

KIC 006356144

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})
006356144-01	OBS	No	358.800189	265.670890	1757.6	4.009	19.6	10.4	0.46	3764	1.94	0.06
006356144-02	OBS	No	556.578837	378.047496	846.3	11.200	18.0	4.0	0.46	3764	1.35	0.04
006356144-03	OBS	No	497.957672	519.652520	1233.4	2.809	14.9	6.2	0.46	3764	1.66	0.04
006356144-04	OBS	No	552.087287	414.974593	1402.1	3.770	15.9	6.5	0.46	3764	1.71	0.04
006356144-05	OBS	No	442.145493	507.544955	1952.1	13.965	13.9	8.7	0.46	3764	2.02	0.05
006356144-06	OBS	No	348.623008	330.101796	962.4	3.779	19.2	5.6	0.46	3764	1.44	0.07
006356144-07	OBS	No	454.712751	549.801536	1604.4	8.118	13.0	7.4	0.46	3764	1.86	0.05
006356144-08	OBS	No	489.683454	209.539948	782.1	7.500	12.6	-1.0	0.46	3764	1.28	0.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006356144-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_KIC_POS
006356144-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—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
006356144-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006356144-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_UNCERTAIN
006356144-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
006356144-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

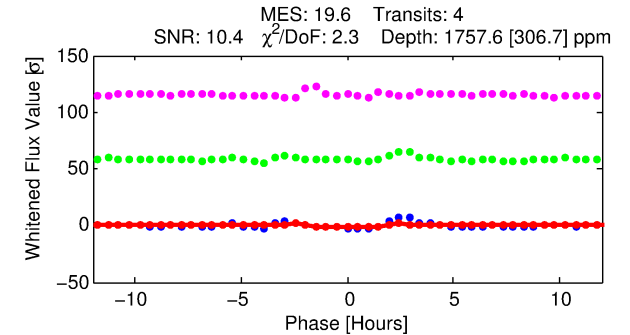
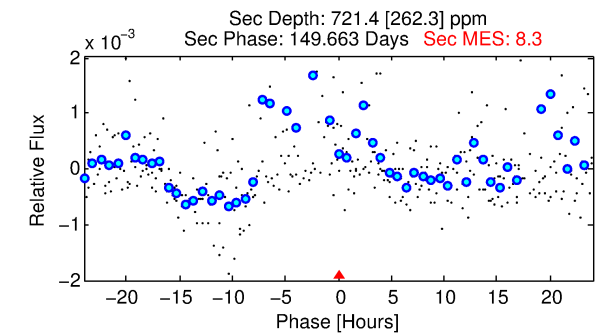
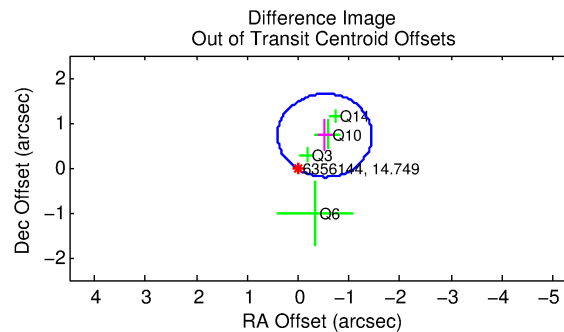
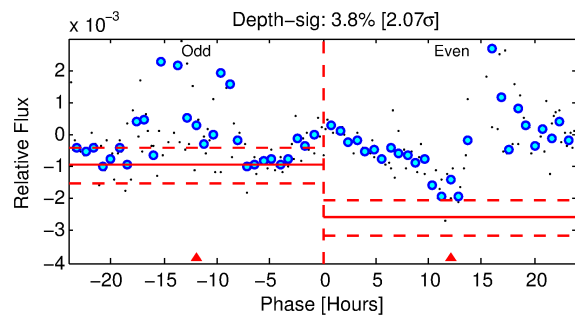
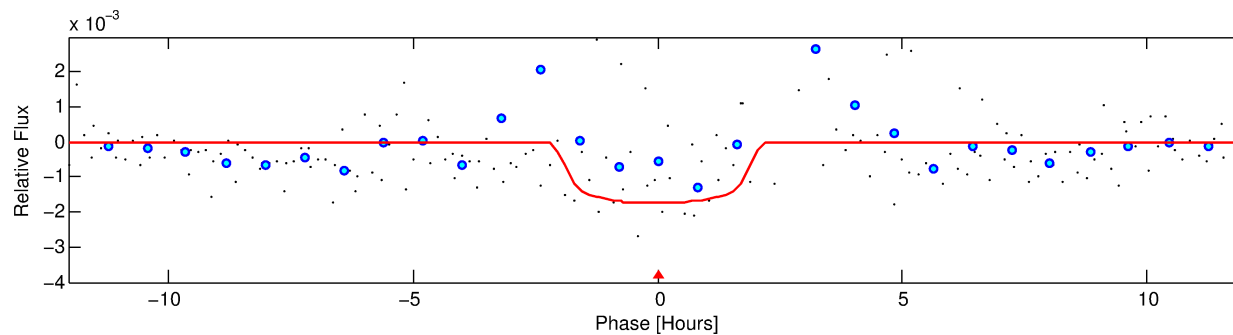
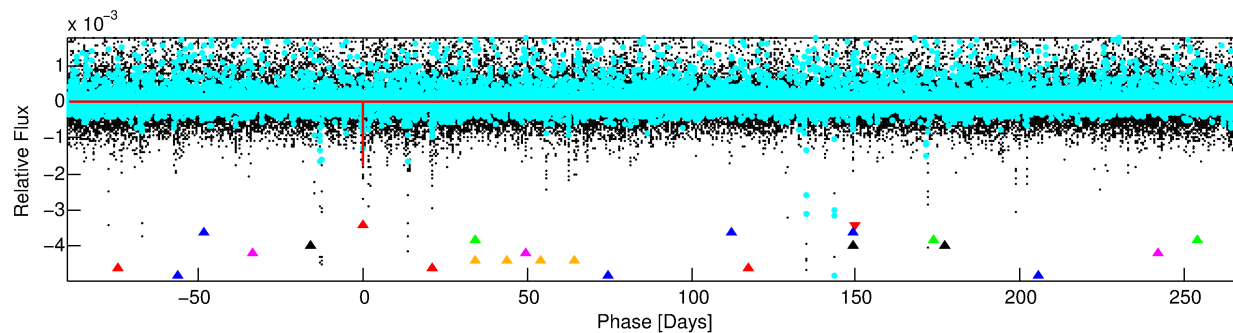
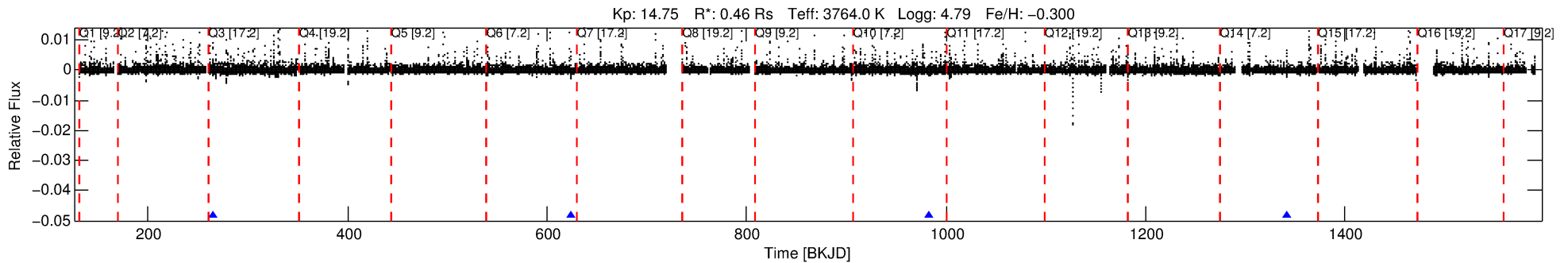
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006356144-01

No Significant Match Found

DV One-Page Summary

KIC: 6356144 Candidate: 1 of 8 Period: 358.800 d



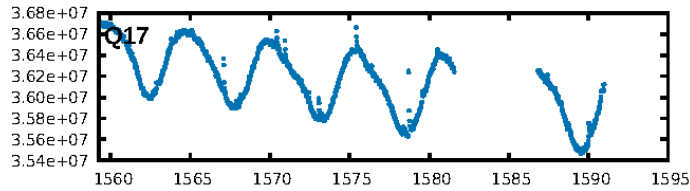
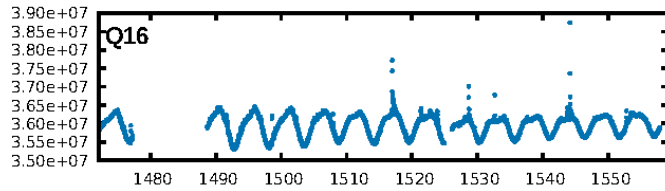
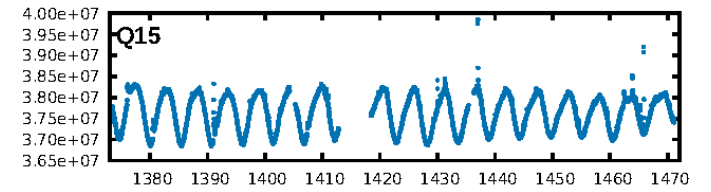
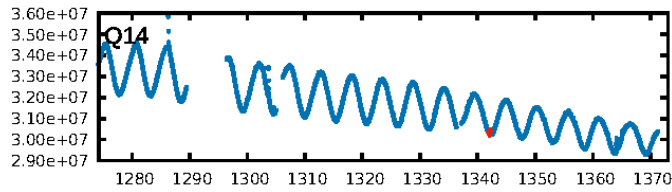
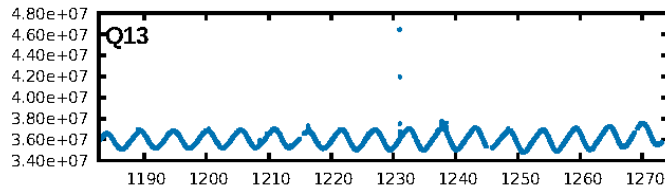
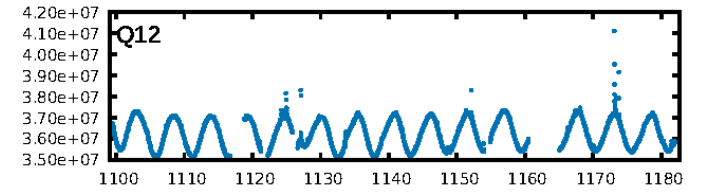
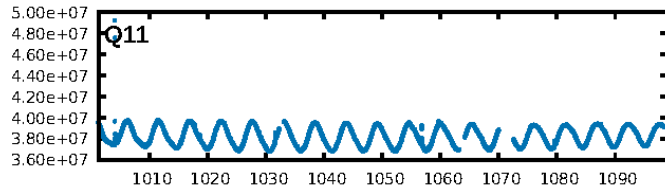
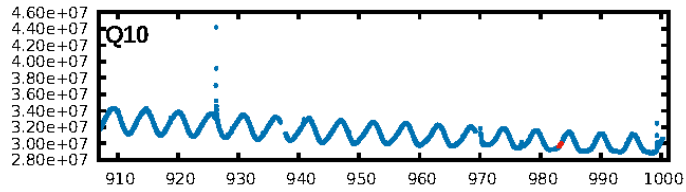
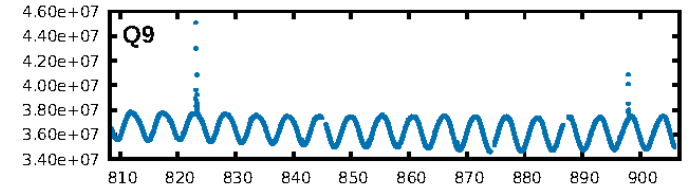
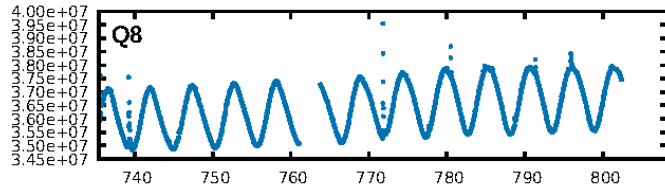
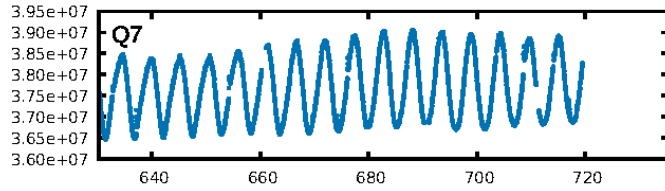
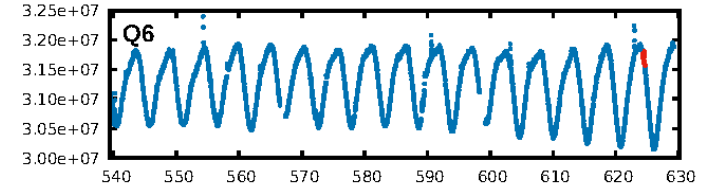
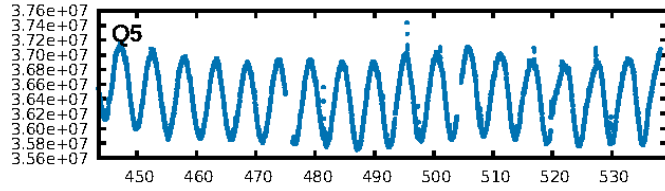
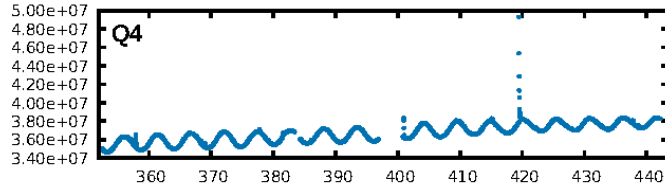
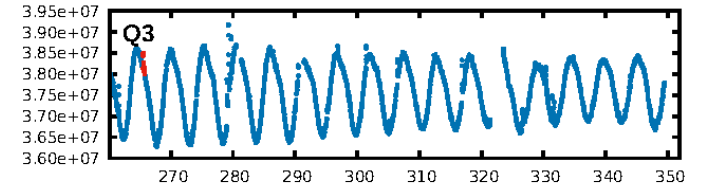
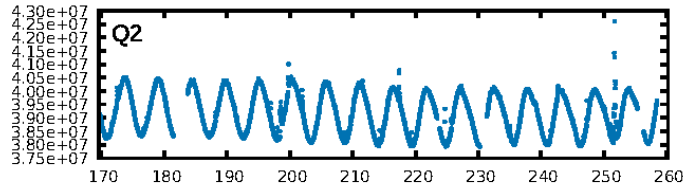
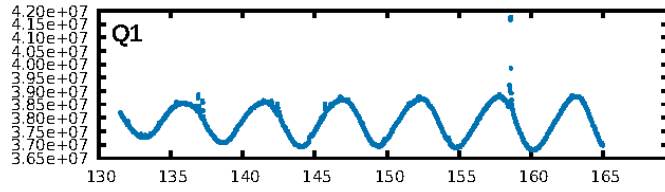
DV Fit Results:

Period = 358.80019 [0.00429] d
Epoch = 265.6709 [0.0084] BKJD
Rp/R* = 0.0388 [0.0654]
a/R* = 672.87 [5572.38]
b = 0.33 [22.12]
Seff = 0.06 [0.01]
Teq = 128 [3] K
Rp = 1.93 [3.27] Re
a = 0.7666 [0.0482] AU
Ag = 62315.34 [211439.65] [0.29 σ]
Teffp = 3132 [2656] K [1.13 σ]

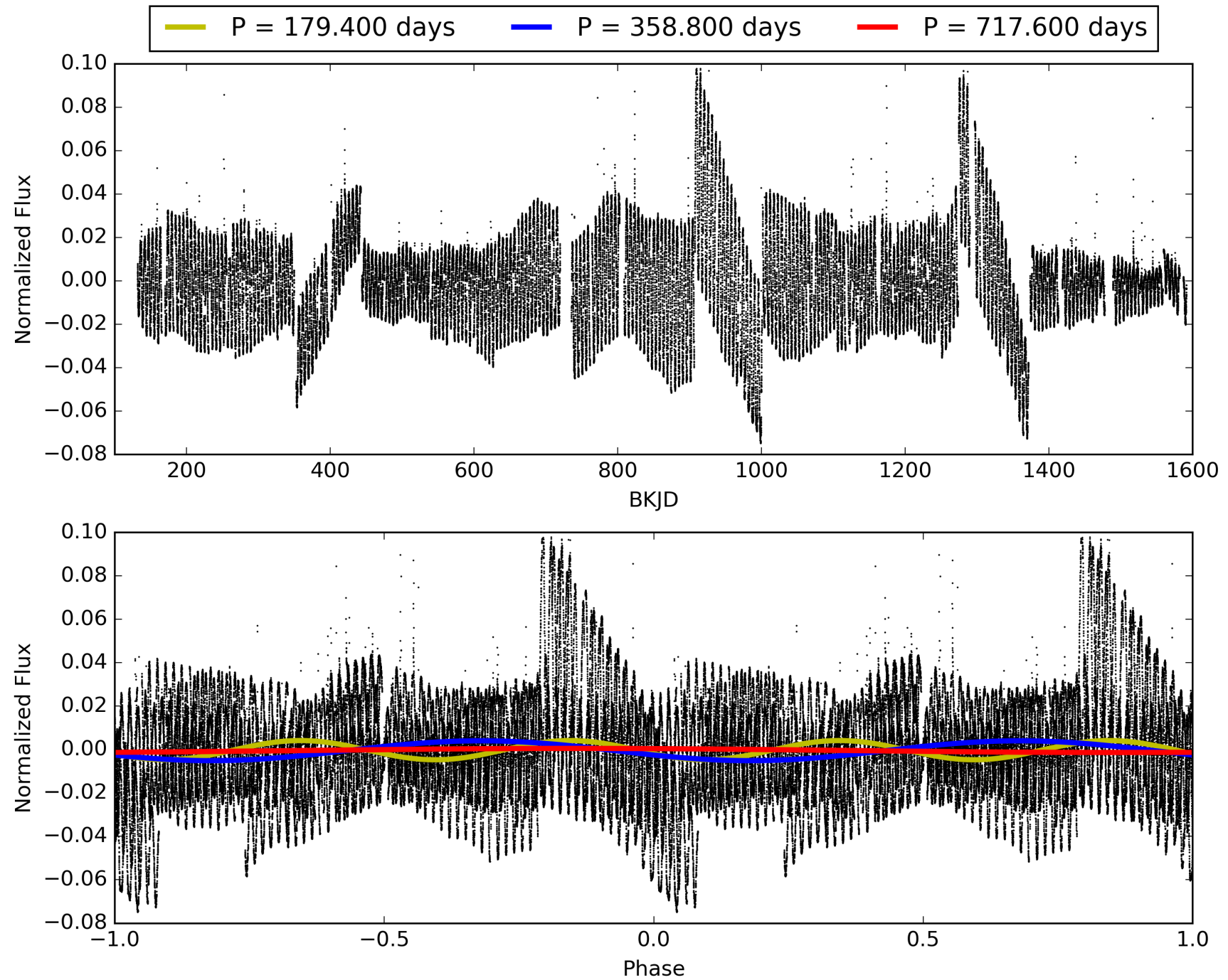
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [44.34 σ]
LongPeriod-sig: 100.0% [137.68 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 2.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4697
Centroid-sig: 40.9%
Centroid-so: 1.098 arcsec [1.28 σ]
OotOffset-rm: 0.889 arcsec [2.88 σ]
KicOffset-rm: 0.066 arcsec [0.32 σ]
OotOffset-st: 3/1/0/0 [4]
KicOffset-st: 3/1/0/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 006356144-01, PDC Light Curves

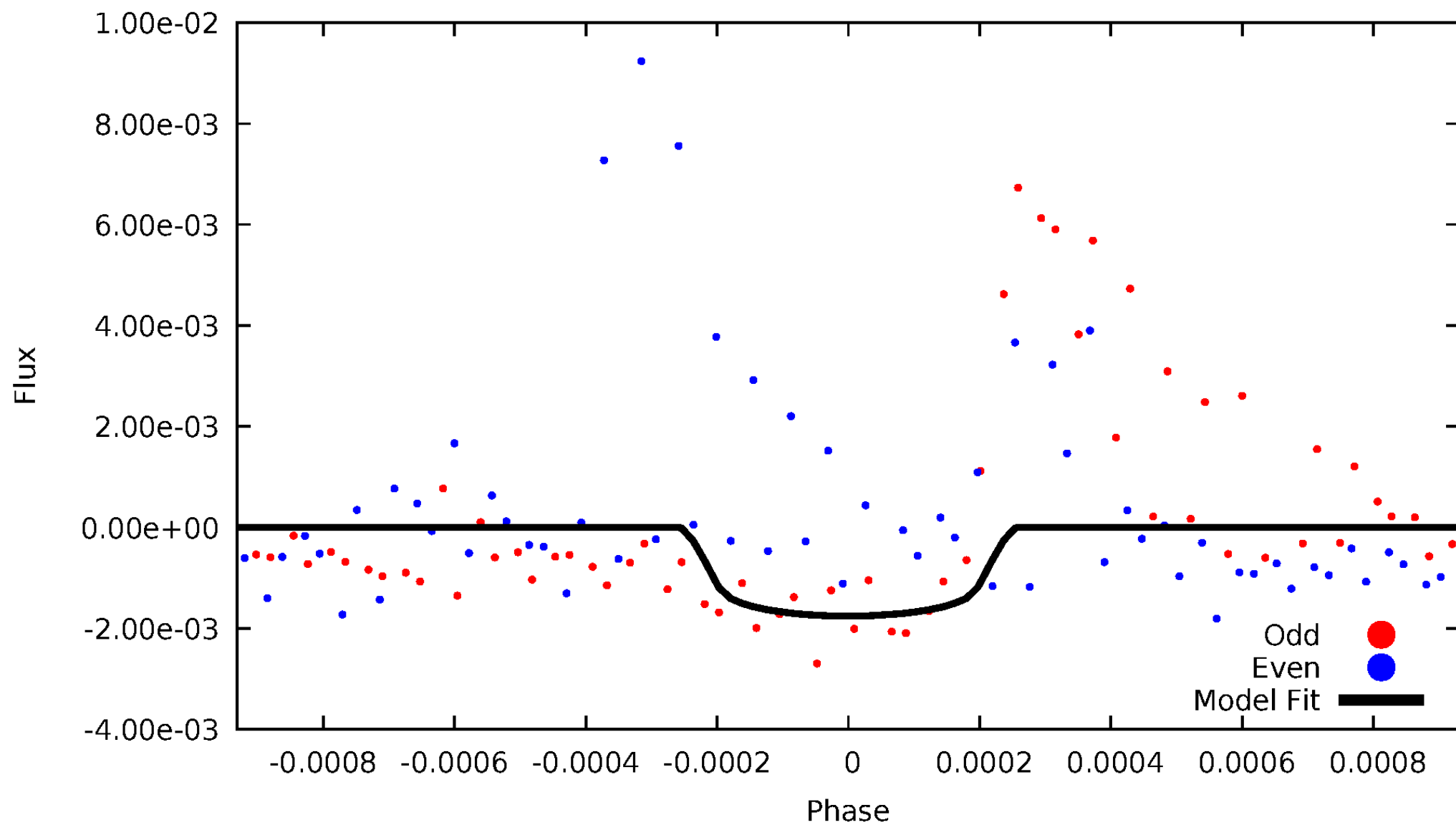


TCE 006356144-01



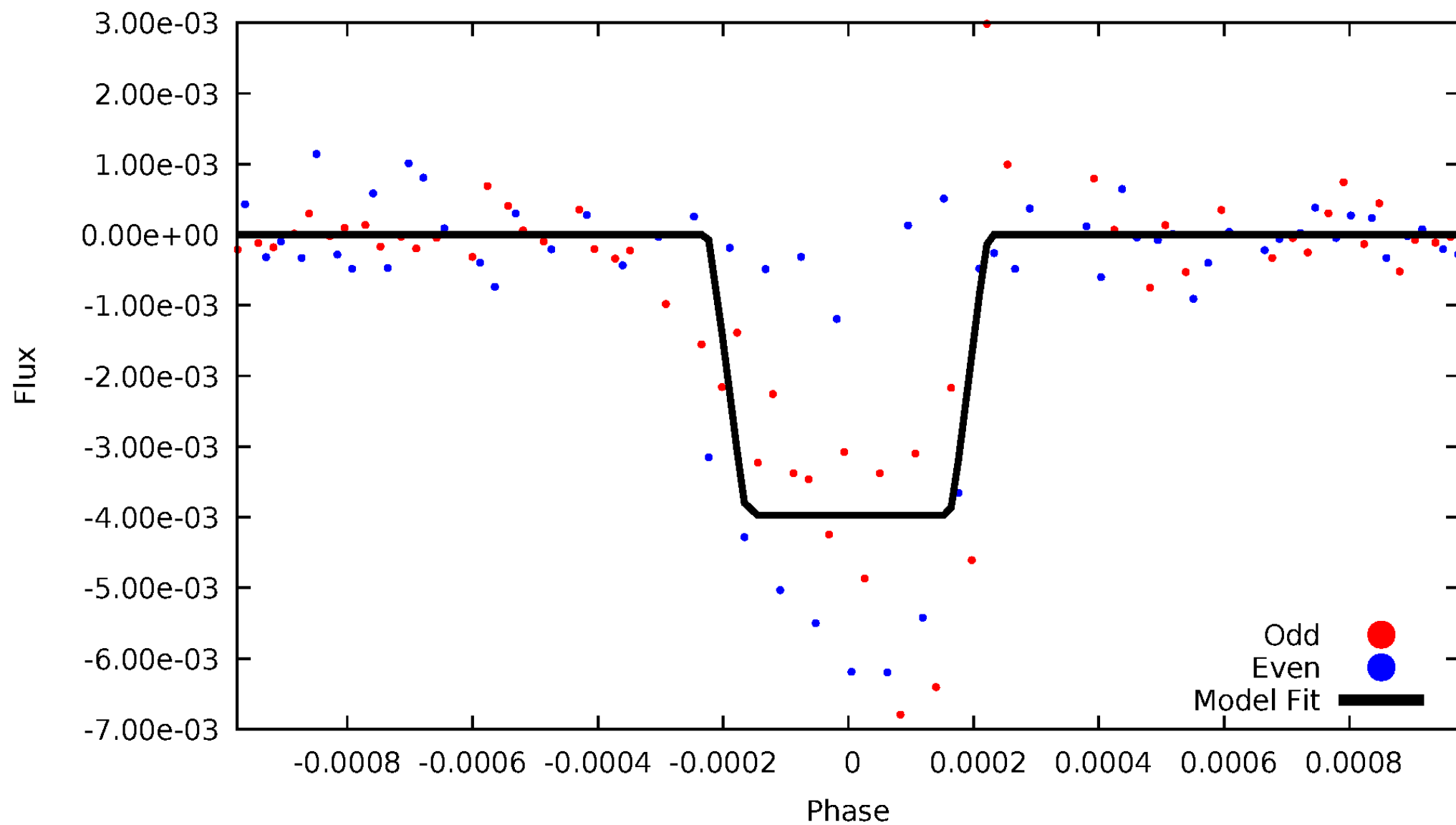
DV Odd/Even

TCE 006356144-01



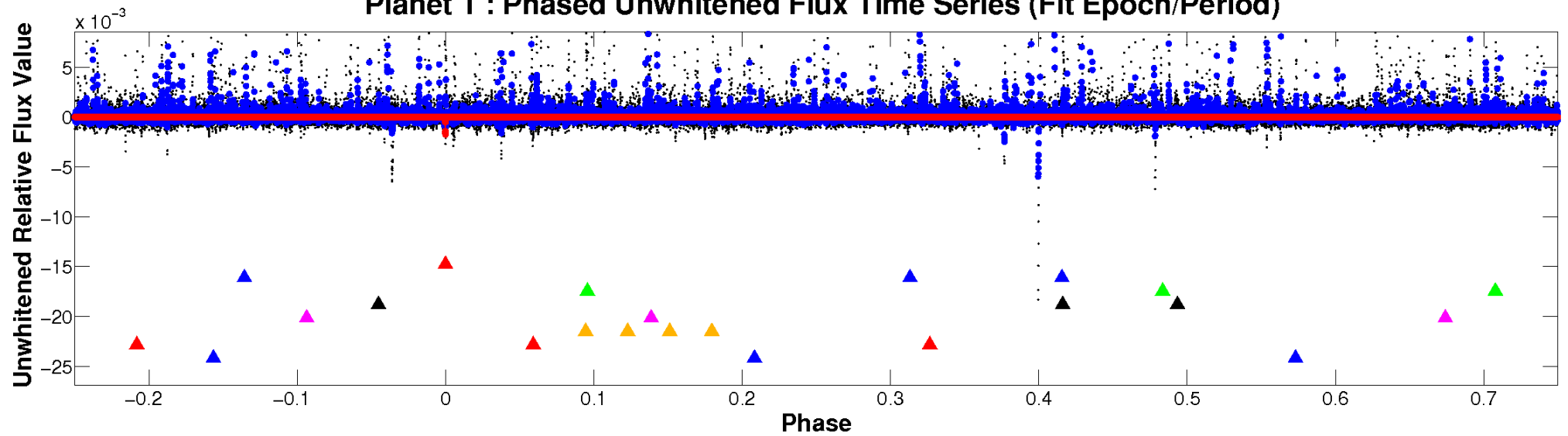
ALT Odd/Even

TCE 006356144-01

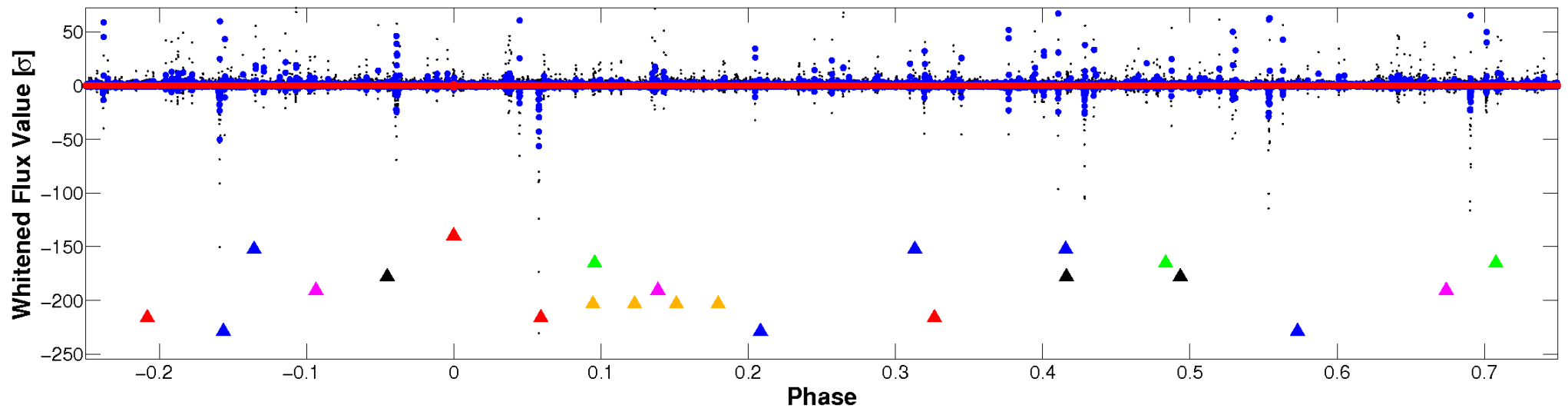


Non-Whitened Vs. Whitened Light Curve

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

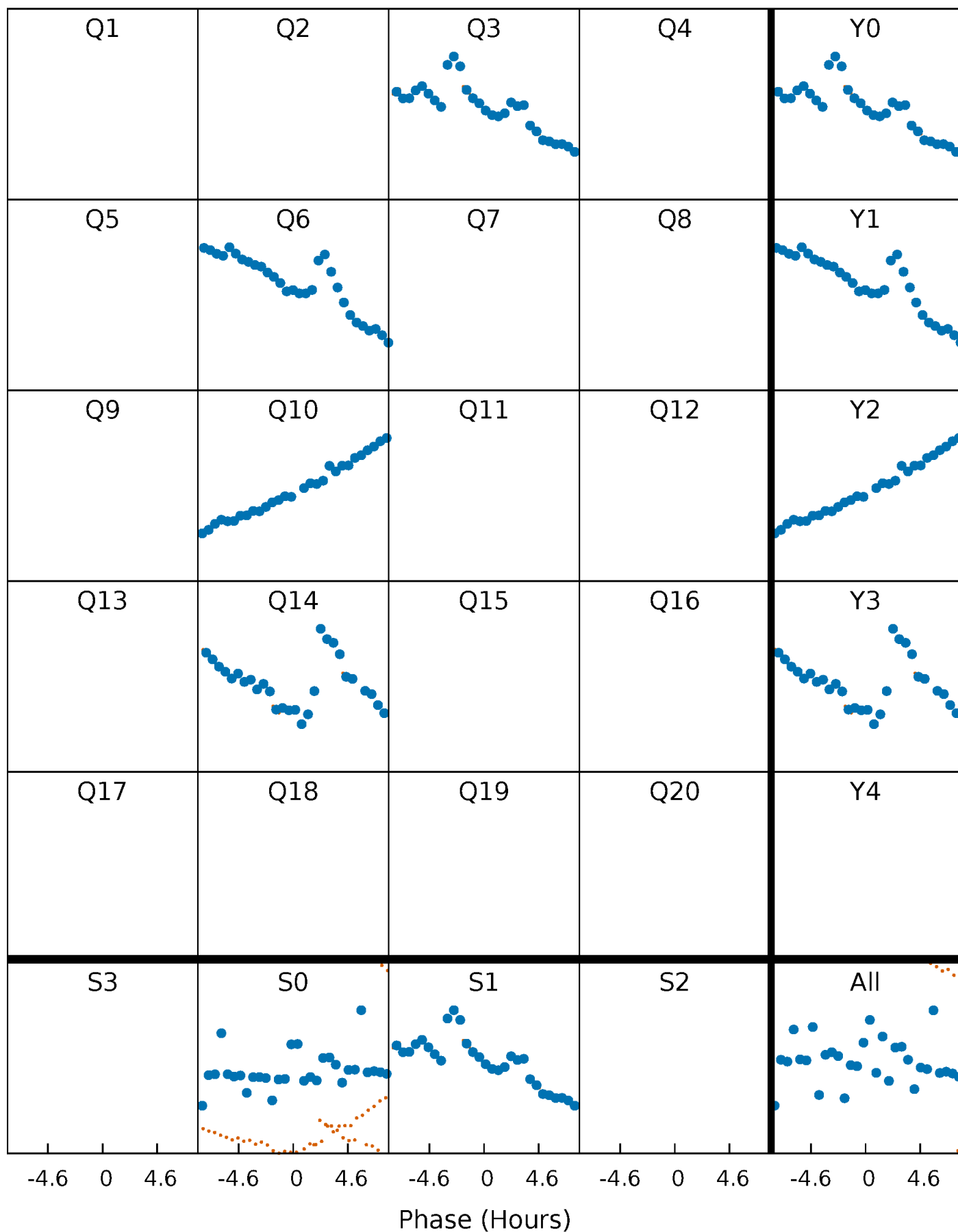


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



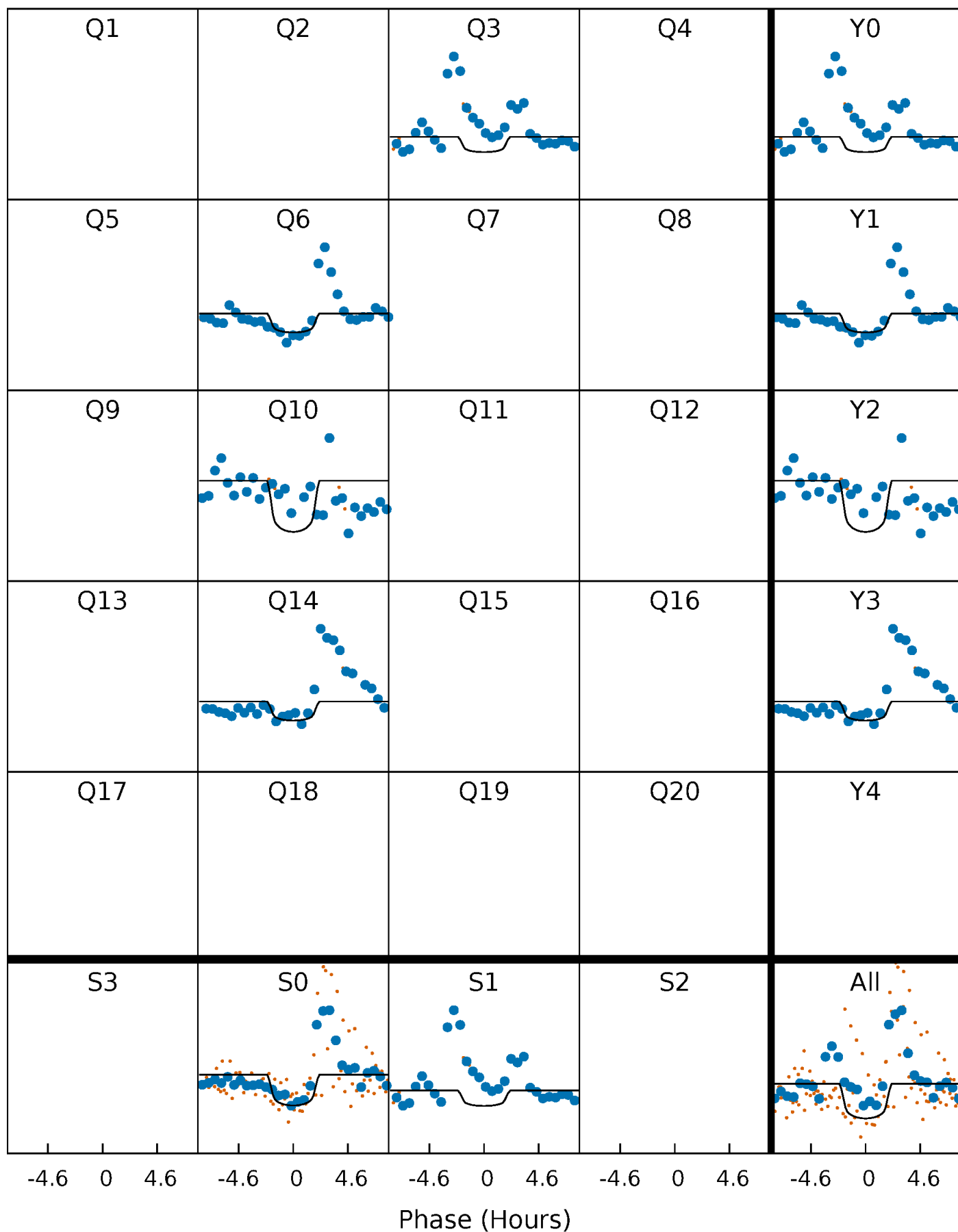
PDC Quarter-Phased Transit Curves

TCE 006356144-01 P=358.800189 Days $T_0=265.670890$ (BKJD)



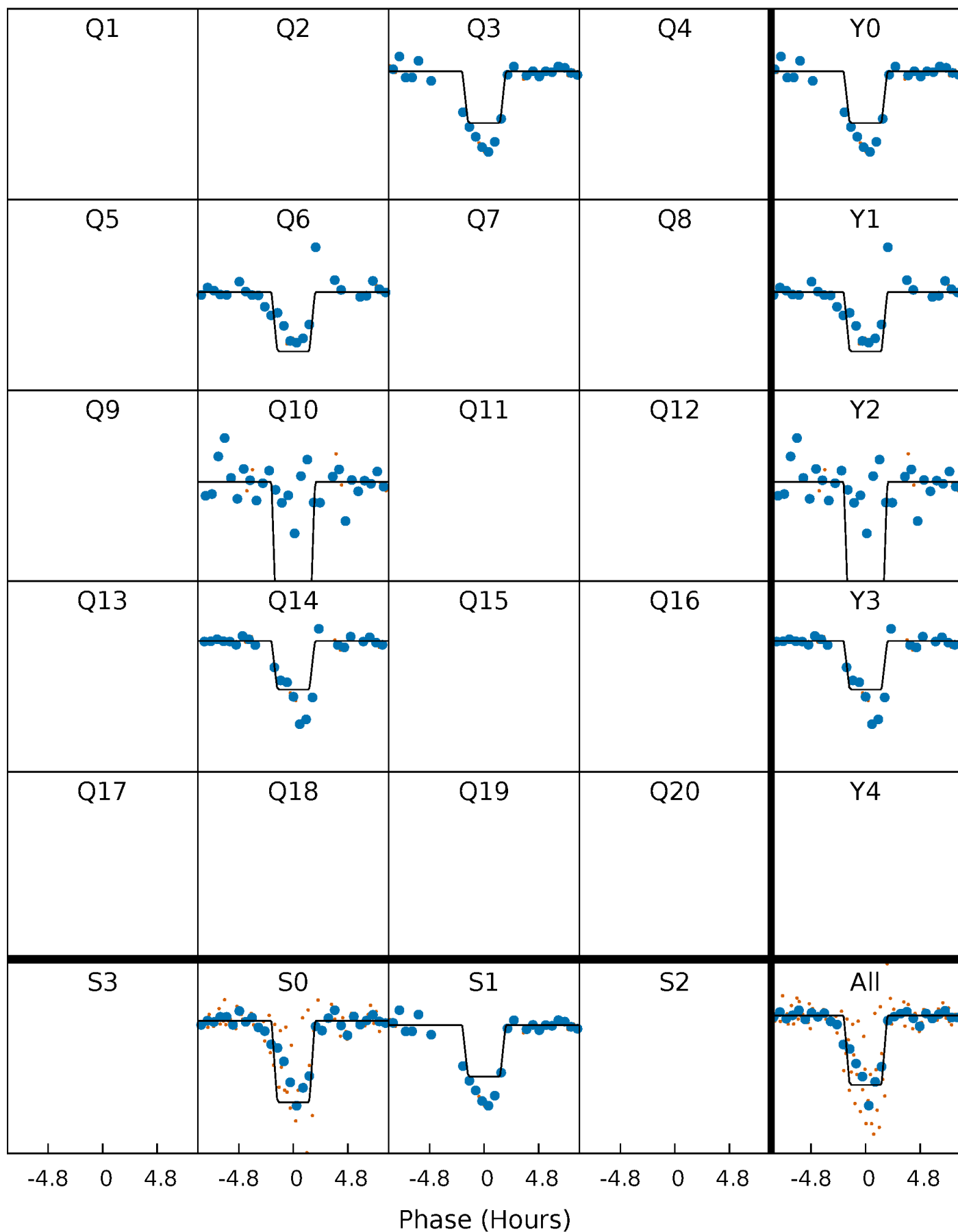
DV Quarter-Phased Transit Curves

TCE 006356144-01 P=358.800189 Days $T_0=265.670890$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

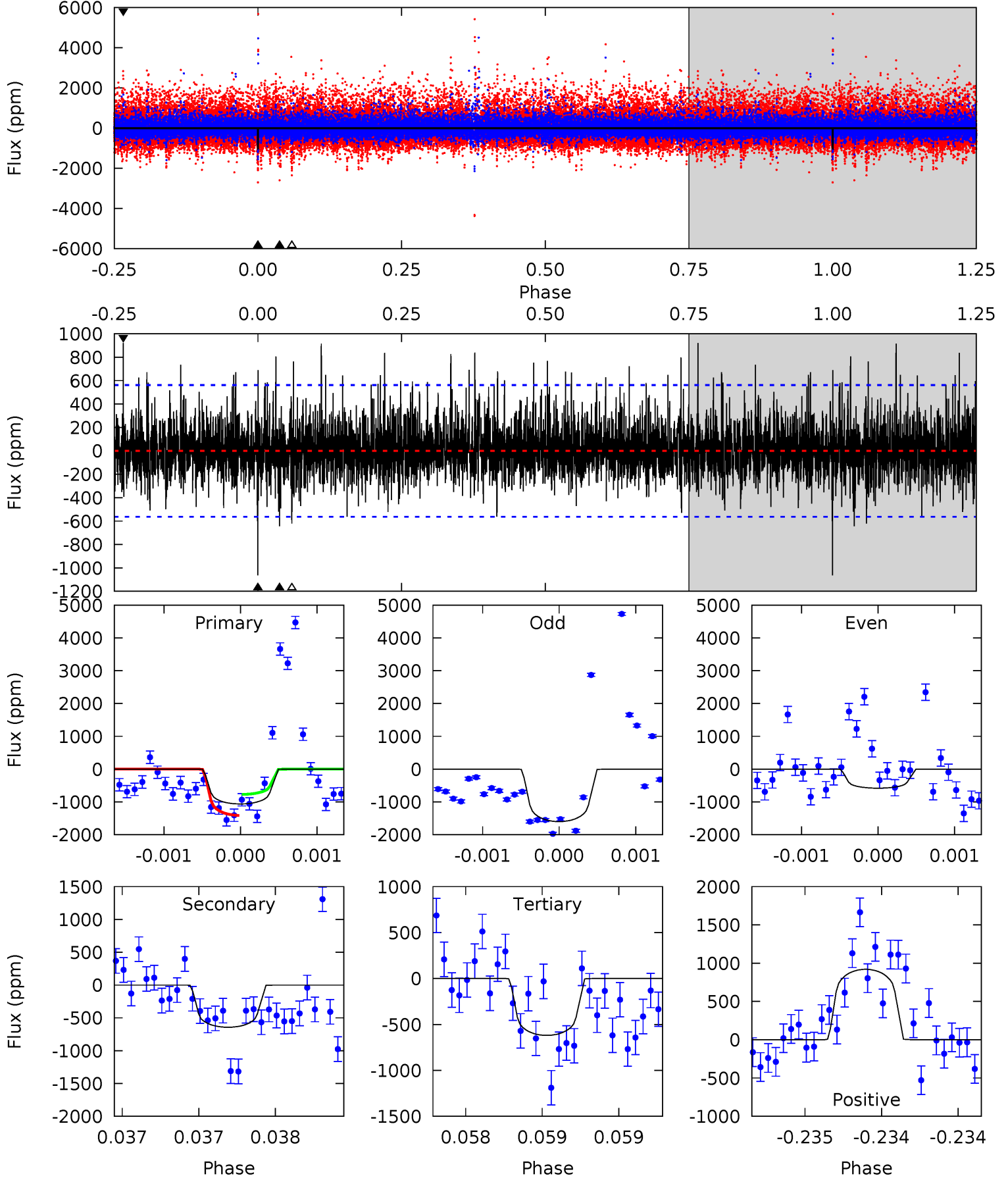
TCE 006356144-01 P=358.798185 Days $T_0=265.678541$ (BKJD)



DV Model-Shift Uniqueness Test

006356144-01, P = 358.800189 Days, E = 265.670890 Days

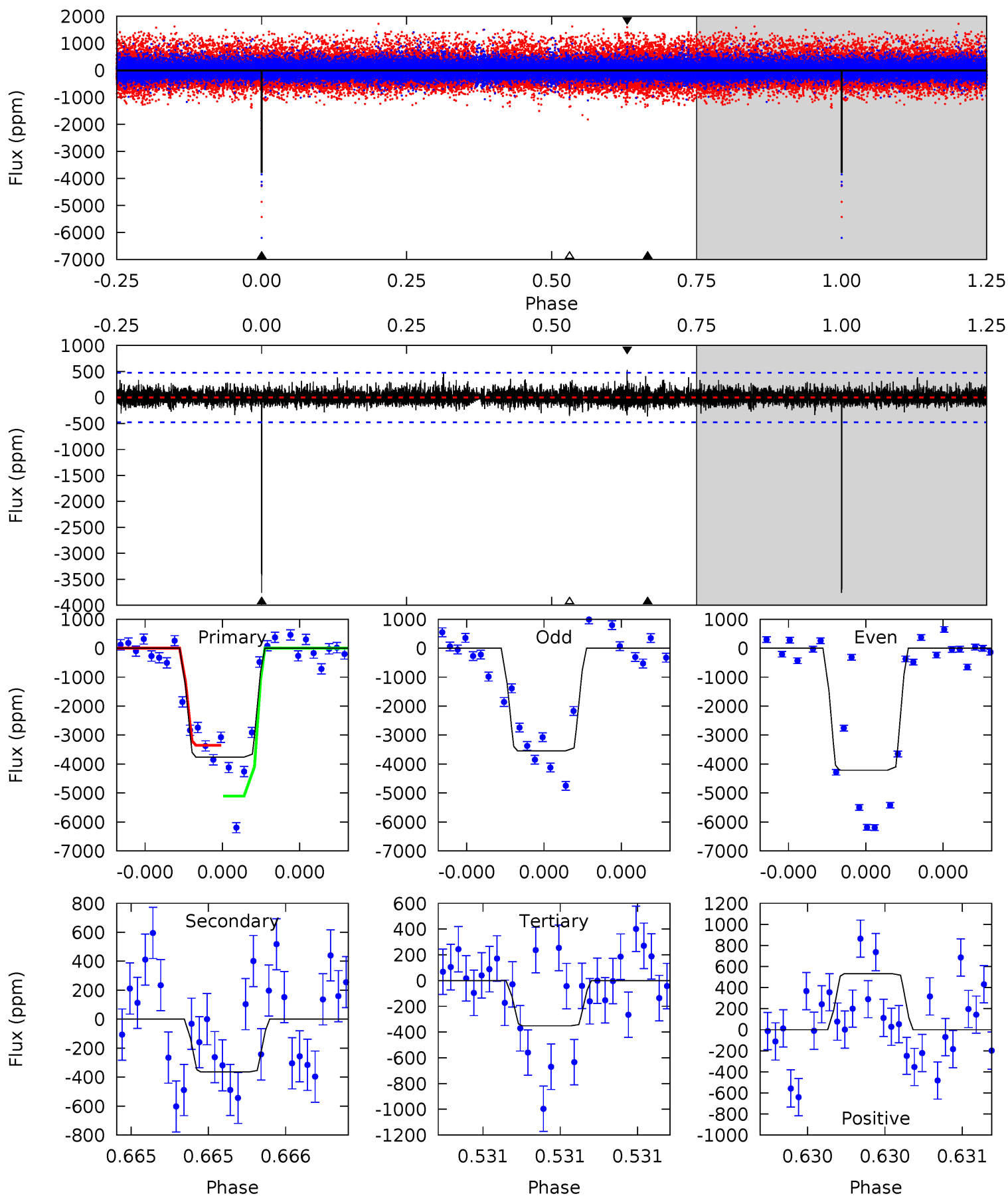
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	6.36	6.13	9.10	5.57	3.47	1.74	4.39	1.42	0.24	-2.73	3.88	0.56	0.46	3.19



Alt Model-Shift Uniqueness Test

006356144-01, P = 358.798185 Days, E = 265.678541 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.2	4.28	4.14	6.25	5.60	3.53	0.98	40.1	38.0	0.15	-1.97	4.41	0.86	0.12	9.65



Stellar Parameters For KIC 006356144

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3764^{+60}_{-60}	$4.787^{+0.042}_{-0.025}$	$-0.300^{+0.100}_{-0.100}$	$0.457^{+0.028}_{-0.037}$	$0.466^{+0.031}_{-0.031}$	$6.897^{+1.350}_{-0.775}$
	+2%/-2%	+1%/-1%	+33%/-33%	+6%/-8%	+7%/-7%	+20%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006356144-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-643 ± 101	$3.01^{+2.93}_{-1.92}$	179^{+4}_{-4}	2869^{+1119}_{-441}	$21630^{+148711}_{-15707}$
Alt.	-364 ± 85	$3.91^{+3.10}_{-2.52}$	179^{+4}_{-4}	2511^{+797}_{-340}	7748^{+52516}_{-5510}

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

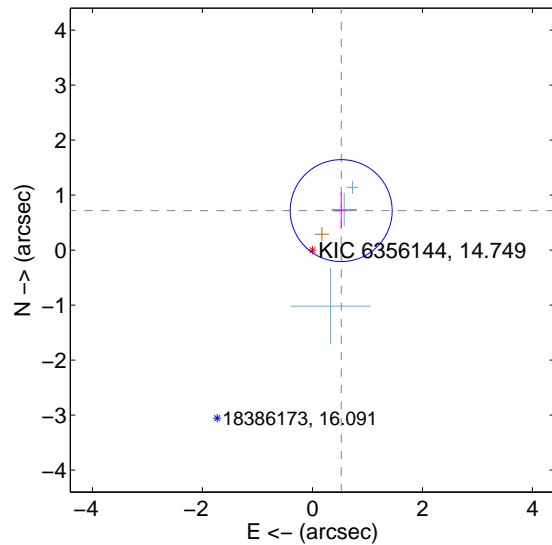
Supplemental centroid analysis for 006356144-01. Kepler magnitude: 14.75. Transit SNR 10.44

There are 3 quarters with good PRF difference image offsets

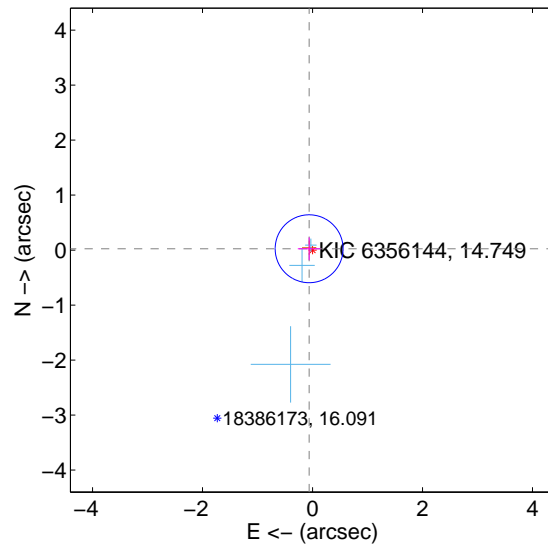
The direct PRF centroid is offset from the target star catalog position by about 1.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.889 ± 0.309	2.88	-0.523 ± 0.128	0.718 ± 0.330
PRF-fit source offset from KIC position	0.066 ± 0.206	0.32	0.062 ± 0.206	0.024 ± 0.206
photometric centroid source offset	1.10 ± 0.86	1.28	0.11 ± 0.61	-1.09 ± 0.86

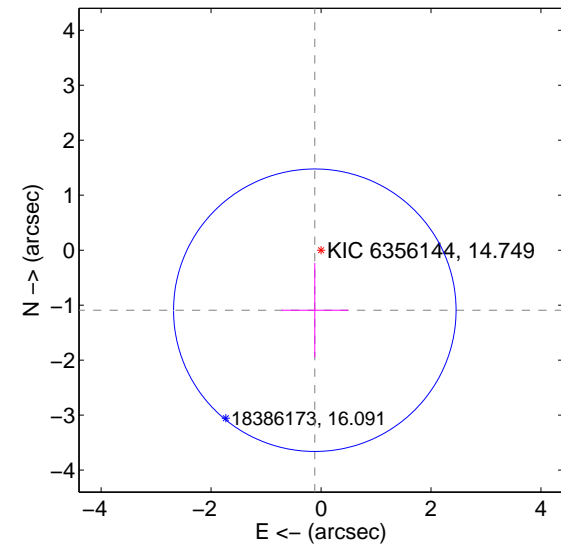
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

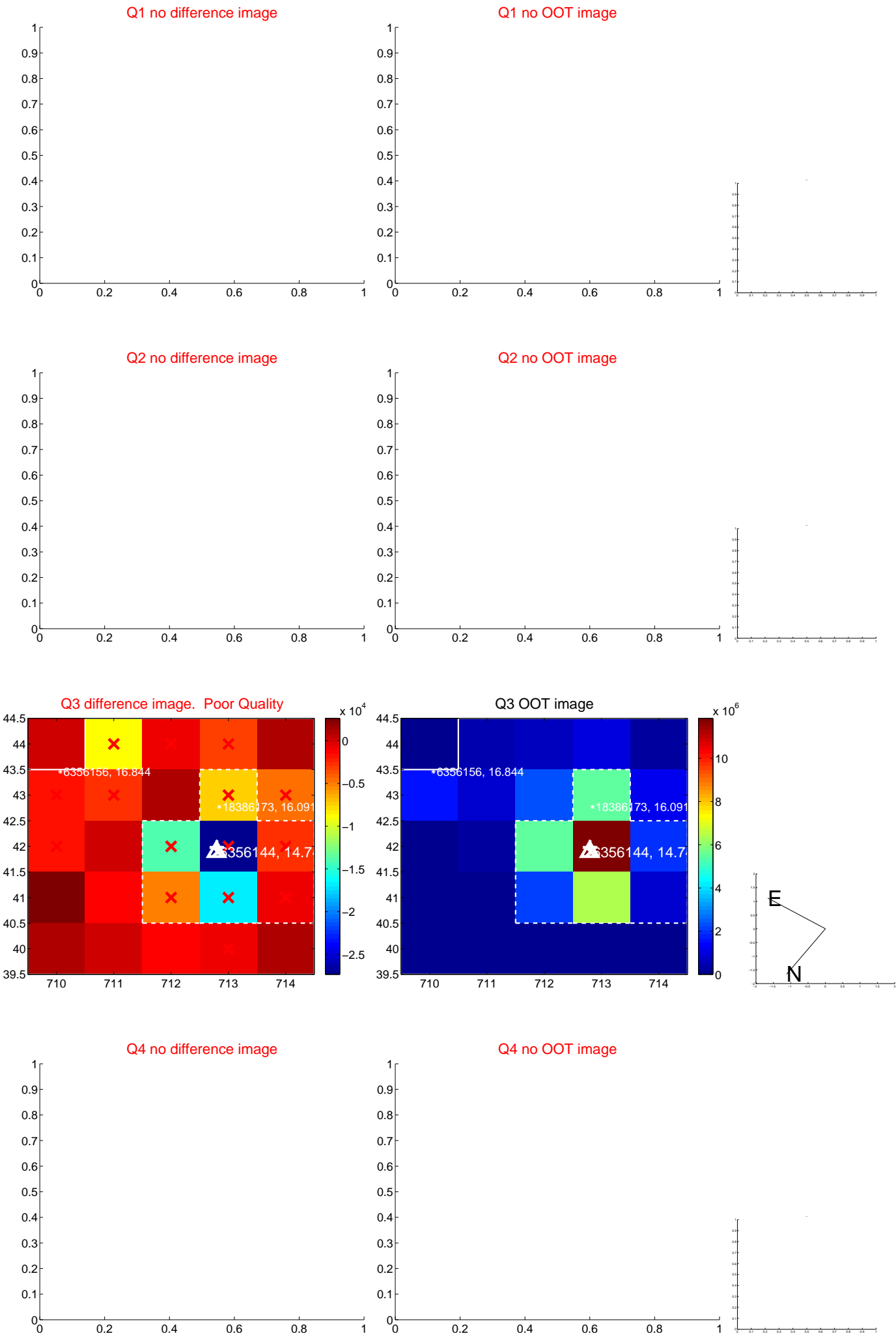


offset from photometric centroids

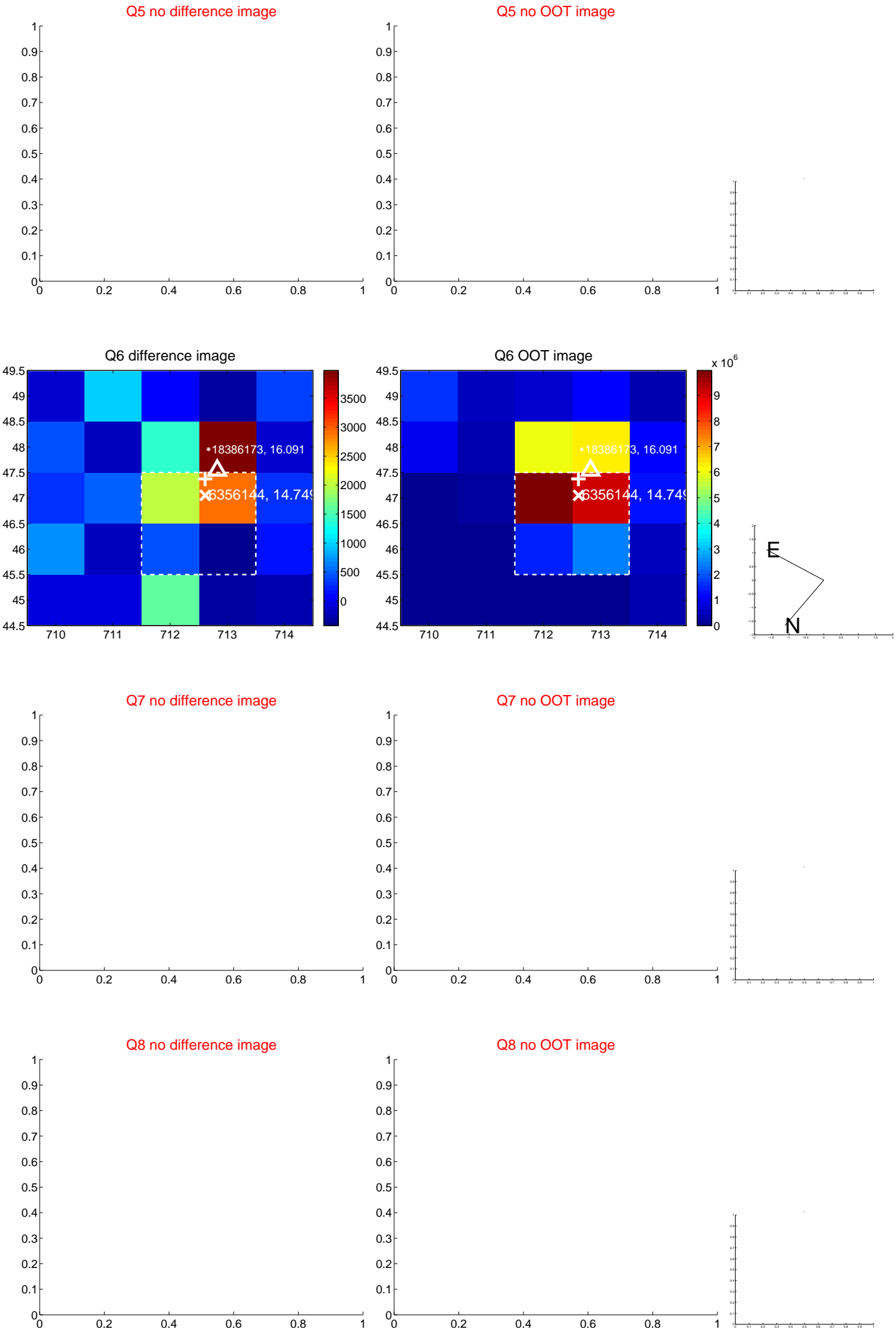


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



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

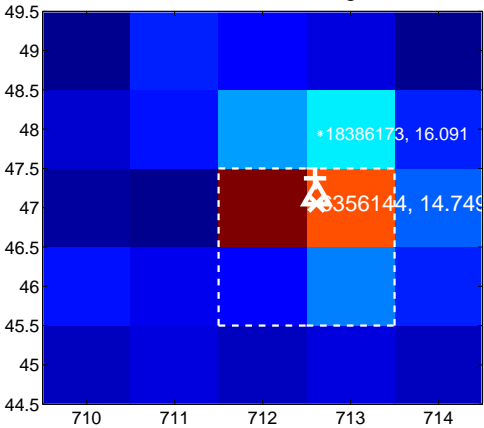
Q9 no difference image



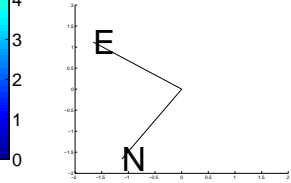
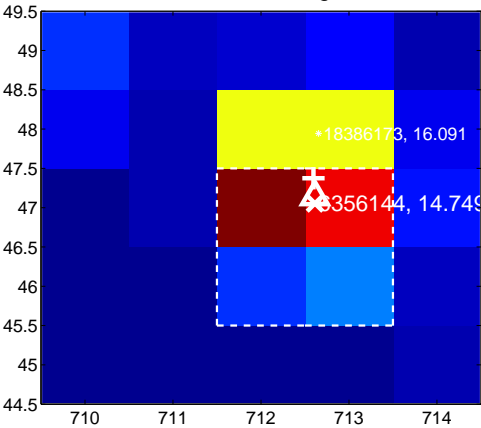
Q9 no OOT image



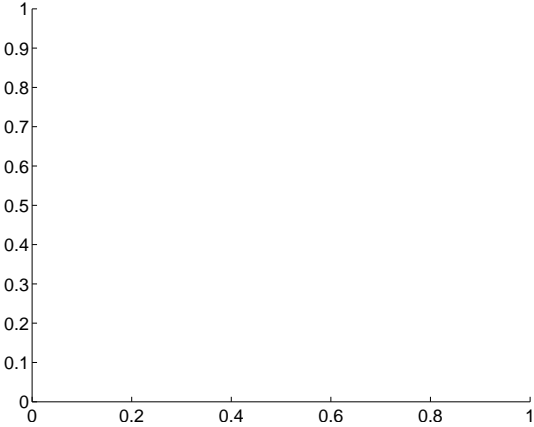
Q10 difference image



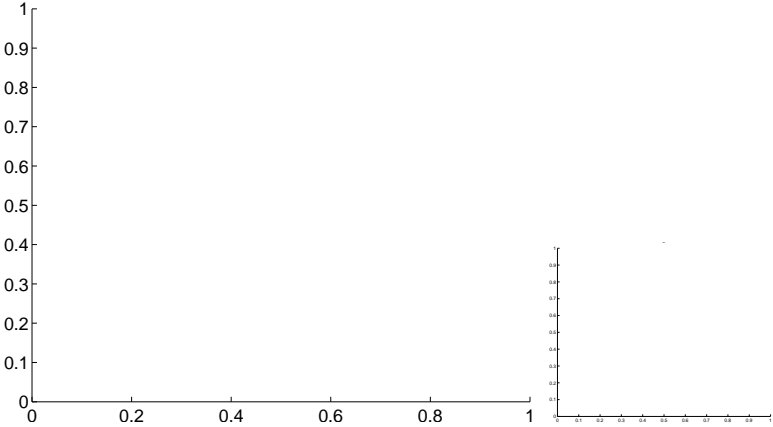
Q10 OOT image



Q11 no difference image



Q11 no OOT image



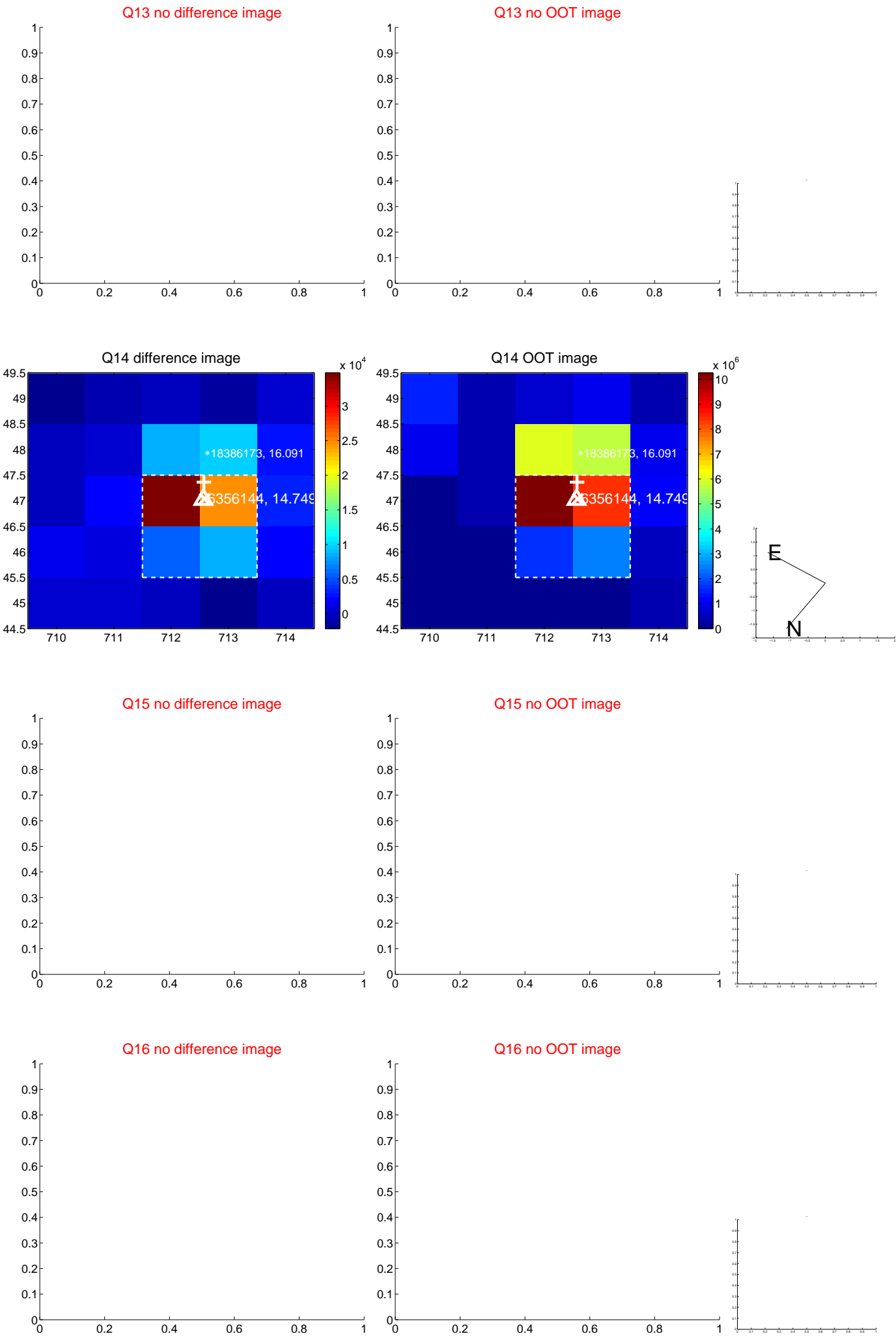
Q12 no difference image



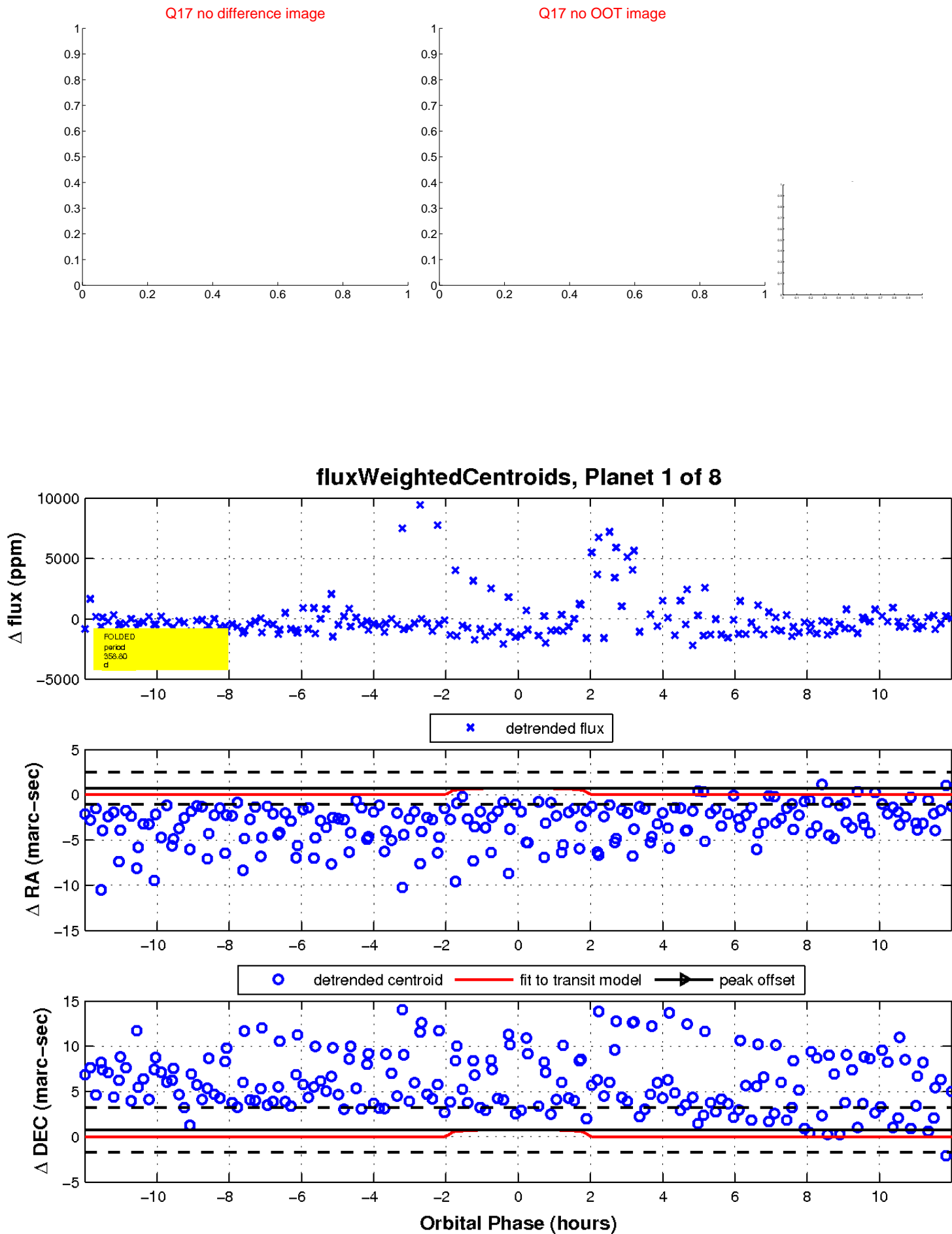
Q12 no OOT image



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

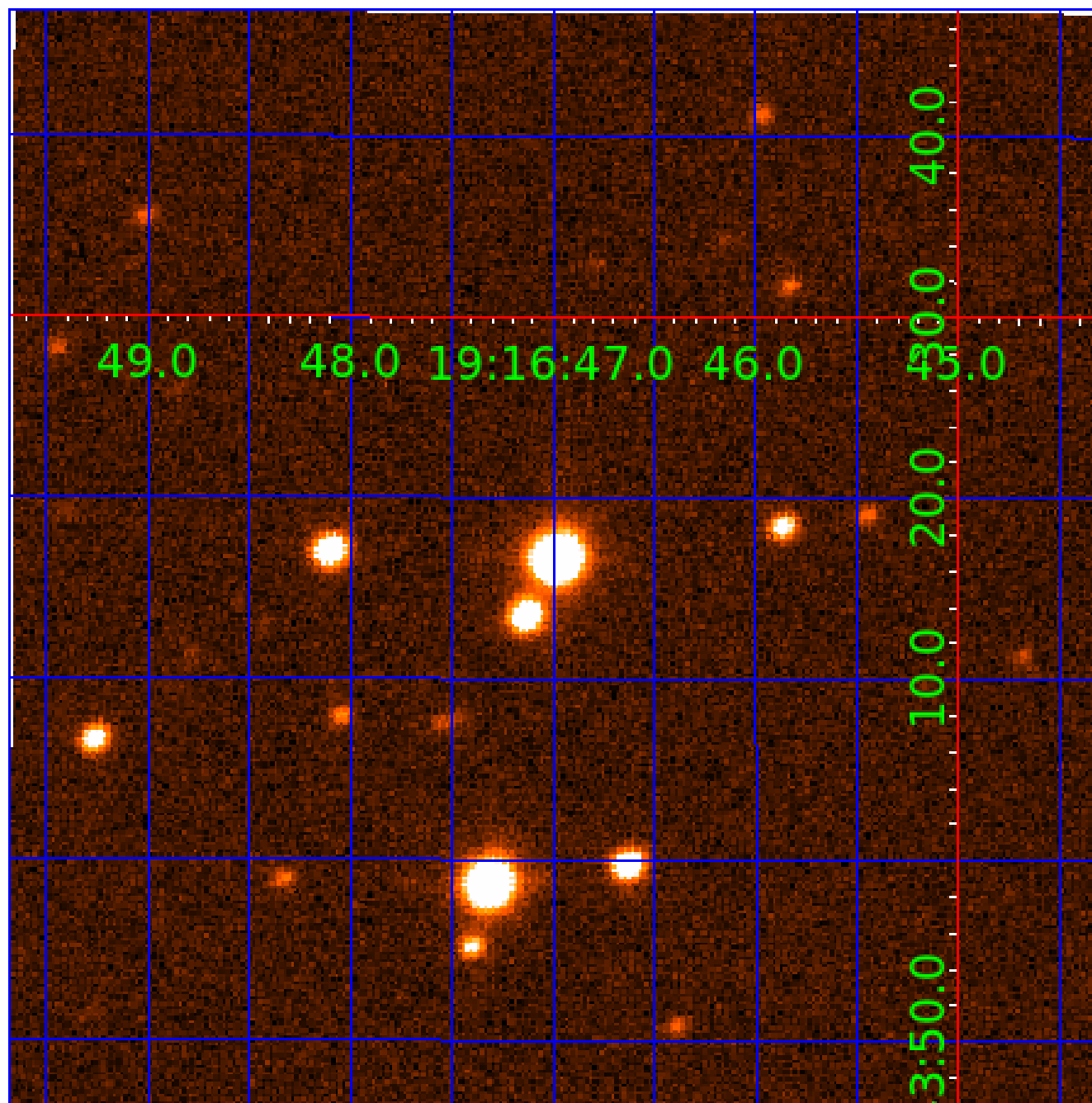


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006356144

Q1-17 DR25 TCE Parameters

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006356144-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—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
006356144-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006356144-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_UNCERTAIN
006356144-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
006356144-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

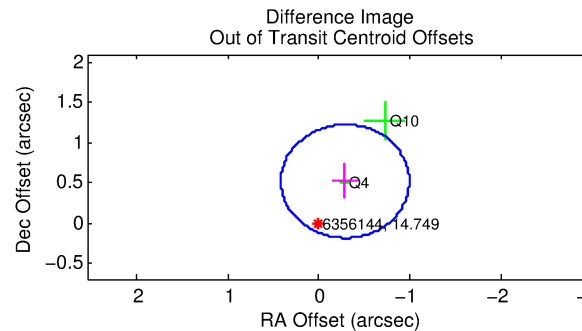
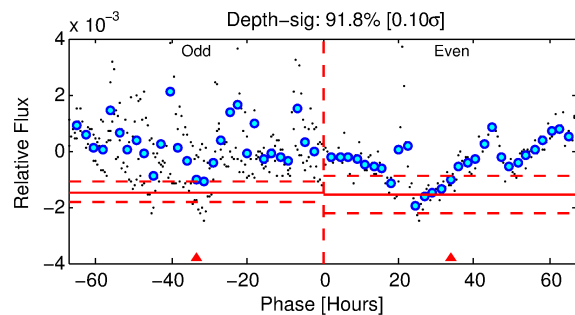
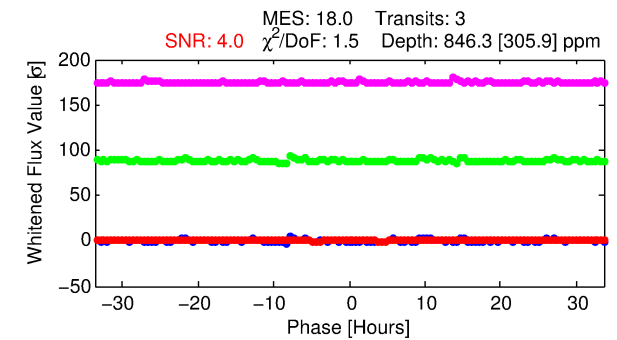
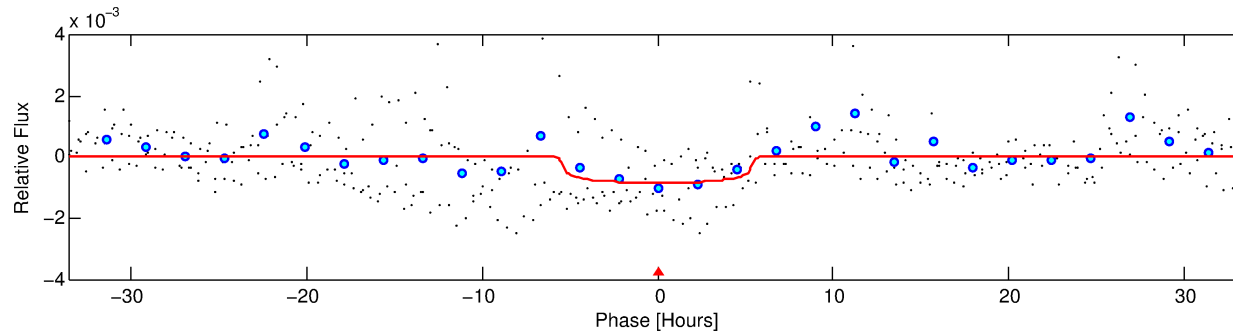
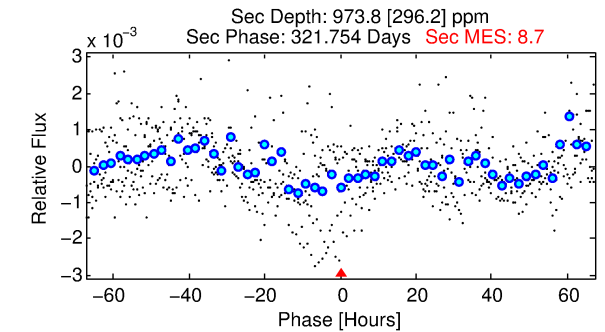
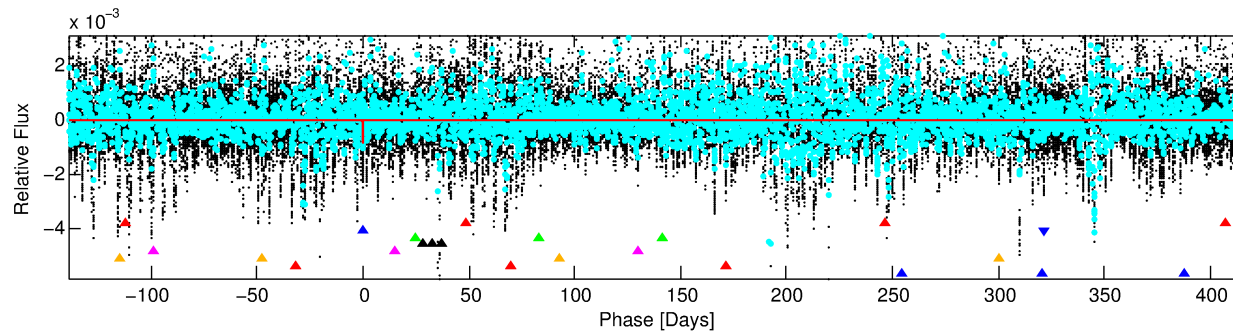
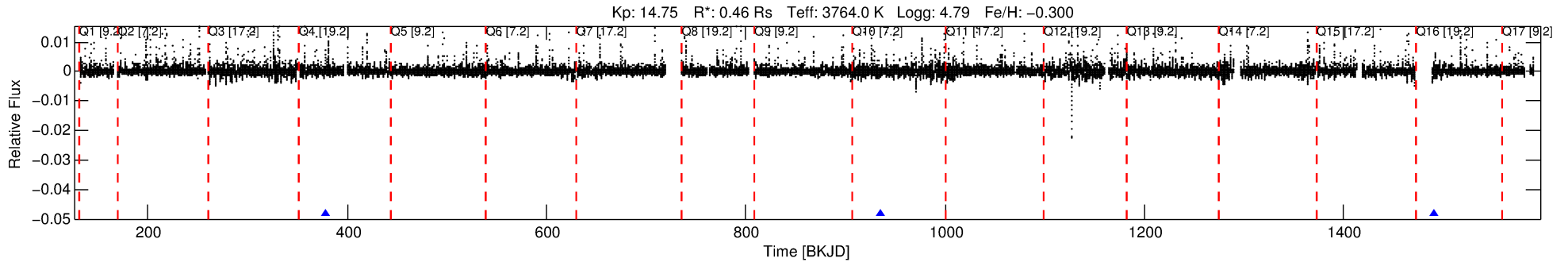
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006356144-02

No Significant Match Found

DV One-Page Summary

KIC: 6356144 Candidate: 2 of 8 Period: 556.579 d



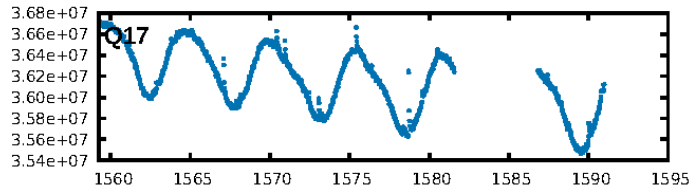
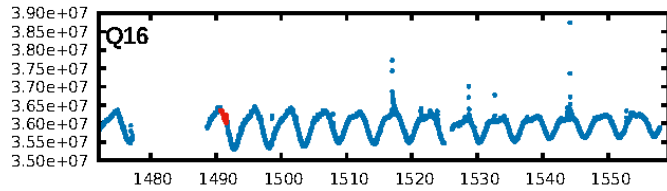
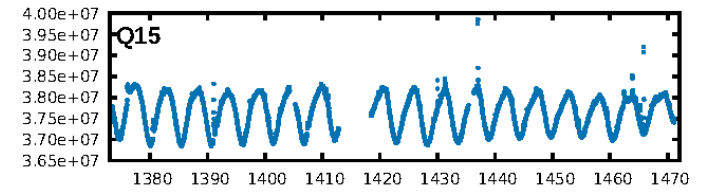
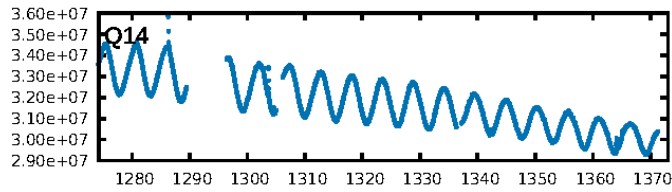
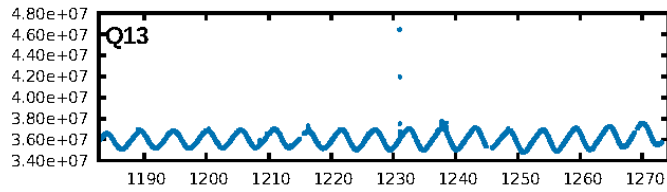
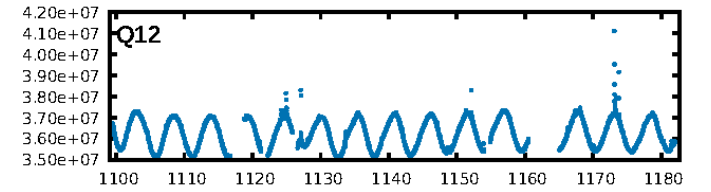
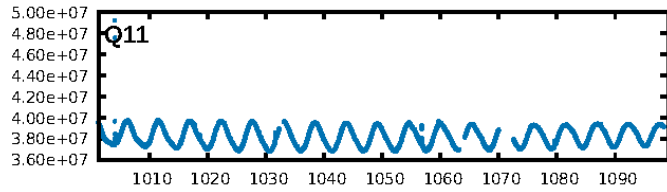
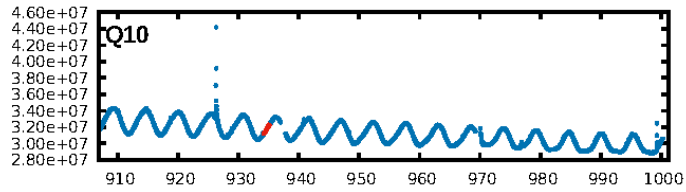
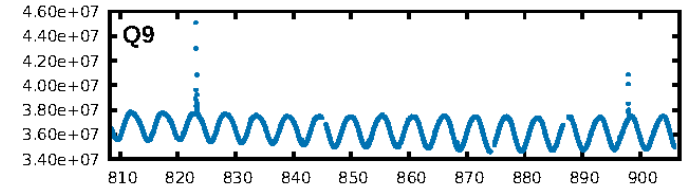
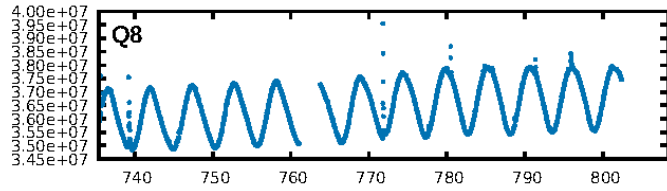
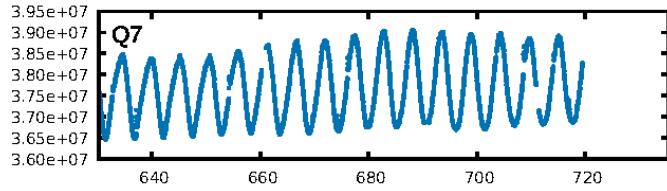
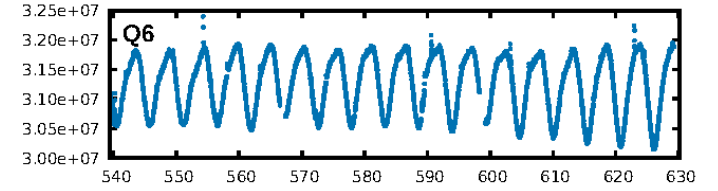
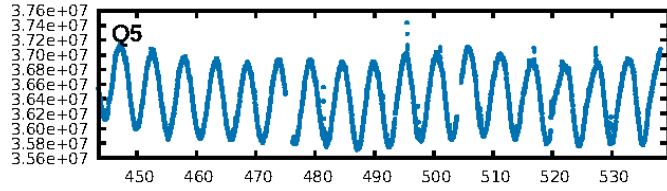
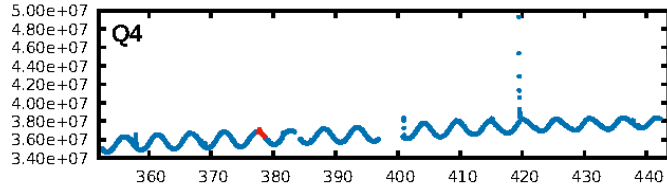
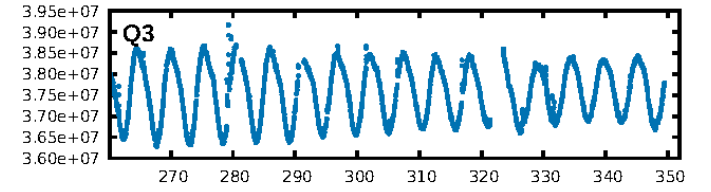
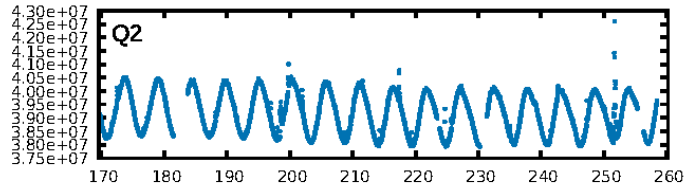
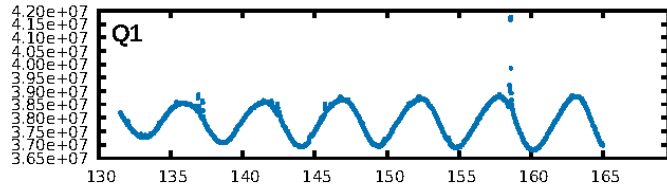
DV Fit Results:

Period = 556.57884 [0.01247] d
Epoch = 378.0475 [0.0191] BKJD
Rp/R* = 0.0271 [0.0162]
a/R* = 359.17 [929.88]
b = 0.40 [5.44]
Seff = 0.04 [0.00]
Teq = 111 [3] K
Rp = 1.35 [0.81] Re
a = 1.0272 [0.0646] AU
Ag = 310510.26 [383572.88] [0.81σ]
Teffp = 4042 [1247] K [3.15σ]

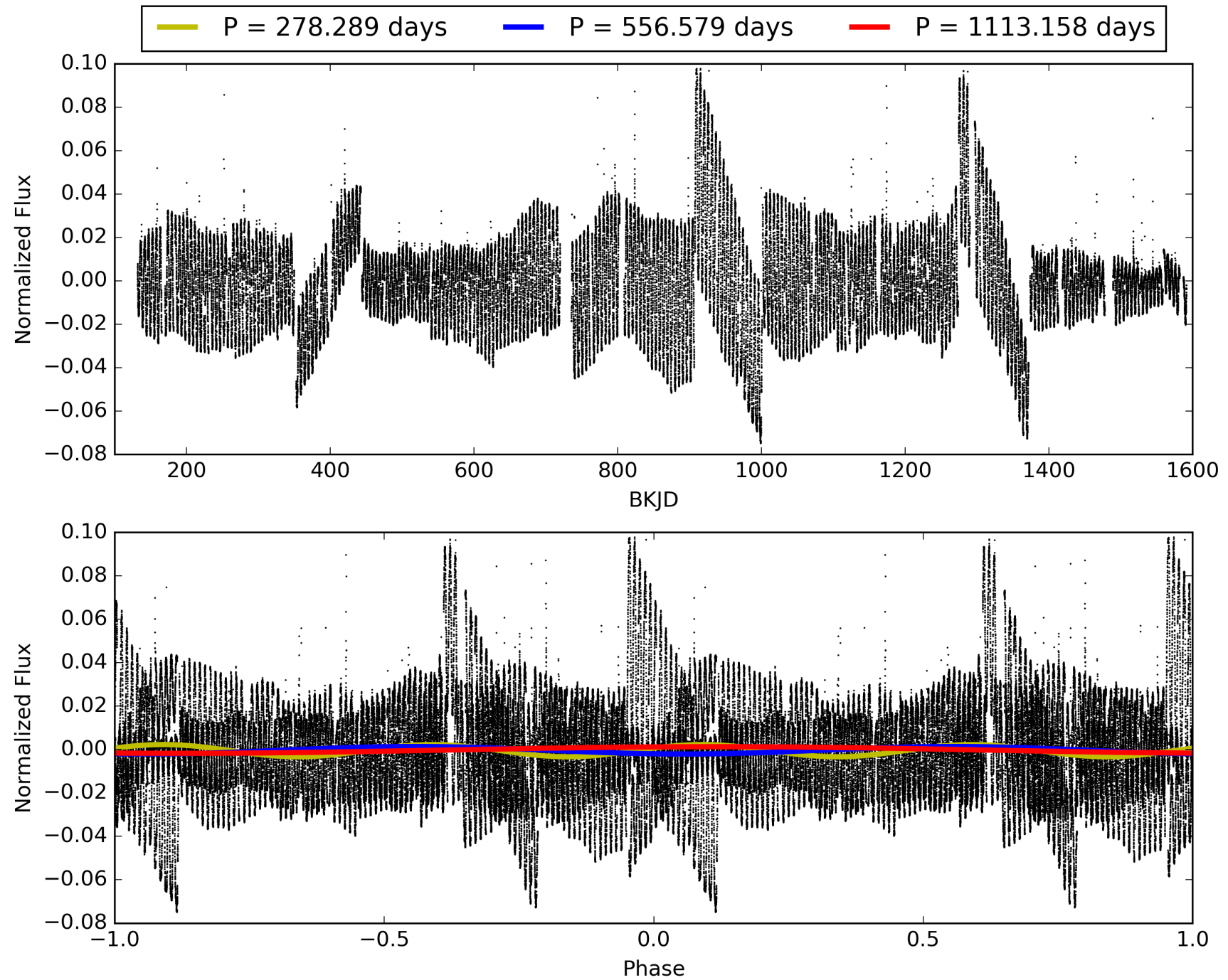
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.12σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 89.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.9877
Centroid-sig: 3.9%
Centroid-so: 2.284 arcsec [1.10σ]
OotOffset-rm: 0.593 arcsec [2.52σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-rm: 0.200 arcsec [1.46σ]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 006356144-02, PDC Light Curves

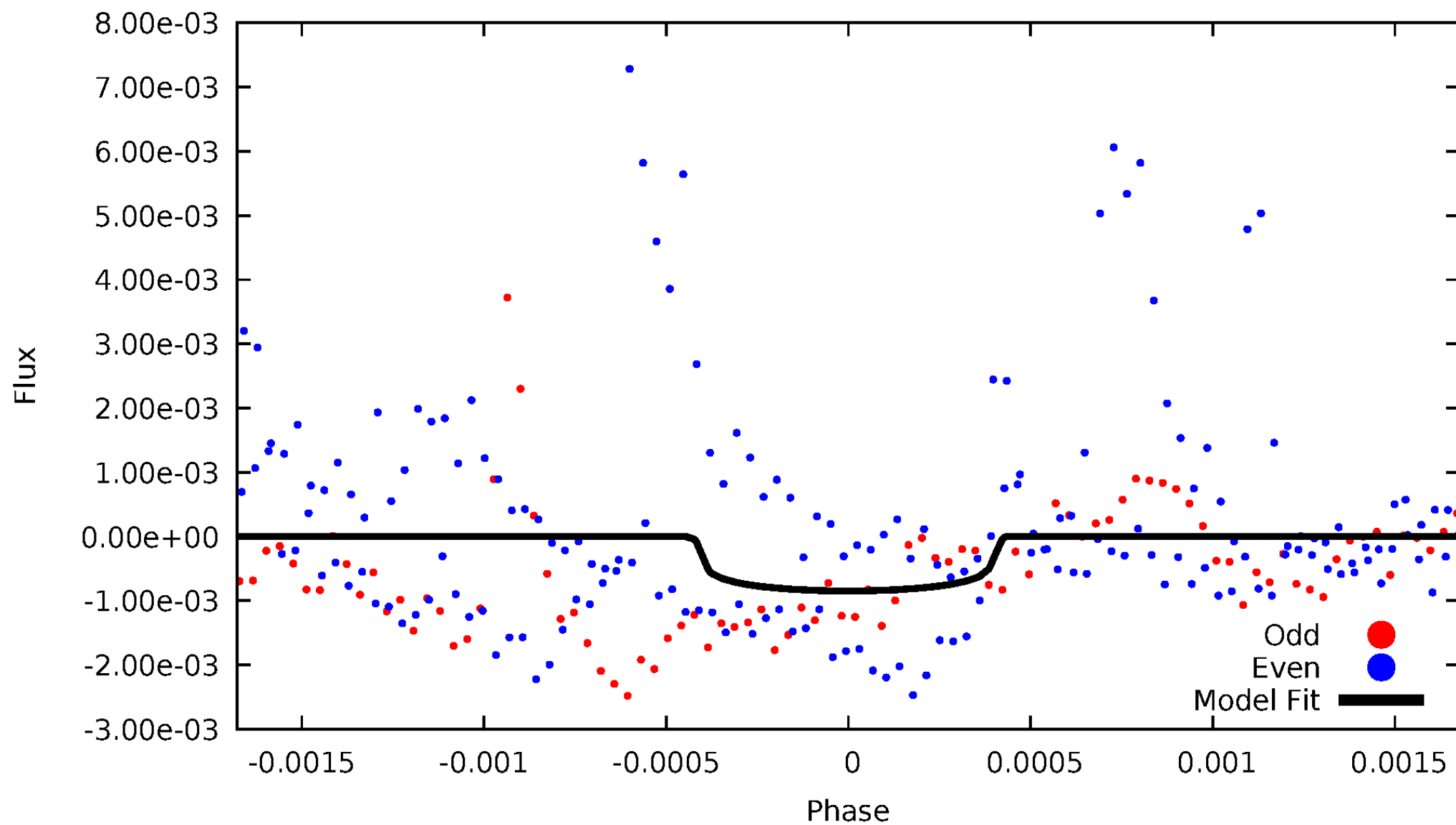


TCE 006356144-02



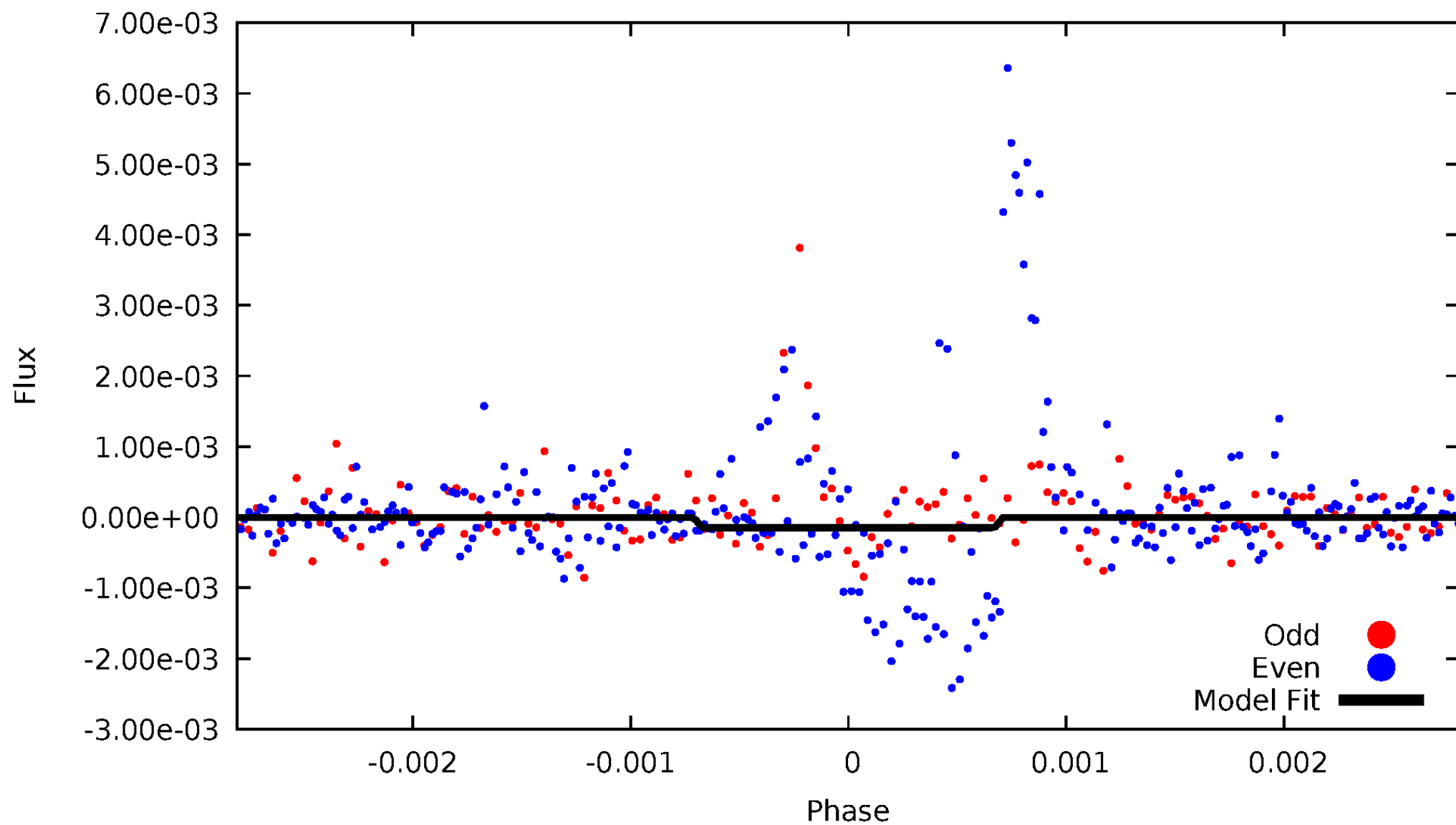
DV Odd/Even

TCE 006356144-02



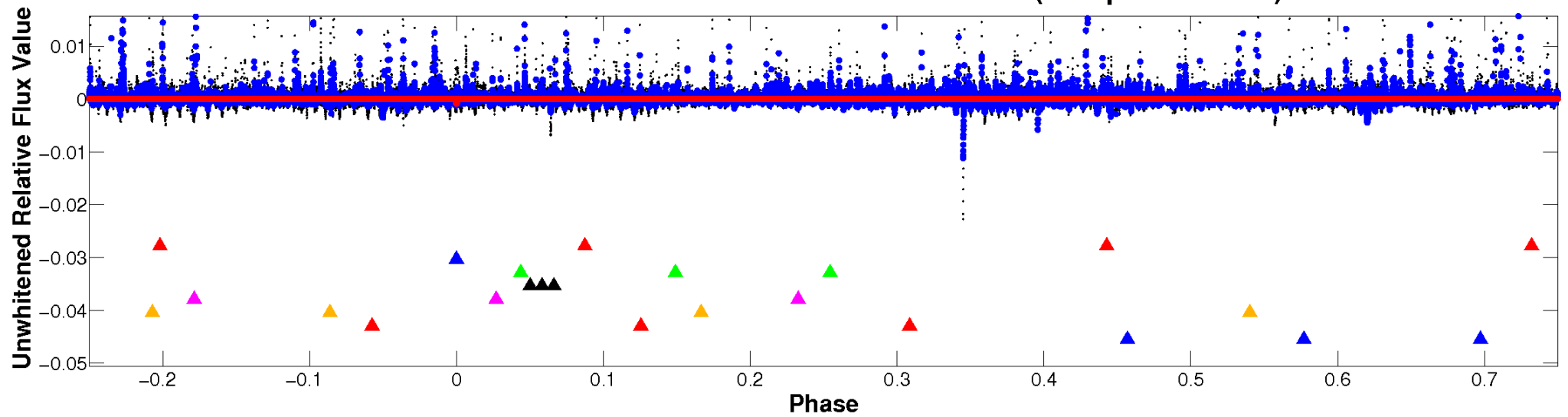
ALT Odd/Even

TCE 006356144-02

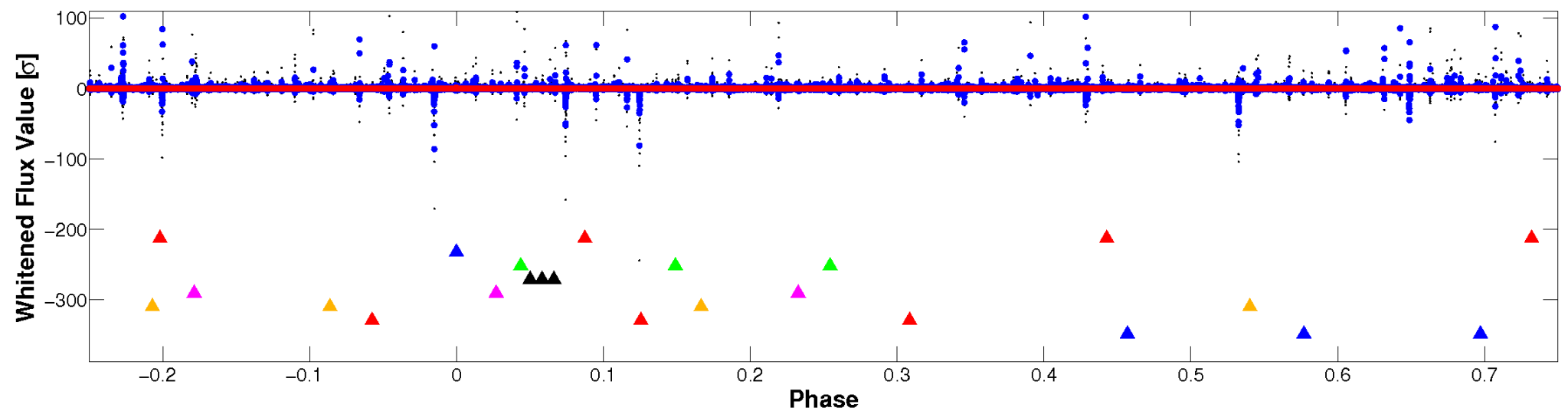


Non-Whitened Vs. Whitened Light Curve

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

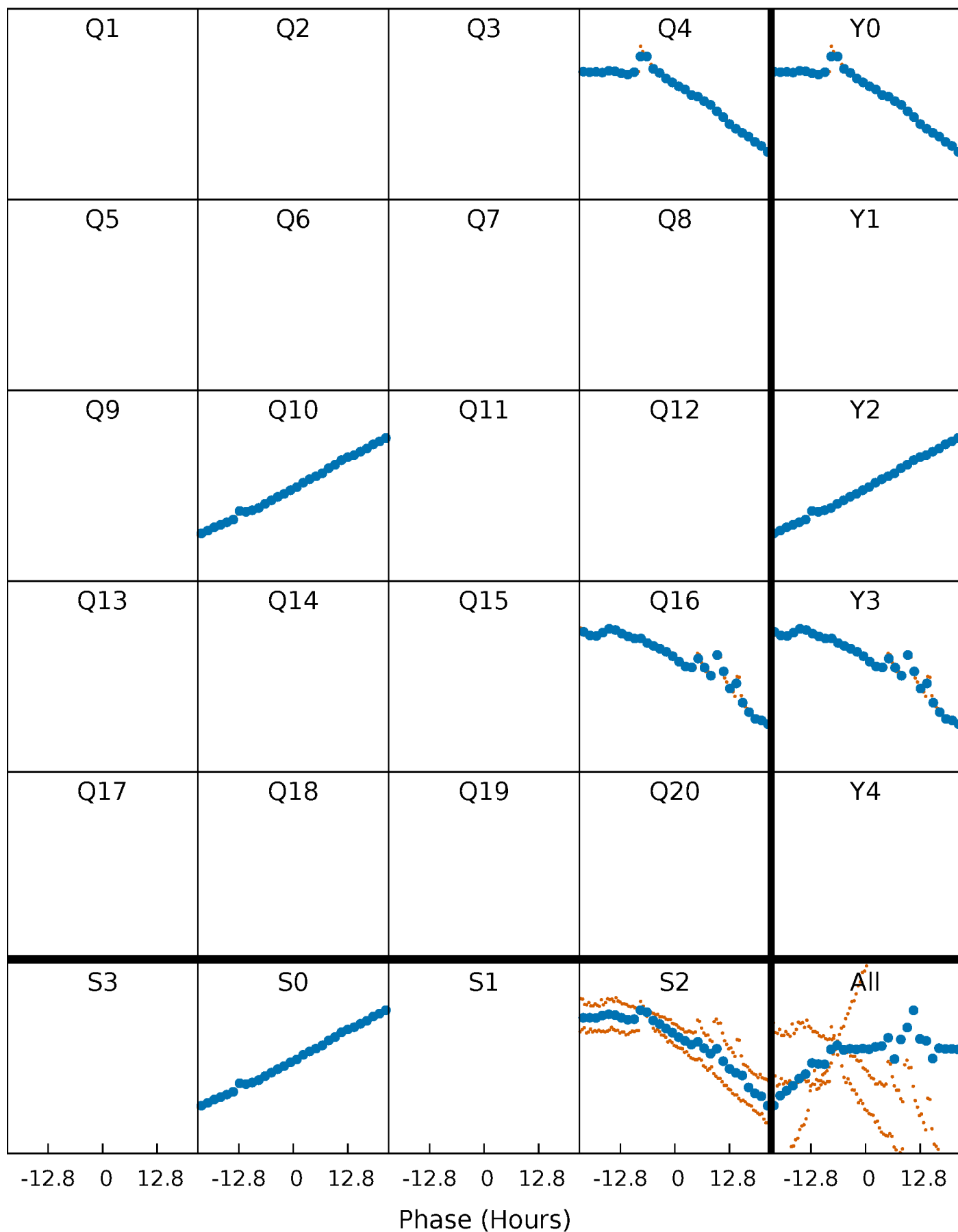


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 006356144-02 P=556.578837 Days $T_0=378.047496$ (BKJD)



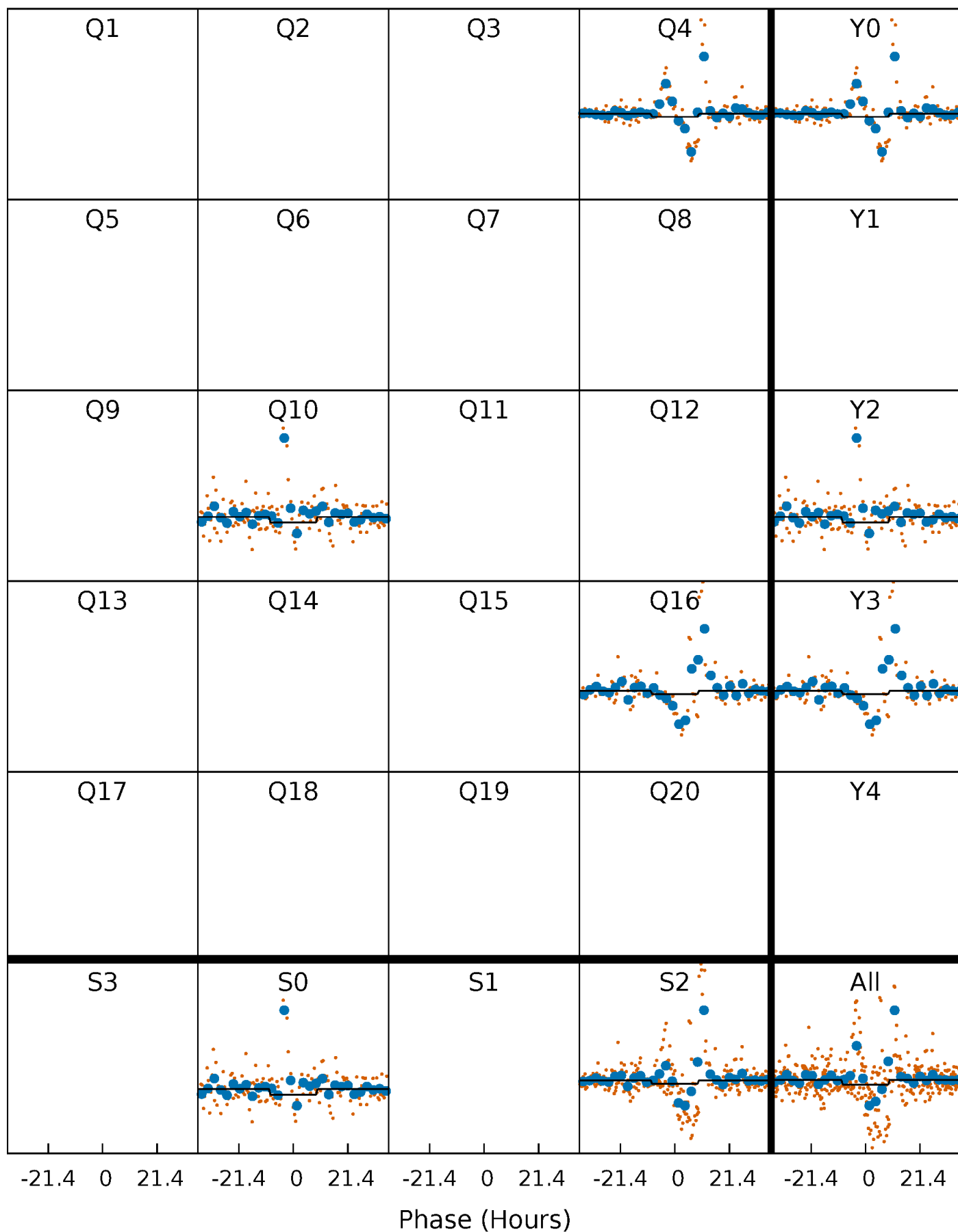
DV Quarter-Phased Transit Curves

TCE 006356144-02 P=556.578837 Days $T_0=378.047496$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

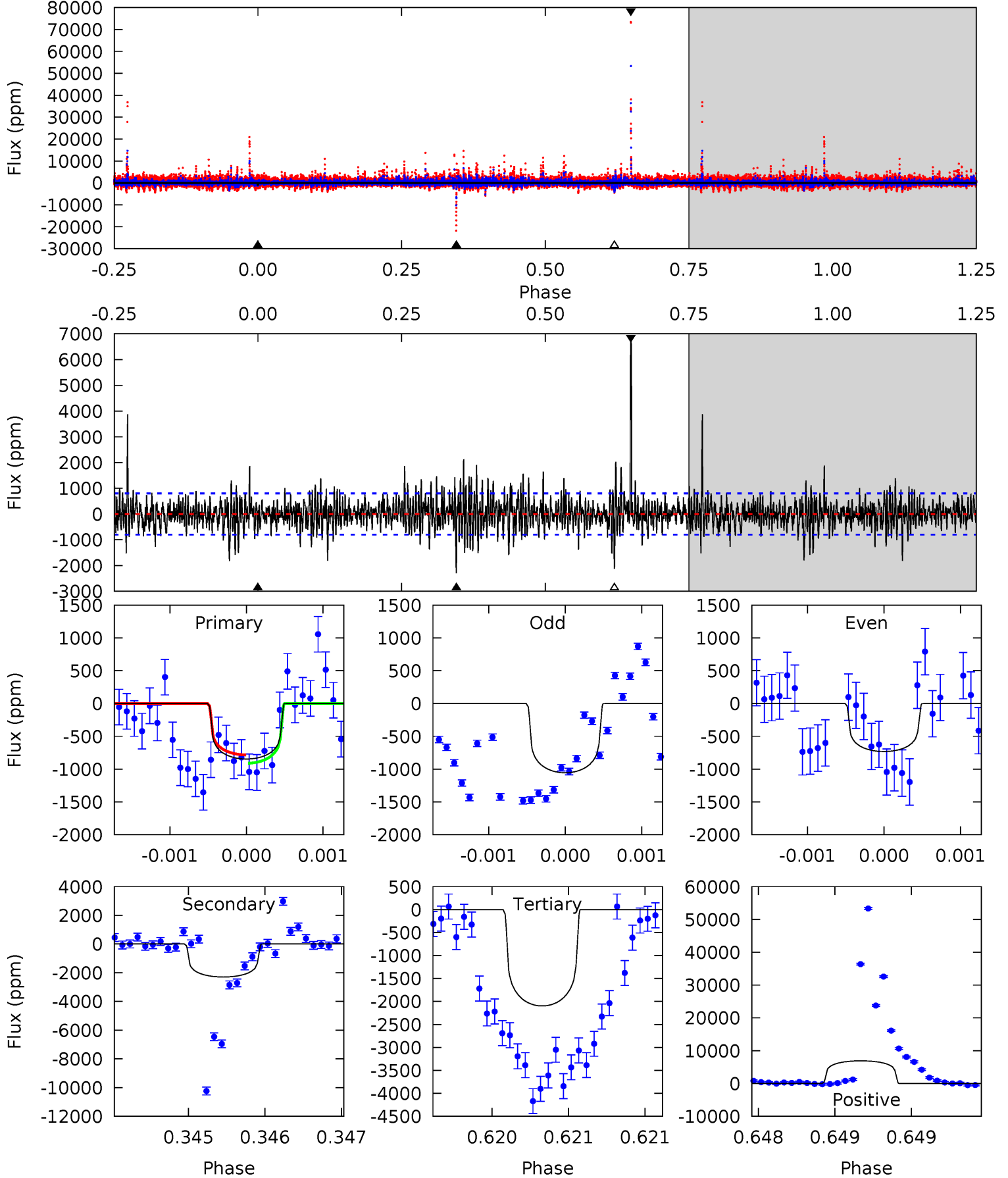
TCE 006356144-02 P=556.943922 Days $T_0=377.305841$ (BKJD)



DV Model-Shift Uniqueness Test

006356144-02, P = 556.578837 Days, E = 378.047496 Days

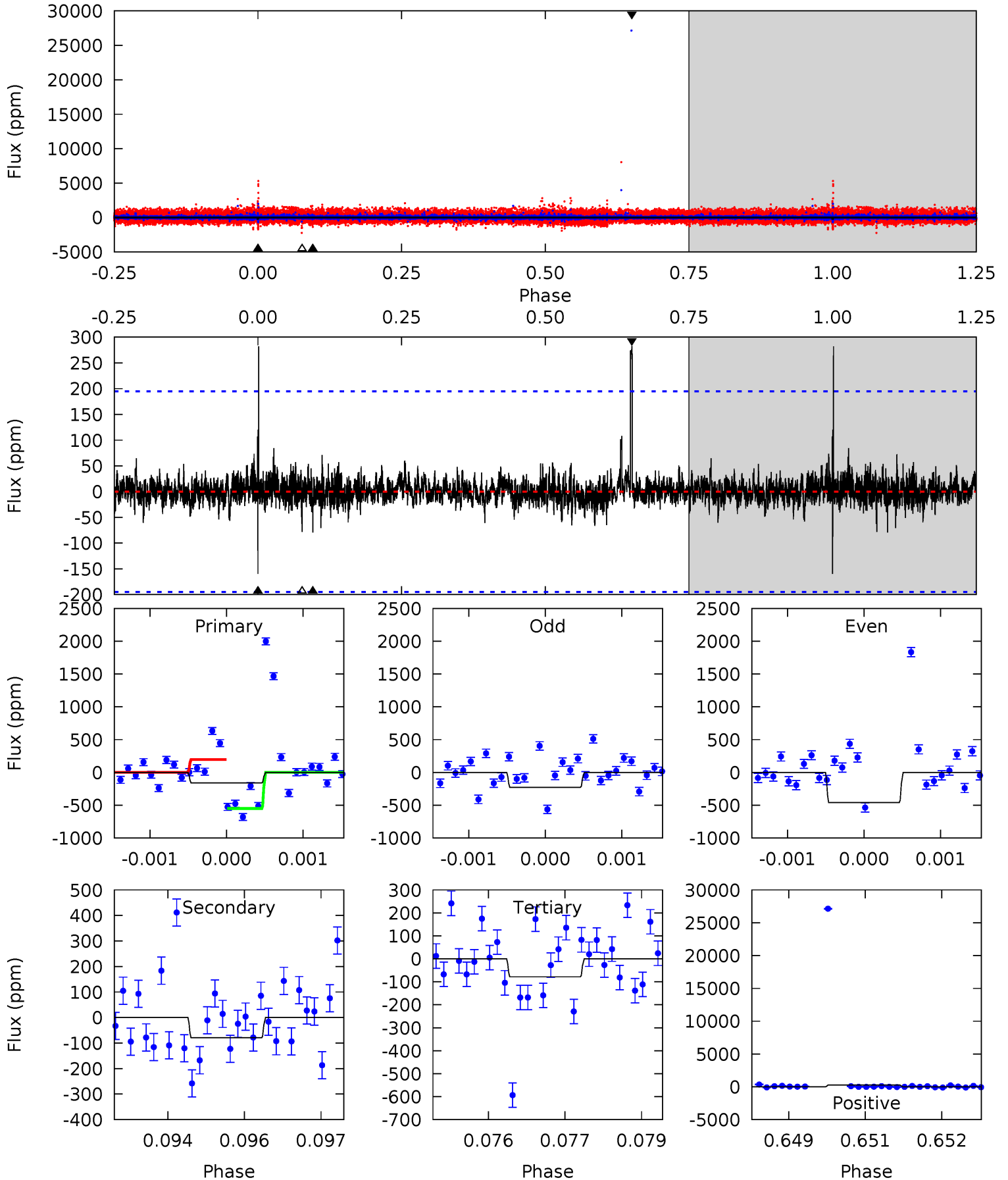
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.80	15.7	14.4	47.3	5.47	3.33	3.59	-8.57	-41.5	1.37	-31.5	0.45	0.80	0.75	0.44



Alt Model-Shift Uniqueness Test

006356144-02, P = 556.943922 Days, E = 377.305841 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.42	2.19	2.16	7.82	5.39	3.19	0.56	2.25	-3.40	0.03	-5.62	2.75	0.75	0.64	5.10



Stellar Parameters For KIC 006356144

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3764^{+60}_{-60}	$4.787^{+0.042}_{-0.025}$	$-0.300^{+0.100}_{-0.100}$	$0.457^{+0.028}_{-0.037}$	$0.466^{+0.031}_{-0.031}$	$6.897^{+1.350}_{-0.775}$
	+2%/-2%	+1%/-1%	+33%/-33%	+6%/-8%	+7%/-7%	+20%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006356144-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2298 ± 146	$1.39^{+0.75}_{-0.70}$	154^{+3}_{-4}	4561^{+1612}_{-672}	$687515^{+2027290}_{-395013}$
Alt.	-79 ± 36	$0.83^{+0.68}_{-0.56}$	154^{+3}_{-3}	3088^{+1407}_{-520}	$65747^{+558311}_{-49040}$

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

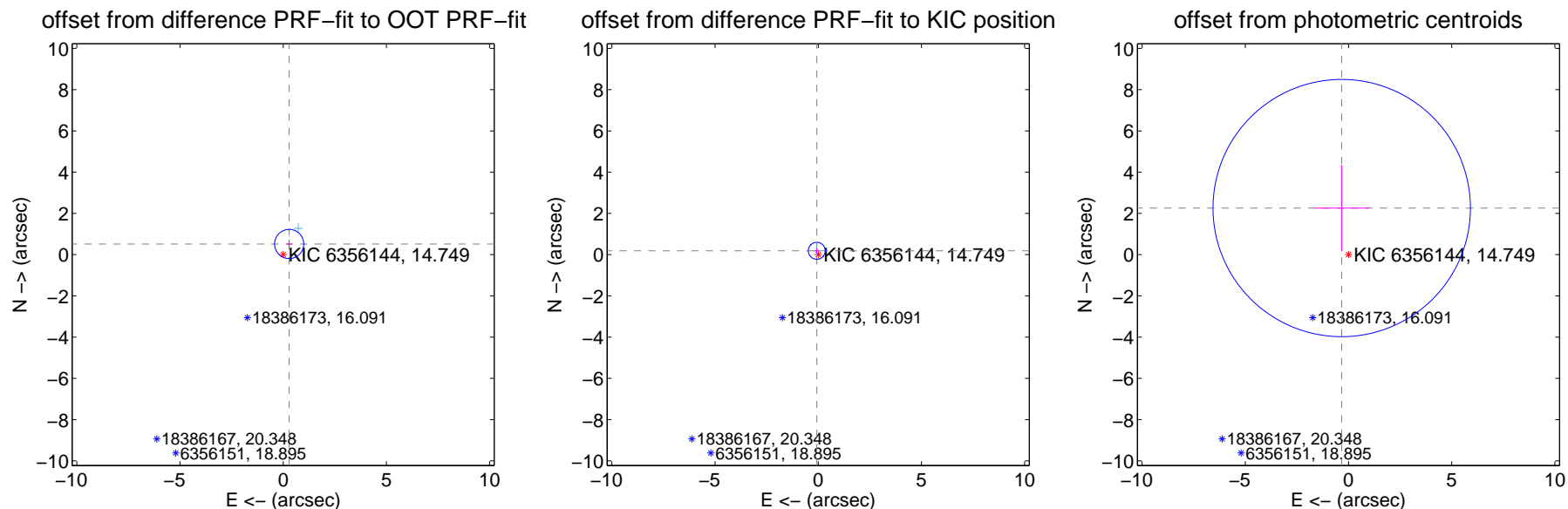
DV Centroid Data

Supplemental centroid analysis for 006356144-02. Kepler magnitude: 14.75. Transit SNR 3.98

There are 1 quarters with good PRF difference image offsets

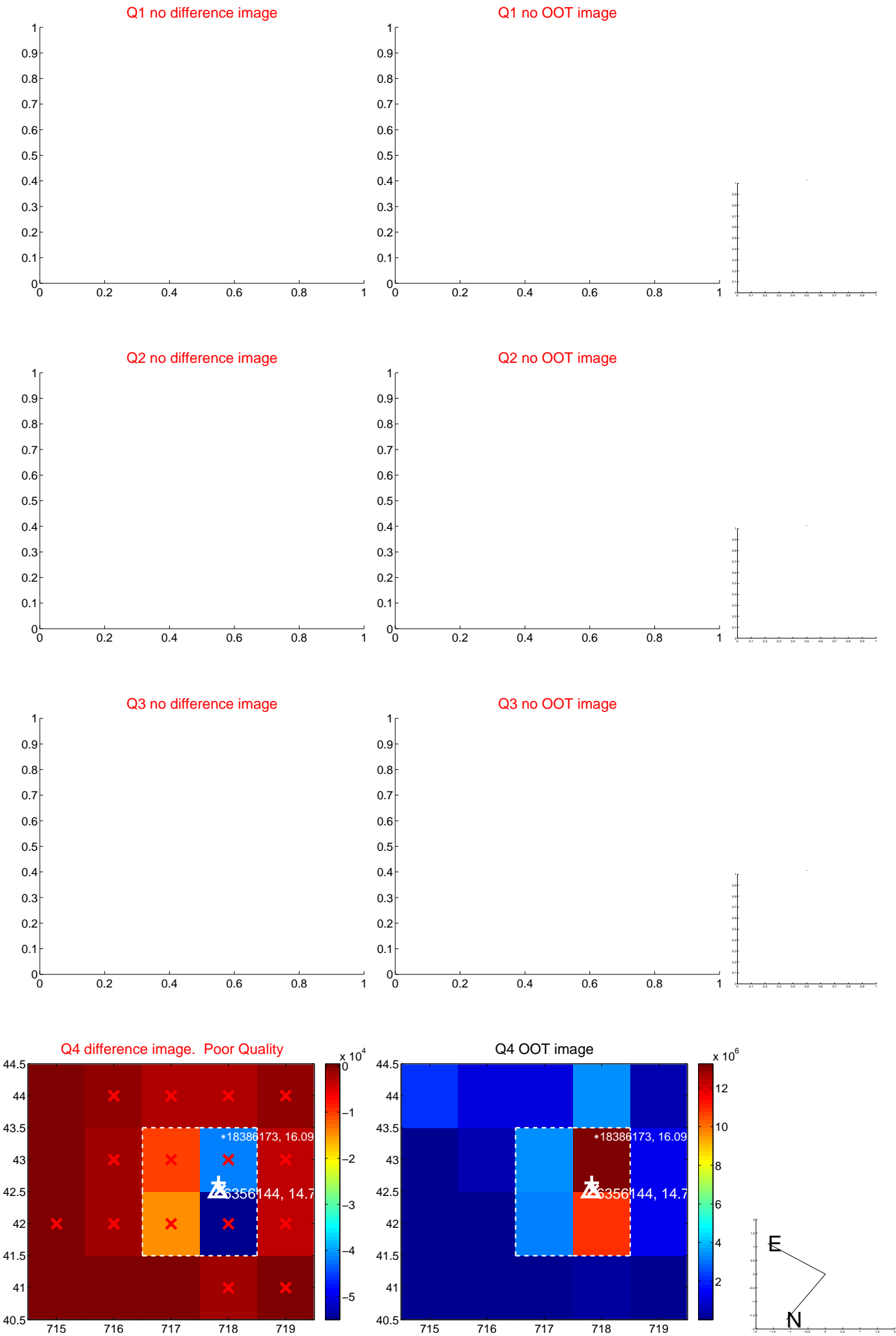
The direct PRF centroid is offset from the target star catalog position by about 1.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.593 ± 0.235	2.52	-0.289 ± 0.132	0.518 ± 0.206
PRF-fit source offset from KIC position	0.200 ± 0.137	1.46	0.070 ± 0.127	0.187 ± 0.138
photometric centroid source offset	2.28 ± 2.08	1.10	0.33 ± 1.32	2.26 ± 2.09



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

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



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



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

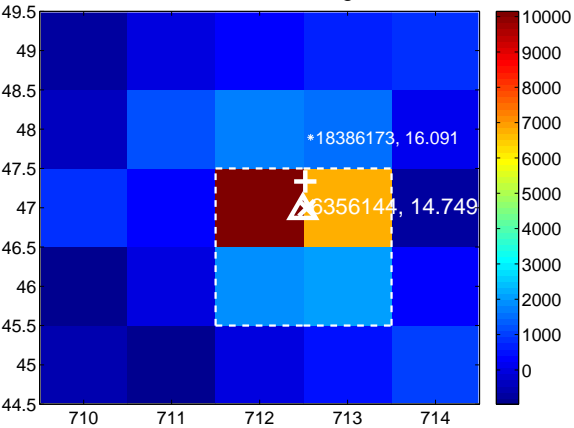
Q9 no difference image



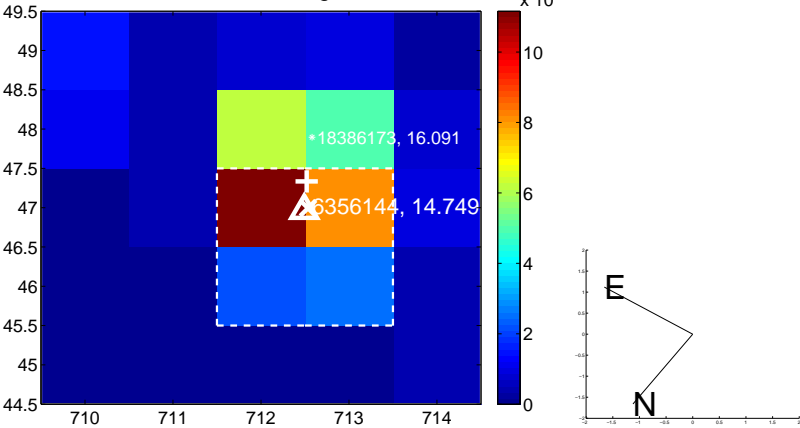
Q9 no OOT image



Q10 difference image



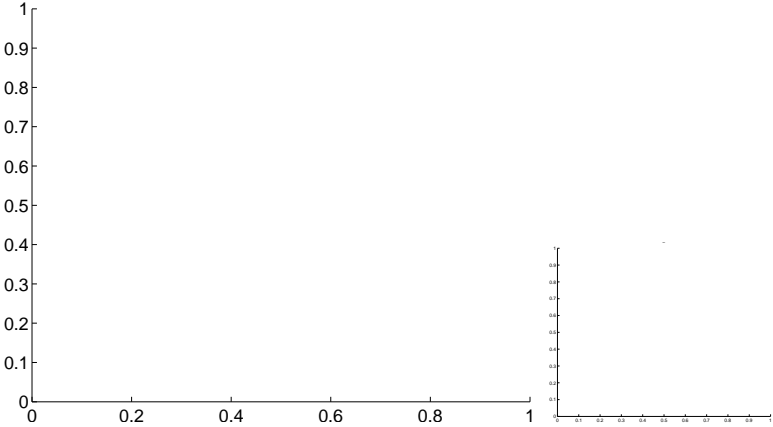
Q10 OOT image



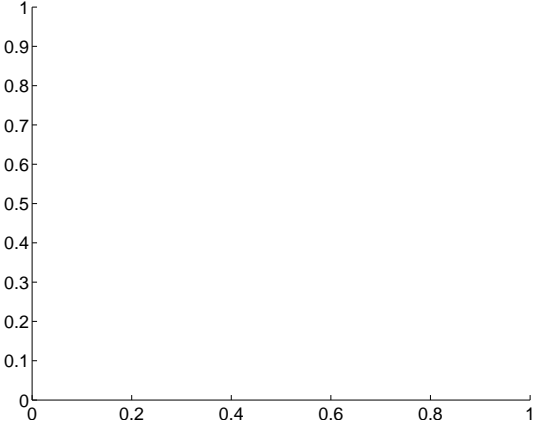
Q11 no difference image



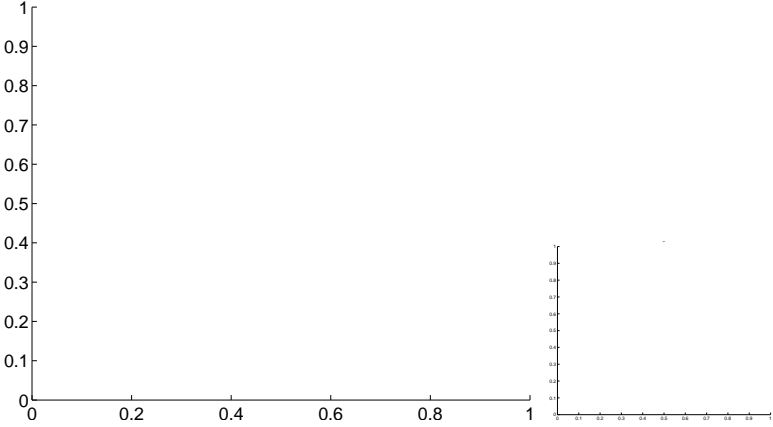
Q11 no OOT image



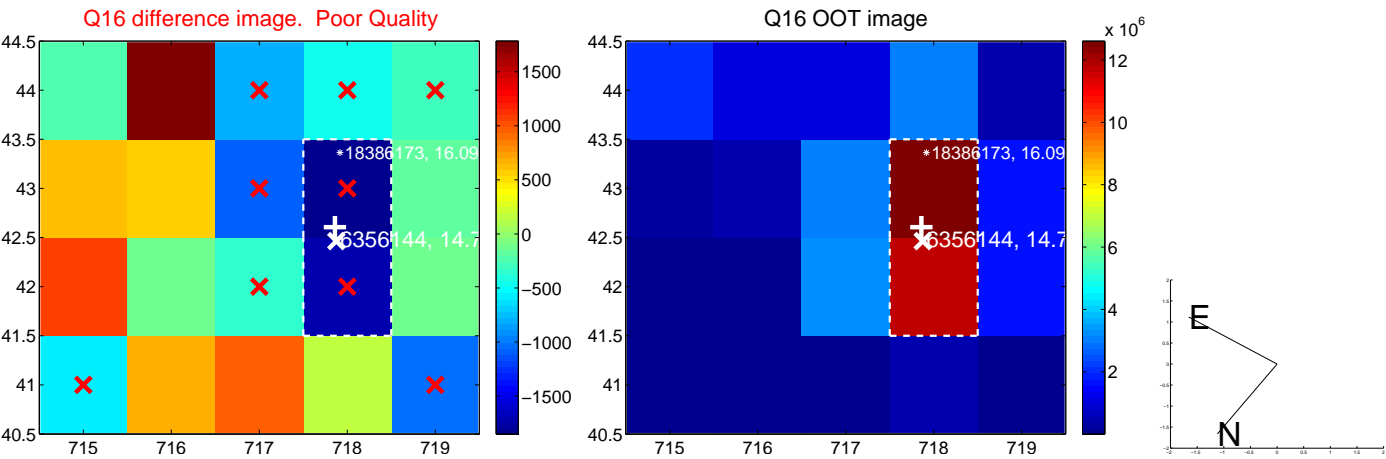
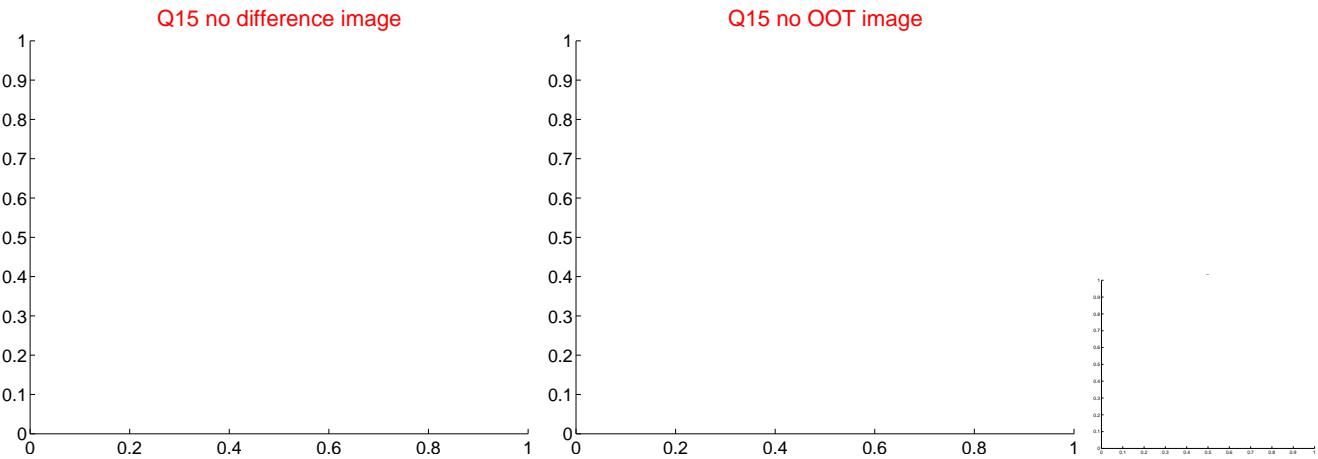
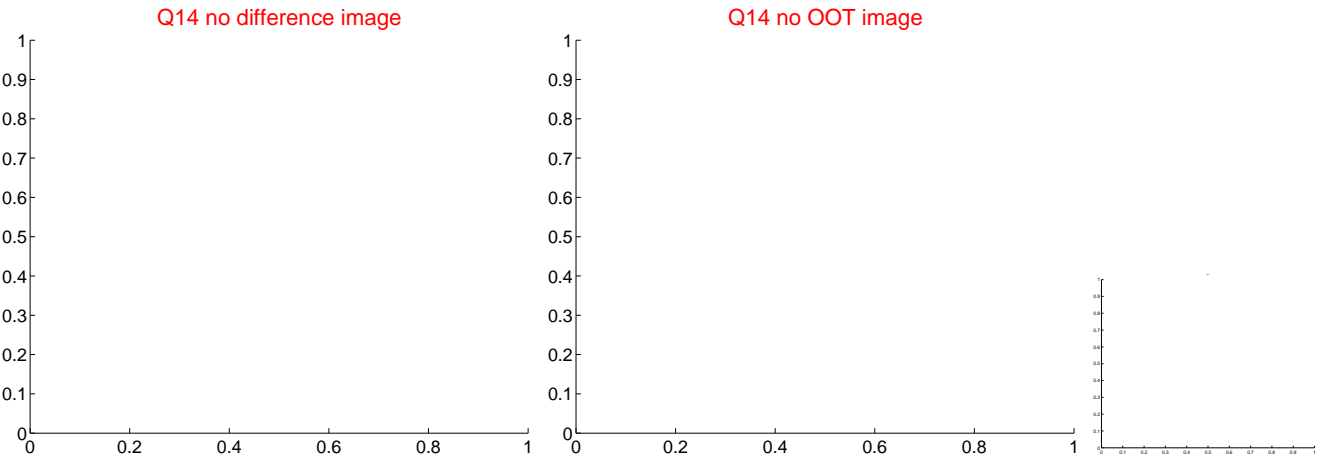
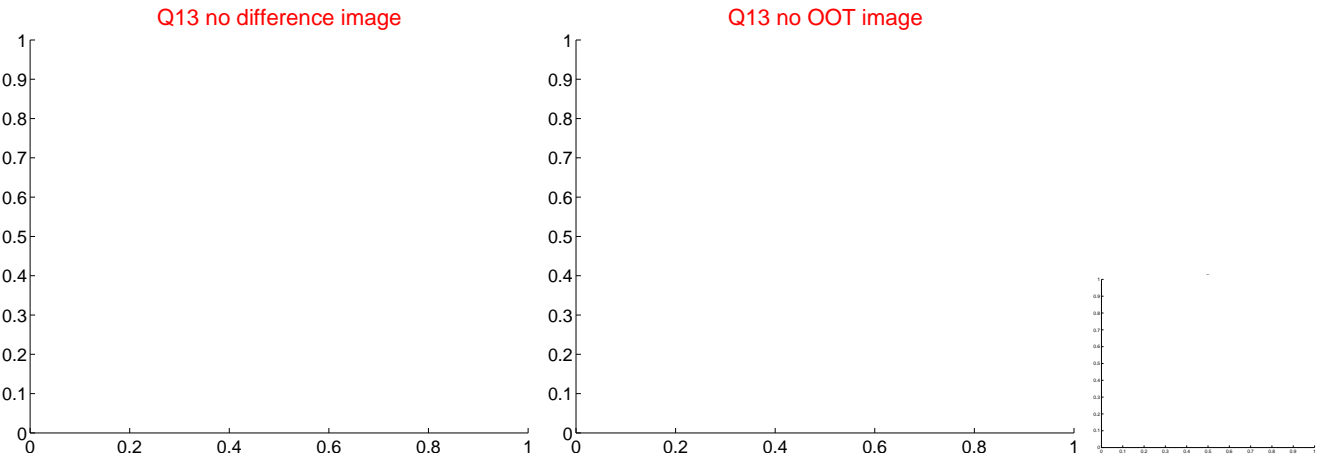
Q12 no difference image



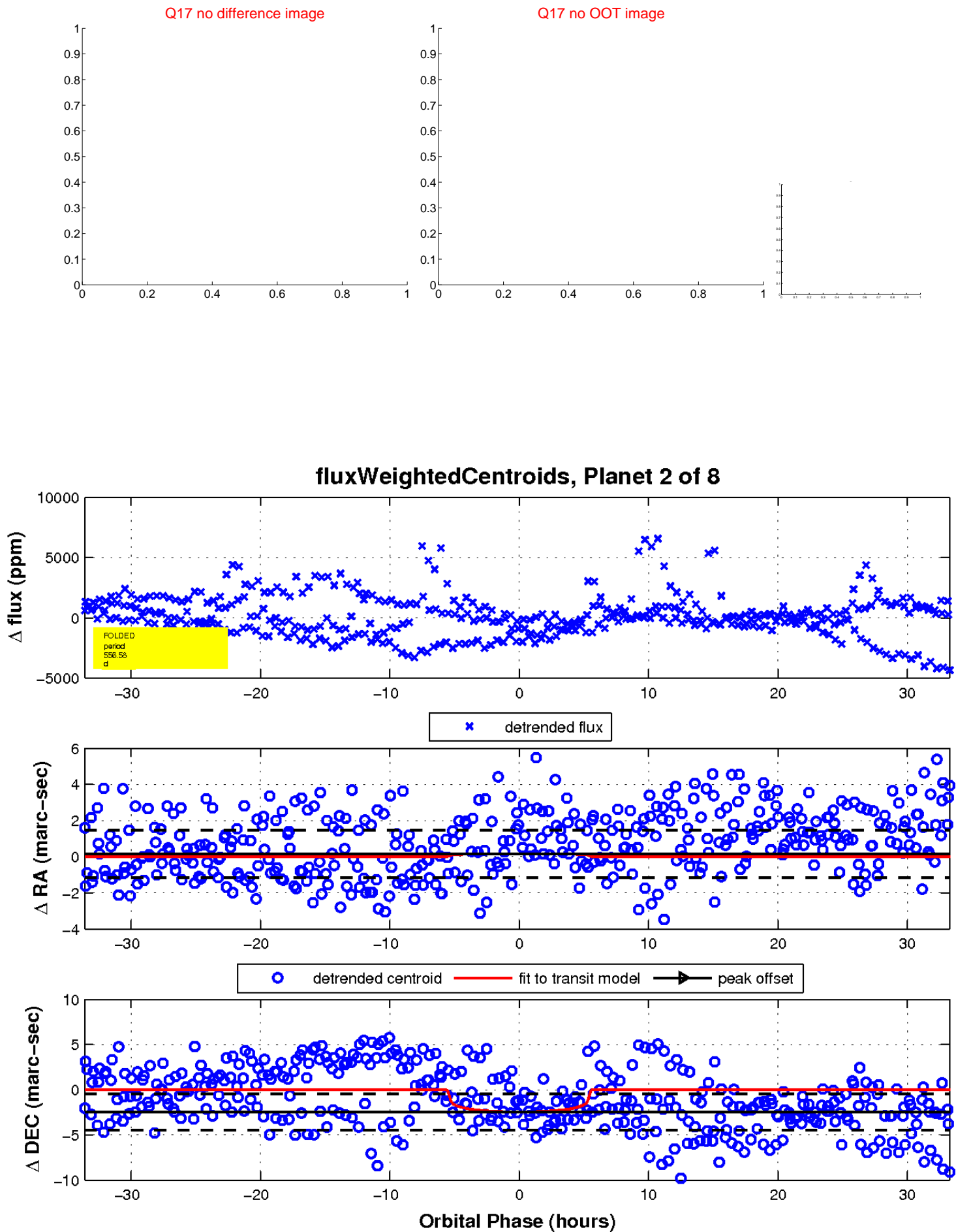
Q12 no OOT image



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

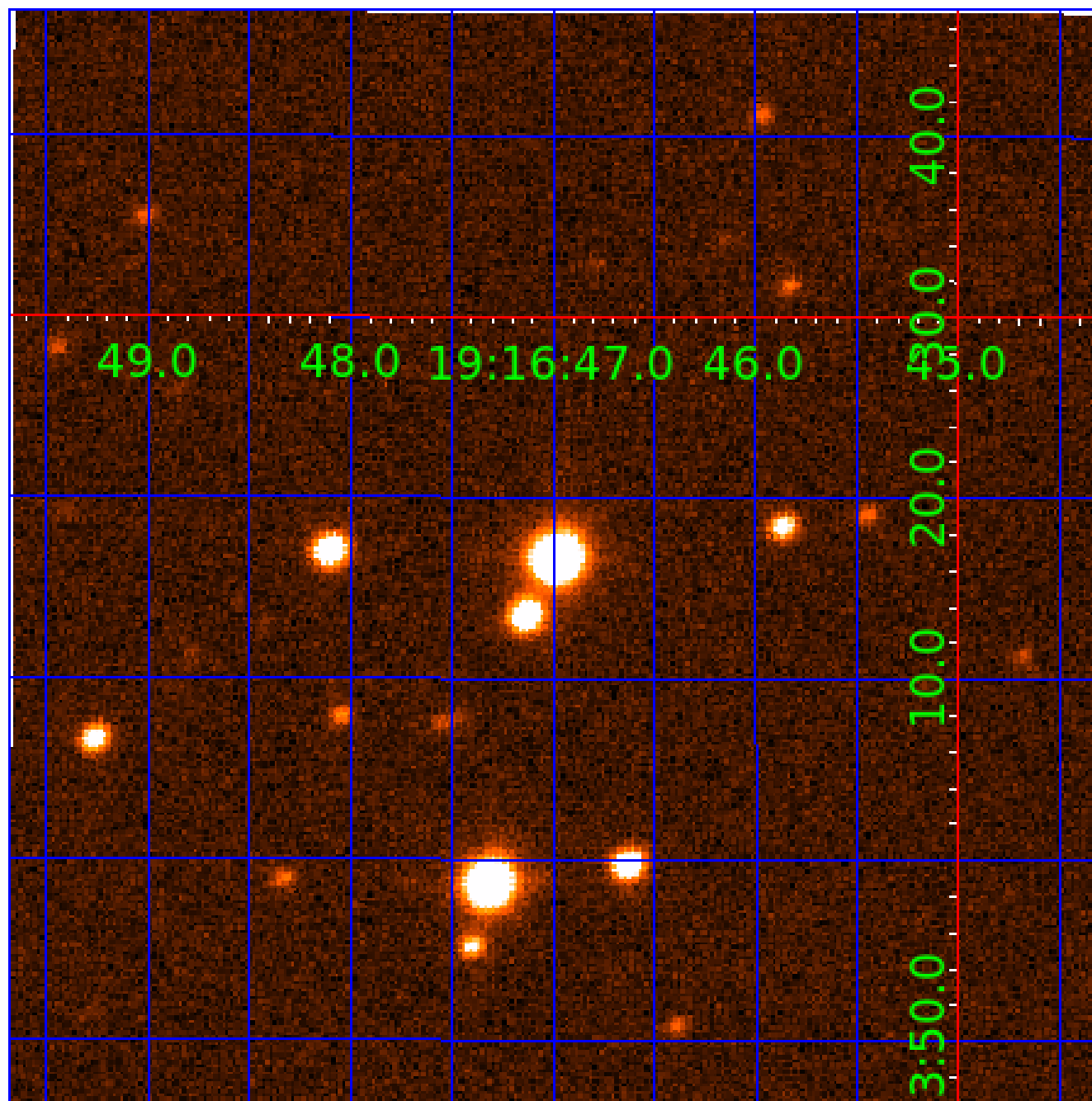


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006356144

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})
006356144-01	OBS	No	358.800189	265.670890	1757.6	4.009	19.6	10.4	0.46	3764	1.94	0.06
006356144-02	OBS	No	556.578837	378.047496	846.3	11.200	18.0	4.0	0.46	3764	1.35	0.04
006356144-03	OBS	No	497.957672	519.652520	1233.4	2.809	14.9	6.2	0.46	3764	1.66	0.04
006356144-04	OBS	No	552.087287	414.974593	1402.1	3.770	15.9	6.5	0.46	3764	1.71	0.04
006356144-05	OBS	No	442.145493	507.544955	1952.1	13.965	13.9	8.7	0.46	3764	2.02	0.05
006356144-06	OBS	No	348.623008	330.101796	962.4	3.779	19.2	5.6	0.46	3764	1.44	0.07
006356144-07	OBS	No	454.712751	549.801536	1604.4	8.118	13.0	7.4	0.46	3764	1.86	0.05
006356144-08	OBS	No	489.683454	209.539948	782.1	7.500	12.6	-1.0	0.46	3764	1.28	0.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006356144-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_KIC_POS
006356144-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—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
006356144-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006356144-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_UNCERTAIN
006356144-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
006356144-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

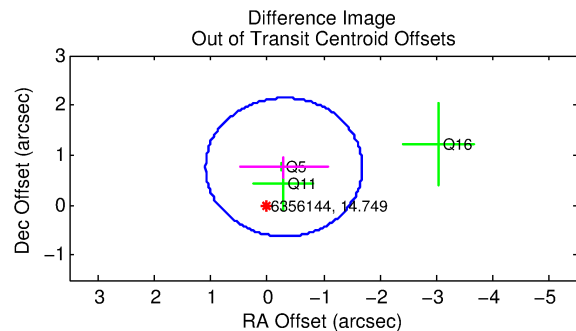
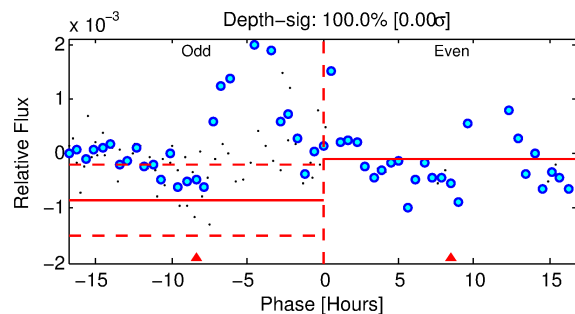
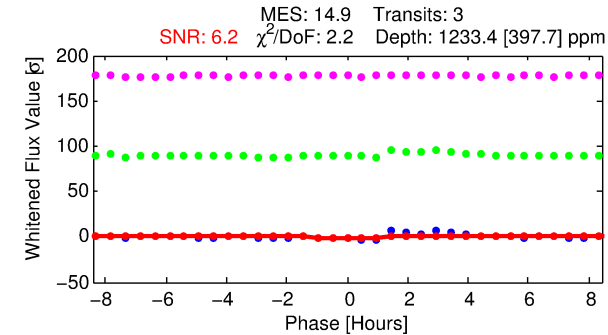
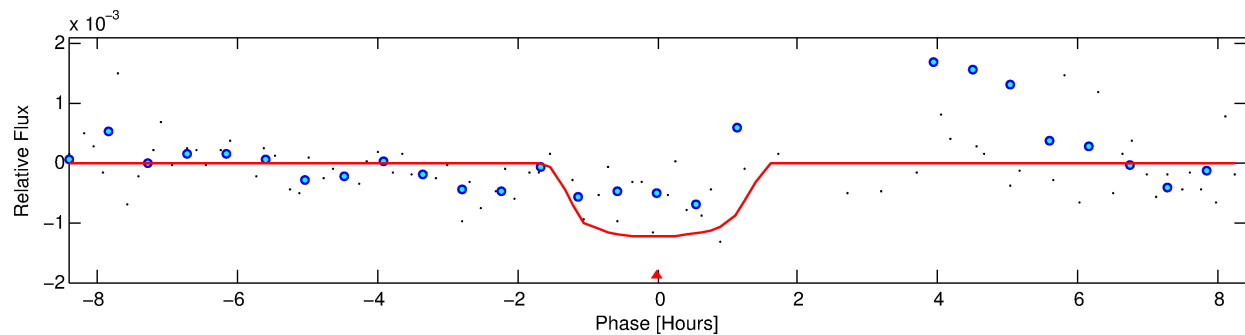
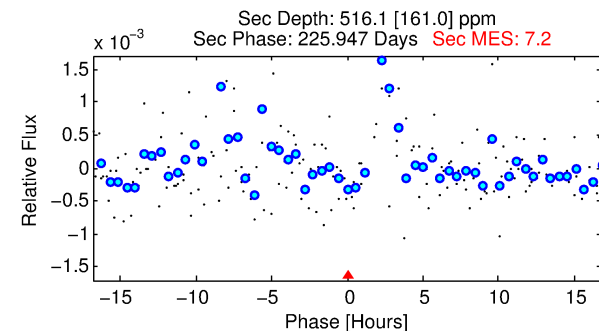
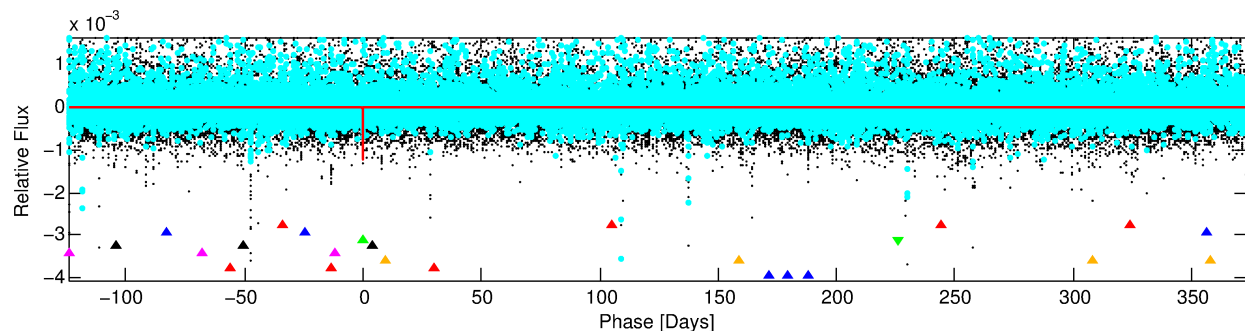
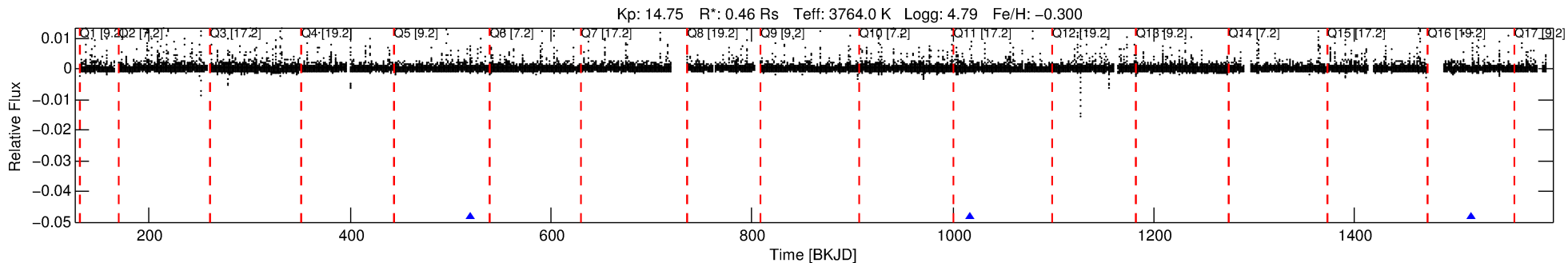
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006356144-03

No Significant Match Found

DV One-Page Summary

KIC: 6356144 Candidate: 3 of 8 Period: 497.958 d



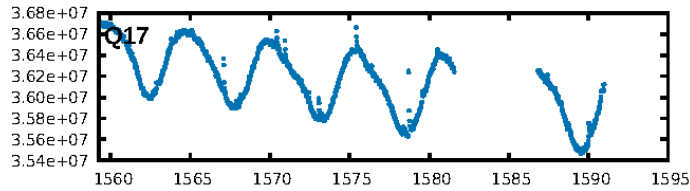
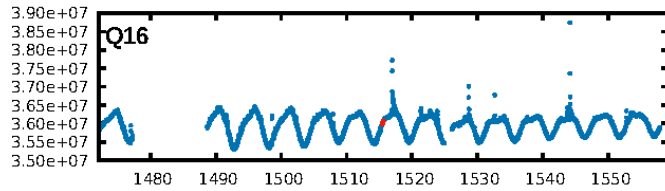
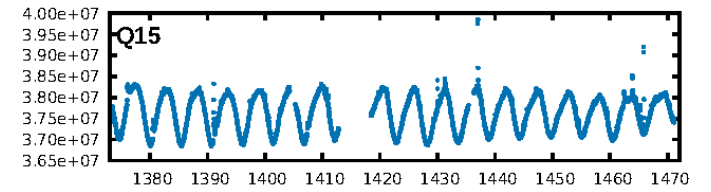
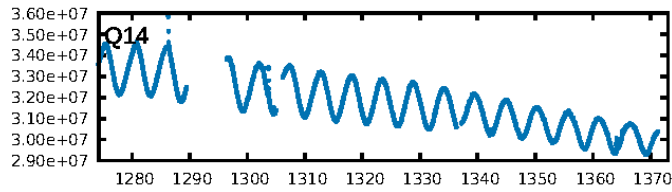
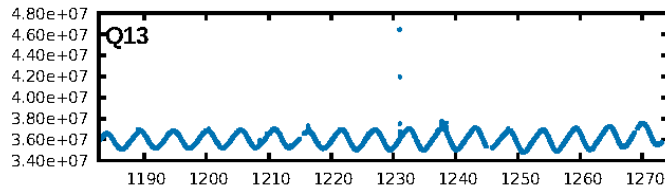
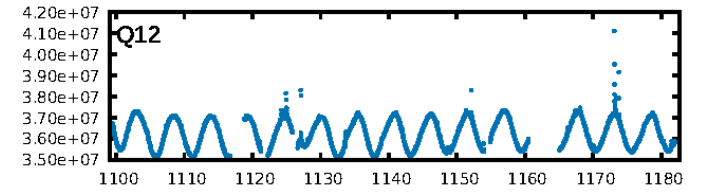
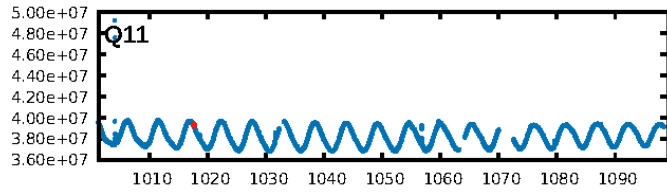
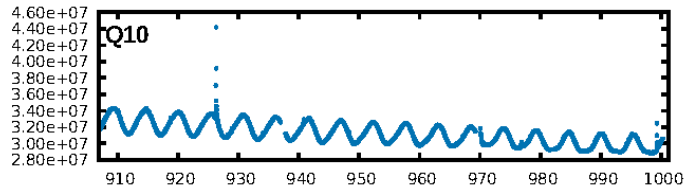
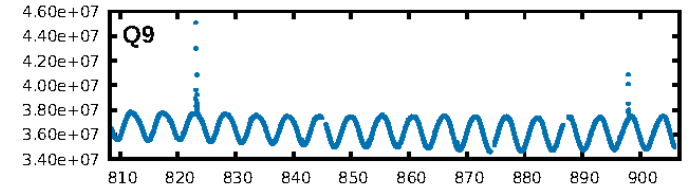
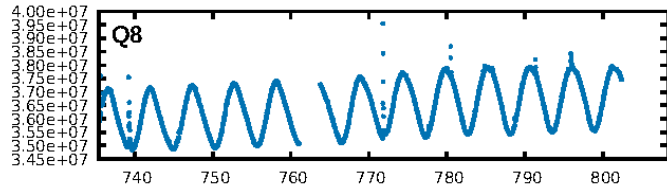
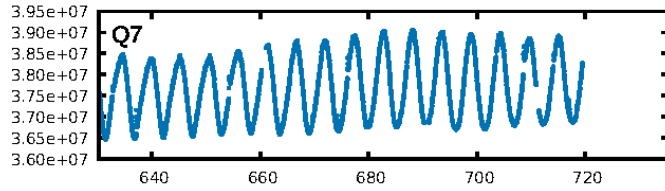
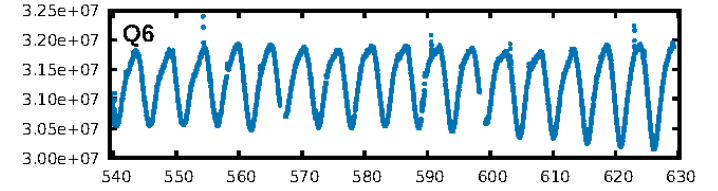
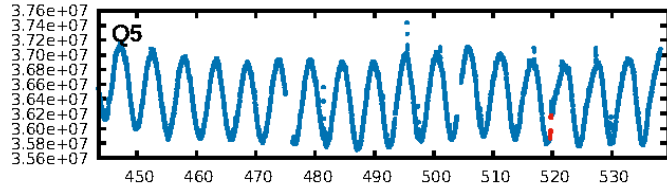
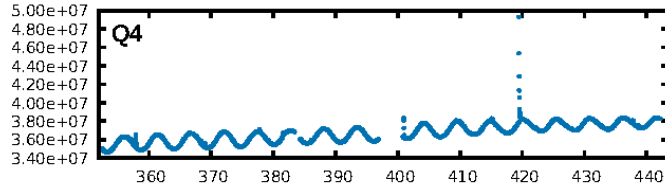
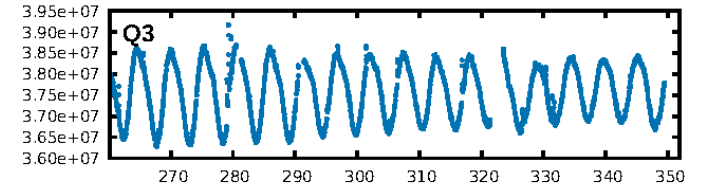
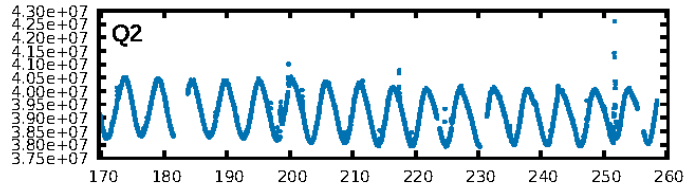
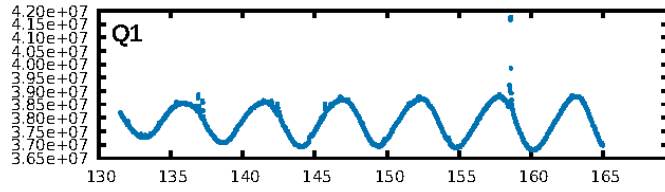
DV Fit Results:

Period = 497.95767 [0.00904] d
Epoch = 519.6525 [0.0131] BKJD
Rp/R* = 0.0333 [0.0873]
a/R* = 1191.06 [15362.46]
b = 0.54 [16.78]
Seff = 0.04 [0.00]
Teq = 115 [3] K
Rp = 1.66 [4.35] Re
a = 0.9538 [0.0600] AU
Ag = 93758.72 [492599.32] [0.19σ]
Teffp = 3110 [4084] K [0.73σ]

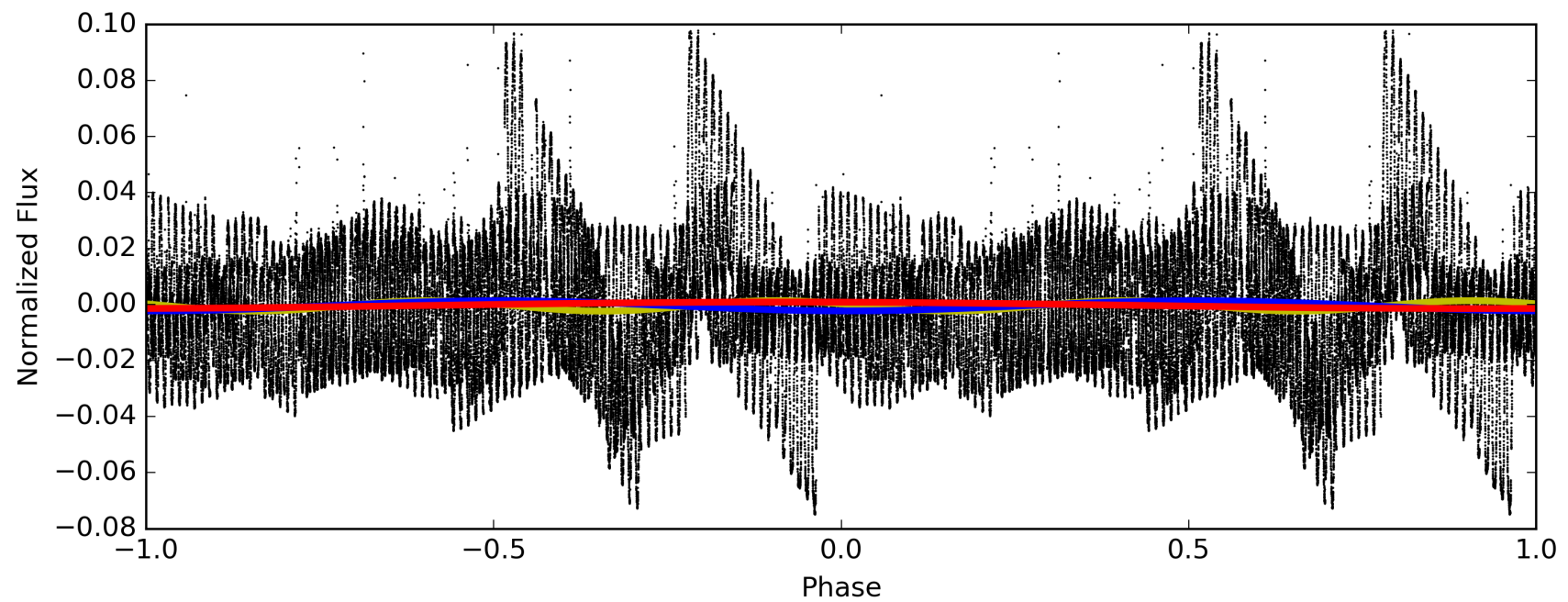
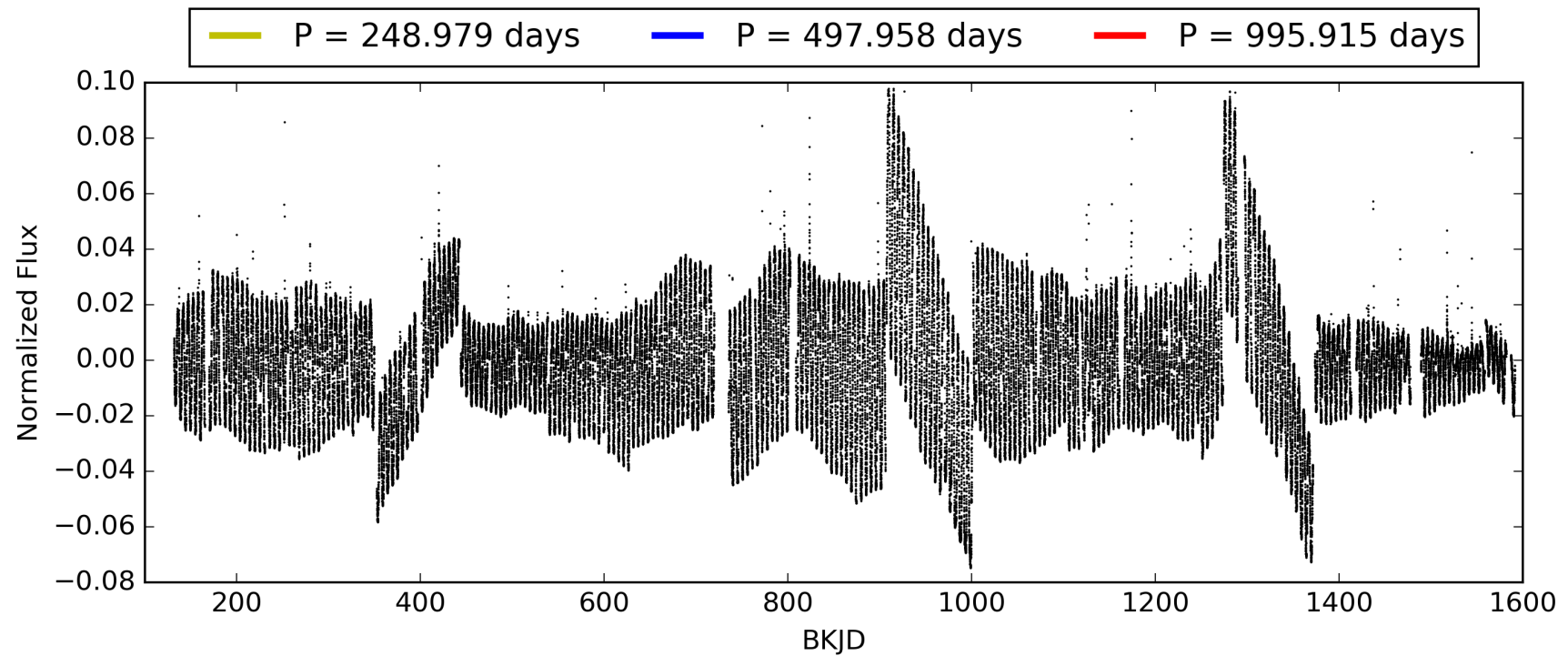
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [24.80σ]
LongPeriod-sig: 100.0% [276.34σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 17.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.233
Centroid-sig: 0.1%
Centroid-so: 2.782 arcsec [1.99σ]
OotOffset-rm: 0.815 arcsec [1.76σ]
KicOffset-rm: 0.248 arcsec [0.74σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 006356144-03, PDC Light Curves

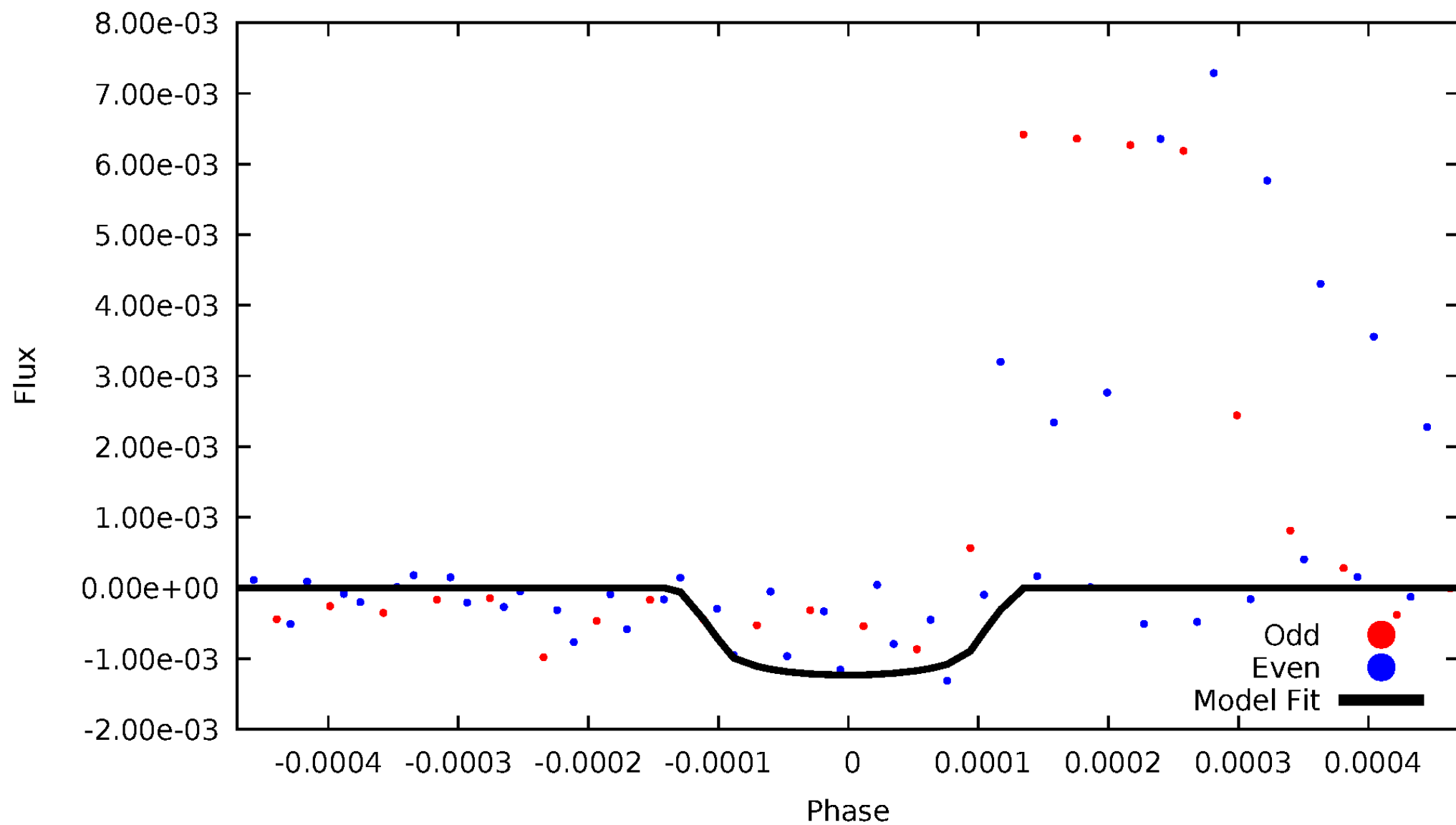


TCE 006356144-03



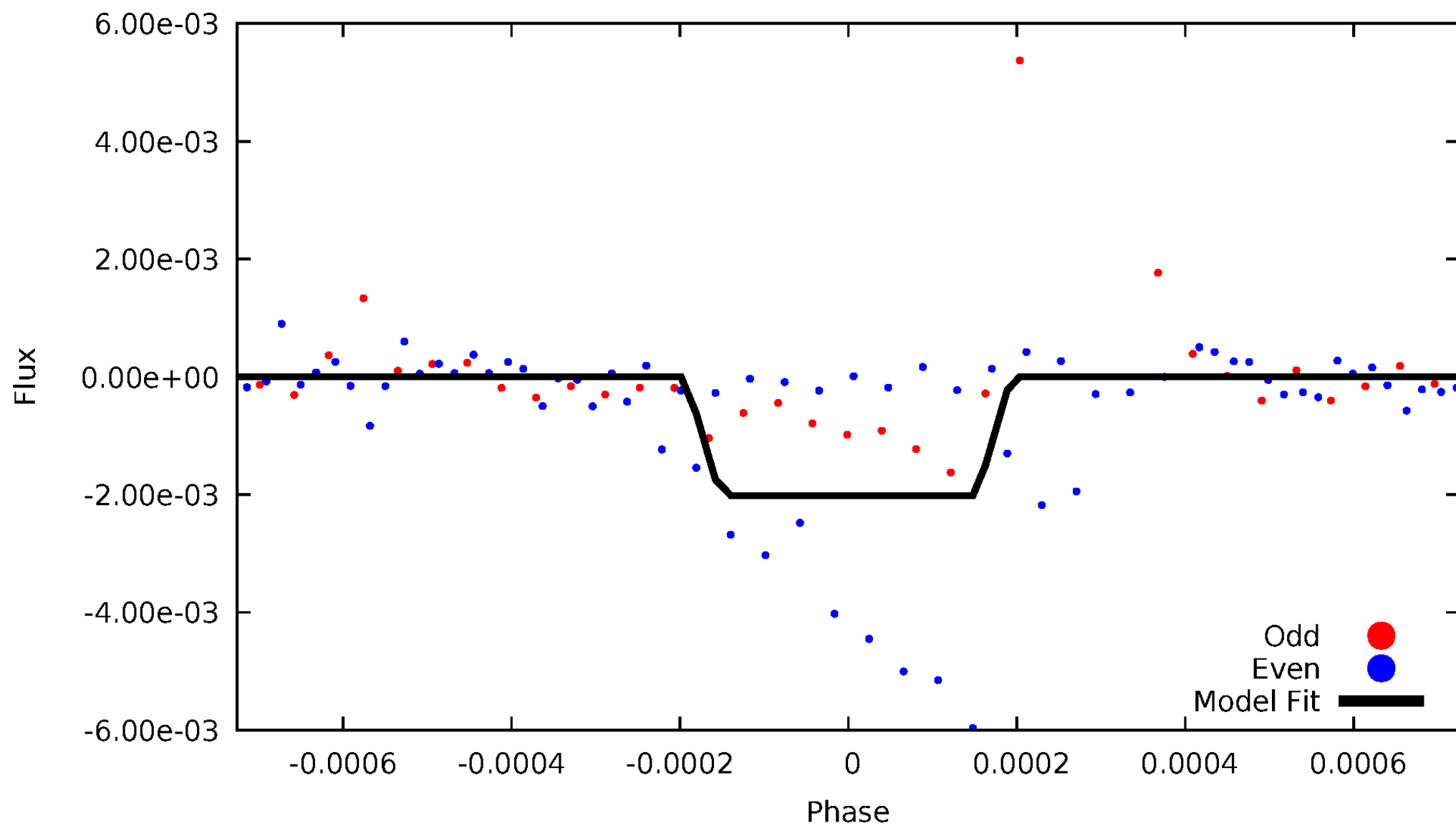
DV Odd/Even

TCE 006356144-03



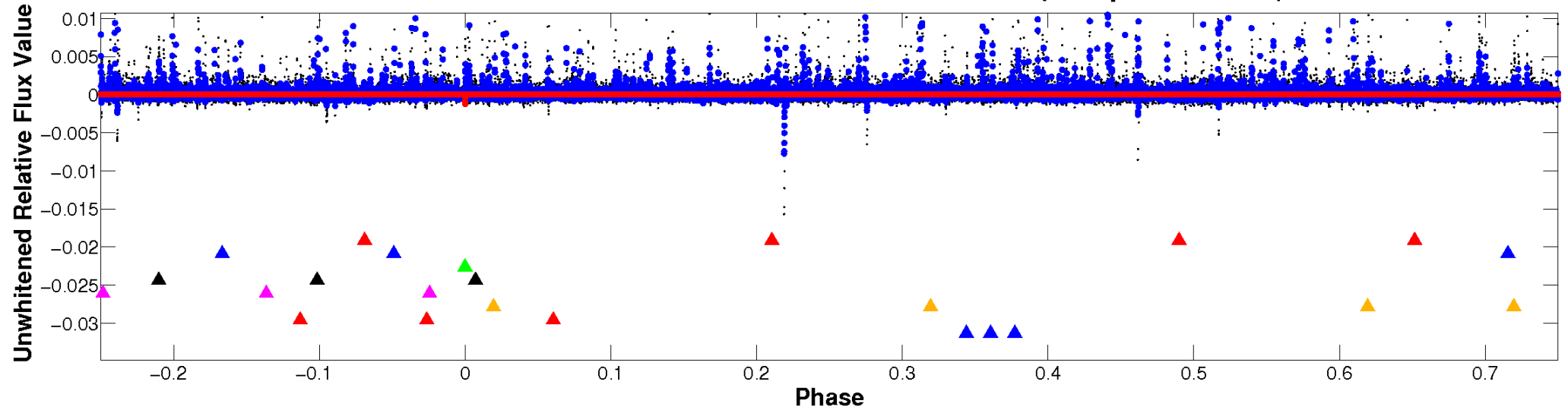
ALT Odd/Even

TCE 006356144-03

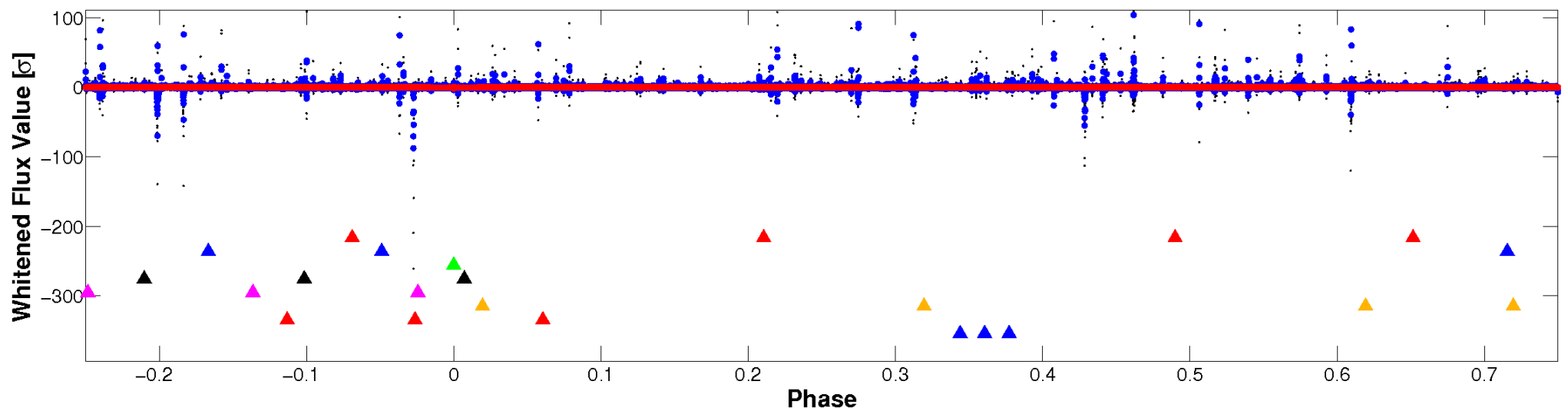


Non-Whitened Vs. Whitened Light Curve

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

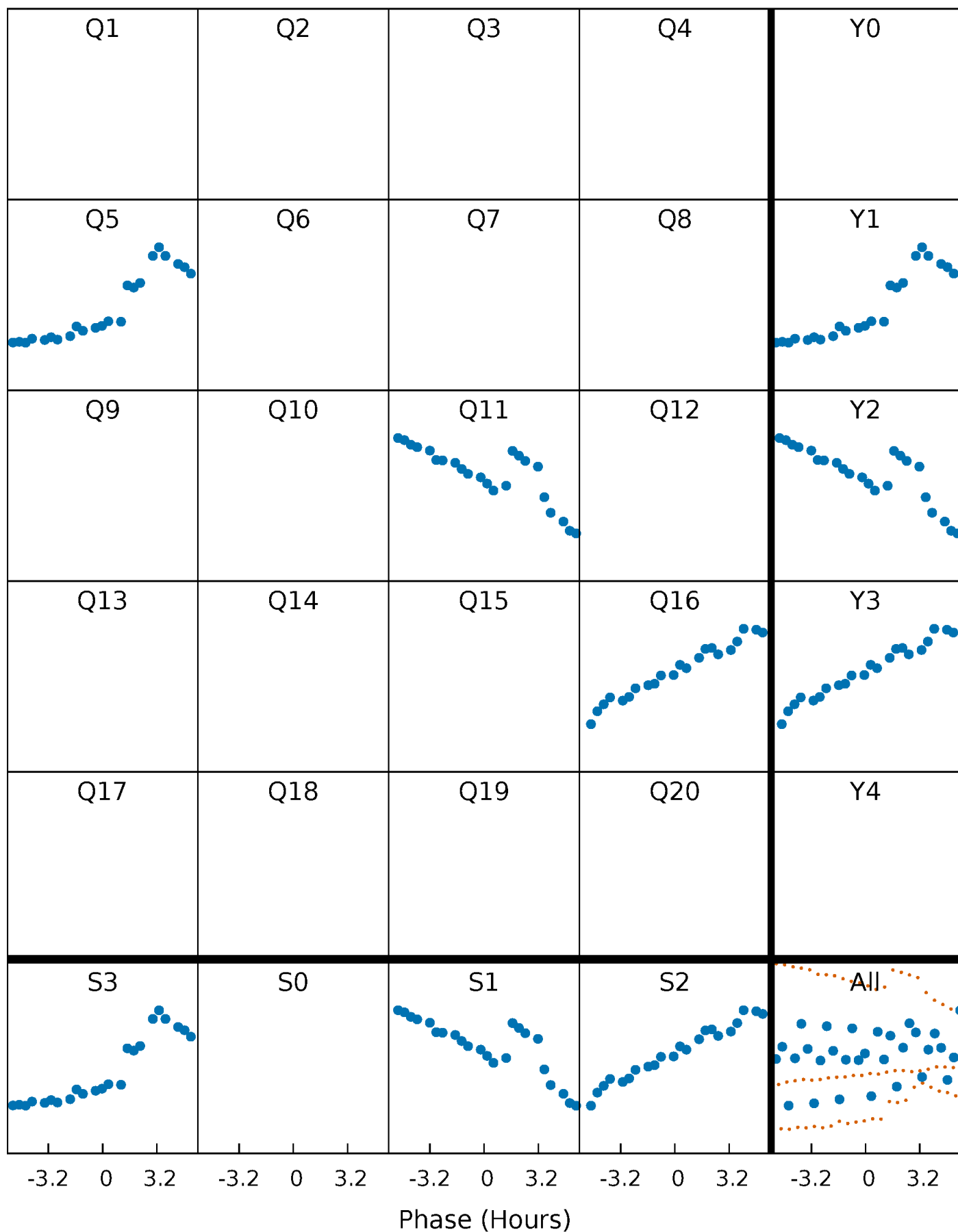


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



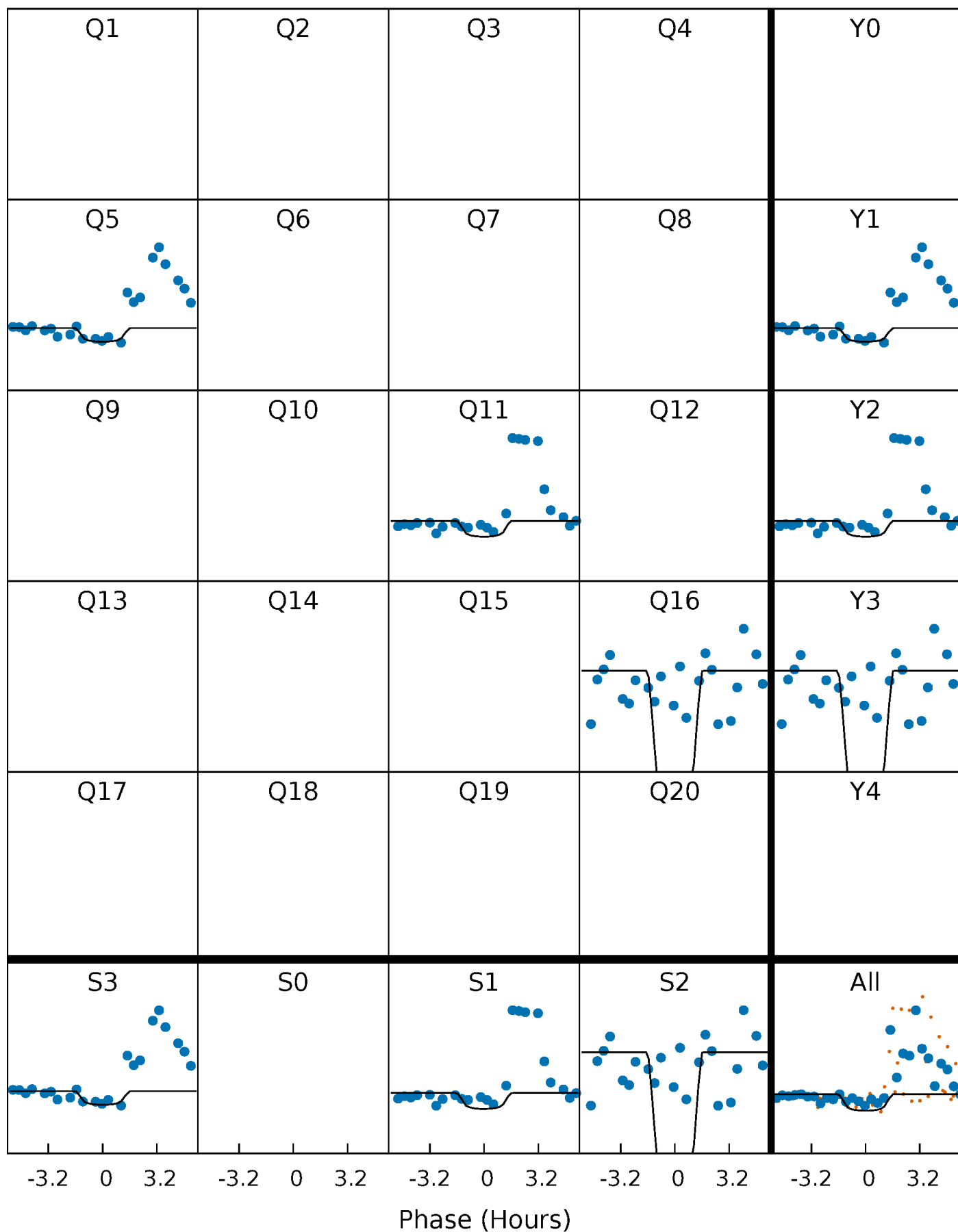
PDC Quarter-Phased Transit Curves

TCE 006356144-03 P=497.957672 Days $T_0=519.652520$ (BKJD)



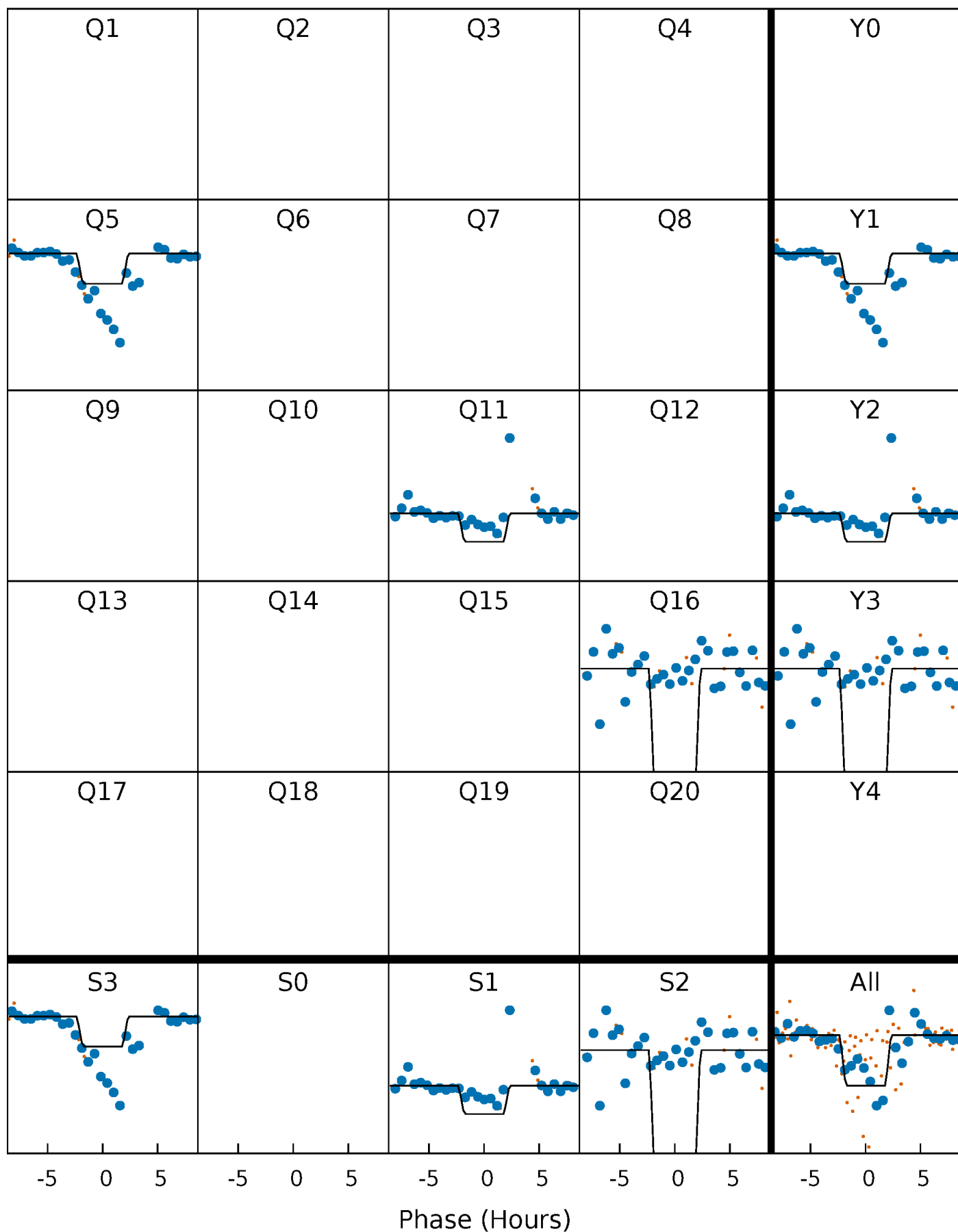
DV Quarter-Phased Transit Curves

TCE 006356144-03 P=497.957672 Days $T_0=519.652520$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

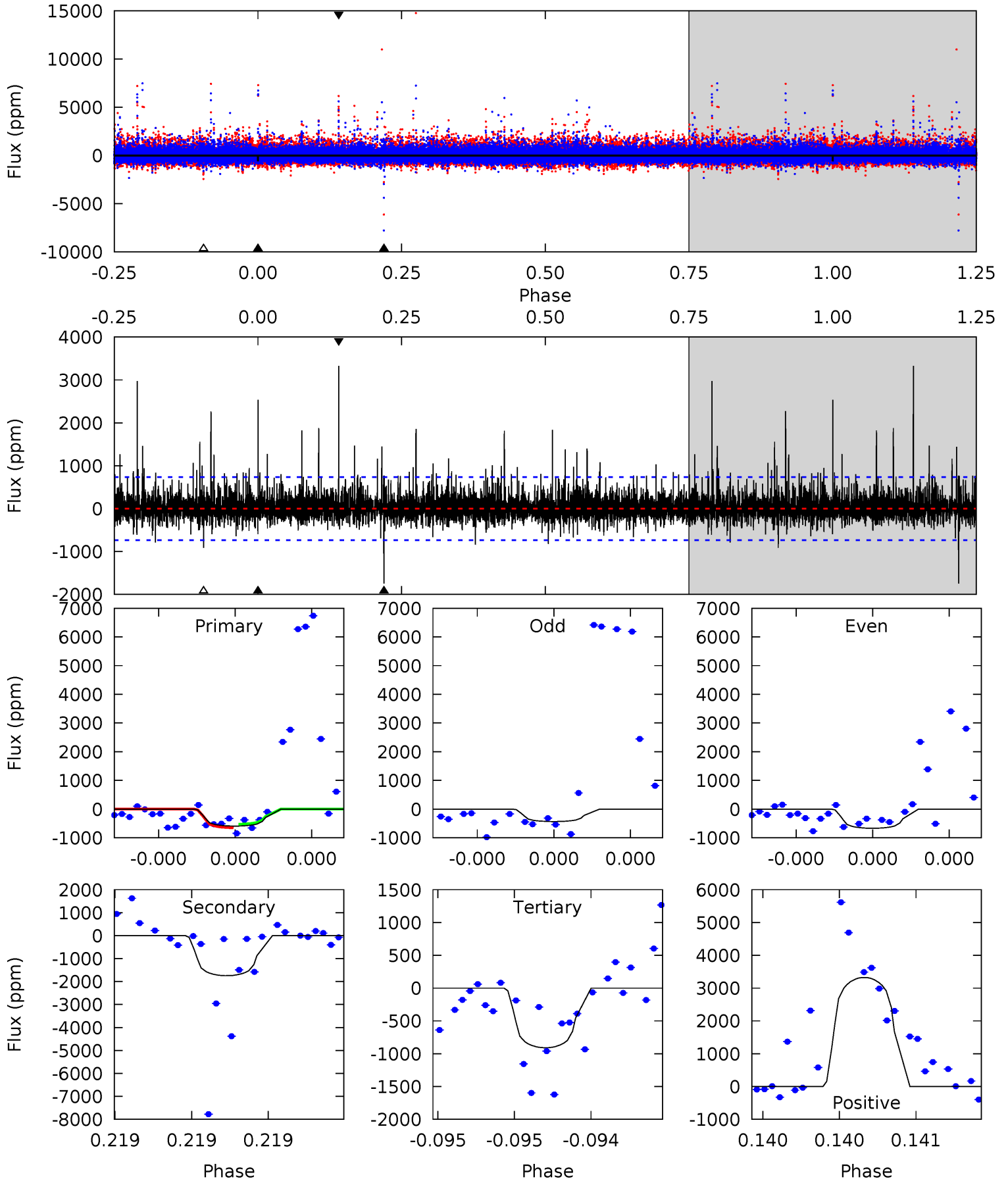
TCE 006356144-03 P=497.959046 Days $T_0=519.616803$ (BKJD)



DV Model-Shift Uniqueness Test

006356144-03, P = 497.957672 Days, E = 21.694848 Days

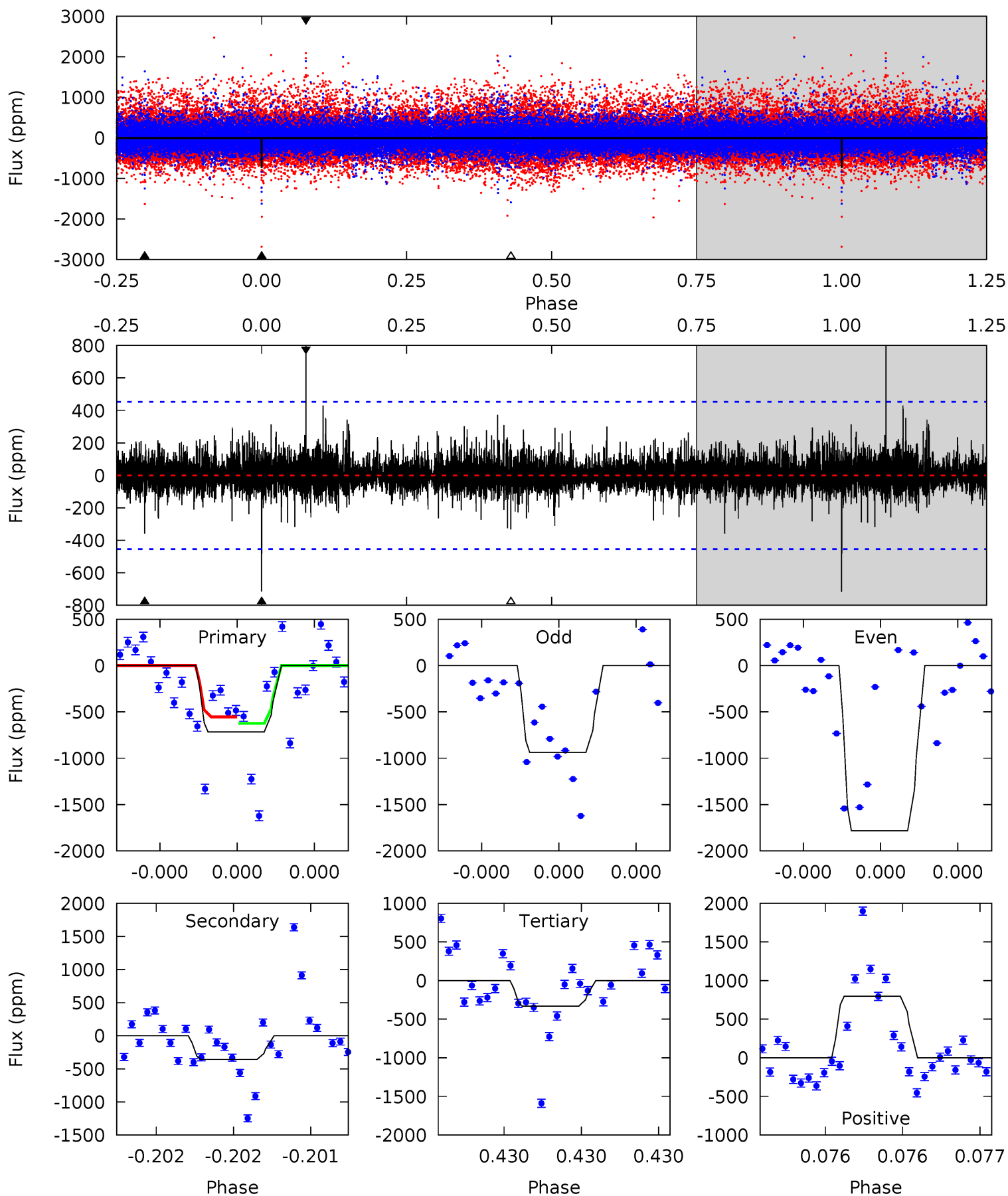
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.58	13.5	7.02	25.7	5.68	3.65	1.81	-2.45	-21.1	6.46	-12.2	0.19	1.21	0.66	0.47



Alt Model-Shift Uniqueness Test

006356144-03, P = 497.959046 Days, E = 21.657757 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.88	4.46	4.13	9.88	5.63	3.56	0.81	4.75	-1.00	0.33	-5.42	4.97	1.83	0.53	0.43



Stellar Parameters For KIC 006356144

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3764^{+60}_{-60}	$4.787^{+0.042}_{-0.025}$	$-0.300^{+0.100}_{-0.100}$	$0.457^{+0.028}_{-0.037}$	$0.466^{+0.031}_{-0.031}$	$6.897^{+1.350}_{-0.775}$
	+2%/-2%	+1%/-1%	+33%/-33%	+6%/-8%	+7%/-7%	+20%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006356144-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1745 ± 129	$3.54^{+3.51}_{-2.43}$	160^{+3}_{-3}	3177^{+1547}_{-541}	$69811^{+621842}_{-52379}$
Alt.	-359 ± 81	$3.92^{+3.66}_{-2.63}$	160^{+3}_{-3}	2503^{+909}_{-347}	11952^{+99342}_{-8815}

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

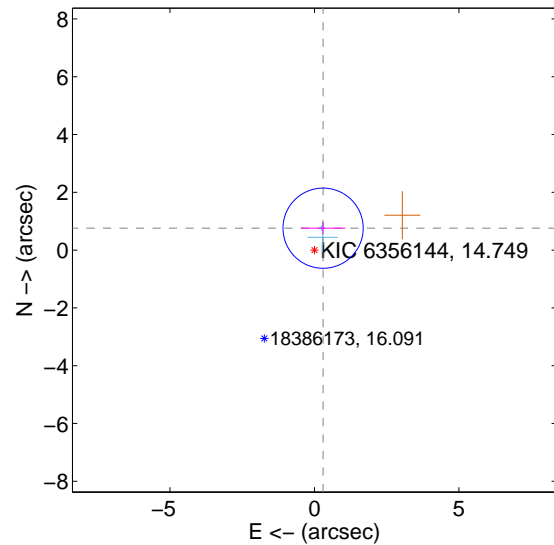
Supplemental centroid analysis for 006356144-03. Kepler magnitude: 14.75. Transit SNR 6.21

There are 2 quarters with good PRF difference image offsets

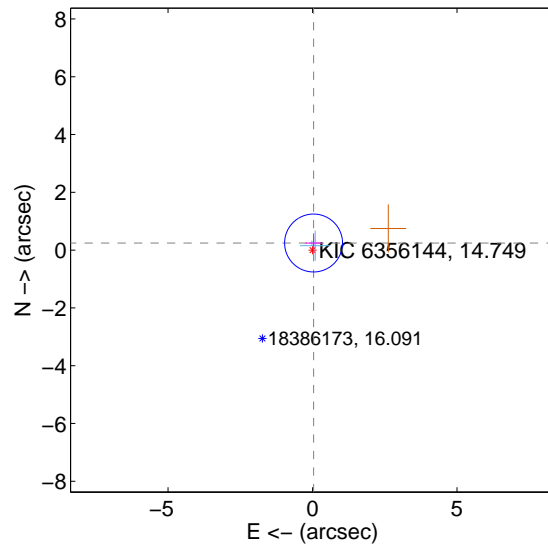
The direct PRF centroid is offset from the target star catalog position by about 0.62 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.815 ± 0.463	1.76	-0.300 ± 0.773	0.758 ± 0.211
PRF-fit source offset from KIC position	0.248 ± 0.334	0.74	-0.036 ± 0.281	0.245 ± 0.335
photometric centroid source offset	2.78 ± 1.40	1.99	-1.08 ± 1.04	2.56 ± 1.45

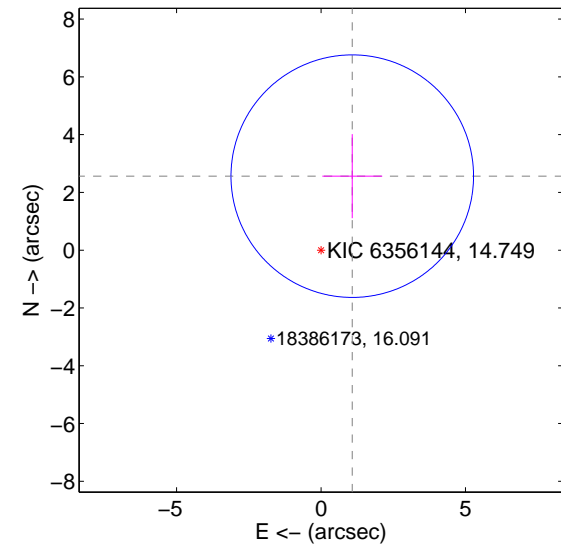
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

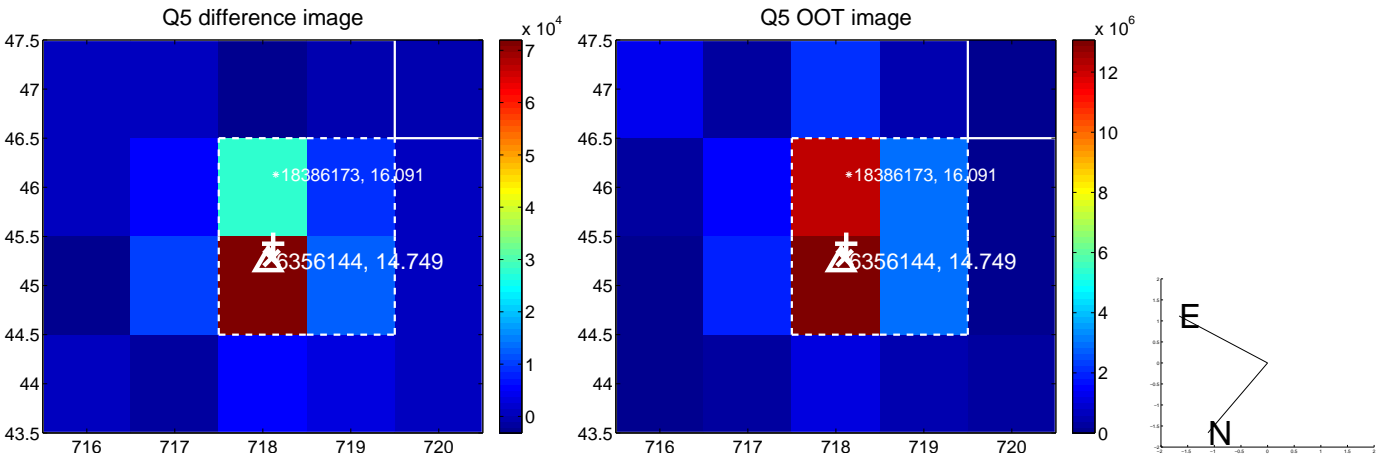


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

Q9 no difference image



Q9 no OOT image



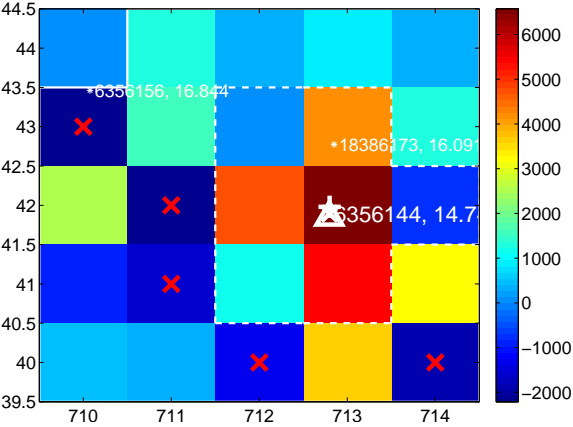
Q10 no difference image



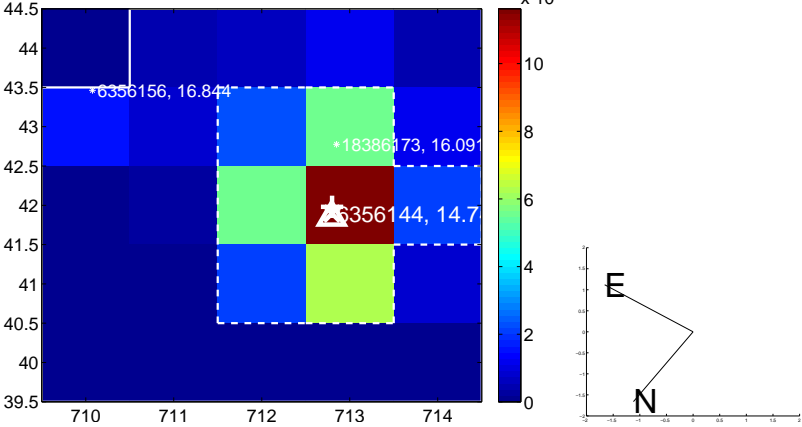
Q10 no OOT image



Q11 difference image



Q11 OOT image



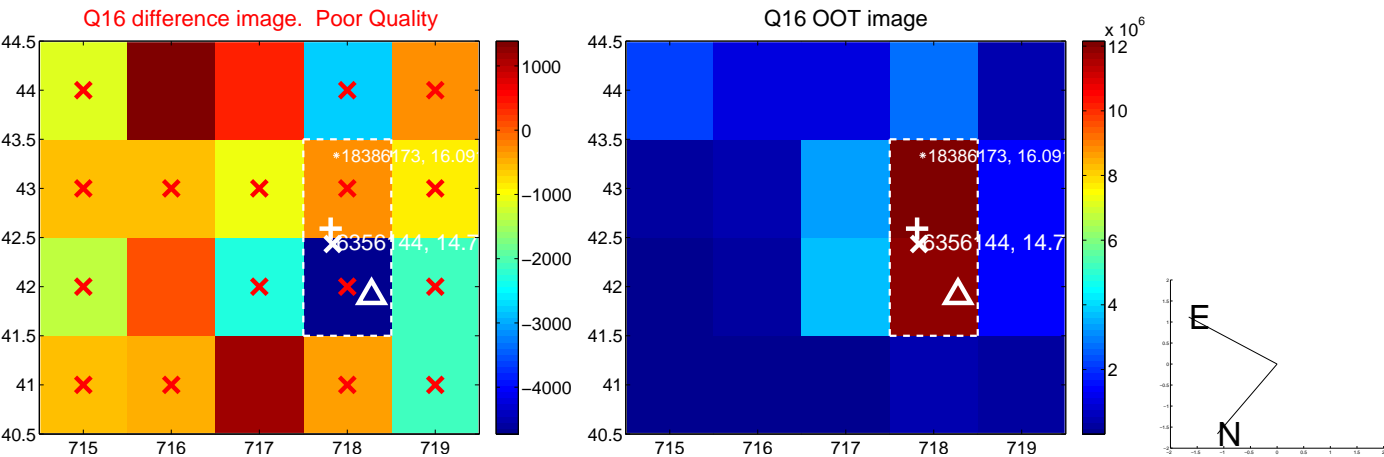
Q12 no difference image



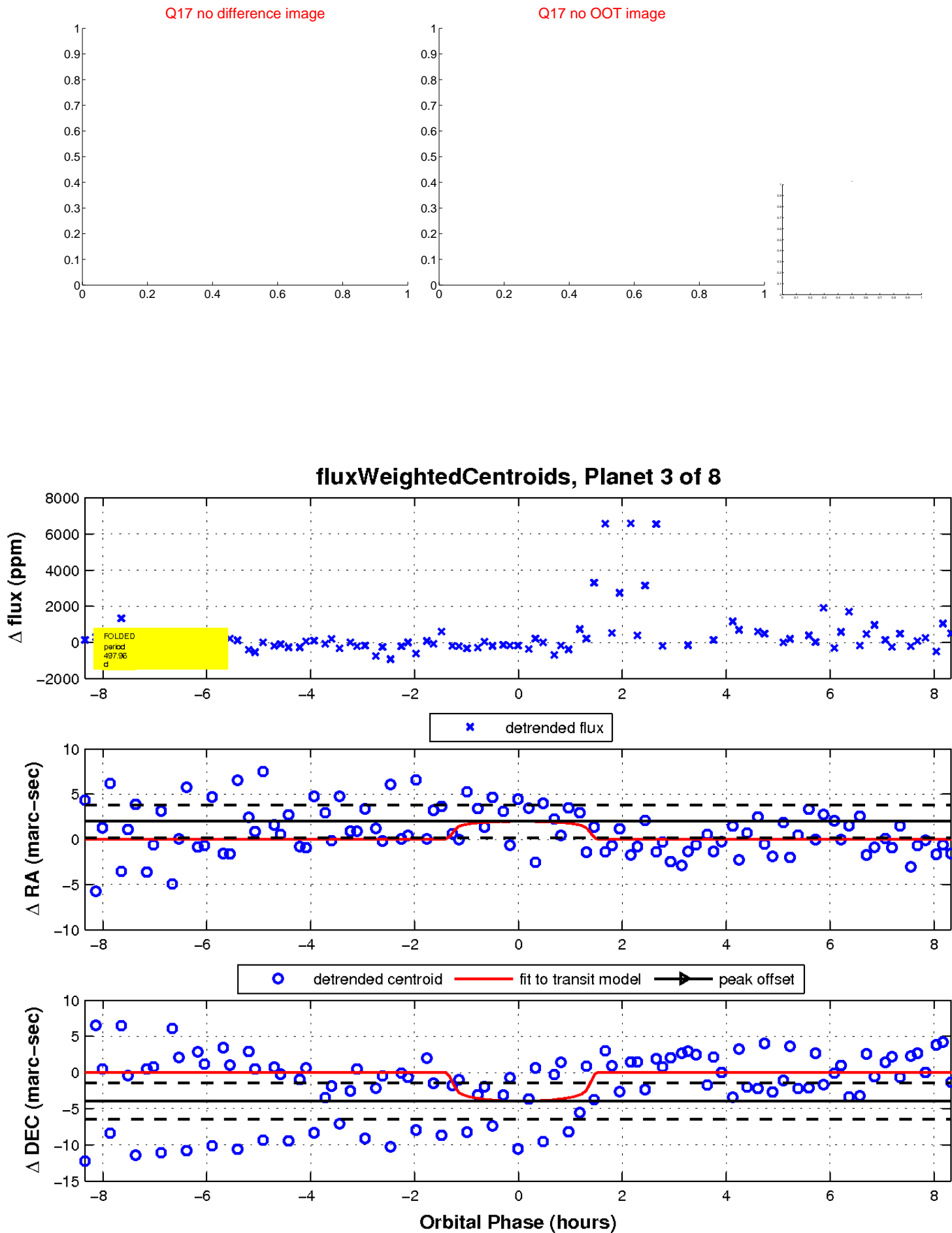
Q12 no OOT image



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

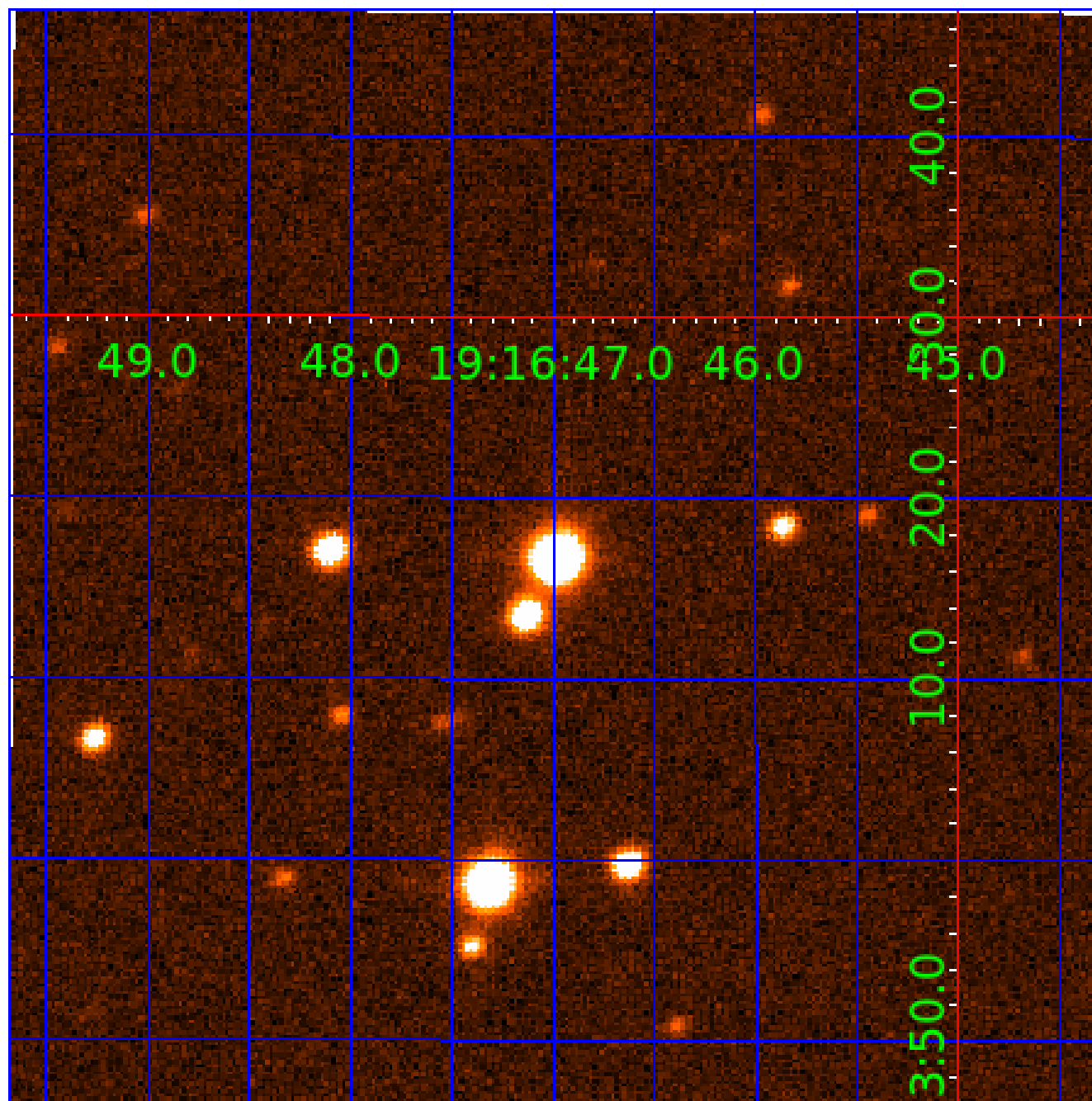


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006356144

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})
006356144-01	OBS	No	358.800189	265.670890	1757.6	4.009	19.6	10.4	0.46	3764	1.94	0.06
006356144-02	OBS	No	556.578837	378.047496	846.3	11.200	18.0	4.0	0.46	3764	1.35	0.04
006356144-03	OBS	No	497.957672	519.652520	1233.4	2.809	14.9	6.2	0.46	3764	1.66	0.04
006356144-04	OBS	No	552.087287	414.974593	1402.1	3.770	15.9	6.5	0.46	3764	1.71	0.04
006356144-05	OBS	No	442.145493	507.544955	1952.1	13.965	13.9	8.7	0.46	3764	2.02	0.05
006356144-06	OBS	No	348.623008	330.101796	962.4	3.779	19.2	5.6	0.46	3764	1.44	0.07
006356144-07	OBS	No	454.712751	549.801536	1604.4	8.118	13.0	7.4	0.46	3764	1.86	0.05
006356144-08	OBS	No	489.683454	209.539948	782.1	7.500	12.6	-1.0	0.46	3764	1.28	0.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006356144-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_KIC_POS
006356144-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—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
006356144-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006356144-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_UNCERTAIN
006356144-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
006356144-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

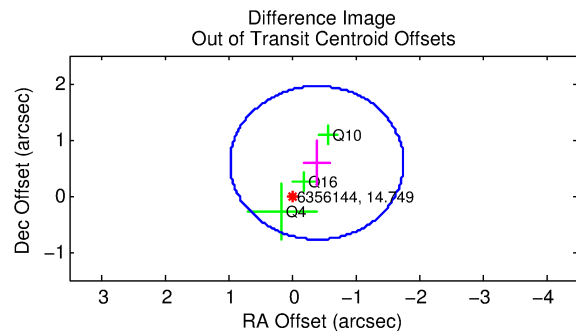
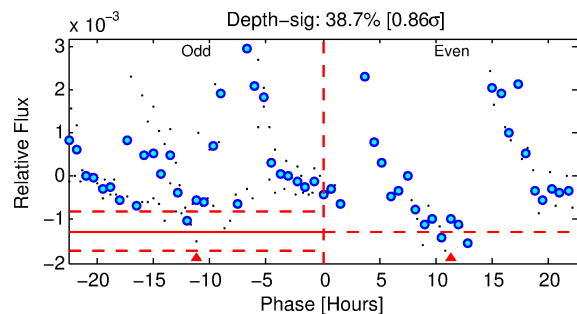
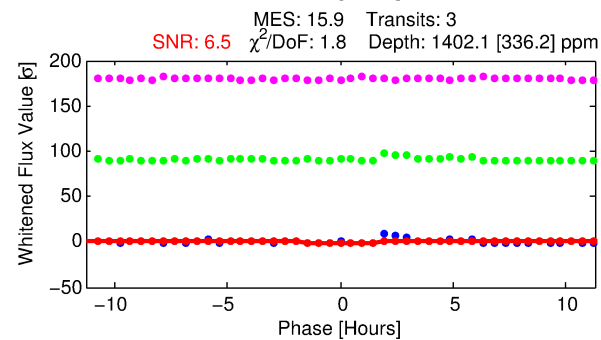
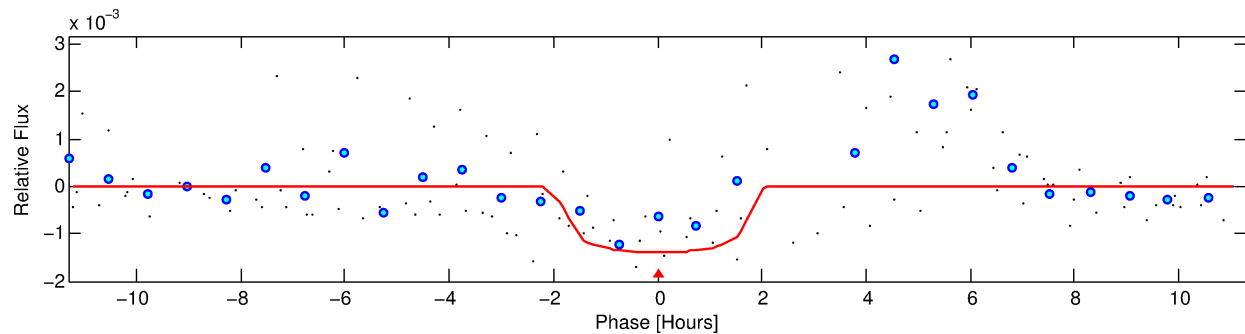
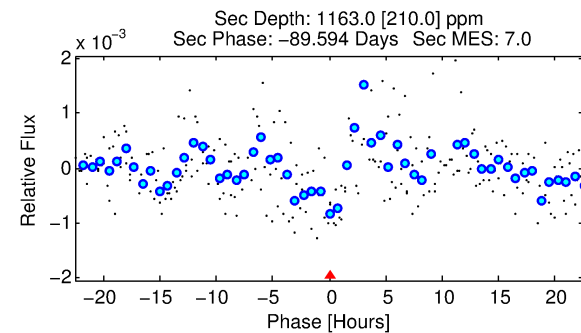
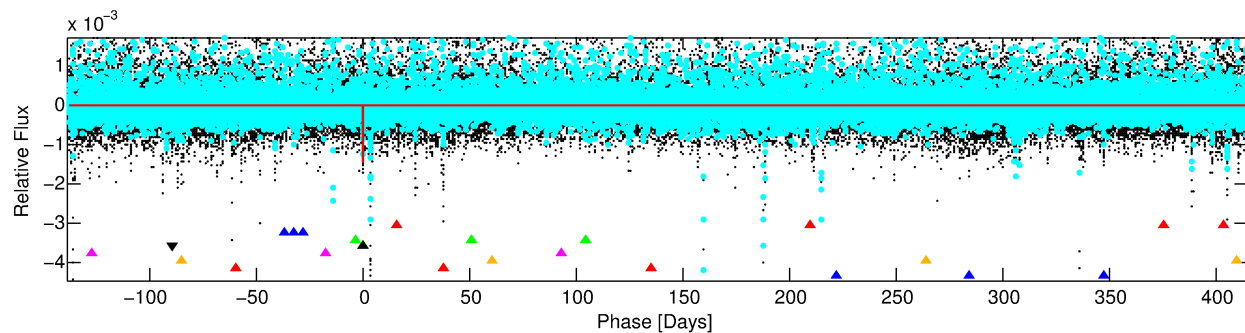
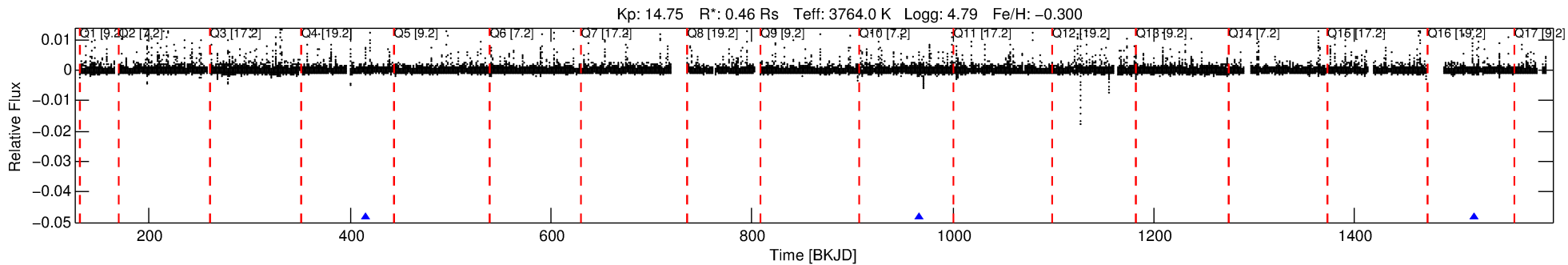
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006356144-04

No Significant Match Found

DV One-Page Summary

KIC: 6356144 Candidate: 4 of 8 Period: 552.087 d



DV Fit Results:

Period = 552.08729 [0.00650] d
Epoch = 414.9746 [0.0067] BKJD
Rp/R* = 0.0342 [0.1102]
a/R* = 1157.07 [18346.75]
b = 0.01 [2219.53]
Seff = 0.04 [0.00]
Teq = 111 [3] K
Rp = 1.71 [5.50] Re
a = 1.0217 [0.0642] AU
Ag = 229021.02 [1474309.53] [0.16σ]
Teffp = 3756 [6045] K [0.60σ]

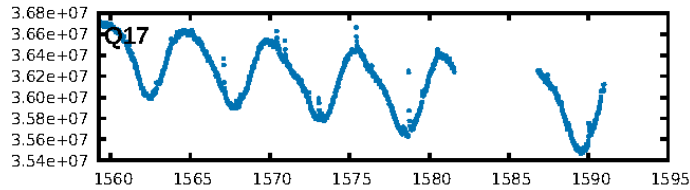
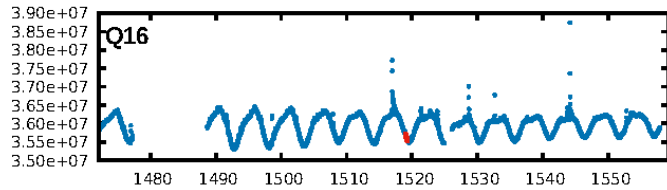
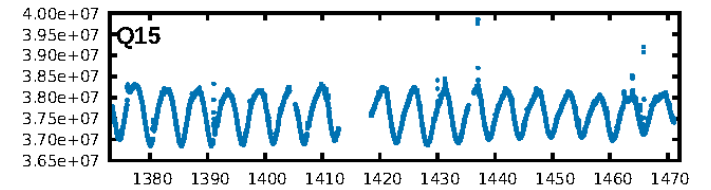
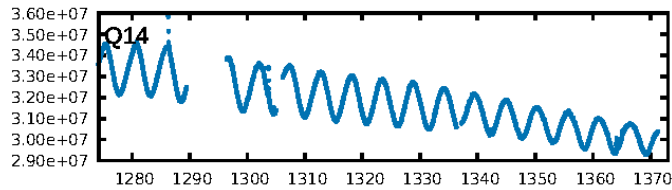
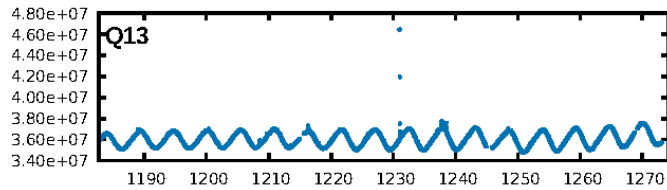
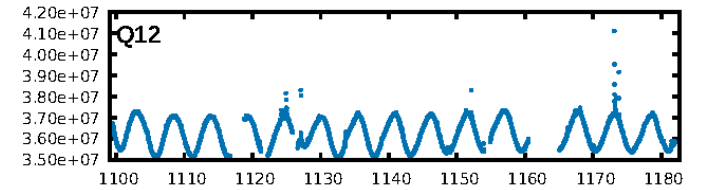
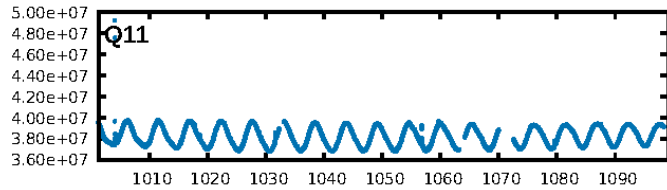
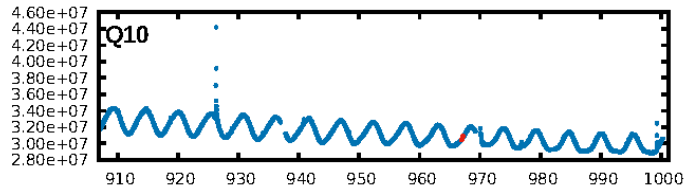
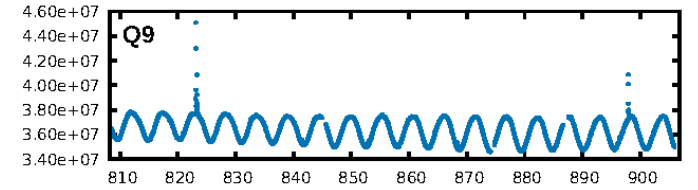
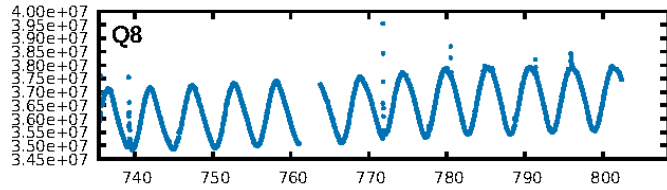
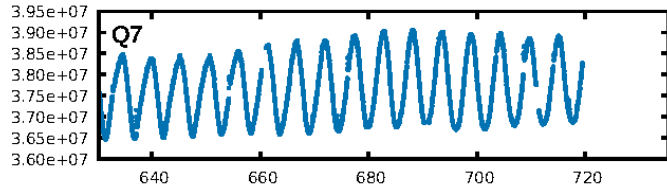
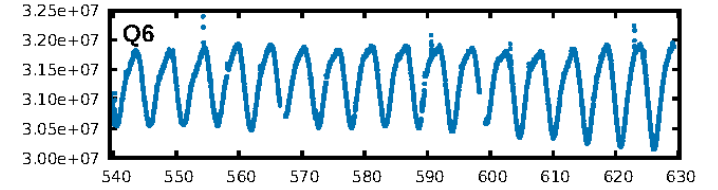
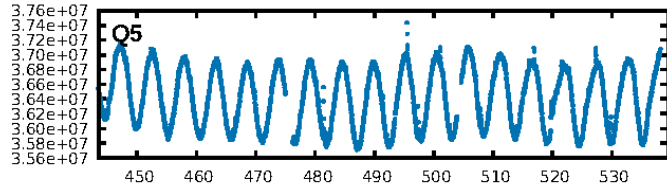
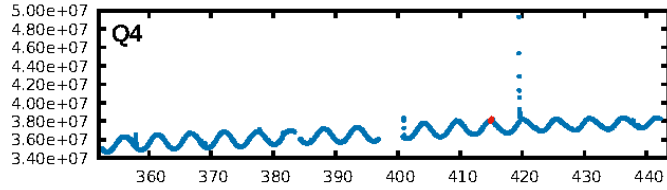
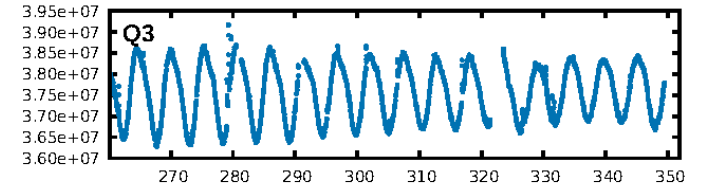
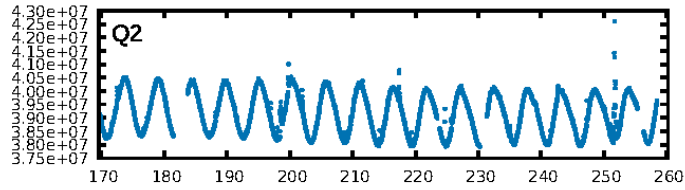
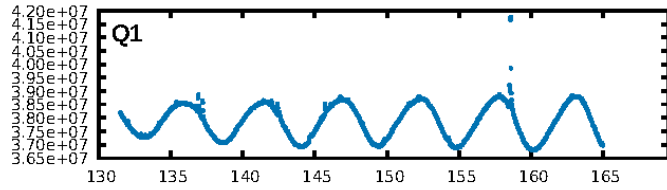
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [276.34σ]
LongPeriod-sig: 100.0% [9.12σ]
ModelChiSquare2-sig: 1.6%
ModelChiSquareGof-sig: 47.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -40.05
Centroid-sig: 5.9%
Centroid-so: 0.928 arcsec [0.87σ]
OotOffset-rm: 0.707 arcsec [1.55σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-rm: 0.262 arcsec [1.13σ]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

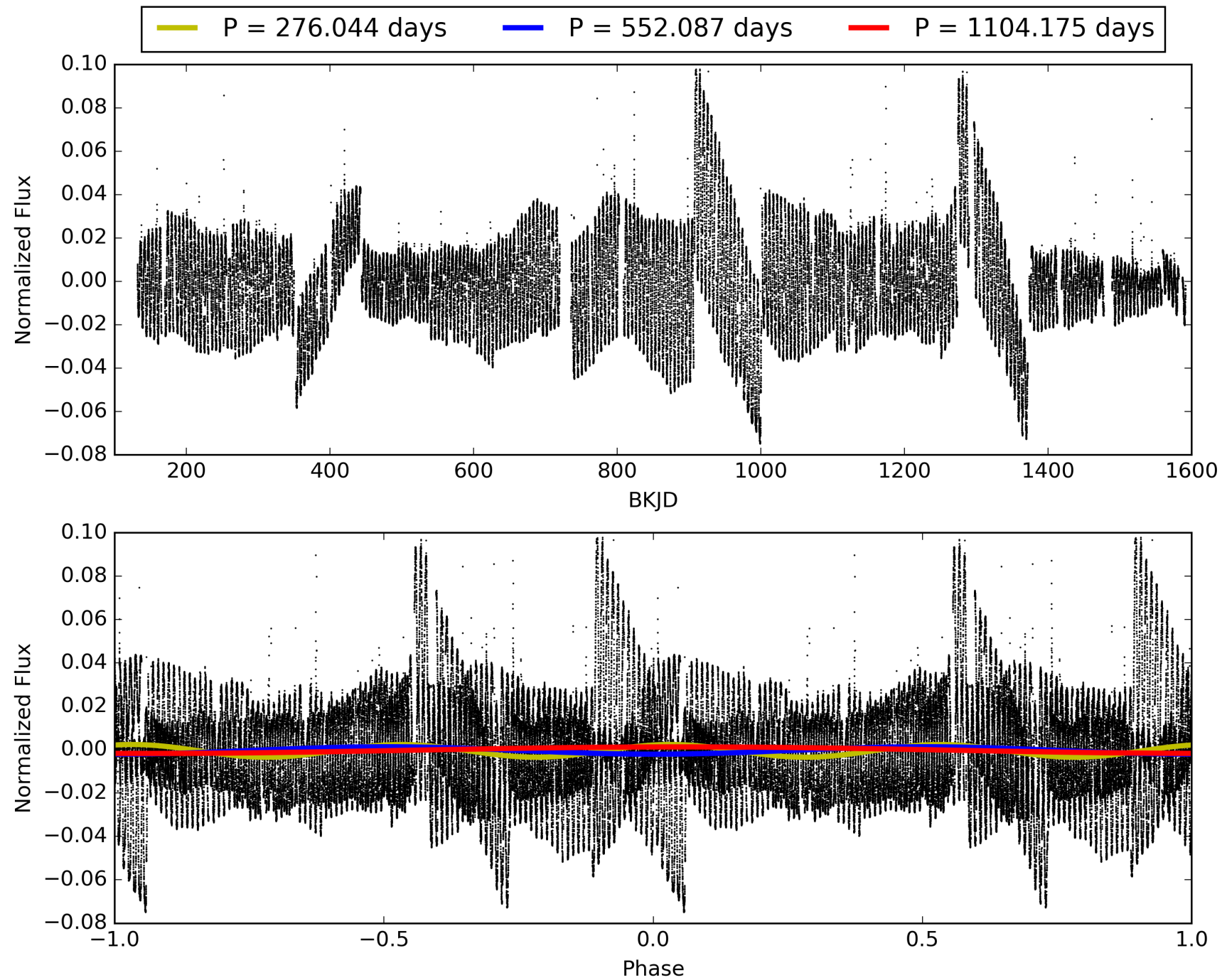
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:33:55 Z

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

TCE 006356144-04, PDC Light Curves

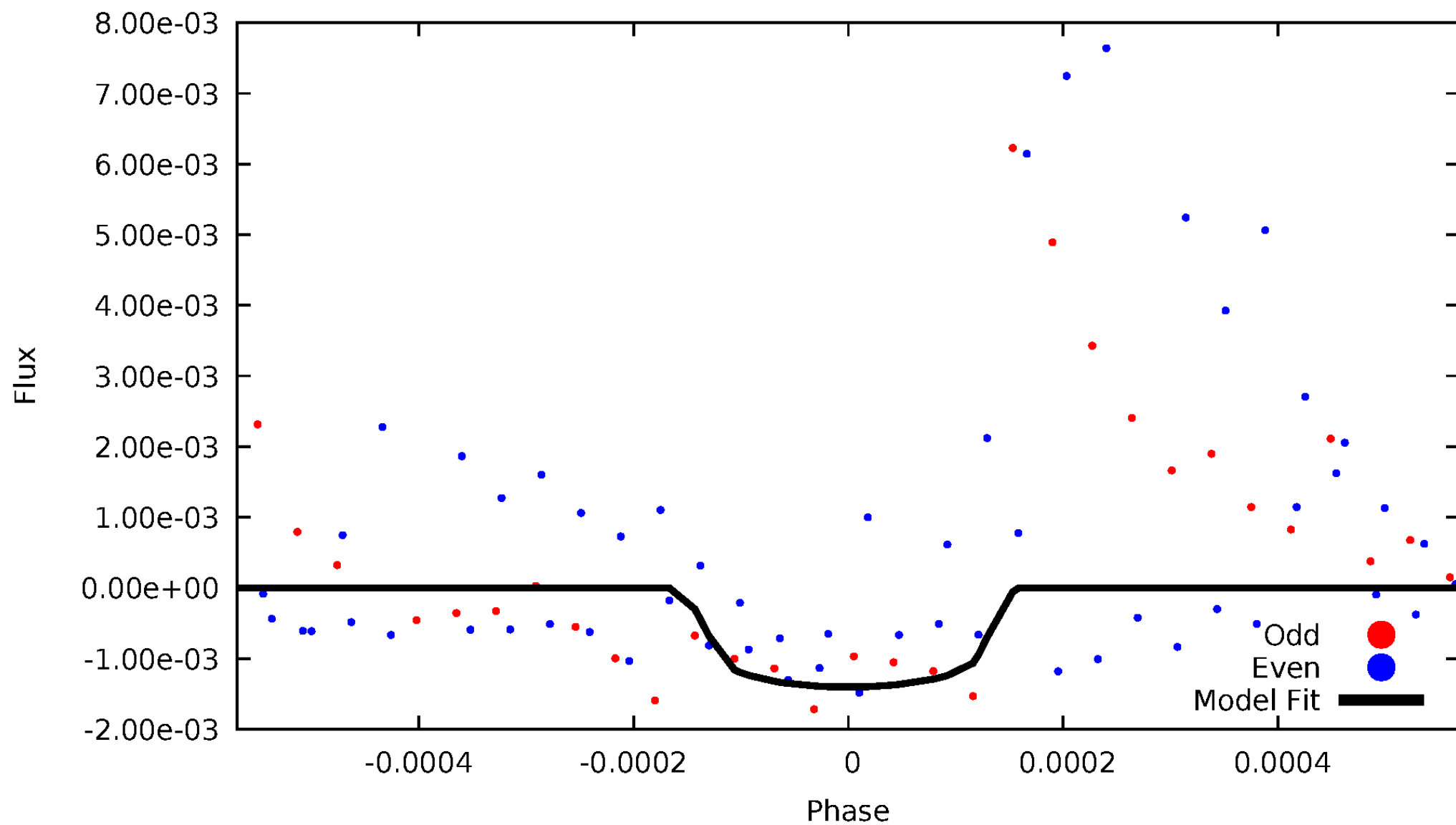


TCE 006356144-04



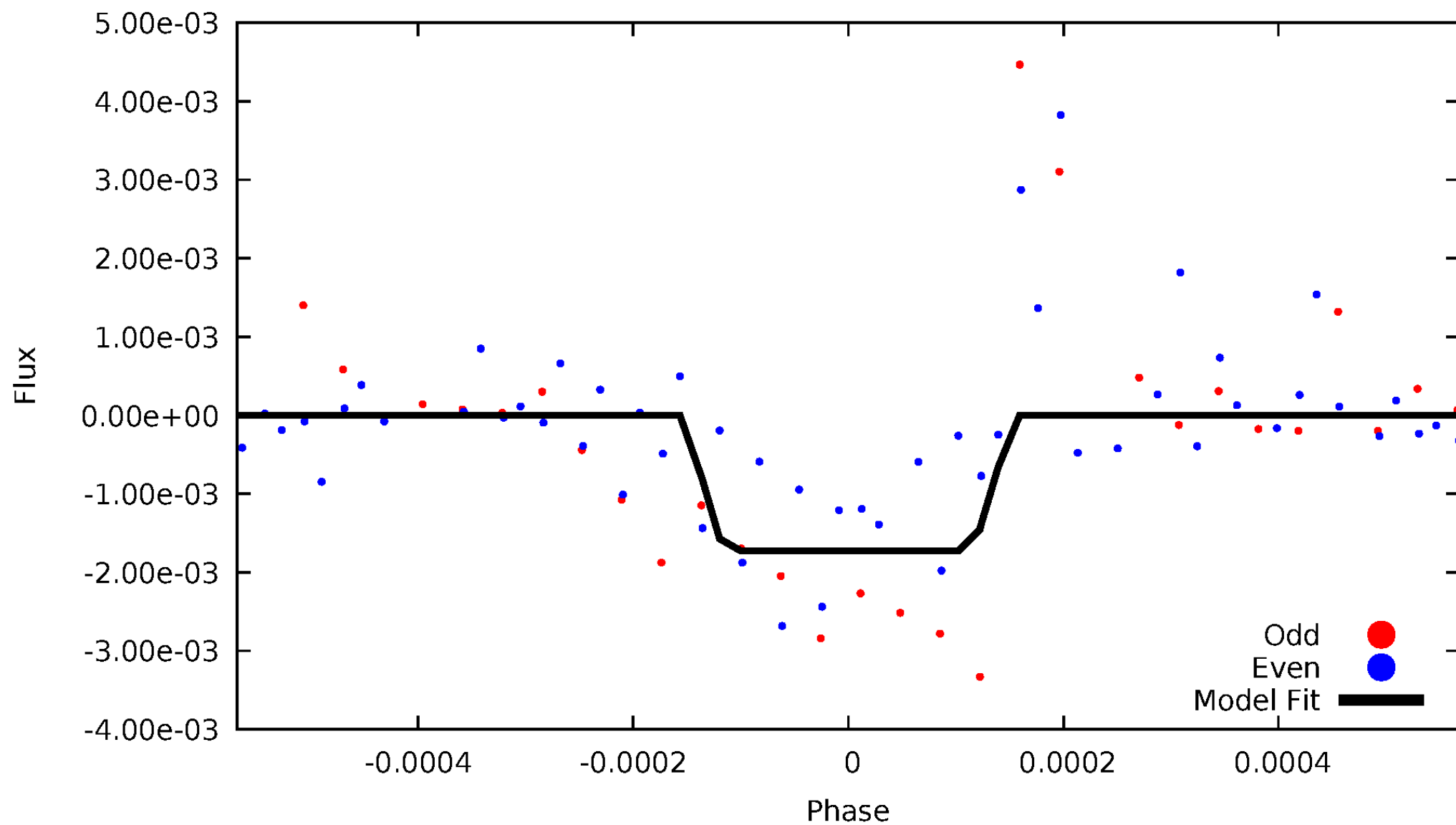
DV Odd/Even

TCE 006356144-04



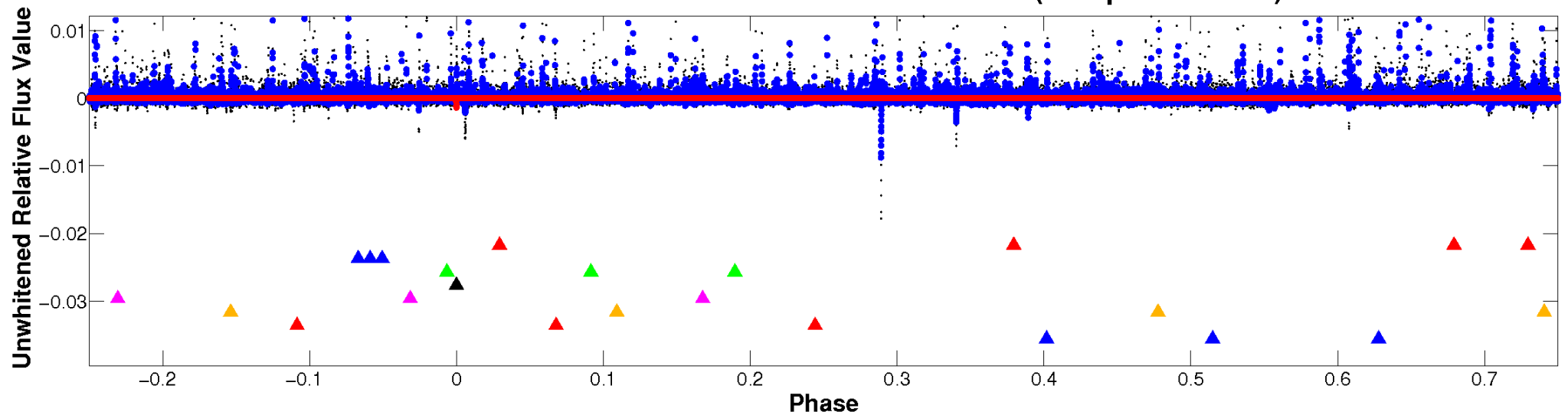
ALT Odd/Even

TCE 006356144-04

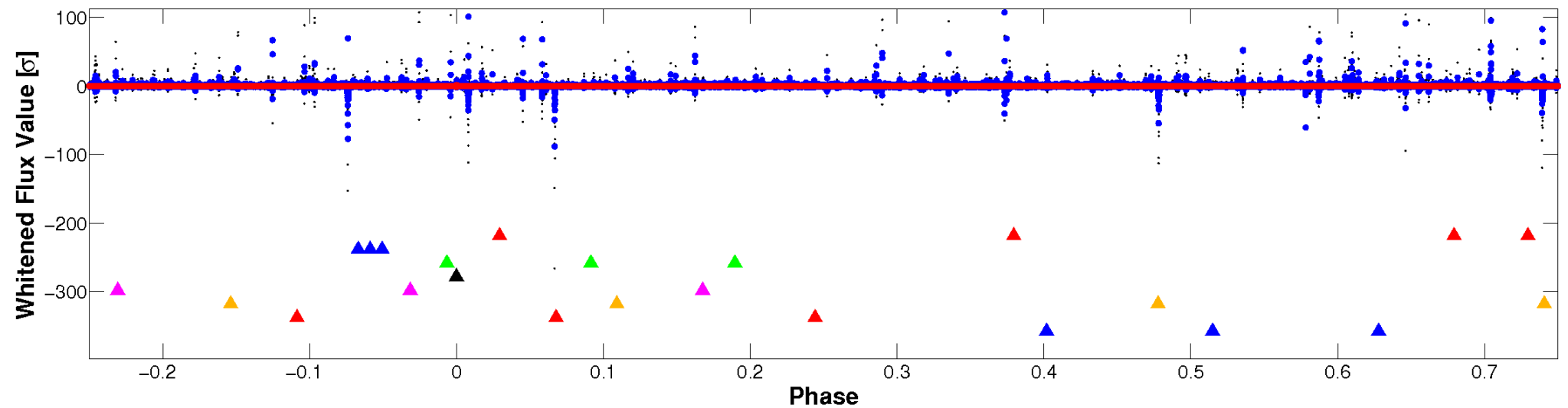


Non-Whitened Vs. Whitened Light Curve

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

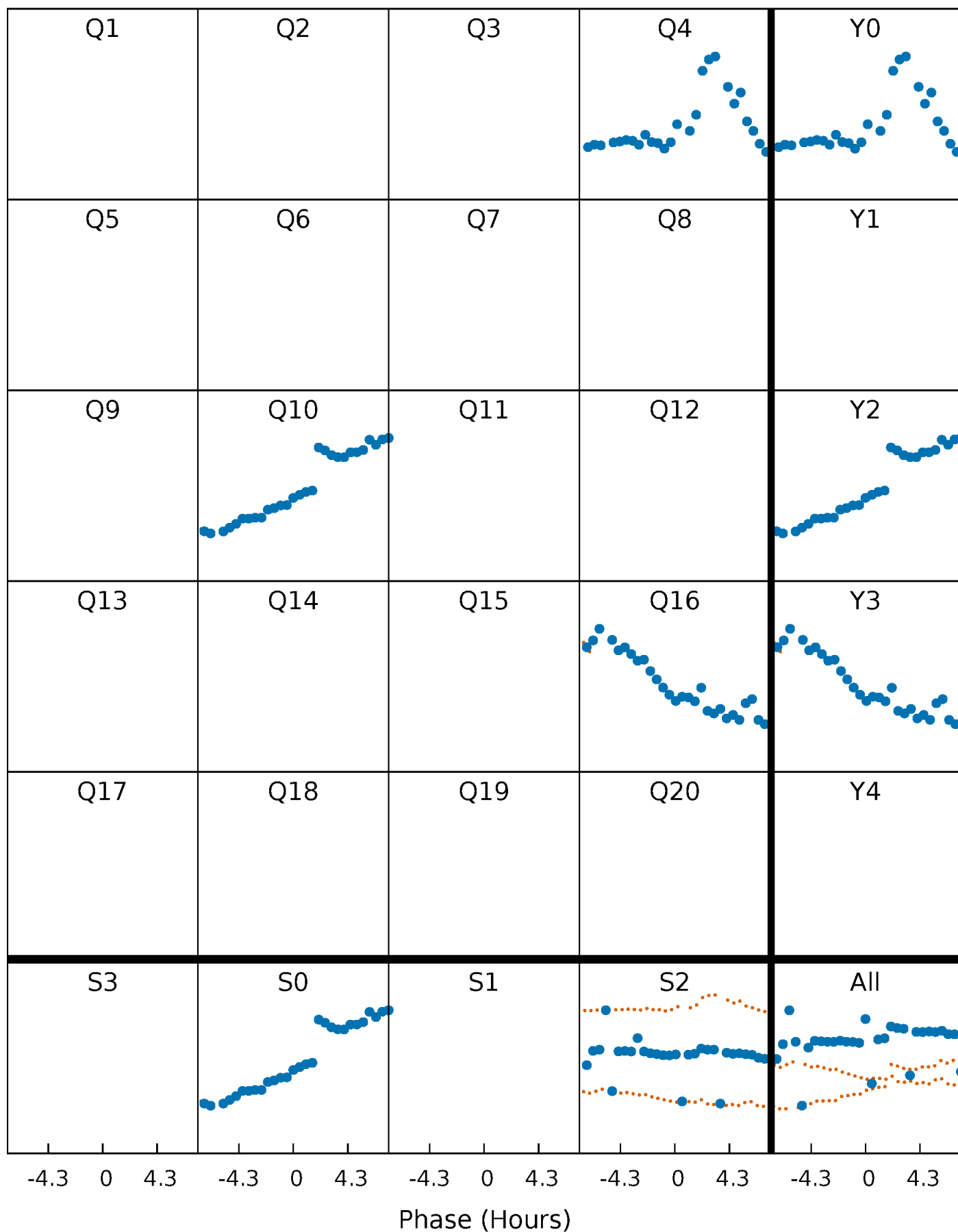


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



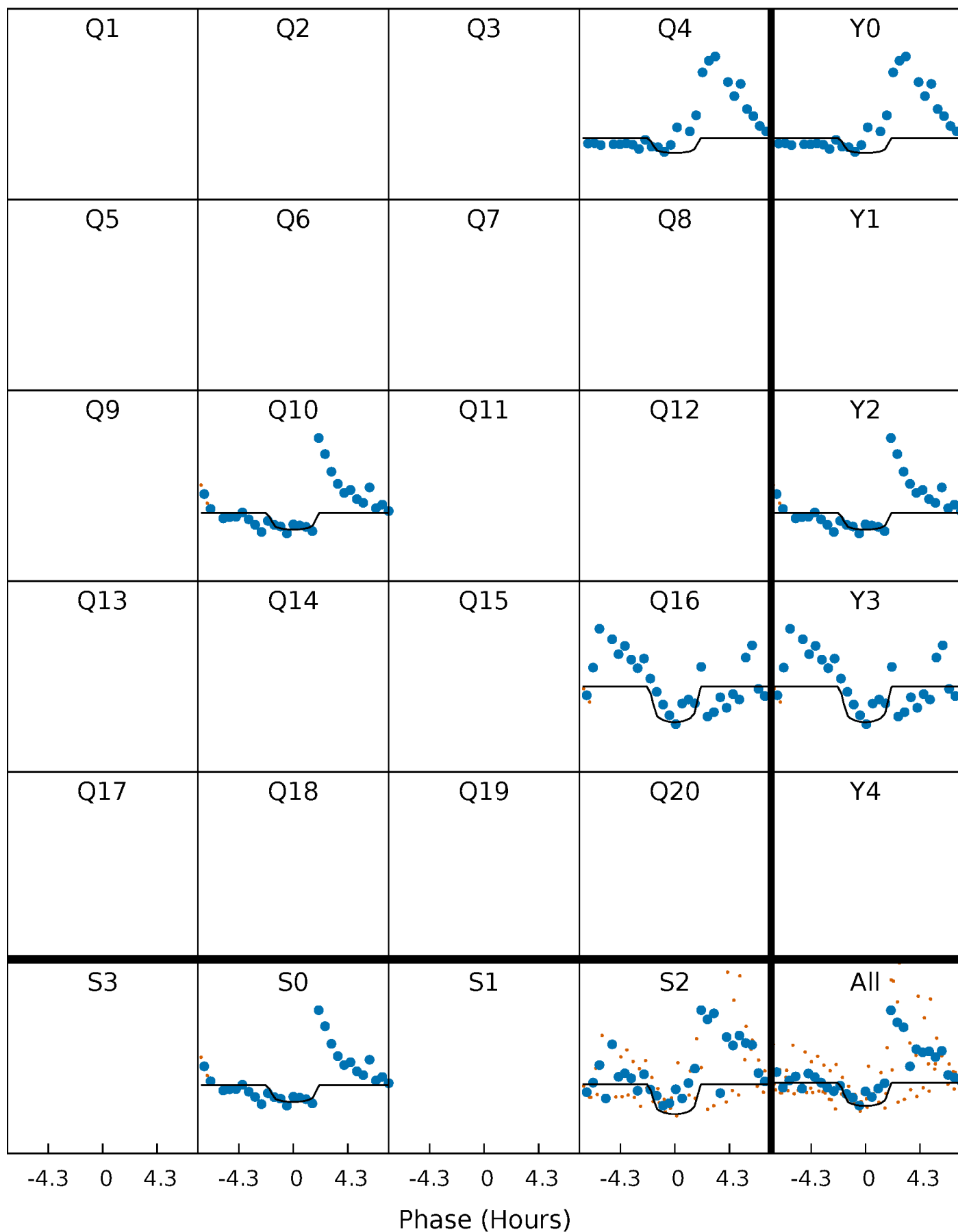
PDC Quarter-Phased Transit Curves

TCE 006356144-04 P=552.087288 Days $T_0=414.974593$ (BKJD)



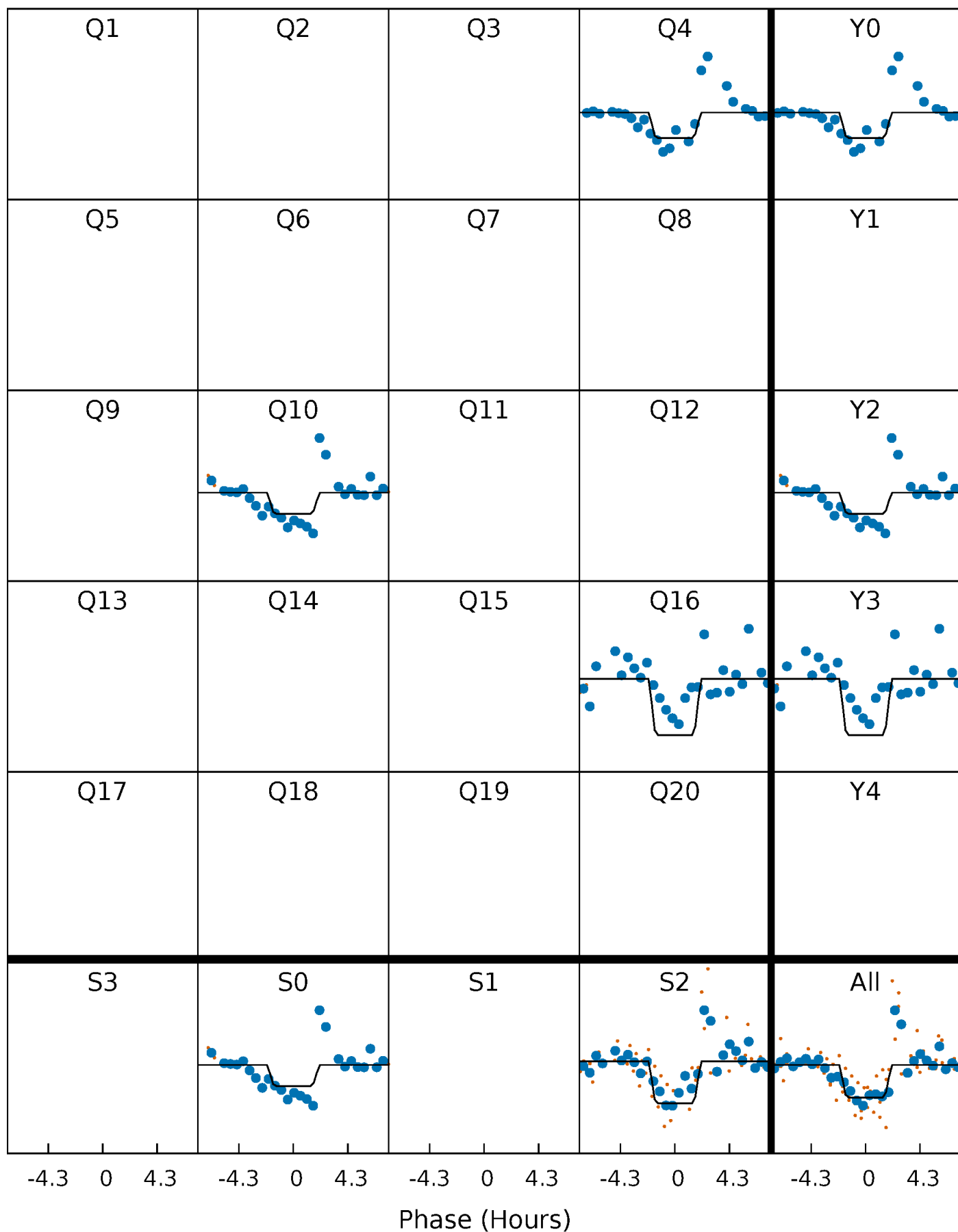
DV Quarter-Phased Transit Curves

TCE 006356144-04 P=552.087288 Days $T_0=414.974593$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

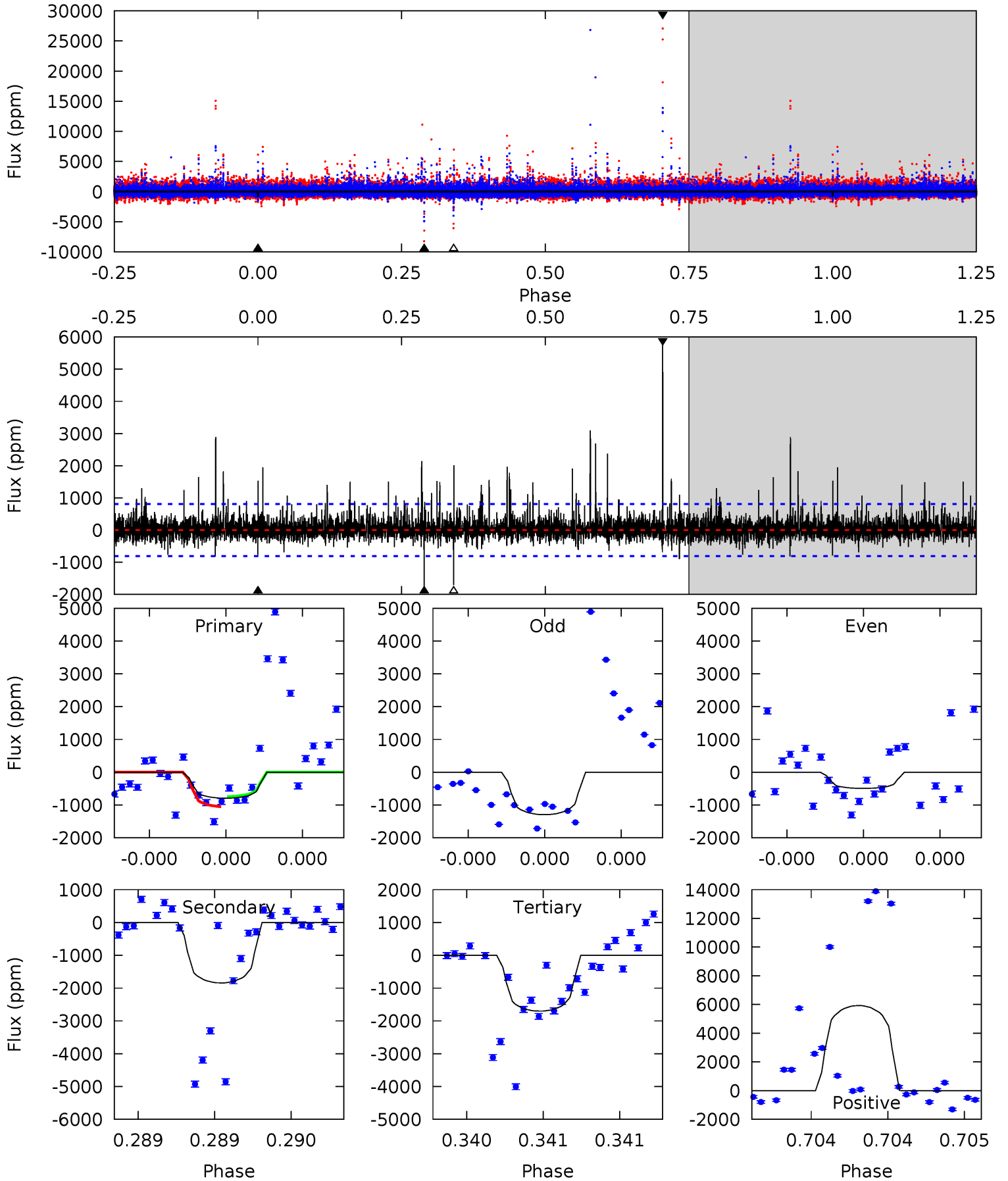
TCE 006356144-04 P=552.080735 Days $T_0=414.977722$ (BKJD)



DV Model-Shift Uniqueness Test

006356144-04, P = 552.087288 Days, E = 414.974593 Days

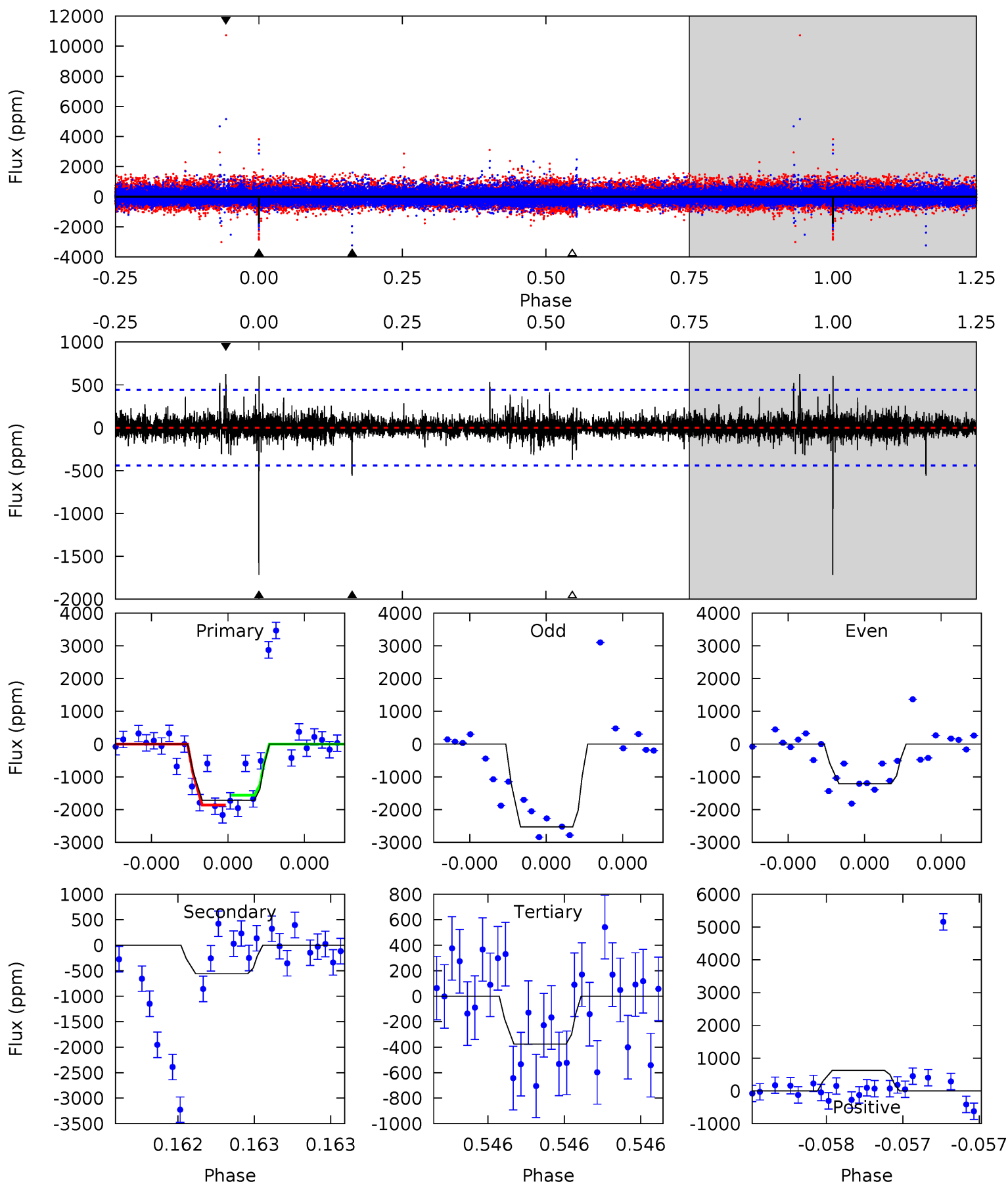
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.53	12.9	11.9	41.4	5.66	3.62	1.88	-6.34	-35.8	0.98	-28.5	0.68	0.89	0.76	1.06



Alt Model-Shift Uniqueness Test

006356144-04, P = 552.080735 Days, E = 414.977722 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	7.16	4.83	8.04	5.66	3.62	0.81	17.3	14.0	2.34	-0.88	6.04	0.89	0.27	1.94



Stellar Parameters For KIC 006356144

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3764^{+60}_{-60}	$4.787^{+0.042}_{-0.025}$	$-0.300^{+0.100}_{-0.100}$	$0.457^{+0.028}_{-0.037}$	$0.466^{+0.031}_{-0.031}$	$6.897^{+1.350}_{-0.775}$
	+2%/-2%	+1%/-1%	+33%/-33%	+6%/-8%	+7%/-7%	+20%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006356144-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1843 ± 143	$4.46^{+4.31}_{-2.99}$	155^{+3}_{-4}	3000^{+1278}_{-494}	$52790^{+426787}_{-39148}$
Alt.	-557 ± 78	$4.78^{+4.09}_{-3.24}$	154^{+3}_{-3}	2521^{+929}_{-336}	$14527^{+127964}_{-10450}$

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

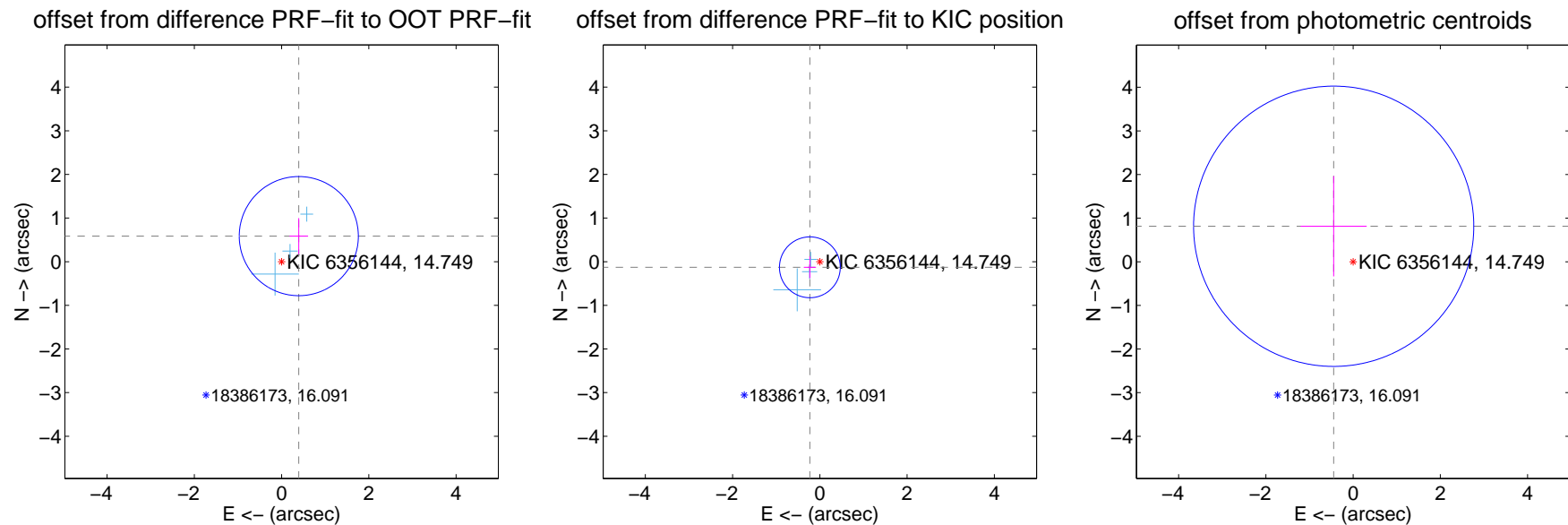
DV Centroid Data

Supplemental centroid analysis for 006356144-04. Kepler magnitude: 14.75. Transit SNR 6.50

There are 3 quarters with good PRF difference image offsets

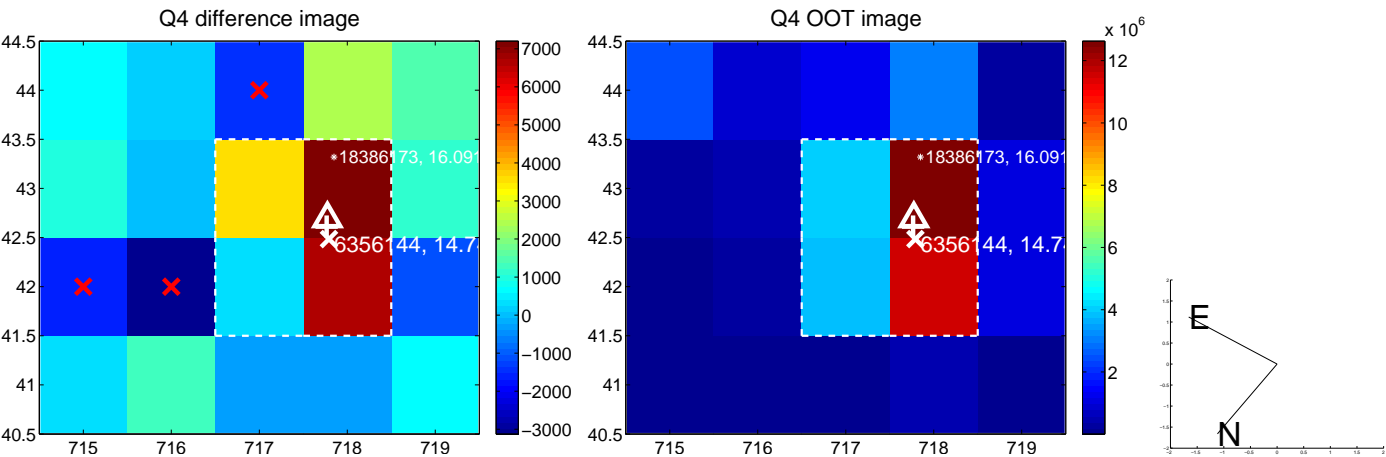
The direct PRF centroid is offset from the target star catalog position by about 0.64 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.707 ± 0.455	1.55	-0.395 ± 0.213	0.586 ± 0.412
PRF-fit source offset from KIC position	0.262 ± 0.232	1.13	0.229 ± 0.140	-0.128 ± 0.249
photometric centroid source offset	0.93 ± 1.07	0.87	0.45 ± 0.76	0.81 ± 1.15



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.

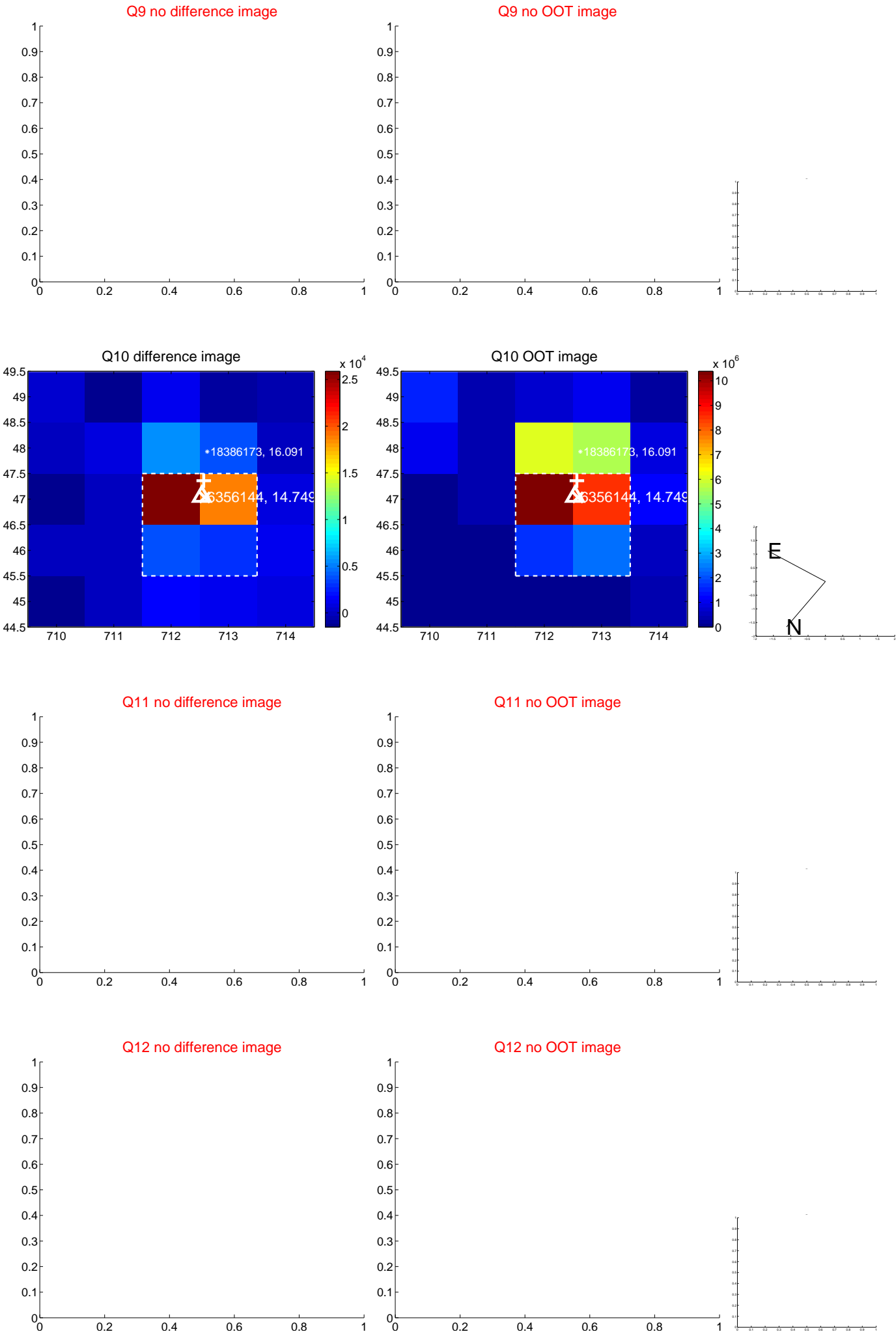
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



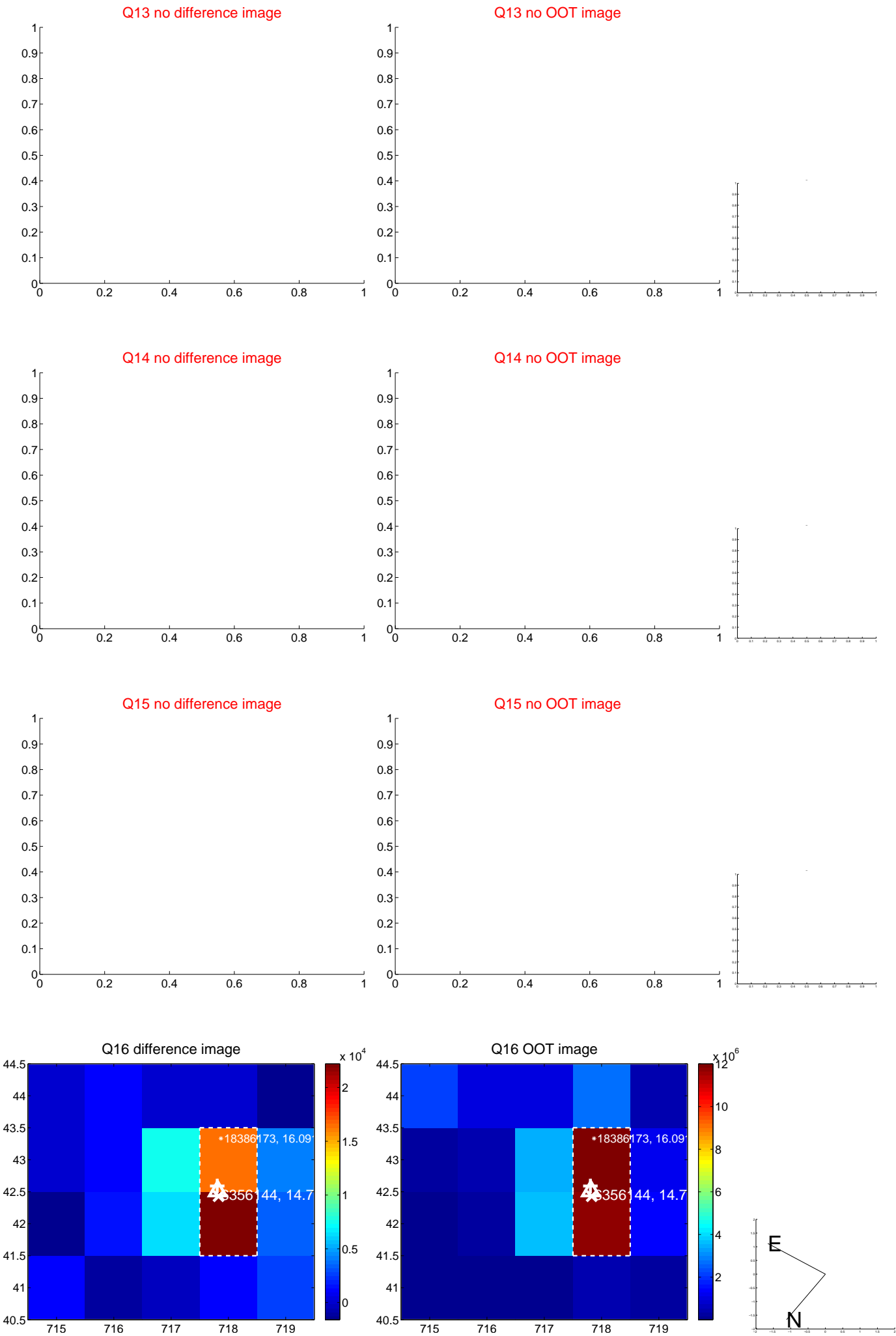
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



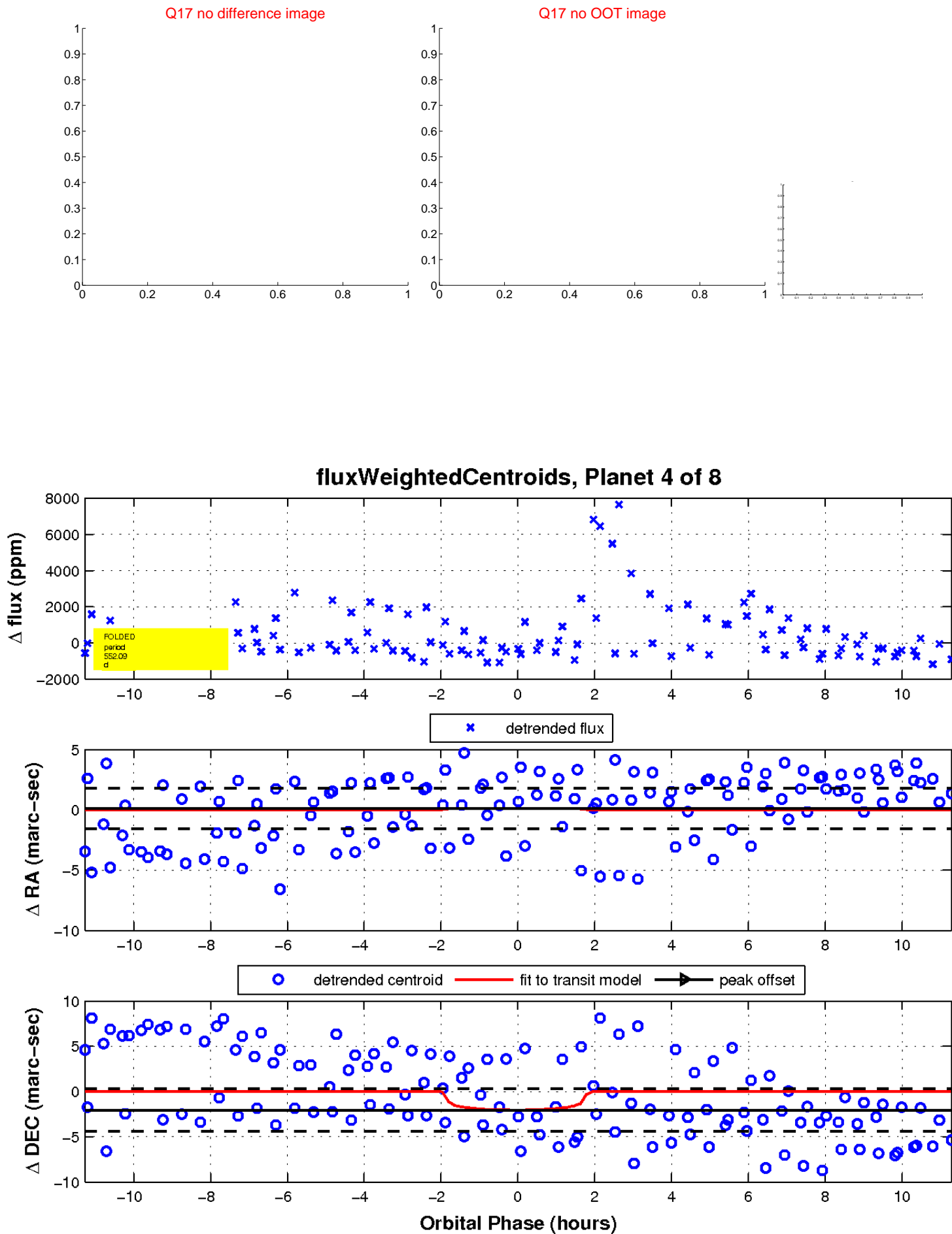
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

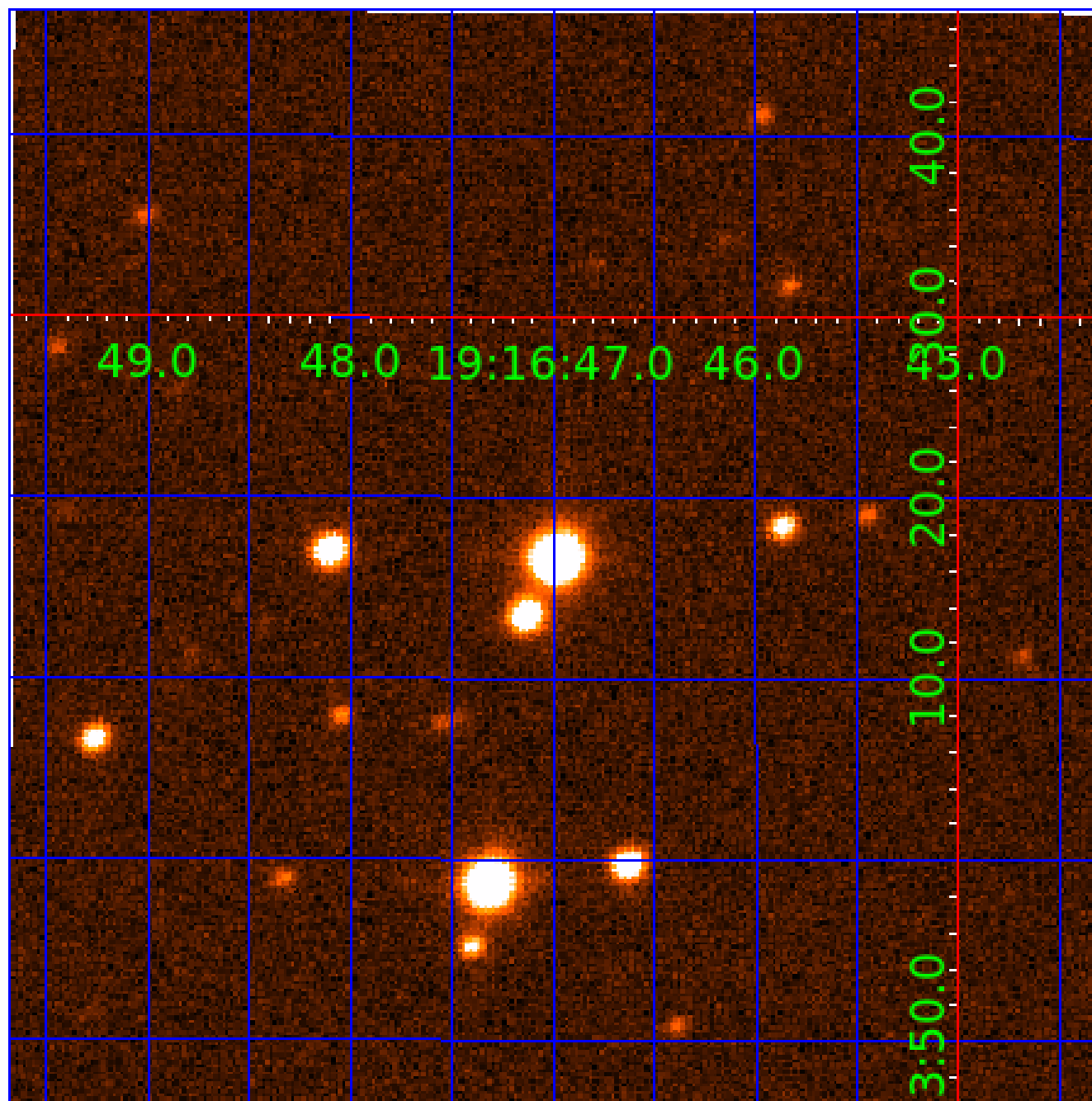


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006356144

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})
006356144-01	OBS	No	358.800189	265.670890	1757.6	4.009	19.6	10.4	0.46	3764	1.94	0.06
006356144-02	OBS	No	556.578837	378.047496	846.3	11.200	18.0	4.0	0.46	3764	1.35	0.04
006356144-03	OBS	No	497.957672	519.652520	1233.4	2.809	14.9	6.2	0.46	3764	1.66	0.04
006356144-04	OBS	No	552.087287	414.974593	1402.1	3.770	15.9	6.5	0.46	3764	1.71	0.04
006356144-05	OBS	No	442.145493	507.544955	1952.1	13.965	13.9	8.7	0.46	3764	2.02	0.05
006356144-06	OBS	No	348.623008	330.101796	962.4	3.779	19.2	5.6	0.46	3764	1.44	0.07
006356144-07	OBS	No	454.712751	549.801536	1604.4	8.118	13.0	7.4	0.46	3764	1.86	0.05
006356144-08	OBS	No	489.683454	209.539948	782.1	7.500	12.6	-1.0	0.46	3764	1.28	0.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006356144-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_KIC_POS
006356144-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—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
006356144-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006356144-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_UNCERTAIN
006356144-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
006356144-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

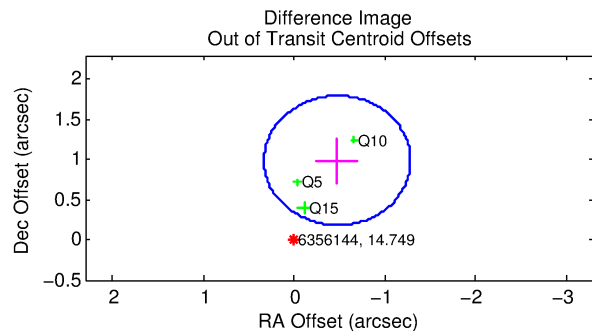
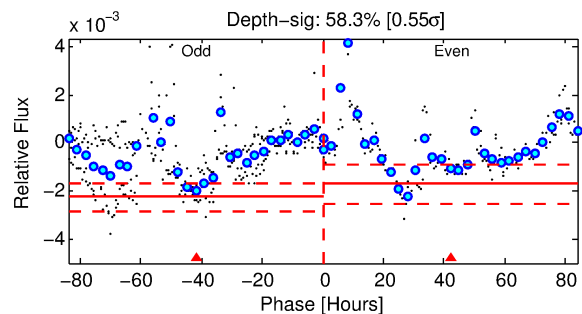
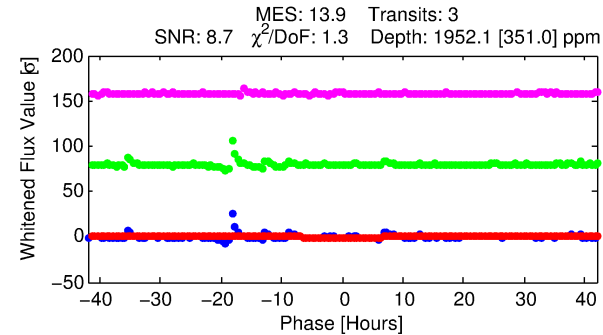
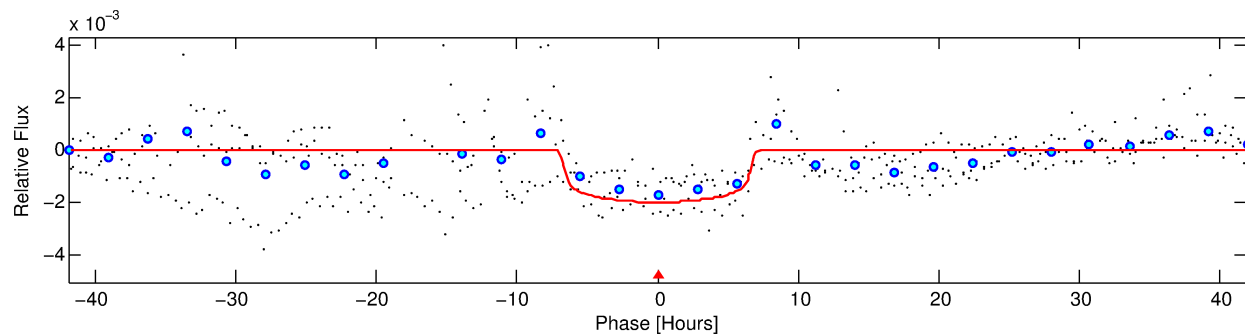
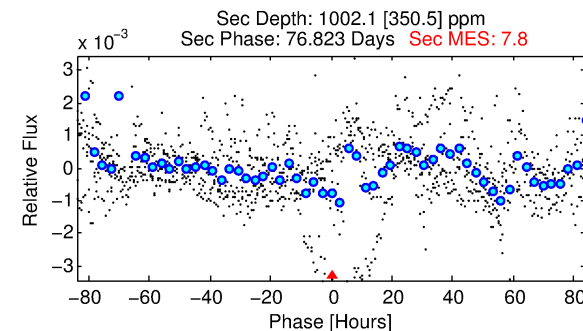
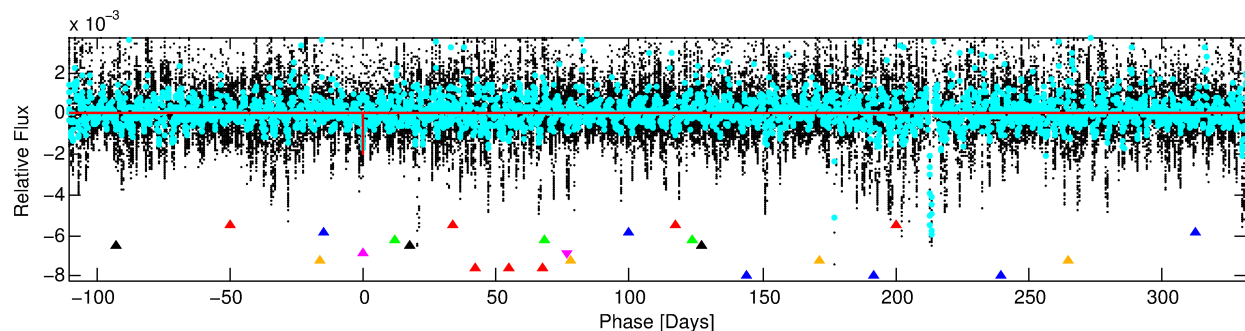
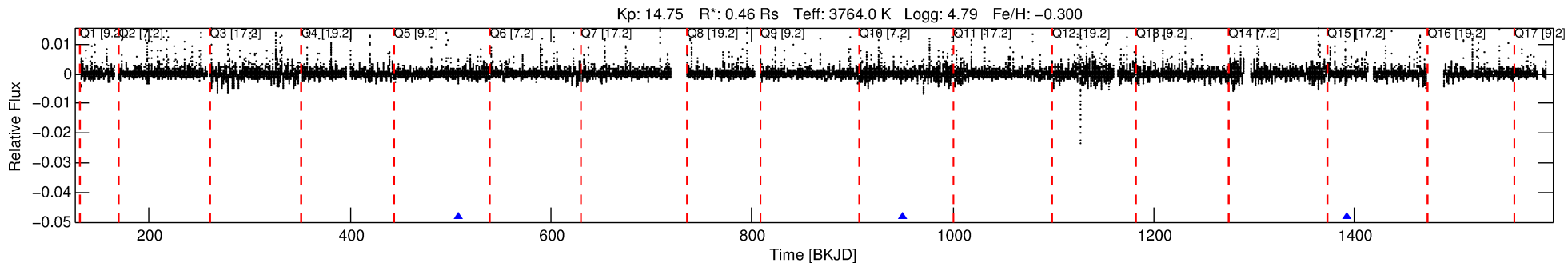
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006356144-05

No Significant Match Found

DV One-Page Summary

KIC: 6356144 Candidate: 5 of 8 Period: 442.145 d



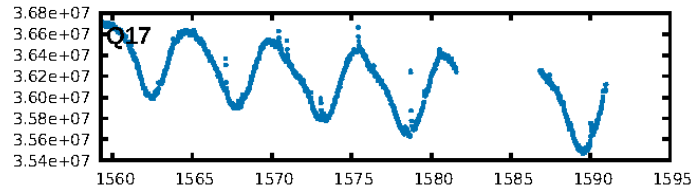
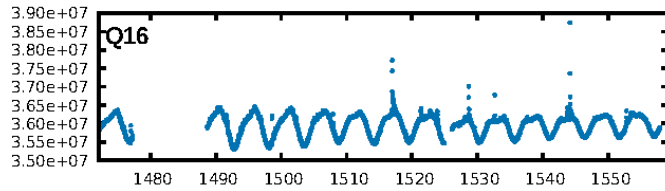
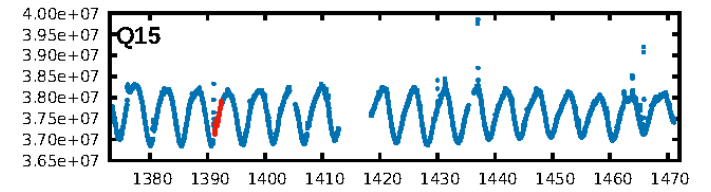
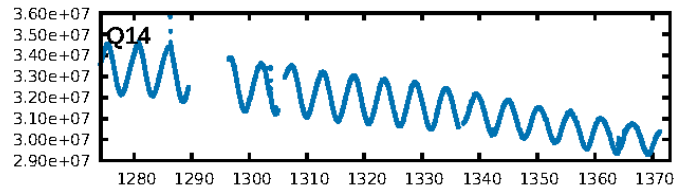
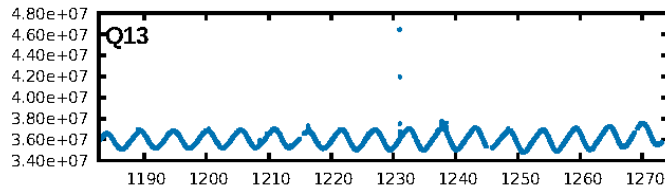
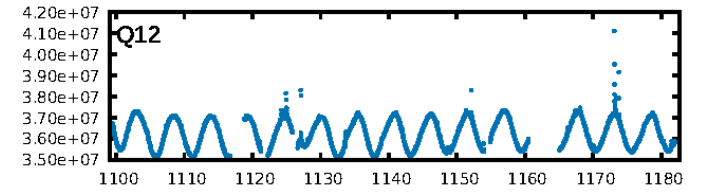
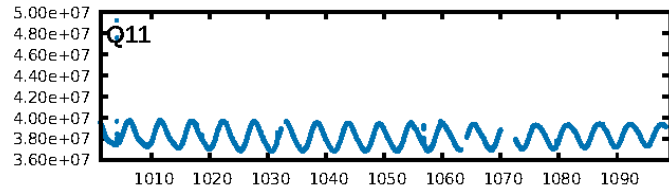
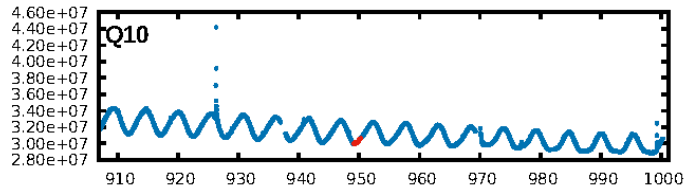
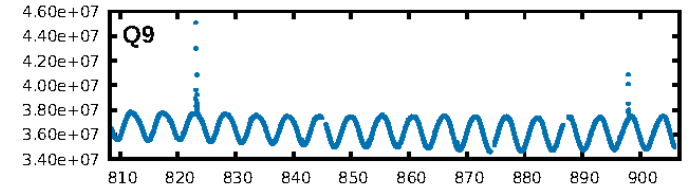
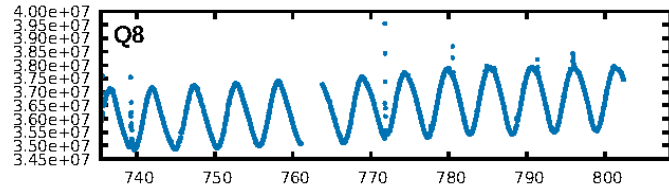
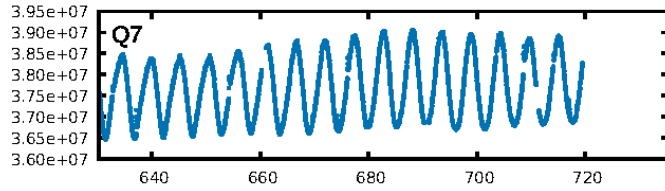
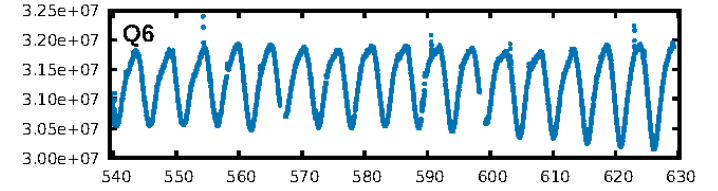
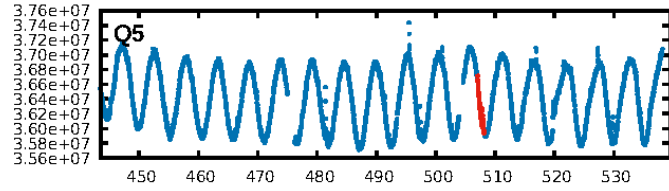
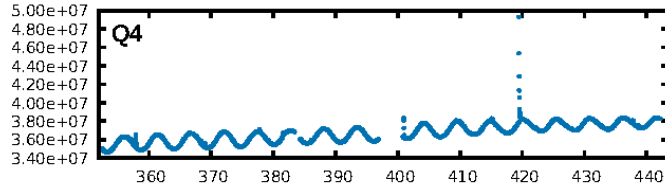
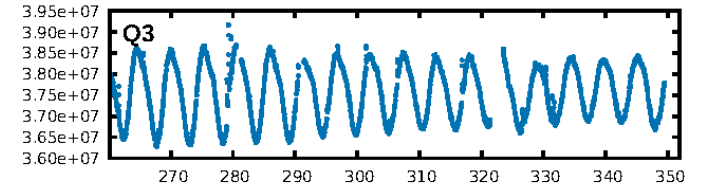
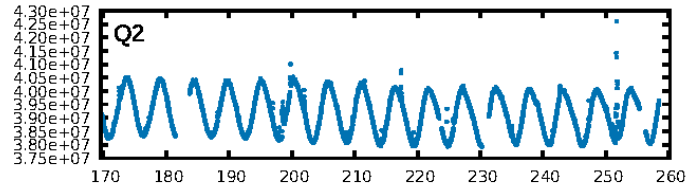
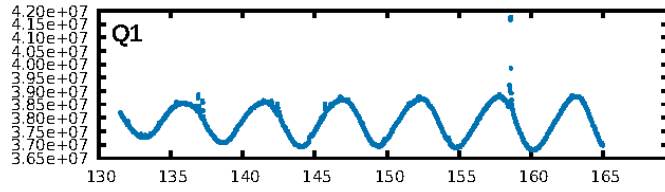
DV Fit Results:

Period = 442.14549 [0.00671] d
Epoch = 507.5450 [0.0083] BKJD
Rp/R* = 0.0404 [0.0084]
a/R* = 250.23 [203.77]
b = 0.11 [7.28]
Seff = 0.05 [0.01]
Teq = 120 [3] K
Rp = 2.02 [0.45] Re
a = 0.8811 [0.0554] AU
Ag = 105297.01 [57920.95] [1.82σ]
Teffp = 3331 [456] K [7.05σ]

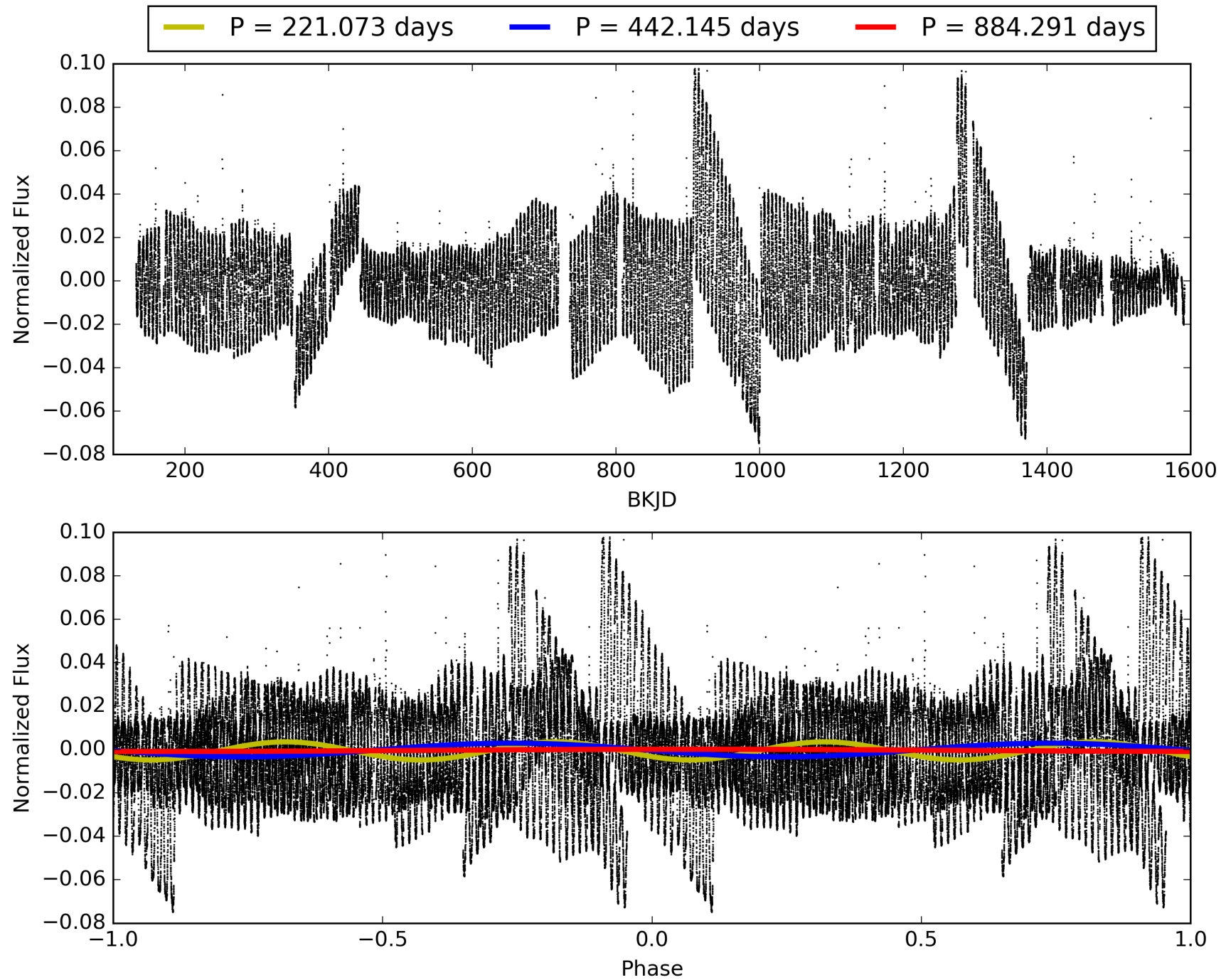
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [137.68σ]
LongPeriod-sig: 100.0% [18.67σ]
ModelChiSquare2-sig: 79.8%
ModelChiSquareGof-sig: 99.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.256
Centroid-sig: 98.8%
Centroid-so: 0.767 arcsec [0.86σ]
OotOffset-rm: 1.097 arcsec [4.08σ]
KicOffset-rm: 0.249 arcsec [3.14σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 006356144-05, PDC Light Curves

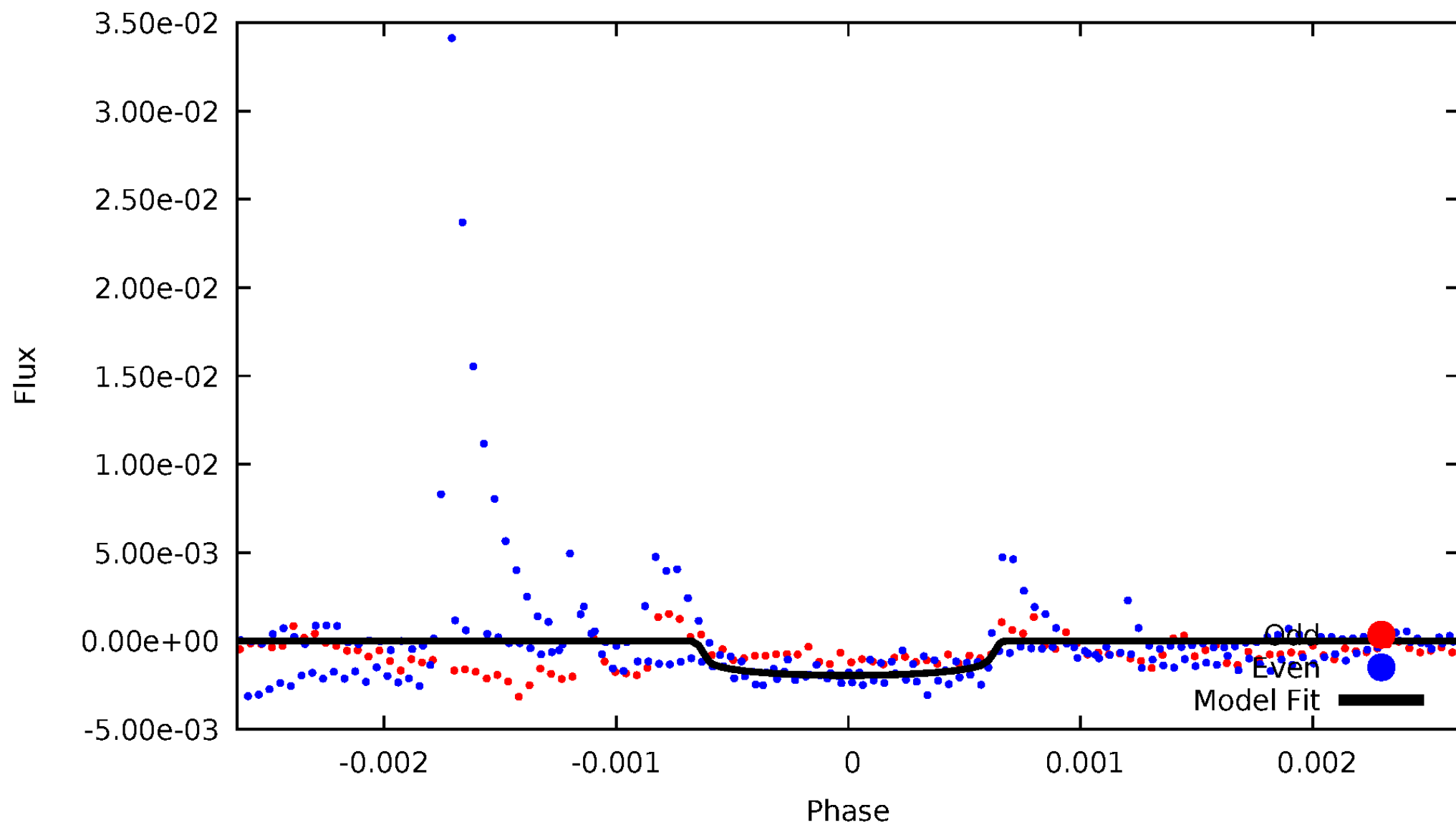


TCE 006356144-05



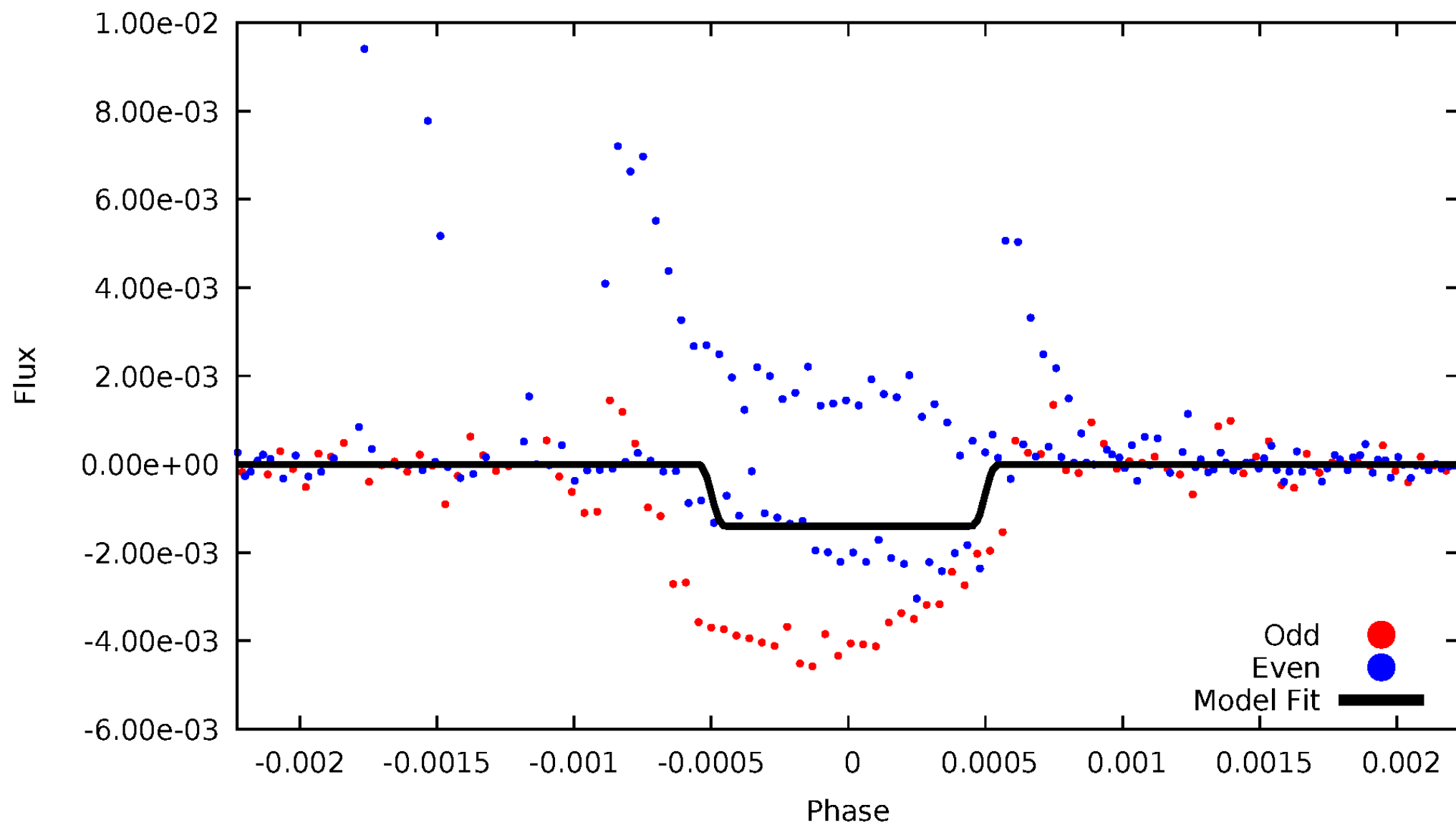
DV Odd/Even

TCE 006356144-05



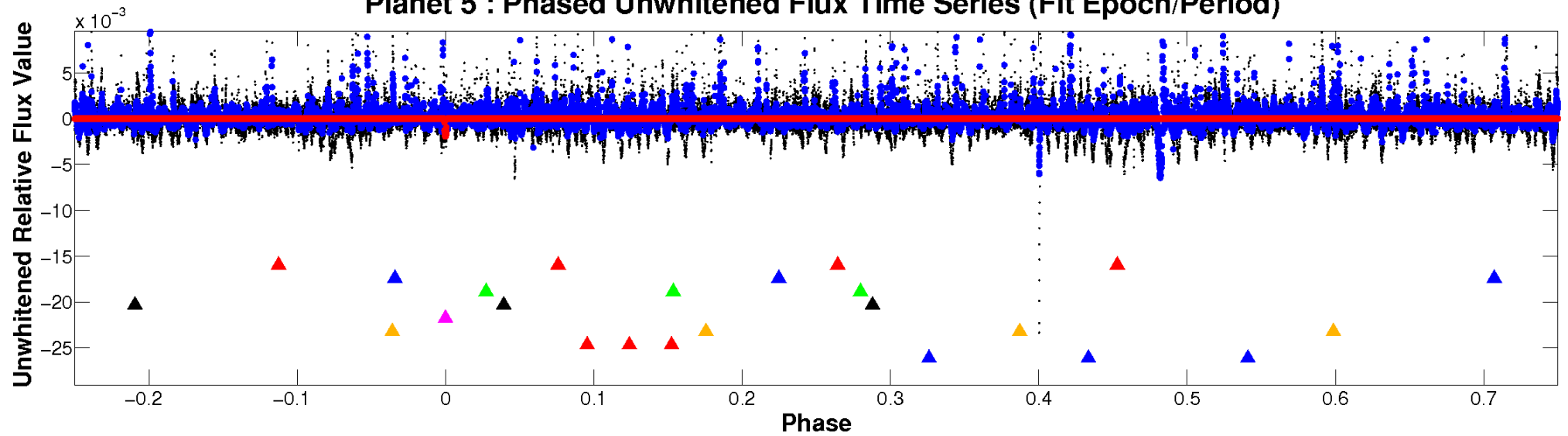
ALT Odd/Even

TCE 006356144-05

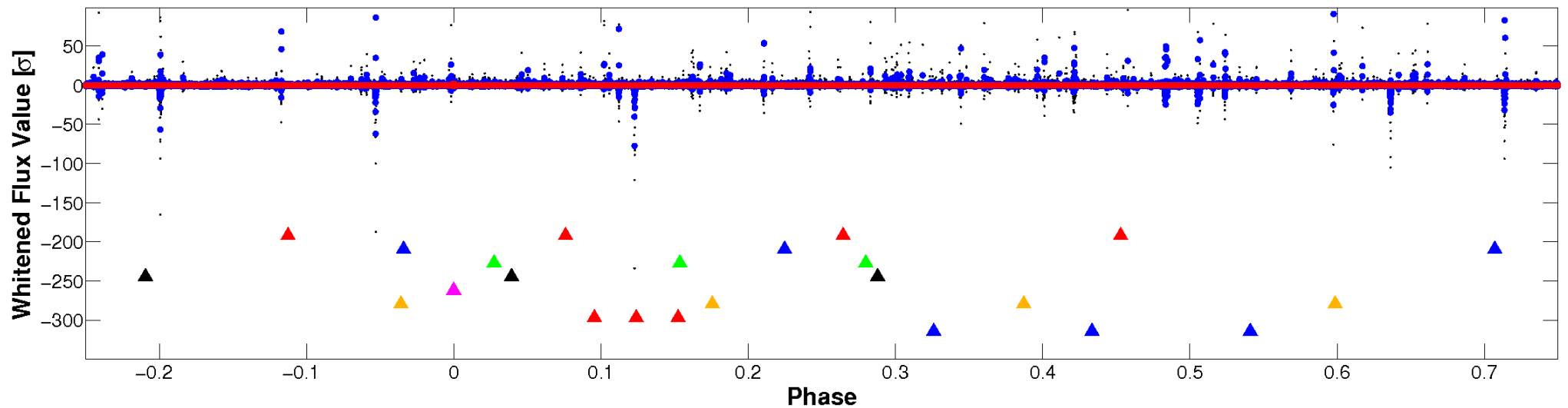


Non-Whitened Vs. Whitened Light Curve

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

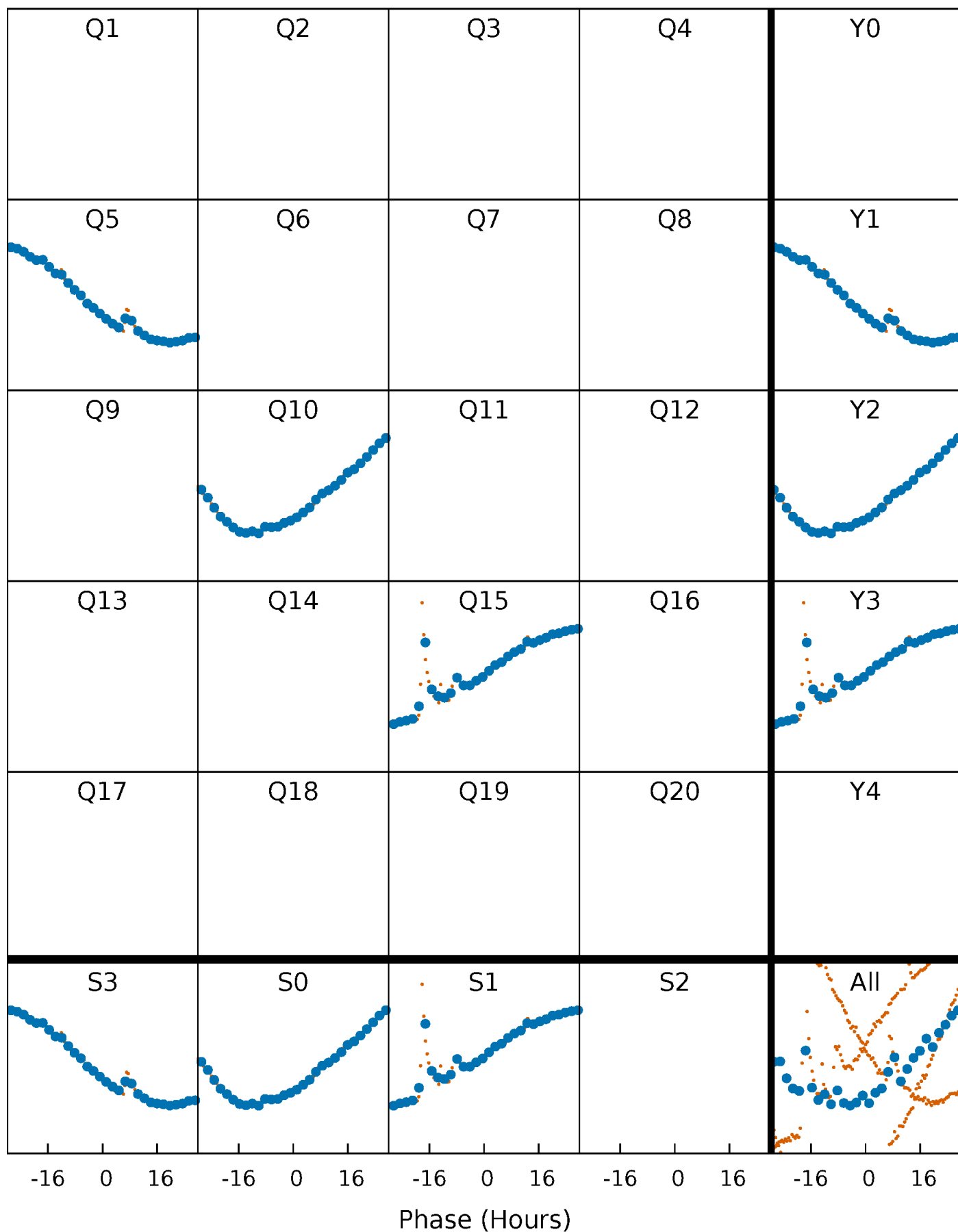


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



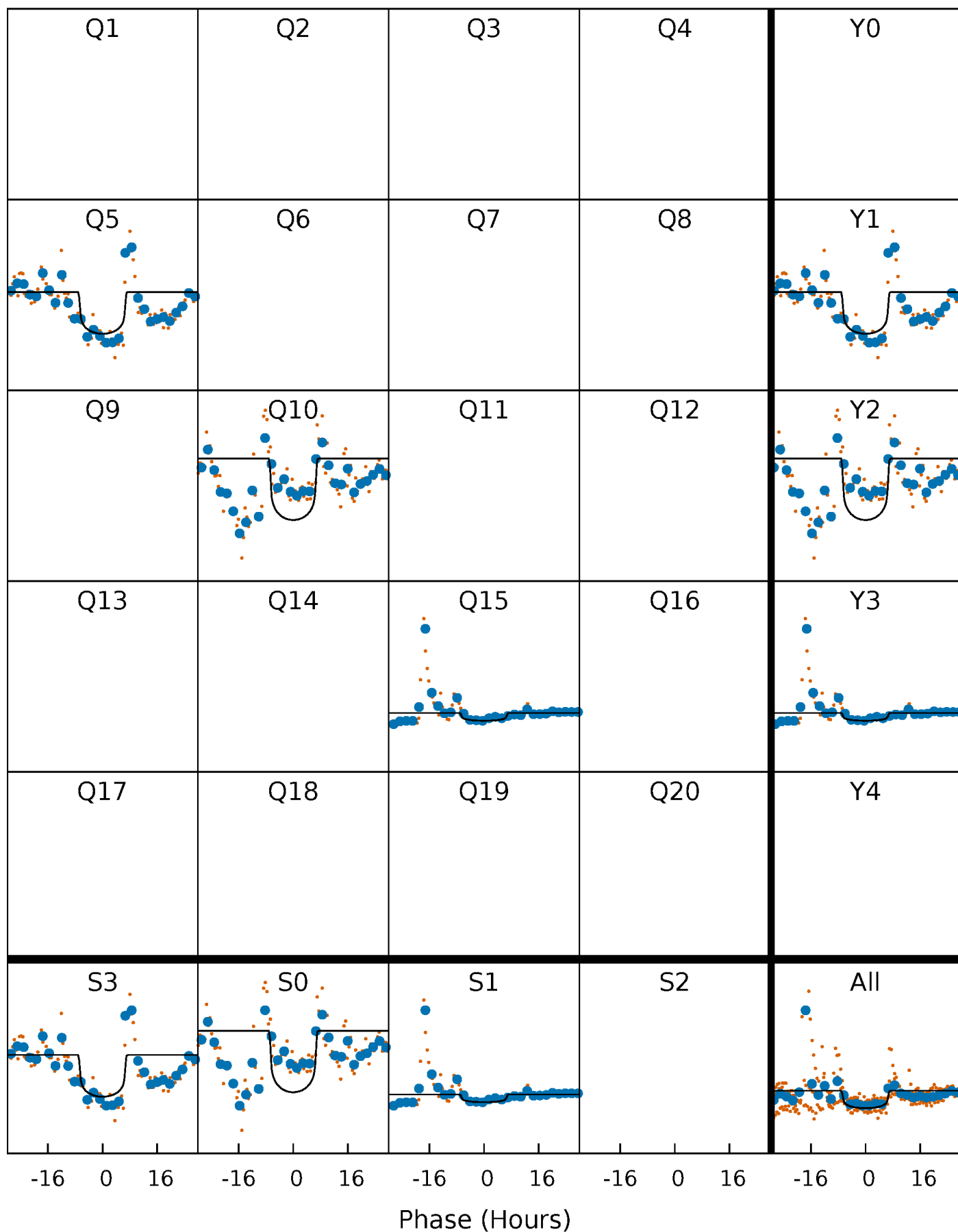
PDC Quarter-Phased Transit Curves

TCE 006356144-05 $P=442.145493$ Days $T_0=507.544955$ (BKJD)



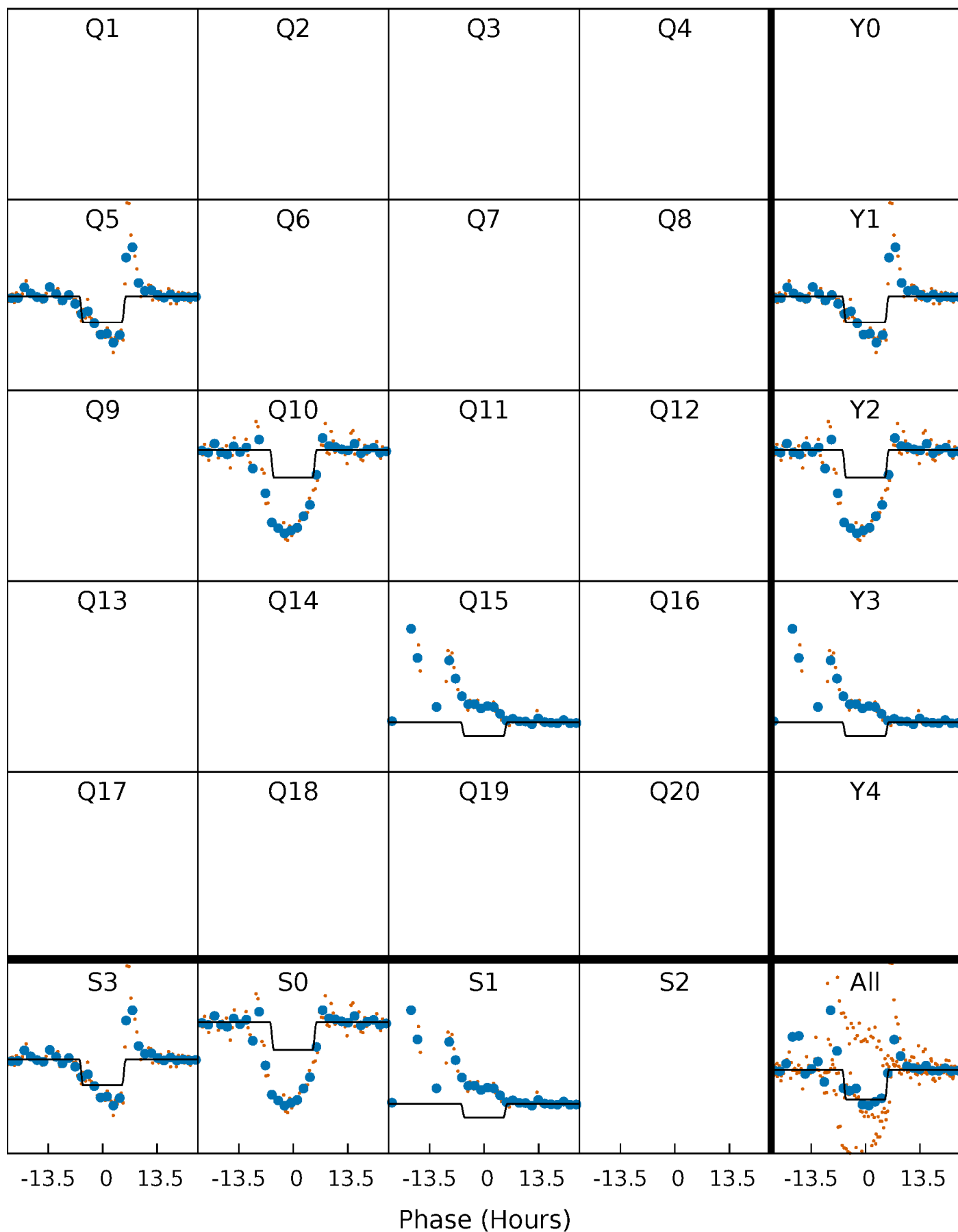
DV Quarter-Phased Transit Curves

TCE 006356144-05 $P=442.145493$ Days $T_0=507.544955$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

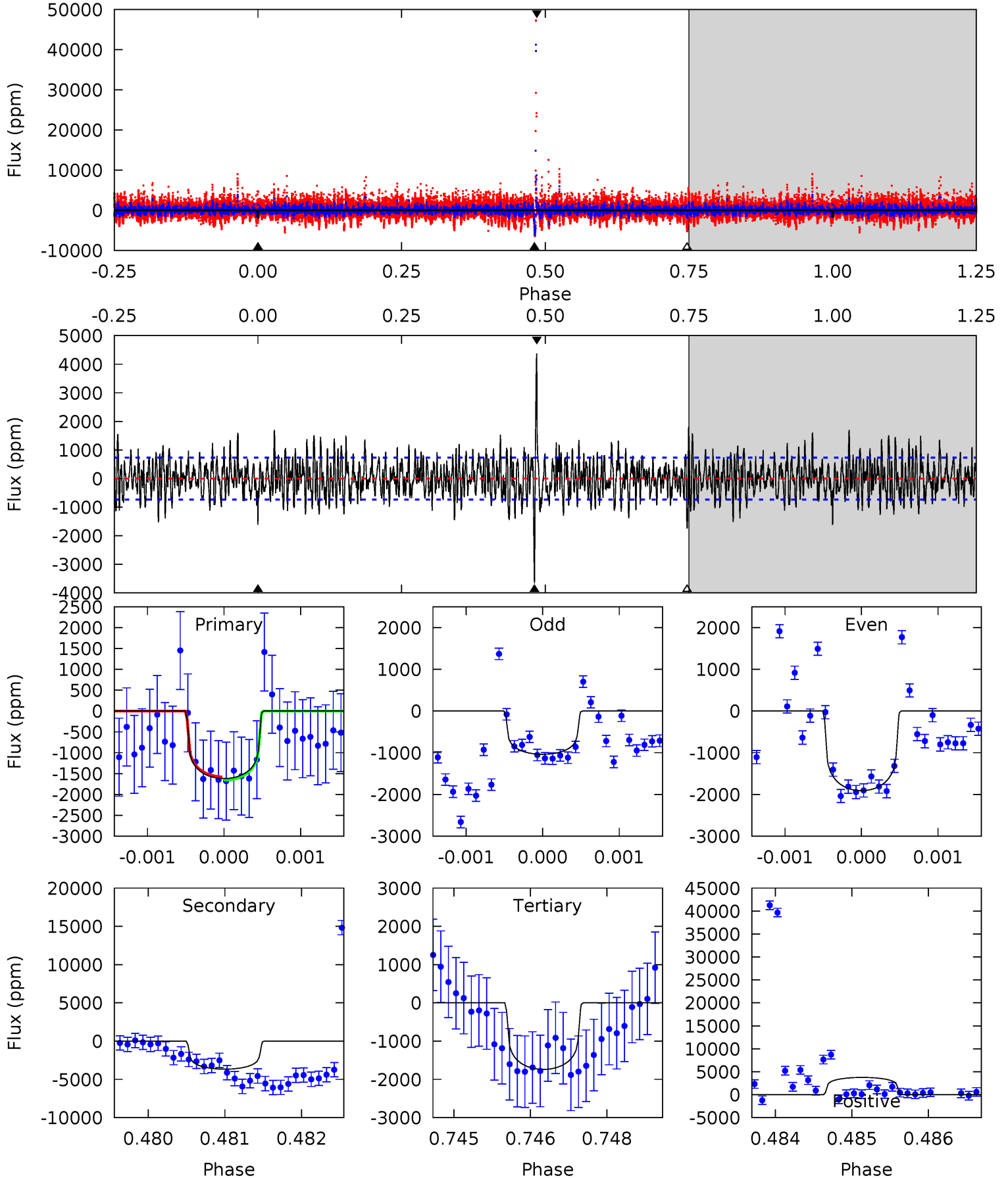
TCE 006356144-05 $P=442.127749$ Days $T_0=507.585247$ (BKJD)



DV Model-Shift Uniqueness Test

006356144-05, P = 442.145493 Days, E = 65.399462 Days

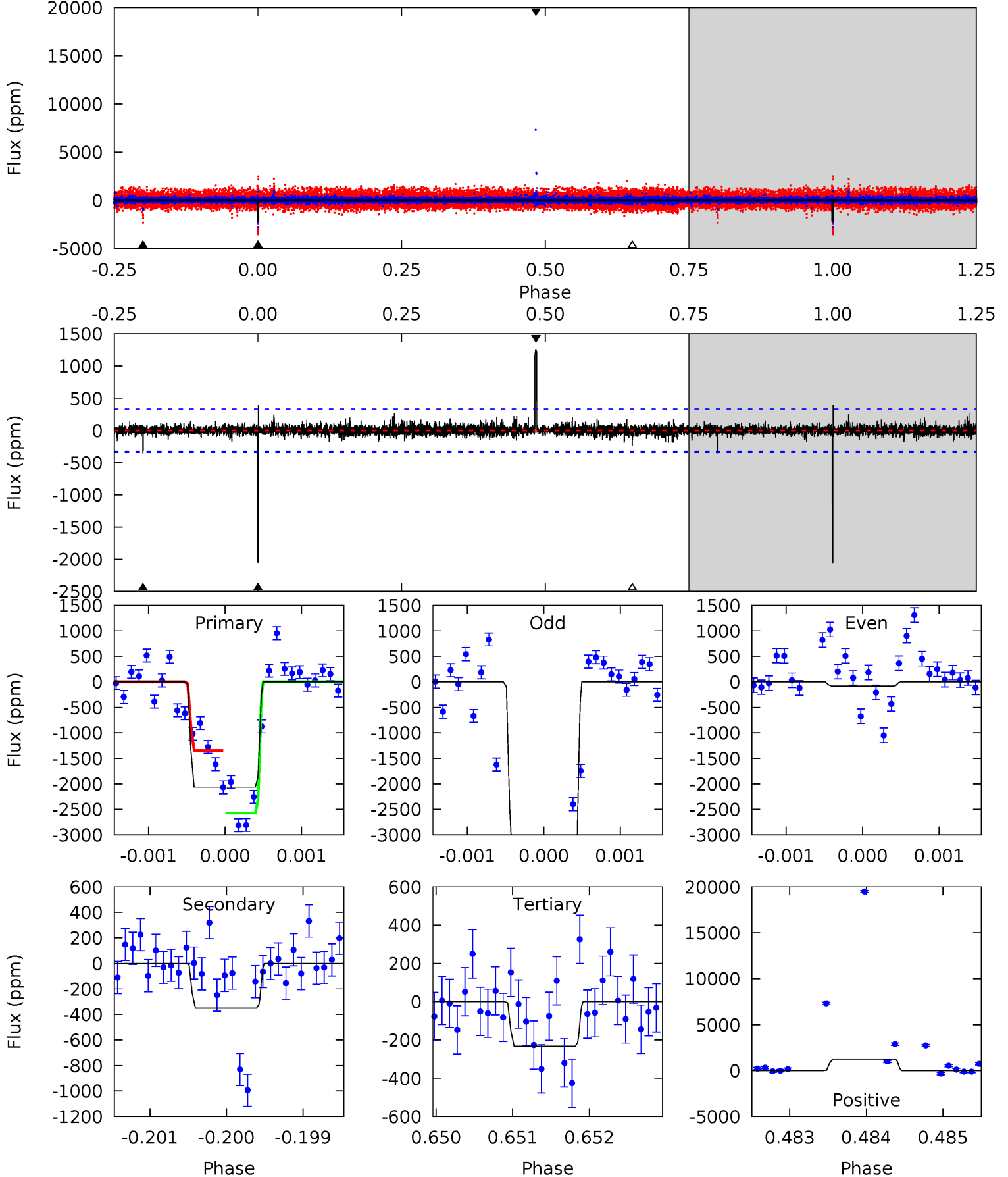
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	27.0	12.8	27.7	5.40	3.21	4.00	-0.89	-15.8	14.2	-0.70	1.36	1.04	0.54	0.29



Alt Model-Shift Uniqueness Test

006356144-05, P = 442.127749 Days, E = 65.457498 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.8	5.74	3.82	20.7	5.43	3.26	0.83	30.0	13.1	1.93	-15.0	35.5	0.75	0.38	0



Stellar Parameters For KIC 006356144

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3764^{+60}_{-60}	$4.787^{+0.042}_{-0.025}$	$-0.300^{+0.100}_{-0.100}$	$0.457^{+0.028}_{-0.037}$	$0.466^{+0.031}_{-0.031}$	$6.897^{+1.350}_{-0.775}$
	+2%/-2%	+1%/-1%	+33%/-33%	+6%/-8%	+7%/-7%	+20%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006356144-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3664 ± 136	$2.02^{+0.40}_{-0.41}$	167^{+4}_{-4}	4347^{+407}_{-303}	$385378^{+215857}_{-114009}$
Alt.	-350 ± 61	$1.84^{+0.41}_{-0.40}$	167^{+3}_{-4}	3033^{+264}_{-170}	43544^{+31279}_{-15015}

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

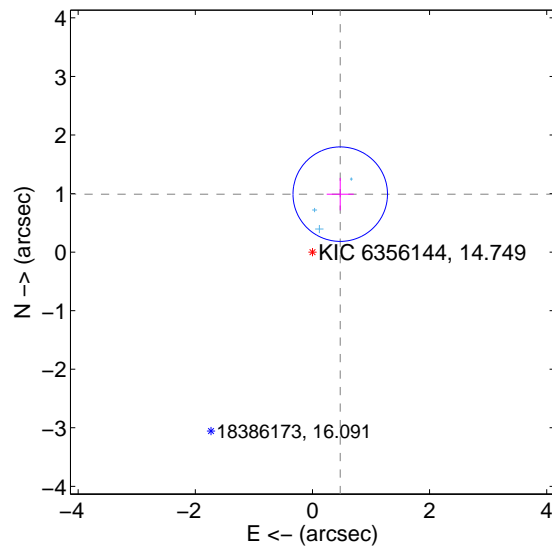
Supplemental centroid analysis for 006356144-05. Kepler magnitude: 14.75. Transit SNR 8.66

There are 3 quarters with good PRF difference image offsets

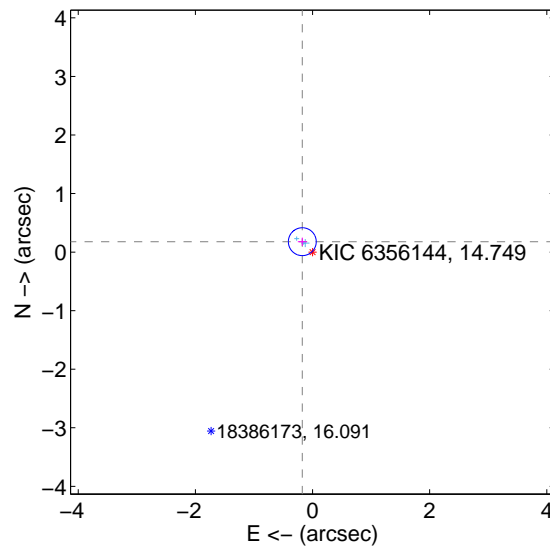
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.097 ± 0.269	4.08	-0.475 ± 0.231	0.989 ± 0.277
PRF-fit source offset from KIC position	0.249 ± 0.079	3.14	0.175 ± 0.077	0.178 ± 0.070
photometric centroid source offset	0.77 ± 0.89	0.86	0.52 ± 0.68	-0.56 ± 1.04

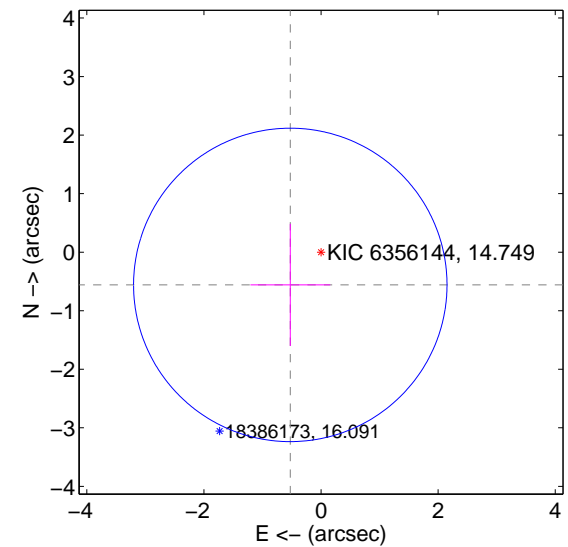
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

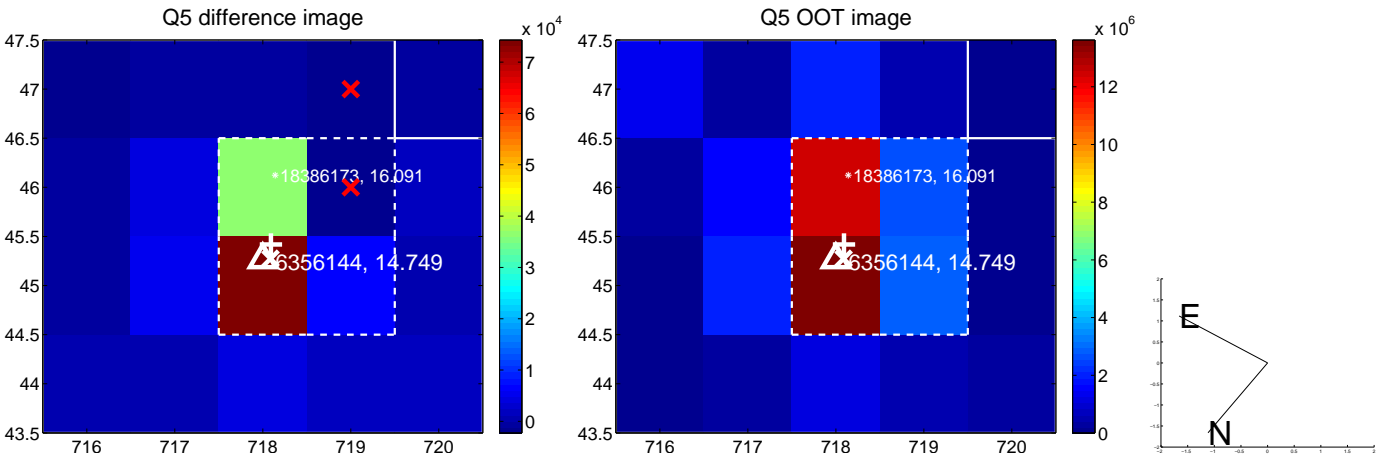


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

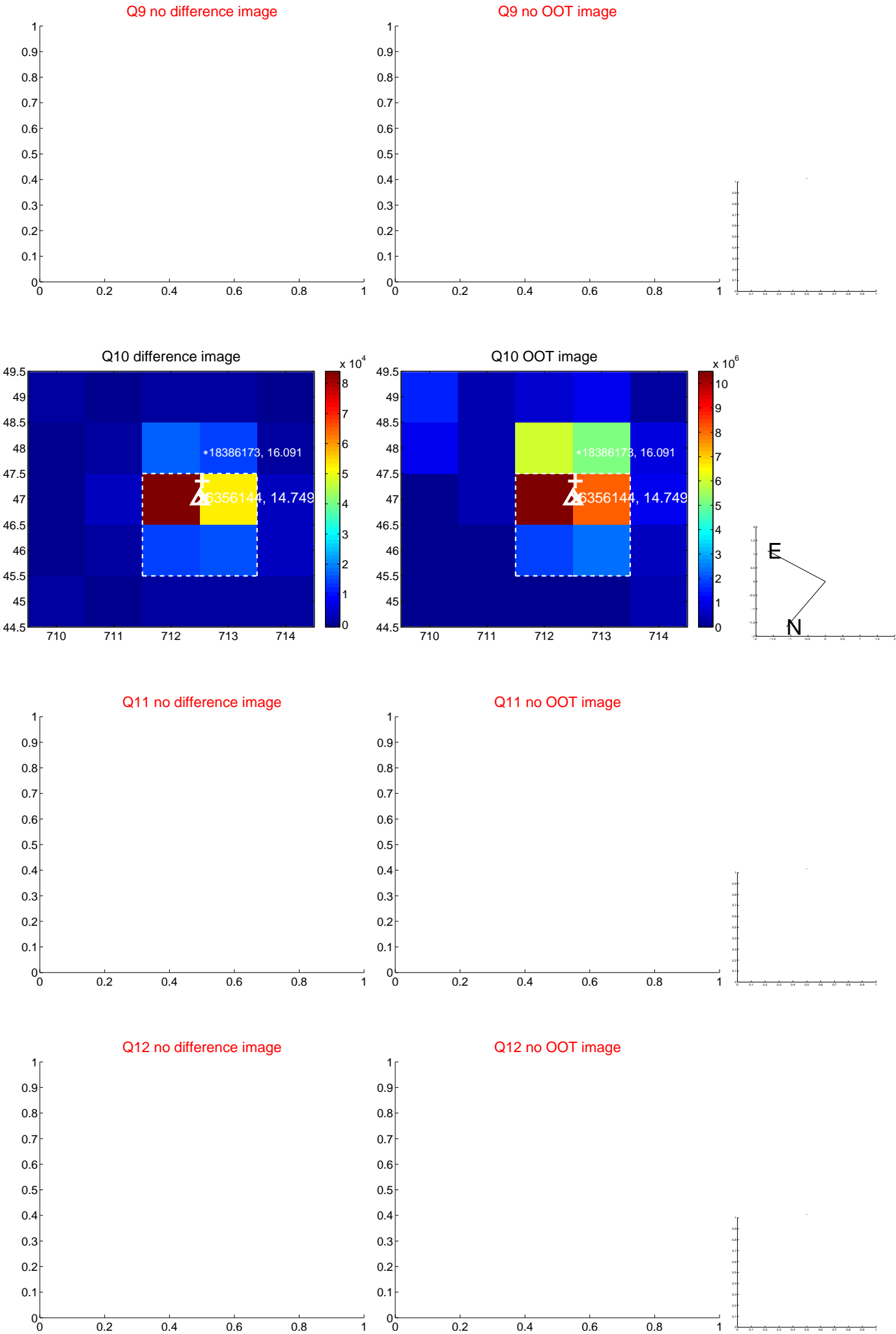
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Q13 no difference image



Q13 no OOT image



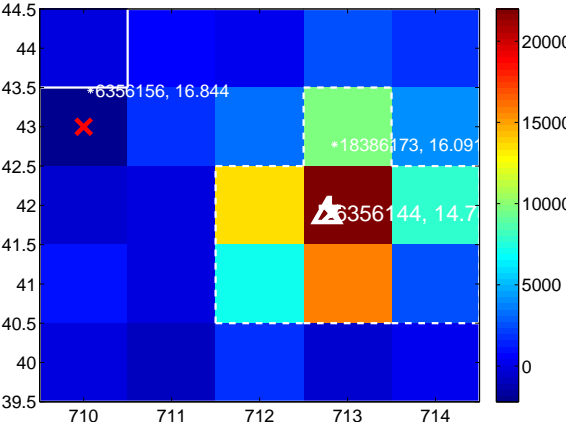
Q14 no difference image



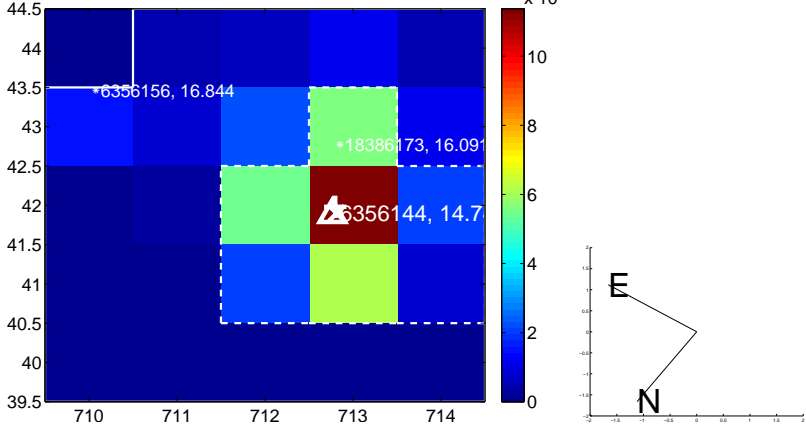
Q14 no OOT image



Q15 difference image



Q15 OOT image



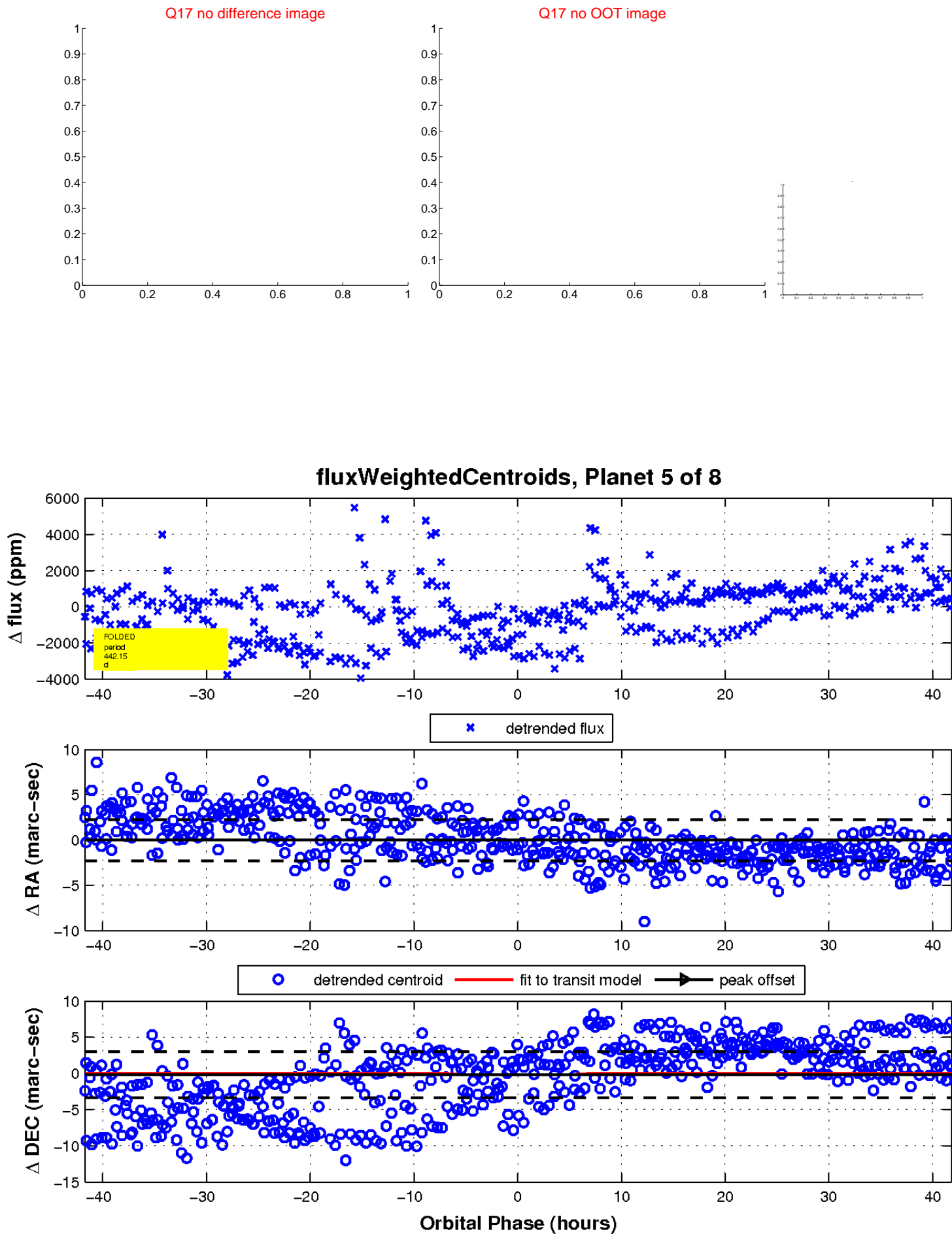
Q16 no difference image



Q16 no OOT image

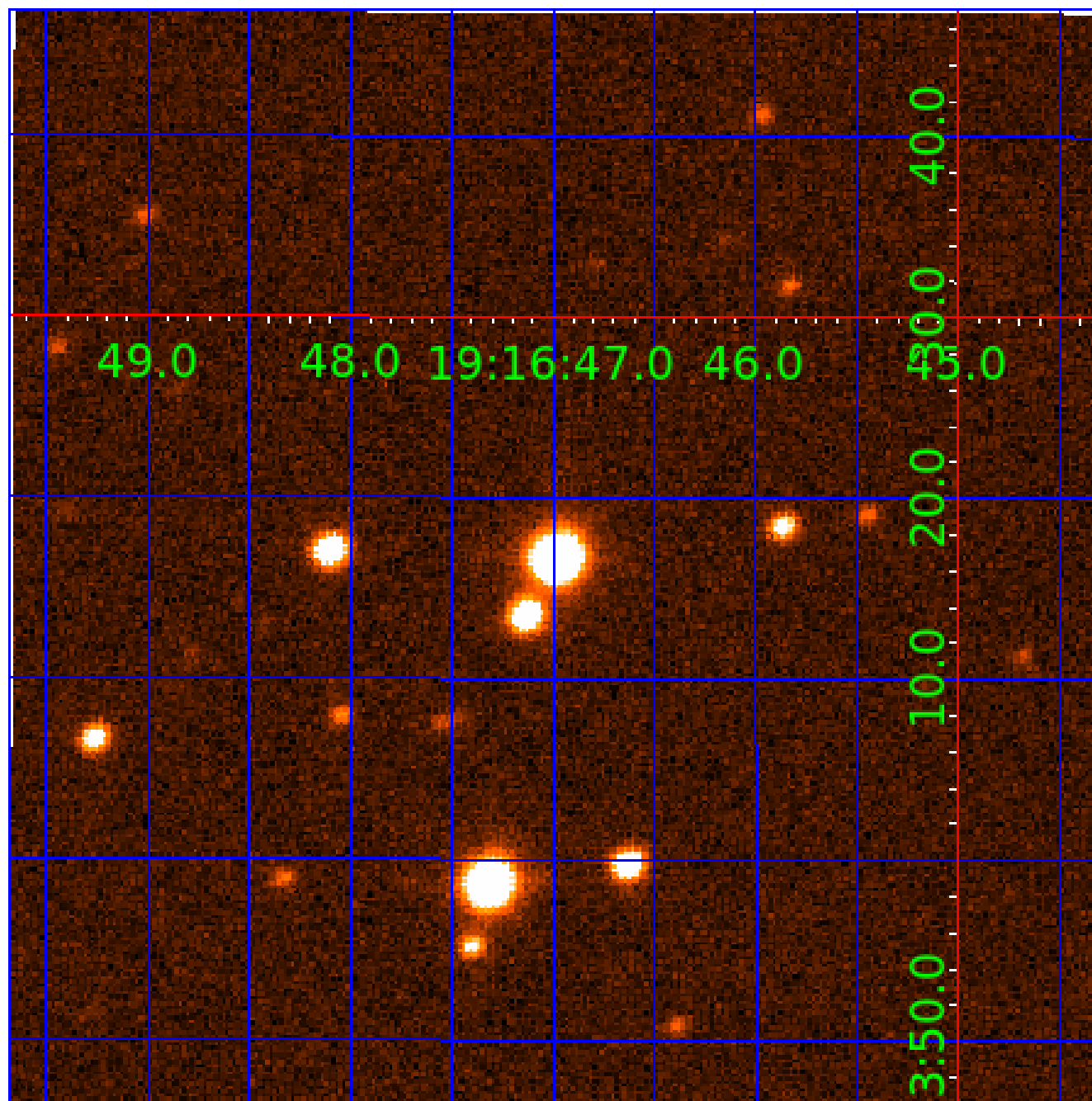


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006356144

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})
006356144-01	OBS	No	358.800189	265.670890	1757.6	4.009	19.6	10.4	0.46	3764	1.94	0.06
006356144-02	OBS	No	556.578837	378.047496	846.3	11.200	18.0	4.0	0.46	3764	1.35	0.04
006356144-03	OBS	No	497.957672	519.652520	1233.4	2.809	14.9	6.2	0.46	3764	1.66	0.04
006356144-04	OBS	No	552.087287	414.974593	1402.1	3.770	15.9	6.5	0.46	3764	1.71	0.04
006356144-05	OBS	No	442.145493	507.544955	1952.1	13.965	13.9	8.7	0.46	3764	2.02	0.05
006356144-06	OBS	No	348.623008	330.101796	962.4	3.779	19.2	5.6	0.46	3764	1.44	0.07
006356144-07	OBS	No	454.712751	549.801536	1604.4	8.118	13.0	7.4	0.46	3764	1.86	0.05
006356144-08	OBS	No	489.683454	209.539948	782.1	7.500	12.6	-1.0	0.46	3764	1.28	0.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006356144-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_KIC_POS
006356144-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—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
006356144-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006356144-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_UNCERTAIN
006356144-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
006356144-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

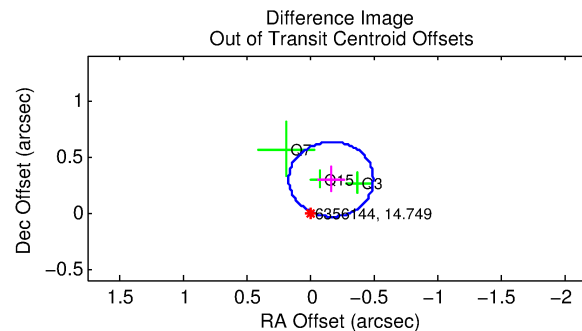
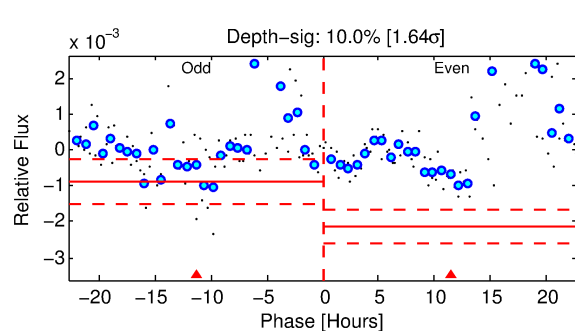
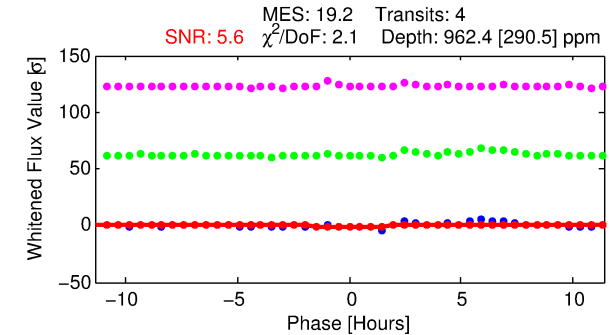
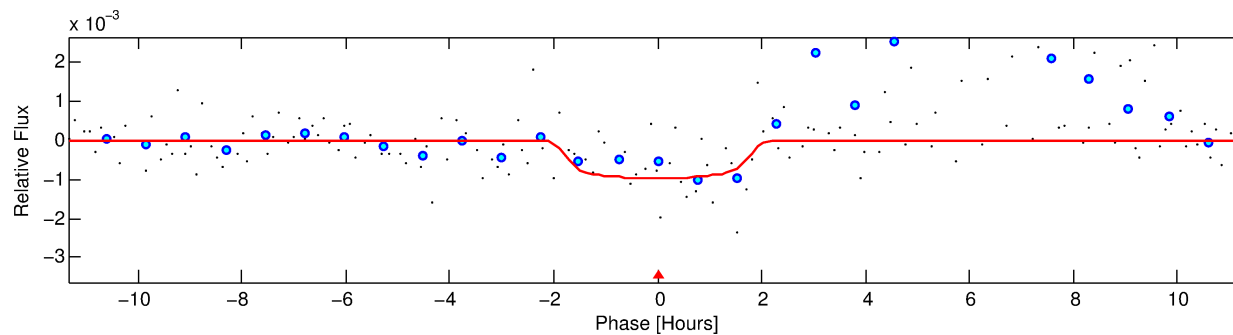
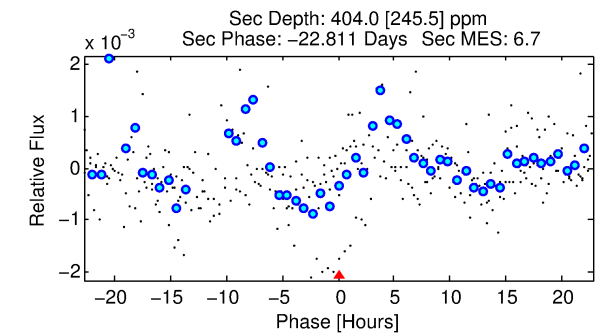
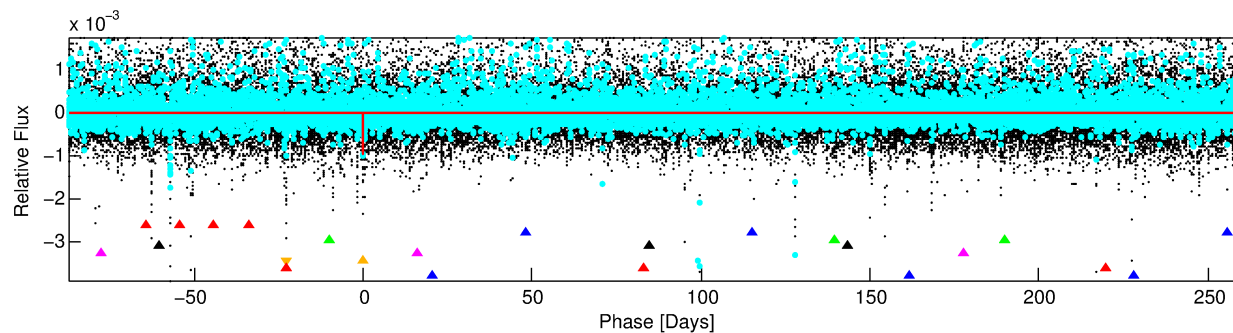
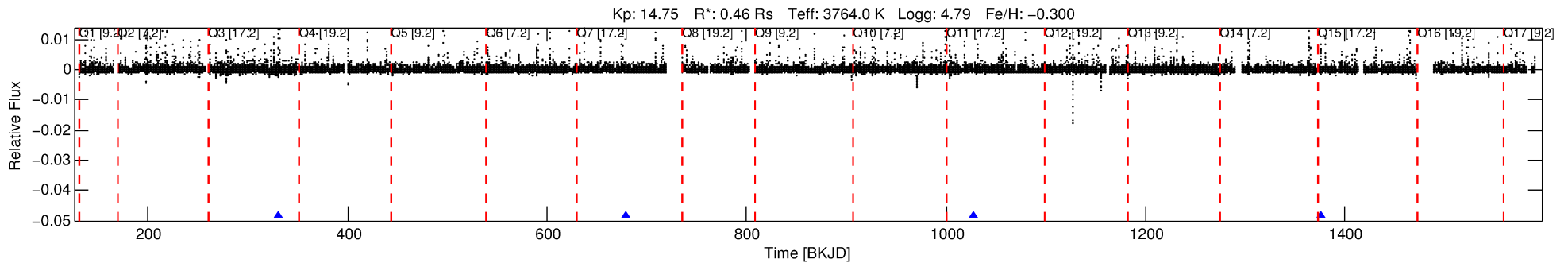
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006356144-06

No Significant Match Found

DV One-Page Summary

KIC: 6356144 Candidate: 6 of 8 Period: 348.623 d



DV Fit Results:

Period = 348.62301 [0.00747] d
Epoch = 330.1018 [0.0168] BKJD
Rp/R* = 0.0289 [0.1199]
a/R* = 662.21 [13617.47]
b = 0.42 [40.42]
Seff = 0.07 [0.01]
Teq = 129 [3] K
Rp = 1.44 [5.98] Re
a = 0.7520 [0.0473] AU
Ag = 60409.18 [502124.06] [0.12σ]
Teffp = 3138 [6520] K [0.46σ]

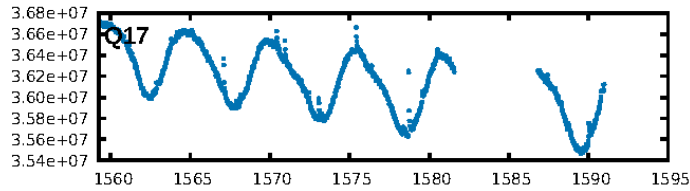
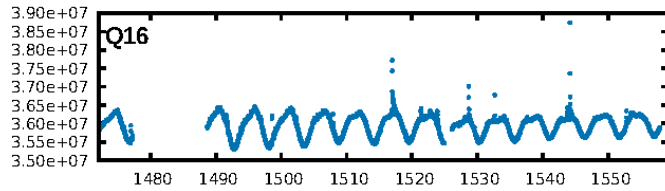
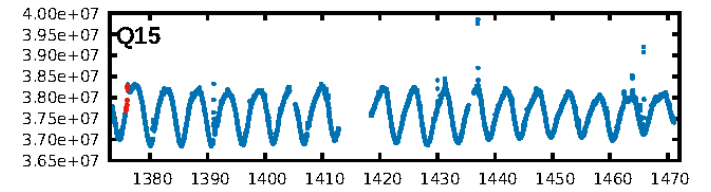
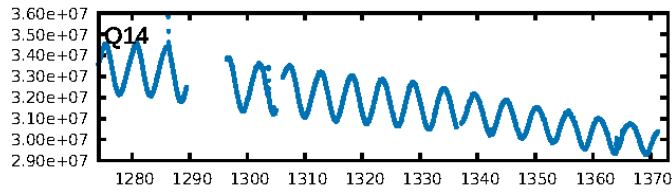
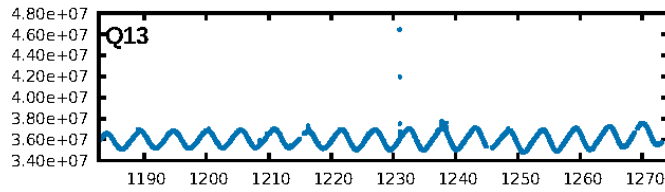
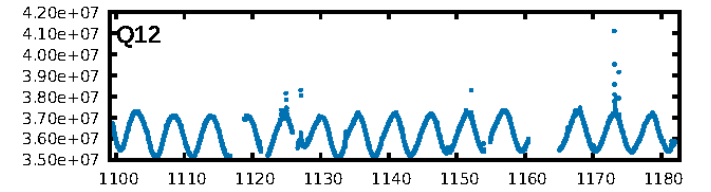
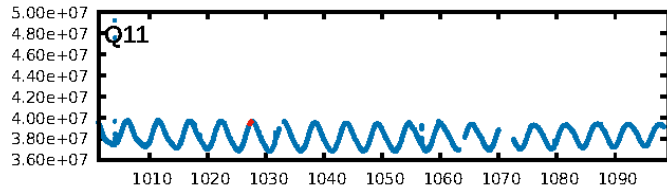
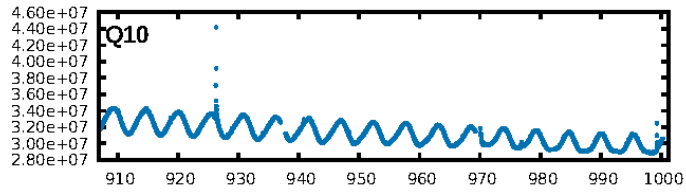
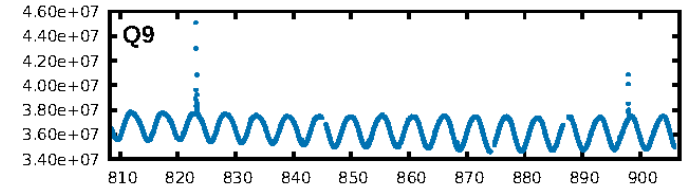
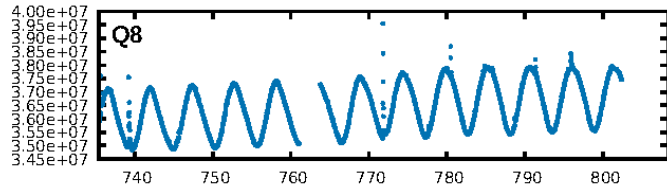
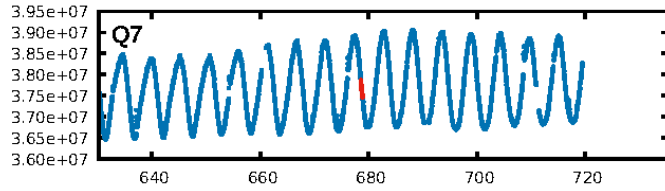
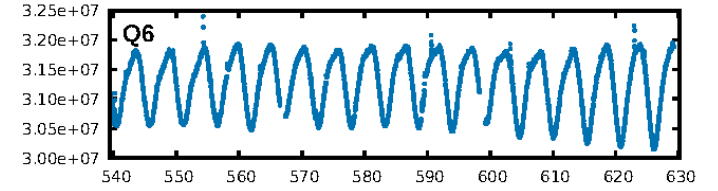
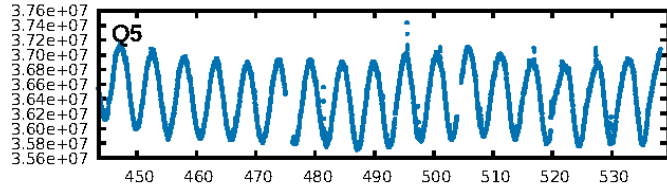
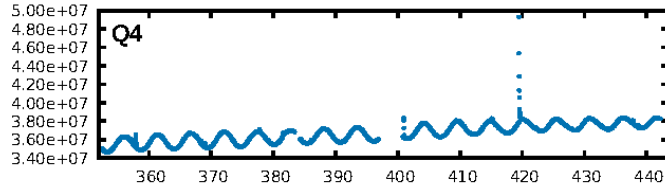
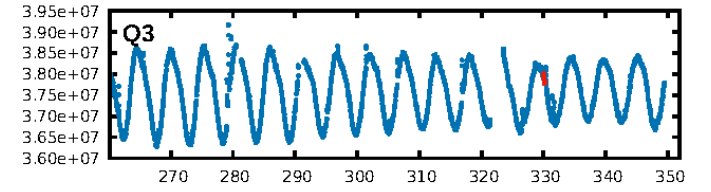
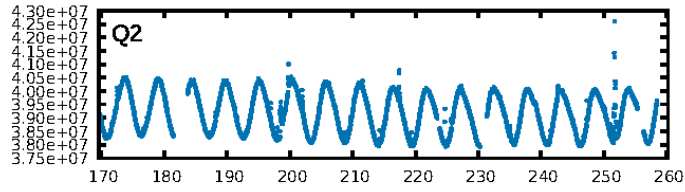
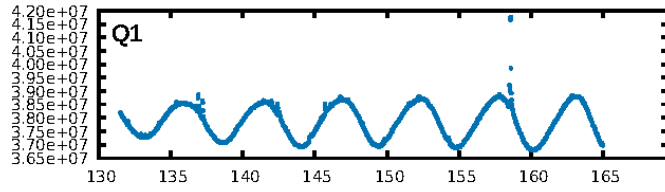
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [44.34σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 5.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.879
Centroid-sig: 47.2%
Centroid-so: 1.460 arcsec [0.93σ]
OotOffset-rm: 0.340 arcsec [3.07σ]
KicOffset-rm: 0.078 arcsec [0.51σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

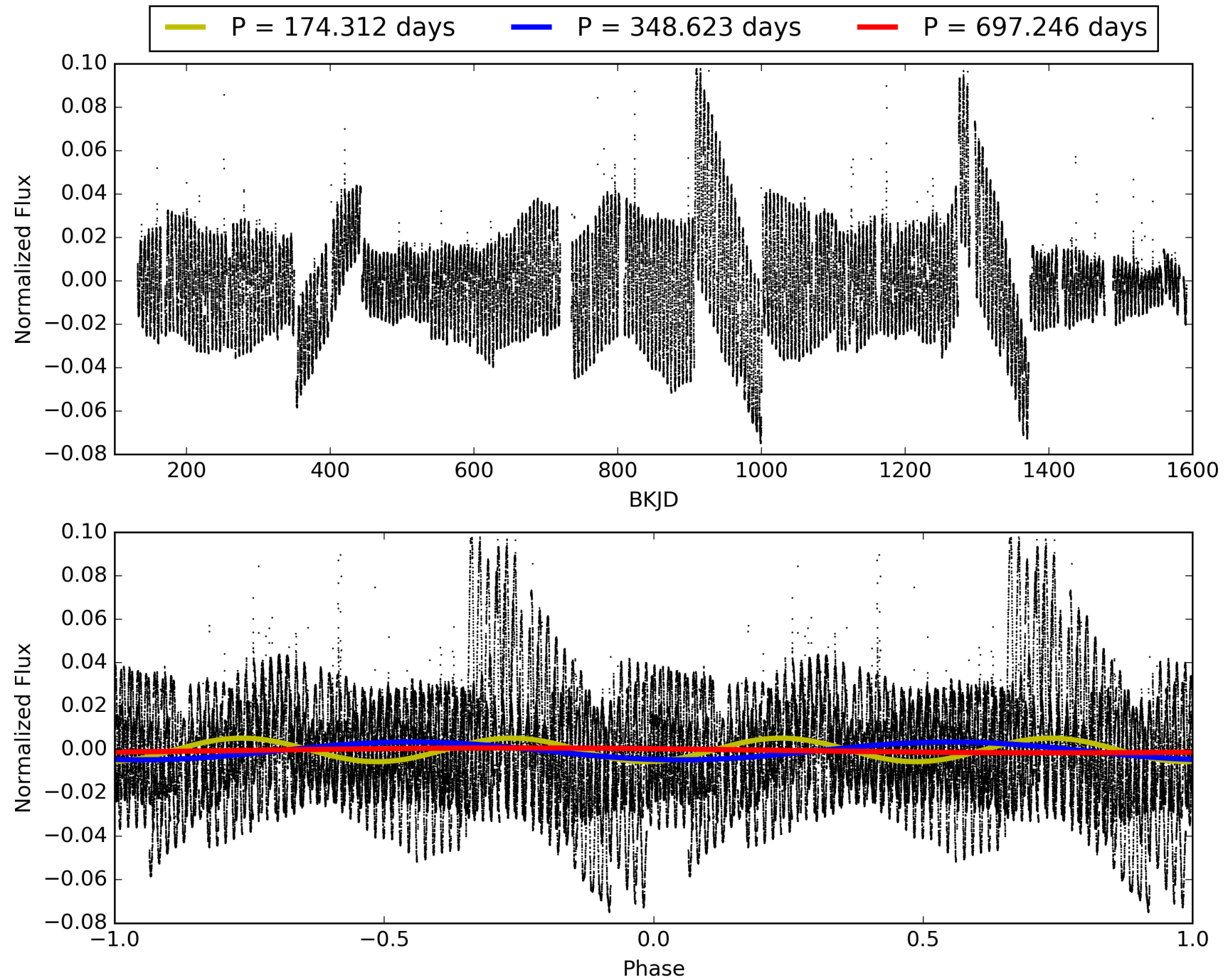
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:34:19 Z

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

TCE 006356144-06, PDC Light Curves

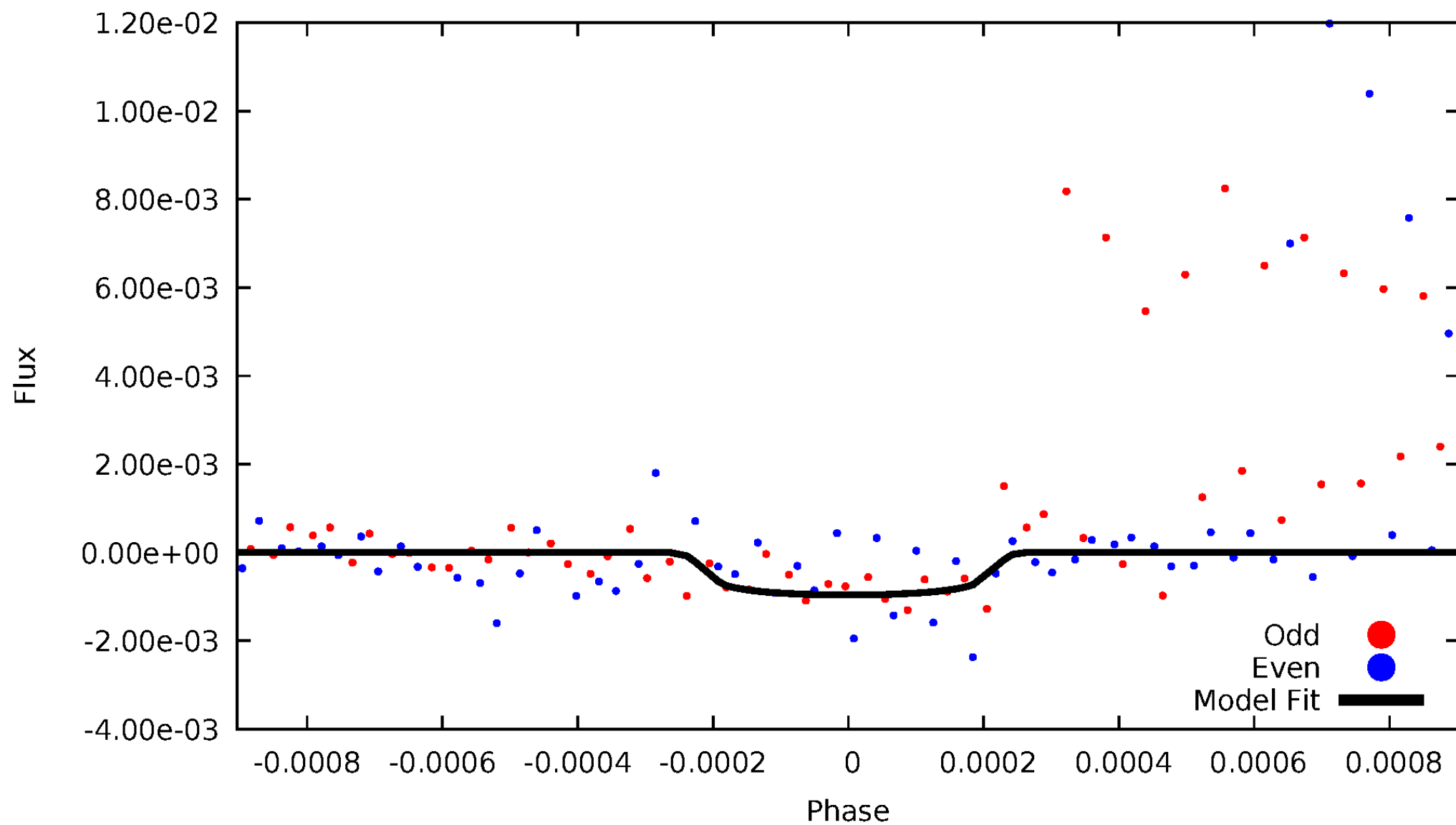


TCE 006356144-06



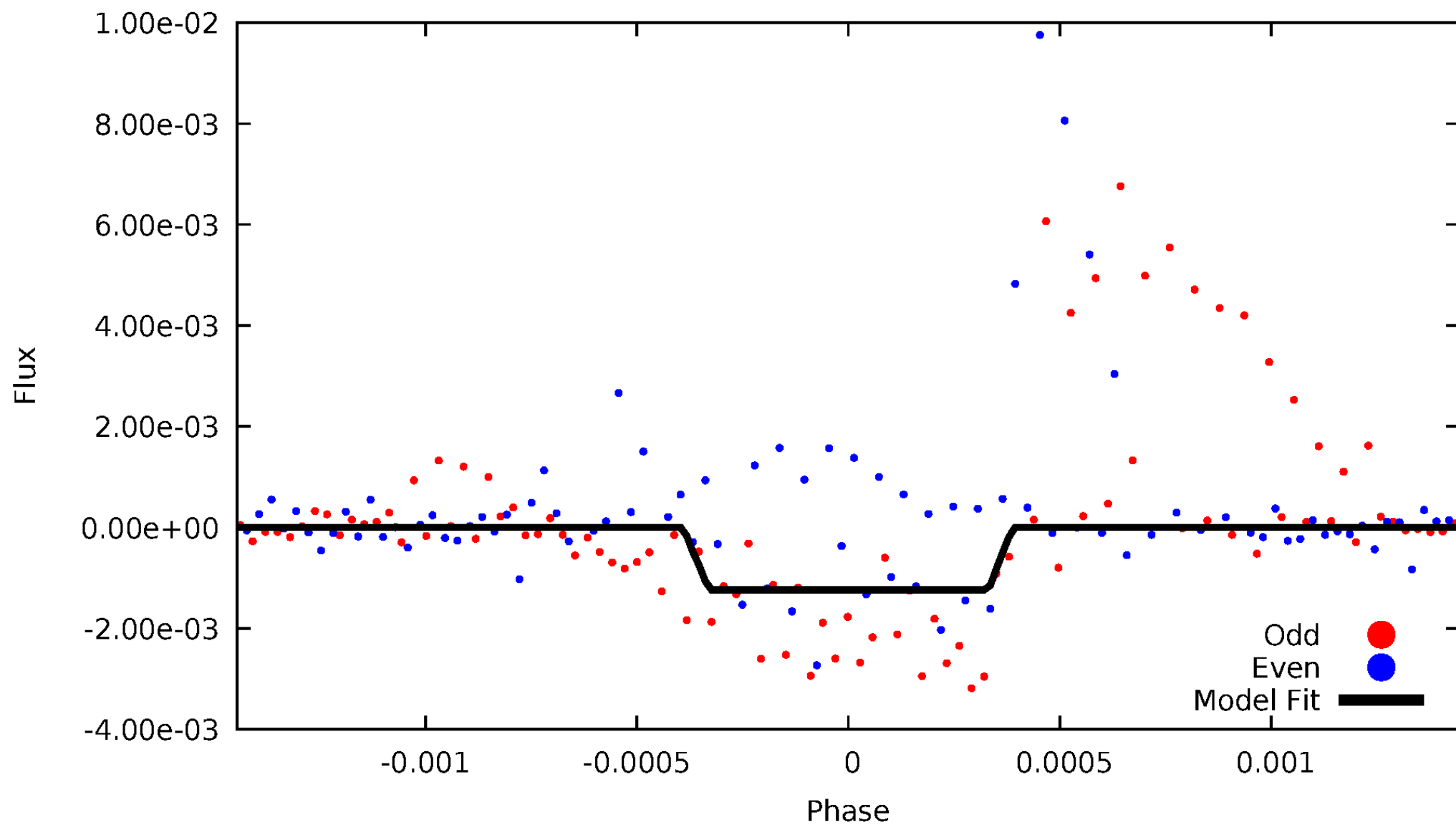
DV Odd/Even

TCE 006356144-06



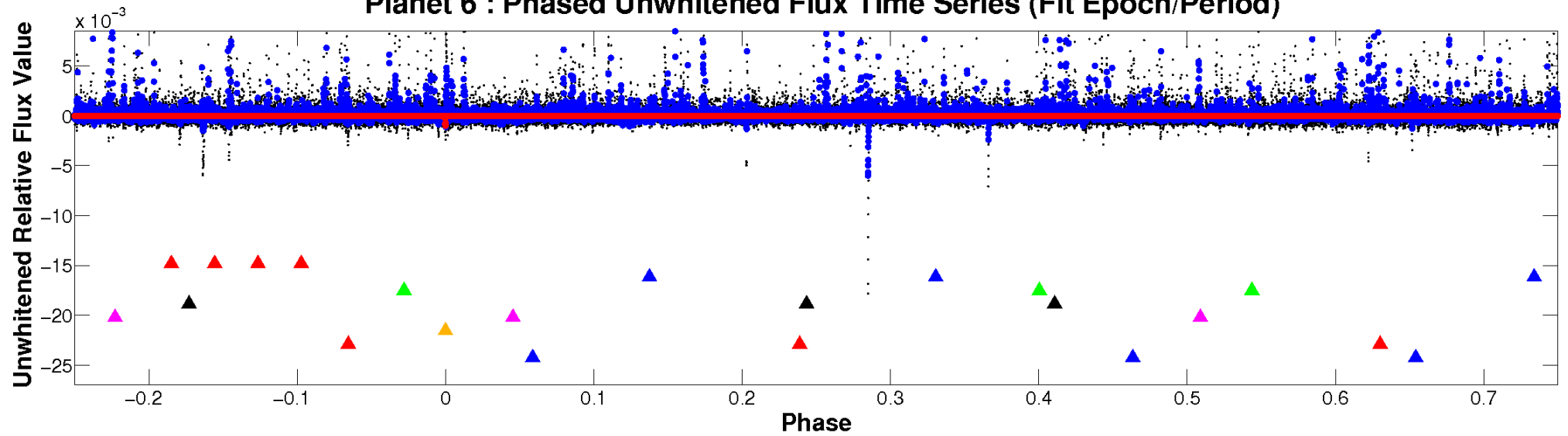
ALT Odd/Even

TCE 006356144-06

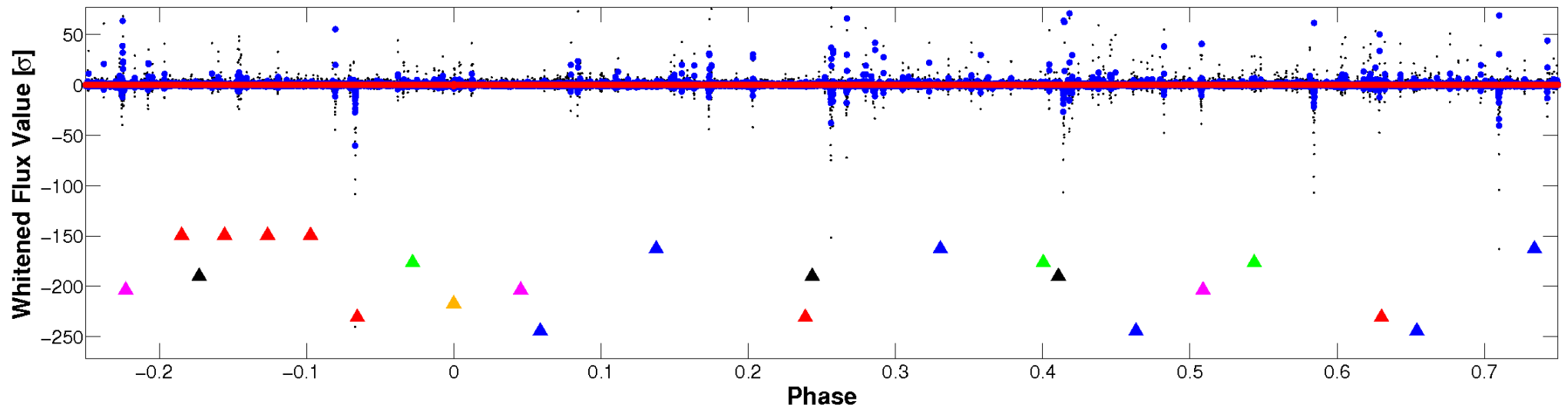


Non-Whitened Vs. Whitened Light Curve

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

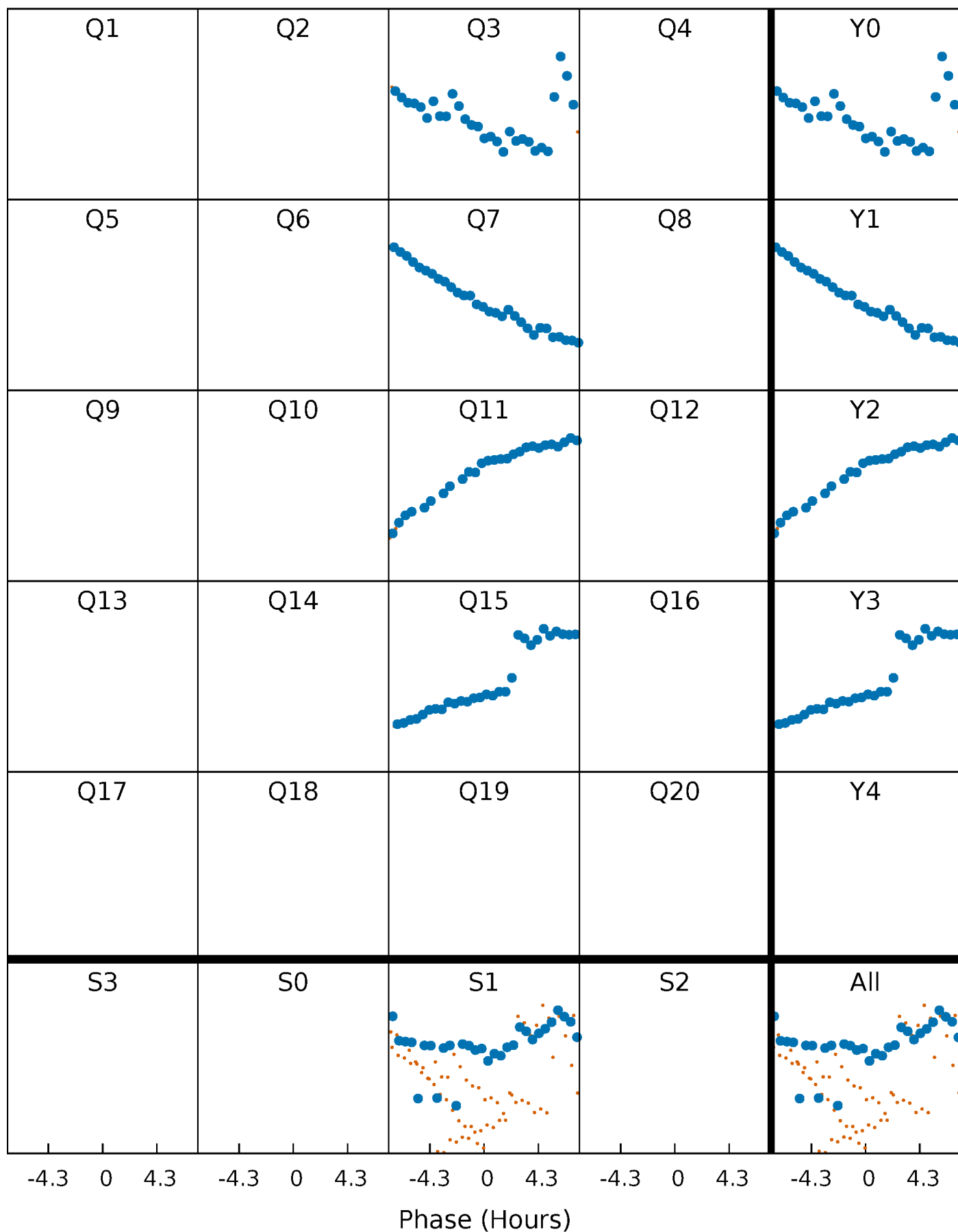


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



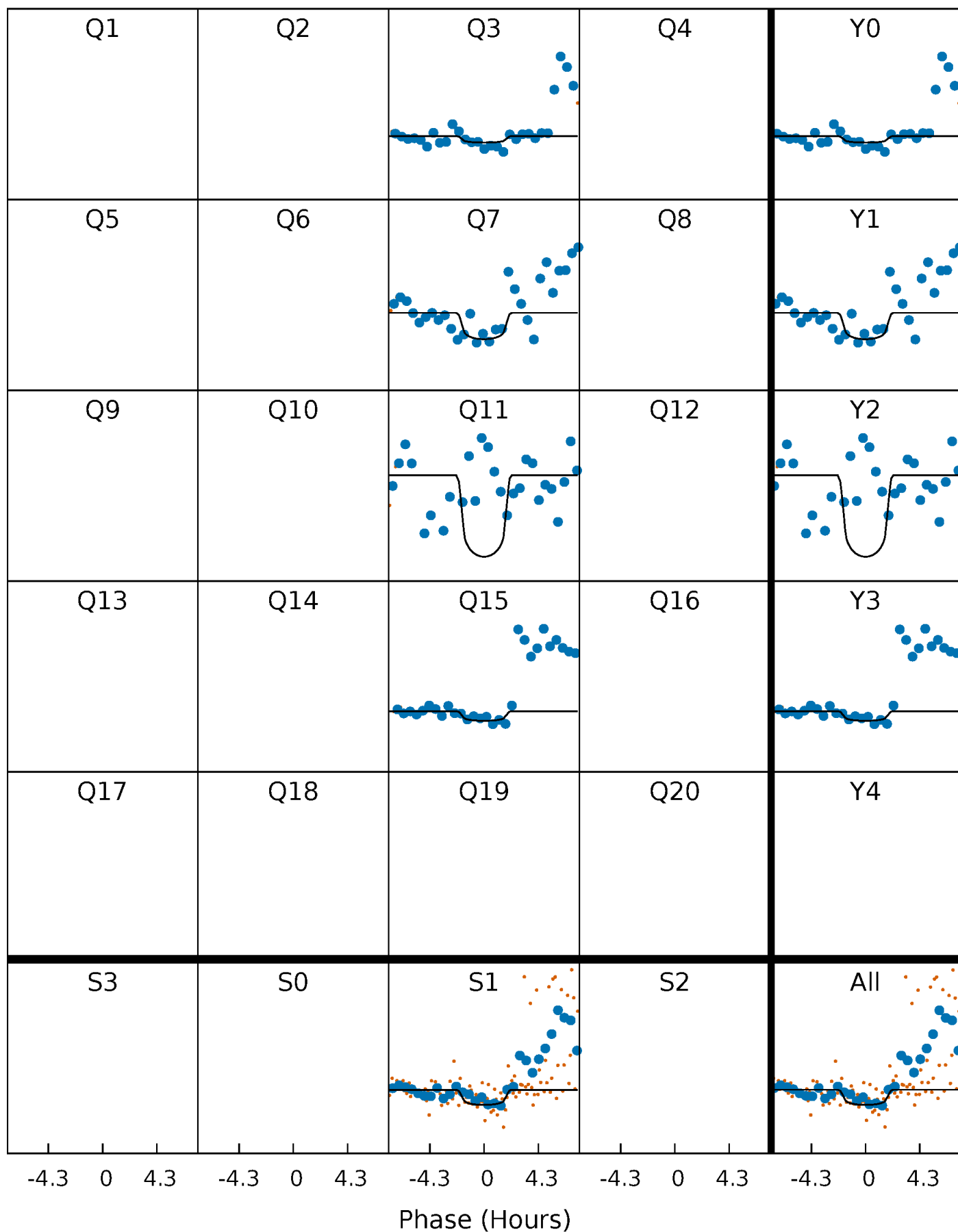
PDC Quarter-Phased Transit Curves

TCE 006356144-06 P=348.623008 Days $T_0=330.101795$ (BKJD)



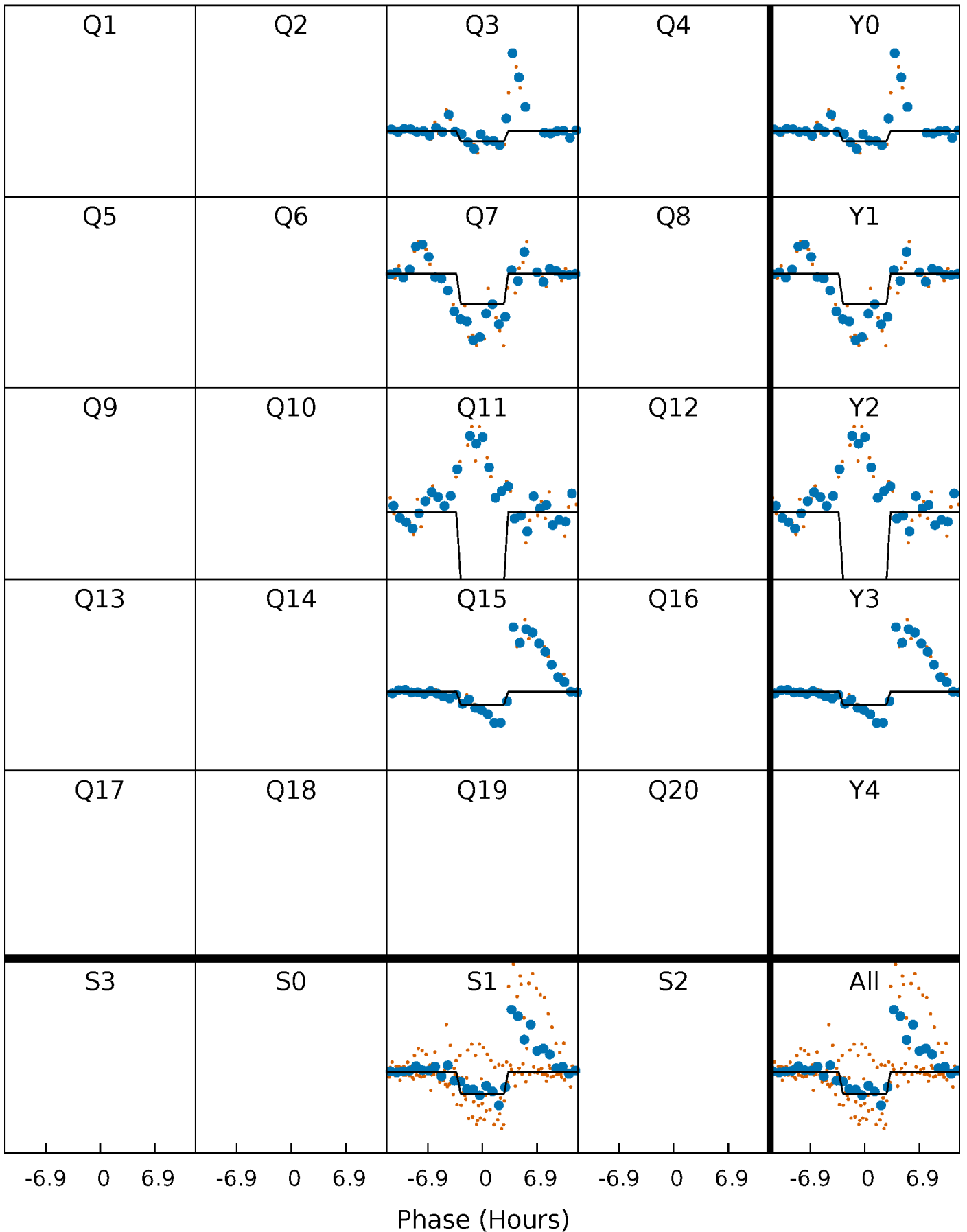
DV Quarter-Phased Transit Curves

TCE 006356144-06 $P=348.623008$ Days $T_0=330.101795$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

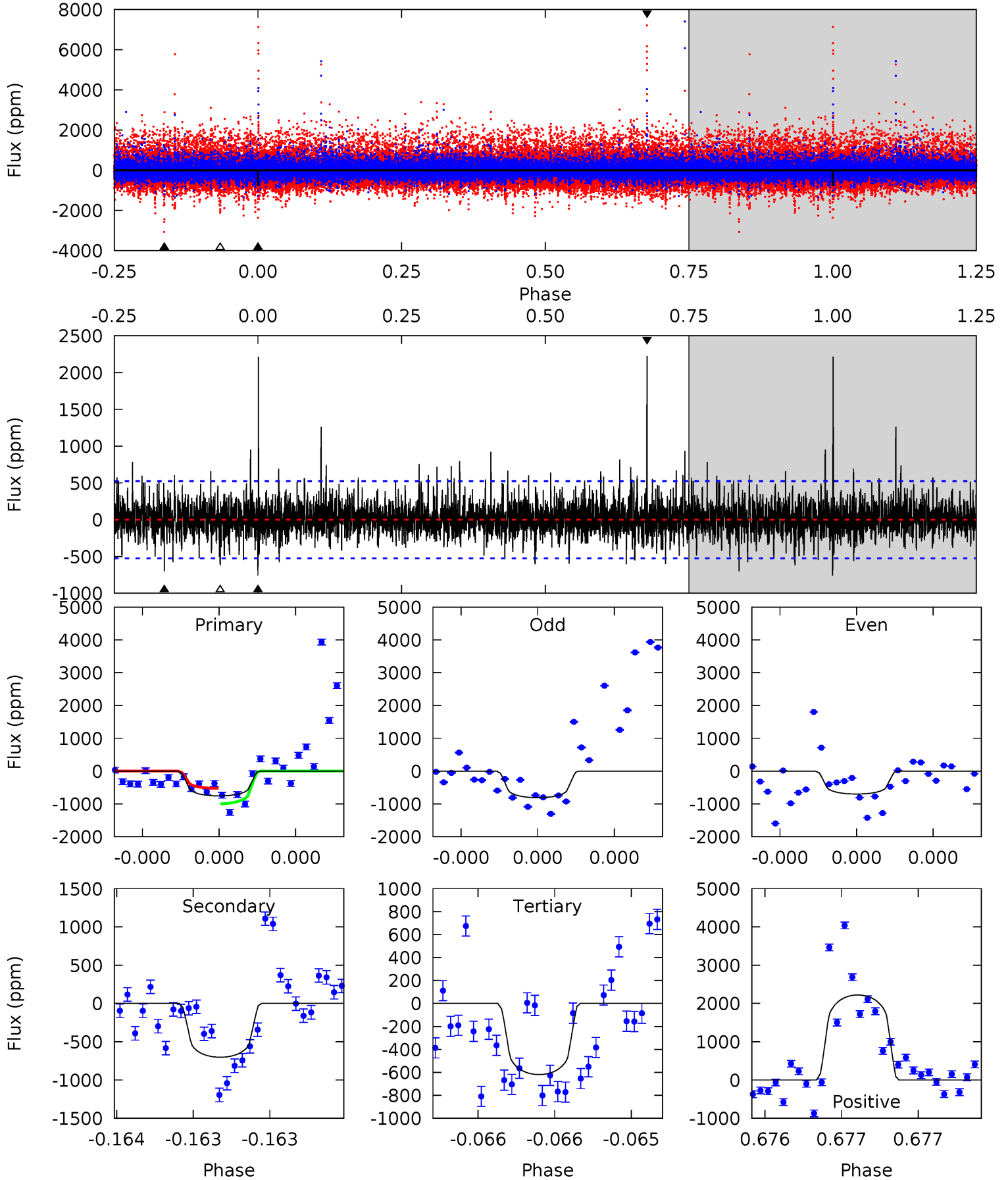
TCE 006356144-06 P=348.582911 Days $T_0=330.191932$ (BKJD)



DV Model-Shift Uniqueness Test

006356144-06, P = 348.623008 Days, E = 330.101795 Days

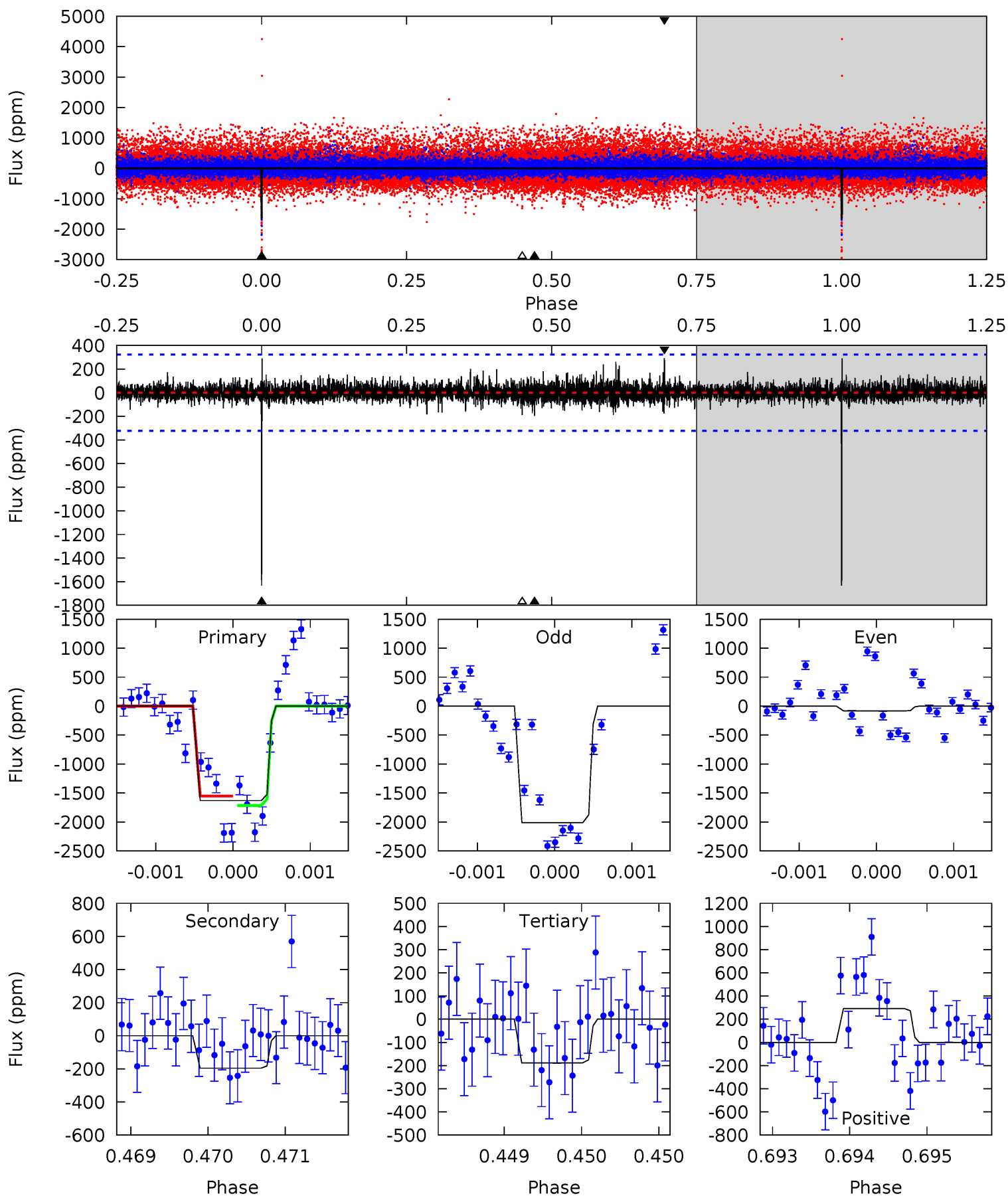
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.05	7.48	6.59	23.7	5.58	3.49	2.00	1.46	-15.6	0.89	-16.2	0.22	0.93	0.75	2.52



Alt Model-Shift Uniqueness Test

006356144-06, P = 348.582911 Days, E = 330.191932 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.7	3.33	3.20	4.97	5.50	3.37	0.75	24.5	22.8	0.13	-1.64	18.6	0.69	0.15	1.40



Stellar Parameters For KIC 006356144

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3764^{+60}_{-60}	$4.787^{+0.042}_{-0.025}$	$-0.300^{+0.100}_{-0.100}$	$0.457^{+0.028}_{-0.037}$	$0.466^{+0.031}_{-0.031}$	$6.897^{+1.350}_{-0.775}$
	+2%/-2%	+1%/-1%	+33%/-33%	+6%/-8%	+7%/-7%	+20%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006356144-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-703 ± 94	$4.80^{+4.80}_{-3.49}$	180^{+4}_{-4}	2585^{+1135}_{-399}	$9598^{+105341}_{-7298}$
Alt.	-196 ± 59	$4.94^{+4.51}_{-3.44}$	180^{+4}_{-4}	2204^{+770}_{-287}	2521^{+24645}_{-1905}

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

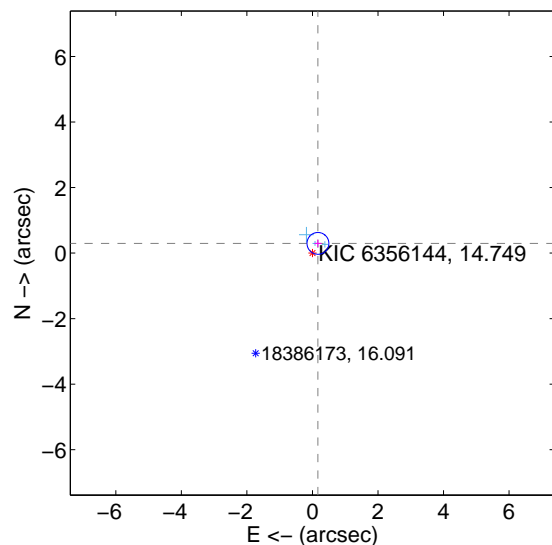
Supplemental centroid analysis for 006356144-06. Kepler magnitude: 14.75. Transit SNR 5.56

There are 3 quarters with good PRF difference image offsets

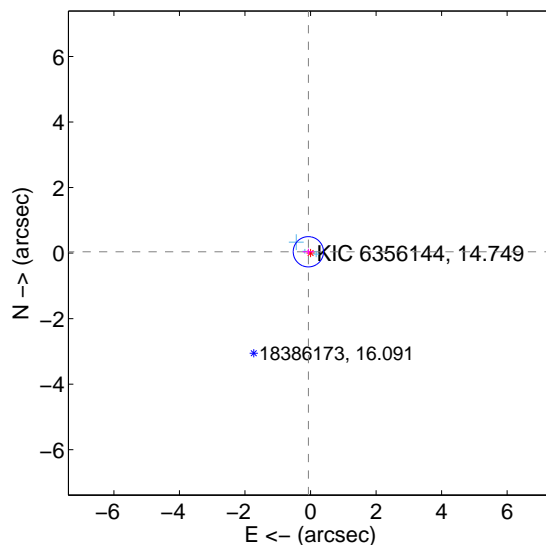
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.340 ± 0.111	3.07	-0.168 ± 0.109	0.296 ± 0.112
PRF-fit source offset from KIC position	0.078 ± 0.154	0.51	0.066 ± 0.171	0.041 ± 0.093
photometric centroid source offset	1.46 ± 1.57	0.93	1.43 ± 1.54	0.28 ± 2.06

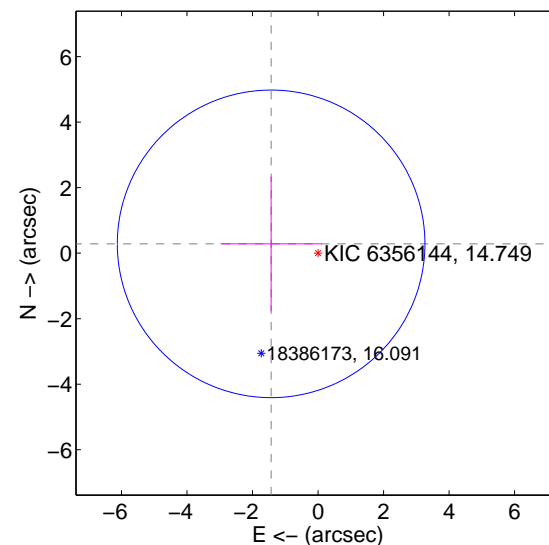
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

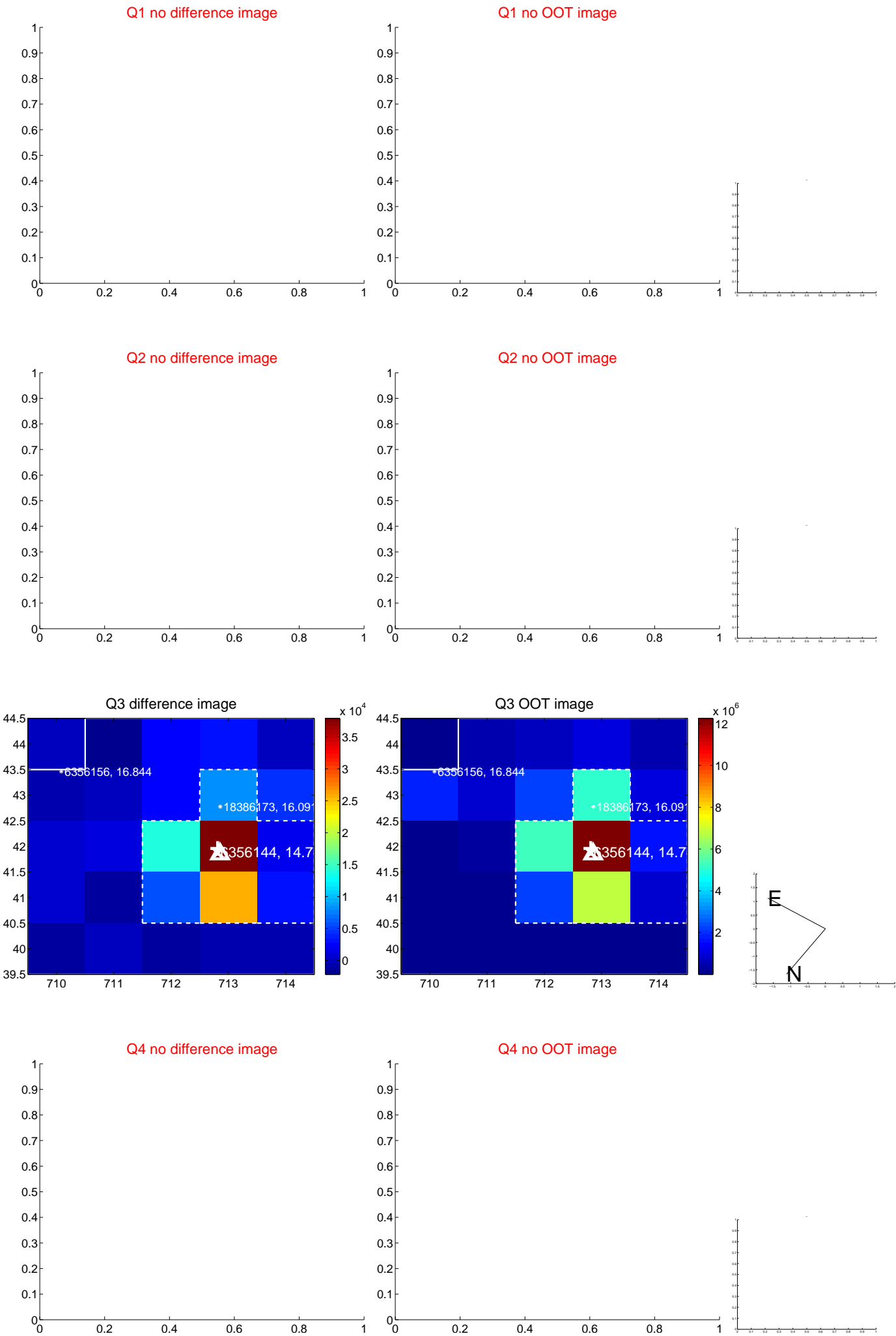


offset from photometric centroids



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



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

Q5 no difference image



Q5 no OOT image



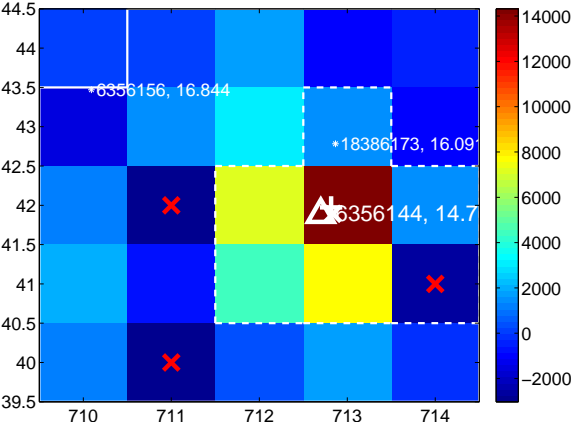
Q6 no difference image



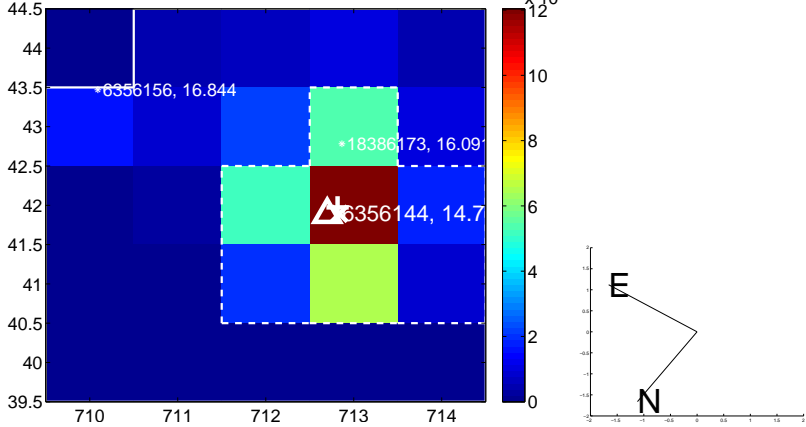
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



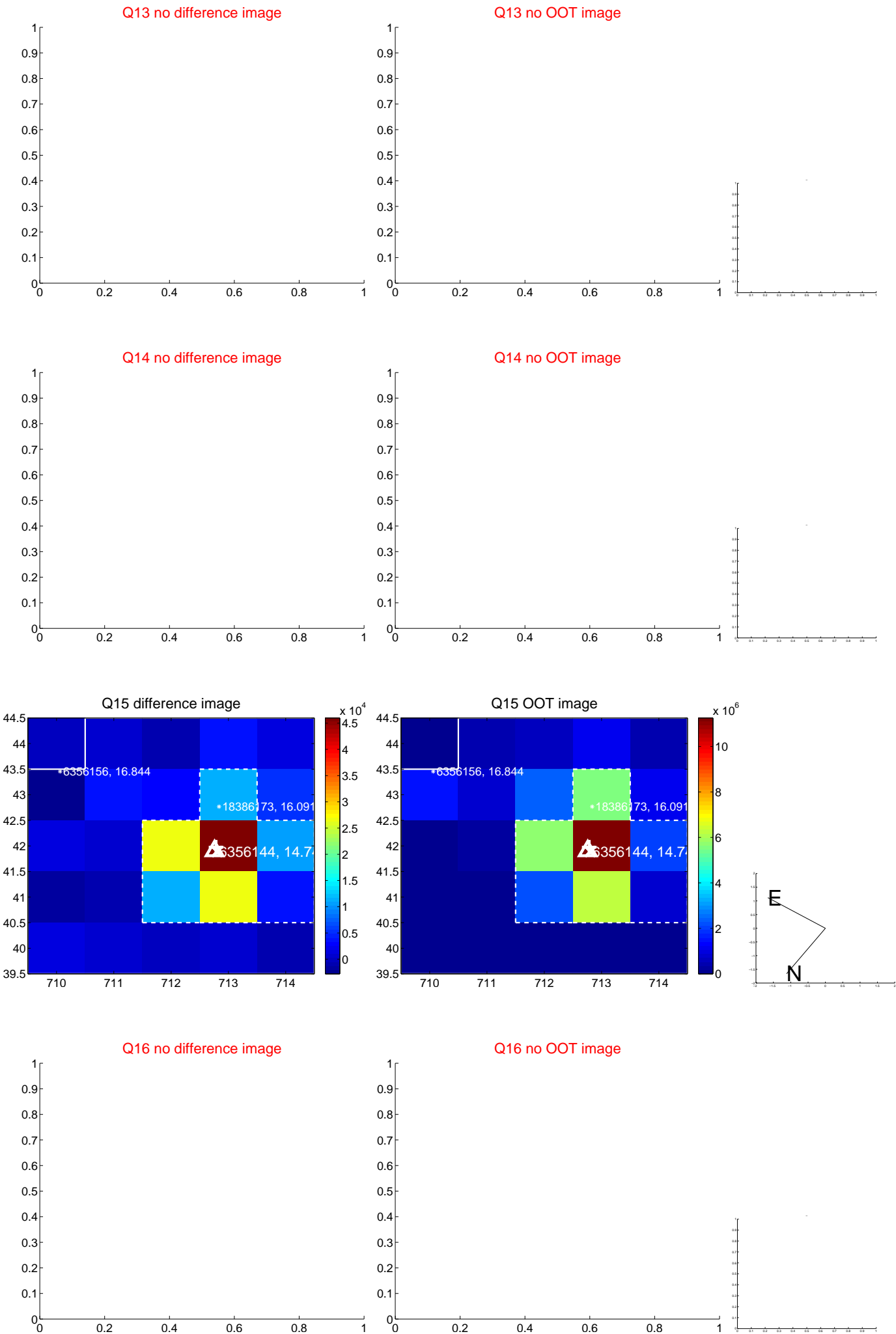
Q8 no OOT image



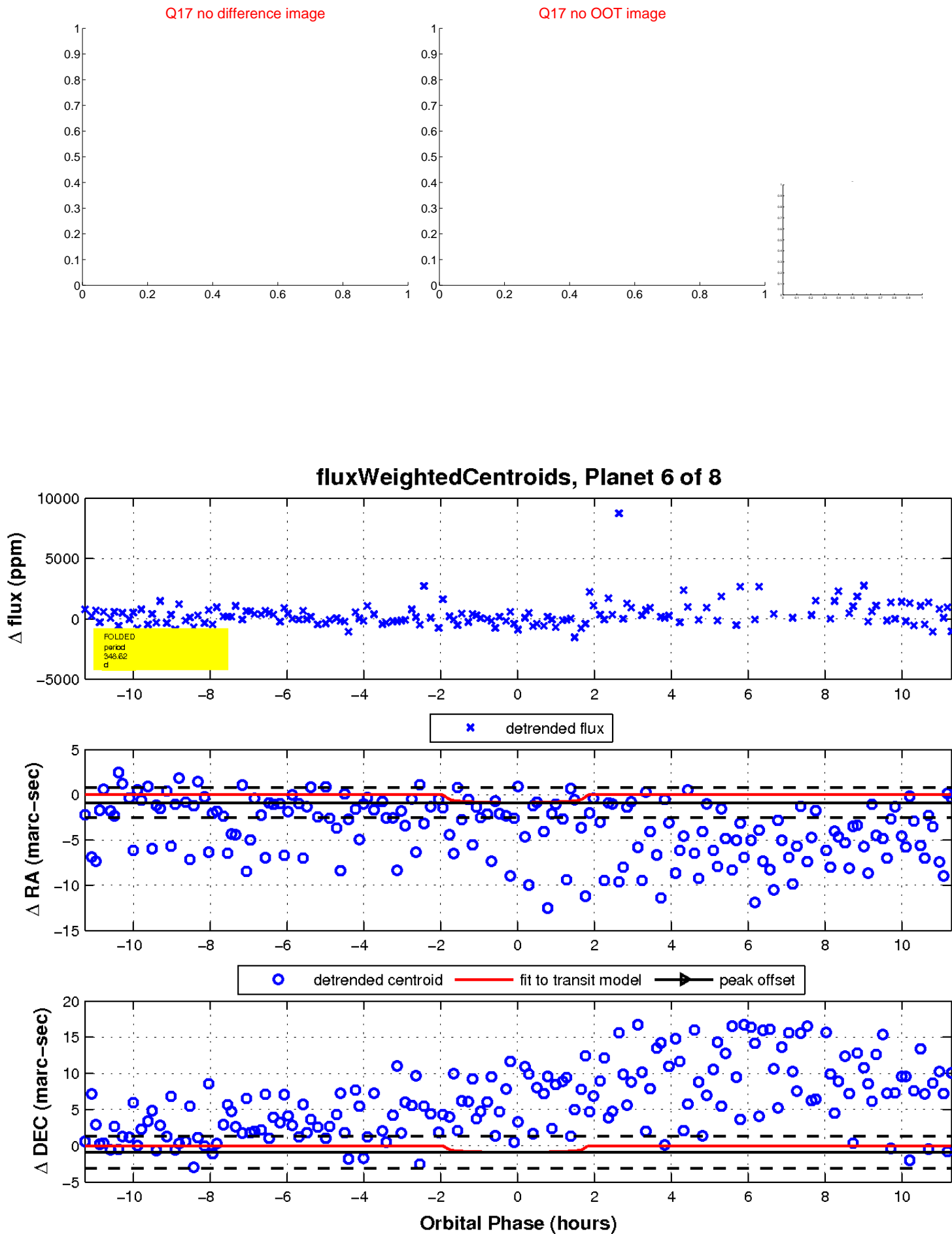
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

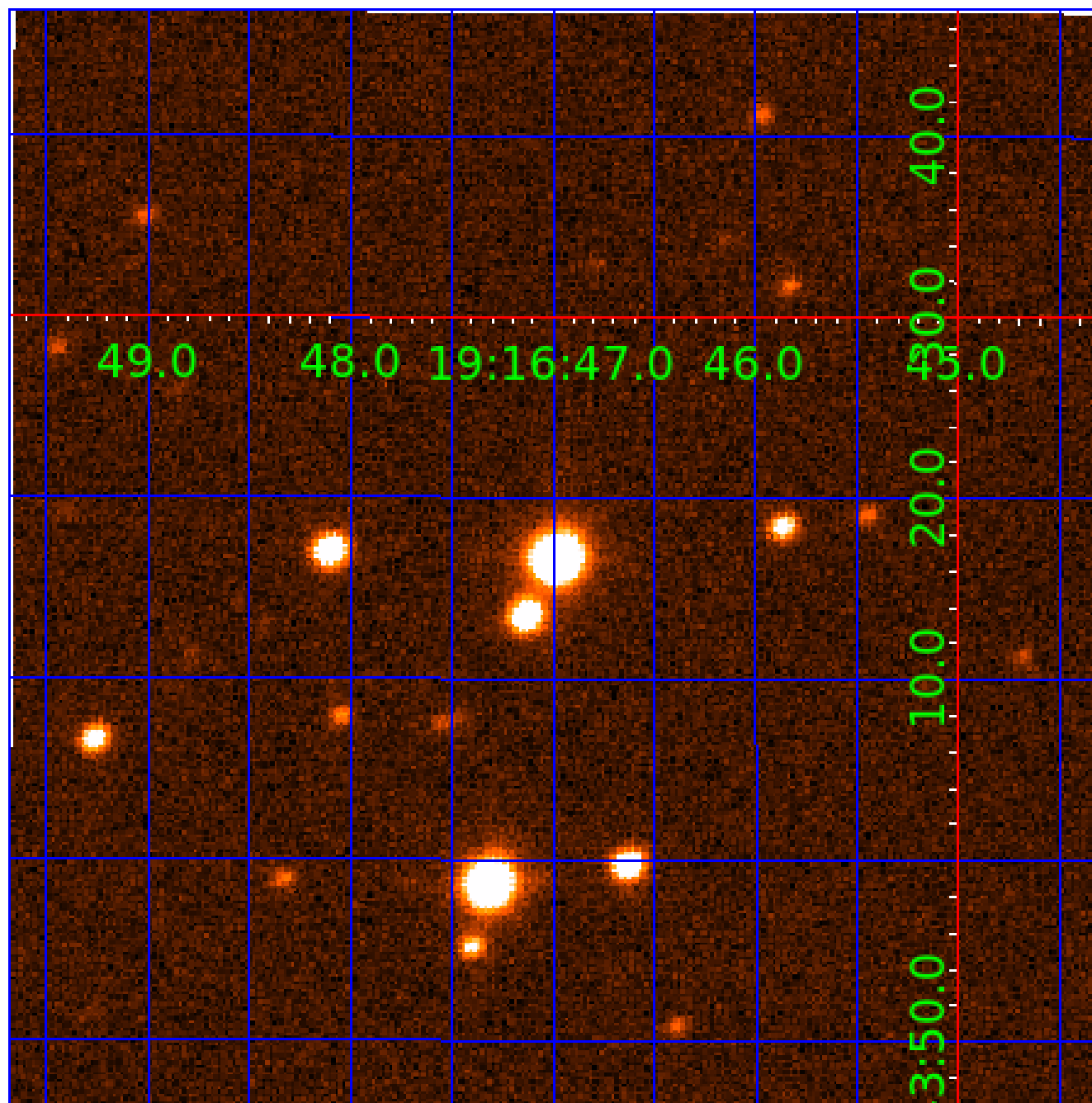


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006356144

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})
006356144-01	OBS	No	358.800189	265.670890	1757.6	4.009	19.6	10.4	0.46	3764	1.94	0.06
006356144-02	OBS	No	556.578837	378.047496	846.3	11.200	18.0	4.0	0.46	3764	1.35	0.04
006356144-03	OBS	No	497.957672	519.652520	1233.4	2.809	14.9	6.2	0.46	3764	1.66	0.04
006356144-04	OBS	No	552.087287	414.974593	1402.1	3.770	15.9	6.5	0.46	3764	1.71	0.04
006356144-05	OBS	No	442.145493	507.544955	1952.1	13.965	13.9	8.7	0.46	3764	2.02	0.05
006356144-06	OBS	No	348.623008	330.101796	962.4	3.779	19.2	5.6	0.46	3764	1.44	0.07
006356144-07	OBS	No	454.712751	549.801536	1604.4	8.118	13.0	7.4	0.46	3764	1.86	0.05
006356144-08	OBS	No	489.683454	209.539948	782.1	7.500	12.6	-1.0	0.46	3764	1.28	0.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006356144-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_KIC_POS
006356144-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—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
006356144-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006356144-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_UNCERTAIN
006356144-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
006356144-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

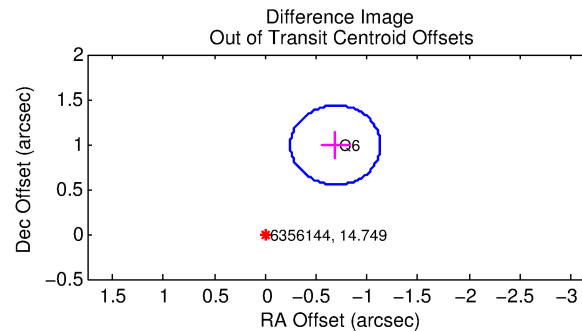
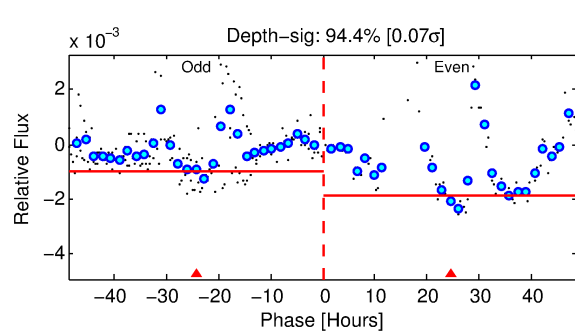
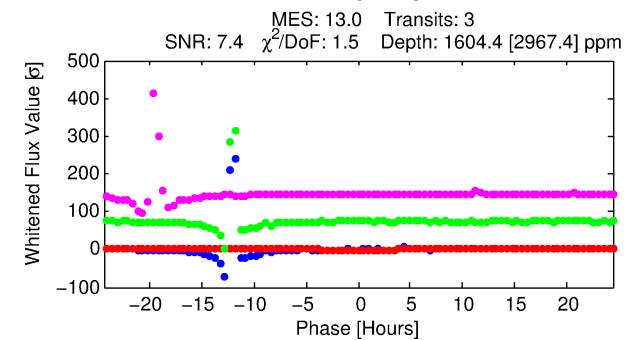
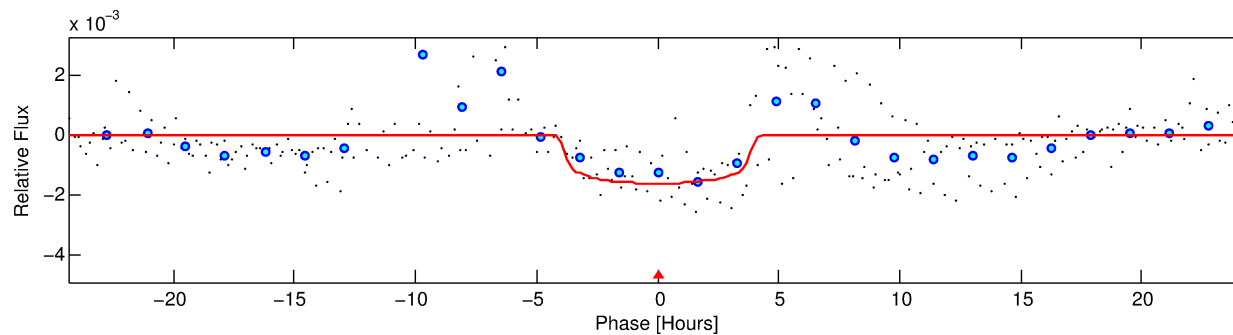
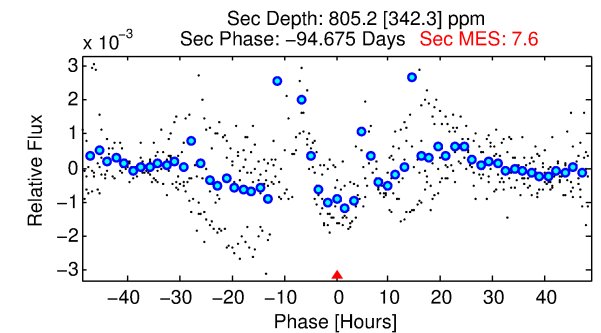
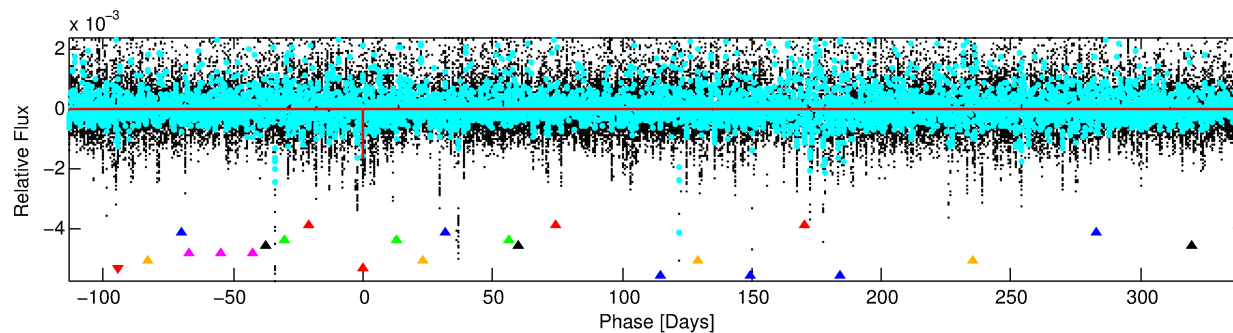
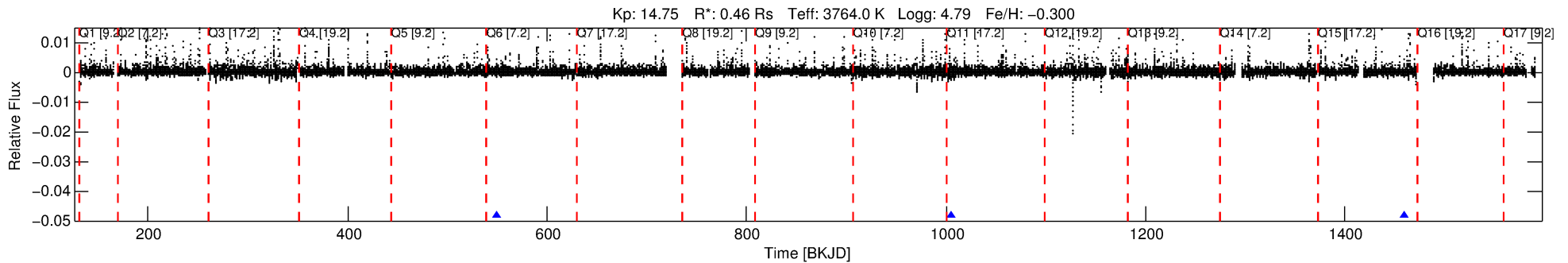
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006356144-07

No Significant Match Found

DV One-Page Summary

KIC: 6356144 Candidate: 7 of 8 Period: 454.713 d



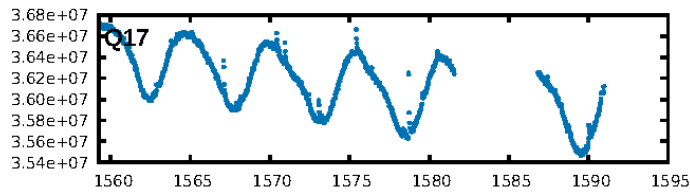
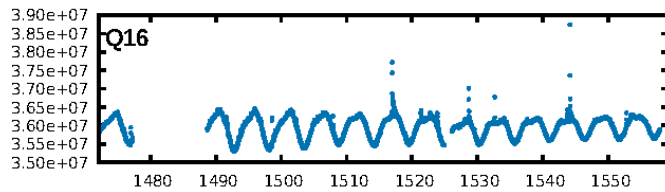
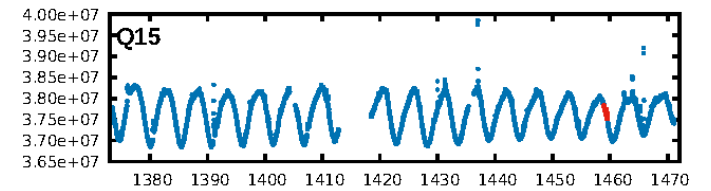
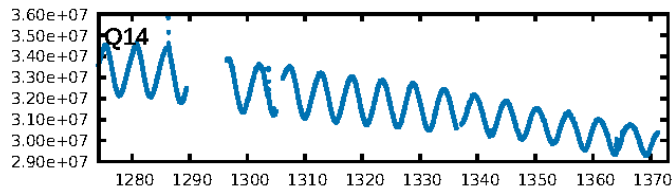
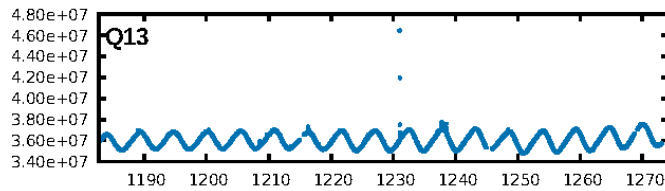
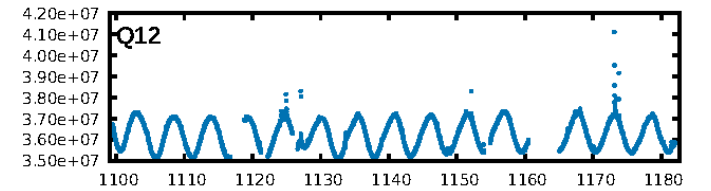
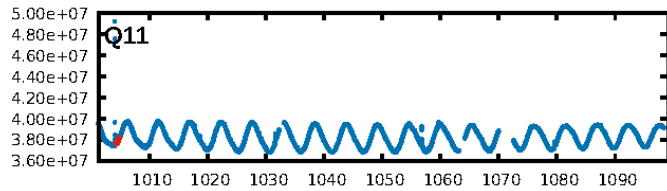
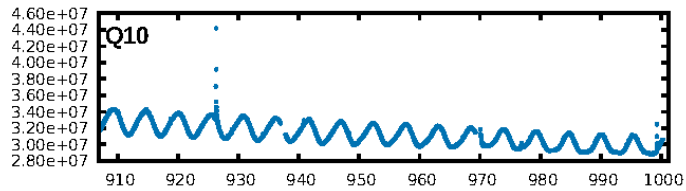
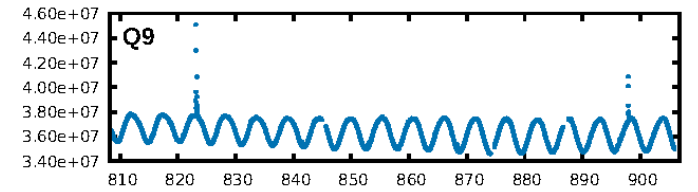
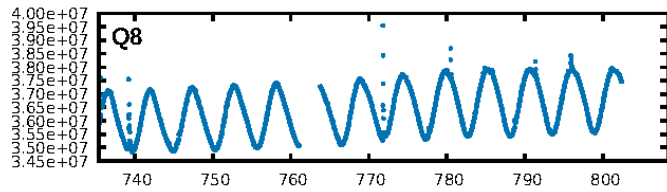
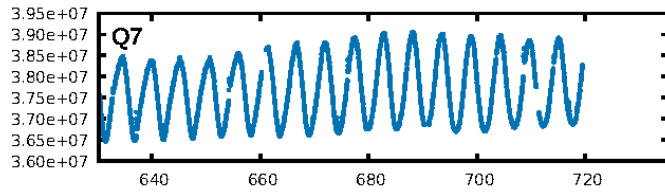
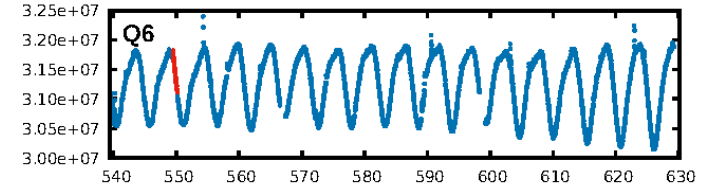
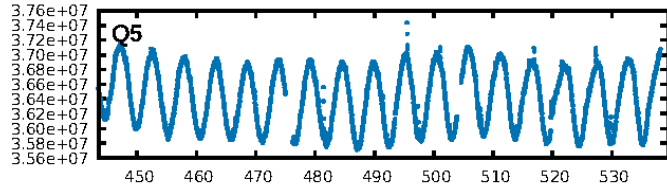
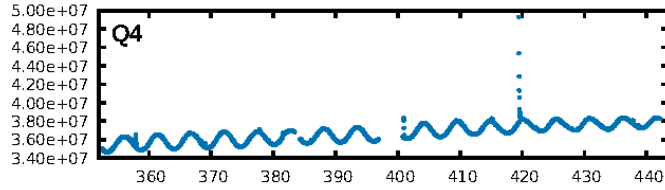
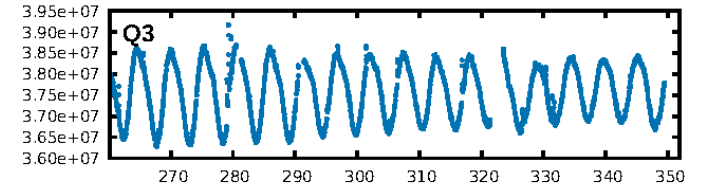
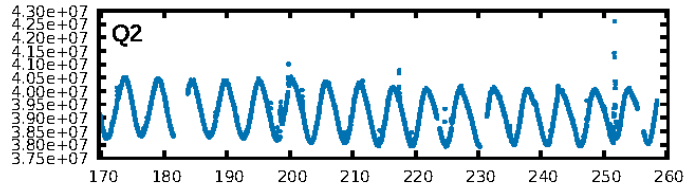
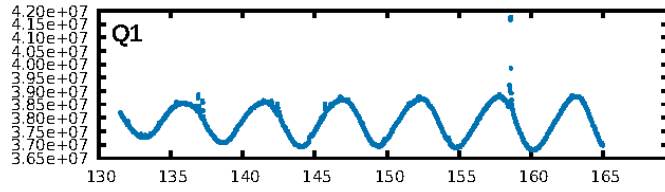
DV Fit Results:

Period = 454.71275 [0.06247] d
Epoch = 549.8015 [0.0840] BKJD
Rp/R* = 0.0374 [0.1357]
a/R* = 403.04 [6535.53]
b = 0.43 [30.32]
Seff = 0.05 [0.00]
Teq = 118 [3] K
Rp = 1.86 [6.77] Re
a = 0.8977 [0.0564] AU
Ag = 102679.69 [746395.36] [0.14 σ]
Teffp = 3279 [5959] K [0.53 σ]

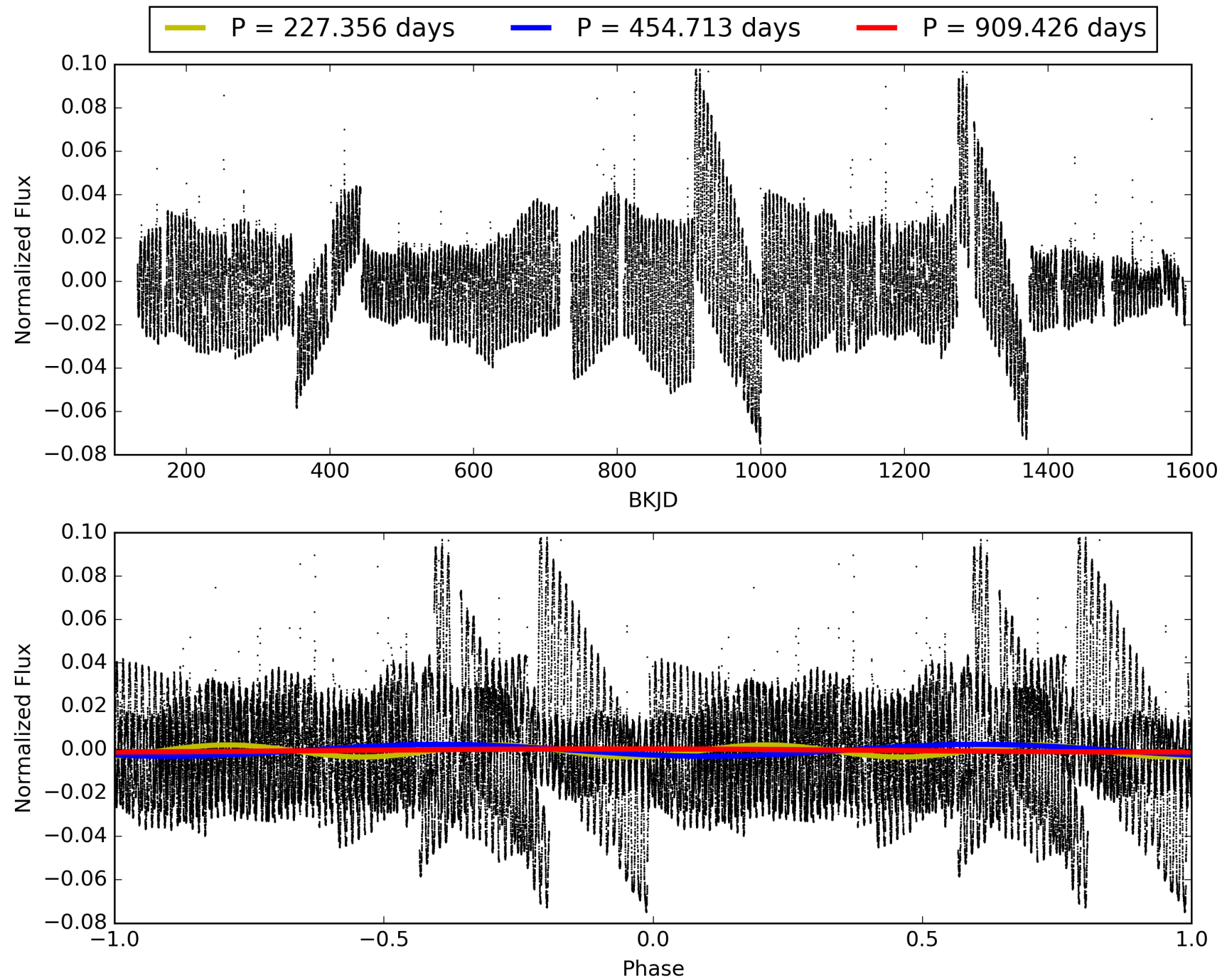
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.67 σ]
LongPeriod-sig: 100.0% [75.94 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 89.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 50.52
Centroid-sig: 0.0%
Centroid-so: 1.720 arcsec [1.55 σ]
OotOffset-rm: 1.206 arcsec [8.18 σ]
KicOffset-rm: 0.183 arcsec [1.22 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 006356144-07, PDC Light Curves

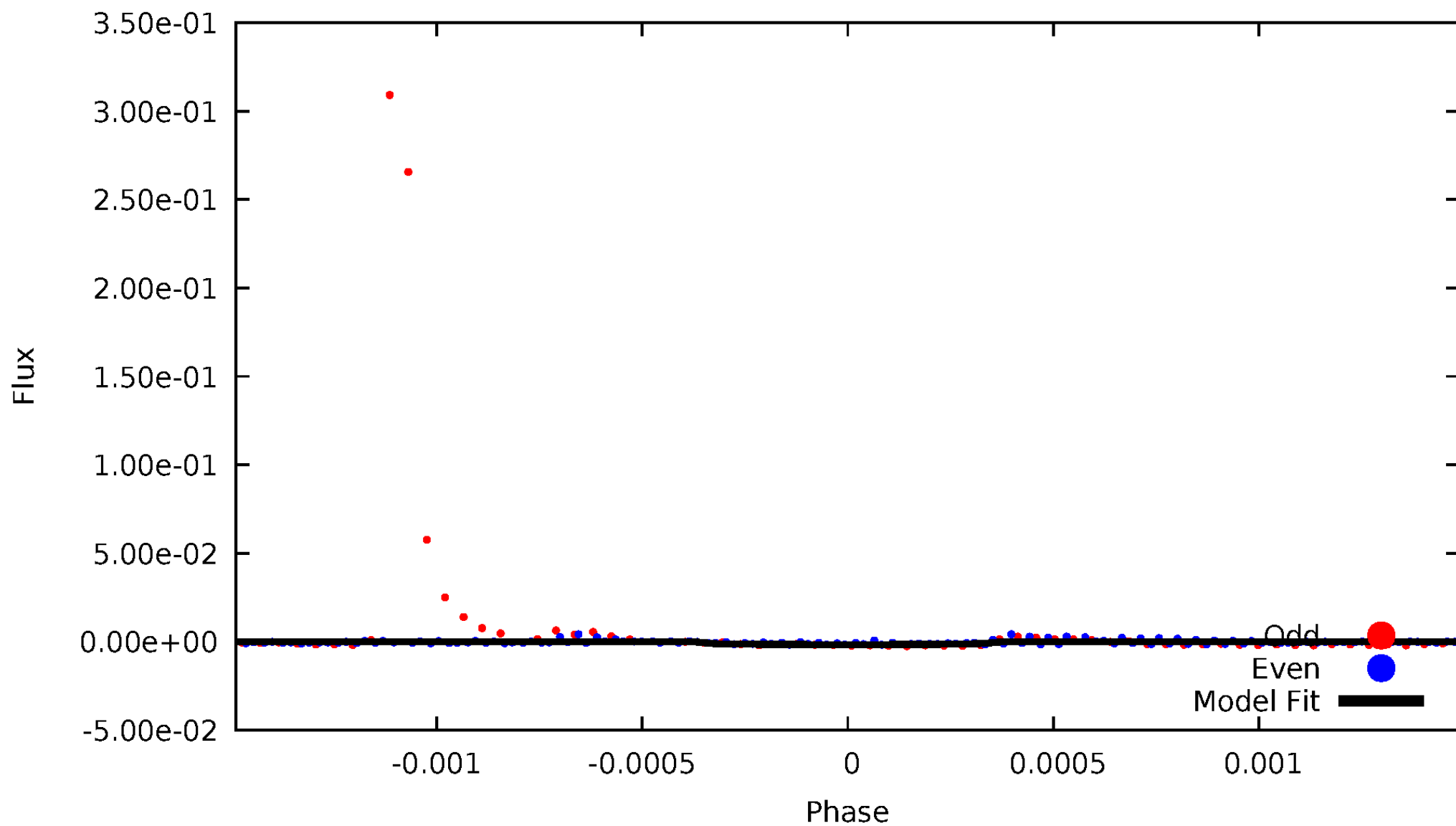


TCE 006356144-07



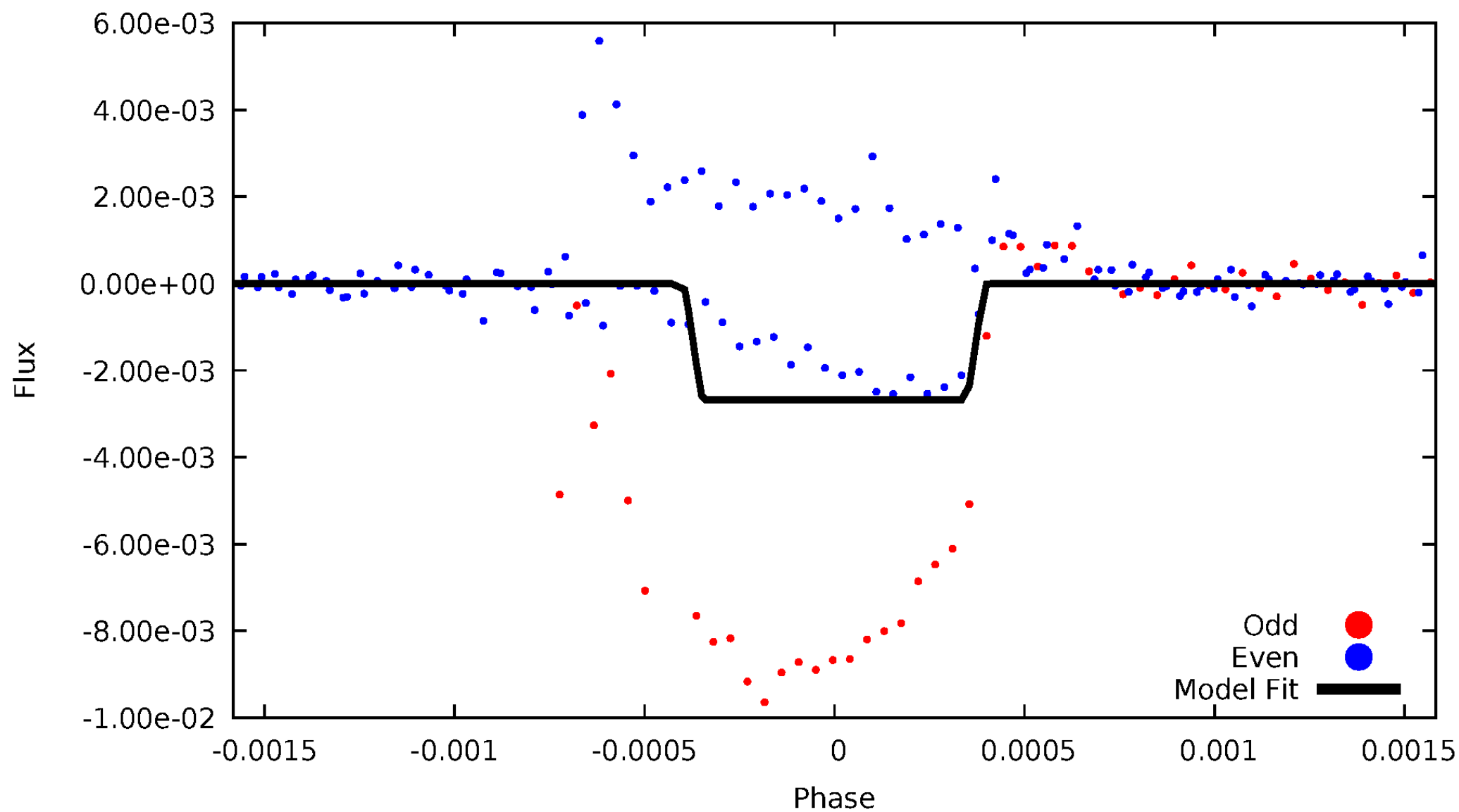
DV Odd/Even

TCE 006356144-07



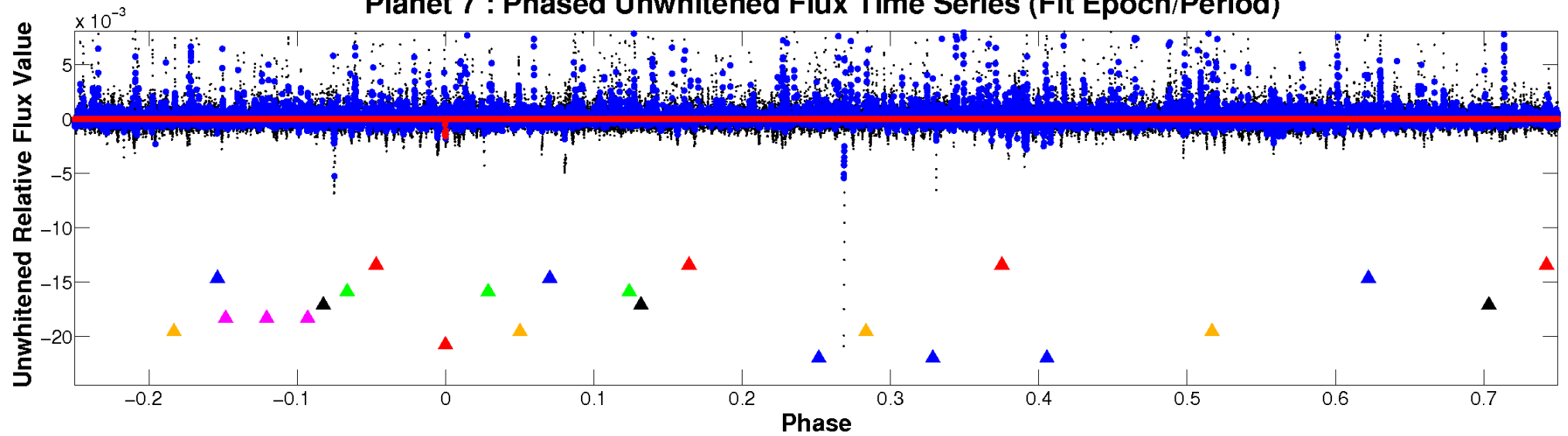
ALT Odd/Even

TCE 006356144-07

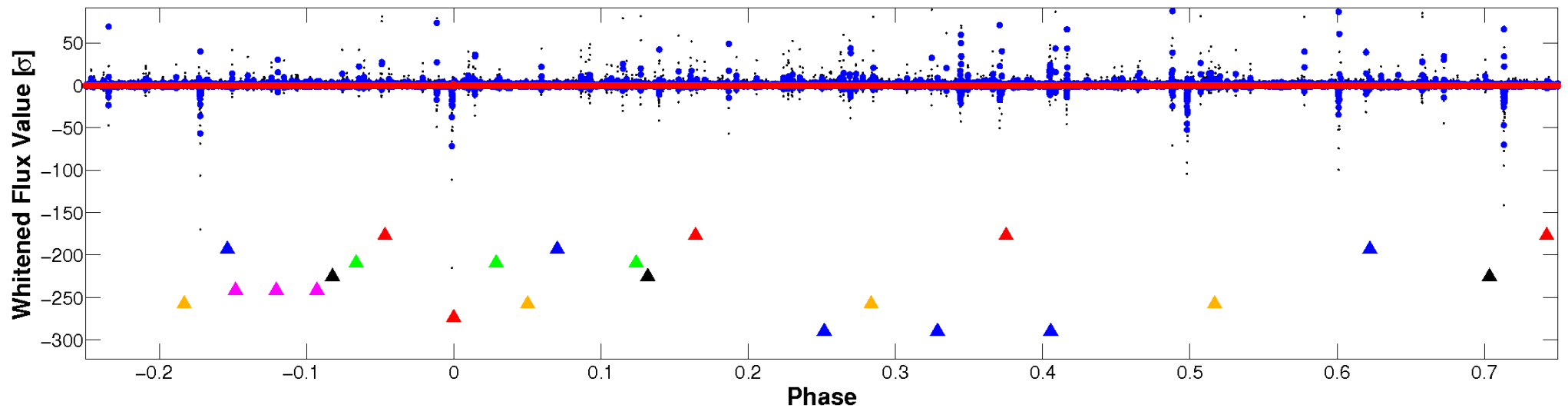


Non-Whitened Vs. Whitened Light Curve

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



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



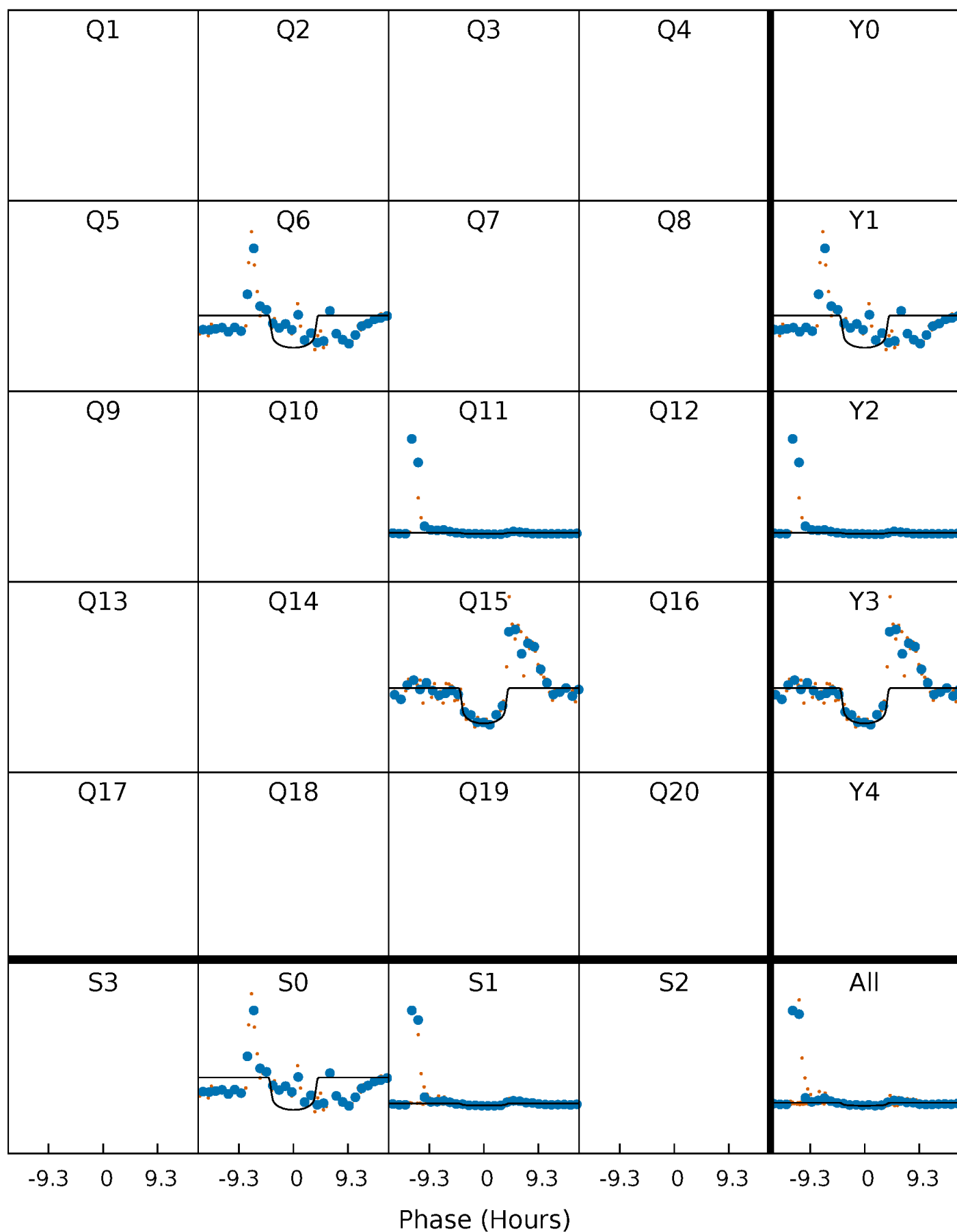
PDC Quarter-Phased Transit Curves

TCE 006356144-07 $P=454.712751$ Days $T_0=549.801536$ (BKJD)



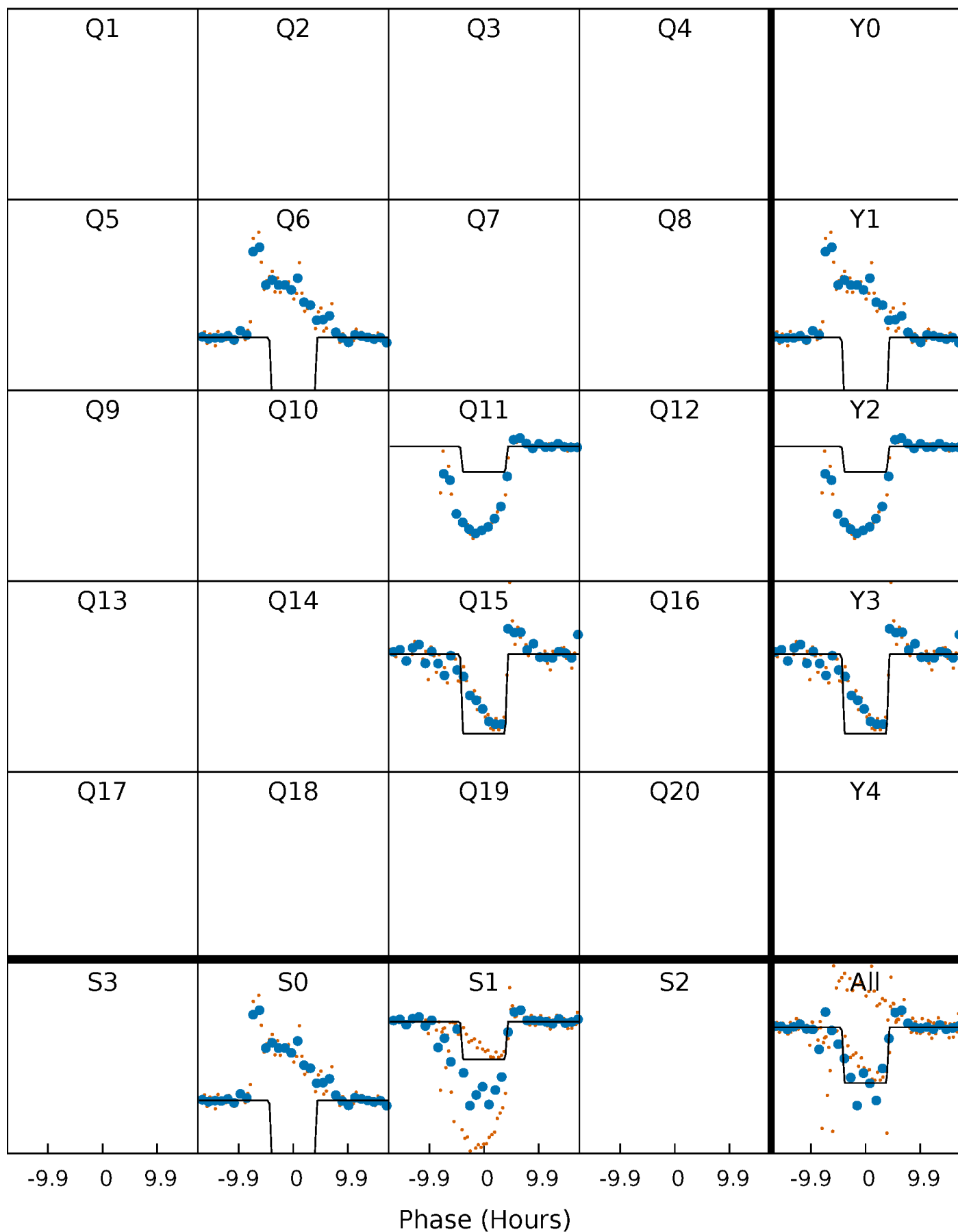
DV Quarter-Phased Transit Curves

TCE 006356144-07 $P=454.712751$ Days $T_0=549.801536$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

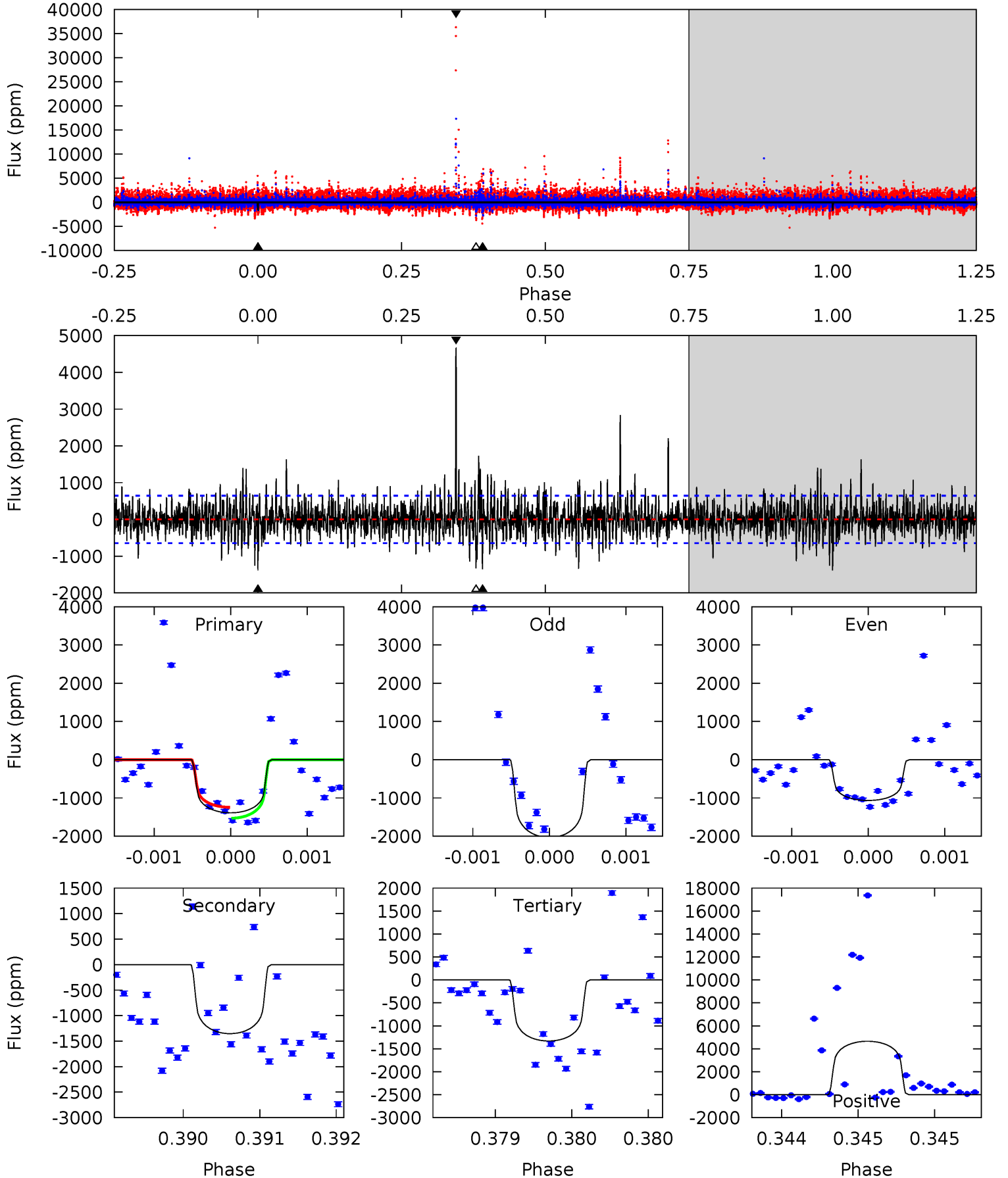
TCE 006356144-07 $P=454.714822$ Days $T_0=549.785263$ (BKJD)



DV Model-Shift Uniqueness Test

006356144-07, P = 454.712751 Days, E = 95.088785 Days

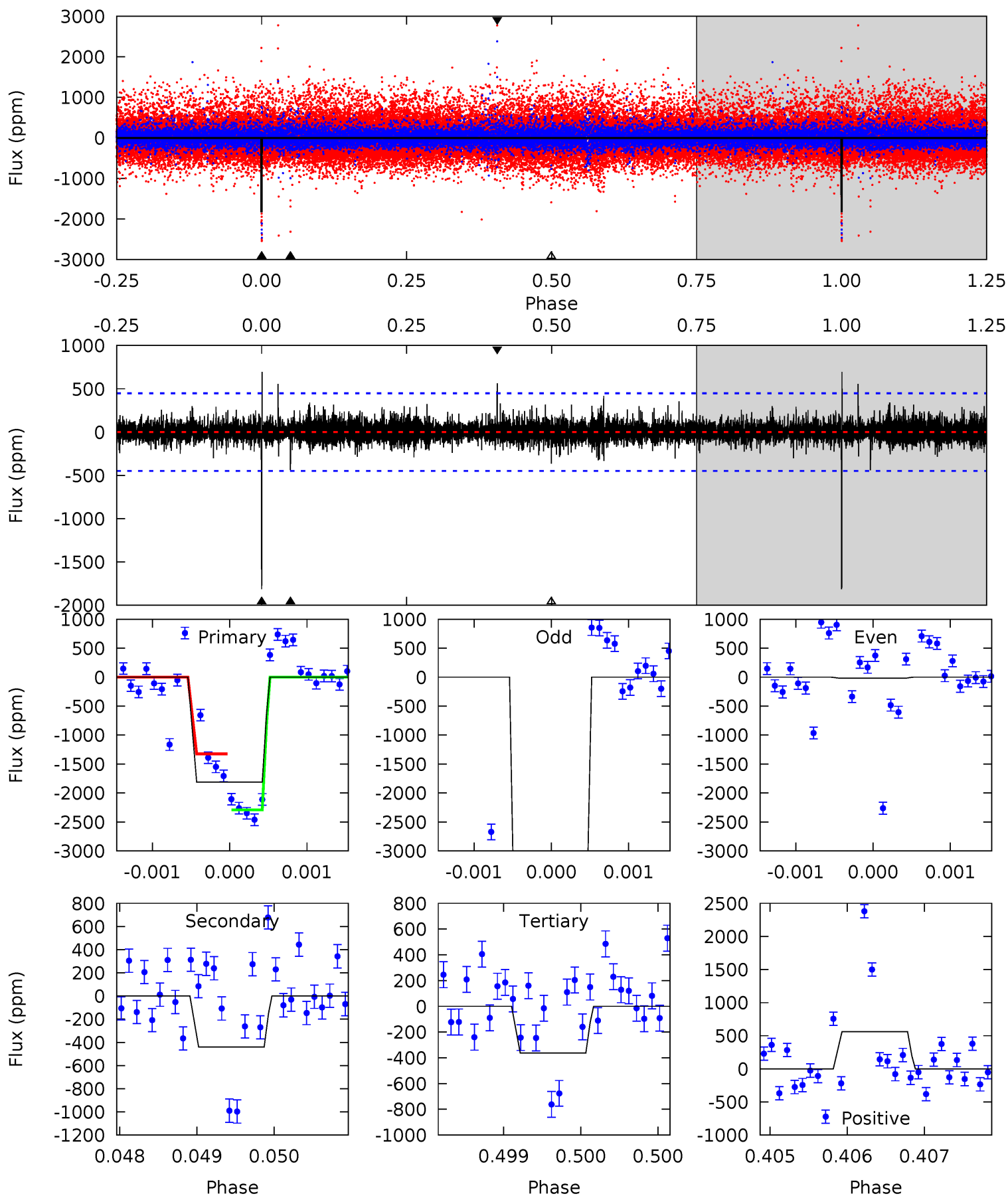
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	11.6	11.4	39.8	5.50	3.37	3.18	0.49	-27.9	0.20	-28.2	1.23	0.98	0.77	1.23



Alt Model-Shift Uniqueness Test

006356144-07, P = 454.714822 Days, E = 95.070441 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	5.39	4.45	6.89	5.49	3.35	0.87	17.8	15.3	0.93	-1.50	71.1	1.49	0.28	0



Stellar Parameters For KIC 006356144

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3764^{+60}_{-60}	$4.787^{+0.042}_{-0.025}$	$-0.300^{+0.100}_{-0.100}$	$0.457^{+0.028}_{-0.037}$	$0.466^{+0.031}_{-0.031}$	$6.897^{+1.350}_{-0.775}$
	+2%/-2%	+1%/-1%	+33%/-33%	+6%/-8%	+7%/-7%	+20%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006356144-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1353 ± 117	$5.47^{+5.29}_{-3.78}$	165^{+3}_{-4}	2729^{+1153}_{-428}	$20638^{+191535}_{-15490}$
Alt.	-439 ± 82	$5.79^{+5.70}_{-4.15}$	165^{+3}_{-4}	2341^{+935}_{-335}	5852^{+67535}_{-4377}

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

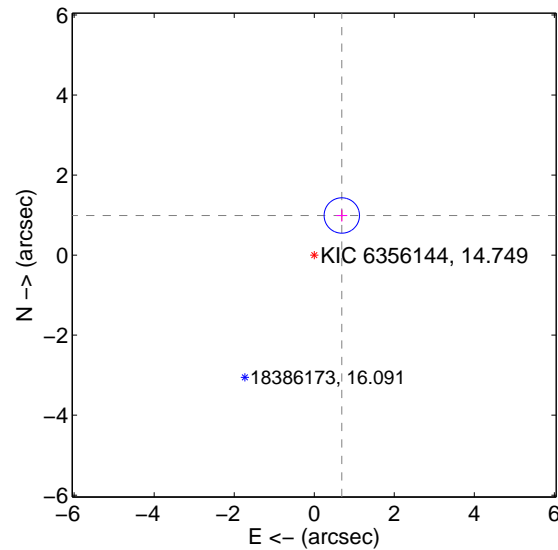
Supplemental centroid analysis for 006356144-07. Kepler magnitude: 14.75. Transit SNR 7.38

There are 0 quarters with good PRF difference image offsets

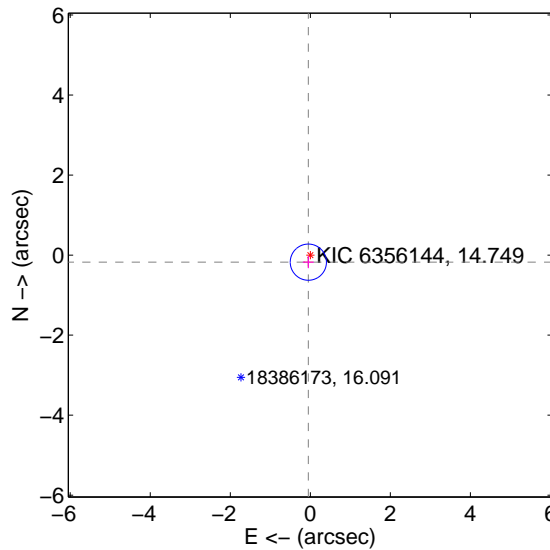
The direct PRF centroid is offset from the target star catalog position by about 1.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.206 ± 0.147	8.18	-0.689 ± 0.138	0.990 ± 0.152
PRF-fit source offset from KIC position	0.183 ± 0.151	1.22	0.050 ± 0.138	-0.177 ± 0.152
photometric centroid source offset	1.72 ± 1.11	1.55	0.01 ± 0.75	1.72 ± 1.11

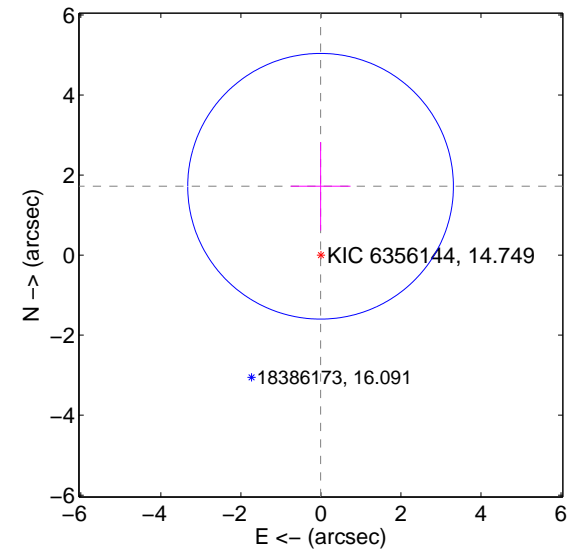
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

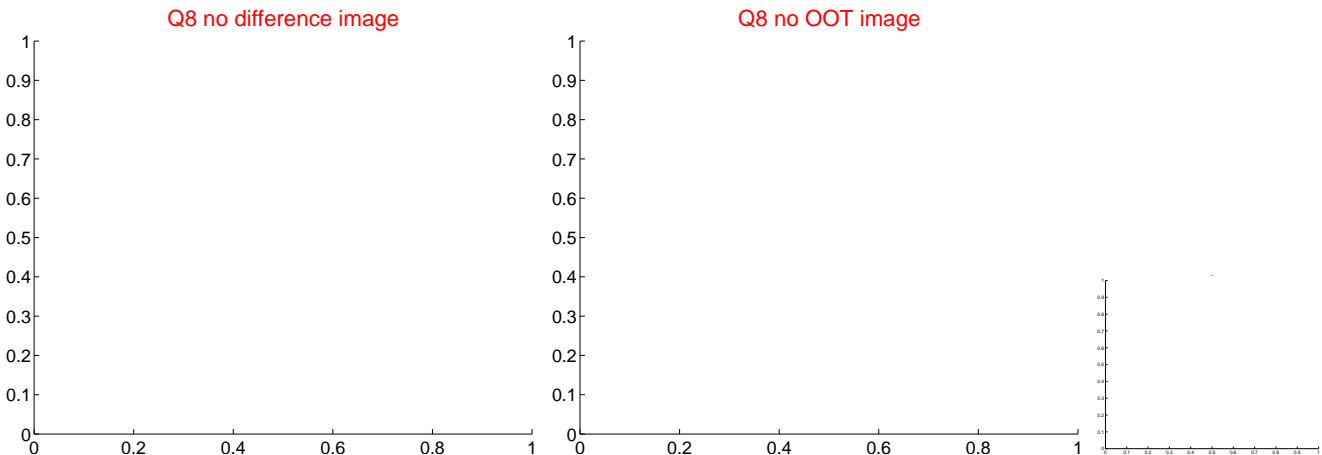
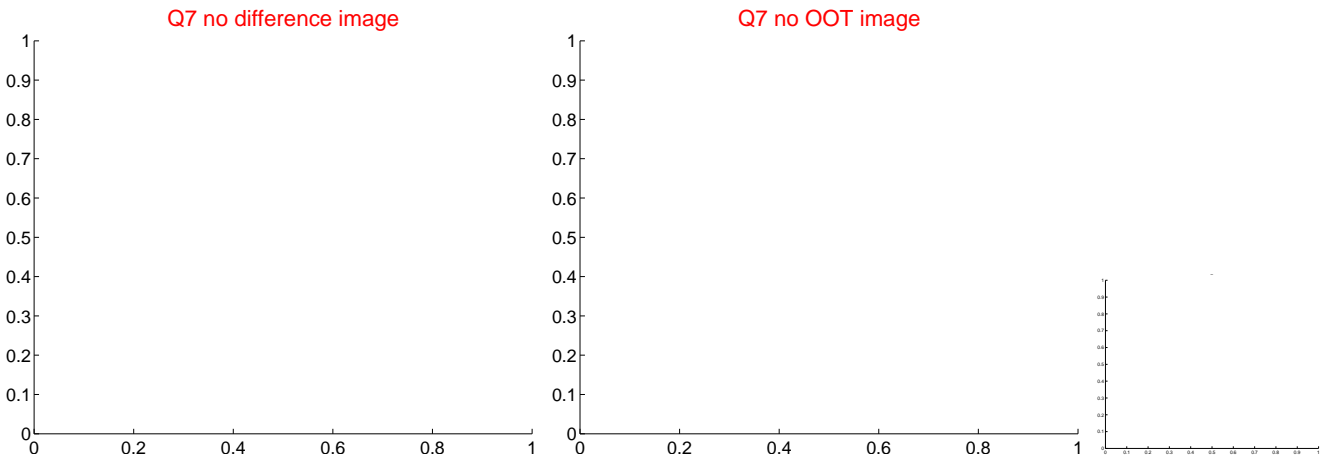
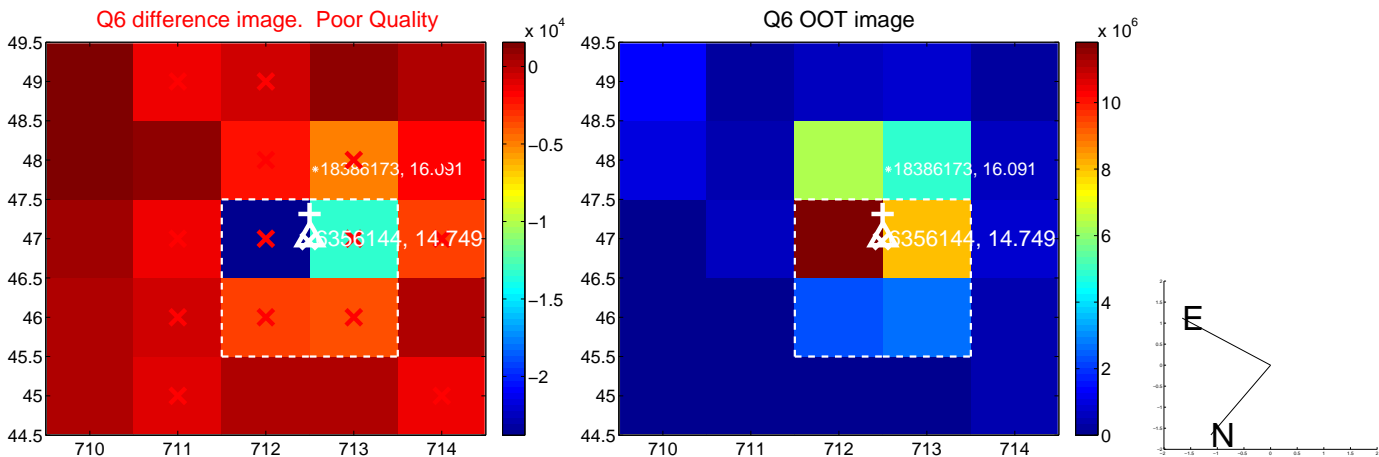
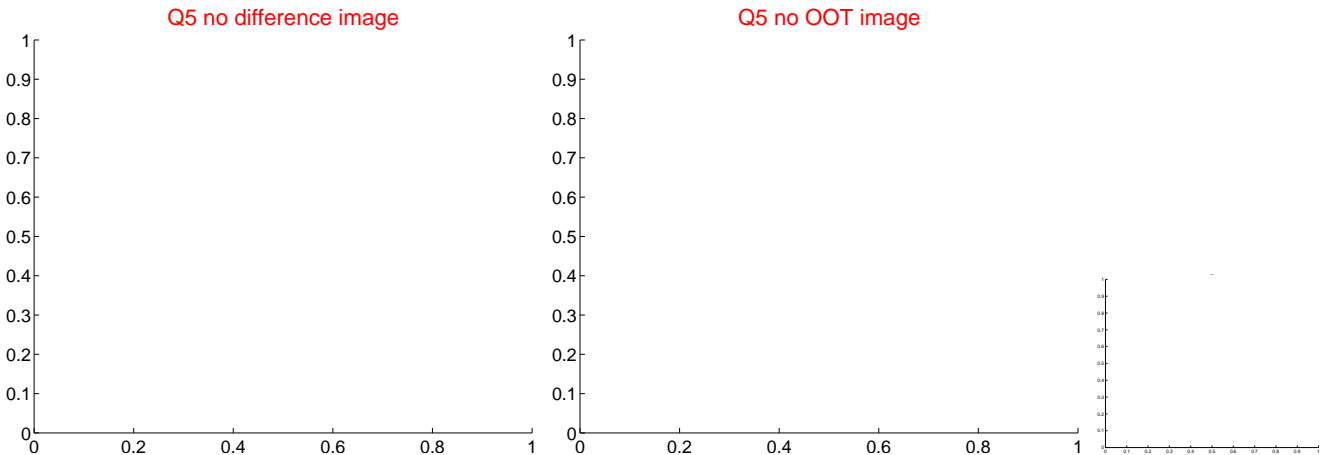


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



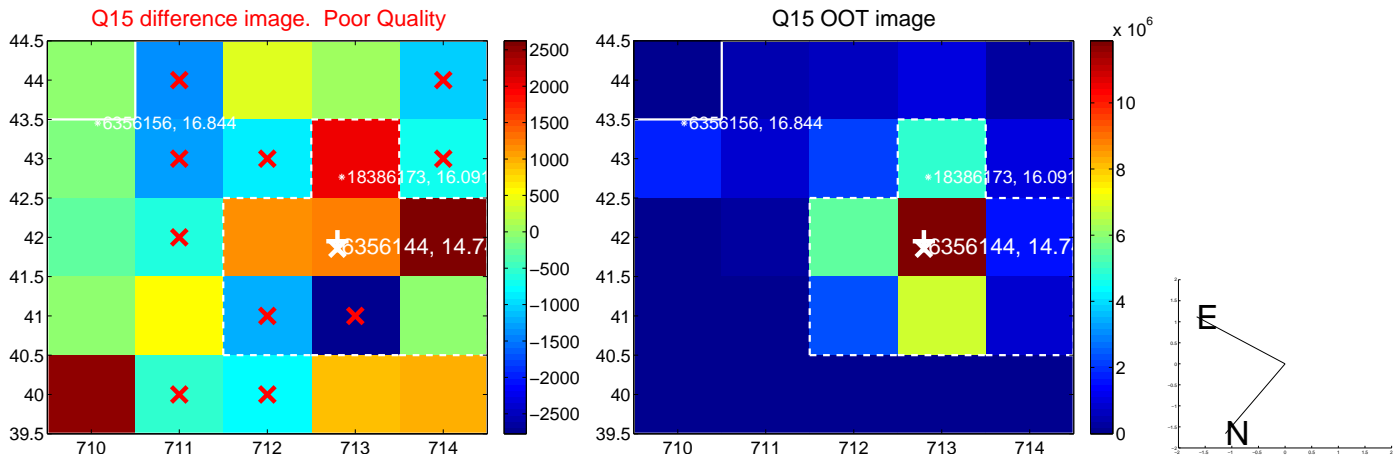
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



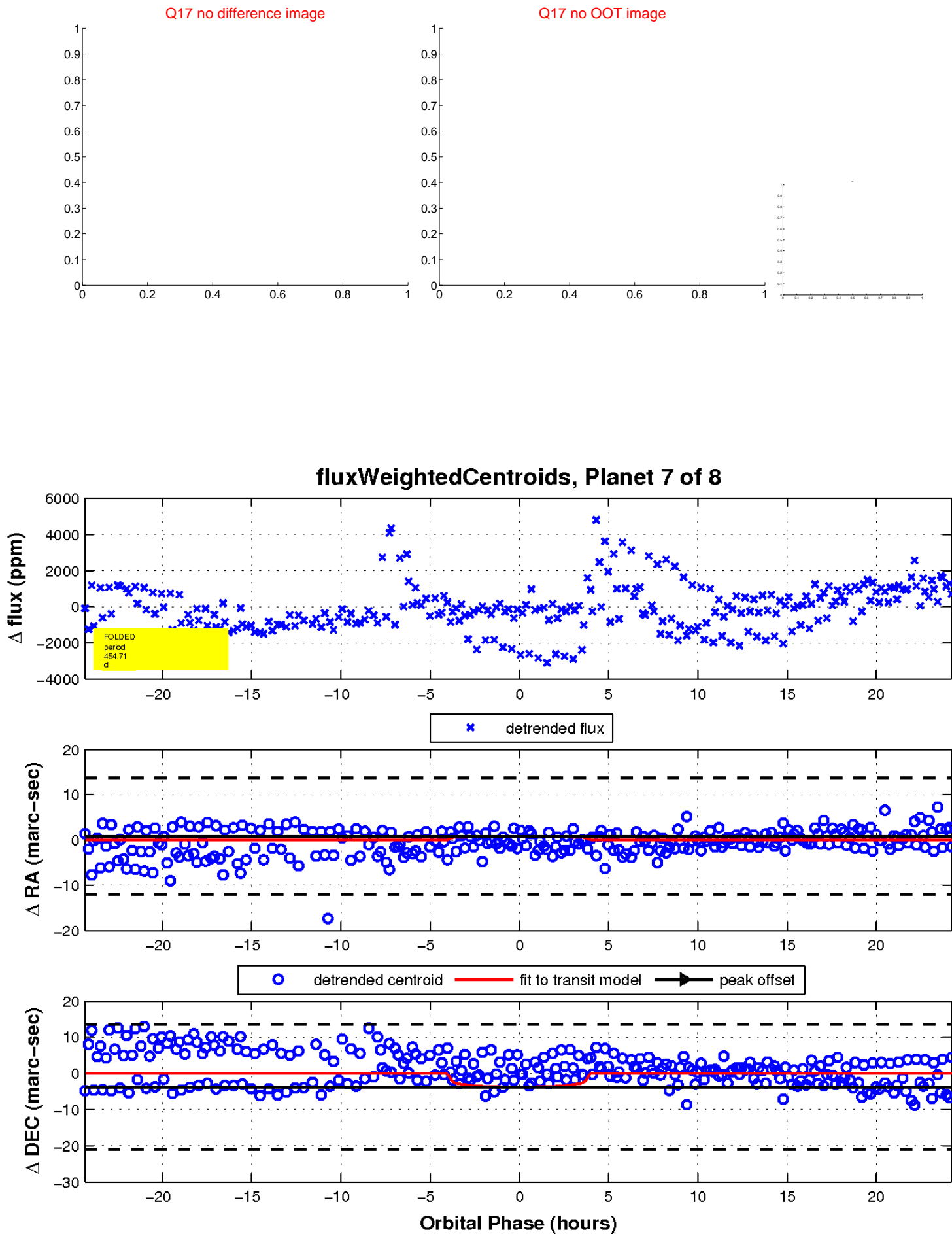
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

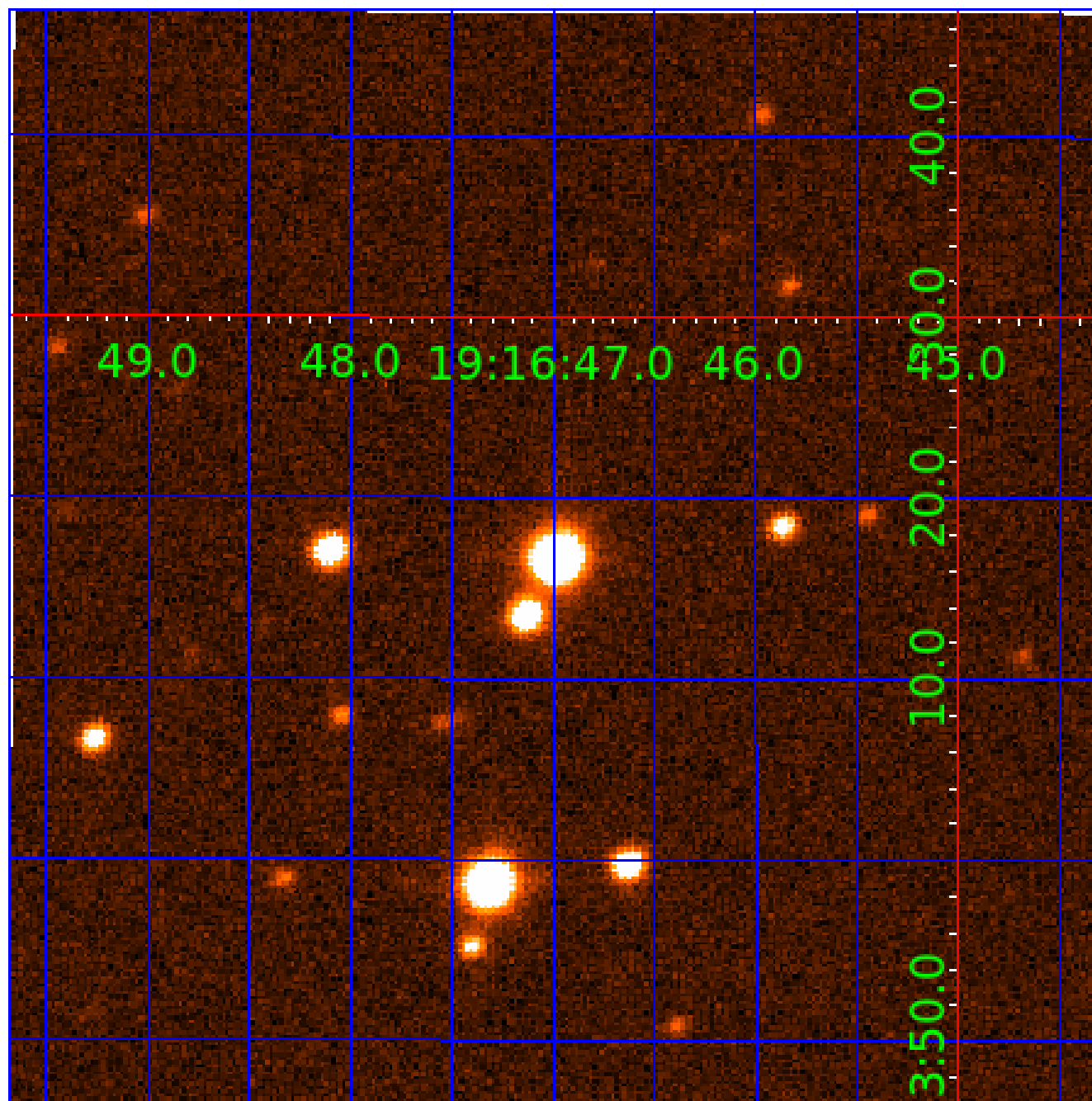


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006356144

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})
006356144-01	OBS	No	358.800189	265.670890	1757.6	4.009	19.6	10.4	0.46	3764	1.94	0.06
006356144-02	OBS	No	556.578837	378.047496	846.3	11.200	18.0	4.0	0.46	3764	1.35	0.04
006356144-03	OBS	No	497.957672	519.652520	1233.4	2.809	14.9	6.2	0.46	3764	1.66	0.04
006356144-04	OBS	No	552.087287	414.974593	1402.1	3.770	15.9	6.5	0.46	3764	1.71	0.04
006356144-05	OBS	No	442.145493	507.544955	1952.1	13.965	13.9	8.7	0.46	3764	2.02	0.05
006356144-06	OBS	No	348.623008	330.101796	962.4	3.779	19.2	5.6	0.46	3764	1.44	0.07
006356144-07	OBS	No	454.712751	549.801536	1604.4	8.118	13.0	7.4	0.46	3764	1.86	0.05
006356144-08	OBS	No	489.683454	209.539948	782.1	7.500	12.6	-1.0	0.46	3764	1.28	0.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006356144-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_KIC_POS
006356144-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—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
006356144-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
006356144-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_UNCERTAIN
006356144-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
006356144-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006356144-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

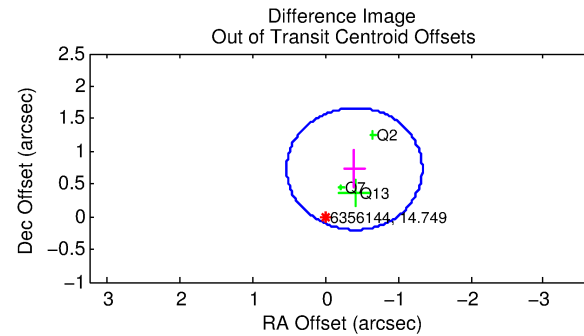
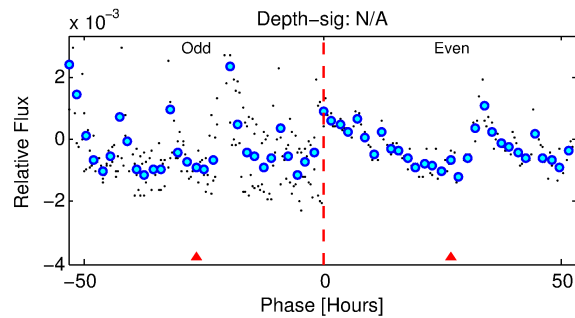
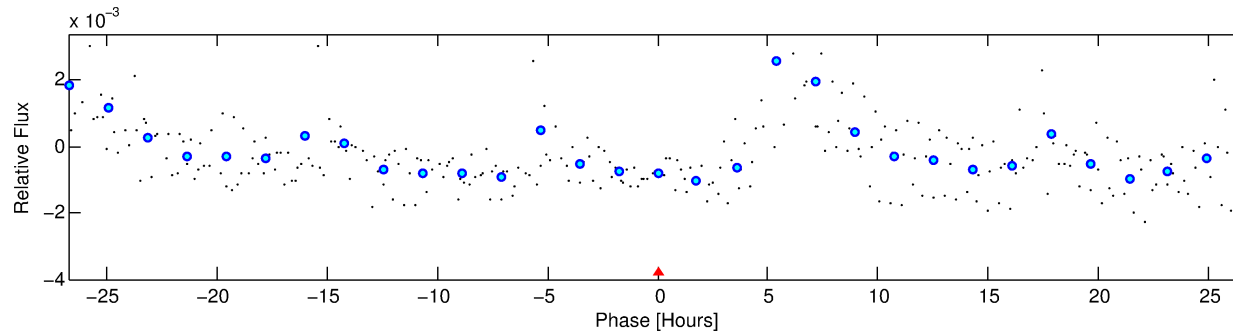
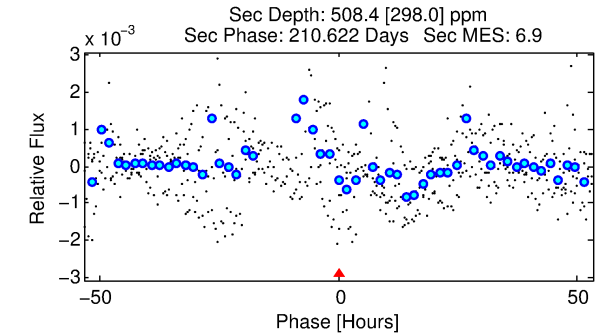
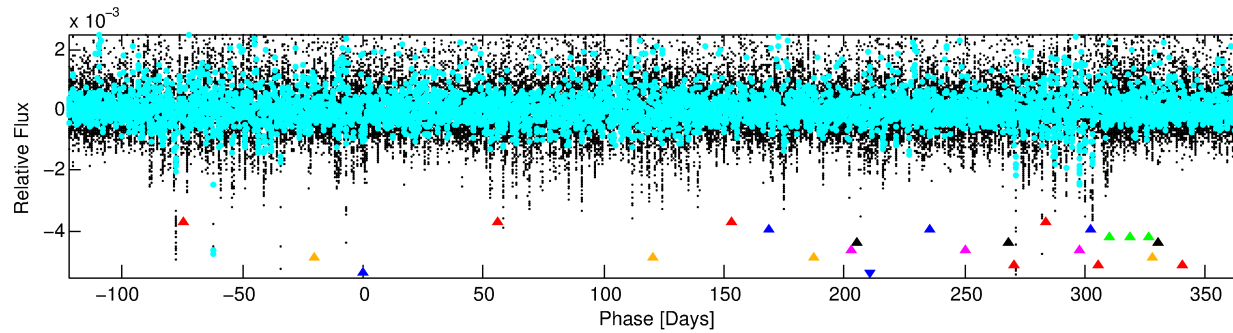
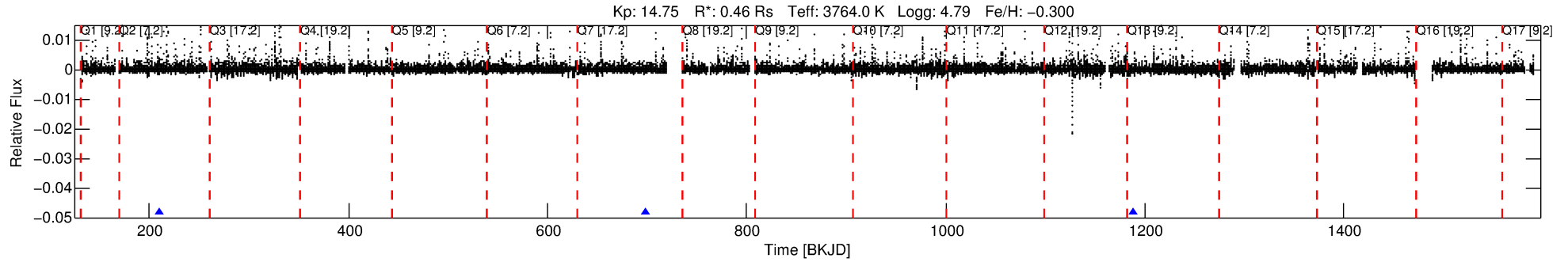
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006356144-08

No Significant Match Found

DV One-Page Summary

KIC: 6356144 Candidate: 8 of 8 Period: 489.683 d



TPS TCE Results:

Period = 489.68345 d
Epoch = 209.5399 BKJD

DV fit results are unavailable

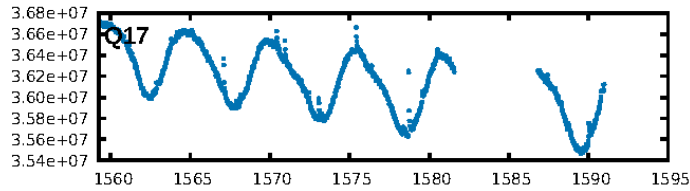
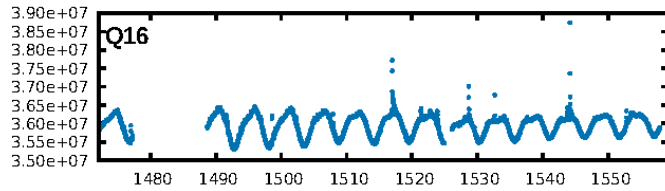
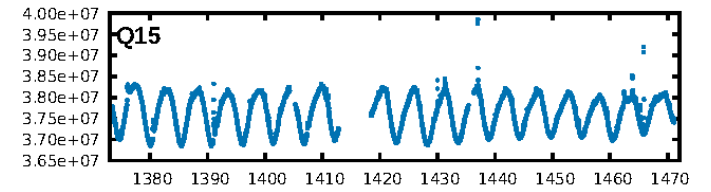
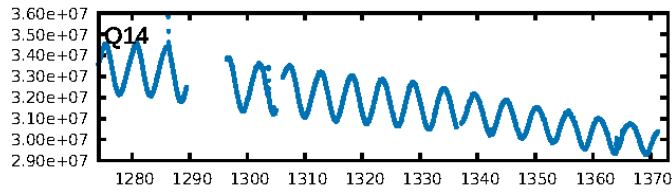
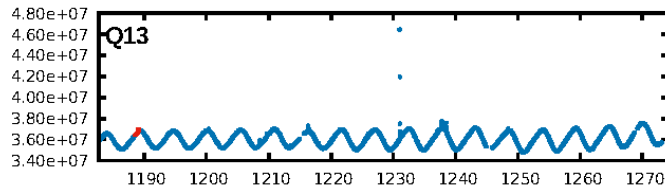
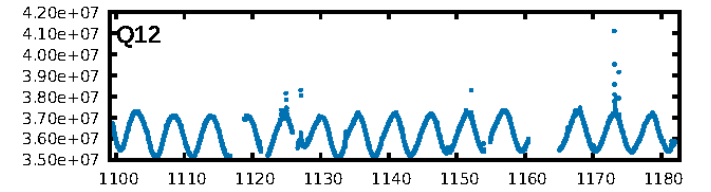
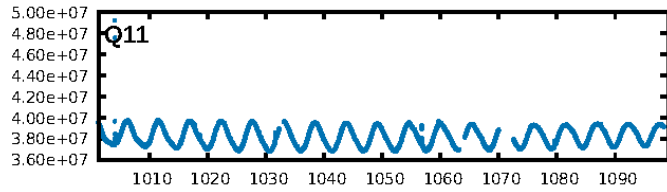
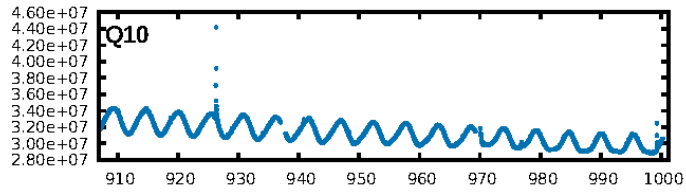
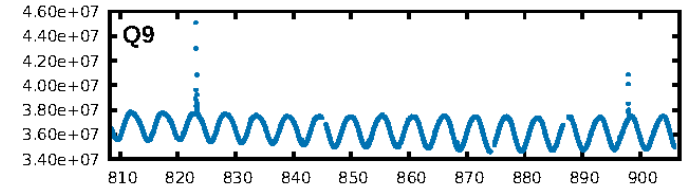
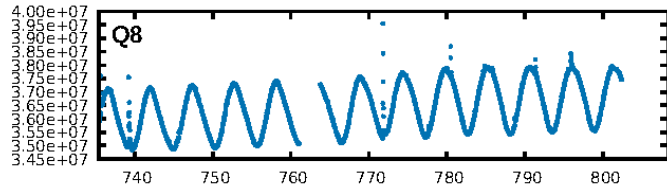
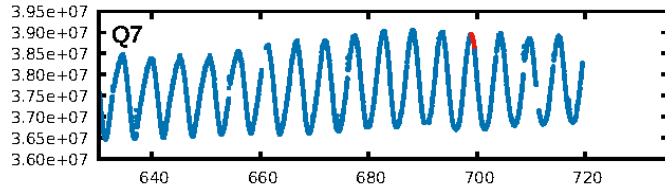
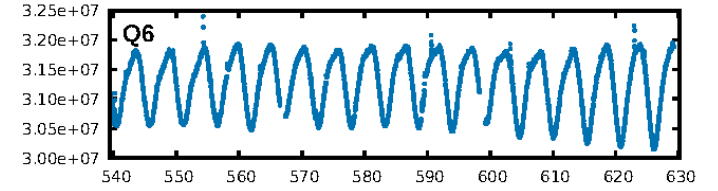
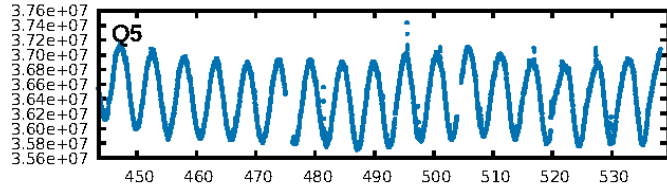
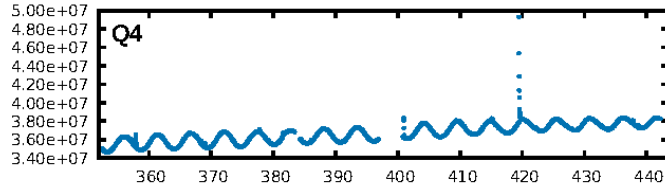
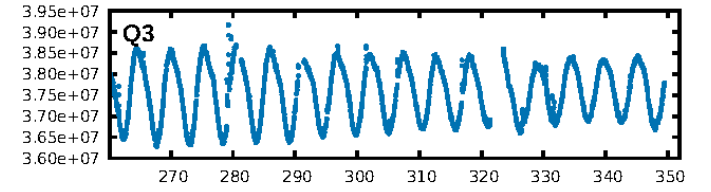
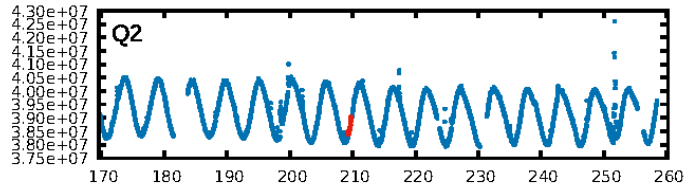
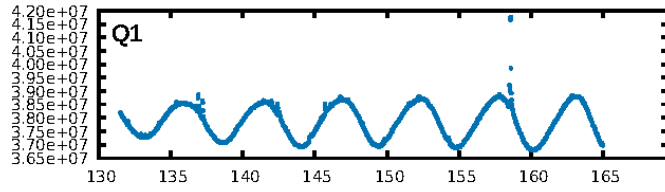
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [75.94 σ]
LongPeriod-sig: 100.0% [24.80 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4735
Centroid-sig: 14.5%
Centroid-so: 1.901 arcsec [1.86 σ]
OotOffset-rm: 0.836 arcsec [2.69 σ]
KicOffset-rm: 0.245 arcsec [2.56 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

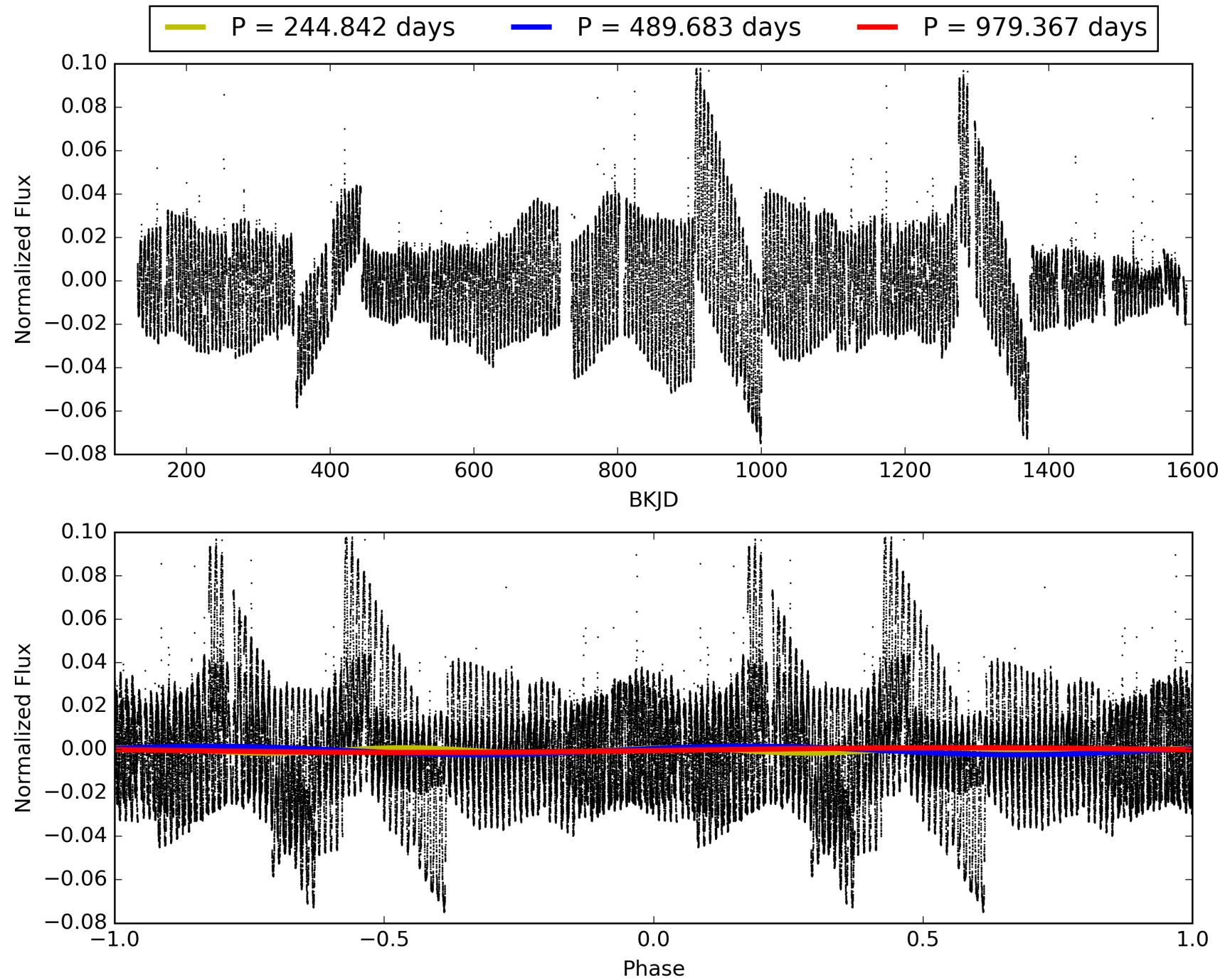
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:34:40 Z

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

TCE 006356144-08, PDC Light Curves

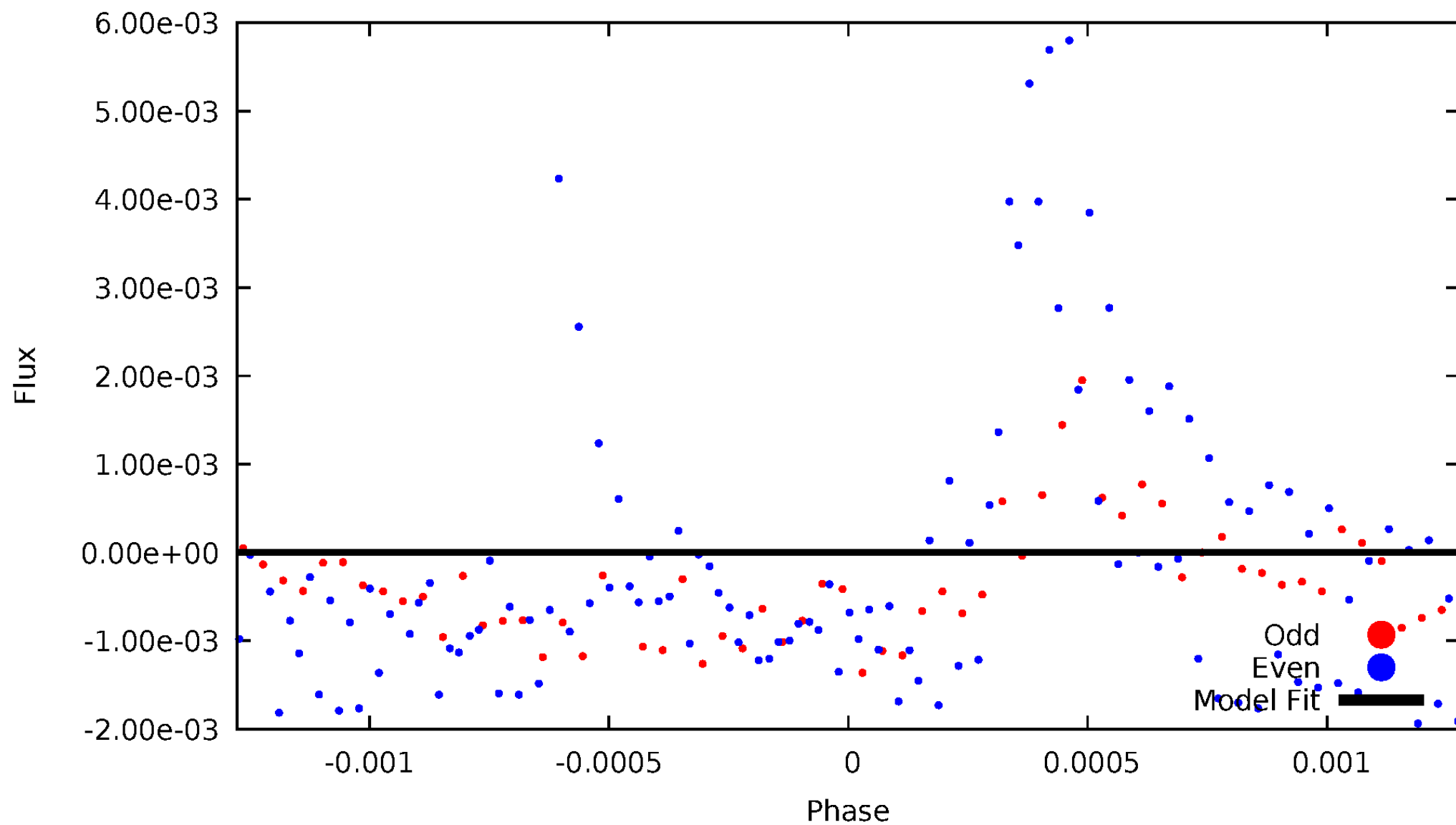


TCE 006356144-08



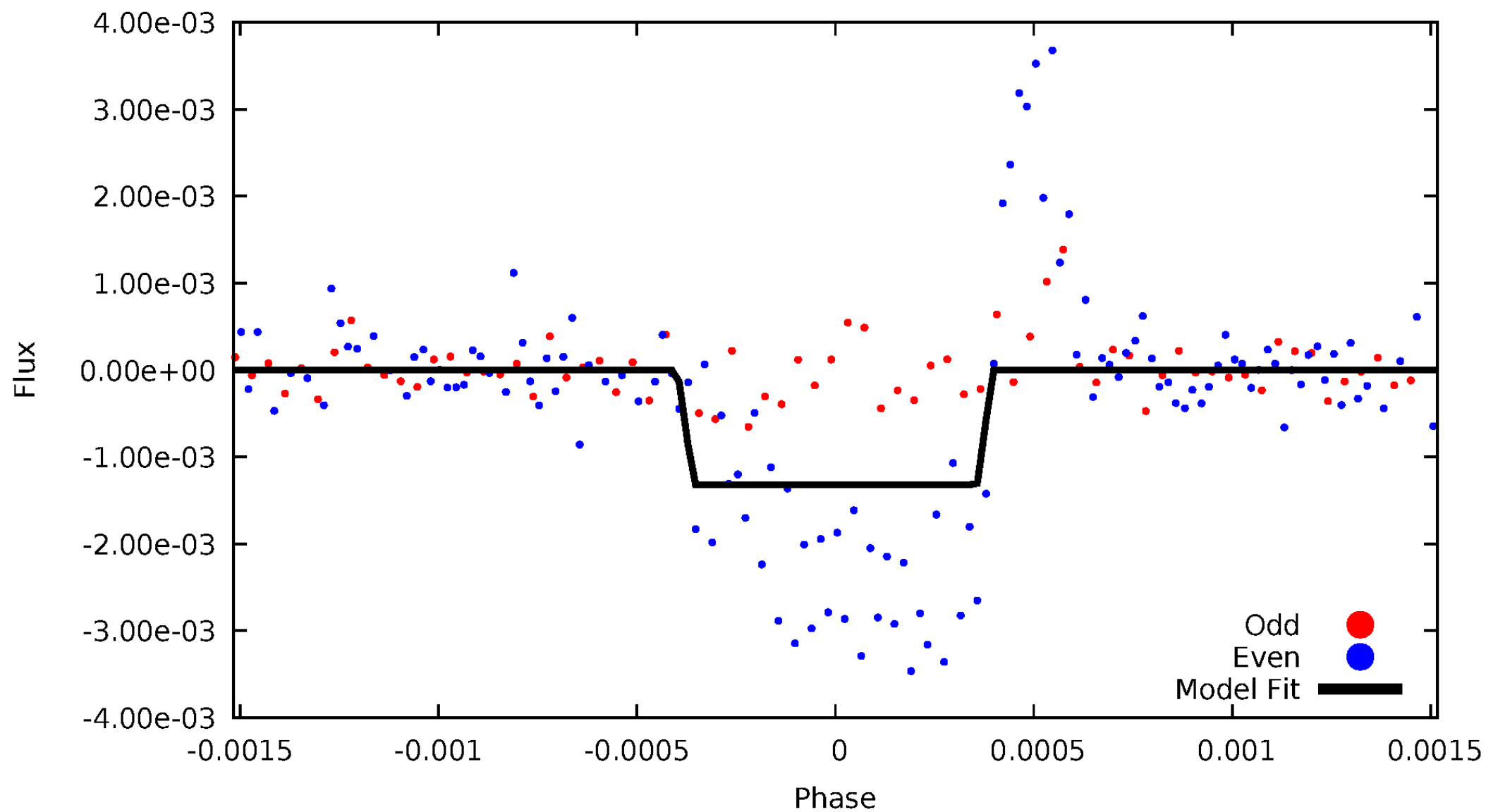
DV Odd/Even

TCE 006356144-08



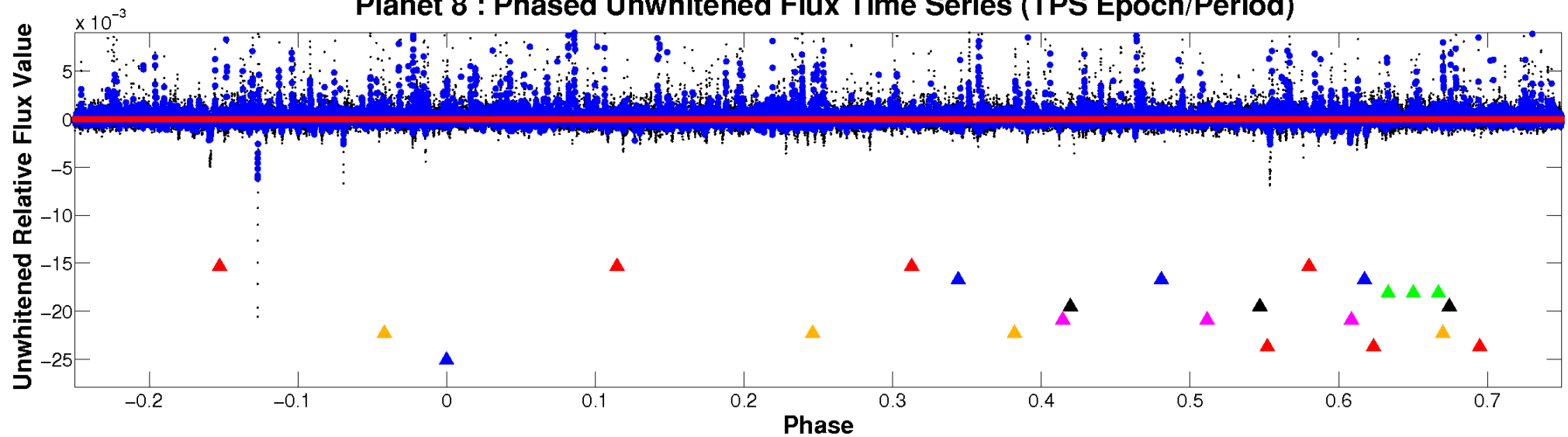
ALT Odd/Even

TCE 006356144-08

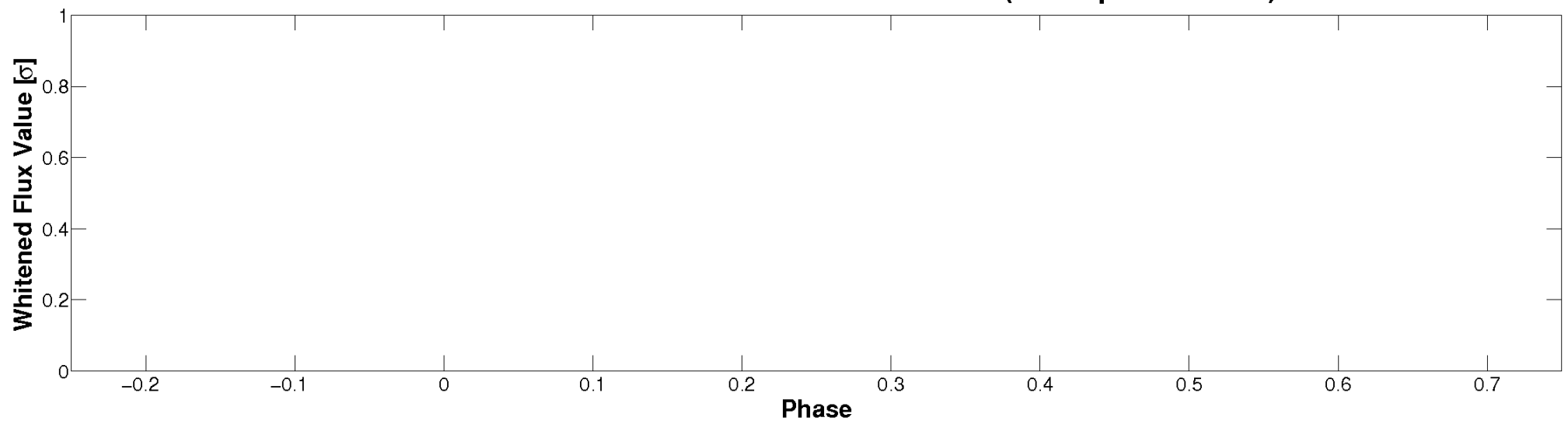


Non-Whitened Vs. Whitened Light Curve

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

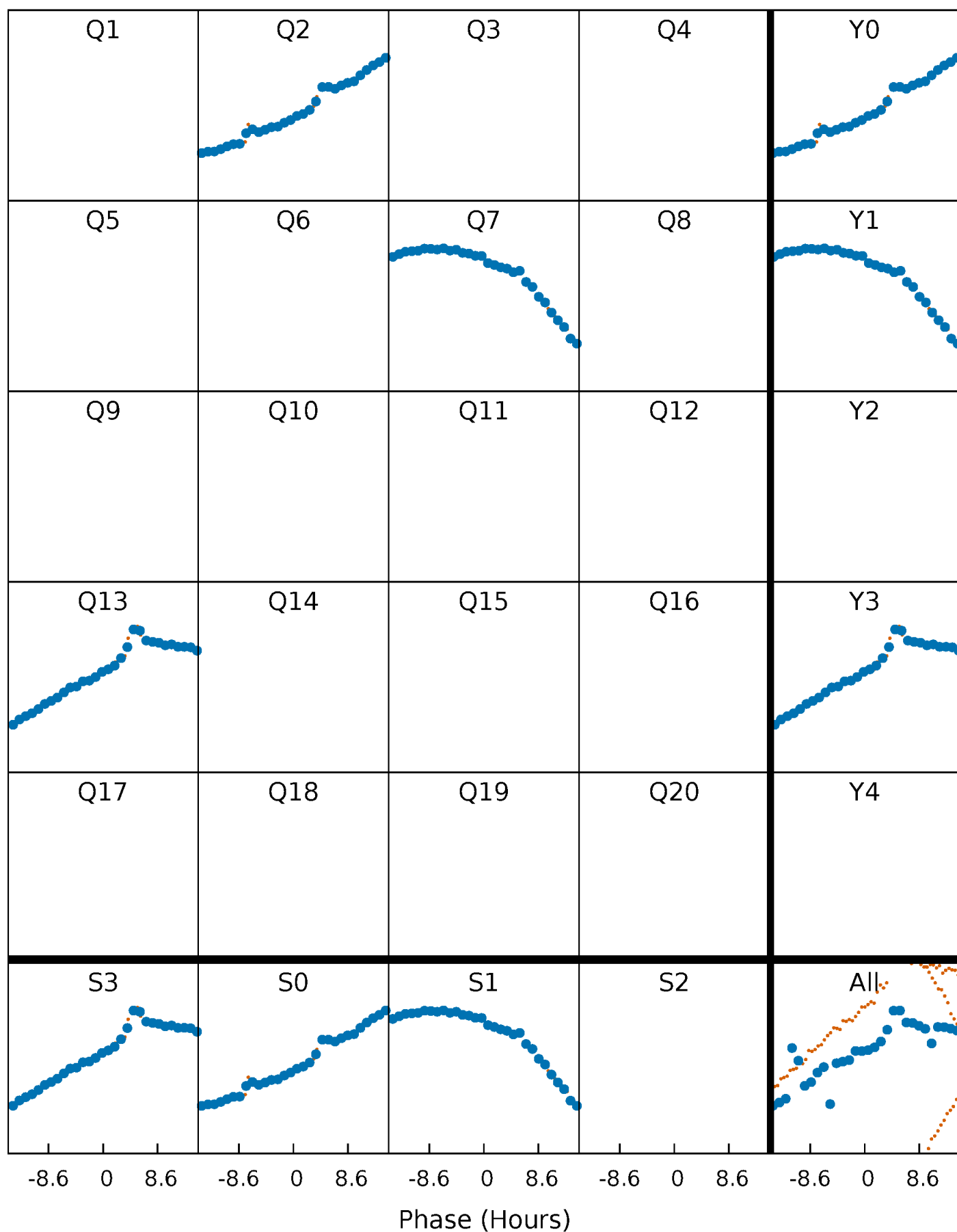


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



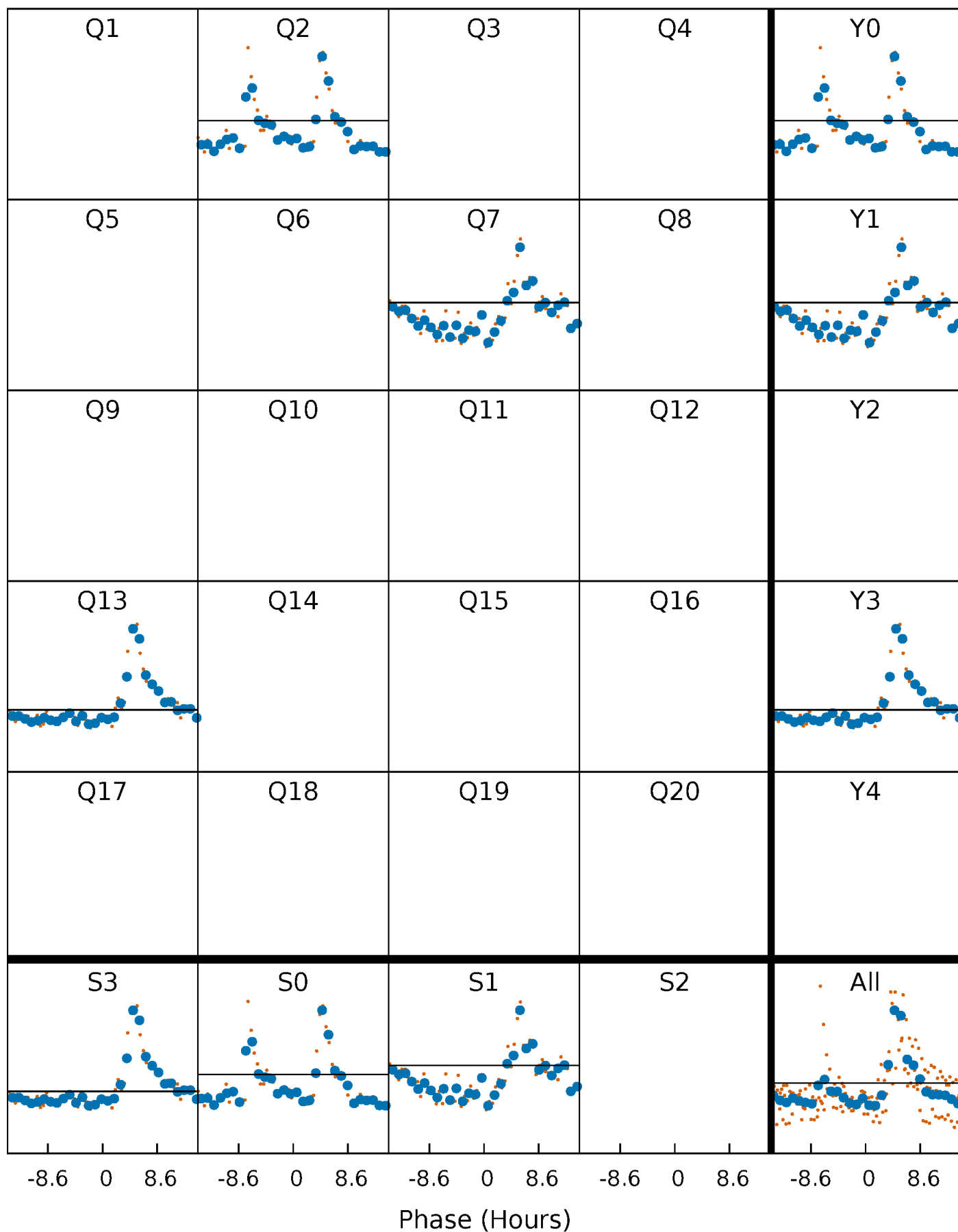
PDC Quarter-Phased Transit Curves

TCE 006356144-08 $P=489.683454$ Days $T_0=209.539948$ (BKJD)



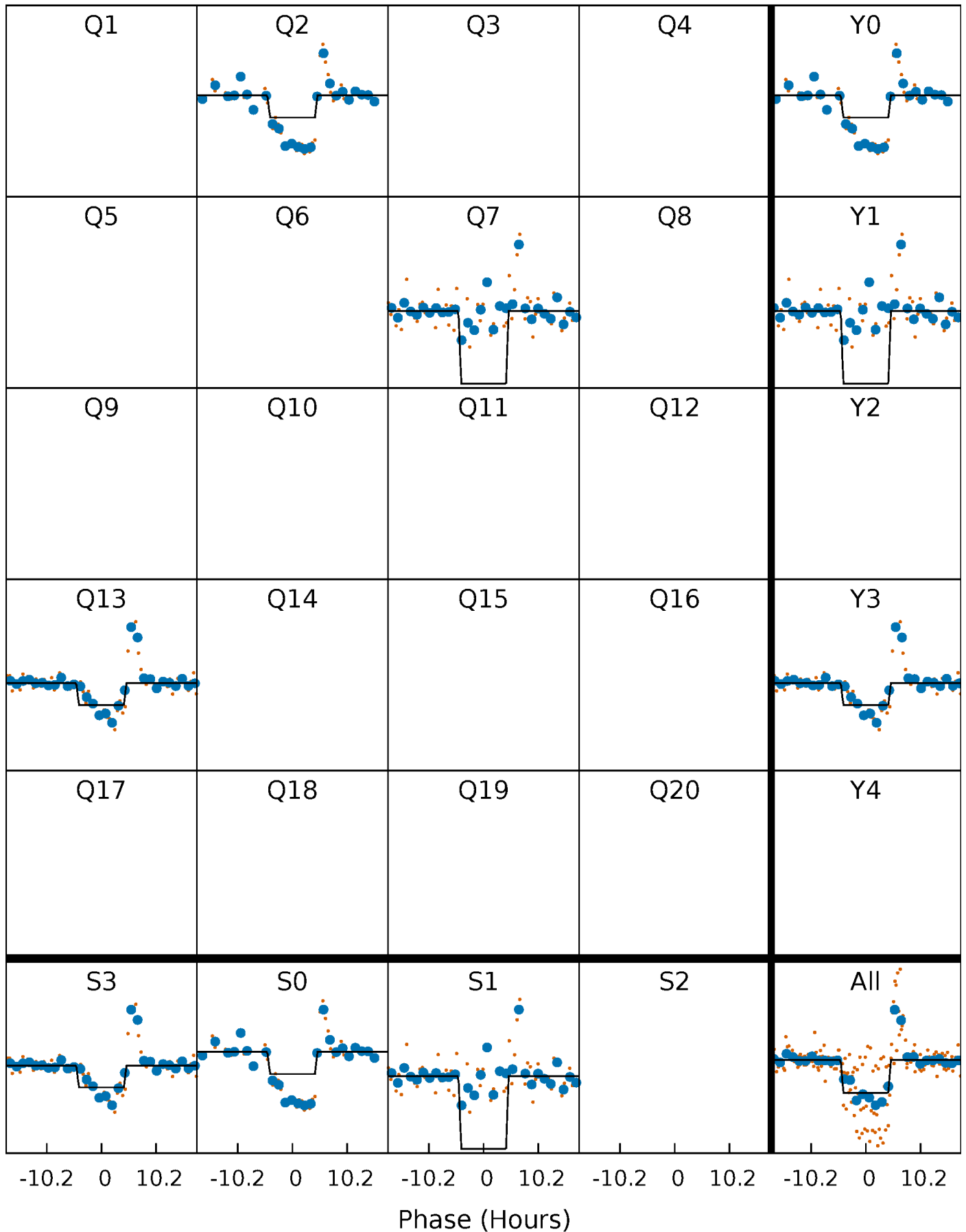
DV Quarter-Phased Transit Curves

TCE 006356144-08 P=489.683454 Days $T_0=209.539948$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

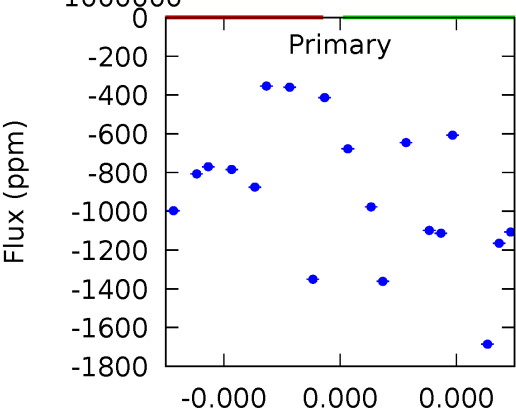
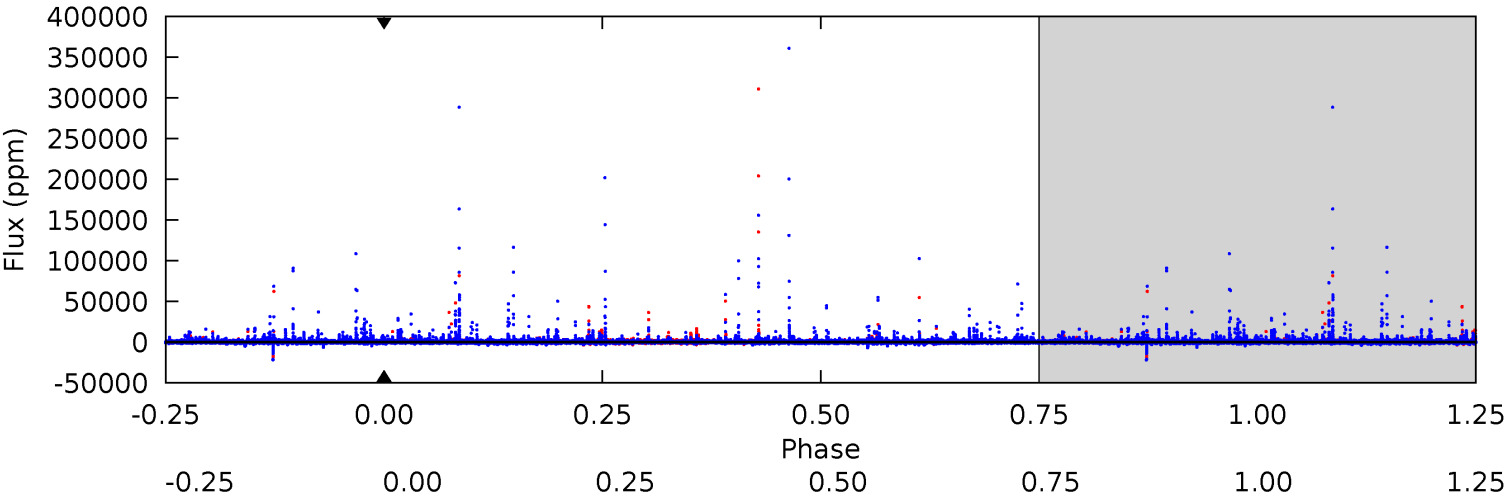
TCE 006356144-08 P=489.683454 Days $T_0=209.498040$ (BKJD)



DV Model-Shift Uniqueness Test

006356144-08, P = 489.683454 Days, E = 209.539948 Days

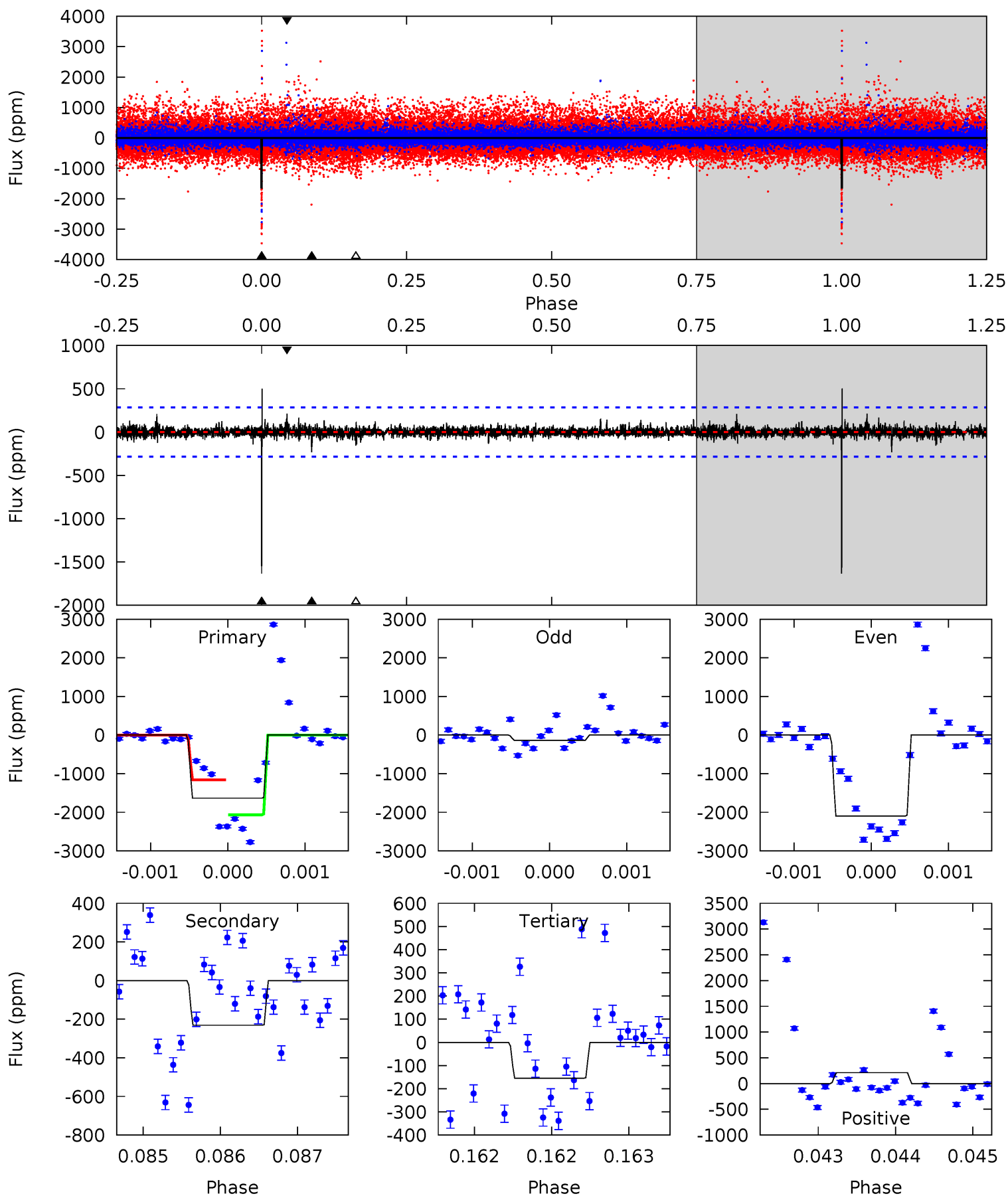
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006356144-08, P = 489.683454 Days, E = 209.498040 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.6	4.47	2.99	4.11	5.50	3.36	0.59	28.6	27.5	1.48	0.36	18.6	0.96	0.23	0



Stellar Parameters For KIC 006356144

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3764^{+60}_{-60}	$4.787^{+0.042}_{-0.025}$	$-0.300^{+0.100}_{-0.100}$	$0.457^{+0.028}_{-0.037}$	$0.466^{+0.031}_{-0.031}$	$6.897^{+1.350}_{-0.775}$
	+2%/-2%	+1%/-1%	+33%/-33%	+6%/-8%	+7%/-7%	+20%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 006356144-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$3.79^{+3.86}_{-2.66}$	161^{+3}_{-4}	3546^{+5271}_{-11095}	$139946^{+7365586}_{-5002585}$
Alt.	-231 ± 52	$4.10^{+3.74}_{-2.86}$	161^{+3}_{-4}	2336^{+884}_{-308}	6751^{+65475}_{-5009}

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

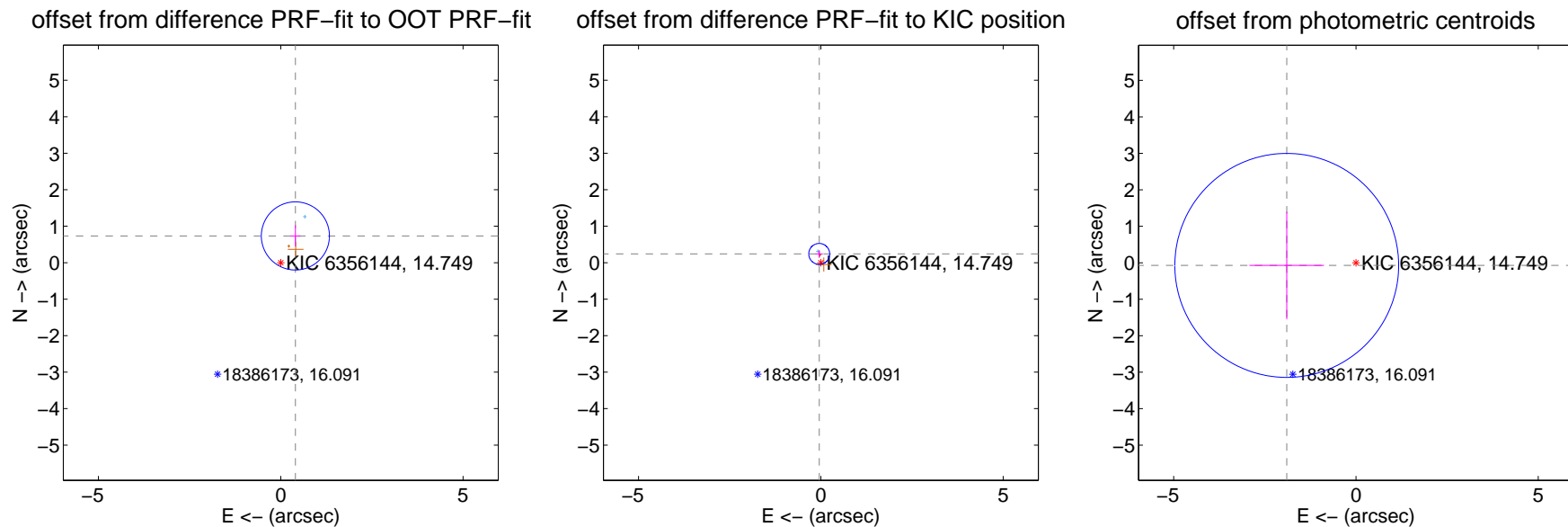
DV Centroid Data

Supplemental centroid analysis for 006356144-08. Kepler magnitude: 14.75. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

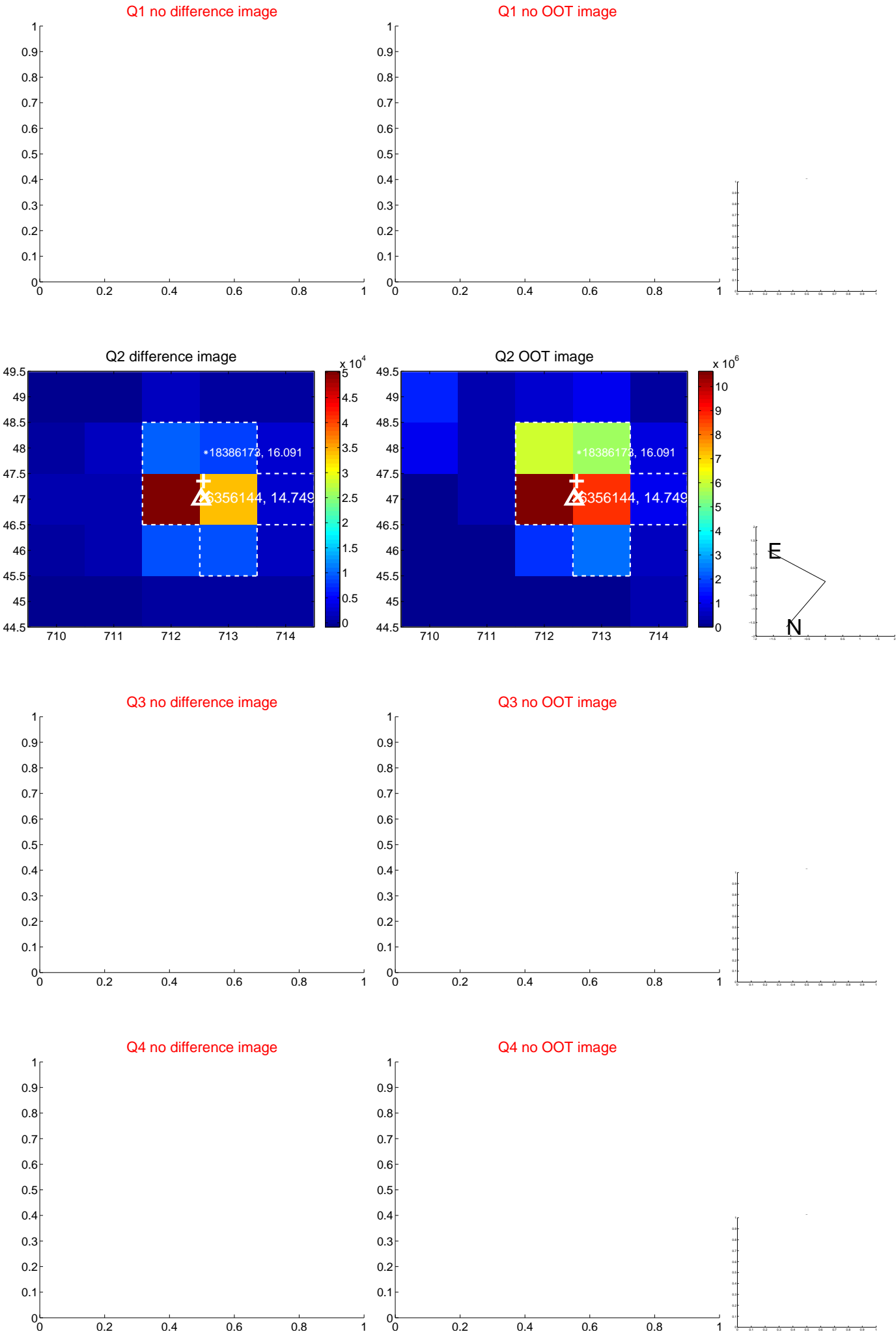
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.836 ± 0.311	2.69	-0.401 ± 0.137	0.734 ± 0.292
PRF-fit source offset from KIC position	0.245 ± 0.096	2.56	0.045 ± 0.100	0.241 ± 0.095
photometric centroid source offset	1.90 ± 1.02	1.86	1.90 ± 1.02	-0.07 ± 1.47

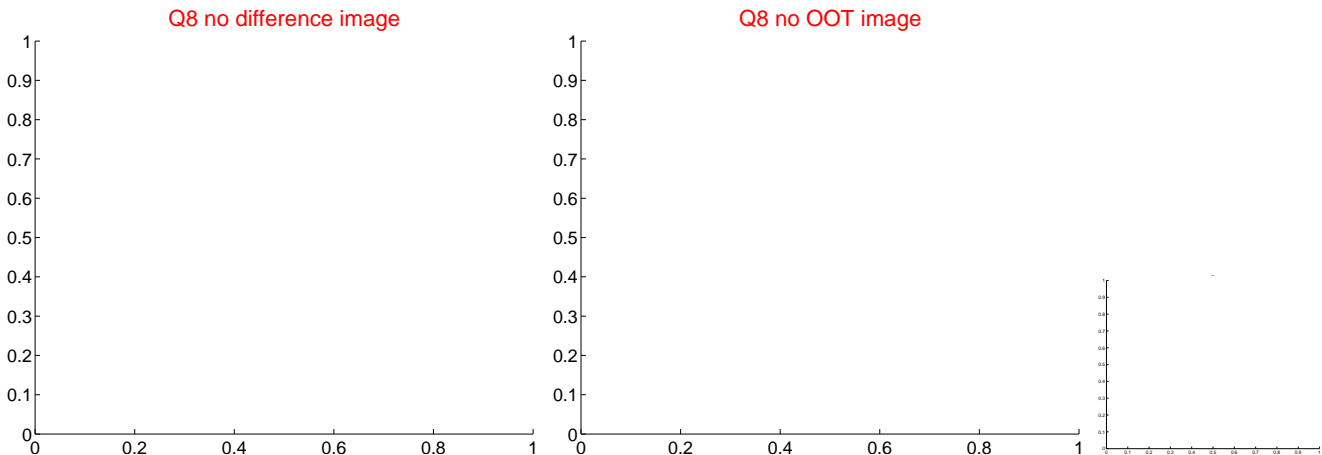
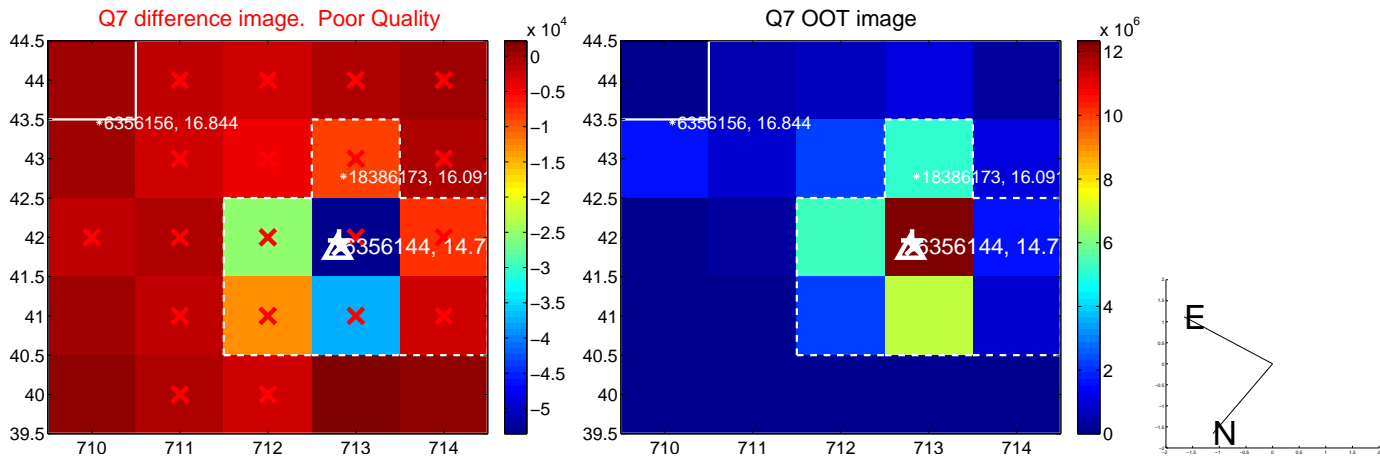
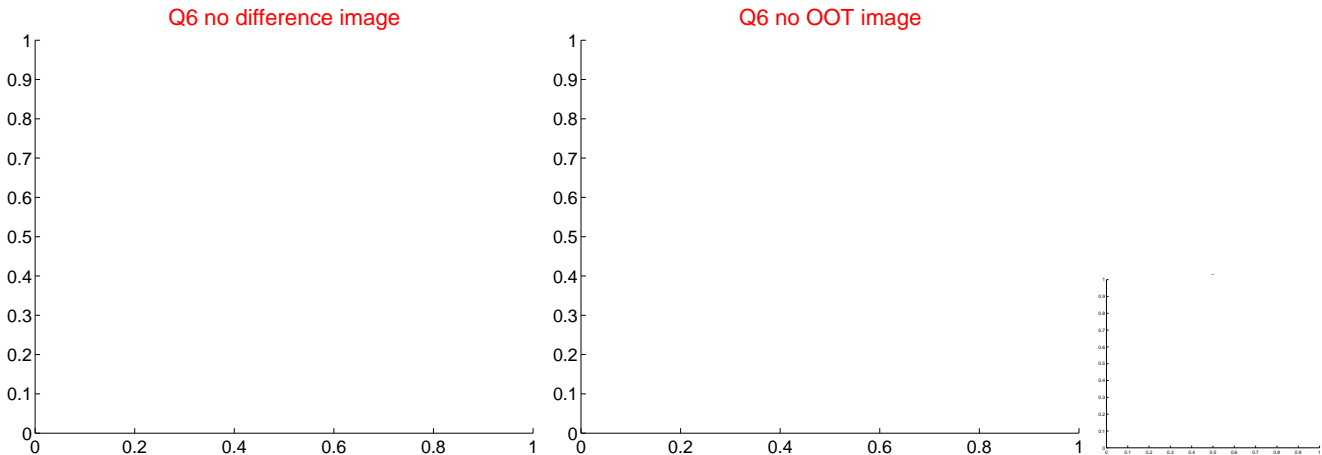
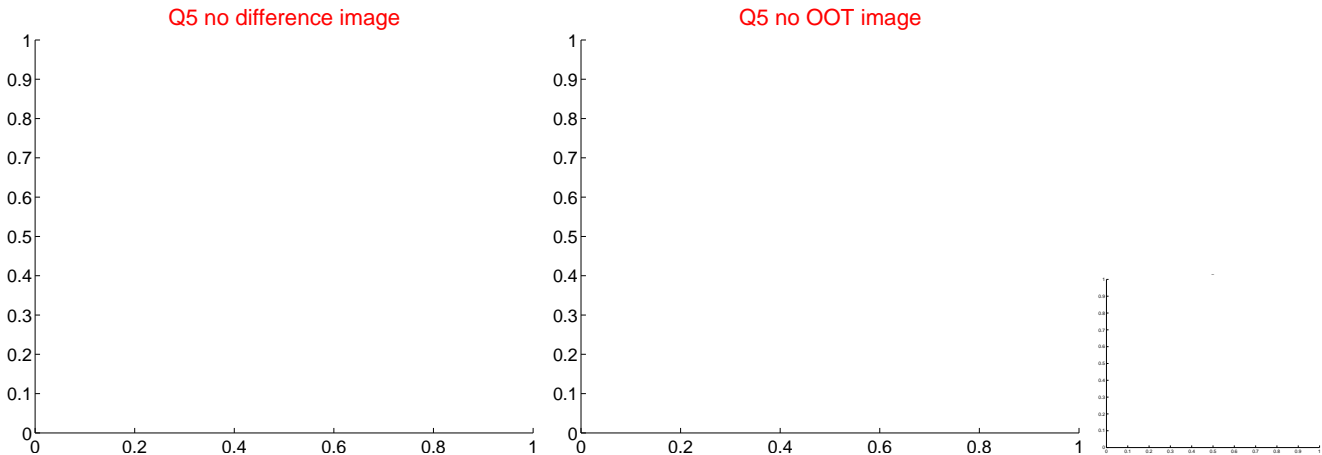


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



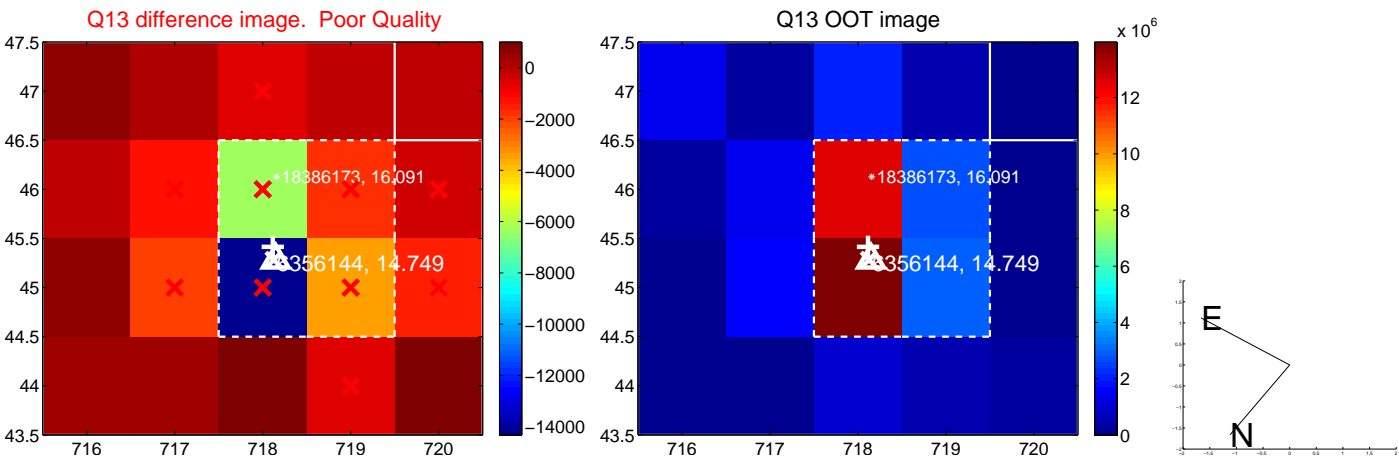
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



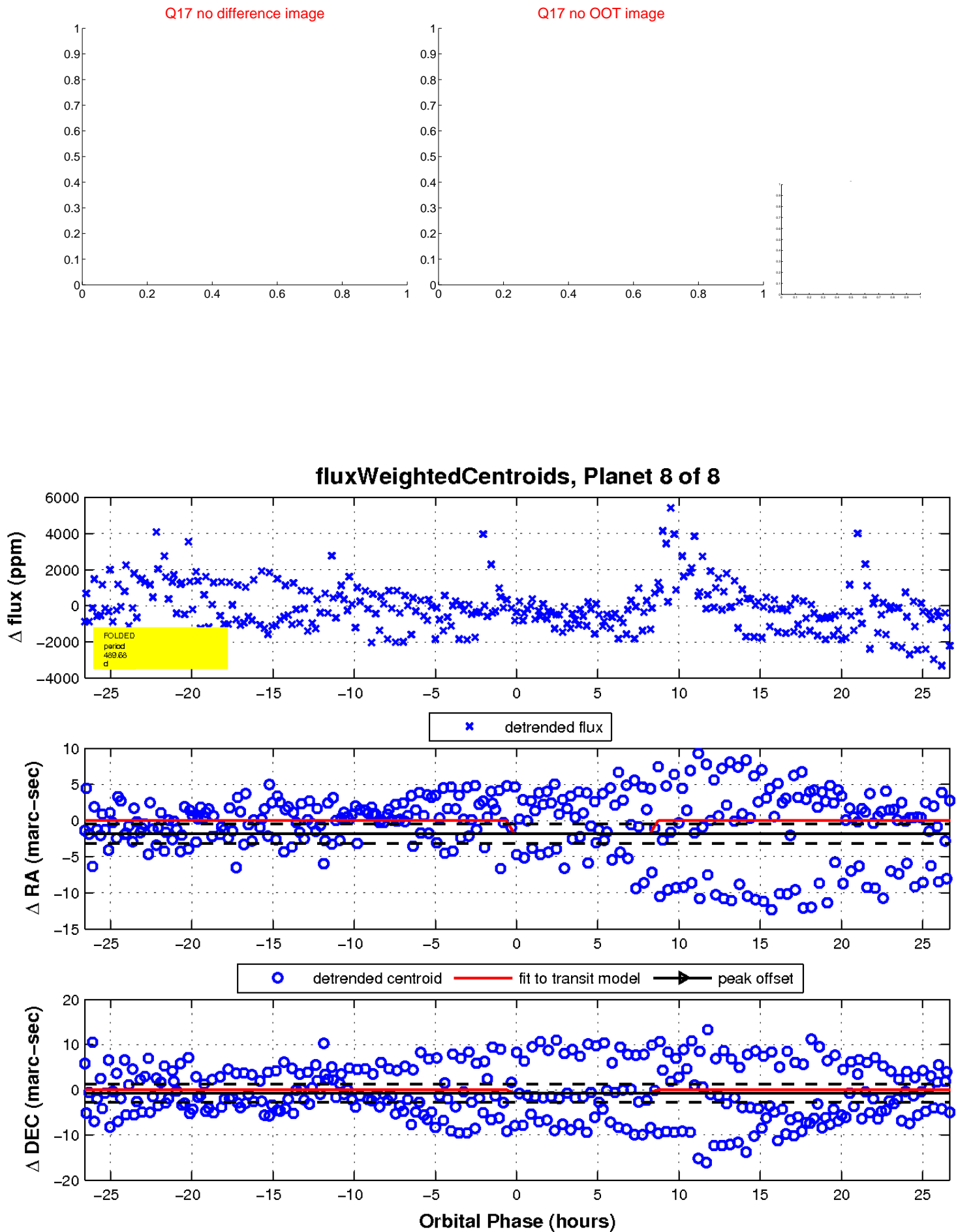
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

