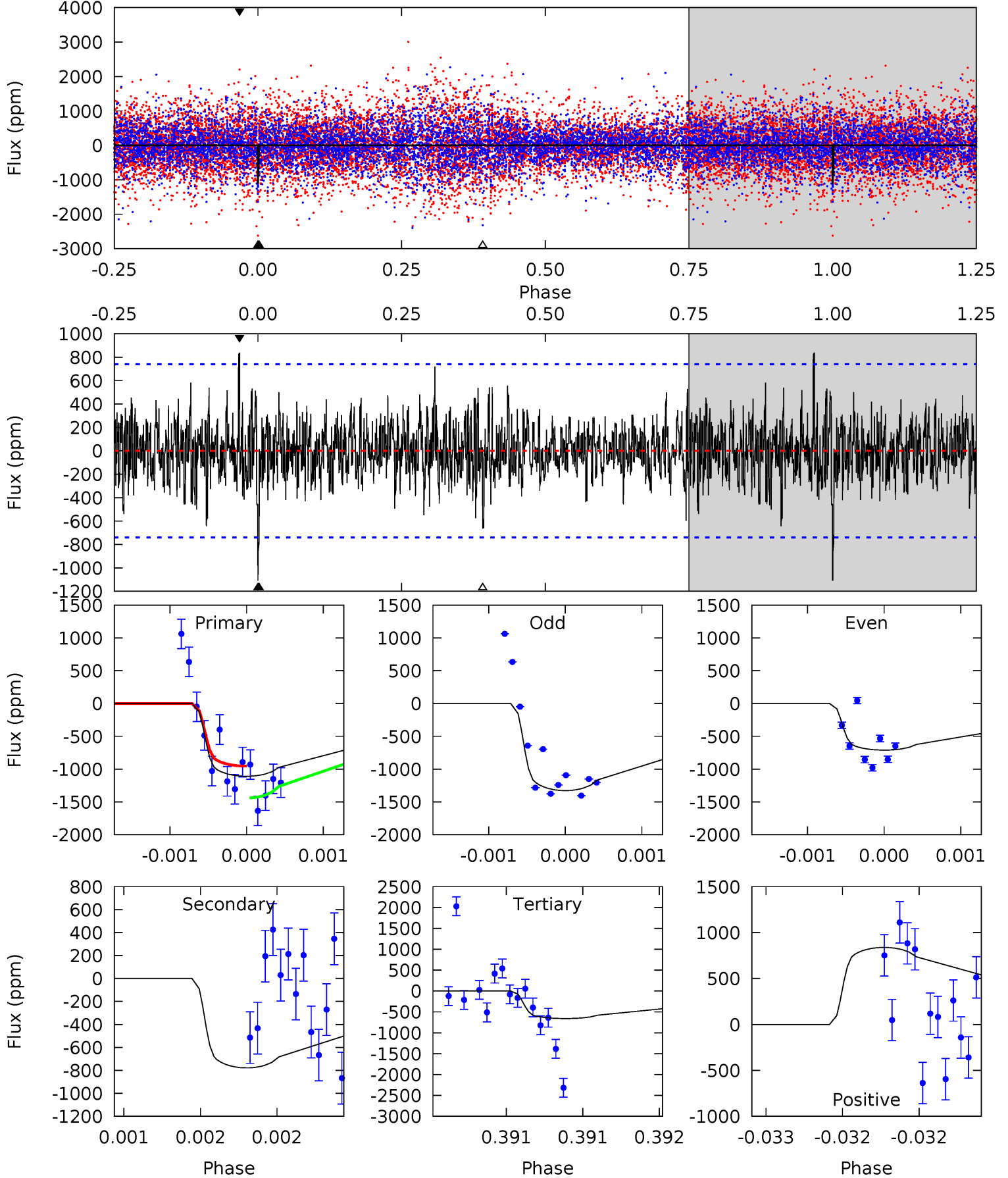
TCE 007538950-04 P=389.306996 Days $T_0=230.965862$ (BKJD)



DV Model-Shift Uniqueness Test

007538950-04, $P = 389.329597$ Days, $E = 230.947670$ Days

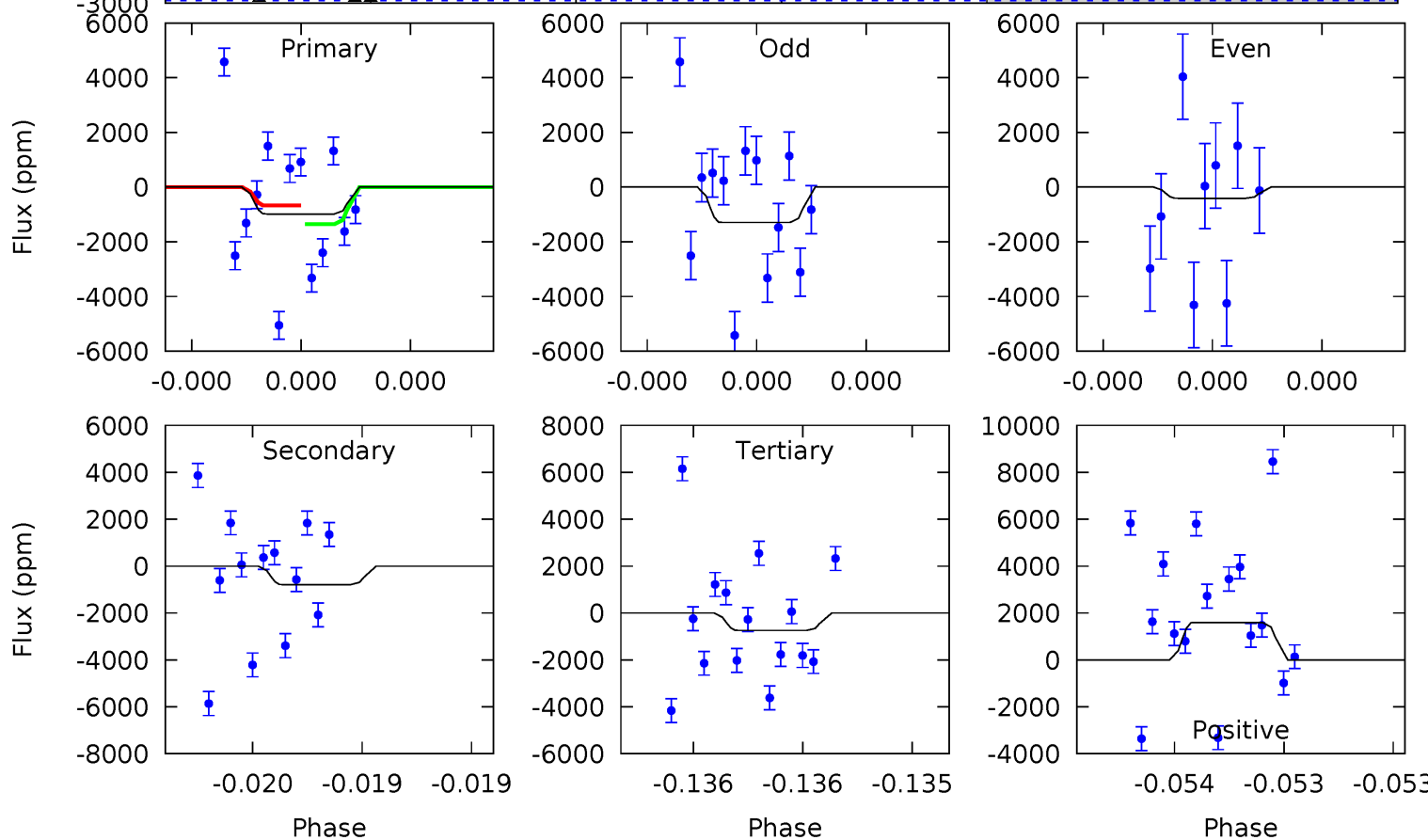
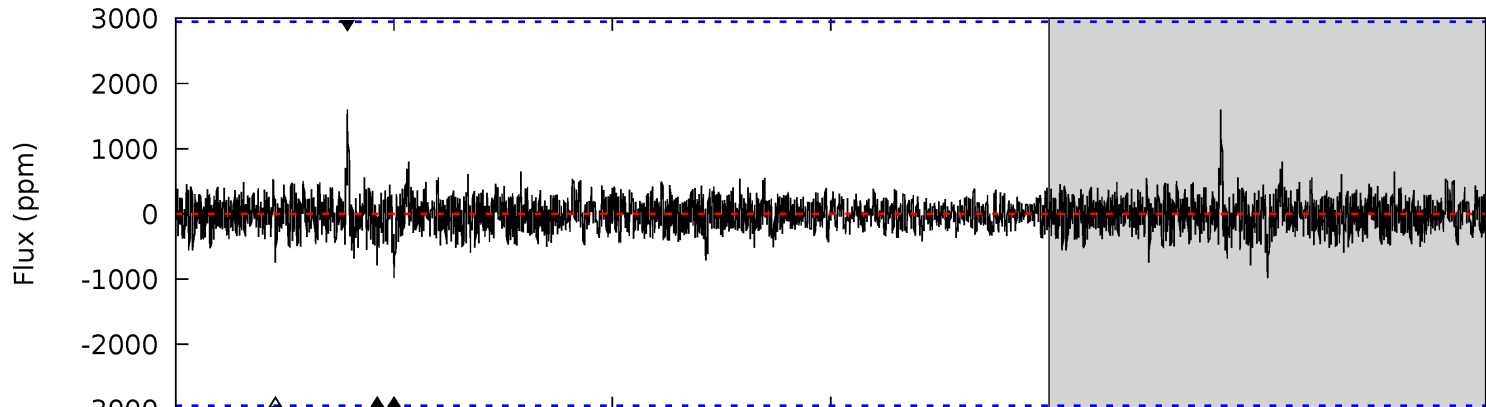
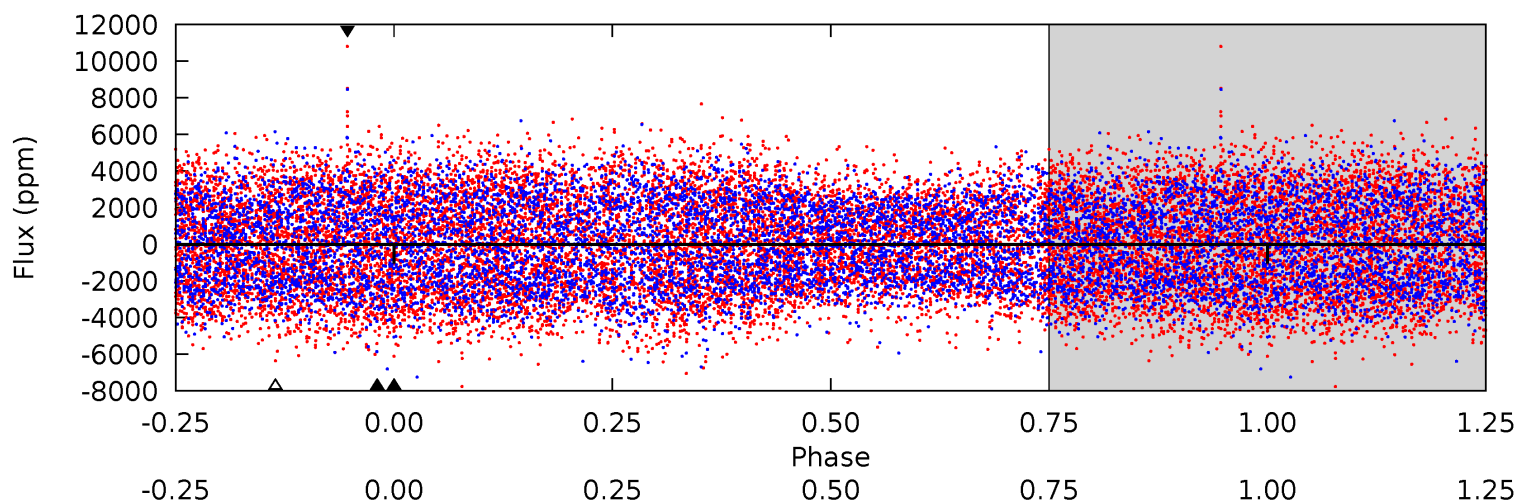
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.33	5.84	4.95	6.29	5.56	3.46	1.41	3.38	2.04	0.89	-0.45	2.31	0.99	0.43	1.56



Alt Model-Shift Uniqueness Test

007538950-04, P = 389.306996 Days, E = 230.965862 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.87	1.50	1.42	3.03	5.59	3.51	0.37	0.45	-1.16	0.08	-1.53	0.82	1.05	0.62	0.65



Stellar Parameters For KIC 007538950

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8763^{+237}_{-407}	$3.484^{+0.704}_{-0.176}$	$-0.500^{+0.150}_{-0.300}$	$4.625^{+0.532}_{-3.017}$	$2.379^{+0.372}_{-0.868}$	$0.034^{+0.437}_{-0.015}$
	+3%/-5%	+20%/-5%	+30%/-60%	+12%/-65%	+16%/-36%	+1289%/-44%
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 007538950-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-778 ± 133	$17.42^{+4.58}_{-5.75}$	966^{+68}_{-149}	7396^{+1038}_{-768}	2806^{+2981}_{-1145}
Alt.	-789 ± 527	$18.18^{+4.43}_{-6.19}$	963^{+68}_{-156}	7121^{+1623}_{-1643}	2453^{+3622}_{-1621}

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

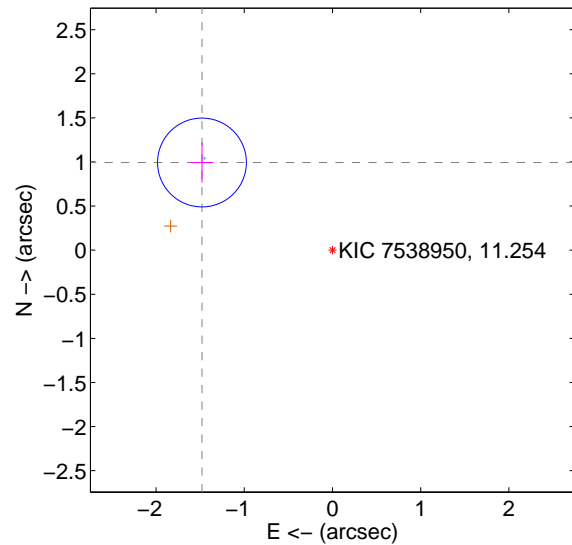
Supplemental centroid analysis for 007538950-04. **Kepler magnitude: 11.25.** Transit SNR 8.15

There are 1 quarters with good PRF difference image offsets

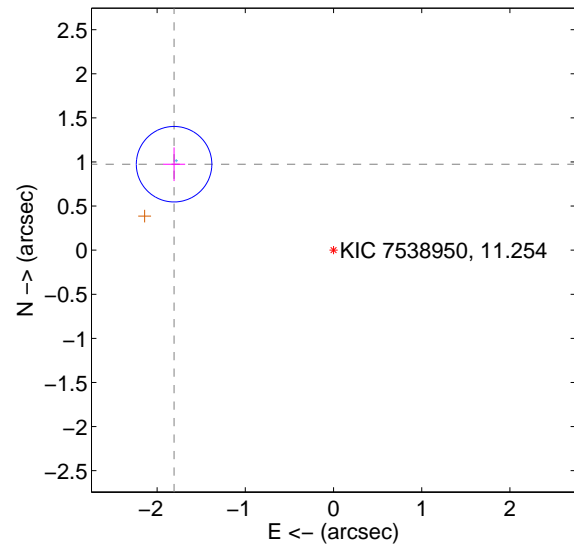
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.783 ± 0.168	10.62	1.480 ± 0.131	0.994 ± 0.229
PRF-fit source offset from KIC position	2.054 ± 0.143	14.39	1.808 ± 0.125	0.975 ± 0.191
photometric centroid source offset	0.33 ± 0.24	1.35	-0.18 ± 0.32	-0.27 ± 0.20

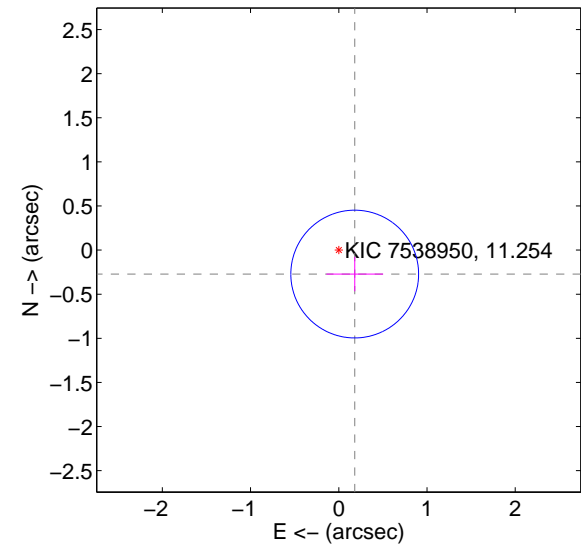
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

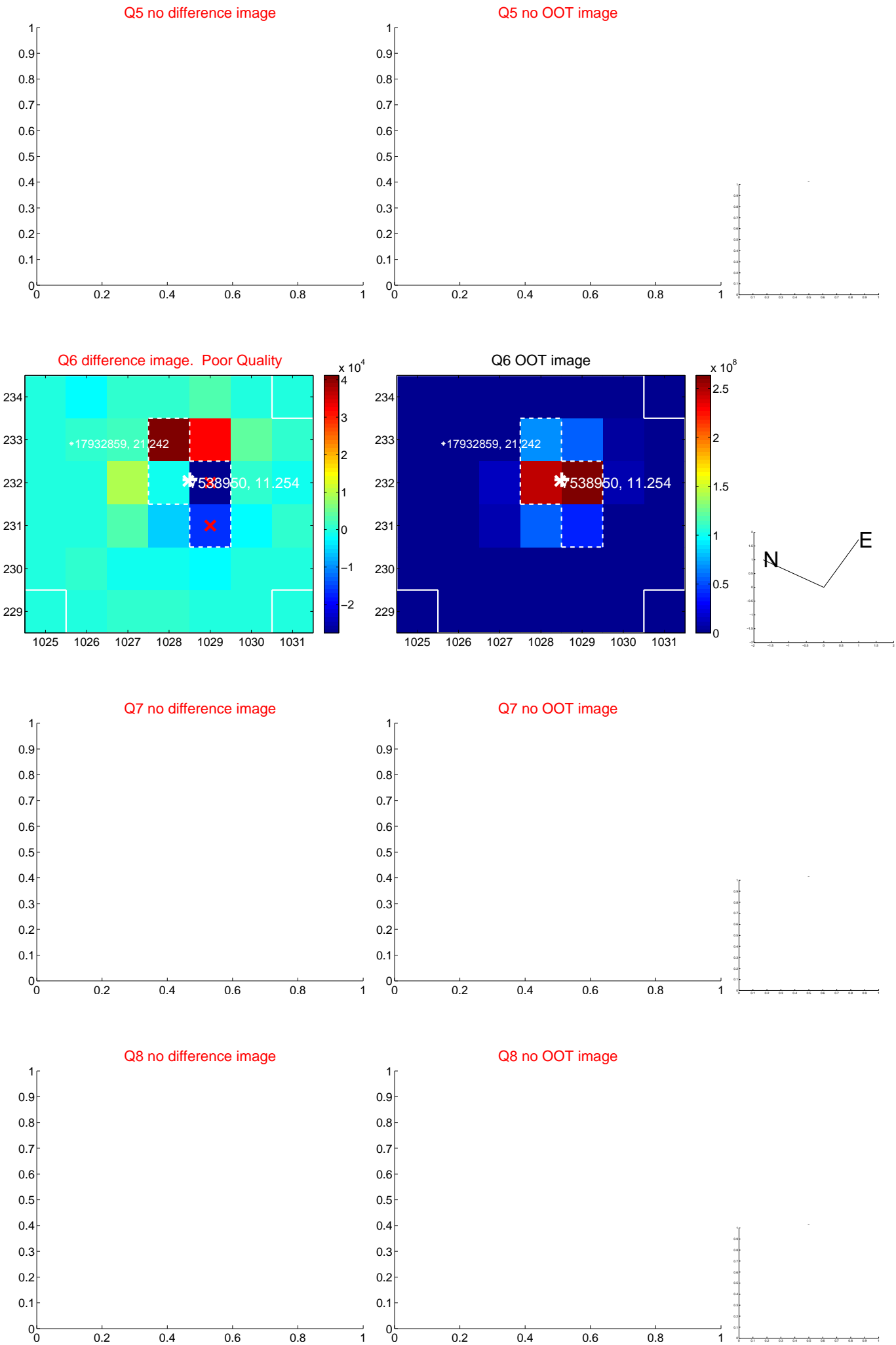


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

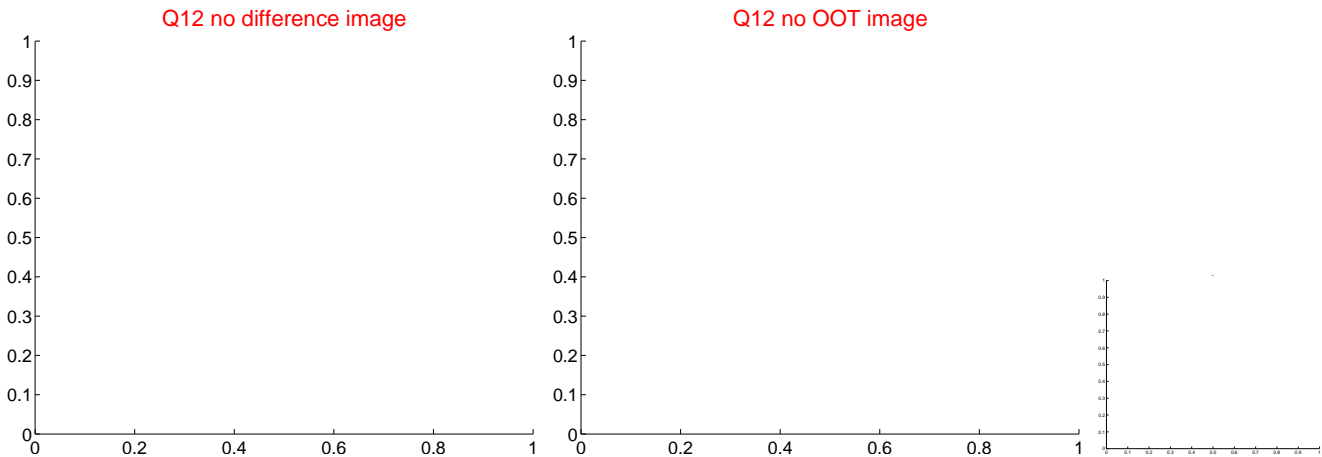
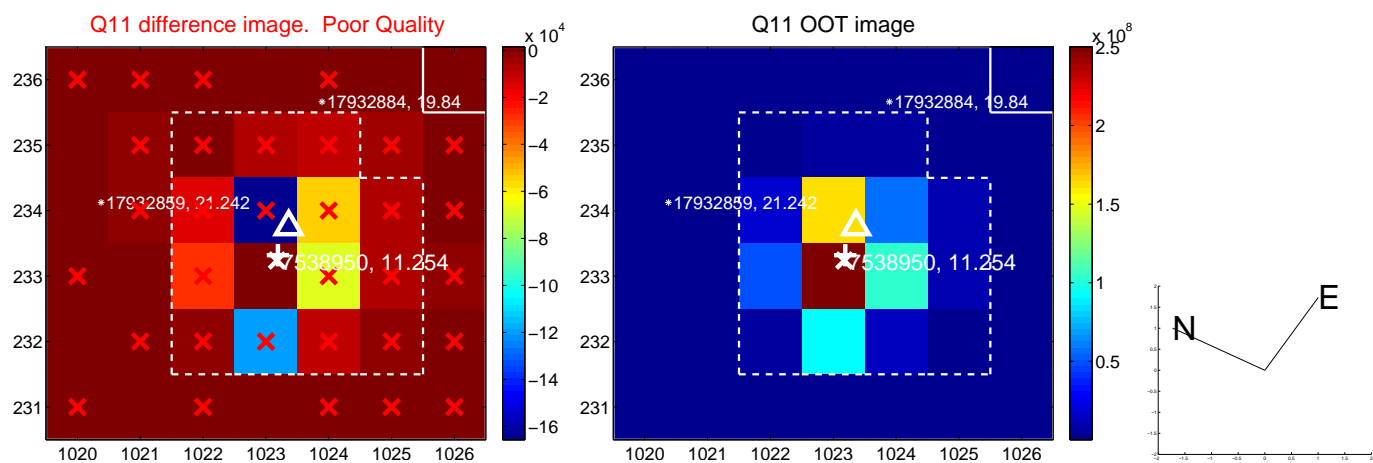
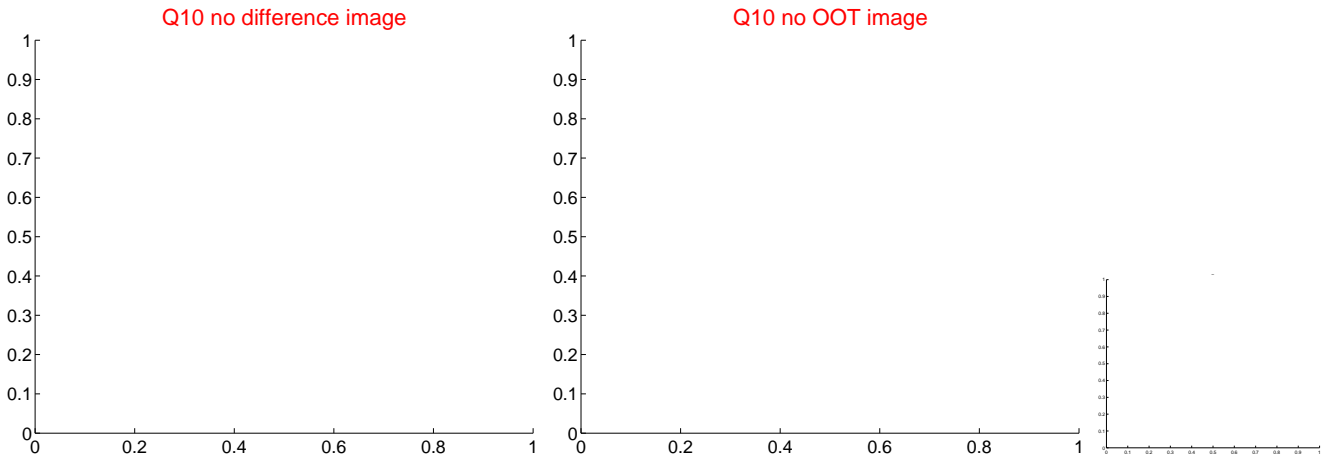
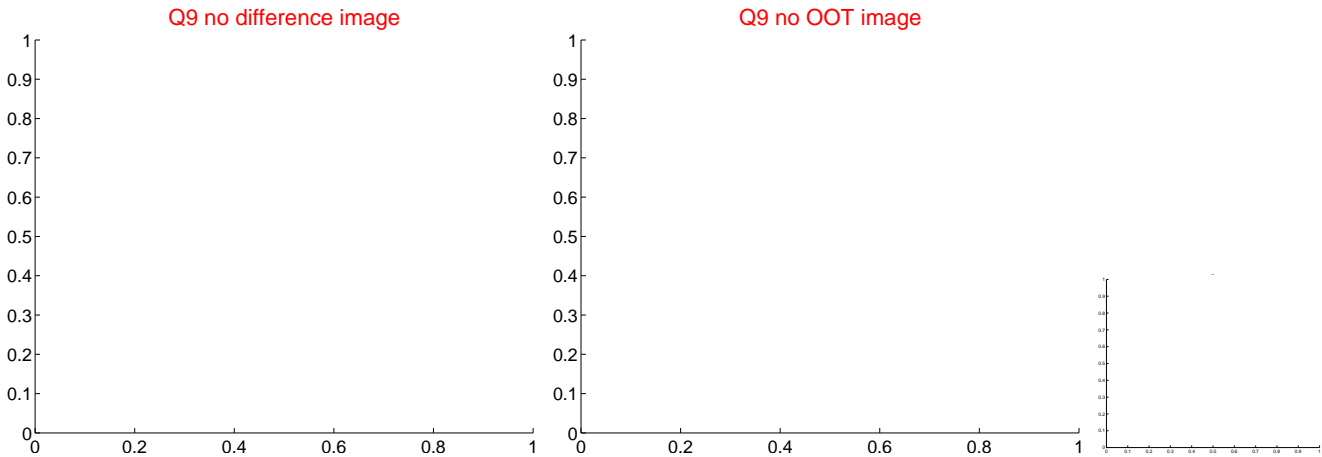
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



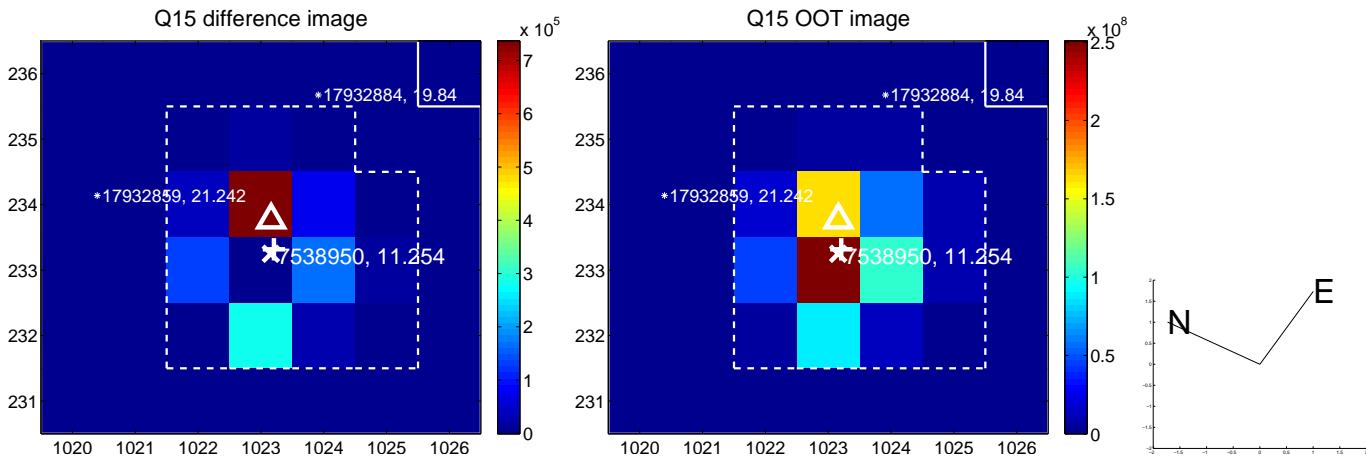
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



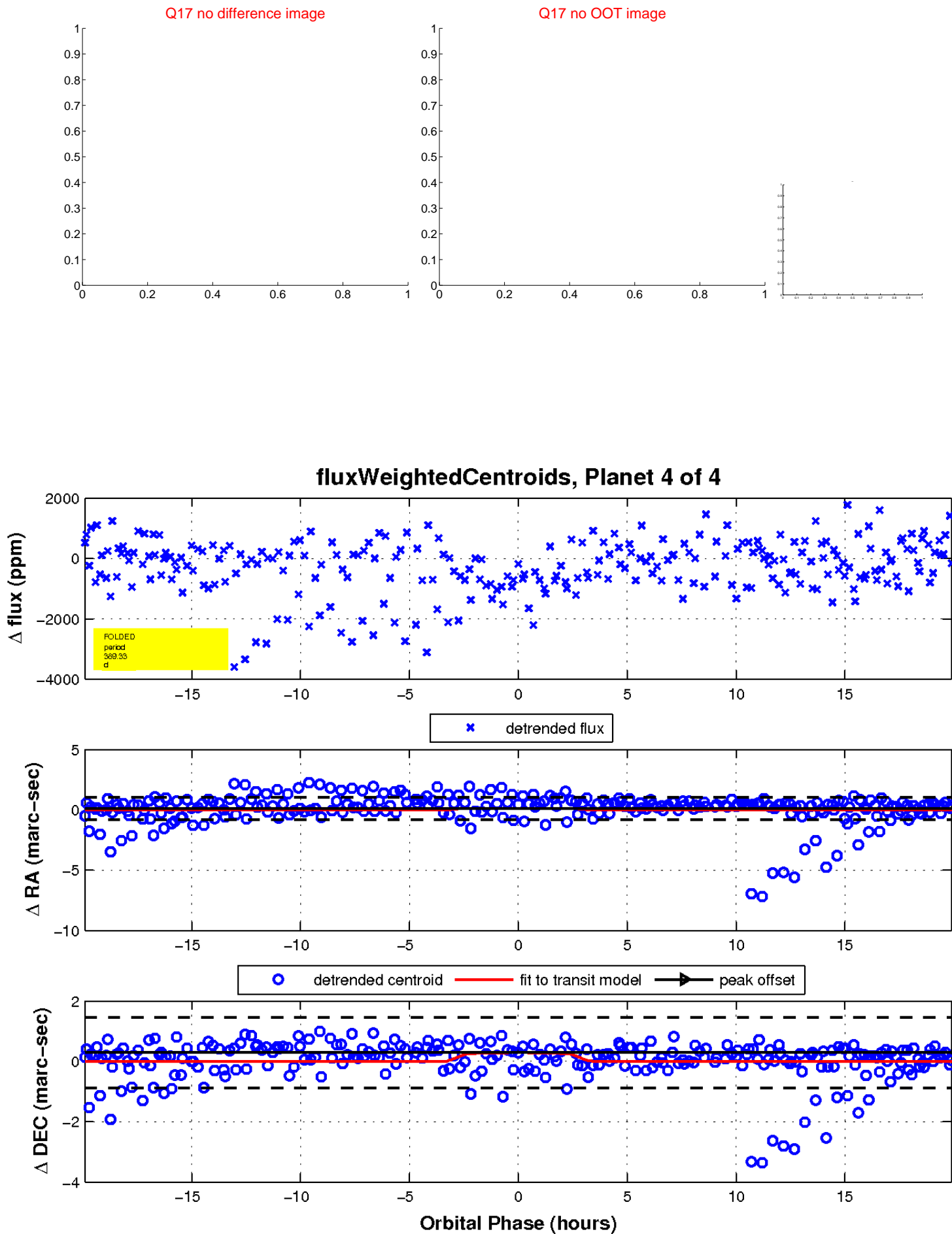
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

