

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})
003533551-01	OBS	No	2.297362	133.631750	64.2	12.450	7.9	9.3	1.23	6144	1.33	1920.73
003533551-02	OBS	No	211.777821	283.721491	297.7	4.541	15.3	4.3	1.23	6144	2.27	4.61
003533551-03	OBS	No	498.367920	497.396492	1907.5	41.710	14.0	9.7	1.23	6144	9.98	1.47
003533551-04	OBS	No	132.648483	227.746073	225.6	3.059	9.1	3.3	1.23	6144	2.09	8.61
003533551-05	OBS	No	132.682289	228.720197	154.0	1.732	9.5	2.1	1.23	6144	1.58	8.60
003533551-06	OBS	No	132.656119	228.240061	277.2	9.000	9.6	-1.0	1.23	6144	2.06	8.61
003533551-07	OBS	No	379.158986	428.600167	548.9	7.215	9.2	8.2	1.23	6144	3.26	2.12
003533551-08	OBS	No	411.361648	196.323732	586.8	7.760	9.0	7.1	1.23	6144	3.19	1.90
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003533551-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003533551-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003533551-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003533551-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET
003533551-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
003533551-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003533551-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003533551-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

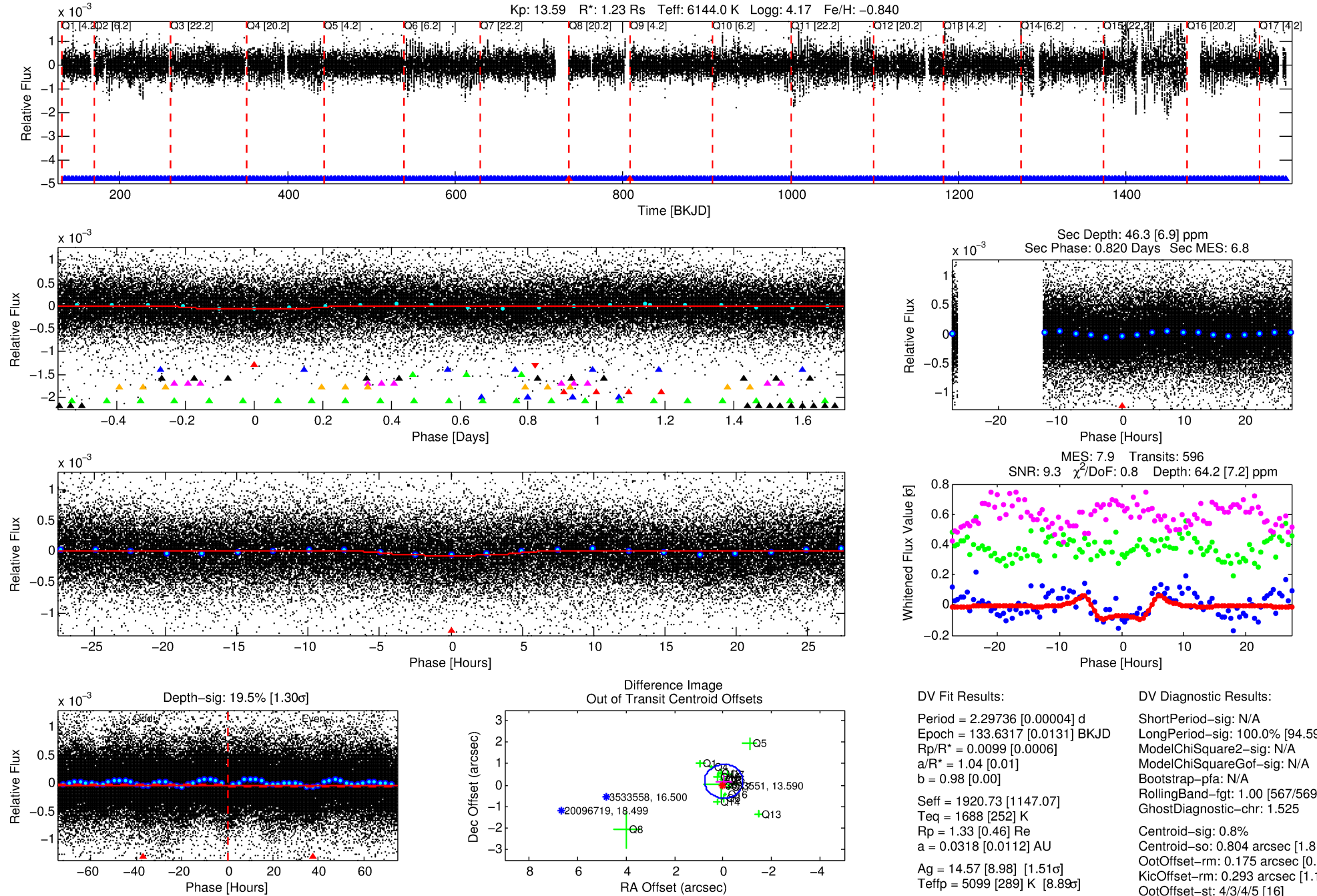
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003533551-01

No Significant Match Found

DV One-Page Summary

KIC: 3533551 Candidate: 1 of 10 Period: 2.297 d



DV Fit Results:

Period = 2.29736 [0.00004] d
Epoch = 133.6317 [0.0131] BKJD
Rp/R* = 0.0099 [0.0006]
a/R* = 1.04 [0.01]
b = 0.98 [0.00]
Seff = 1920.73 [1147.07]
Teff = 1688 [252] K
Rp = 1.33 [0.46] Re
a = 0.0318 [0.0112] AU
Ag = 14.57 [8.98] [1.51σ]
Teffp = 5099 [289] K [8.89σ]

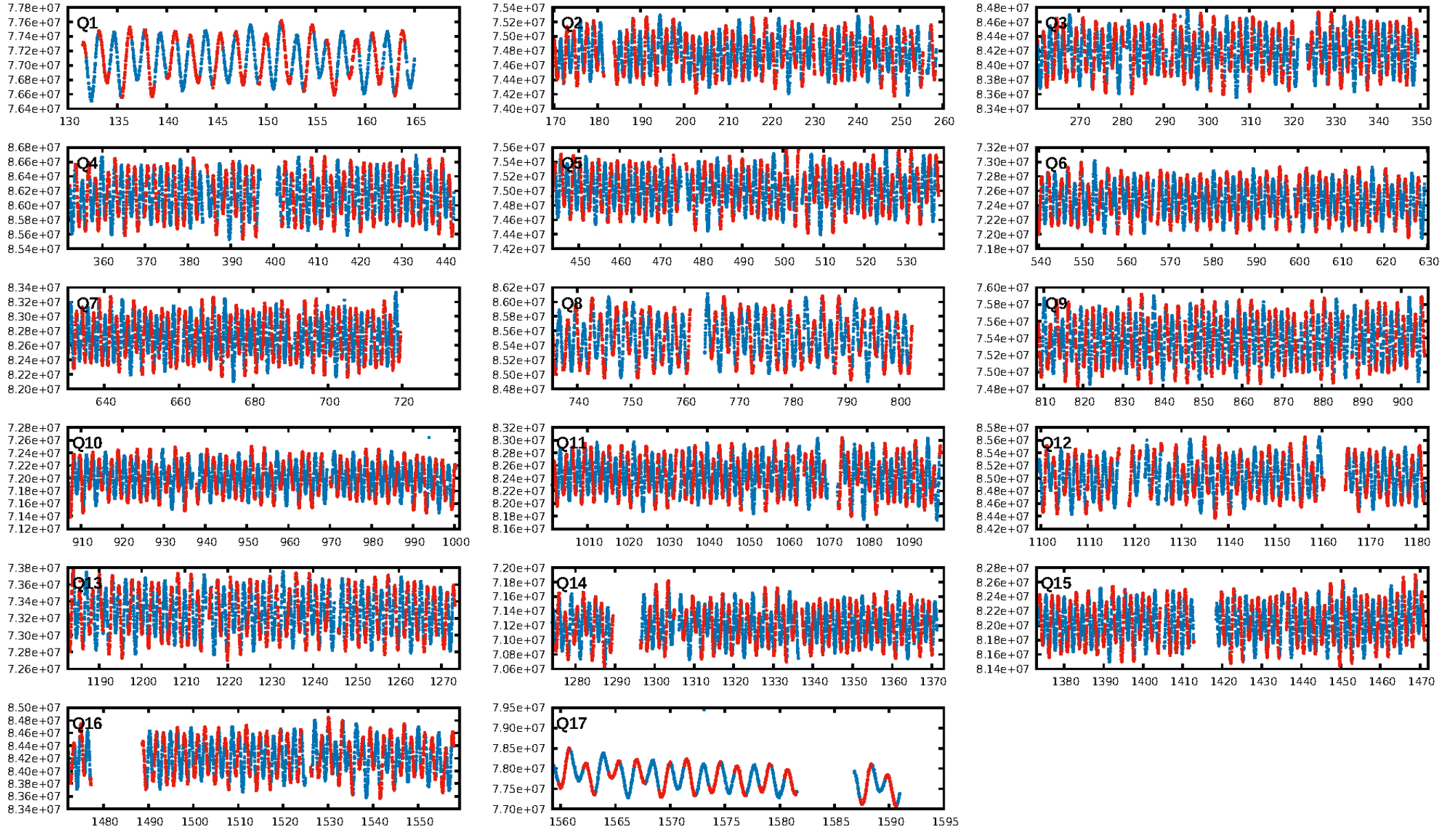
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [94.59σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [567/569]
GhostDiagnostic-chr: 1.525
Centroid-sig: 0.8%
Centroid-so: 0.804 arcsec [1.81σ]
OotOffset-rm: 0.175 arcsec [0.66σ]
KicOffset-rm: 0.293 arcsec [1.16σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

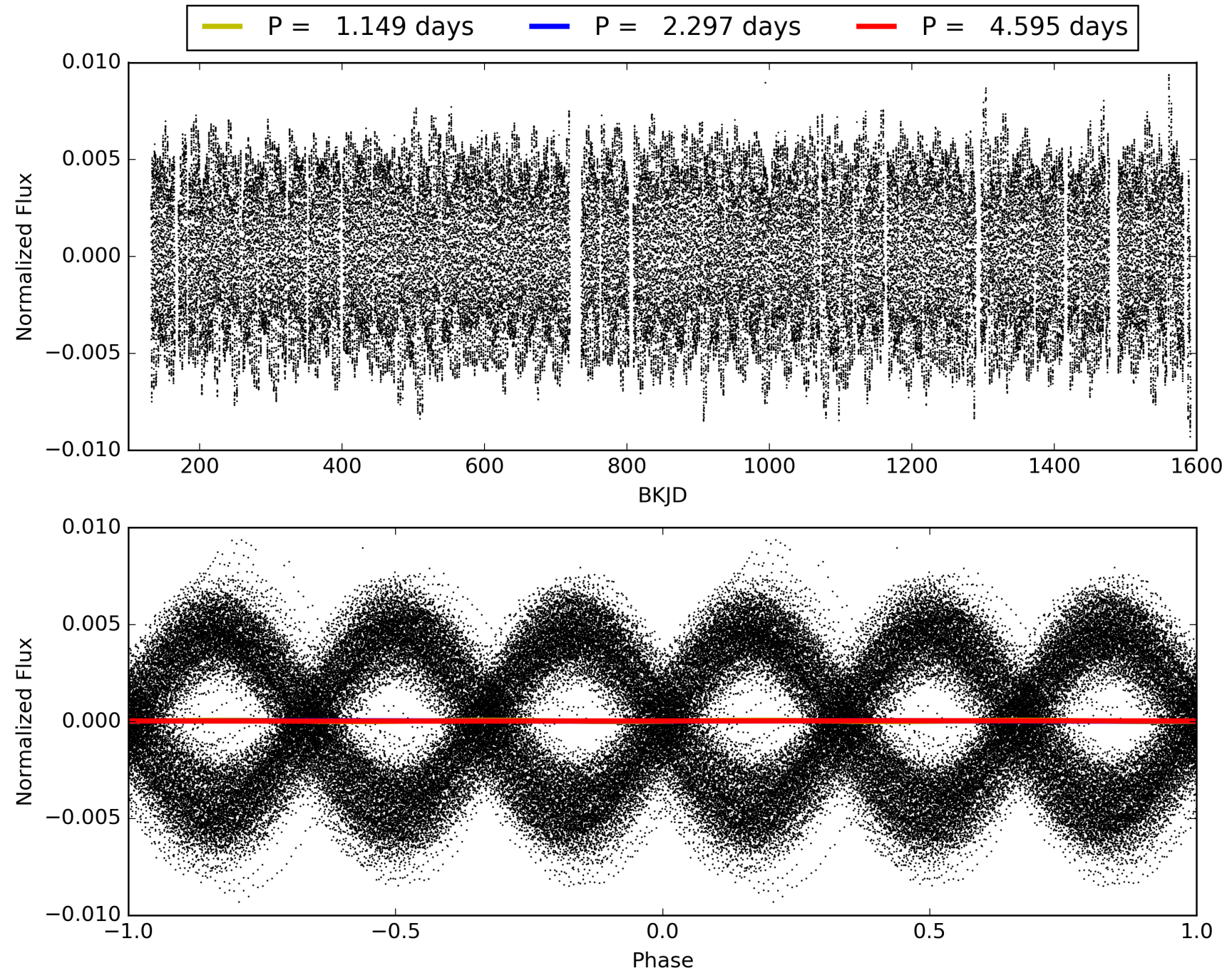
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:59:40 Z

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

TCE 003533551-01, PDC Light Curves

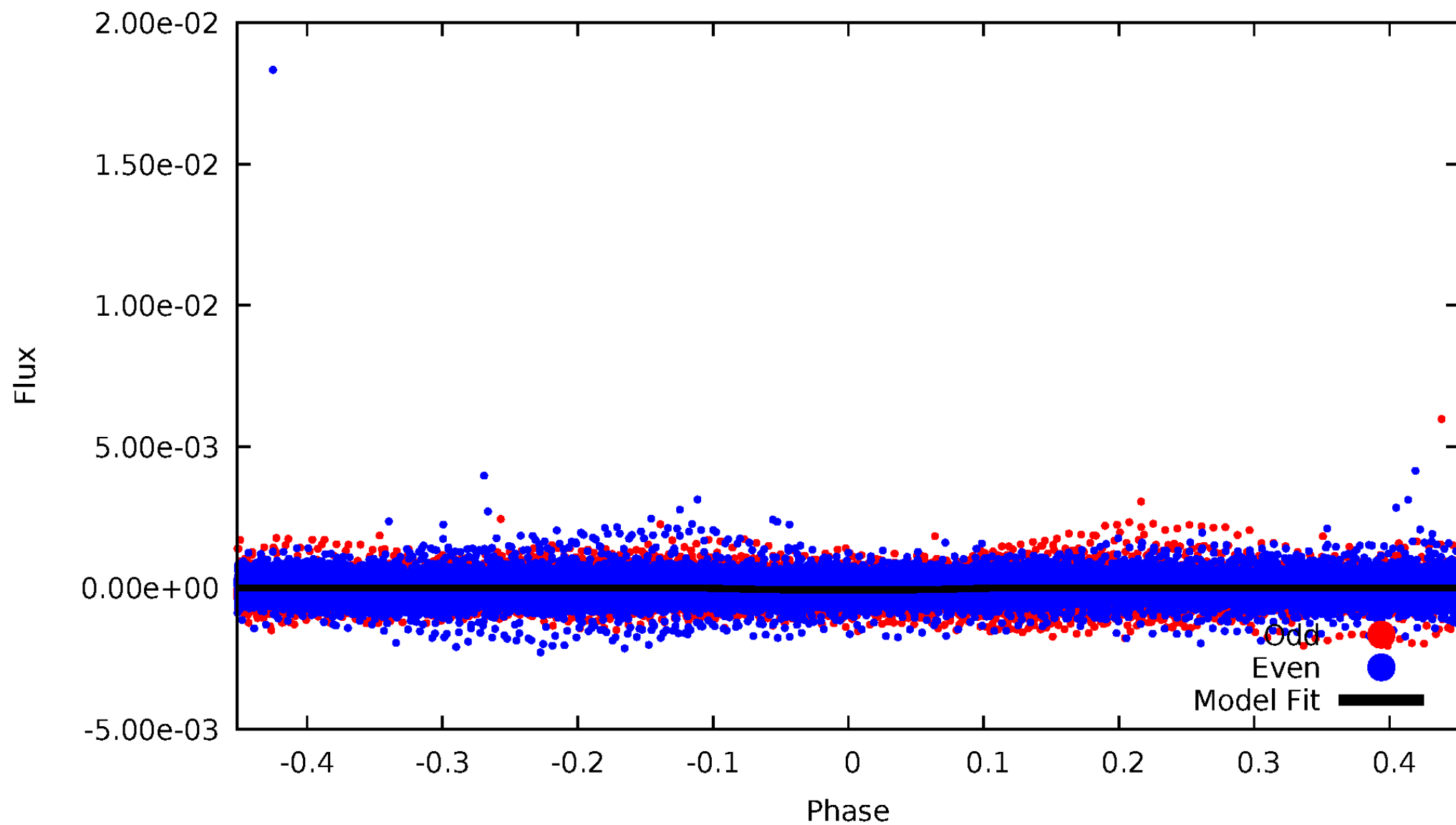


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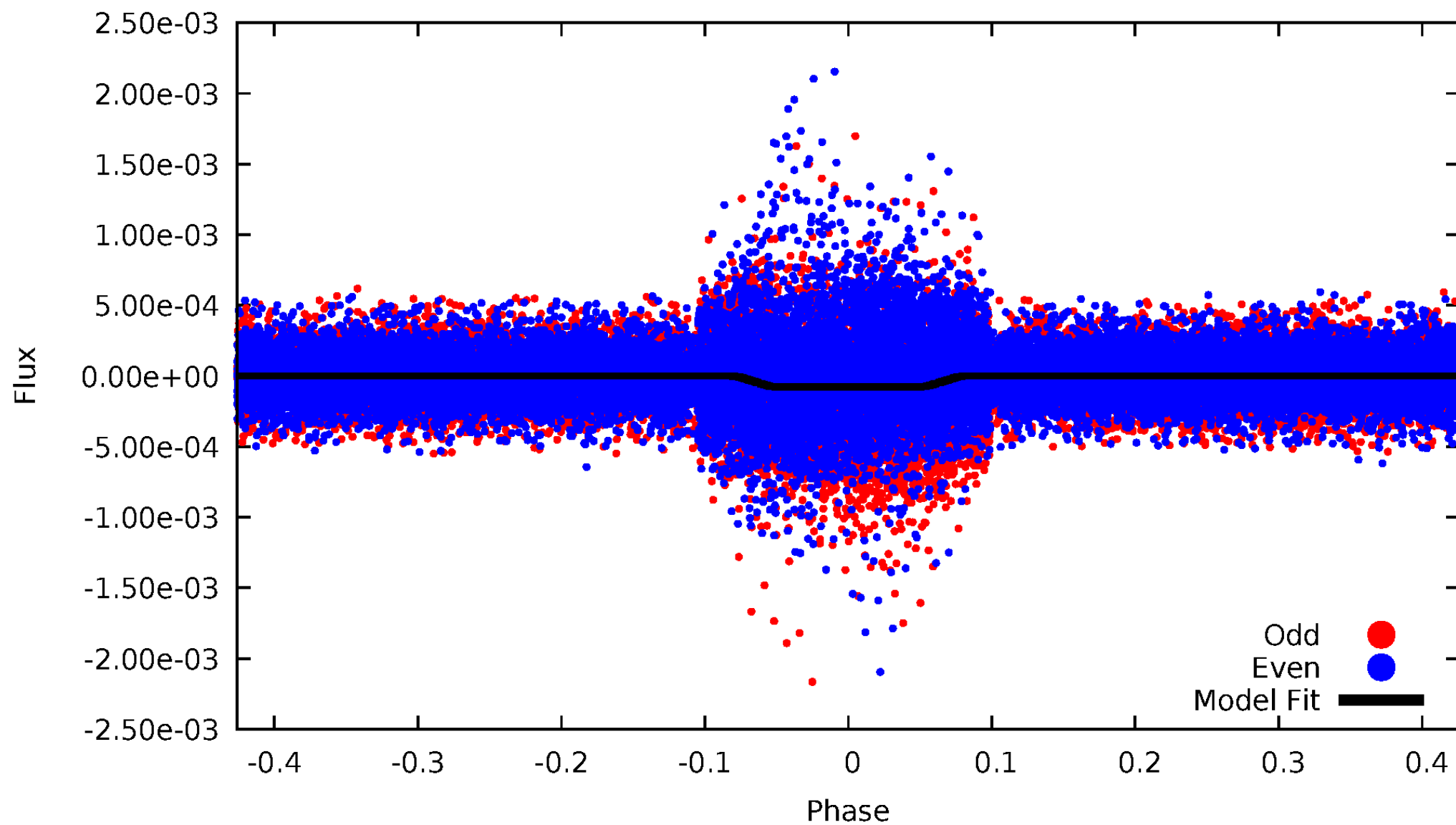
DV Odd/Even

TCE 003533551-01

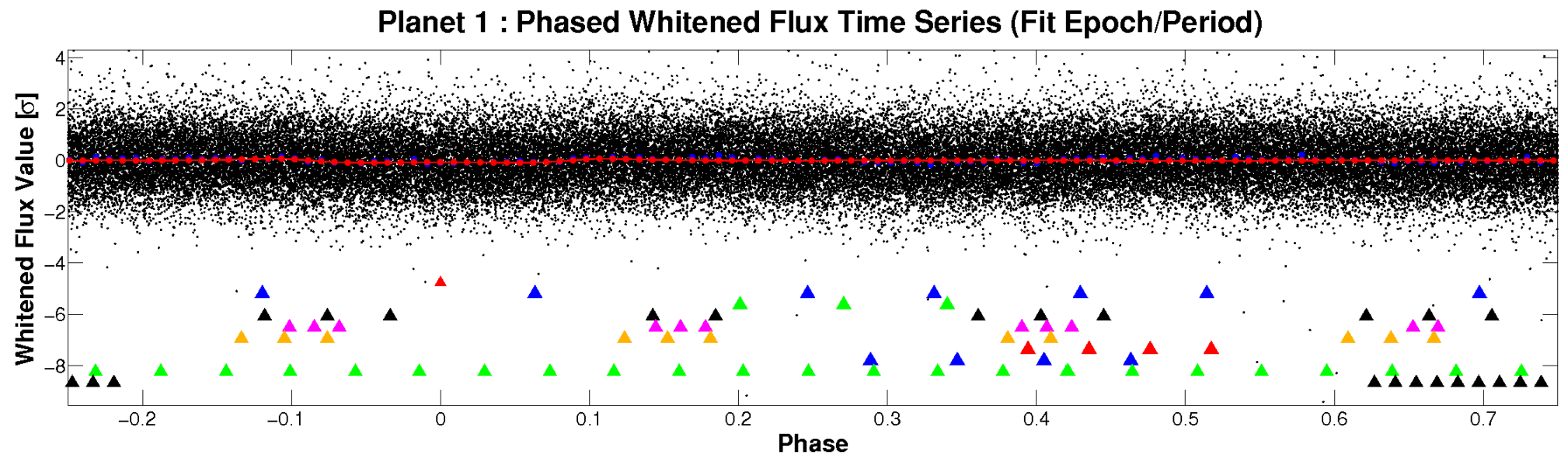
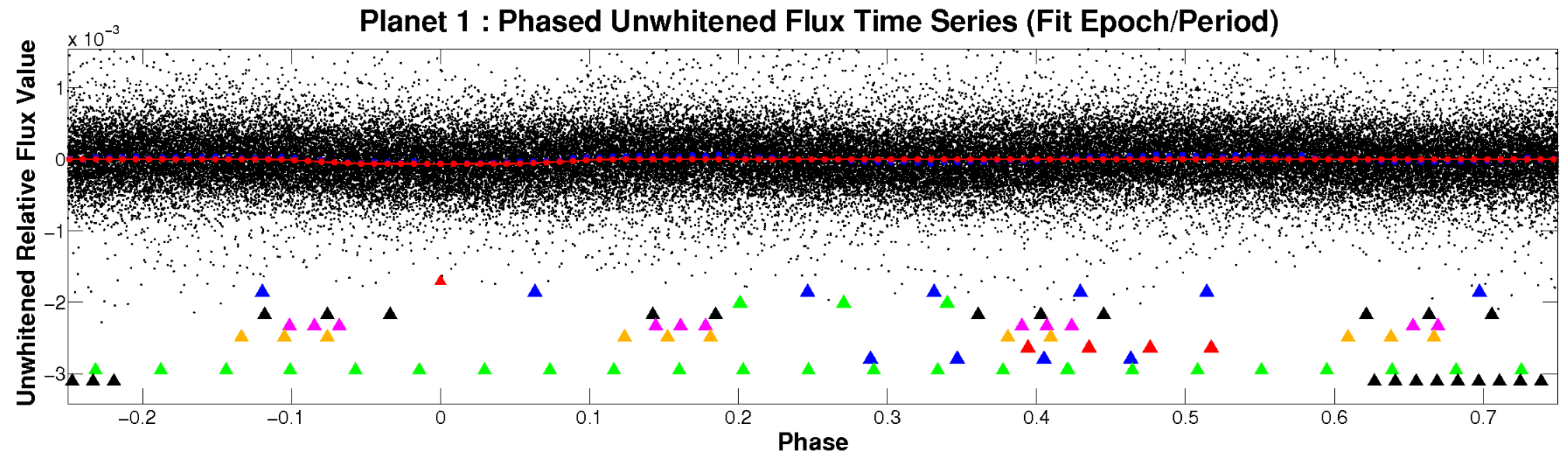


ALT Odd/Even

TCE 003533551-01

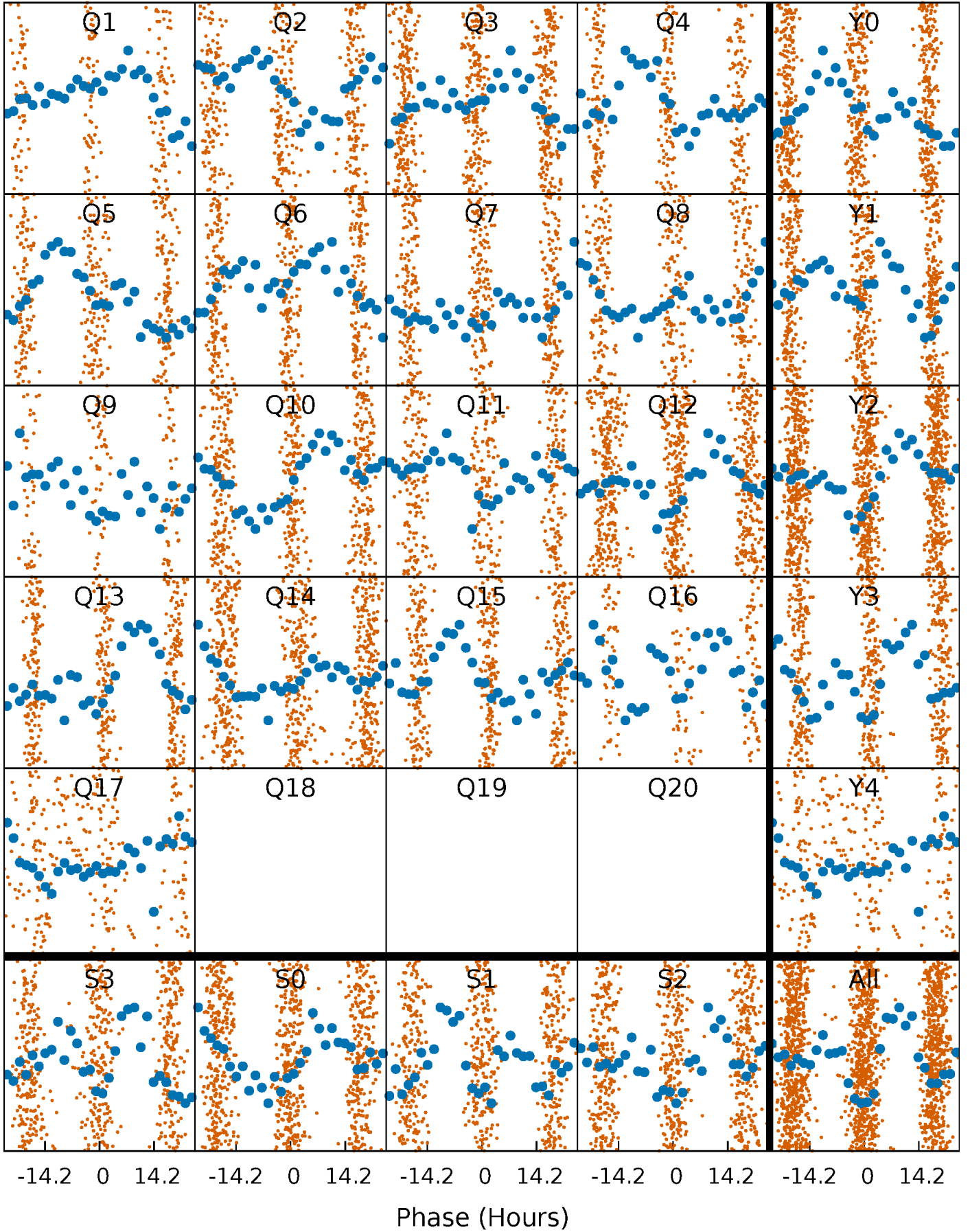


Non-Whitened Vs. Whitened Light Curve



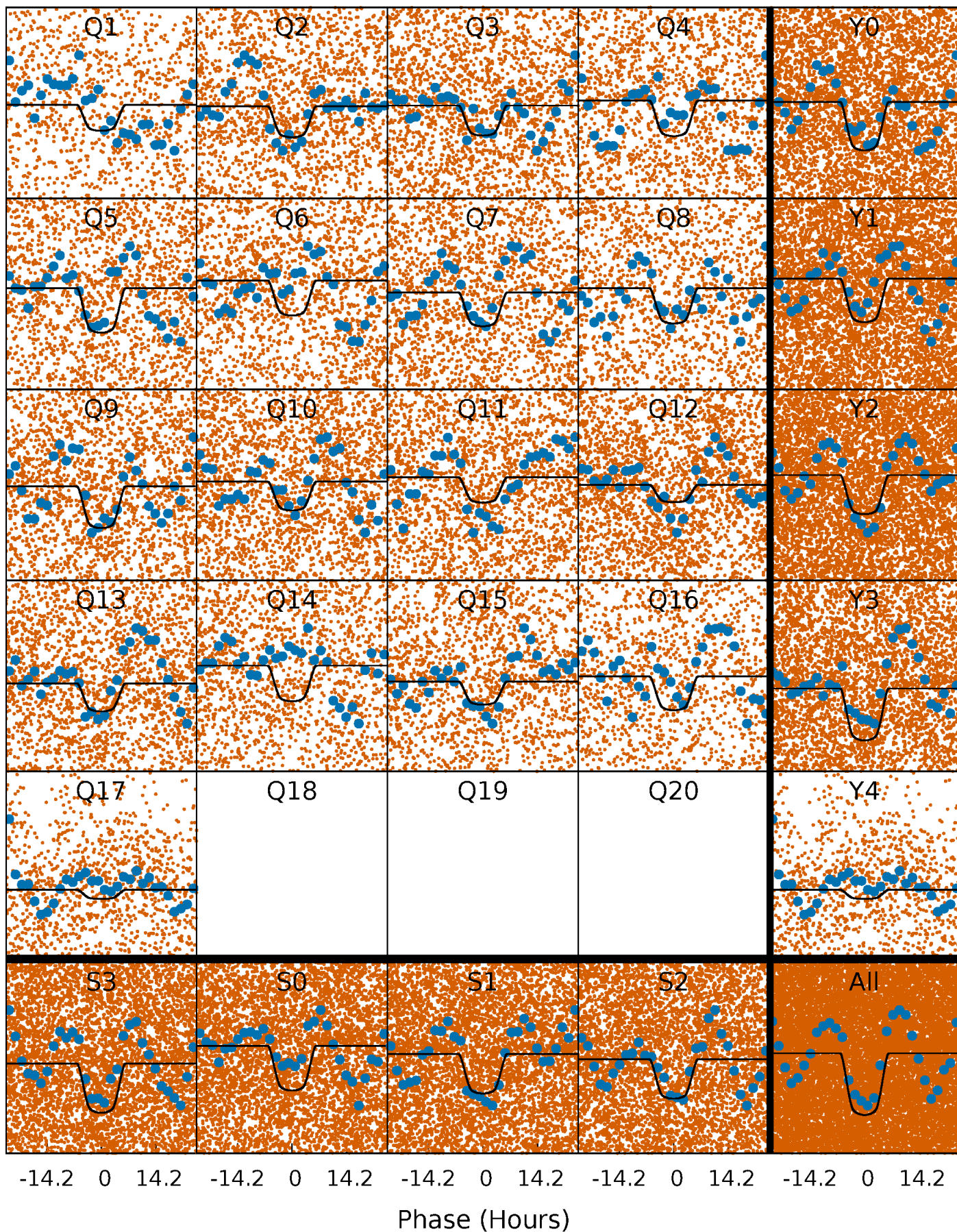
PDC Quarter-Phased Transit Curves

TCE 003533551-01 P= 2.297362 Days $T_0=133.631750$ (BKJD)



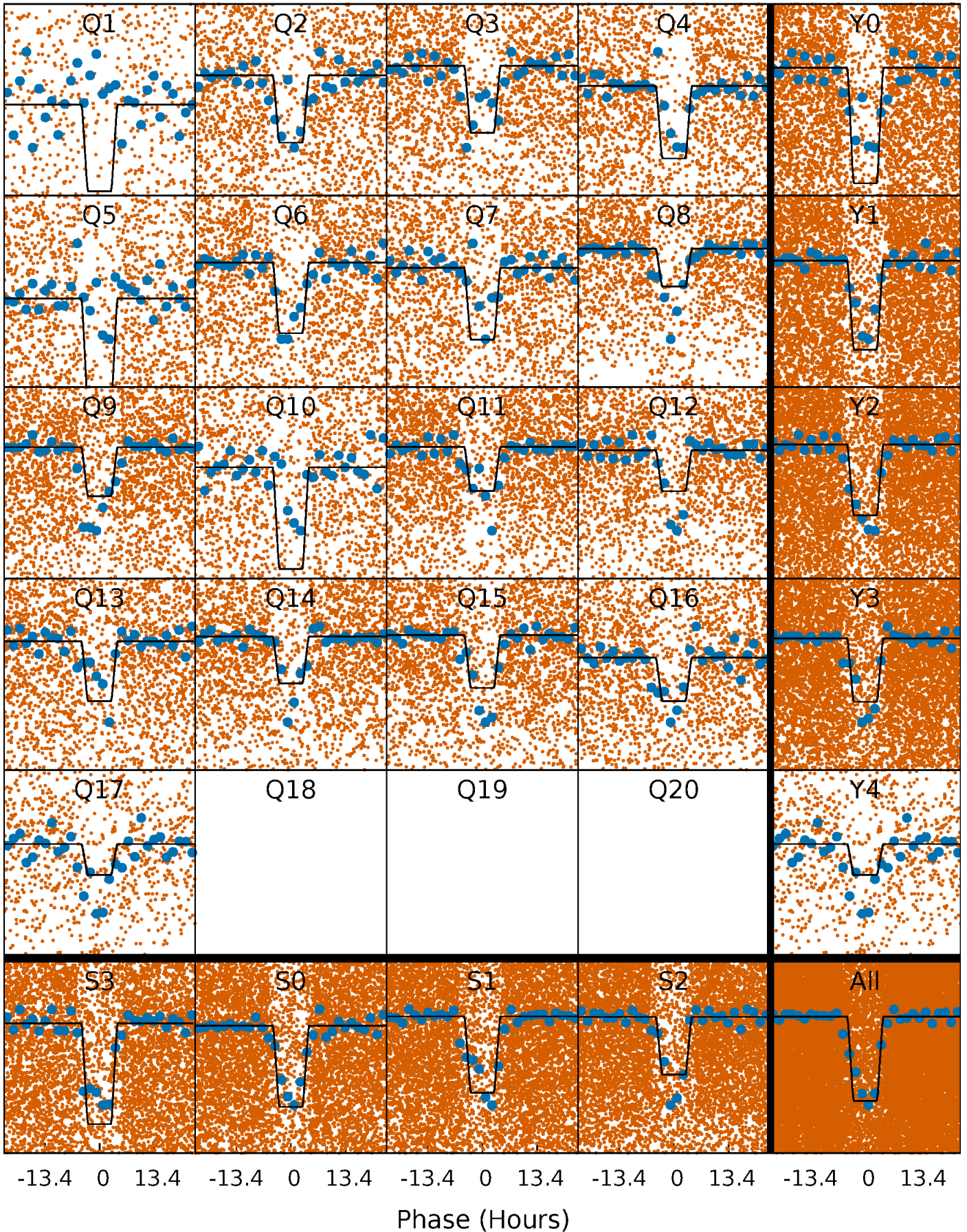
DV Quarter-Phased Transit Curves

TCE 003533551-01 P= 2.297362 Days $T_0=133.631750$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

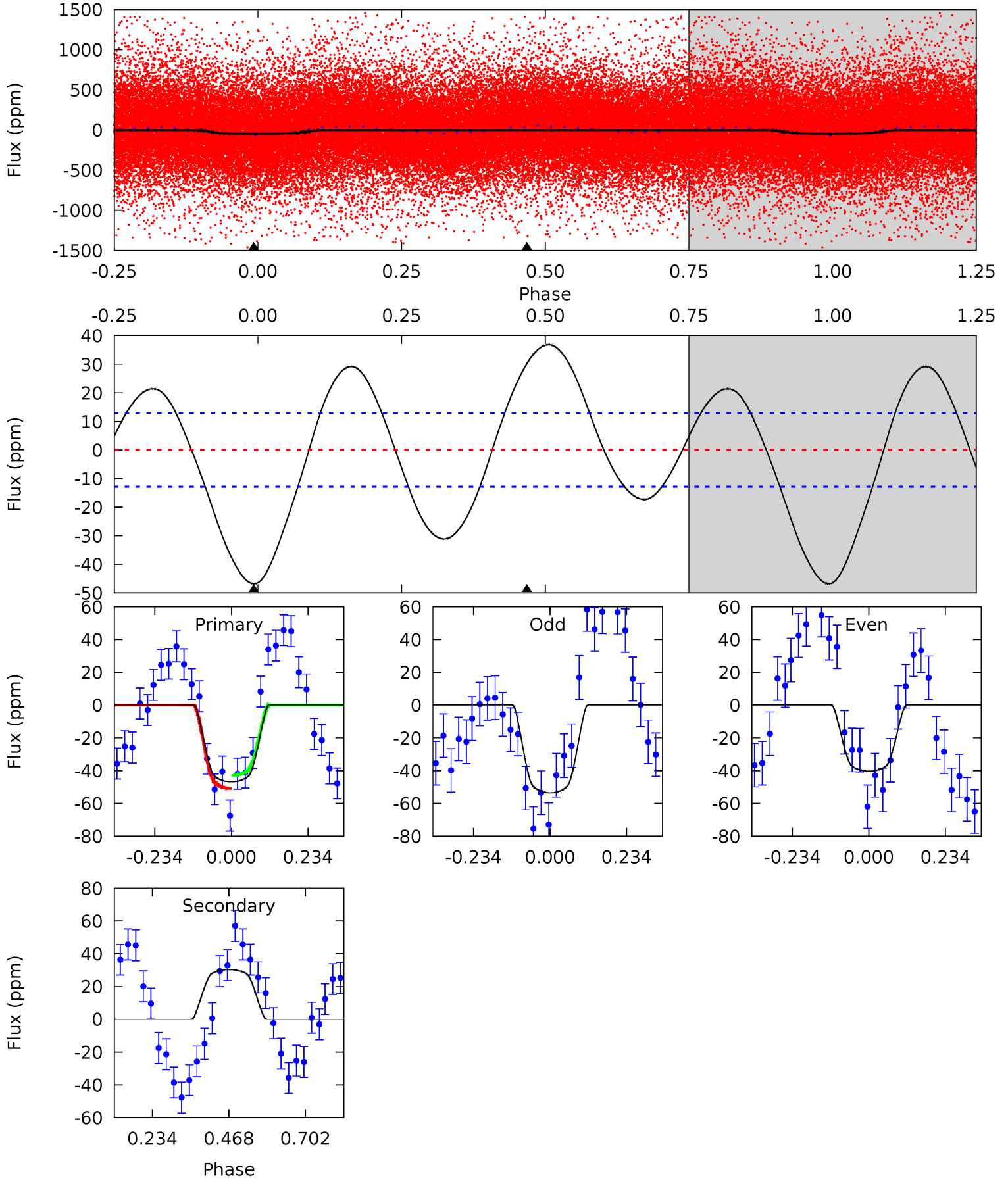
TCE 003533551-01 P= 2.297597 Days $T_0=133.583457$ (BKJD)



DV Model-Shift Uniqueness Test

003533551-01, P = 2.297362 Days, E = 131.334388 Days

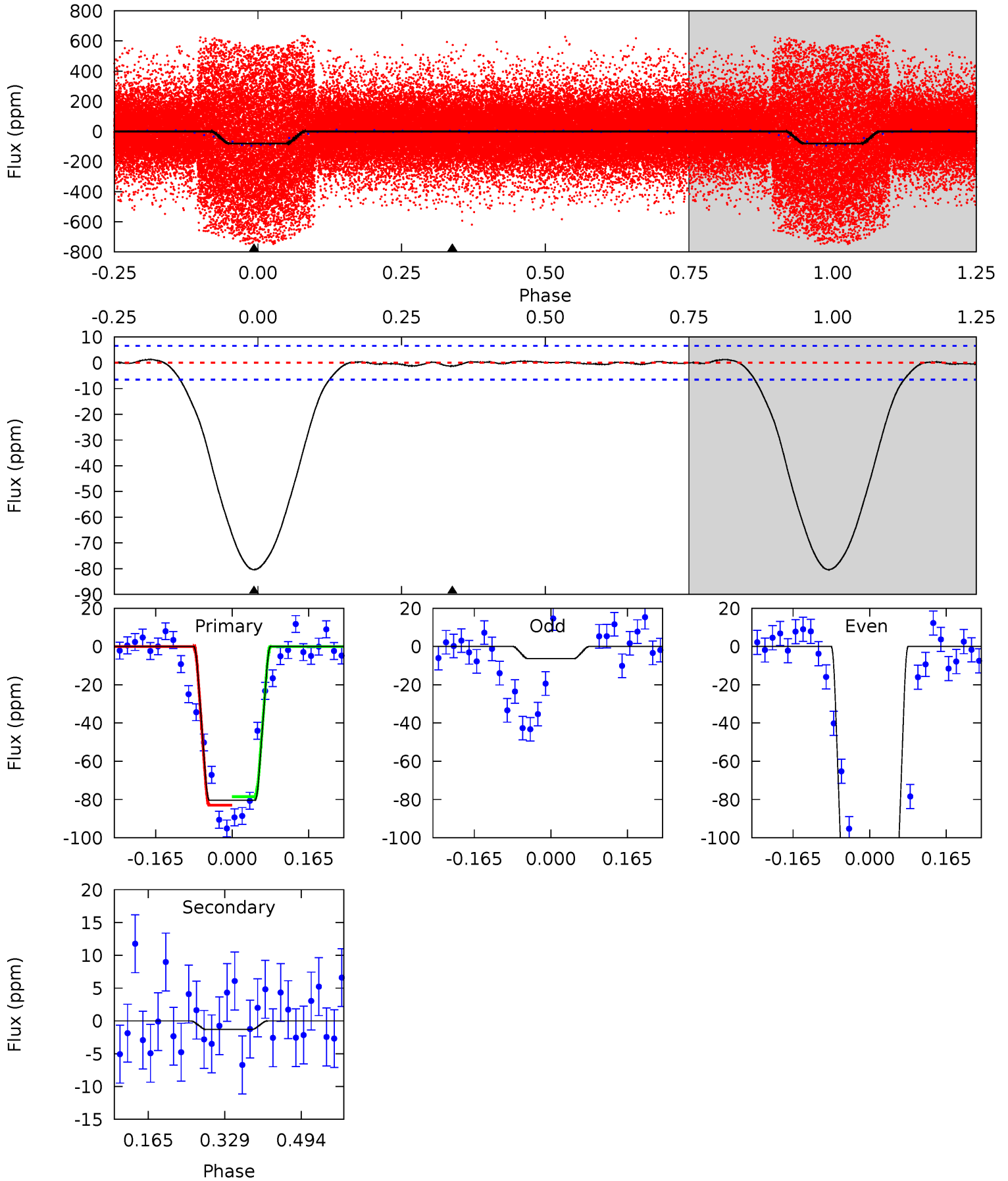
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	-10.3	0	0	4.38	1.19	2.77	15.9	15.9	-10.3	-10.3	2.29	0.87	0.44	1.39



Alt Model-Shift Uniqueness Test

003533551-01, P = 2.297597 Days, E = 131.285860 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.7	0.88	0	0	4.46	1.39	0.30	54.7	54.7	0.88	0.88	53.7	0.85	0.02	1.49



Stellar Parameters For KIC 003533551

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6144^{+183}_{-183}	$4.165^{+0.351}_{-0.189}$	$-0.840^{+0.300}_{-0.300}$	$1.232^{+0.345}_{-0.422}$	$0.809^{+0.103}_{-0.051}$	$0.609^{+1.309}_{-0.304}$
	+3%/-3%	+8%/-5%	+36%/-36%	+28%/-34%	+13%/-6%	+215%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003533551-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	30 ± 3	$1.31^{+0.23}_{-0.23}$	2333^{+203}_{-219}	-4754^{+176}_{-194}	$-9.878^{+2.785}_{-4.908}$
Alt.	-1 ± 1	$1.17^{+0.23}_{-0.23}$	2349^{+194}_{-239}	2622^{+498}_{-5430}	$0.528^{+0.766}_{-0.582}$

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

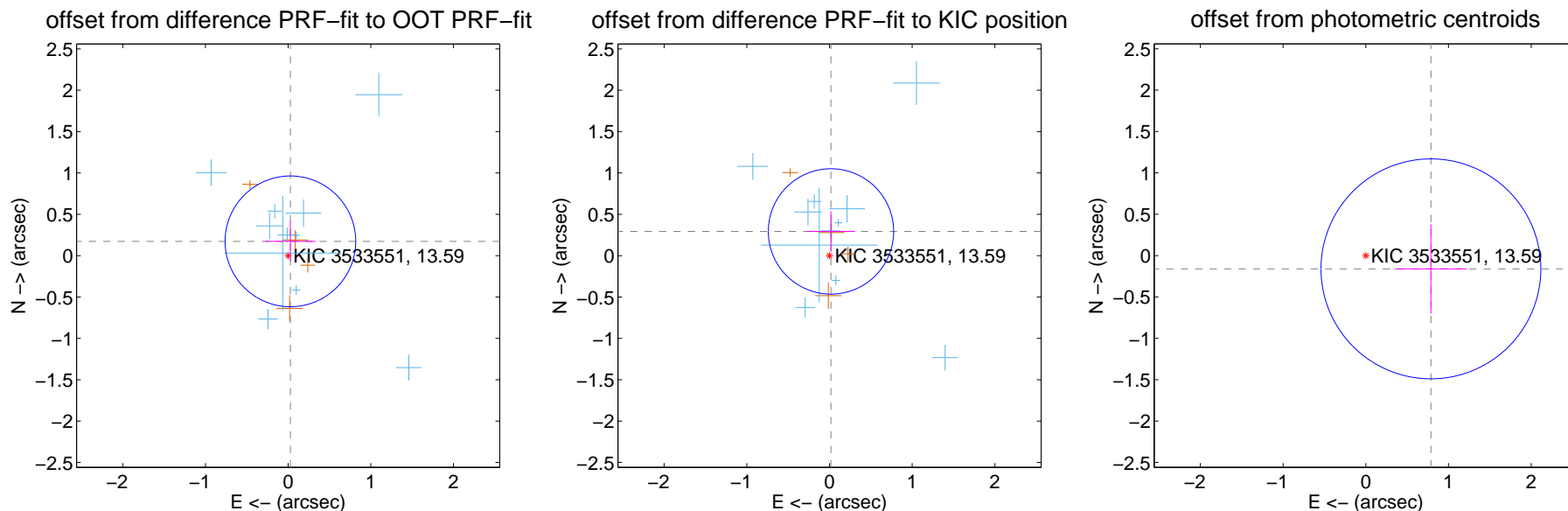
DV Centroid Data

Supplemental centroid analysis for 003533551-01. Kepler magnitude: 13.59. Transit SNR 9.31

There are 12 quarters with good PRF difference image offsets

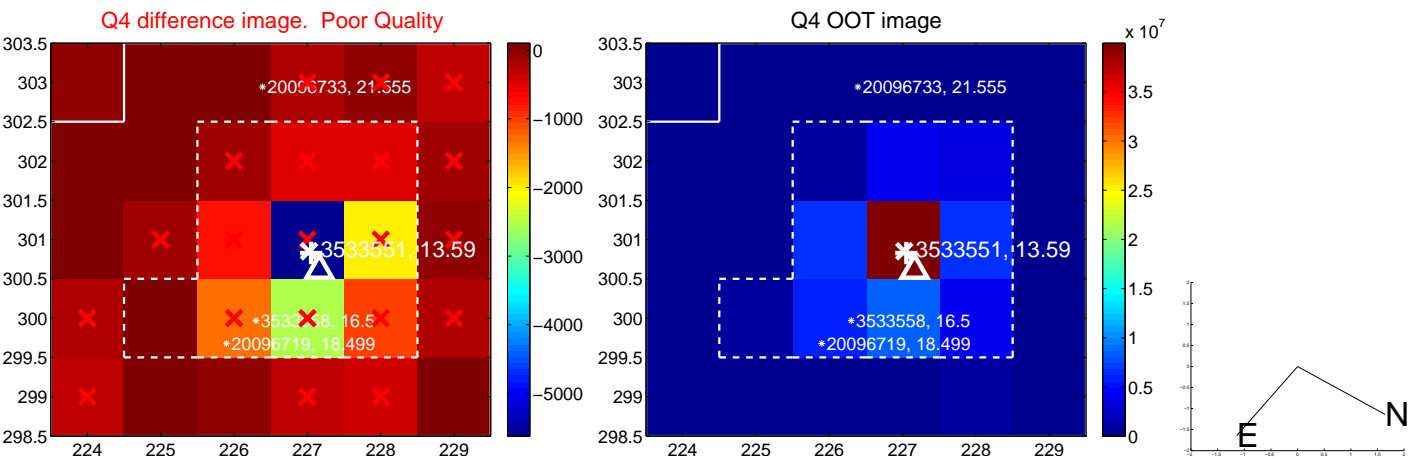
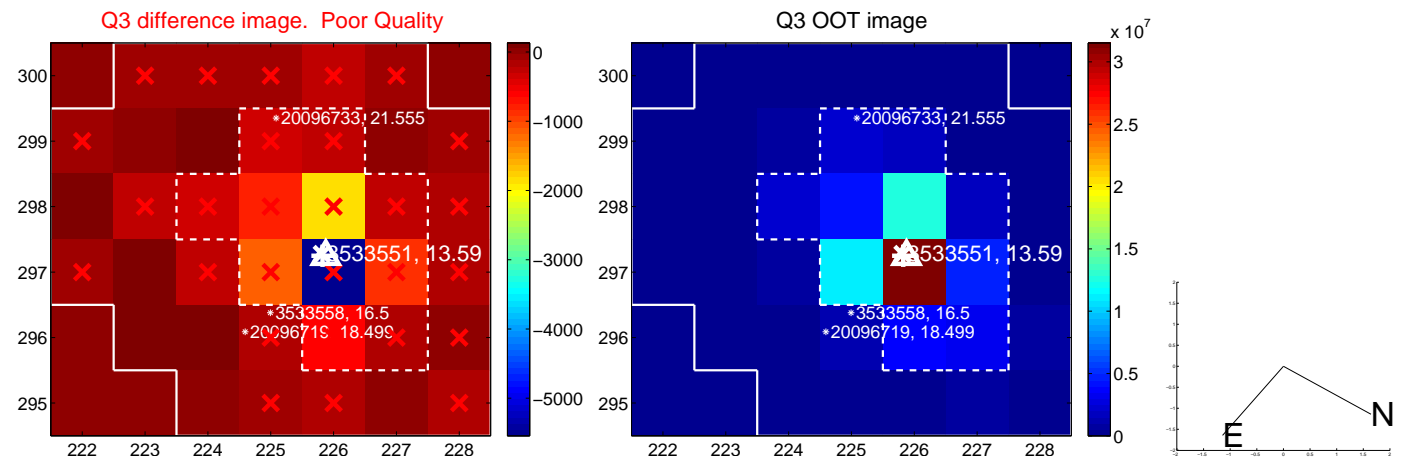
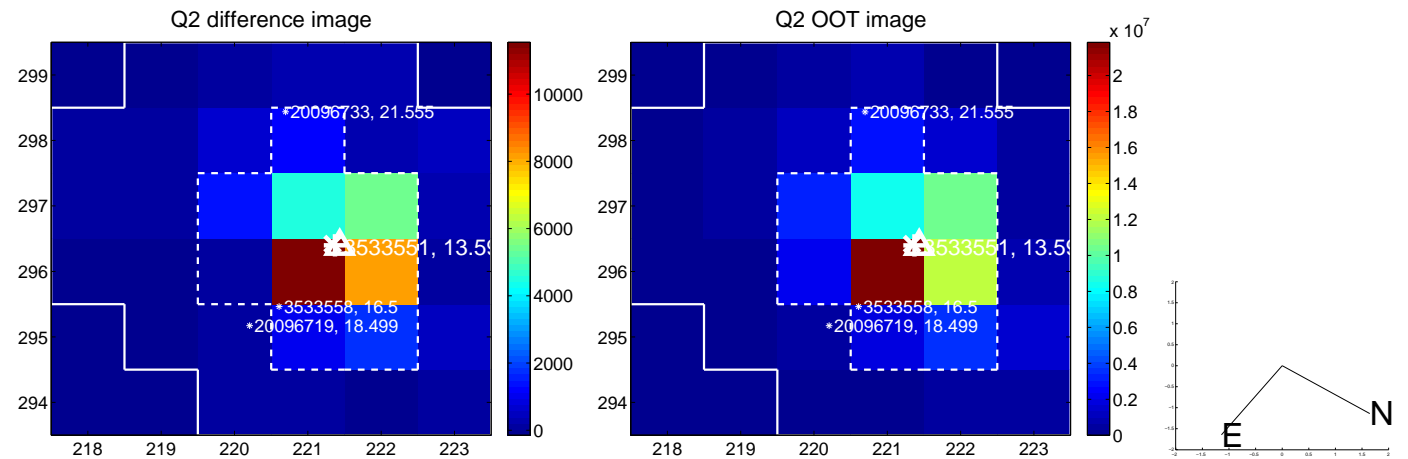
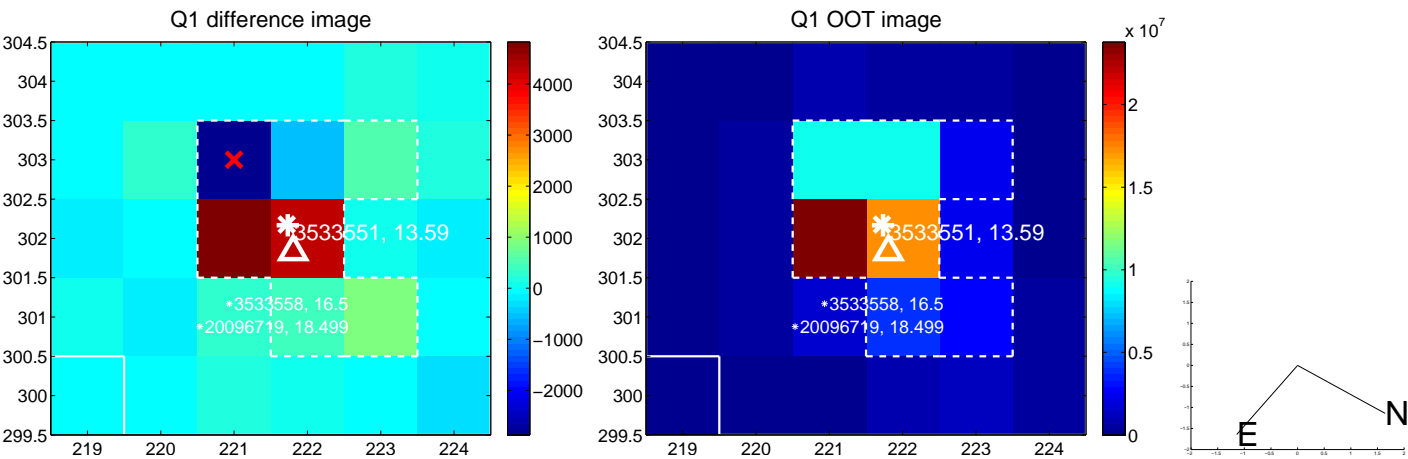
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.175 ± 0.263	0.66	-0.028 ± 0.304	0.173 ± 0.242
PRF-fit source offset from KIC position	0.293 ± 0.253	1.16	-0.018 ± 0.293	0.293 ± 0.245
photometric centroid source offset	0.80 ± 0.44	1.81	-0.79 ± 0.44	-0.16 ± 0.54

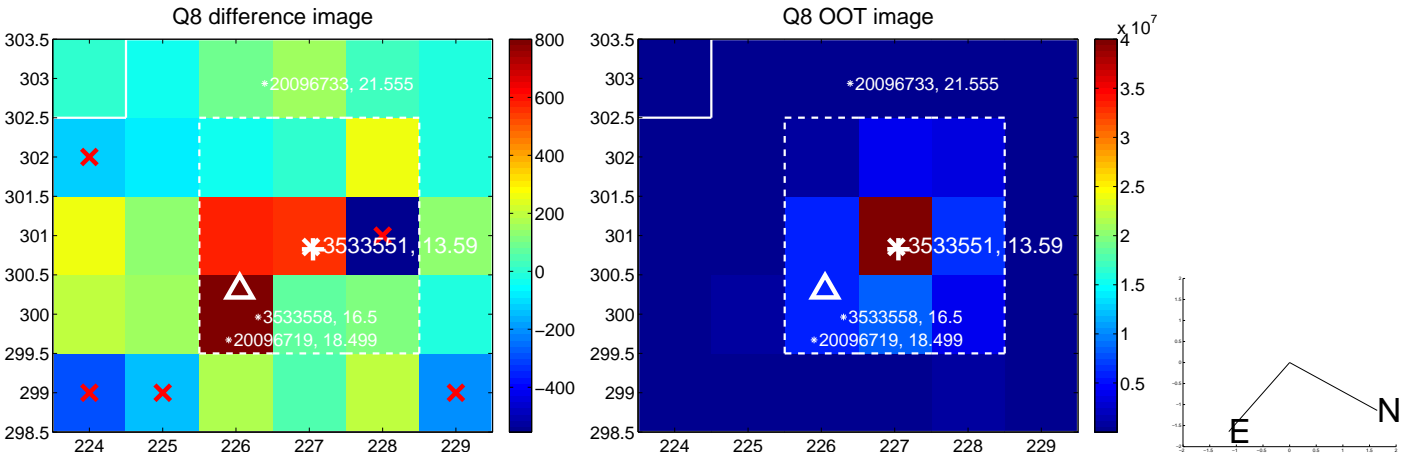
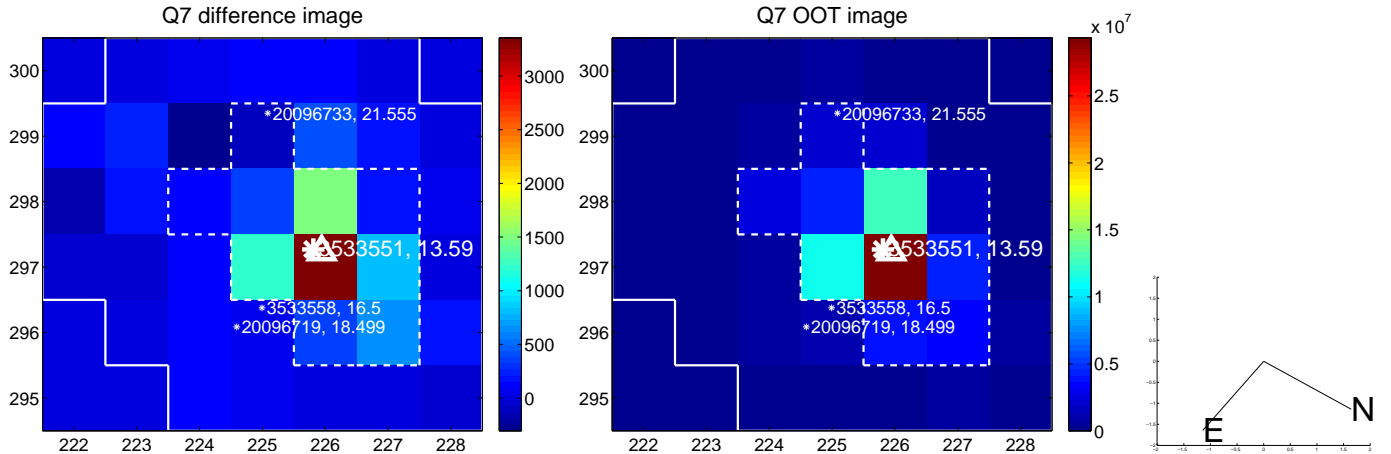
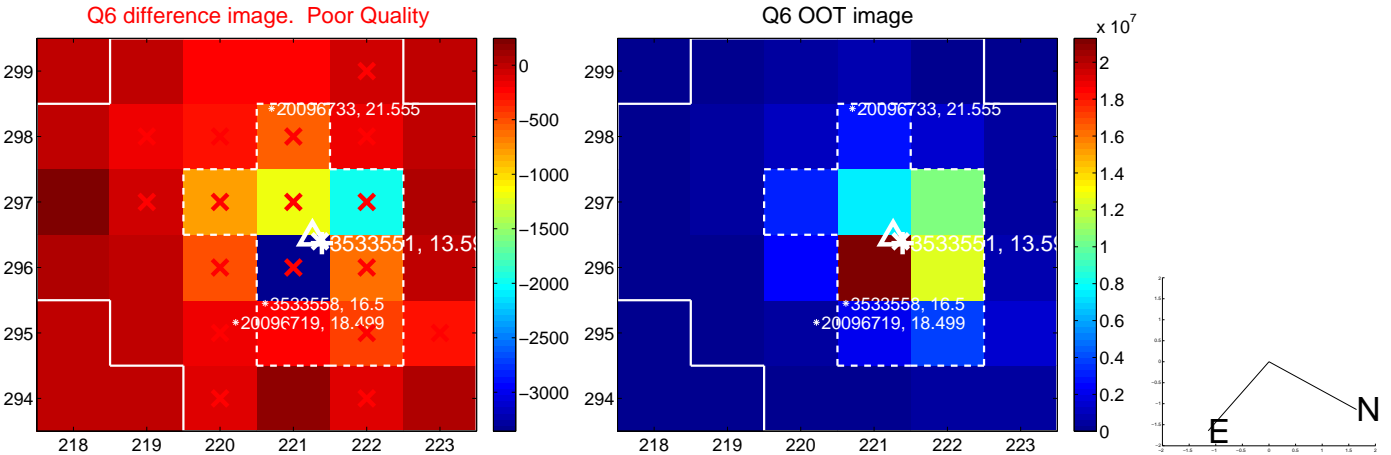
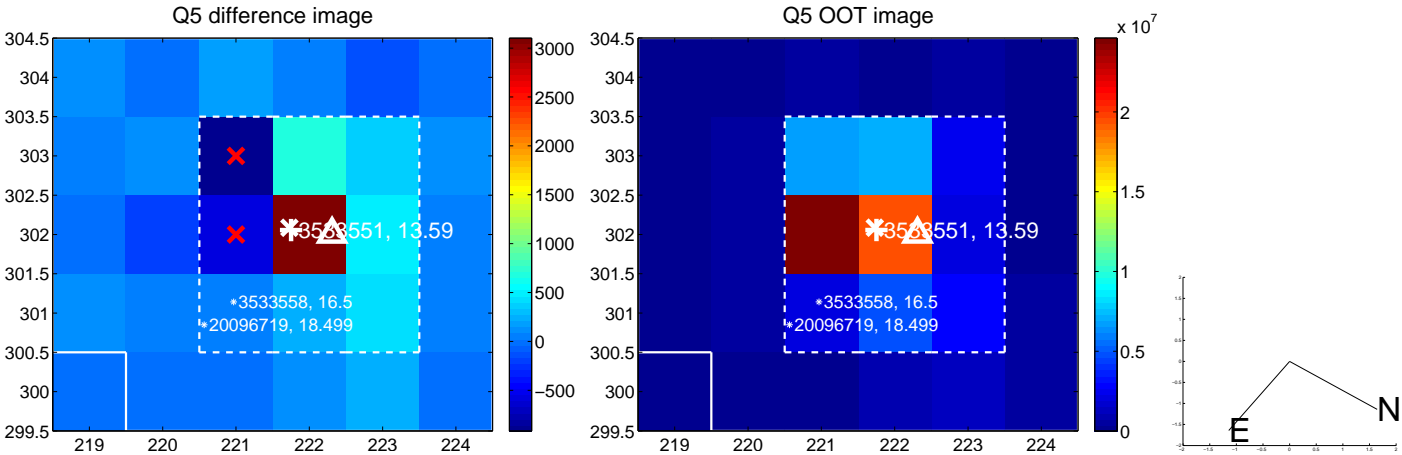


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

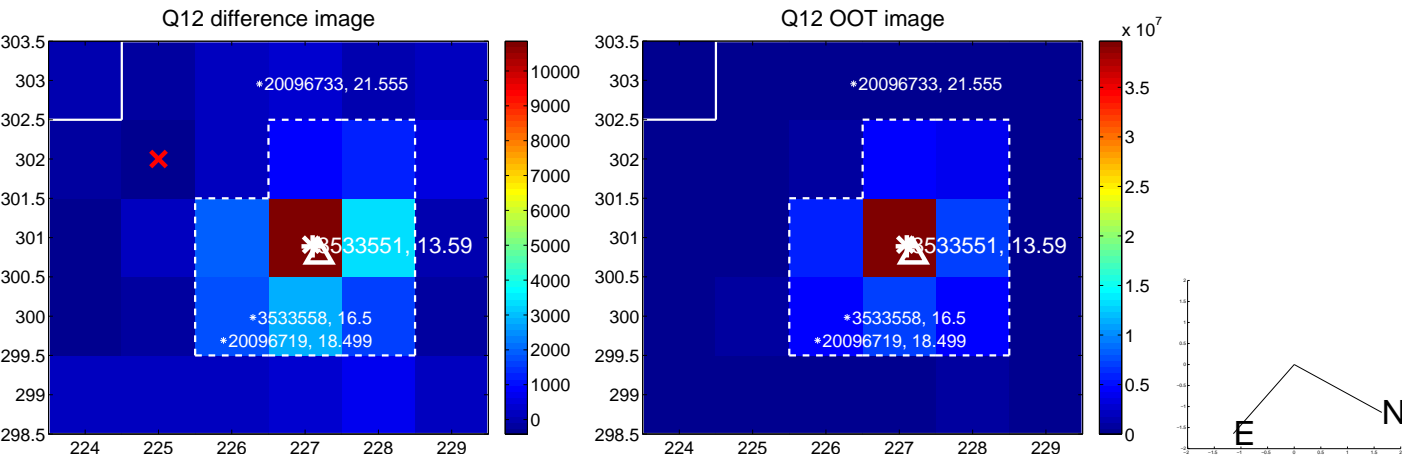
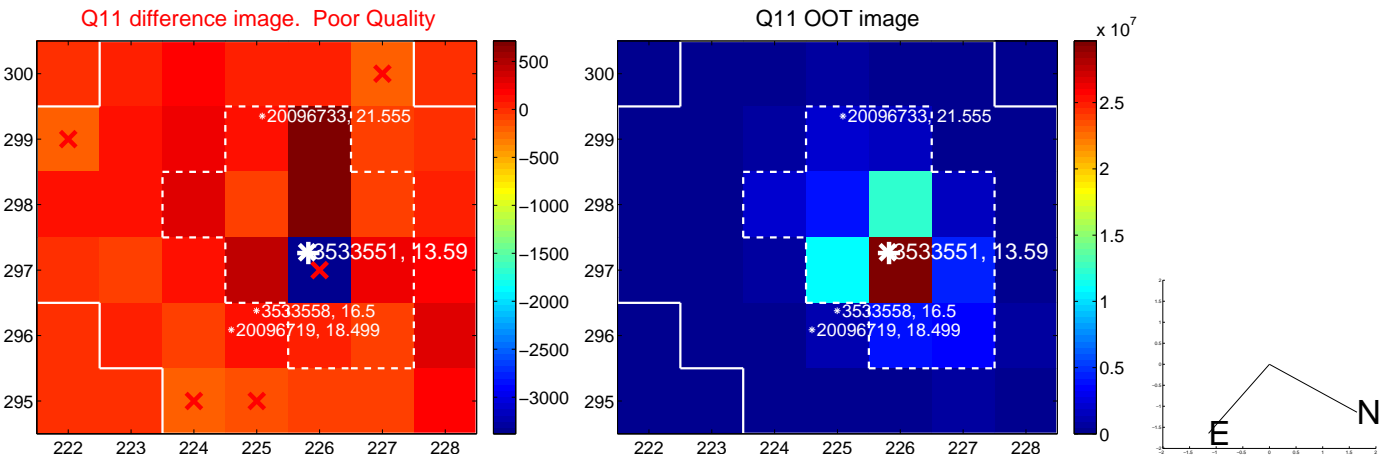
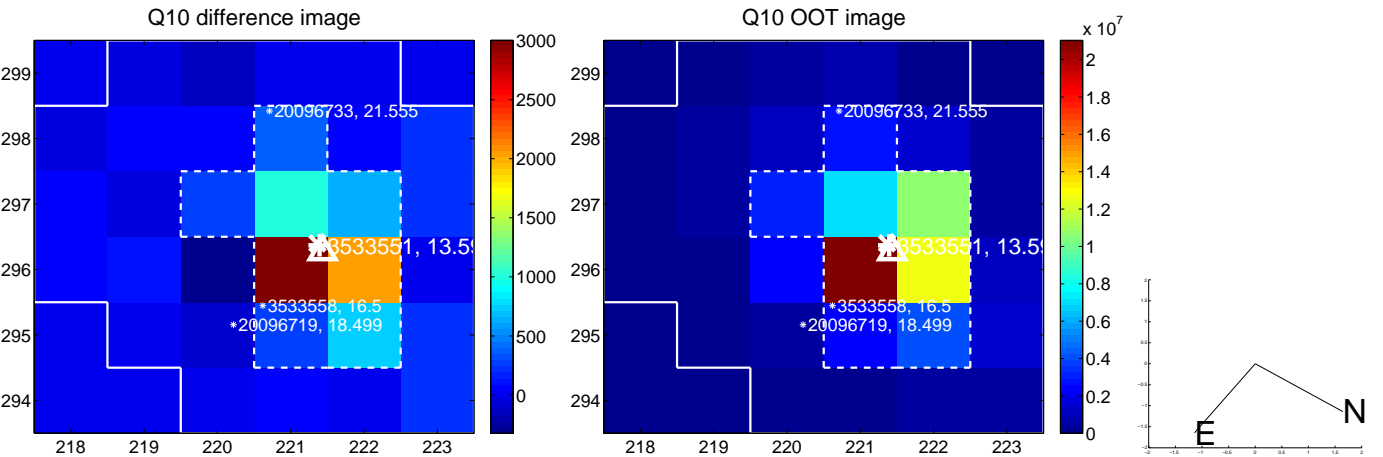
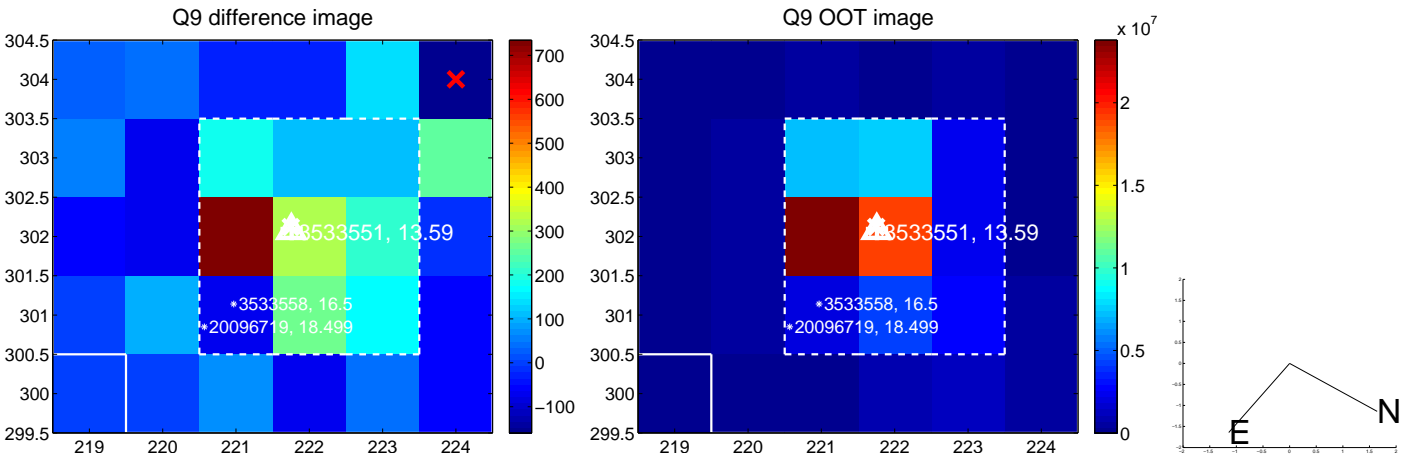
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



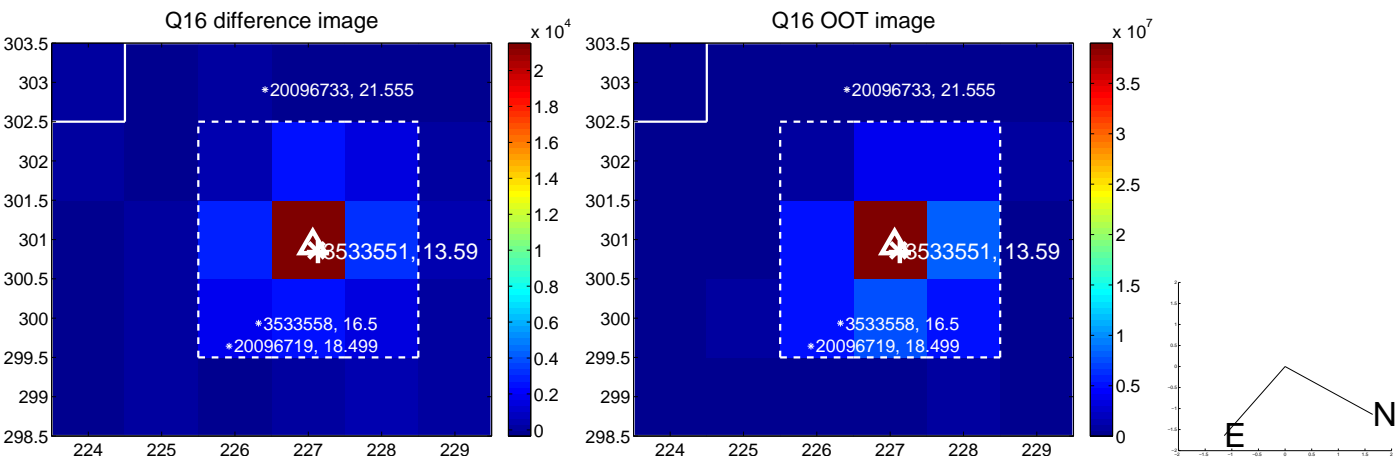
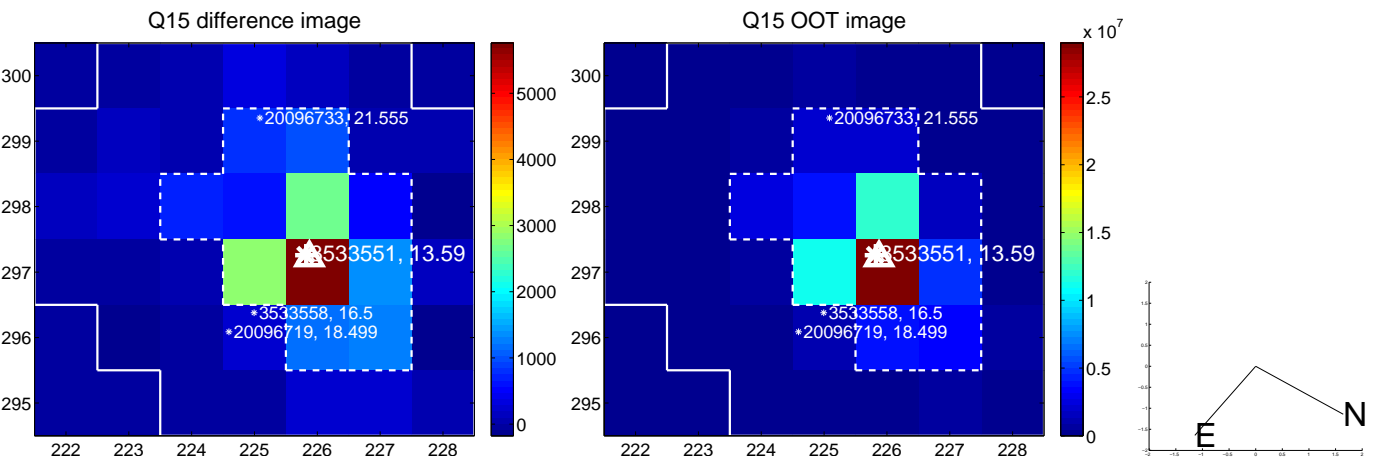
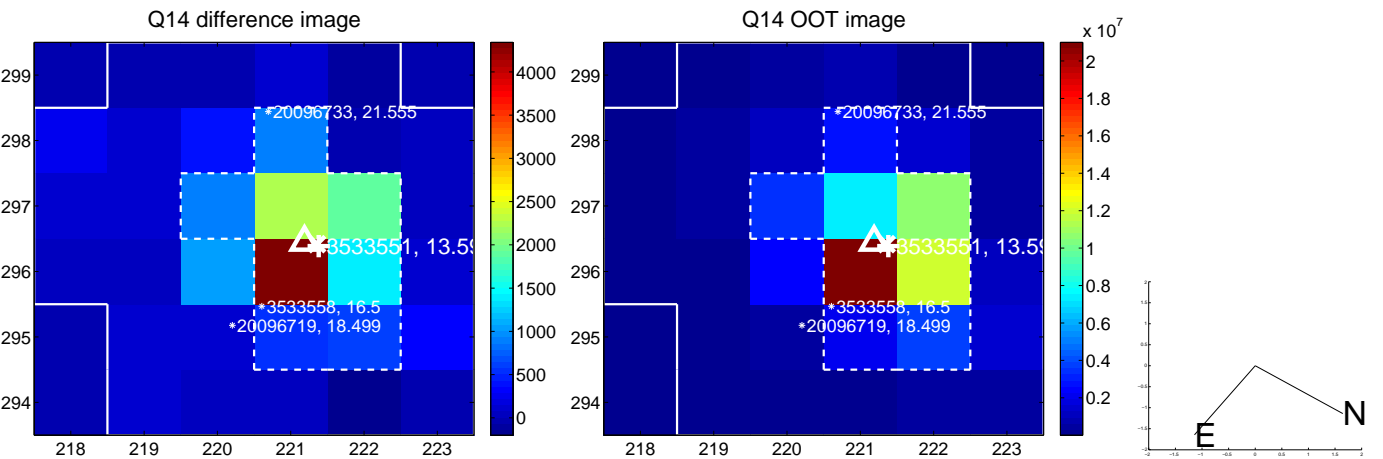
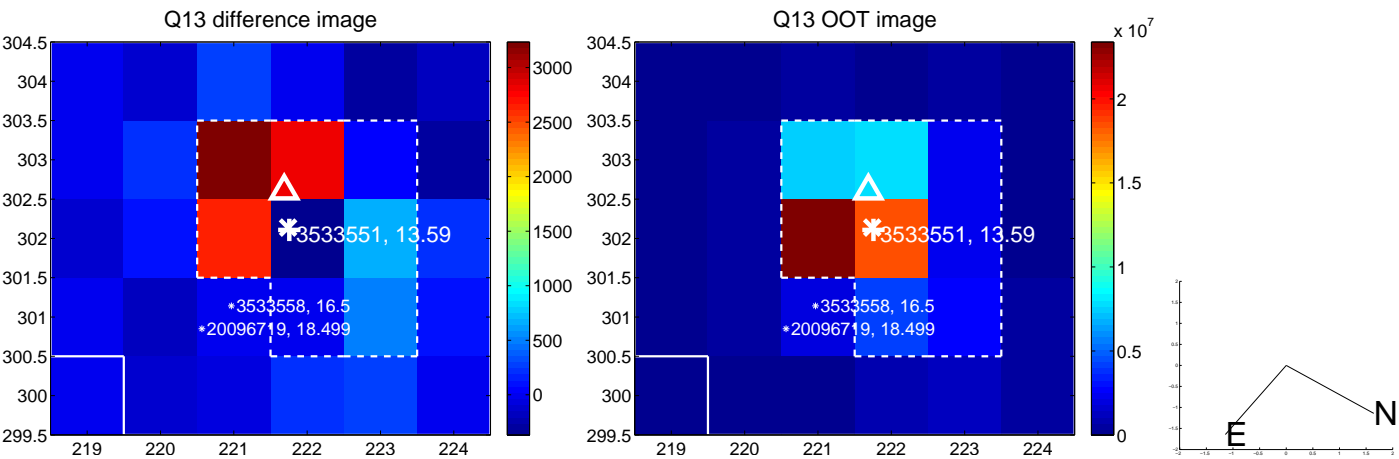
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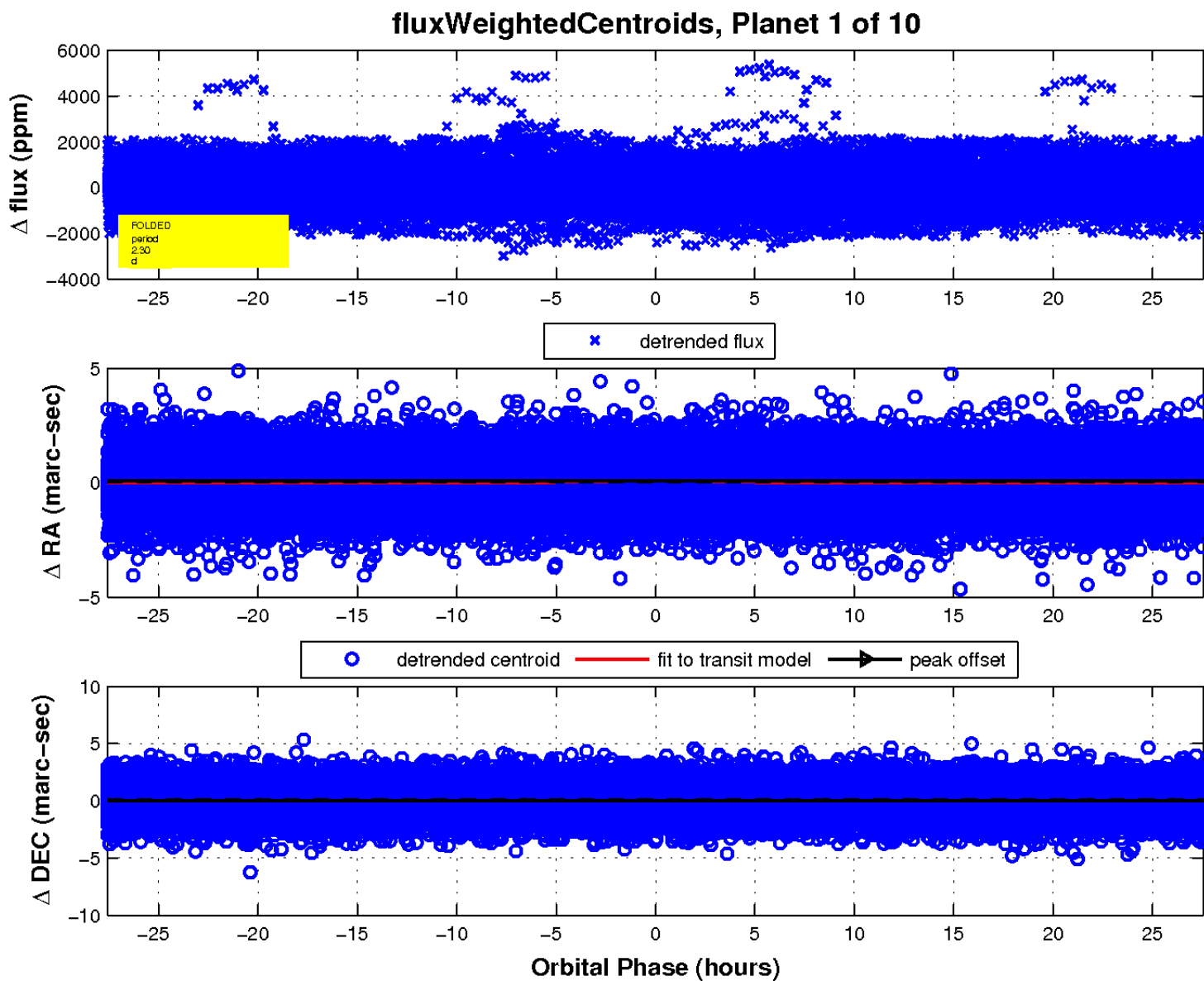
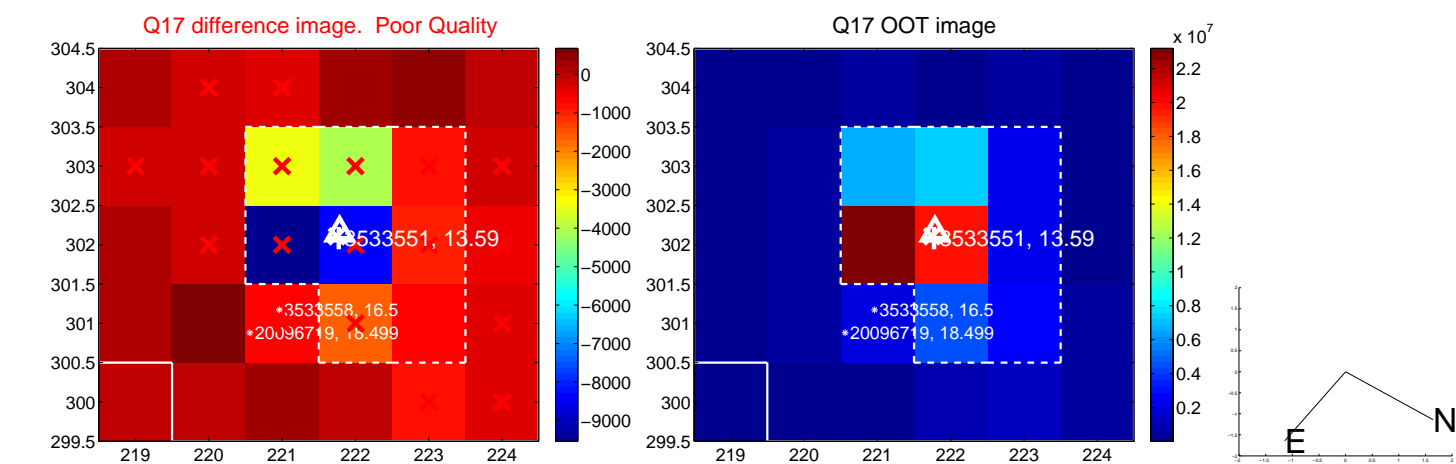
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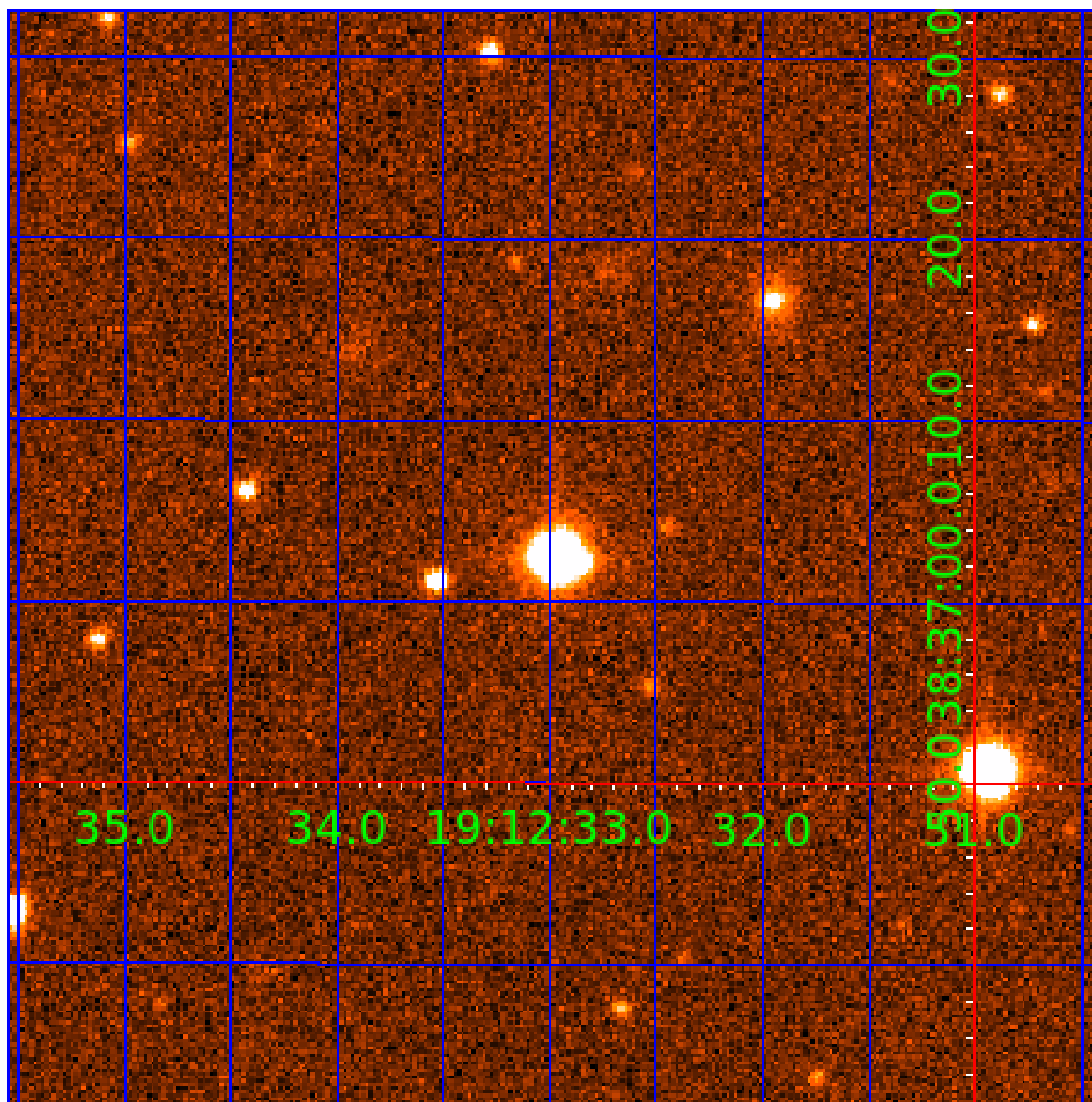


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UKIRT Image

Declination



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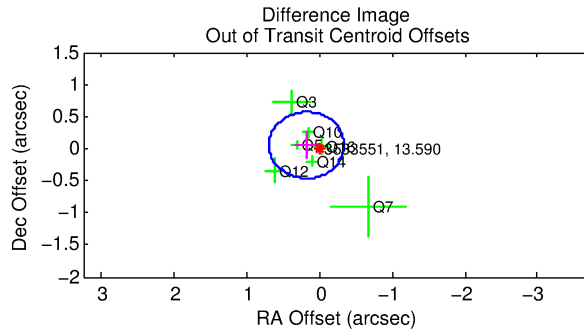
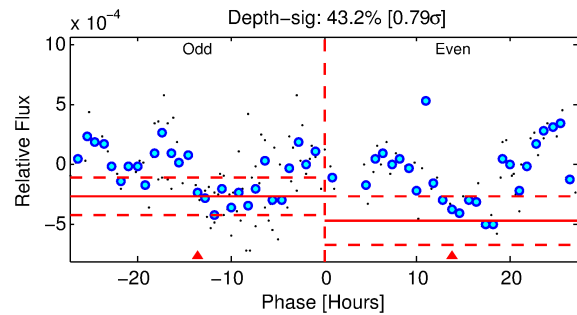
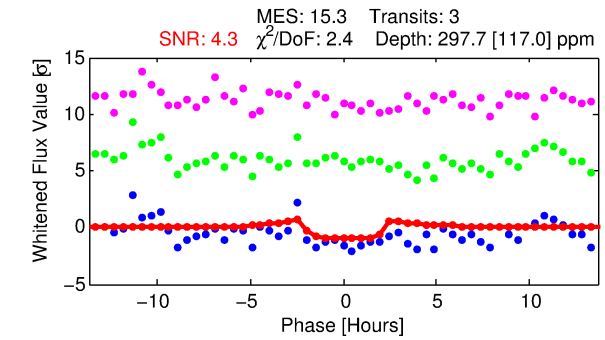
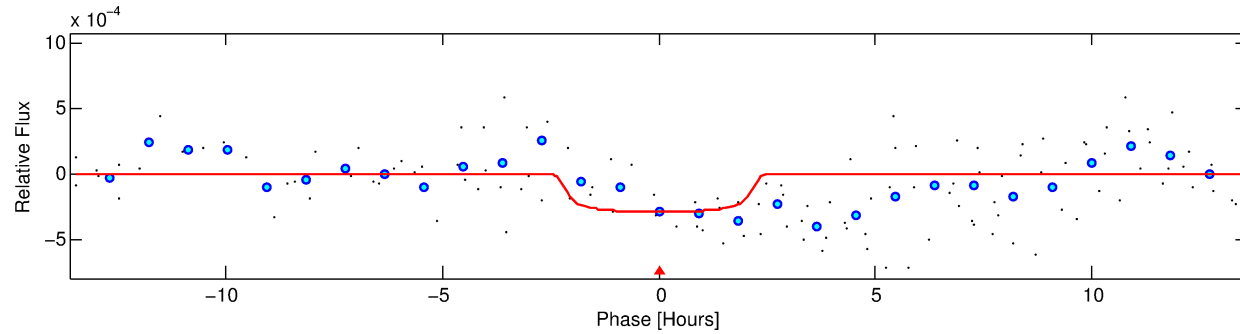
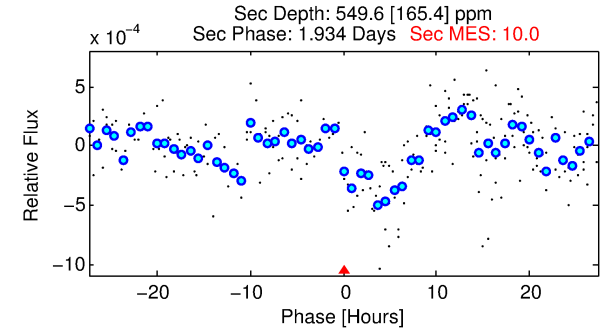
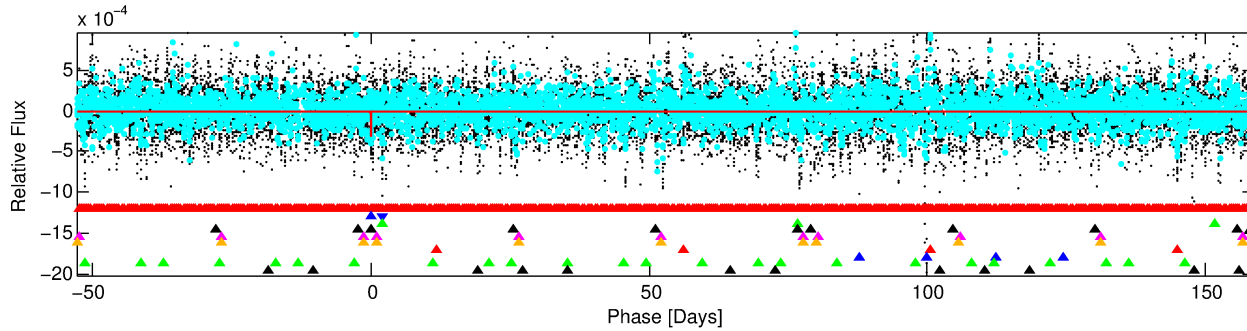
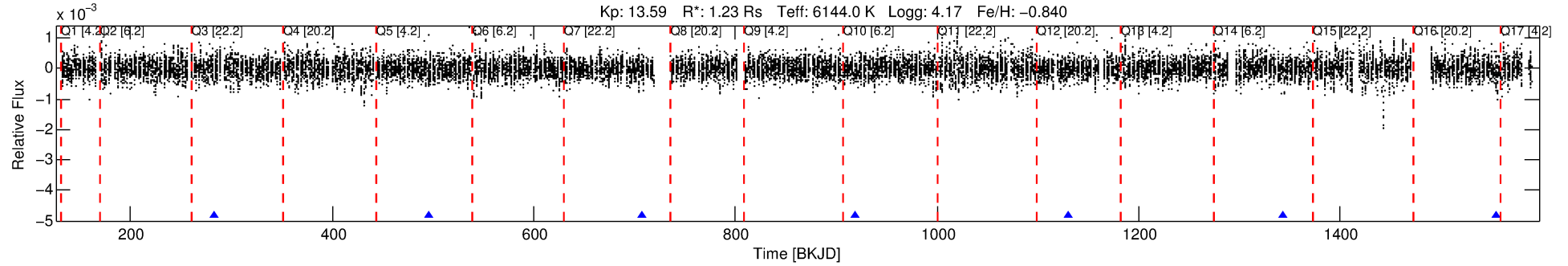
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003533551-02

No Significant Match Found

DV One-Page Summary

KIC: 3533551 Candidate: 2 of 10 Period: 211.778 d



DV Fit Results:

Period = 211.77782 [0.00522] d
Epoch = 283.7215 [0.0192] BKJD
Rp/R* = 0.0169 [0.0597]
a/R* = 264.14 [5042.83]
b = 0.70 [14.24]
Seff = 4.61 [2.75]
Teq = 374 [56] K
Rp = 2.27 [8.07] Re
a = 0.6482 [0.2289] AU
Ag = 24587.62 [174463.33] [0.14 σ]
Teffp = 7235 [12792] K [0.54 σ]

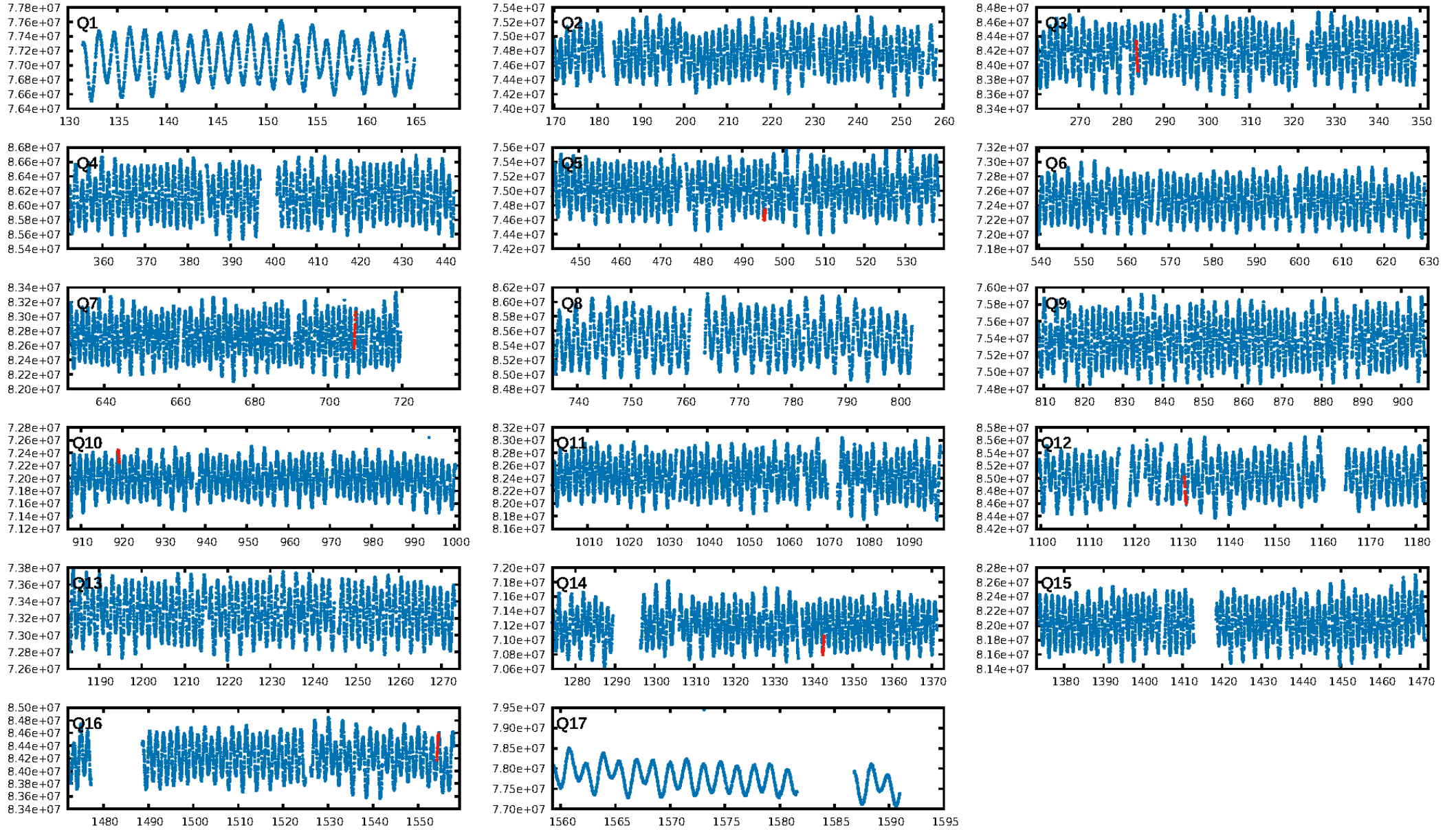
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [390.59 σ]
LongPeriod-sig: 100.0% [471.21 σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 94.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.5656
Centroid-sig: 41.2%
Centroid-so: 1.176 arcsec [0.86 σ]
OotOffset-rm: 0.190 arcsec [1.10 σ]
OotOffset-st: 2/2/2/1 [7]
KicOffset-rm: 0.303 arcsec [1.46 σ]
KicOffset-st: 2/2/2/1 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 0.43 [3/7]

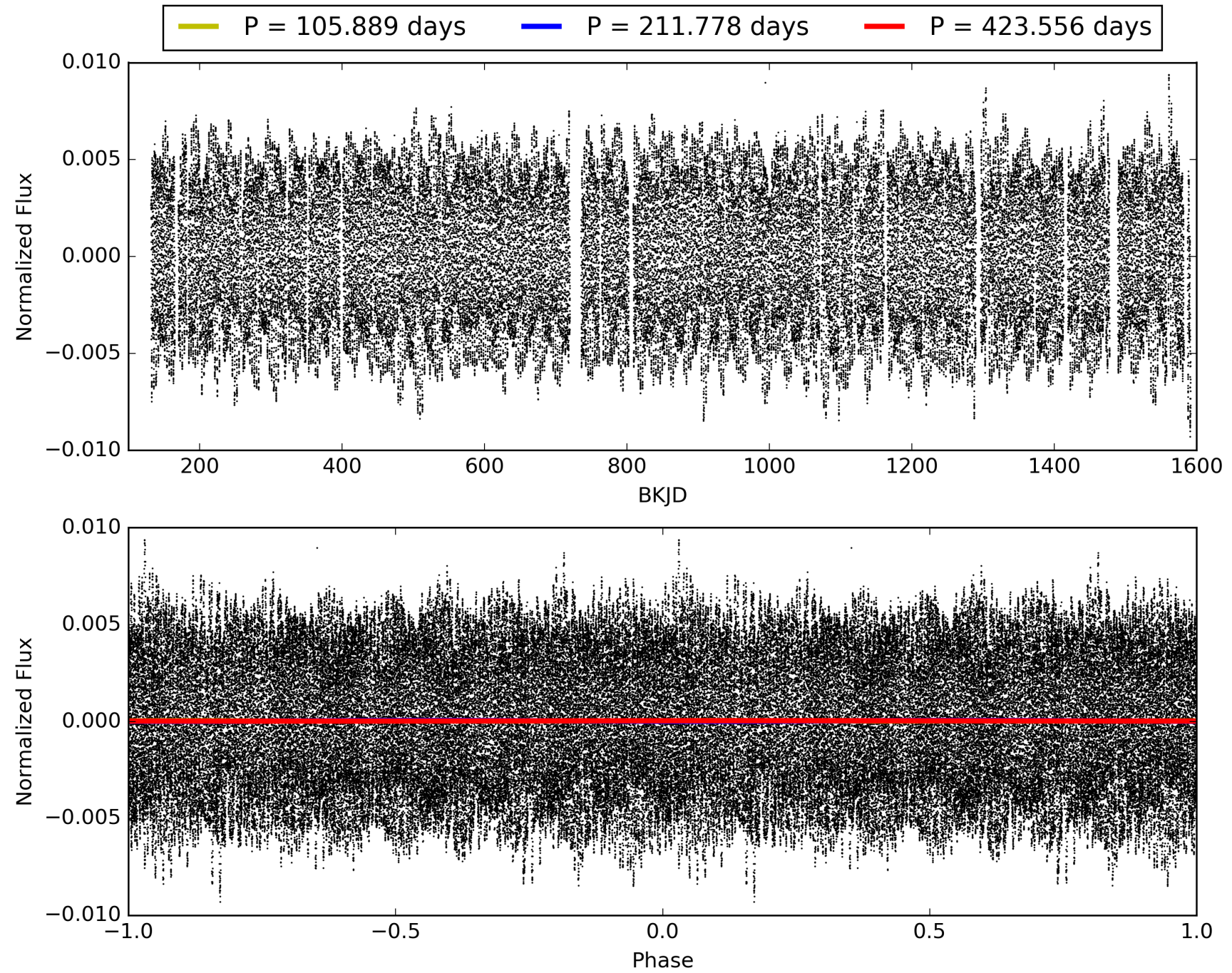
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:59:52 Z

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

TCE 003533551-02, PDC Light Curves

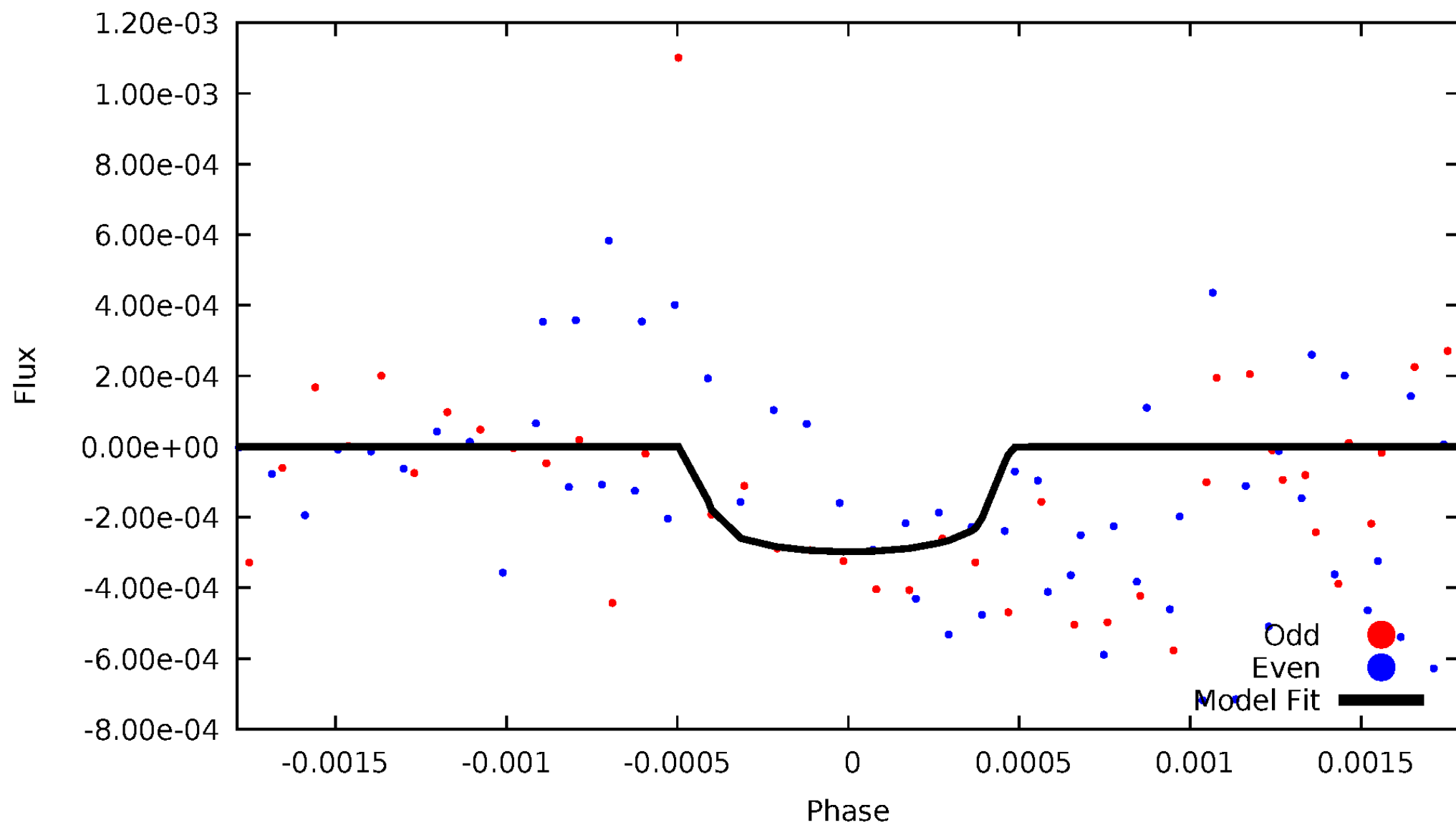


TCE 003533551-02



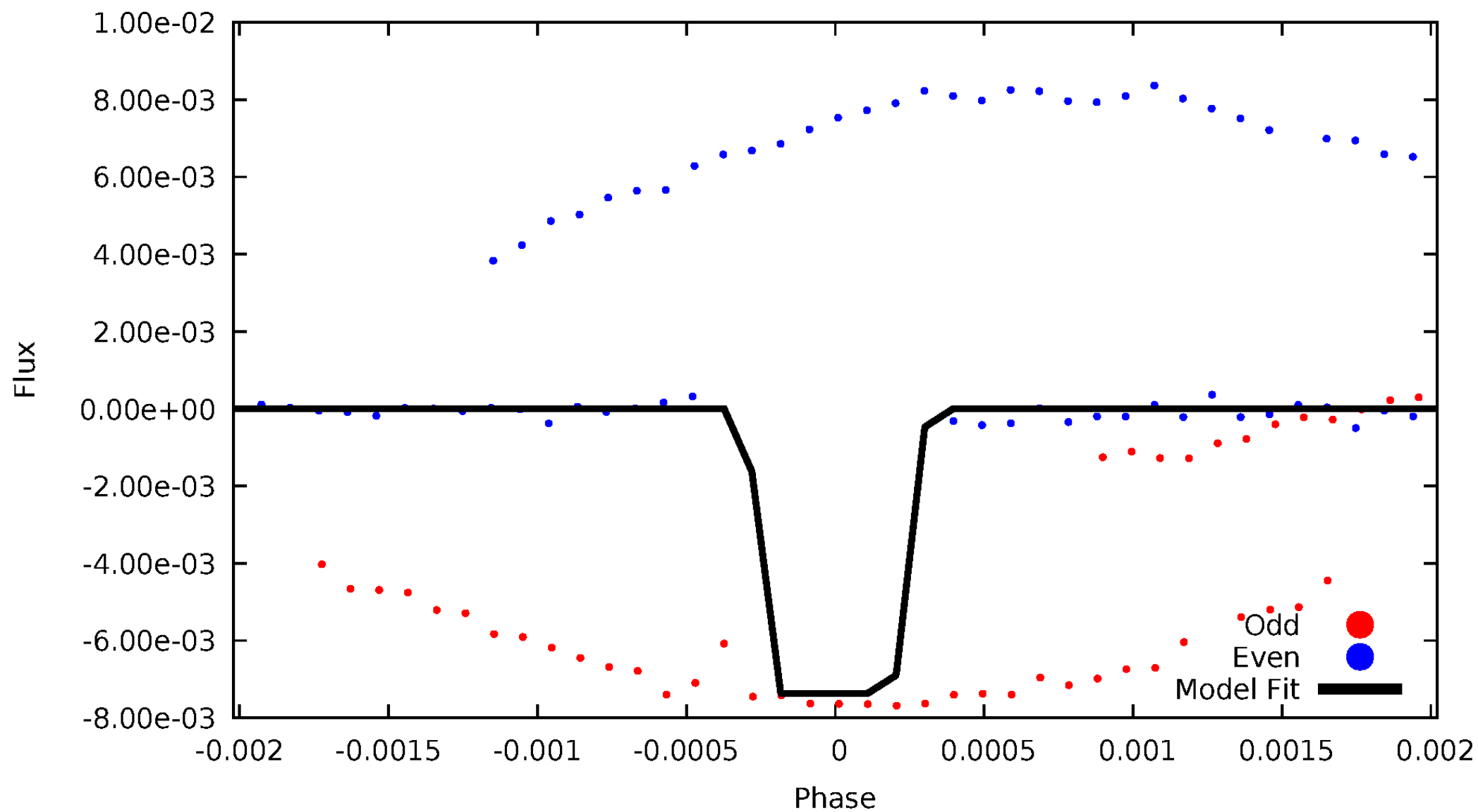
DV Odd/Even

TCE 003533551-02



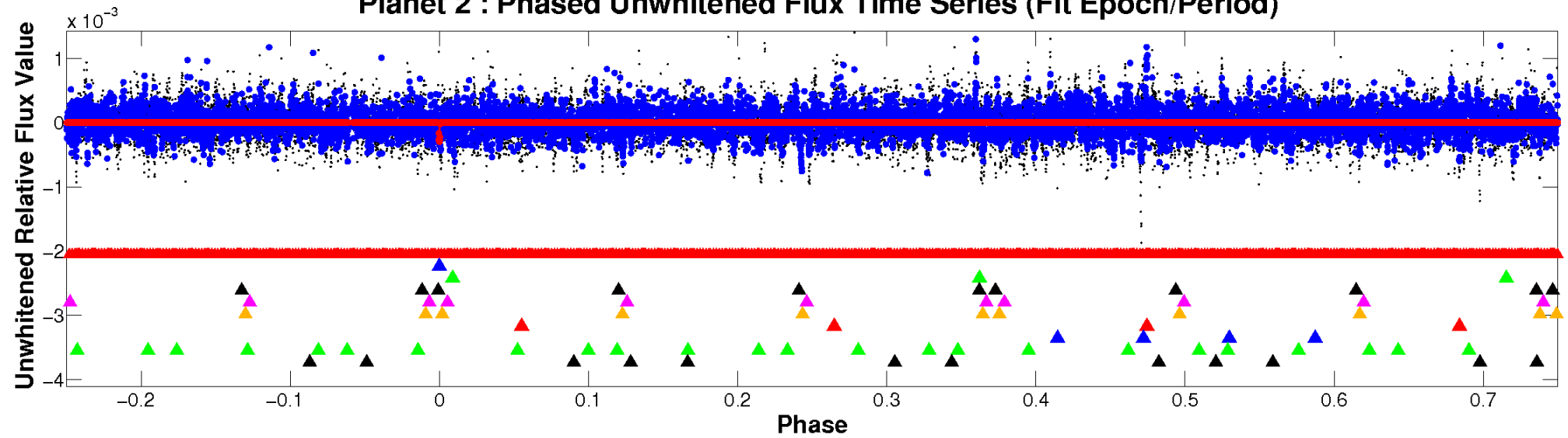
ALT Odd/Even

TCE 003533551-02

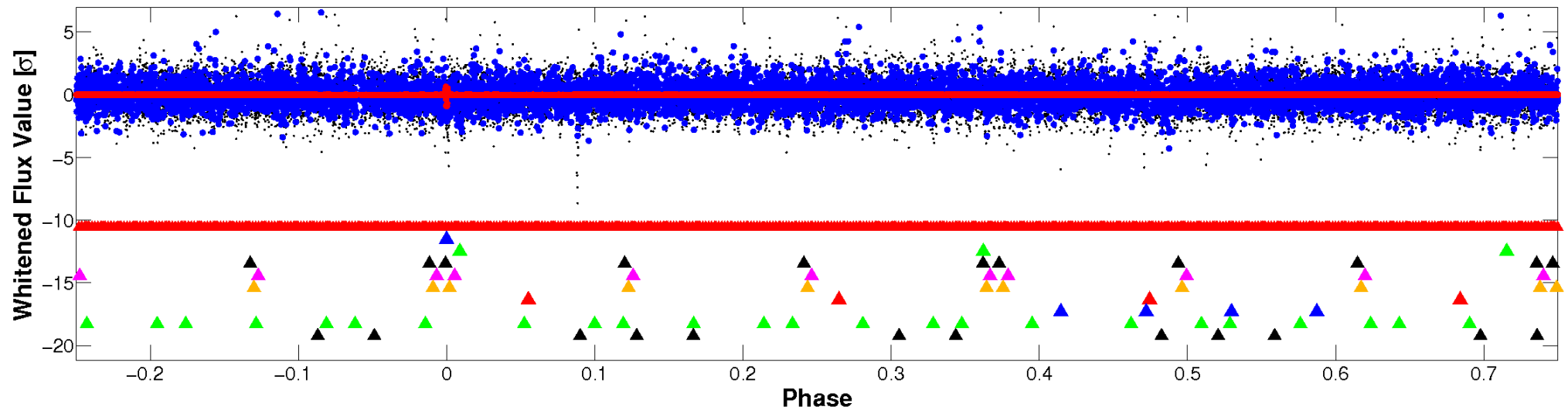


Non-Whitened Vs. Whitened Light Curve

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

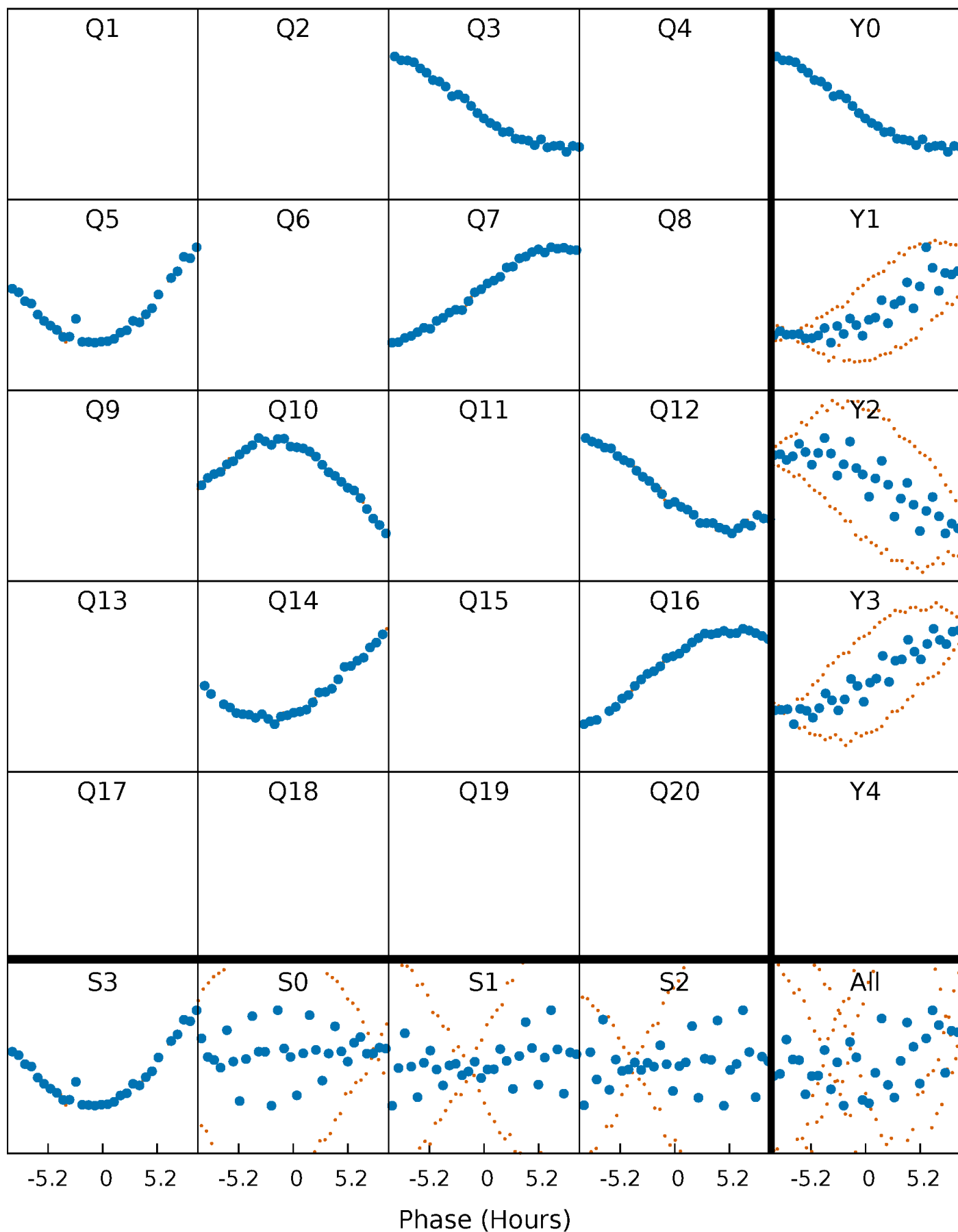


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



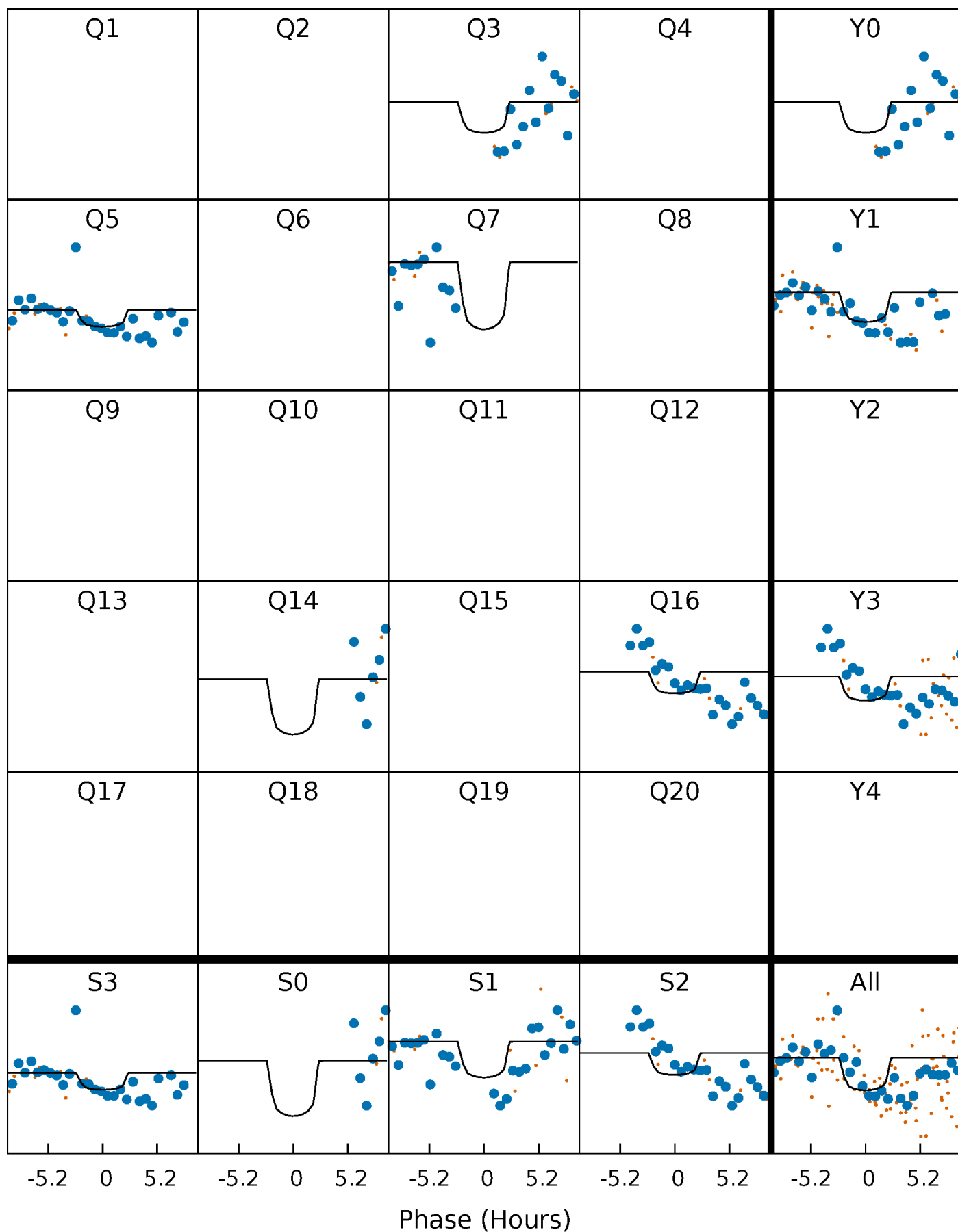
PDC Quarter-Phased Transit Curves

TCE 003533551-02 P=211.777821 Days $T_0=283.721491$ (BKJD)



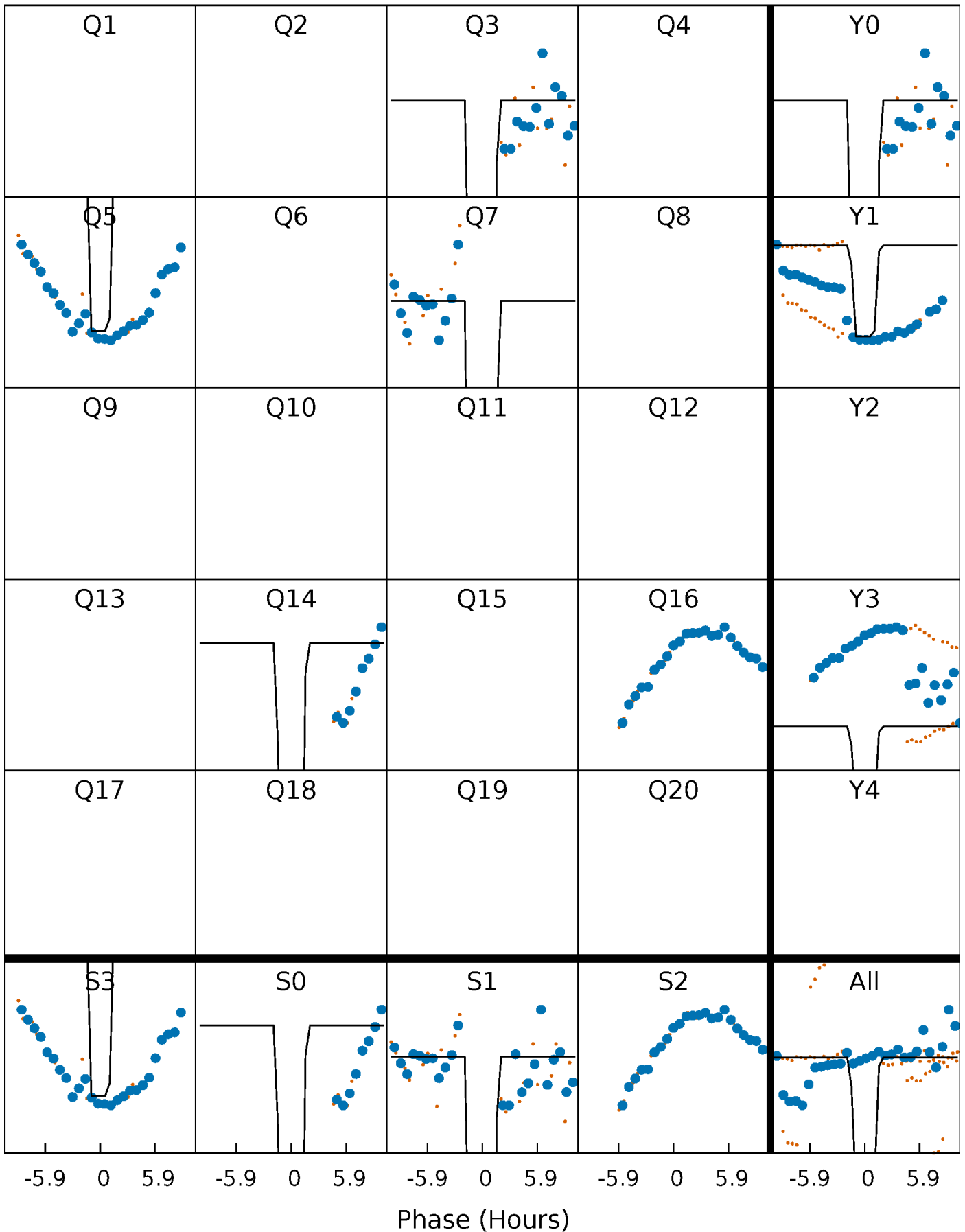
DV Quarter-Phased Transit Curves

TCE 003533551-02 P=211.777821 Days $T_0=283.721491$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

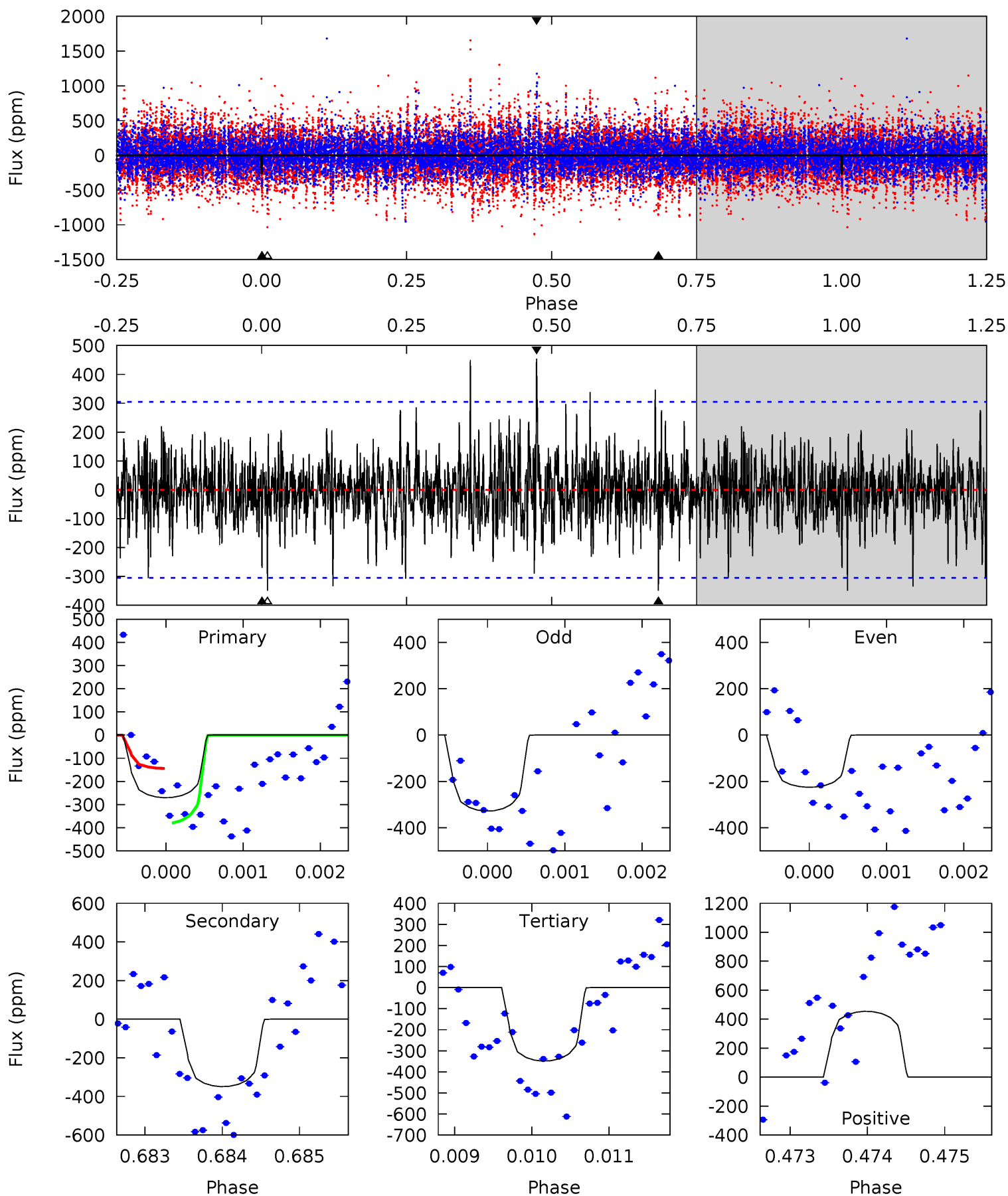
TCE 003533551-02 P=211.793849 Days $T_0=283.679279$ (BKJD)



DV Model-Shift Uniqueness Test

003533551-02, P = 211.777821 Days, E = 71.943670 Days

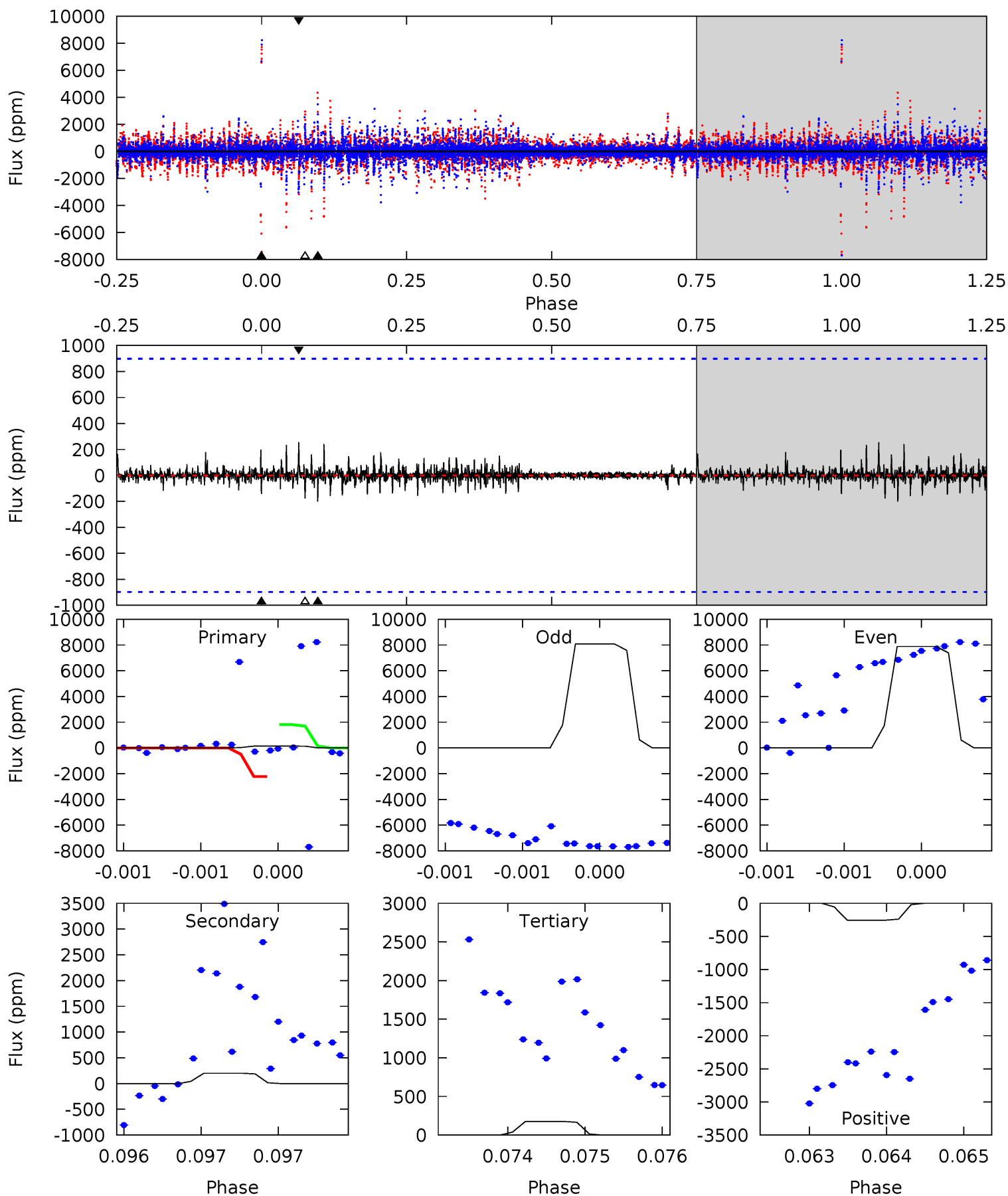
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.85	6.26	6.26	8.15	5.47	3.32	1.60	-1.41	-3.30	0.00	-1.88	0.91	1.03	0.57	2.09



Alt Model-Shift Uniqueness Test

003533551-02, P = 211.793849 Days, E = 71.885430 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.89	1.24	1.09	1.58	5.55	3.44	0.19	-0.21	-0.69	0.15	-0.34	0.51	1.00	0.56	1.16



Stellar Parameters For KIC 003533551

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6144^{+183}_{-183}	$4.165^{+0.351}_{-0.189}$	$-0.840^{+0.300}_{-0.300}$	$1.232^{+0.345}_{-0.422}$	$0.809^{+0.103}_{-0.051}$	$0.609^{+1.309}_{-0.304}$
	+3%/-3%	+8%/-5%	+36%/-36%	+28%/-34%	+13%/-6%	+215%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003533551-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-349 ± 56	$5.93^{+6.64}_{-4.26}$	518^{+42}_{-51}	4178^{+3151}_{-876}	2283^{+24201}_{-1767}
Alt.	-200 ± 162	$12.25^{+7.27}_{-6.84}$	519^{+43}_{-51}	2992^{+881}_{-630}	269^{+1234}_{-228}

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

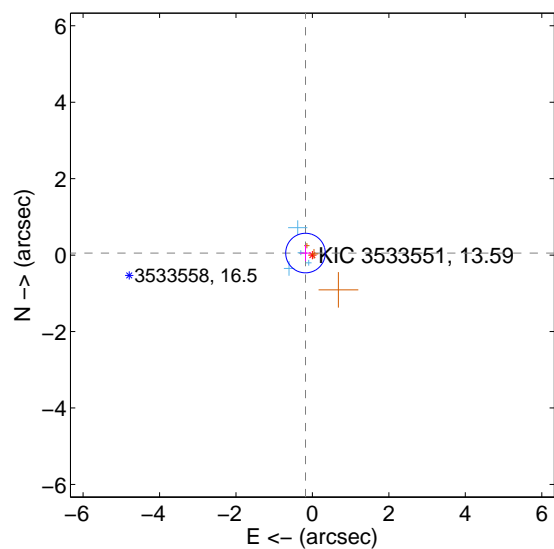
Supplemental centroid analysis for 003533551-02. Kepler magnitude: 13.59. Transit SNR 4.33

There are 4 quarters with good PRF difference image offsets

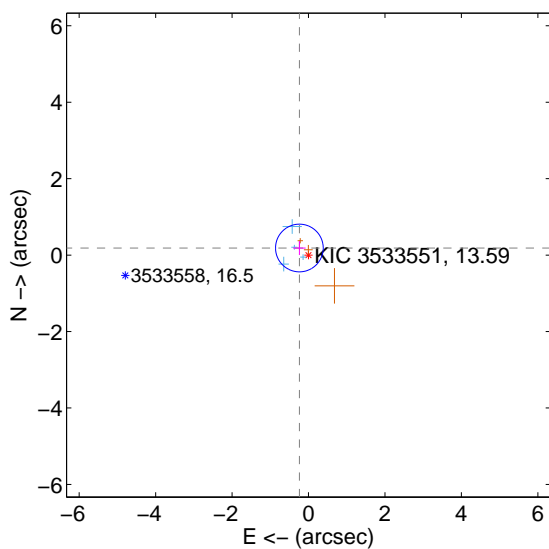
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.190 ± 0.172	1.10	0.182 ± 0.142	0.053 ± 0.212
PRF-fit source offset from KIC position	0.303 ± 0.208	1.46	0.239 ± 0.163	0.186 ± 0.185
photometric centroid source offset	1.18 ± 1.37	0.86	0.71 ± 1.22	0.94 ± 1.45

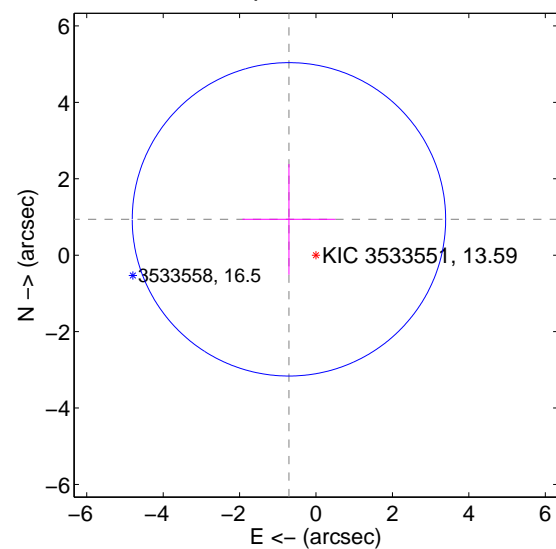
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

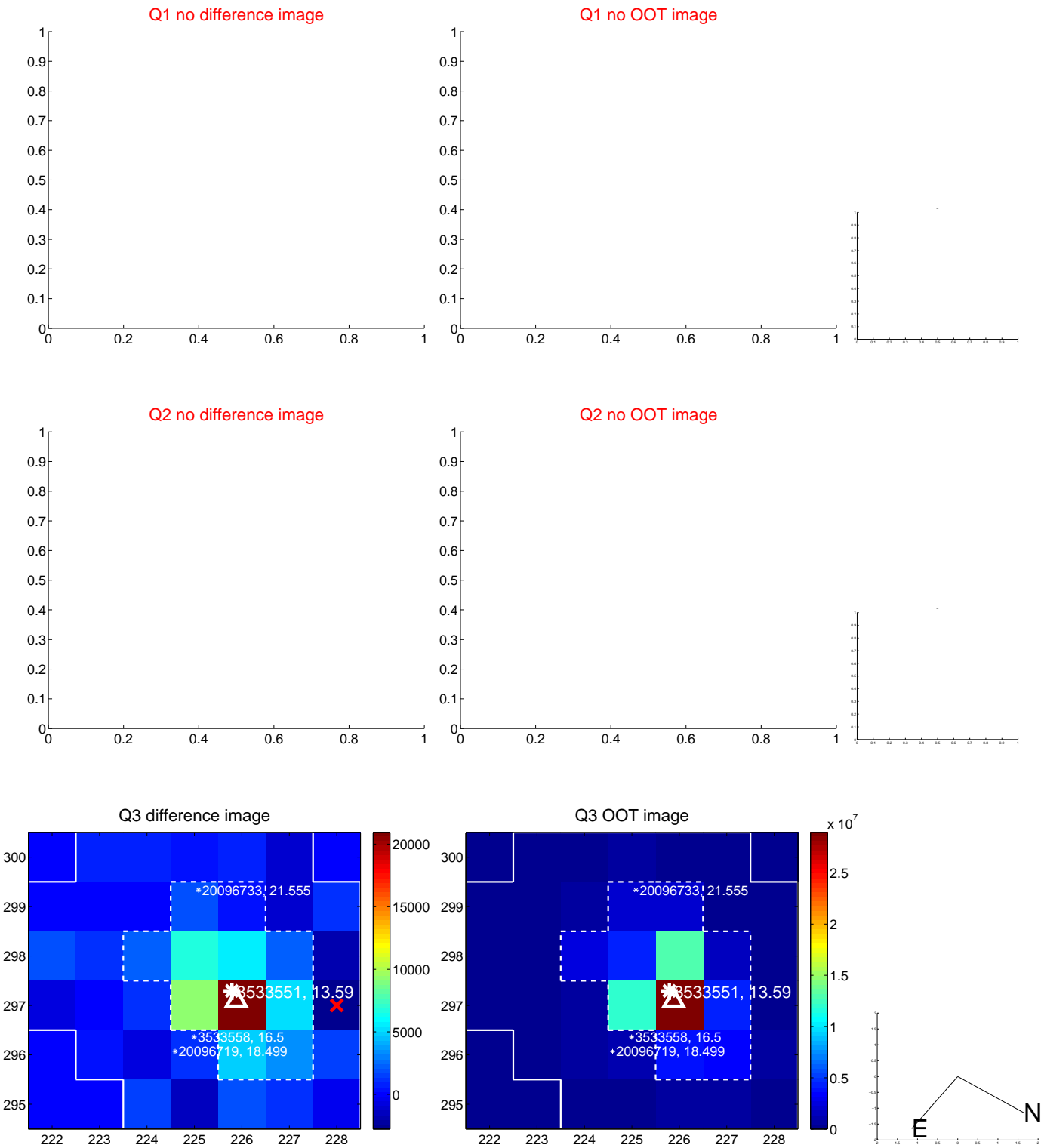


offset from photometric centroids

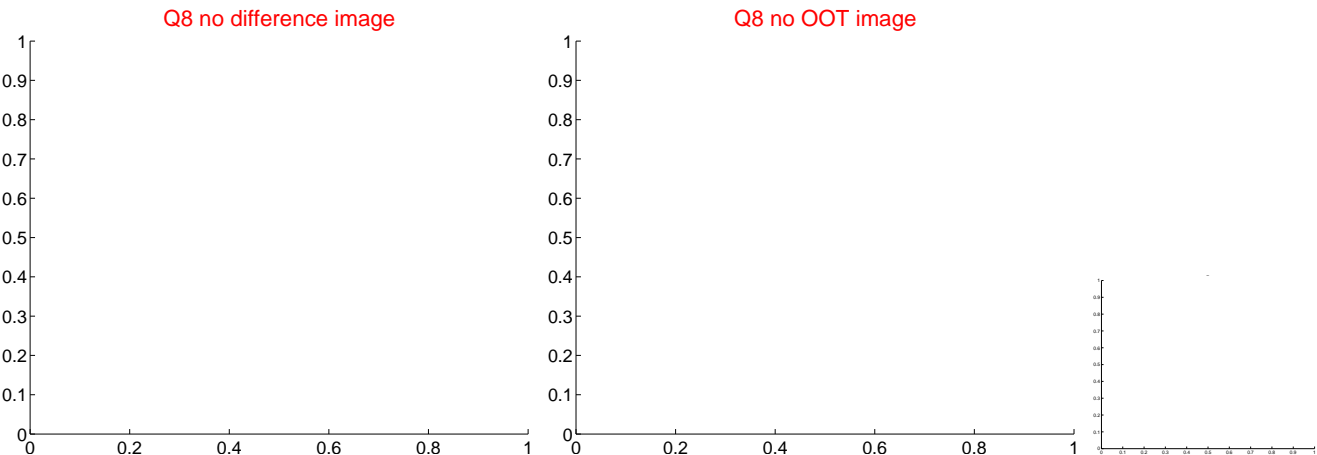
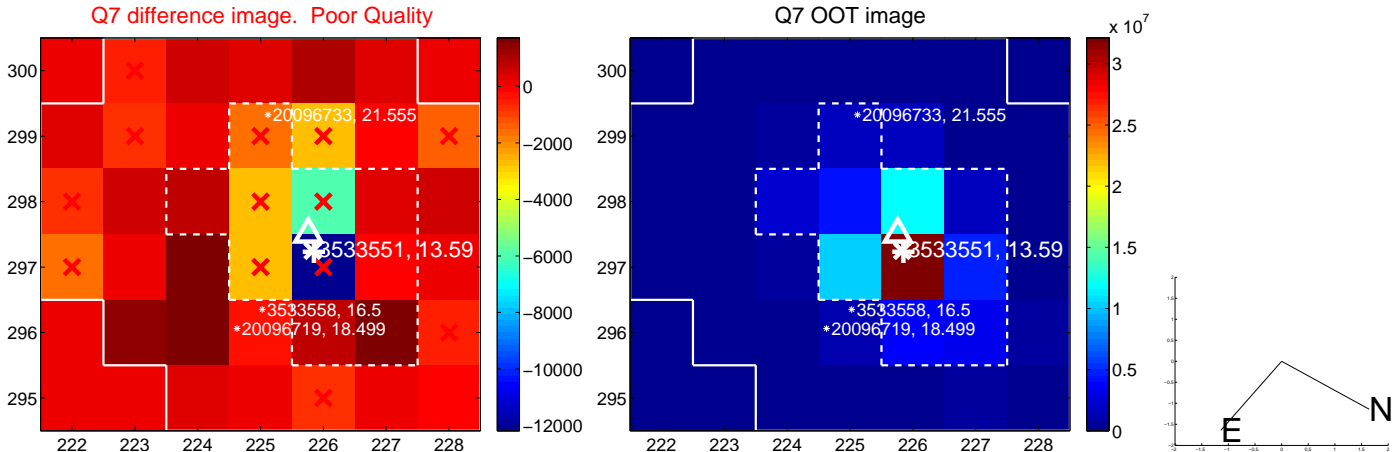
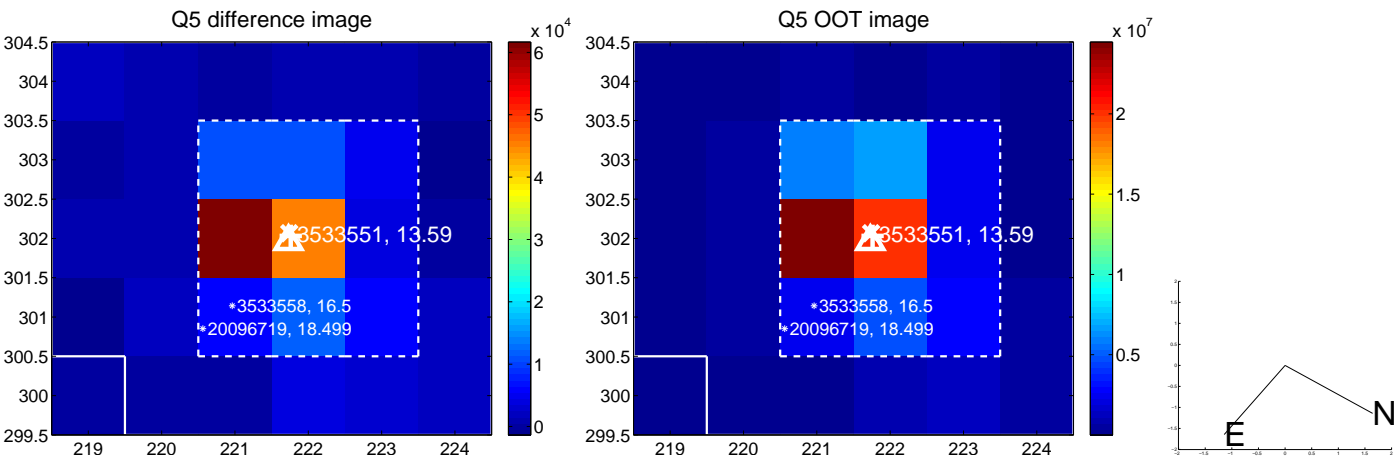


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

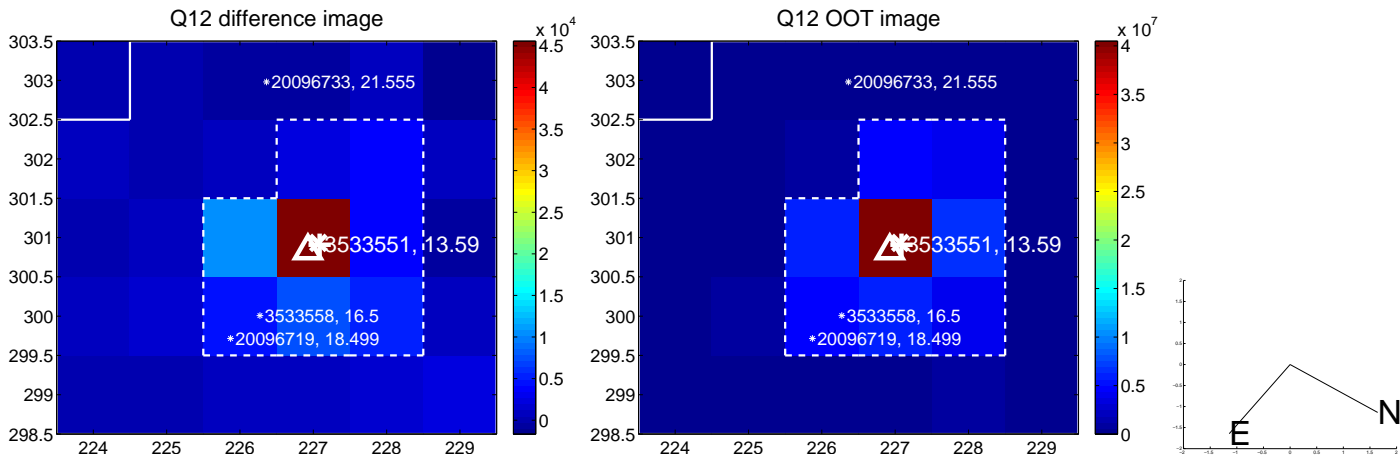
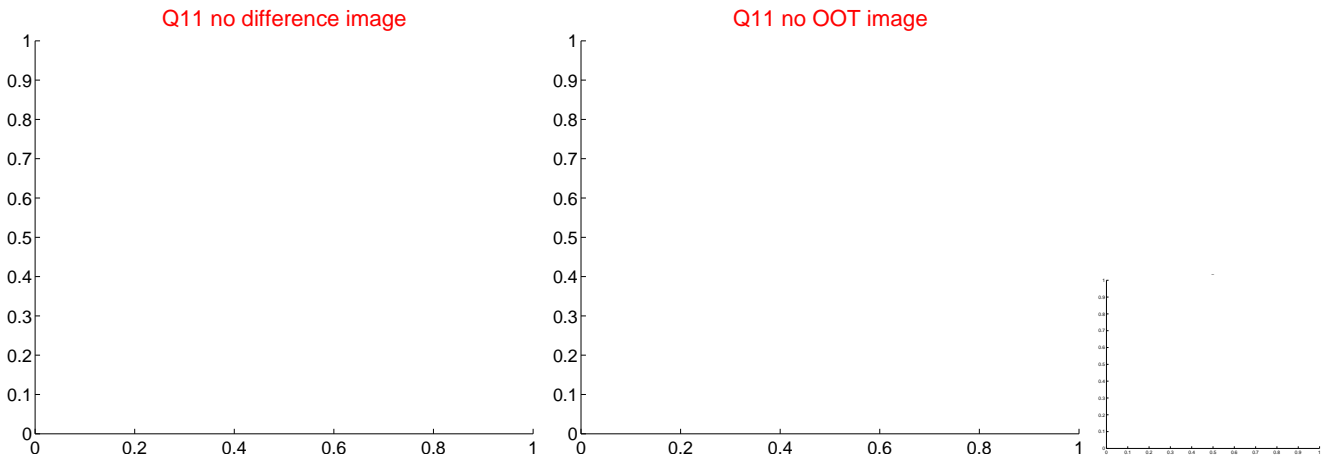
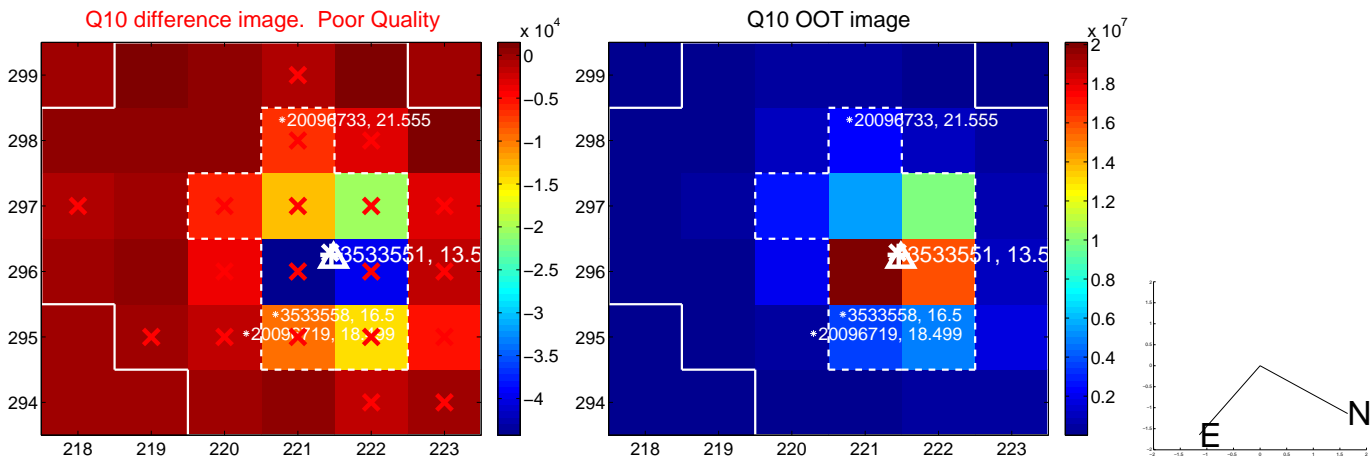
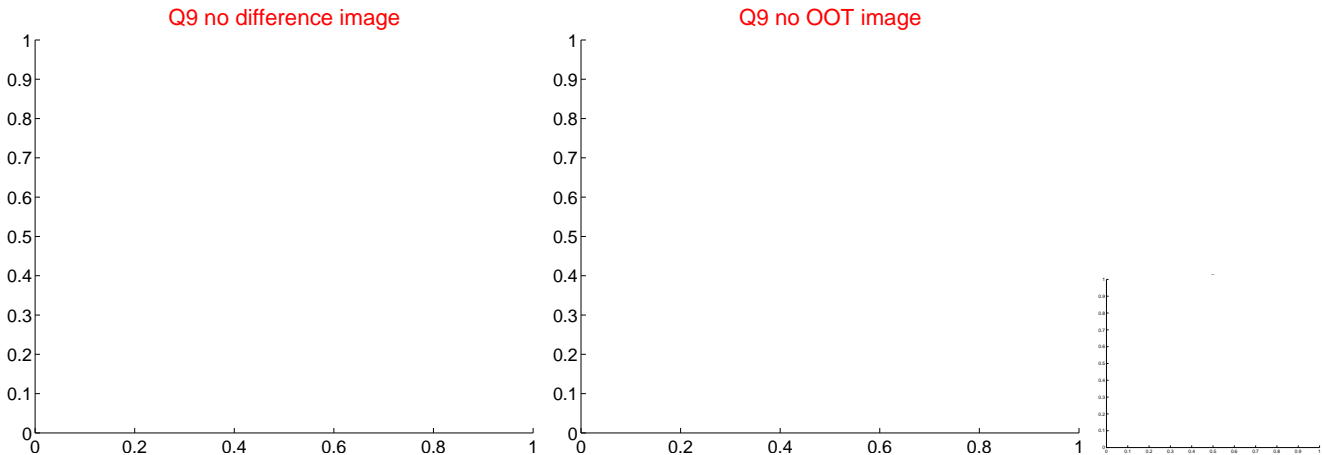
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



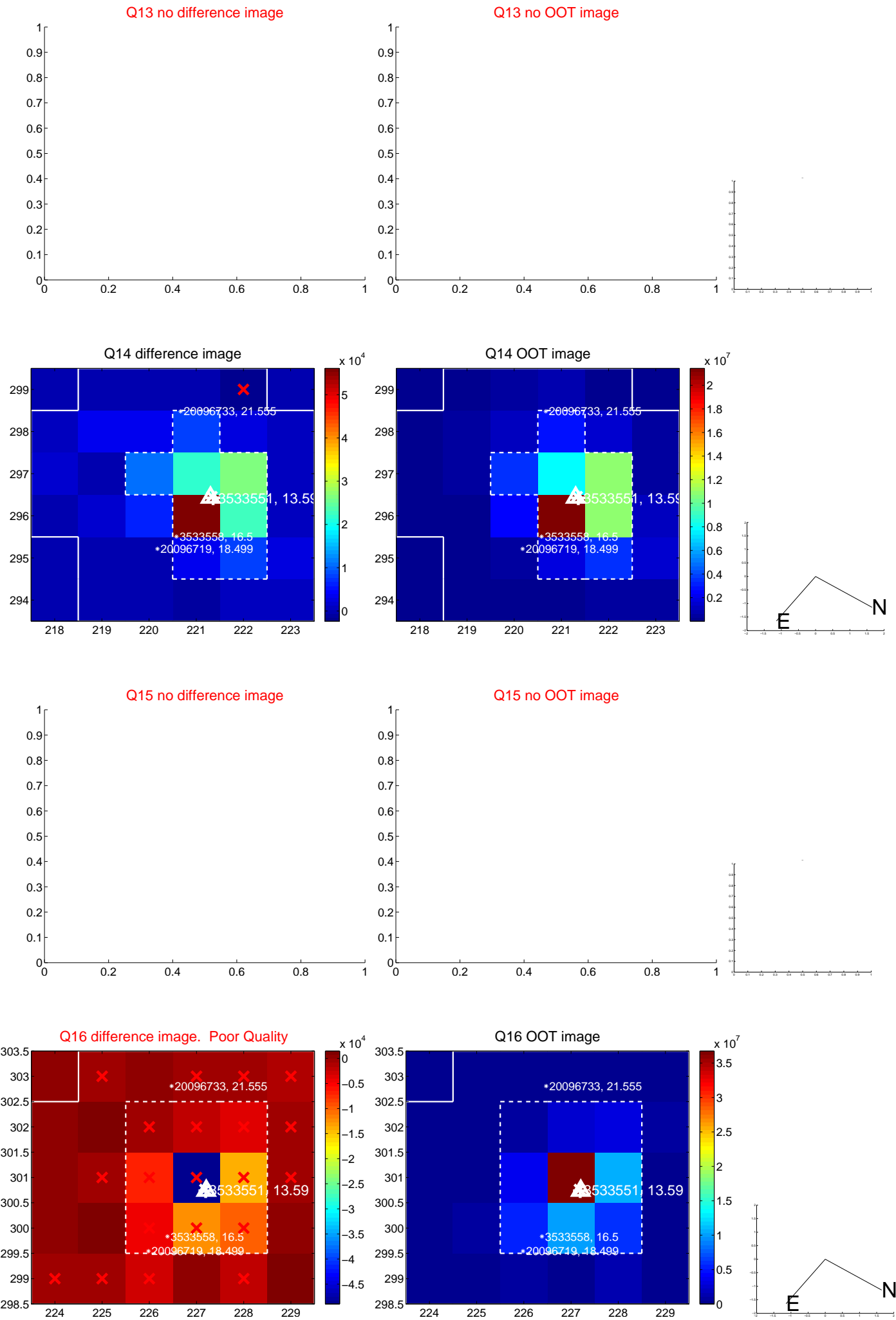
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



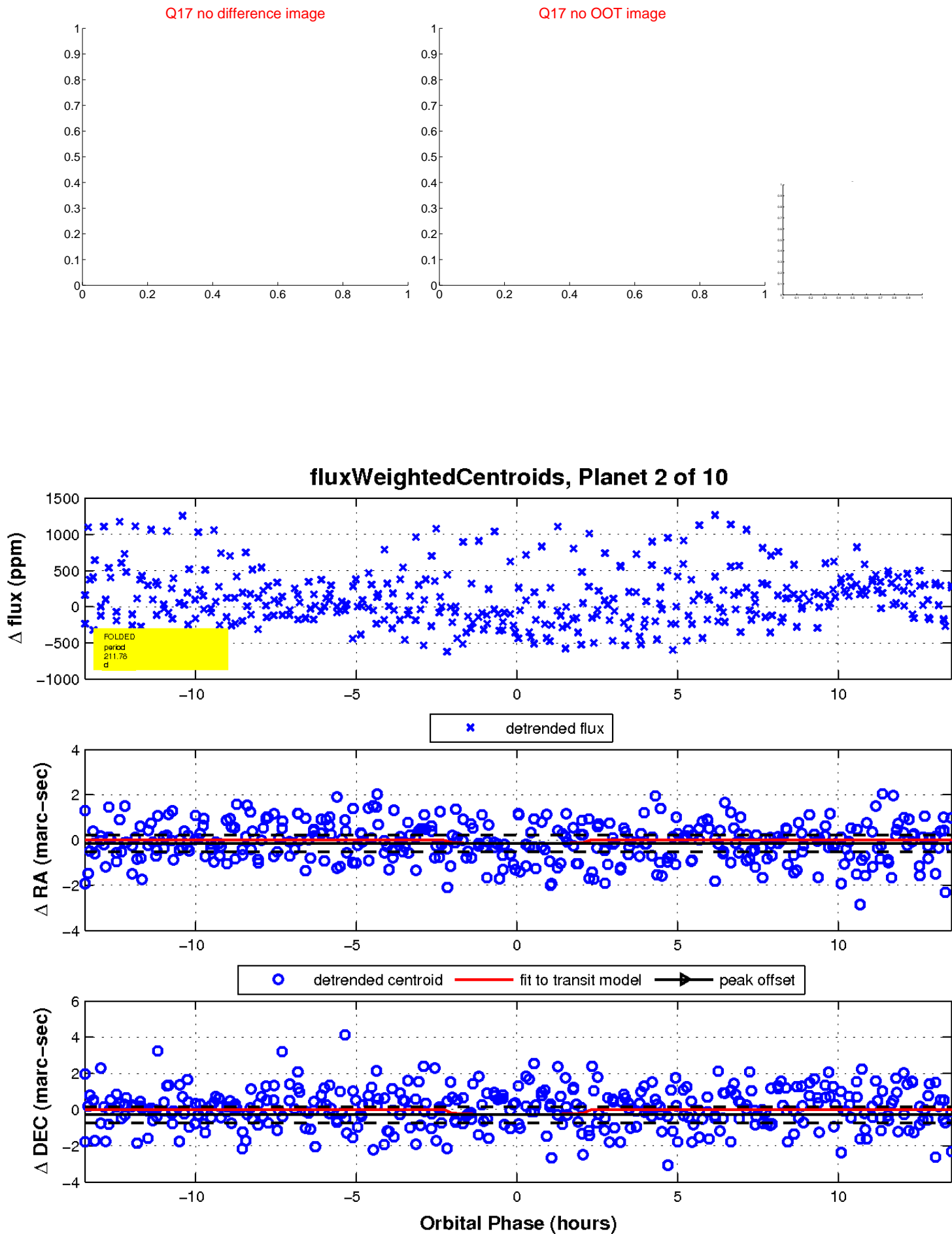
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

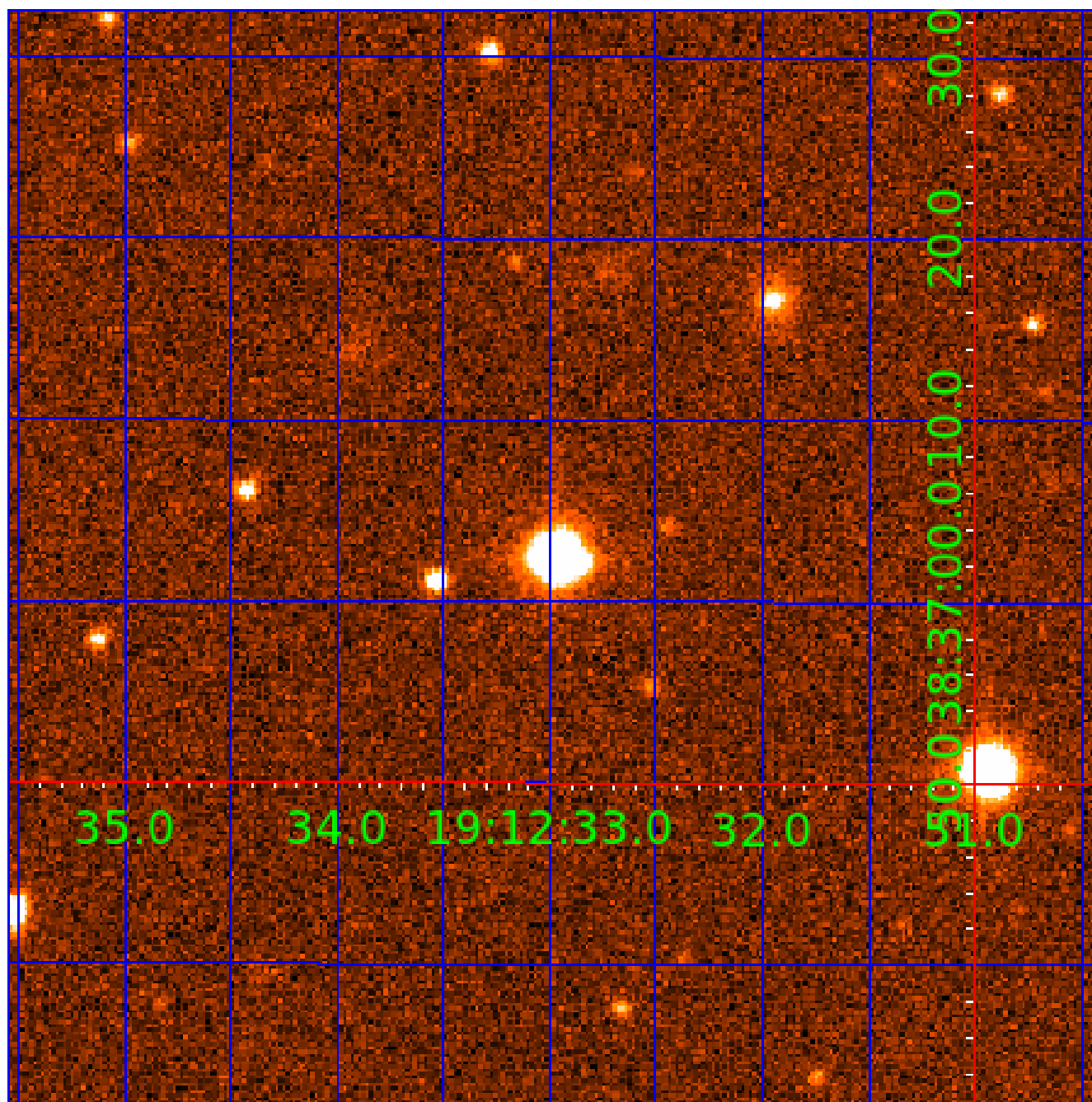


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
003533551-01	OBS	No	2.297362	133.631750	64.2	12.450	7.9	9.3	1.23	6144	1.33	1920.73
003533551-02	OBS	No	211.777821	283.721491	297.7	4.541	15.3	4.3	1.23	6144	2.27	4.61
003533551-03	OBS	No	498.367920	497.396492	1907.5	41.710	14.0	9.7	1.23	6144	9.98	1.47
003533551-04	OBS	No	132.648483	227.746073	225.6	3.059	9.1	3.3	1.23	6144	2.09	8.61
003533551-05	OBS	No	132.682289	228.720197	154.0	1.732	9.5	2.1	1.23	6144	1.58	8.60
003533551-06	OBS	No	132.656119	228.240061	277.2	9.000	9.6	-1.0	1.23	6144	2.06	8.61
003533551-07	OBS	No	379.158986	428.600167	548.9	7.215	9.2	8.2	1.23	6144	3.26	2.12
003533551-08	OBS	No	411.361648	196.323732	586.8	7.760	9.0	7.1	1.23	6144	3.19	1.90
003533551-09	OBS	No	62.528122	141.492009	277.9	8.863	9.4	7.4	1.23	6144	2.17	23.46
003533551-10	OBS	No	128.684428	174.127242	635.3	4.081	8.7	8.8	1.23	6144	5.97	8.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003533551-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003533551-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003533551-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003533551-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET
003533551-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
003533551-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003533551-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003533551-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

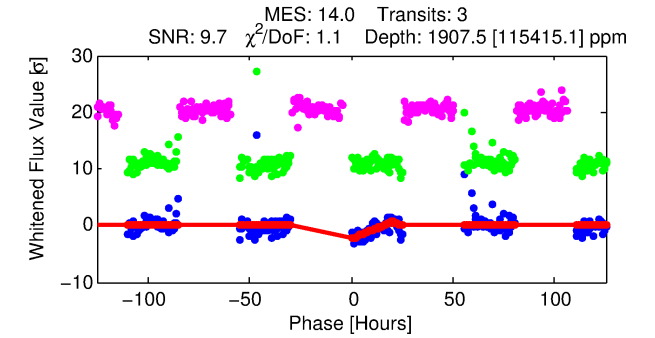
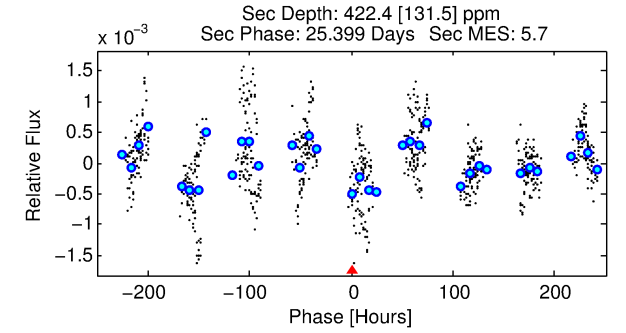
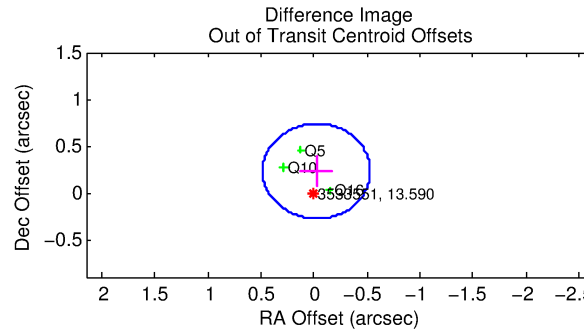
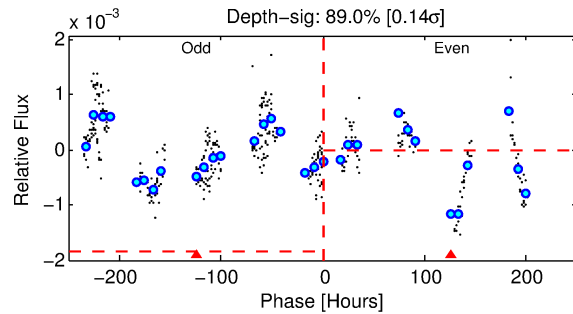
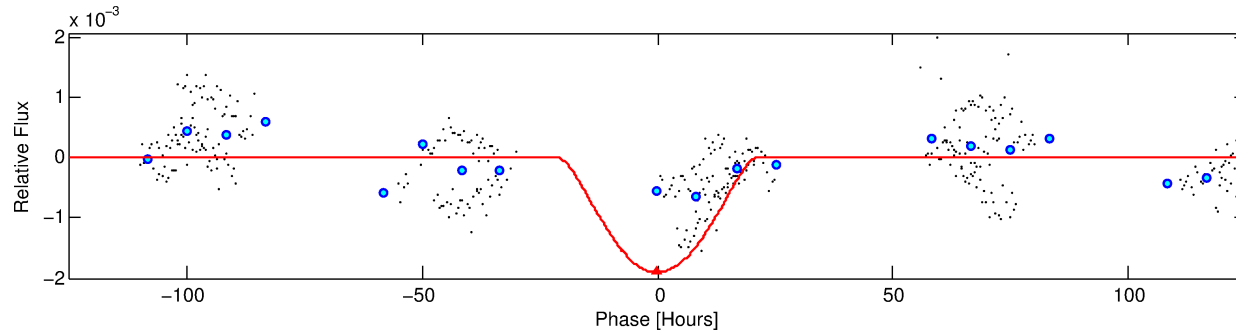
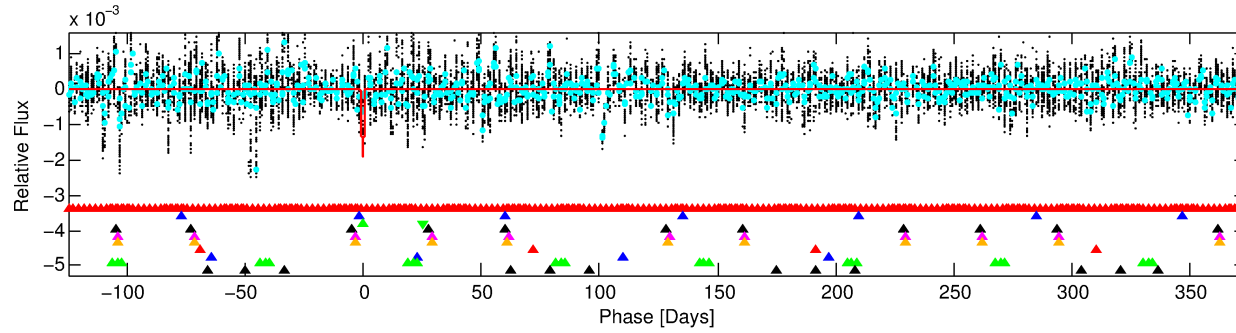
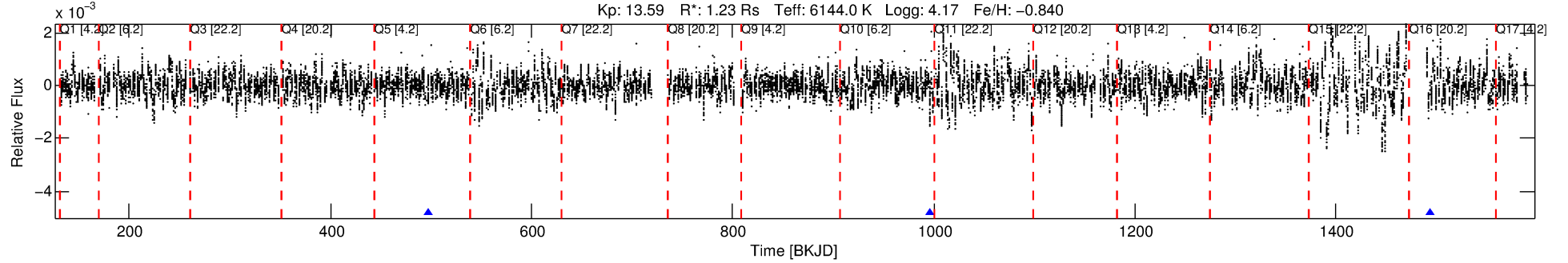
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003533551-03

No Significant Match Found

DV One-Page Summary

KIC: 3533551 Candidate: 3 of 10 Period: 498.368 d



DV Fit Results:

Period = 498.36792 [0.05753] d
Epoch = 497.3965 [0.2559] BKJD
Rp/R* = 0.0742 [0.1733]
a/R* = 35.83 [13.86]
b = 1.00 [2.80]
Seff = 1.47 [0.88]
Teq = 281 [42] K
Rp = 9.98 [23.55] Re
a = 1.1468 [0.4050] AU
Ag = 3069.77 [14483.23] [0.21 σ]
Teffp = 3233 [3785] K [0.78 σ]

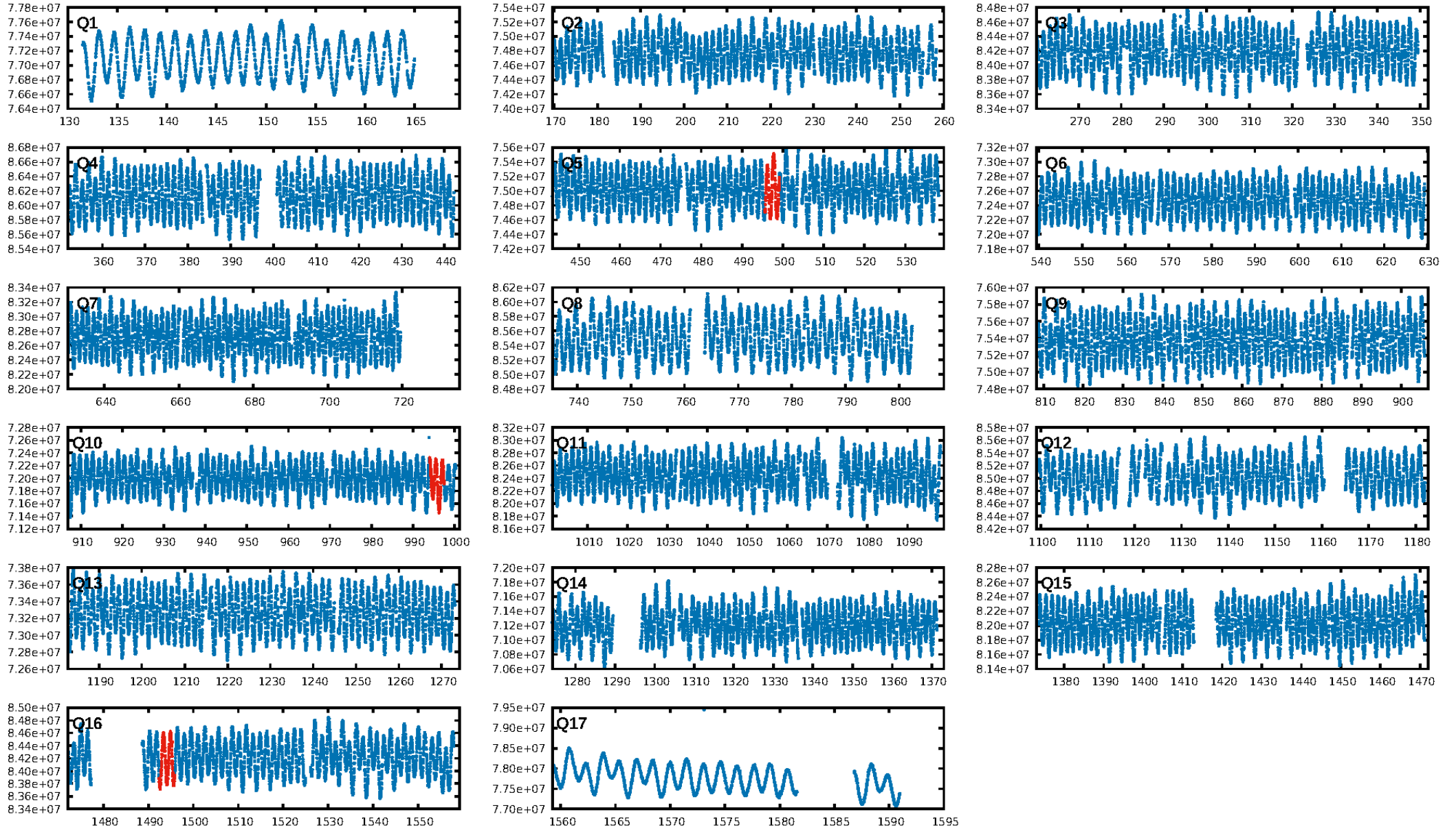
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [49.22 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 26.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.184
Centroid-sig: 2.0%
Centroid-so: 0.483 arcsec [2.26 σ]
OotOffset-rm: 0.231 arcsec [1.36 σ]
KicOffset-rm: 0.383 arcsec [2.09 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/3]

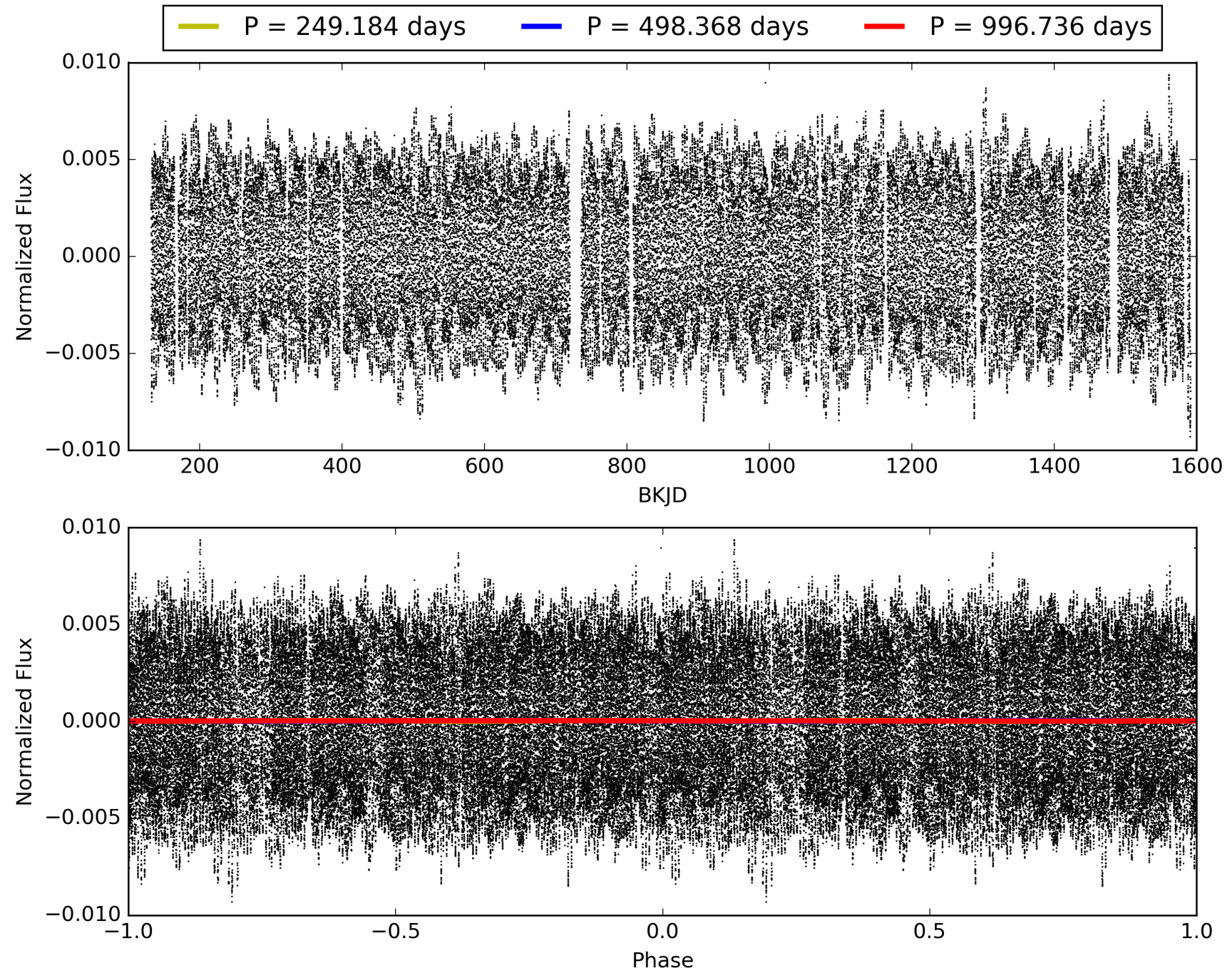
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:59:58 Z

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

TCE 003533551-03, PDC Light Curves

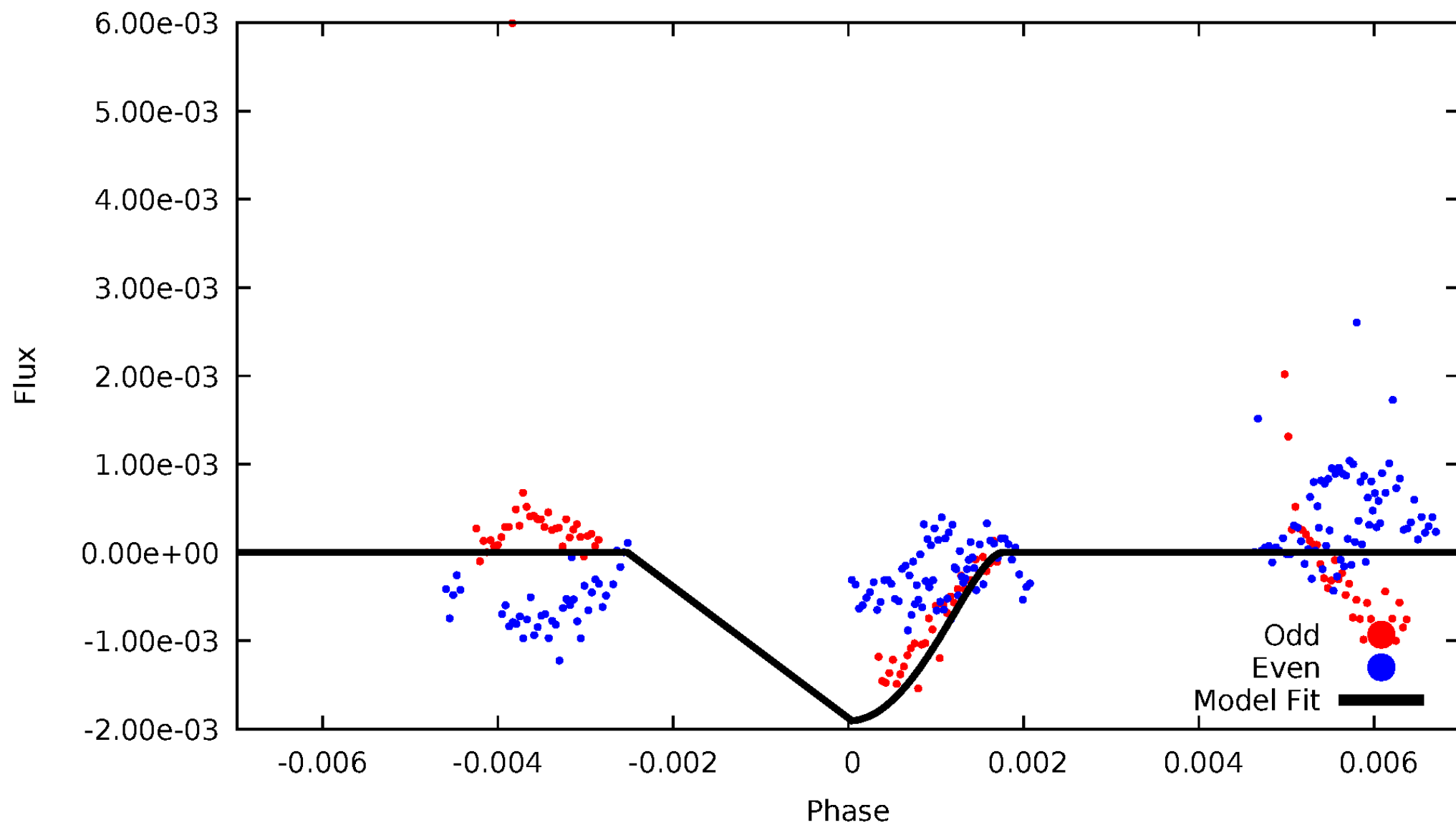


TCE 003533551-03



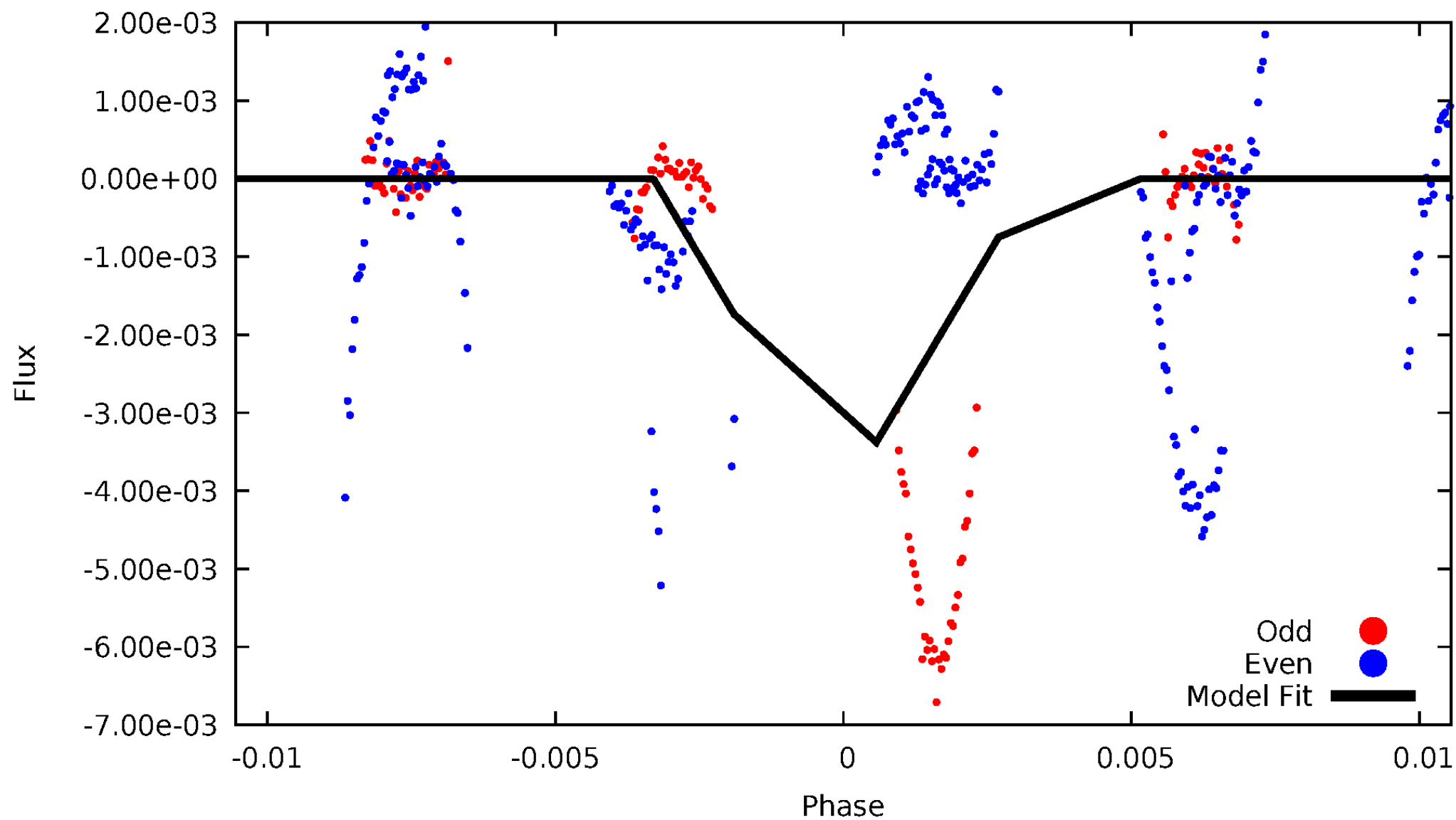
DV Odd/Even

TCE 003533551-03

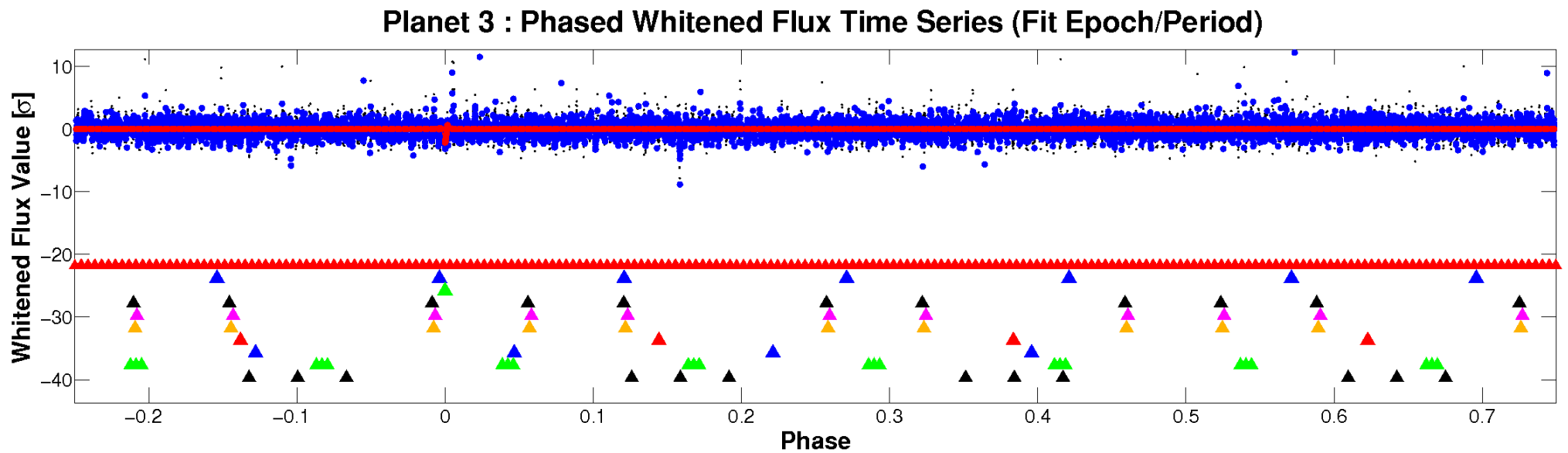
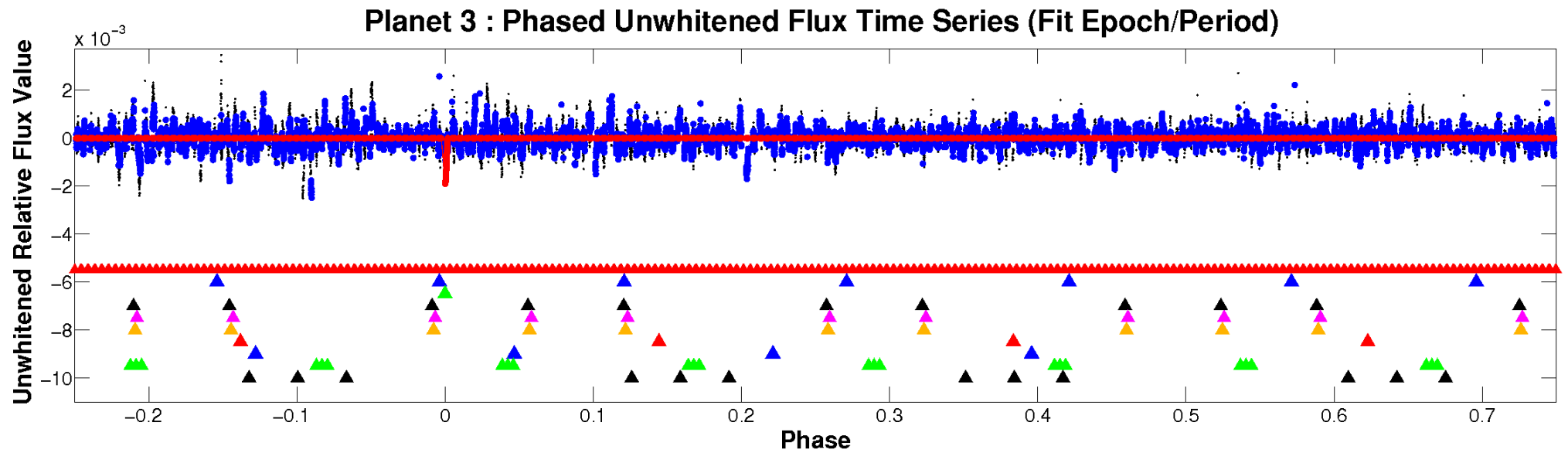


ALT Odd/Even

TCE 003533551-03

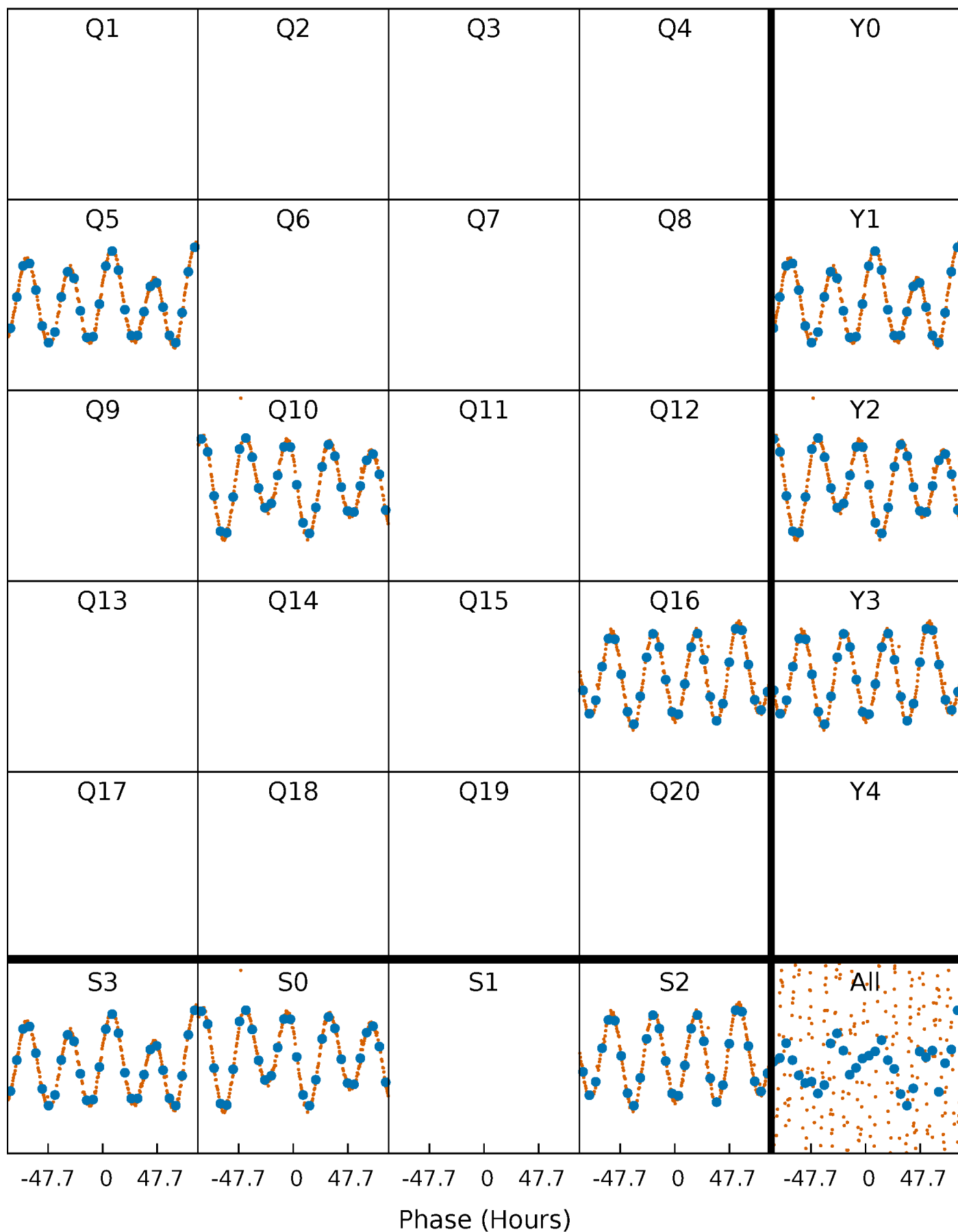


Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 003533551-03 P=498.367920 Days $T_0=497.396492$ (BKJD)



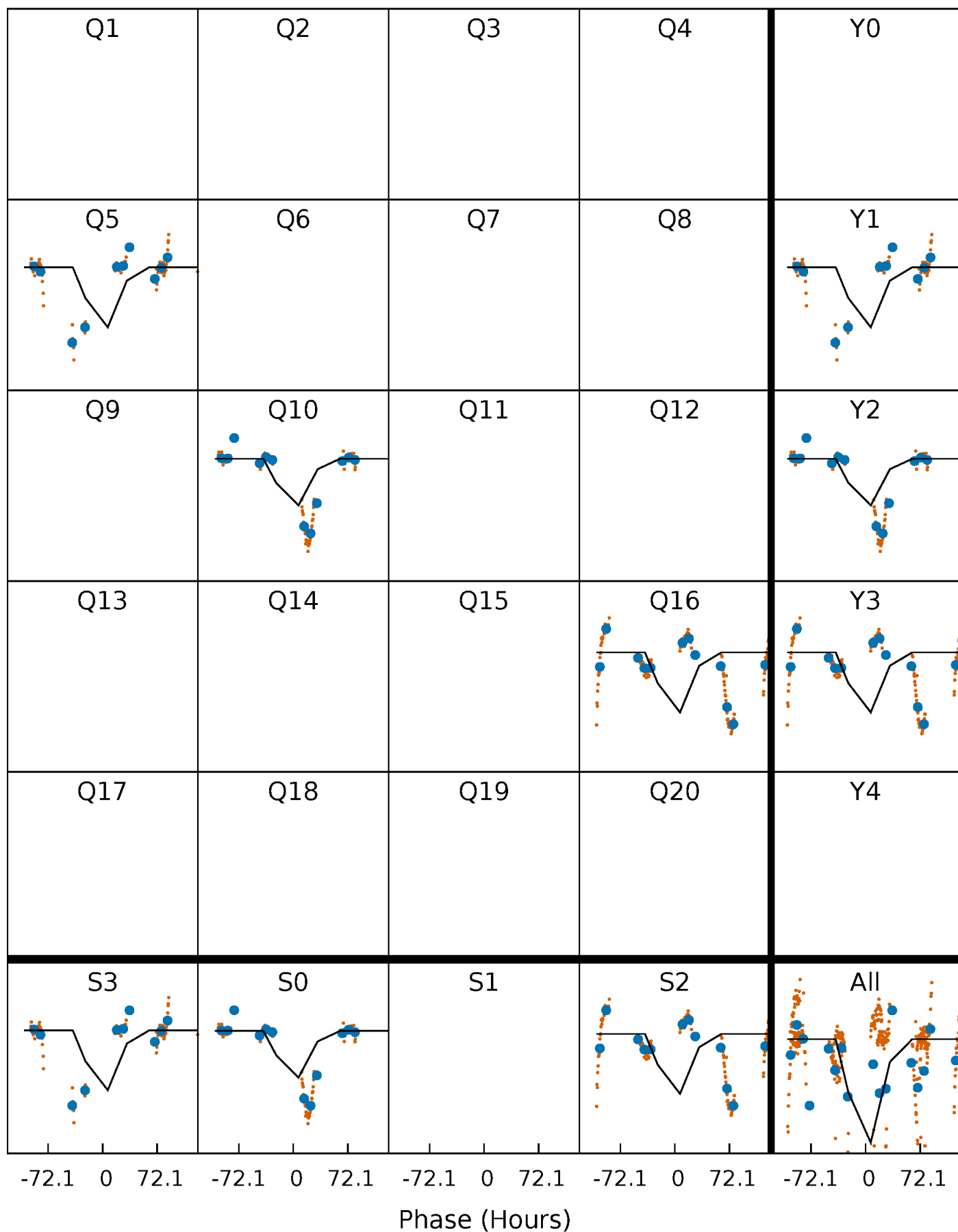
DV Quarter-Phased Transit Curves

TCE 003533551-03 P=498.367920 Days $T_0=497.396492$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

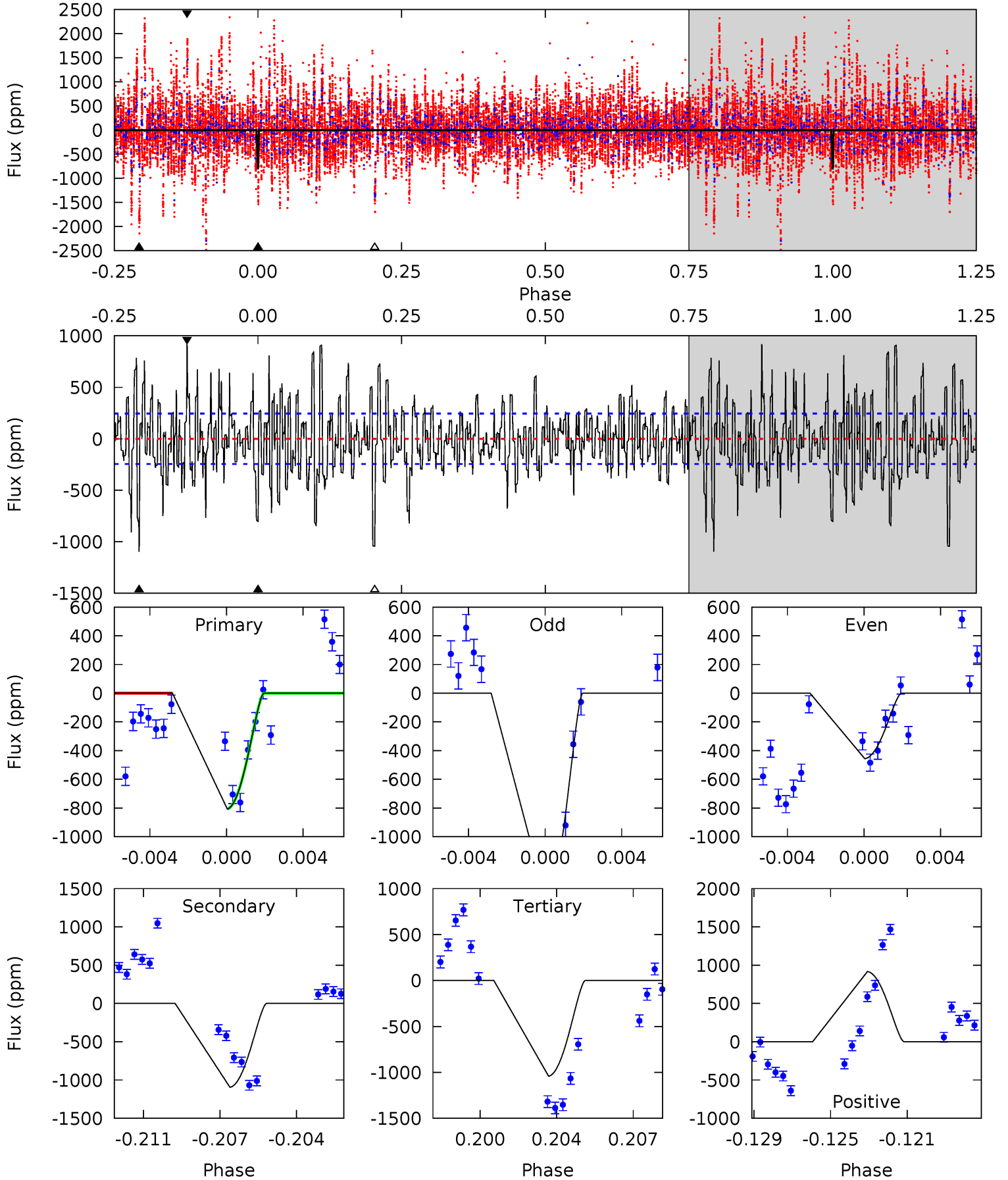
TCE 003533551-03 P=498.708277 Days $T_0=496.768590$ (BKJD)



DV Model-Shift Uniqueness Test

003533551-03, P = 498.367920 Days, E = 497.396492 Days

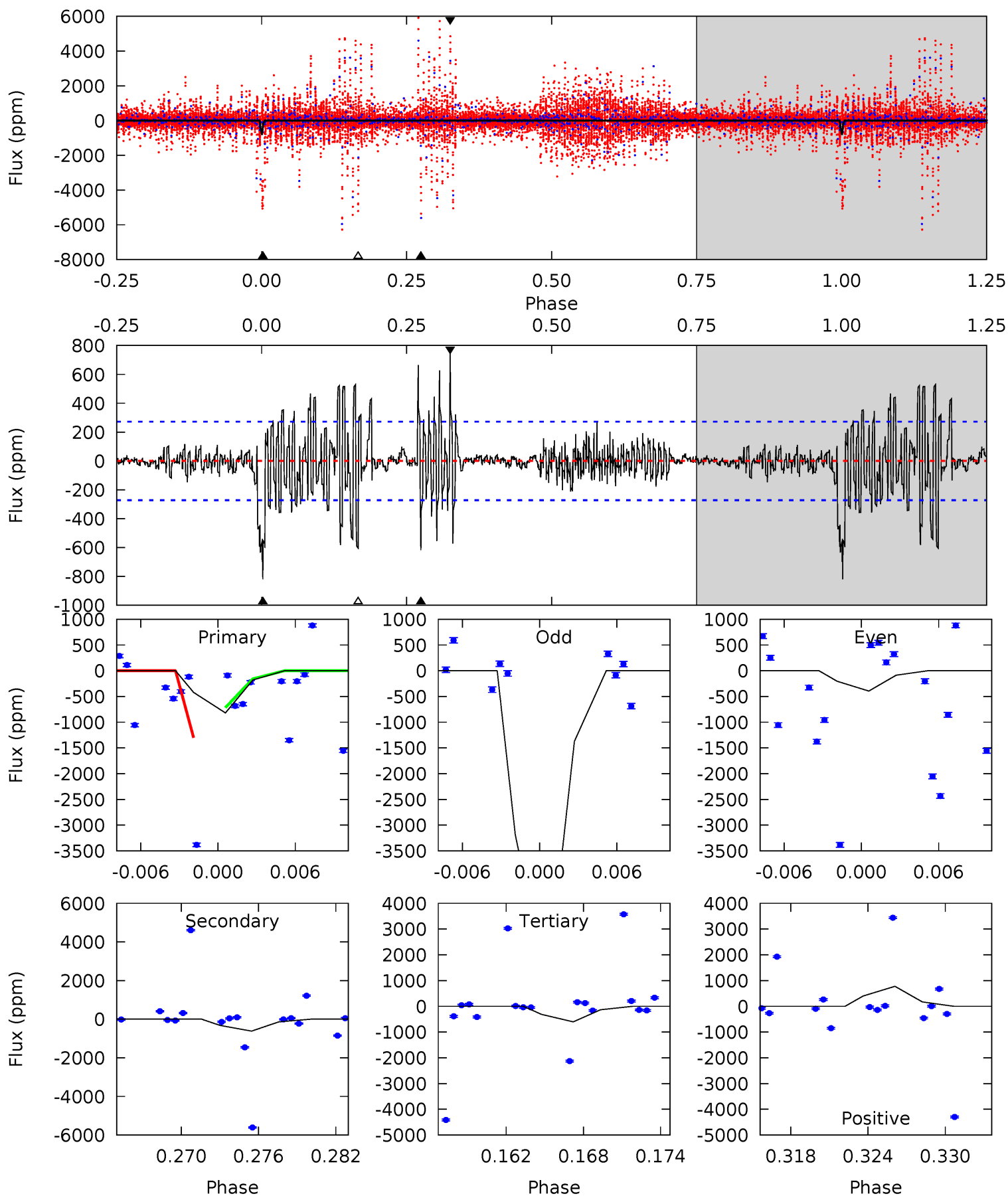
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	23.3	22.2	19.5	5.22	2.91	5.71	-5.02	-2.35	1.12	3.80	10.3	1.00	0.46	0



Alt Model-Shift Uniqueness Test

003533551-03, P = 498.708277 Days, E = 496.768590 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	11.7	11.4	14.6	5.12	2.75	2.38	4.09	0.84	0.27	-2.99	54.0	7.14	0.49	5.41



Stellar Parameters For KIC 003533551

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6144^{+183}_{-183}	$4.165^{+0.351}_{-0.189}$	$-0.840^{+0.300}_{-0.300}$	$1.232^{+0.345}_{-0.422}$	$0.809^{+0.103}_{-0.051}$	$0.609^{+1.309}_{-0.304}$
	+3%/-3%	+8%/-5%	+36%/-36%	+28%/-34%	+13%/-6%	+215%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003533551-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1096 ± 47	$18.89^{+18.63}_{-12.53}$	389^{+34}_{-36}	3460^{+1578}_{-620}	2302^{+17460}_{-1724}
Alt.	-617 ± 53	$18.05^{+20.48}_{-12.27}$	387^{+35}_{-38}	3182^{+1485}_{-567}	1360^{+12839}_{-1052}

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 $A_{obs} \gg 1.0$

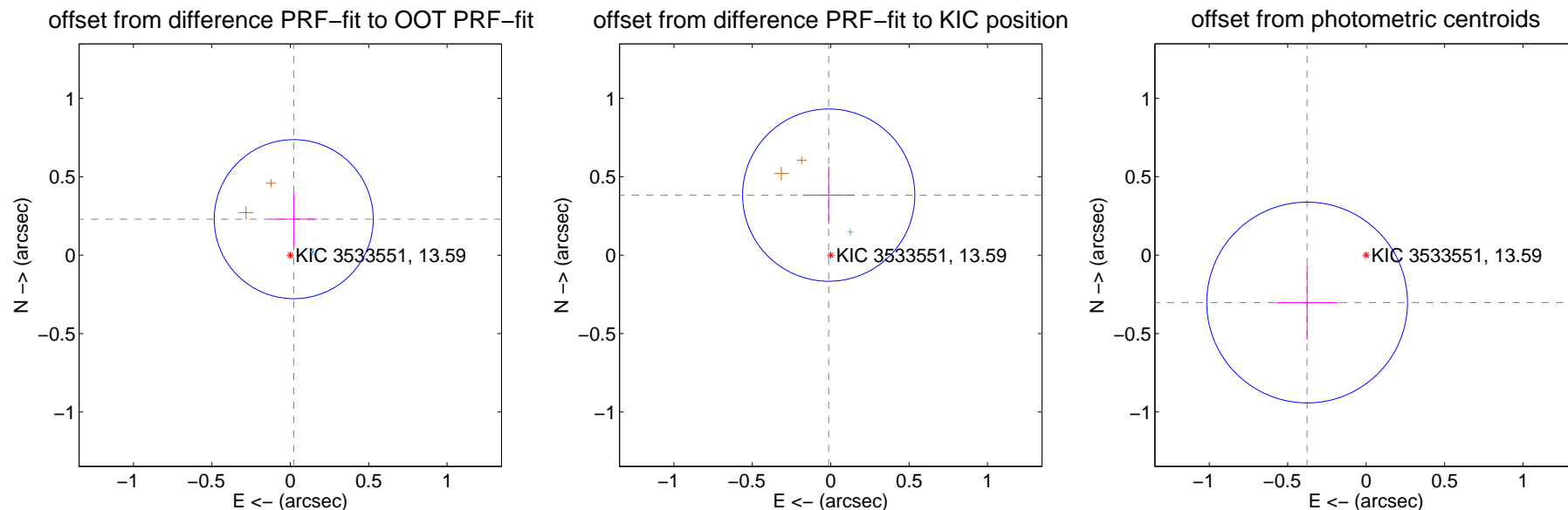
DV Centroid Data

Supplemental centroid analysis for 003533551-03. Kepler magnitude: 13.59. Transit SNR 9.74

There are 1 quarters with good PRF difference image offsets

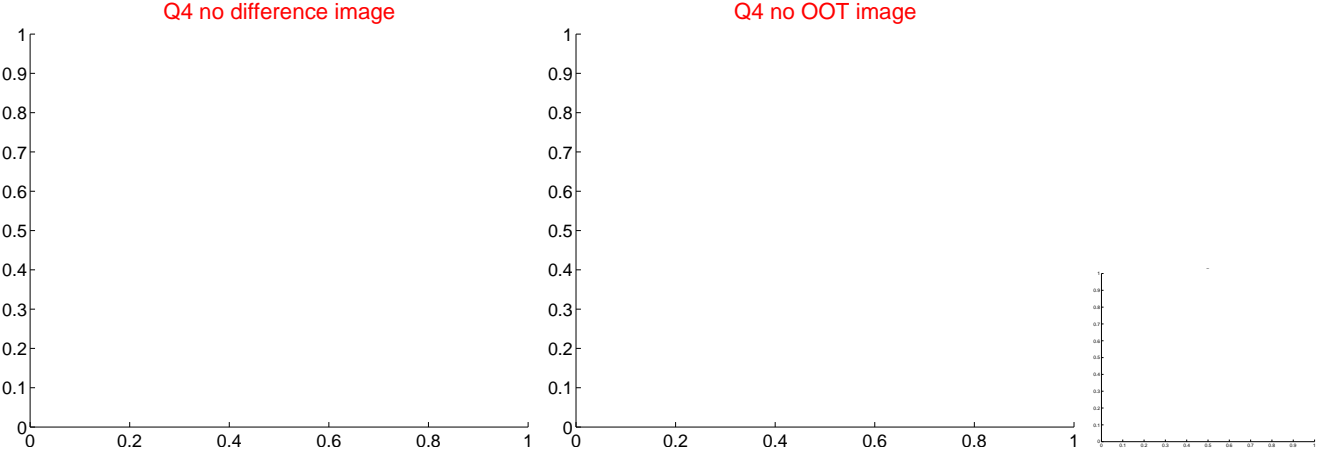
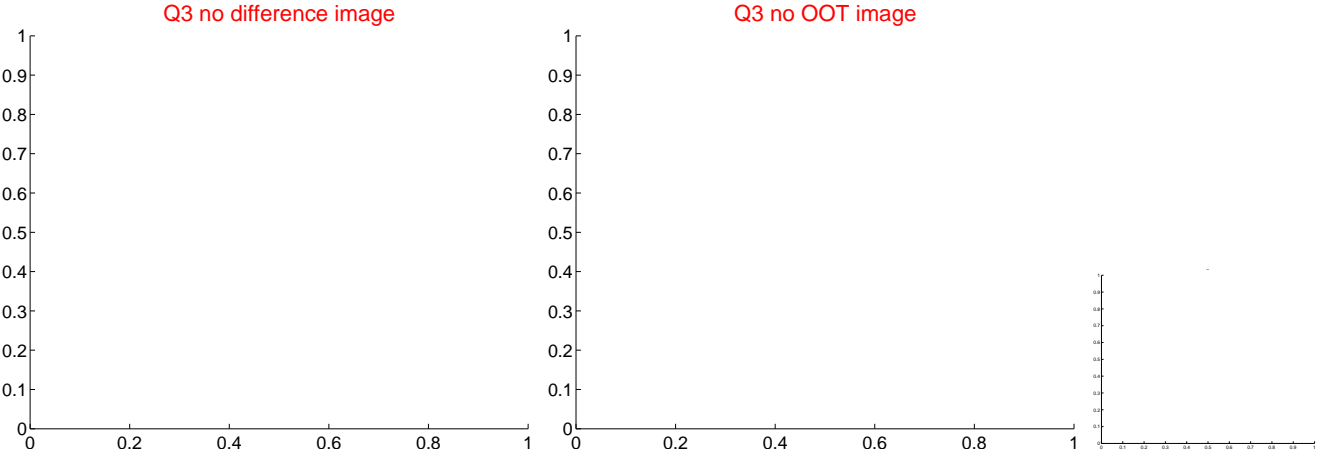
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.231 ± 0.169	1.36	-0.022 ± 0.149	0.230 ± 0.169
PRF-fit source offset from KIC position	0.383 ± 0.183	2.09	0.013 ± 0.165	0.383 ± 0.183
photometric centroid source offset	0.48 ± 0.21	2.26	0.38 ± 0.20	-0.30 ± 0.24

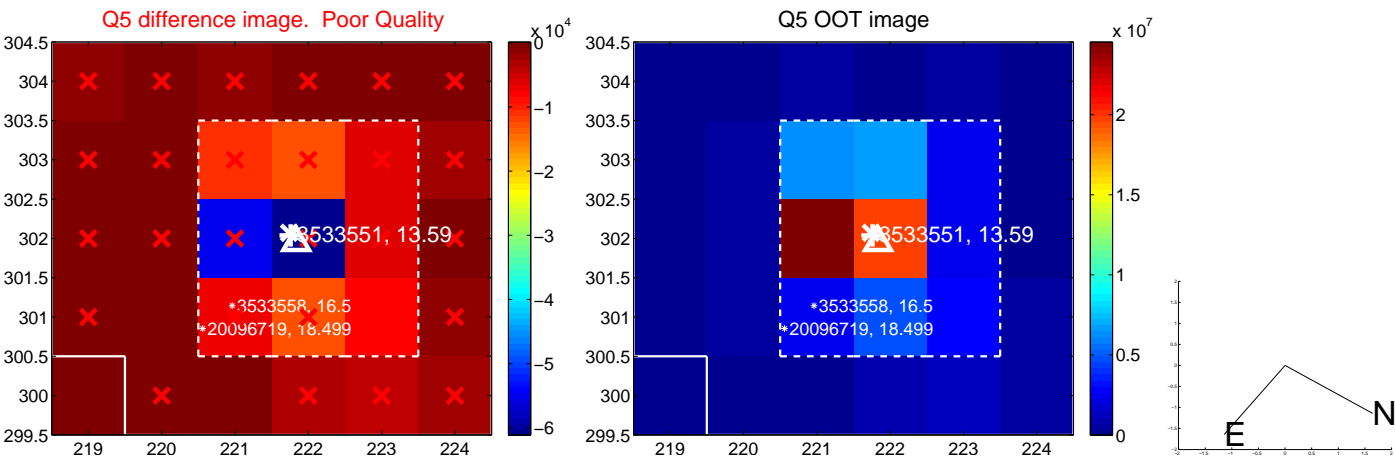


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

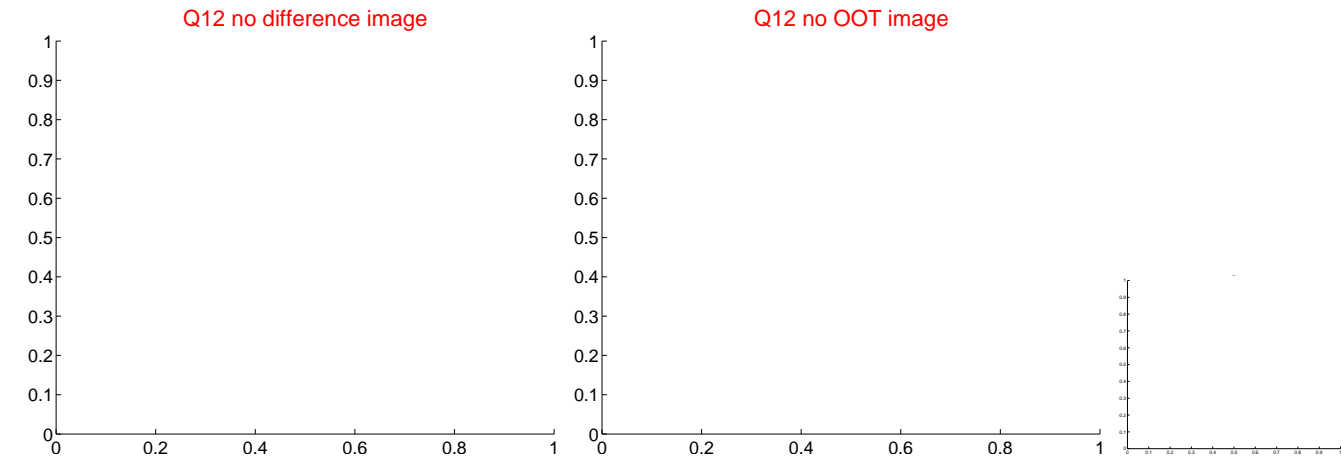
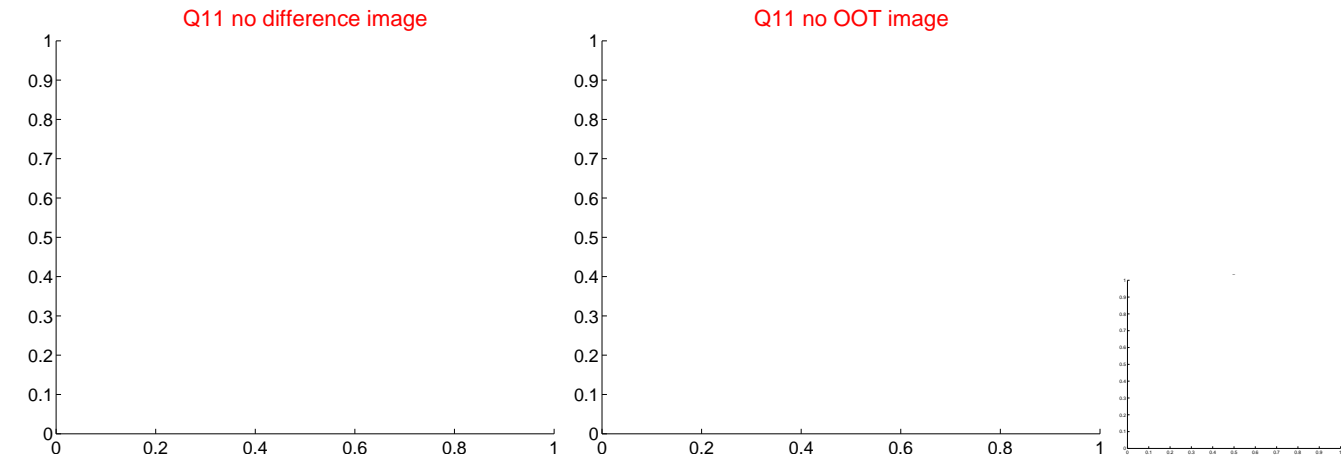
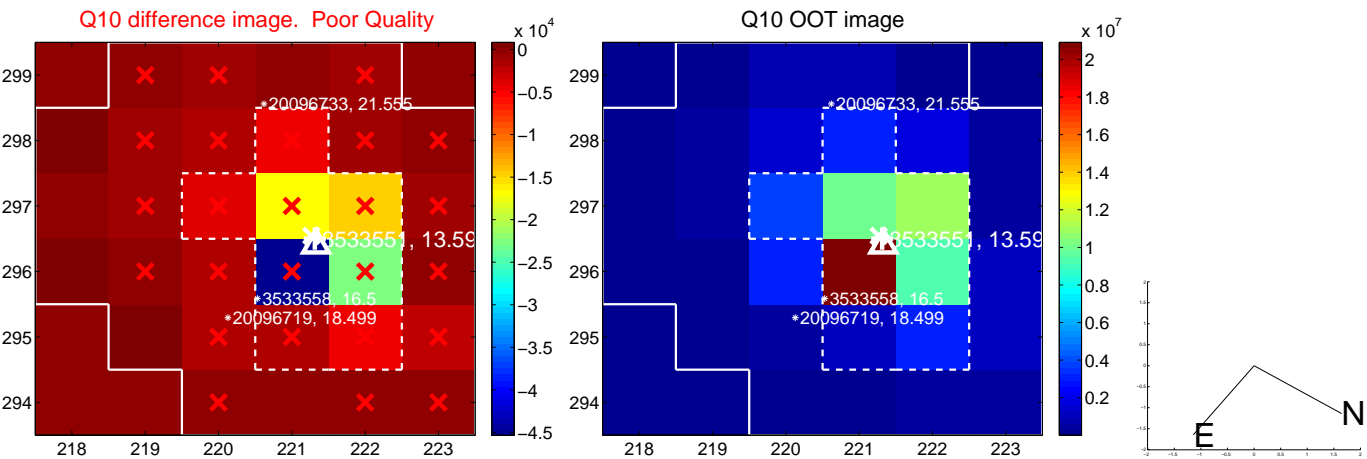
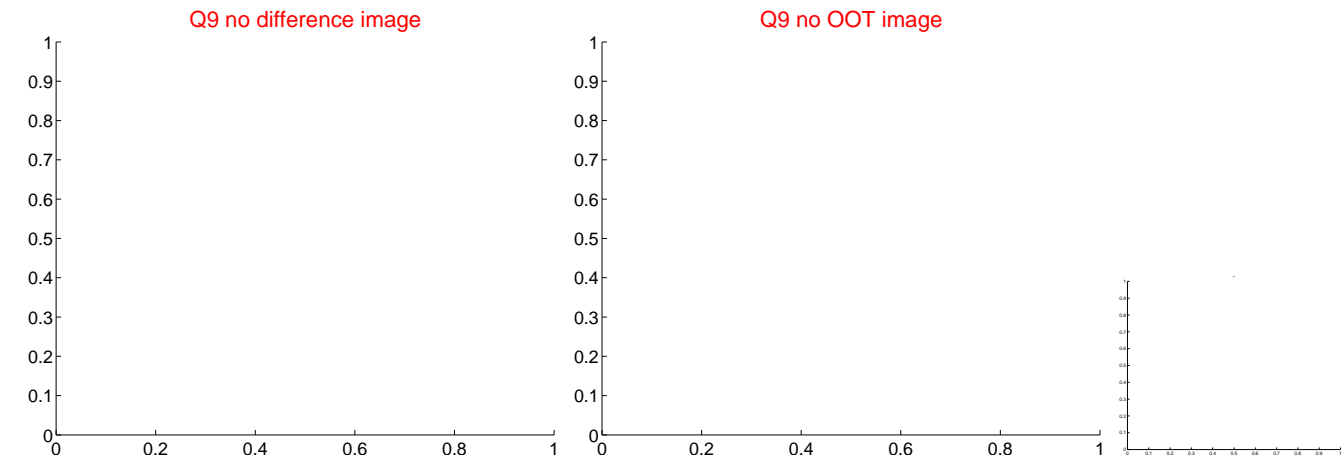
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



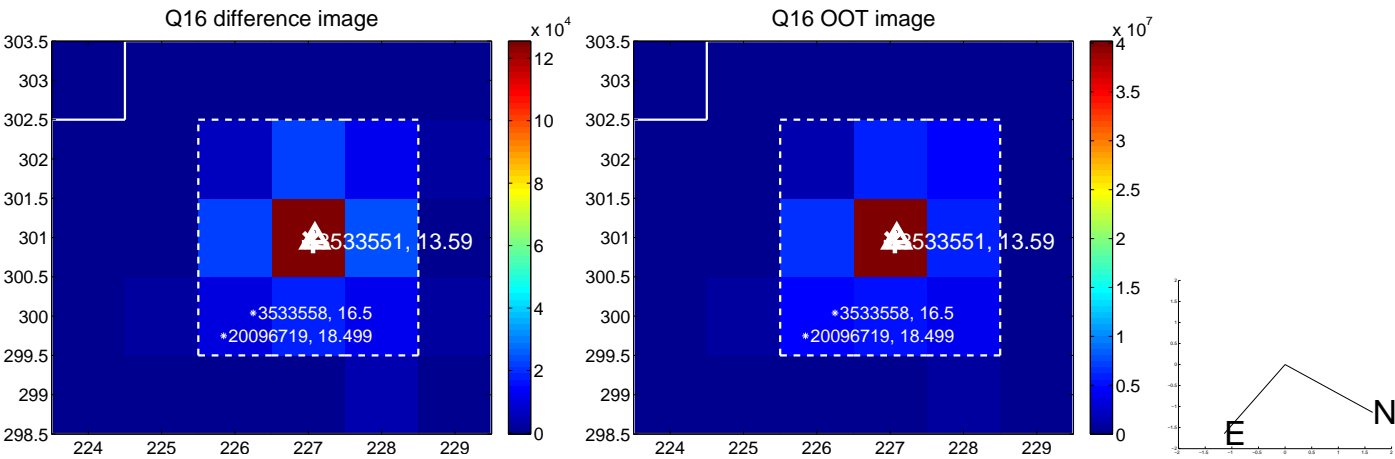
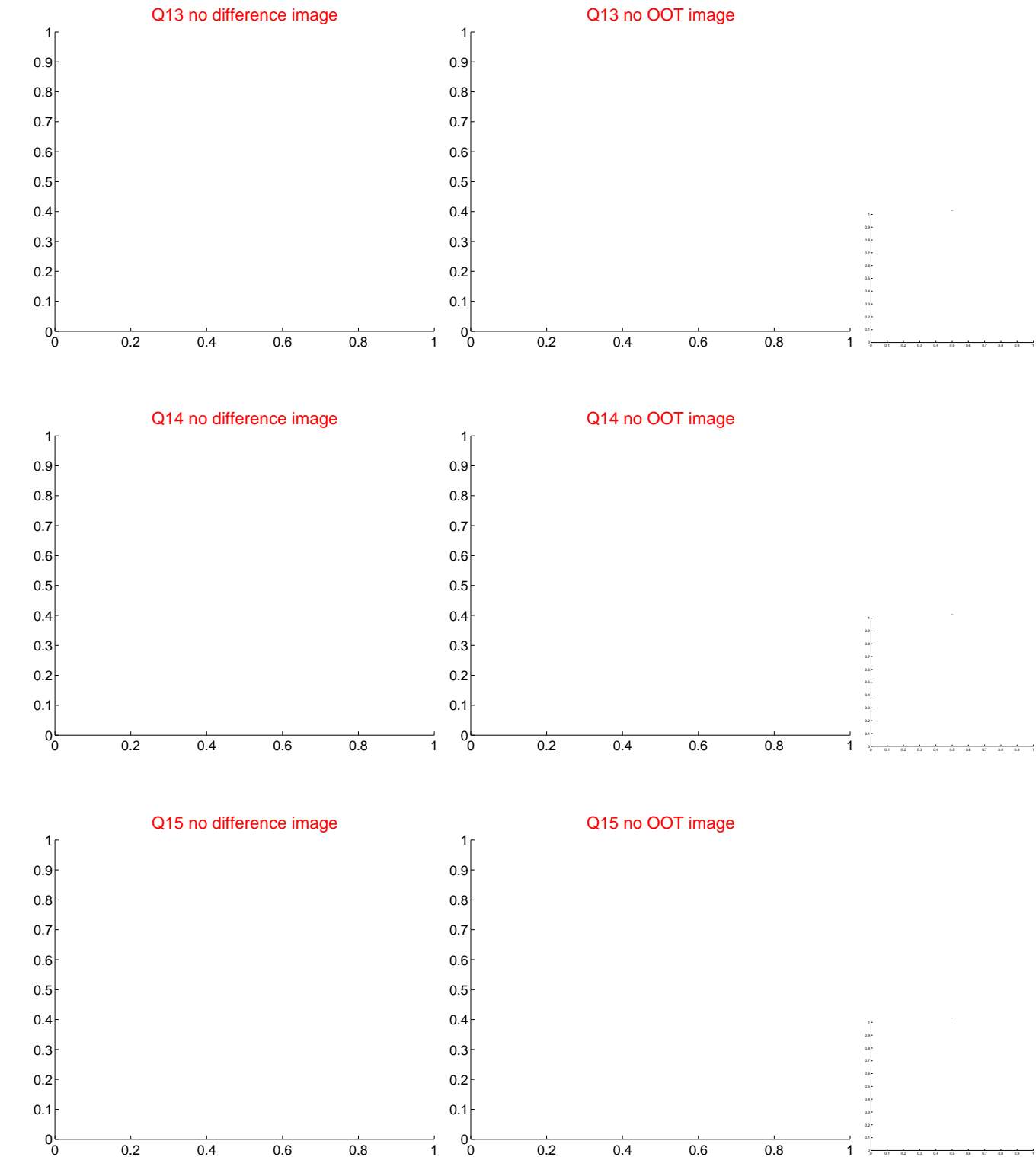
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



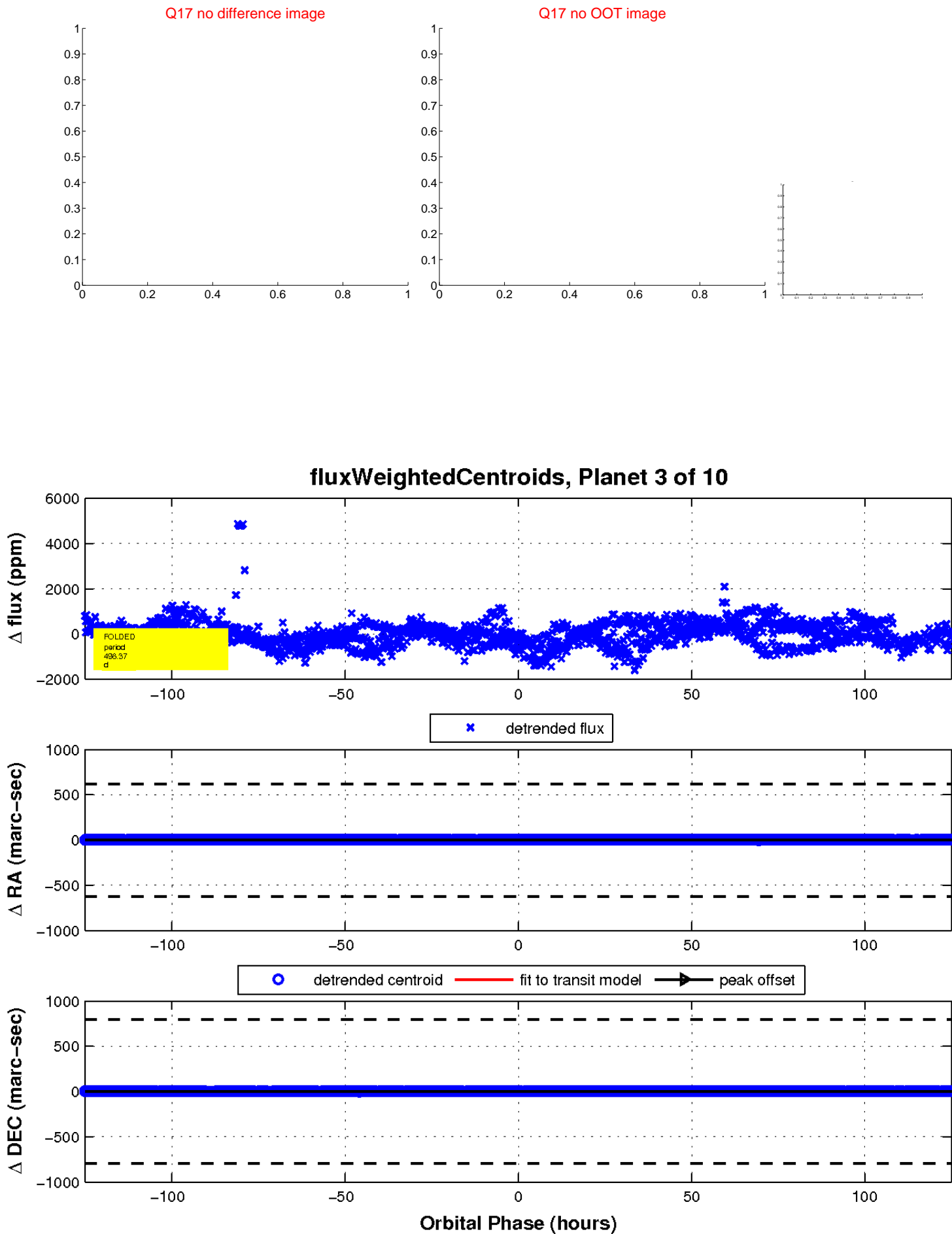
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

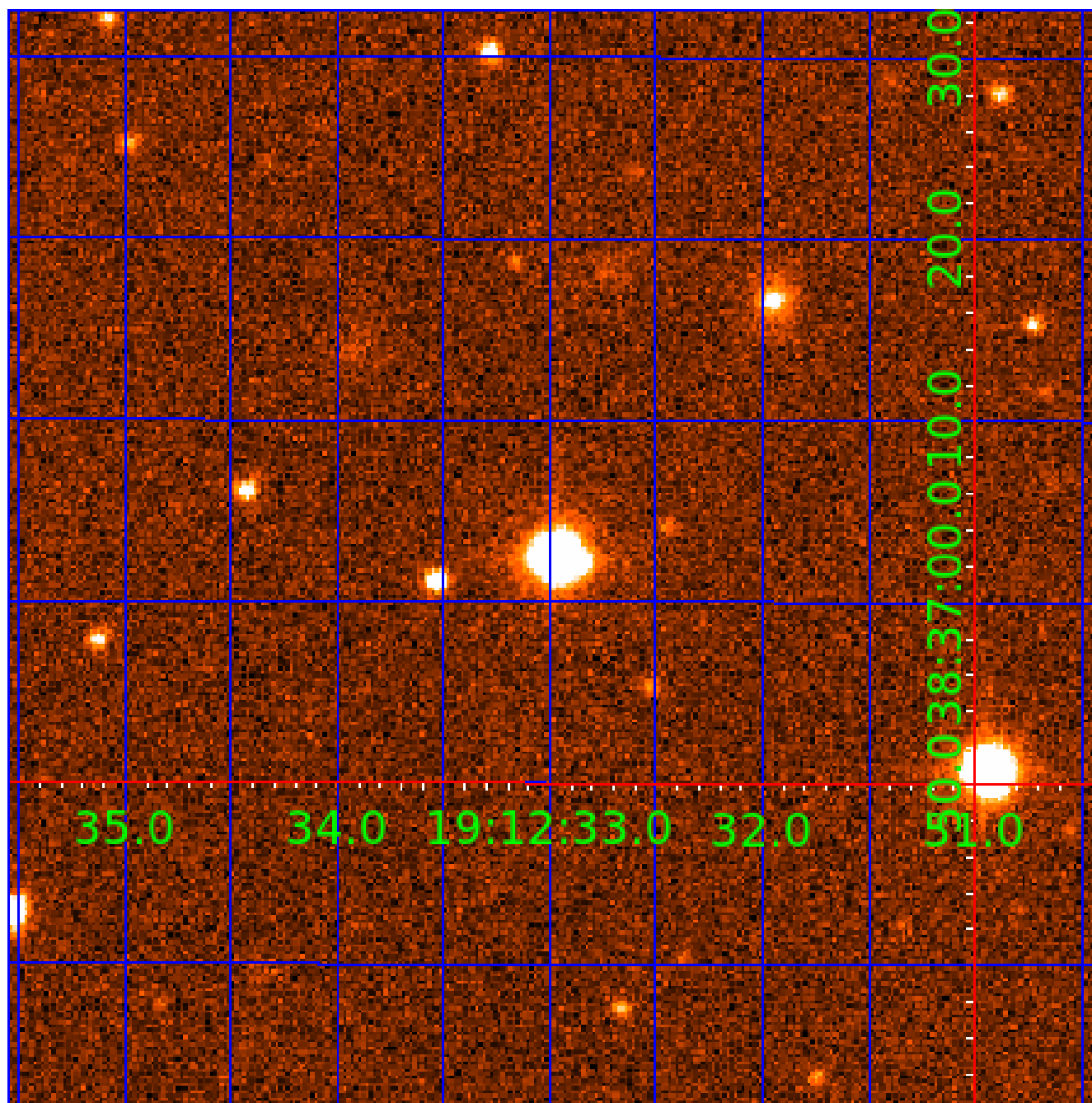


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
003533551-01	OBS	No	2.297362	133.631750	64.2	12.450	7.9	9.3	1.23	6144	1.33	1920.73
003533551-02	OBS	No	211.777821	283.721491	297.7	4.541	15.3	4.3	1.23	6144	2.27	4.61
003533551-03	OBS	No	498.367920	497.396492	1907.5	41.710	14.0	9.7	1.23	6144	9.98	1.47
003533551-04	OBS	No	132.648483	227.746073	225.6	3.059	9.1	3.3	1.23	6144	2.09	8.61
003533551-05	OBS	No	132.682289	228.720197	154.0	1.732	9.5	2.1	1.23	6144	1.58	8.60
003533551-06	OBS	No	132.656119	228.240061	277.2	9.000	9.6	-1.0	1.23	6144	2.06	8.61
003533551-07	OBS	No	379.158986	428.600167	548.9	7.215	9.2	8.2	1.23	6144	3.26	2.12
003533551-08	OBS	No	411.361648	196.323732	586.8	7.760	9.0	7.1	1.23	6144	3.19	1.90
003533551-09	OBS	No	62.528122	141.492009	277.9	8.863	9.4	7.4	1.23	6144	2.17	23.46
003533551-10	OBS	No	128.684428	174.127242	635.3	4.081	8.7	8.8	1.23	6144	5.97	8.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003533551-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003533551-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003533551-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003533551-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET
003533551-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
003533551-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003533551-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003533551-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

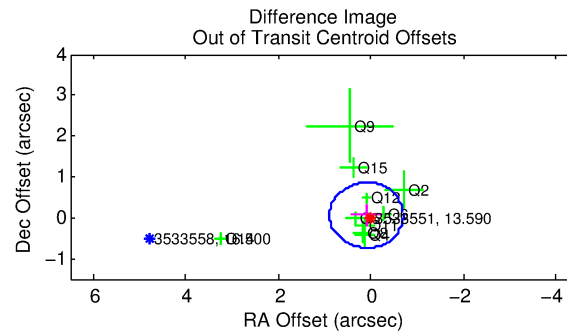
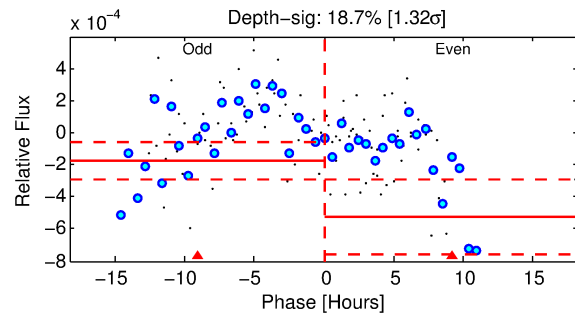
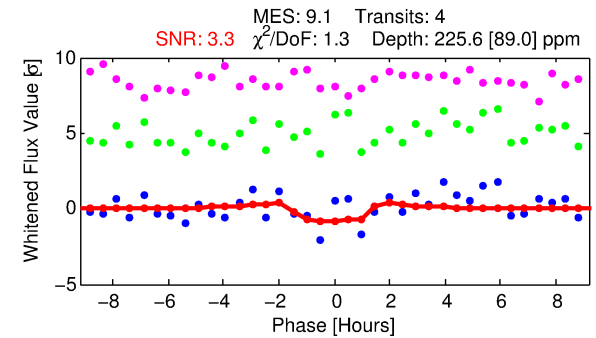
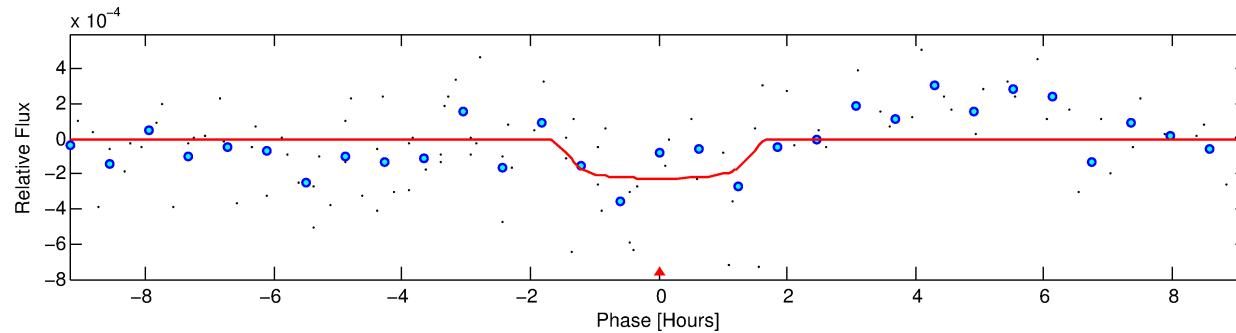
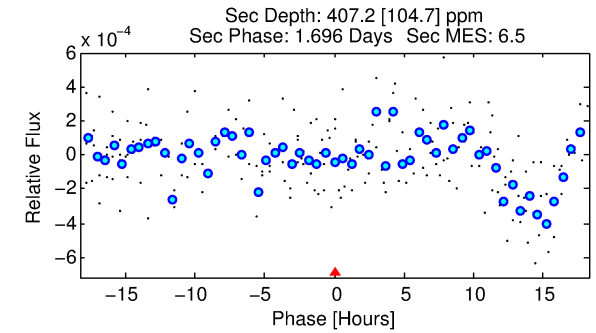
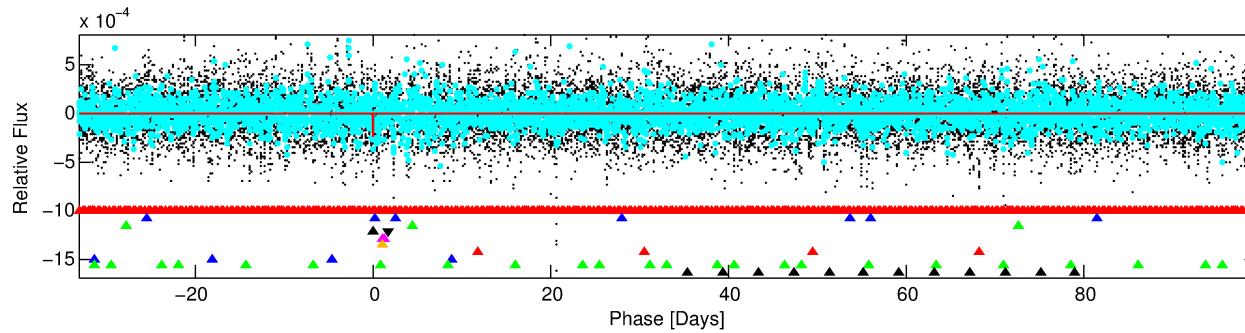
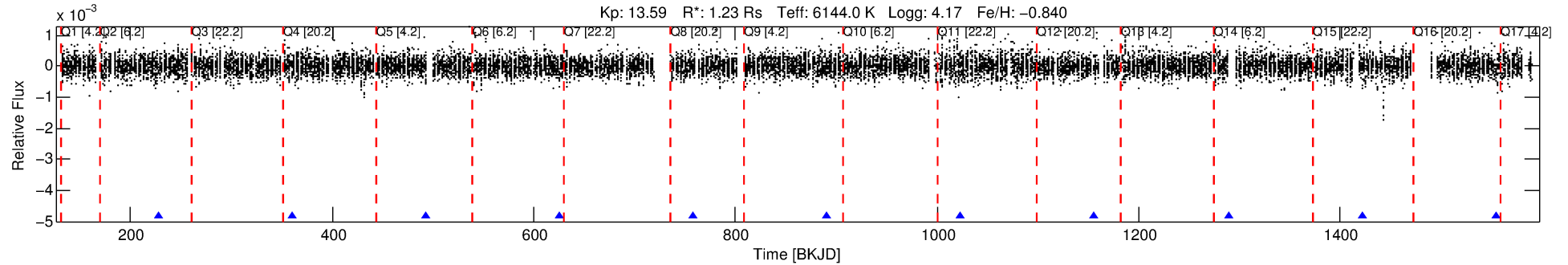
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003533551-04

No Significant Match Found

DV One-Page Summary

KIC: 3533551 Candidate: 4 of 10 Period: 132.648 d



DV Fit Results:

Period = 132.64848 [0.00584] d
Epoch = 227.7461 [0.0223] BKJD
Rp/R* = 0.0155 [0.1046]
a/R* = 185.56 [6997.05]
b = 0.85 [12.74]
Seff = 8.61 [5.14]
Teq = 437 [65] K
Rp = 2.09 [14.08] Re
a = 0.4745 [0.1676] AU
Ag = 11541.55 [155480.58] [0.07 σ]
Teffp = 6999 [23550] K [0.28 σ]

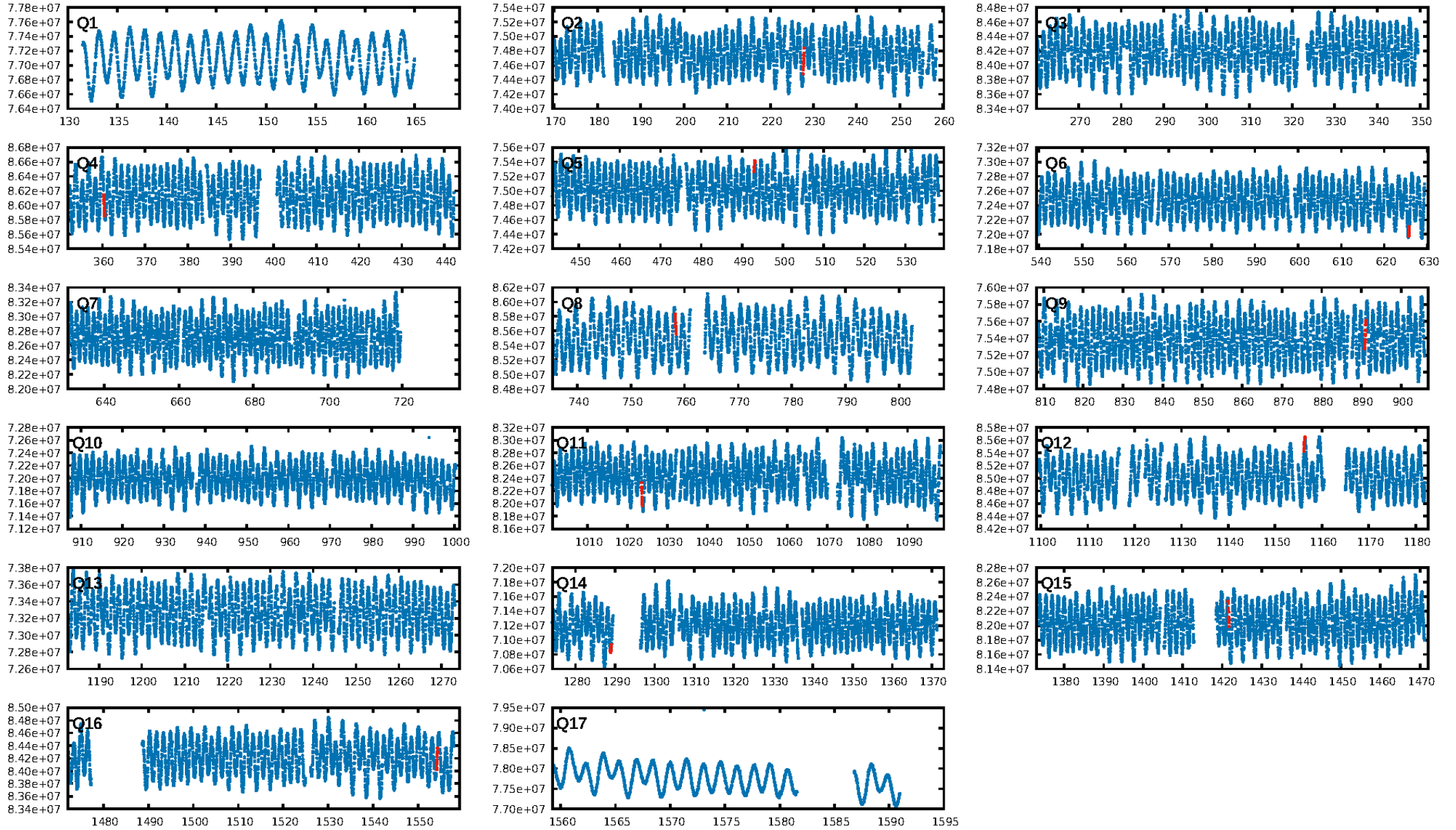
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.65 σ]
LongPeriod-sig: 1.5% [0.02 σ]
ModelChiSquare2-sig: 87.1%
ModelChiSquareGof-sig: 57.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.63
Centroid-sig: 12.3%
Centroid-so: 2.327 arcsec [1.44 σ]
OotOffset-rm: 0.114 arcsec [0.43 σ]
KicOffset-rm: 0.231 arcsec [0.96 σ]
OotOffset-st: 3/2/3/2 [10]
KicOffset-st: 3/2/3/2 [10]
DiffImageQuality-fgm: 0.60 [6/10]
DiffImageOverlap-fno: 0.45 [5/11]

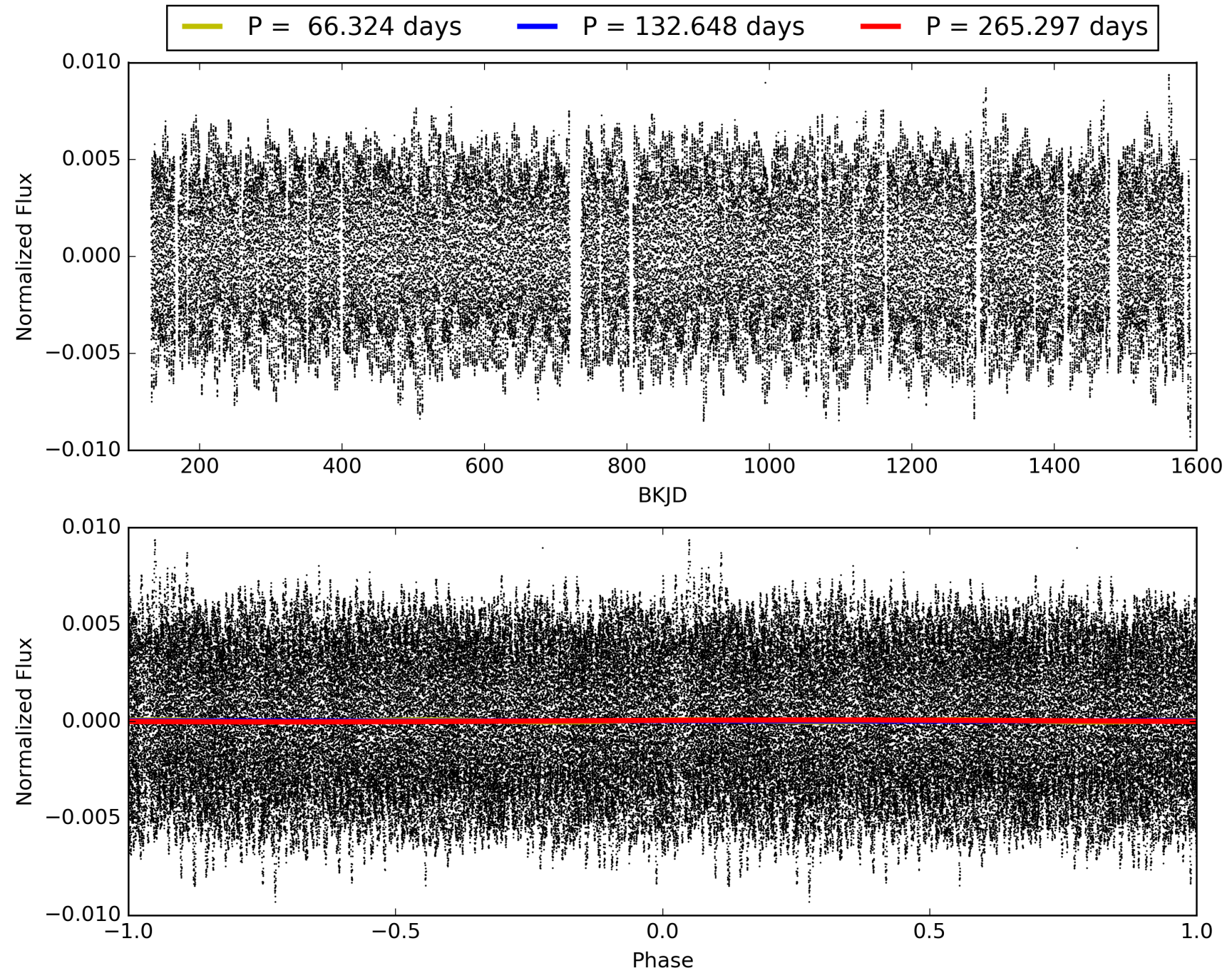
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 19:00:03 Z

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

TCE 003533551-04, PDC Light Curves

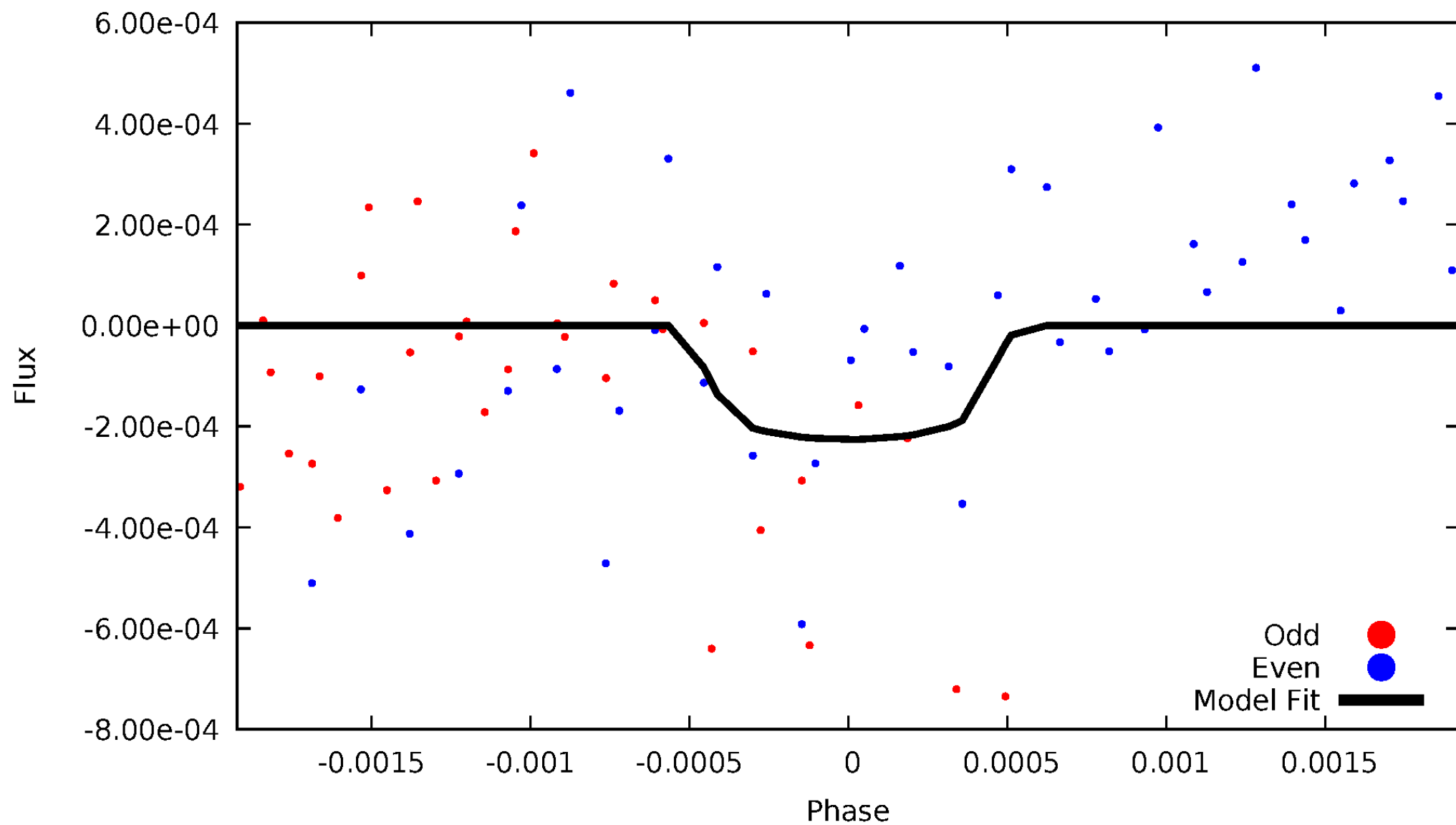


TCE 003533551-04



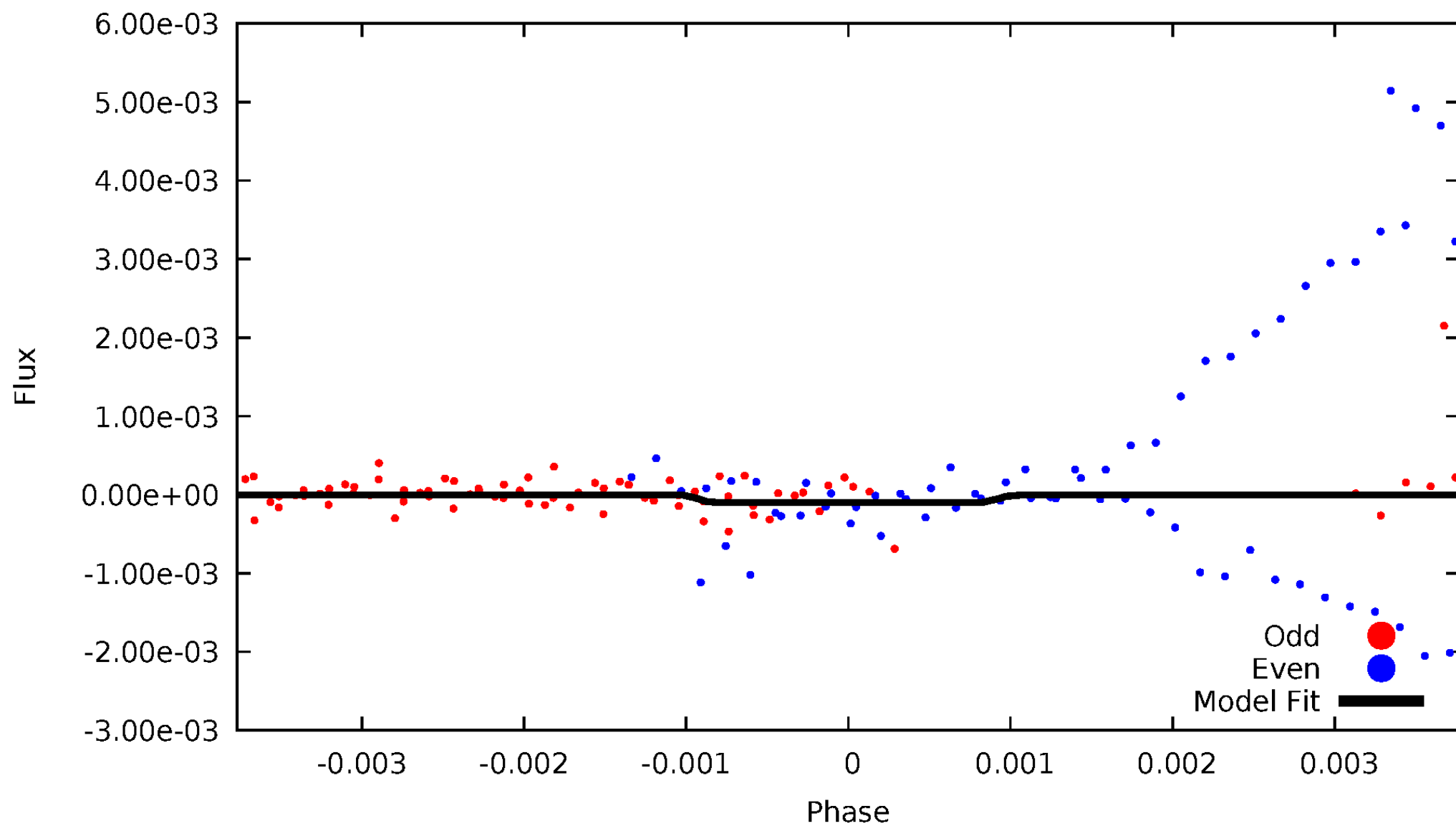
DV Odd/Even

TCE 003533551-04



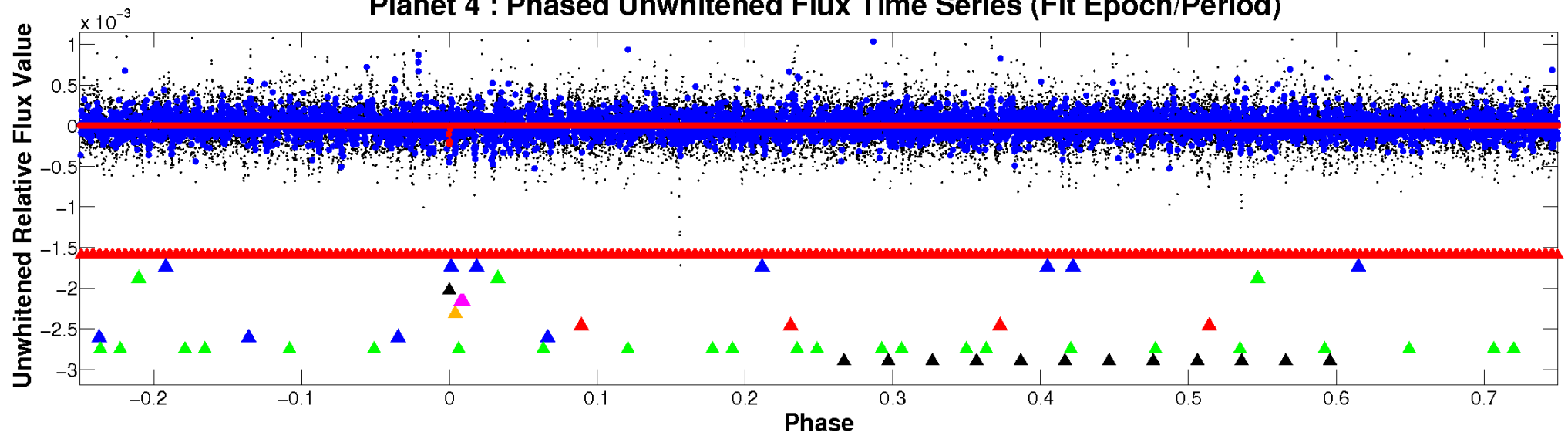
ALT Odd/Even

TCE 003533551-04

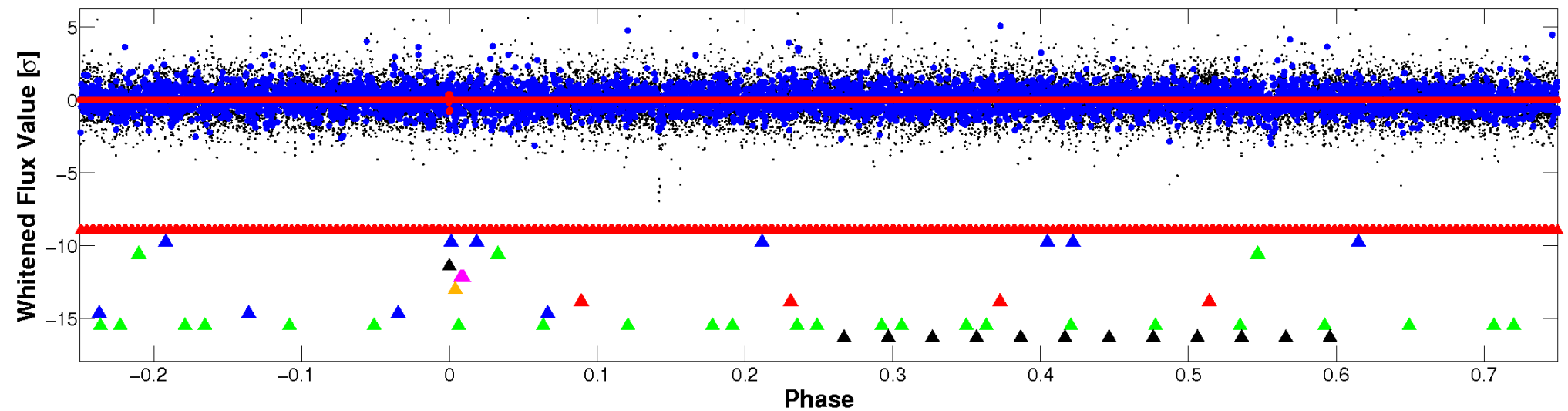


Non-Whitened Vs. Whitened Light Curve

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

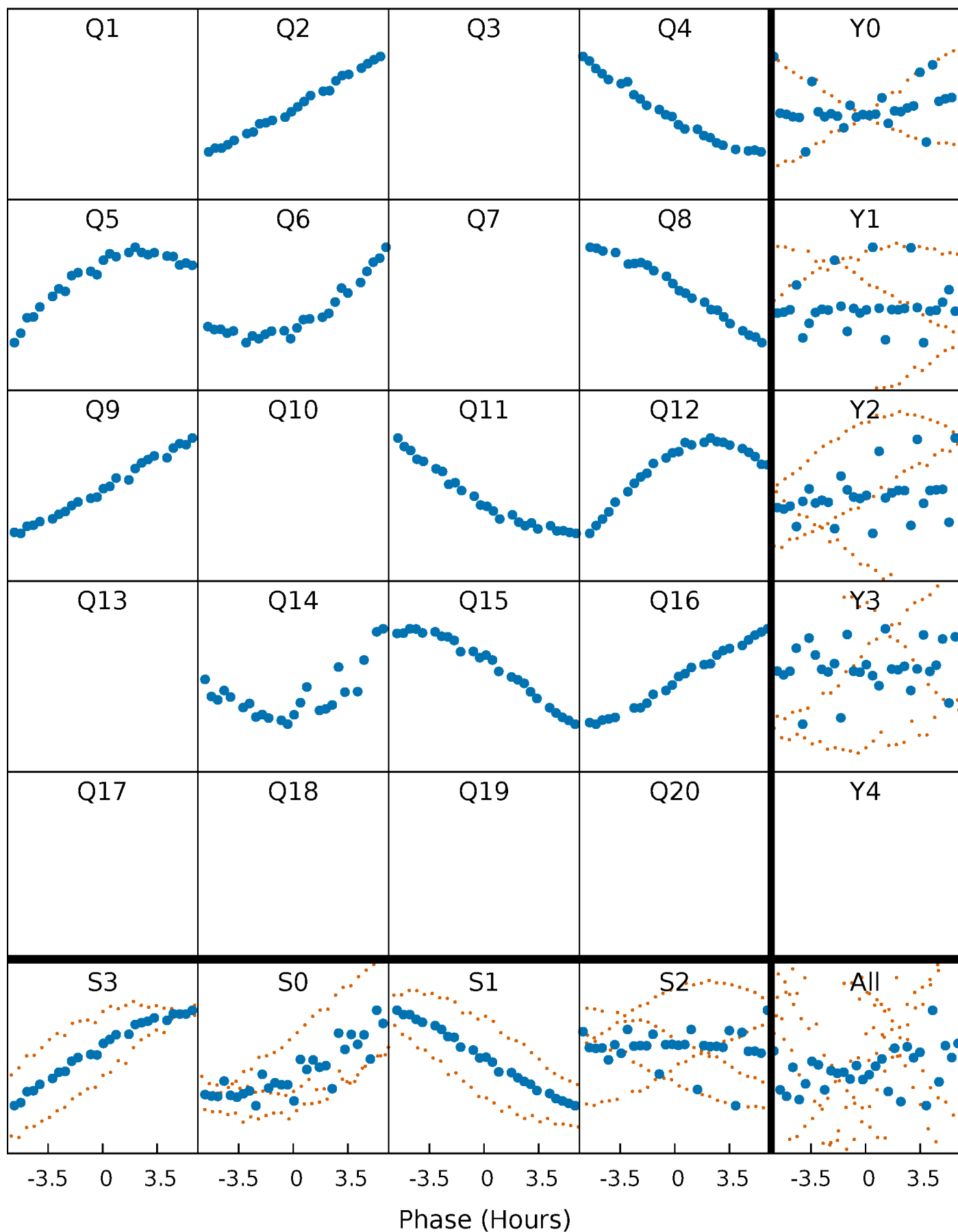


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



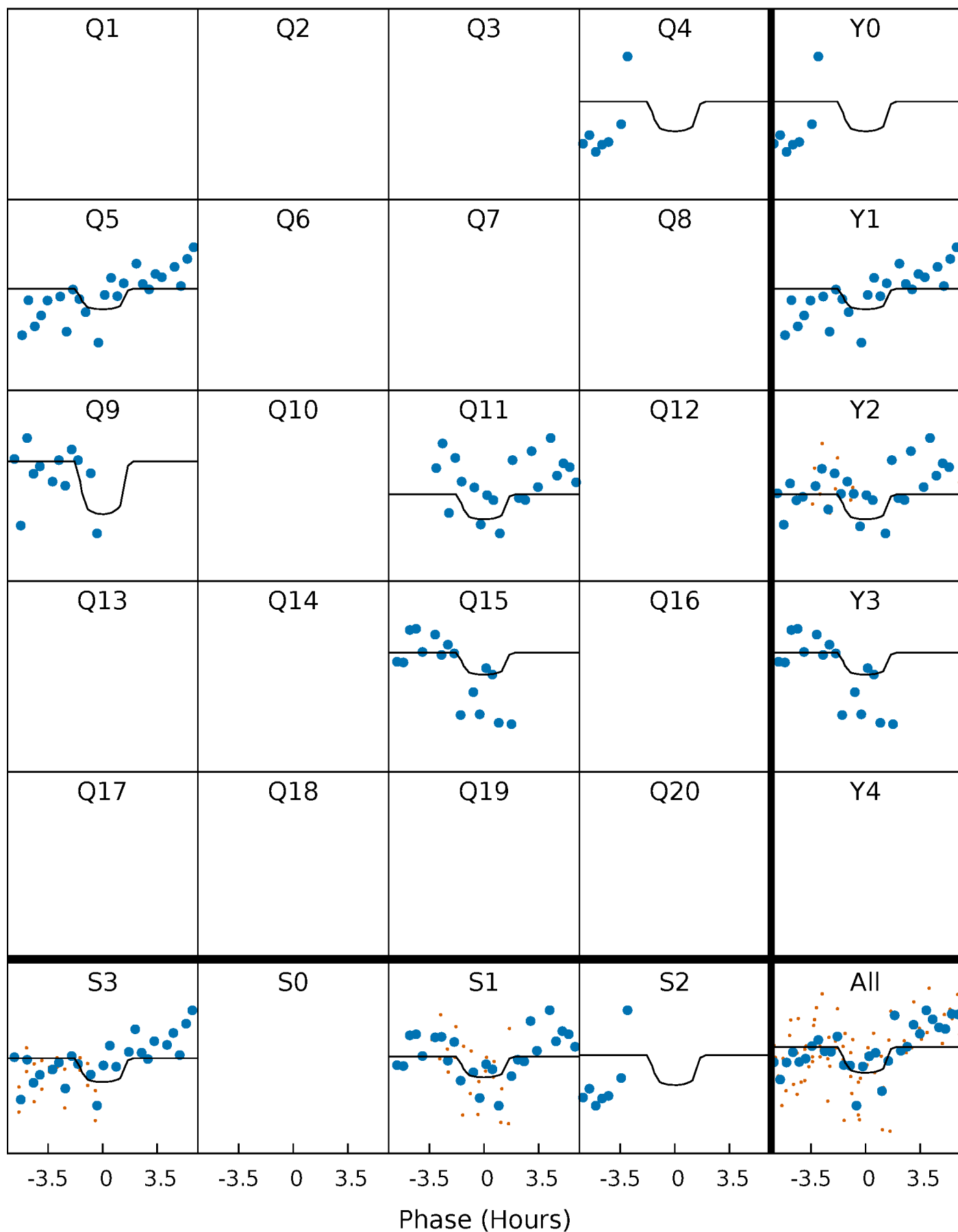
PDC Quarter-Phased Transit Curves

TCE 003533551-04 P=132.648483 Days $T_0=227.746073$ (BKJD)



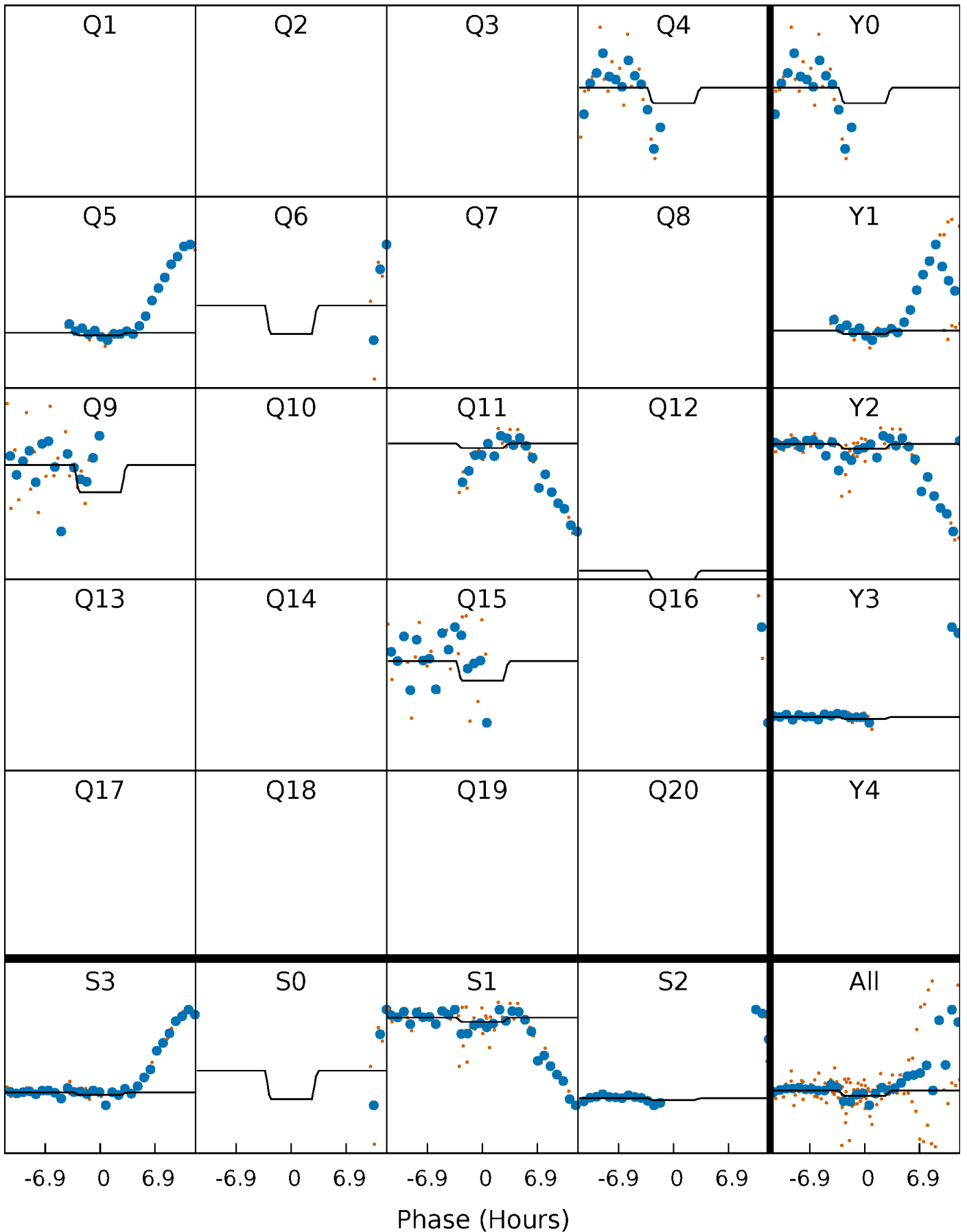
DV Quarter-Phased Transit Curves

TCE 003533551-04 P=132.648483 Days $T_0=227.746073$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

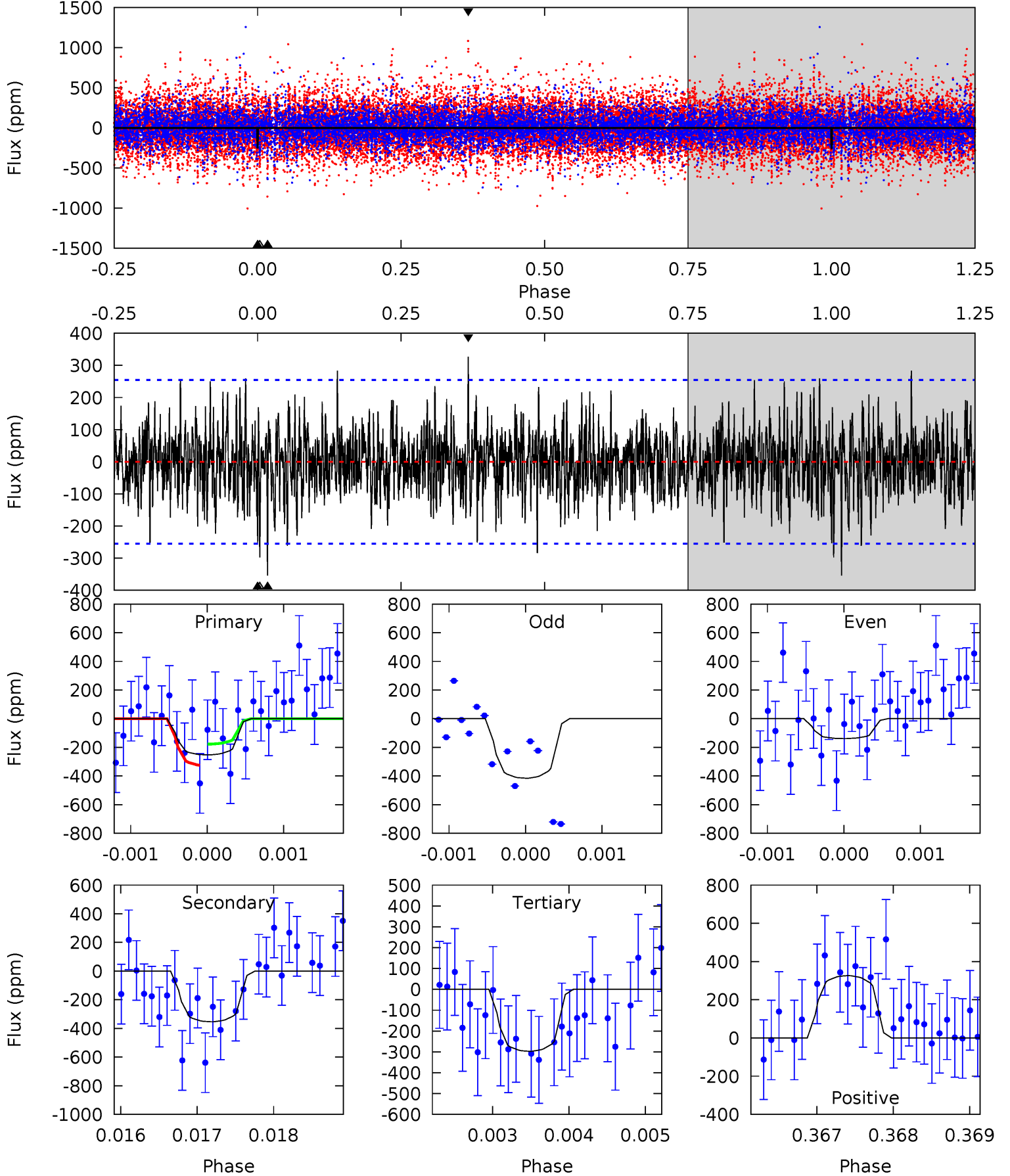
TCE 003533551-04 P=132.656119 Days $T_0=227.684663$ (BKJD)



DV Model-Shift Uniqueness Test

003533551-04, P = 132.648483 Days, E = 95.097590 Days

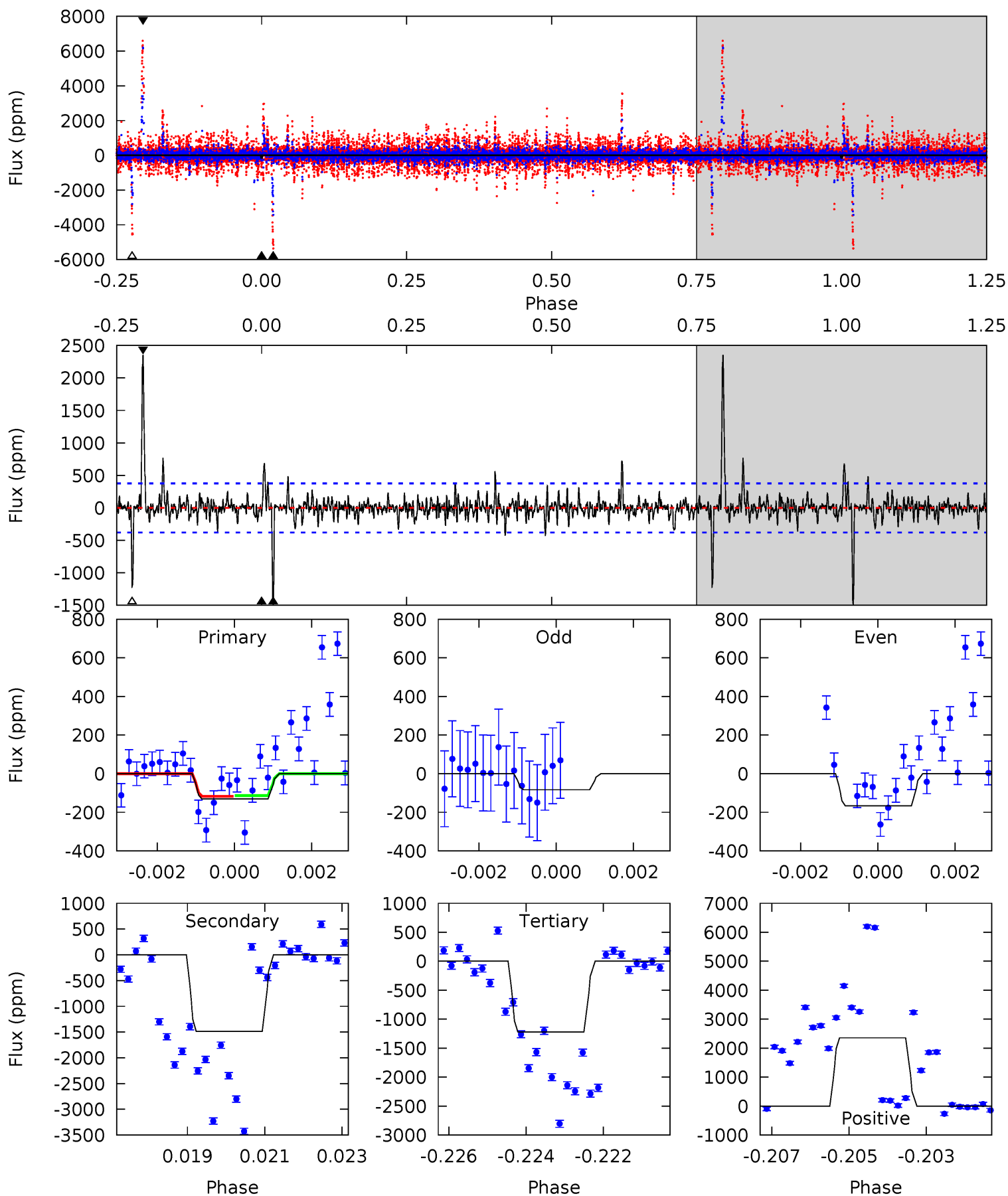
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.40	7.55	6.35	6.97	5.44	3.27	1.69	-0.95	-1.57	1.20	0.59	2.91	1.34	0.48	1.57



Alt Model-Shift Uniqueness Test

003533551-04, P = 132.656119 Days, E = 95.028544 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.85	21.0	17.2	33.2	5.34	3.11	2.30	-15.3	-31.3	3.78	-12.2	0.44	2.60	0.61	0.03



Stellar Parameters For KIC 003533551

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6144^{+183}_{-183}	$4.165^{+0.351}_{-0.189}$	$-0.840^{+0.300}_{-0.300}$	$1.232^{+0.345}_{-0.422}$	$0.809^{+0.103}_{-0.051}$	$0.609^{+1.309}_{-0.304}$
	+3%/-3%	+8%/-5%	+36%/-36%	+28%/-34%	+13%/-6%	+215%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003533551-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-354 ± 47	$9.55^{+11.50}_{-6.53}$	604^{+49}_{-59}	3502^{+1999}_{-647}	475^{+4653}_{-373}
Alt.	-1486 ± 71	$9.72^{+10.05}_{-6.94}$	606^{+46}_{-64}	4624^{+3830}_{-1082}	2028^{+21404}_{-1566}

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

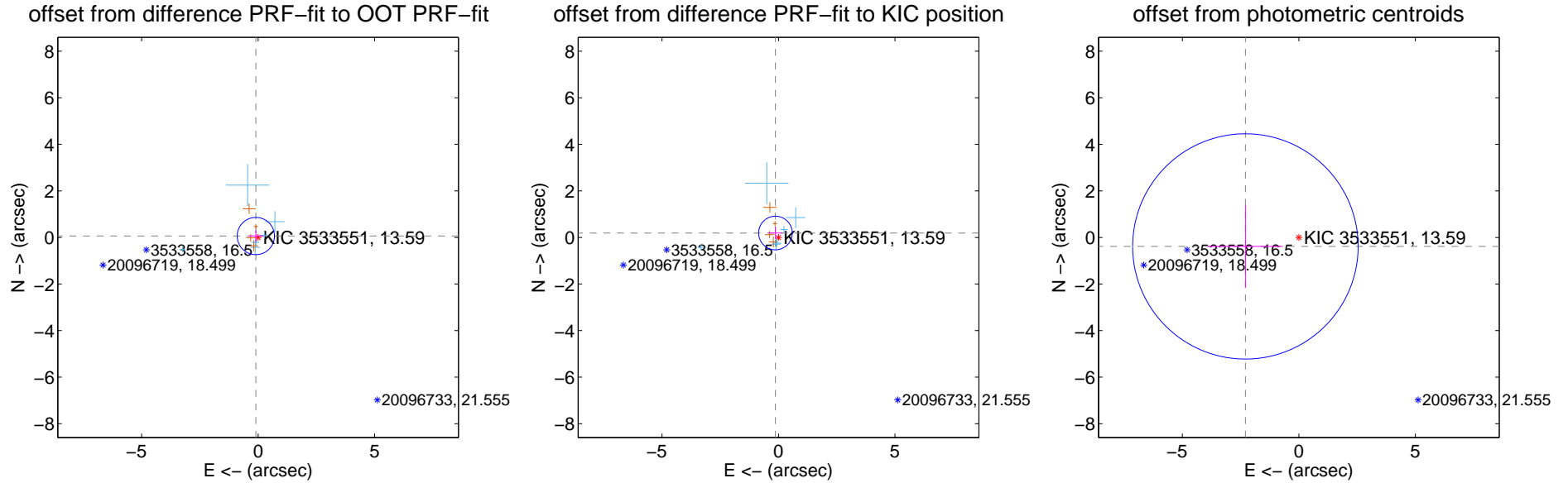
DV Centroid Data

Supplemental centroid analysis for 003533551-04. Kepler magnitude: 13.59. Transit SNR 3.35

There are 6 quarters with good PRF difference image offsets

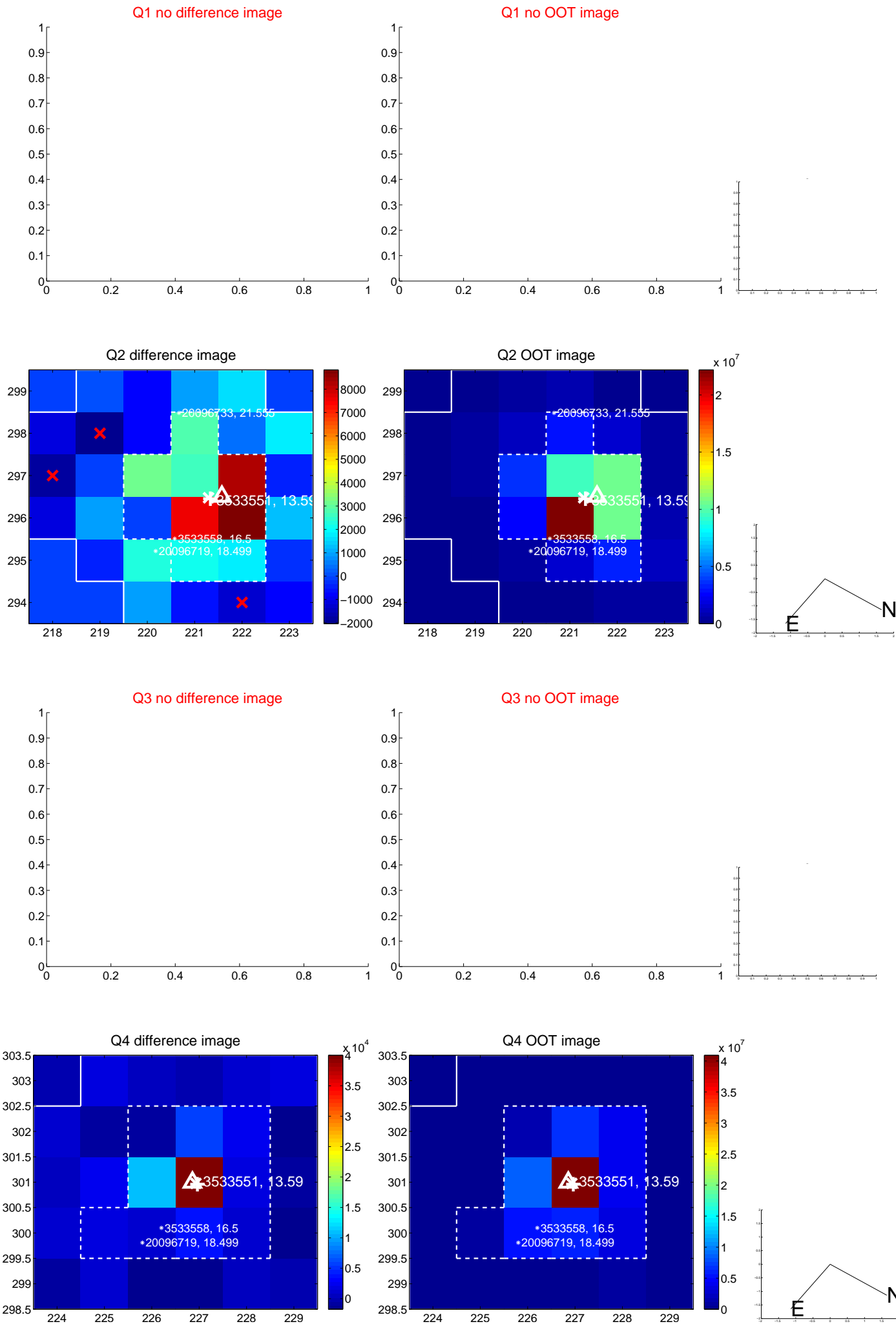
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.114 ± 0.266	0.43	0.097 ± 0.329	0.061 ± 0.252
PRF-fit source offset from KIC position	0.231 ± 0.241	0.96	0.131 ± 0.310	0.190 ± 0.268
photometric centroid source offset	2.33 ± 1.61	1.44	2.29 ± 1.61	-0.39 ± 1.77

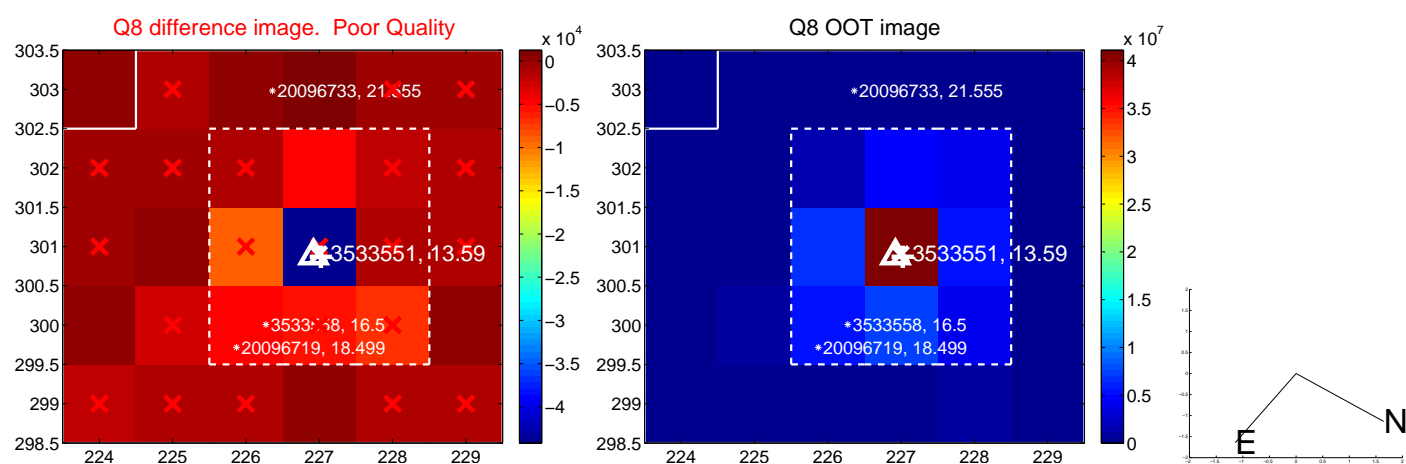
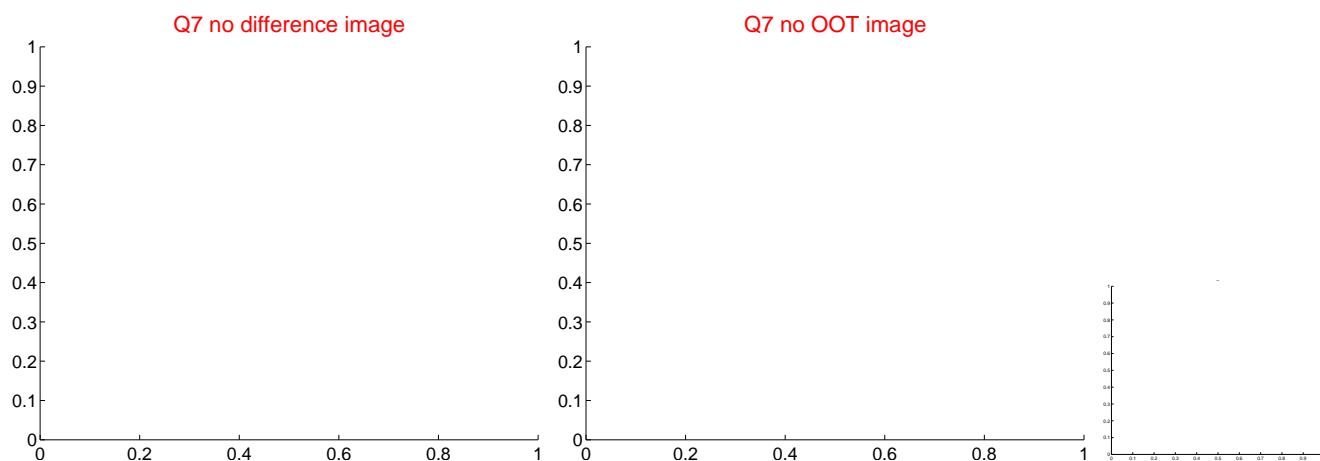
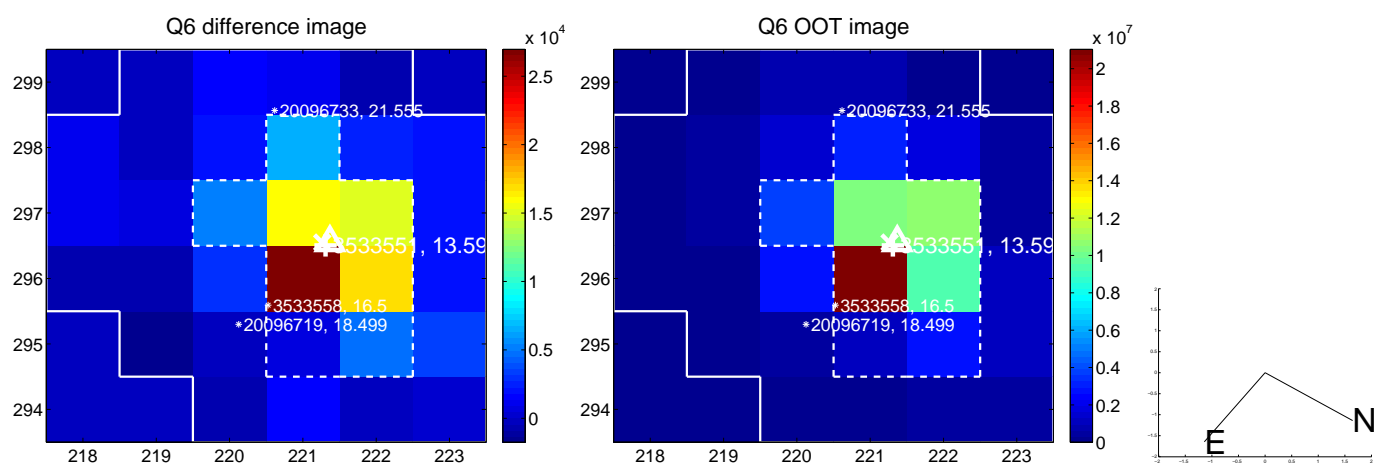
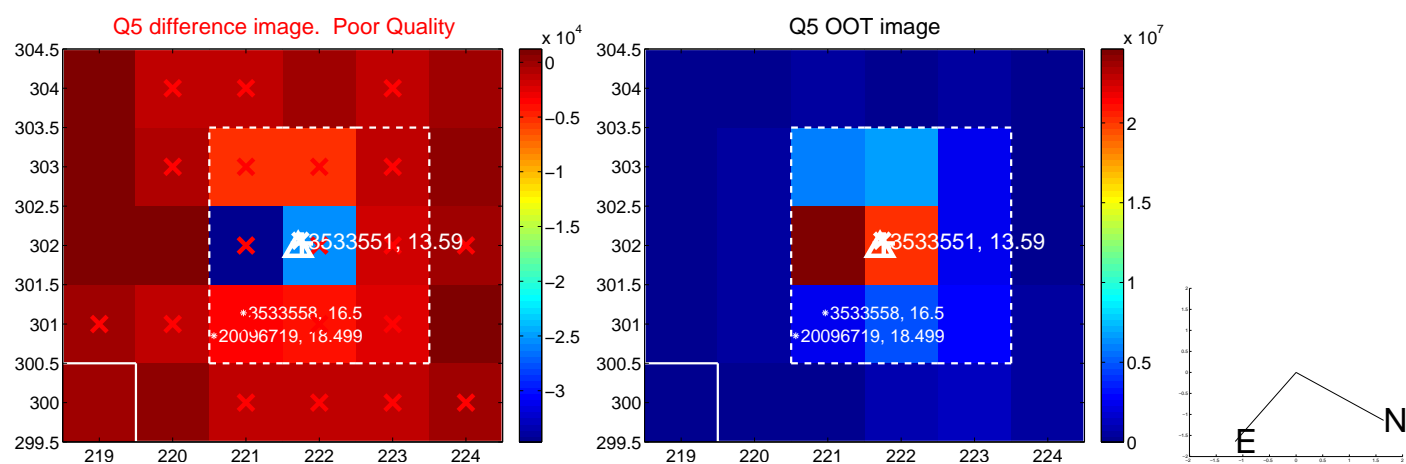


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

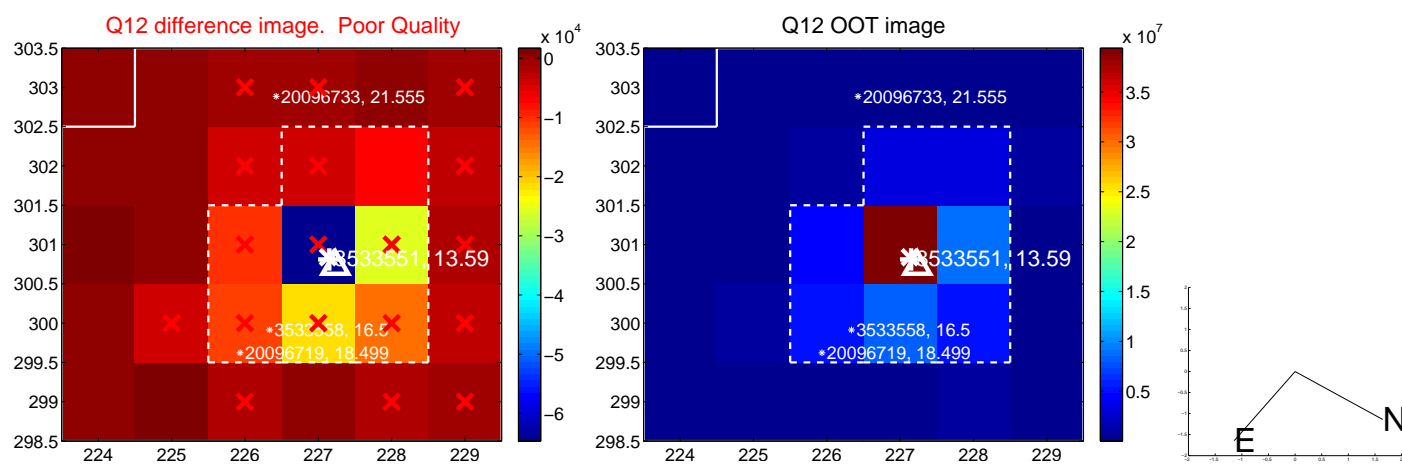
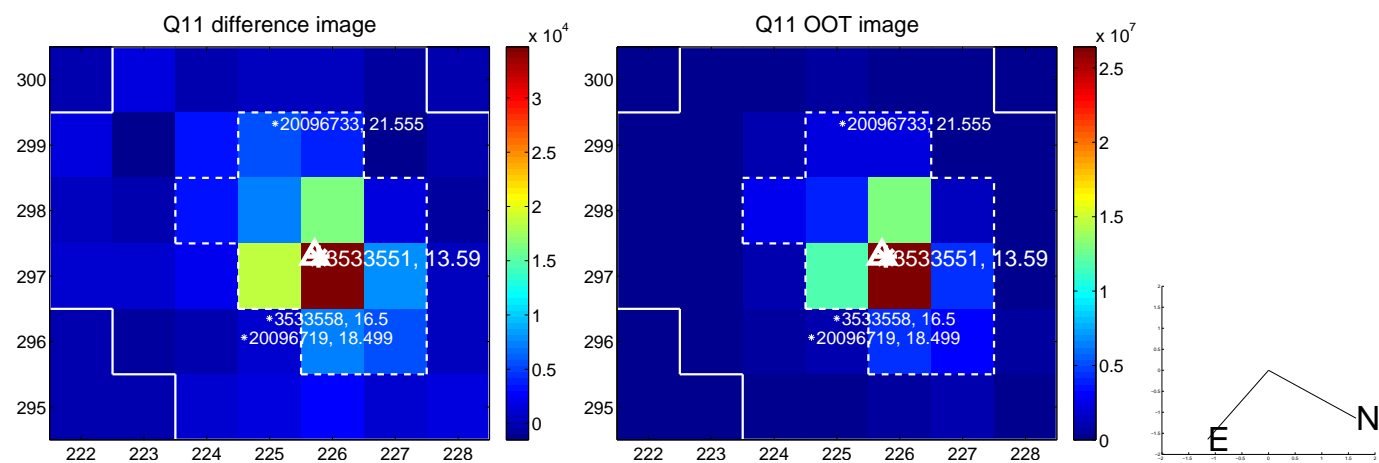
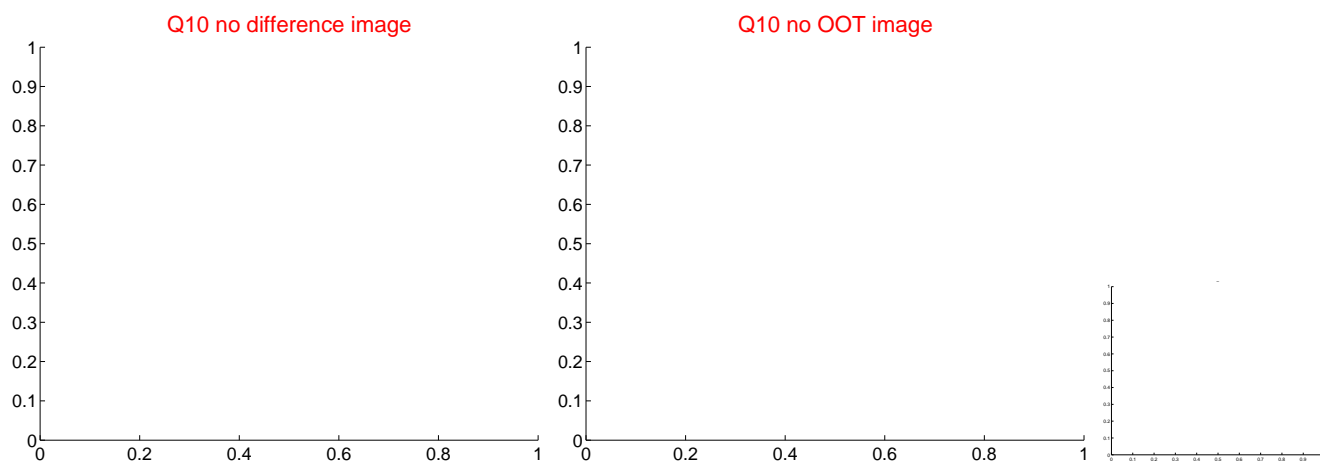
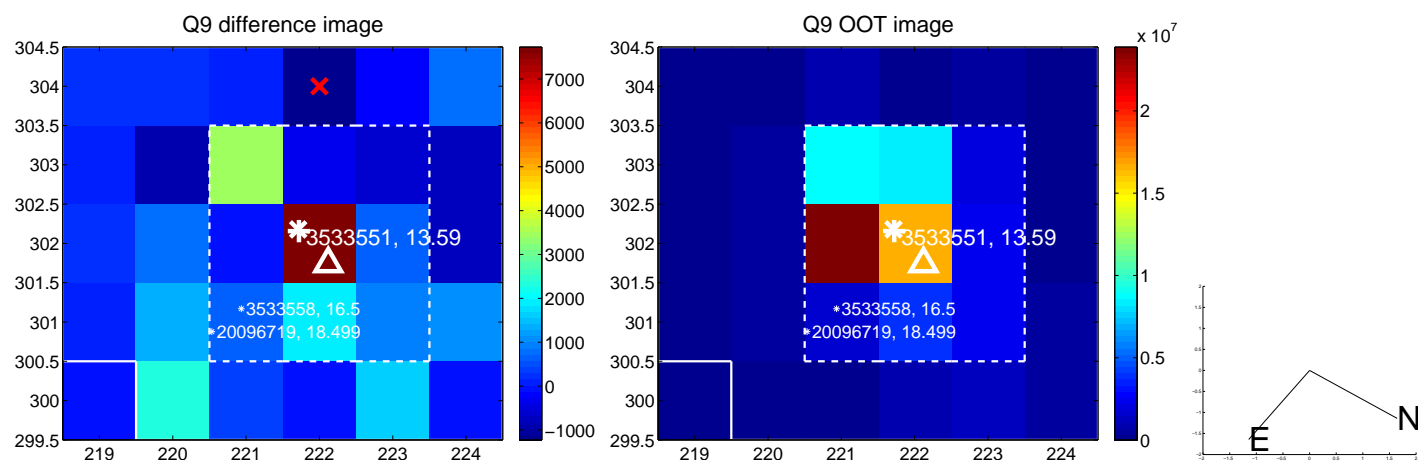
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



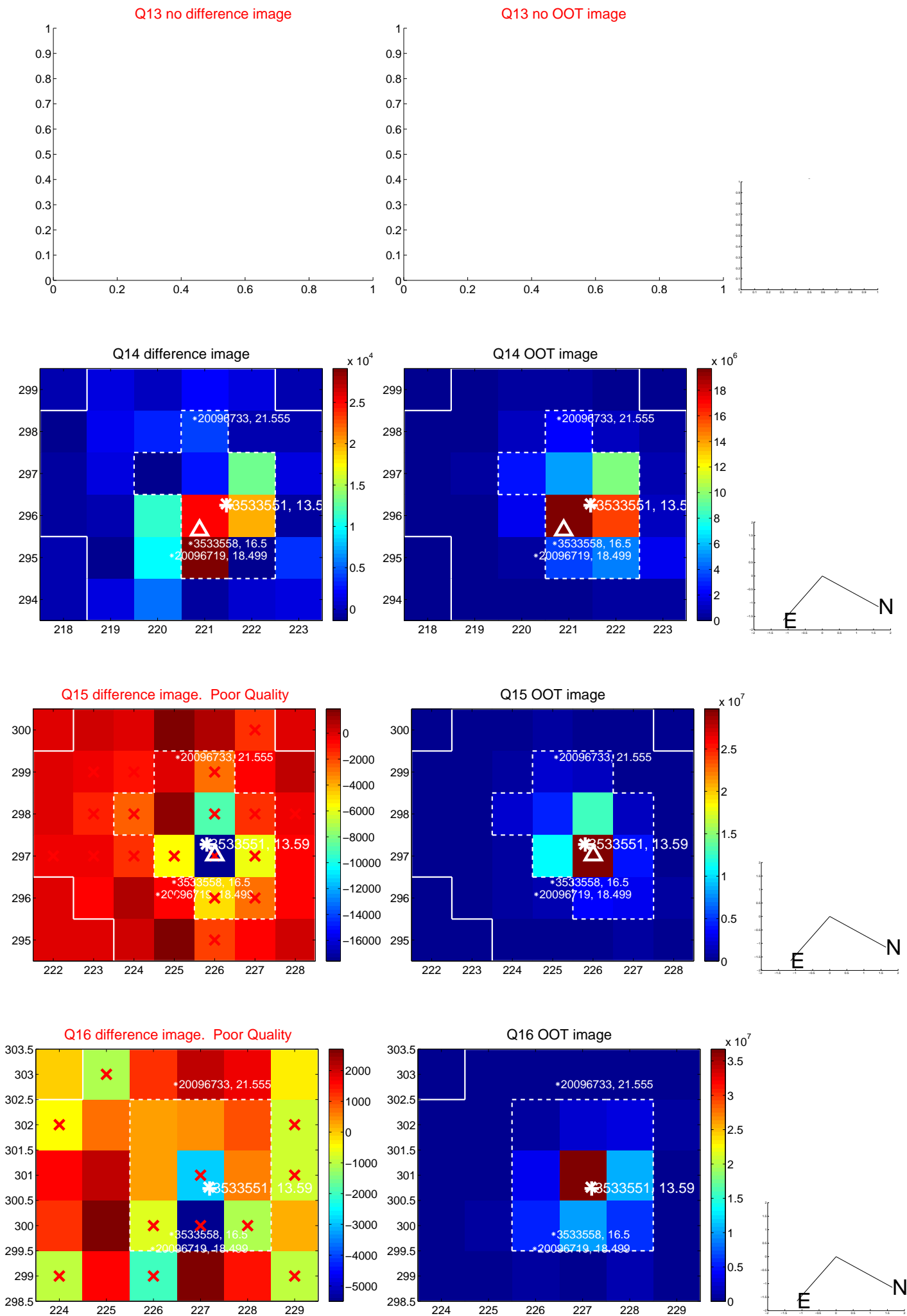
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



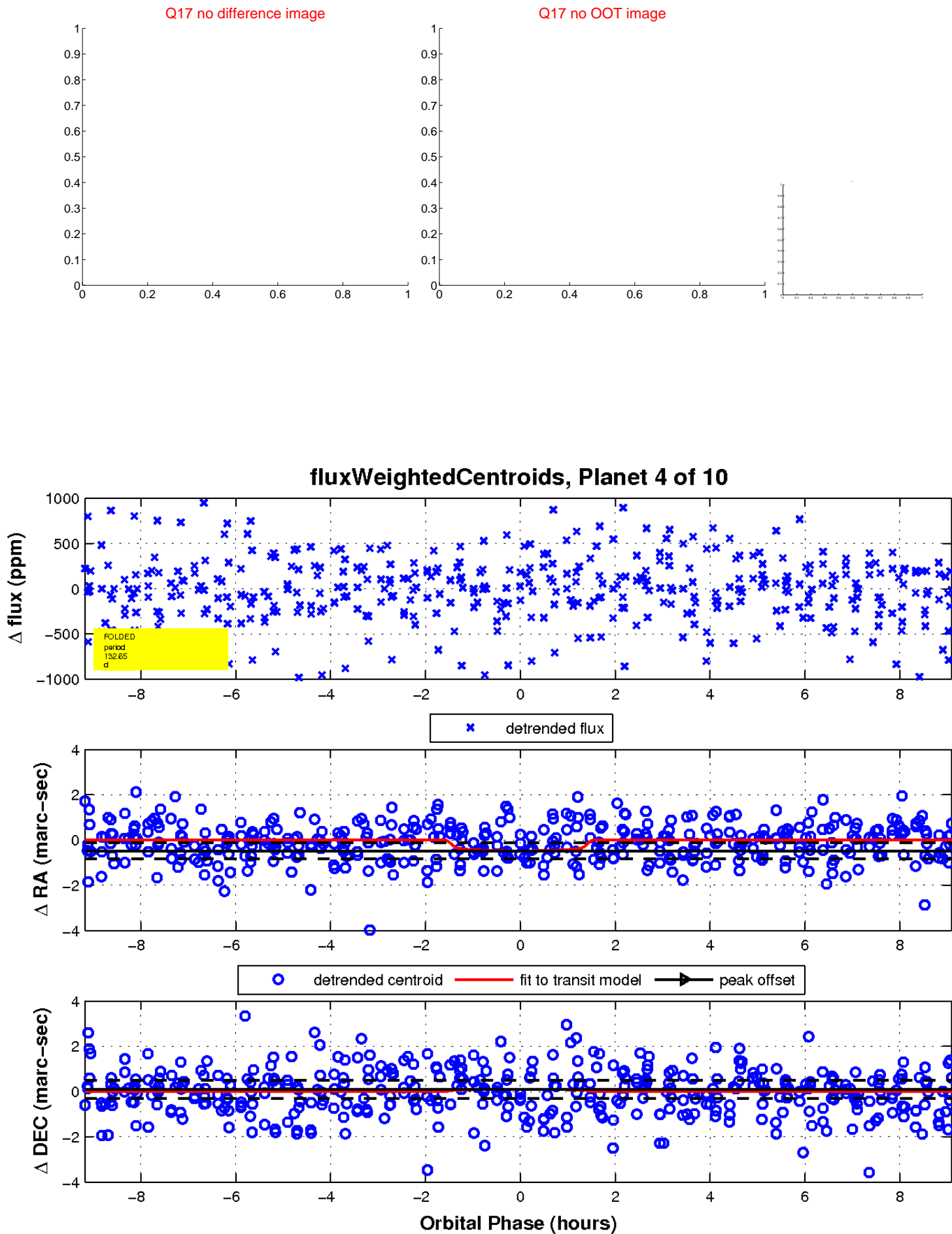
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

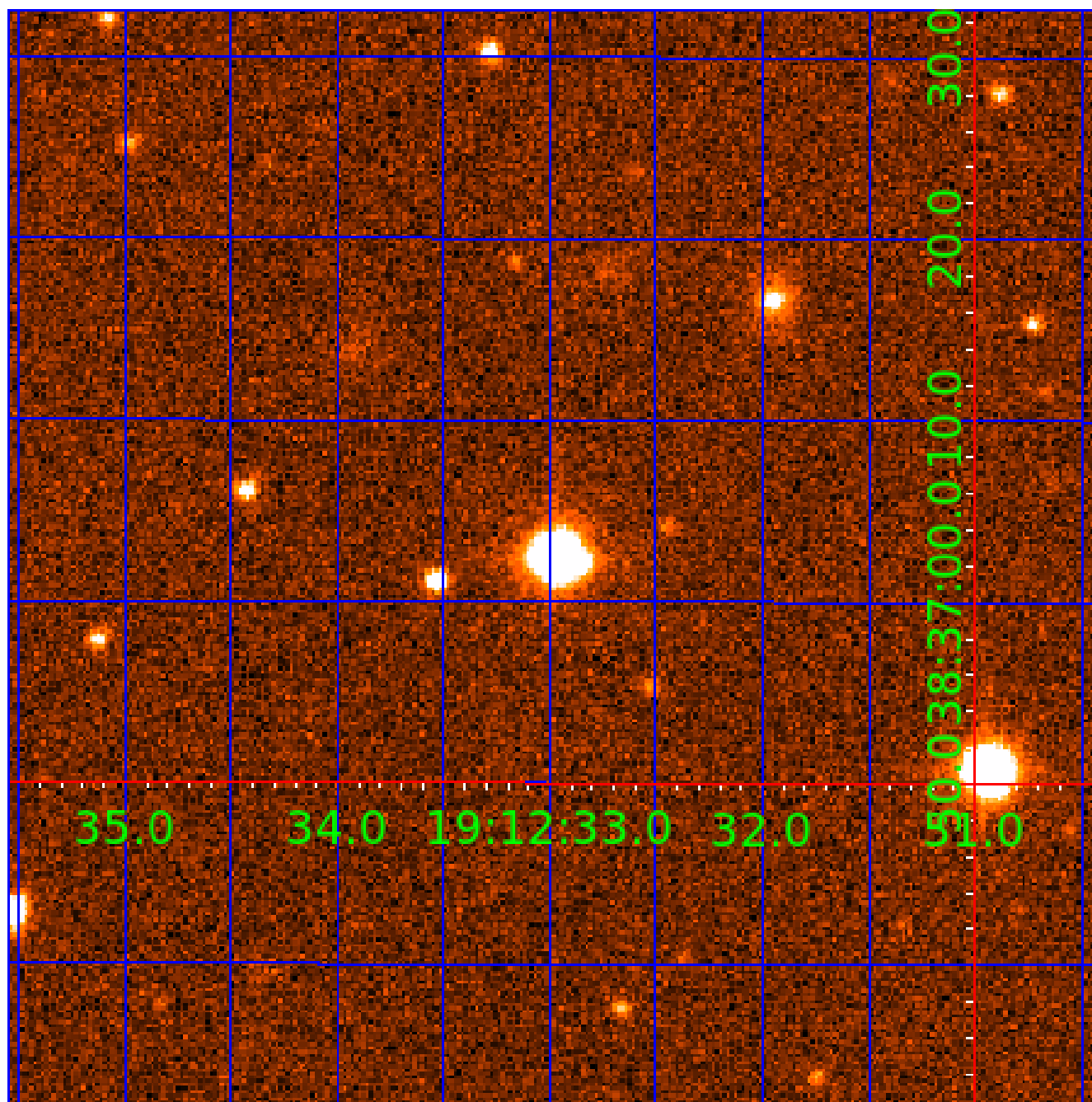


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
003533551-01	OBS	No	2.297362	133.631750	64.2	12.450	7.9	9.3	1.23	6144	1.33	1920.73
003533551-02	OBS	No	211.777821	283.721491	297.7	4.541	15.3	4.3	1.23	6144	2.27	4.61
003533551-03	OBS	No	498.367920	497.396492	1907.5	41.710	14.0	9.7	1.23	6144	9.98	1.47
003533551-04	OBS	No	132.648483	227.746073	225.6	3.059	9.1	3.3	1.23	6144	2.09	8.61
003533551-05	OBS	No	132.682289	228.720197	154.0	1.732	9.5	2.1	1.23	6144	1.58	8.60
003533551-06	OBS	No	132.656119	228.240061	277.2	9.000	9.6	-1.0	1.23	6144	2.06	8.61
003533551-07	OBS	No	379.158986	428.600167	548.9	7.215	9.2	8.2	1.23	6144	3.26	2.12
003533551-08	OBS	No	411.361648	196.323732	586.8	7.760	9.0	7.1	1.23	6144	3.19	1.90
003533551-09	OBS	No	62.528122	141.492009	277.9	8.863	9.4	7.4	1.23	6144	2.17	23.46
003533551-10	OBS	No	128.684428	174.127242	635.3	4.081	8.7	8.8	1.23	6144	5.97	8.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003533551-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003533551-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003533551-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003533551-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET
003533551-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
003533551-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003533551-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003533551-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

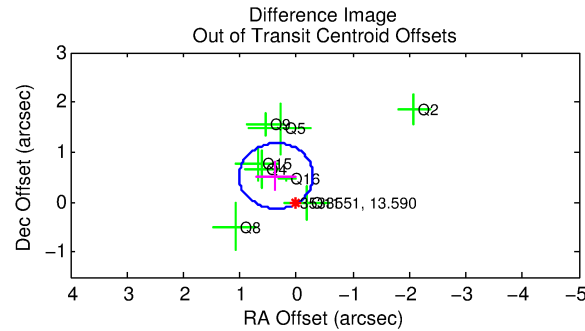
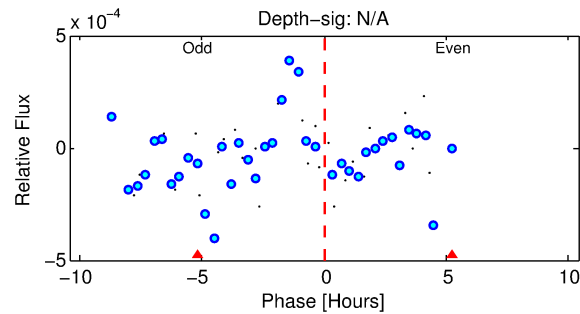
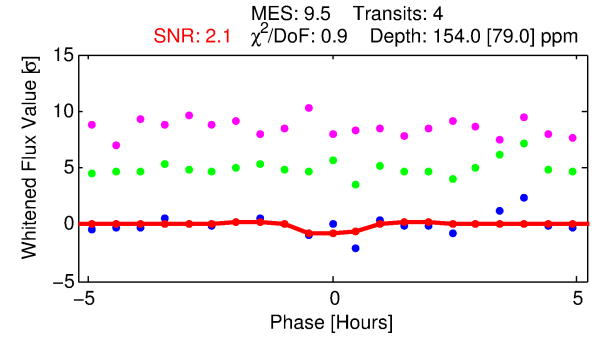
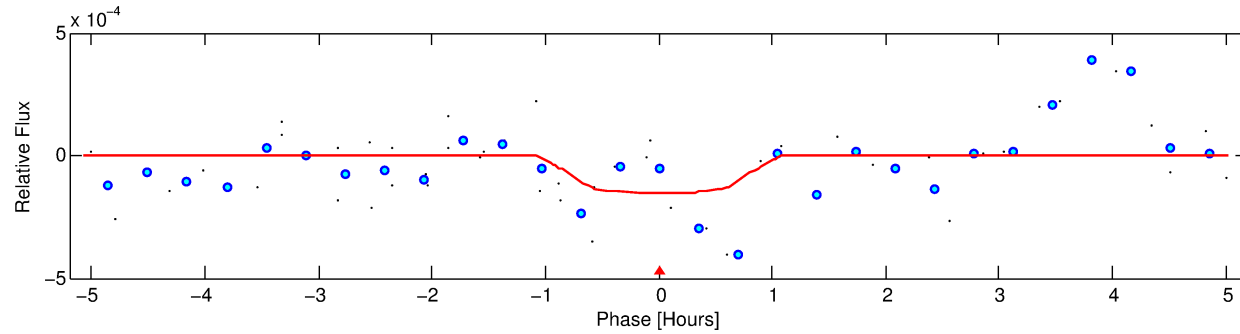
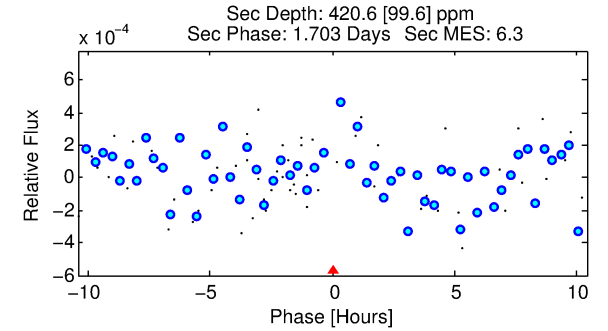
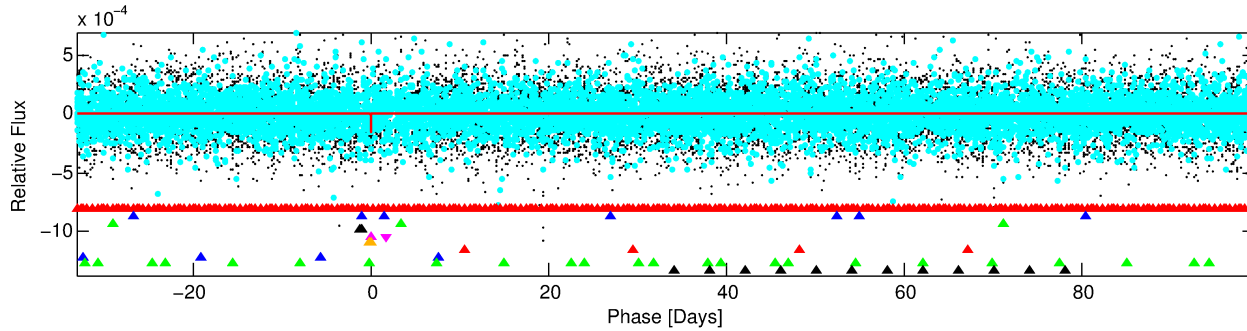
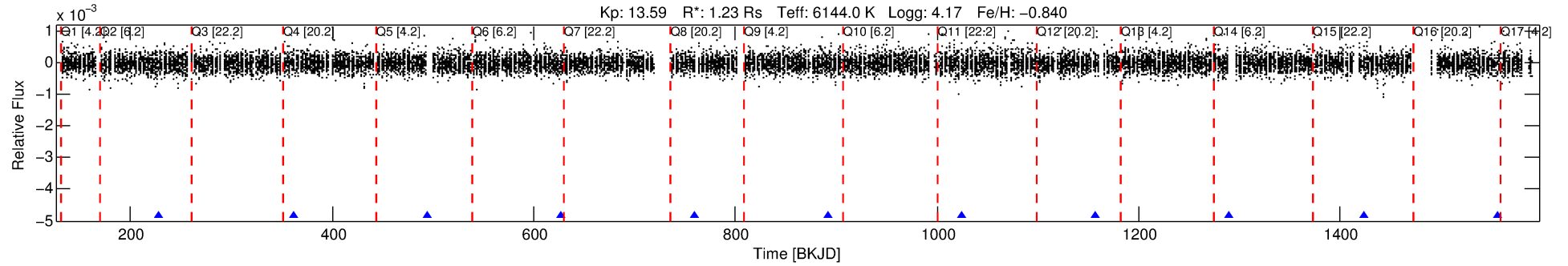
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003533551-05

No Significant Match Found

DV One-Page Summary

KIC: 3533551 Candidate: 5 of 10 Period: 132.682 d



DV Fit Results:

Period = 132.68229 [0.00493] d
Epoch = 228.7202 [0.0161] BKJD
Rp/R* = 0.0118 [0.0813]
a/R* = 514.62 [18141.75]
b = 0.50 [54.70]
Seff = 8.60 [5.14]
Teq = 437 [65] K
Rp = 1.58 [10.95] Re
a = 0.4746 [0.1676] AU
Ag = 20819.40 [288111.50] [0.07σ]
Teffp = 8111 [28036] K [0.27σ]

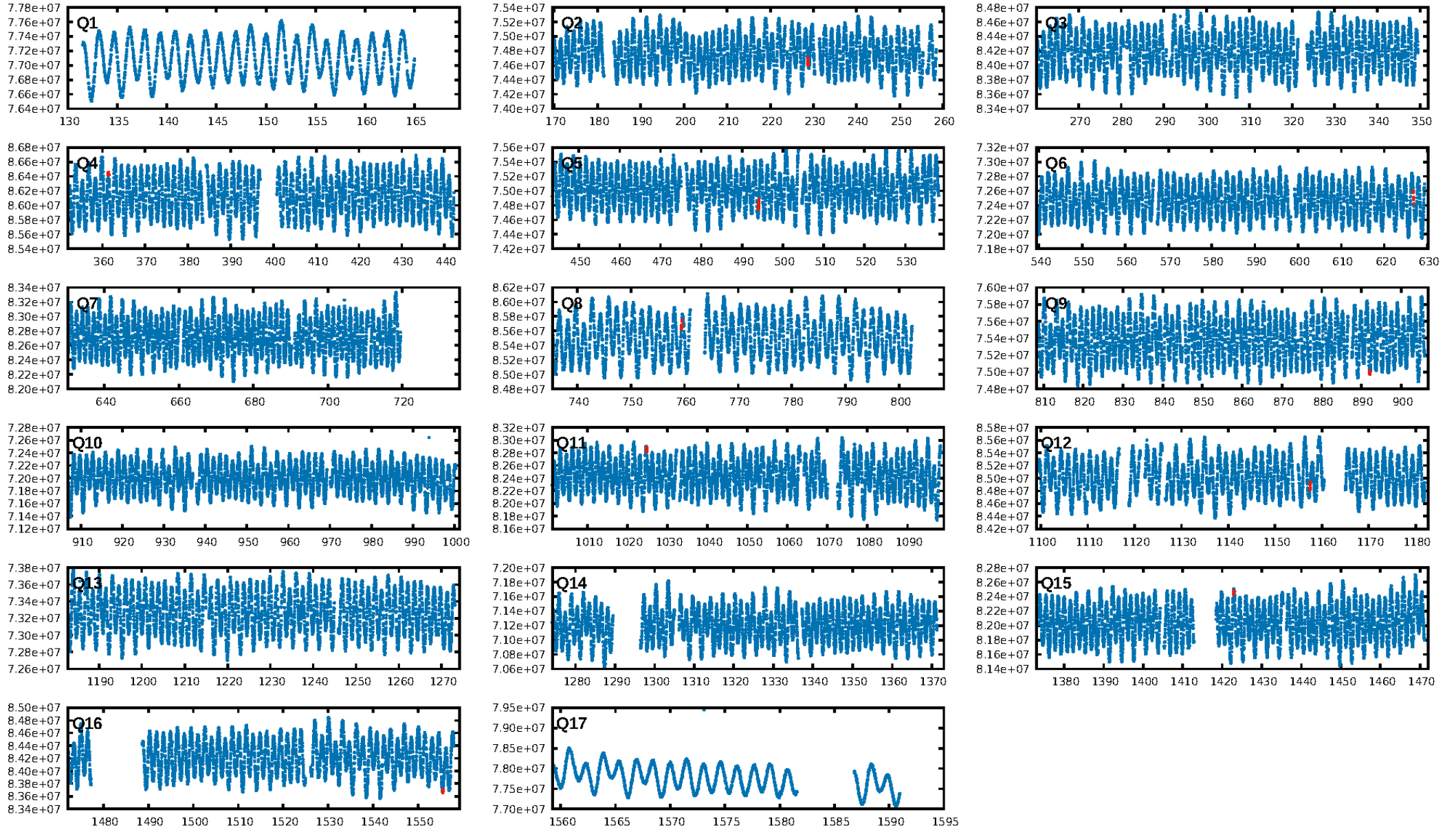
DV Diagnostic Results:

ShortPeriod-sig: 5.5% [0.07σ]
LongPeriod-sig: 100.0% [390.59σ]
ModelChiSquare2-sig: 96.5%
ModelChiSquareGof-sig: 96.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.9809
Centroid-sig: 54.3%
Centroid-so: 2.442 arcsec [0.75σ]
OotOffset-rm: 0.635 arcsec [2.91σ]
OotOffset-st: 1/2/3/2 [8]
KicOffset-rm: 0.738 arcsec [3.52σ]
KicOffset-st: 1/2/3/2 [8]
DiffImageQuality-fgm: 0.50 [4/8]
DiffImageOverlap-fno: 0.00 [0/10]

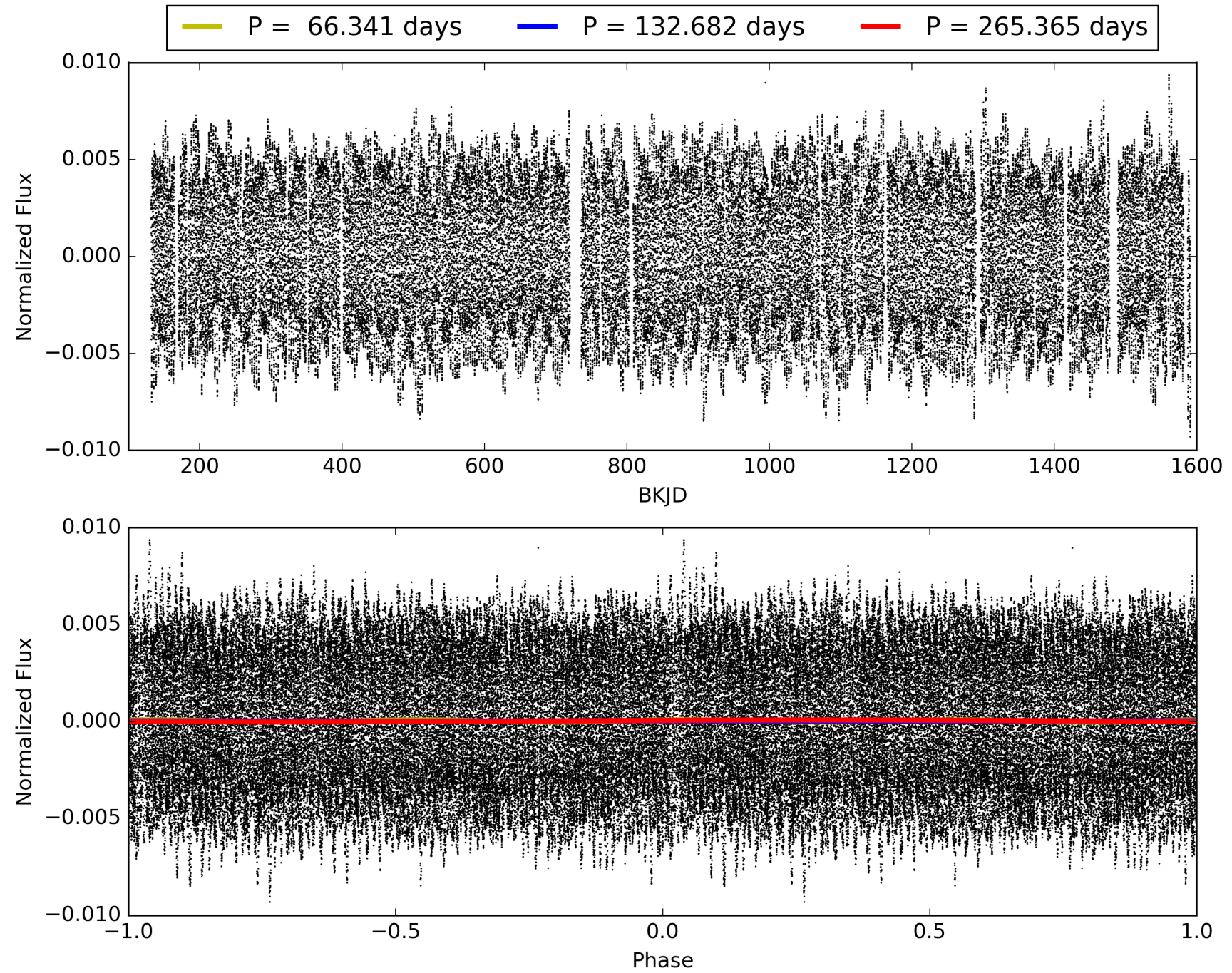
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 19:00:09 Z

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

TCE 003533551-05, PDC Light Curves

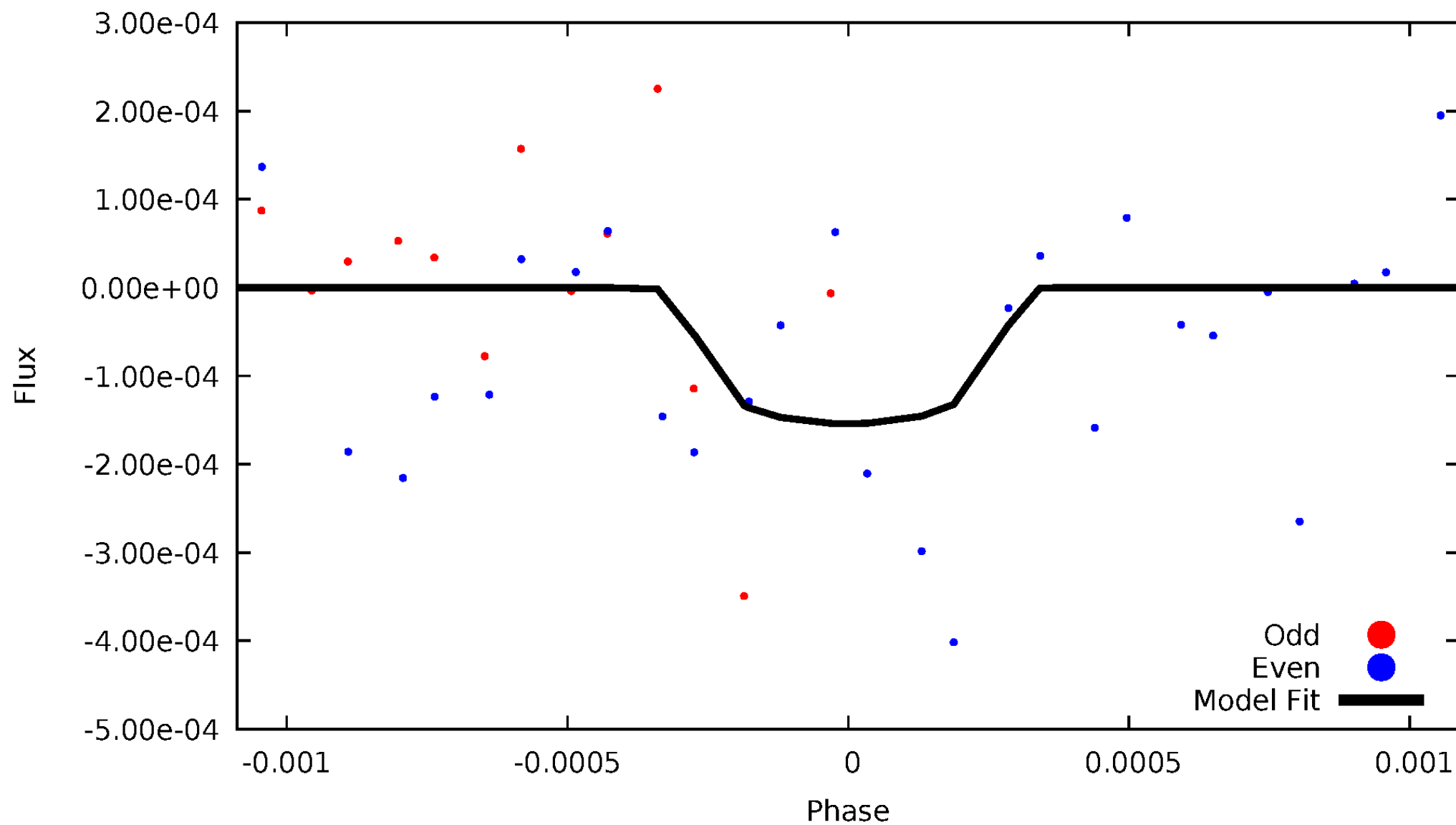


TCE 003533551-05



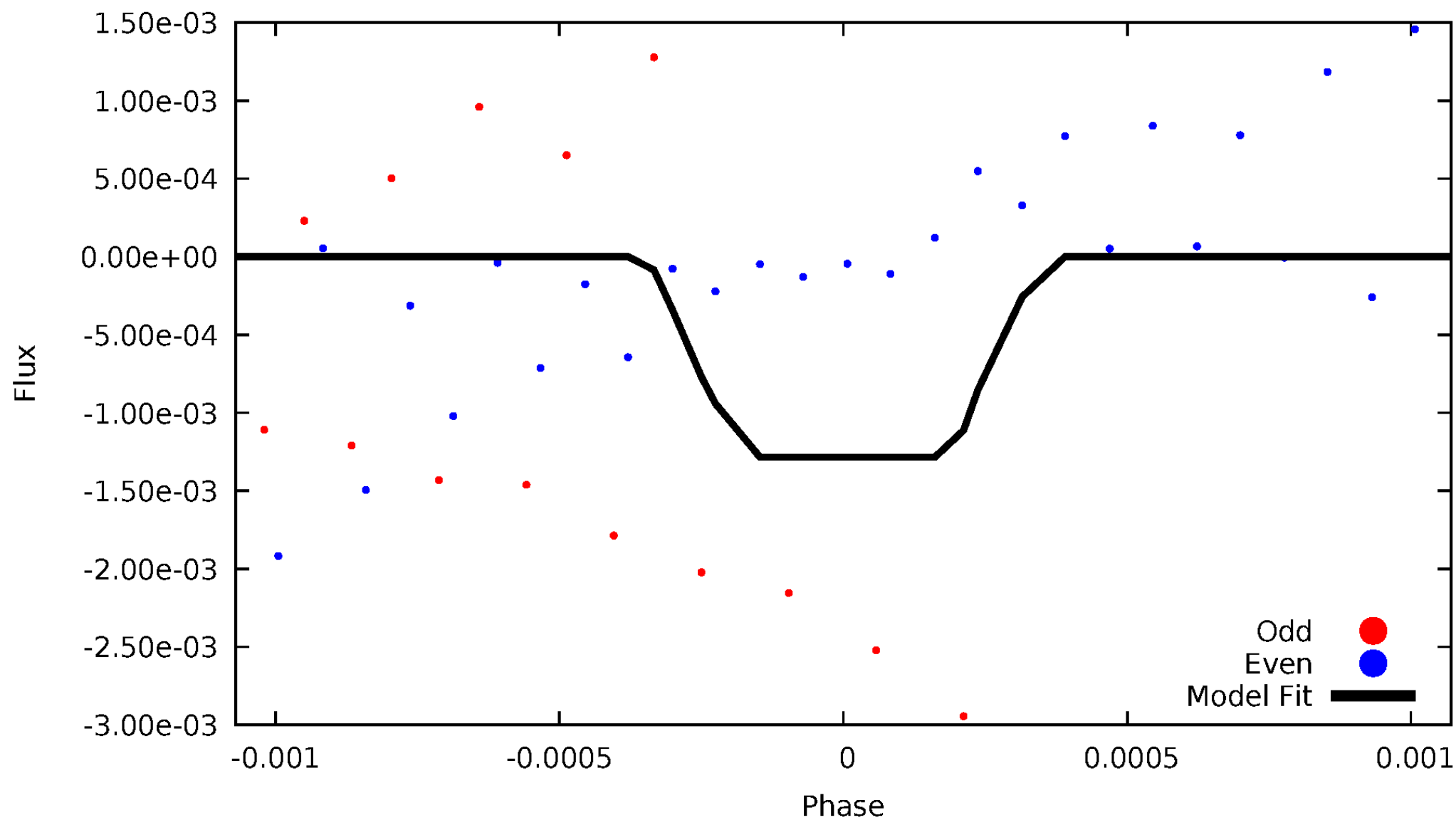
DV Odd/Even

TCE 003533551-05



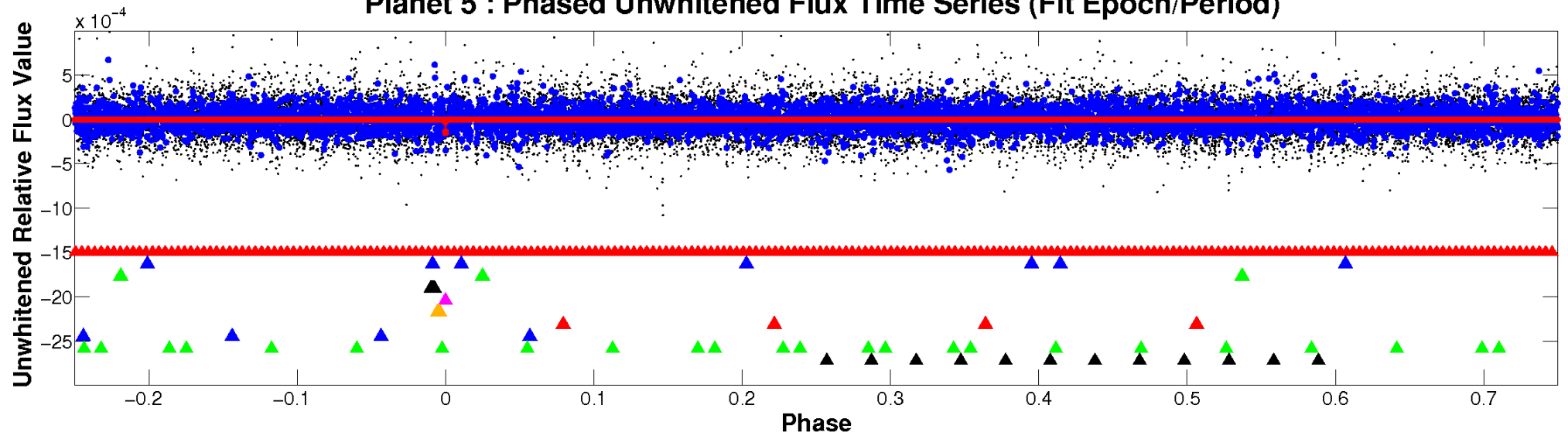
ALT Odd/Even

TCE 003533551-05

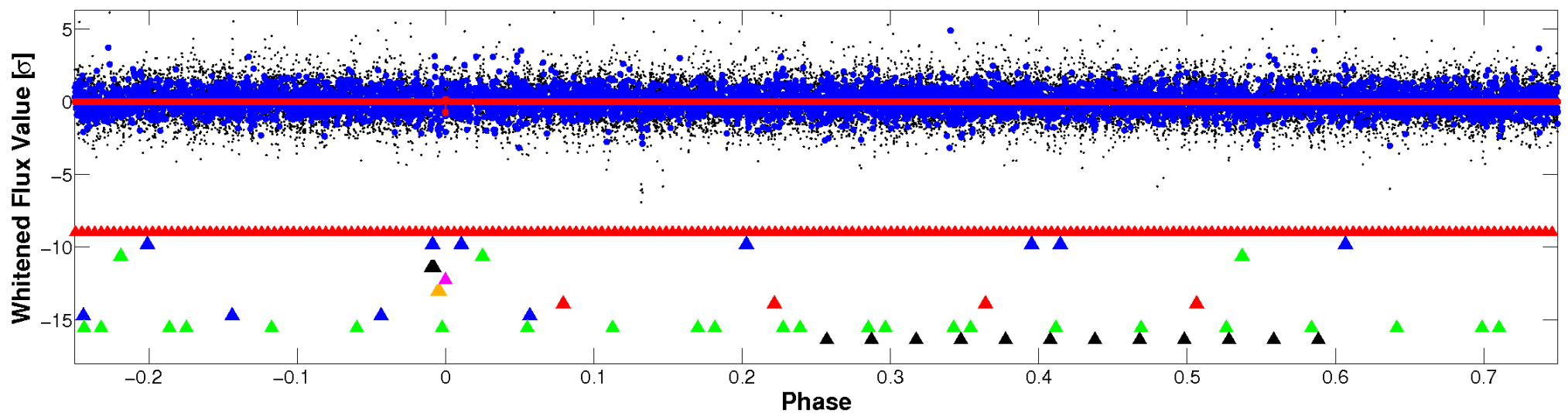


Non-Whitened Vs. Whitened Light Curve

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

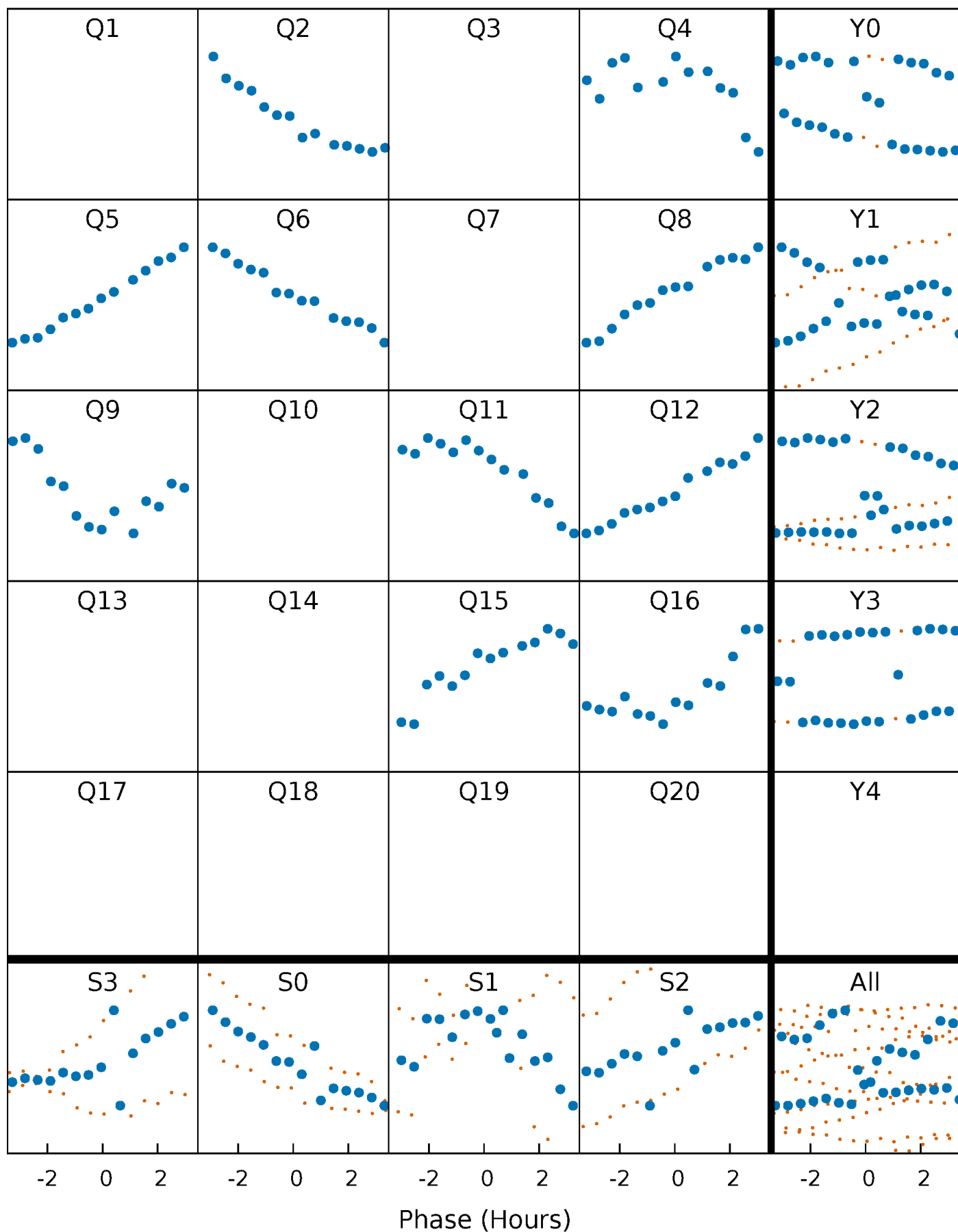


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



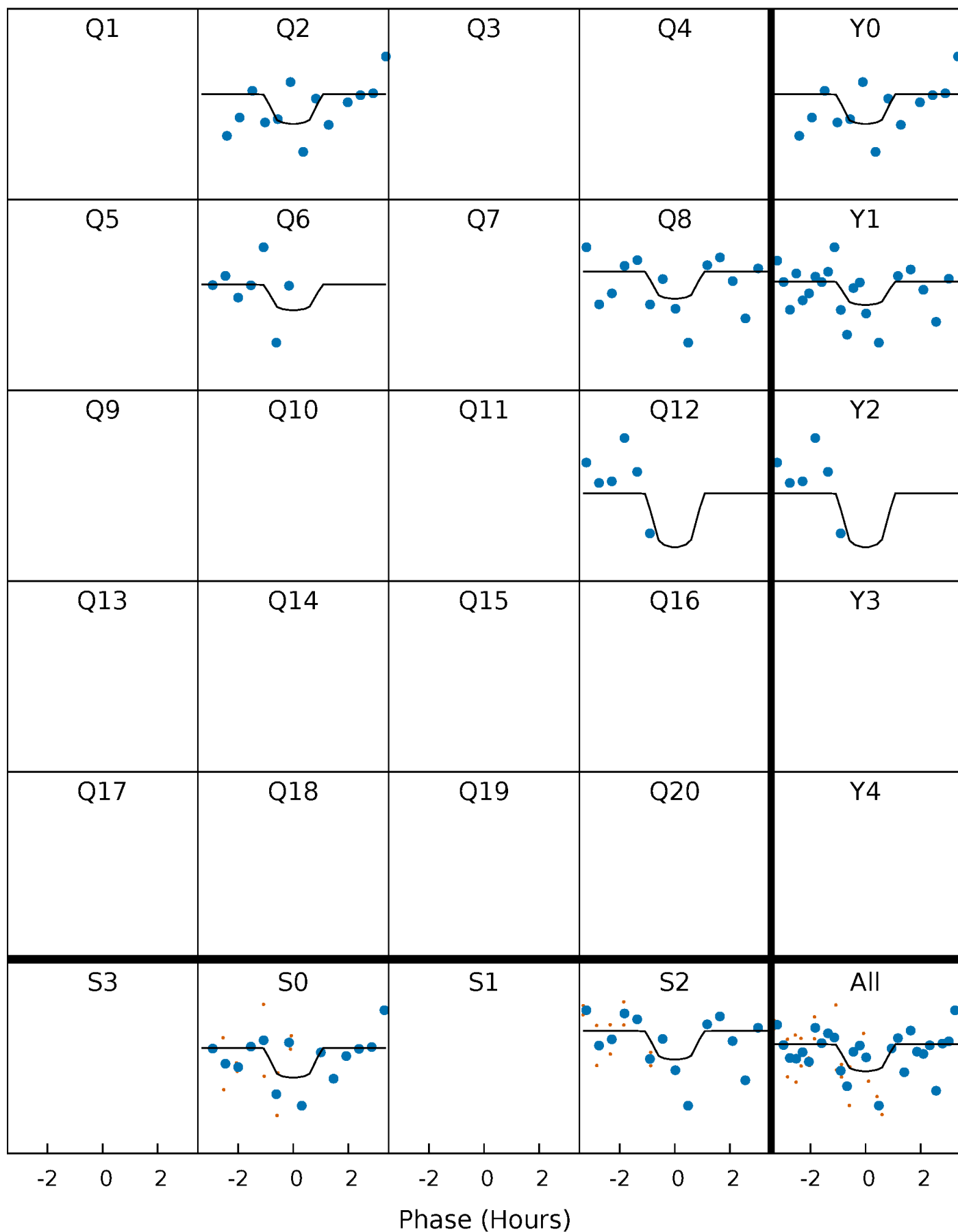
PDC Quarter-Phased Transit Curves

TCE 003533551-05 $P=132.682289$ Days $T_0=228.720197$ (BKJD)



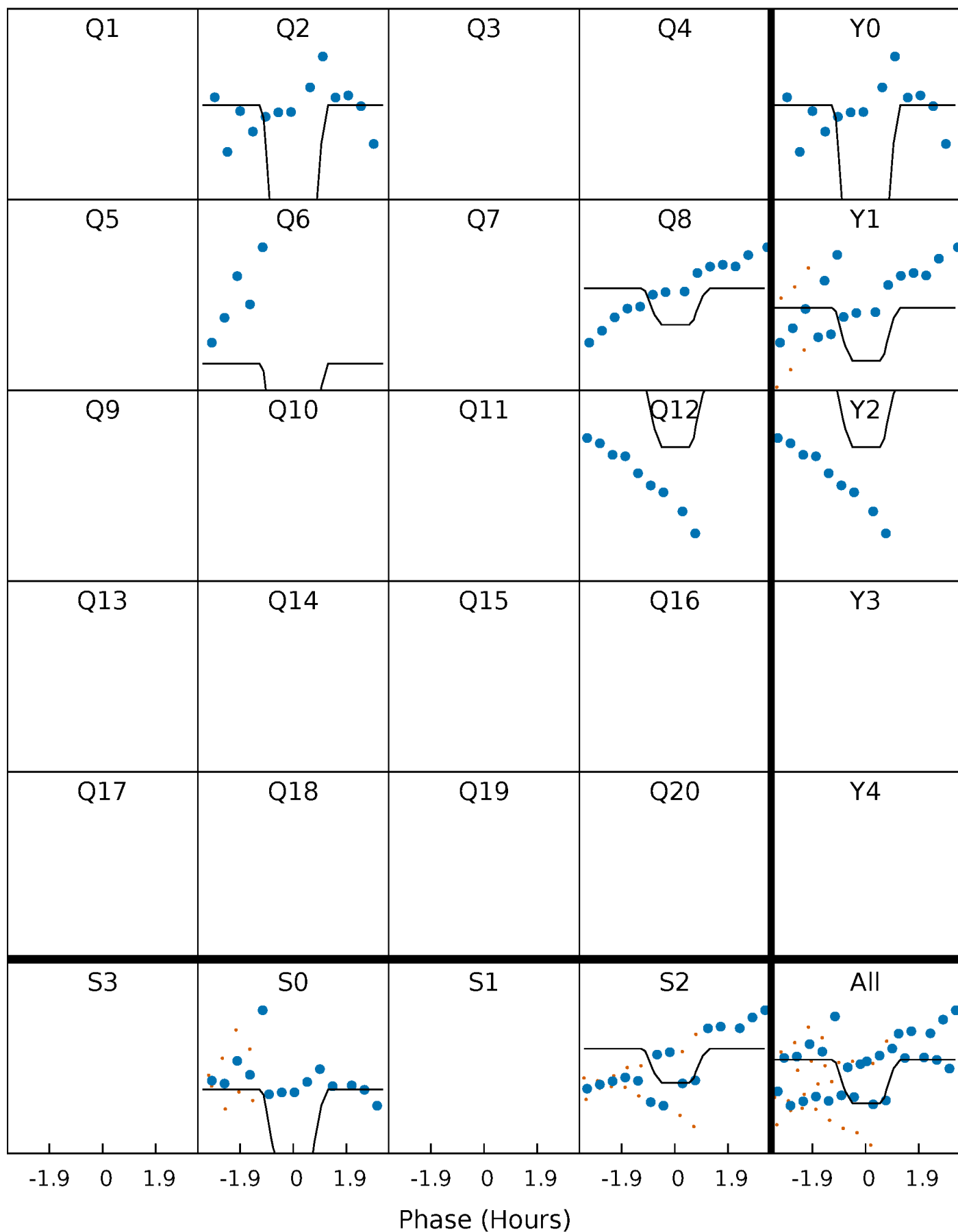
DV Quarter-Phased Transit Curves

TCE 003533551-05 $P=132.682289$ Days $T_0=228.720197$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

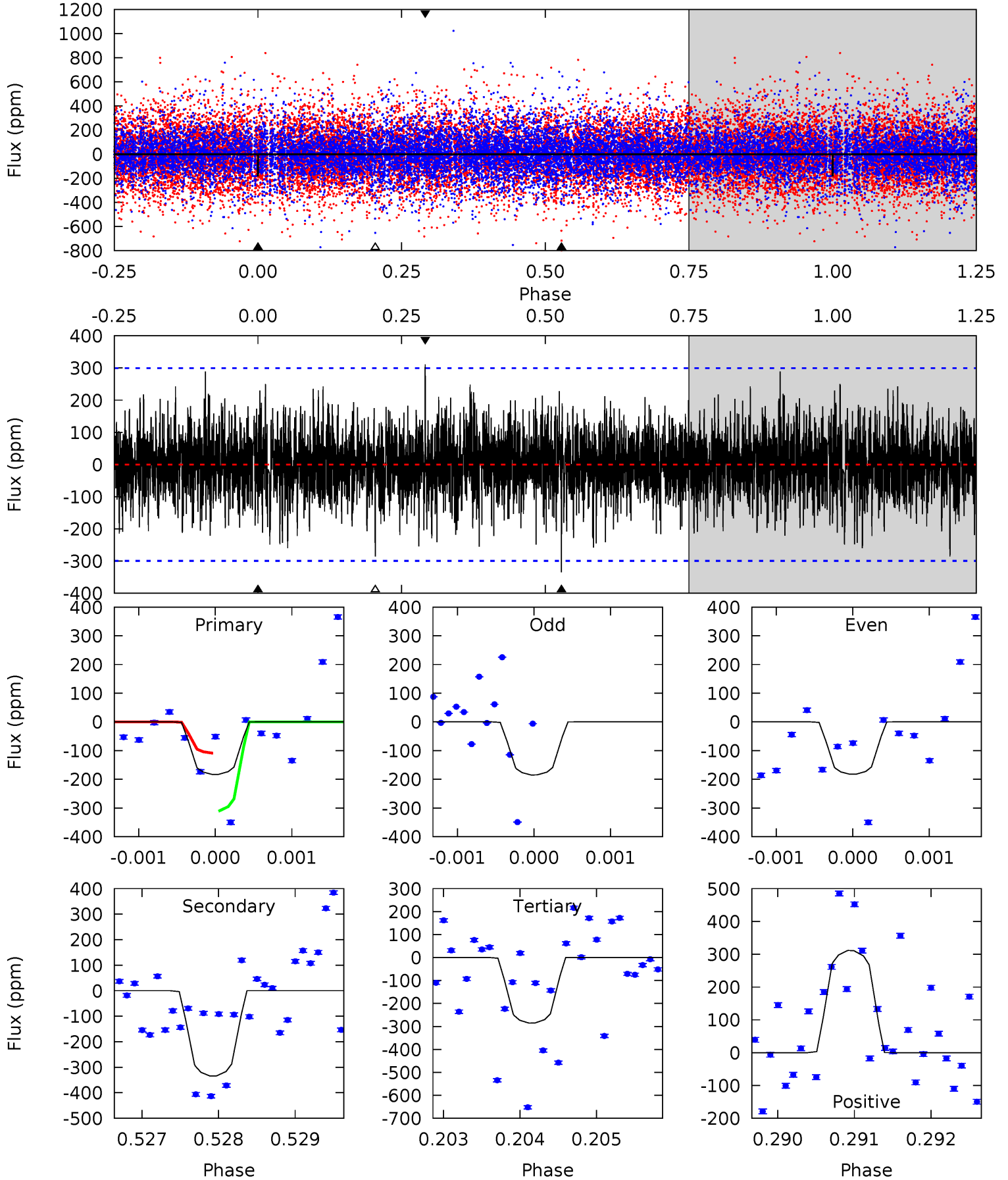
TCE 003533551-05 P=132.656119 Days $T_0=228.838782$ (BKJD)



DV Model-Shift Uniqueness Test

003533551-05, P = 132.682289 Days, E = 96.037908 Days

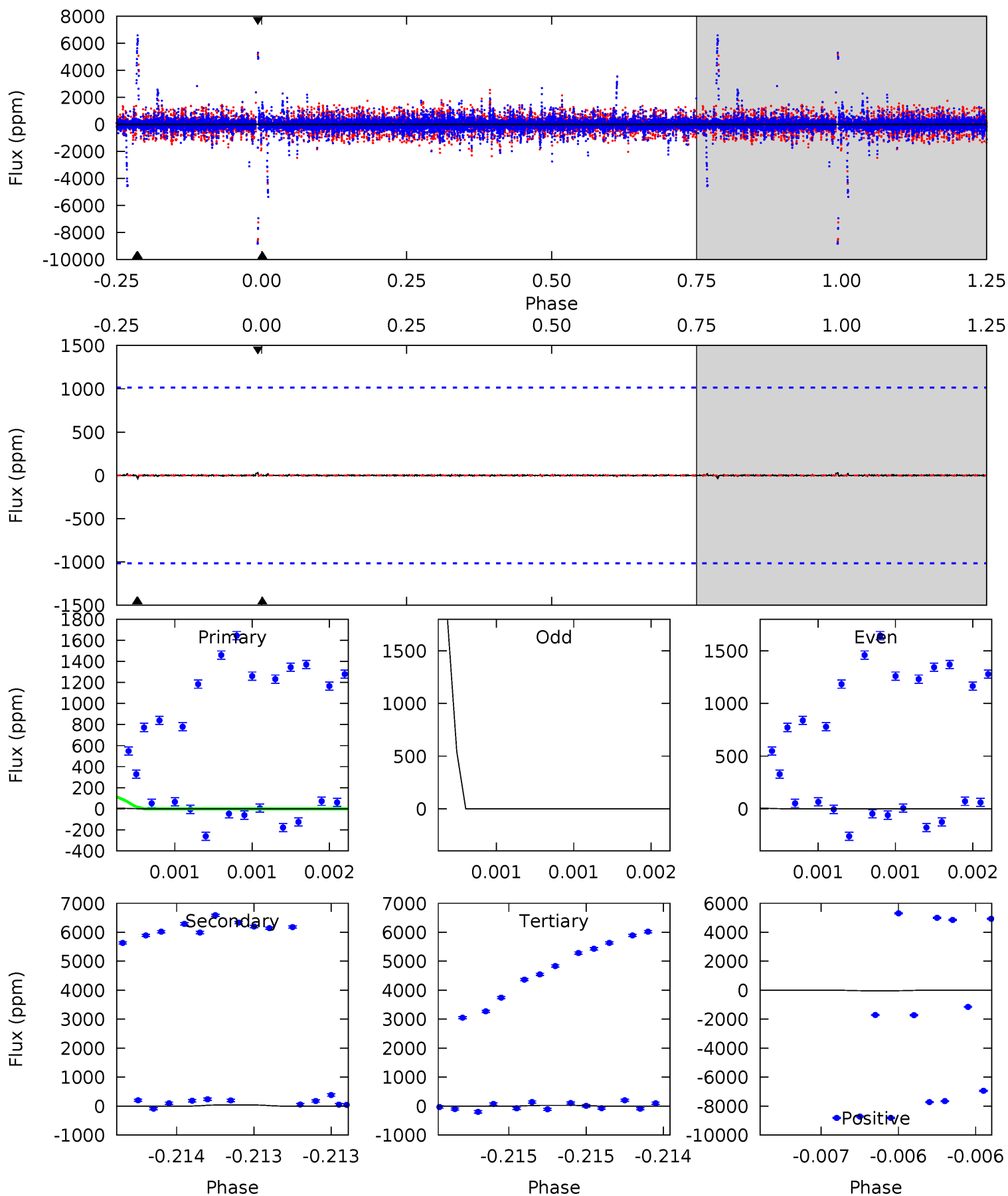
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.36	6.14	5.24	5.71	5.50	3.36	1.39	-1.88	-2.35	0.90	0.42	0.02	1.03	0.48	1.83



Alt Model-Shift Uniqueness Test

003533551-05, P = 132.656119 Days, E = 96.182663 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.03	0.22	0.12	0.18	5.53	3.41	0.01	-0.09	-0.15	0.10	0.04	7.38	75.3	0.45	0.07



Stellar Parameters For KIC 003533551

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6144^{+183}_{-183}	$4.165^{+0.351}_{-0.189}$	$-0.840^{+0.300}_{-0.300}$	$1.232^{+0.345}_{-0.422}$	$0.809^{+0.103}_{-0.051}$	$0.609^{+1.309}_{-0.304}$
	+3%/-3%	+8%/-5%	+36%/-36%	+28%/-34%	+13%/-6%	+215%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003533551-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-335 ± 54	$7.70^{+8.72}_{-5.26}$	602^{+51}_{-58}	3798^{+2139}_{-785}	713^{+6682}_{-558}
Alt.	-41 ± 183	$9.40^{+8.37}_{-6.66}$	606^{+53}_{-61}	2418^{+1361}_{-5661}	28^{+692}_{-283}

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

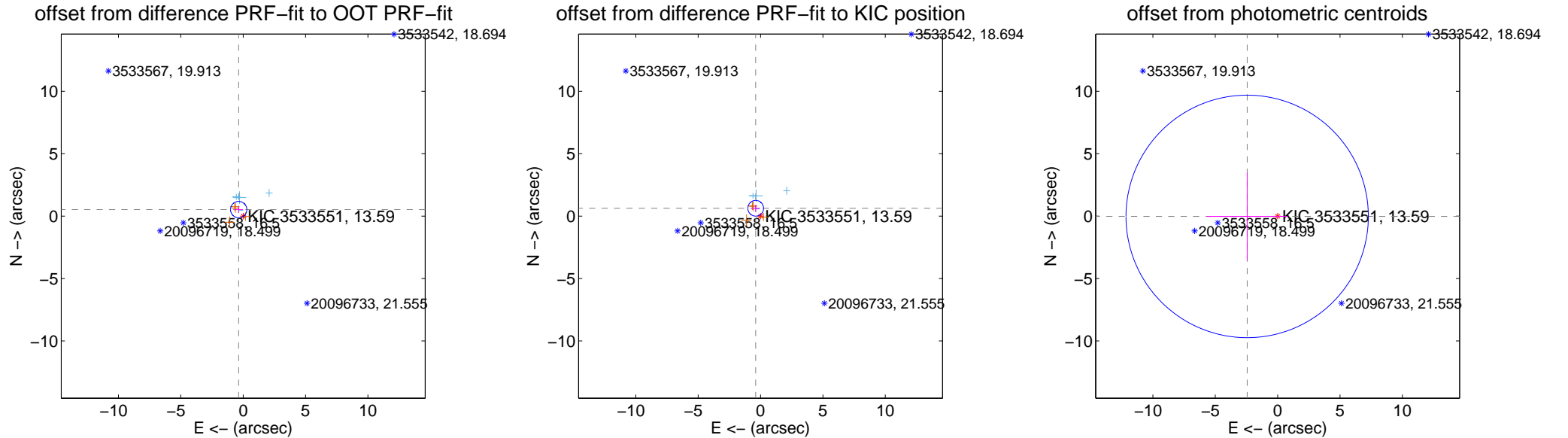
DV Centroid Data

Supplemental centroid analysis for 003533551-05. Kepler magnitude: 13.59. Transit SNR 2.06

There are 4 quarters with good PRF difference image offsets

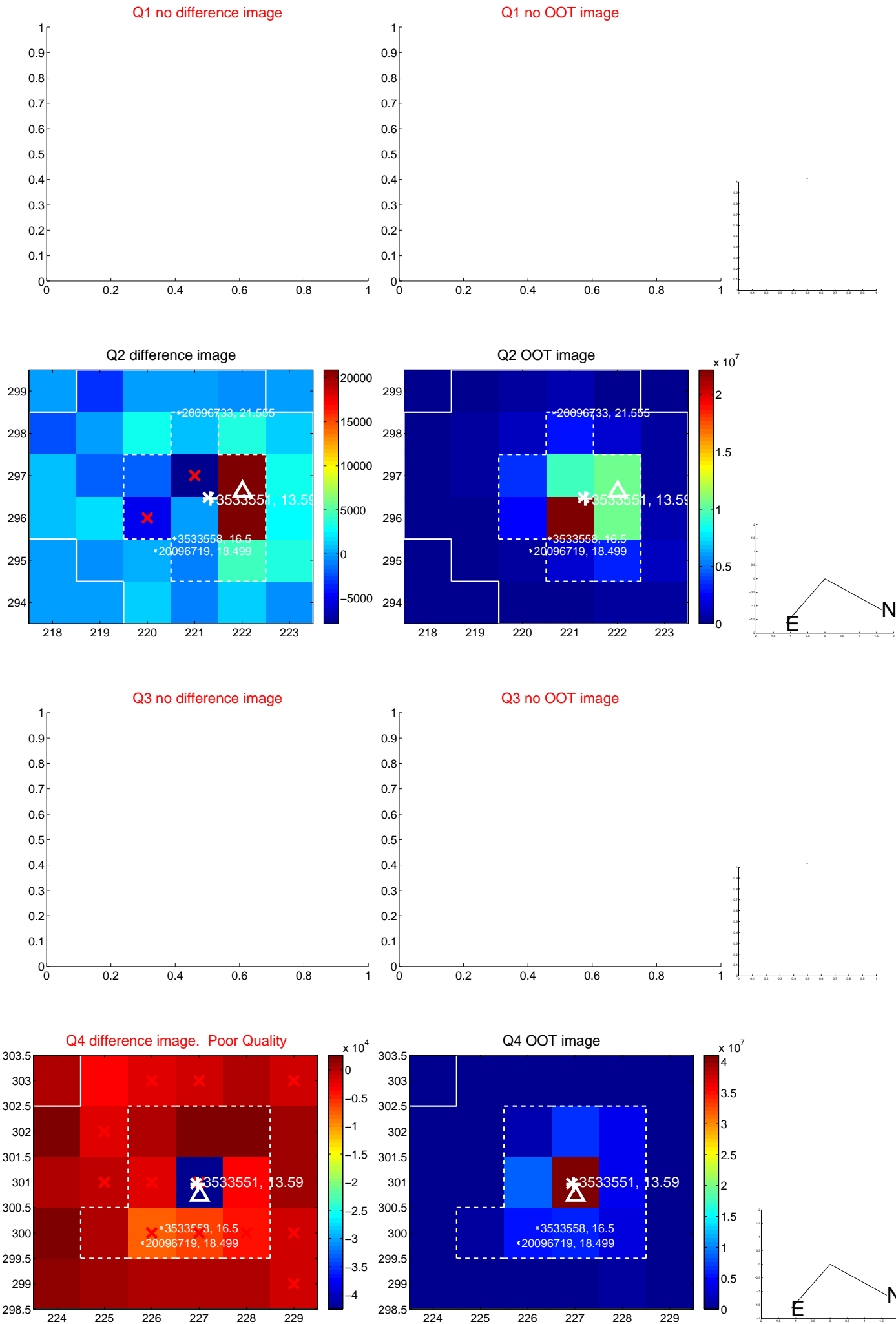
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.635 ± 0.218	2.91	0.360 ± 0.335	0.523 ± 0.286
PRF-fit source offset from KIC position	0.738 ± 0.210	3.52	0.388 ± 0.341	0.628 ± 0.287
photometric centroid source offset	2.44 ± 3.24	0.75	2.44 ± 3.24	-0.02 ± 3.51

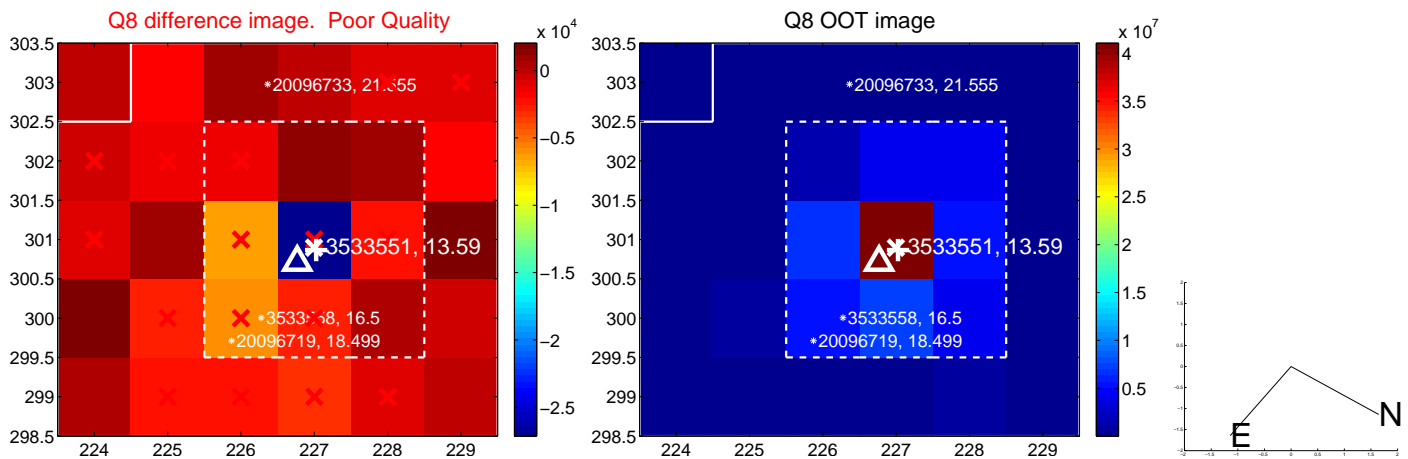
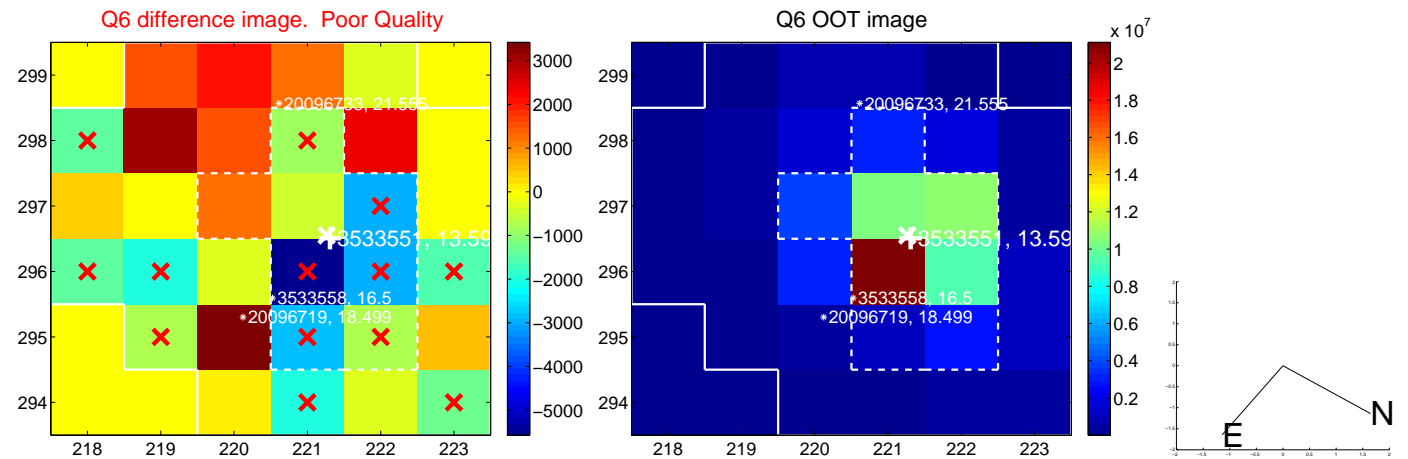
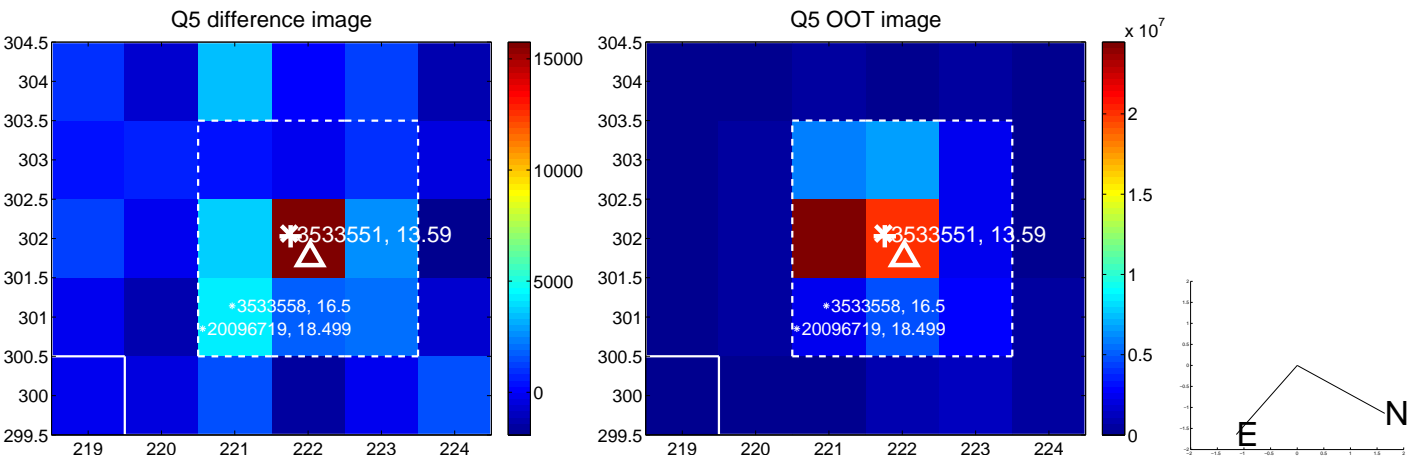


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

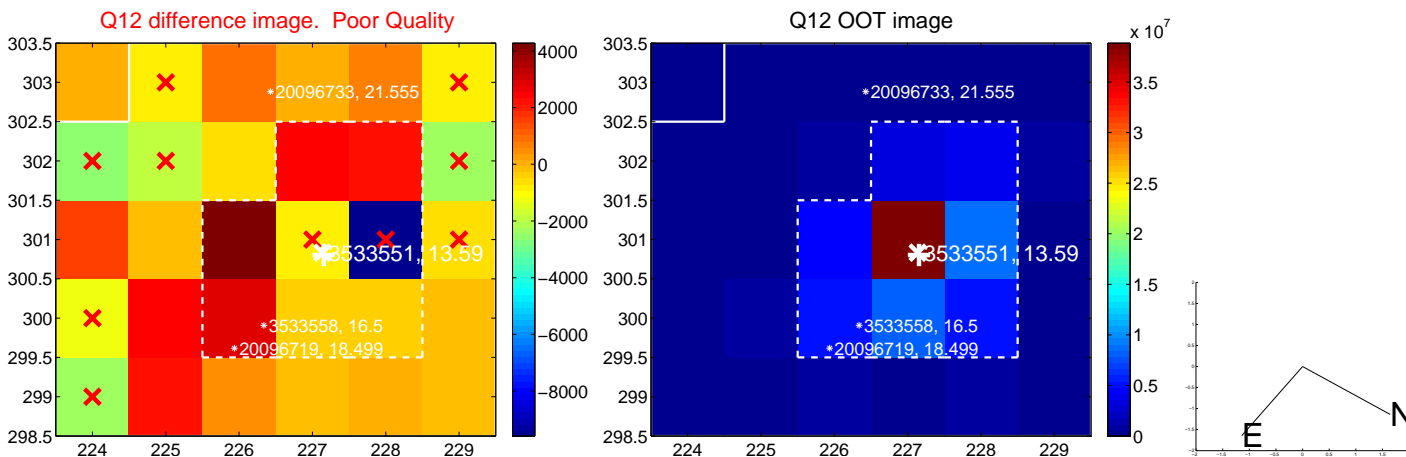
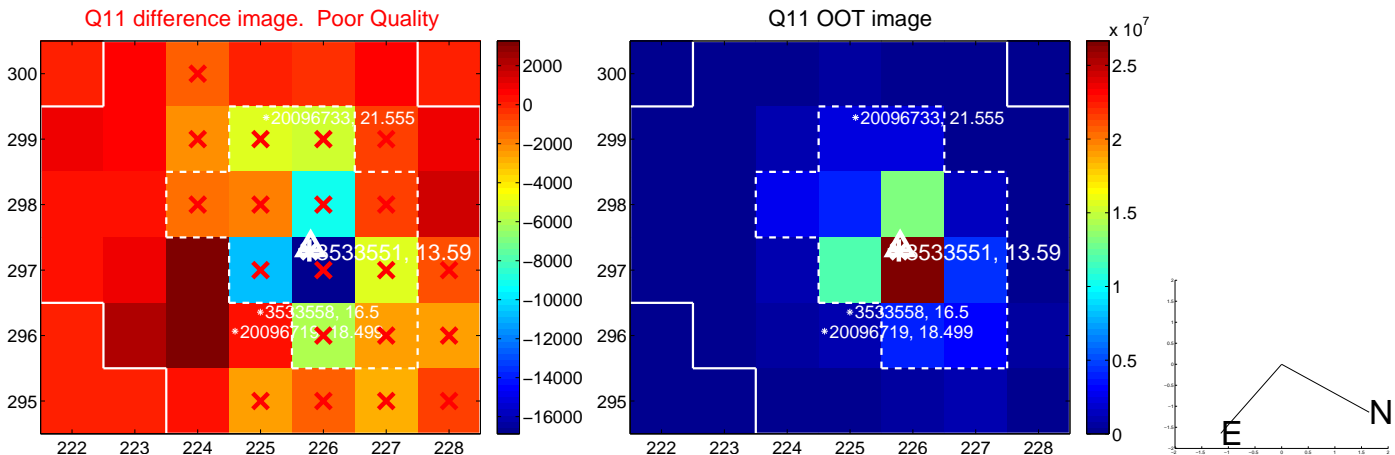
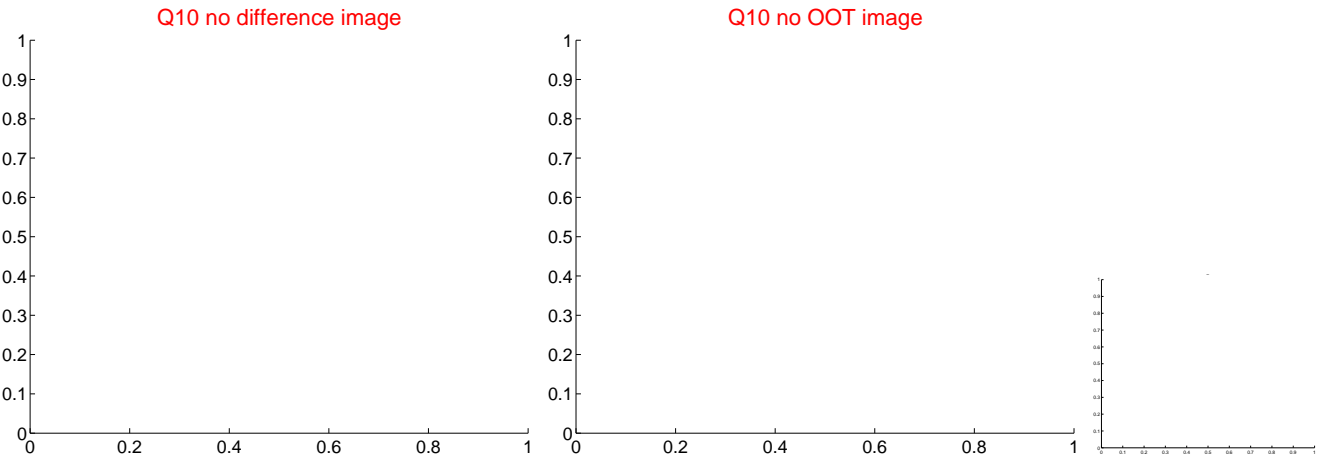
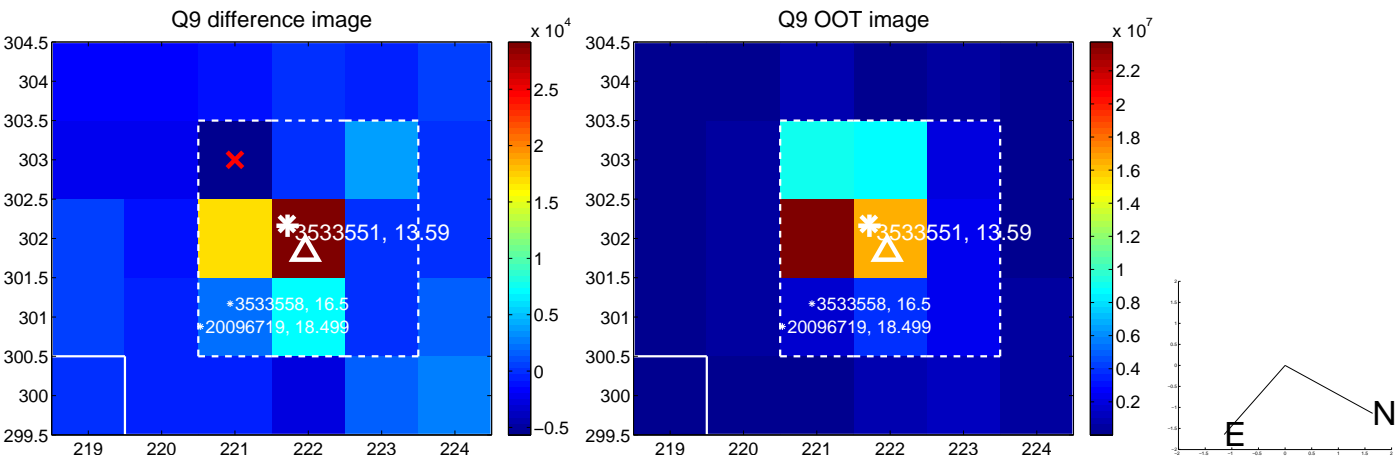
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



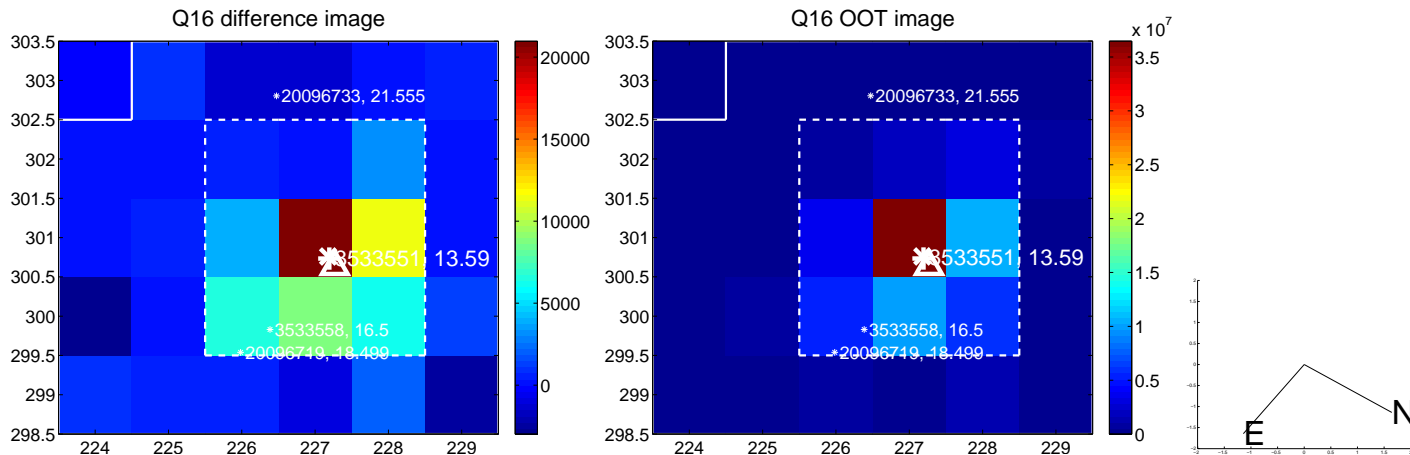
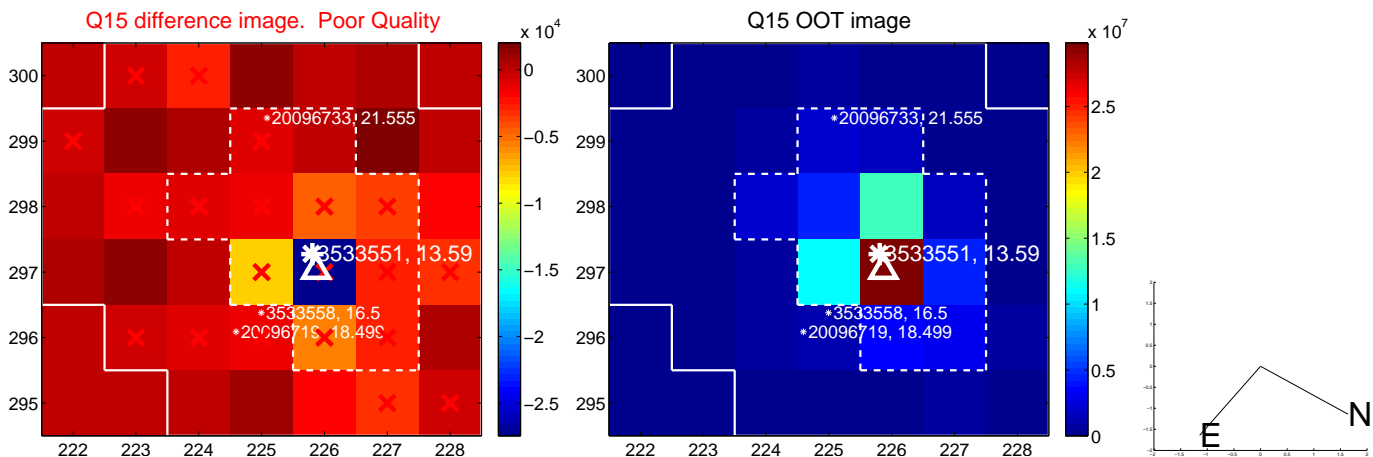
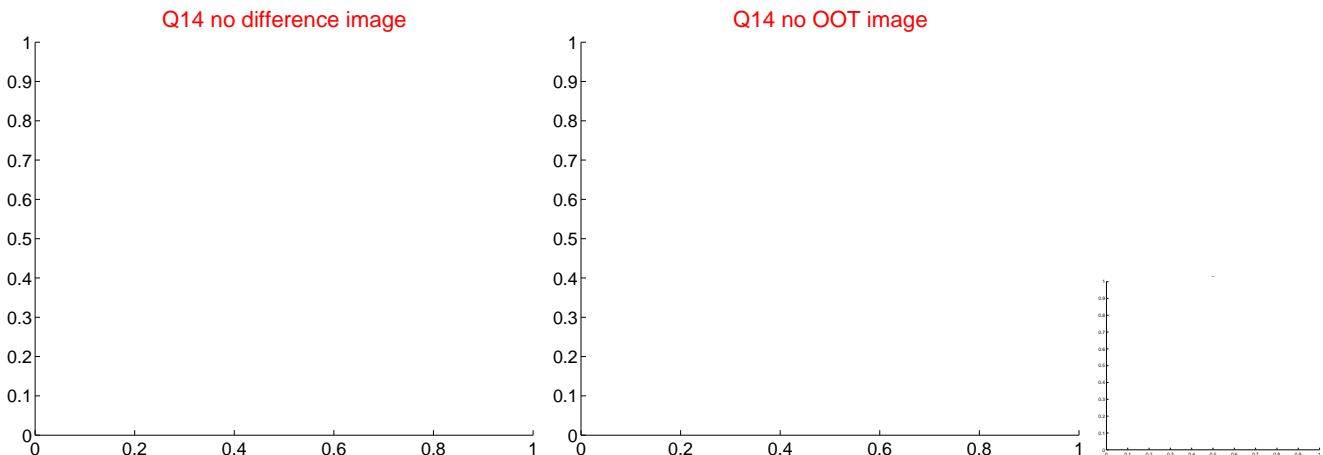
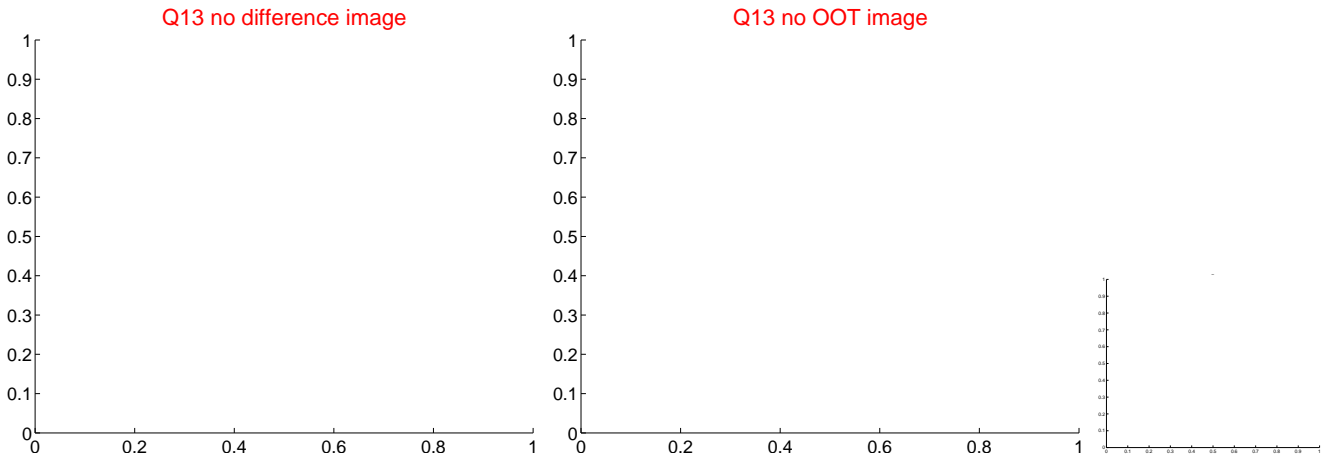
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



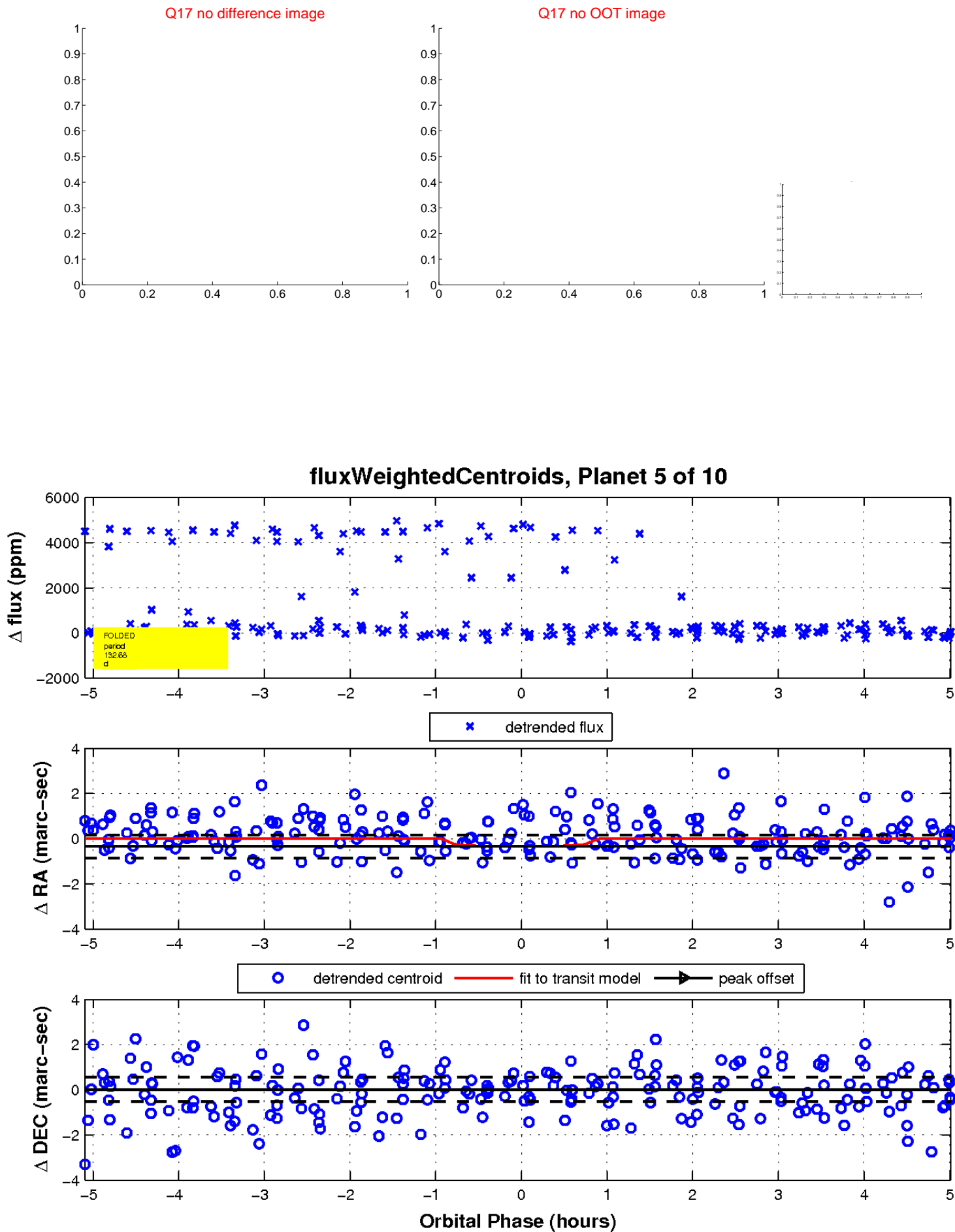
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

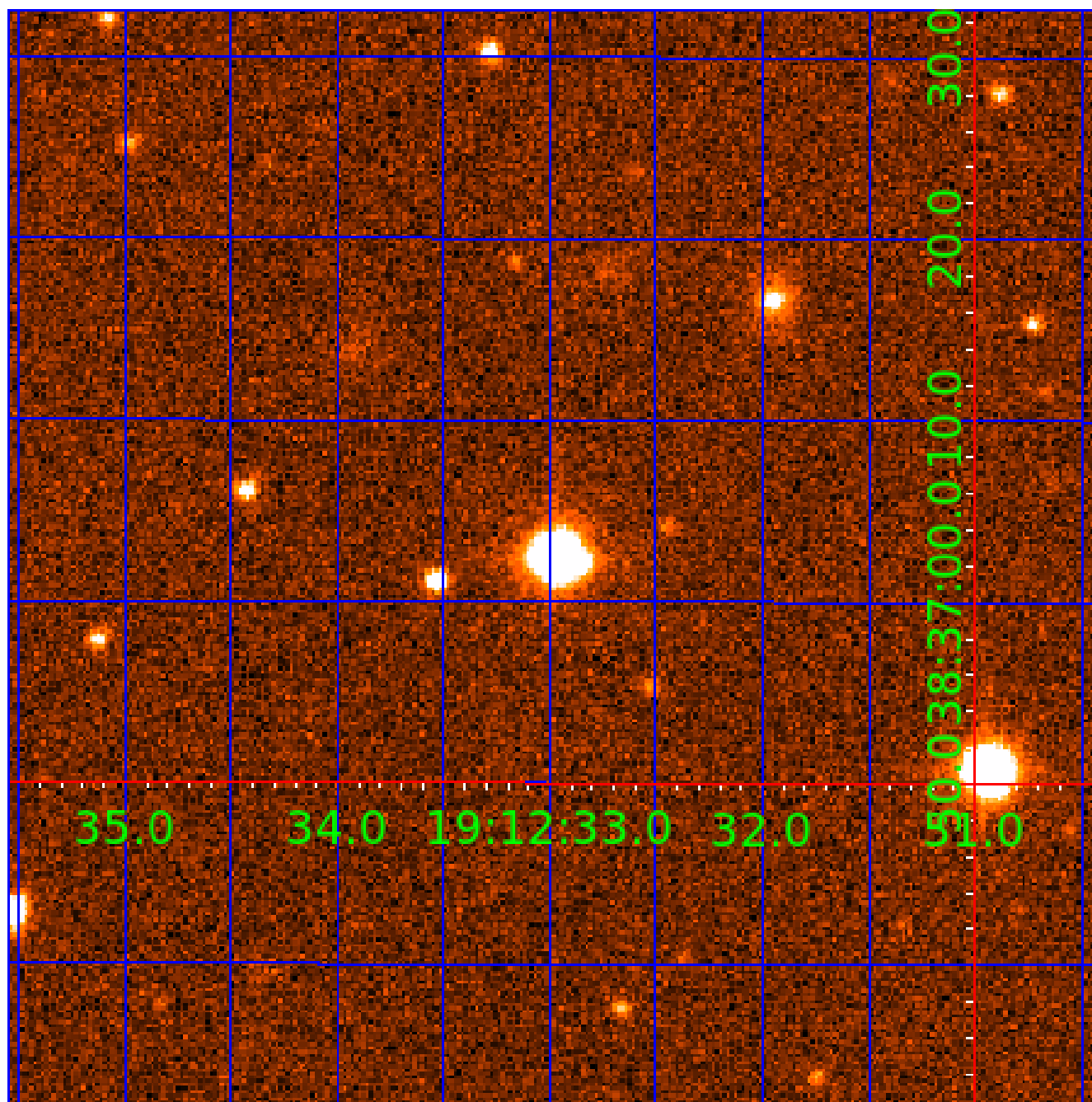


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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003533551-08	OBS	No	411.361648	196.323732	586.8	7.760	9.0	7.1	1.23	6144	3.19	1.90
003533551-09	OBS	No	62.528122	141.492009	277.9	8.863	9.4	7.4	1.23	6144	2.17	23.46
003533551-10	OBS	No	128.684428	174.127242	635.3	4.081	8.7	8.8	1.23	6144	5.97	8.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003533551-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003533551-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003533551-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003533551-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET
003533551-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
003533551-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003533551-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003533551-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

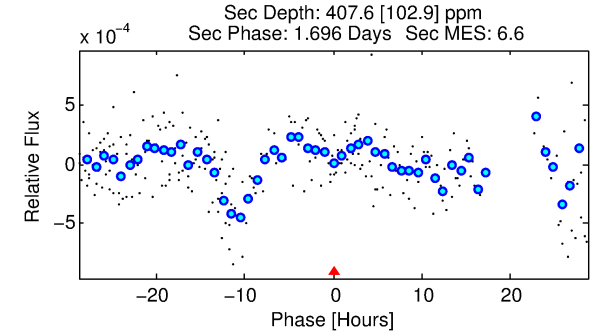
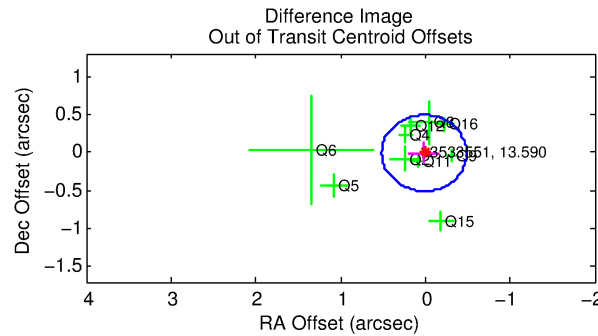
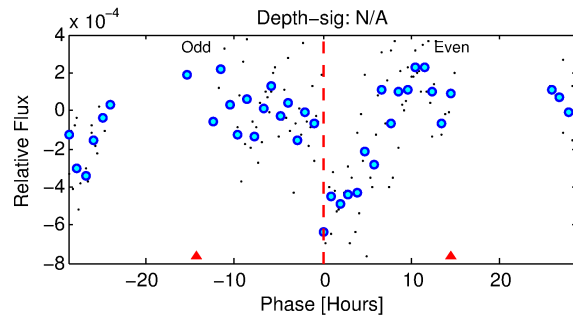
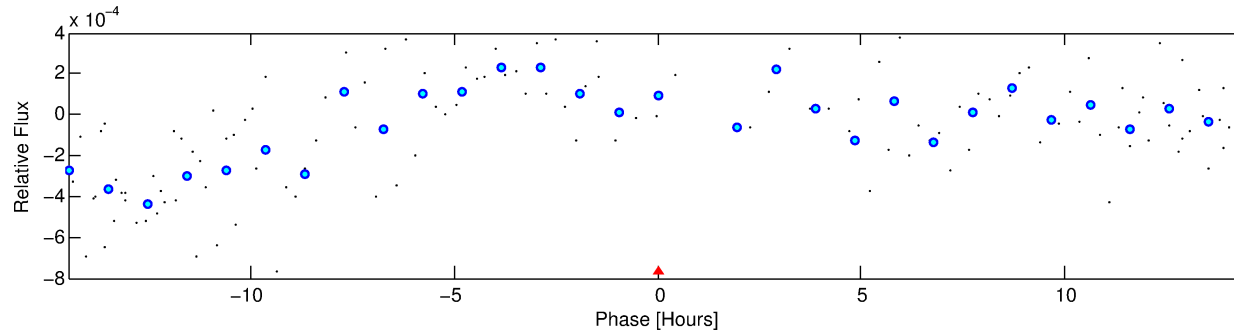
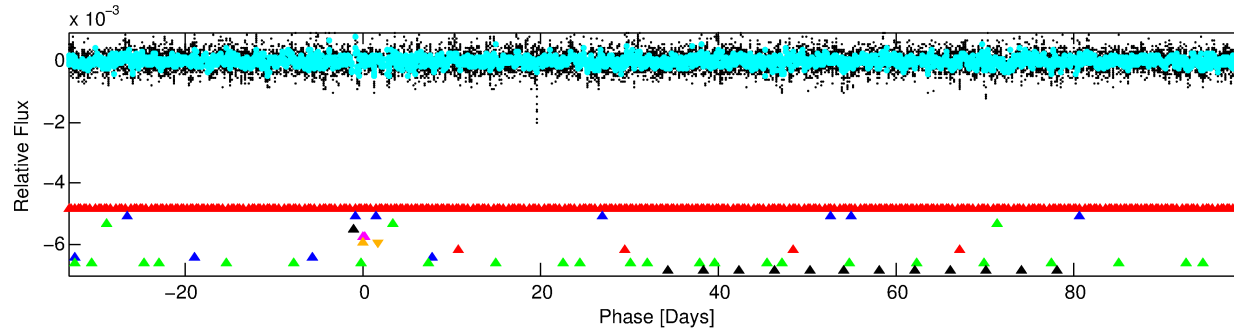
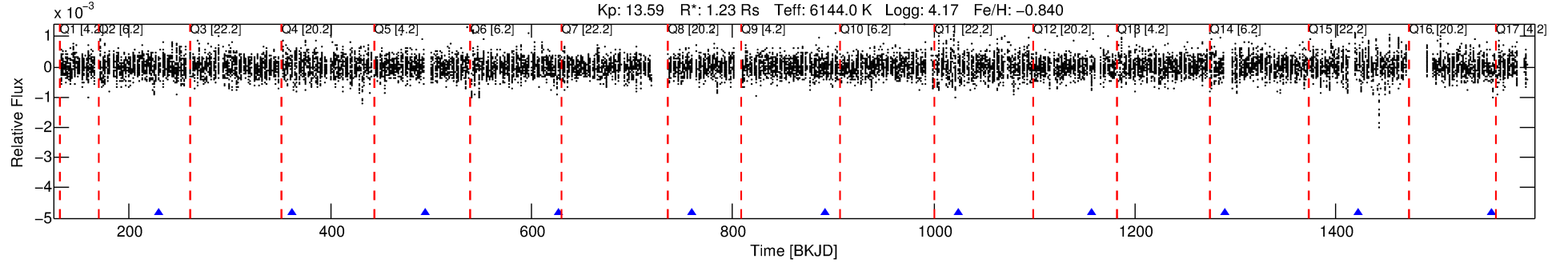
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003533551-06

No Significant Match Found

DV One-Page Summary

KIC: 3533551 Candidate: 6 of 10 Period: 132.656 d



TPS TCE Results:

Period = 132.65612 d
Epoch = 228.2401 BKJD

DV fit results are unavailable

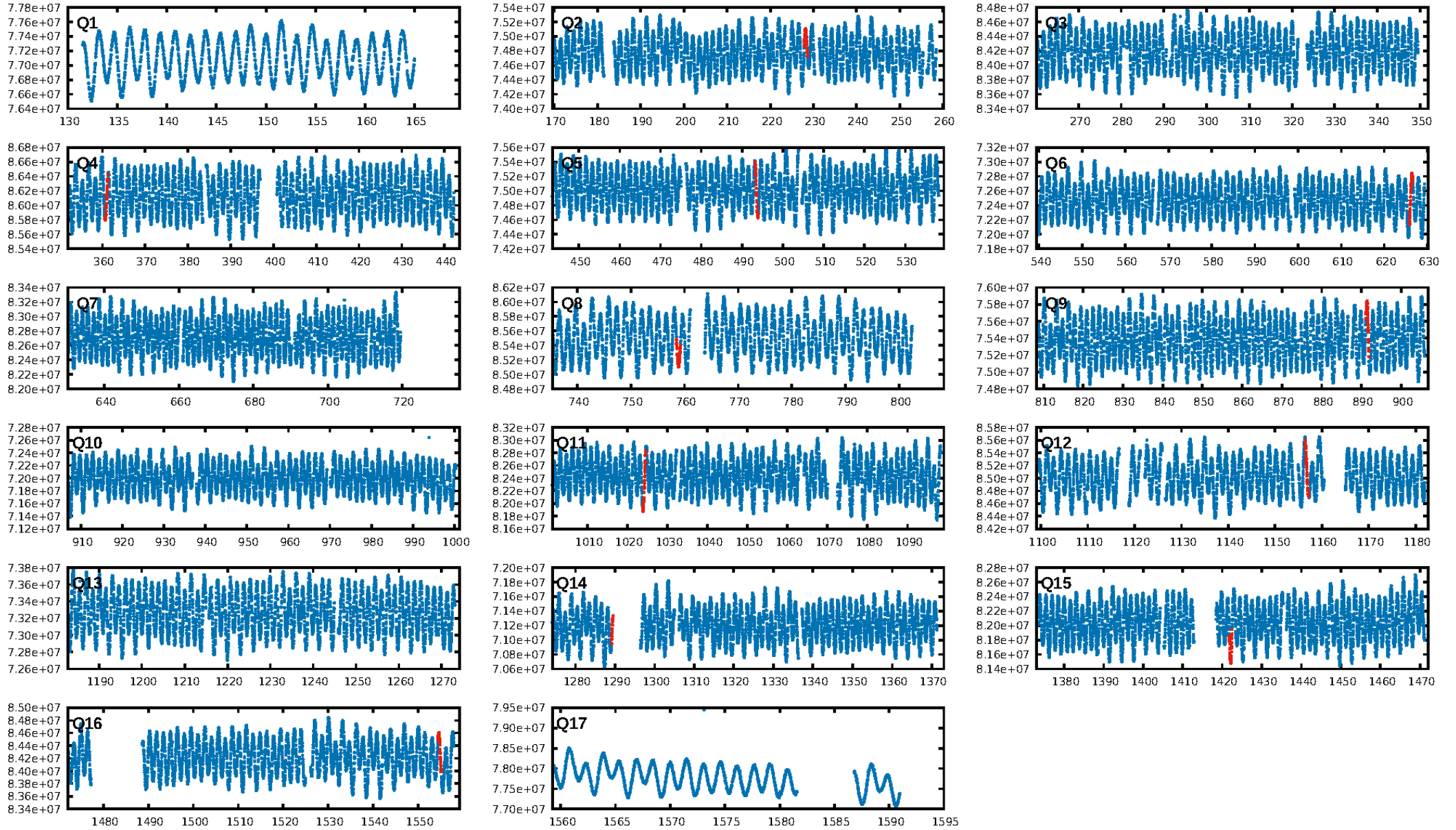
DV Diagnostic Results:

ShortPeriod-sig: 1.5% [0.02σ]
LongPeriod-sig: 5.5% [0.07σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -2.323
Centroid-sig: 20.3%
Centroid-so: 0.185 arcsec [2.03σ]
OotOffset-rm: 0.016 arcsec [0.10σ]
OotOffset-st: 2/2/4/2 [10]
KicOffset-st: 2/2/4/2 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 0.00 [0/10]

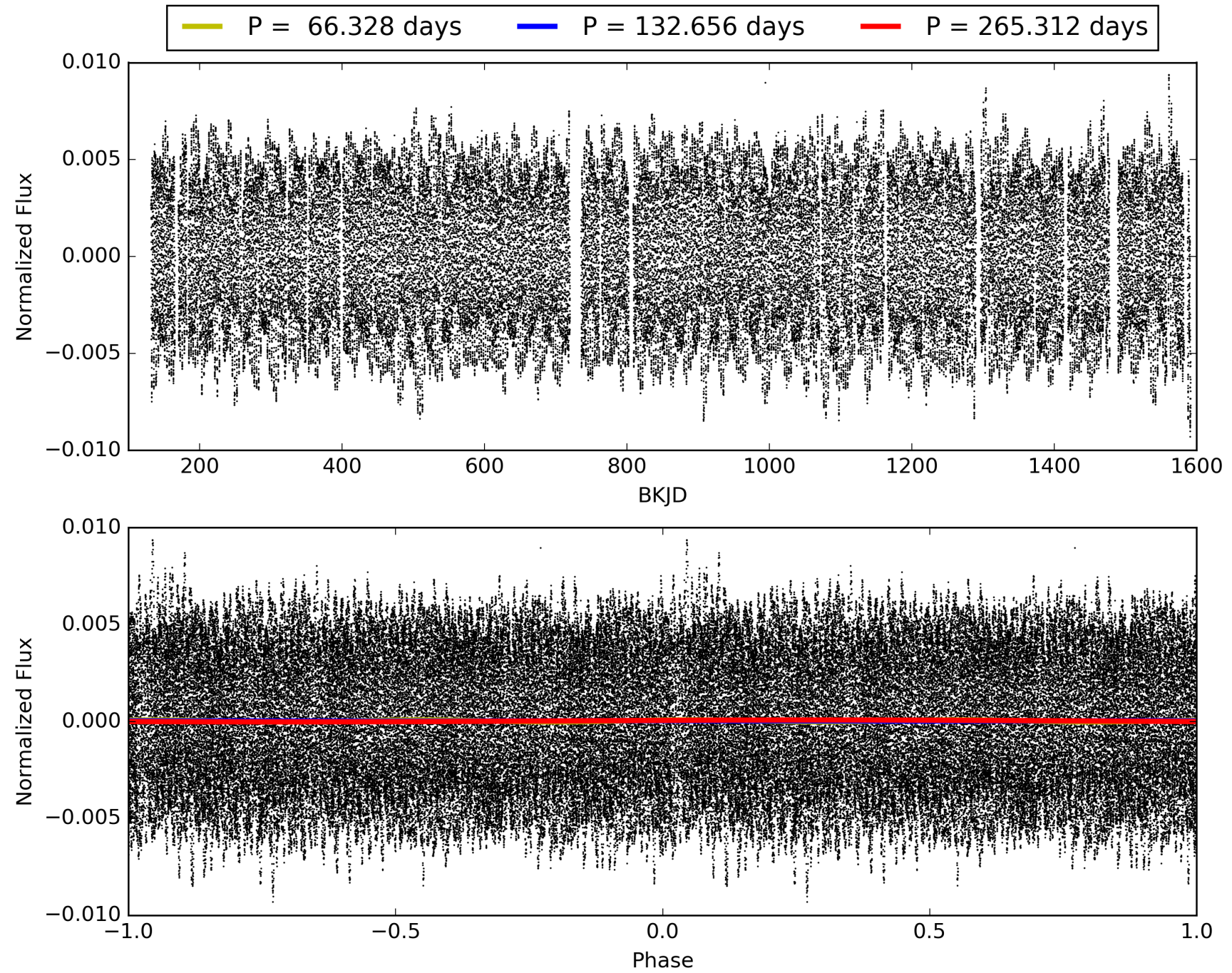
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 19:00:14 Z

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

TCE 003533551-06, PDC Light Curves

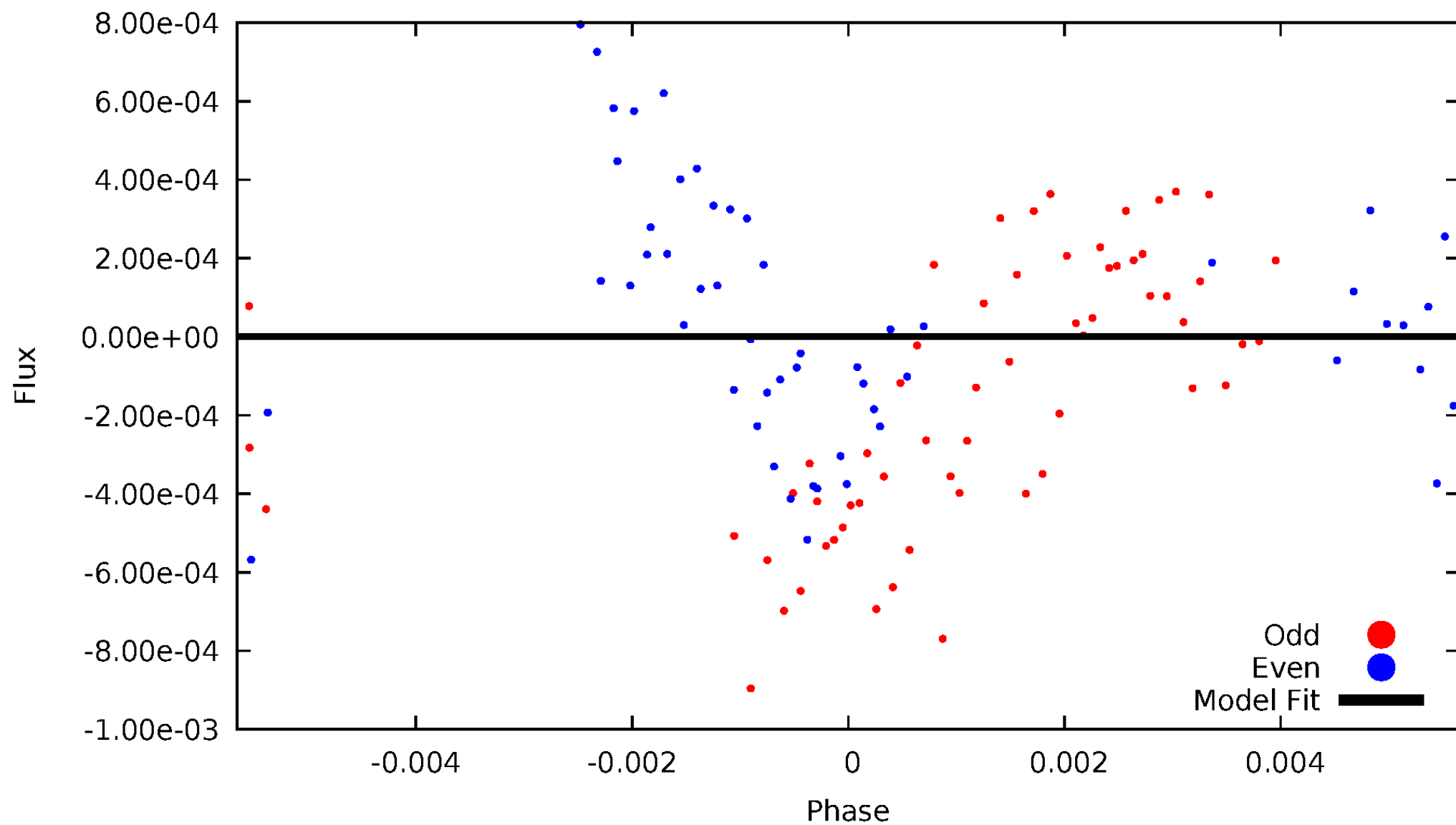


TCE 003533551-06



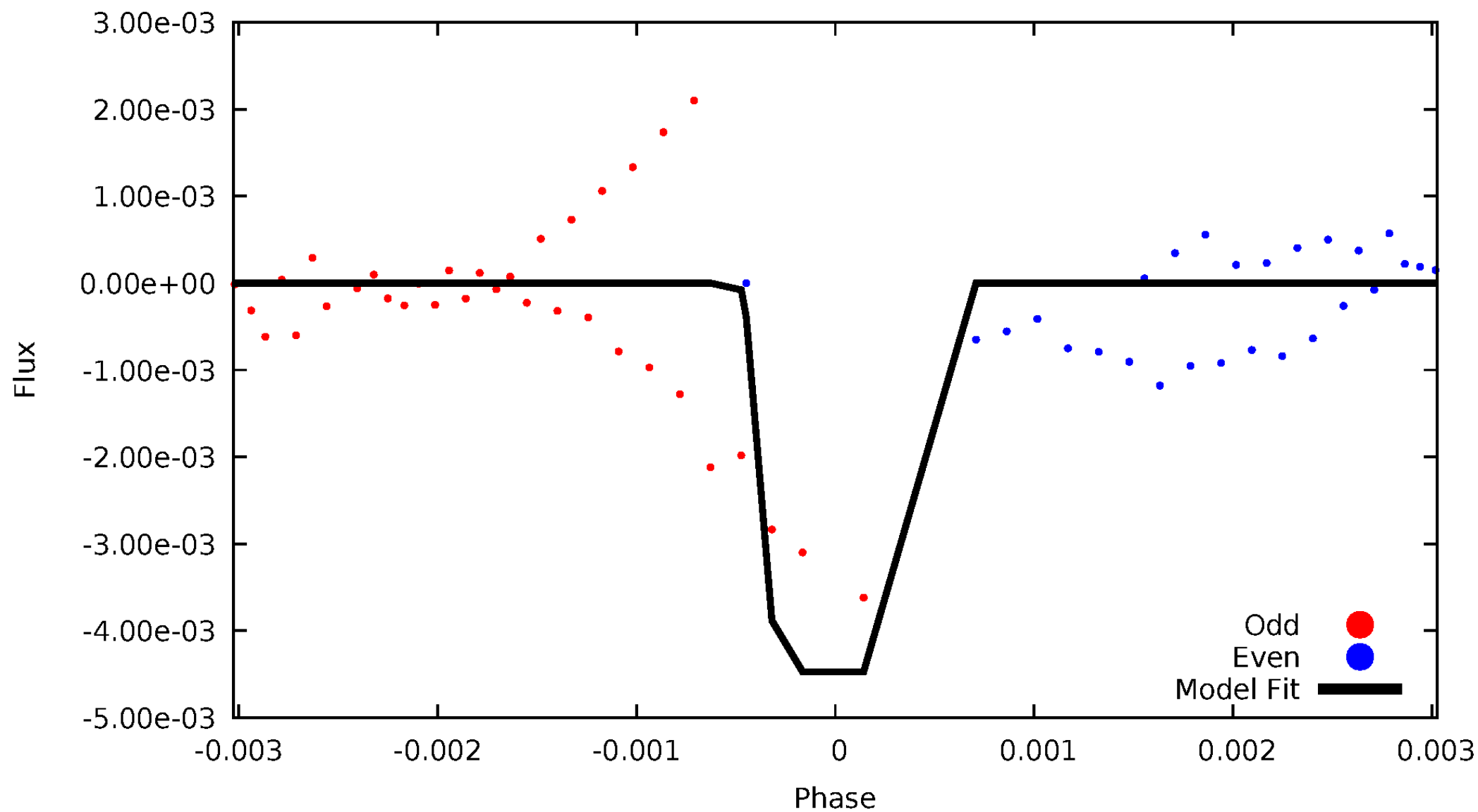
DV Odd/Even

TCE 003533551-06



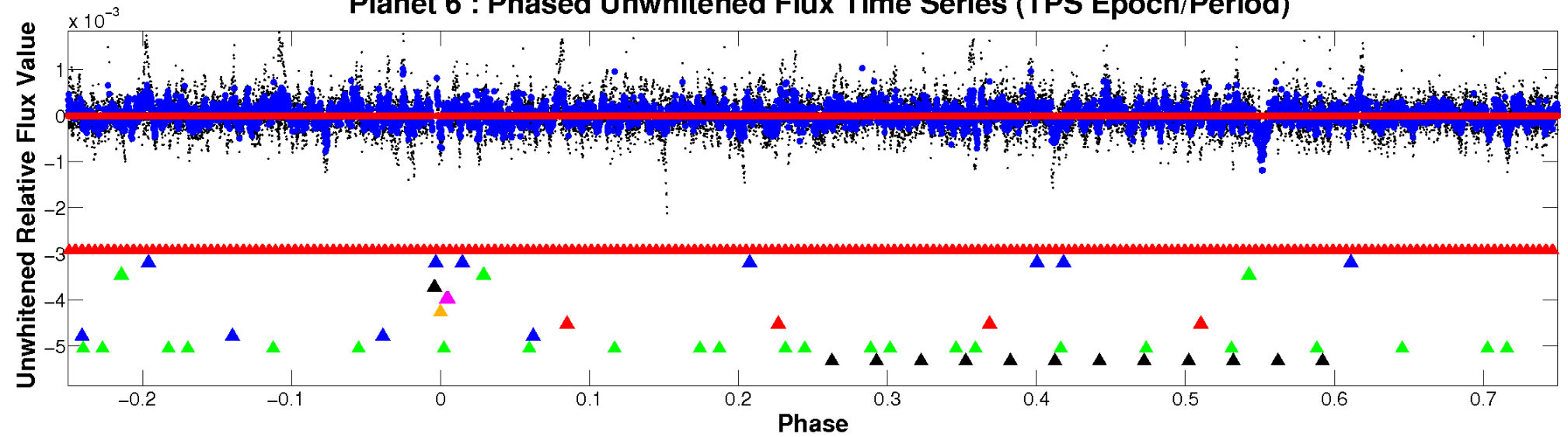
ALT Odd/Even

TCE 003533551-06



Non-Whitened Vs. Whitened Light Curve

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

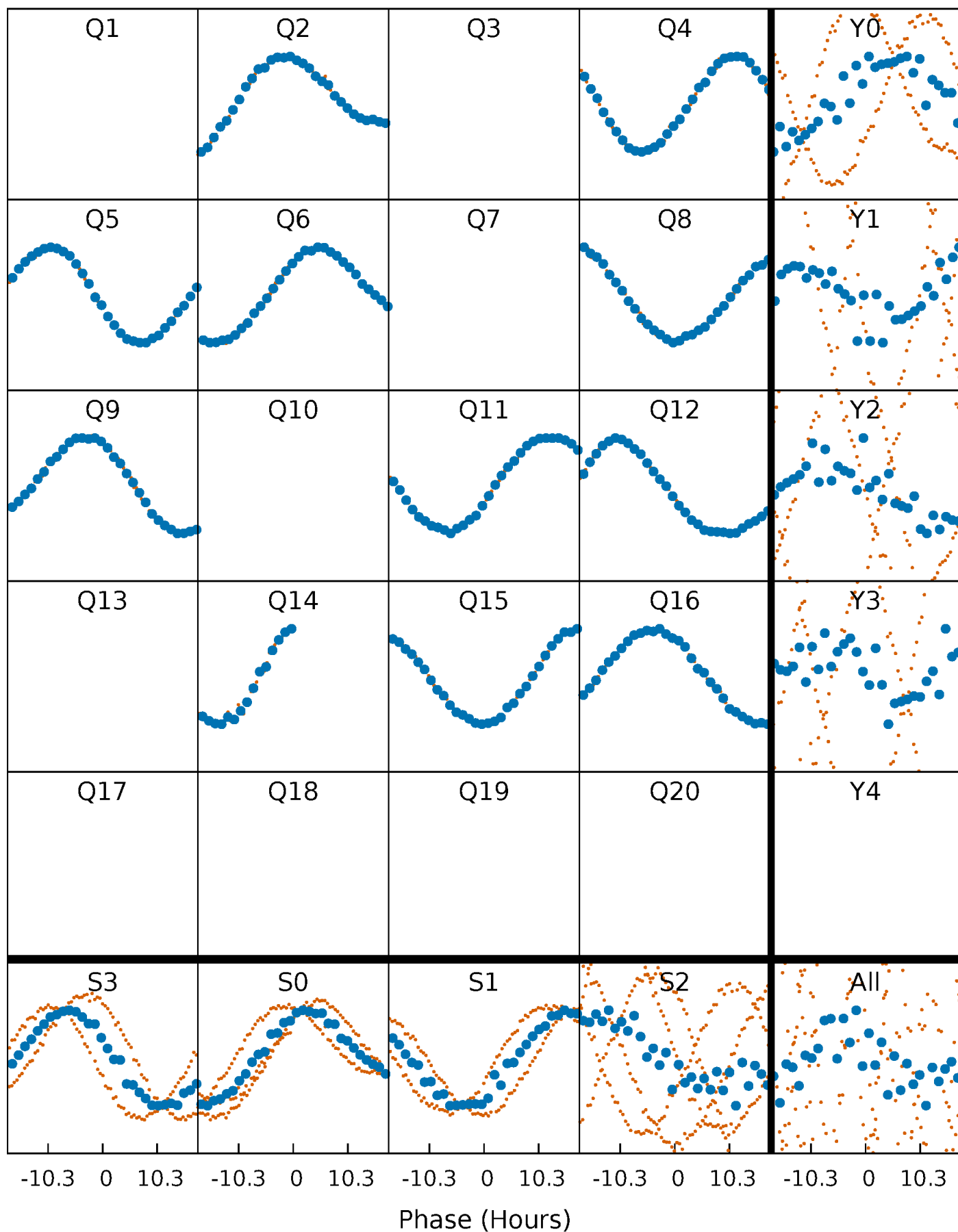


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



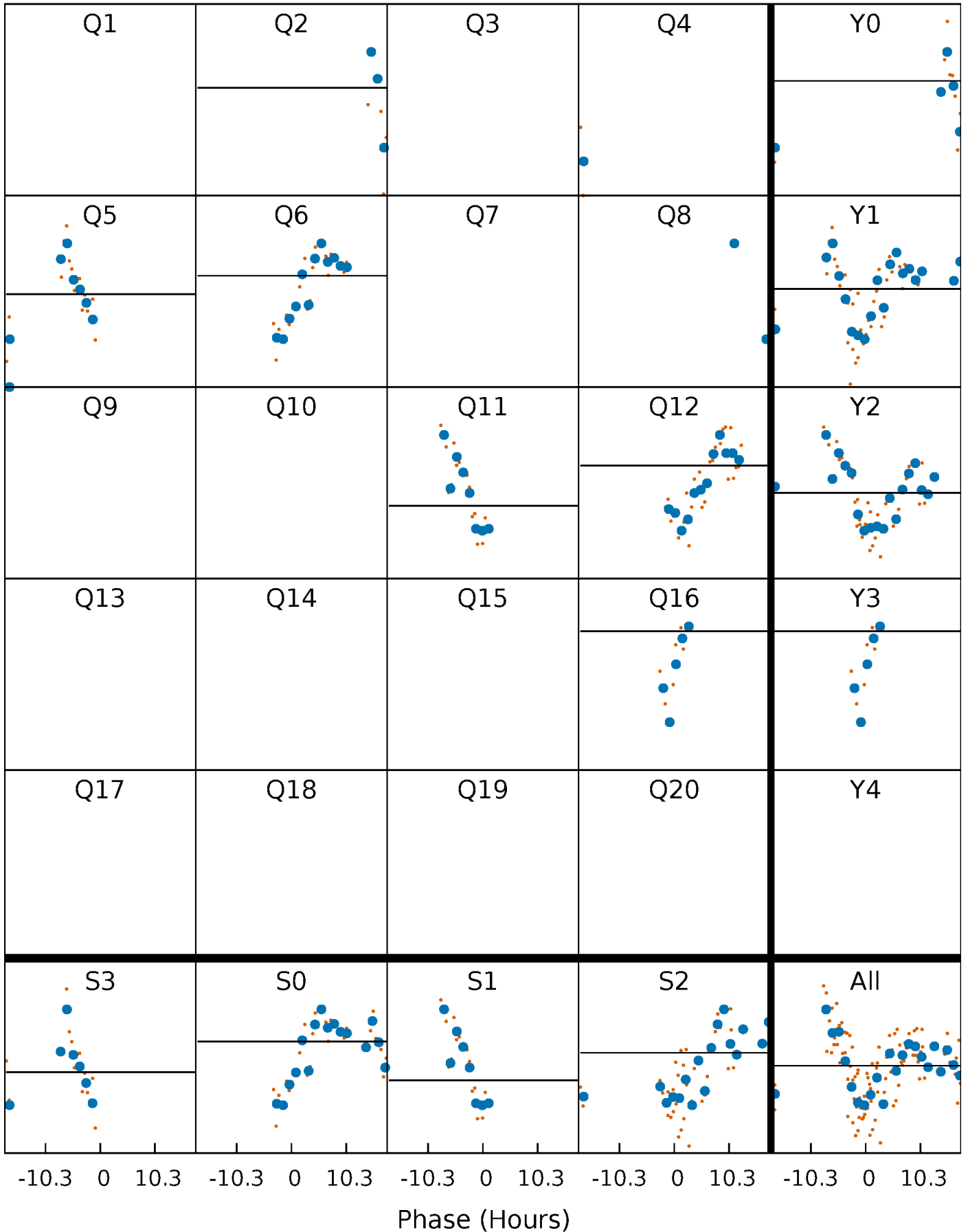
PDC Quarter-Phased Transit Curves

TCE 003533551-06 P=132.656119 Days $T_0=228.240061$ (BKJD)



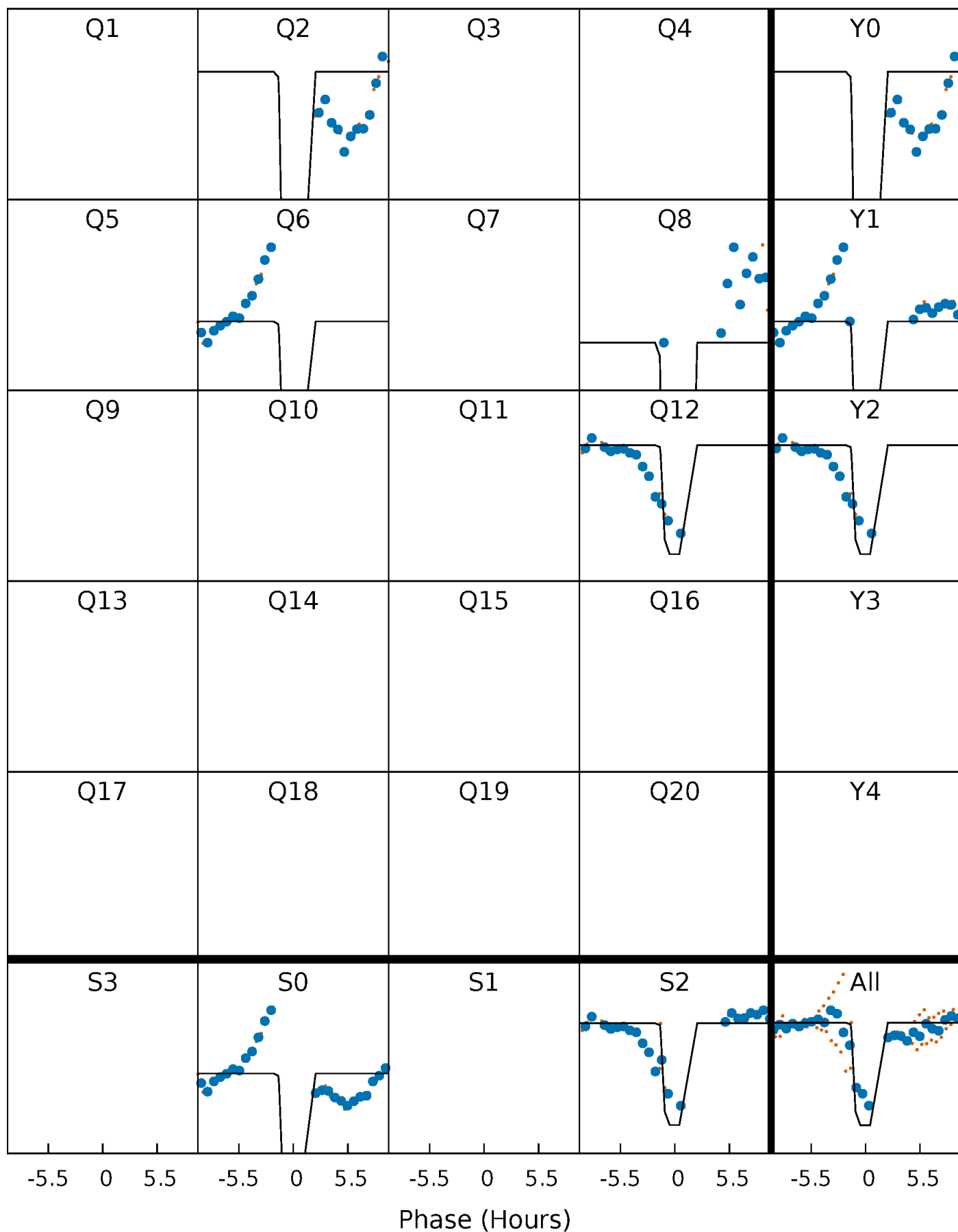
DV Quarter-Phased Transit Curves

TCE 003533551-06 $P=132.656119$ Days $T_0=228.240061$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

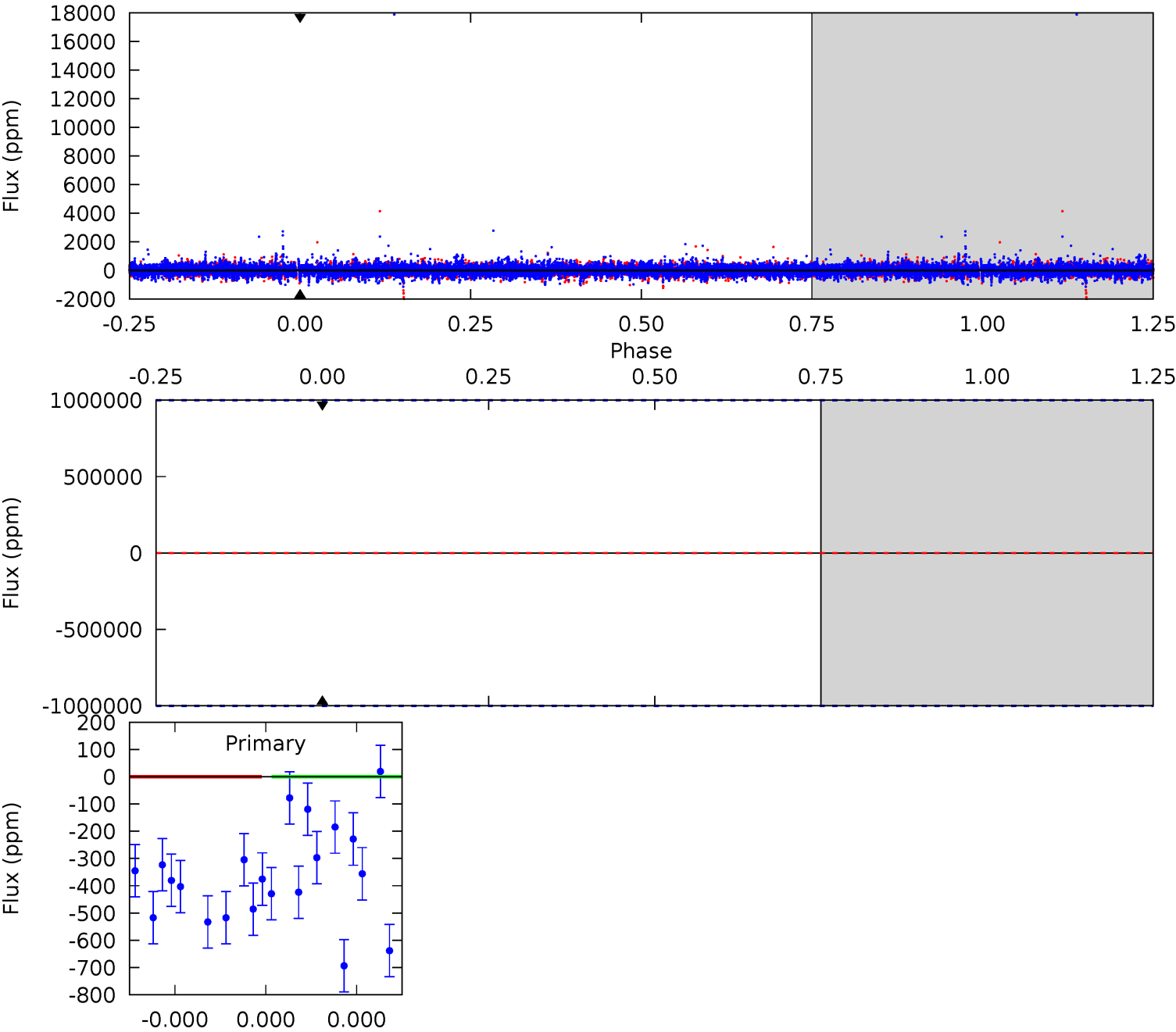
TCE 003533551-06 P=132.656119 Days $T_0=228.745729$ (BKJD)



DV Model-Shift Uniqueness Test

003533551-06, P = 132.656119 Days, E = 95.583942 Days

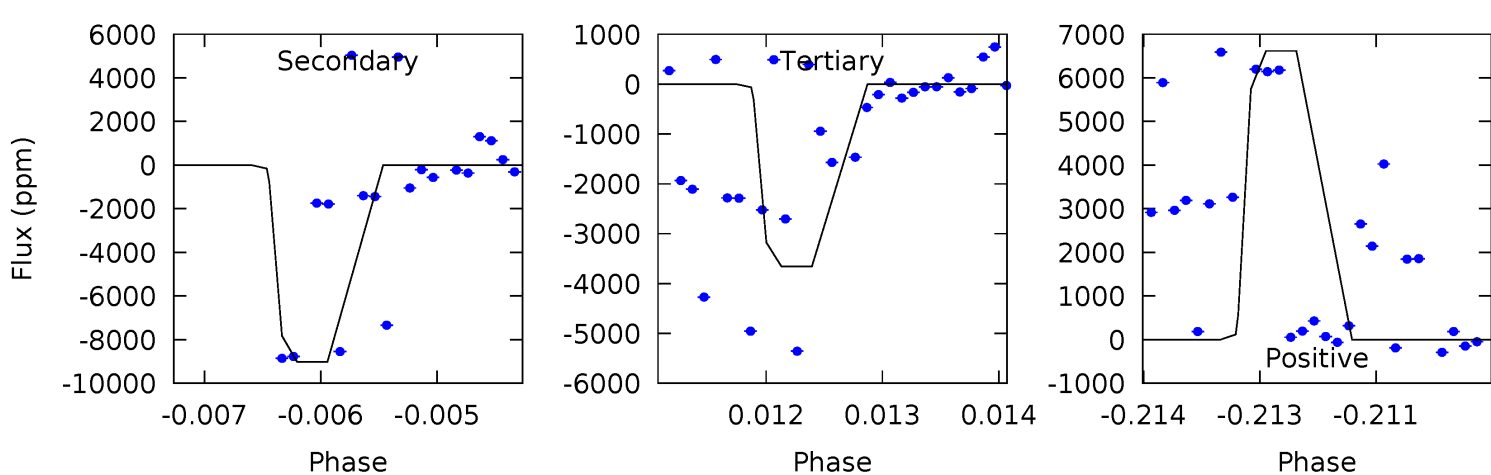
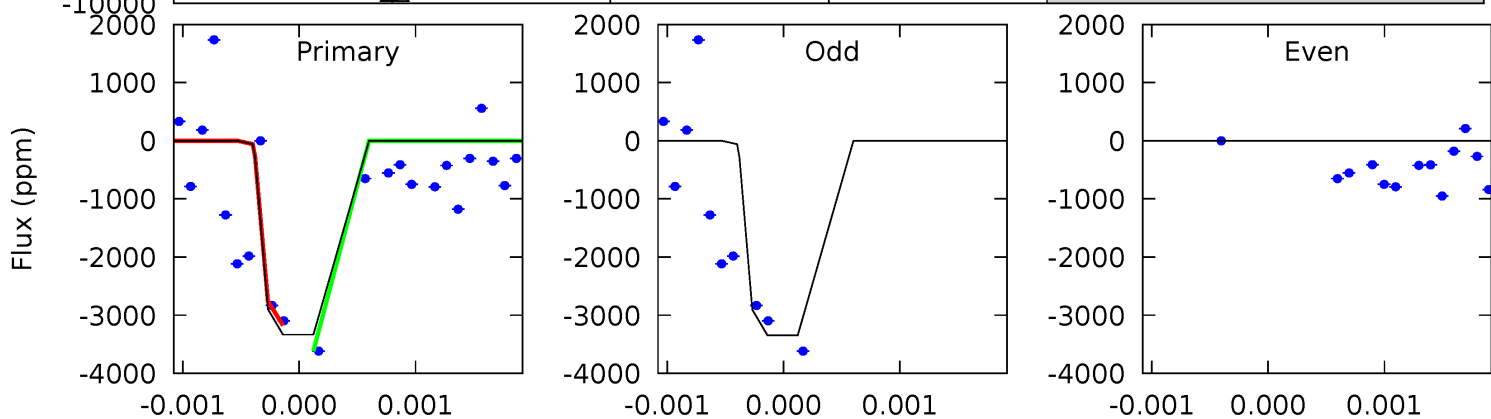
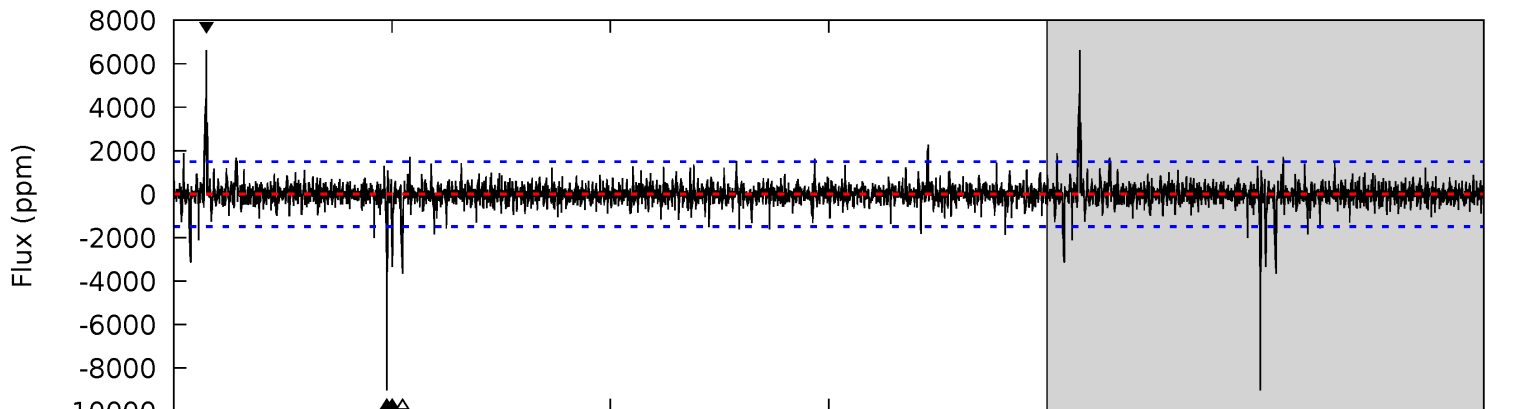
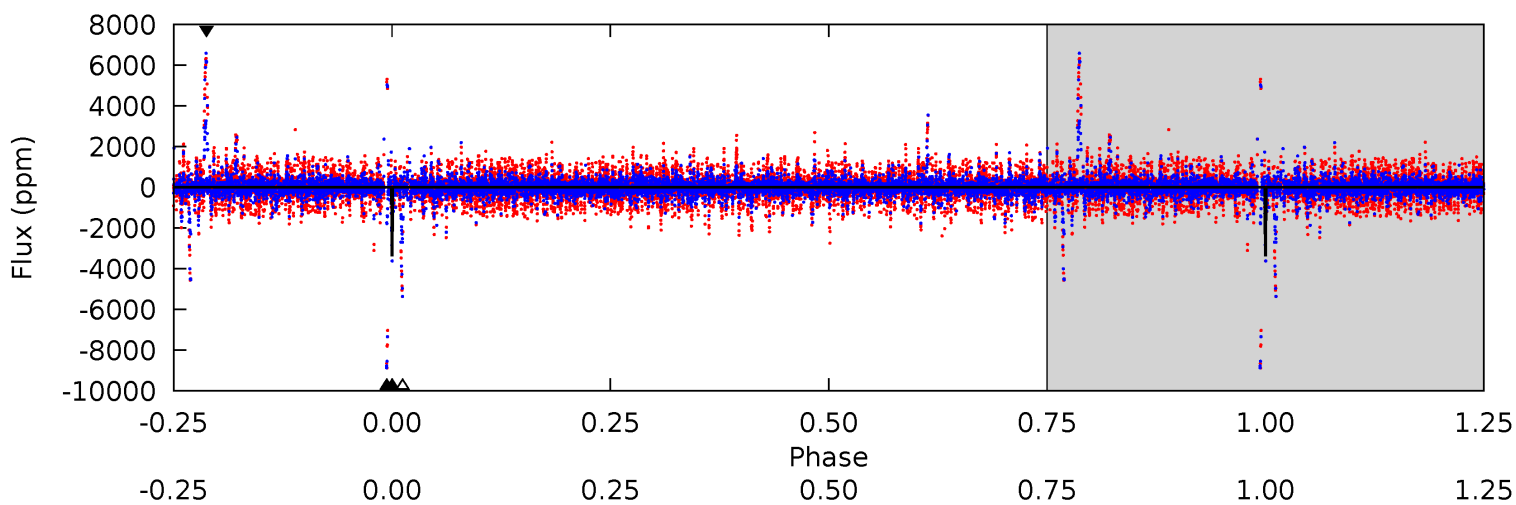
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003533551-06, P = 132.656119 Days, E = 96.089610 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	32.7	13.3	24.0	5.42	3.24	1.35	-1.17	-11.9	19.4	8.69	0	1.00	0.42	0.76



Stellar Parameters For KIC 003533551

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6144^{+183}_{-183}	$4.165^{+0.351}_{-0.189}$	$-0.840^{+0.300}_{-0.300}$	$1.232^{+0.345}_{-0.422}$	$0.809^{+0.103}_{-0.051}$	$0.609^{+1.309}_{-0.304}$
	+3%/-3%	+8%/-5%	+36%/-36%	+28%/-34%	+13%/-6%	+215%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003533551-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$9.71^{+11.22}_{-7.36}$	605^{+50}_{-62}	-3787^{+31857}_{-21962}	$-547.424^{+305440.351}_{-267813.678}$
Alt.	-9015 ± 276	$12.95^{+12.15}_{-8.34}$	606^{+52}_{-65}	5989^{+5591}_{-1392}	6796^{+47428}_{-4983}

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

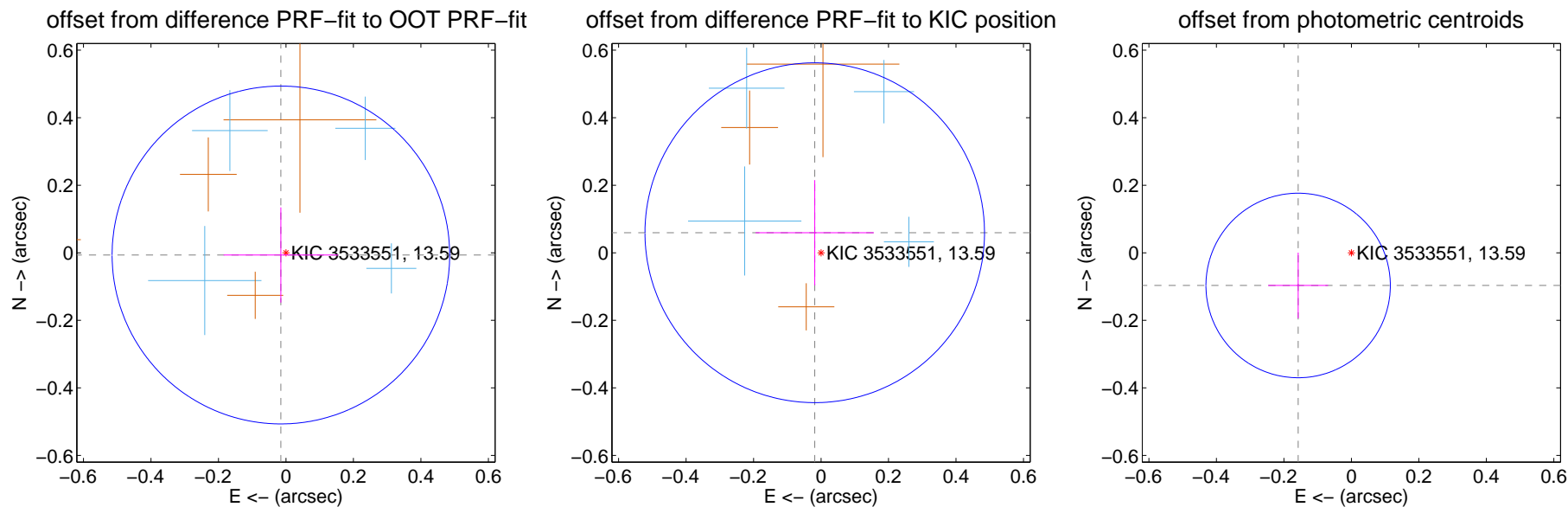
DV Centroid Data

Supplemental centroid analysis for 003533551-06. Kepler magnitude: 13.59. Transit SNR -1.00

There are 5 quarters with good PRF difference image offsets

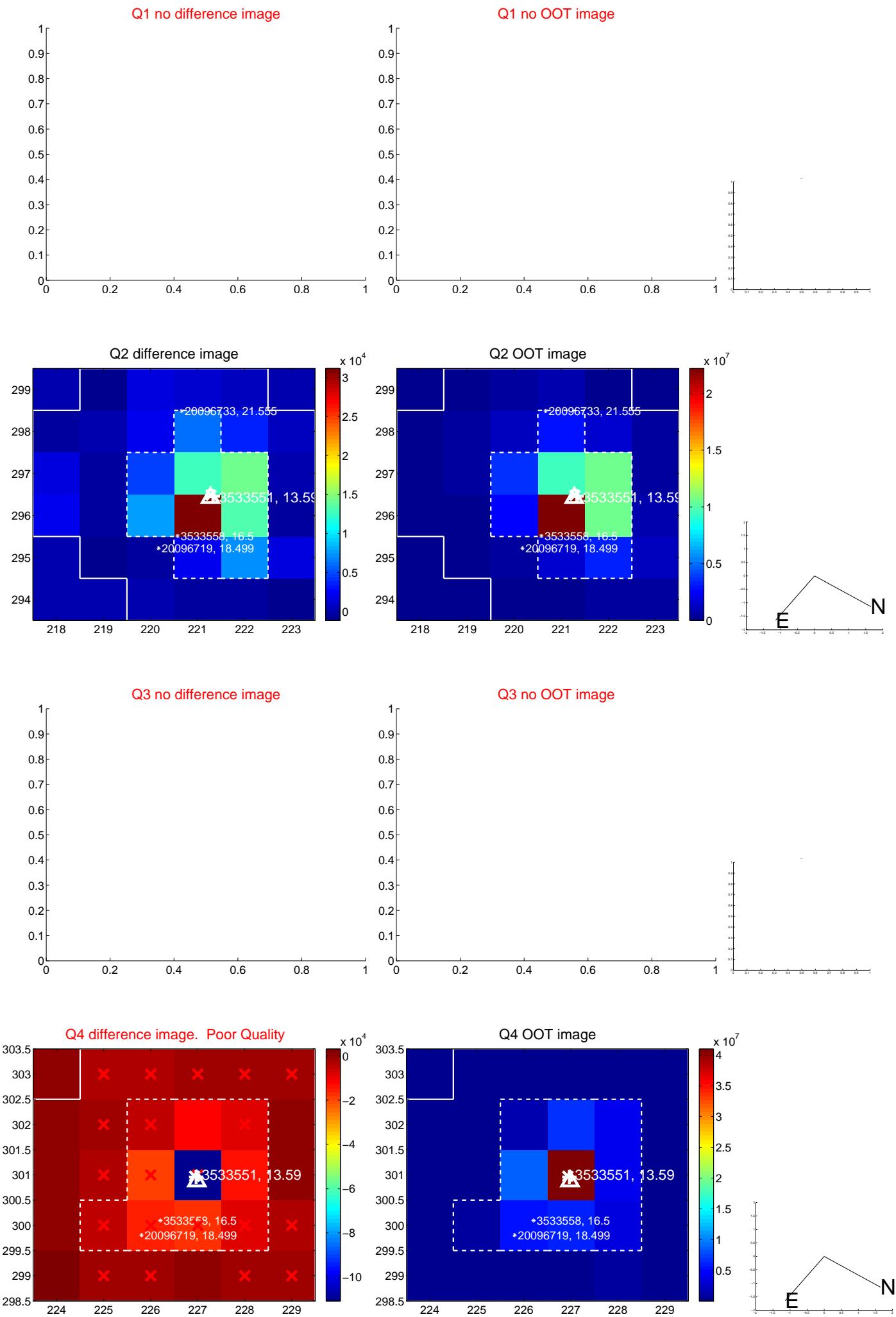
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.016 ± 0.167	0.10	0.015 ± 0.170	-0.007 ± 0.141
PRF-fit source offset from KIC position	0.062 ± 0.168	0.37	0.019 ± 0.175	0.059 ± 0.156
photometric centroid source offset	0.19 ± 0.09	2.03	0.16 ± 0.09	-0.10 ± 0.10

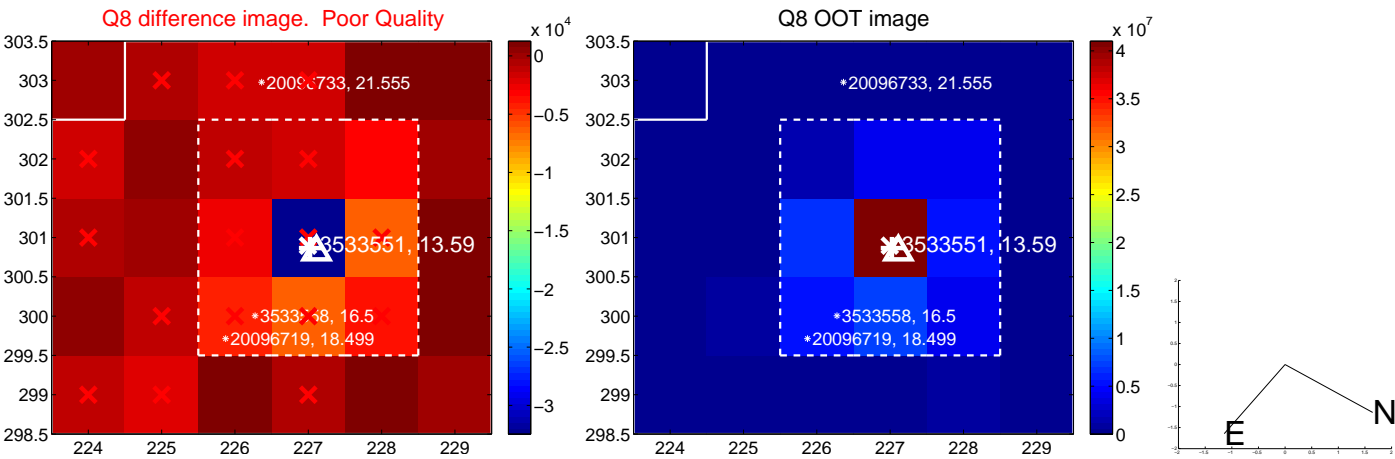
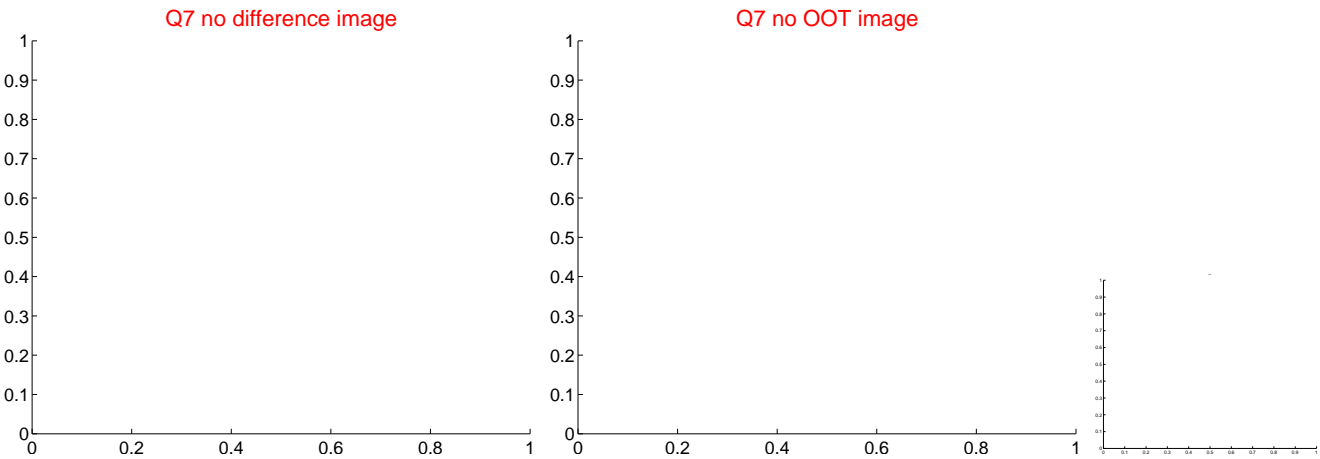
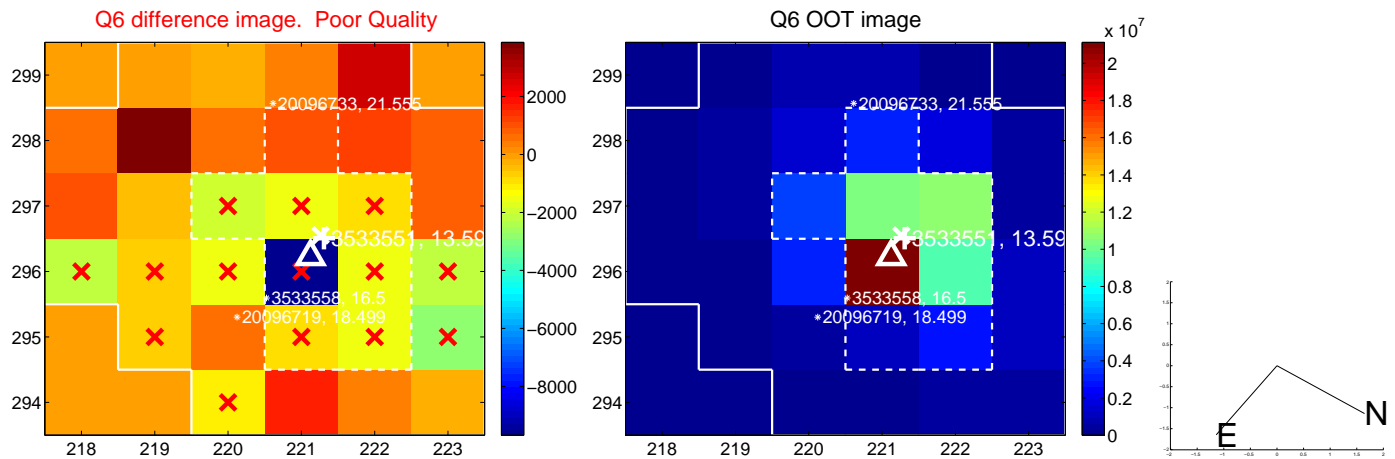
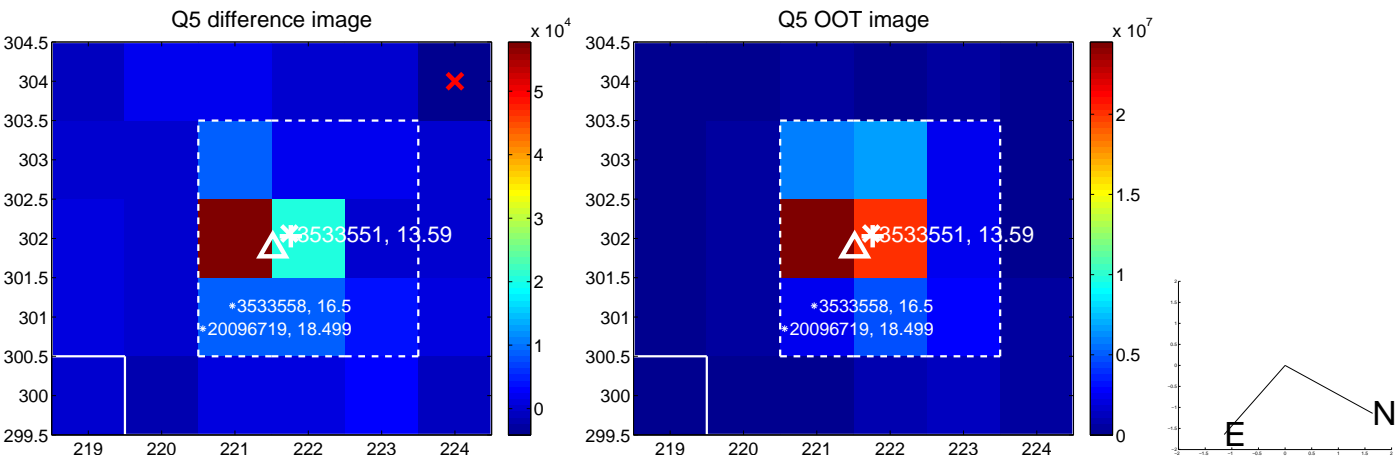


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

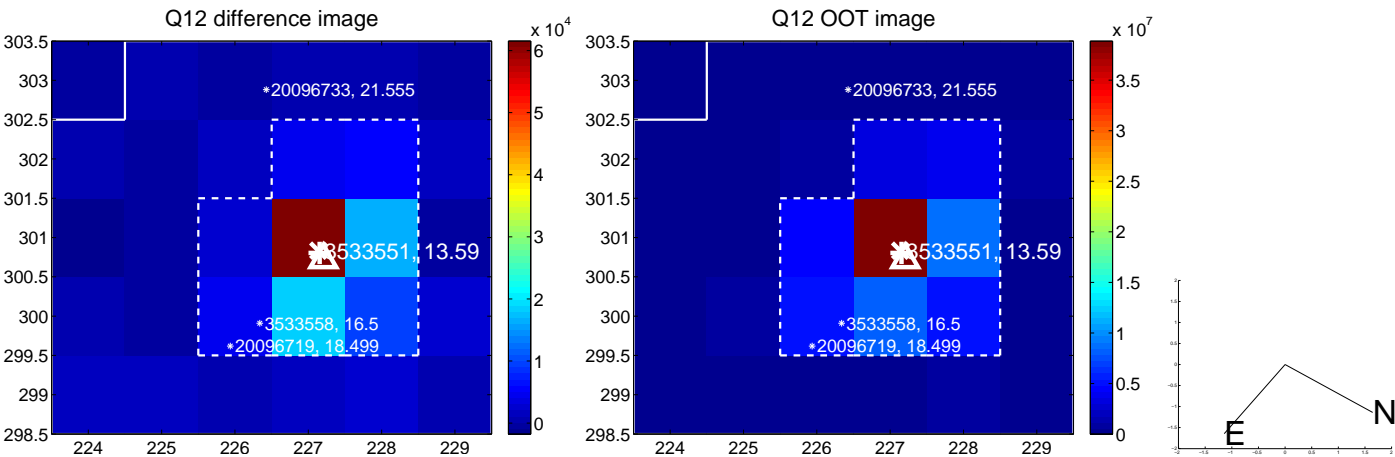
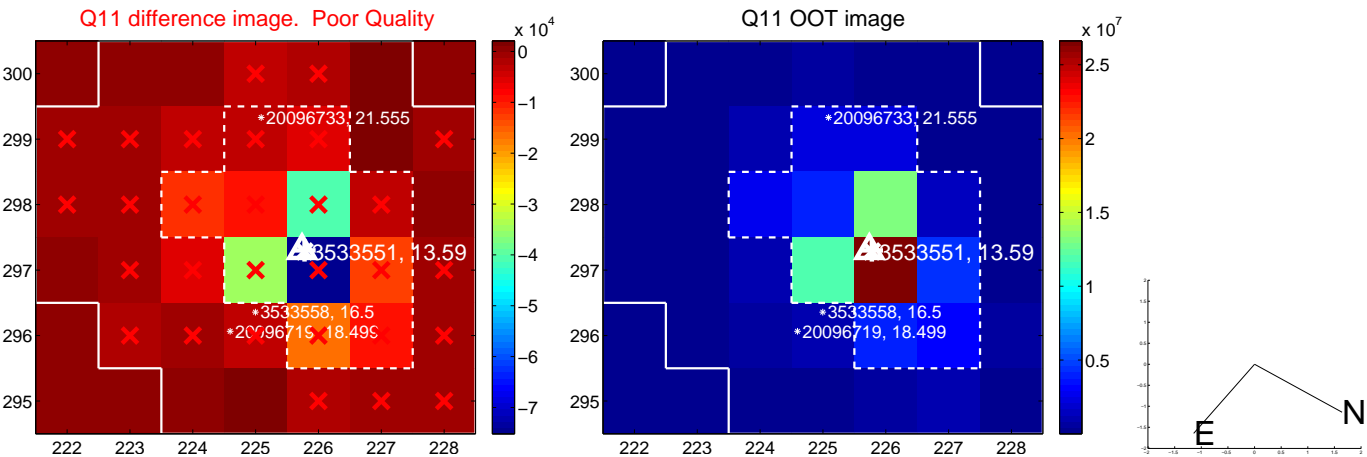
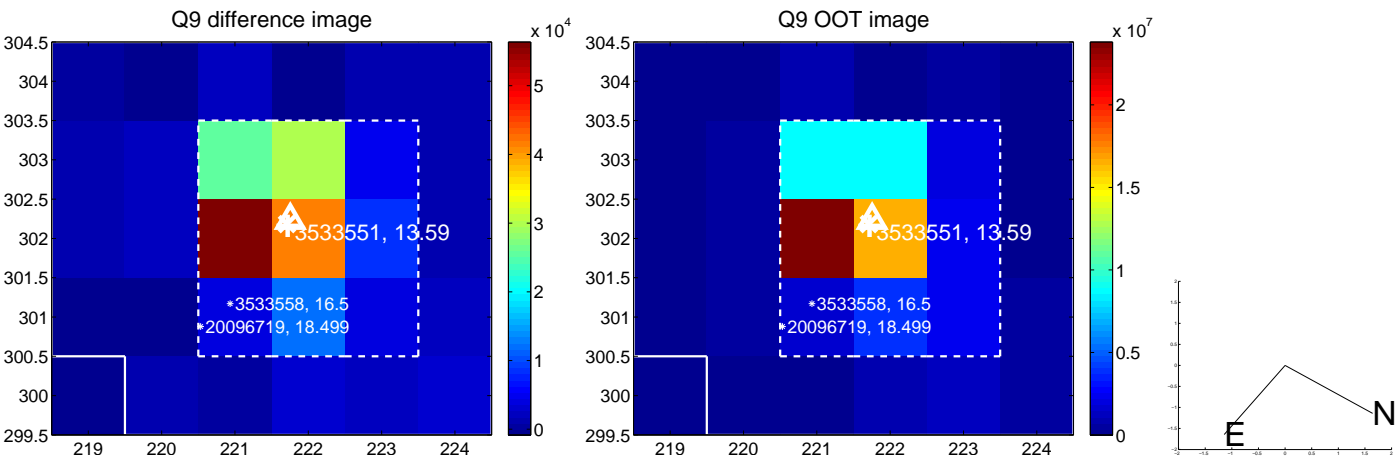
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



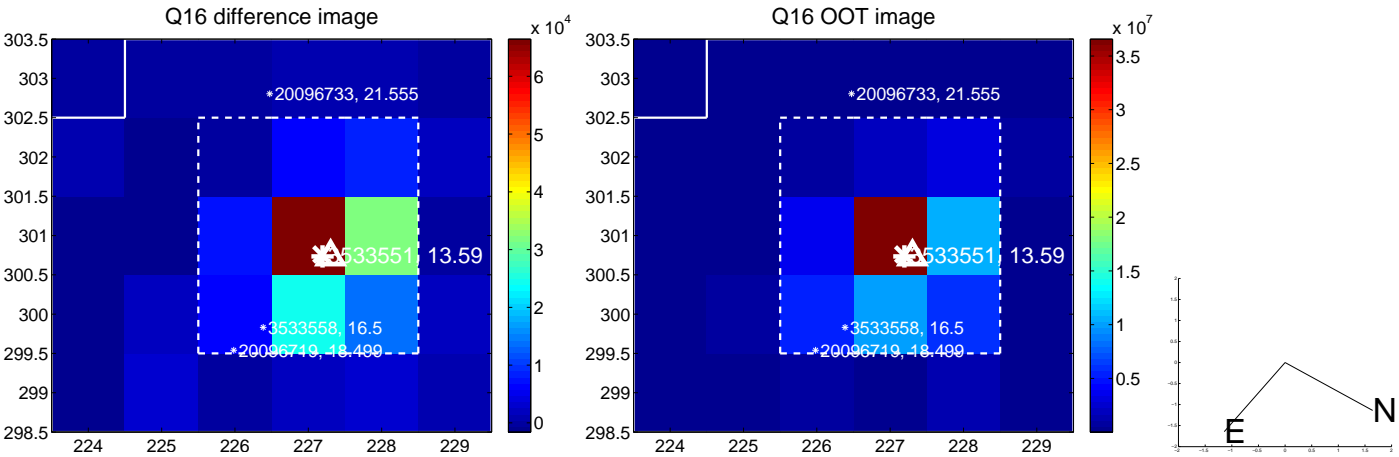
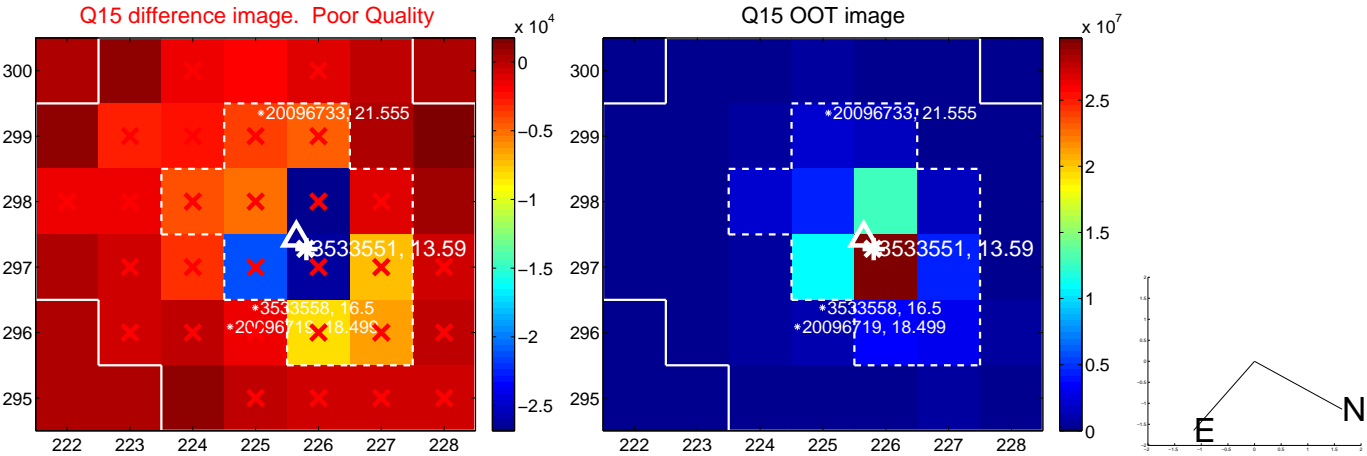
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



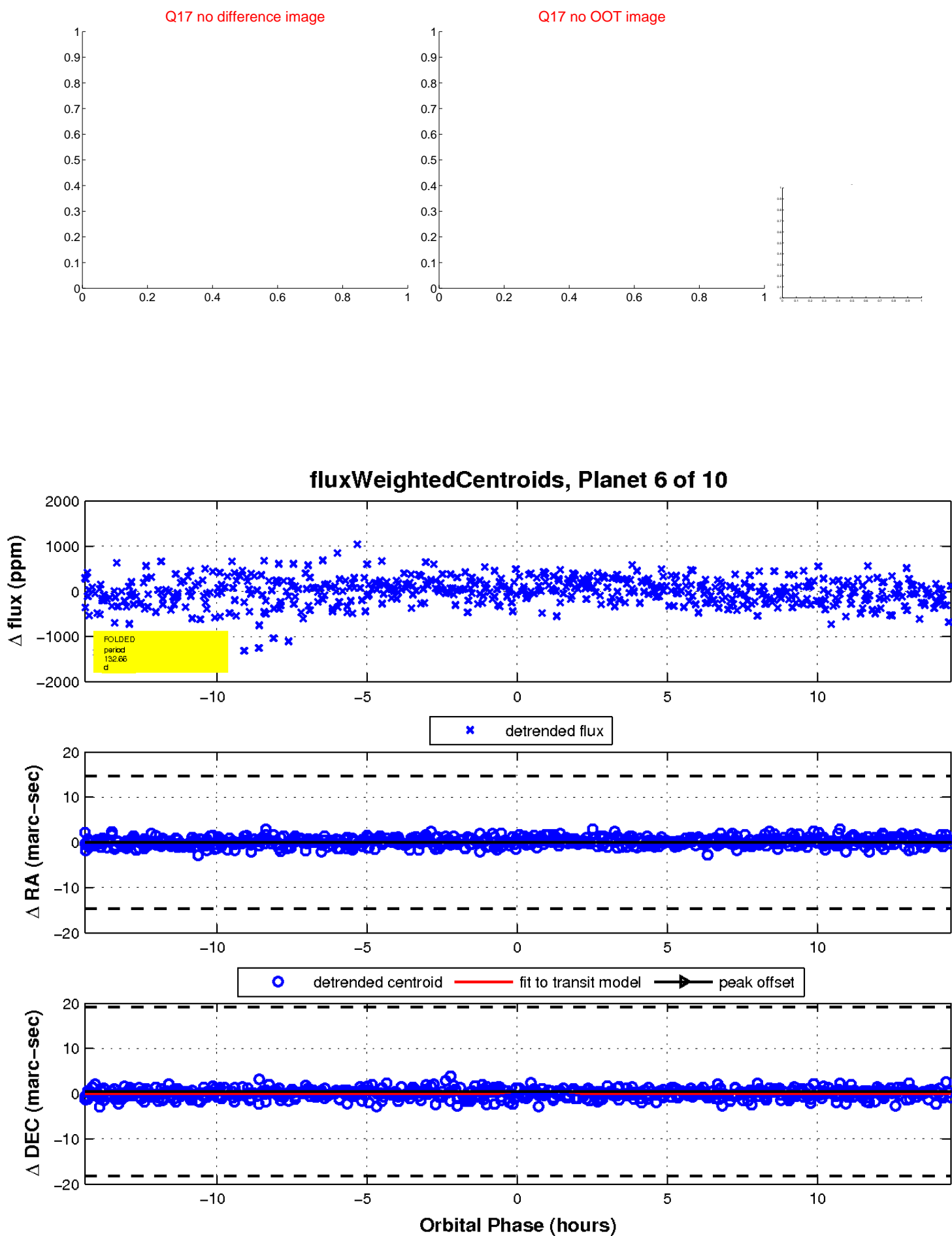
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

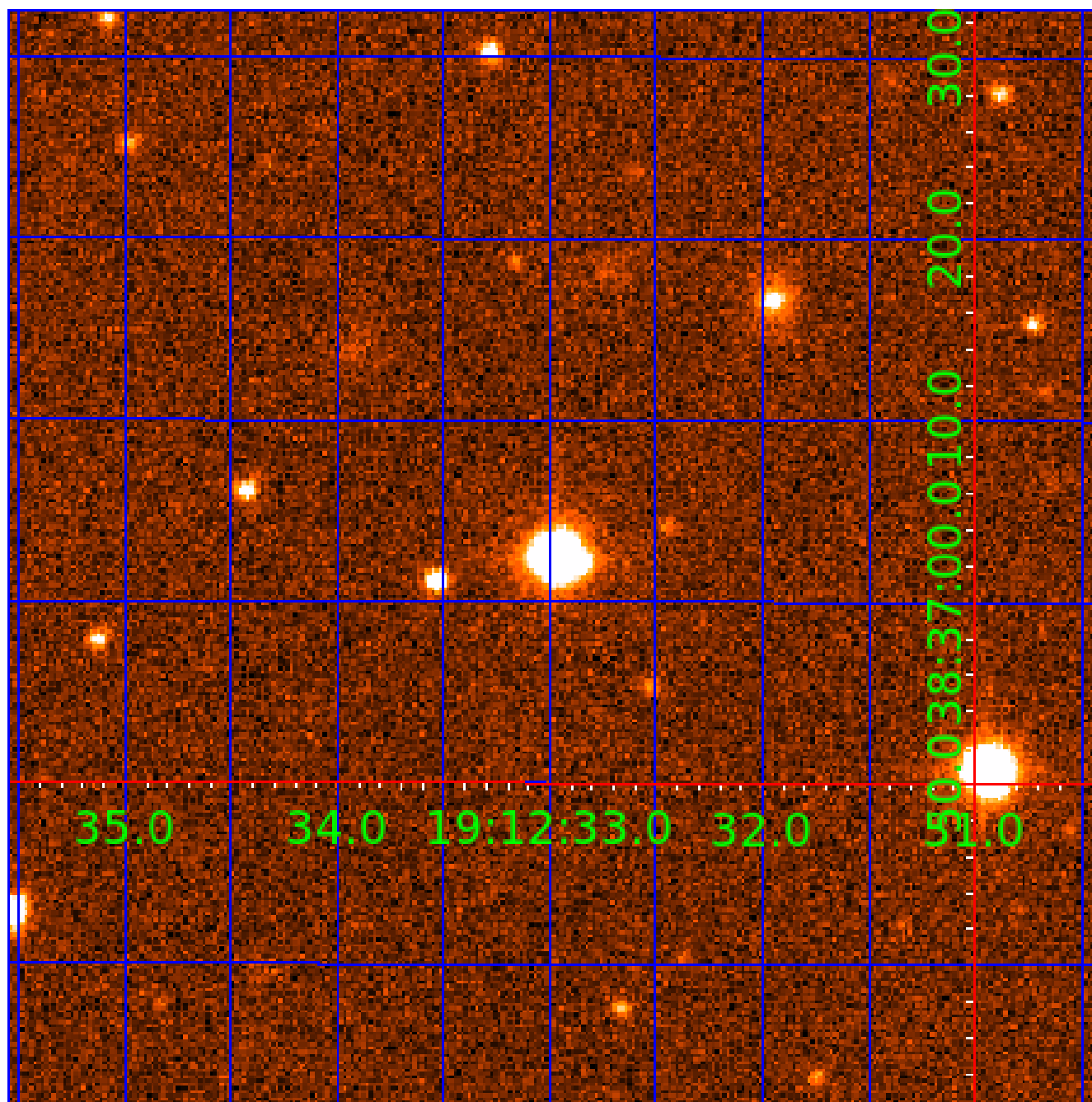


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
003533551-01	OBS	No	2.297362	133.631750	64.2	12.450	7.9	9.3	1.23	6144	1.33	1920.73
003533551-02	OBS	No	211.777821	283.721491	297.7	4.541	15.3	4.3	1.23	6144	2.27	4.61
003533551-03	OBS	No	498.367920	497.396492	1907.5	41.710	14.0	9.7	1.23	6144	9.98	1.47
003533551-04	OBS	No	132.648483	227.746073	225.6	3.059	9.1	3.3	1.23	6144	2.09	8.61
003533551-05	OBS	No	132.682289	228.720197	154.0	1.732	9.5	2.1	1.23	6144	1.58	8.60
003533551-06	OBS	No	132.656119	228.240061	277.2	9.000	9.6	-1.0	1.23	6144	2.06	8.61
003533551-07	OBS	No	379.158986	428.600167	548.9	7.215	9.2	8.2	1.23	6144	3.26	2.12
003533551-08	OBS	No	411.361648	196.323732	586.8	7.760	9.0	7.1	1.23	6144	3.19	1.90
003533551-09	OBS	No	62.528122	141.492009	277.9	8.863	9.4	7.4	1.23	6144	2.17	23.46
003533551-10	OBS	No	128.684428	174.127242	635.3	4.081	8.7	8.8	1.23	6144	5.97	8.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003533551-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003533551-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003533551-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003533551-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET
003533551-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
003533551-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003533551-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003533551-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

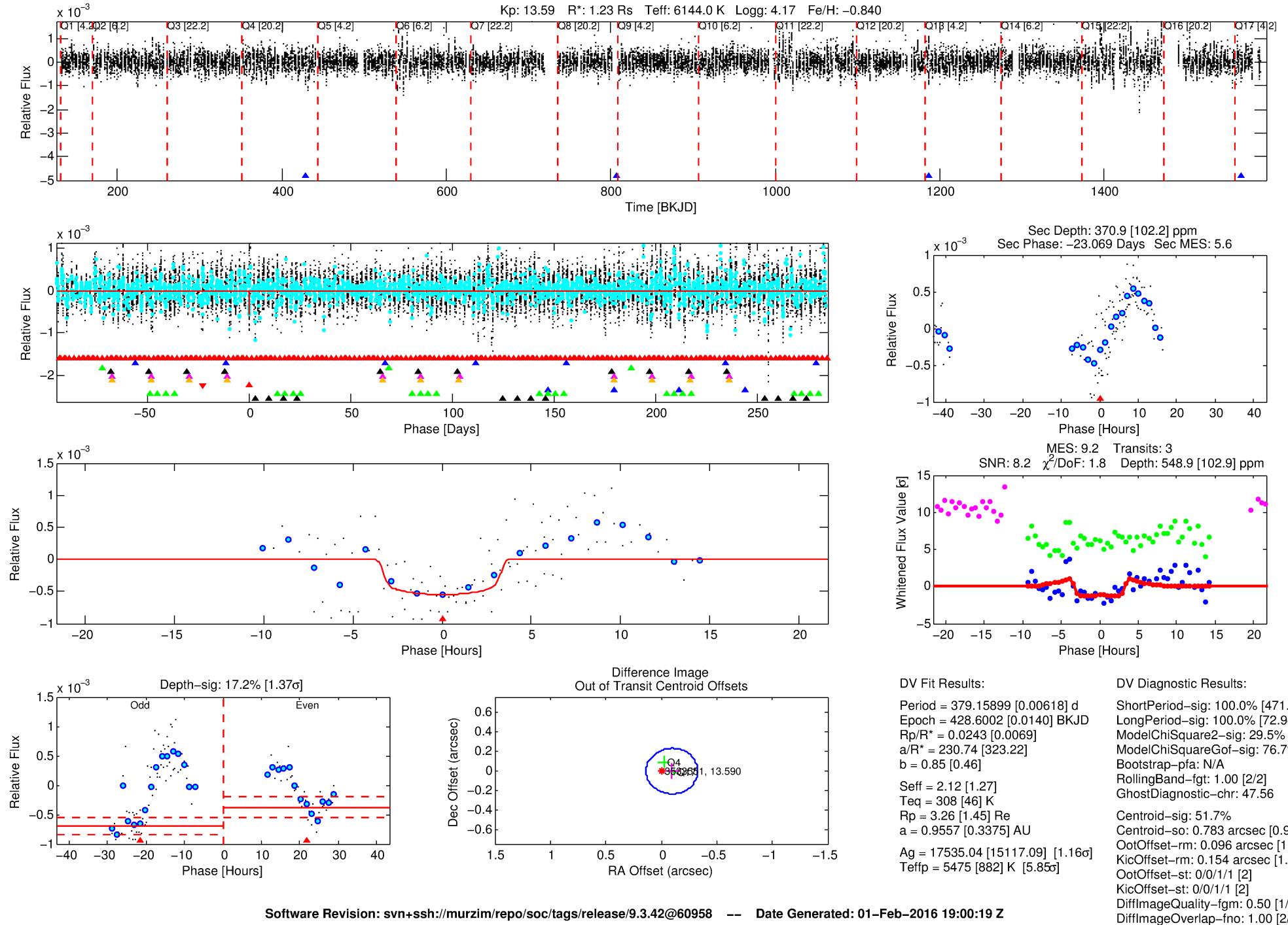
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003533551-07

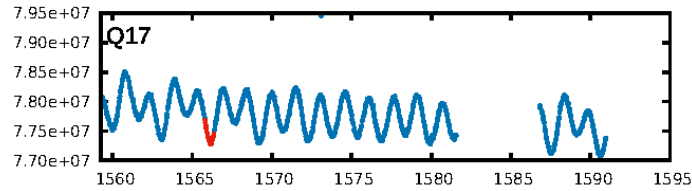
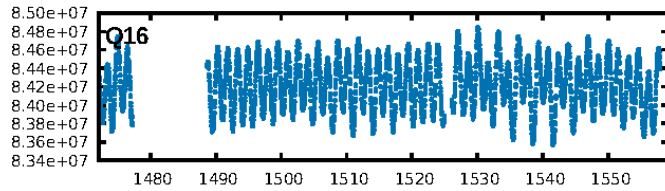
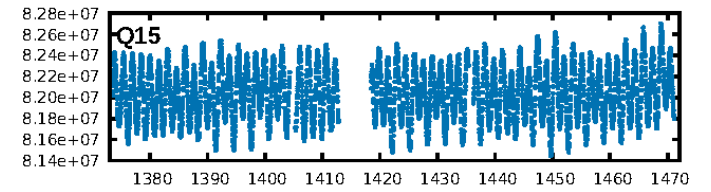
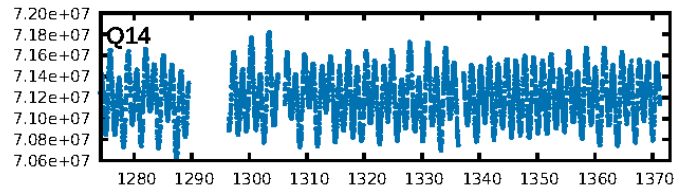
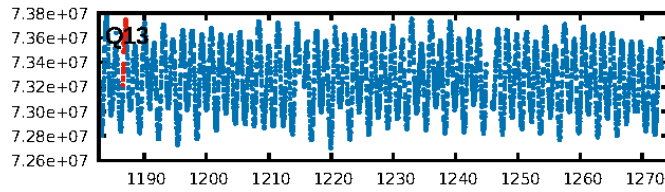
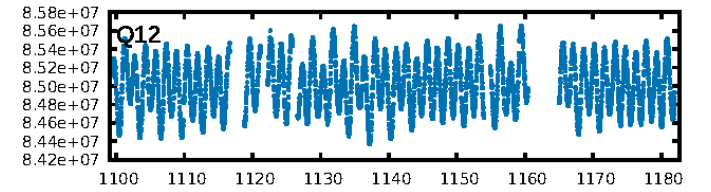
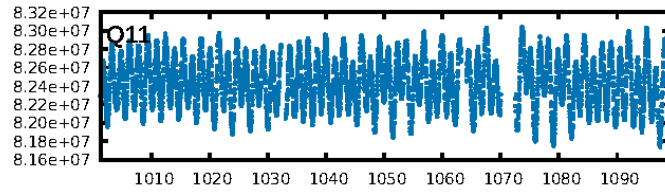
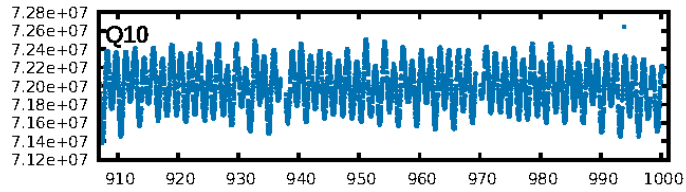
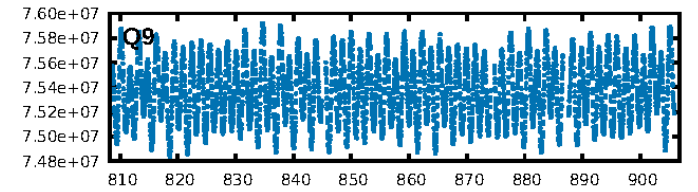
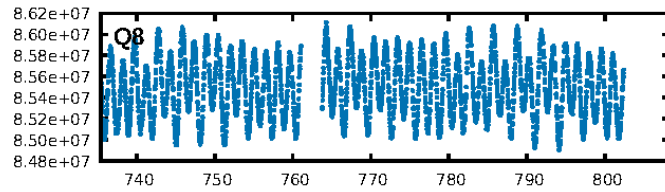
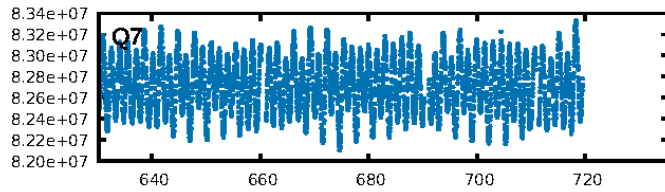
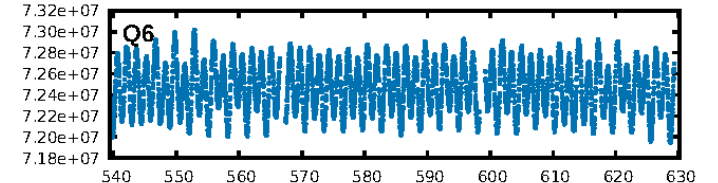
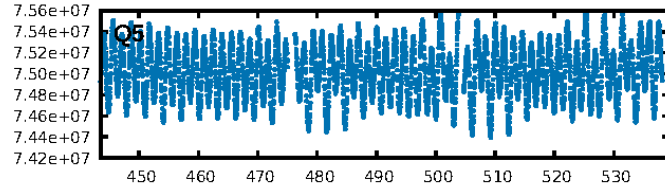
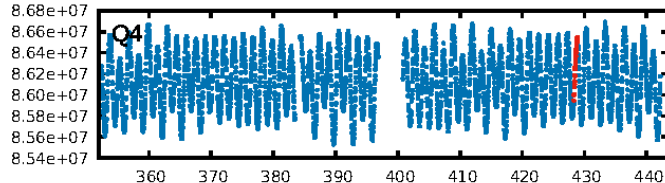
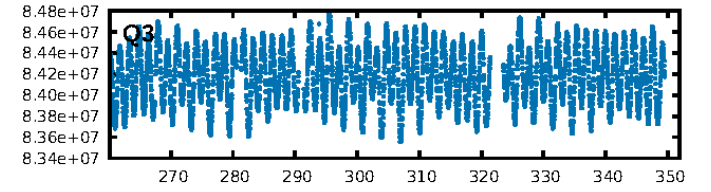
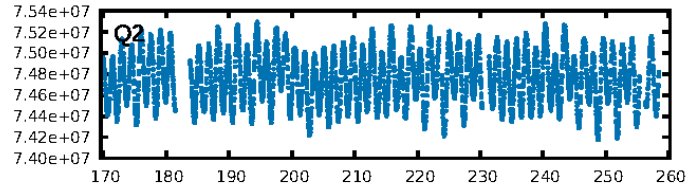
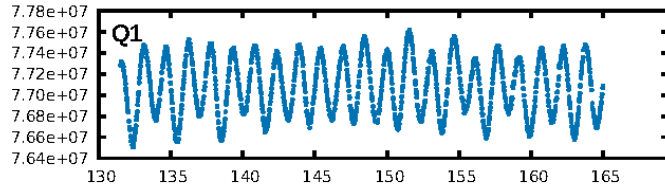
No Significant Match Found

DV One-Page Summary

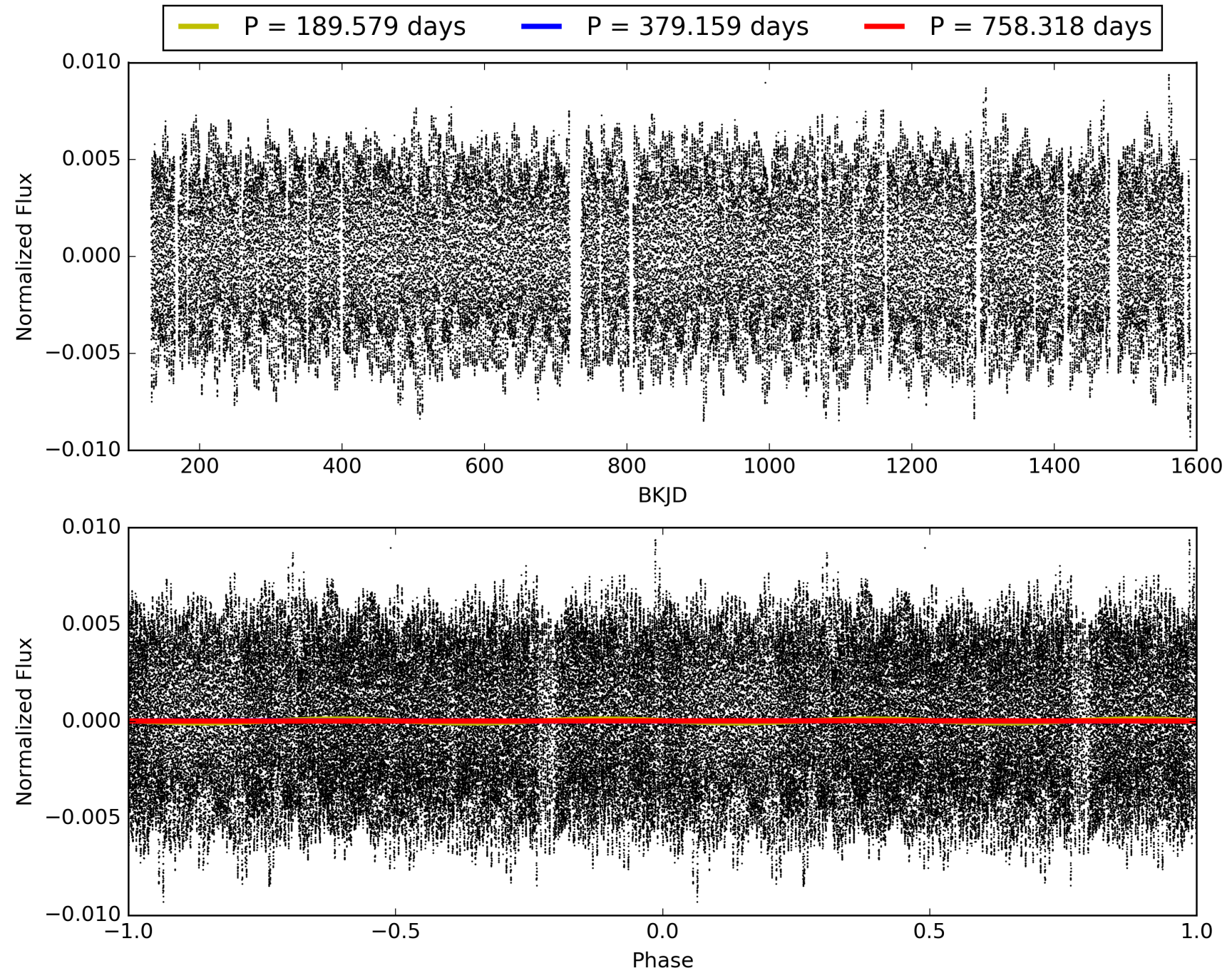
KIC: 3533551 Candidate: 7 of 10 Period: 379.159 d



TCE 003533551-07, PDC Light Curves

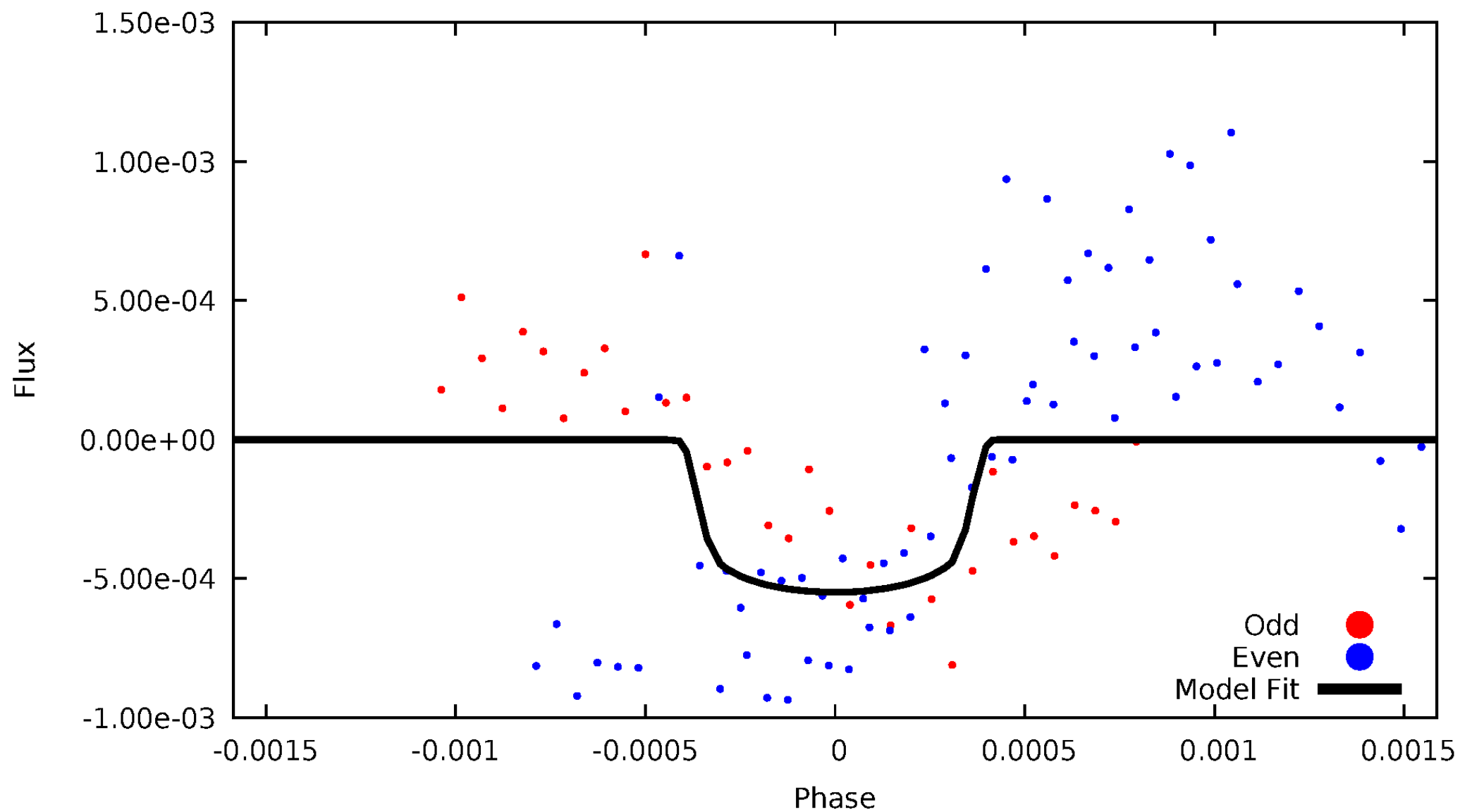


TCE 003533551-07



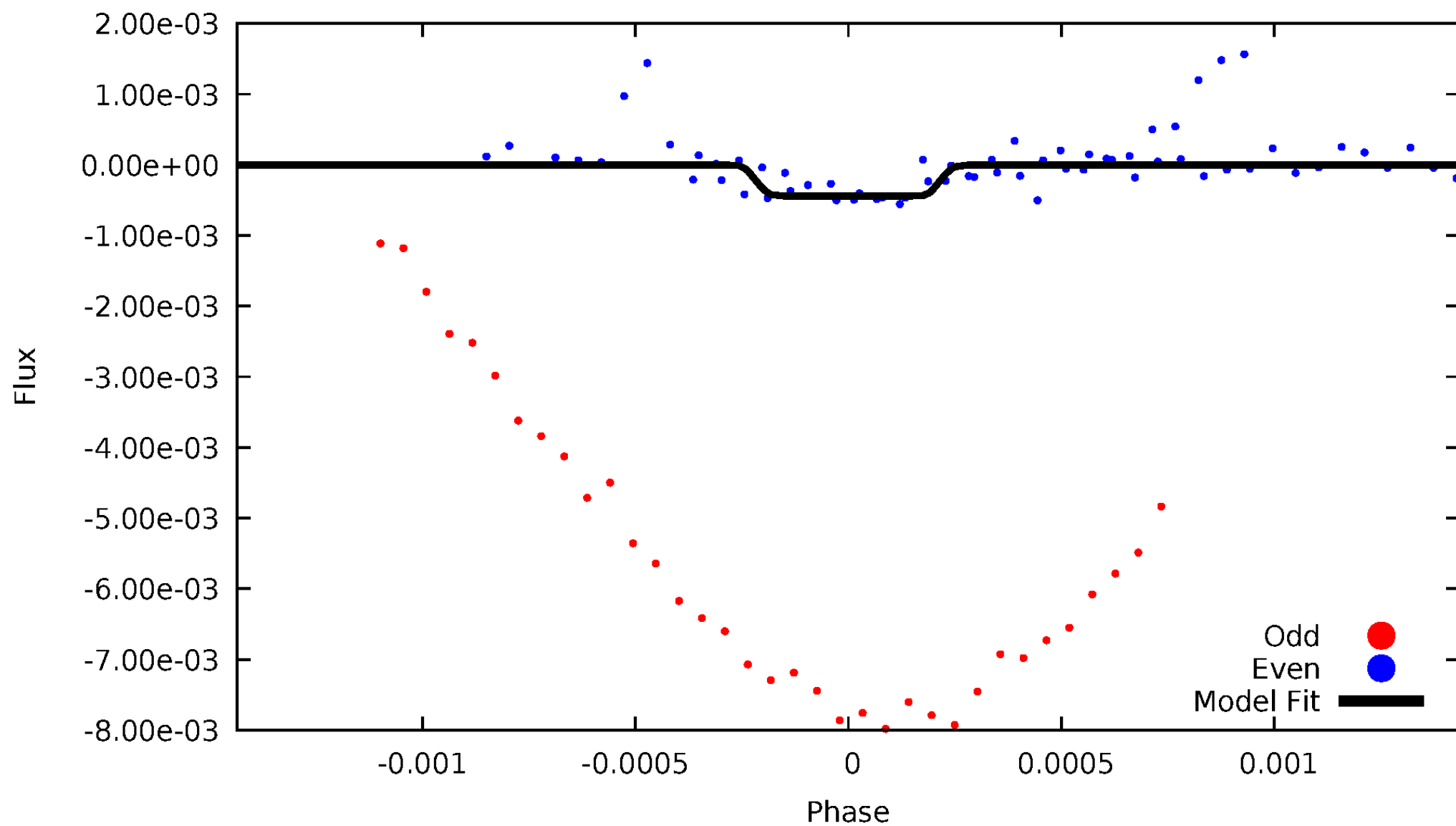
DV Odd/Even

TCE 003533551-07



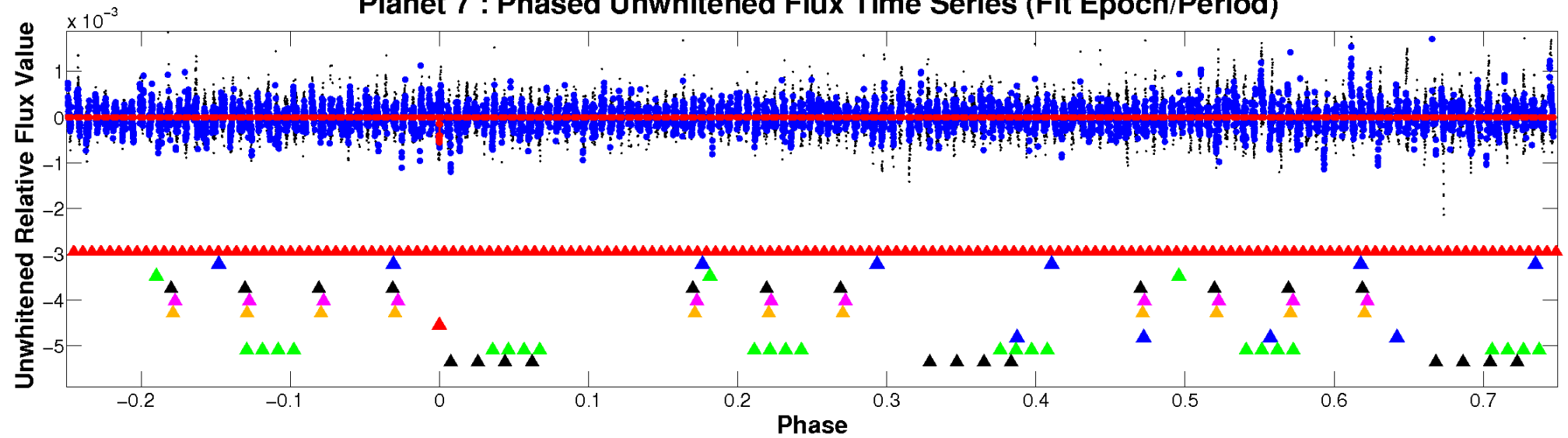
ALT Odd/Even

TCE 003533551-07

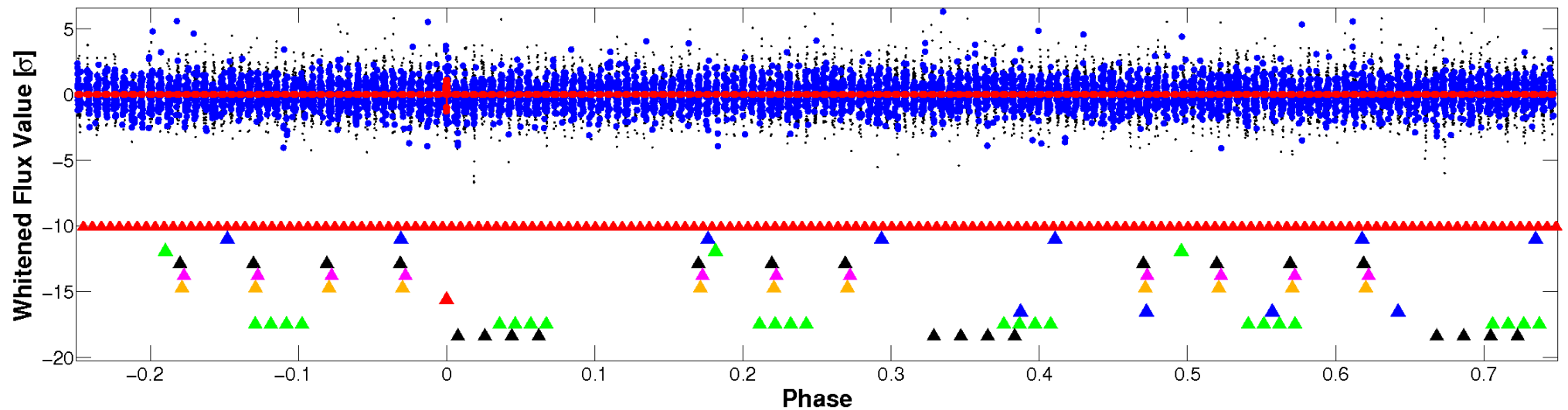


Non-Whitened Vs. Whitened Light Curve

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

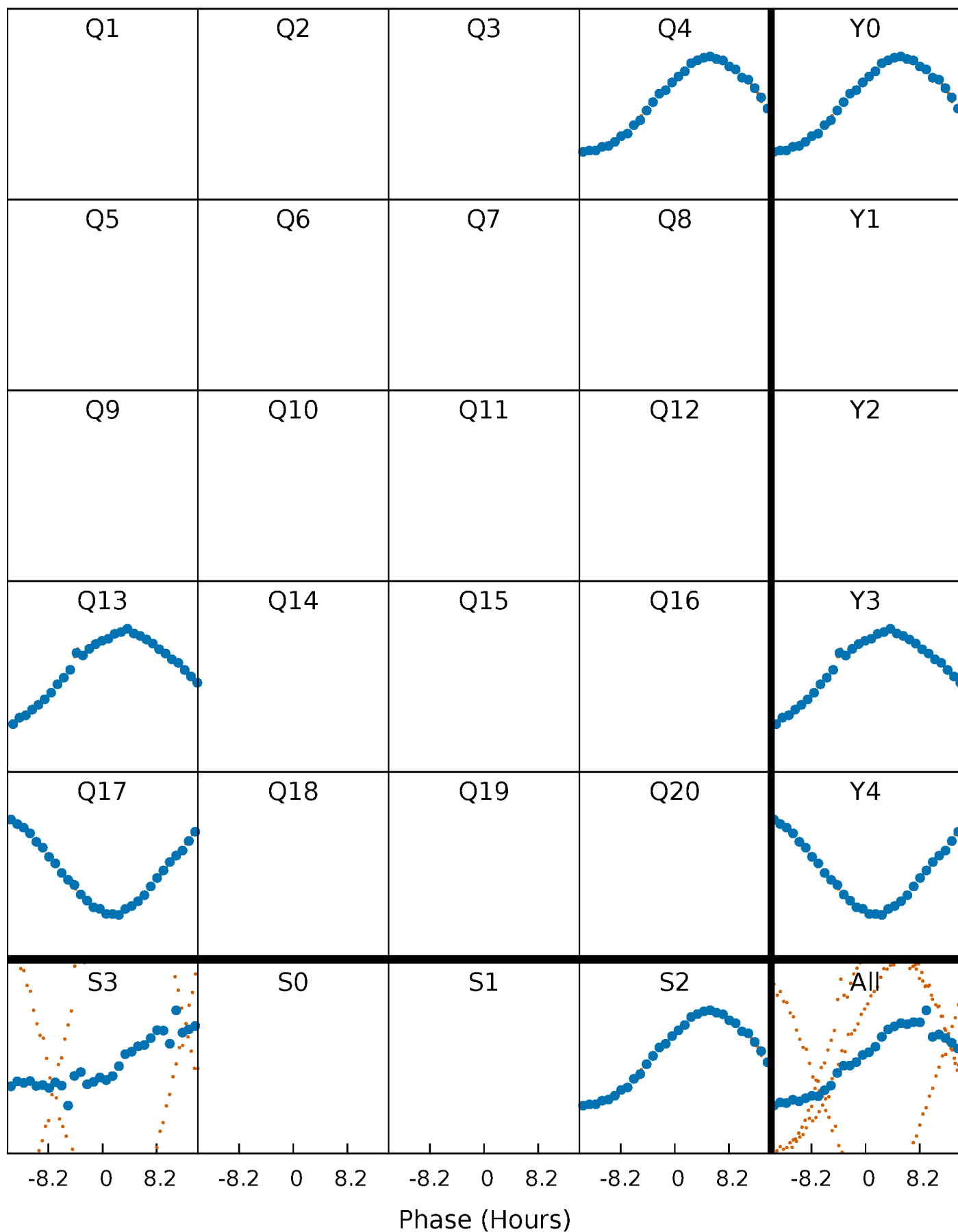


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



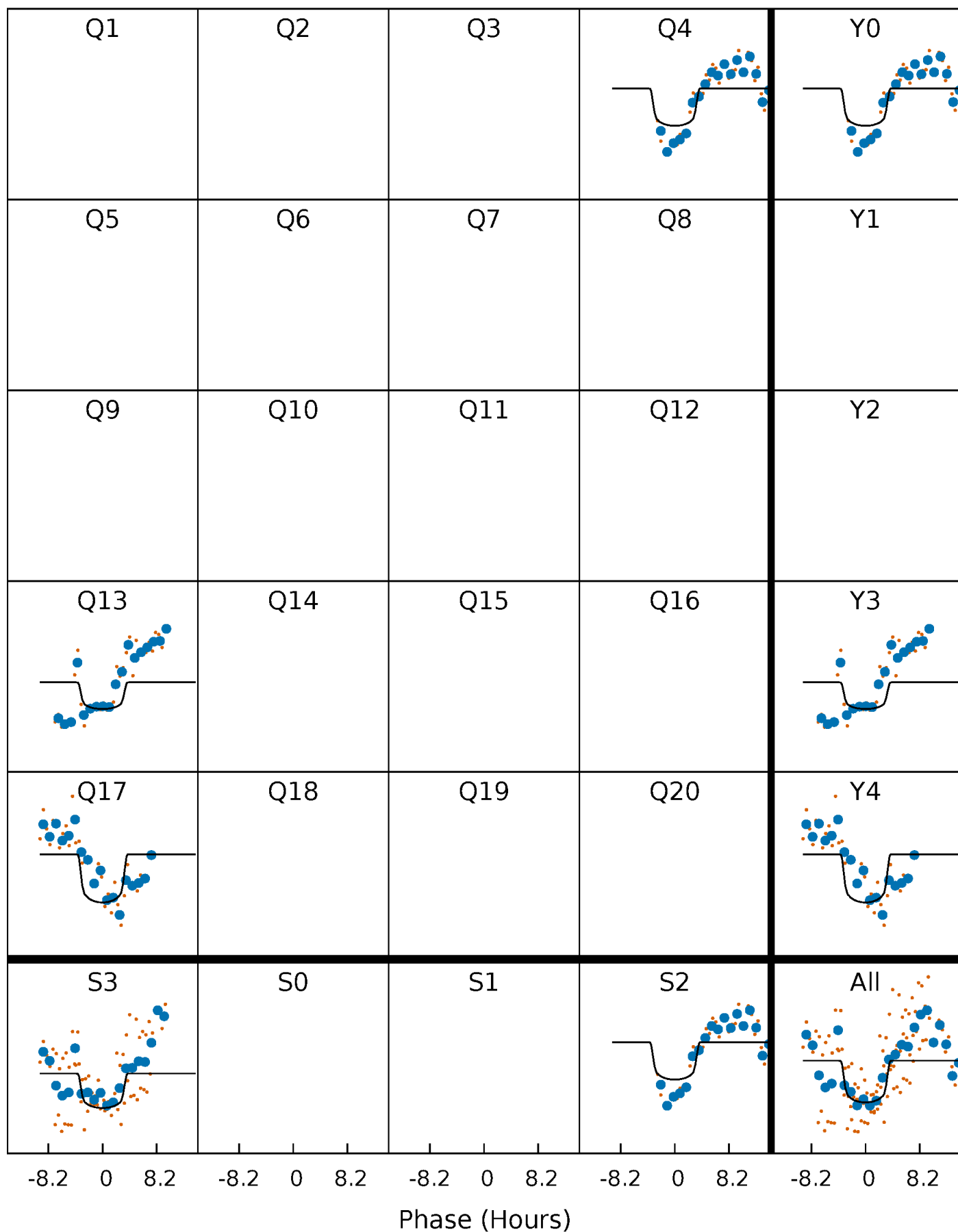
PDC Quarter-Phased Transit Curves

TCE 003533551-07 P=379.158986 Days $T_0=428.600167$ (BKJD)



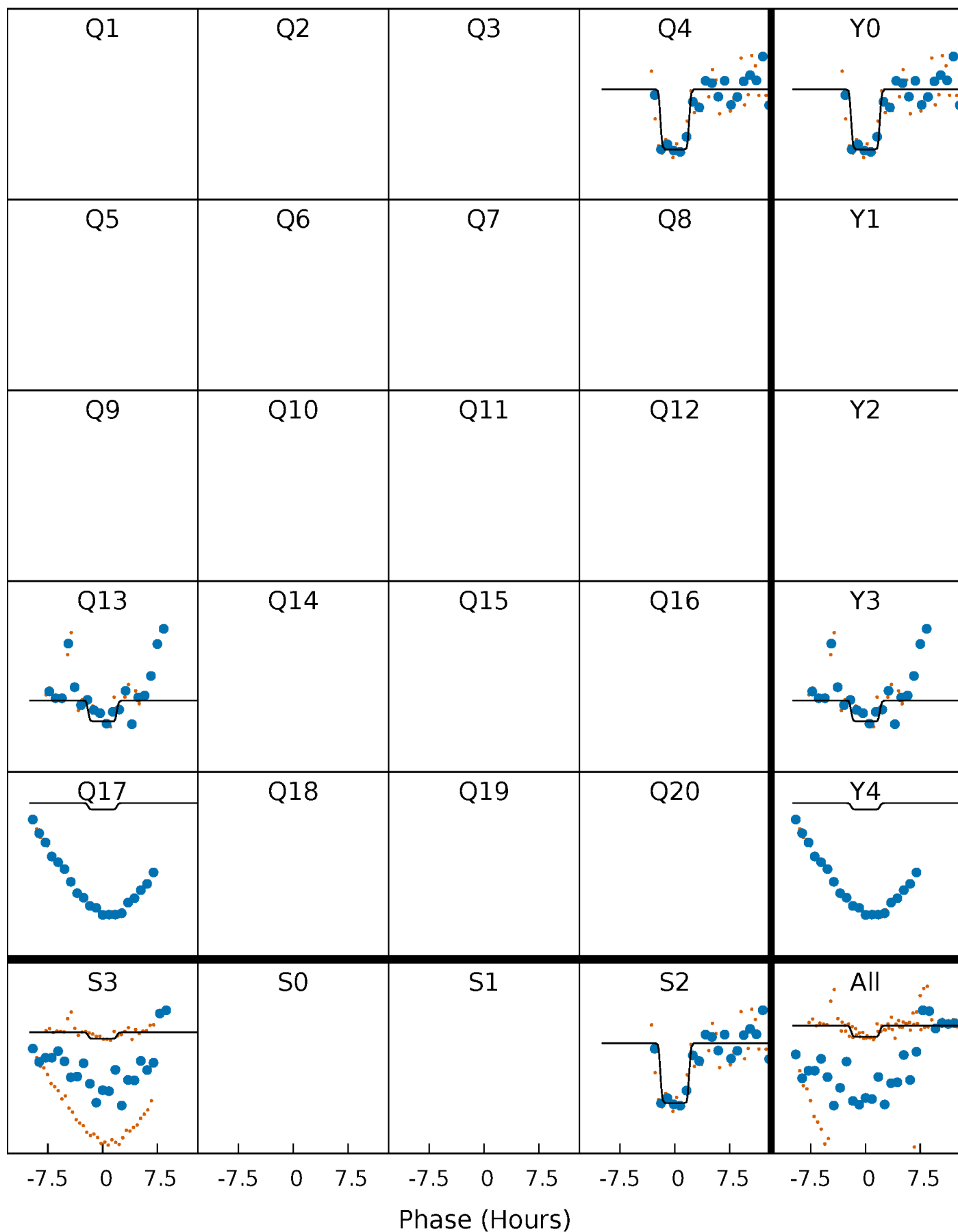
DV Quarter-Phased Transit Curves

TCE 003533551-07 $P=379.158986$ Days $T_0=428.600167$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

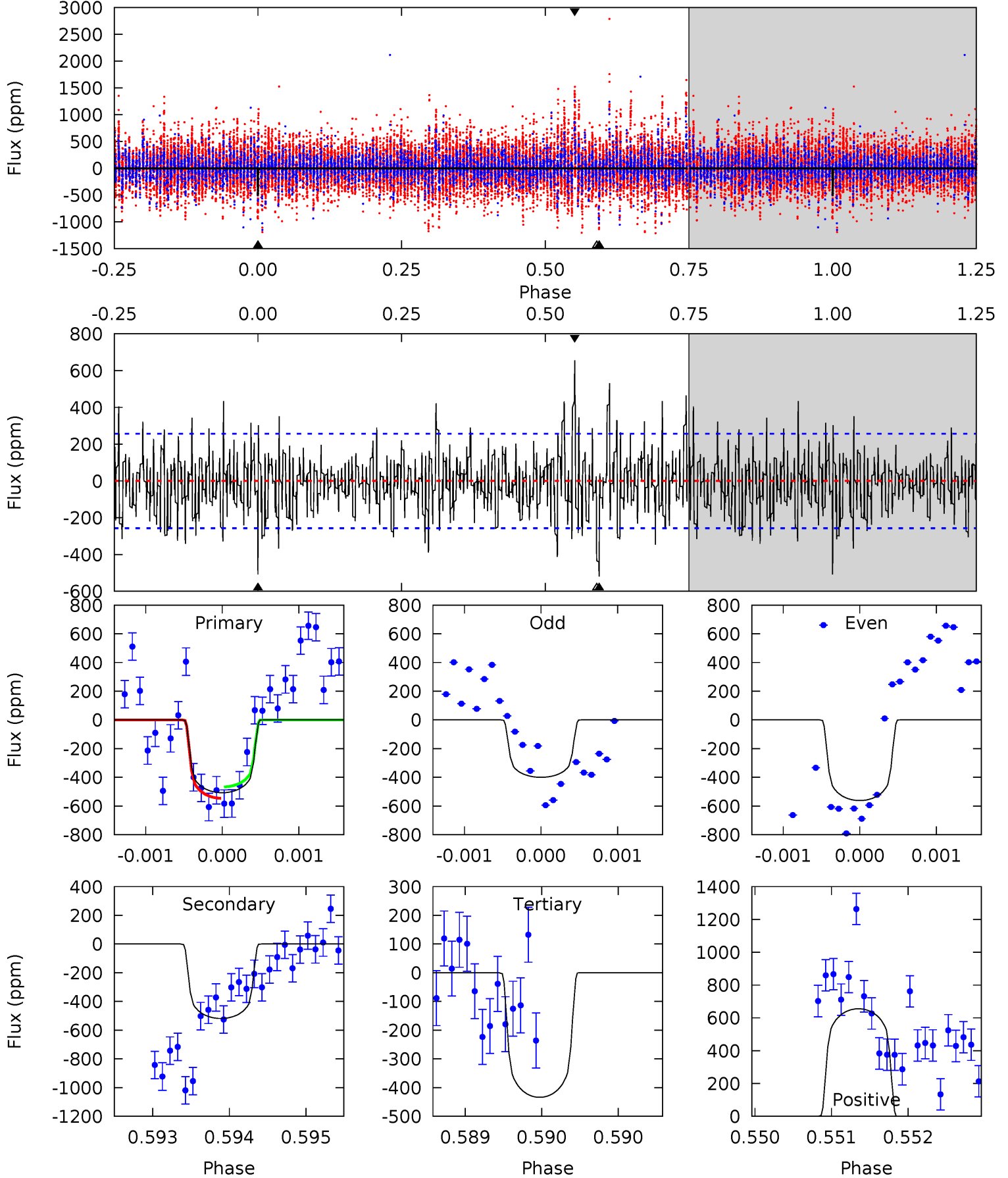
TCE 003533551-07 P=379.158328 Days $T_0=428.624696$ (BKJD)



DV Model-Shift Uniqueness Test

003533551-07, P = 379.158986 Days, E = 49.441181 Days

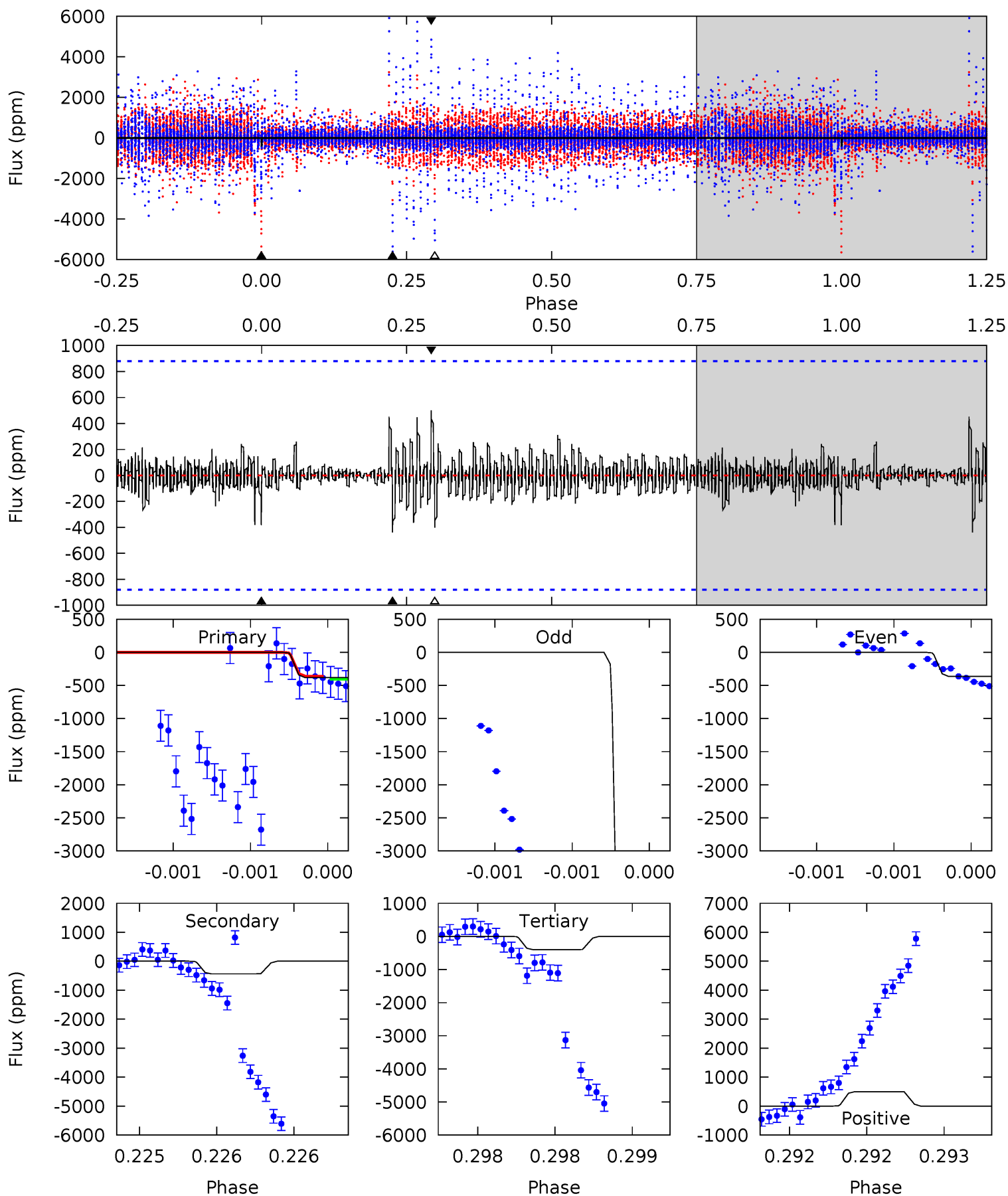
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	11.1	9.26	14.0	5.48	3.34	2.83	1.57	-3.16	1.81	-2.92	1.61	1.22	0.56	0.84



Alt Model-Shift Uniqueness Test

003533551-07, P = 379.158328 Days, E = 49.466368 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.42	2.77	2.54	3.16	5.57	3.48	0.38	-0.12	-0.74	0.23	-0.39	22.2	6.70	0.53	0



Stellar Parameters For KIC 003533551

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6144^{+183}_{-183}	$4.165^{+0.351}_{-0.189}$	$-0.840^{+0.300}_{-0.300}$	$1.232^{+0.345}_{-0.422}$	$0.809^{+0.103}_{-0.051}$	$0.609^{+1.309}_{-0.304}$
	+3%/-3%	+8%/-5%	+36%/-36%	+28%/-34%	+13%/-6%	+215%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003533551-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-519±47	$3.11^{+1.12}_{-1.03}$	427^{+36}_{-45}	5982^{+1187}_{-676}	27429^{+34115}_{-12863}
Alt.	-437±158	$2.75^{+0.98}_{-1.00}$	427^{+34}_{-45}	6113^{+1577}_{-986}	29262^{+45748}_{-16152}

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

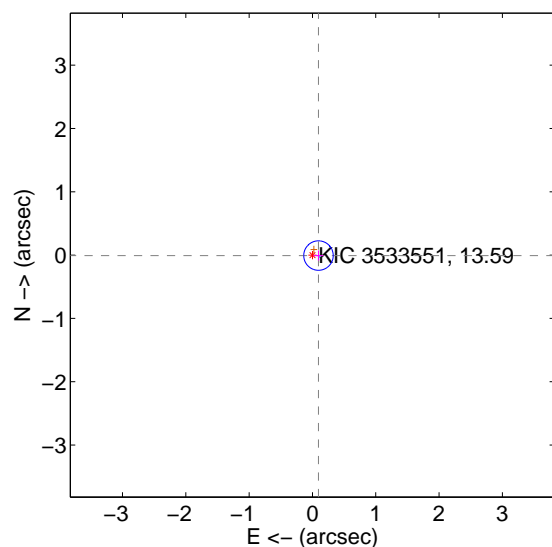
Supplemental centroid analysis for 003533551-07. Kepler magnitude: 13.59. Transit SNR 8.24

There are 1 quarters with good PRF difference image offsets

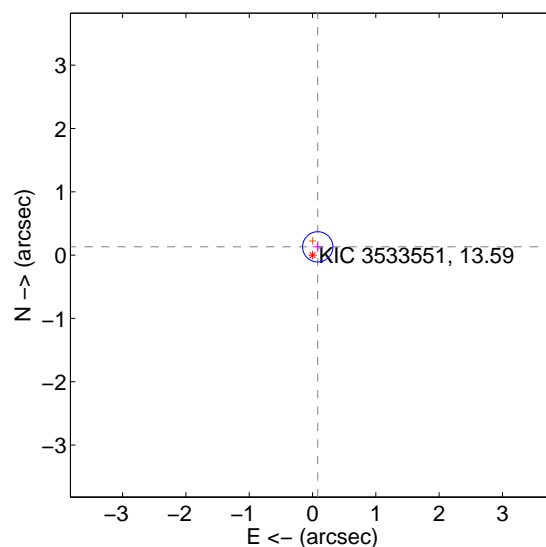
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.096 ± 0.078	1.23	-0.095 ± 0.078	-0.007 ± 0.080
PRF-fit source offset from KIC position	0.154 ± 0.080	1.94	-0.083 ± 0.080	0.130 ± 0.080
photometric centroid source offset	0.78 ± 0.80	0.98	0.78 ± 0.80	0.01 ± 0.92

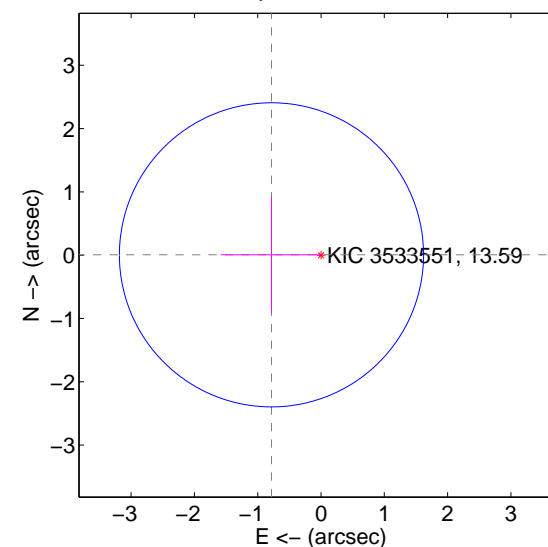
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

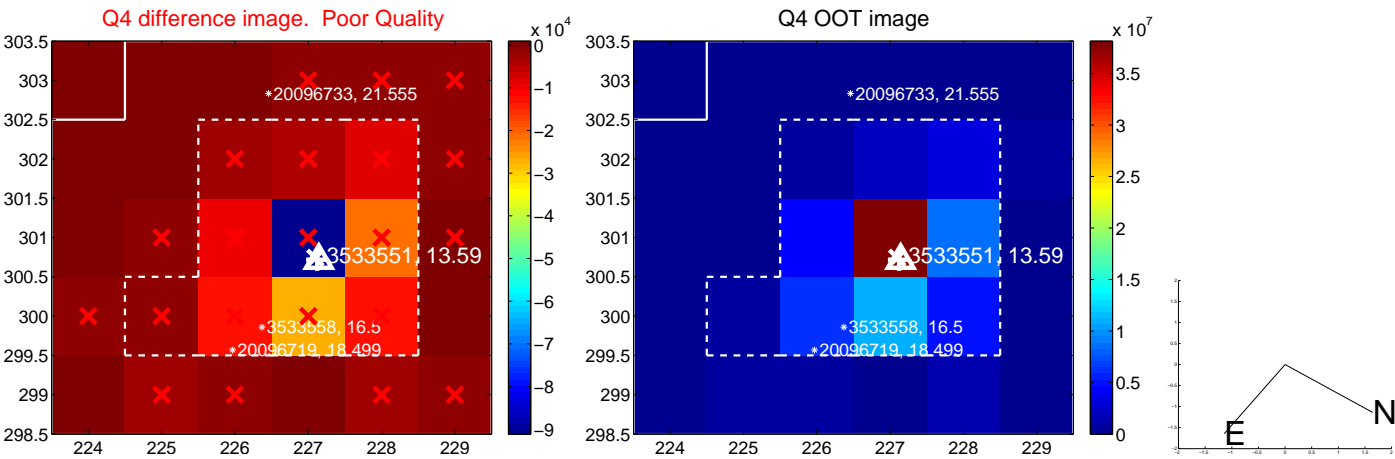
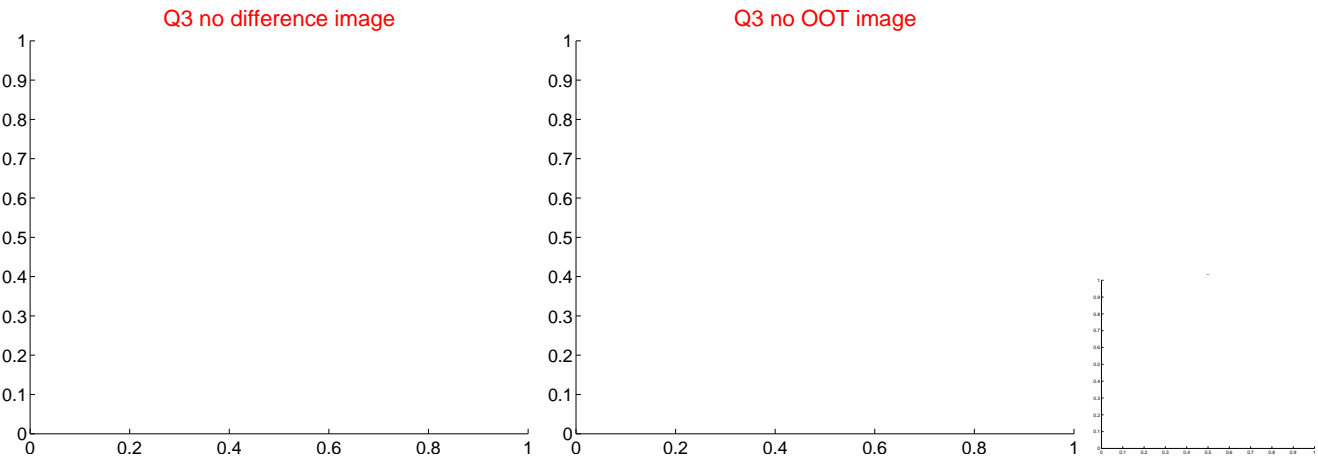
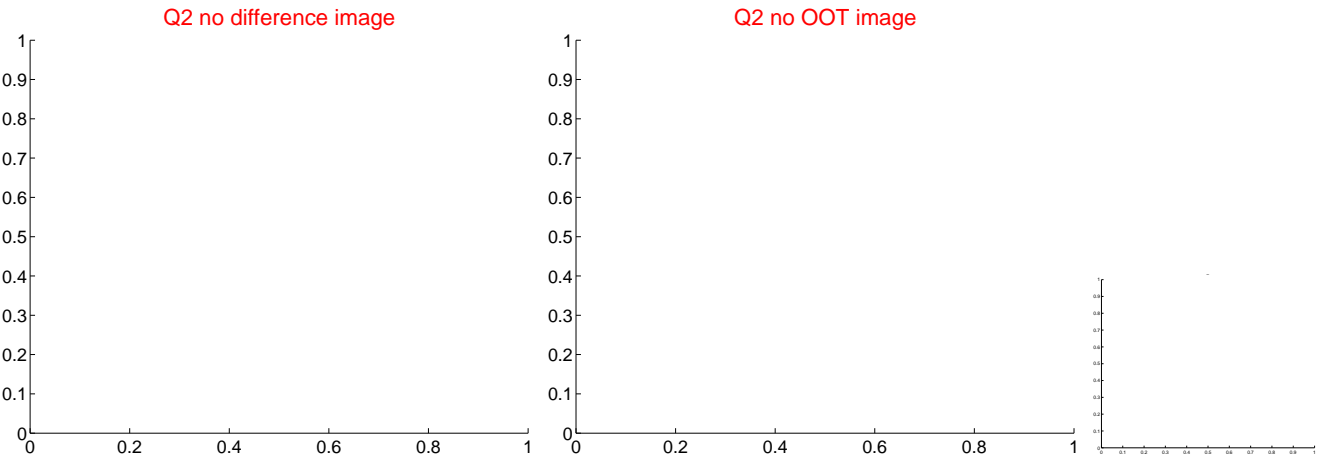
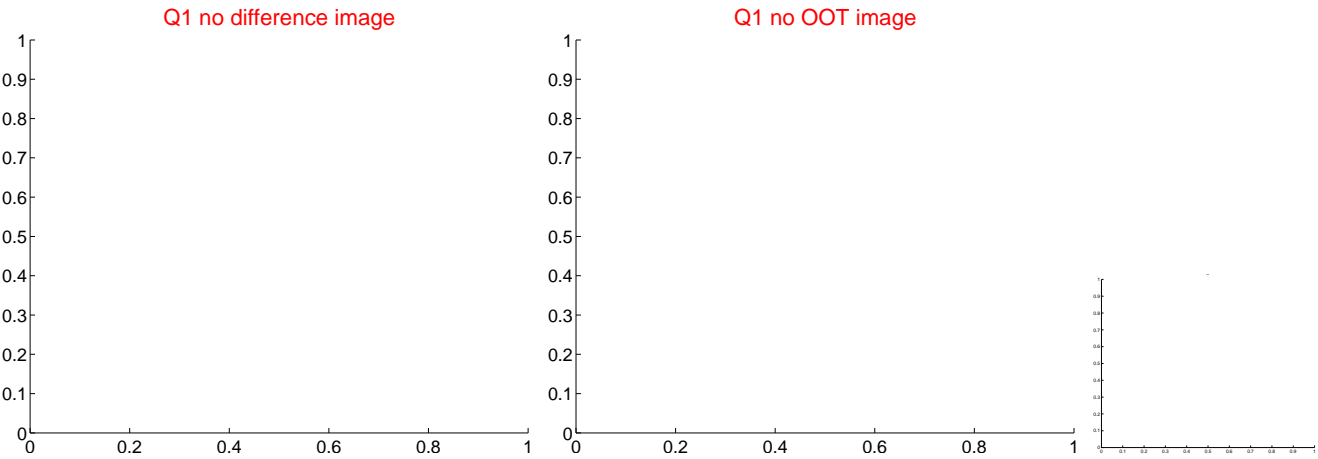


offset from photometric centroids



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.



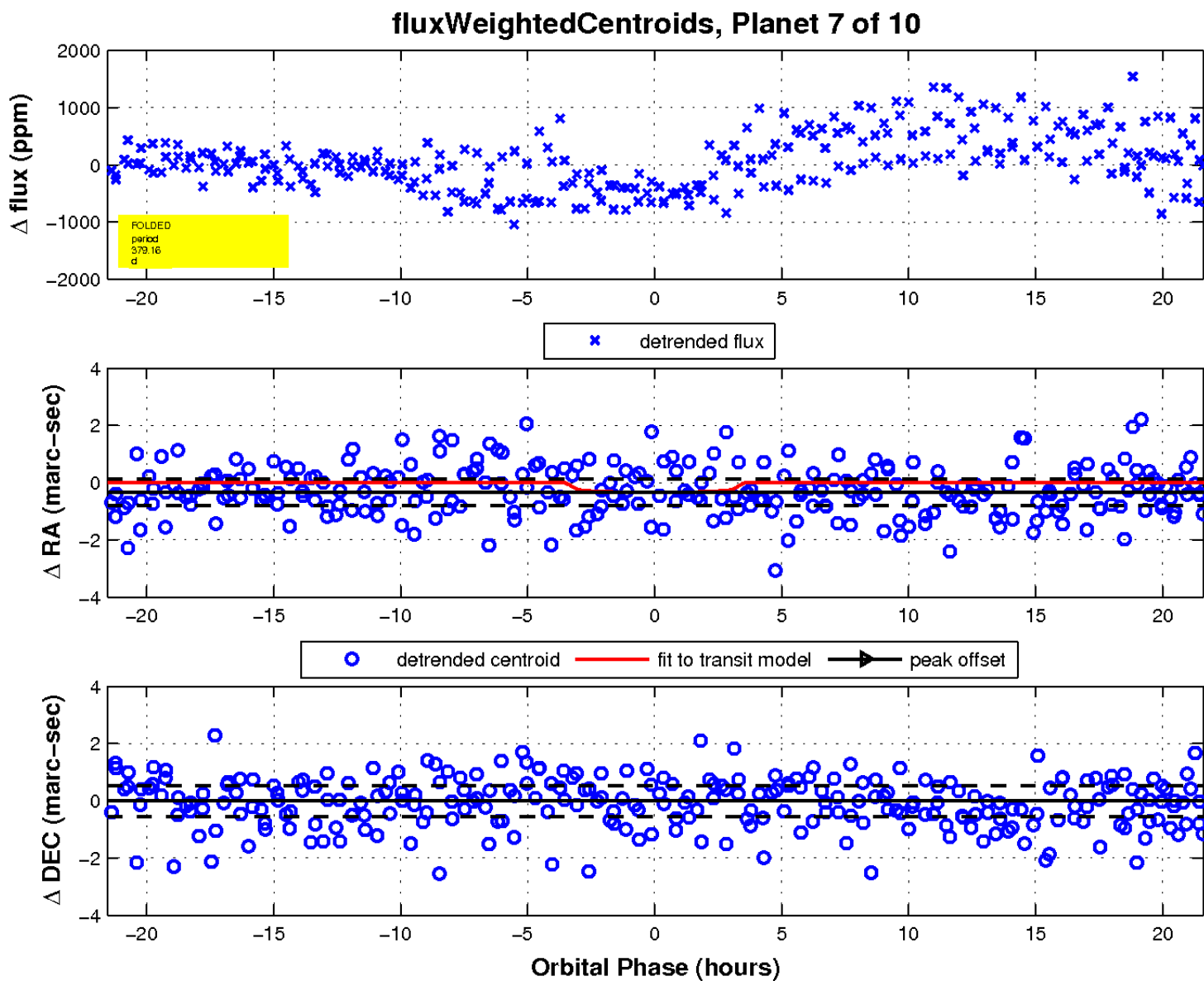
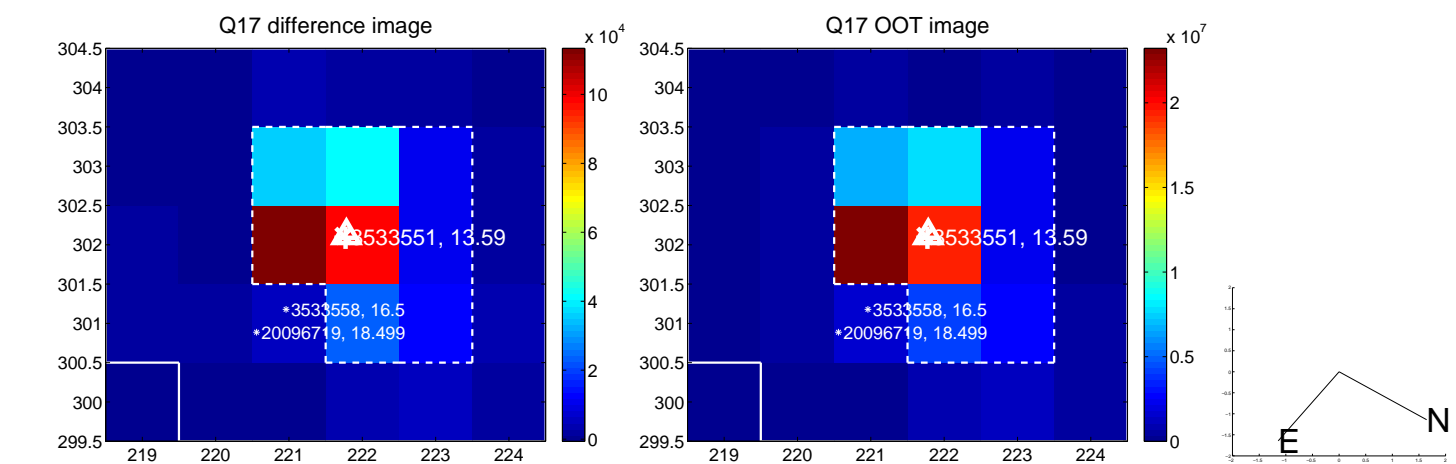
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

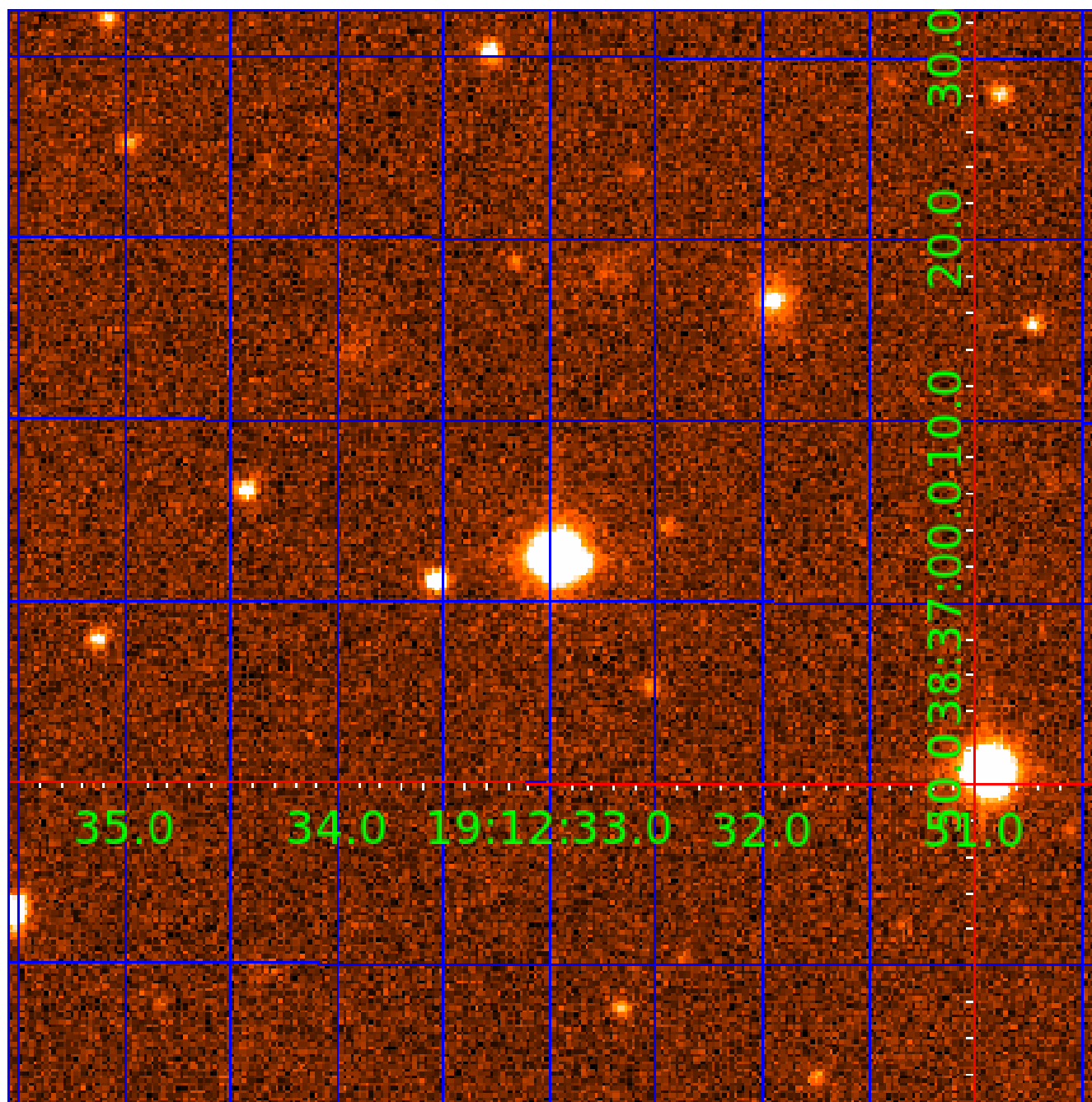


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
003533551-01	OBS	No	2.297362	133.631750	64.2	12.450	7.9	9.3	1.23	6144	1.33	1920.73
003533551-02	OBS	No	211.777821	283.721491	297.7	4.541	15.3	4.3	1.23	6144	2.27	4.61
003533551-03	OBS	No	498.367920	497.396492	1907.5	41.710	14.0	9.7	1.23	6144	9.98	1.47
003533551-04	OBS	No	132.648483	227.746073	225.6	3.059	9.1	3.3	1.23	6144	2.09	8.61
003533551-05	OBS	No	132.682289	228.720197	154.0	1.732	9.5	2.1	1.23	6144	1.58	8.60
003533551-06	OBS	No	132.656119	228.240061	277.2	9.000	9.6	-1.0	1.23	6144	2.06	8.61
003533551-07	OBS	No	379.158986	428.600167	548.9	7.215	9.2	8.2	1.23	6144	3.26	2.12
003533551-08	OBS	No	411.361648	196.323732	586.8	7.760	9.0	7.1	1.23	6144	3.19	1.90
003533551-09	OBS	No	62.528122	141.492009	277.9	8.863	9.4	7.4	1.23	6144	2.17	23.46
003533551-10	OBS	No	128.684428	174.127242	635.3	4.081	8.7	8.8	1.23	6144	5.97	8.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003533551-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003533551-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003533551-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003533551-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET
003533551-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
003533551-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003533551-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003533551-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

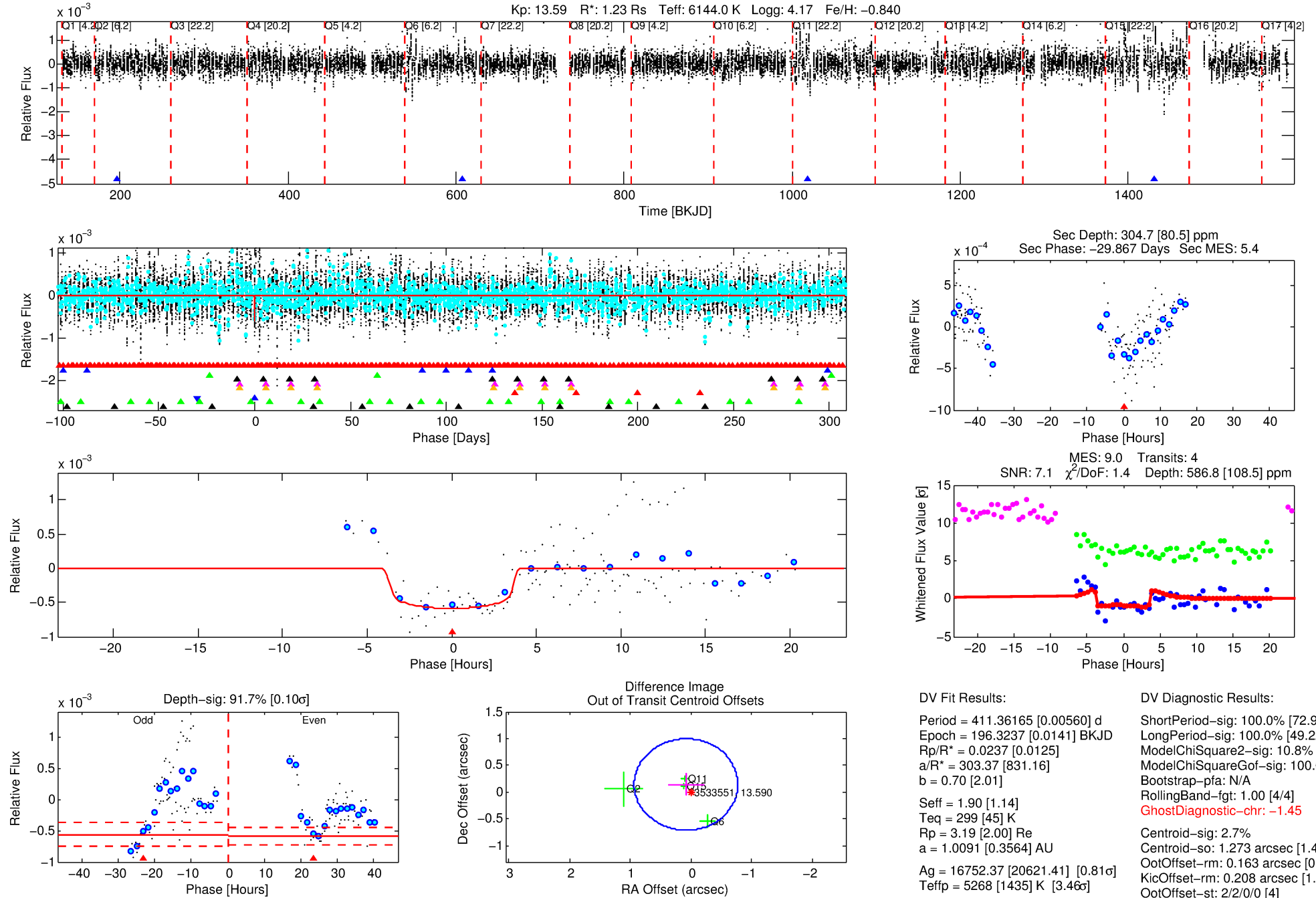
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003533551-08

No Significant Match Found

DV One-Page Summary

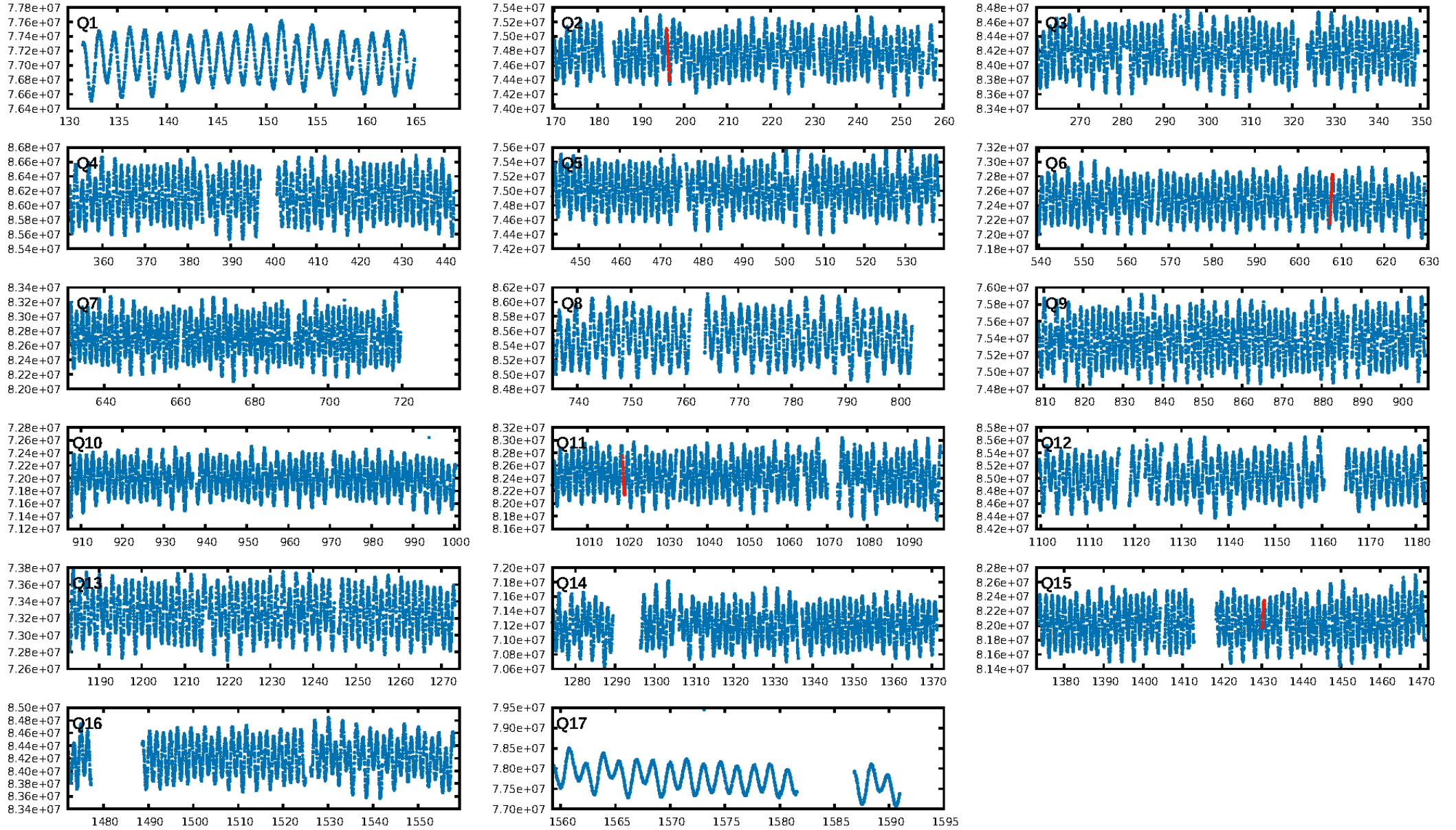
KIC: 3533551 Candidate: 8 of 10 Period: 411.362 d



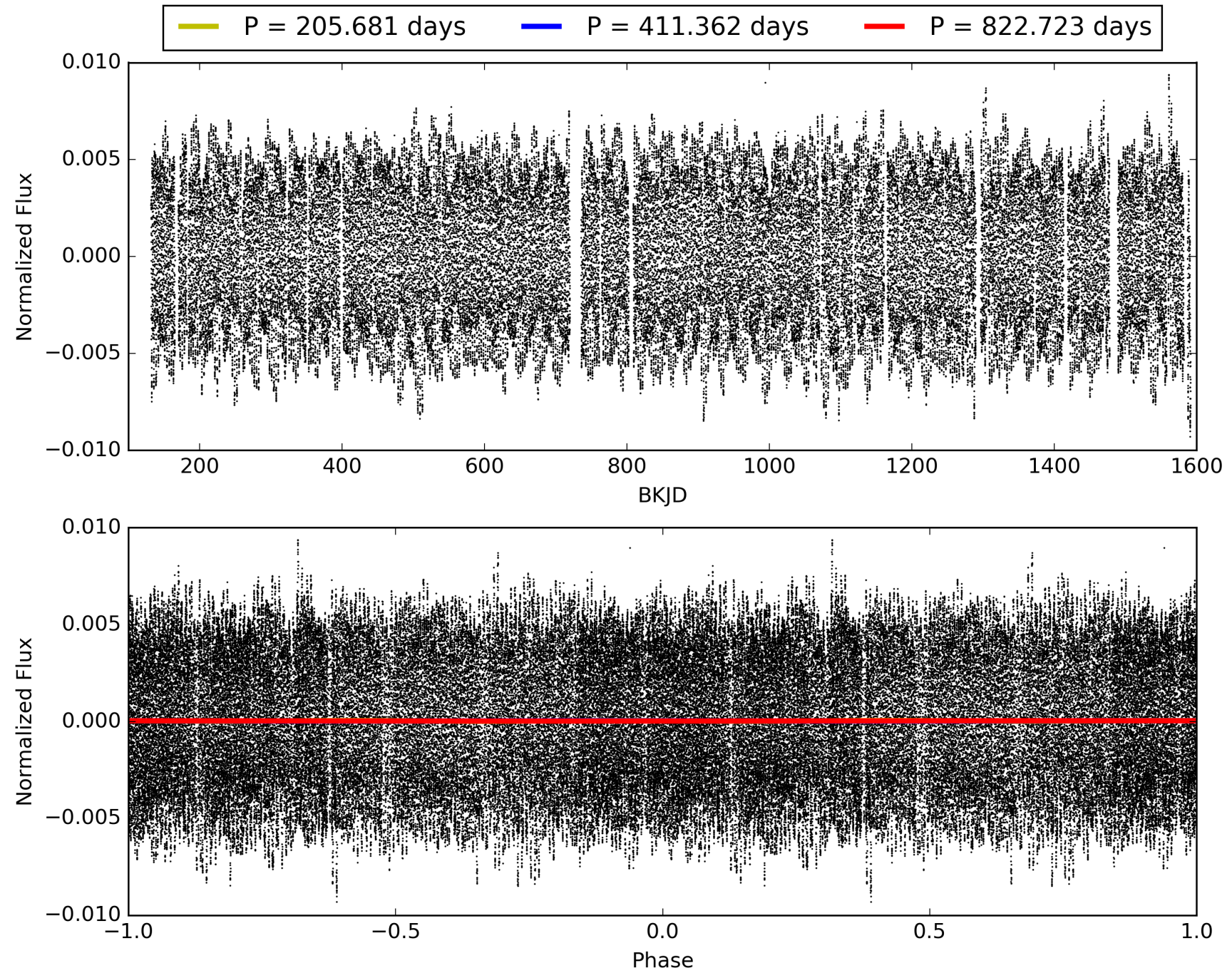
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 19:00:25 Z

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

TCE 003533551-08, PDC Light Curves

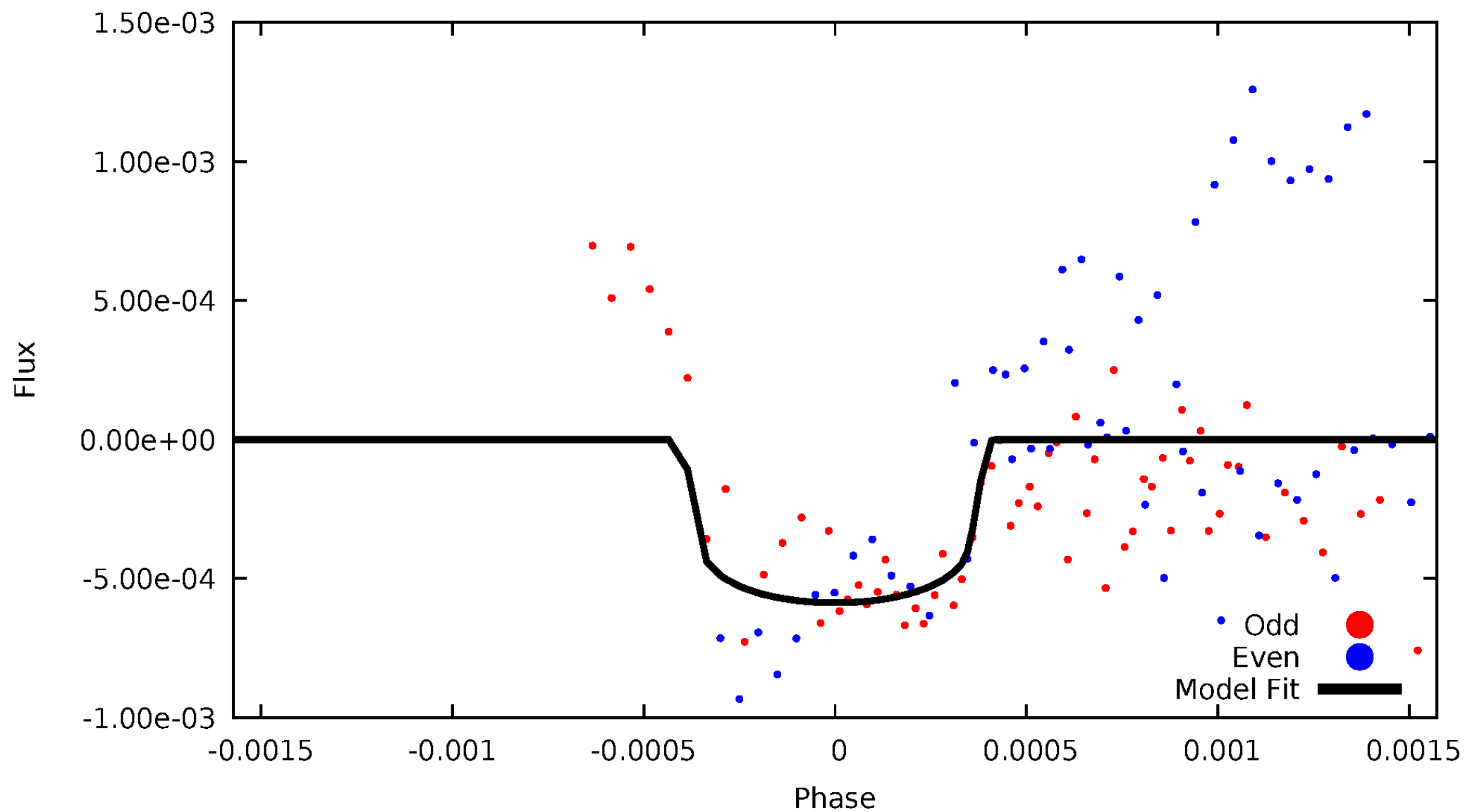


TCE 003533551-08



DV Odd/Even

TCE 003533551-08

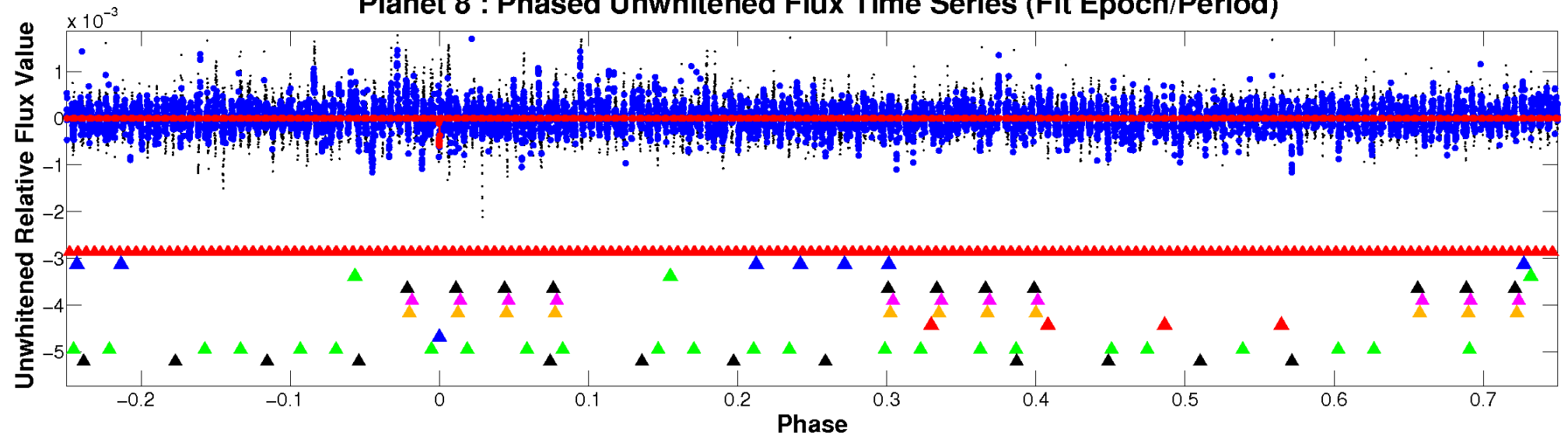


ALT Odd/Even

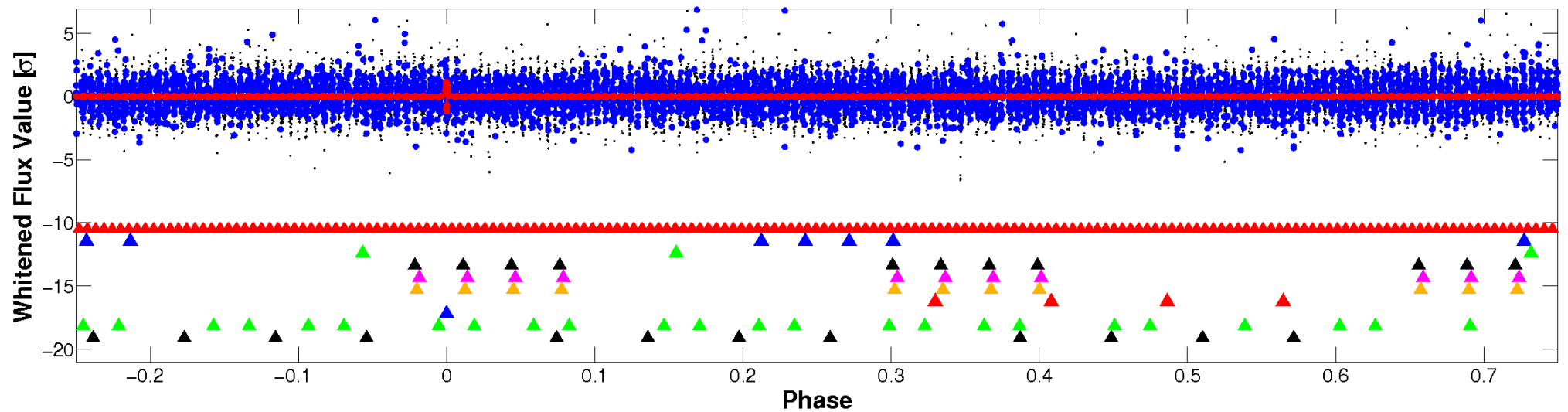
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

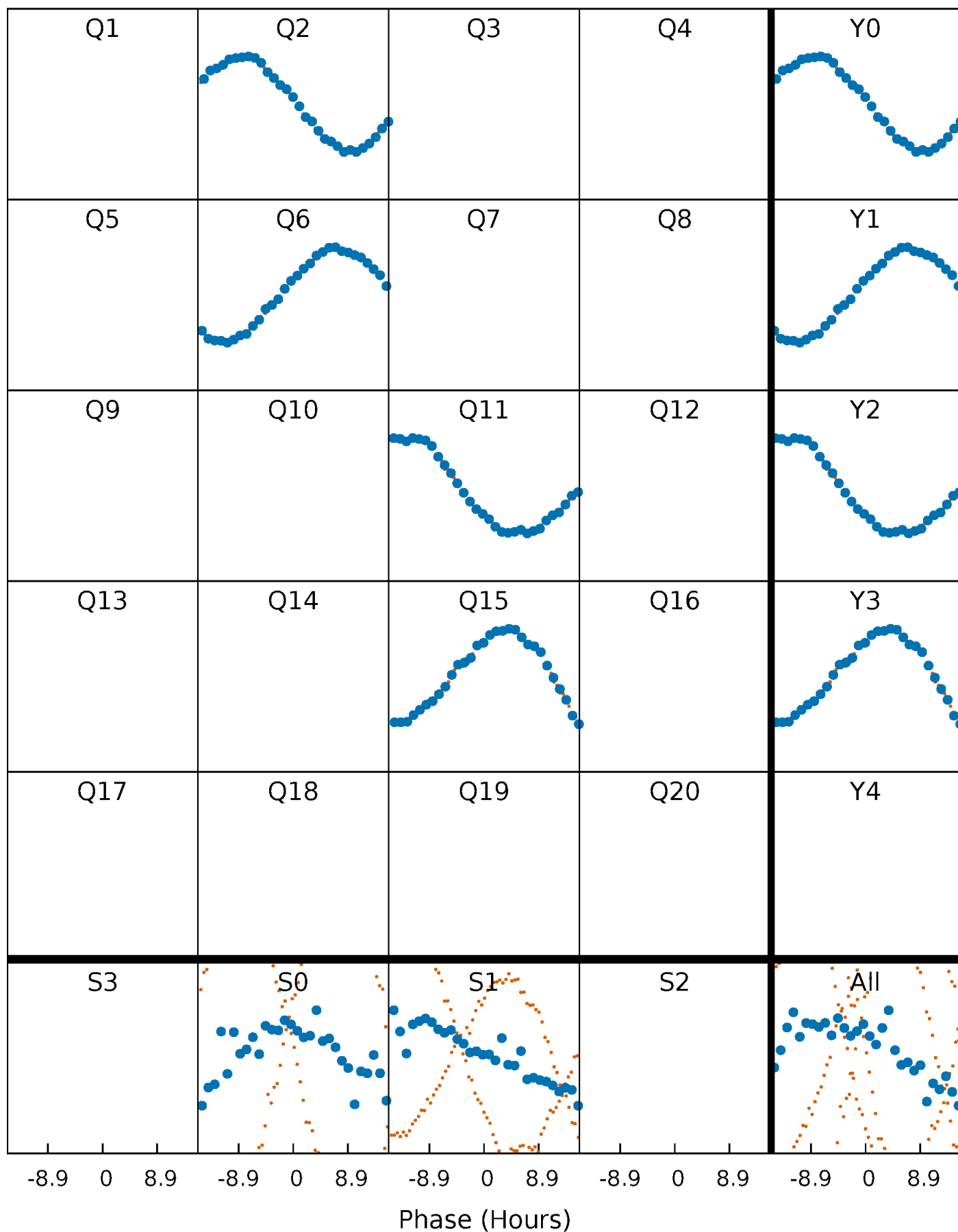


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



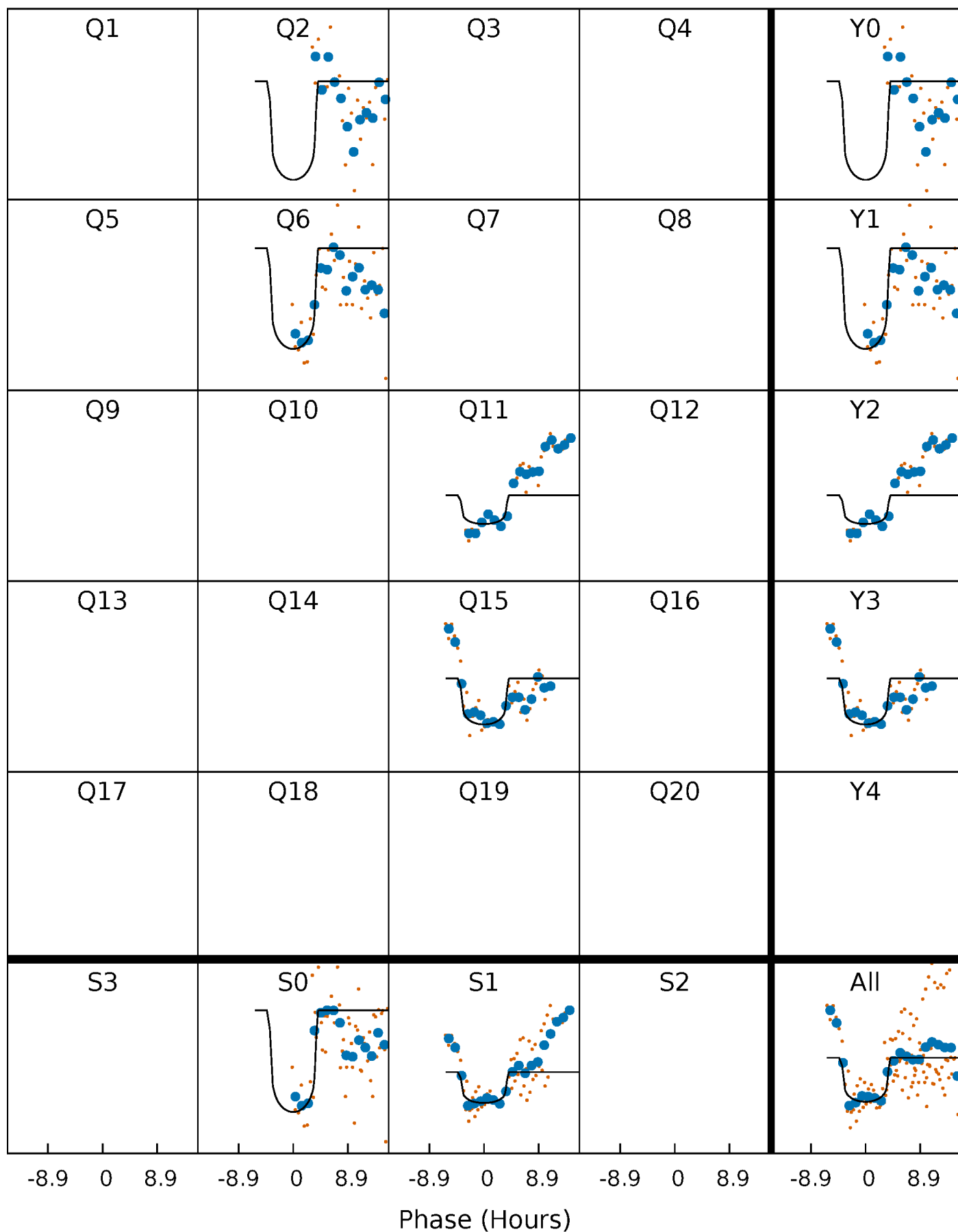
PDC Quarter-Phased Transit Curves

TCE 003533551-08 P=411.361649 Days $T_0=196.323732$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 003533551-08 P=411.361649 Days $T_0=196.323732$ (BKJD)

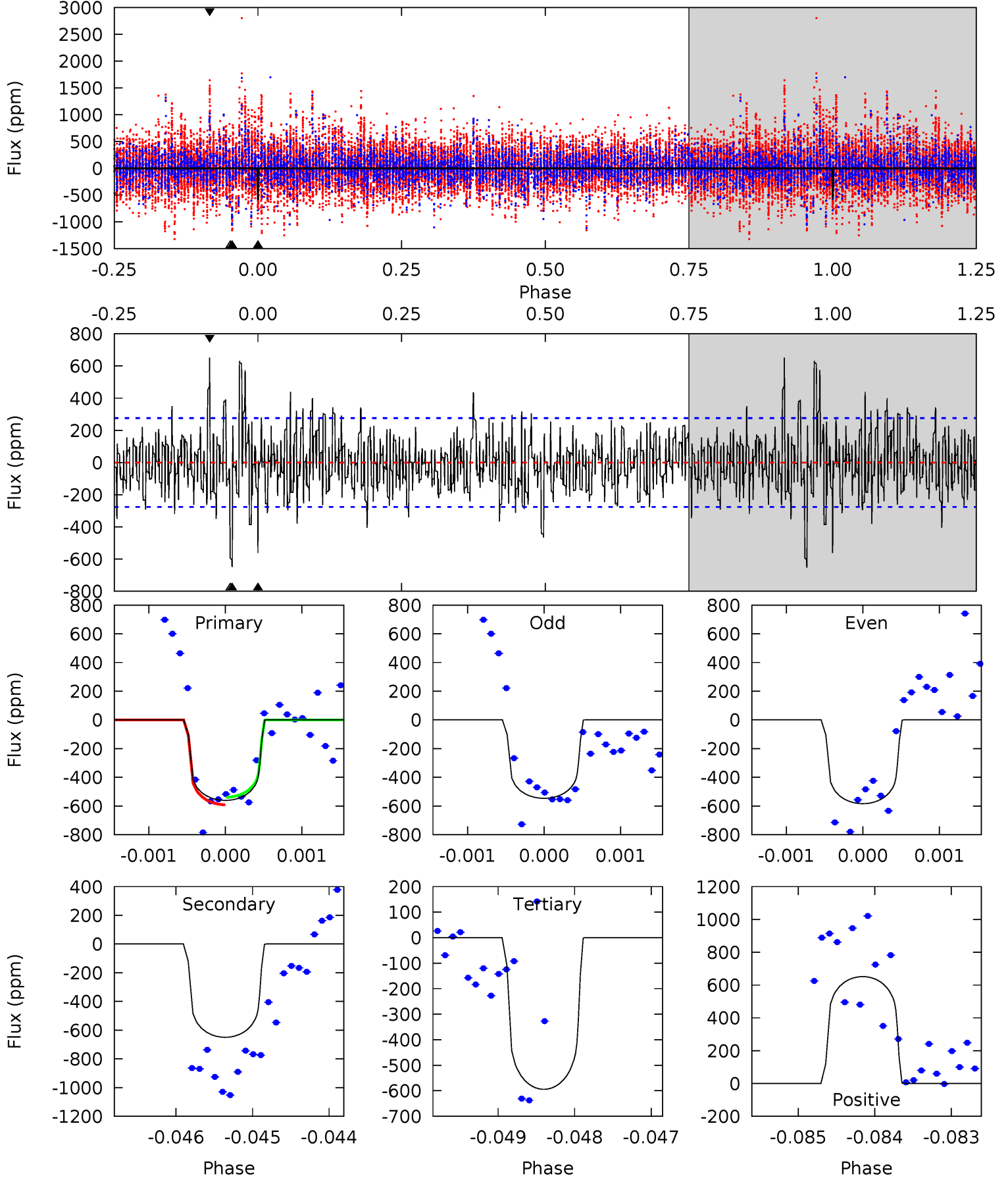


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

003533551-08, P = 411.361649 Days, E = 196.323732 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	12.9	11.8	13.0	5.49	3.35	2.73	-0.66	-1.81	1.10	-0.04	0.36	0.71	0.50	0.50



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 003533551

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6144^{+183}_{-183}	$4.165^{+0.351}_{-0.189}$	$-0.840^{+0.300}_{-0.300}$	$1.232^{+0.345}_{-0.422}$	$0.809^{+0.103}_{-0.051}$	$0.609^{+1.309}_{-0.304}$
	+3%/-3%	+8%/-5%	+36%/-36%	+28%/-34%	+13%/-6%	+215%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003533551-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-650 ± 50	$3.19^{+1.91}_{-1.58}$	418^{+32}_{-40}	6263^{+2991}_{-1124}	$35980^{+111343}_{-21437}$
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

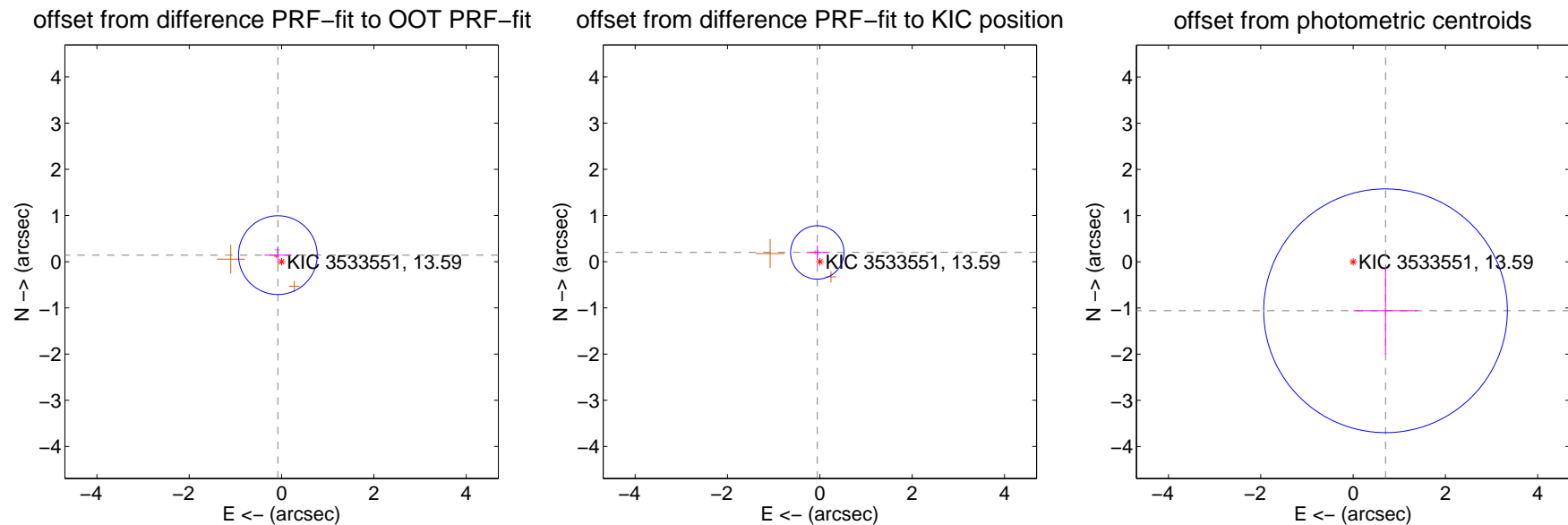
DV Centroid Data

Supplemental centroid analysis for 003533551-08. Kepler magnitude: 13.59. Transit SNR 7.10

There are 1 quarters with good PRF difference image offsets

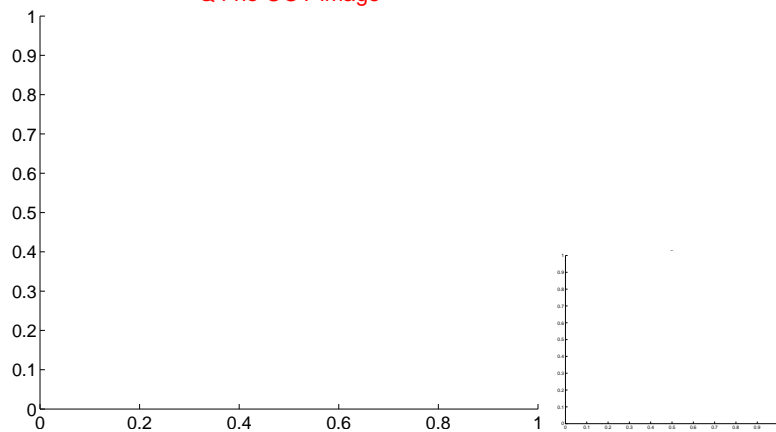
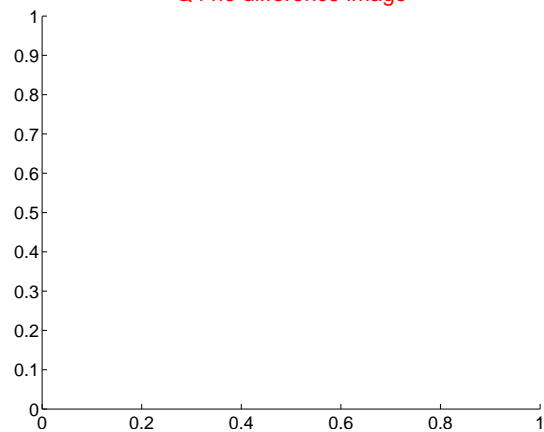
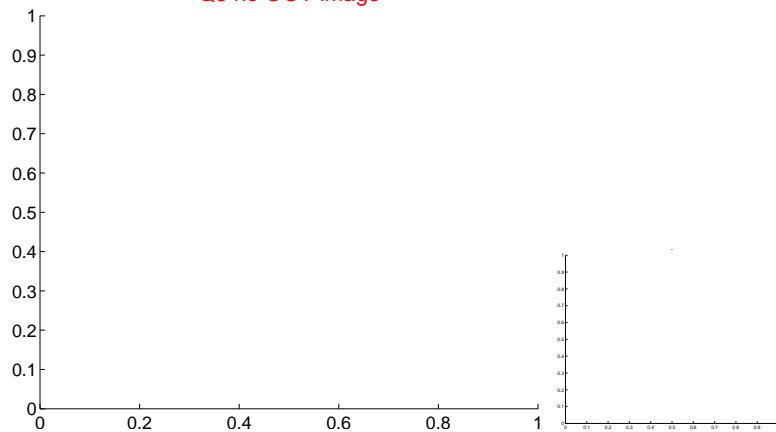
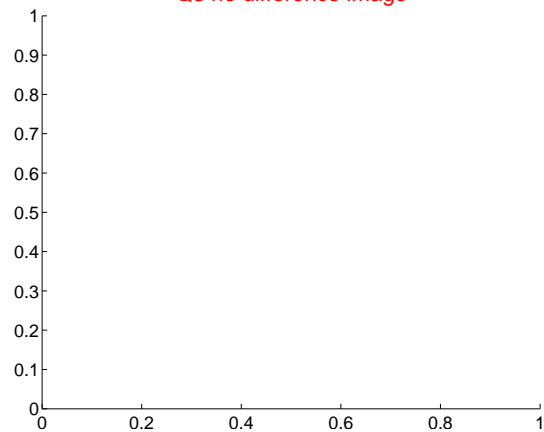
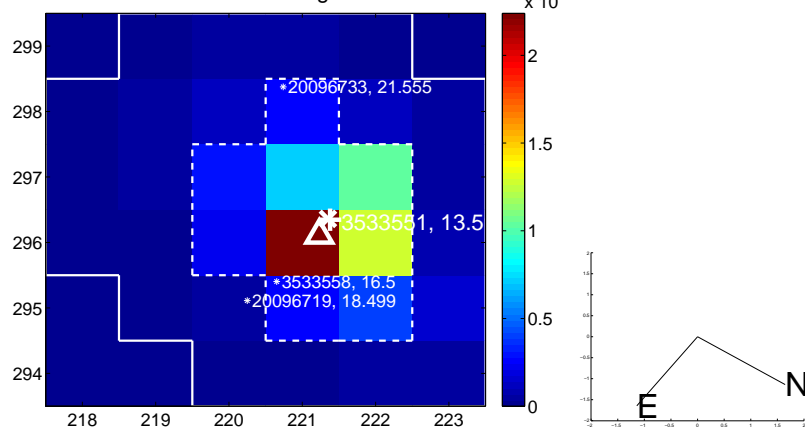
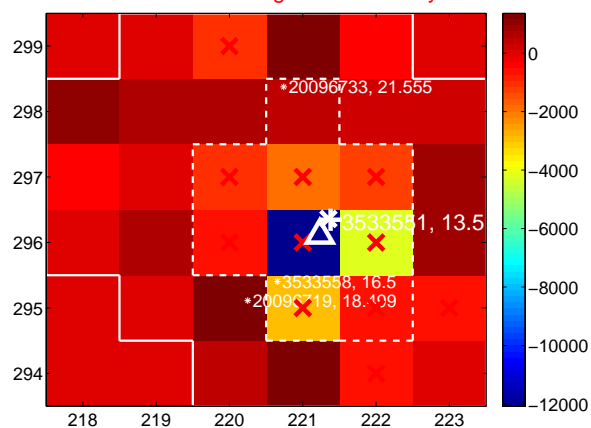
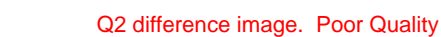
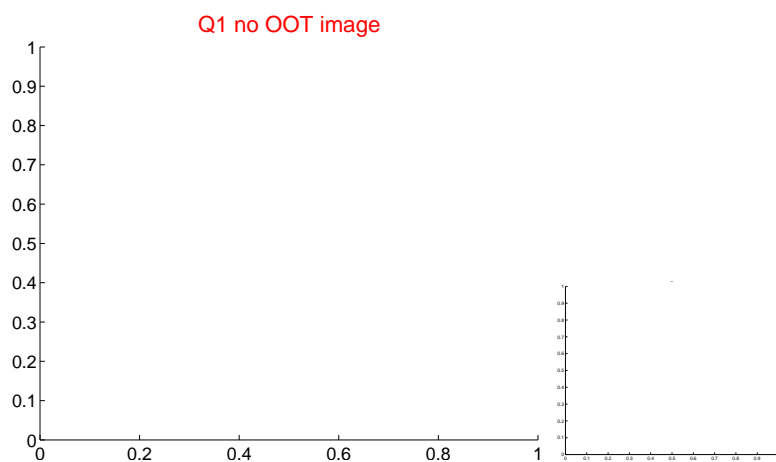
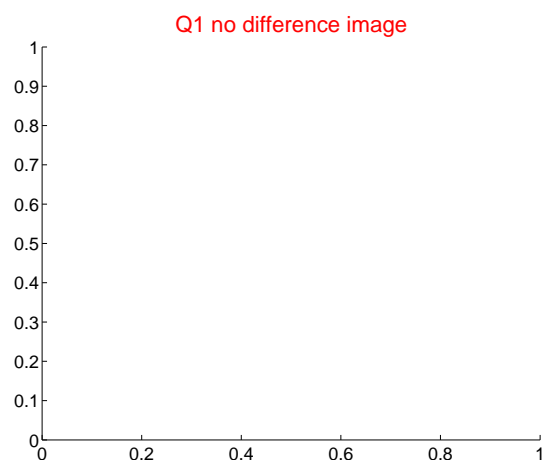
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.163 ± 0.284	0.57	0.080 ± 0.290	0.142 ± 0.192
PRF-fit source offset from KIC position	0.208 ± 0.193	1.08	0.055 ± 0.238	0.200 ± 0.154
photometric centroid source offset	1.27 ± 0.88	1.45	-0.70 ± 0.70	-1.06 ± 0.95

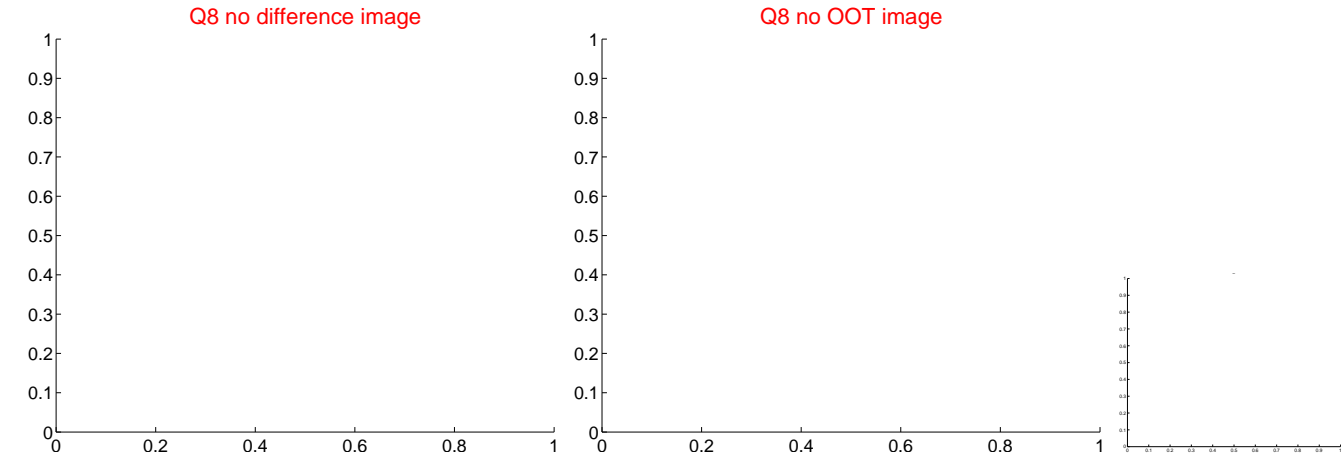
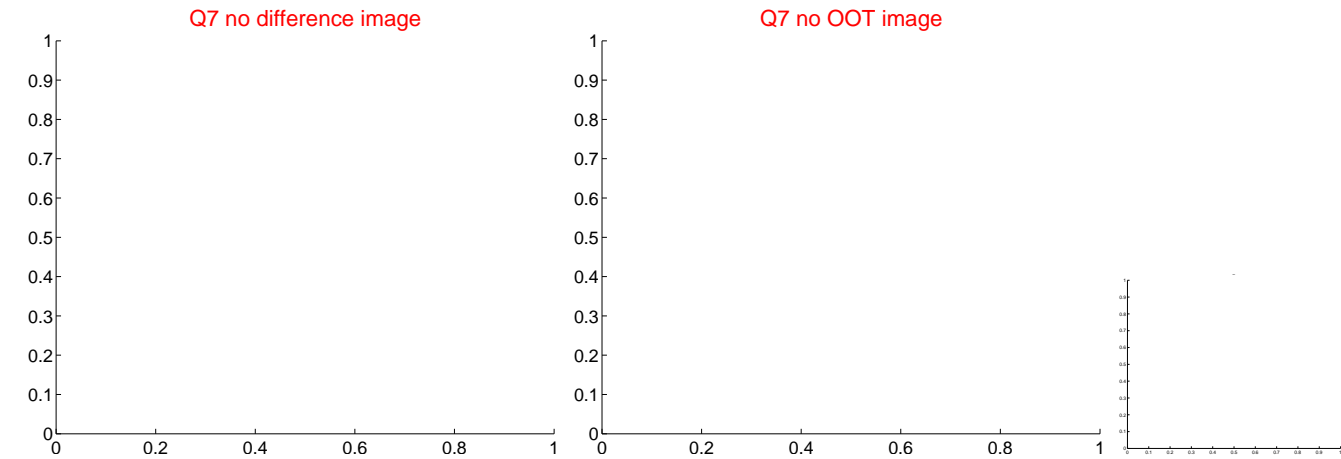
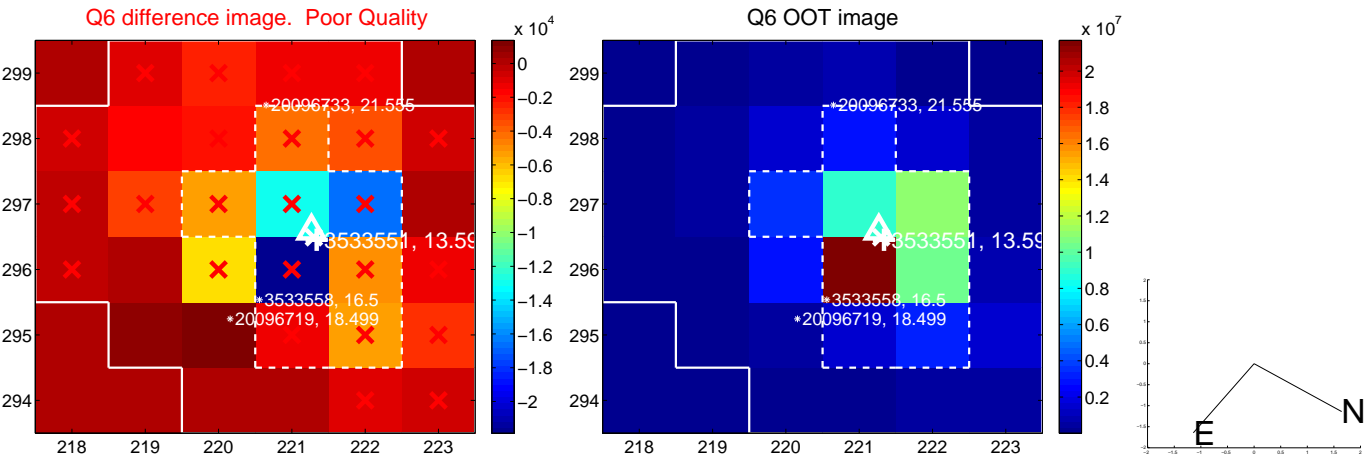
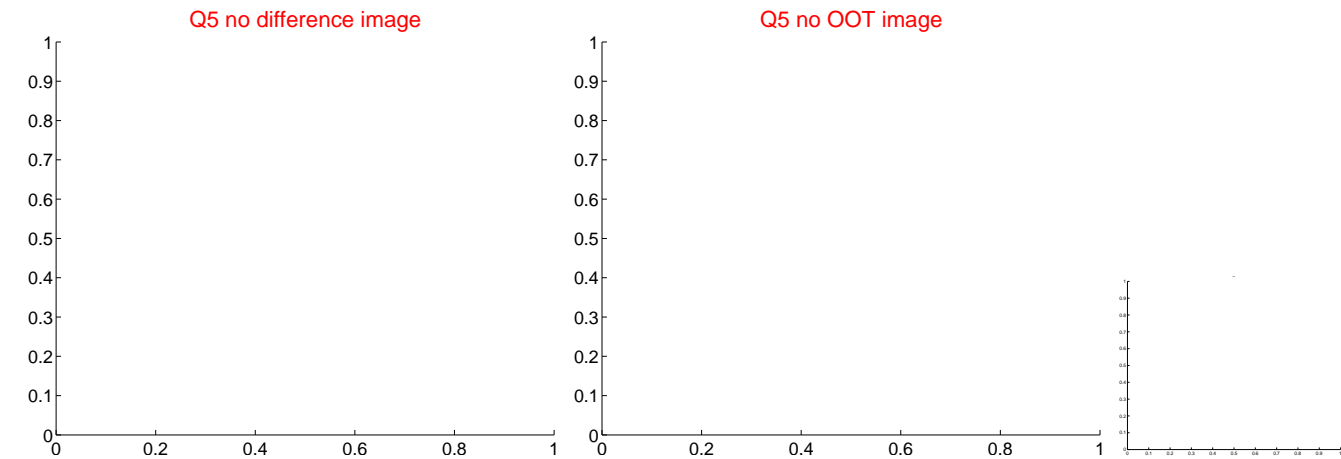


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

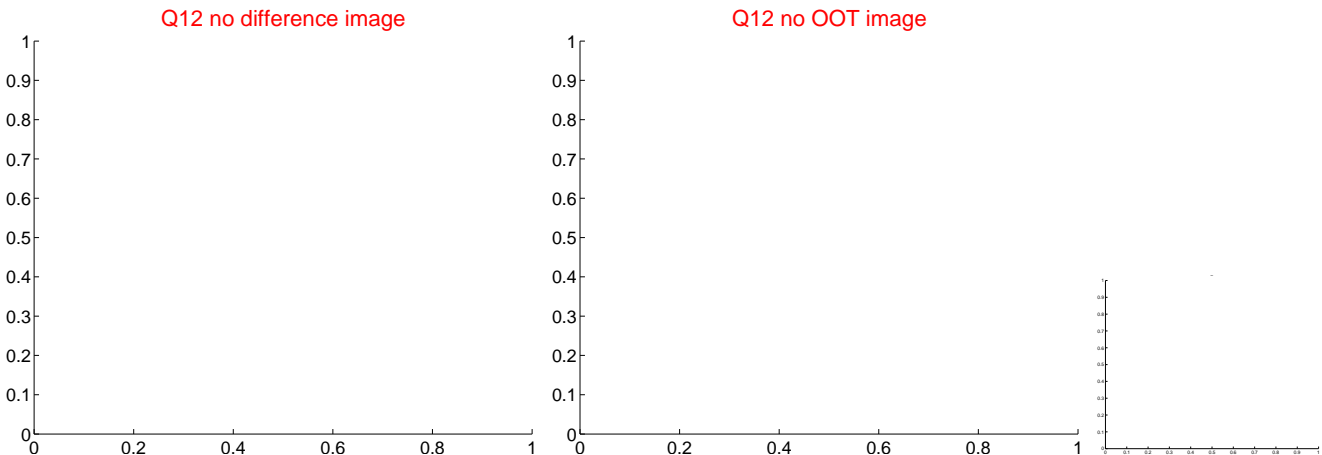
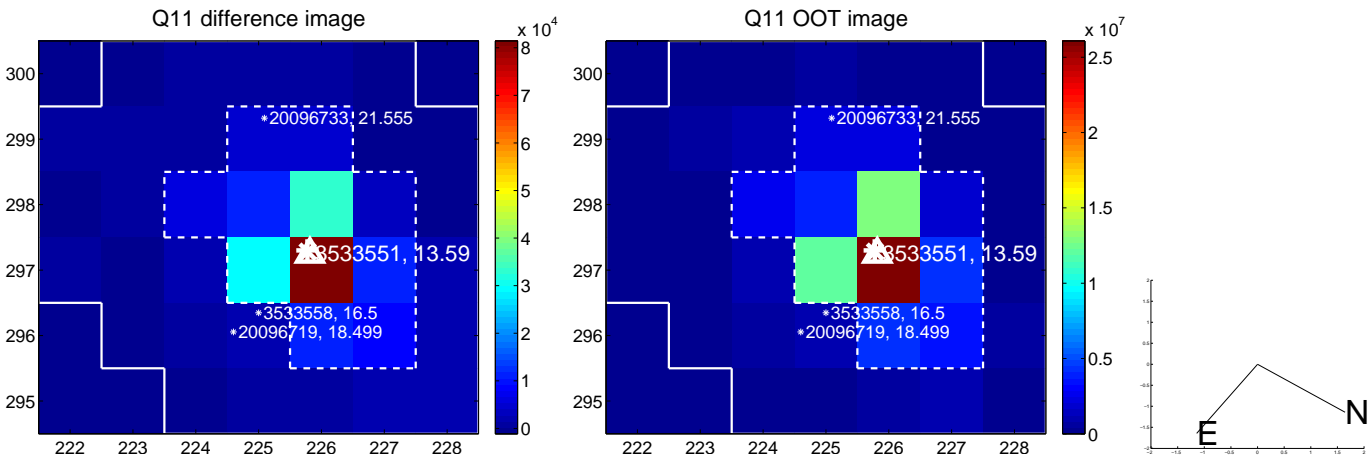
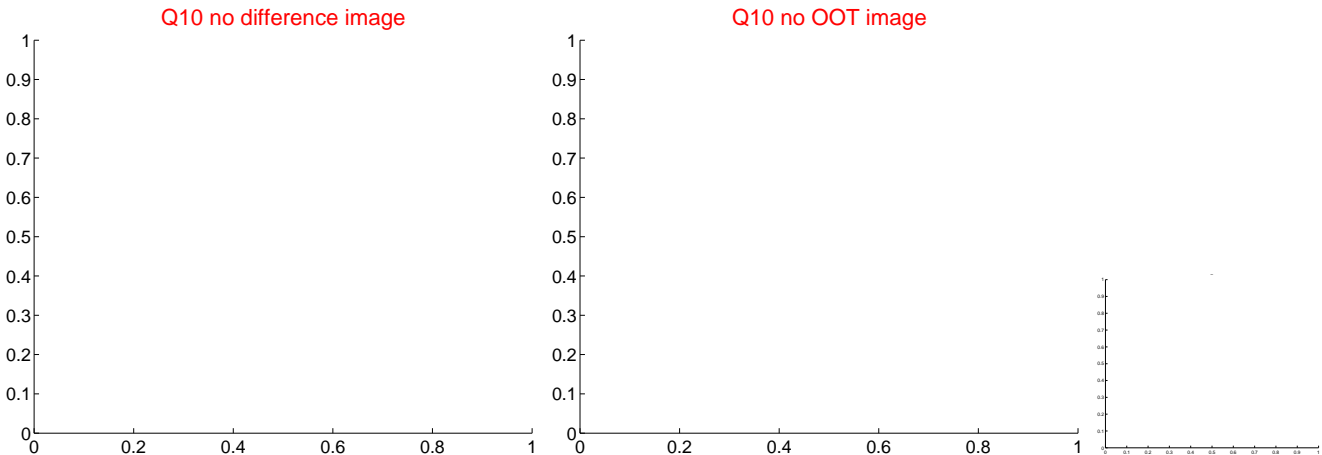
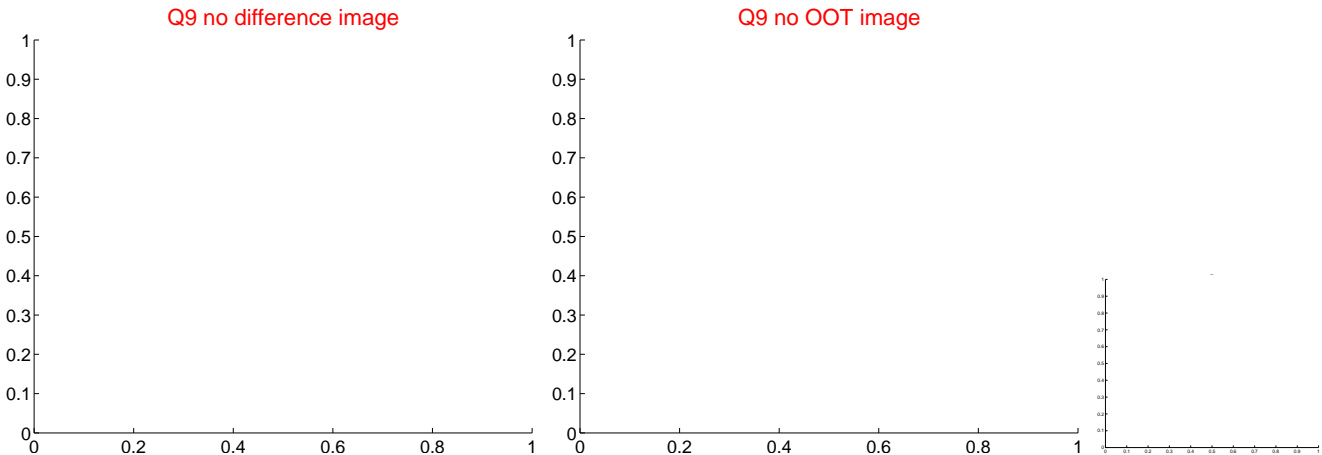
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



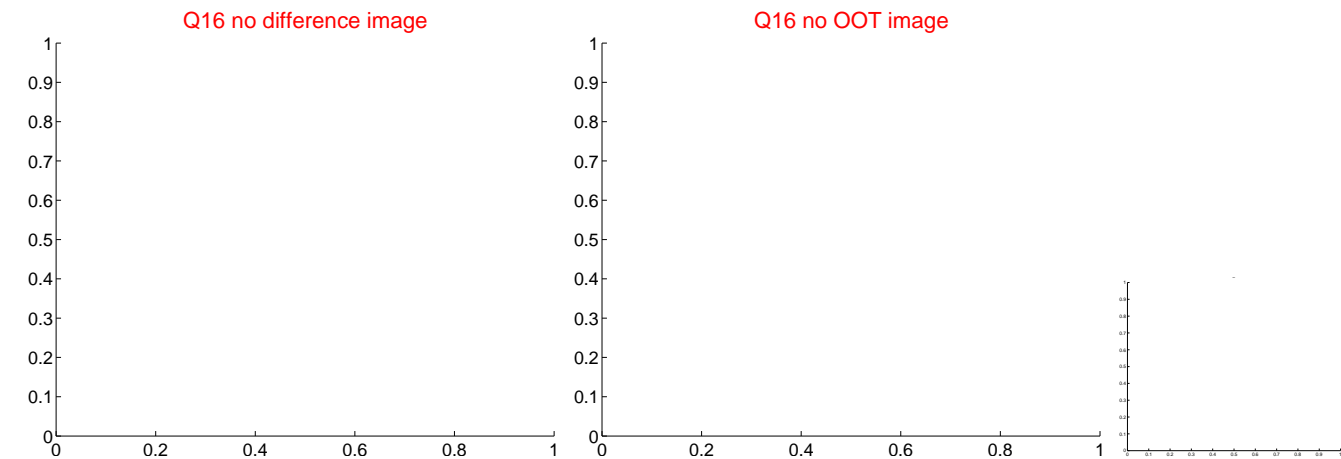
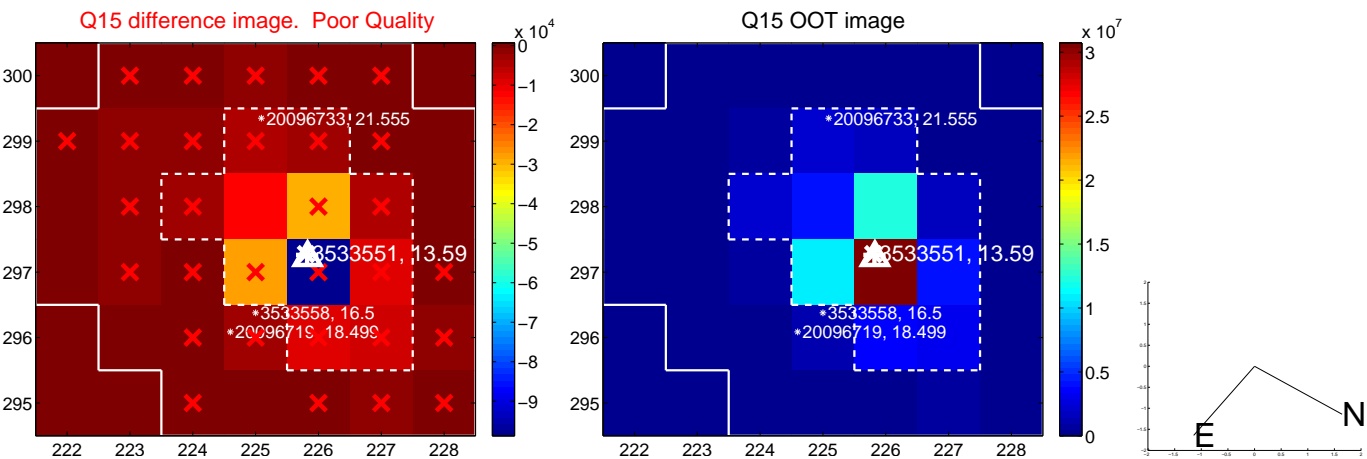
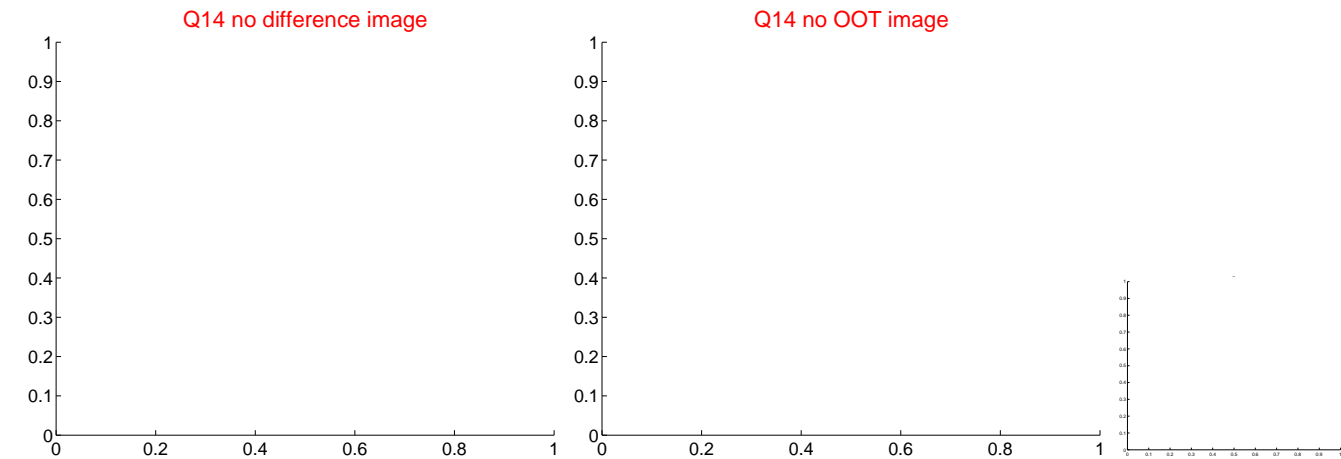
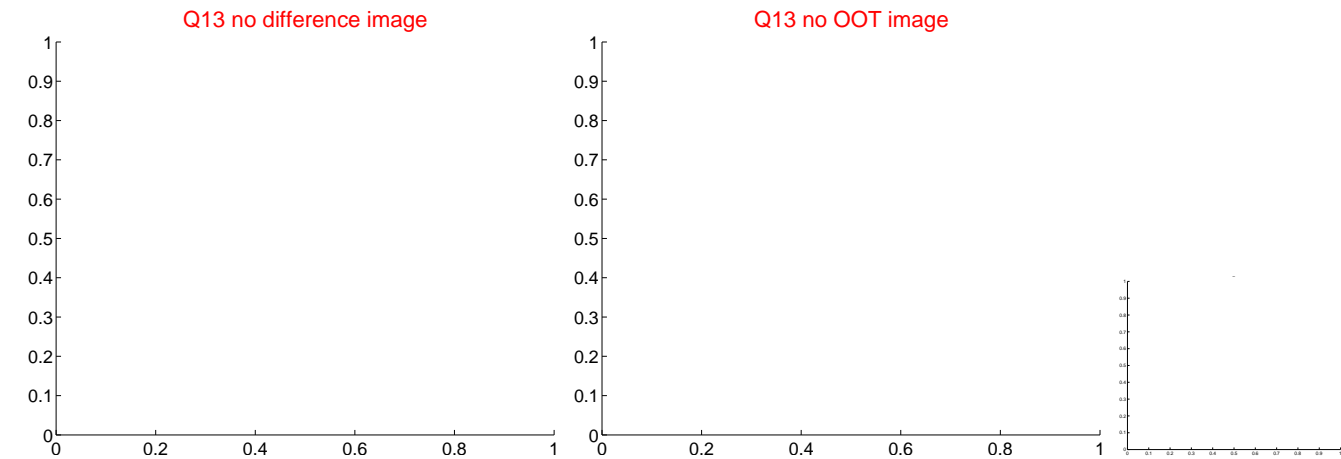
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



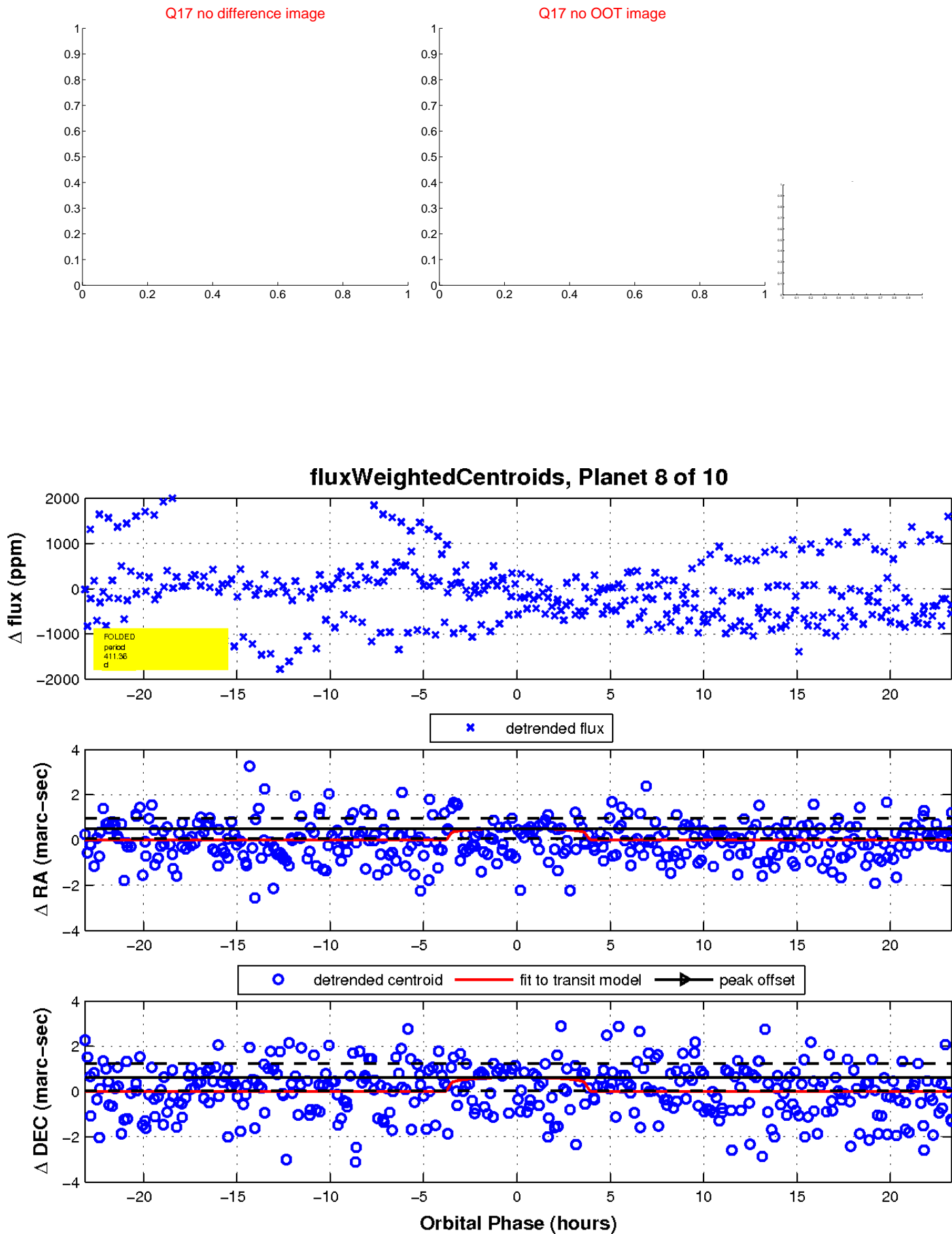
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

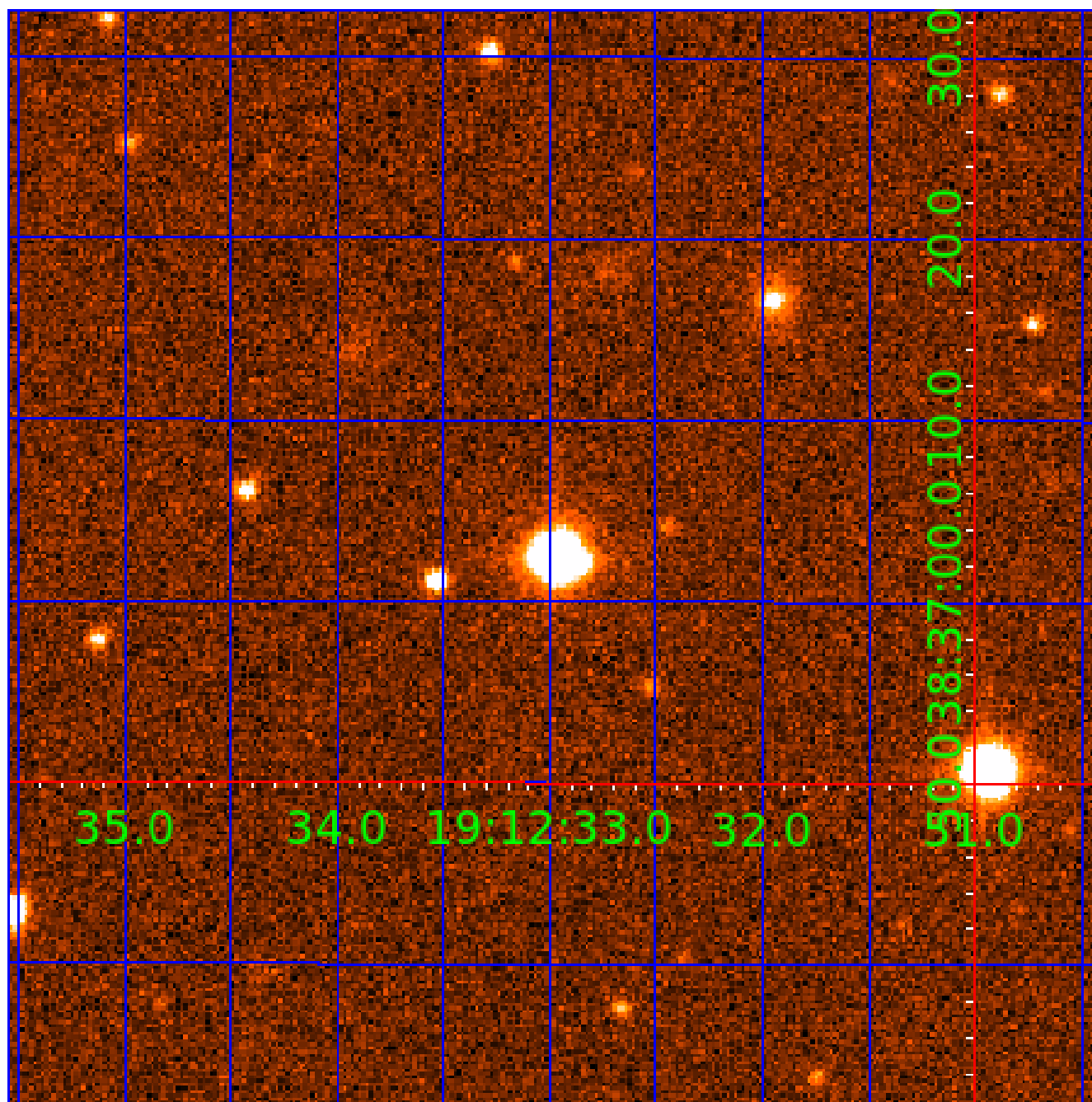


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
003533551-01	OBS	No	2.297362	133.631750	64.2	12.450	7.9	9.3	1.23	6144	1.33	1920.73
003533551-02	OBS	No	211.777821	283.721491	297.7	4.541	15.3	4.3	1.23	6144	2.27	4.61
003533551-03	OBS	No	498.367920	497.396492	1907.5	41.710	14.0	9.7	1.23	6144	9.98	1.47
003533551-04	OBS	No	132.648483	227.746073	225.6	3.059	9.1	3.3	1.23	6144	2.09	8.61
003533551-05	OBS	No	132.682289	228.720197	154.0	1.732	9.5	2.1	1.23	6144	1.58	8.60
003533551-06	OBS	No	132.656119	228.240061	277.2	9.000	9.6	-1.0	1.23	6144	2.06	8.61
003533551-07	OBS	No	379.158986	428.600167	548.9	7.215	9.2	8.2	1.23	6144	3.26	2.12
003533551-08	OBS	No	411.361648	196.323732	586.8	7.760	9.0	7.1	1.23	6144	3.19	1.90
003533551-09	OBS	No	62.528122	141.492009	277.9	8.863	9.4	7.4	1.23	6144	2.17	23.46
003533551-10	OBS	No	128.684428	174.127242	635.3	4.081	8.7	8.8	1.23	6144	5.97	8.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003533551-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003533551-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003533551-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003533551-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET
003533551-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
003533551-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003533551-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003533551-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

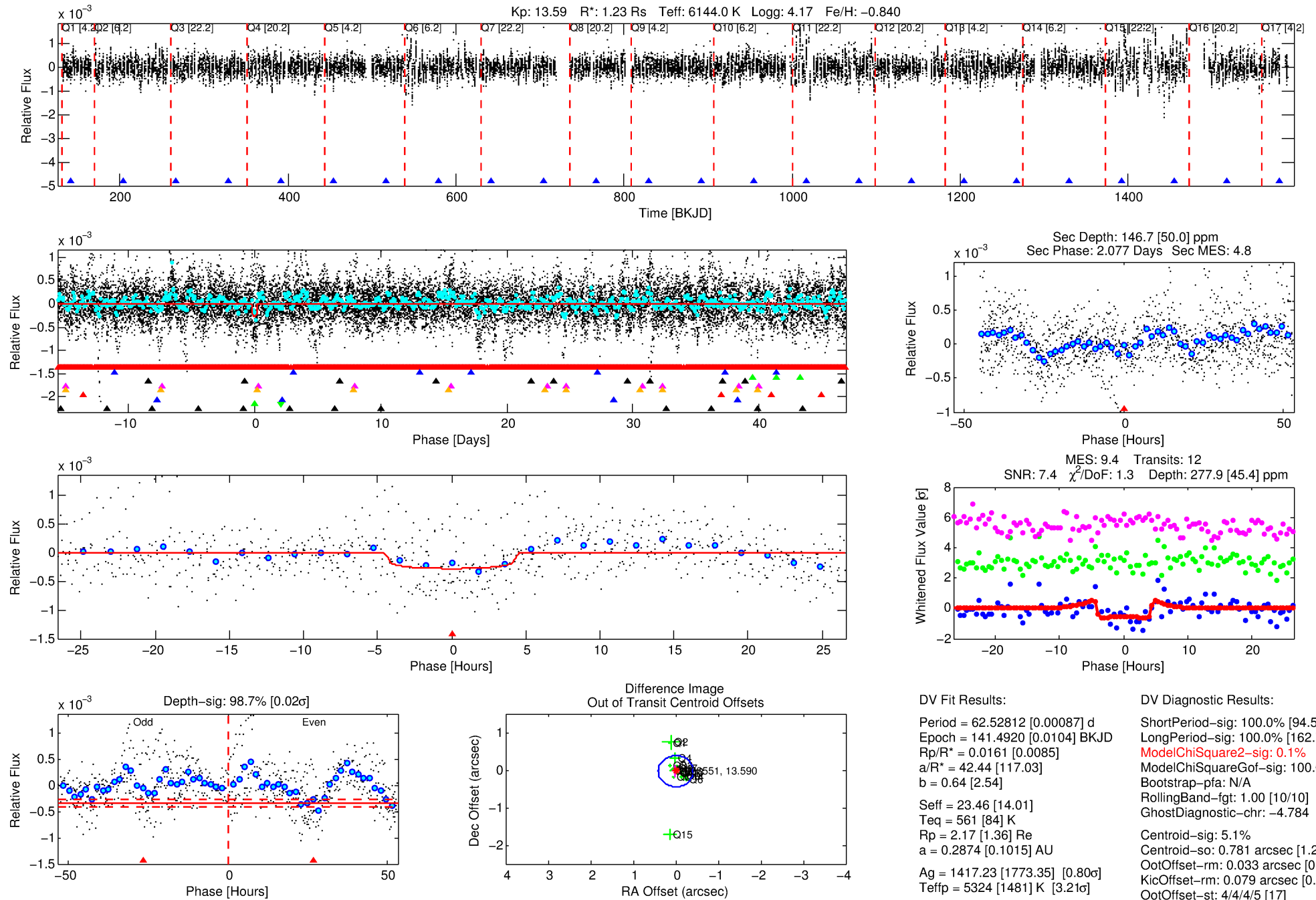
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003533551-09

No Significant Match Found

DV One-Page Summary

KIC: 3533551 Candidate: 9 of 10 Period: 62.528 d



DV Fit Results:

Period = 62.52812 [0.00087] d
Epoch = 141.4920 [0.0104] BKJD
Rp/R* = 0.0161 [0.0085]
a/R* = 42.44 [117.03]
b = 0.64 [2.54]
Seff = 23.46 [14.01]
Teff = 561 [84] K
Rp = 2.17 [1.36] Re
a = 0.2874 [0.1015] AU
Ag = 1417.23 [1773.35] [0.80 σ]
Teffp = 5324 [1481] K [3.21 σ]

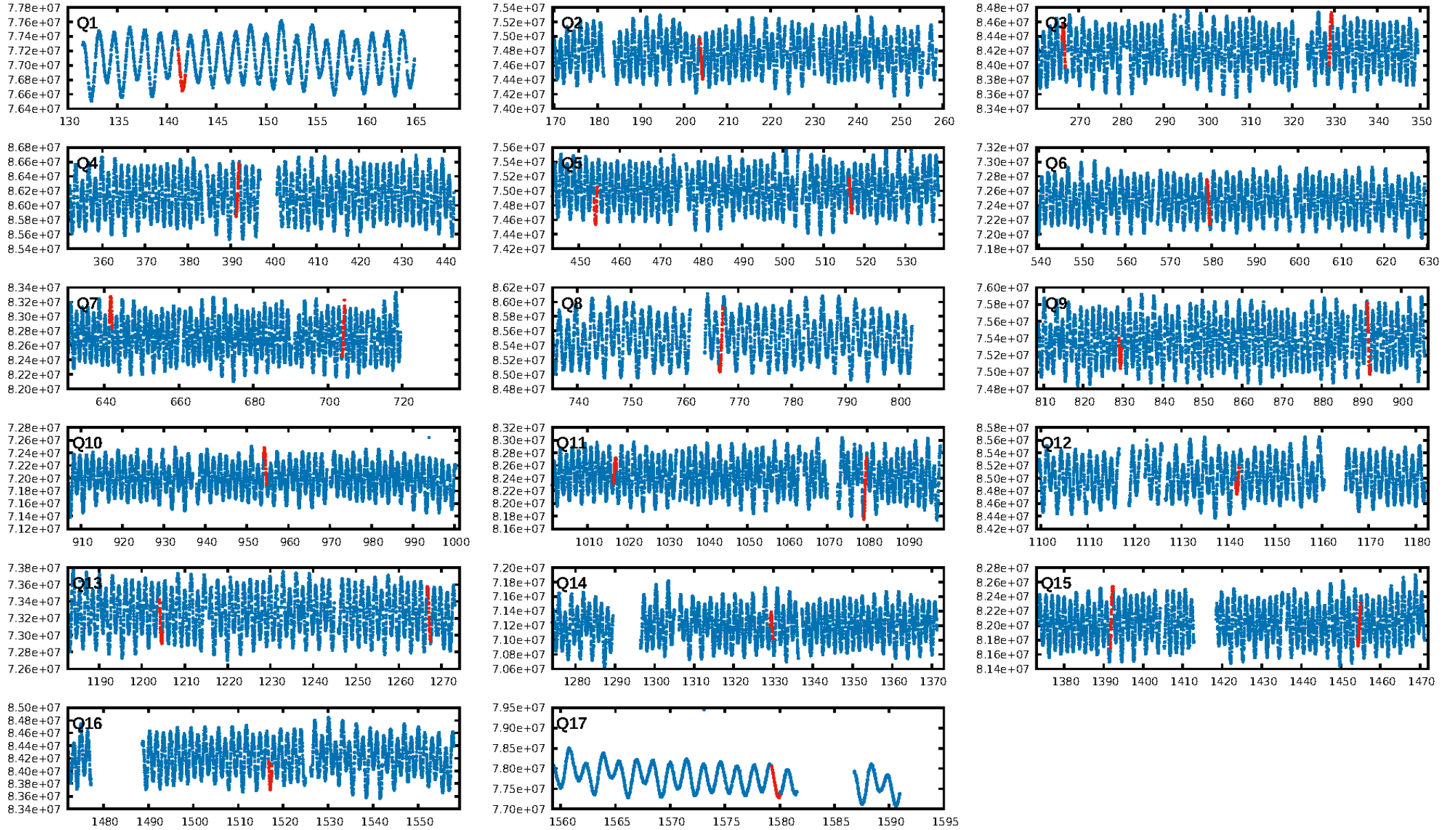
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [94.59 σ]
LongPeriod-sig: 100.0% [162.73 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: -4.784
Centroid-sig: 5.1%
Centroid-so: 0.781 arcsec [1.22 σ]
OotOffset-rm: 0.033 arcsec [0.24 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.079 arcsec [0.55 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 0.29 [5/17]

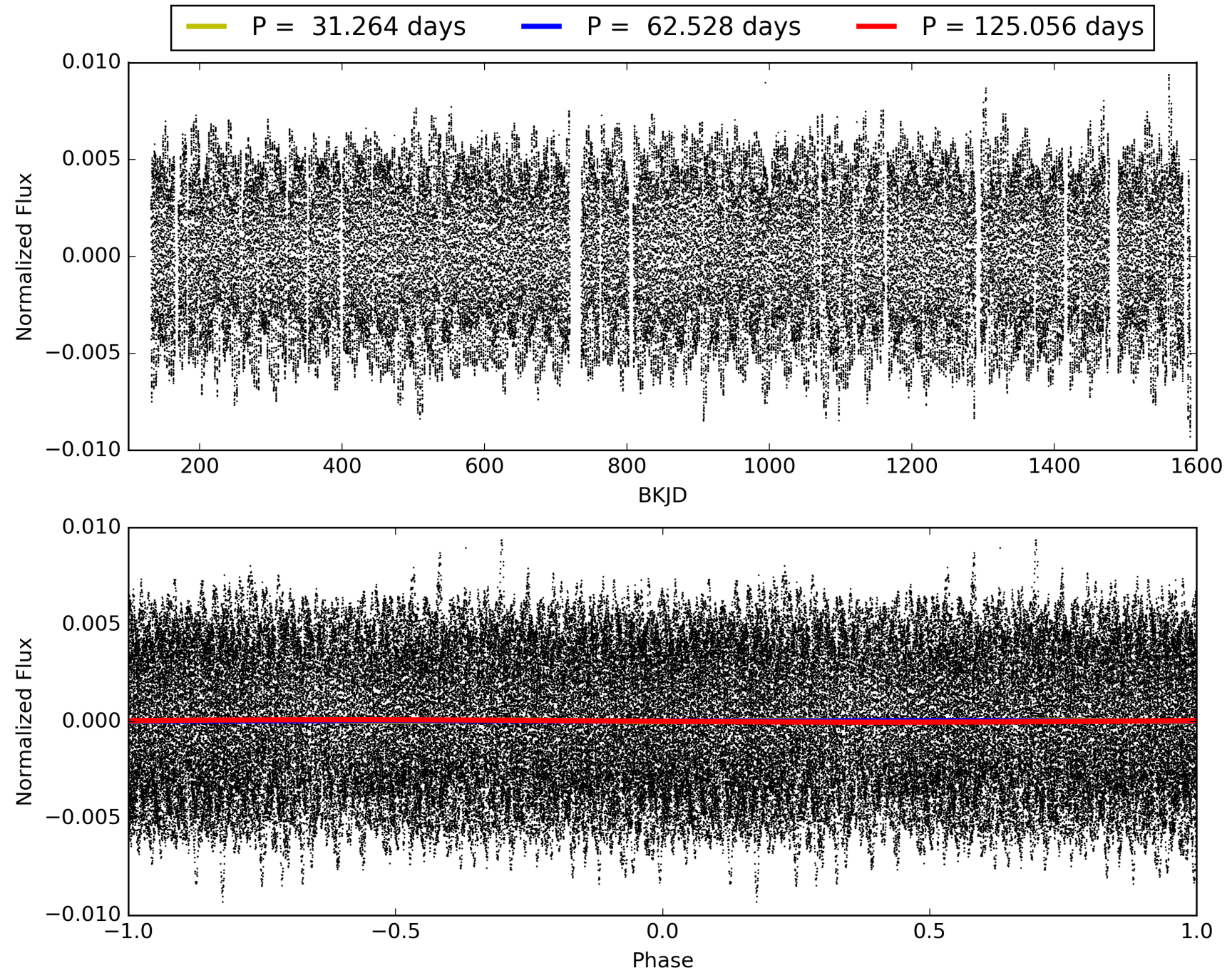
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 19:00:29 Z

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

TCE 003533551-09, PDC Light Curves

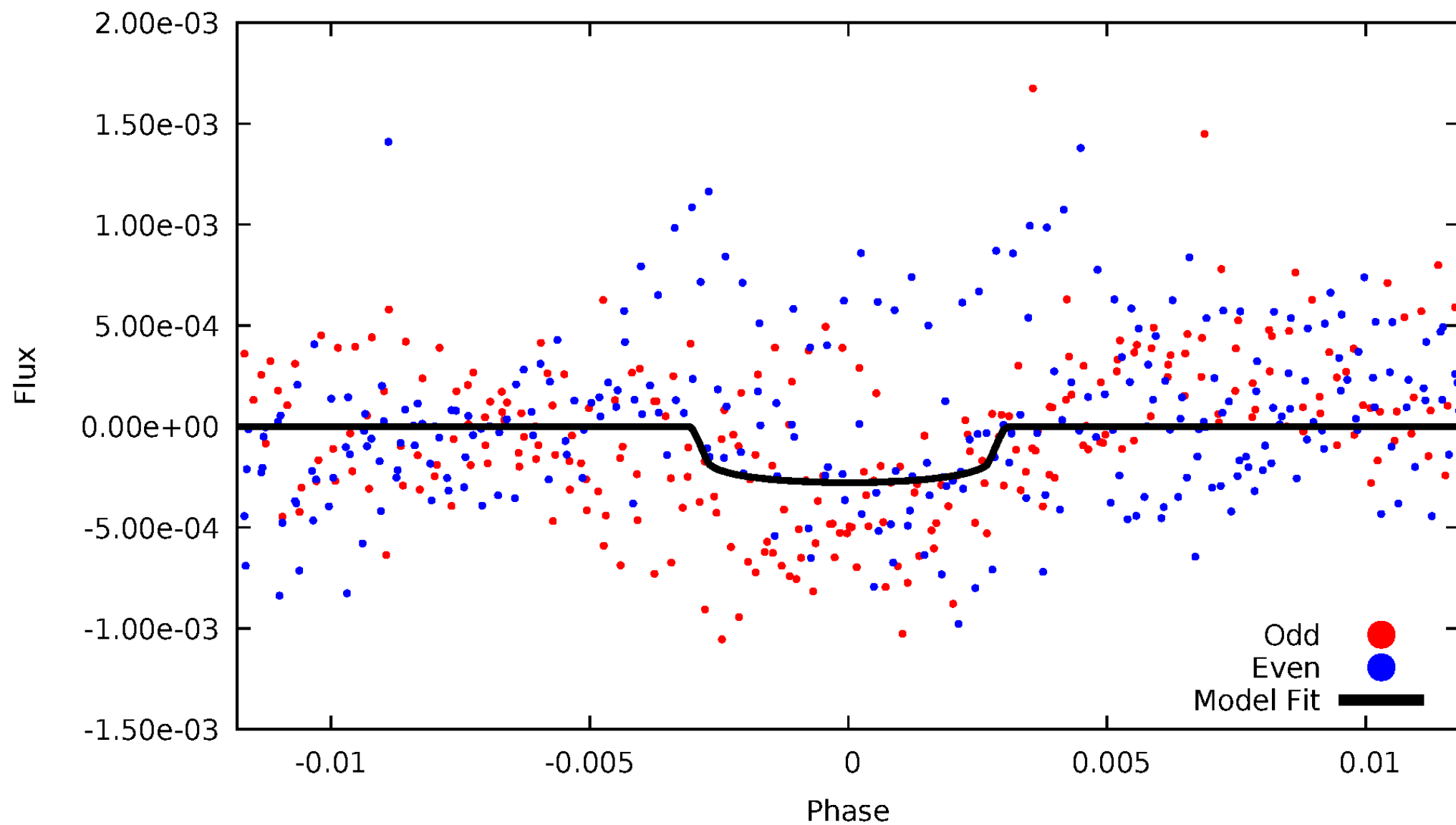


TCE 003533551-09



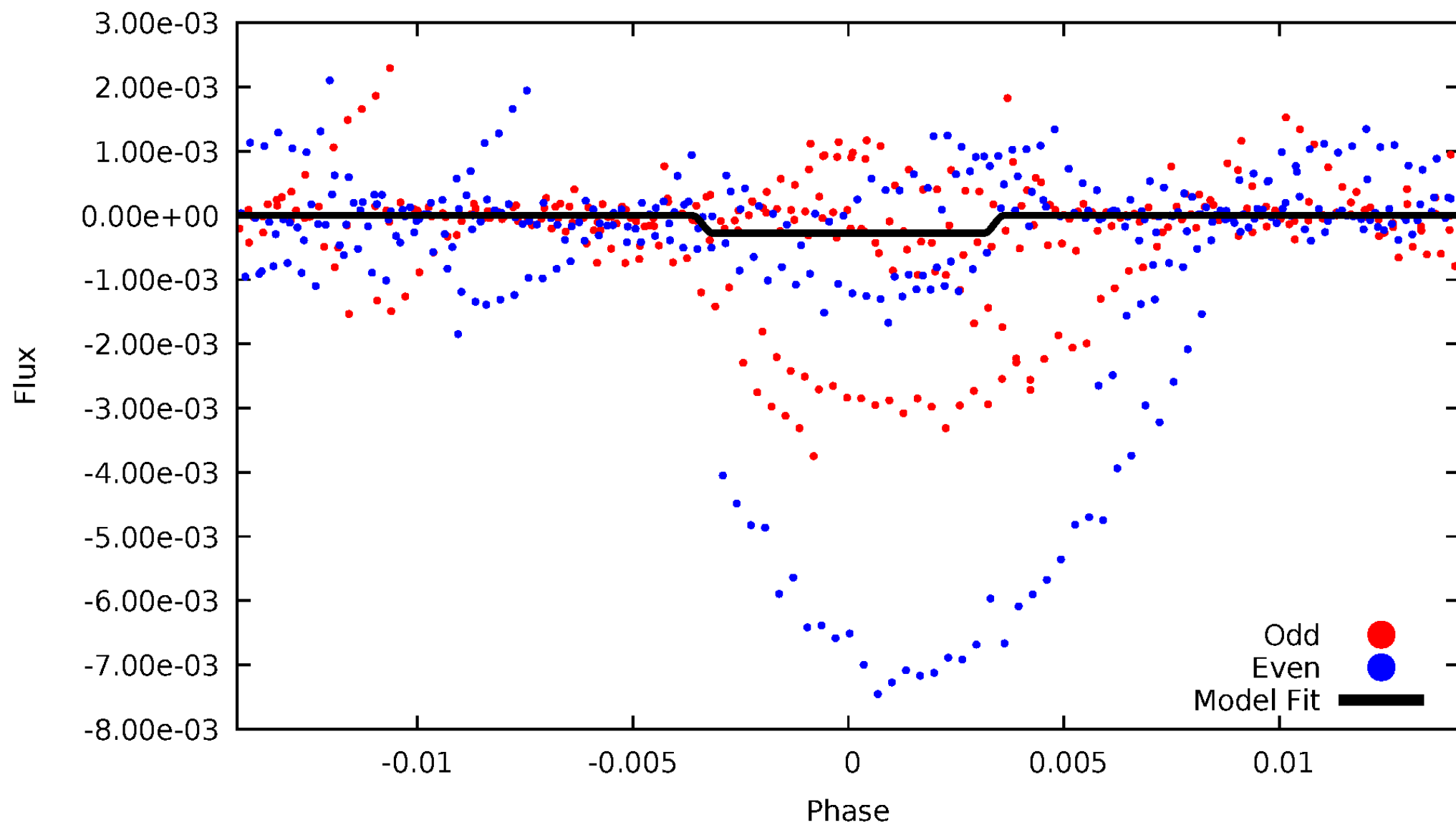
DV Odd/Even

TCE 003533551-09



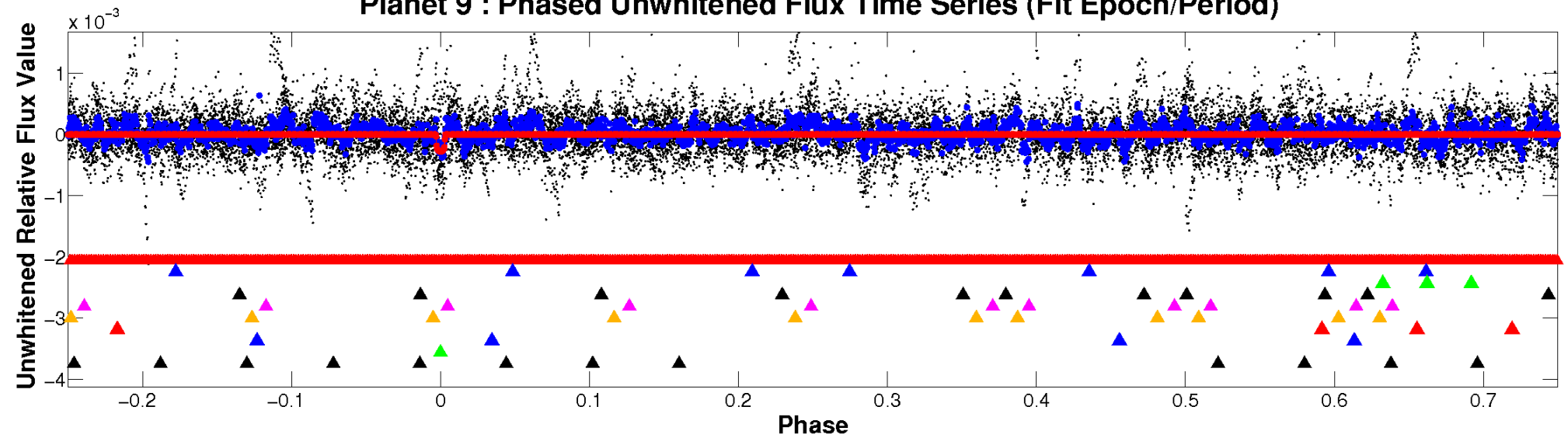
ALT Odd/Even

TCE 003533551-09

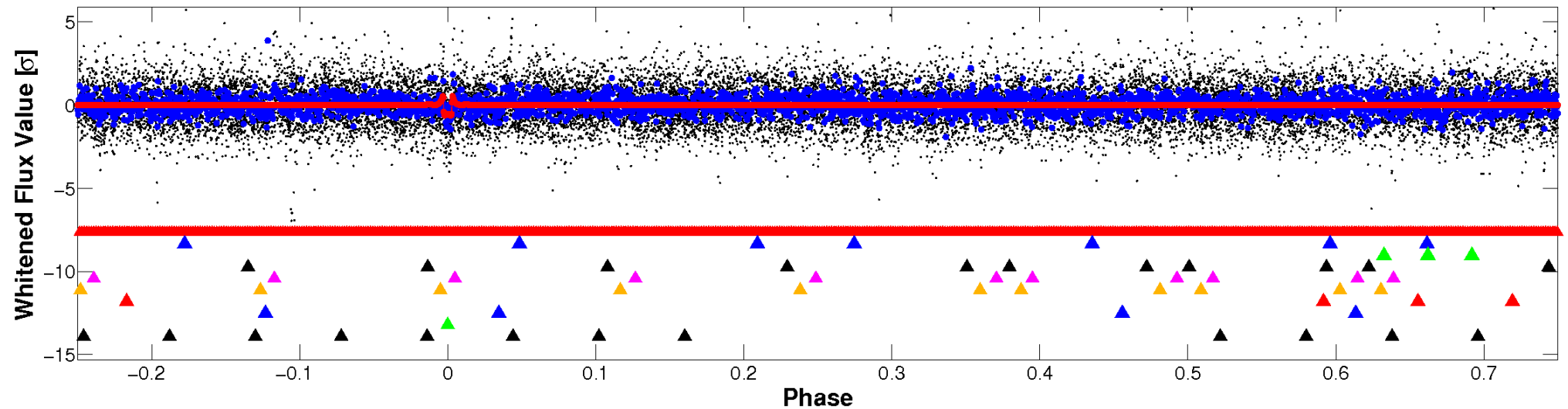


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

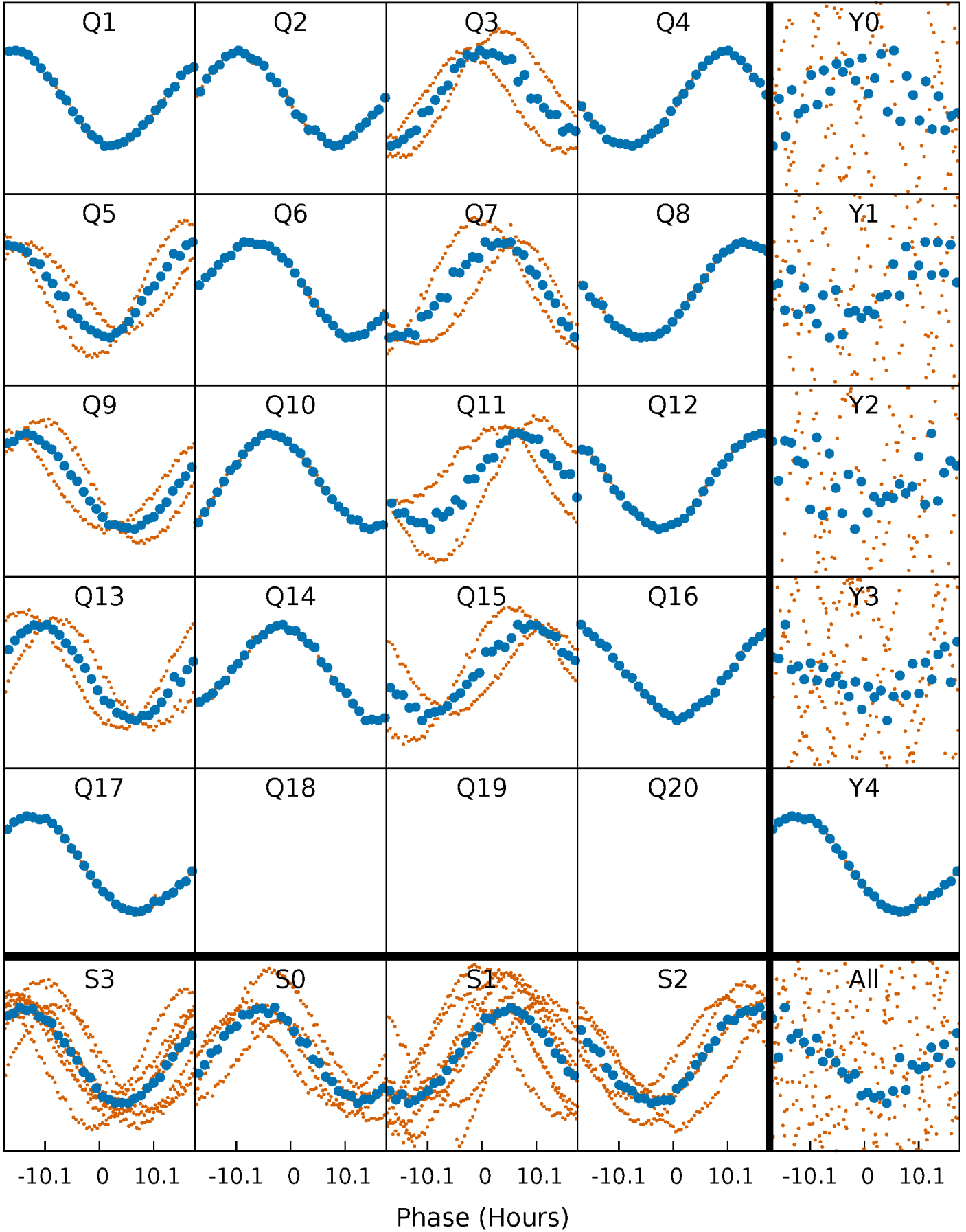


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



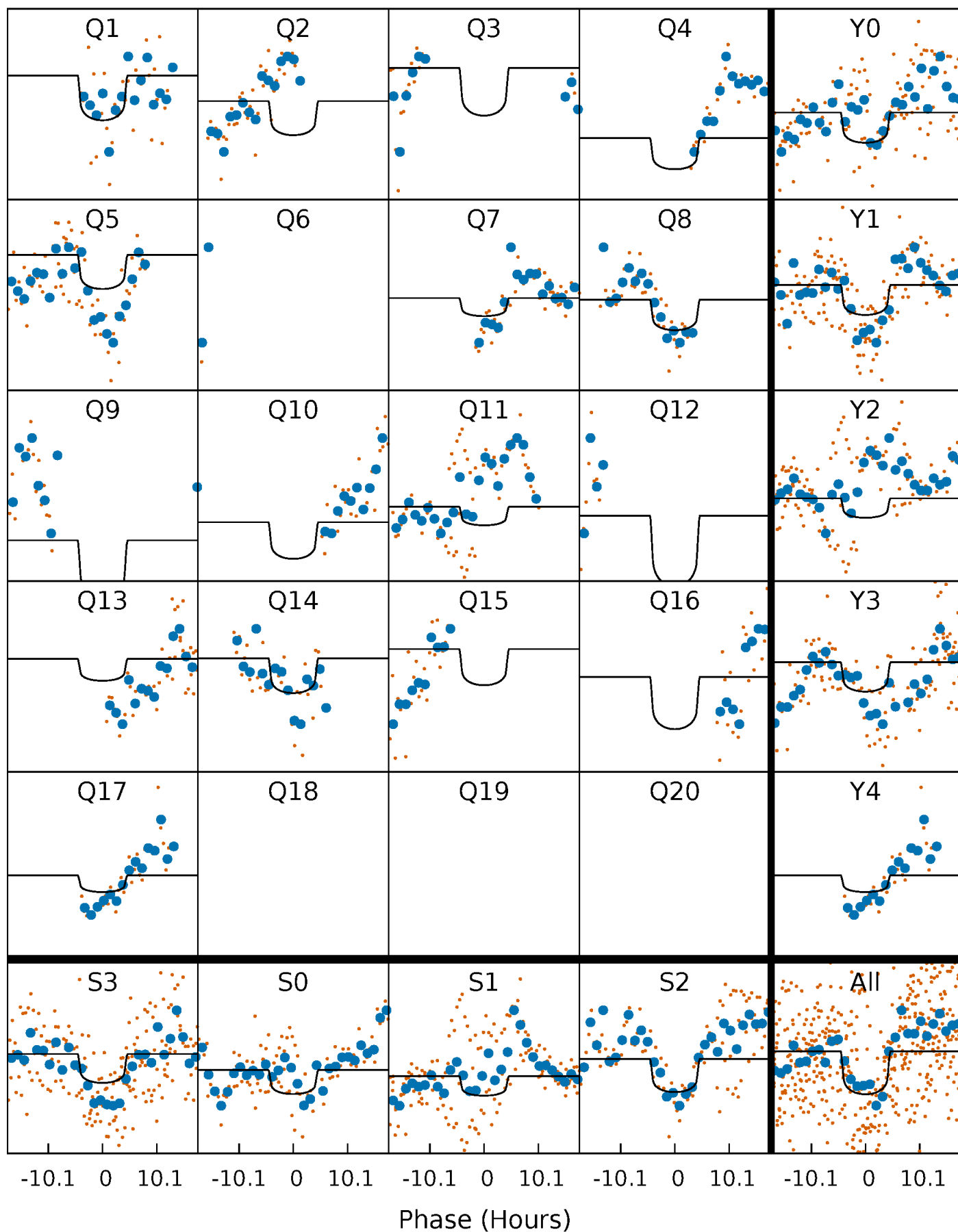
PDC Quarter-Phased Transit Curves

TCE 003533551-09 $P = 62.528122$ Days $T_0 = 141.492009$ (BKJD)



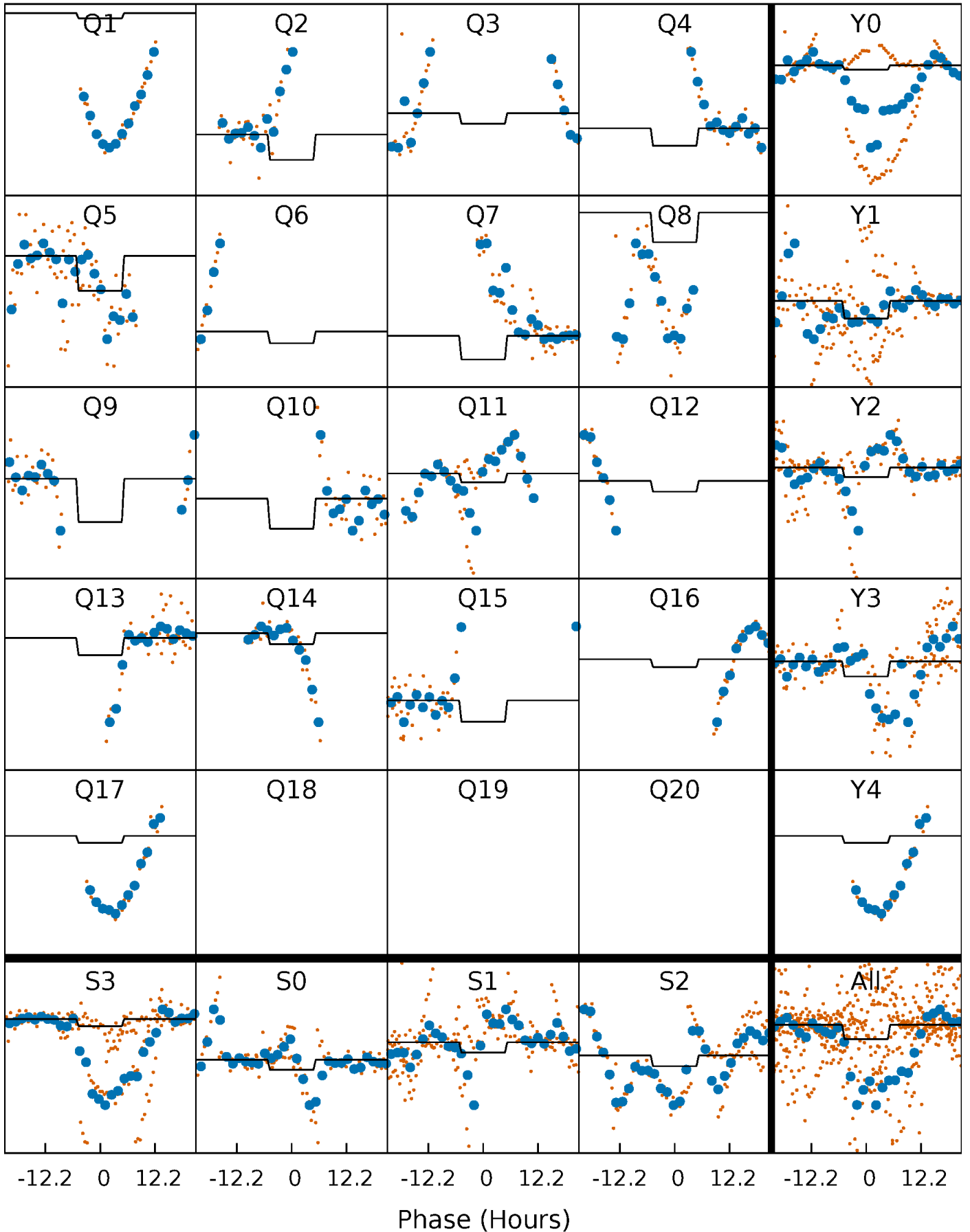
DV Quarter-Phased Transit Curves

TCE 003533551-09 P= 62.528122 Days $T_0=141.492009$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

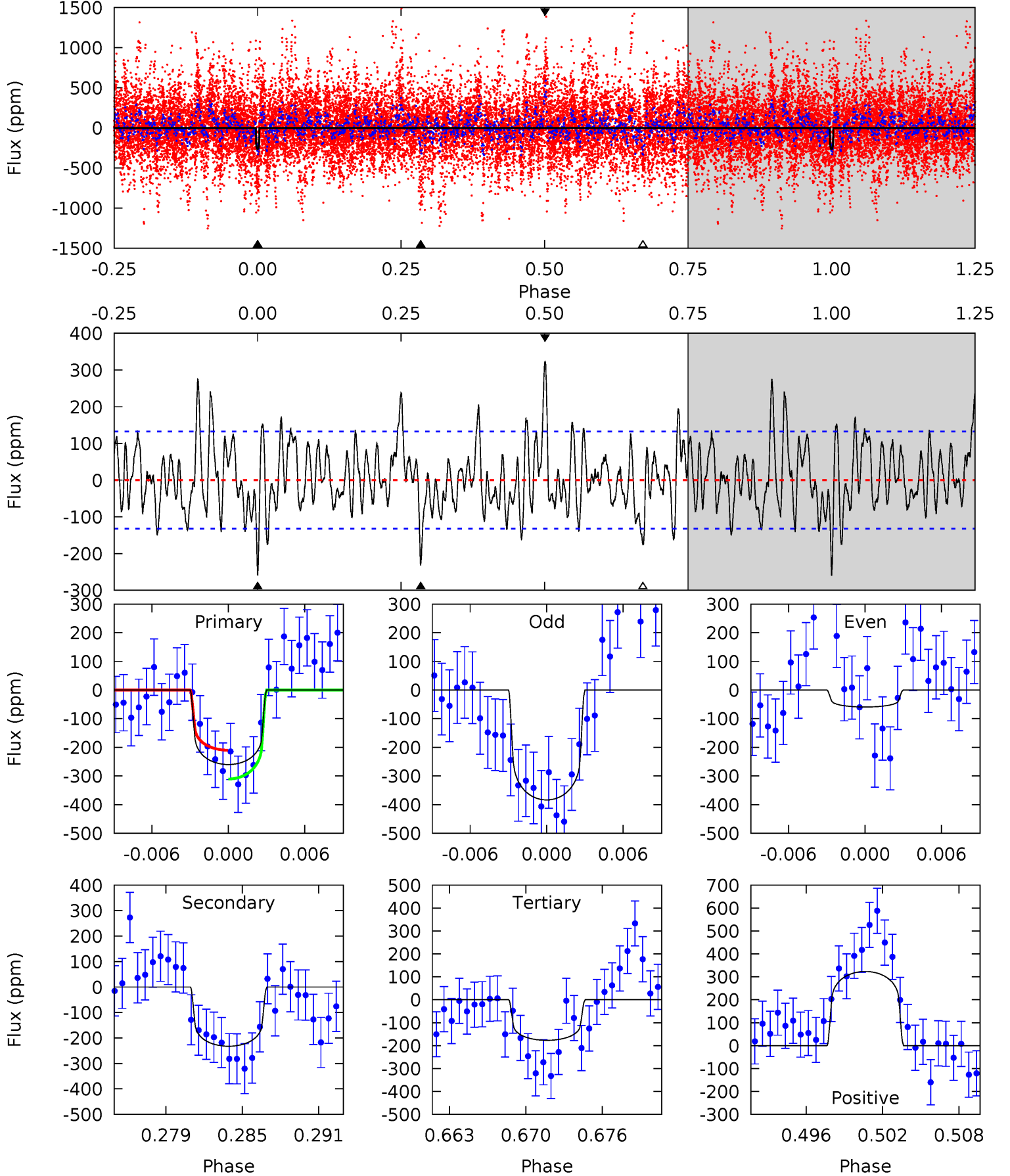
TCE 003533551-09 $P = 62.525987$ Days $T_0 = 141.503370$ (BKJD)



DV Model-Shift Uniqueness Test

003533551-09, P = 62.528122 Days, E = 78.963887 Days

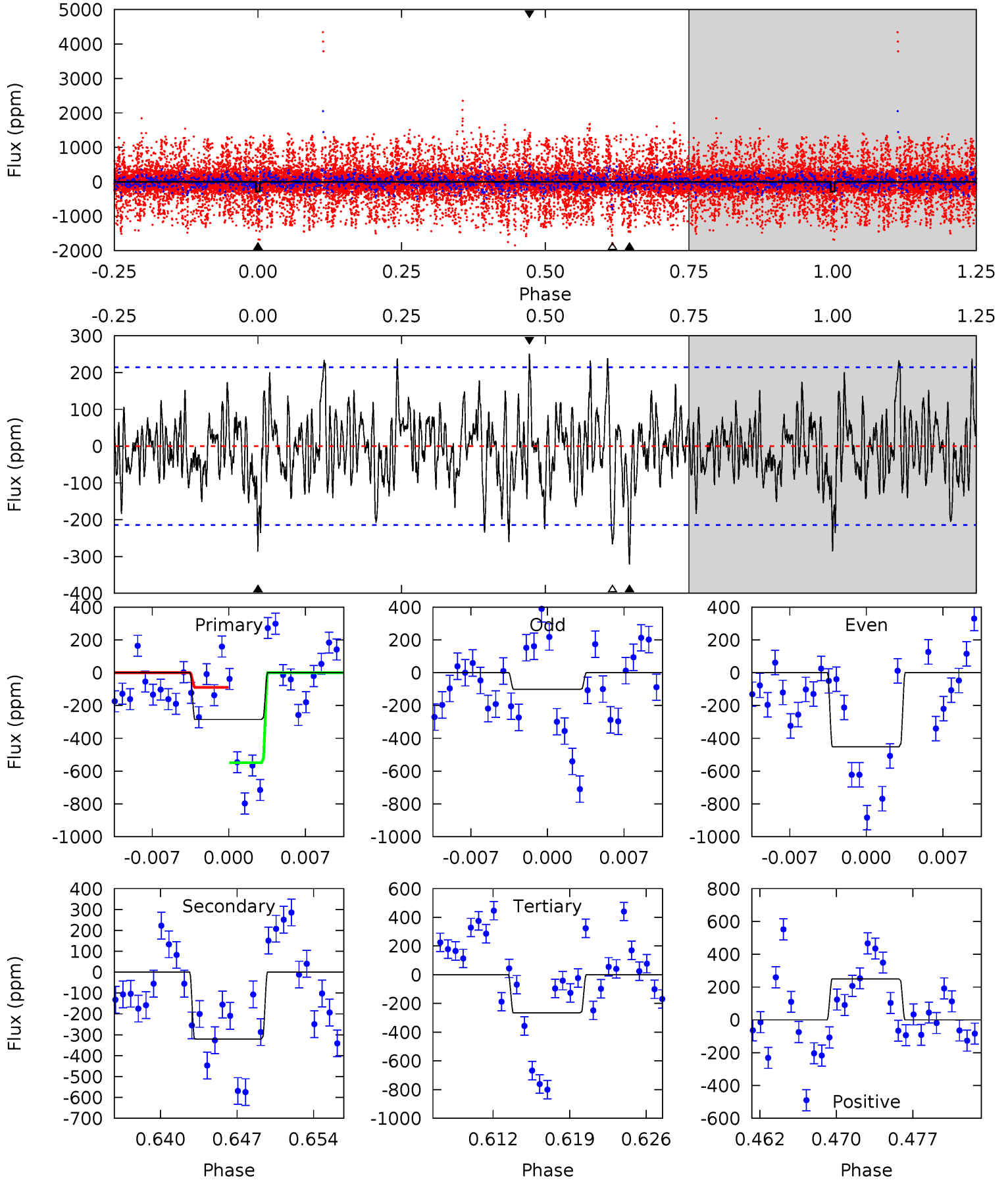
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	8.99	6.84	12.5	5.12	2.74	3.11	3.22	-2.45	2.15	-3.52	6.17	0.78	0.55	1.96



Alt Model-Shift Uniqueness Test

003533551-09, P = 62.525987 Days, E = 78.977383 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.79	7.61	6.32	5.94	5.09	2.69	1.84	0.46	0.85	1.29	1.67	3.45	2.93	0.44	5.53



Stellar Parameters For KIC 003533551

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6144^{+183}_{-183}	$4.165^{+0.351}_{-0.189}$	$-0.840^{+0.300}_{-0.300}$	$1.232^{+0.345}_{-0.422}$	$0.809^{+0.103}_{-0.051}$	$0.609^{+1.309}_{-0.304}$
	+3%/-3%	+8%/-5%	+36%/-36%	+28%/-34%	+13%/-6%	+215%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003533551-09 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-232 ± 26	$2.16^{+1.21}_{-1.06}$	776^{+64}_{-75}	5909^{+2276}_{-985}	2224^{+6582}_{-1280}
Alt.	-320 ± 42	$2.19^{+1.18}_{-1.10}$	780^{+65}_{-78}	6279^{+3066}_{-1069}	3027^{+9466}_{-1773}

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

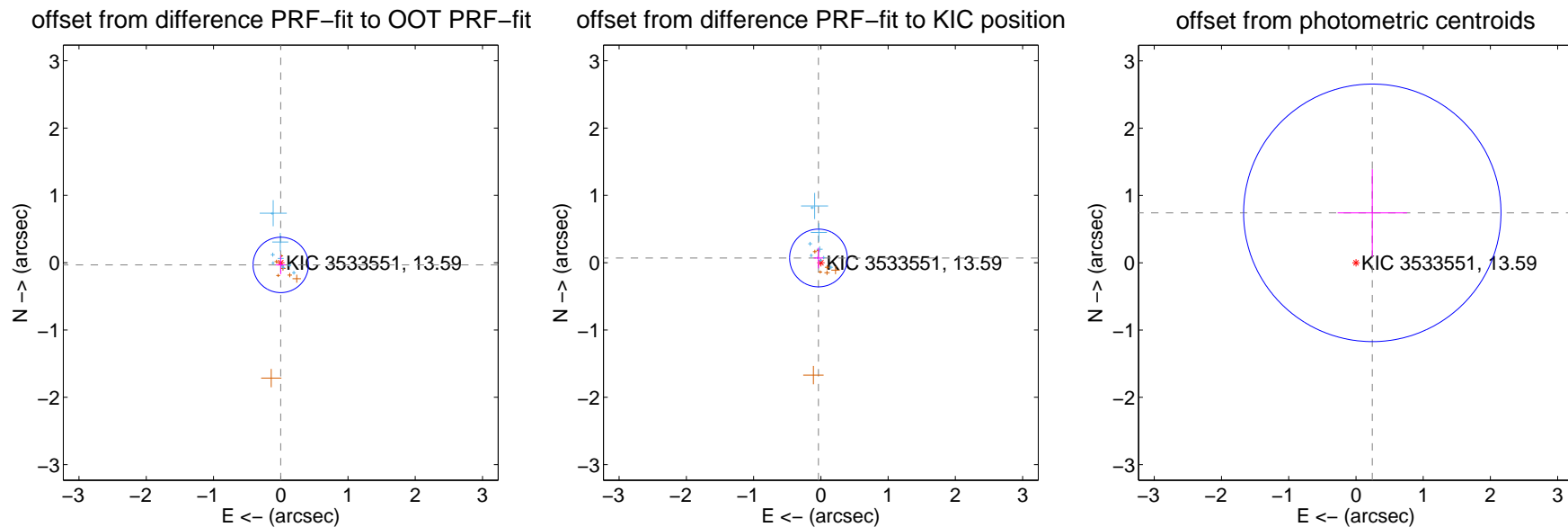
DV Centroid Data

Supplemental centroid analysis for 003533551-09. Kepler magnitude: 13.59. Transit SNR 7.44

There are 10 quarters with good PRF difference image offsets

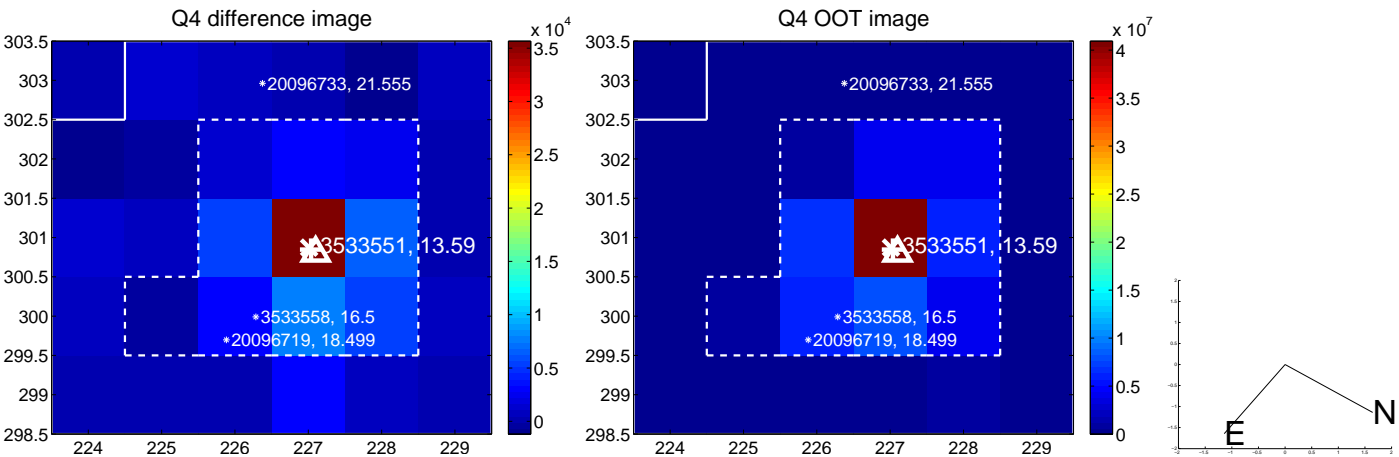
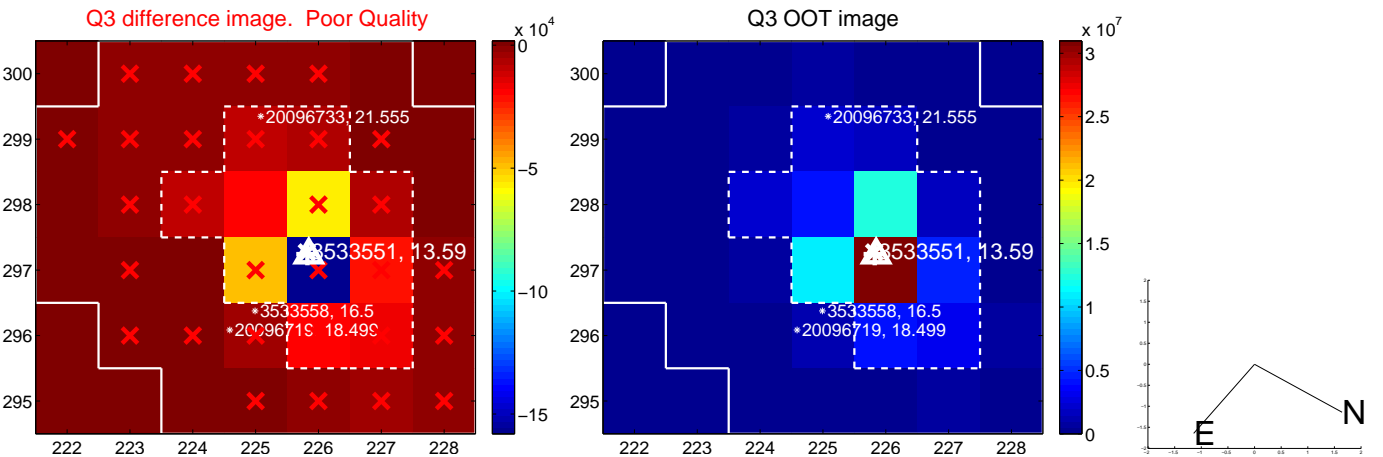
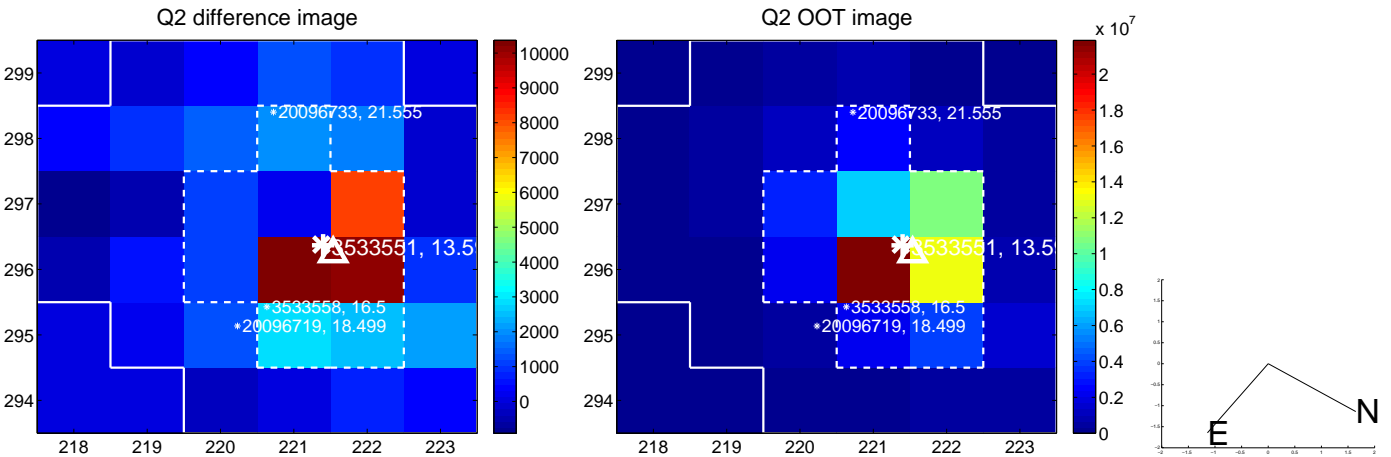
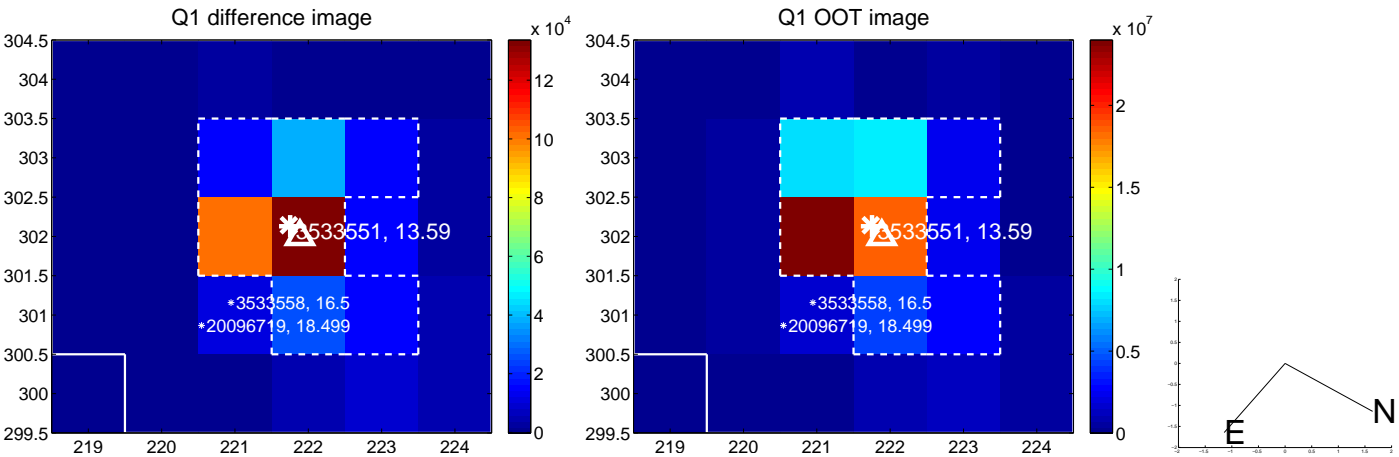
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.033 ± 0.137	0.24	0.000 ± 0.072	-0.033 ± 0.137
PRF-fit source offset from KIC position	0.079 ± 0.143	0.55	0.036 ± 0.071	0.070 ± 0.153
photometric centroid source offset	0.78 ± 0.64	1.22	-0.24 ± 0.52	0.74 ± 0.65

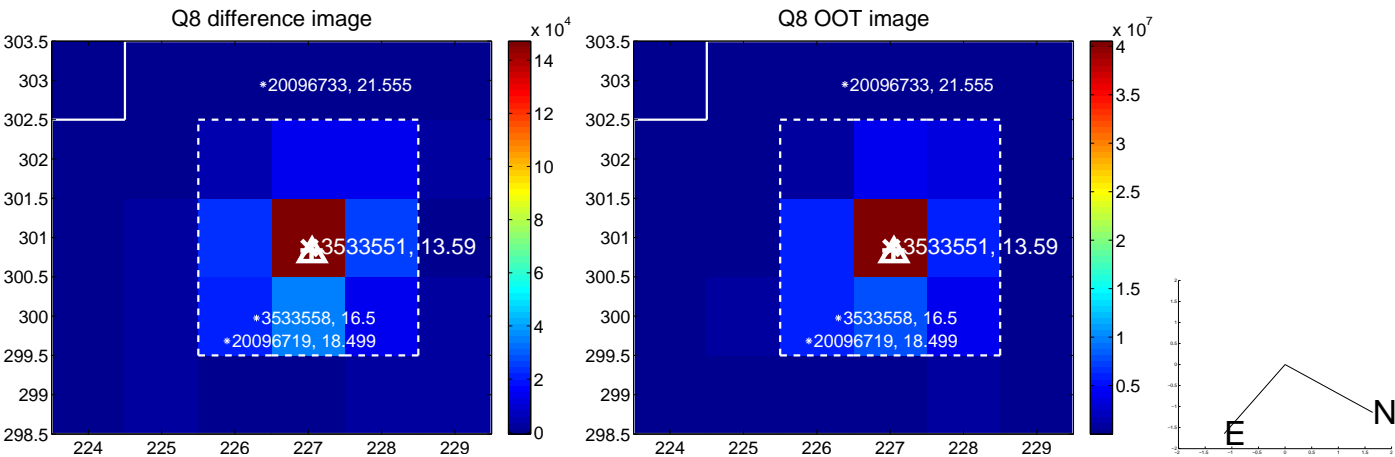
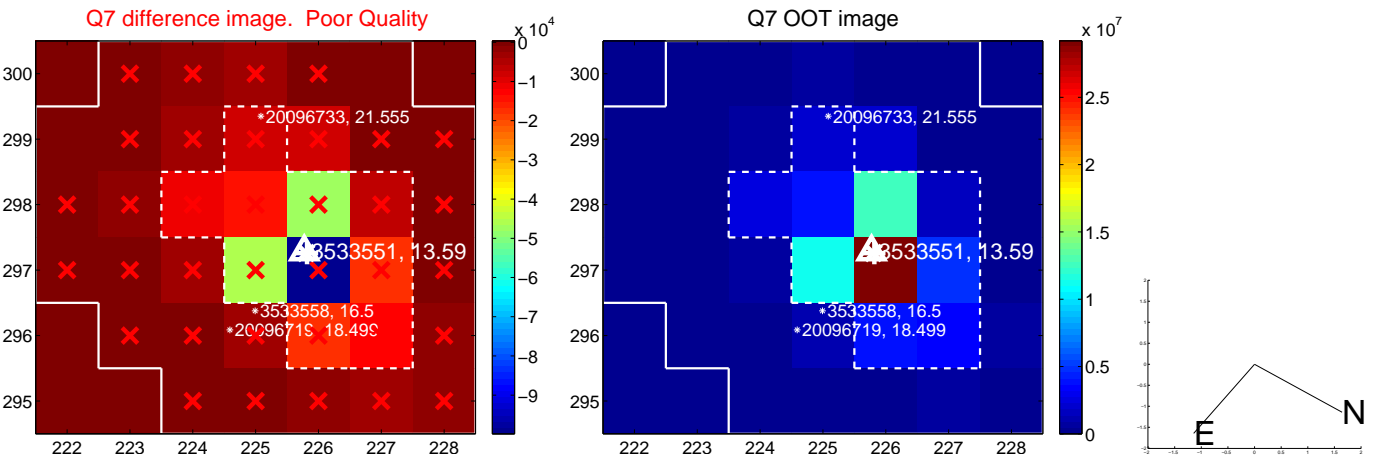
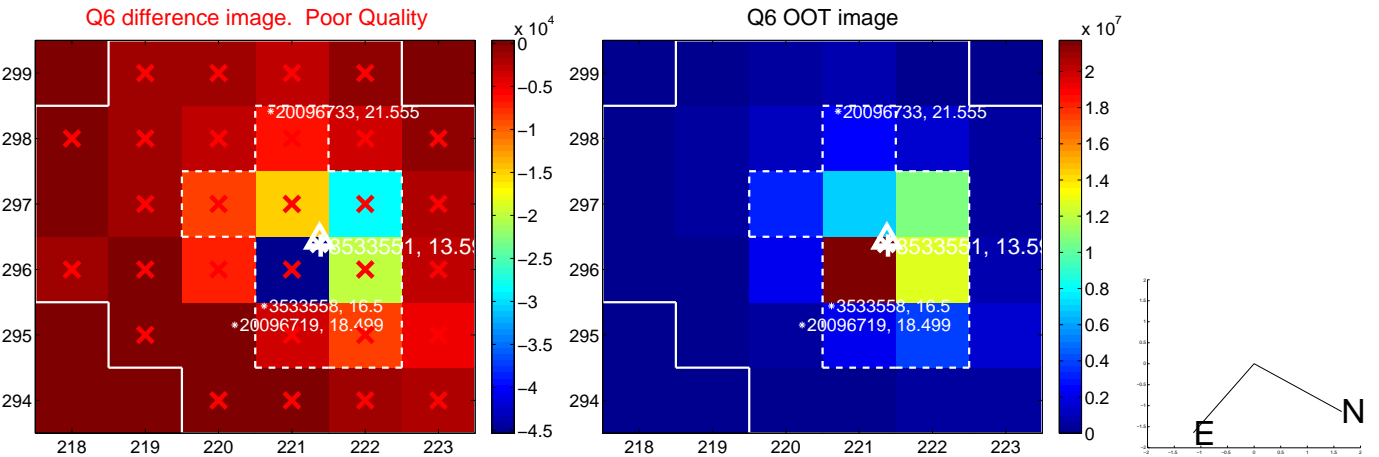
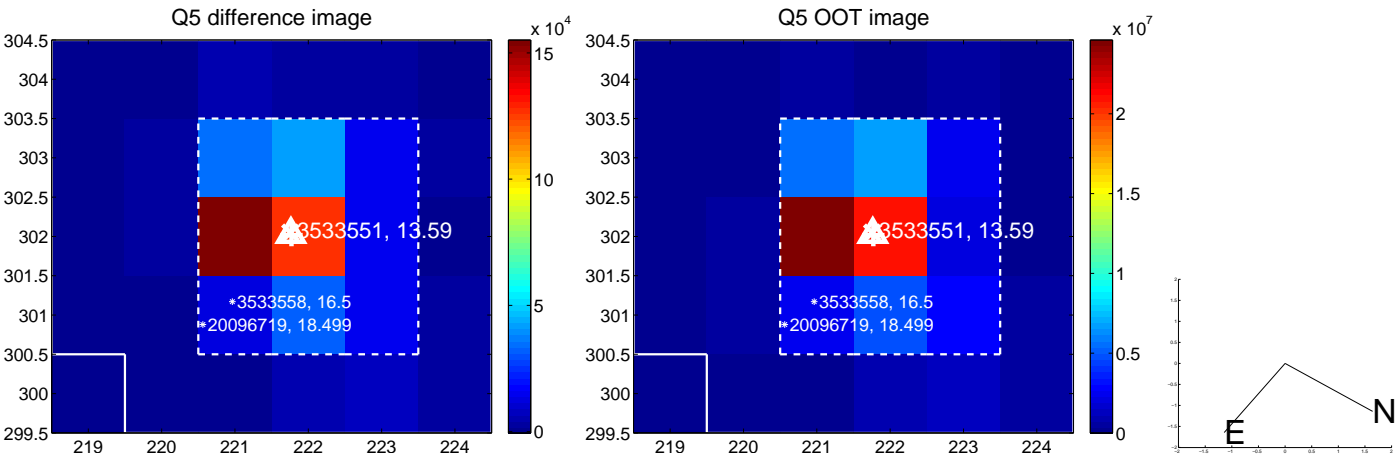


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

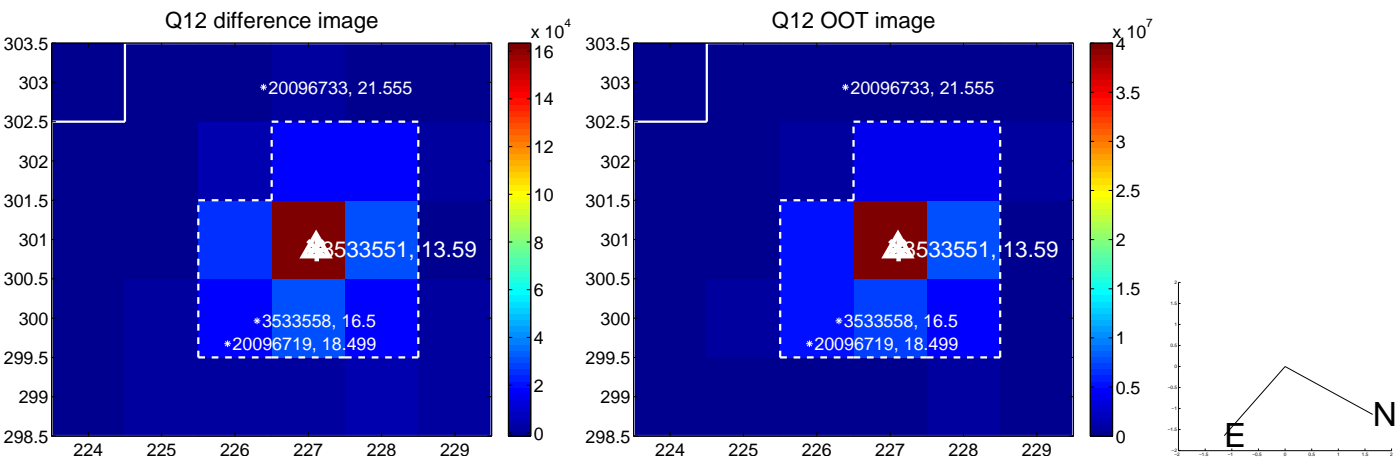
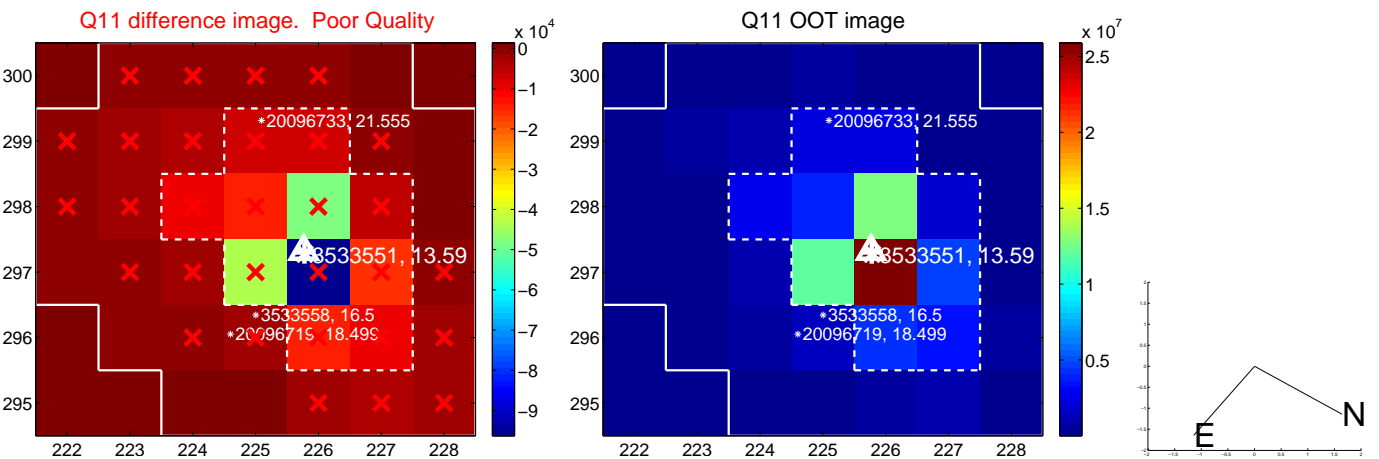
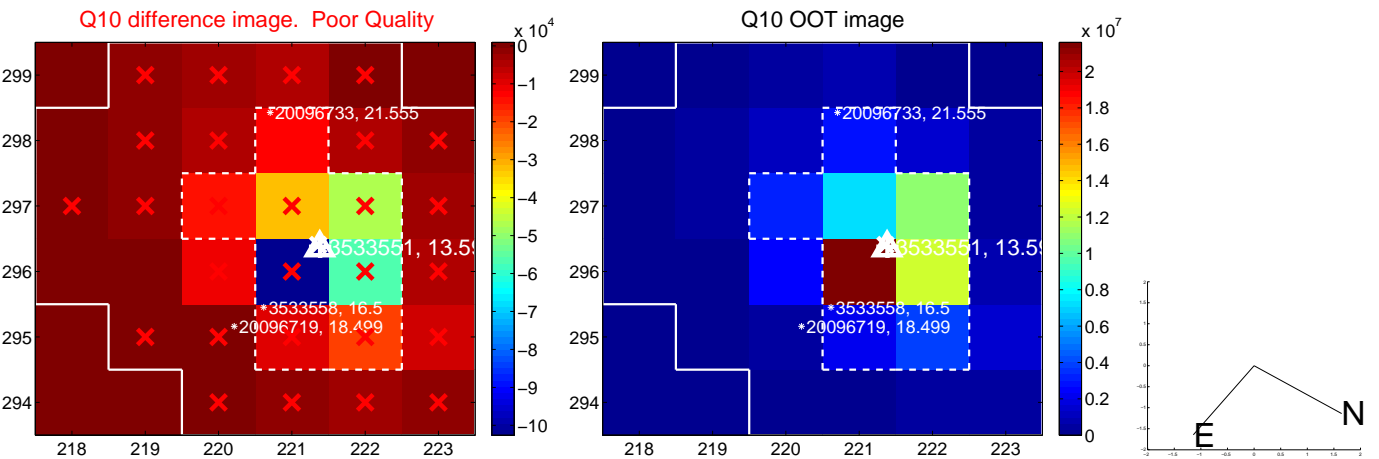
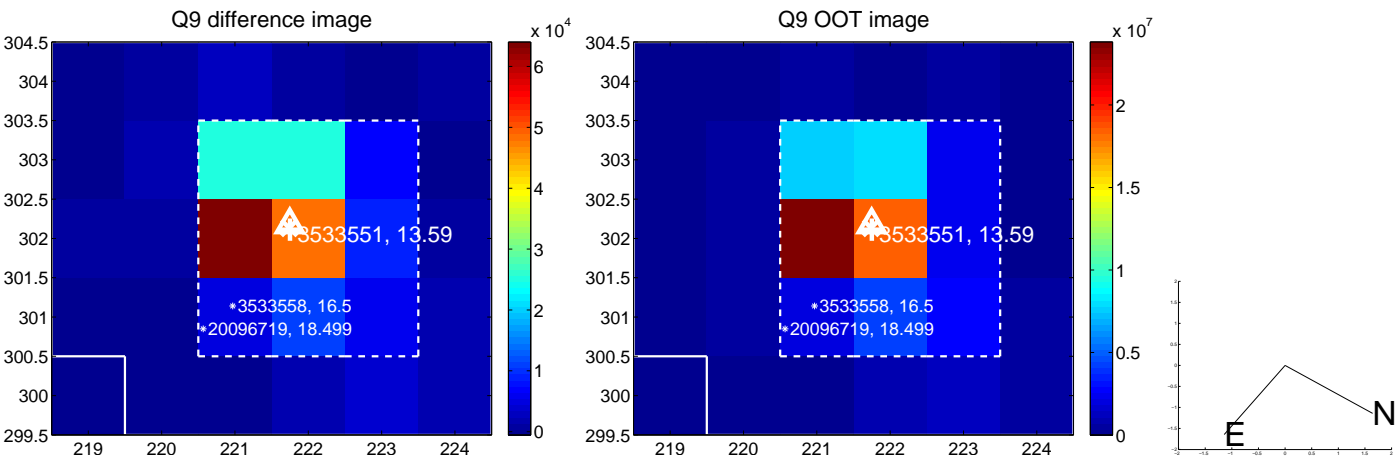
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



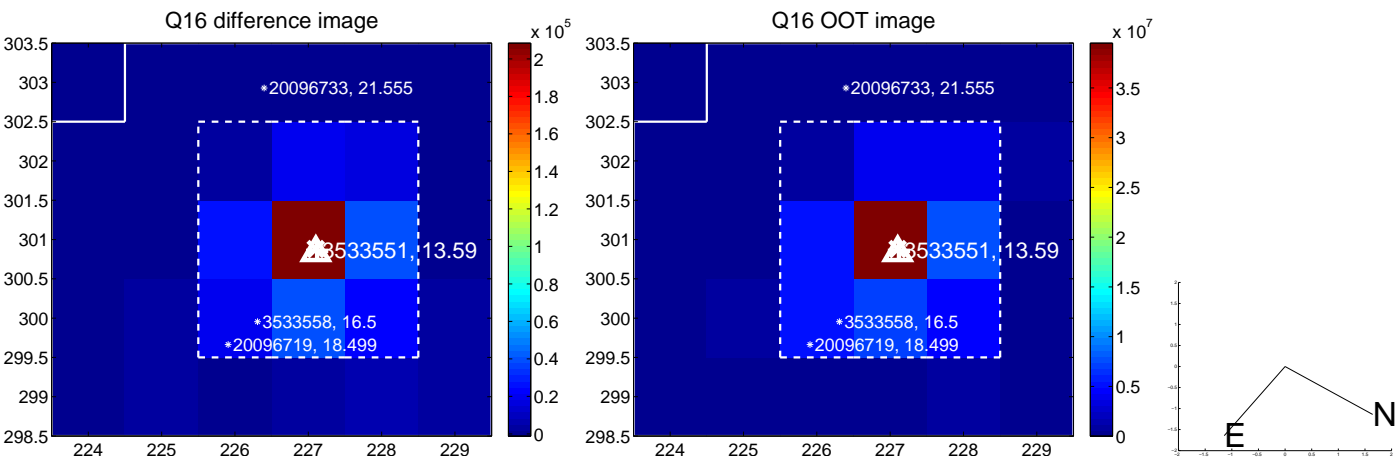
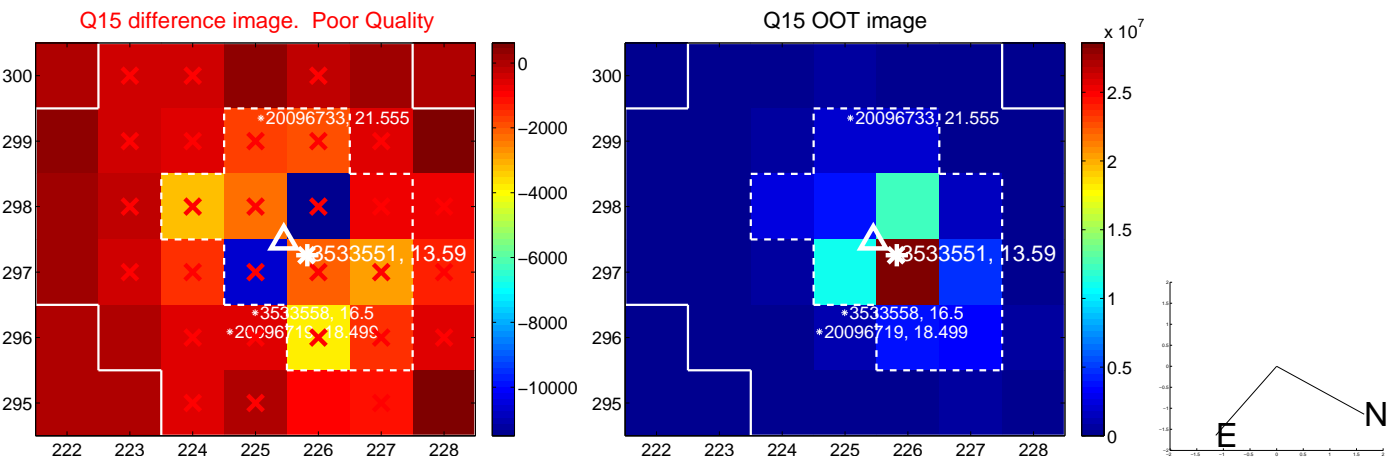
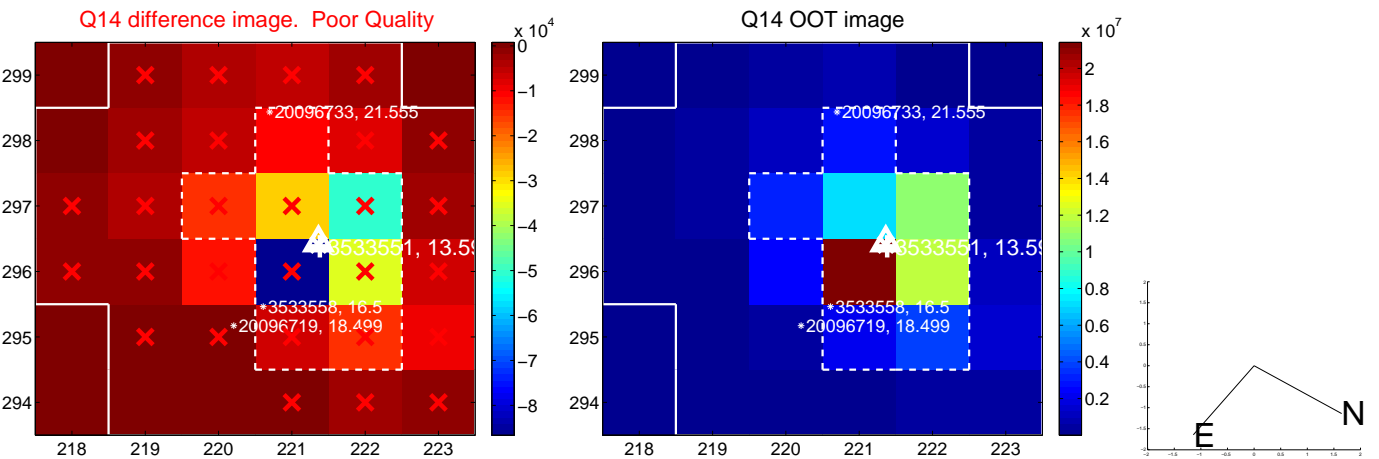
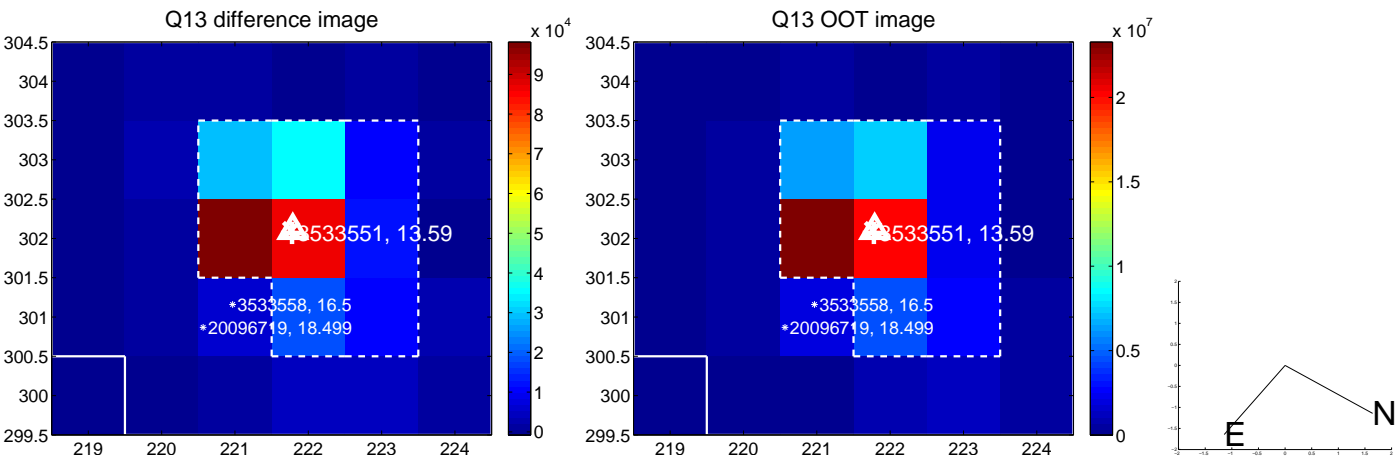
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



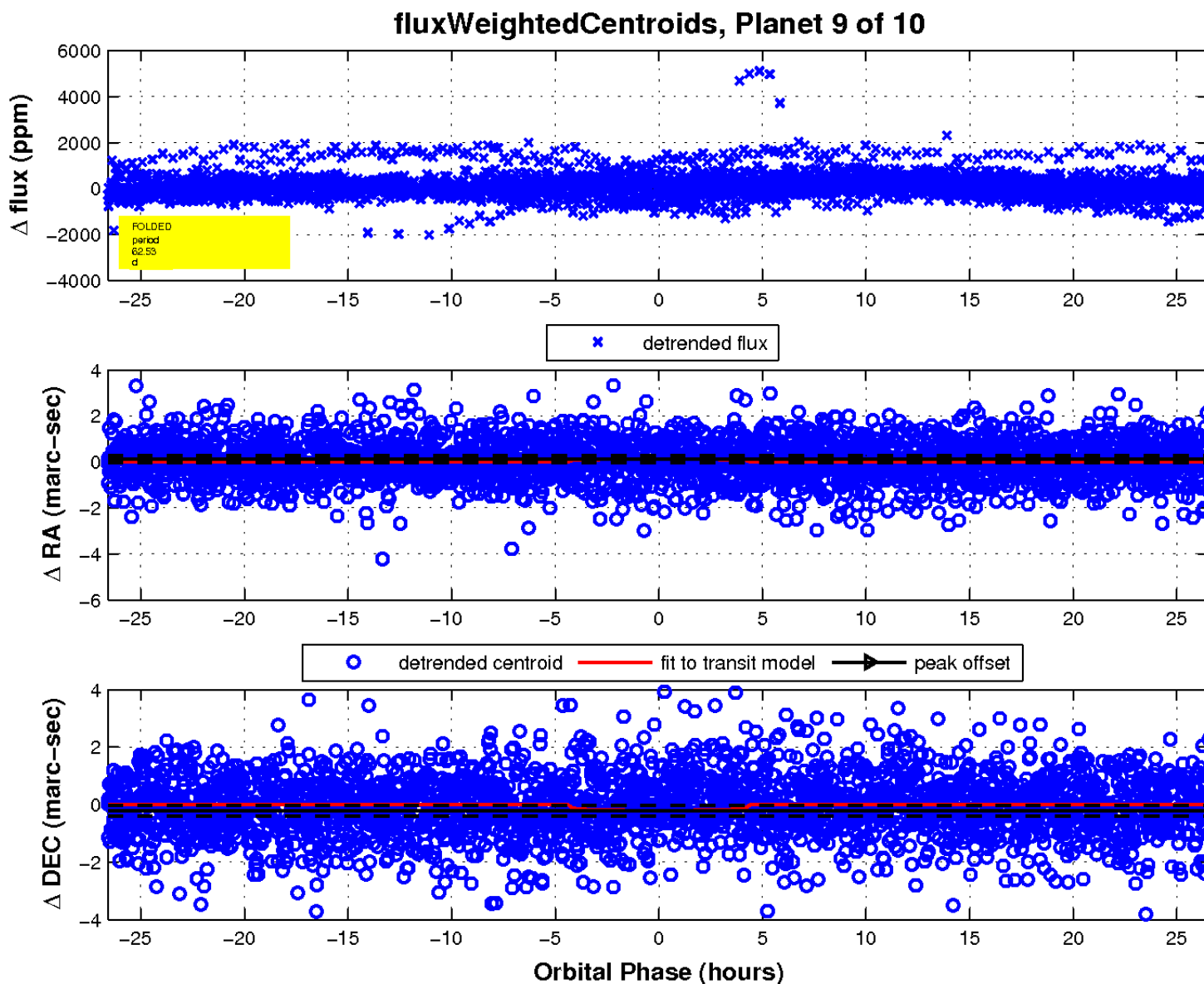
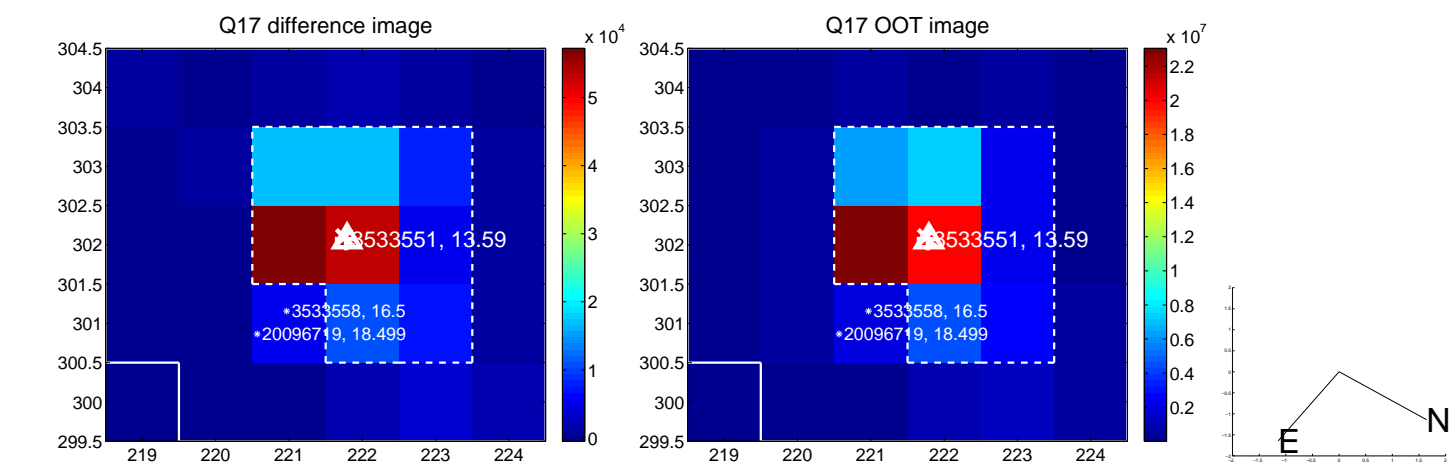
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

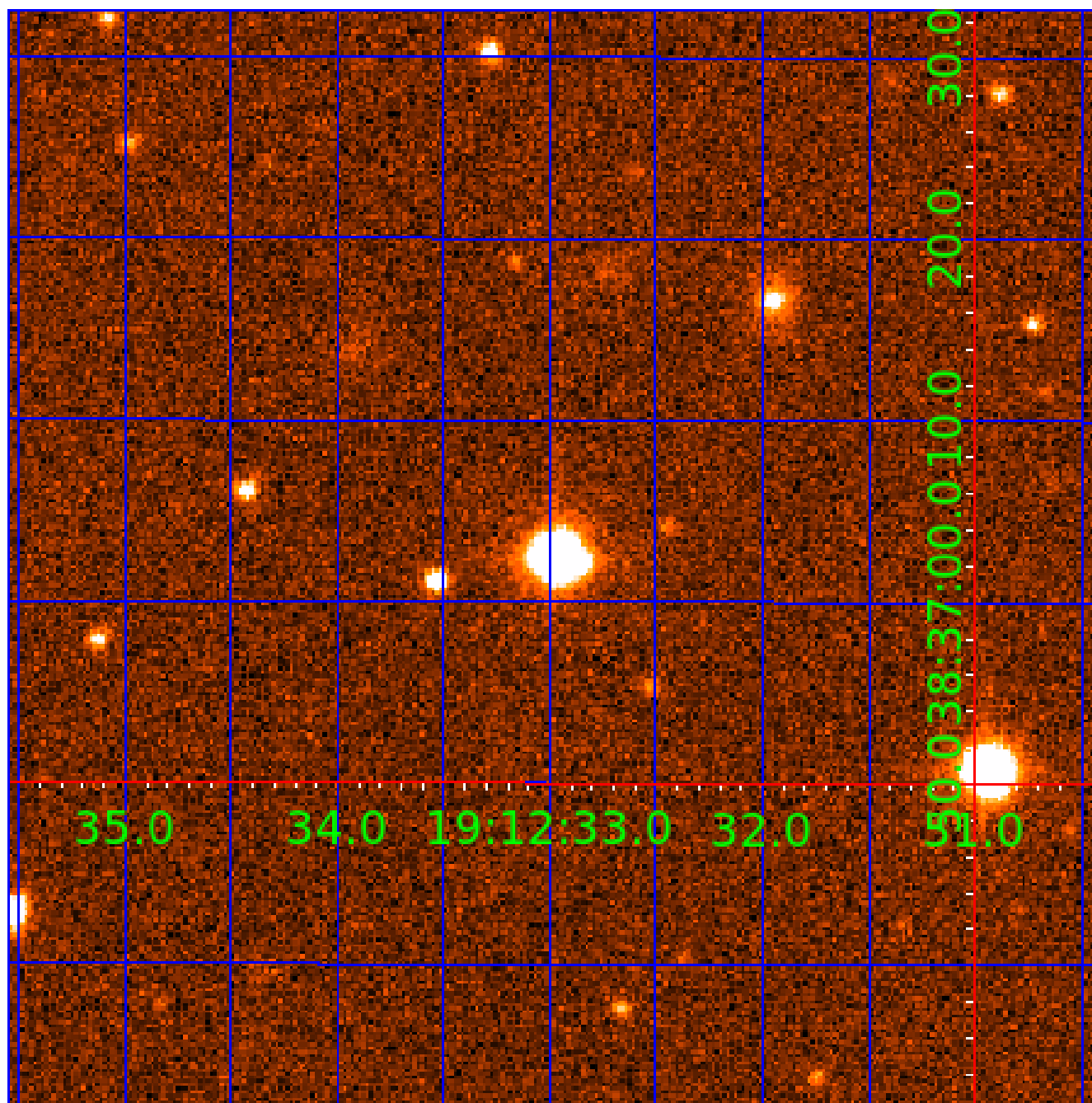


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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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})
003533551-01	OBS	No	2.297362	133.631750	64.2	12.450	7.9	9.3	1.23	6144	1.33	1920.73
003533551-02	OBS	No	211.777821	283.721491	297.7	4.541	15.3	4.3	1.23	6144	2.27	4.61
003533551-03	OBS	No	498.367920	497.396492	1907.5	41.710	14.0	9.7	1.23	6144	9.98	1.47
003533551-04	OBS	No	132.648483	227.746073	225.6	3.059	9.1	3.3	1.23	6144	2.09	8.61
003533551-05	OBS	No	132.682289	228.720197	154.0	1.732	9.5	2.1	1.23	6144	1.58	8.60
003533551-06	OBS	No	132.656119	228.240061	277.2	9.000	9.6	-1.0	1.23	6144	2.06	8.61
003533551-07	OBS	No	379.158986	428.600167	548.9	7.215	9.2	8.2	1.23	6144	3.26	2.12
003533551-08	OBS	No	411.361648	196.323732	586.8	7.760	9.0	7.1	1.23	6144	3.19	1.90
003533551-09	OBS	No	62.528122	141.492009	277.9	8.863	9.4	7.4	1.23	6144	2.17	23.46
003533551-10	OBS	No	128.684428	174.127242	635.3	4.081	8.7	8.8	1.23	6144	5.97	8.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003533551-01	OBS	FP	0.00	1	0	0	0	LPP_DV
003533551-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003533551-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003533551-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET
003533551-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
003533551-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003533551-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003533551-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003533551-10	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

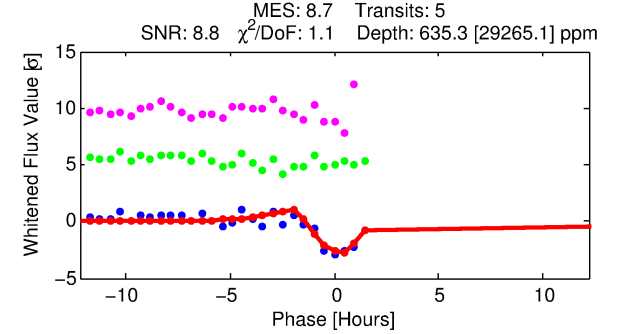
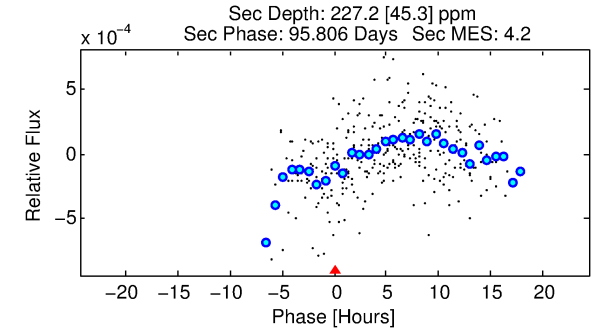
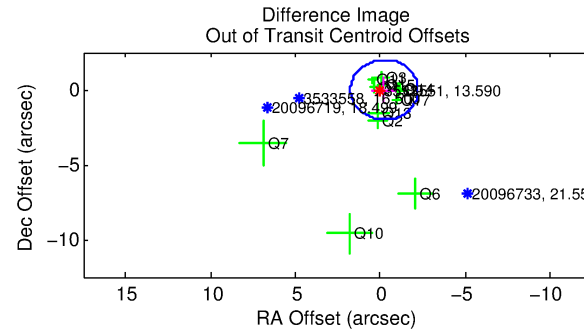
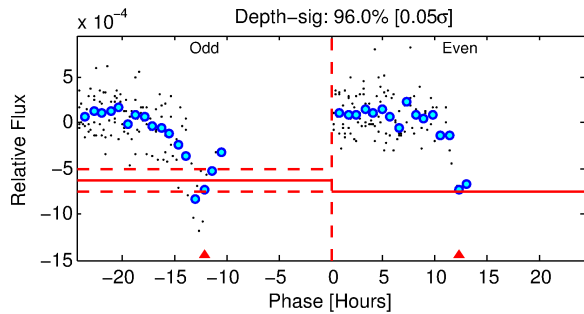
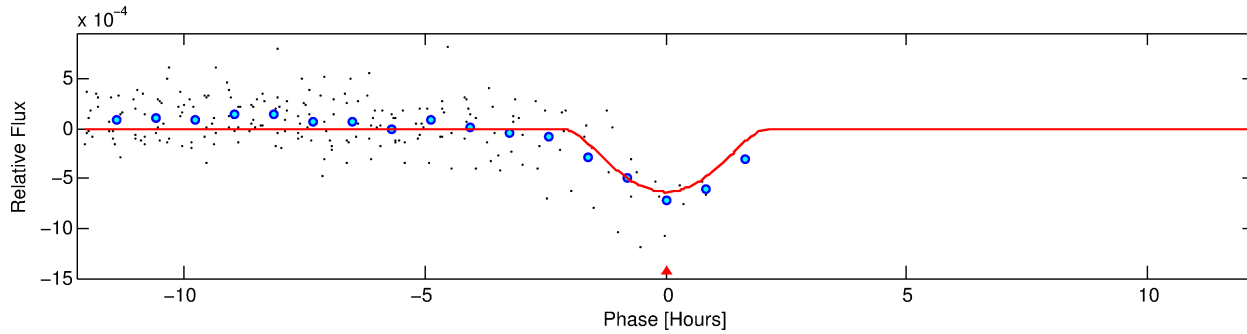
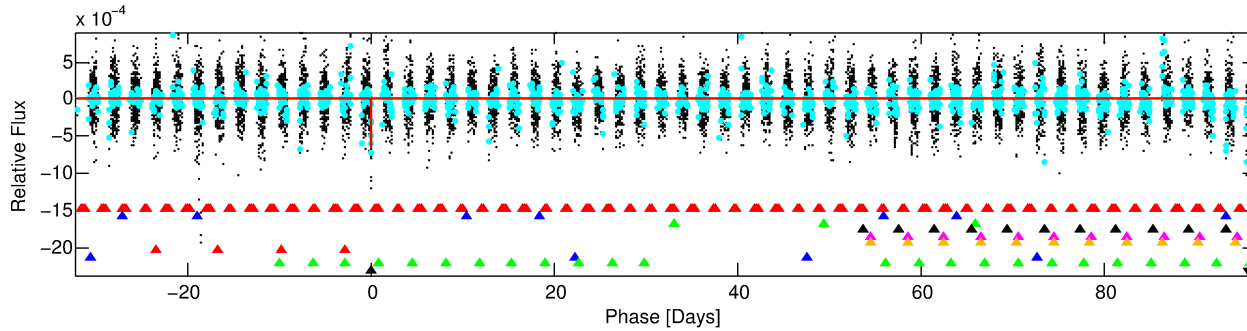
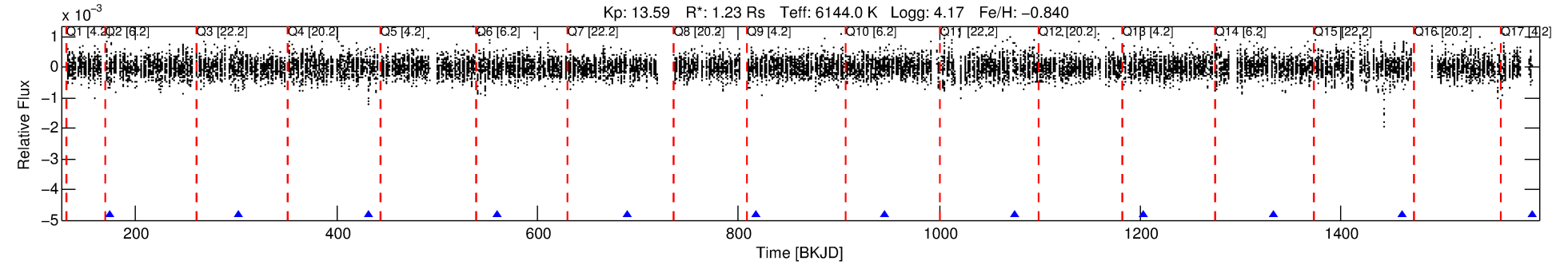
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003533551-10

No Significant Match Found

DV One-Page Summary

KIC: 3533551 Candidate: 10 of 10 Period: 128.684 d



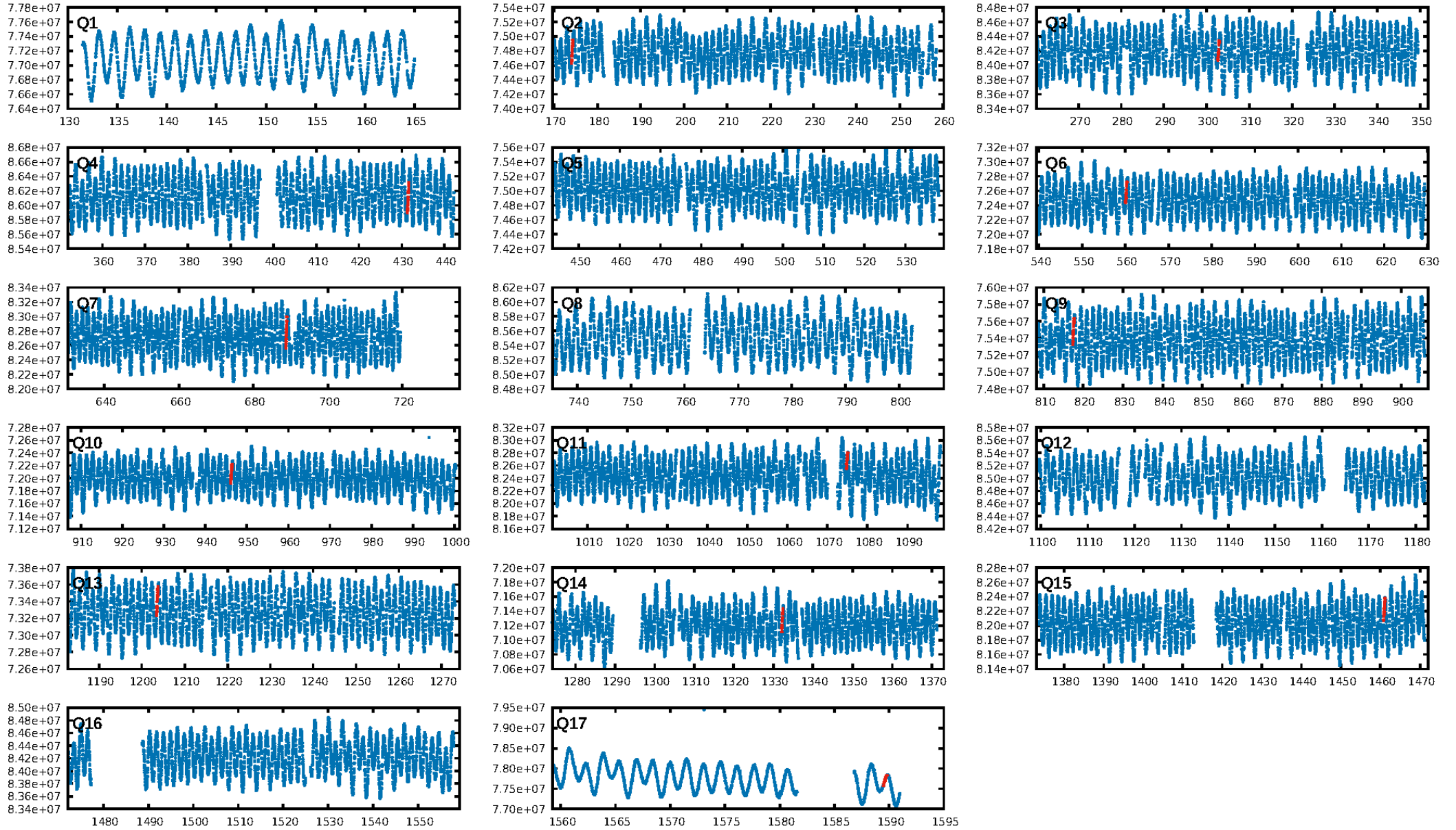
DV Fit Results:

Period = 128.68443 [0.00410] d
Epoch = 174.1272 [0.0072] BKJD
Rp/R* = 0.0444 [0.1900]
a/R* = 72.58 [81.24]
b = 1.00 [1.12]
Seff = 8.96 [5.35]
Teq = 441 [66] K
Rp = 5.97 [25.62] Re
a = 0.4650 [0.1642] AU
Ag = 758.84 [6511.92] [0.12 σ]
Teffp = 3580 [7664] K [0.41 σ]

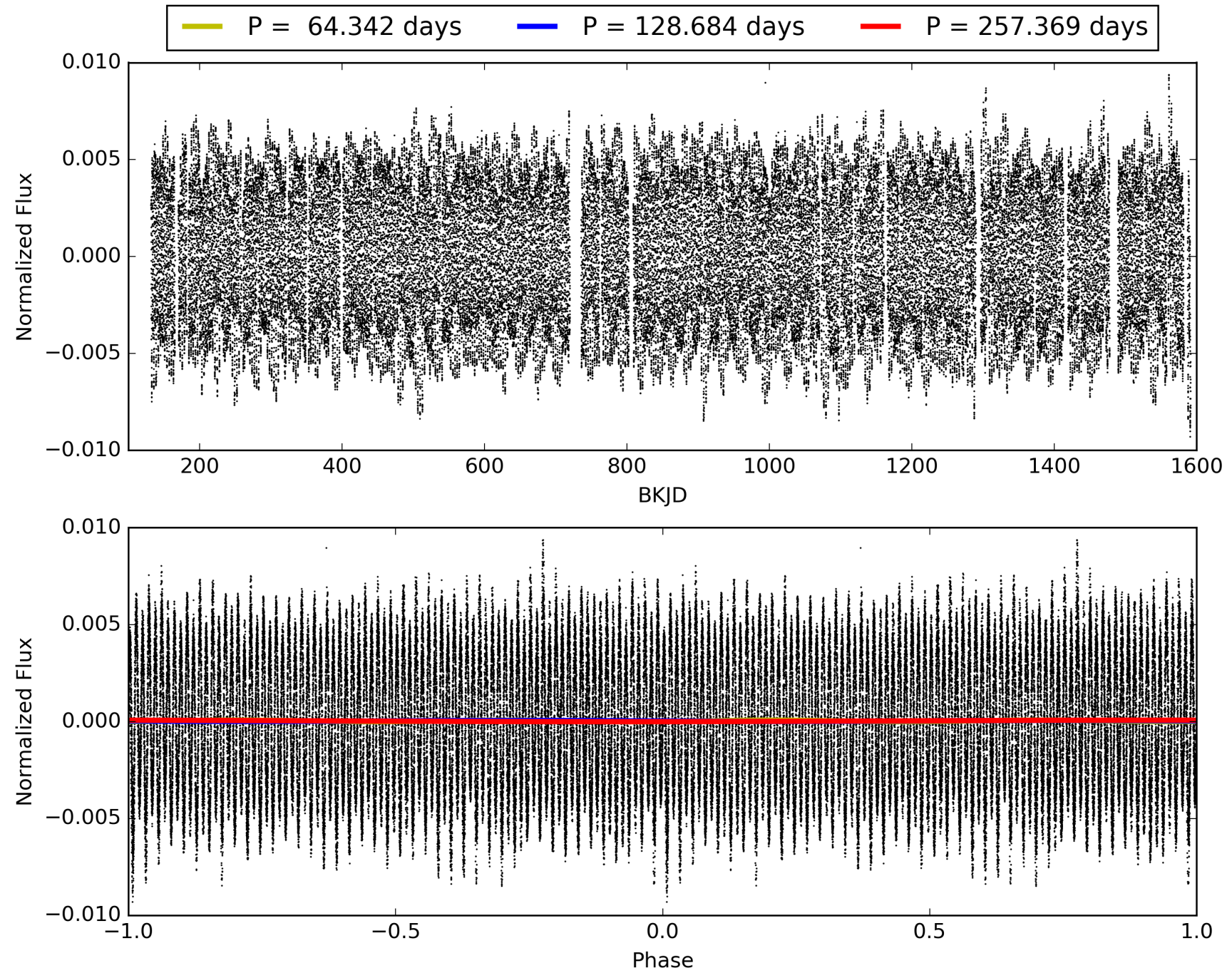
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [162.73 σ]
LongPeriod-sig: 100.0% [18.65 σ]
ModelChiSquare2-sig: 5.6%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.04208
Centroid-sig: 72.5%
Centroid-so: 0.412 arcsec [0.63 σ]
OotOffset-rm: 0.245 arcsec [0.37 σ]
OotOffset-st: 4/4/1/3 [12]
KicOffset-rm: 0.255 arcsec [0.31 σ]
KicOffset-st: 4/4/1/3 [12]
DiffImageQuality-fgm: 0.25 [3/12]
DiffImageOverlap-fno: 0.58 [7/12]

TCE 003533551-10, PDC Light Curves

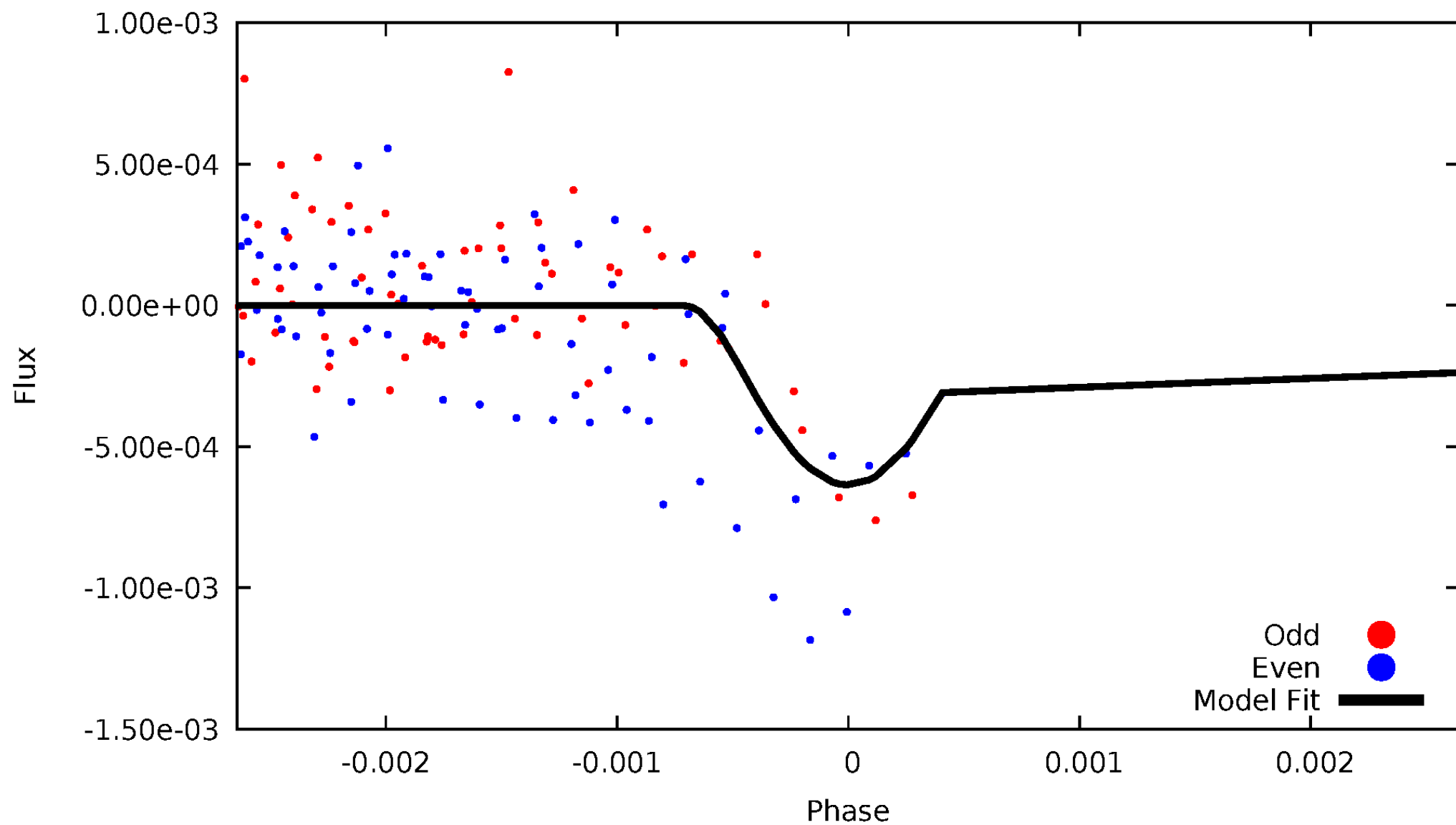


TCE 003533551-10



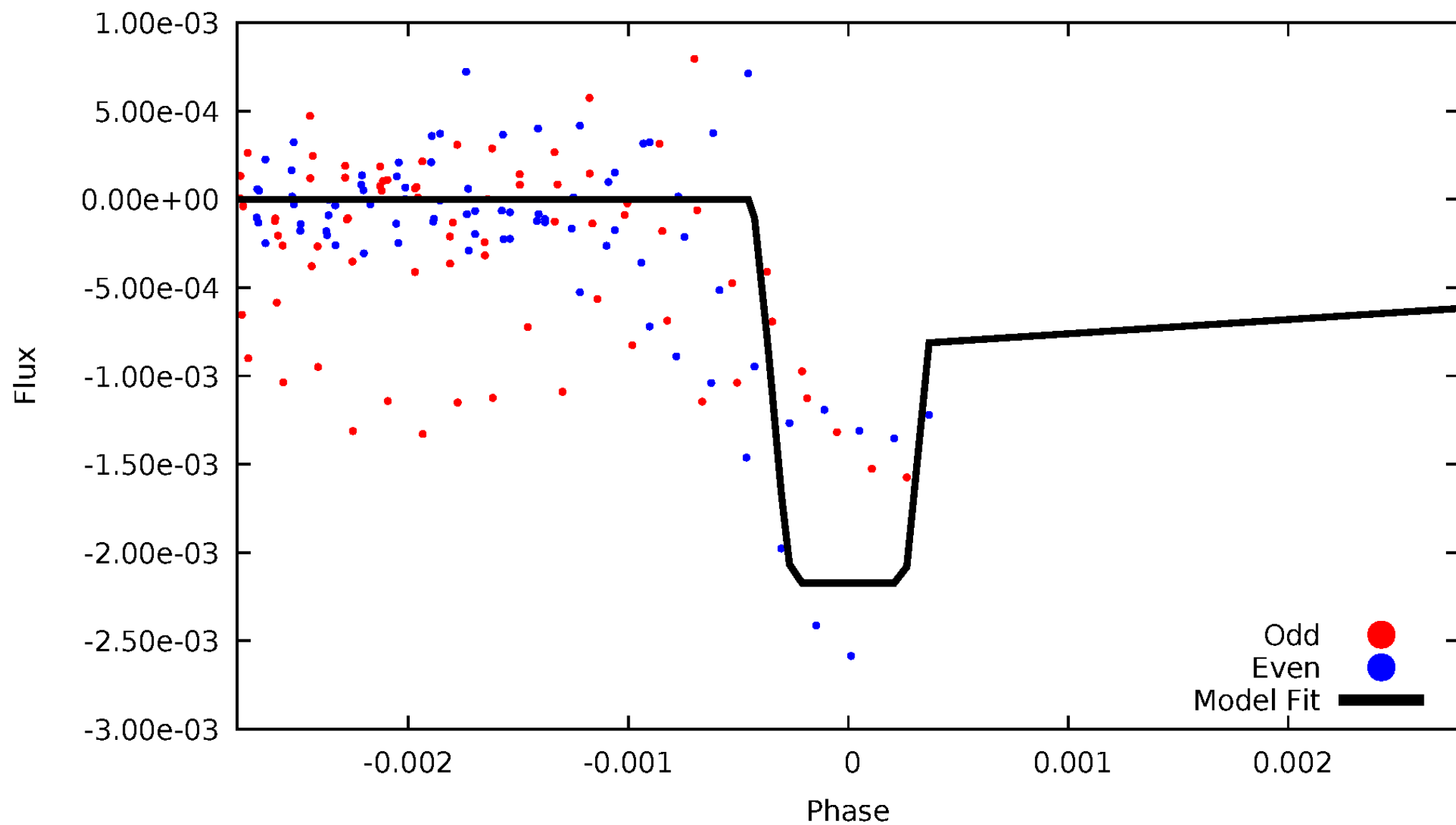
DV Odd/Even

TCE 003533551-10



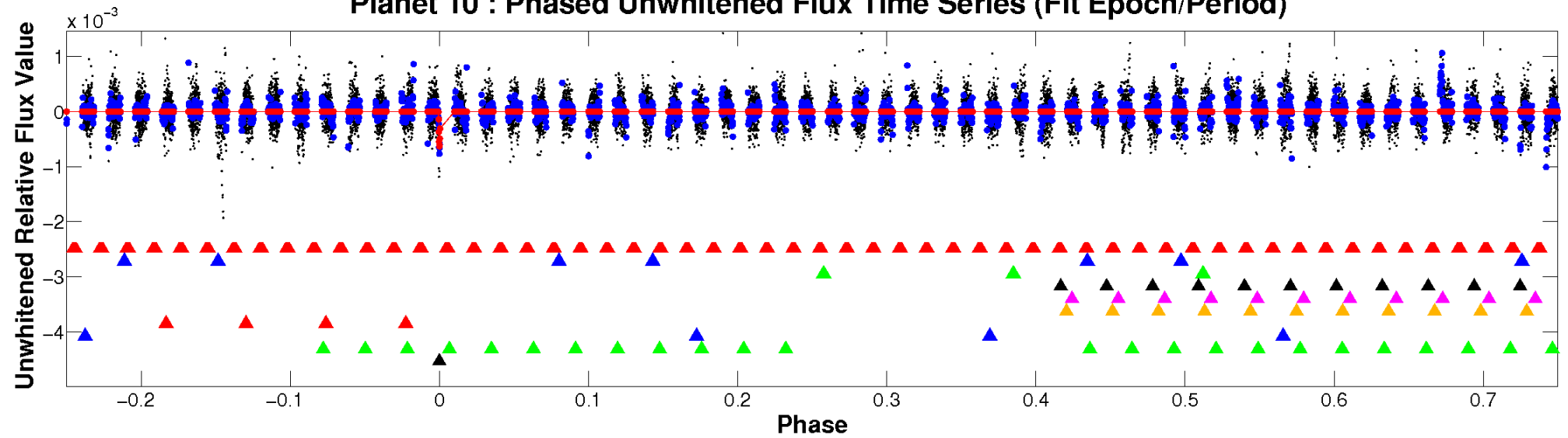
ALT Odd/Even

TCE 003533551-10

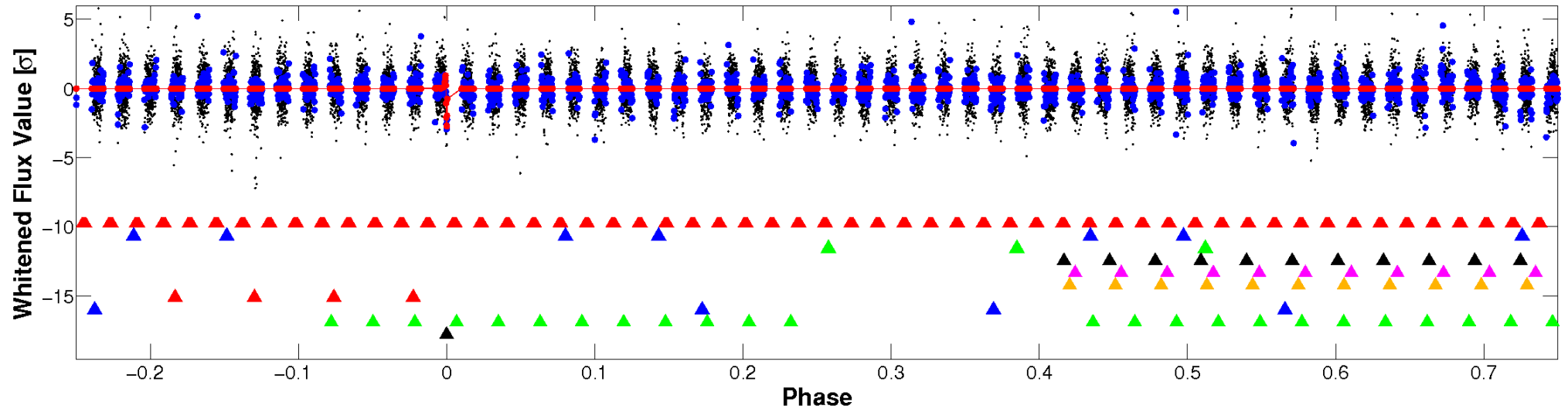


Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

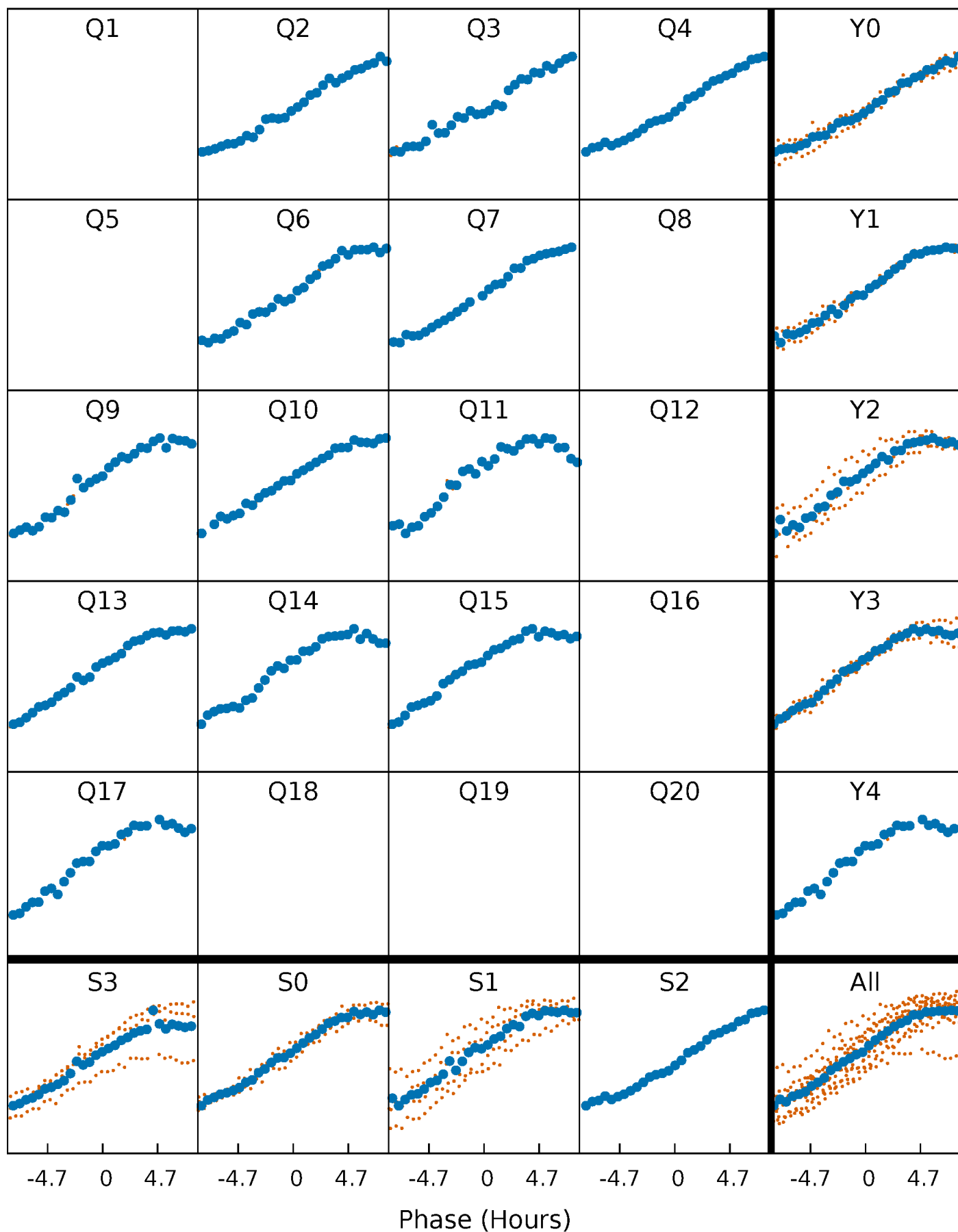


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



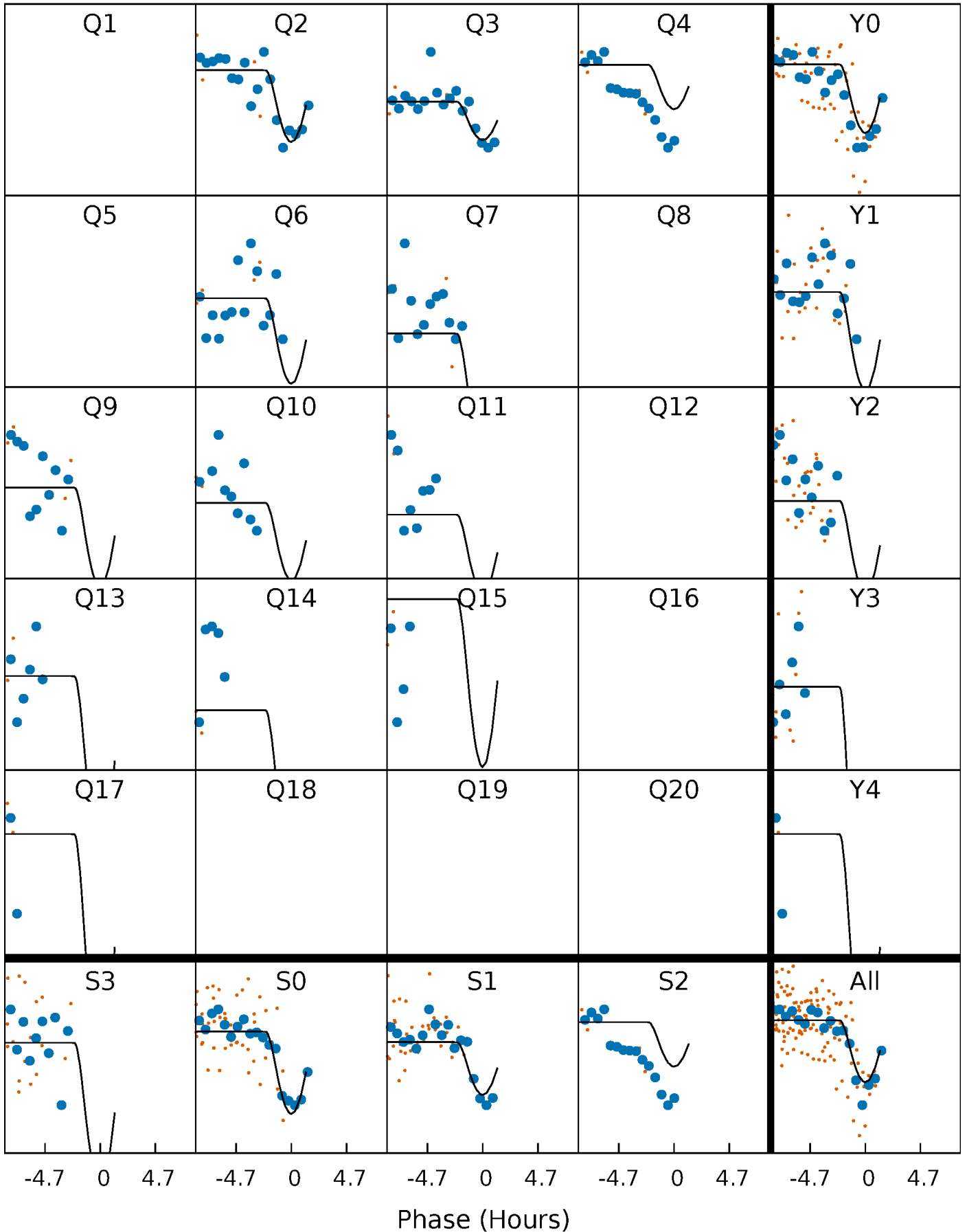
PDC Quarter-Phased Transit Curves

TCE 003533551-10 P=128.684428 Days $T_0=174.127242$ (BKJD)



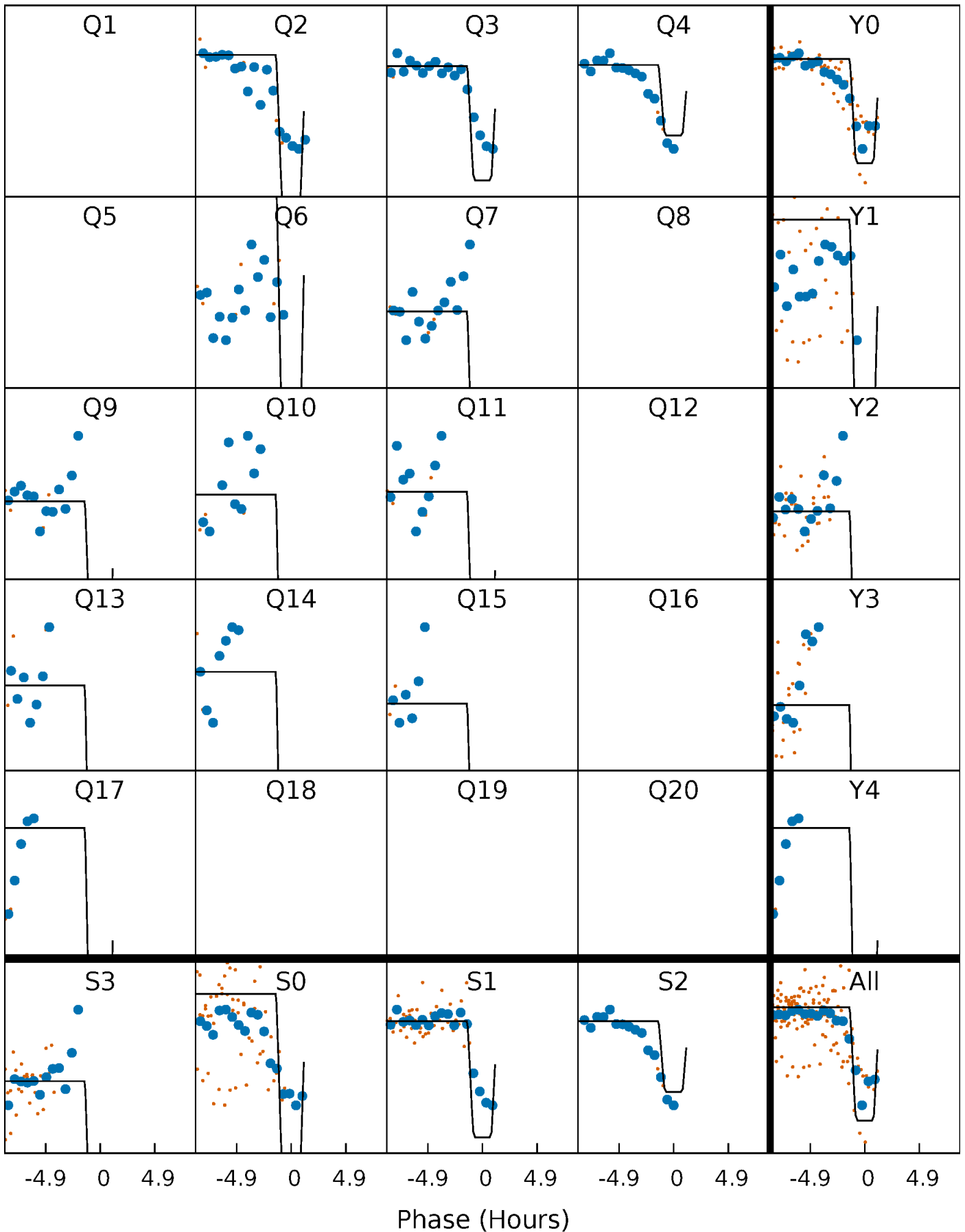
DV Quarter-Phased Transit Curves

TCE 003533551-10 $P=128.684428$ Days $T_0=174.127242$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

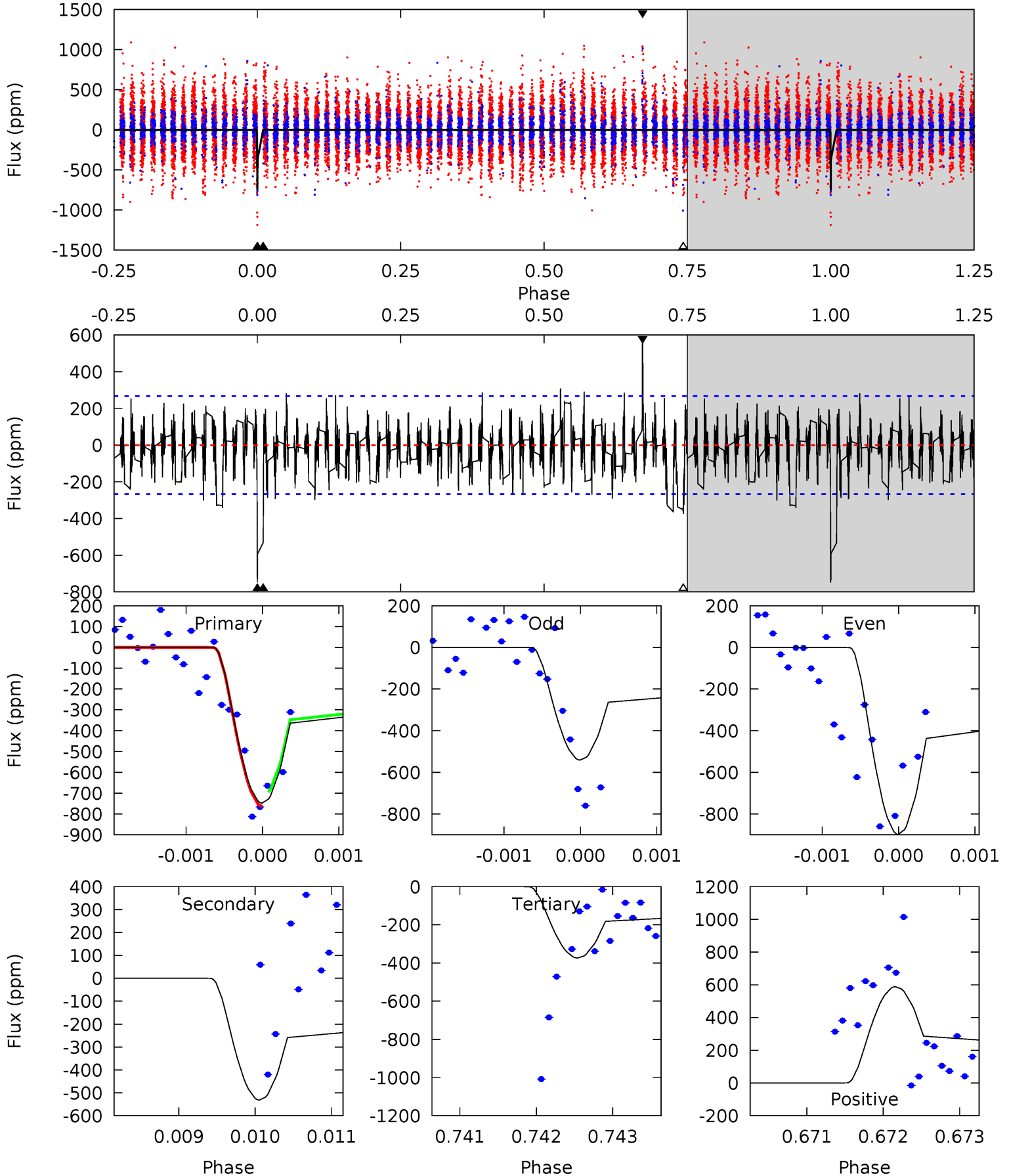
TCE 003533551-10 P=128.680643 Days $T_0=174.132443$ (BKJD)



DV Model-Shift Uniqueness Test

003533551-10, P = 128.684428 Days, E = 45.442814 Days

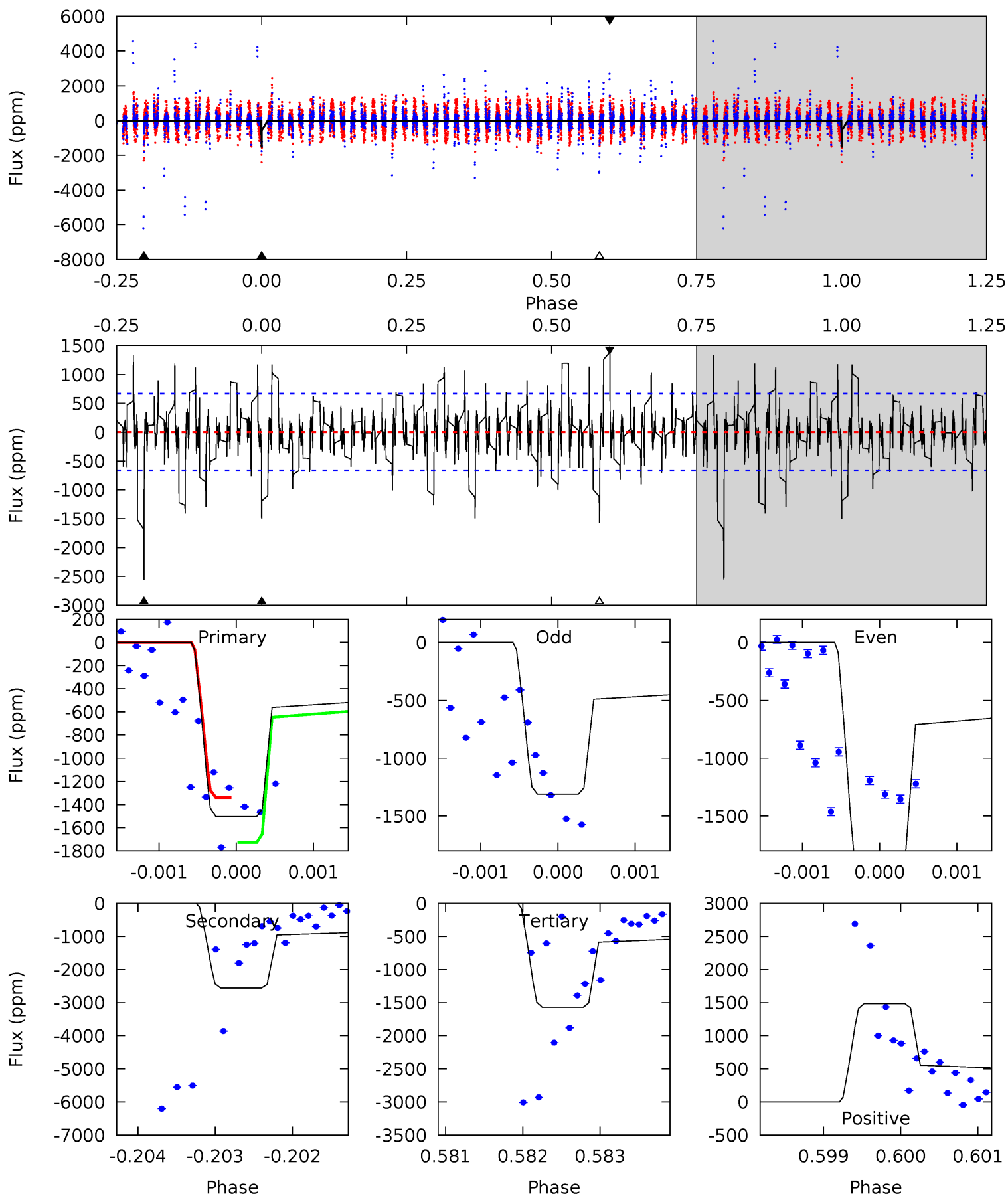
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	10.8	7.60	12.0	5.43	3.26	1.90	7.61	3.24	3.21	-1.16	3.57	0.81	0.44	0.53



Alt Model-Shift Uniqueness Test

003533551-10, P = 128.680643 Days, E = 45.451800 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	21.2	13.0	12.3	5.49	3.35	1.97	-0.57	0.16	8.17	8.91	2.23	1.18	0.37	1.61



Stellar Parameters For KIC 003533551

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6144^{+183}_{-183}	$4.165^{+0.351}_{-0.189}$	$-0.840^{+0.300}_{-0.300}$	$1.232^{+0.345}_{-0.422}$	$0.809^{+0.103}_{-0.051}$	$0.609^{+1.309}_{-0.304}$
	+3%/-3%	+8%/-5%	+36%/-36%	+28%/-34%	+13%/-6%	+215%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003533551-10 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-532 ± 49	$17.88^{+20.37}_{-12.29}$	609^{+55}_{-56}	3129^{+1414}_{-567}	195^{+1899}_{-151}
Alt.	-2561 ± 121	$19.93^{+20.19}_{-12.85}$	612^{+54}_{-60}	3908^{+1983}_{-779}	782^{+5282}_{-588}

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 $A_{obs} \gg 1.0$

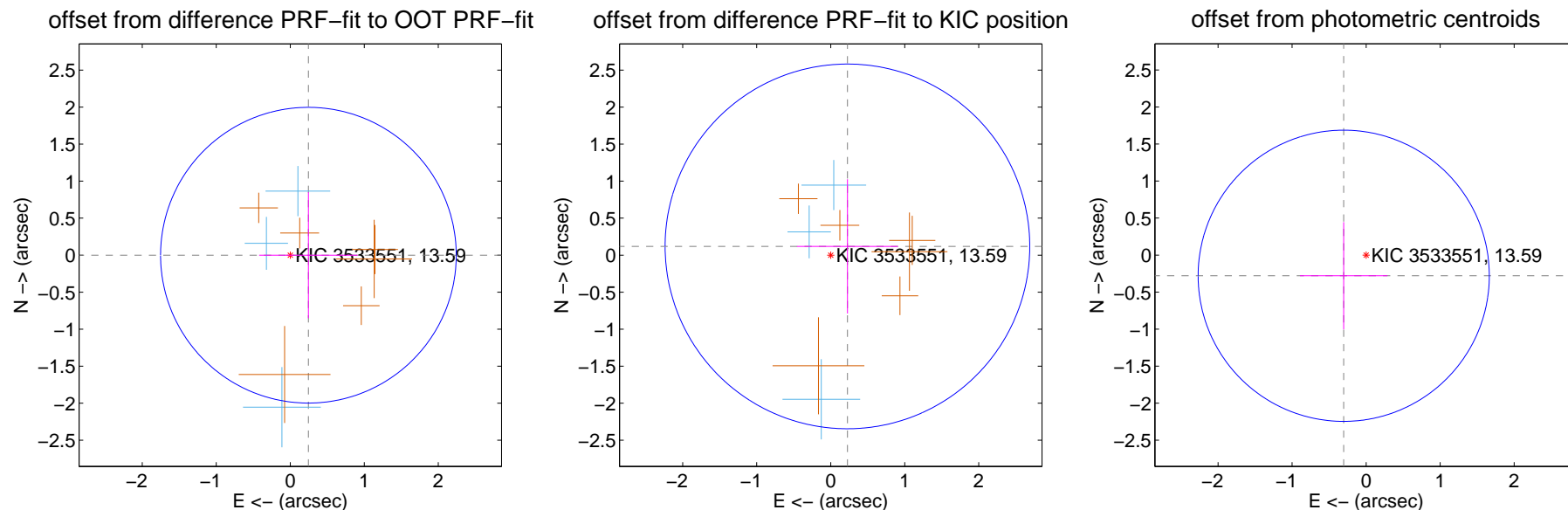
DV Centroid Data

Supplemental centroid analysis for 003533551-10. Kepler magnitude: 13.59. Transit SNR 8.80

There are 3 quarters with good PRF difference image offsets

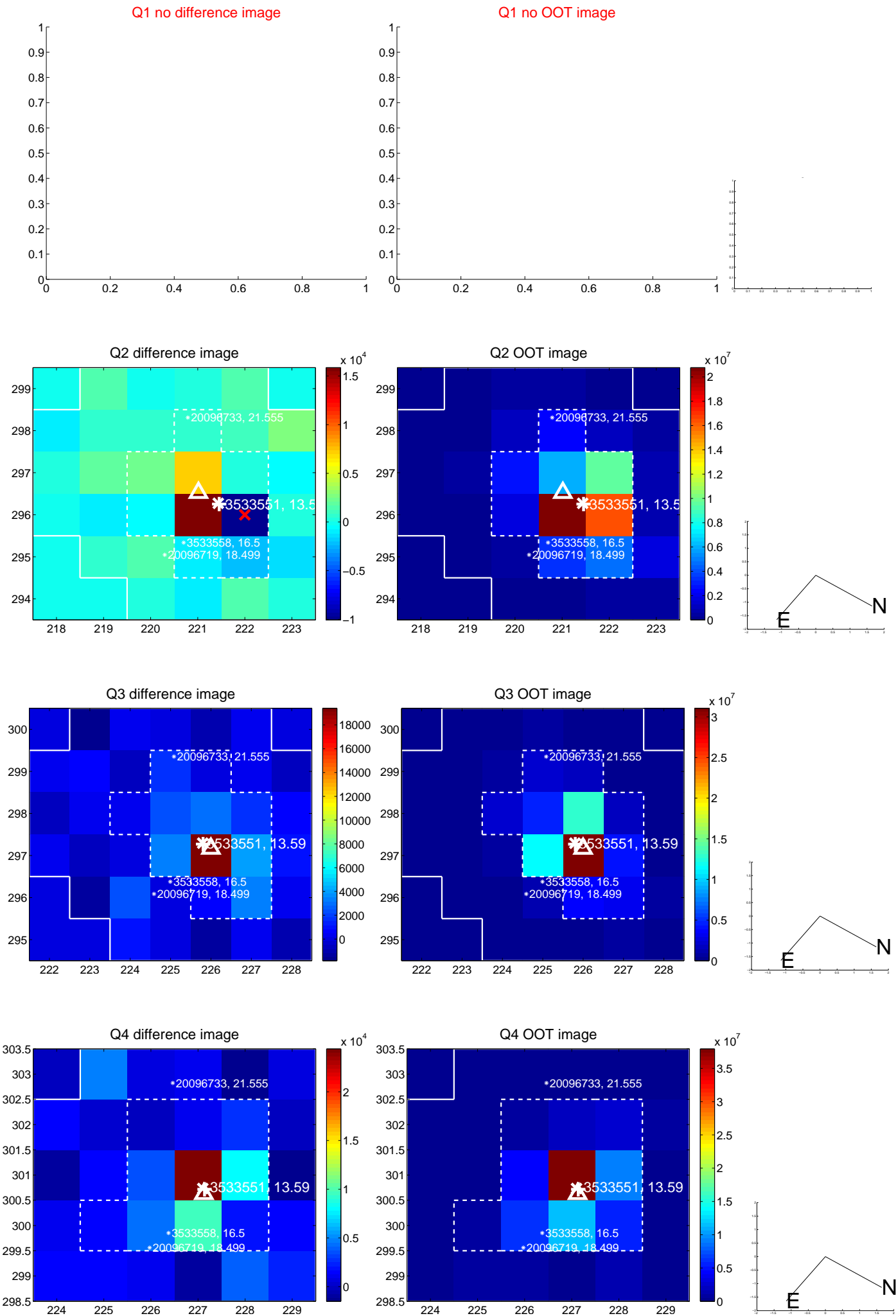
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.245 ± 0.666	0.37	-0.245 ± 0.666	-0.001 ± 0.851
PRF-fit source offset from KIC position	0.255 ± 0.821	0.31	-0.226 ± 0.682	0.118 ± 0.907
photometric centroid source offset	0.41 ± 0.66	0.63	0.30 ± 0.59	-0.28 ± 0.72



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.

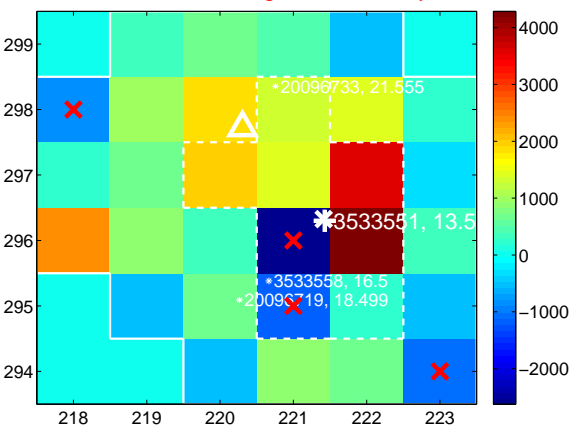
Q5 no difference image



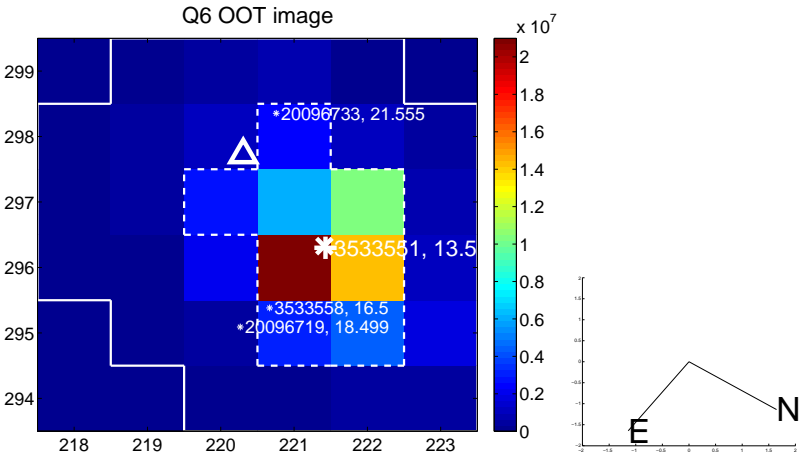
Q5 no OOT image



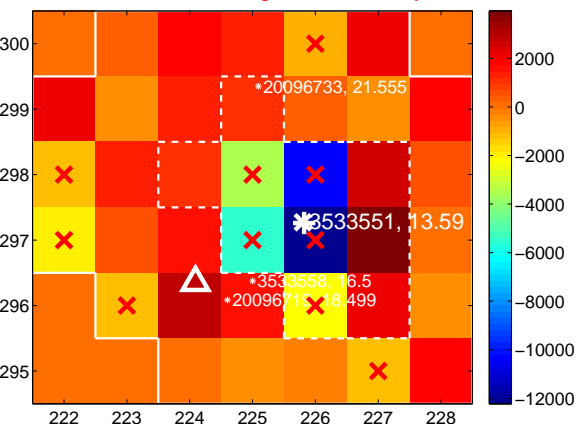
Q6 difference image. Poor Quality



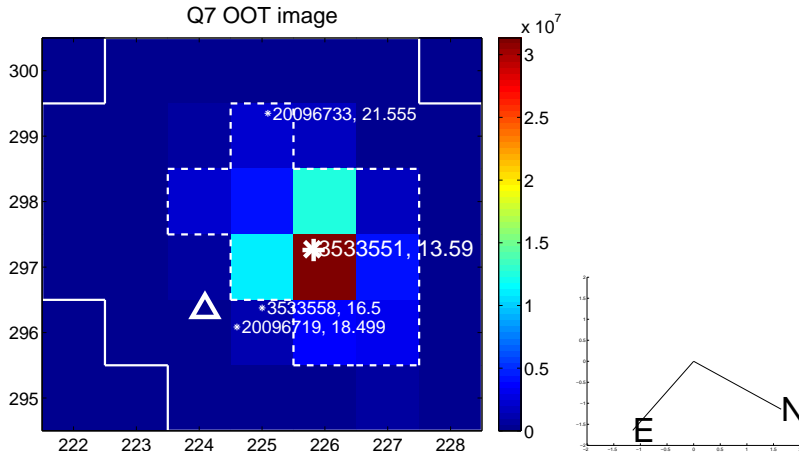
Q6 OOT image



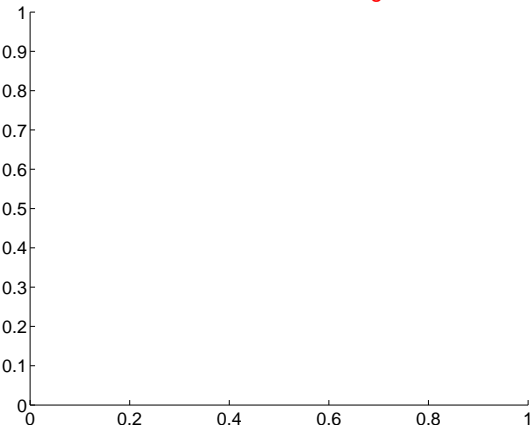
Q7 difference image. Poor Quality



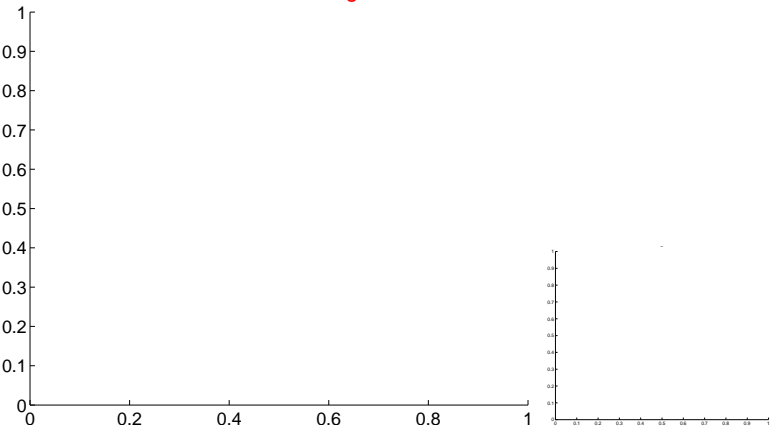
Q7 OOT image



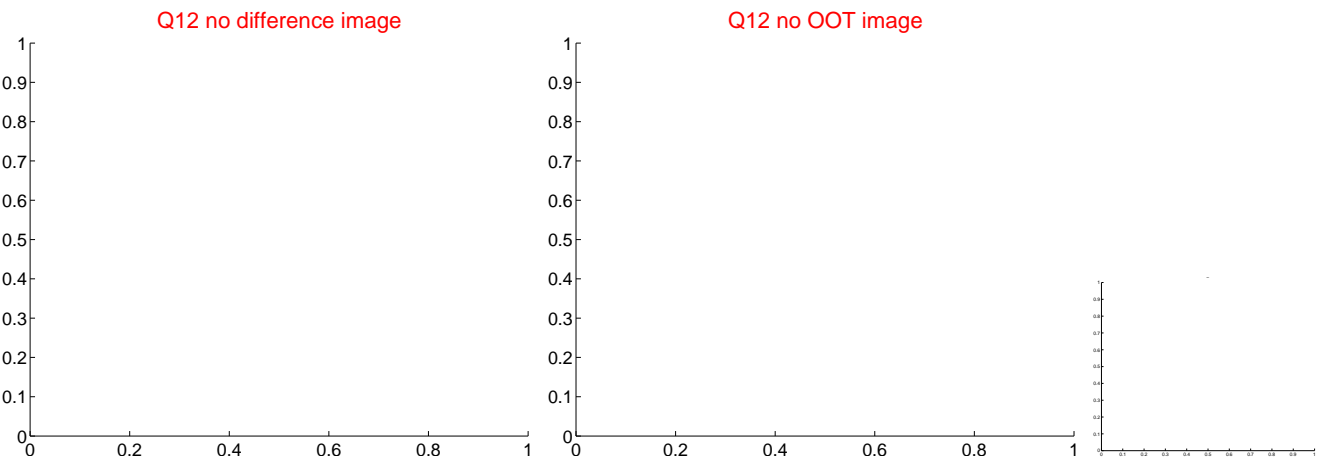
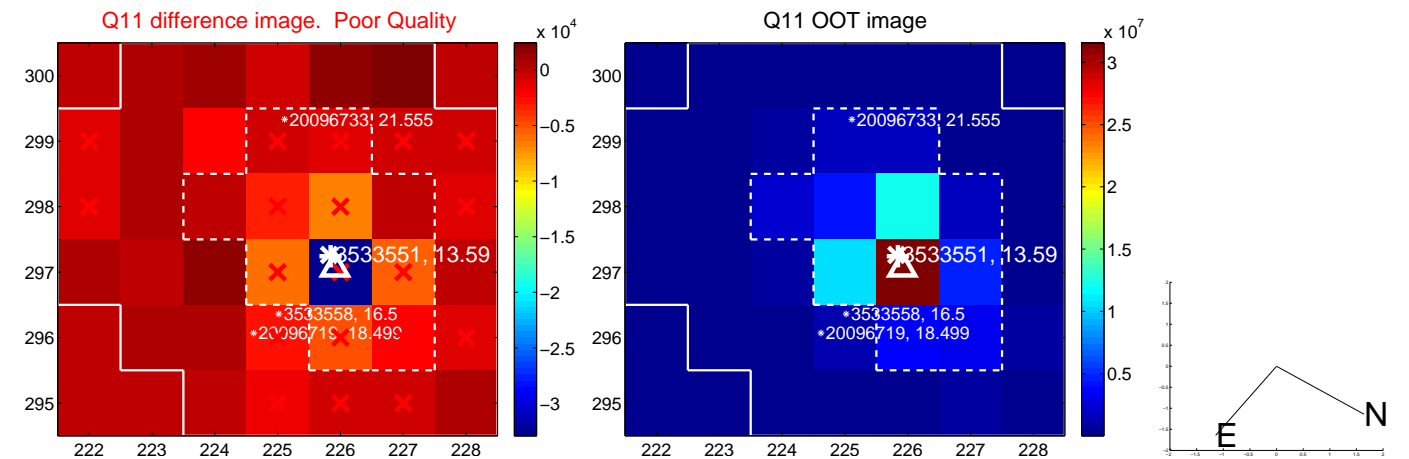
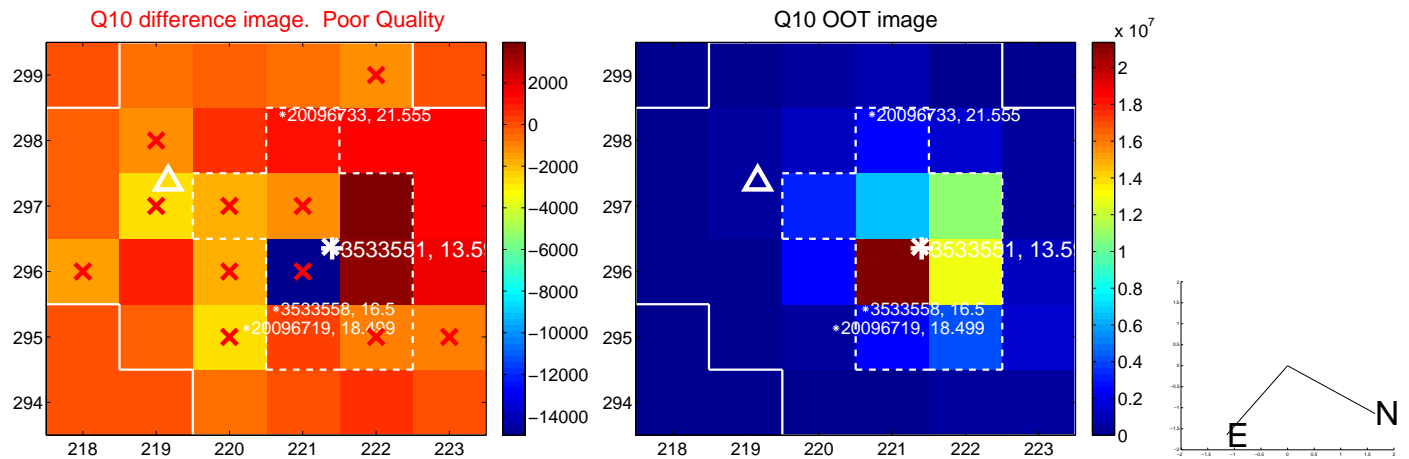
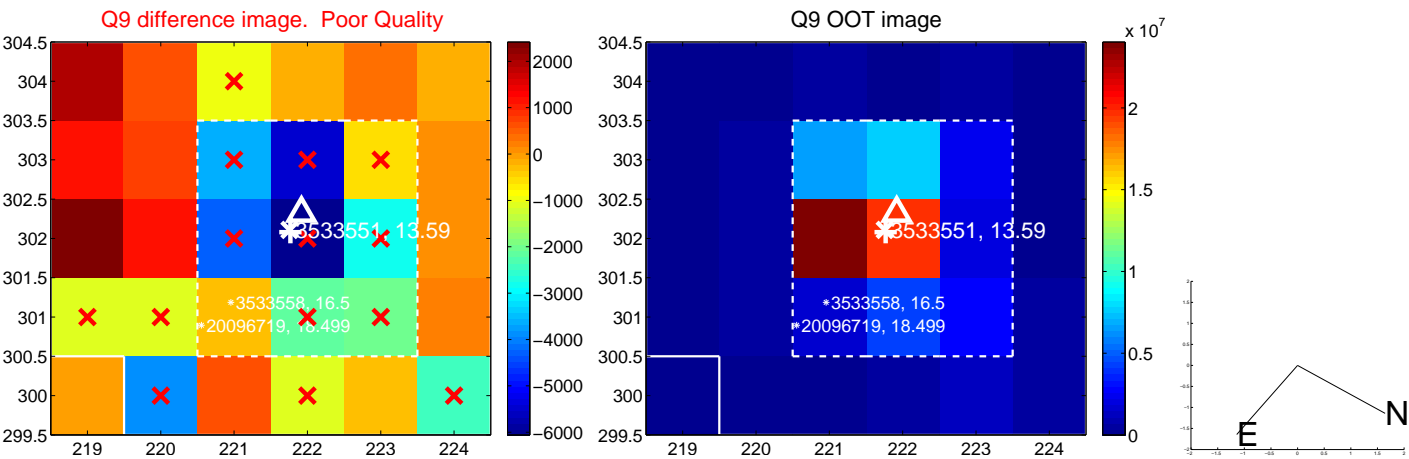
Q8 no difference image



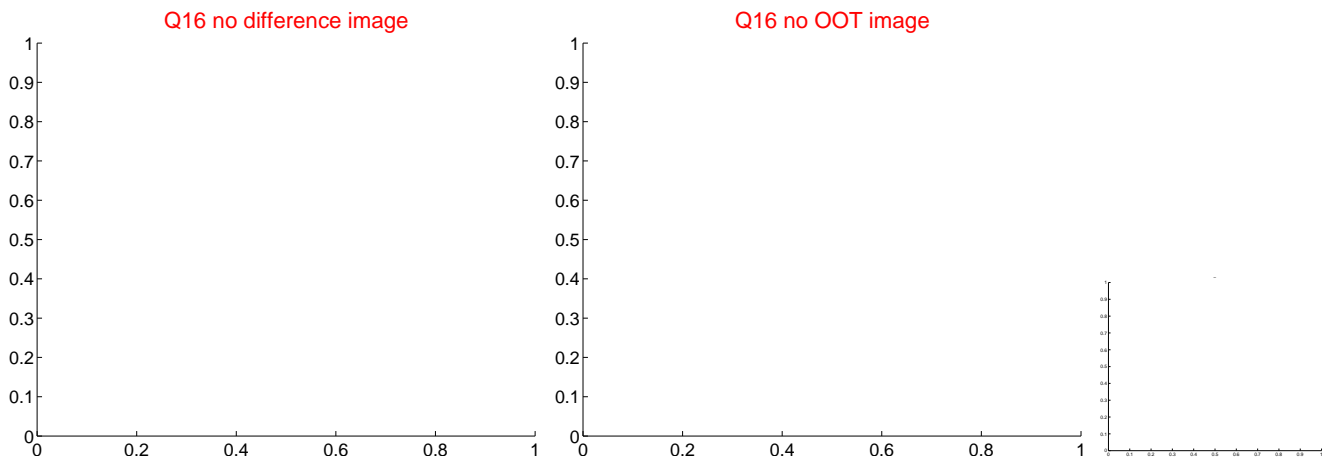
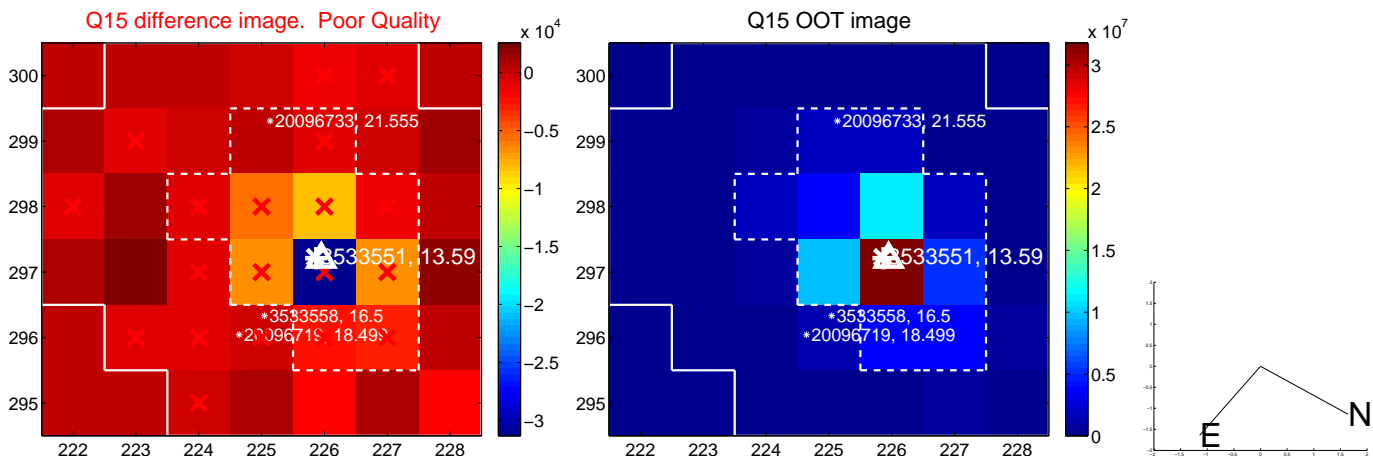
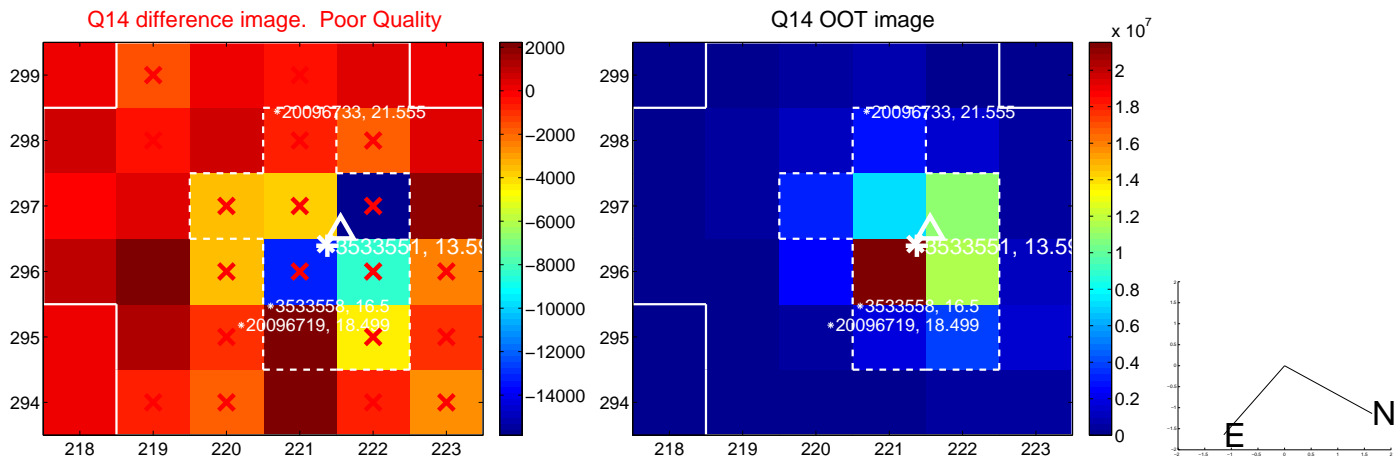
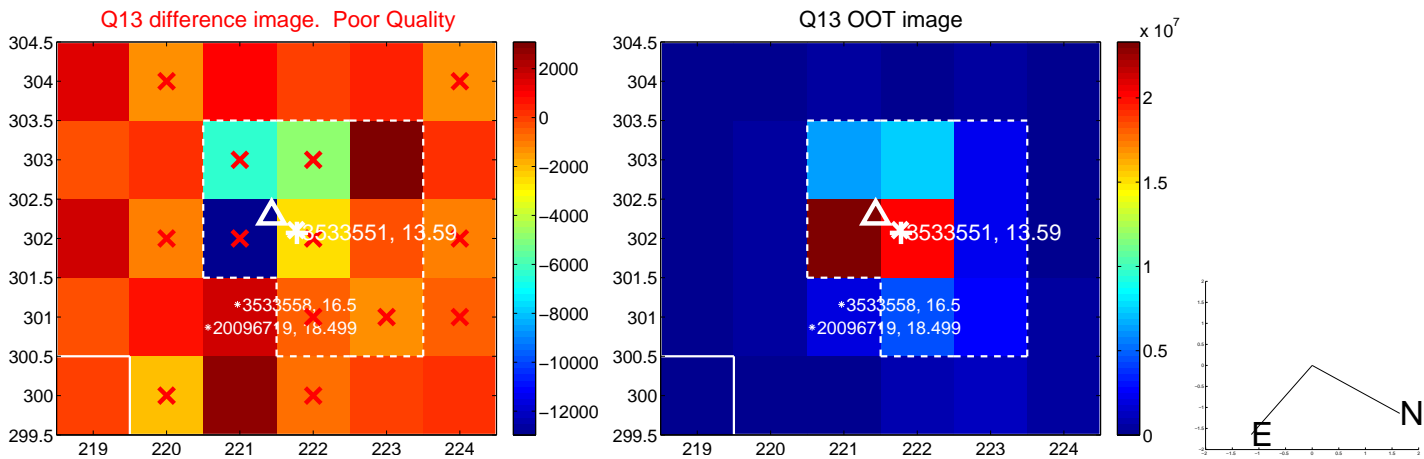
Q8 no OOT image



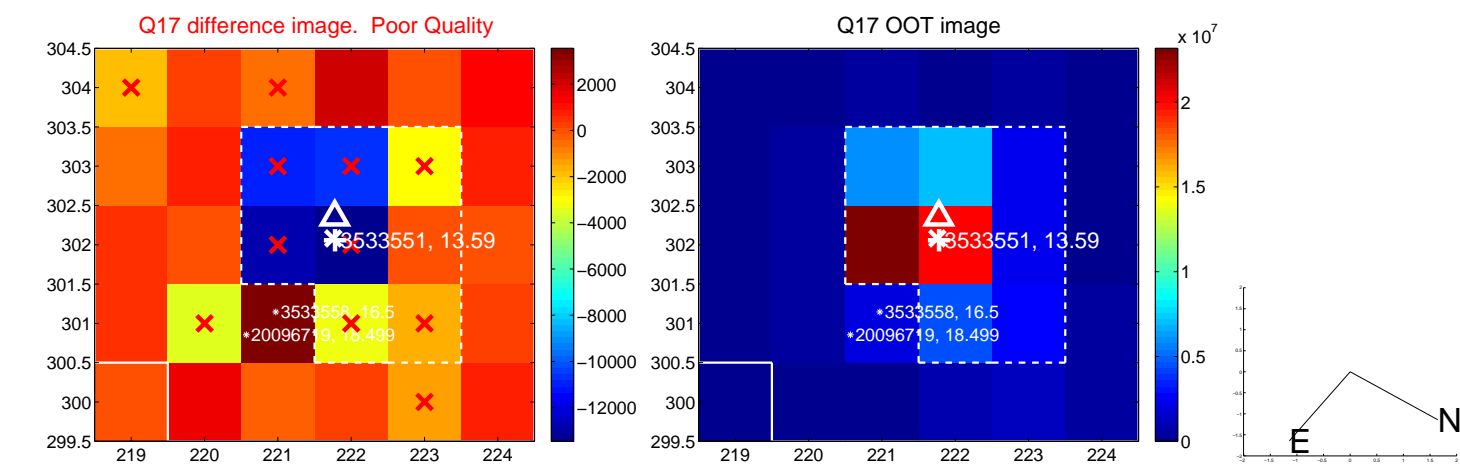
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



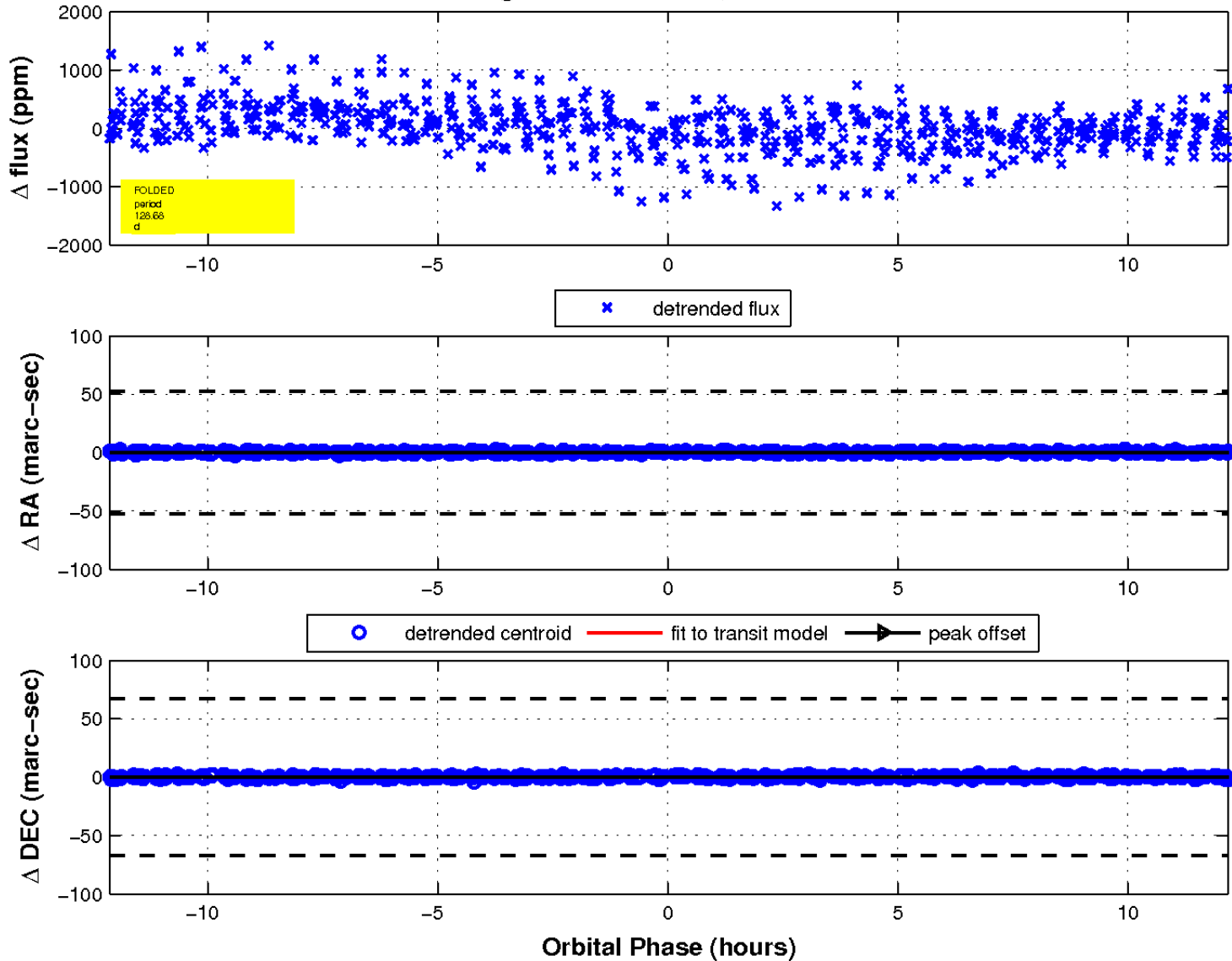
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 10 of 10



UKIRT Image

Declination

