

KIC 007446357

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})
007446357-01	OBS	No	316.767858	437.415009	27390.2	7.500	58.5	-1.0	2.25	9296	38.15	23.89
007446357-02	OBS	No	399.067427	247.703027	17934.0	15.000	50.1	-1.0	2.25	9296	30.86	17.56
007446357-03	OBS	No	308.465022	360.053551	18752.3	10.500	50.8	-1.0	2.25	9296	31.55	24.75
007446357-04	OBS	No	565.634997	422.505322	11996.6	10.500	46.3	-1.0	2.25	9296	25.23	11.03
007446357-05	OBS	No	420.863224	203.147650	16636.7	12.000	45.0	-1.0	2.25	9296	29.72	16.36
007446357-06	OBS	No	471.933502	554.601476	15123.7	10.500	39.4	-1.0	2.25	9296	28.34	14.04
007446357-07	OBS	No	360.931593	213.027276	11585.2	12.500	39.3	-1.0	2.25	9296	24.79	20.08
007446357-08	OBS	No	535.626172	469.039656	494168.2	17.031	34.5	5.8	2.25	9296	165.06	11.86
007446357-09	OBS	No	511.261294	432.483710	9672.8	12.500	33.6	-1.0	2.25	9296	22.65	12.62
007446357-10	OBS	No	442.964688	271.184425	703902.5	24.810	32.9	4.2	2.25	9296	199.42	15.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007446357-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007446357-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS
007446357-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
007446357-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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.

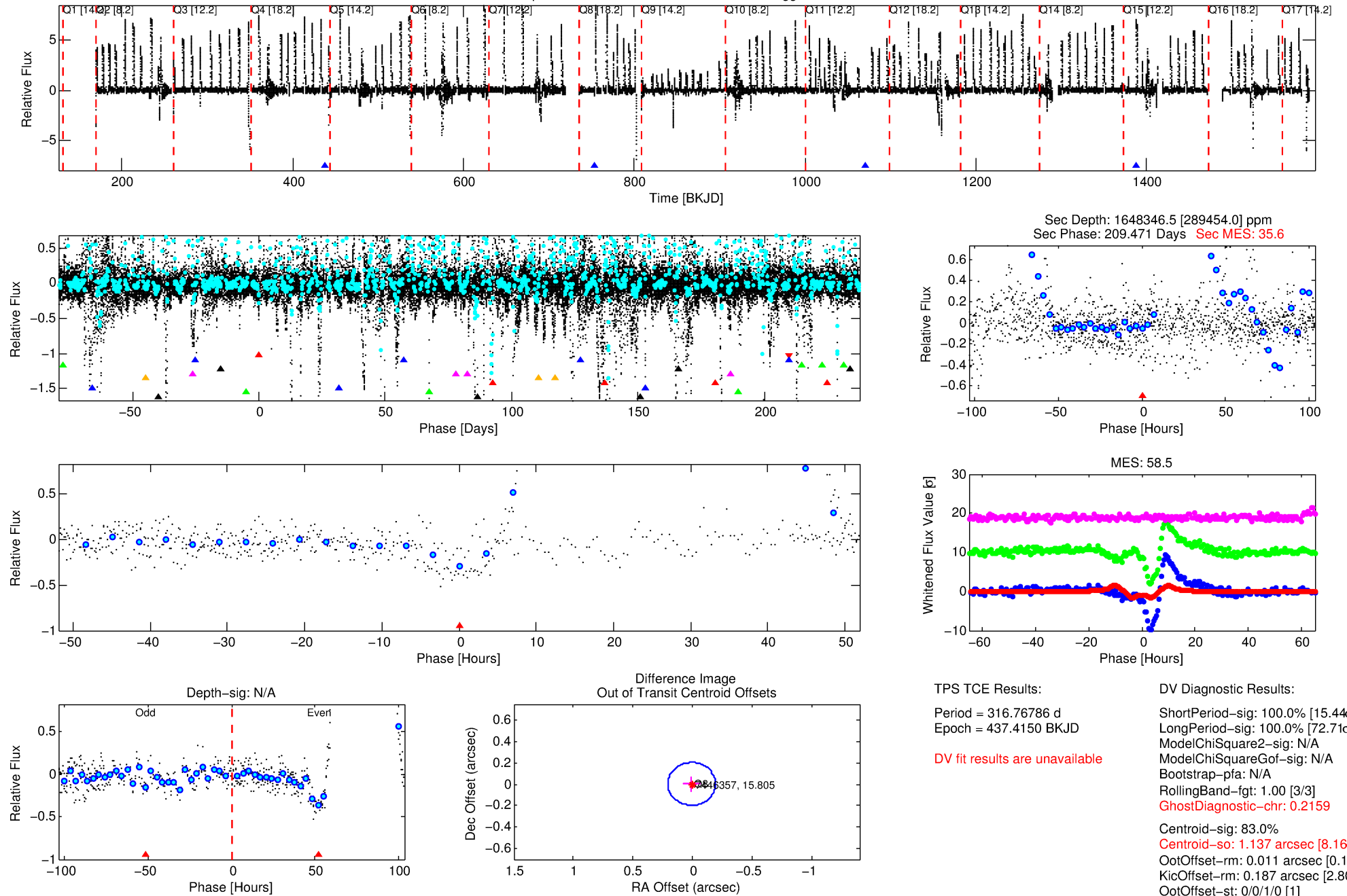
Ephemeris Match Information For 007446357-01

No Significant Match Found

DV One-Page Summary

KIC: 7446357 Candidate: 1 of 10 Period: 316.768 d

Kp: 15.81 R*: 2.25 Rs Teff: 9296.0 K Logg: 4.08 Fe/H: 0.070



TPS TCE Results:

Period = 316.76786 d
Epoch = 437.4150 BKJD

DV fit results are unavailable

DV Diagnostic Results:

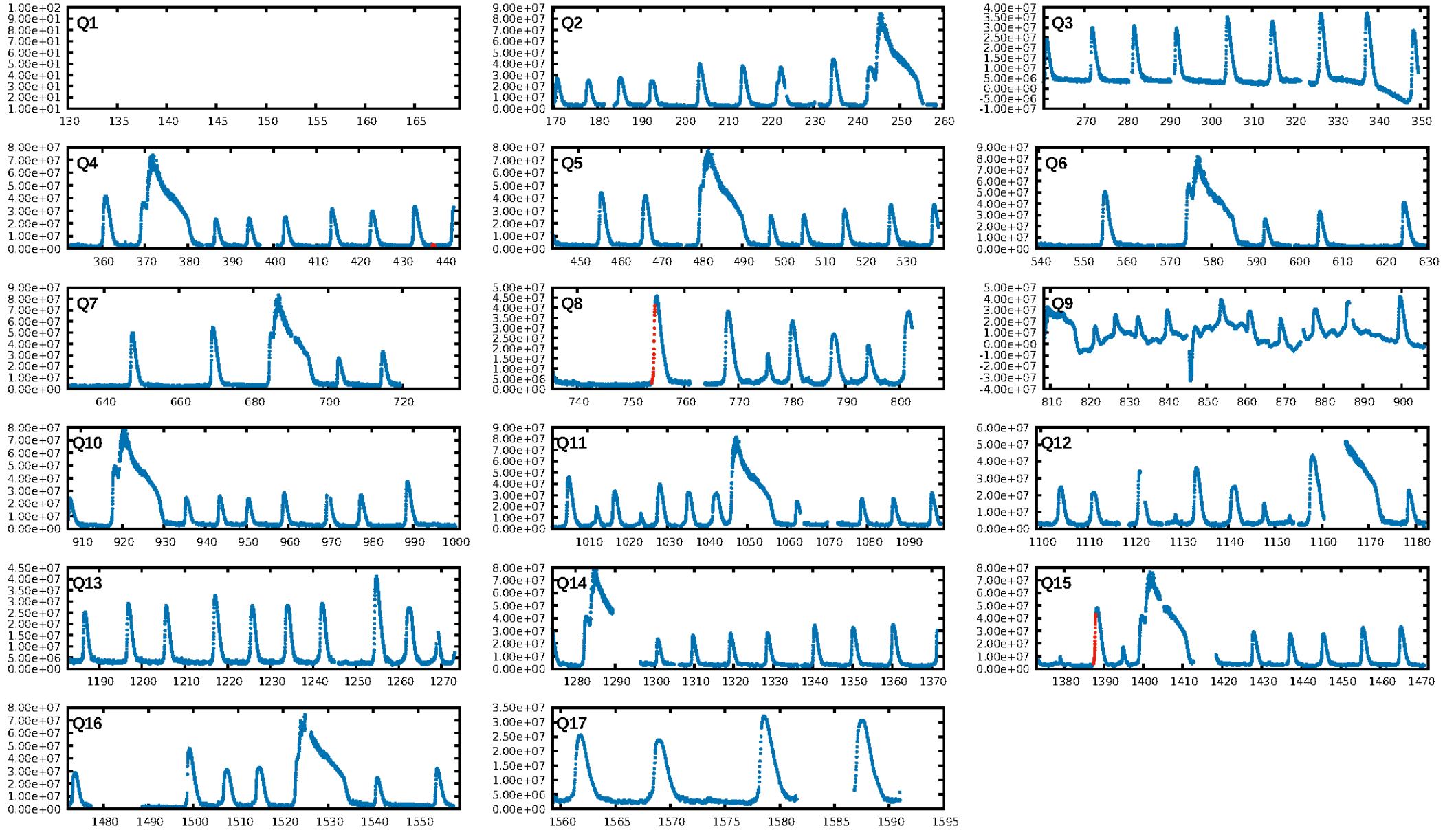
ShortPeriod-sig: 100.0% [15.44σ]
LongPeriod-sig: 100.0% [72.71σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2159

Centroid-sig: 83.0%
Centroid-so: 1.137 arcsec [8.16σ]
OotOffset-rm: 0.011 arcsec [0.16σ]
KicOffset-rm: 0.187 arcsec [2.80σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
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DiffImageOverlap-fno: 1.00 [1/1]

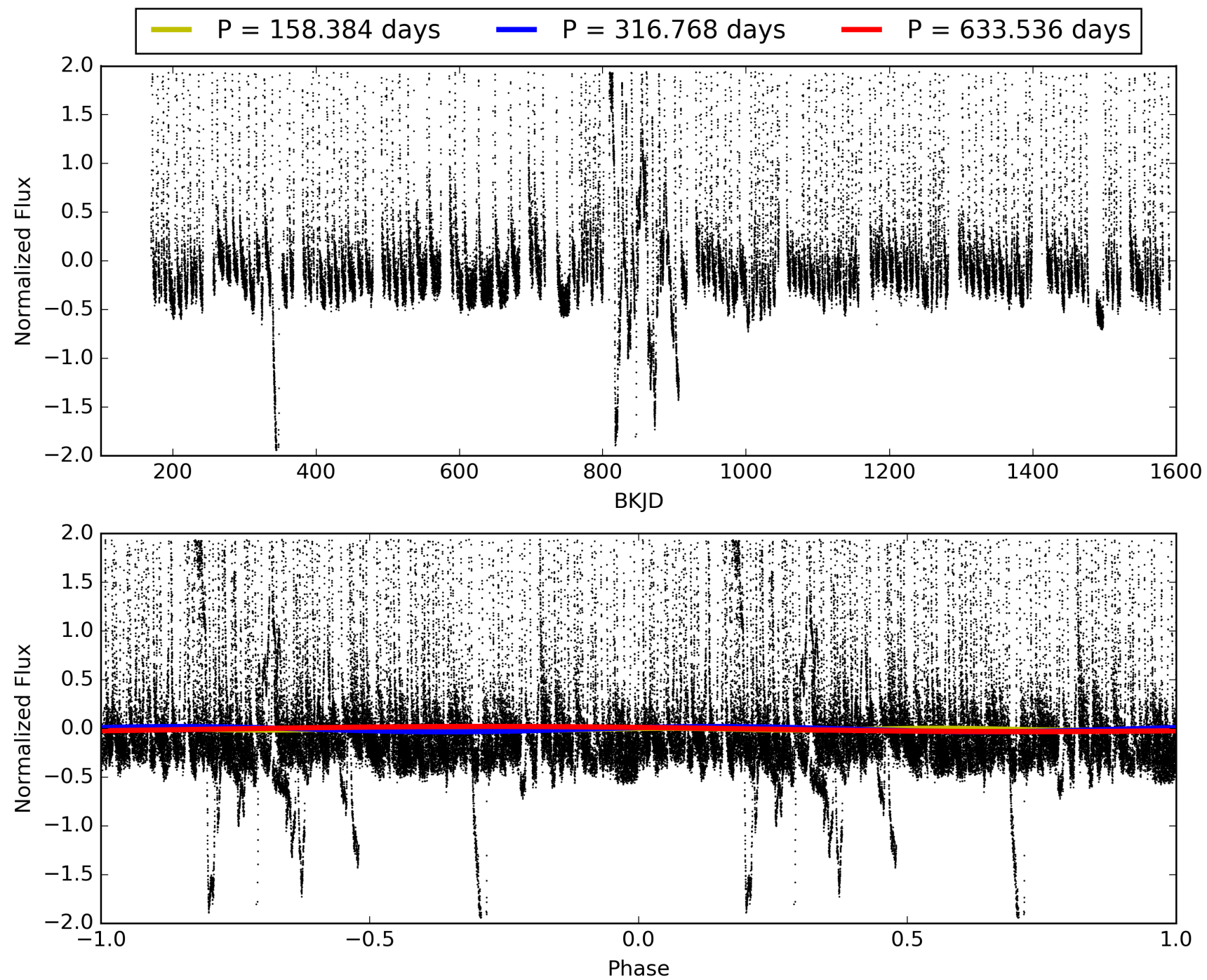
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:30:33 Z

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

TCE 007446357-01, PDC Light Curves

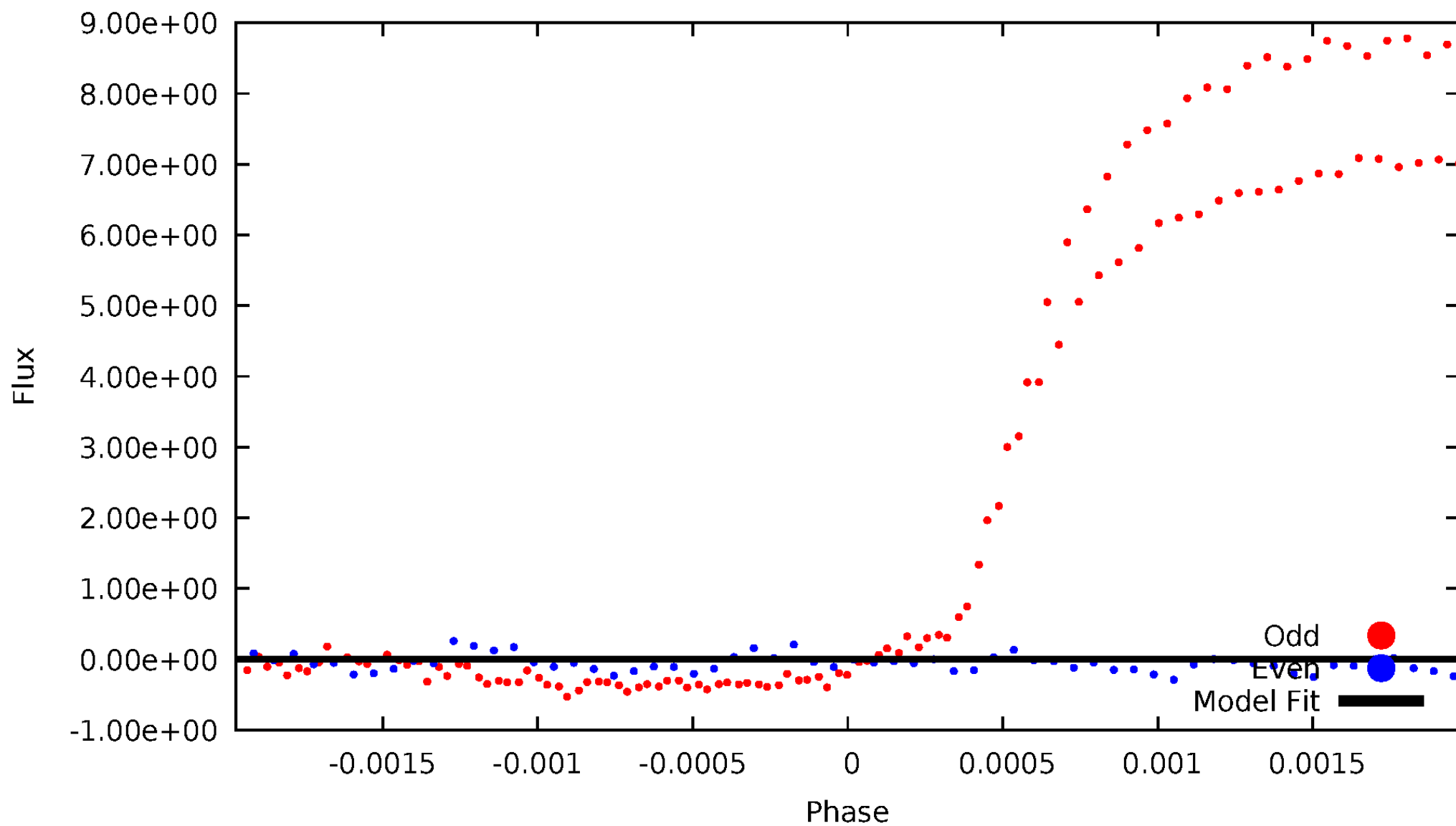


TCE 007446357-01



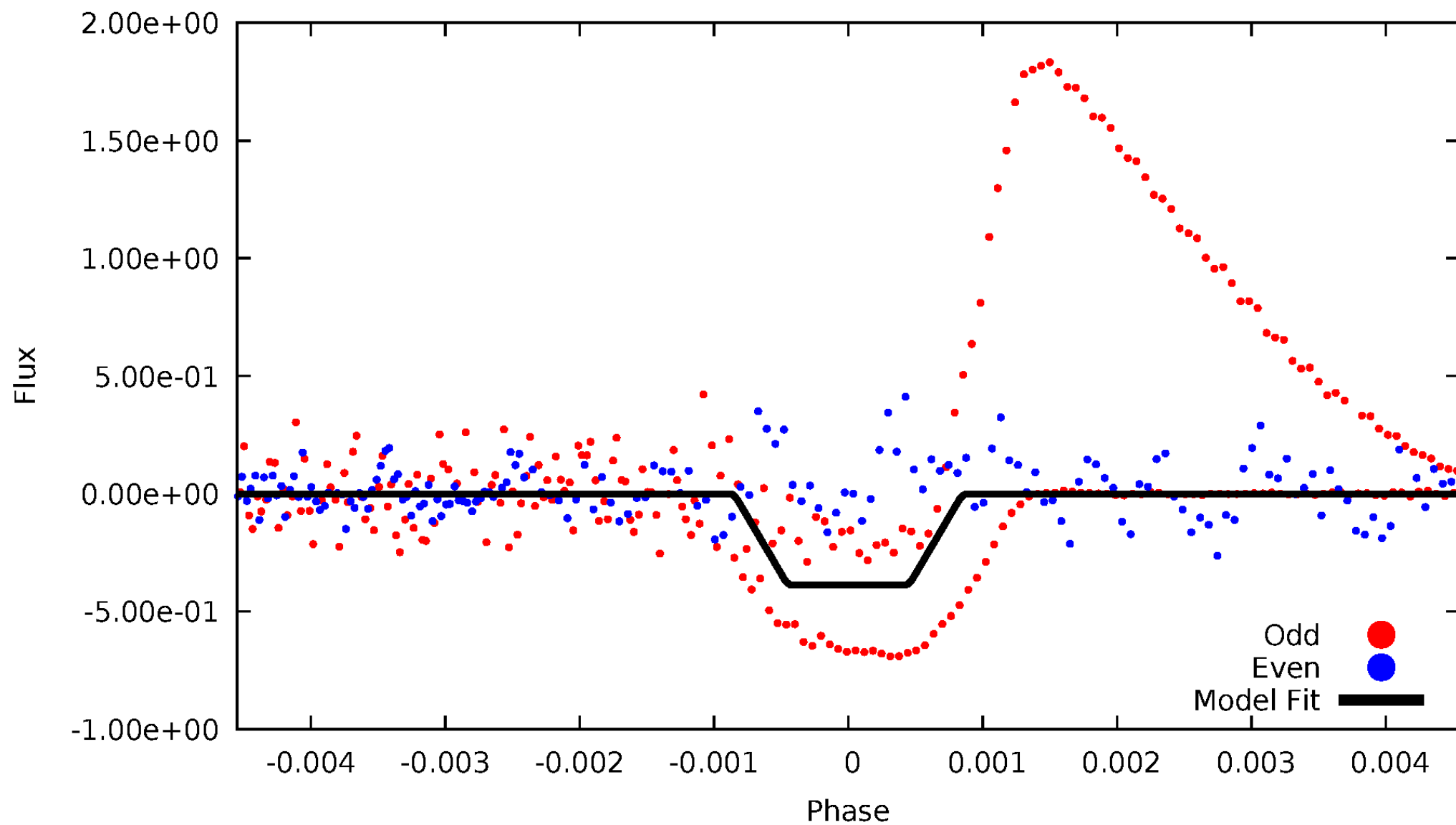
DV Odd/Even

TCE 007446357-01



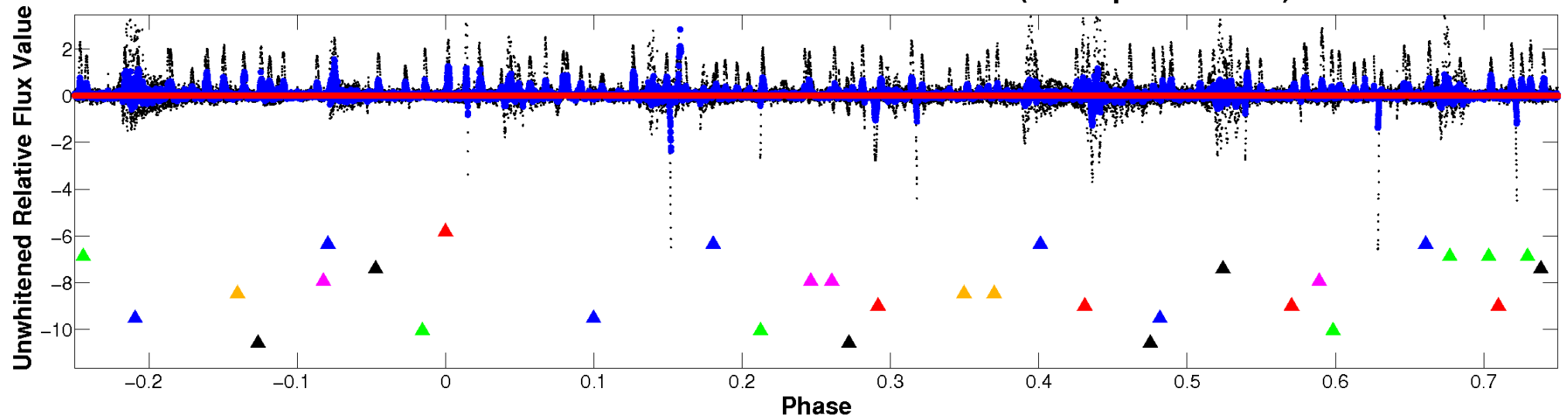
ALT Odd/Even

TCE 007446357-01

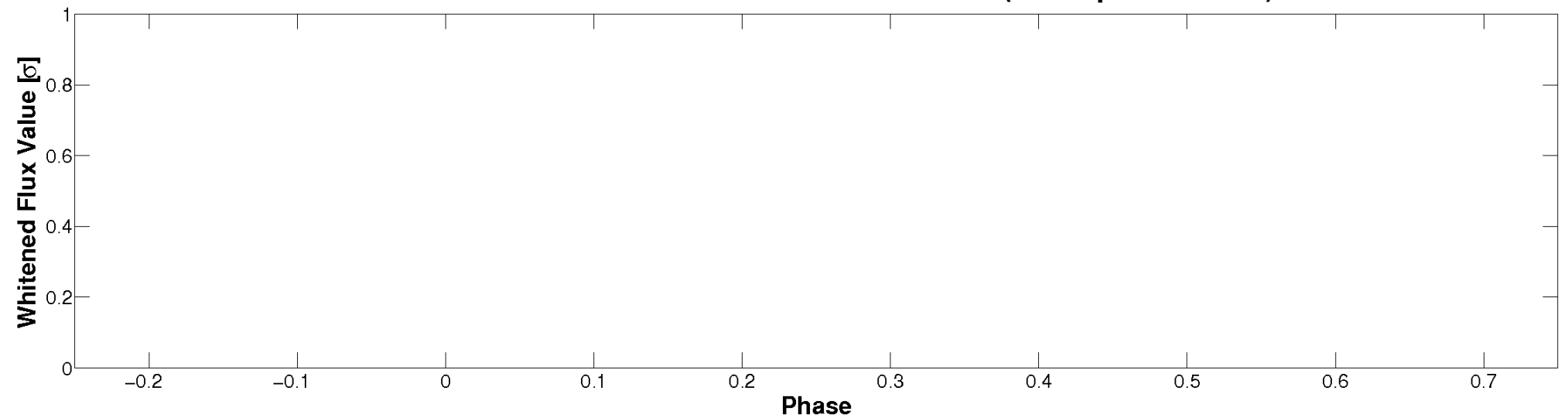


Non-Whitened Vs. Whitened Light Curve

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

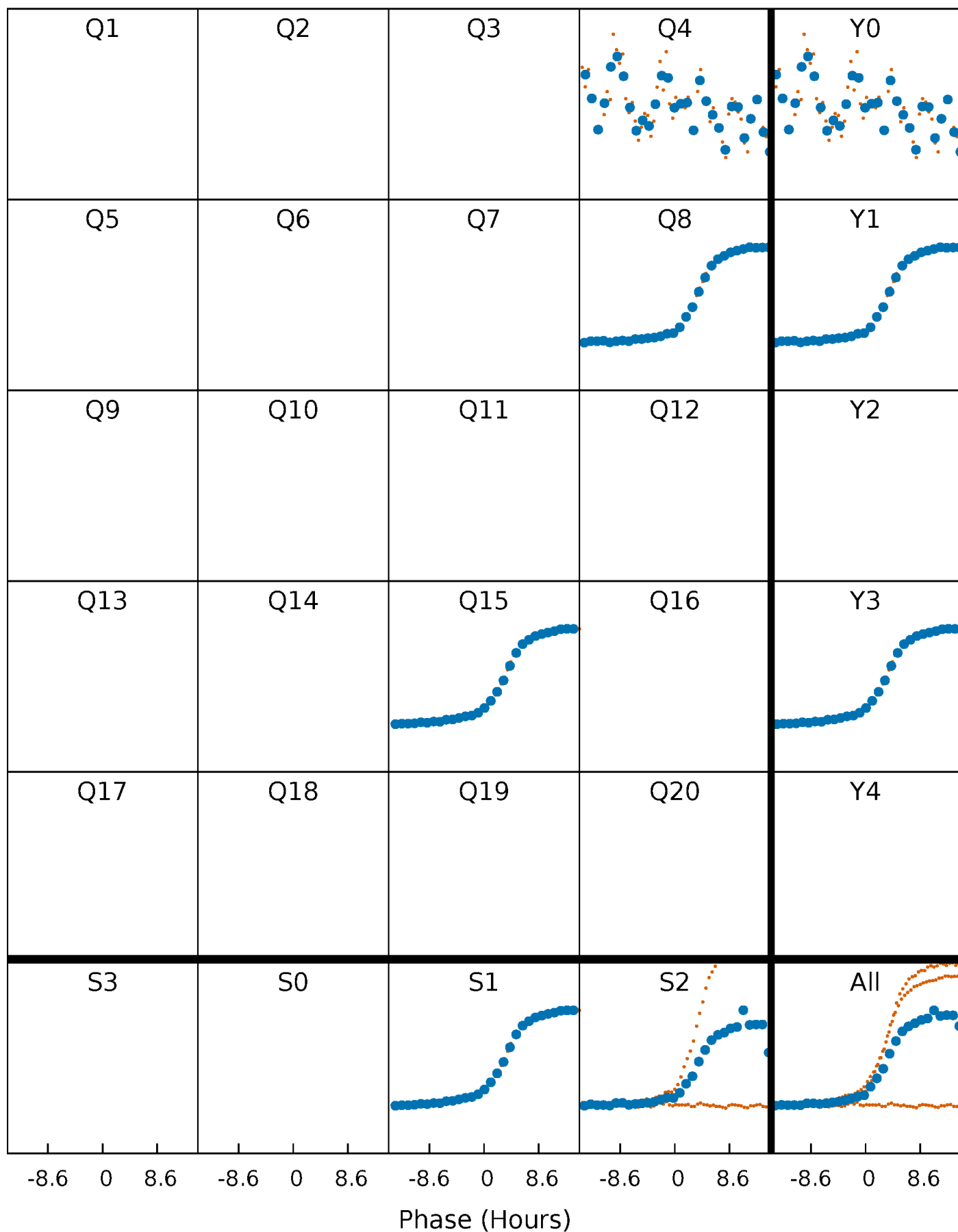


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



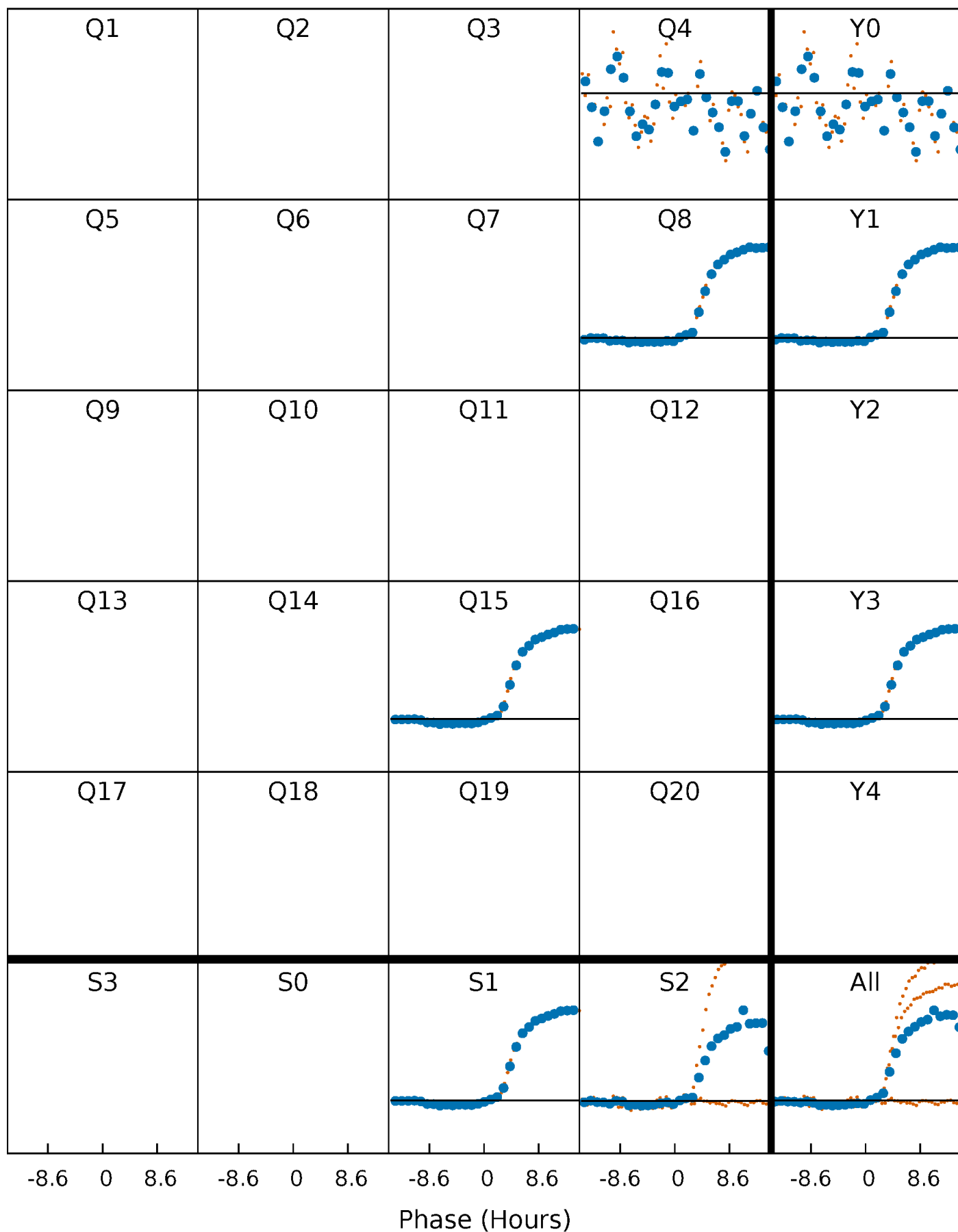
PDC Quarter-Phased Transit Curves

TCE 007446357-01 P=316.767858 Days $T_0=437.415009$ (BKJD)



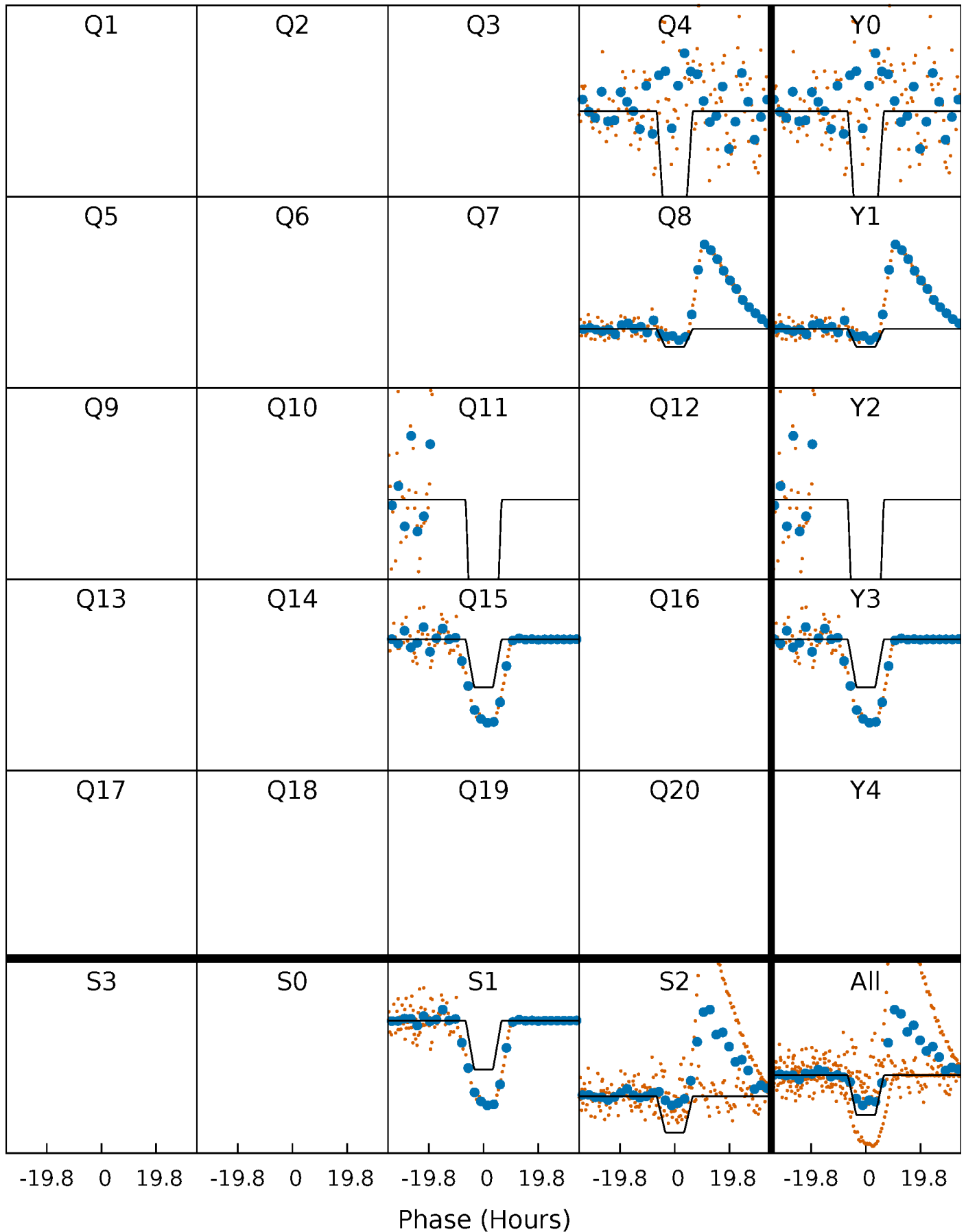
DV Quarter-Phased Transit Curves

TCE 007446357-01 P=316.767858 Days $T_0=437.415009$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

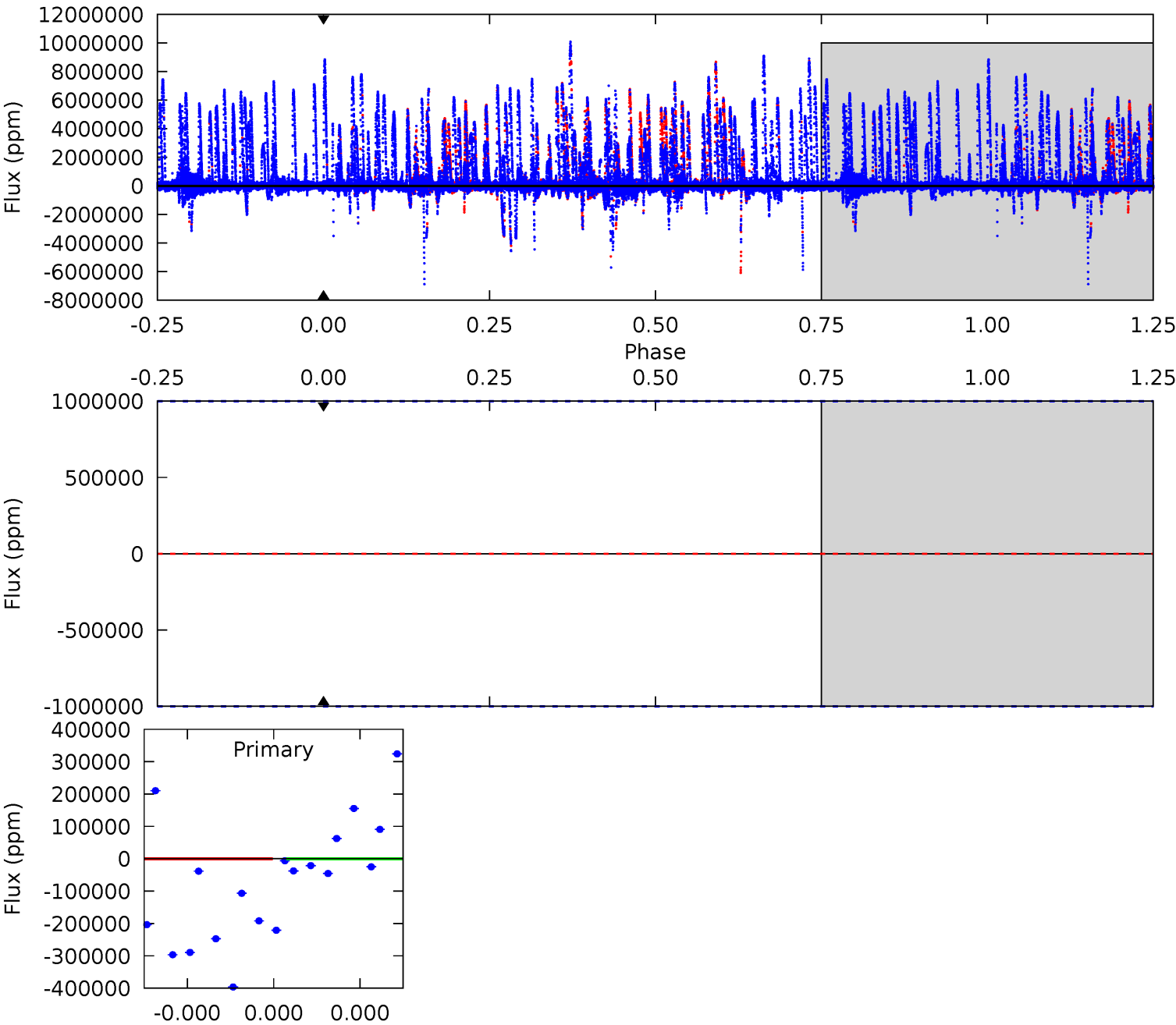
TCE 007446357-01 P=316.767858 Days $T_0=437.225399$ (BKJD)



DV Model-Shift Uniqueness Test

007446357-01, P = 316.767858 Days, E = 120.647151 Days

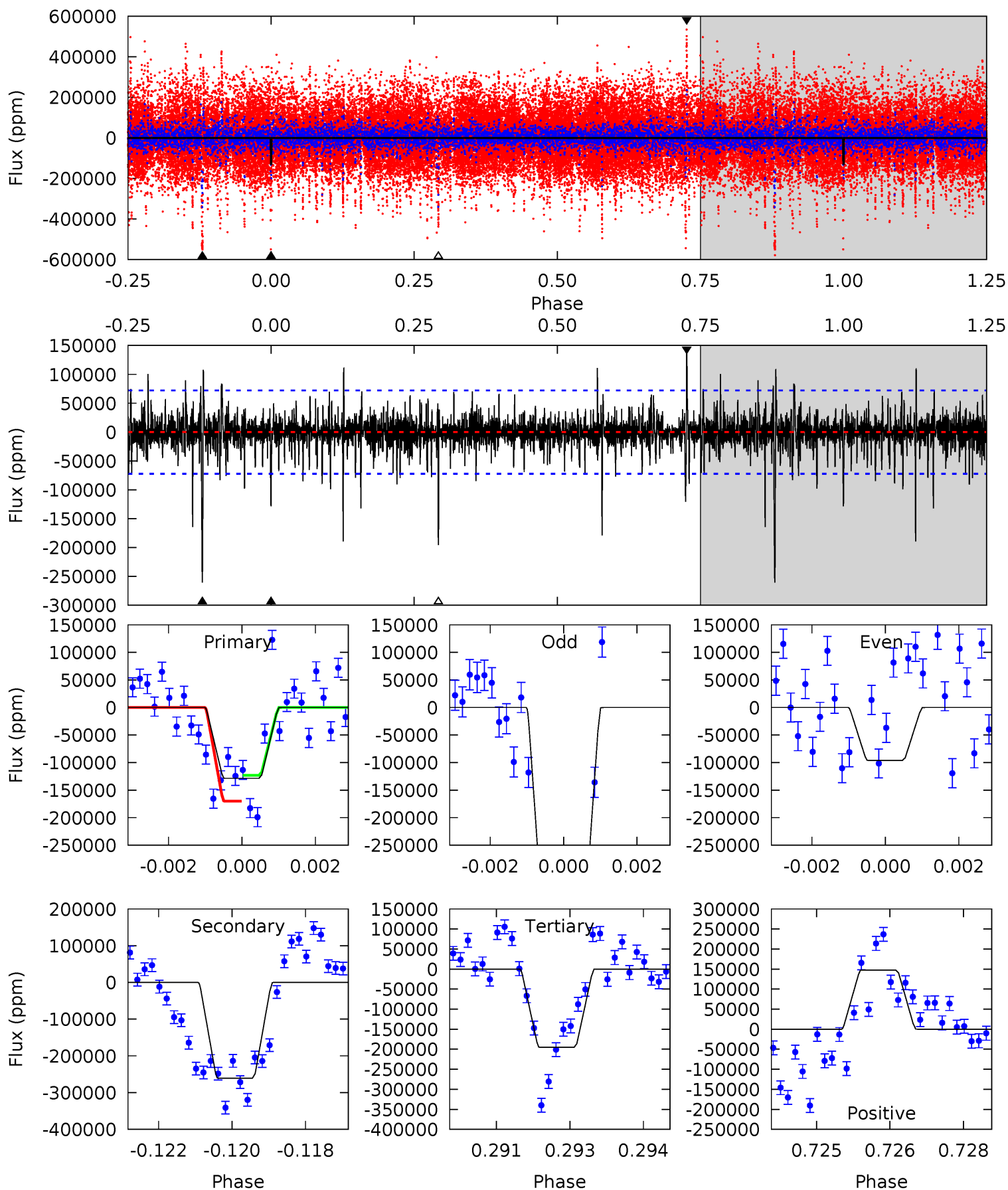
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007446357-01, P = 316.767858 Days, E = 120.457541 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.53	19.3	14.5	10.9	5.35	3.13	1.74	-4.96	-1.41	4.83	8.38	13.6	1.40	0.36	1.80



Stellar Parameters For KIC 007446357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9296^{+245}_{-449}	$4.085^{+0.170}_{-0.170}$	$0.070^{+0.150}_{-0.700}$	$2.253^{+0.774}_{-0.703}$	$2.251^{+0.399}_{-0.599}$	$0.277^{+0.285}_{-0.140}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+34%/-31%	+18%/-27%	+103%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007446357-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$40.51^{+25.75}_{-22.99}$	784^{+67}_{-59}	5156^{+14376}_{-22884}	1516^{+64434}_{-64379}
Alt.	-260585 ± 13487	$153.95^{+36.82}_{-36.09}$	784^{+60}_{-59}	8904^{+1306}_{-838}	11562^{+7256}_{-3824}

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

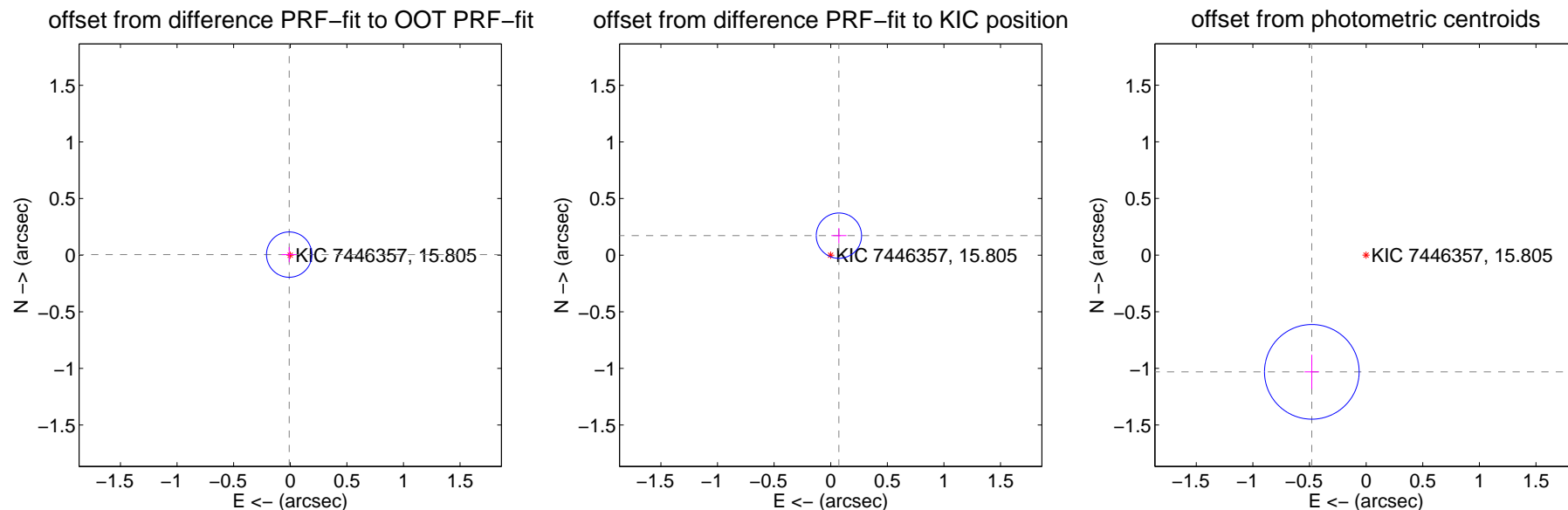
DV Centroid Data

Supplemental centroid analysis for 007446357-01. Kepler magnitude: 15.80. 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 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.011 ± 0.067	0.16	0.010 ± 0.067	0.005 ± 0.067
PRF-fit source offset from KIC position	0.187 ± 0.067	2.80	-0.072 ± 0.067	0.172 ± 0.067
photometric centroid source offset	1.14 ± 0.14	8.16	0.48 ± 0.06	-1.03 ± 0.15

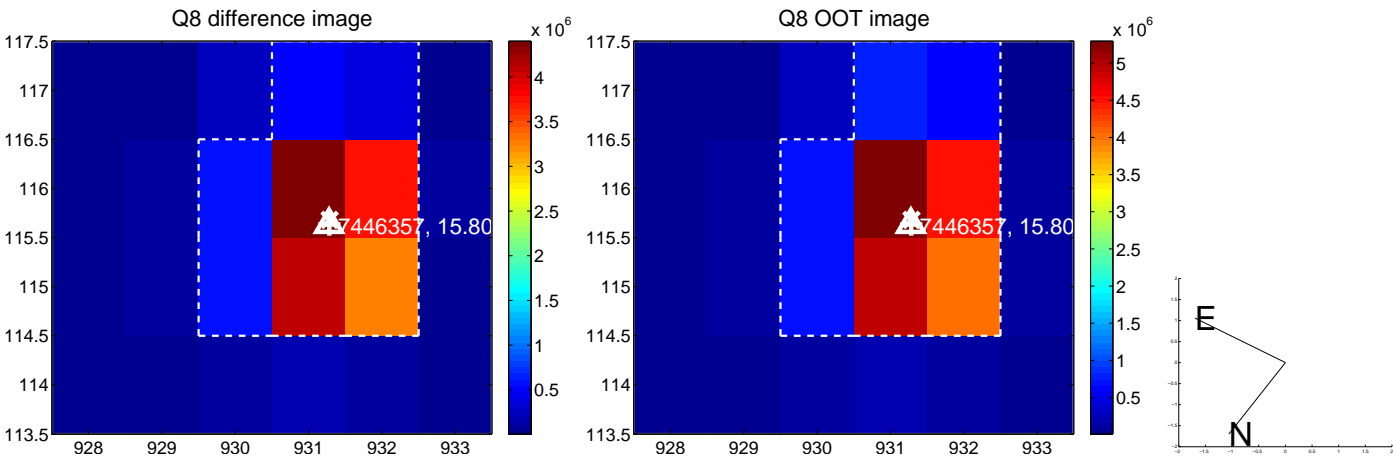


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



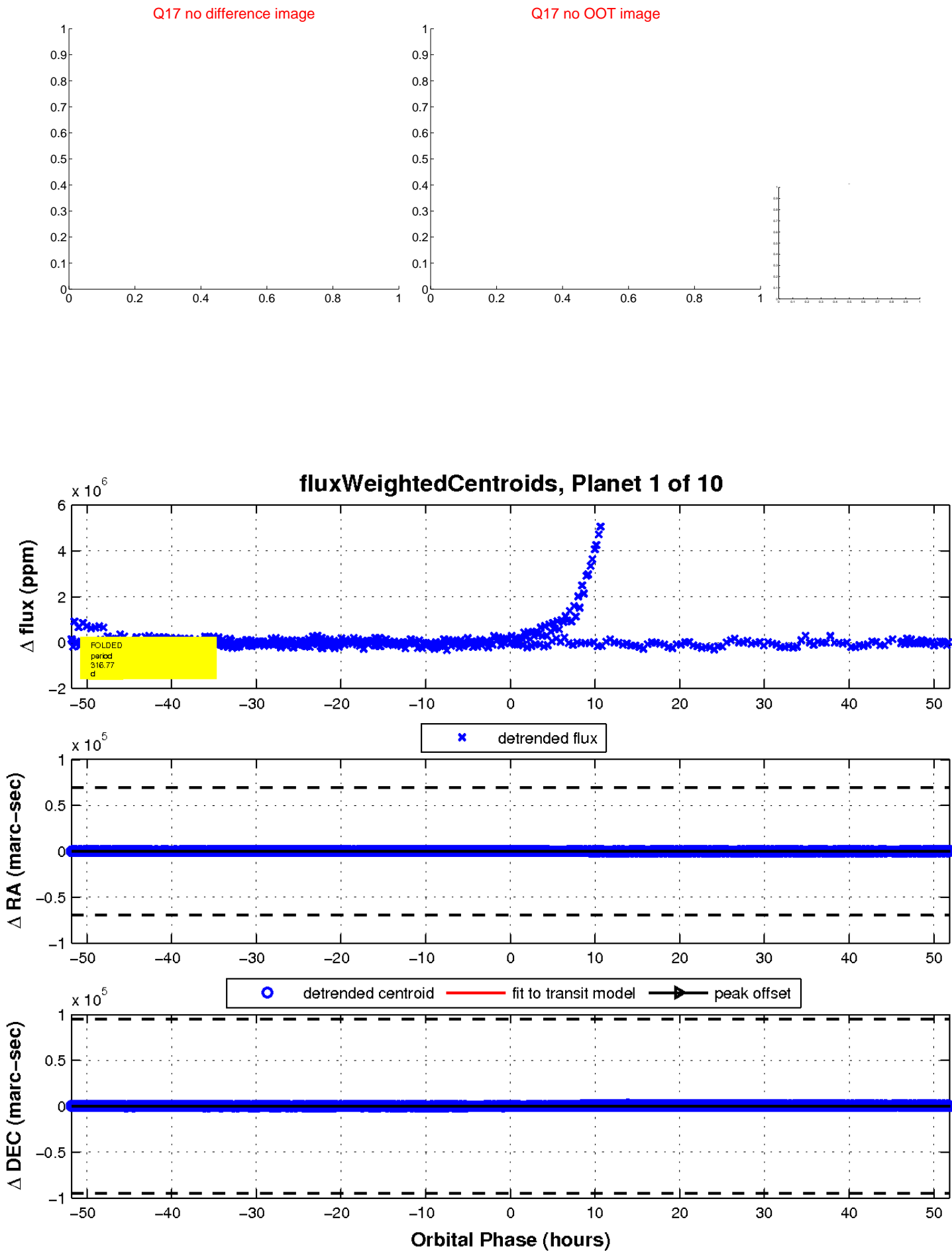
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

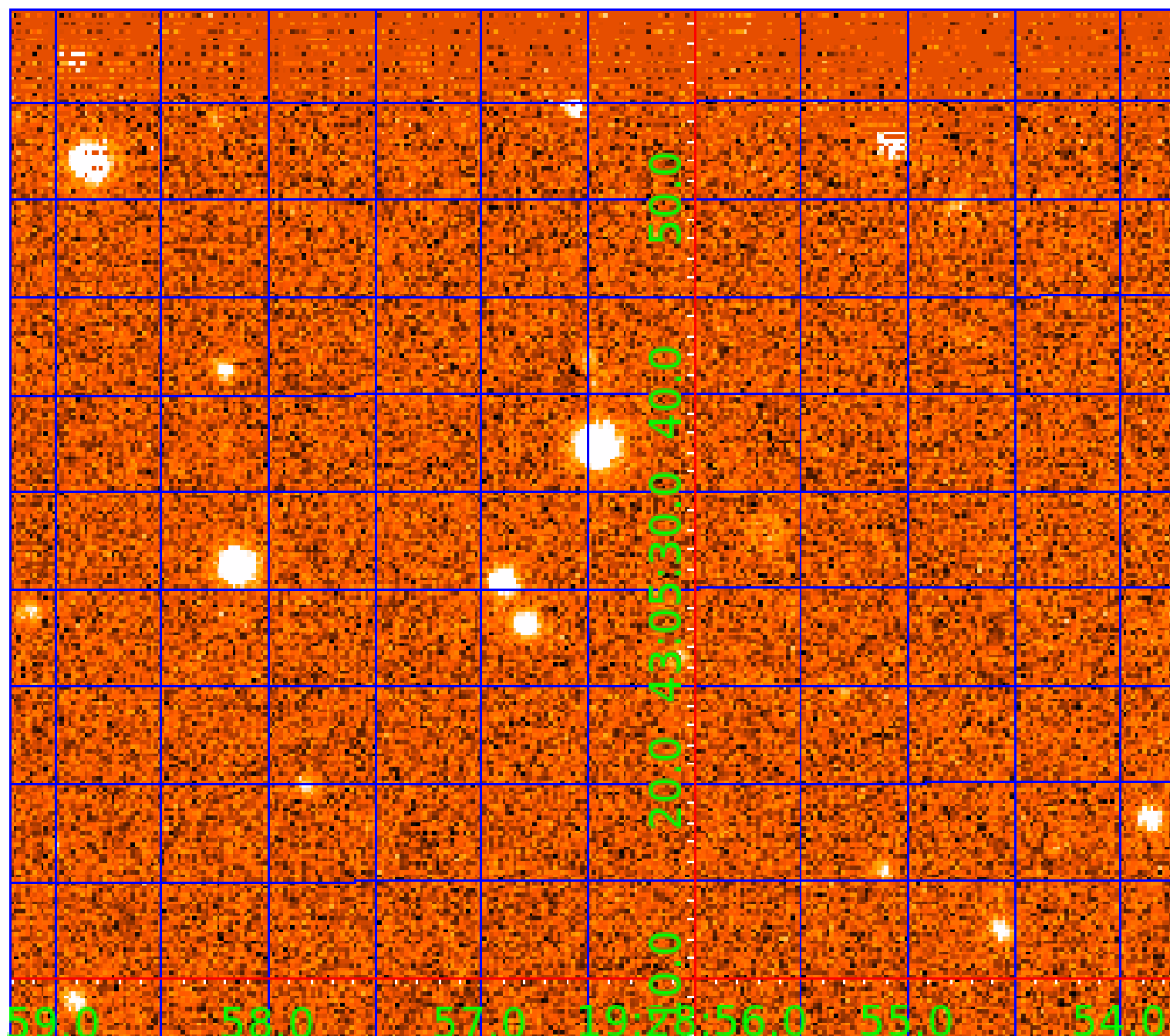


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007446357

Q1-17 DR25 TCE Parameters

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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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007446357-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS
007446357-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQU_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
007446357-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQU_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

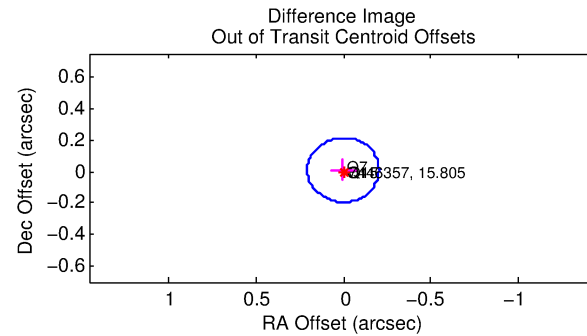
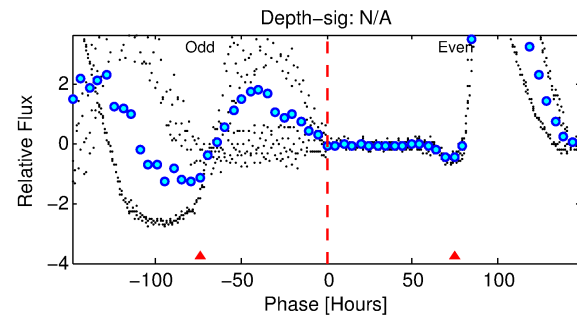
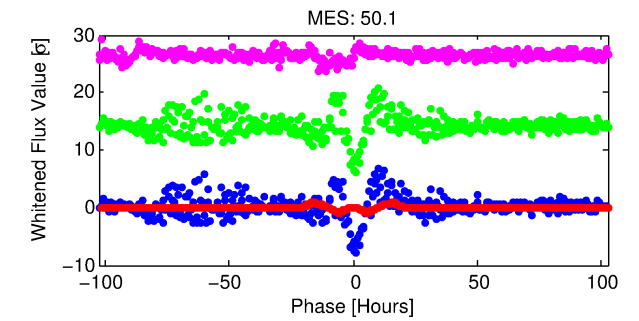
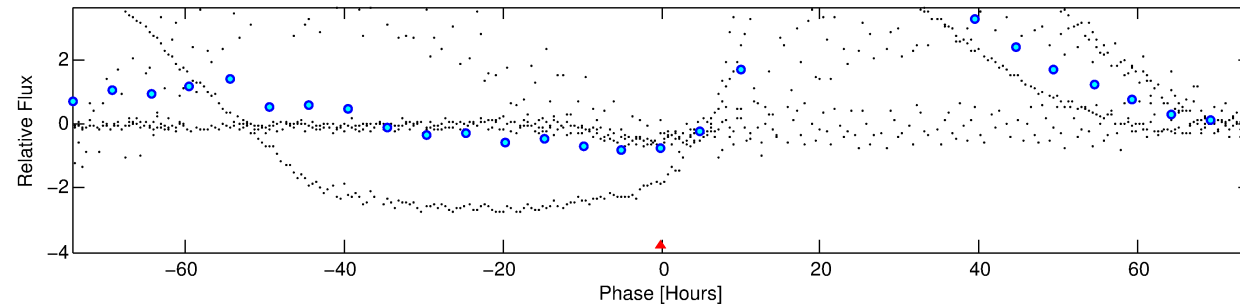
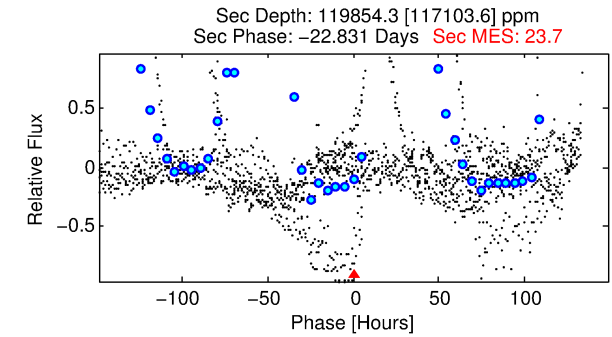
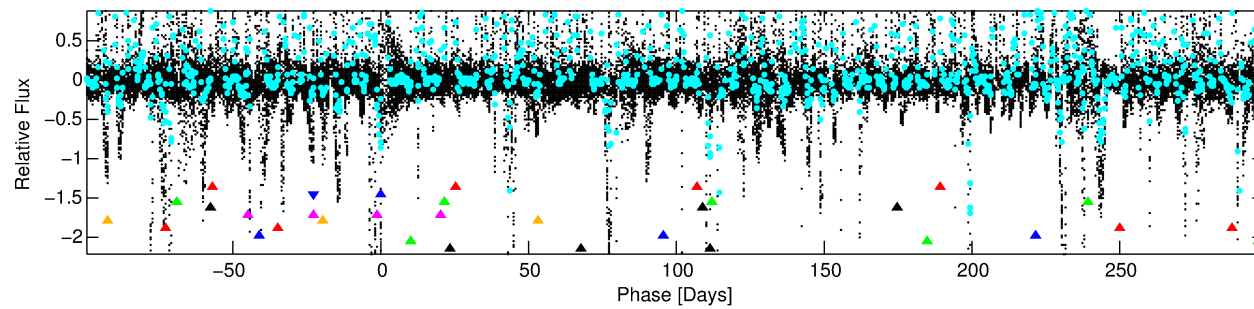
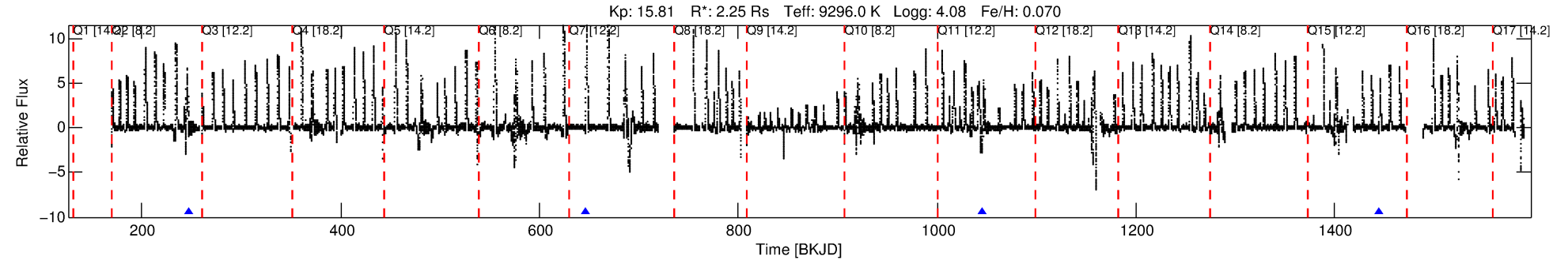
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007446357-02

No Significant Match Found

DV One-Page Summary

KIC: 7446357 Candidate: 2 of 10 Period: 399.067 d



TPS TCE Results:

Period = 399.06743 d
Epoch = 247.7030 BKJD

DV fit results are unavailable

DV Diagnostic Results:

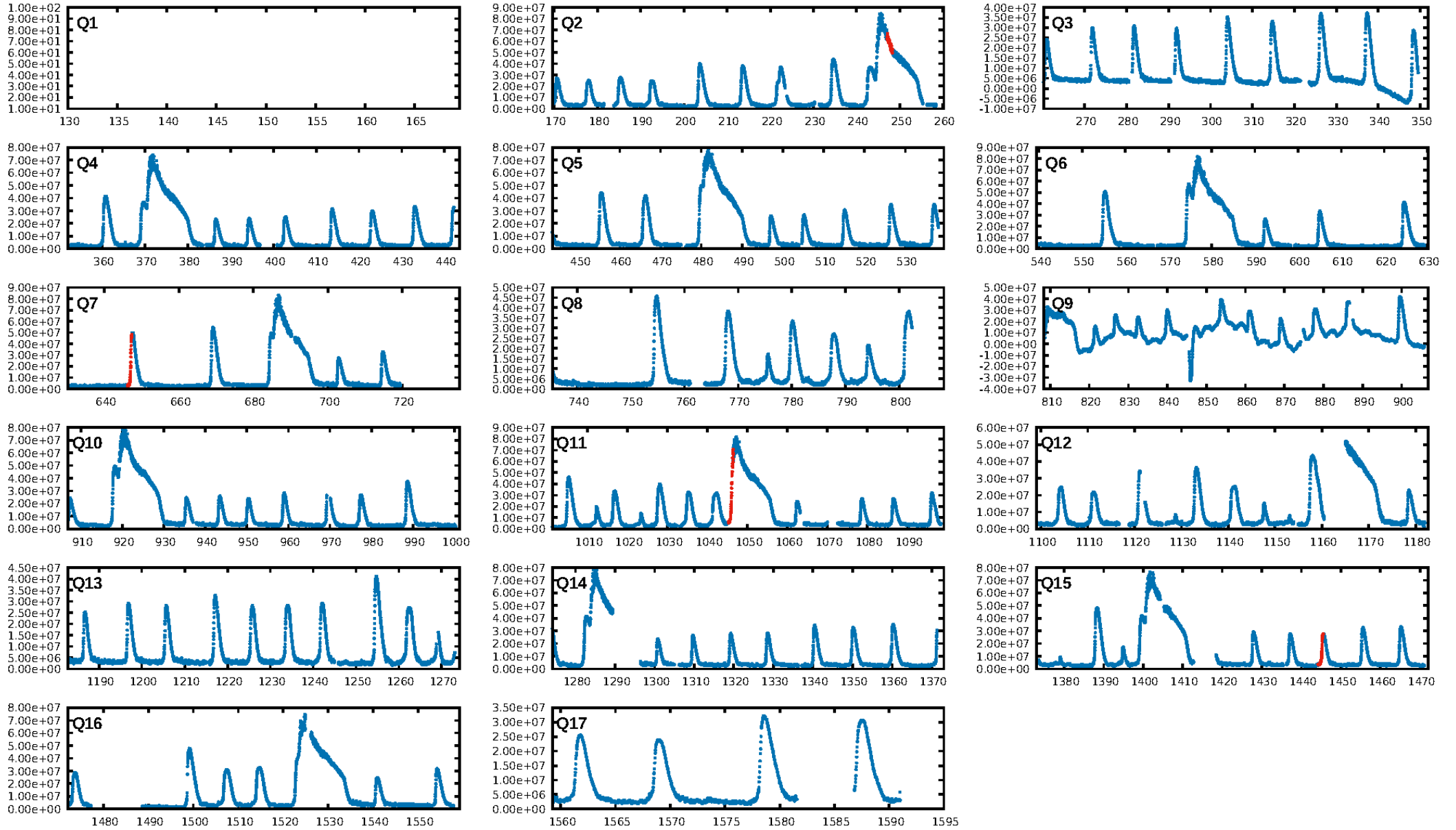
ShortPeriod-sig: 100.0% [46.87σ]
LongPeriod-sig: 100.0% [27.23σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.184

Centroid-sig: 84.4%
Centroid-so: 1.124 arcsec [32.97σ]
OotOffset-rm: 0.011 arcsec [0.16σ]
KicOffset-rm: 0.050 arcsec [0.67σ]
OotOffset-st: 0/3/0/0 [3]
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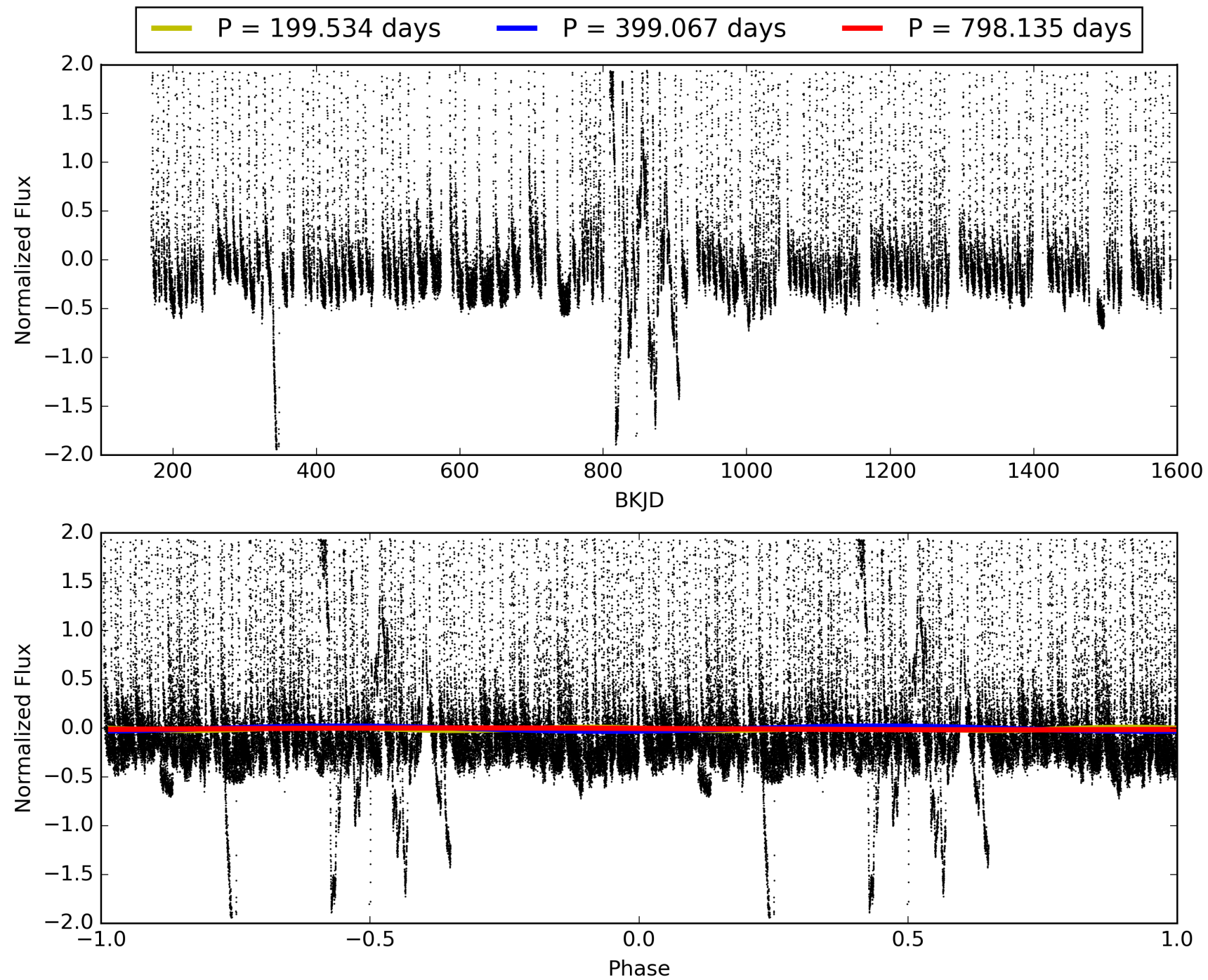
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007446357-02, PDC Light Curves

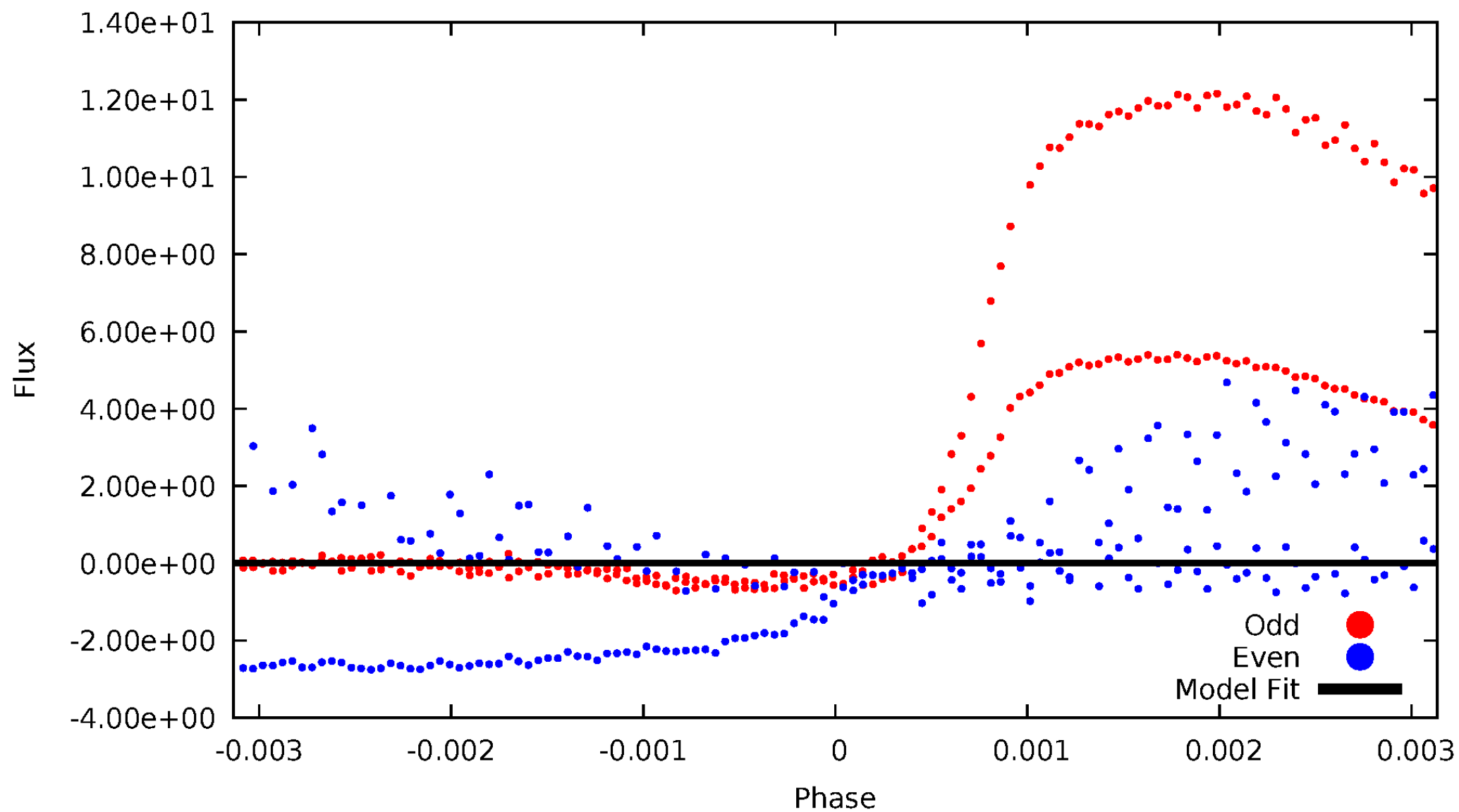


TCE 007446357-02



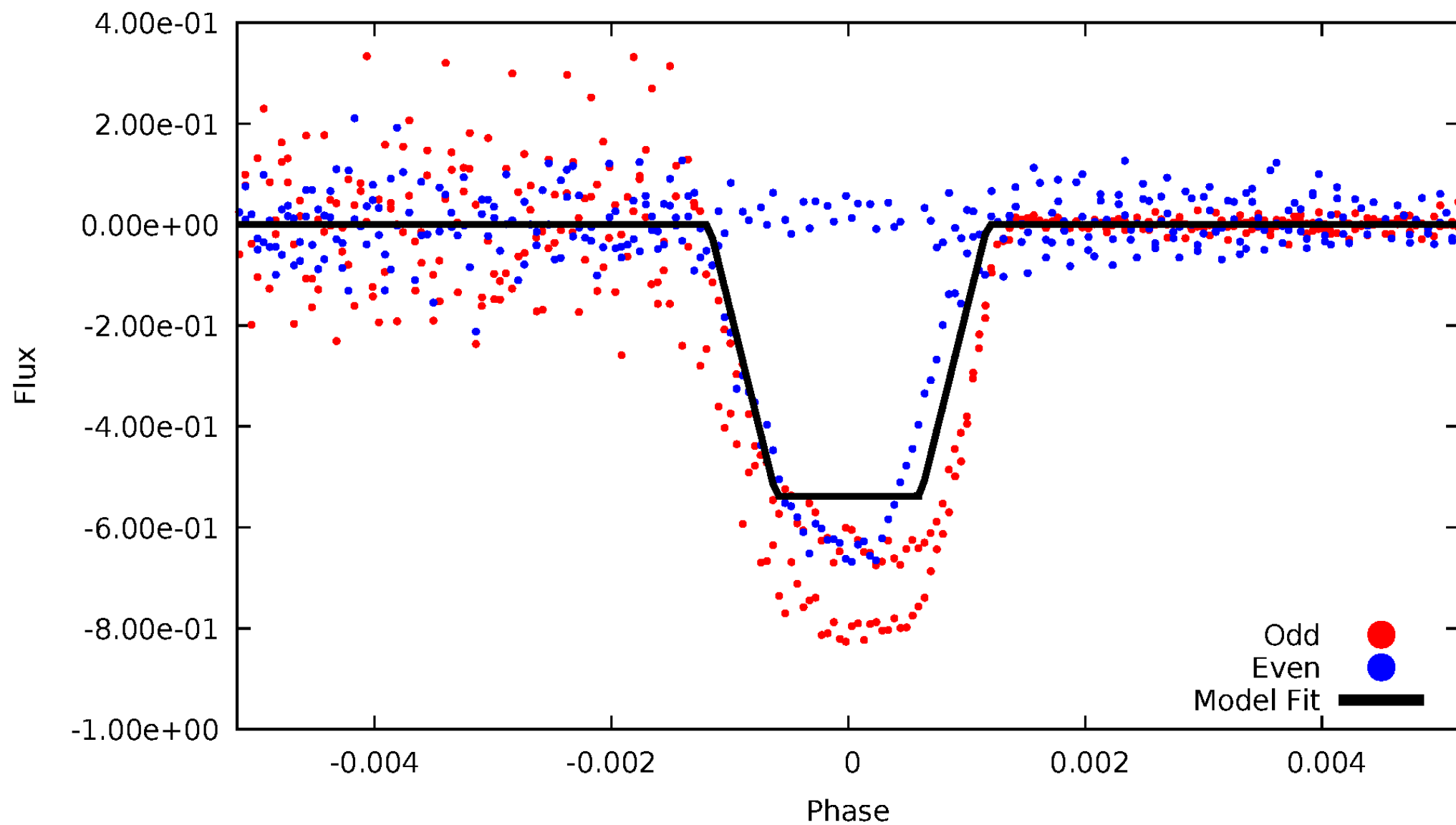
DV Odd/Even

TCE 007446357-02



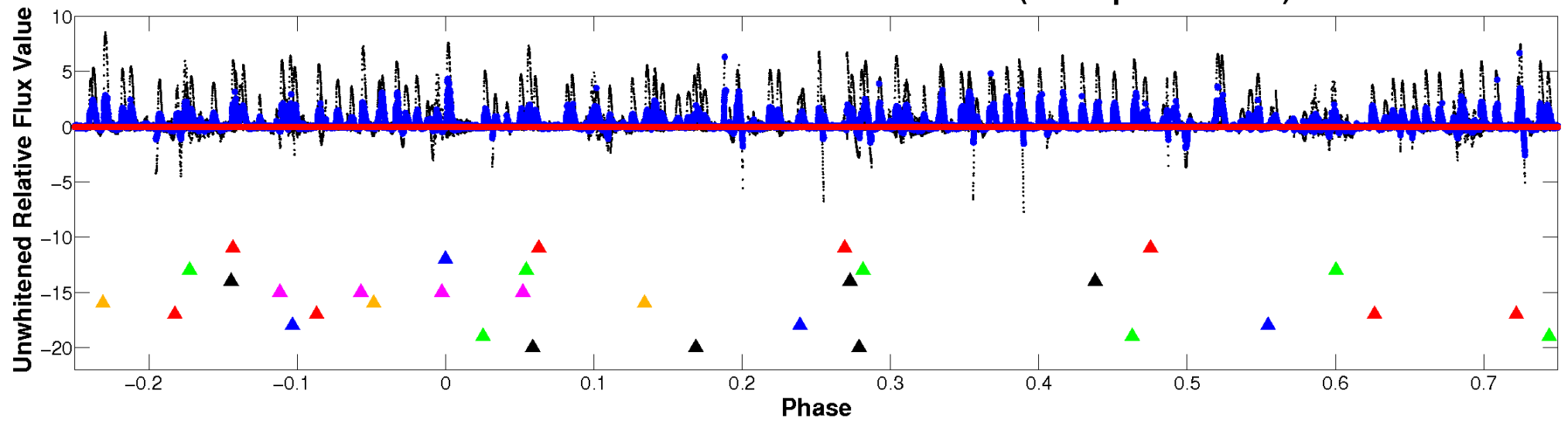
ALT Odd/Even

TCE 007446357-02



Non-Whitened Vs. Whitened Light Curve

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

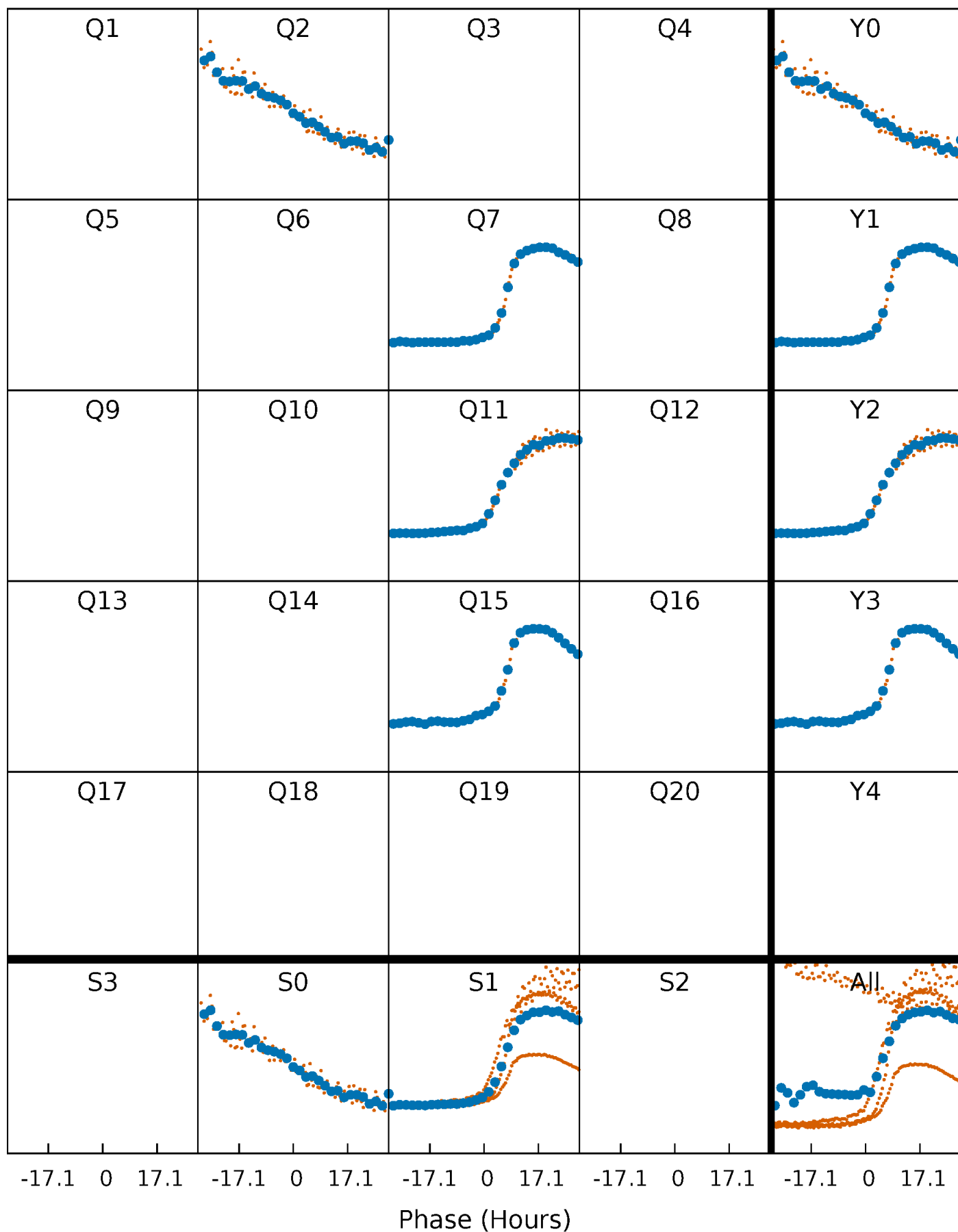


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



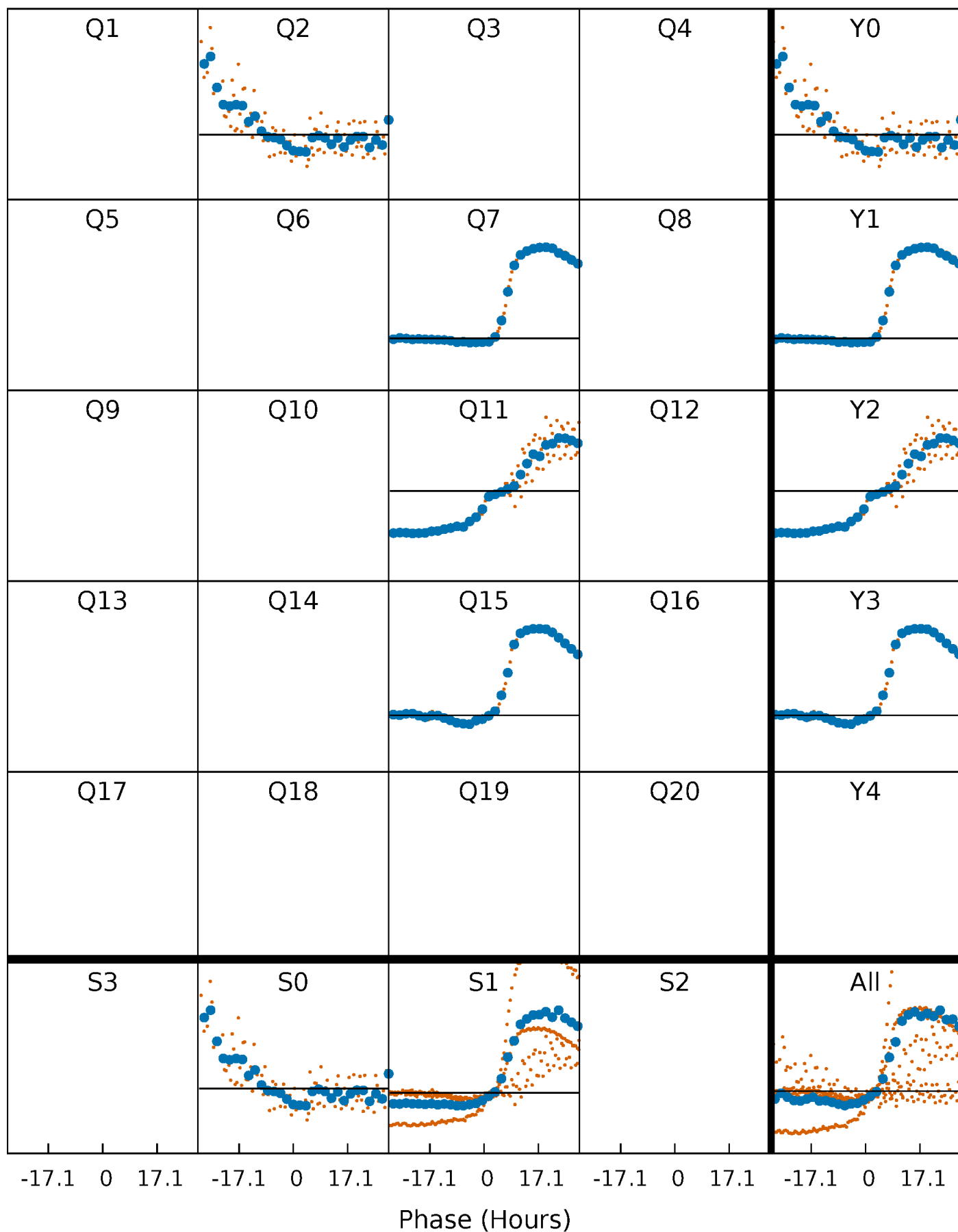
PDC Quarter-Phased Transit Curves

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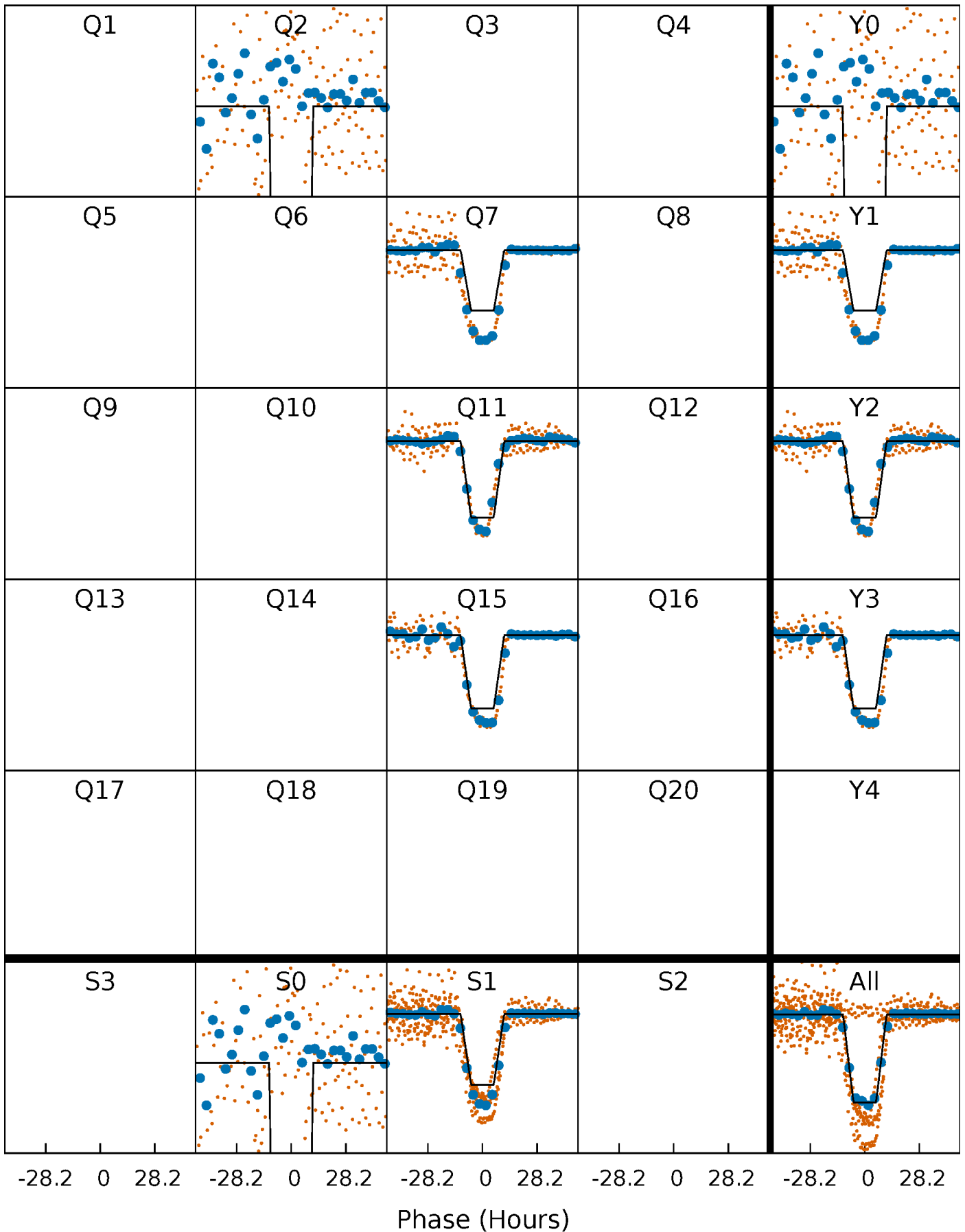
DV Quarter-Phased Transit Curves

TCE 007446357-02 P=399.067427 Days $T_0=247.703027$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

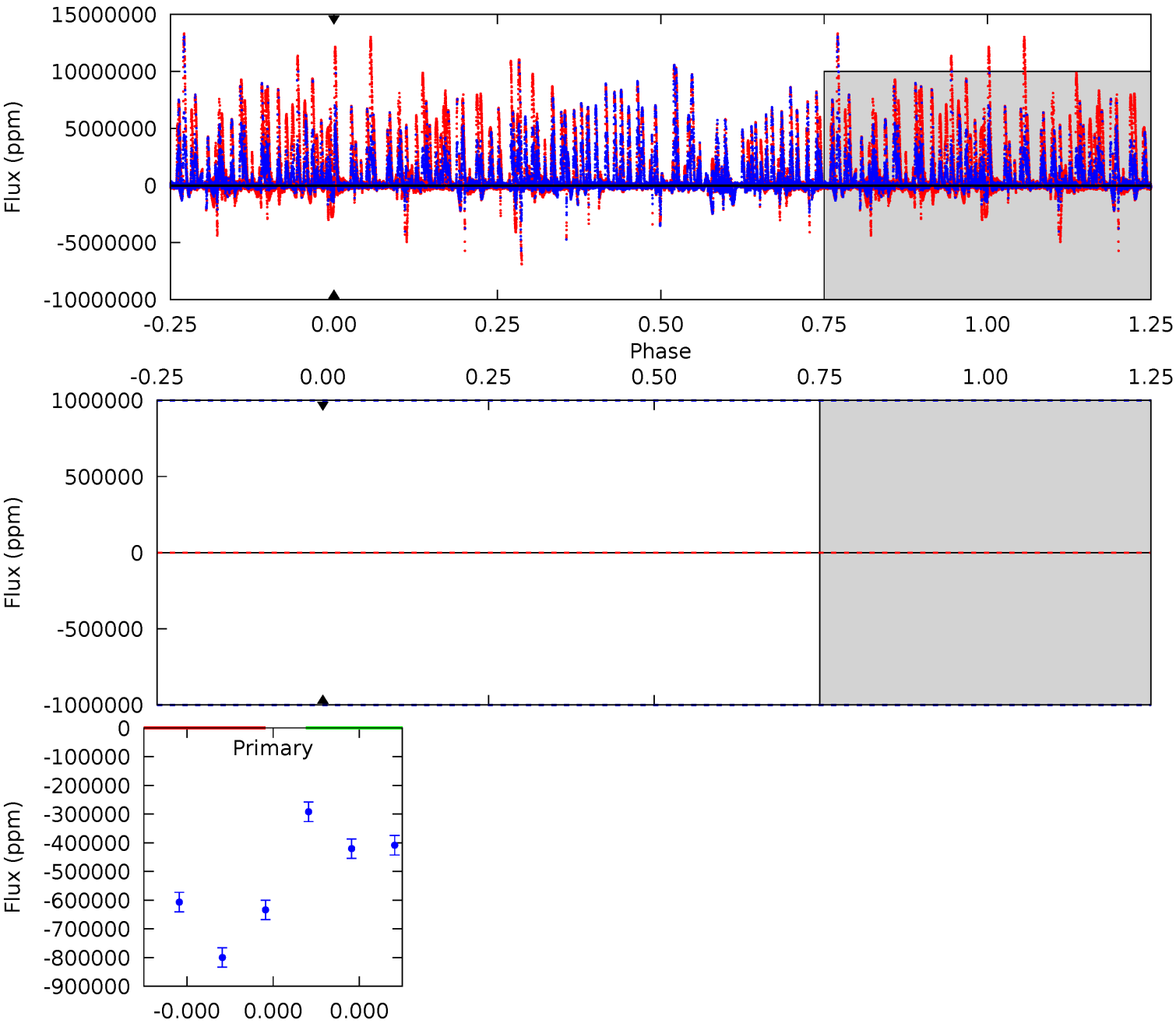
TCE 007446357-02 $P=399.067427$ Days $T_0=247.584952$ (BKJD)



DV Model-Shift Uniqueness Test

007446357-02, P = 399.067427 Days, E = 247.703027 Days

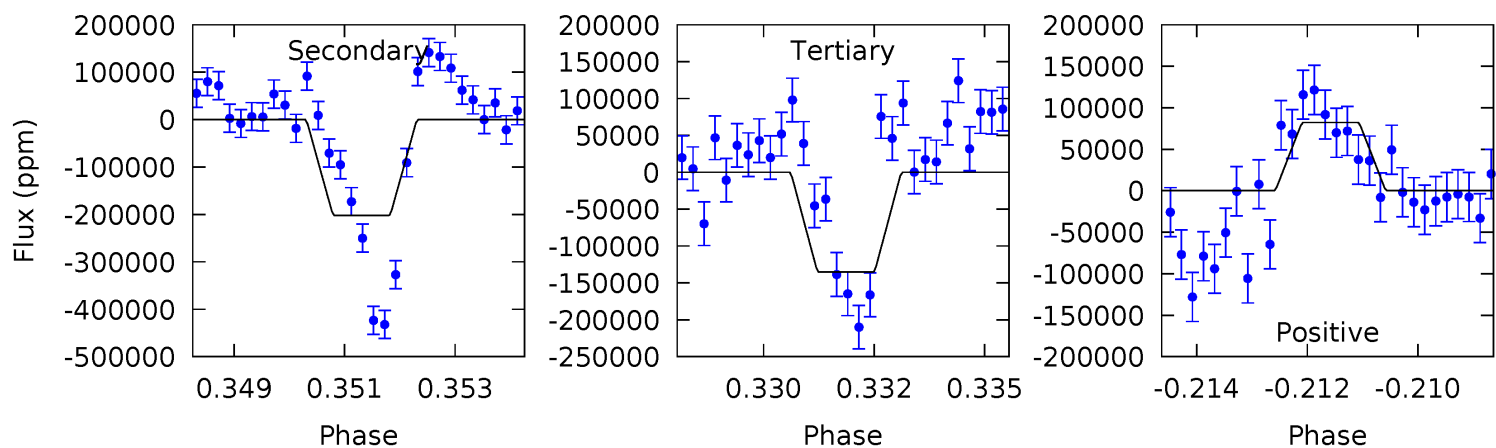
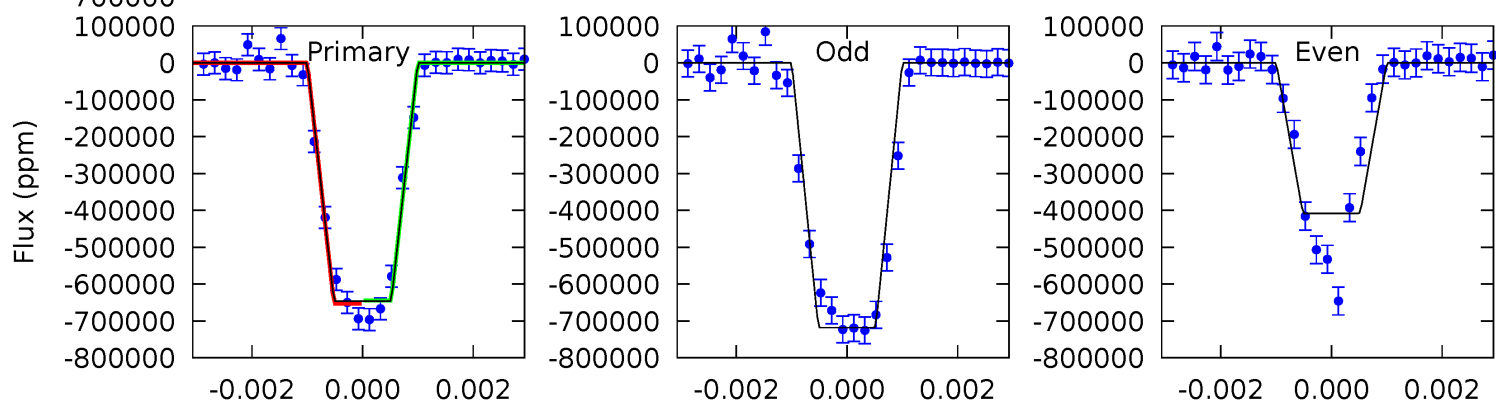
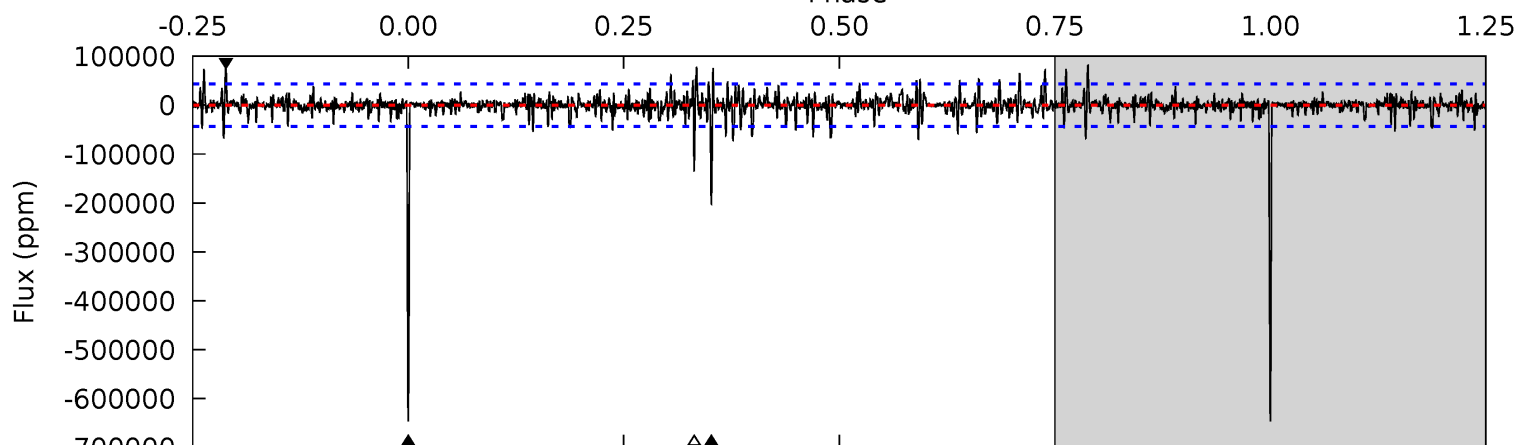
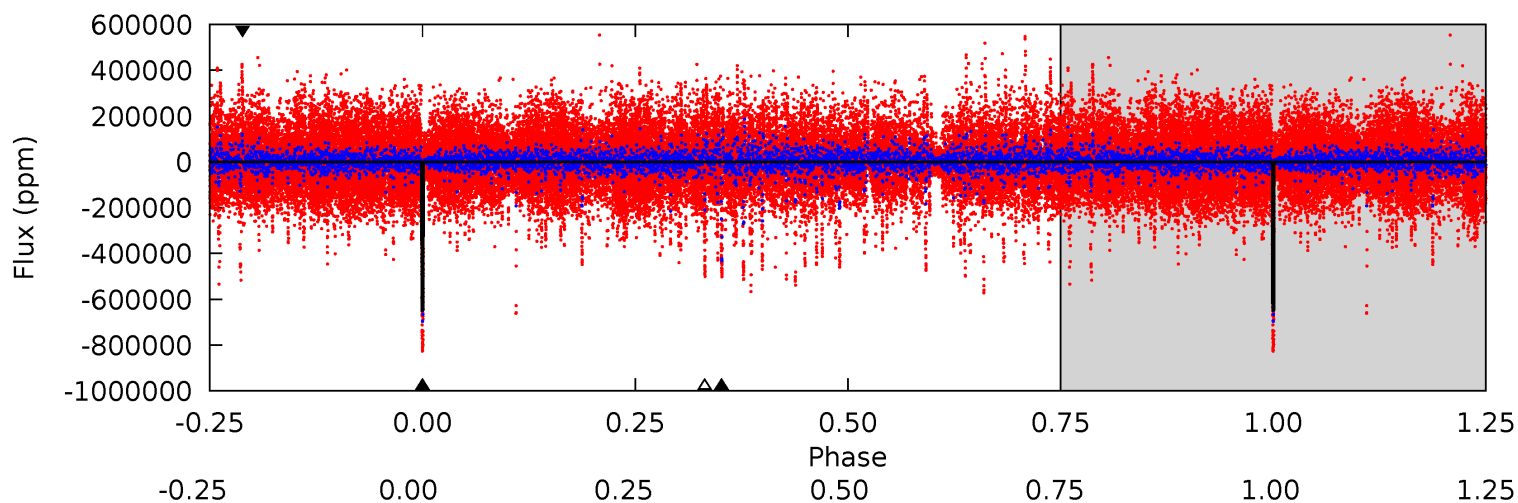
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007446357-02, P = 399.067427 Days, E = 247.584952 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.7	24.6	16.4	10.0	5.30	3.04	1.87	62.3	68.7	8.15	14.6	17.6	0.83	0.11	0



Stellar Parameters For KIC 007446357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9296^{+245}_{-449}	$4.085^{+0.170}_{-0.170}$	$0.070^{+0.150}_{-0.700}$	$2.253^{+0.774}_{-0.703}$	$2.251^{+0.399}_{-0.599}$	$0.277^{+0.285}_{-0.140}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+34%/-31%	+18%/-27%	+103%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007446357-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$32.86^{+24.19}_{-19.11}$	724^{+58}_{-56}	-5576^{+29728}_{-16306}	$-2726.496^{+136578.536}_{-118530.739}$
Alt.	-201943 ± 8220	$179.39^{+41.80}_{-35.79}$	726^{+61}_{-55}	7266^{+738}_{-571}	8063^{+4192}_{-2474}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

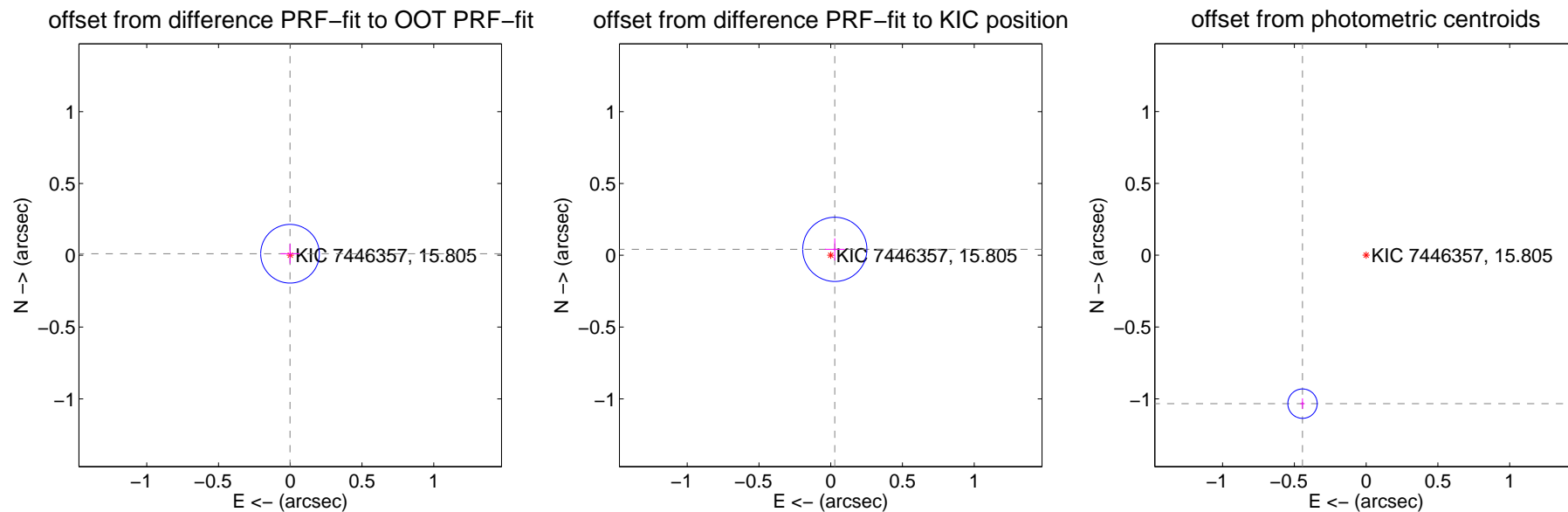
DV Centroid Data

Supplemental centroid analysis for 007446357-02. Kepler magnitude: 15.80. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.011 ± 0.068	0.16	0.002 ± 0.067	0.011 ± 0.068
PRF-fit source offset from KIC position	0.050 ± 0.075	0.67	-0.028 ± 0.069	0.041 ± 0.077
photometric centroid source offset	1.12 ± 0.03	32.97	0.44 ± 0.01	-1.03 ± 0.04



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

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



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

Q5 no difference image



Q5 no OOT image



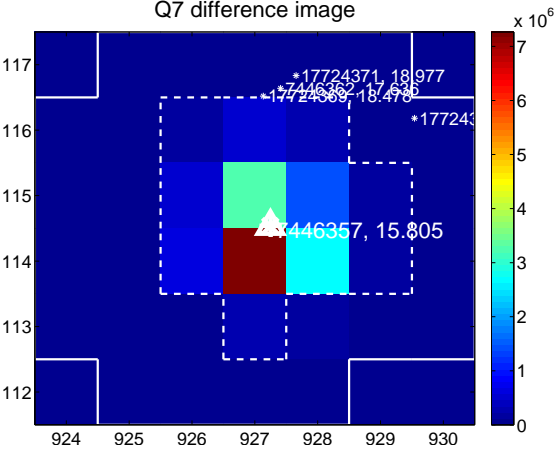
Q6 no difference image



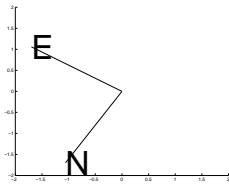
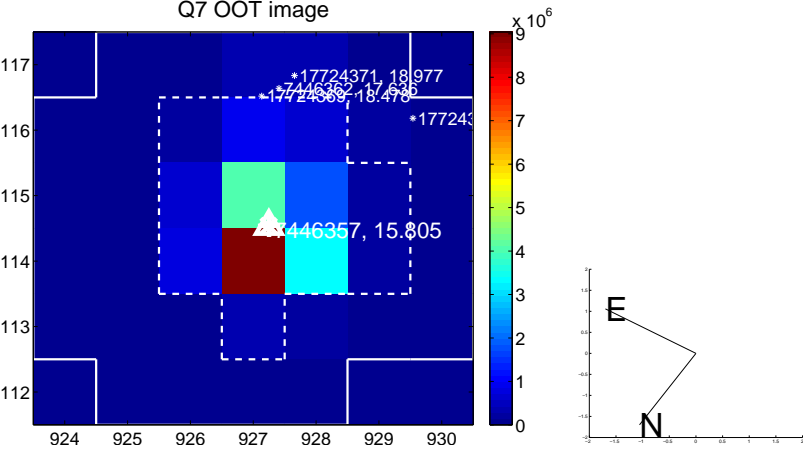
Q6 no OOT image



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.

Q9 no difference image



Q9 no OOT image



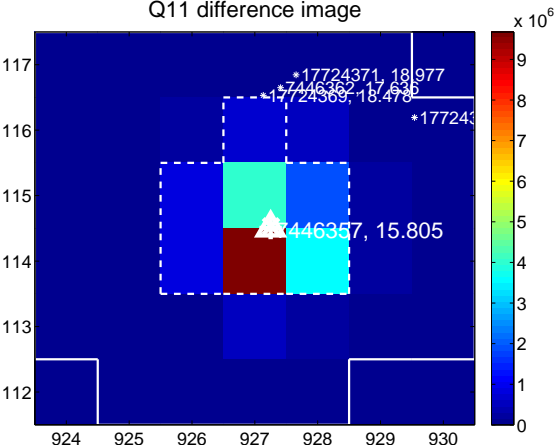
Q10 no difference image



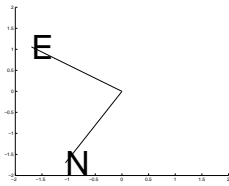
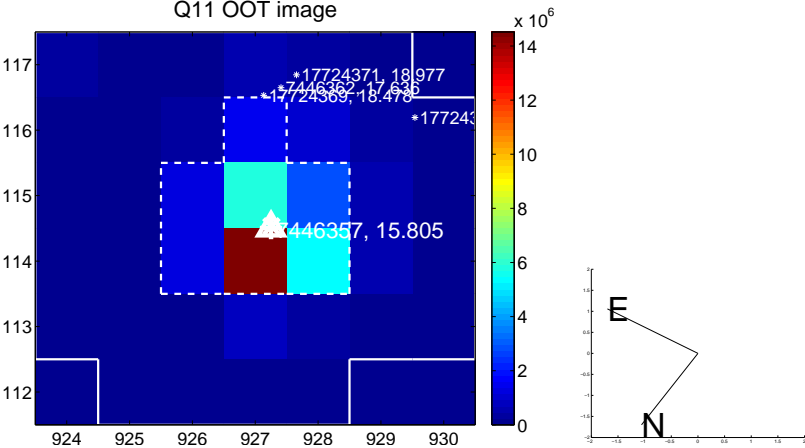
Q10 no OOT image



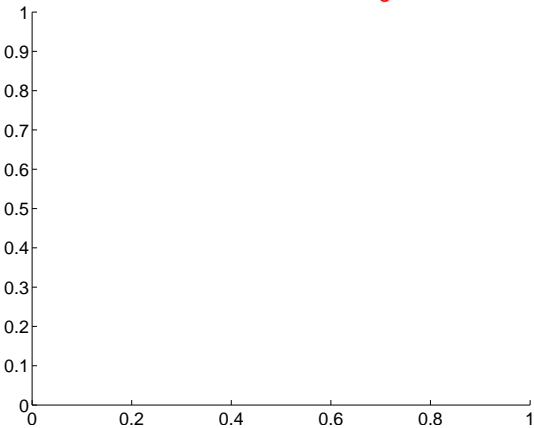
Q11 difference image



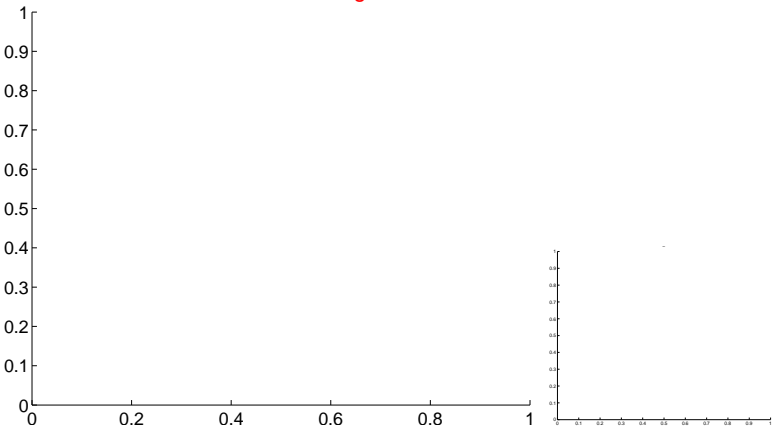
Q11 OOT image



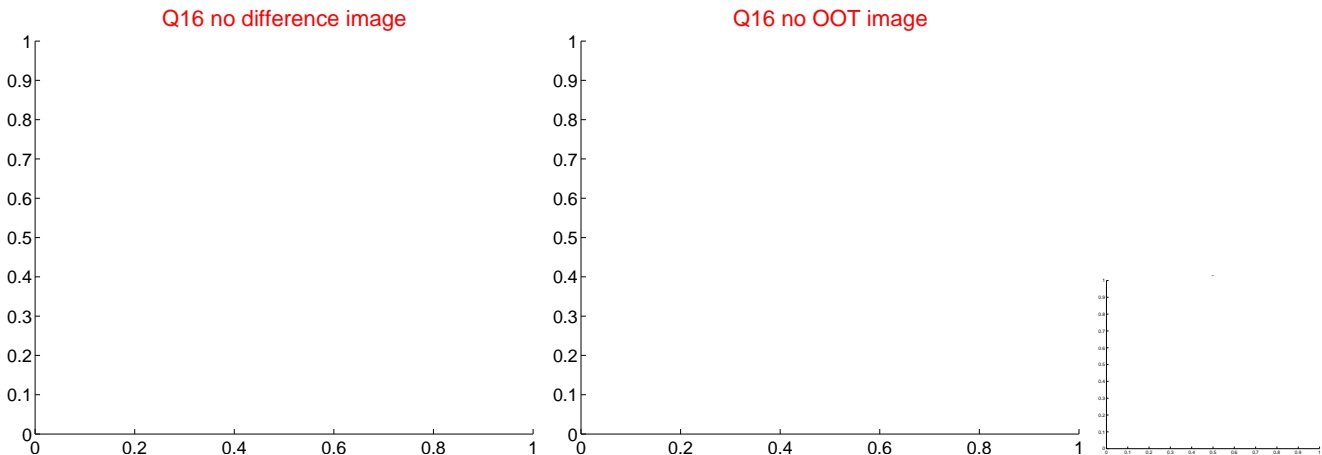
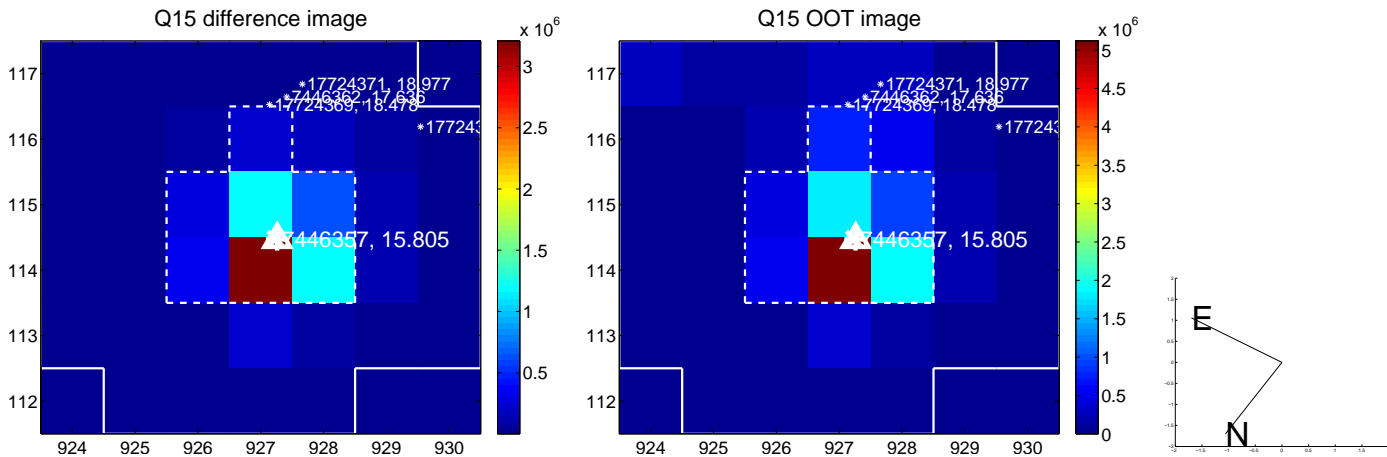
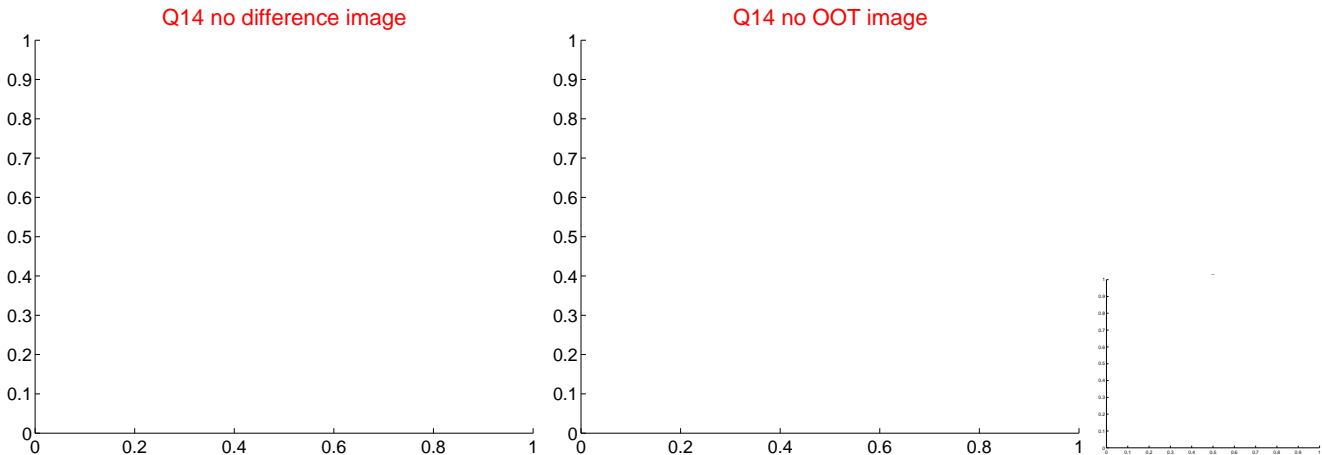
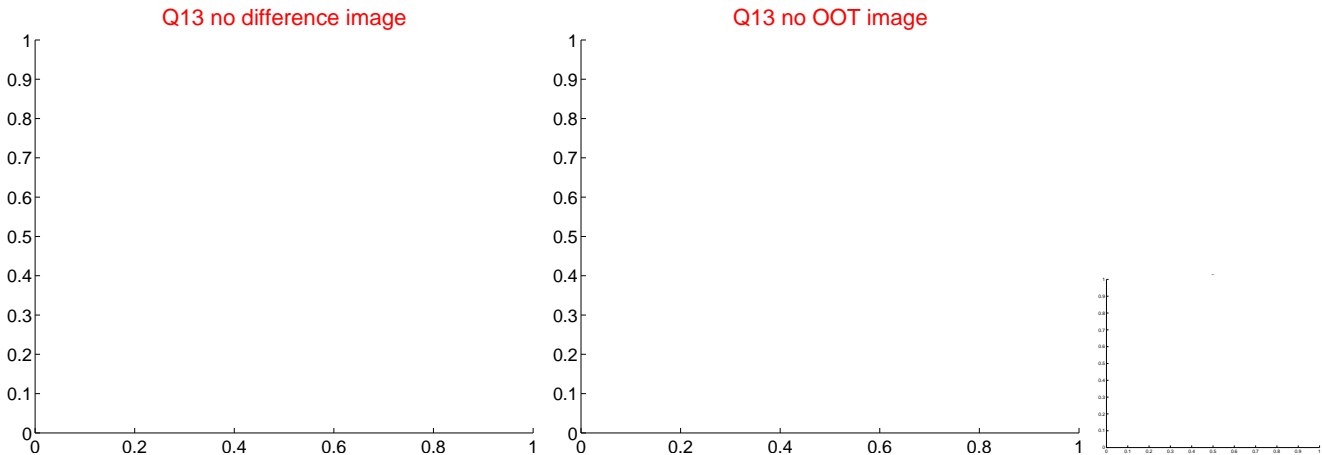
Q12 no difference image



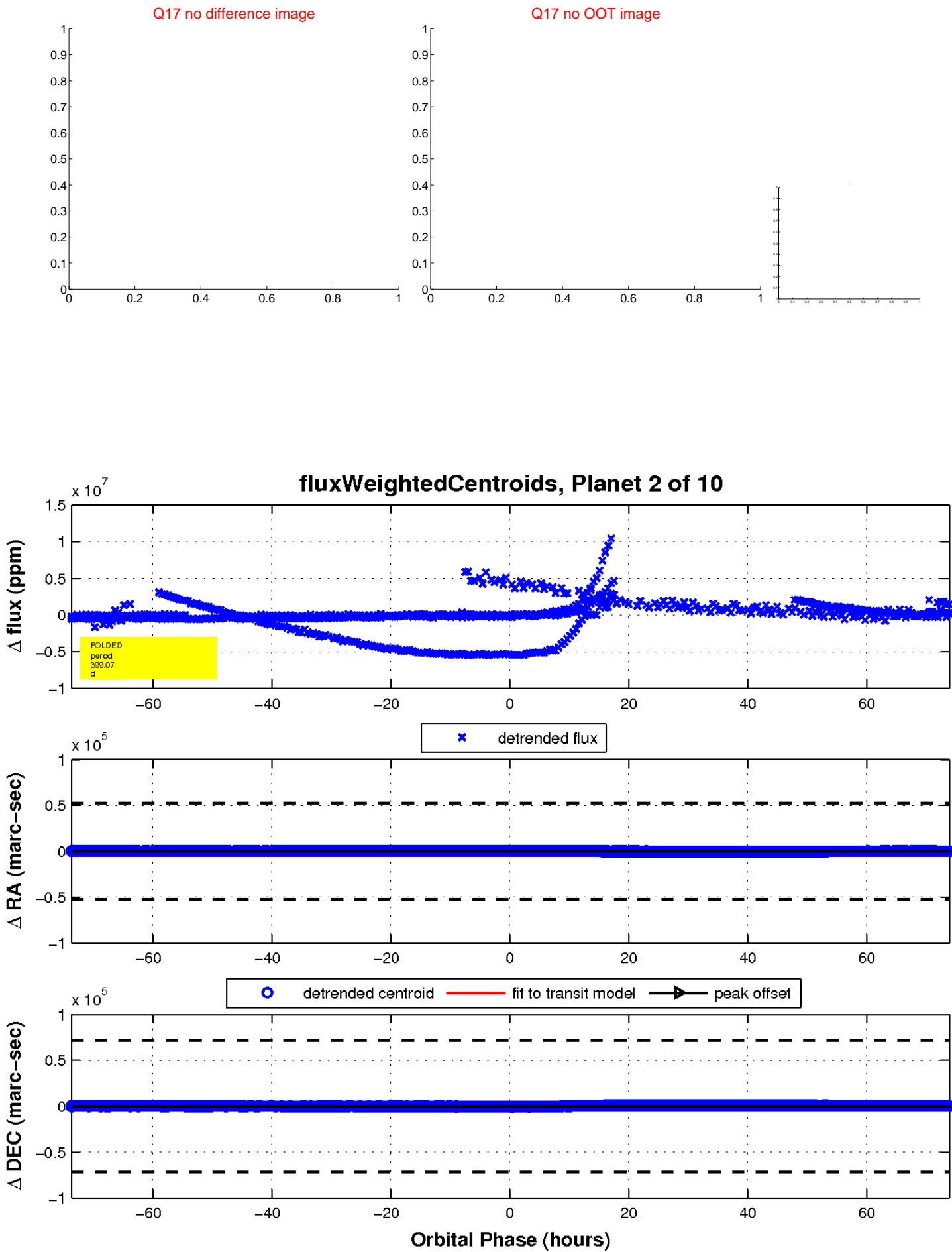
Q12 no OOT image



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

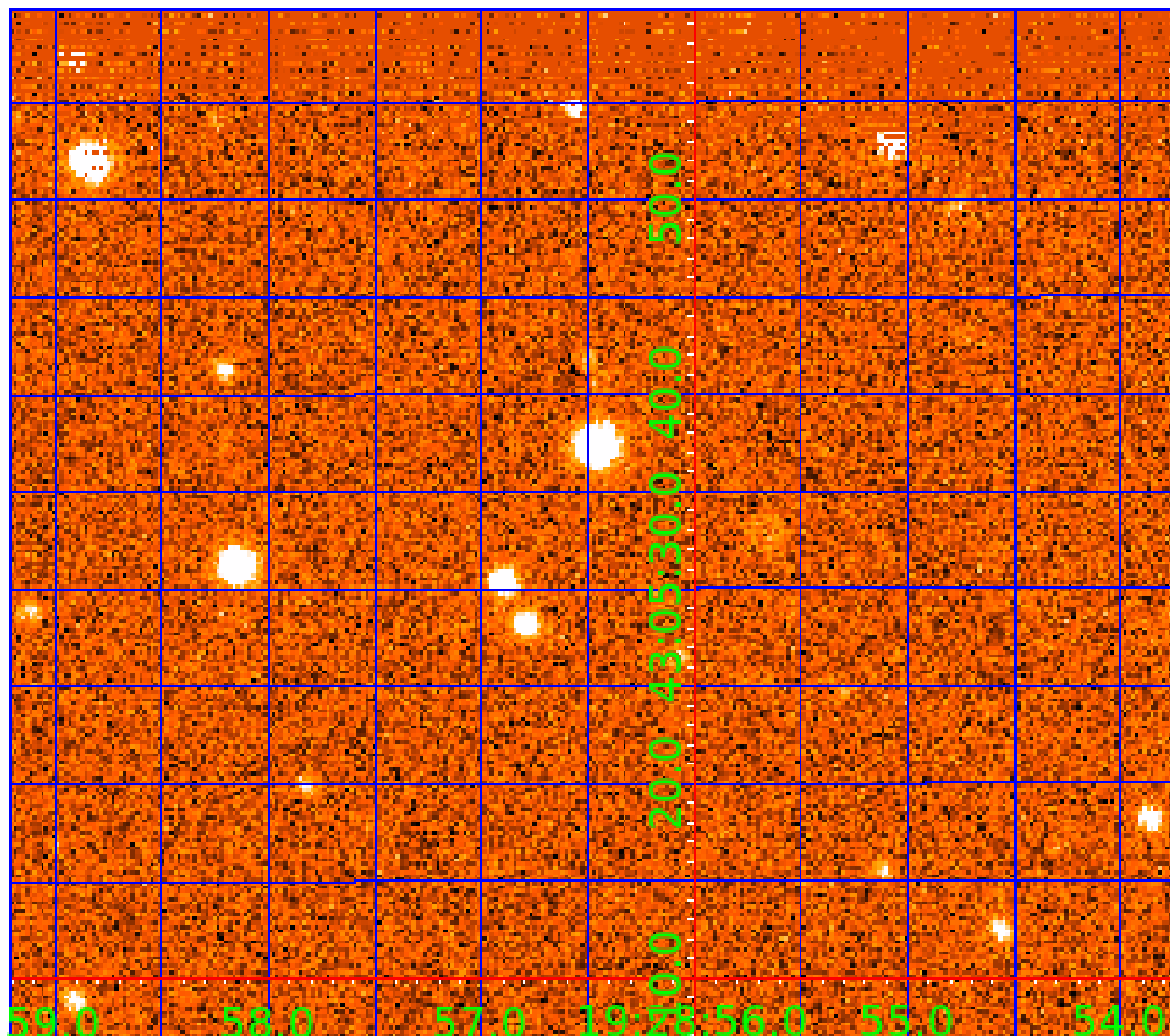


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
007446357-01	OBS	No	316.767858	437.415009	27390.2	7.500	58.5	-1.0	2.25	9296	38.15	23.89
007446357-02	OBS	No	399.067427	247.703027	17934.0	15.000	50.1	-1.0	2.25	9296	30.86	17.56
007446357-03	OBS	No	308.465022	360.053551	18752.3	10.500	50.8	-1.0	2.25	9296	31.55	24.75
007446357-04	OBS	No	565.634997	422.505322	11996.6	10.500	46.3	-1.0	2.25	9296	25.23	11.03
007446357-05	OBS	No	420.863224	203.147650	16636.7	12.000	45.0	-1.0	2.25	9296	29.72	16.36
007446357-06	OBS	No	471.933502	554.601476	15123.7	10.500	39.4	-1.0	2.25	9296	28.34	14.04
007446357-07	OBS	No	360.931593	213.027276	11585.2	12.500	39.3	-1.0	2.25	9296	24.79	20.08
007446357-08	OBS	No	535.626172	469.039656	494168.2	17.031	34.5	5.8	2.25	9296	165.06	11.86
007446357-09	OBS	No	511.261294	432.483710	9672.8	12.500	33.6	-1.0	2.25	9296	22.65	12.62
007446357-10	OBS	No	442.964688	271.184425	703902.5	24.810	32.9	4.2	2.25	9296	199.42	15.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007446357-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007446357-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS
007446357-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
007446357-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

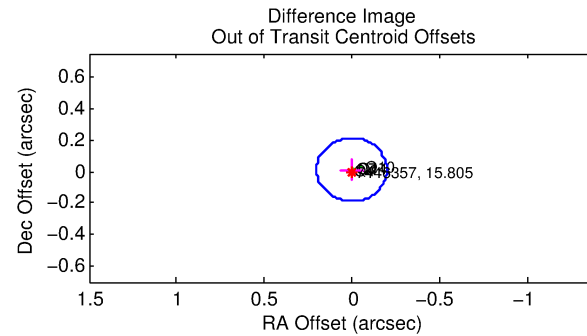
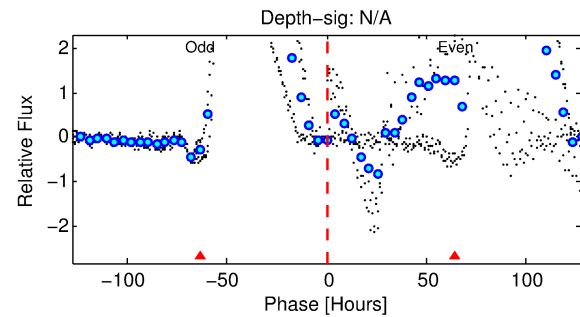
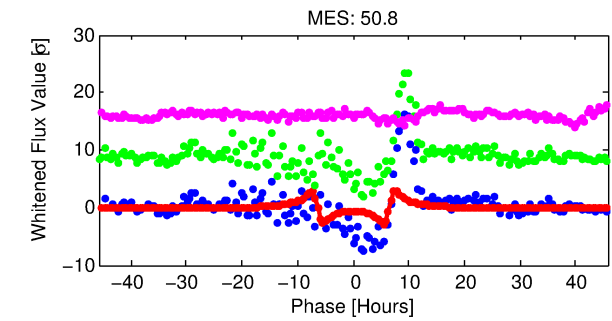
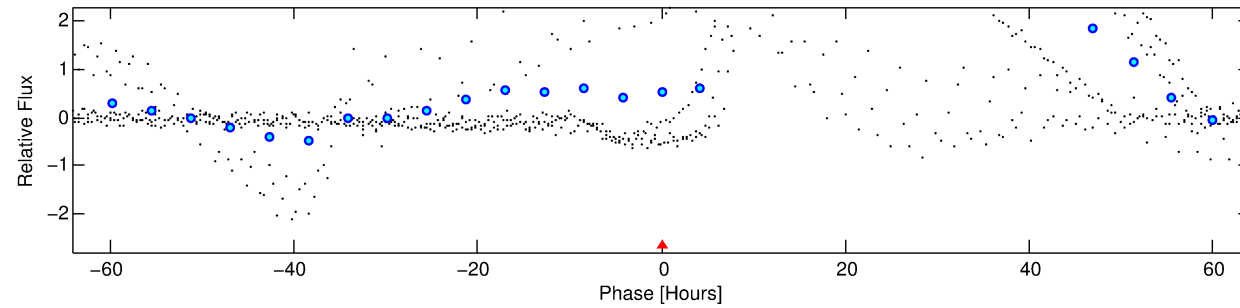
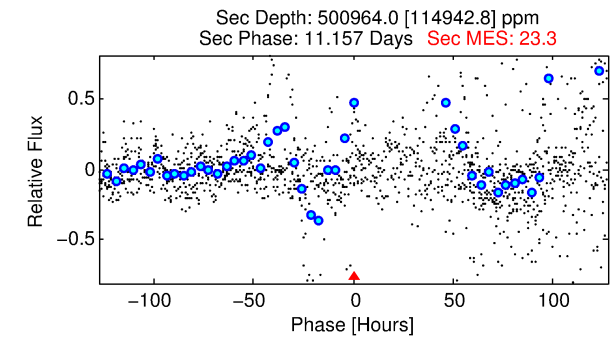
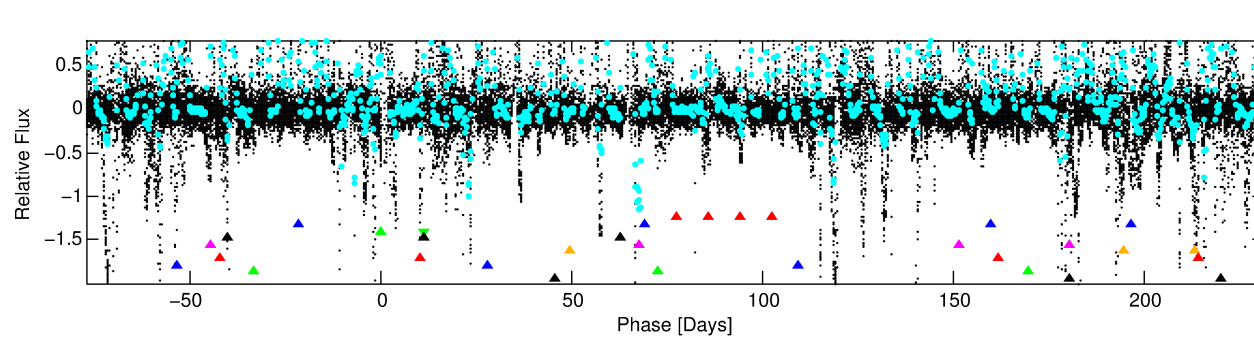
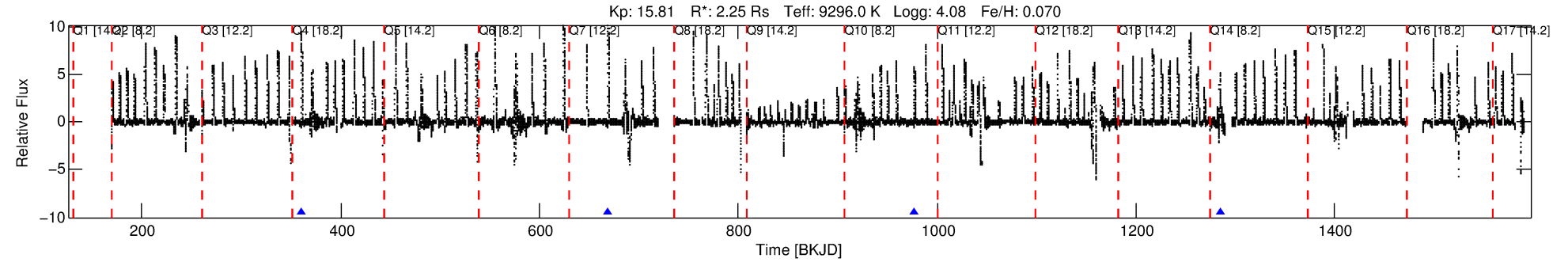
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007446357-03

No Significant Match Found

DV One-Page Summary

KIC: 7446357 Candidate: 3 of 10 Period: 308.465 d



TPS TCE Results:

Period = 308.46502 d
Epoch = 360.0536 BKJD

DV fit results are unavailable

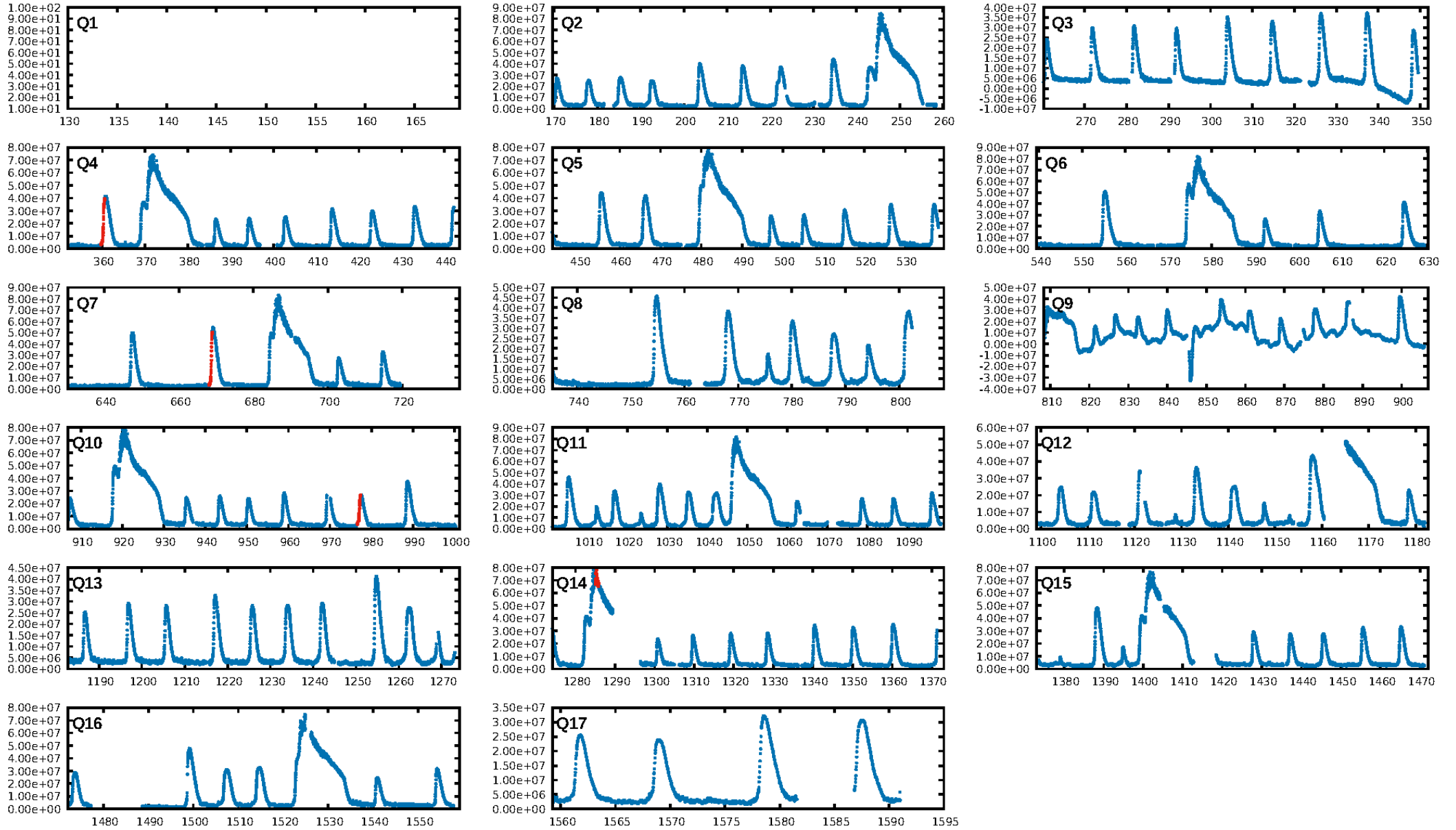
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [15.44σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.048
Centroid-sig: 28.8%
Centroid-so: 0.996 arcsec [7.52σ]
OotOffset-rm: 0.013 arcsec [0.20σ]
KicOffset-rm: 0.106 arcsec [1.21σ]
OotOffset-st: 2/1/1/0 [4]
KicOffset-st: 2/1/1/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

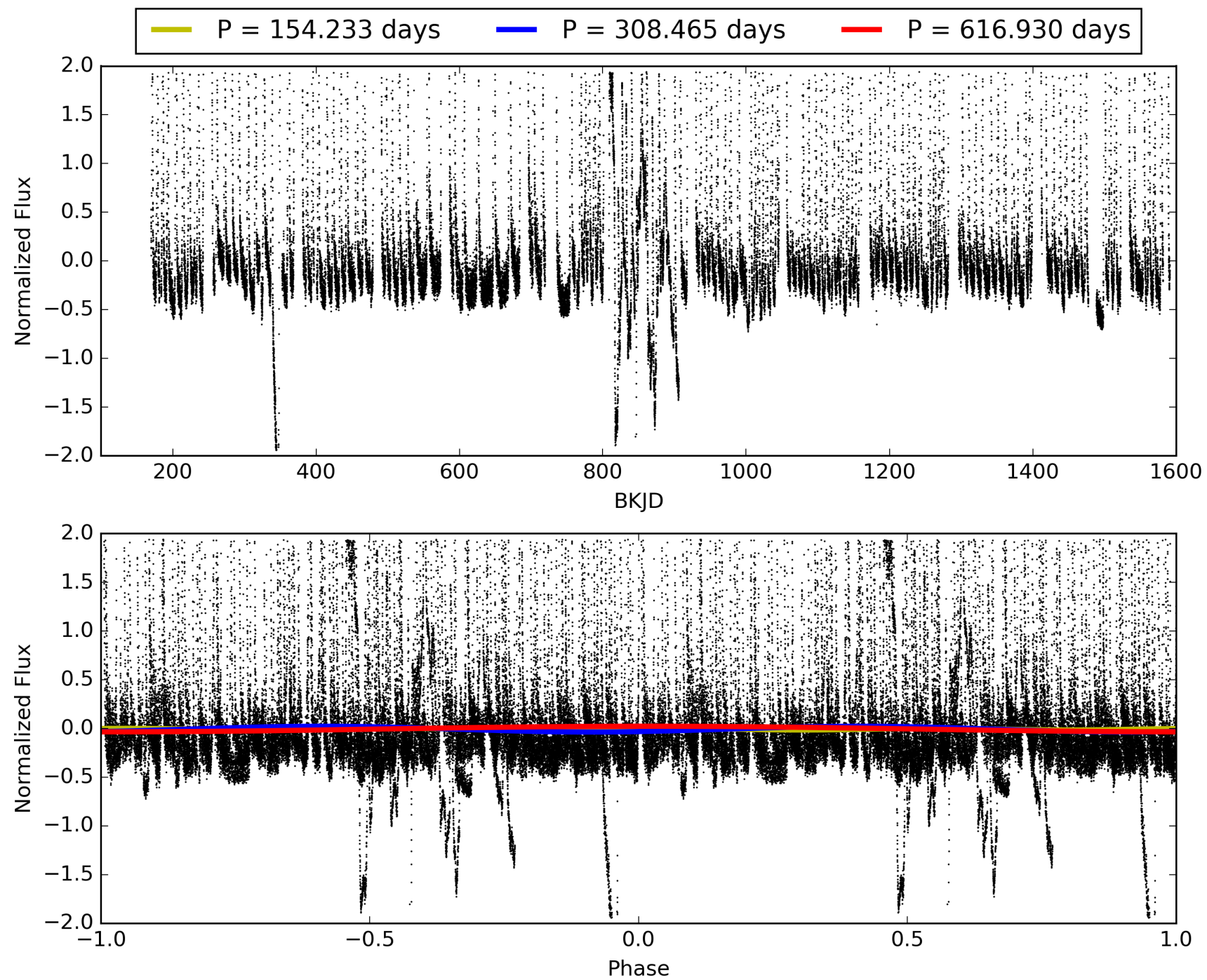
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:30:47 Z

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

TCE 007446357-03, PDC Light Curves

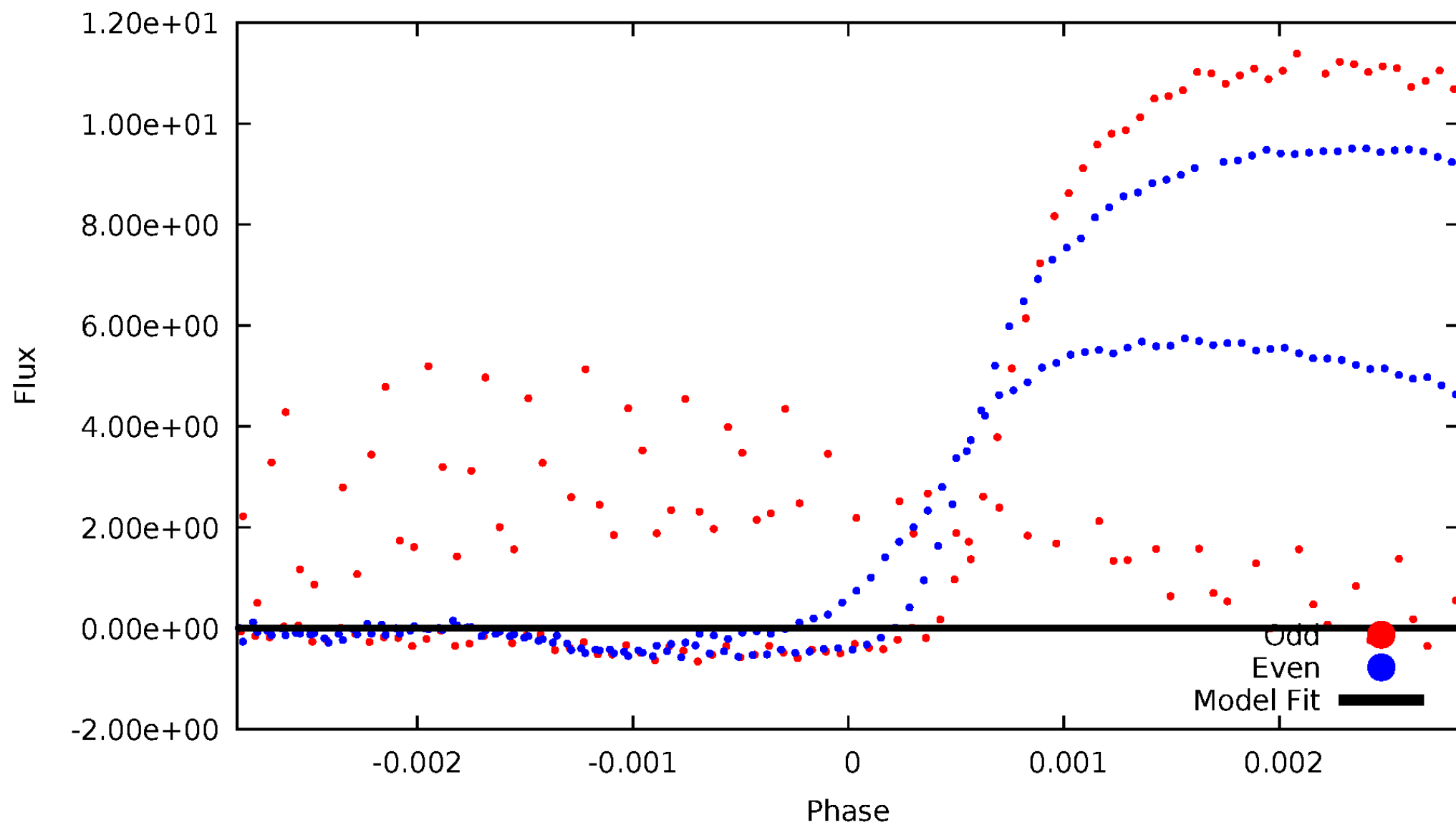


TCE 007446357-03



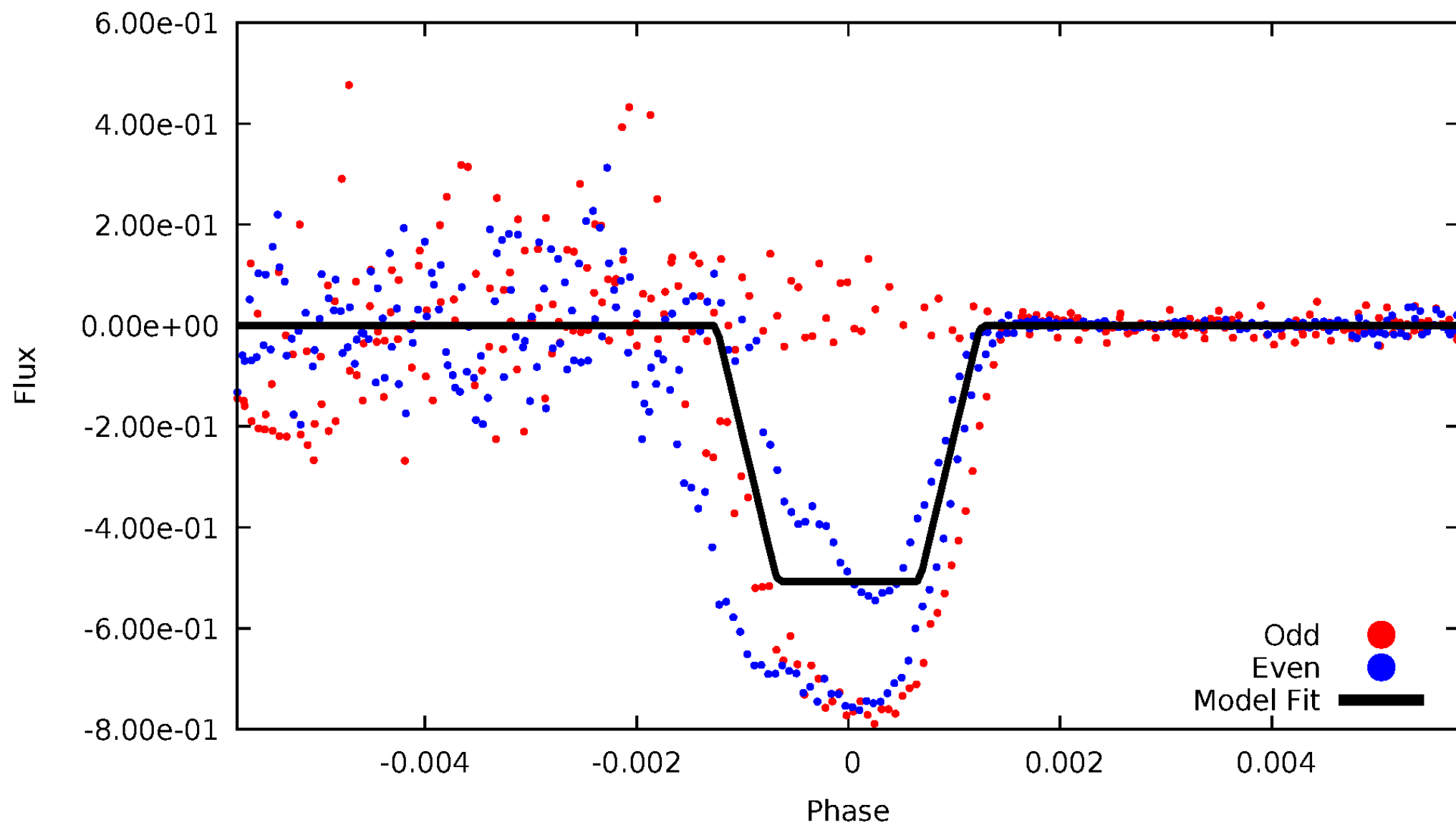
DV Odd/Even

TCE 007446357-03



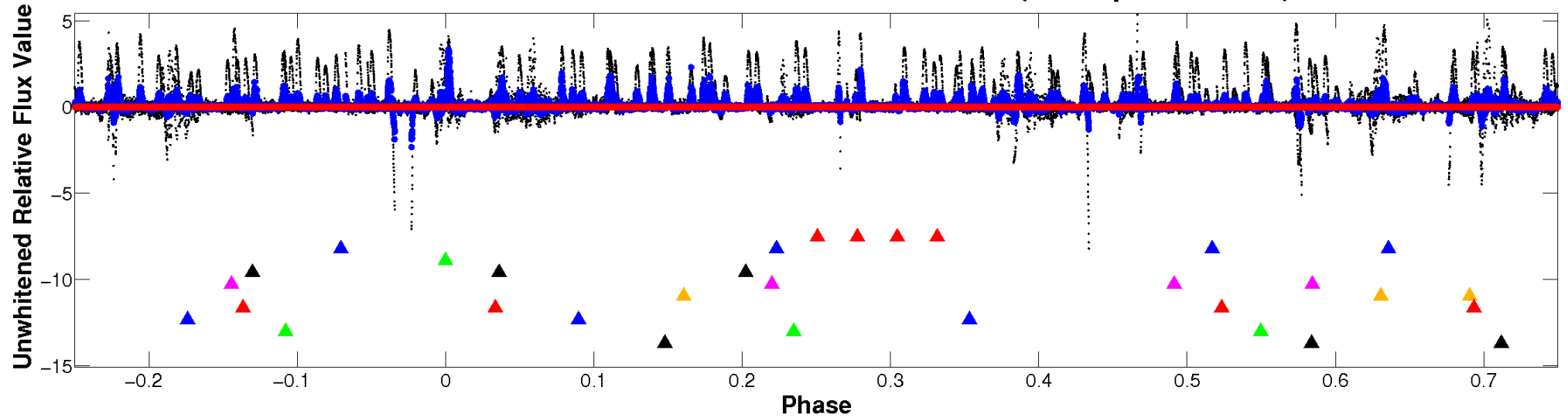
ALT Odd/Even

TCE 007446357-03



Non-Whitened Vs. Whitened Light Curve

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

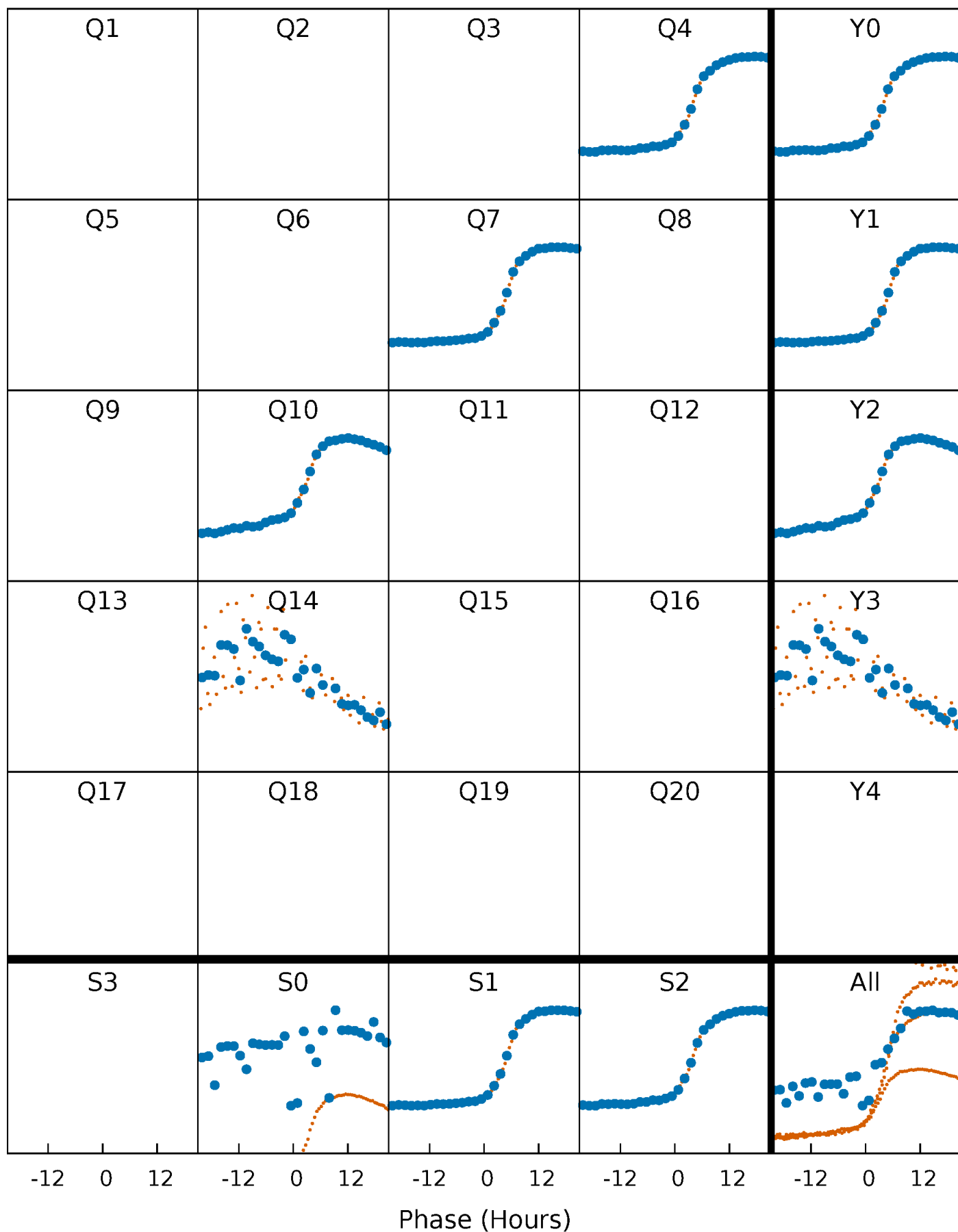


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



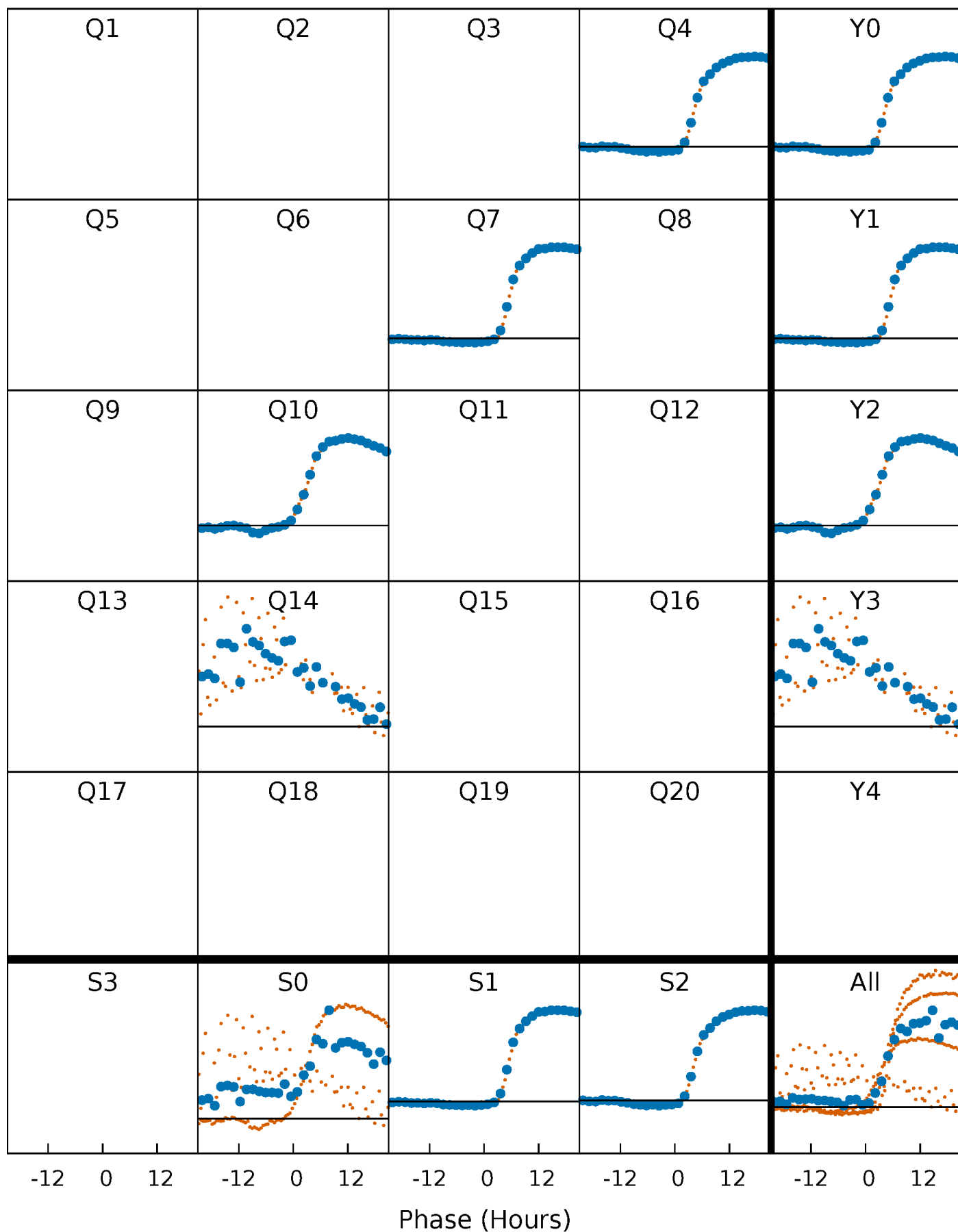
PDC Quarter-Phased Transit Curves

TCE 007446357-03 $P=308.465022$ Days $T_0=360.053551$ (BKJD)



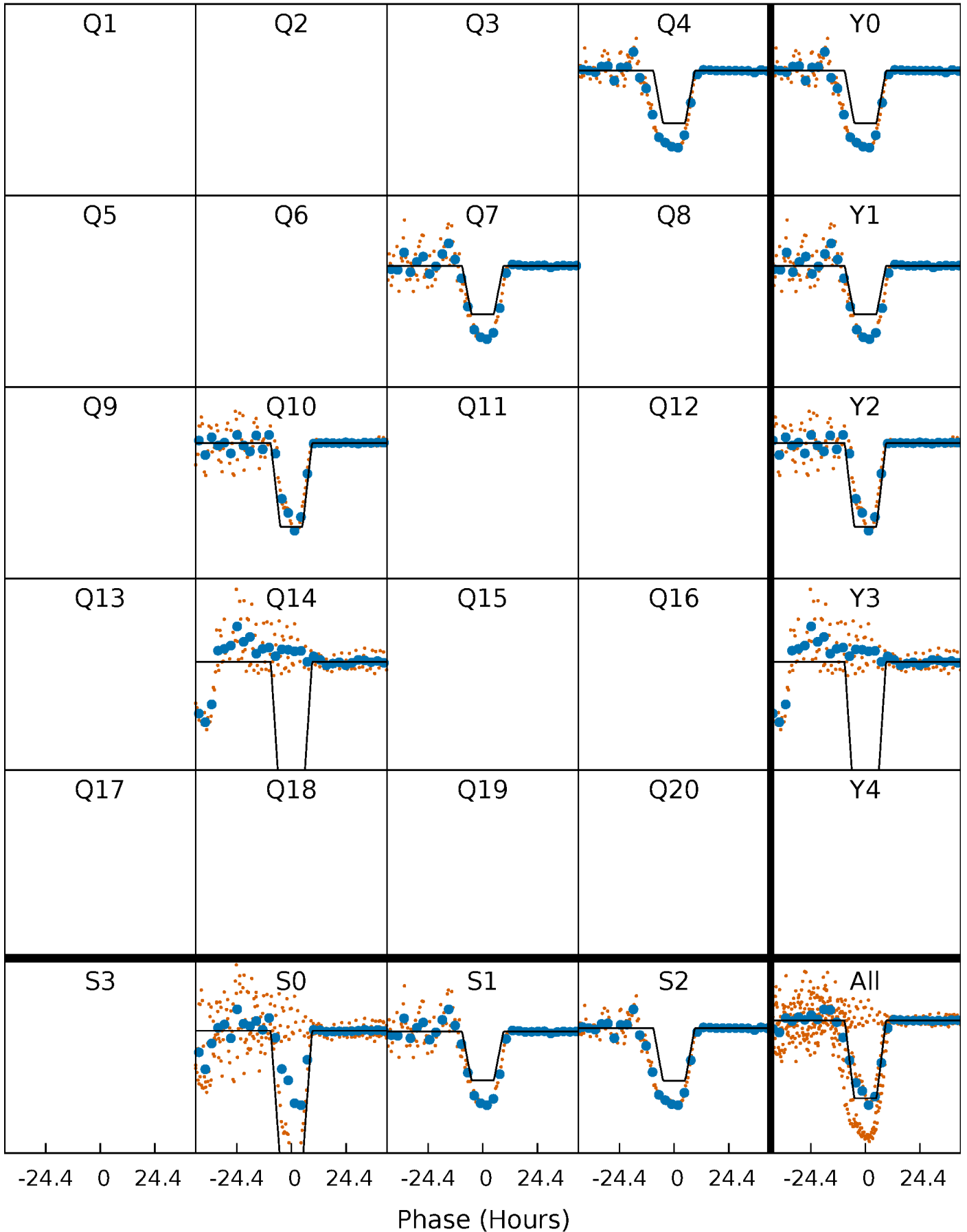
DV Quarter-Phased Transit Curves

TCE 007446357-03 $P=308.465022$ Days $T_0=360.053551$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

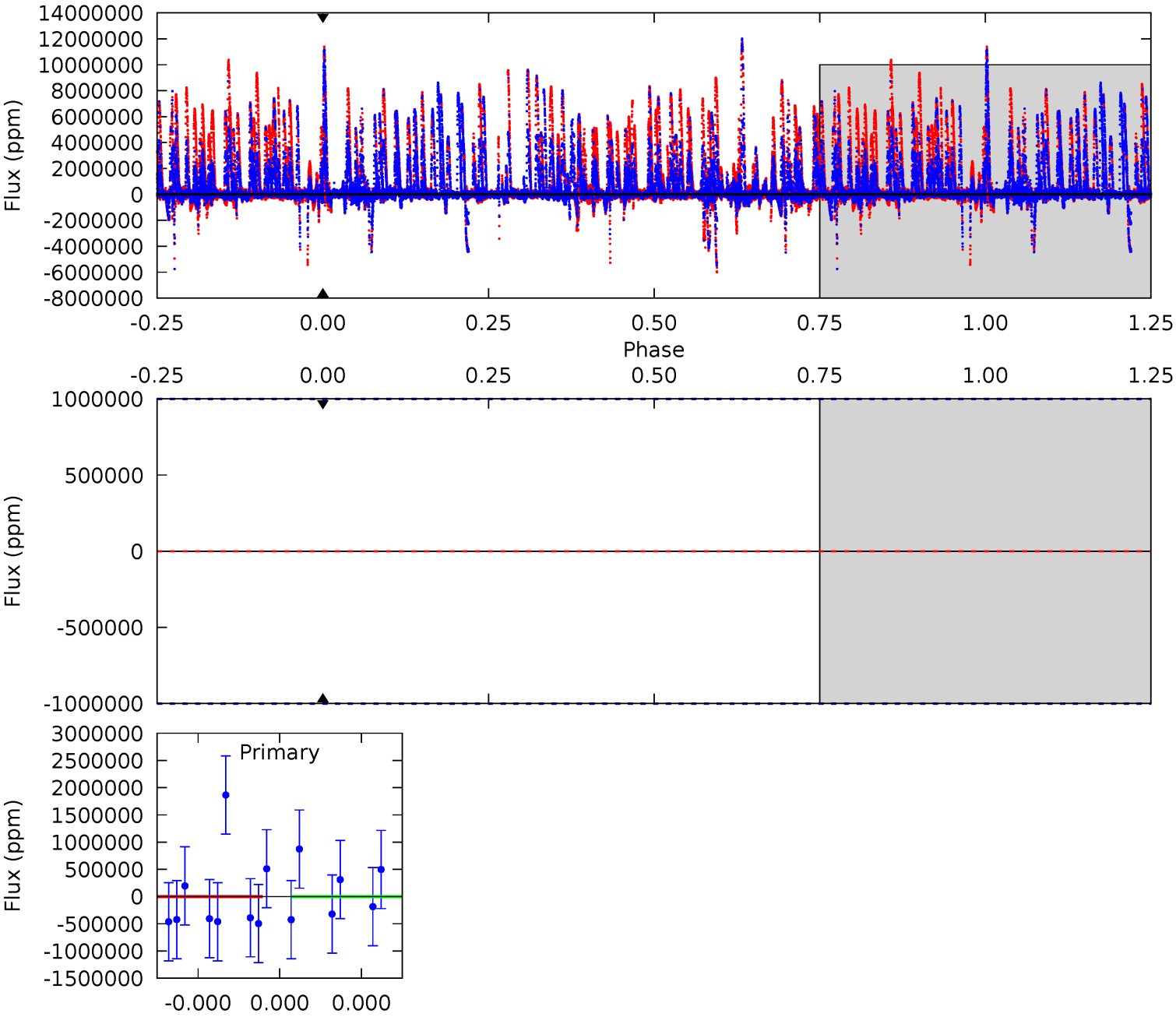
TCE 007446357-03 P=308.465022 Days $T_0=359.904631$ (BKJD)



DV Model-Shift Uniqueness Test

007446357-03, P = 308.465022 Days, E = 51.588529 Days

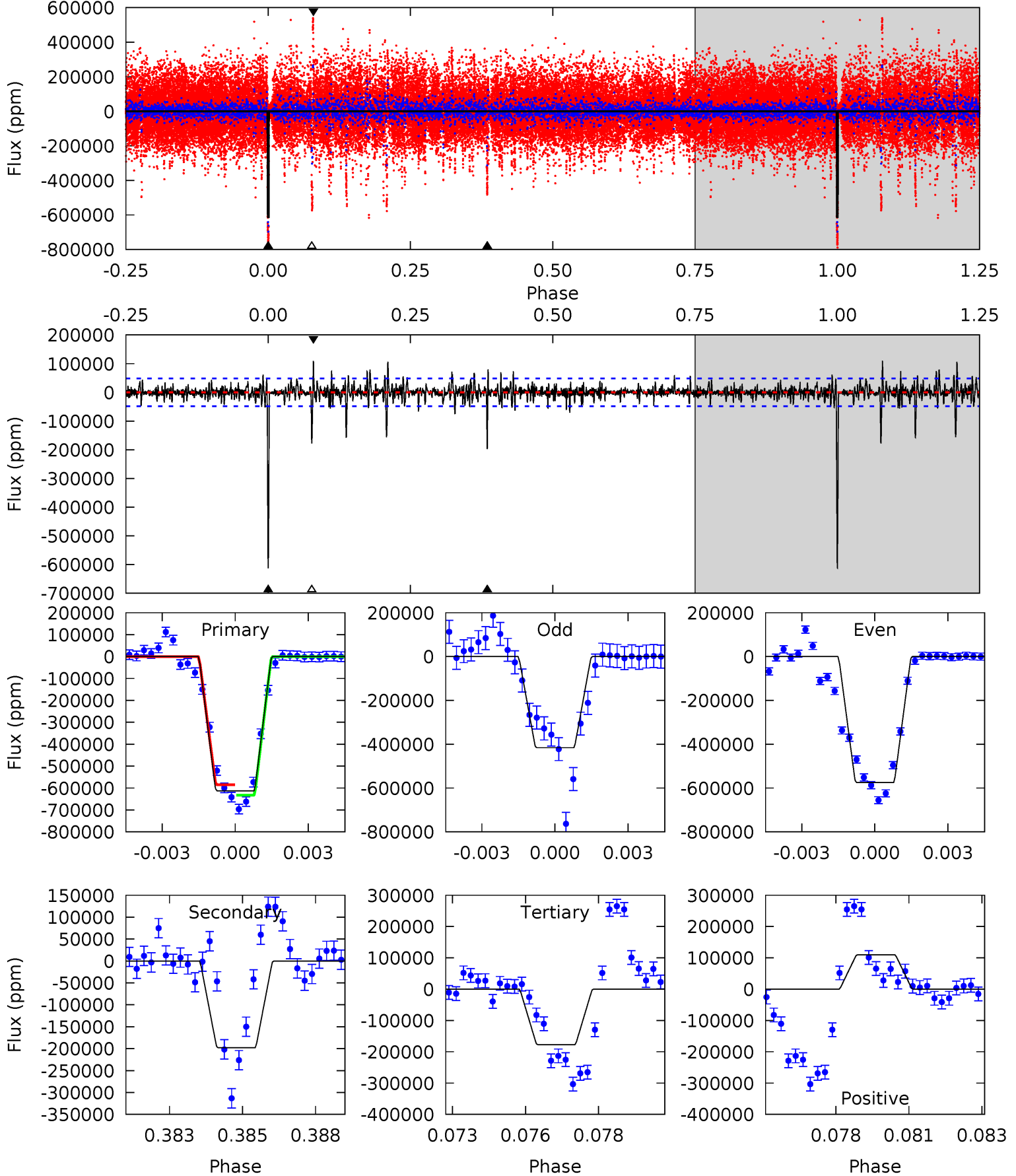
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007446357-03, P = 308.465022 Days, E = 51.439609 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
67.0	21.7	19.4	12.0	5.28	3.02	2.05	47.6	55.0	2.26	9.65	7.94	0.80	0.15	0



Stellar Parameters For KIC 007446357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9296^{+245}_{-449}	$4.085^{+0.170}_{-0.170}$	$0.070^{+0.150}_{-0.700}$	$2.253^{+0.774}_{-0.703}$	$2.251^{+0.399}_{-0.599}$	$0.277^{+0.285}_{-0.140}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+34%/-31%	+18%/-27%	+103%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007446357-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$34.67^{+24.43}_{-20.37}$	792^{+65}_{-57}	6516^{+19703}_{-26453}	$3947^{+111091}_{-76454}$
Alt.	-198070 ± 9147	$175.24^{+37.55}_{-34.81}$	787^{+66}_{-58}	7299^{+771}_{-544}	6036^{+3054}_{-1915}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

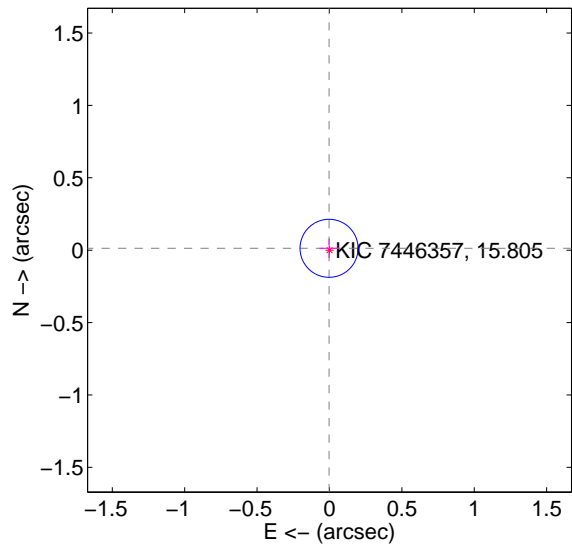
Supplemental centroid analysis for 007446357-03. Kepler magnitude: 15.80. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

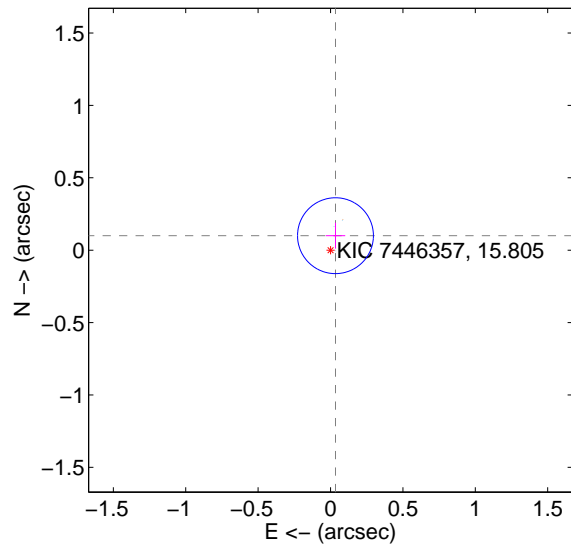
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.013 ± 0.067	0.20	0.003 ± 0.067	0.013 ± 0.067
PRF-fit source offset from KIC position	0.106 ± 0.087	1.21	-0.034 ± 0.067	0.100 ± 0.089
photometric centroid source offset	1.00 ± 0.13	7.52	0.40 ± 0.06	-0.91 ± 0.14

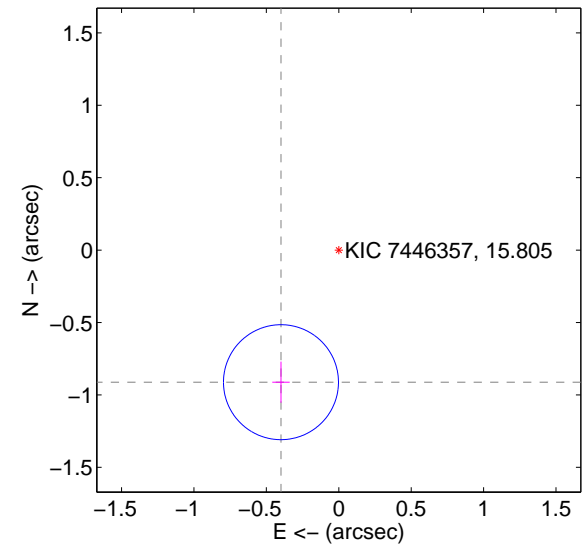
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

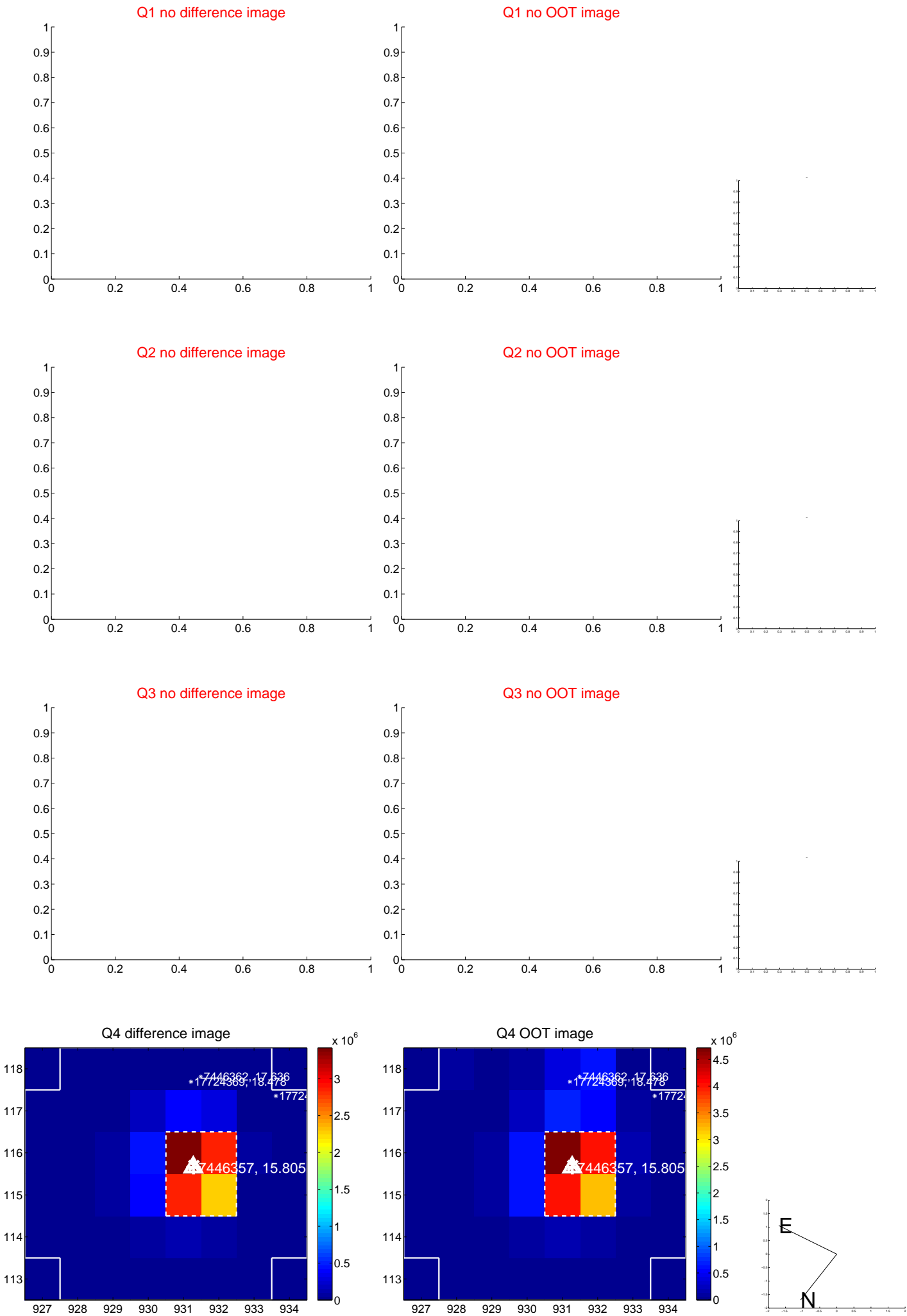


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



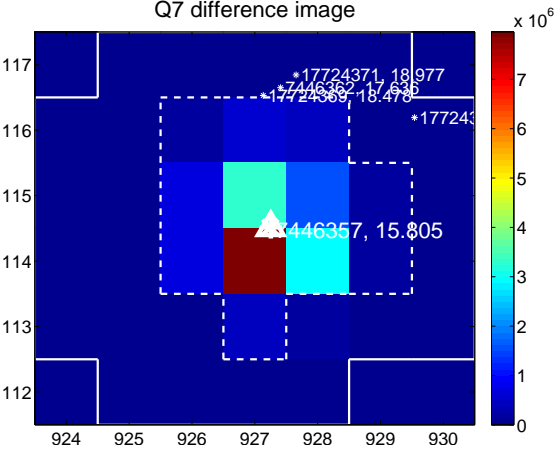
Q6 no difference image



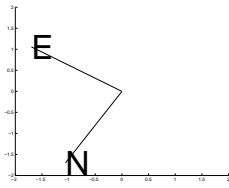
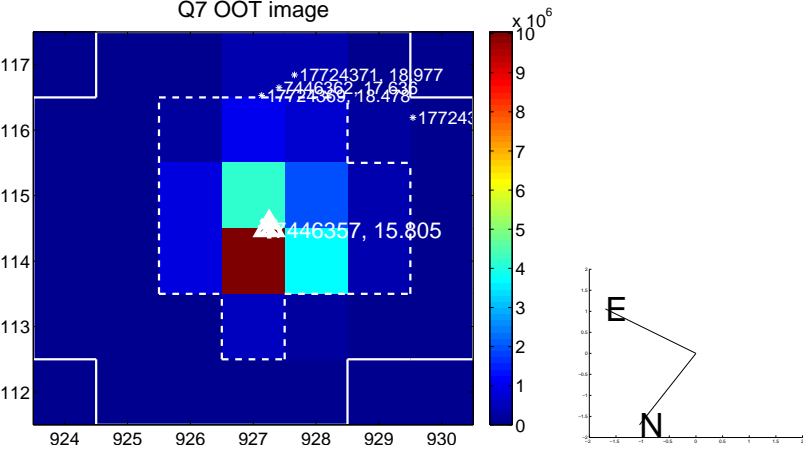
Q6 no OOT image



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.

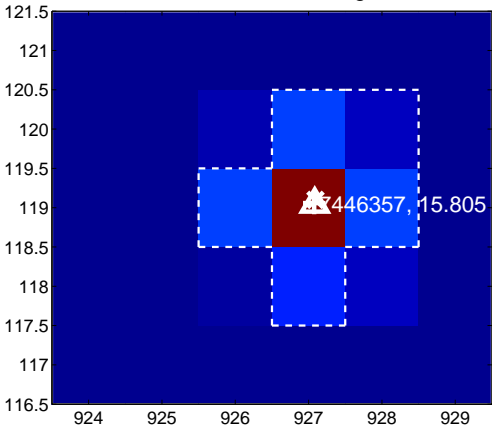
Q9 no difference image



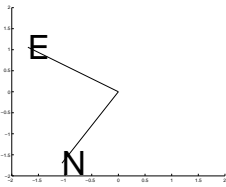
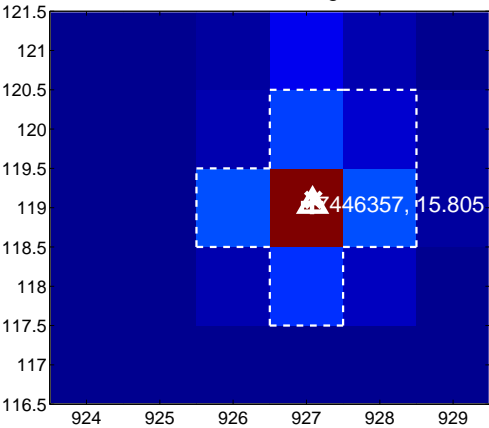
Q9 no OOT image



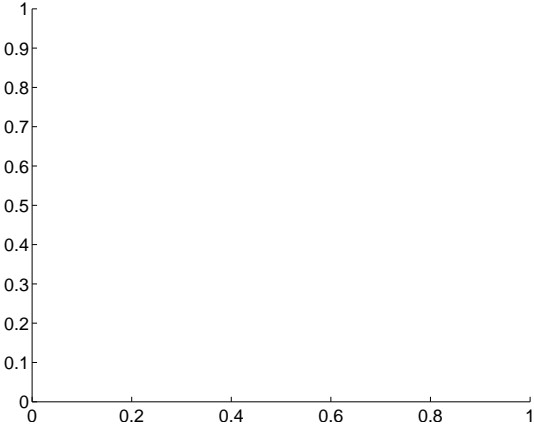
Q10 difference image



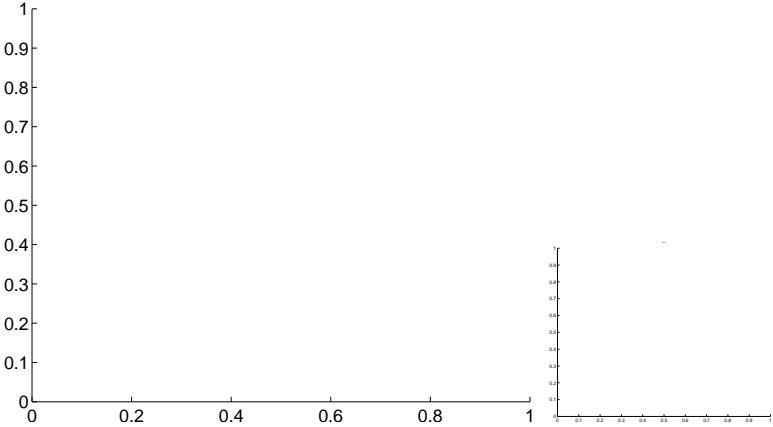
Q10 OOT image



Q11 no difference image



Q11 no OOT image



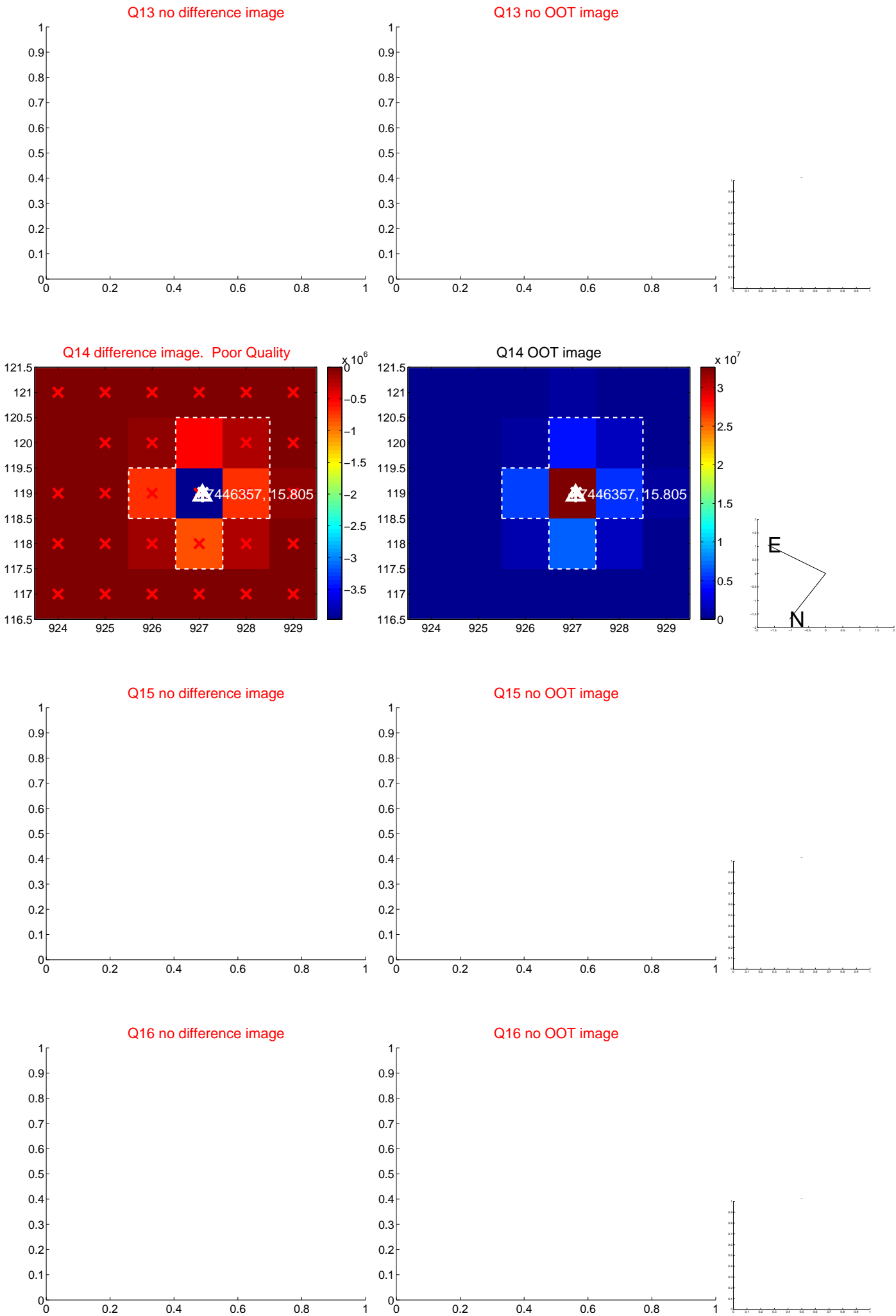
Q12 no difference image



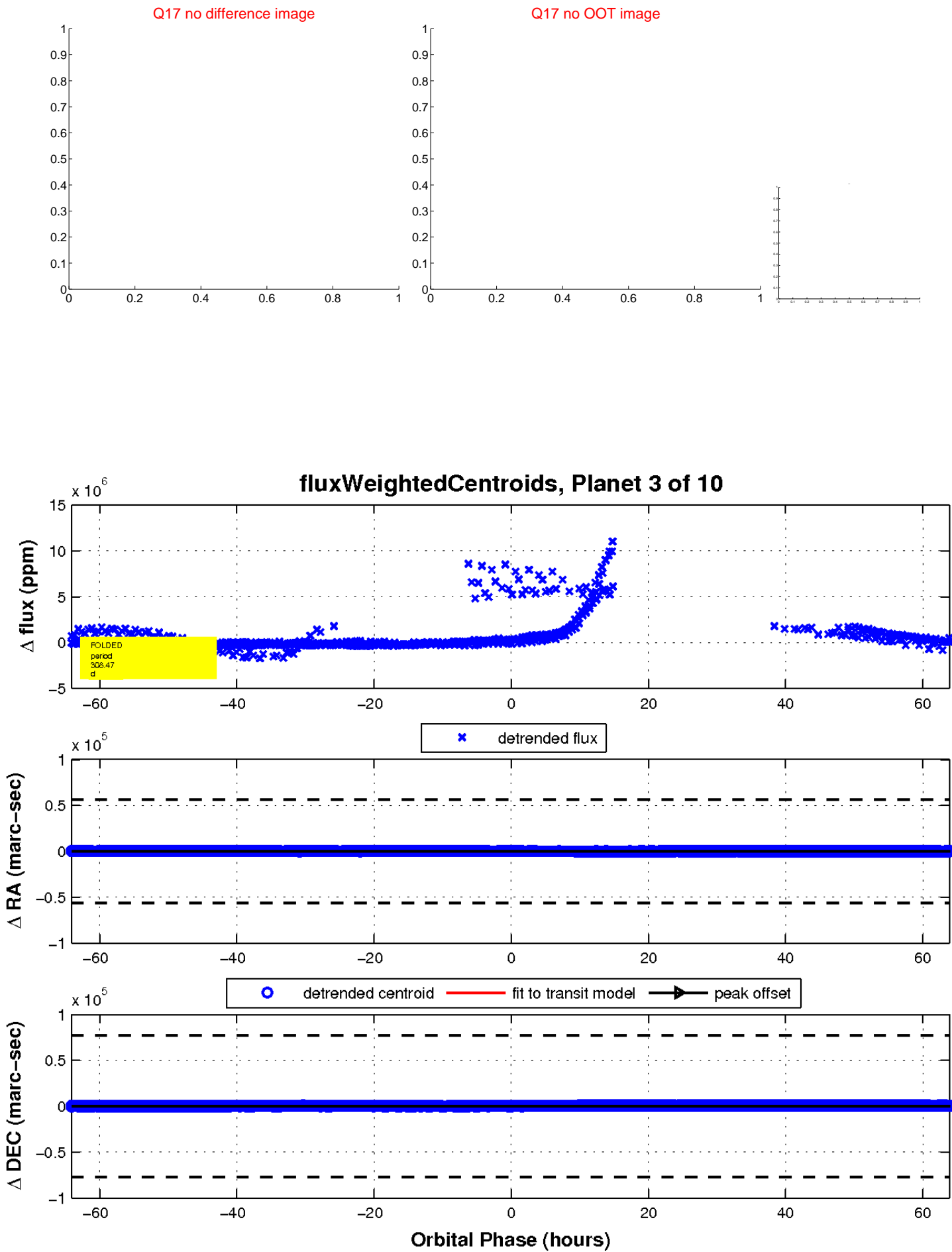
Q12 no OOT image



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

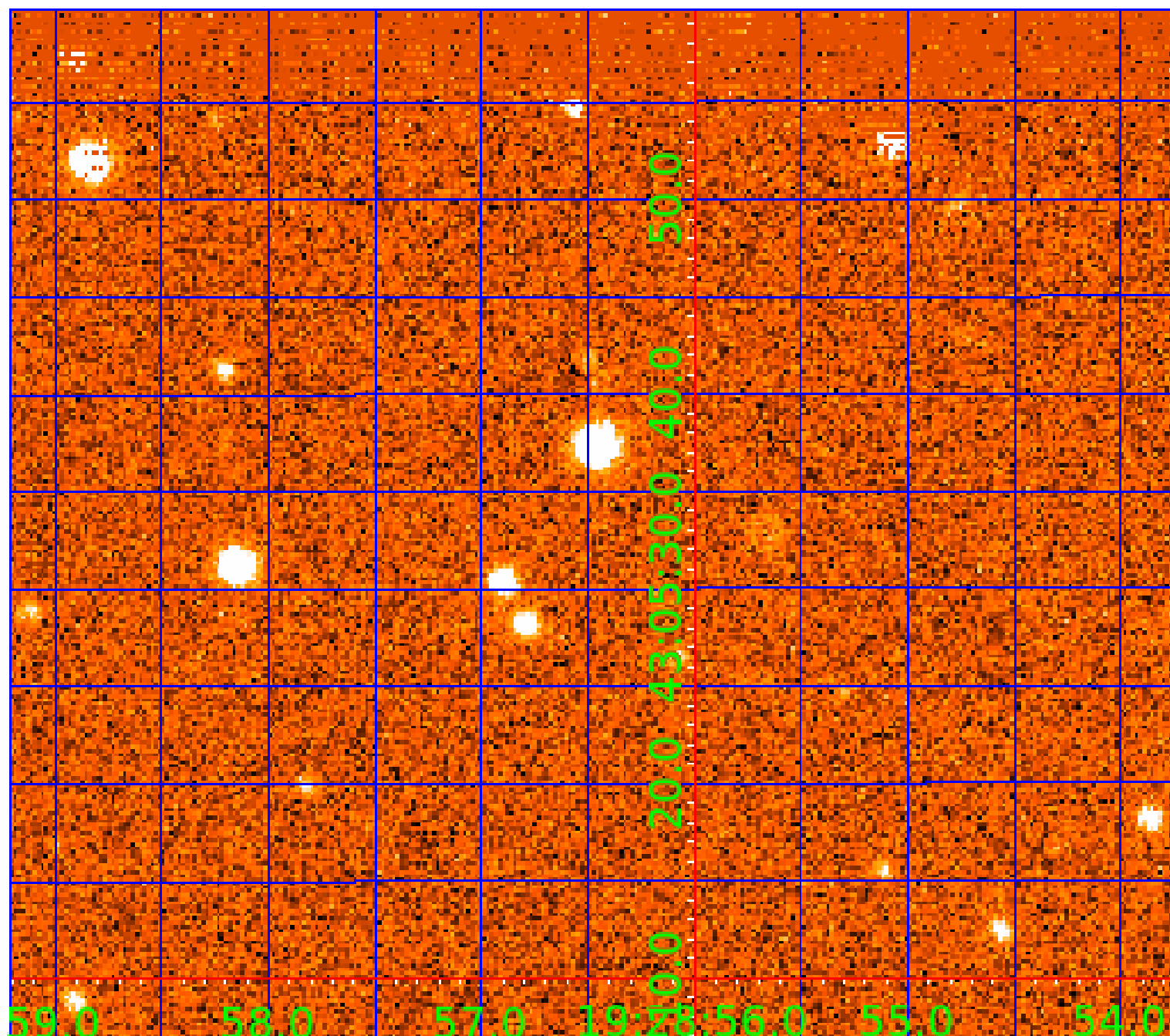


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
007446357-01	OBS	No	316.767858	437.415009	27390.2	7.500	58.5	-1.0	2.25	9296	38.15	23.89
007446357-02	OBS	No	399.067427	247.703027	17934.0	15.000	50.1	-1.0	2.25	9296	30.86	17.56
007446357-03	OBS	No	308.465022	360.053551	18752.3	10.500	50.8	-1.0	2.25	9296	31.55	24.75
007446357-04	OBS	No	565.634997	422.505322	11996.6	10.500	46.3	-1.0	2.25	9296	25.23	11.03
007446357-05	OBS	No	420.863224	203.147650	16636.7	12.000	45.0	-1.0	2.25	9296	29.72	16.36
007446357-06	OBS	No	471.933502	554.601476	15123.7	10.500	39.4	-1.0	2.25	9296	28.34	14.04
007446357-07	OBS	No	360.931593	213.027276	11585.2	12.500	39.3	-1.0	2.25	9296	24.79	20.08
007446357-08	OBS	No	535.626172	469.039656	494168.2	17.031	34.5	5.8	2.25	9296	165.06	11.86
007446357-09	OBS	No	511.261294	432.483710	9672.8	12.500	33.6	-1.0	2.25	9296	22.65	12.62
007446357-10	OBS	No	442.964688	271.184425	703902.5	24.810	32.9	4.2	2.25	9296	199.42	15.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007446357-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007446357-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS
007446357-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
007446357-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

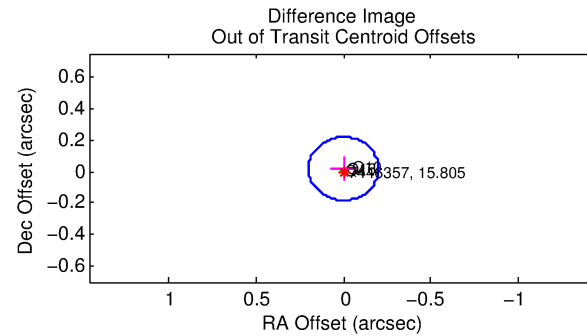
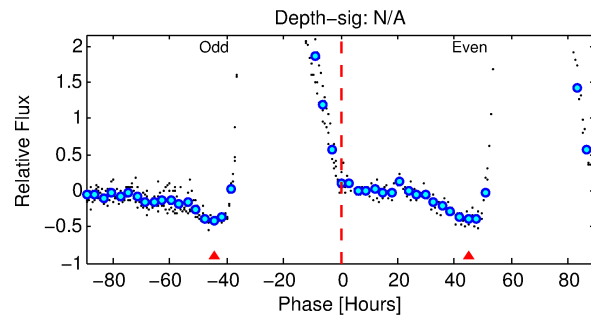
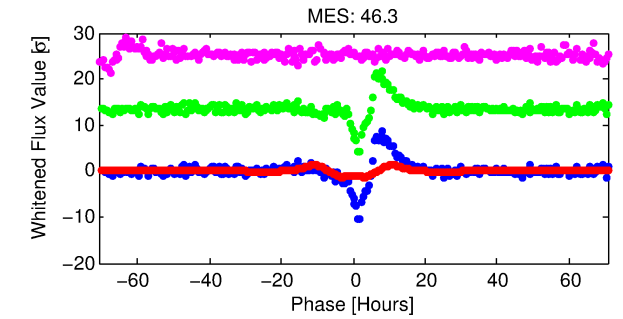
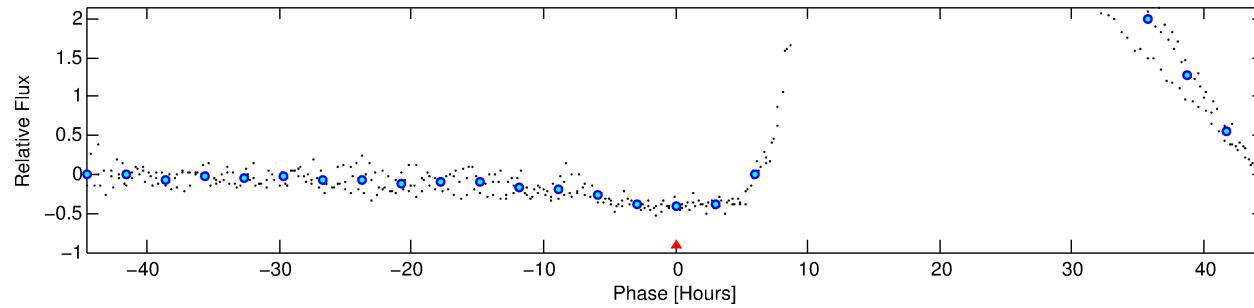
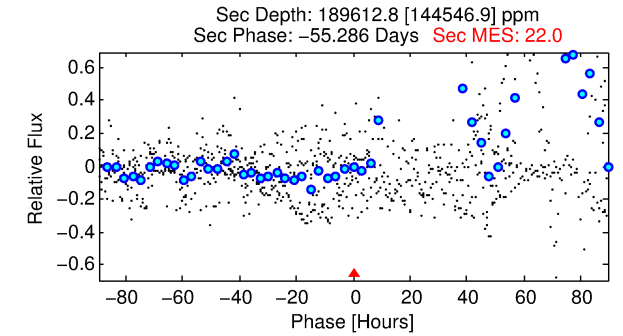
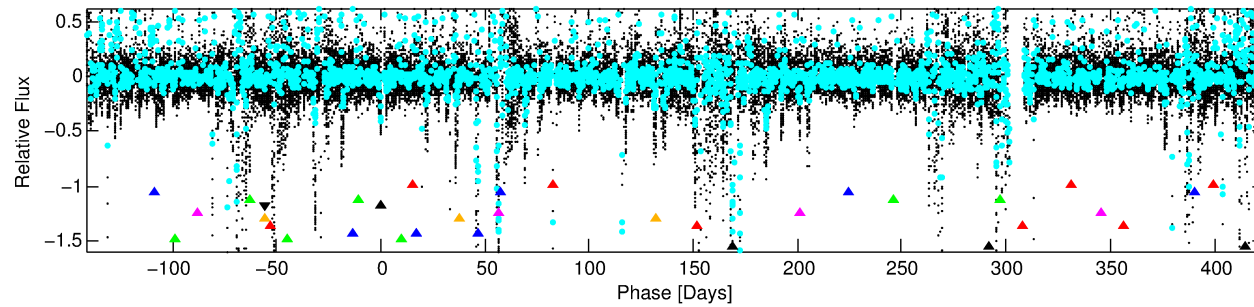
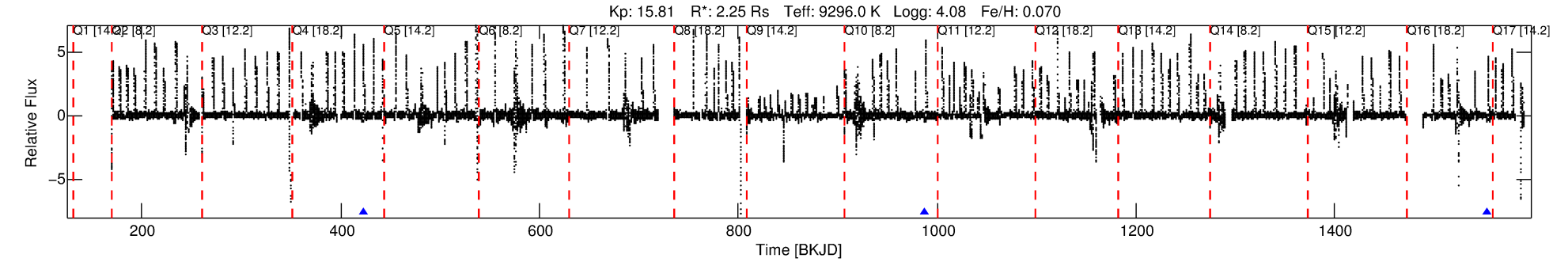
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007446357-04

No Significant Match Found

DV One-Page Summary

KIC: 7446357 Candidate: 4 of 10 Period: 565.635 d



TPS TCE Results:

Period = 565.63500 d
Epoch = 422.5053 BKJD

DV fit results are unavailable

DV Diagnostic Results:

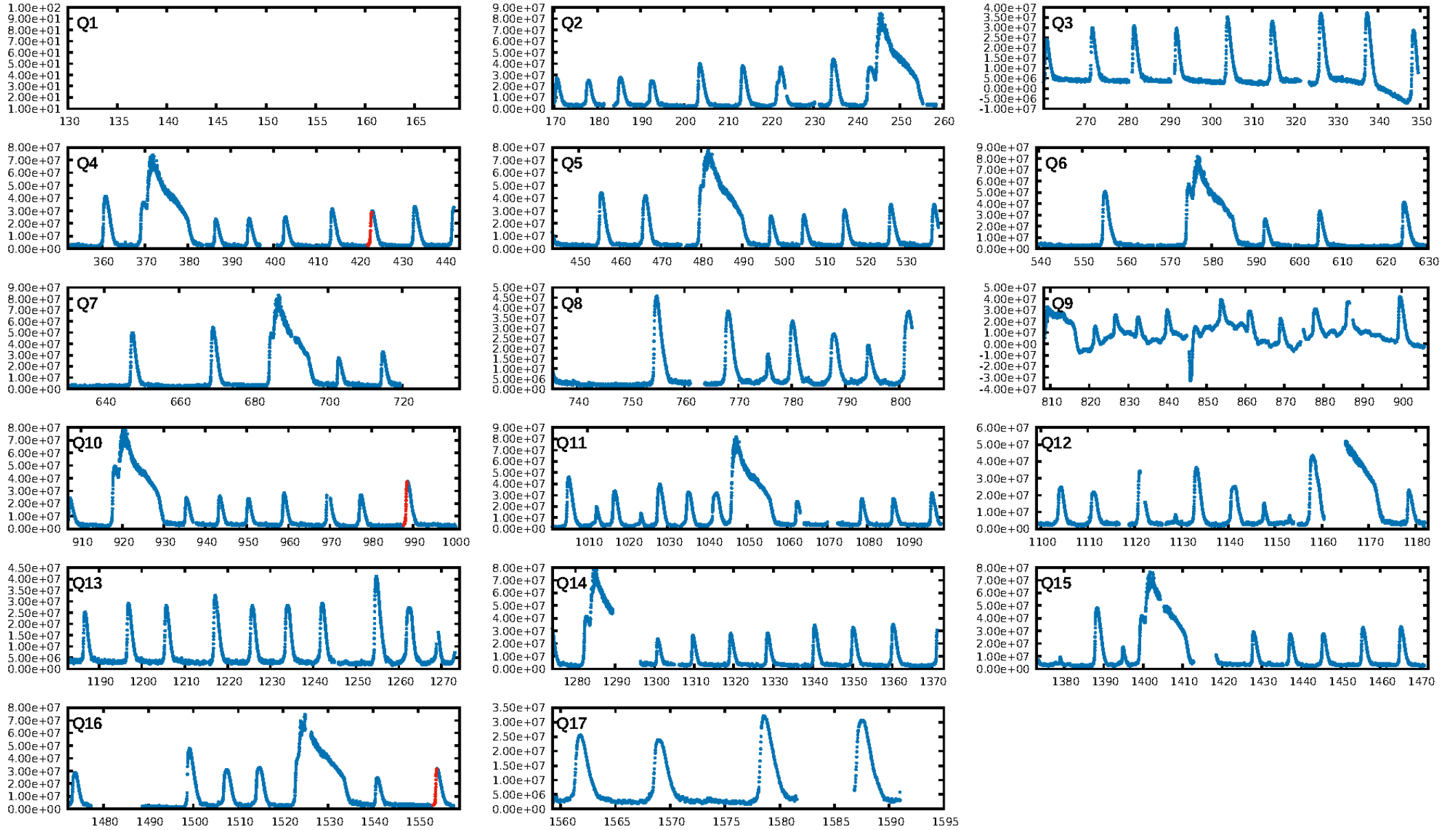
ShortPeriod-sig: 100.0% [36.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.186

Centroid-sig: 0.1%
Centroid-so: 0.863 arcsec [7.28σ]
OotOffset-rm: 0.019 arcsec [0.28σ]
KicOffset-rm: 0.192 arcsec [2.80σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

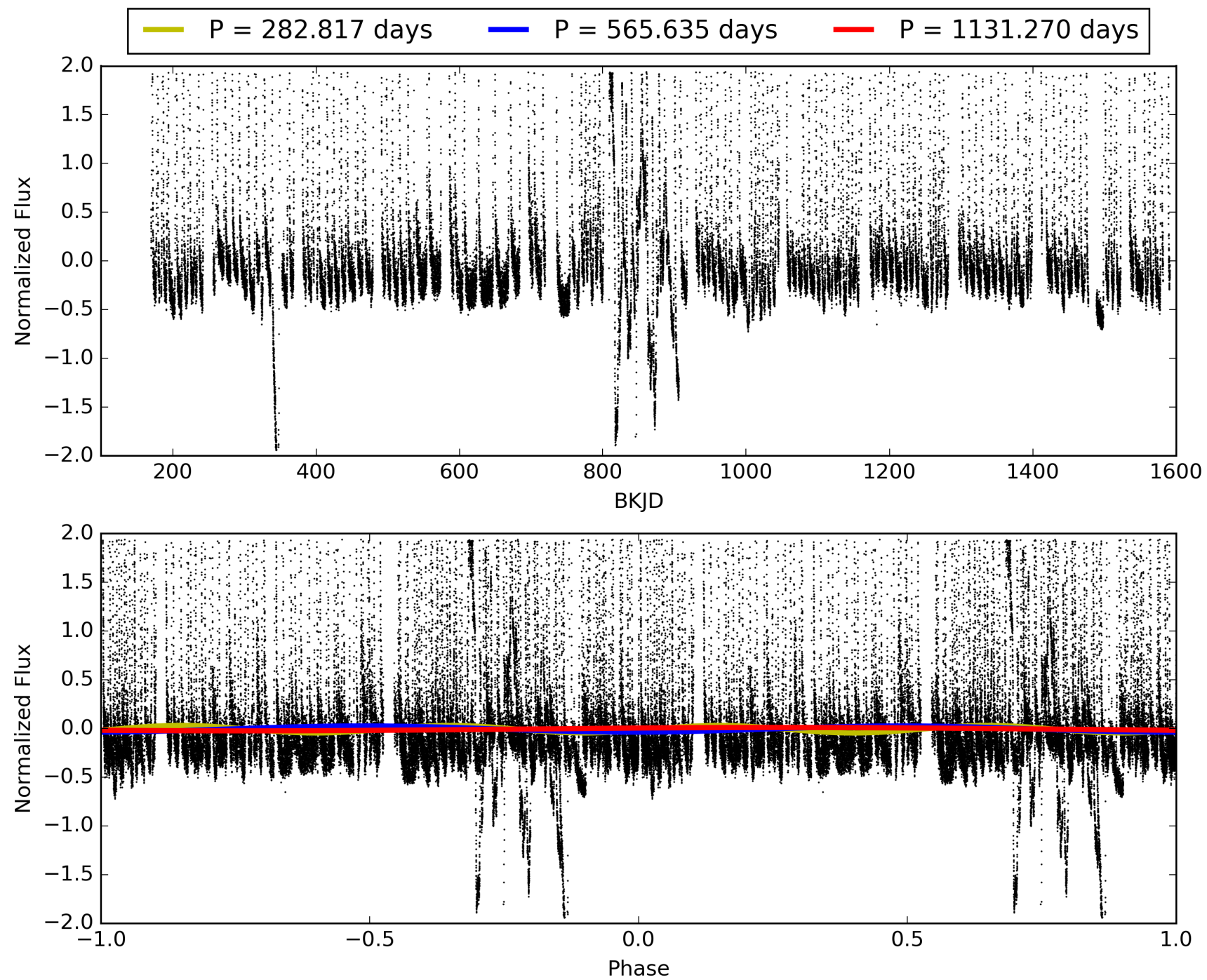
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:30:56 Z

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

TCE 007446357-04, PDC Light Curves

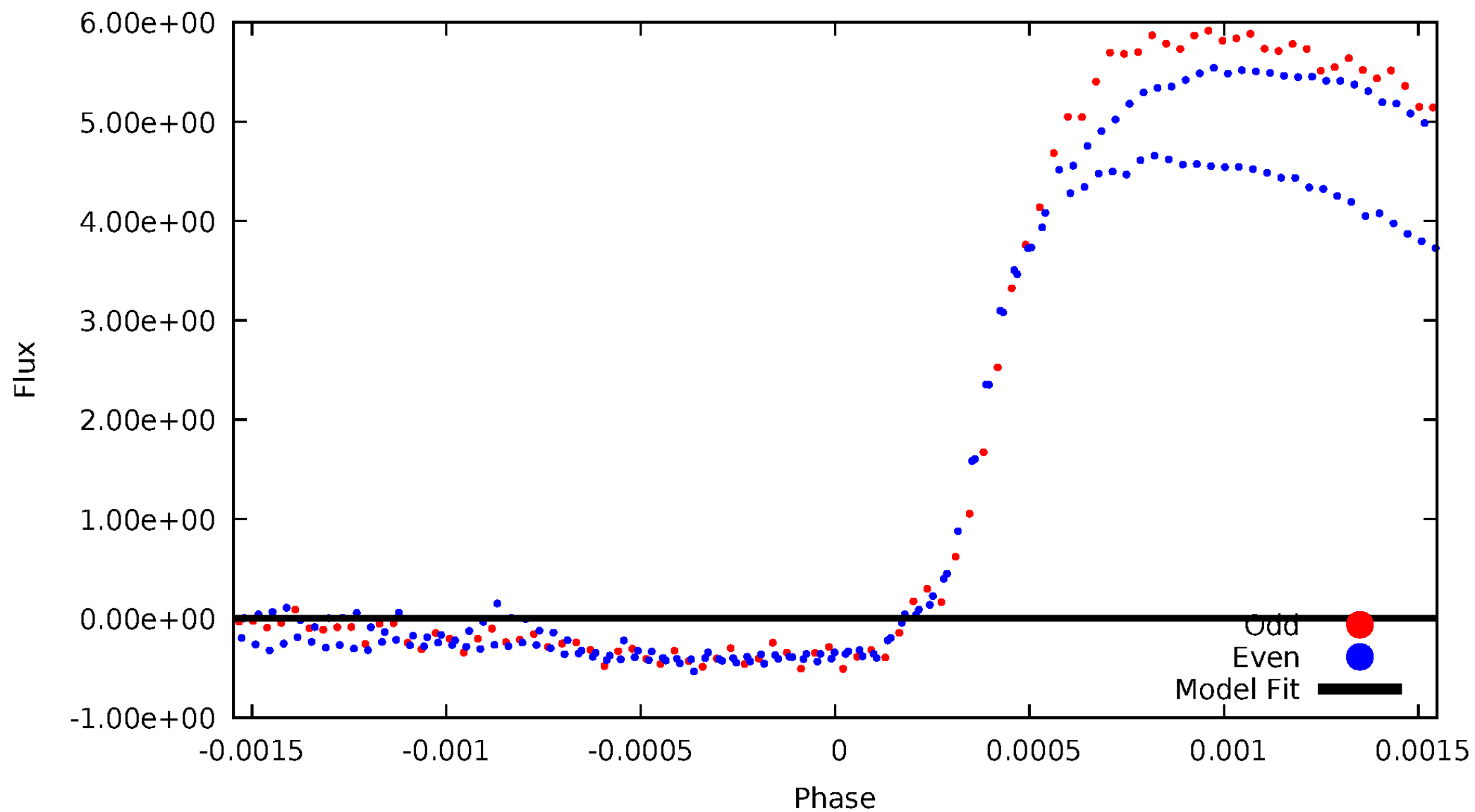


TCE 007446357-04



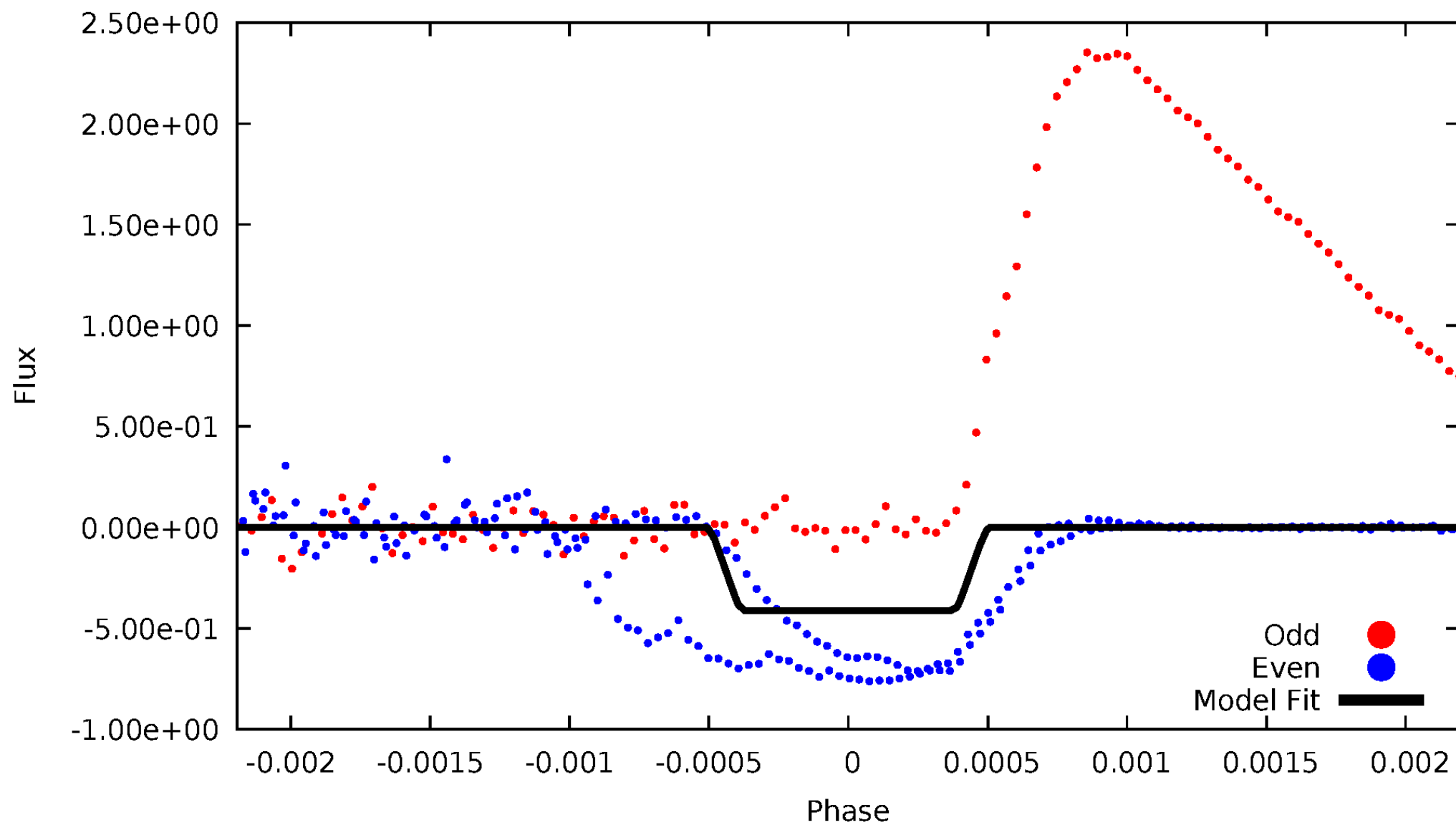
DV Odd/Even

TCE 007446357-04



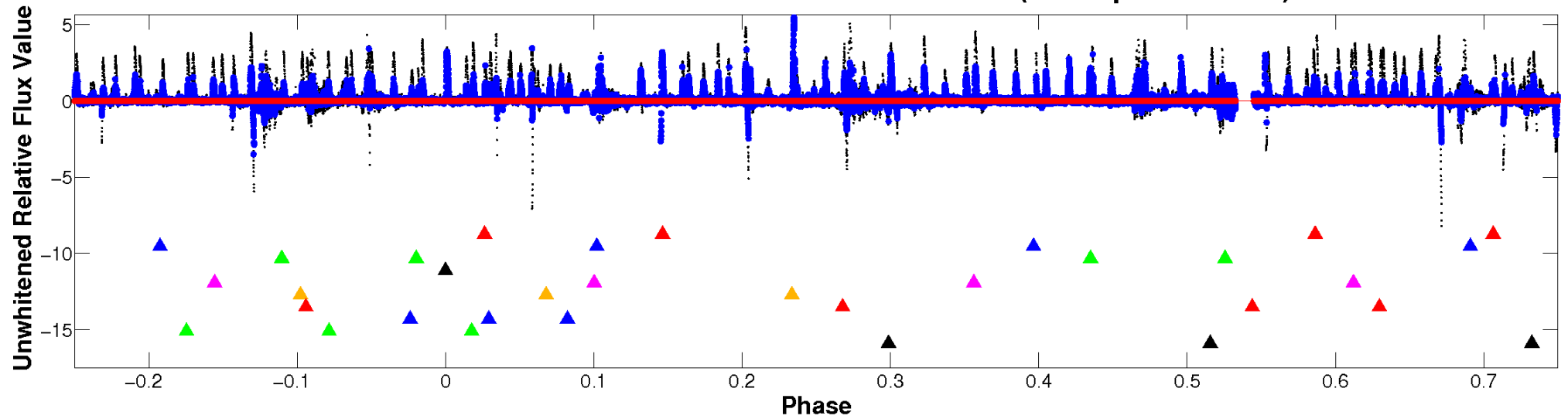
ALT Odd/Even

TCE 007446357-04



Non-Whitened Vs. Whitened Light Curve

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

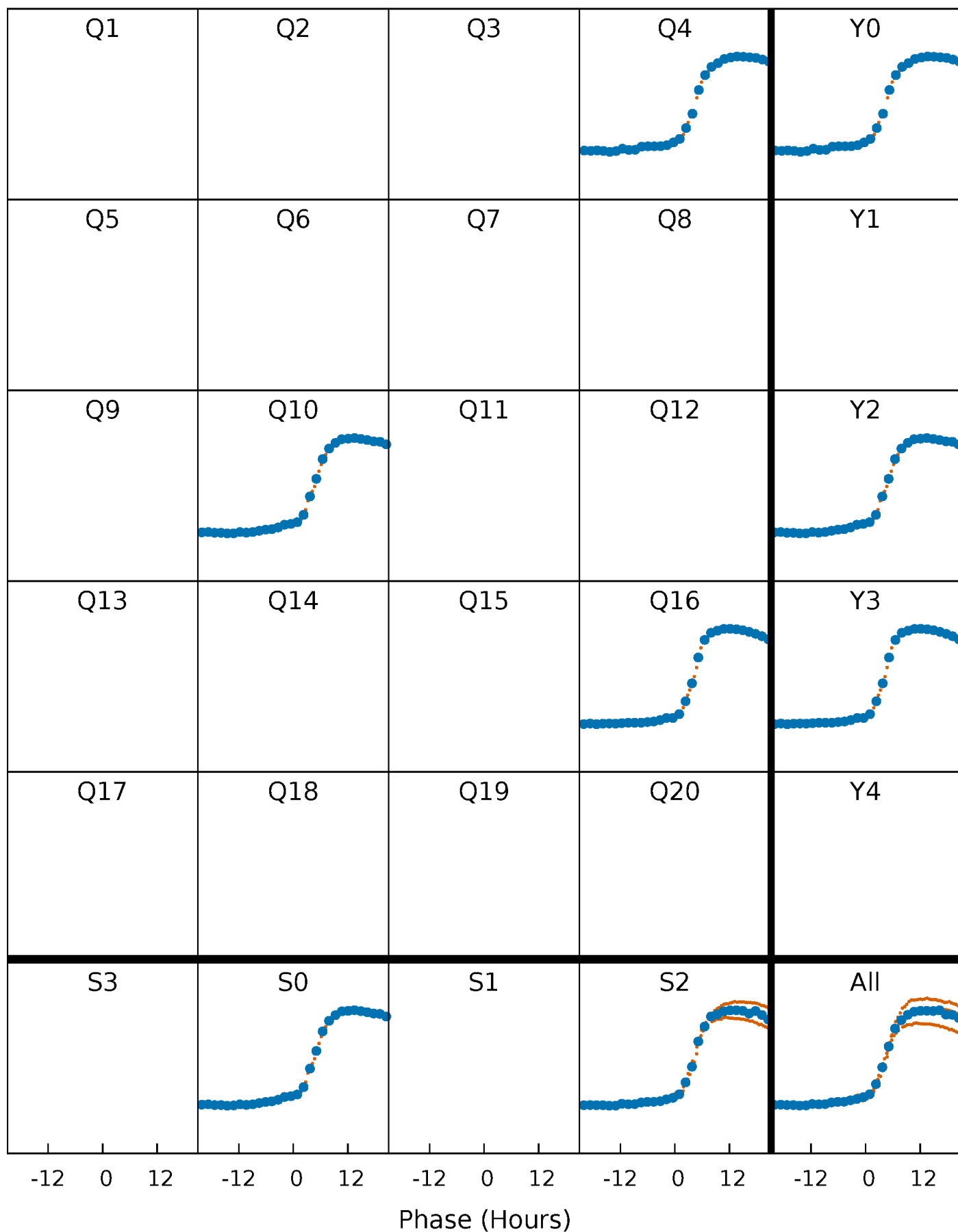


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



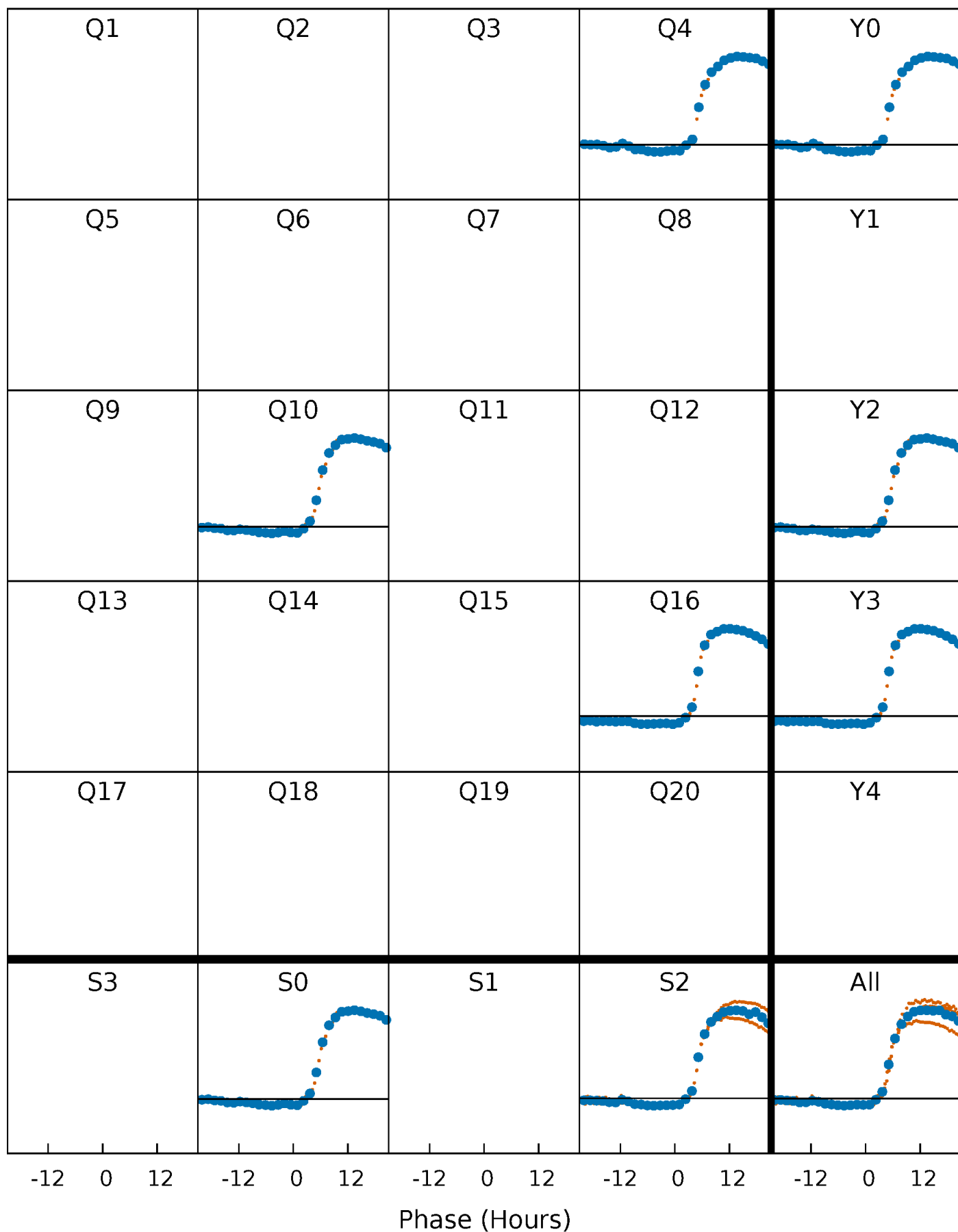
PDC Quarter-Phased Transit Curves

TCE 007446357-04 P=565.634997 Days $T_0=422.505322$ (BKJD)



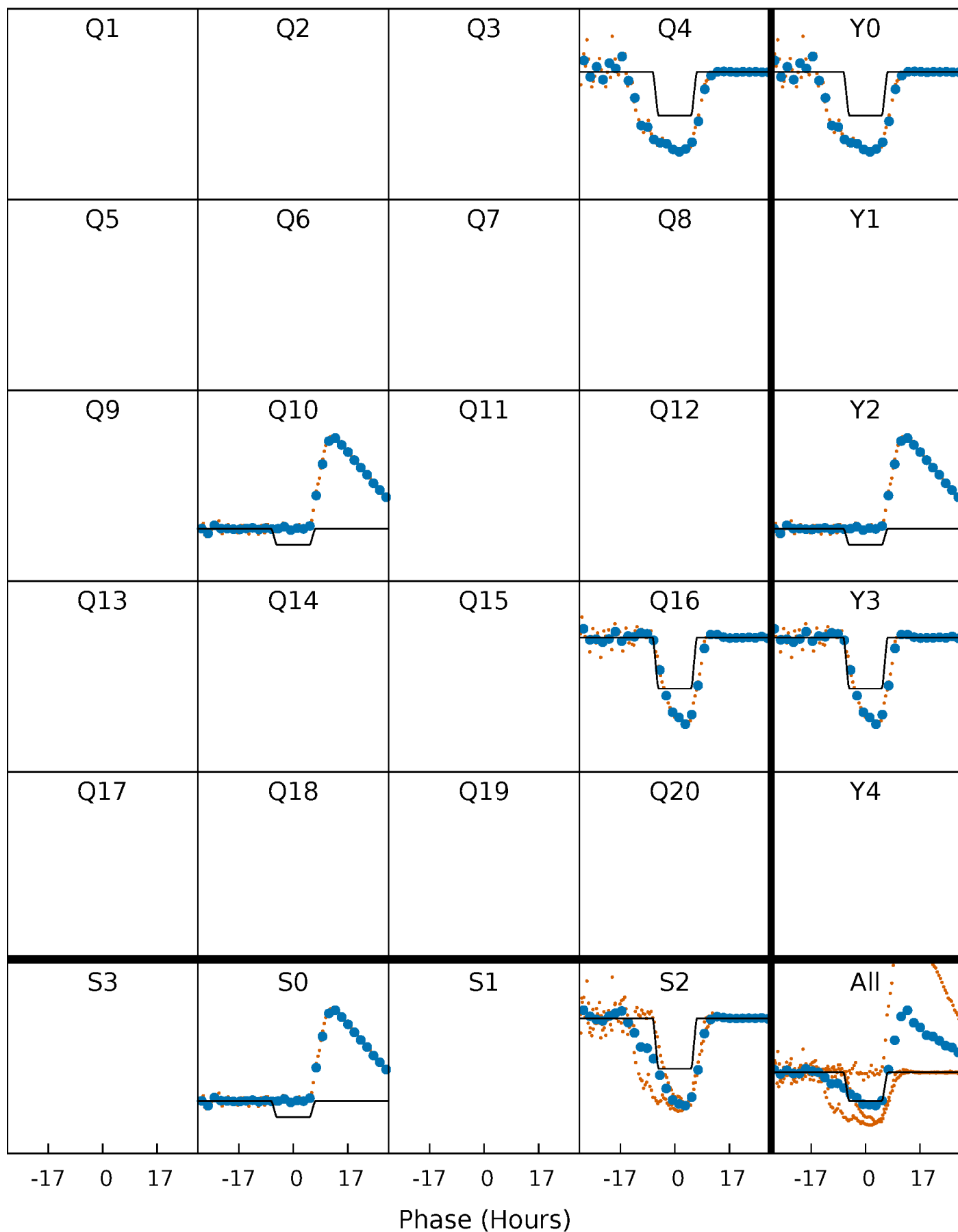
DV Quarter-Phased Transit Curves

TCE 007446357-04 P=565.634997 Days $T_0=422.505322$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

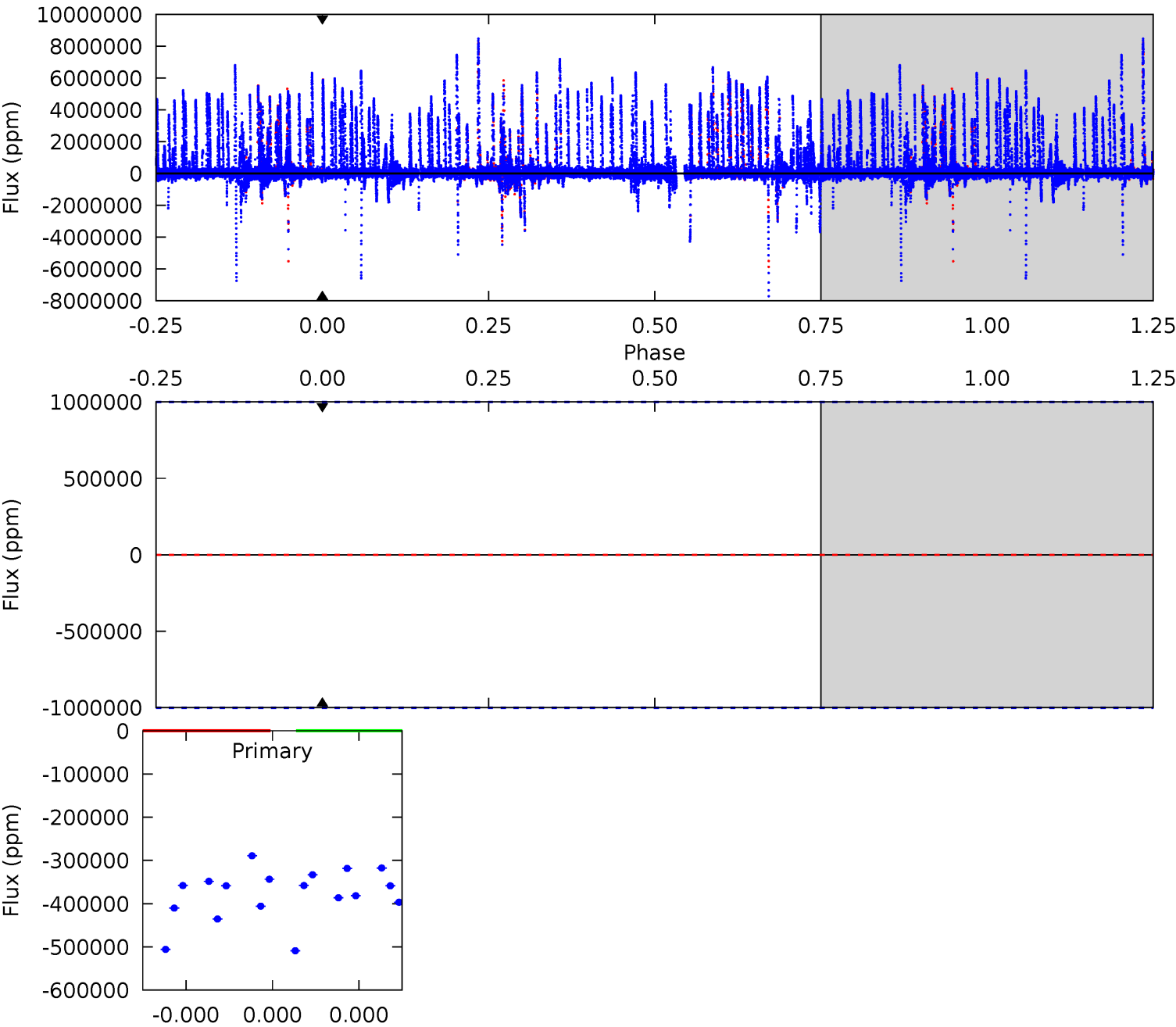
TCE 007446357-04 P=565.634997 Days $T_0=422.359284$ (BKJD)



DV Model-Shift Uniqueness Test

007446357-04, P = 565.634997 Days, E = 422.505322 Days

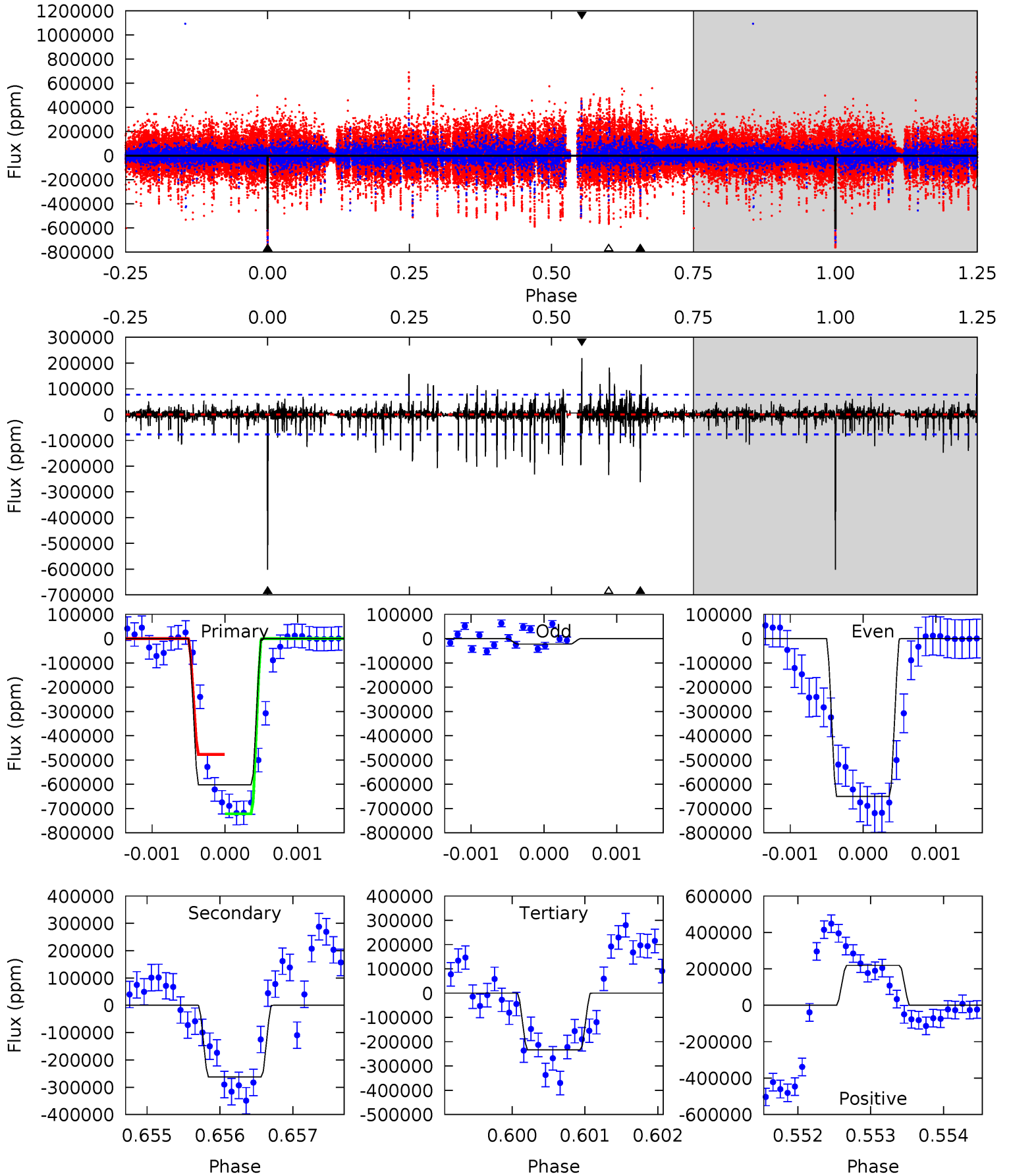
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007446357-04, P = 565.634997 Days, E = 422.359284 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.3	18.4	16.4	15.4	5.45	3.29	2.01	25.9	27.0	2.01	3.05	23.3	0.76	0.27	8.54



Stellar Parameters For KIC 007446357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9296^{+245}_{-449}	$4.085^{+0.170}_{-0.170}$	$0.070^{+0.150}_{-0.700}$	$2.253^{+0.774}_{-0.703}$	$2.251^{+0.399}_{-0.599}$	$0.277^{+0.285}_{-0.140}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+34%/-31%	+18%/-27%	+103%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007446357-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$29.24^{+25.37}_{-18.25}$	648^{+49}_{-51}	4715^{+27476}_{-32741}	$2577^{+361378}_{-288950}$
Alt.	-262158 ± 14219	$155.60^{+39.02}_{-32.25}$	647^{+51}_{-54}	8767^{+1139}_{-889}	24255^{+13513}_{-8194}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

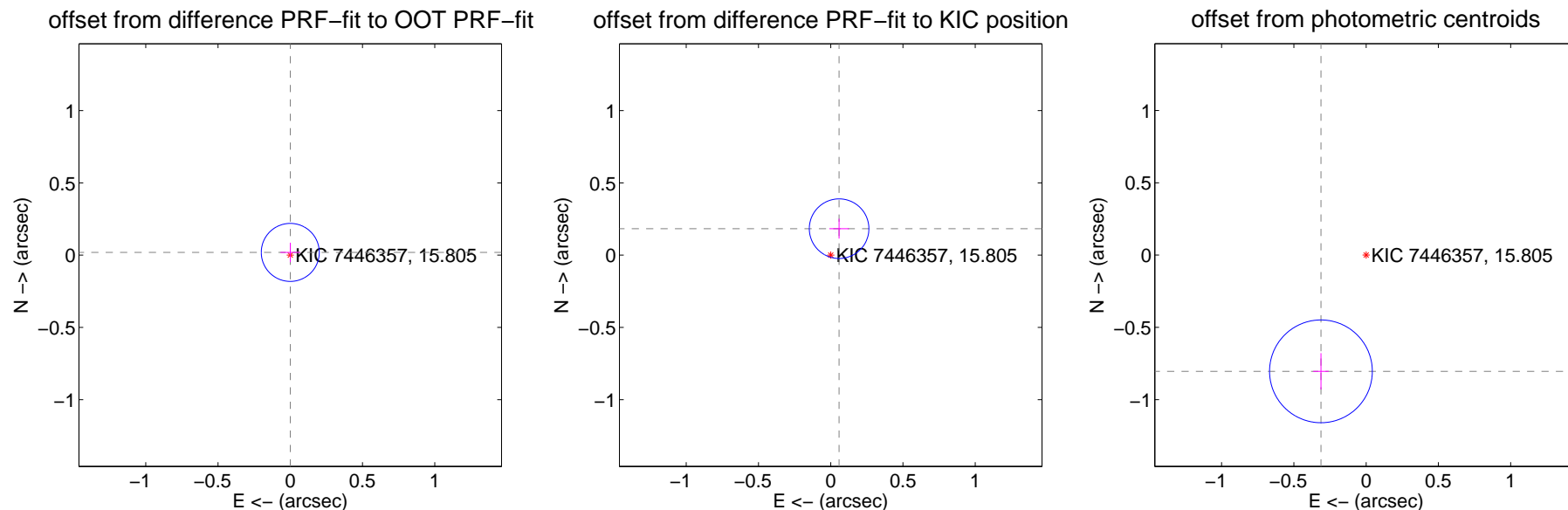
DV Centroid Data

Supplemental centroid analysis for 007446357-04. Kepler magnitude: 15.80. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

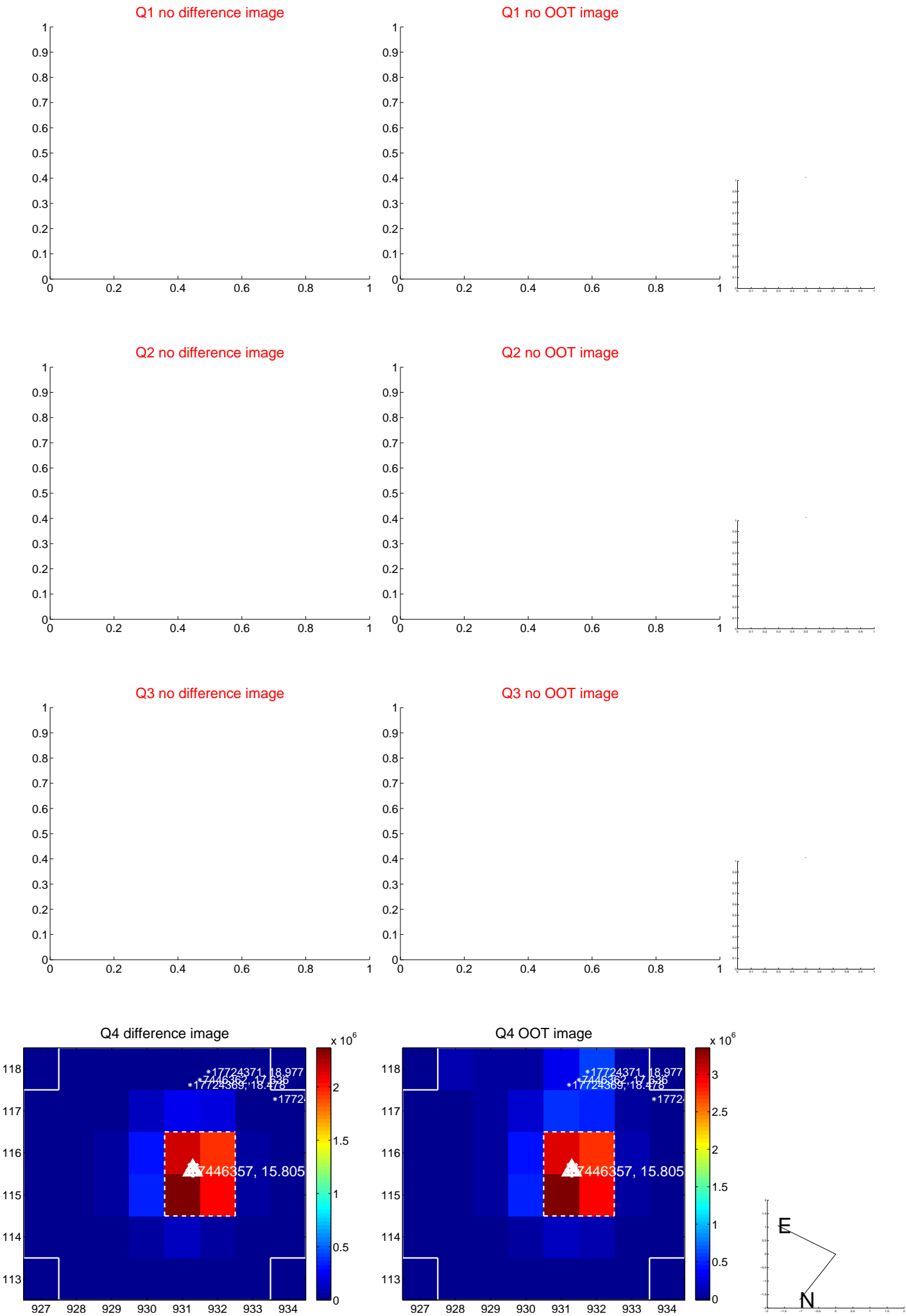
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.019 ± 0.067	0.28	-0.000 ± 0.068	0.019 ± 0.067
PRF-fit source offset from KIC position	0.192 ± 0.069	2.80	-0.058 ± 0.068	0.183 ± 0.069
photometric centroid source offset	0.86 ± 0.12	7.28	0.31 ± 0.05	-0.80 ± 0.13



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.

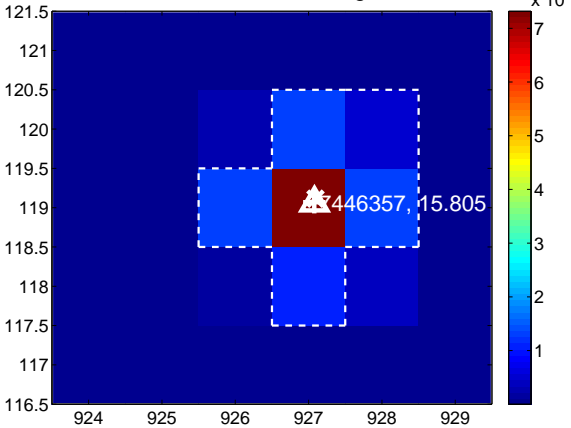
Q9 no difference image



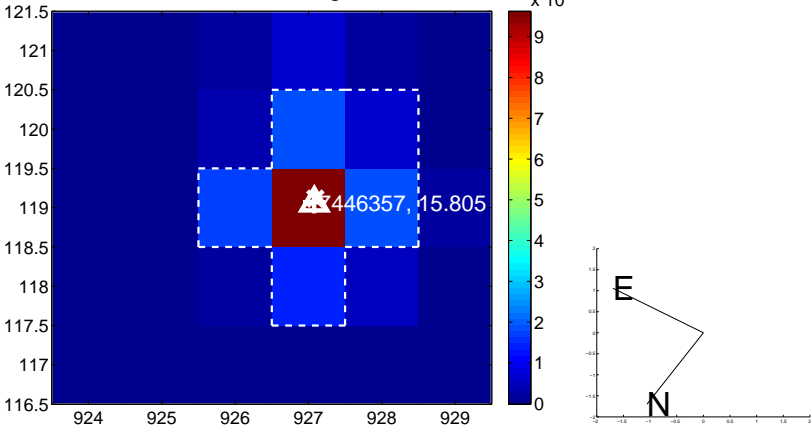
Q9 no OOT image



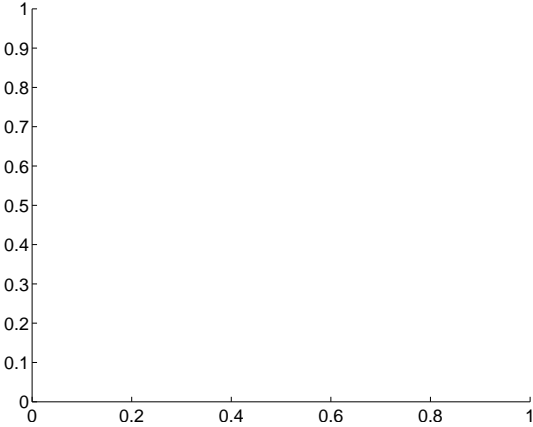
Q10 difference image



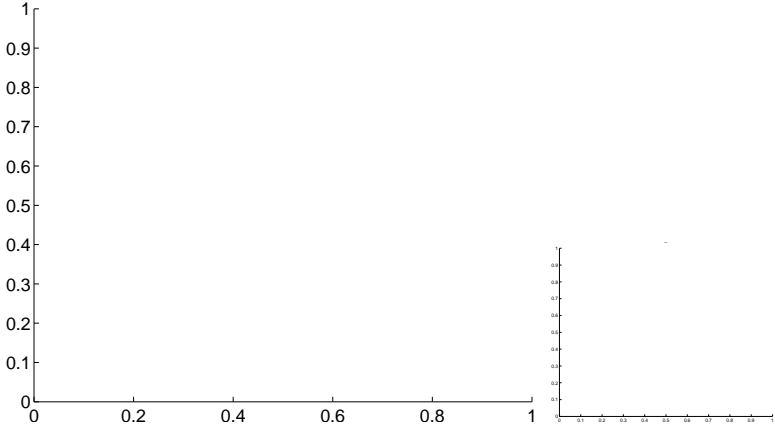
Q10 OOT image



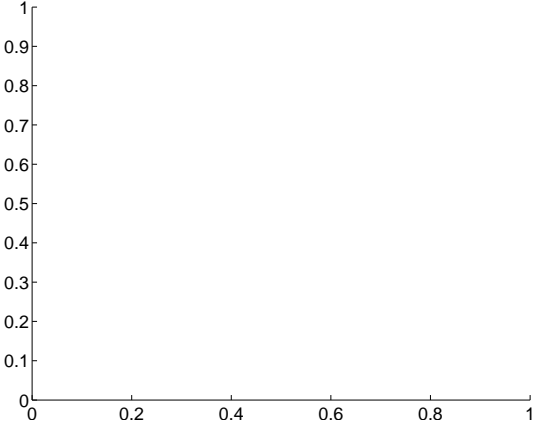
Q11 no difference image



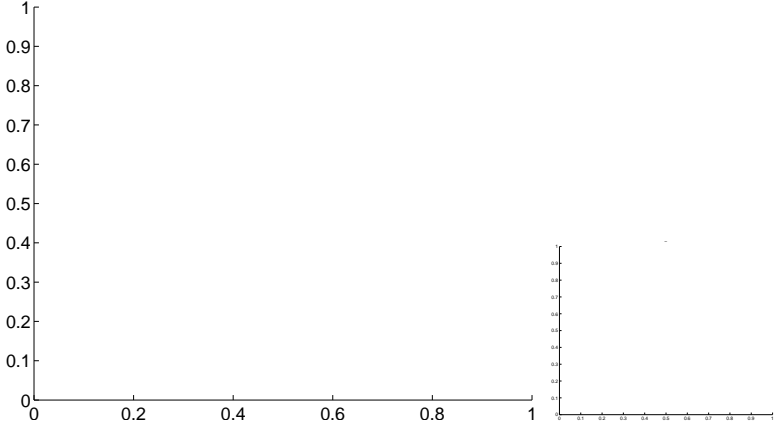
Q11 no OOT image



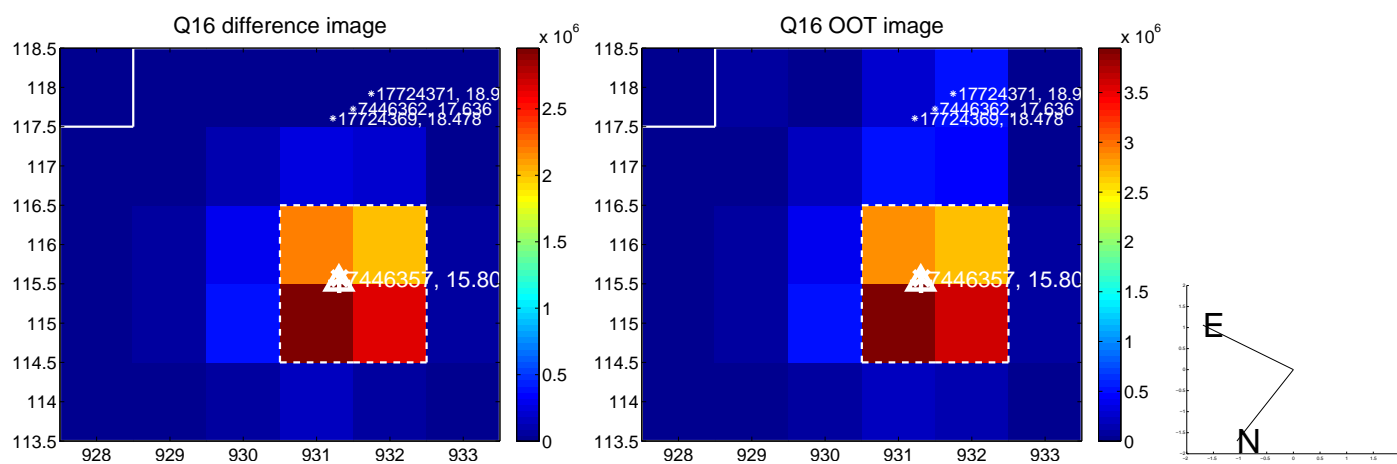
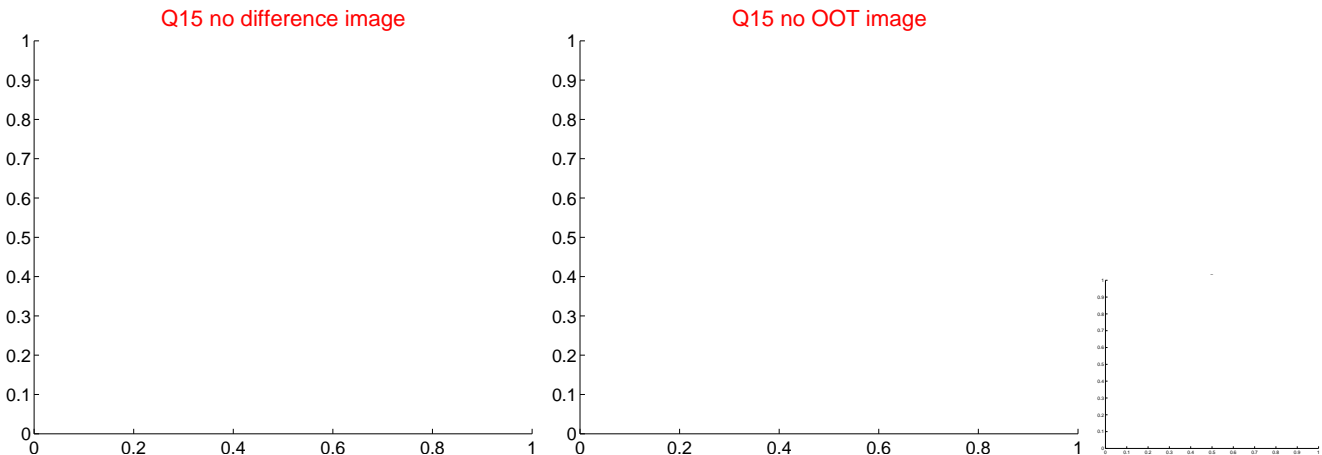
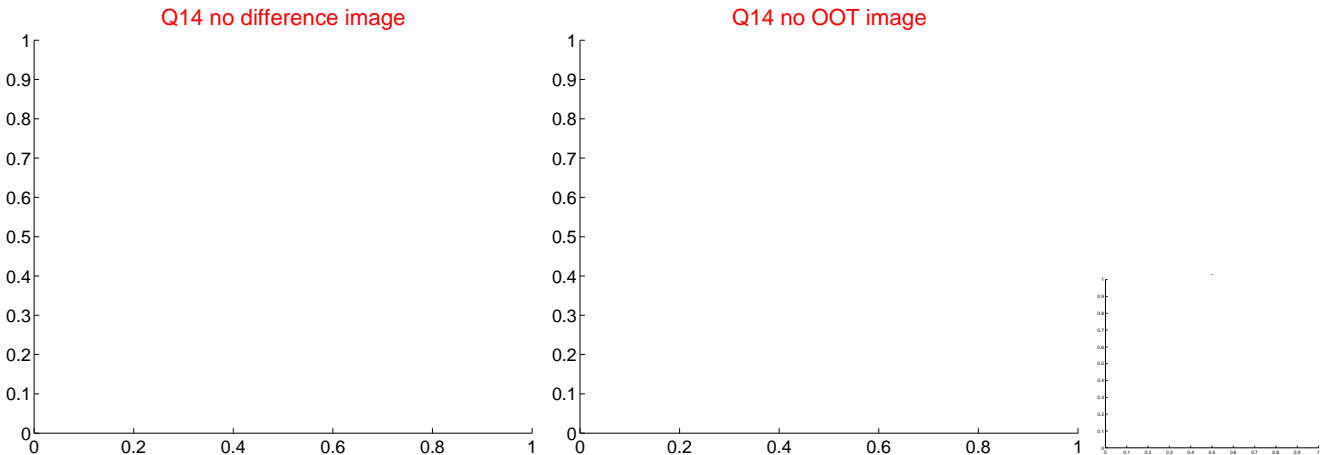
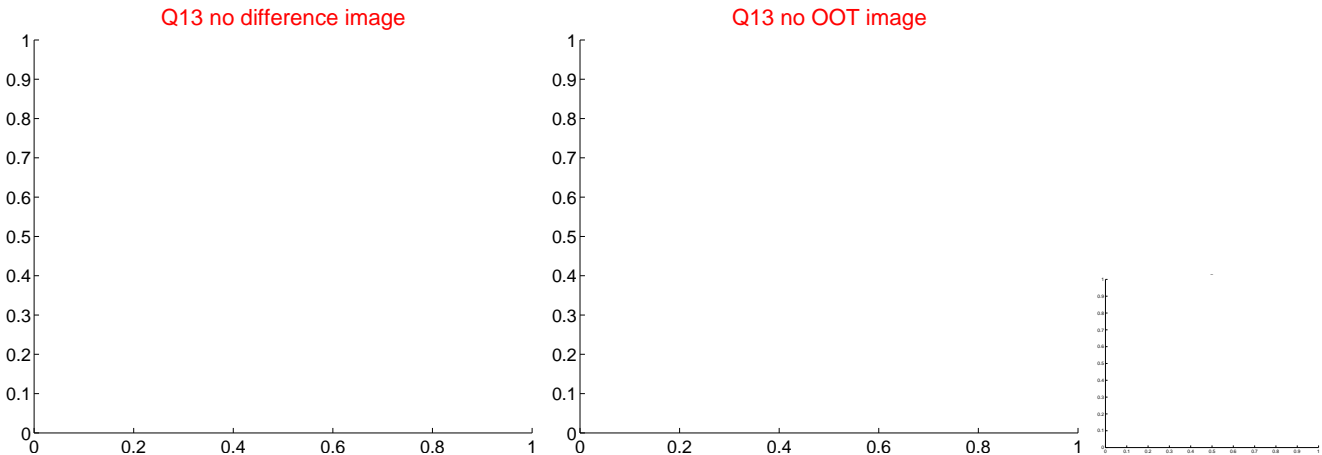
Q12 no difference image



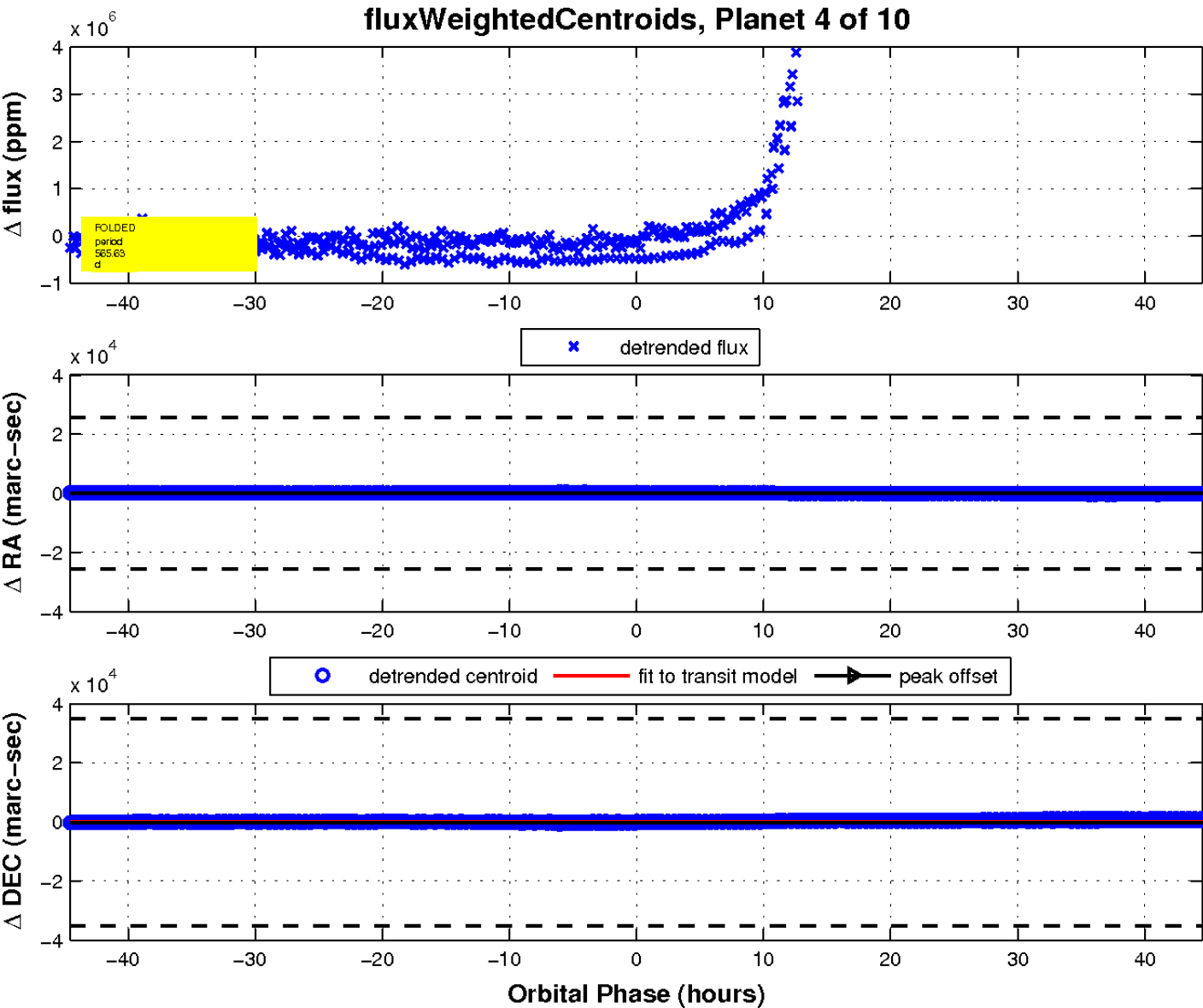
Q12 no OOT image



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

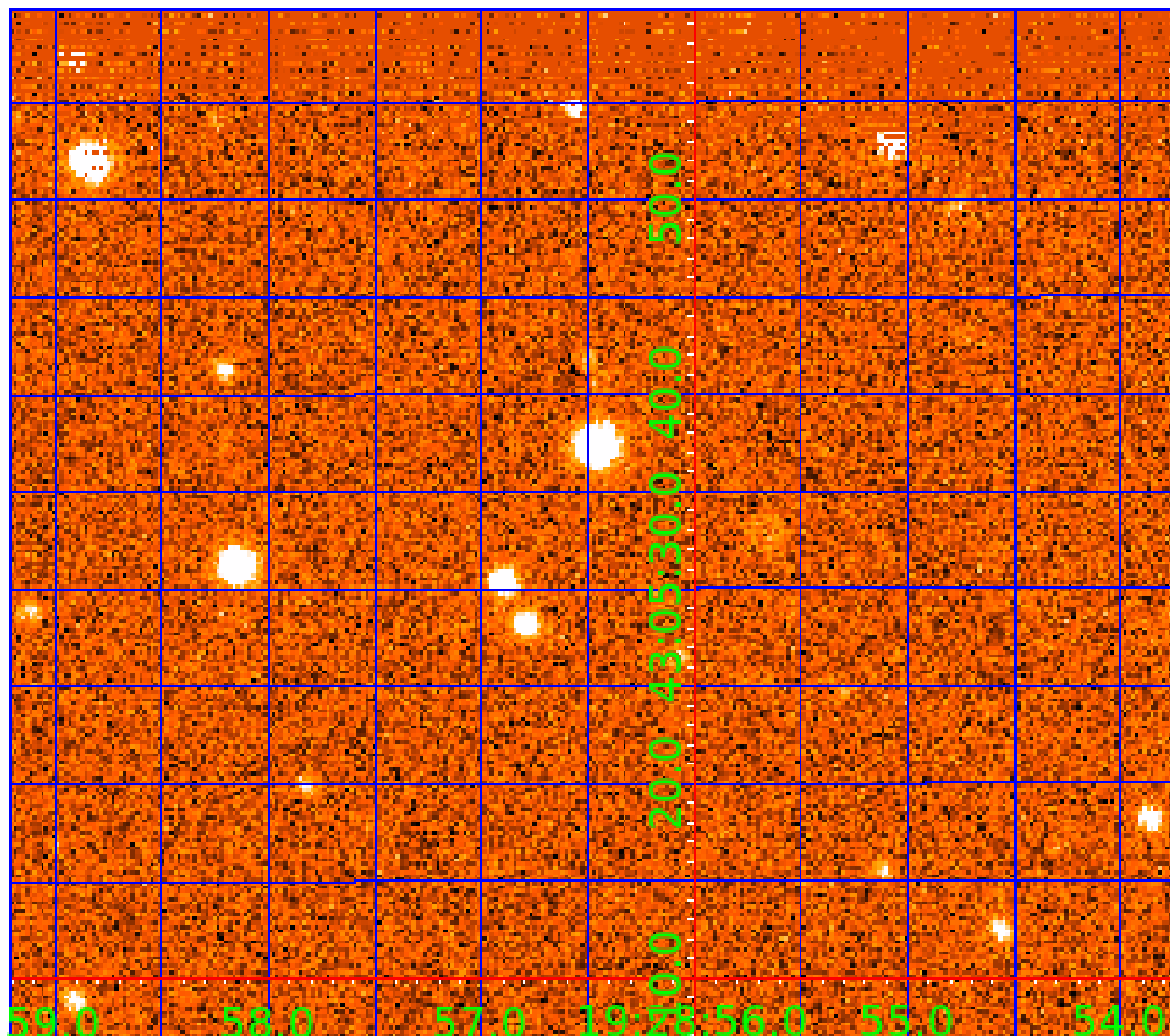


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

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007446357-09	OBS	No	511.261294	432.483710	9672.8	12.500	33.6	-1.0	2.25	9296	22.65	12.62
007446357-10	OBS	No	442.964688	271.184425	703902.5	24.810	32.9	4.2	2.25	9296	199.42	15.28

Robovetter Results

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007446357-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS
007446357-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
007446357-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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.

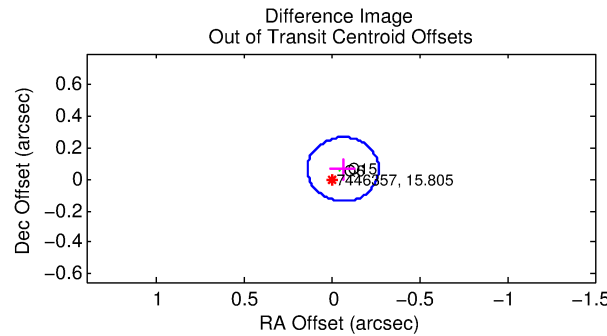
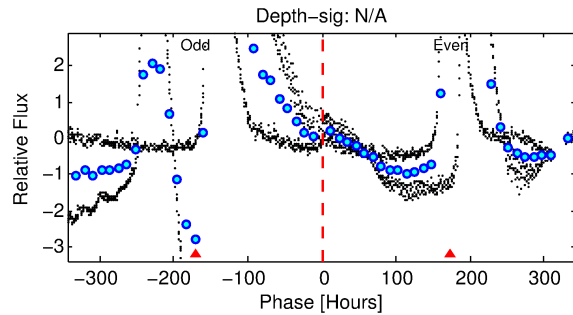
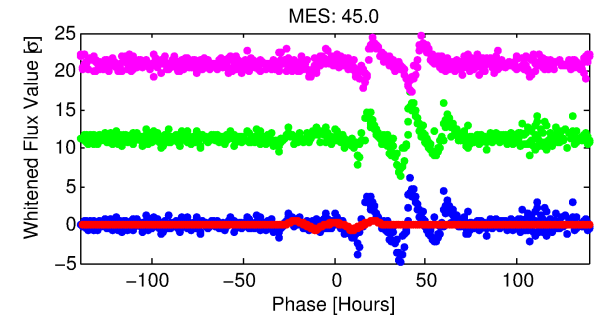
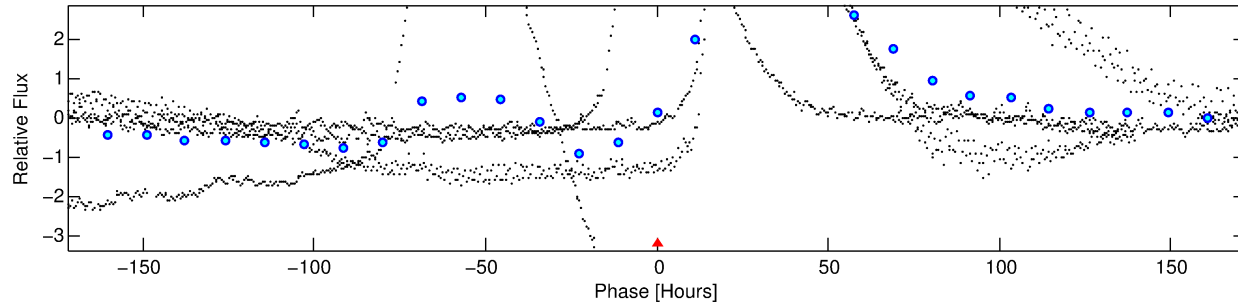
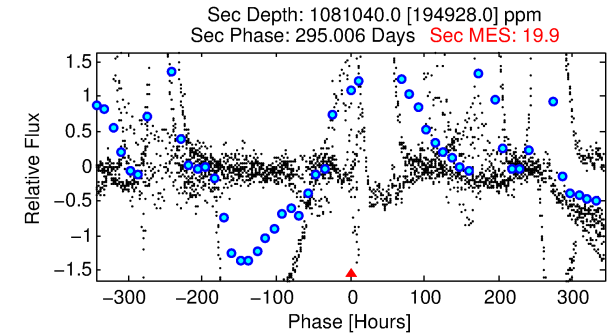
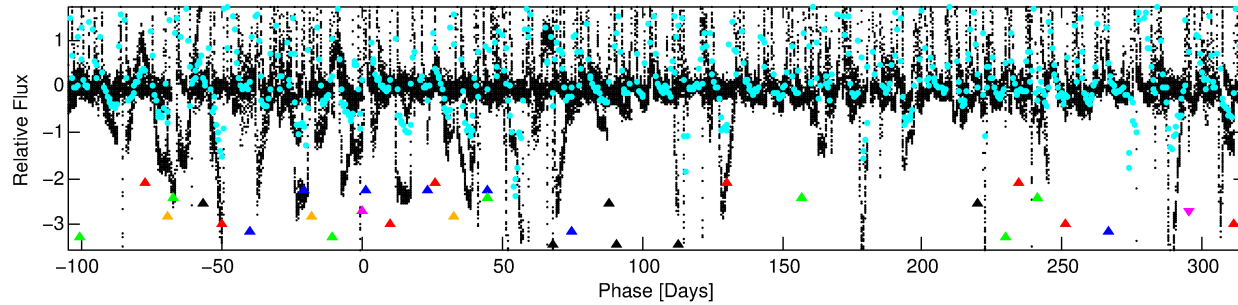
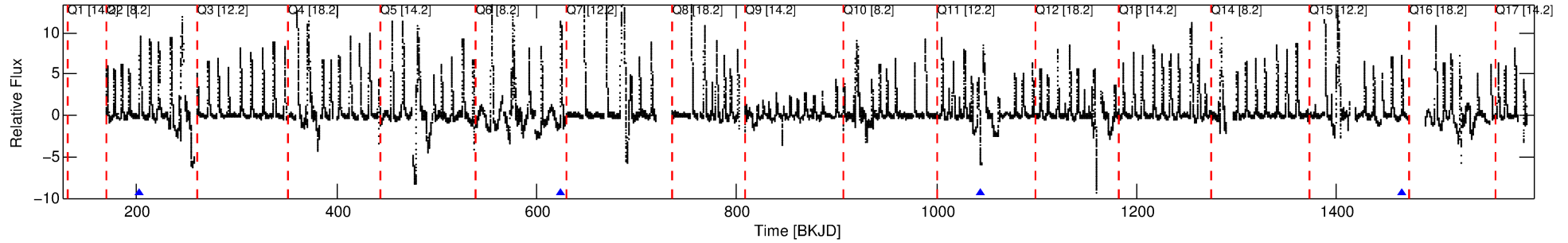
Ephemeris Match Information For 007446357-05

No Significant Match Found

DV One-Page Summary

KIC: 7446357 Candidate: 5 of 10 Period: 420.863 d

Kp: 15.81 R*: 2.25 Rs Teff: 9296.0 K Logg: 4.08 Fe/H: 0.070



TPS TCE Results:

Period = 420.86322 d
Epoch = 203.1476 BKJD

DV fit results are unavailable

DV Diagnostic Results:

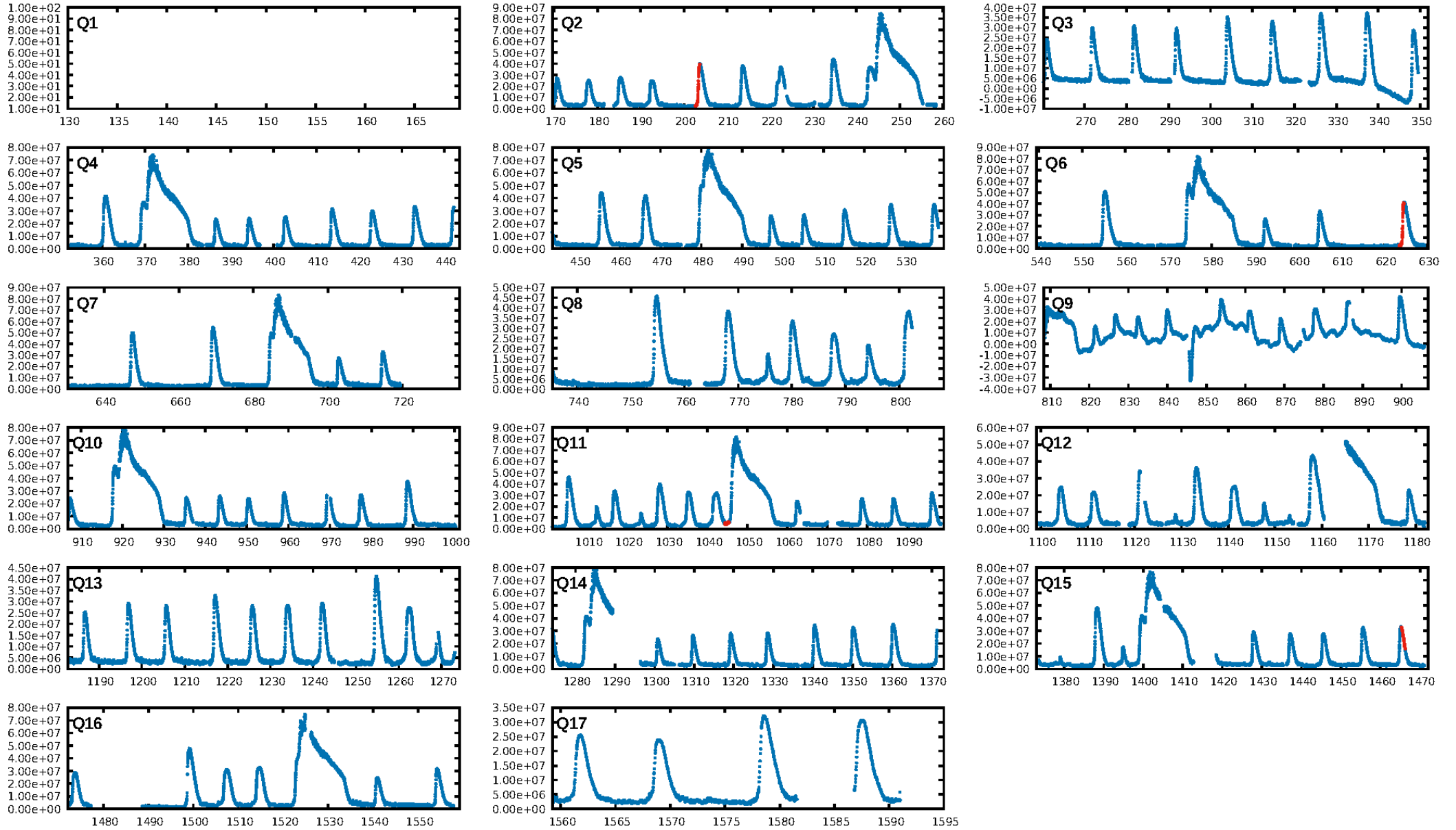
ShortPeriod-sig: 100.0% [27.23σ]
LongPeriod-sig: 100.0% [19.25σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.8845

Centroid-sig: 0.0%
Centroid-so: 1.696 arcsec [16.73σ]
OotOffset-rm: 0.091 arcsec [1.34σ]
KicOffset-rm: 0.108 arcsec [1.43σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

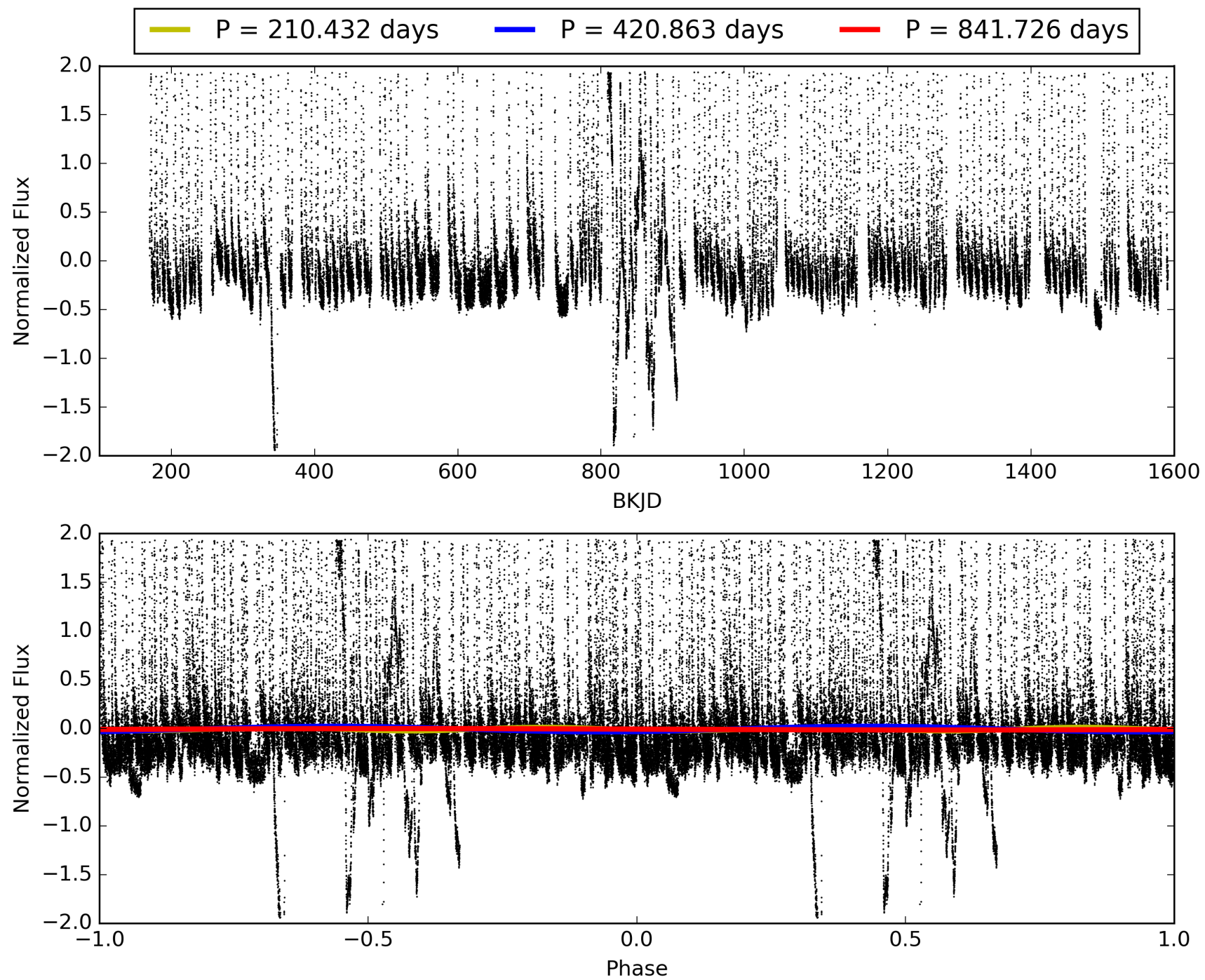
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:31:03 Z

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

TCE 007446357-05, PDC Light Curves

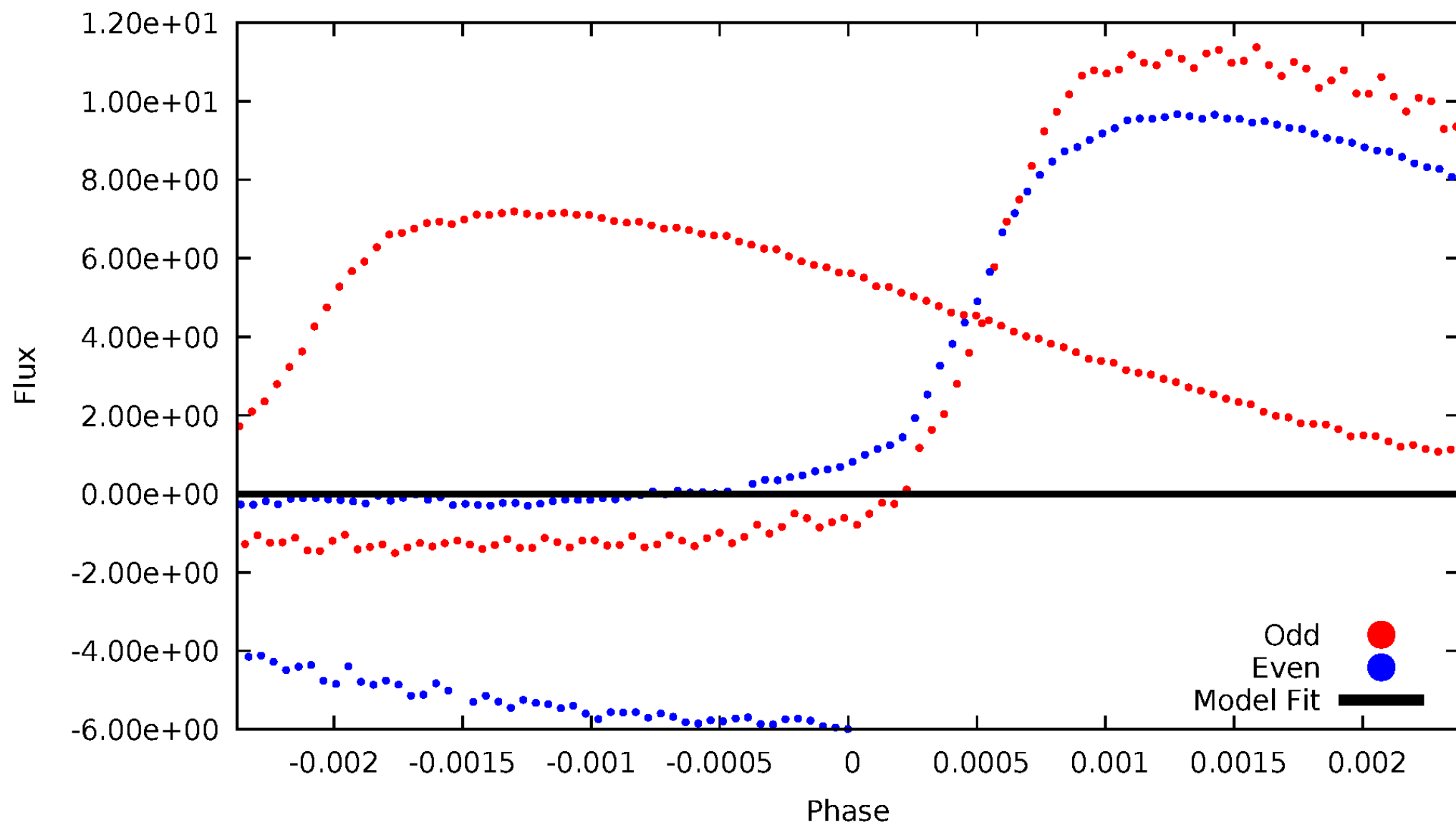


TCE 007446357-05



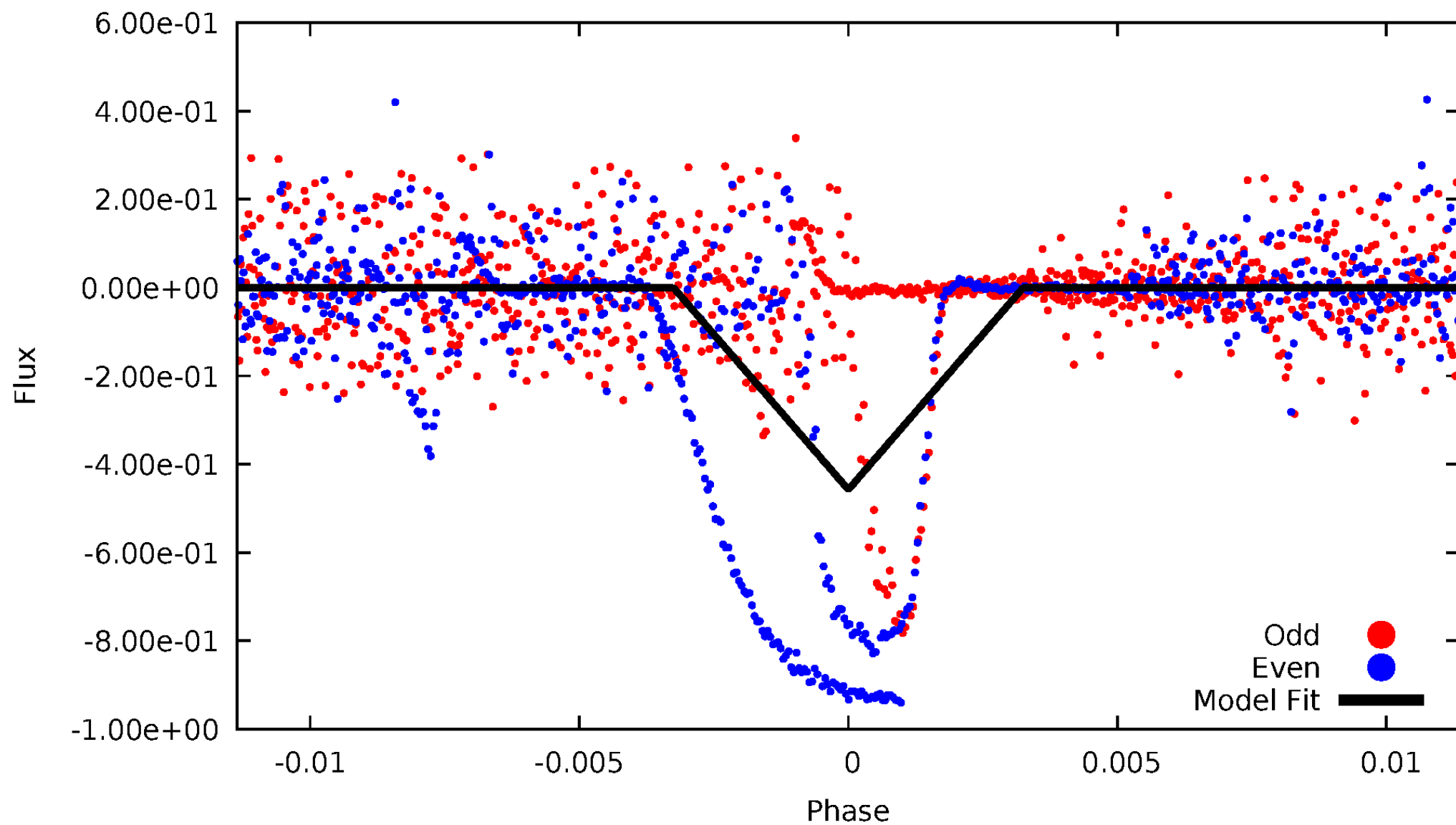
DV Odd/Even

TCE 007446357-05



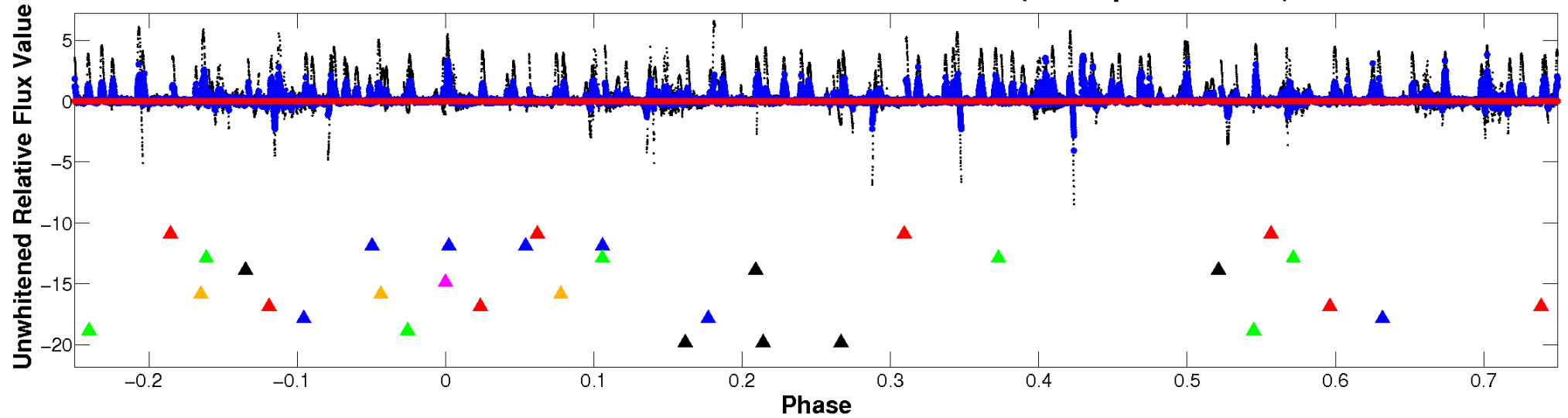
ALT Odd/Even

TCE 007446357-05



Non-Whitened Vs. Whitened Light Curve

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

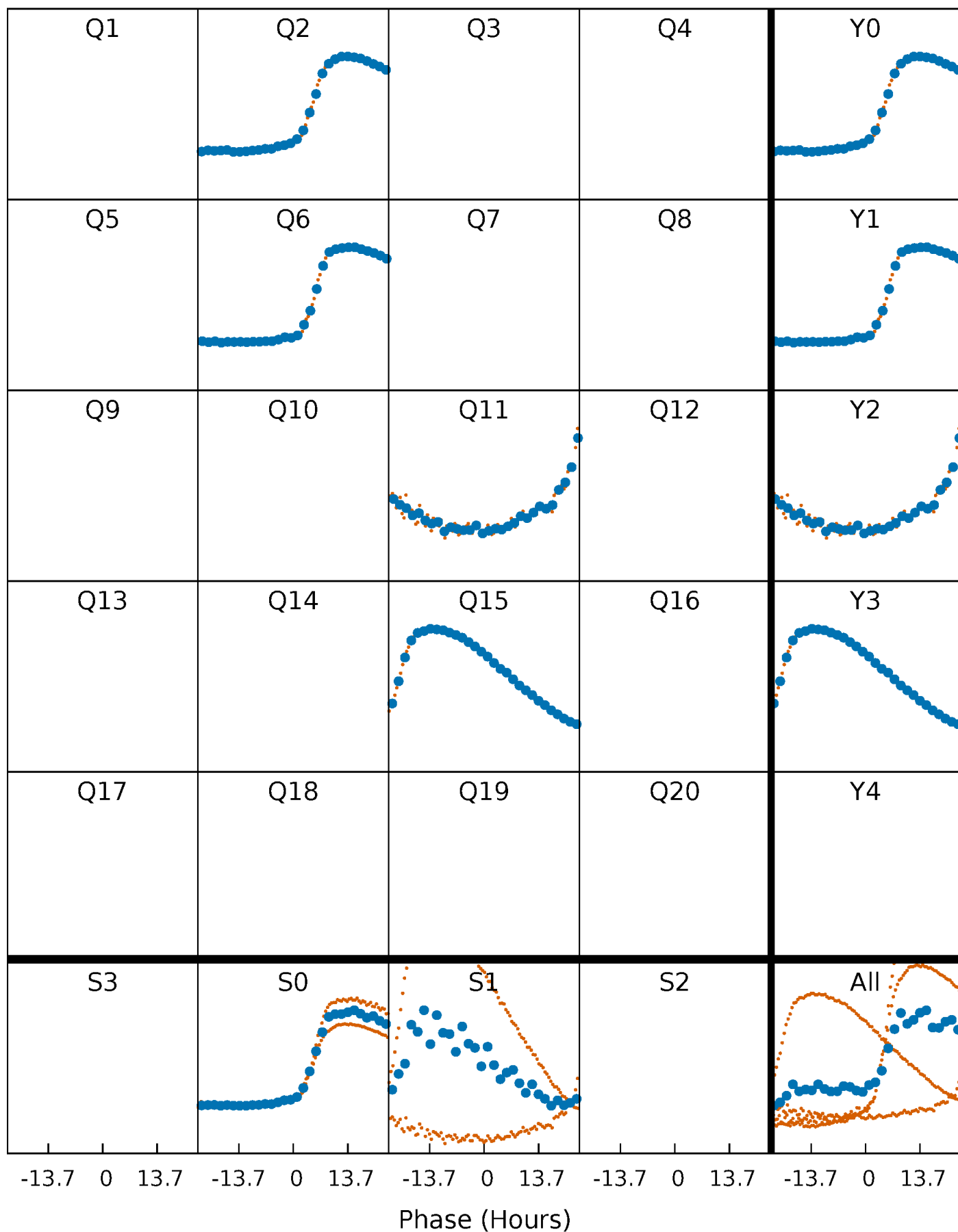


Planet 5 : Phased Whitened Flux Time Series (TPS Epoch/Period)



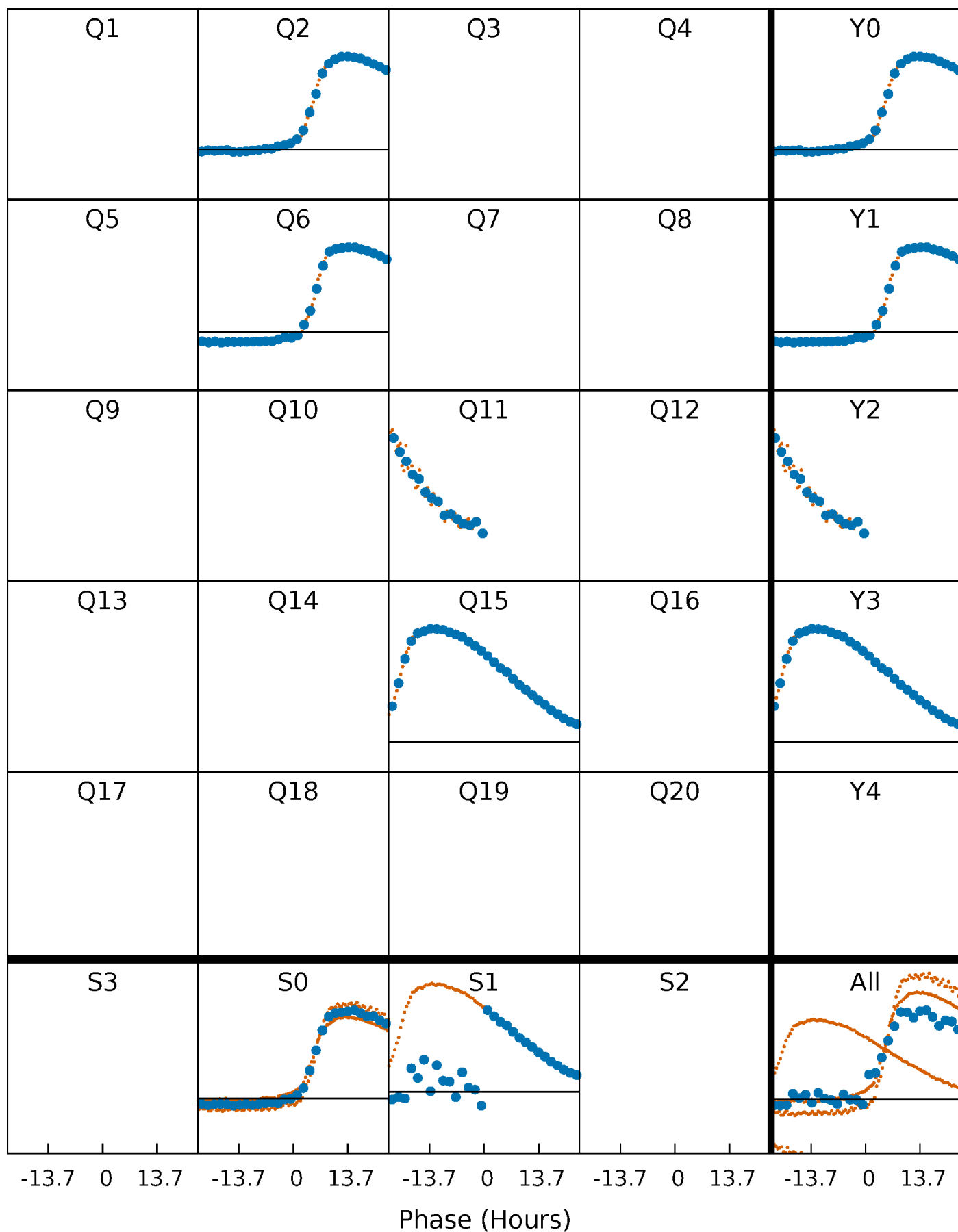
PDC Quarter-Phased Transit Curves

TCE 007446357-05 $P=420.863224$ Days $T_0=203.147650$ (BKJD)



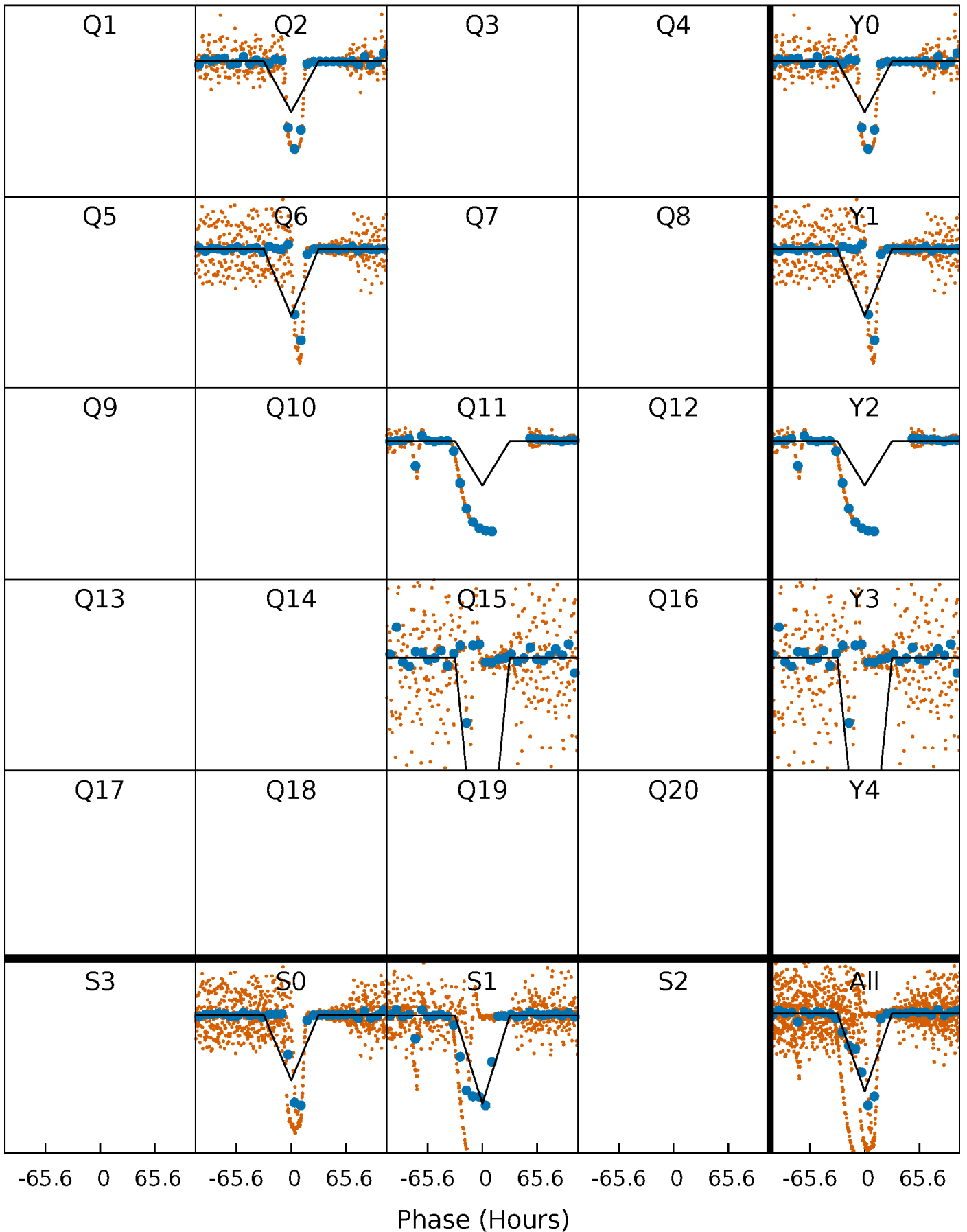
DV Quarter-Phased Transit Curves

TCE 007446357-05 $P=420.863224$ Days $T_0=203.147650$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

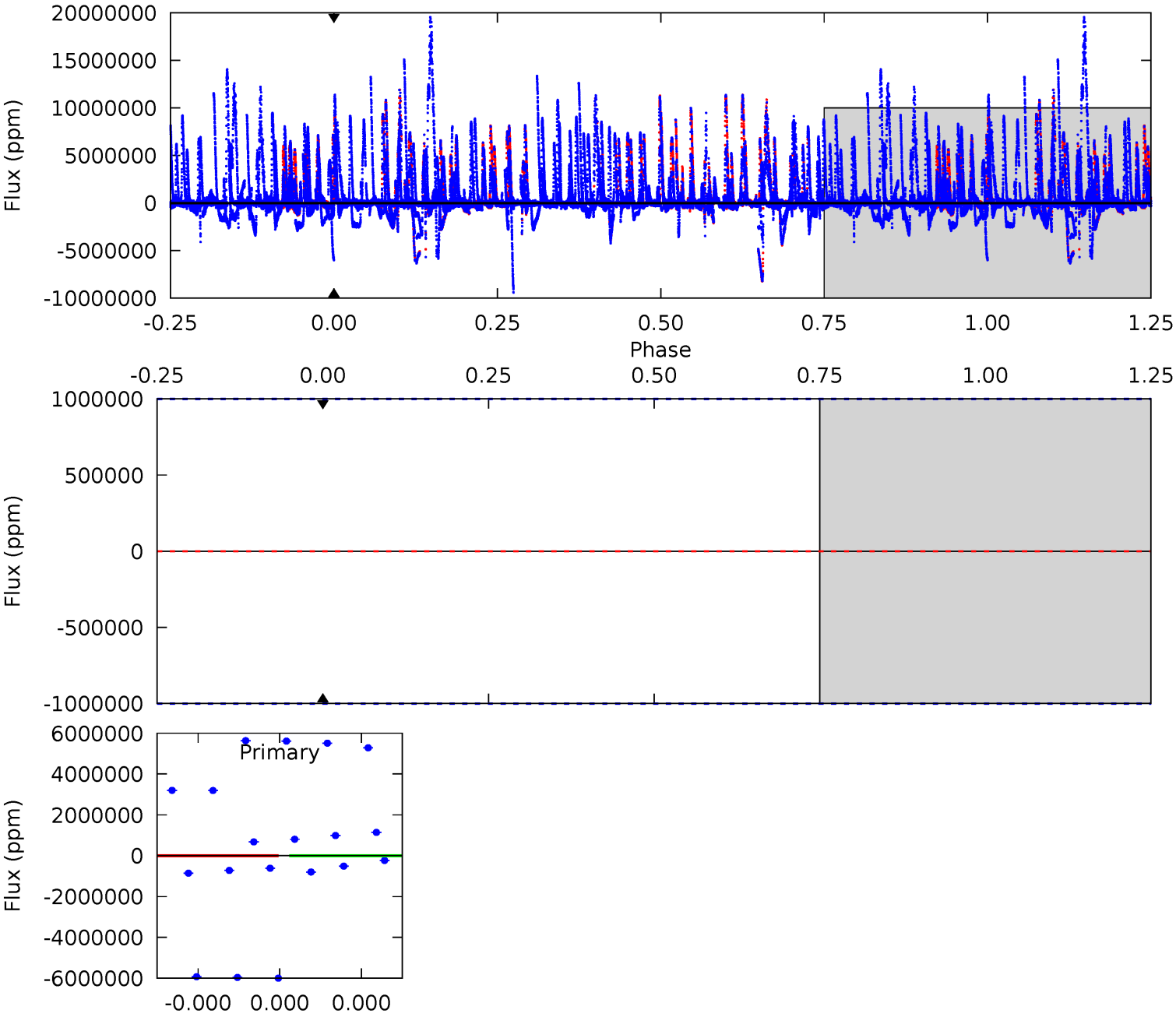
TCE 007446357-05 $P=420.863224$ Days $T_0=202.735601$ (BKJD)



DV Model-Shift Uniqueness Test

007446357-05, P = 420.863224 Days, E = 203.147650 Days

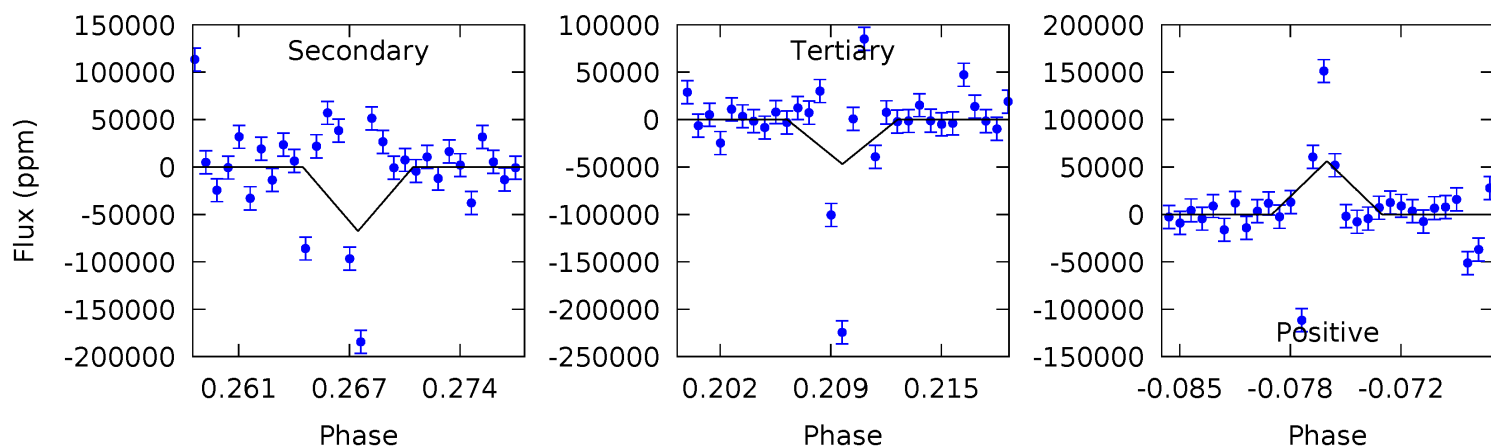
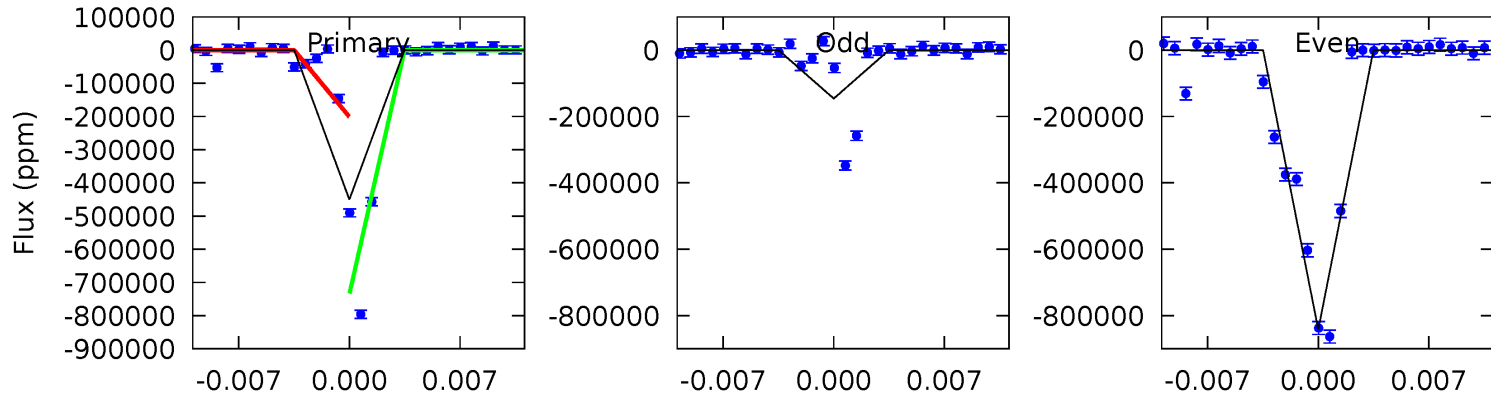
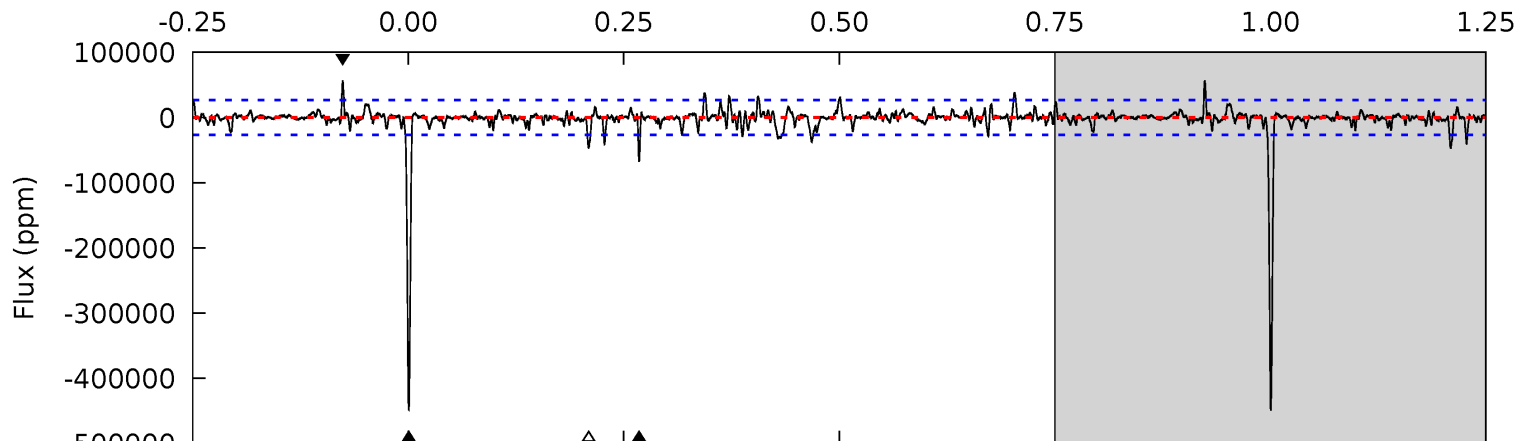
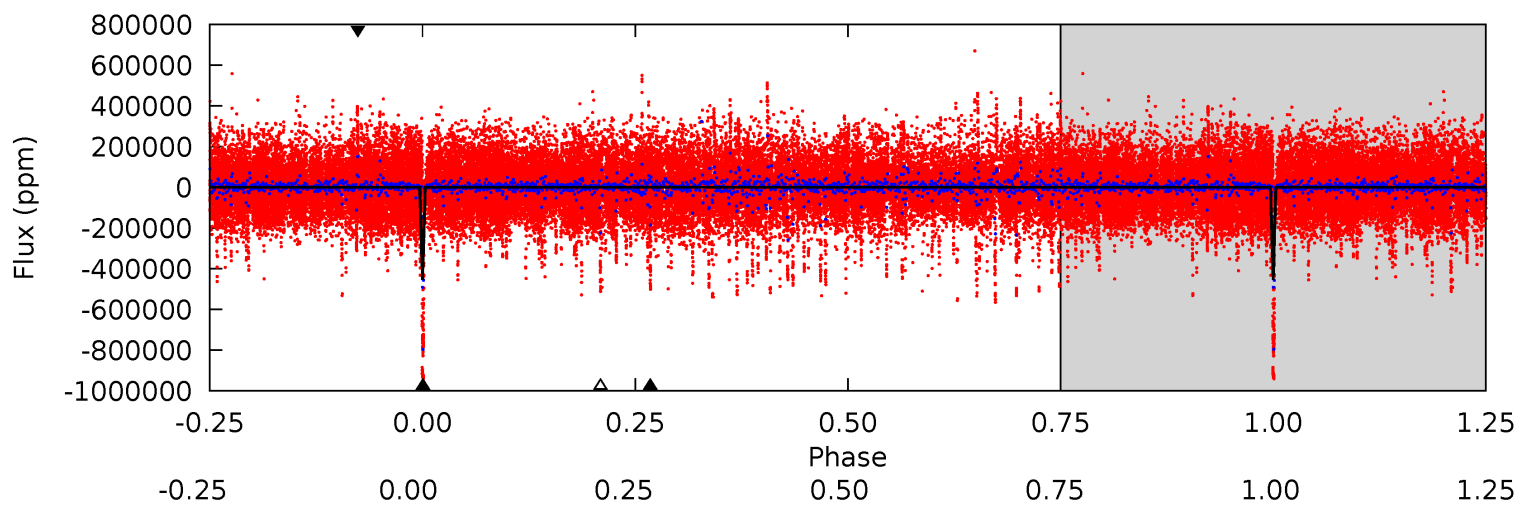
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007446357-05, P = 420.863224 Days, E = 202.735601 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
85.9	12.9	8.95	10.7	5.11	2.72	1.68	77.0	75.2	3.95	2.17	65.4	1.18	0.11	50.8



Stellar Parameters For KIC 007446357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9296^{+245}_{-449}	$4.085^{+0.170}_{-0.170}$	$0.070^{+0.150}_{-0.700}$	$2.253^{+0.774}_{-0.703}$	$2.251^{+0.399}_{-0.599}$	$0.277^{+0.285}_{-0.140}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+34%/-31%	+18%/-27%	+103%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007446357-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$32.72^{+25.35}_{-19.80}$	711^{+60}_{-51}	5909^{+20507}_{-29428}	$4046^{+174001}_{-144047}$
Alt.	-67336 ± 5220	$169.82^{+38.55}_{-35.62}$	712^{+60}_{-54}	5466^{+424}_{-348}	2866^{+1483}_{-979}

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

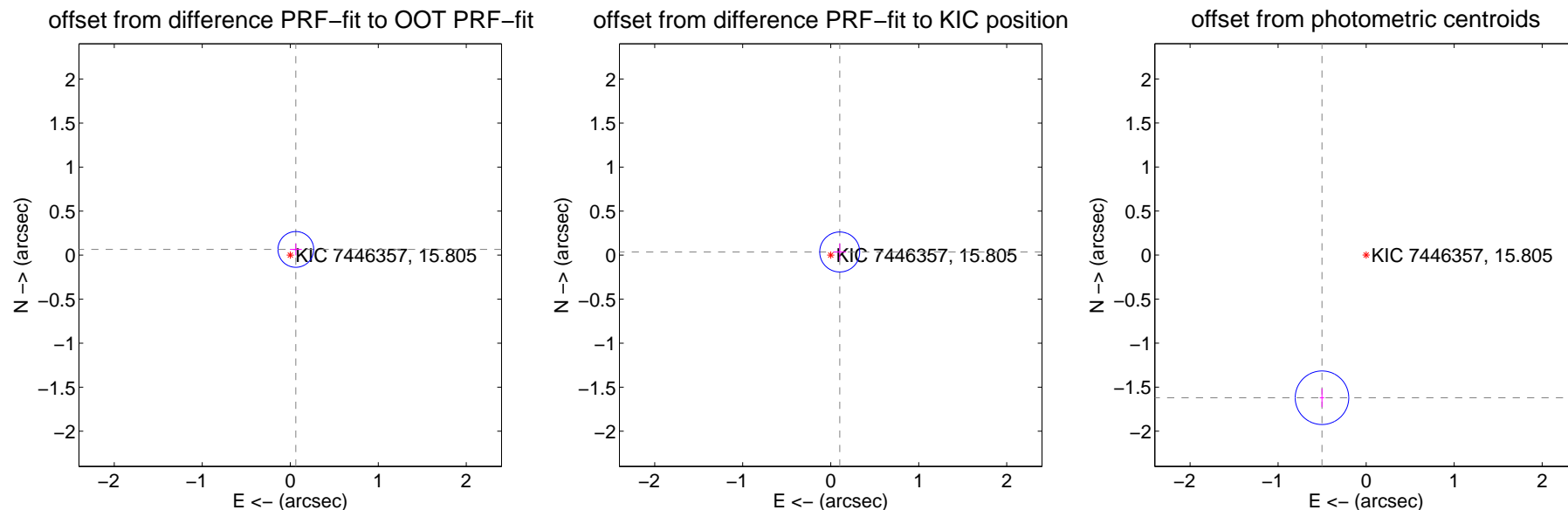
DV Centroid Data

Supplemental centroid analysis for 007446357-05. Kepler magnitude: 15.80. 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 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.091 ± 0.068	1.34	-0.063 ± 0.067	0.065 ± 0.067
PRF-fit source offset from KIC position	0.108 ± 0.076	1.43	-0.102 ± 0.073	0.036 ± 0.097
photometric centroid source offset	1.70 ± 0.10	16.73	0.50 ± 0.02	-1.62 ± 0.11



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

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



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

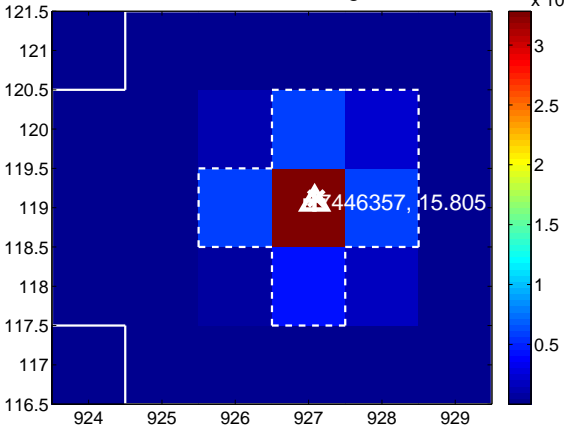
Q5 no difference image



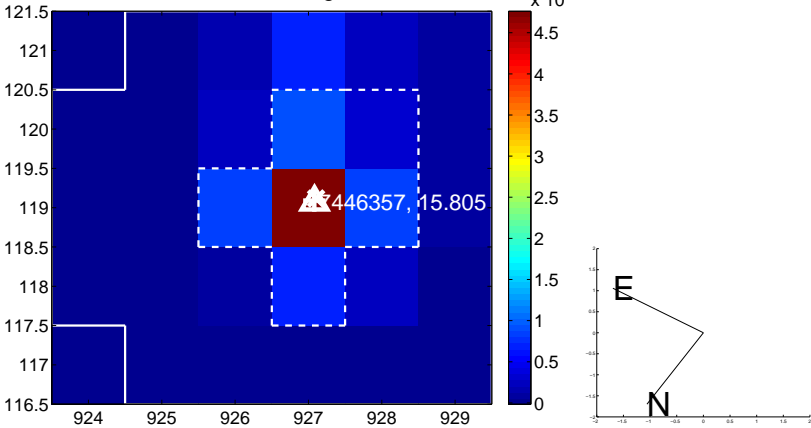
Q5 no OOT image



Q6 difference image



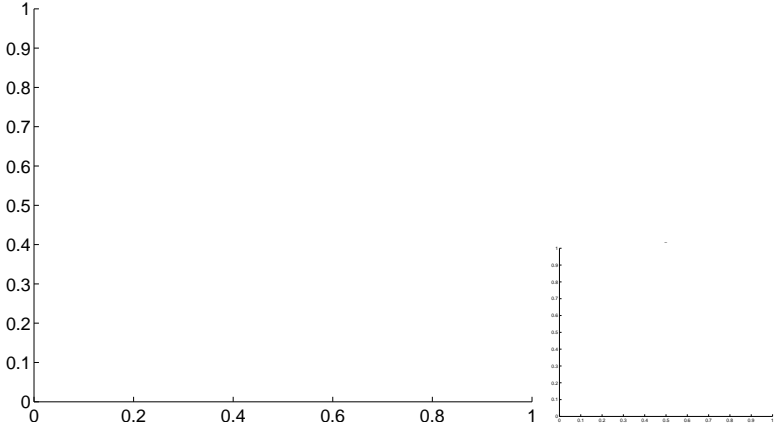
Q6 OOT image



Q7 no difference image



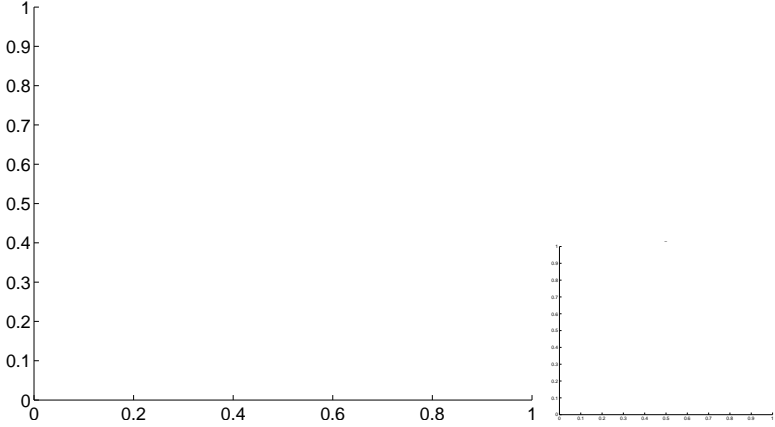
Q7 no OOT image



Q8 no difference image



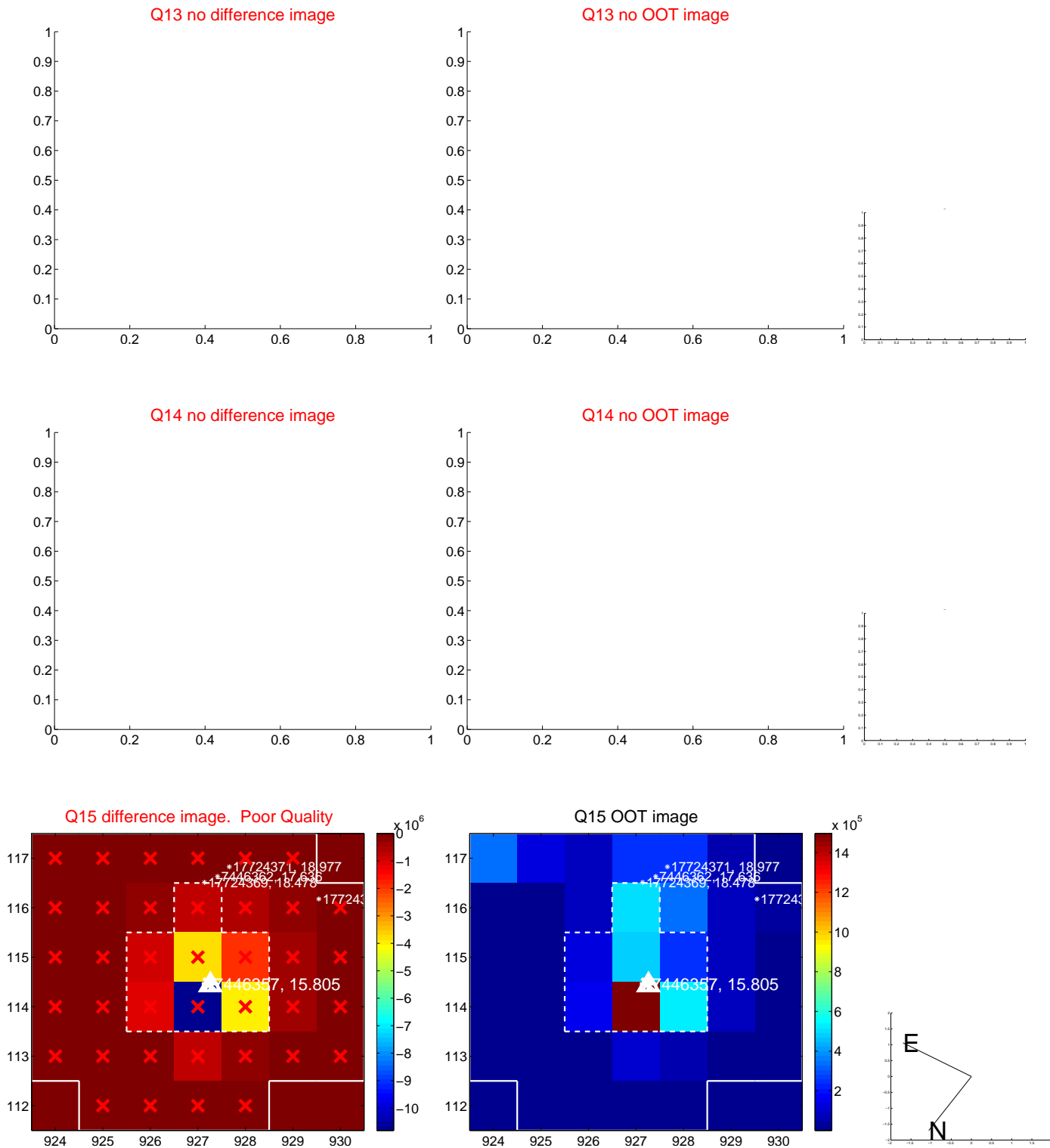
Q8 no OOT image



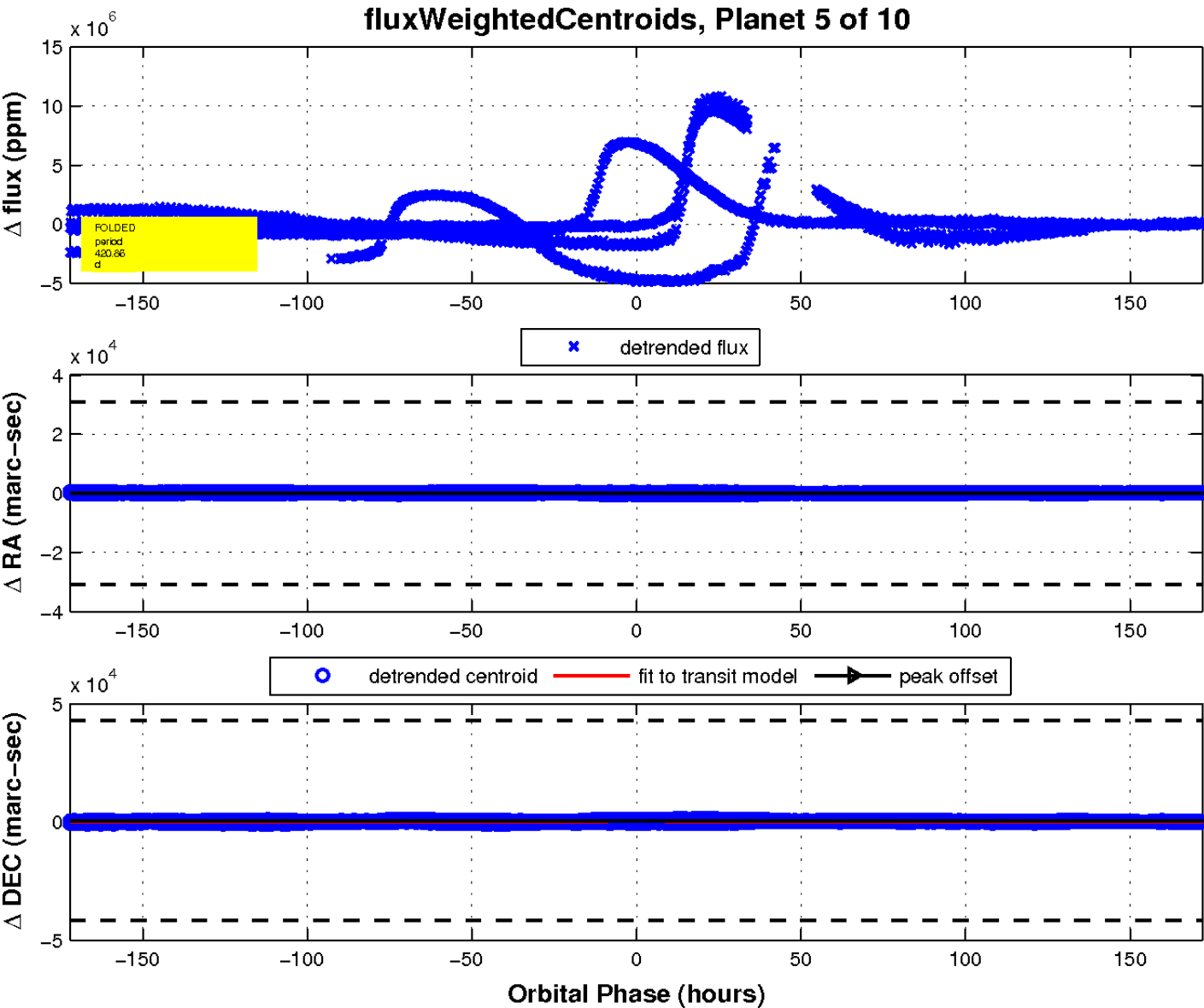
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

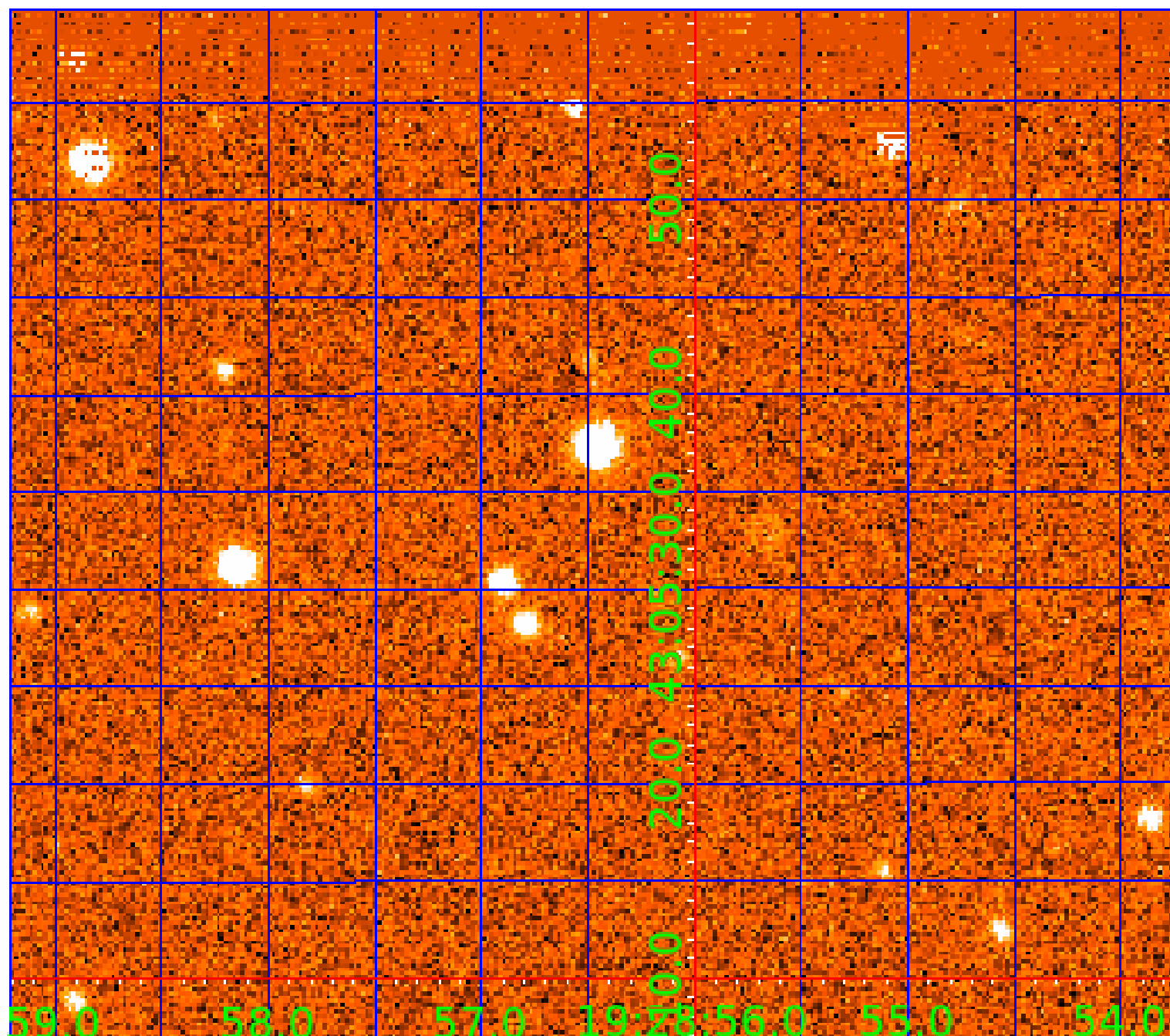


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007446357

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})
007446357-01	OBS	No	316.767858	437.415009	27390.2	7.500	58.5	-1.0	2.25	9296	38.15	23.89
007446357-02	OBS	No	399.067427	247.703027	17934.0	15.000	50.1	-1.0	2.25	9296	30.86	17.56
007446357-03	OBS	No	308.465022	360.053551	18752.3	10.500	50.8	-1.0	2.25	9296	31.55	24.75
007446357-04	OBS	No	565.634997	422.505322	11996.6	10.500	46.3	-1.0	2.25	9296	25.23	11.03
007446357-05	OBS	No	420.863224	203.147650	16636.7	12.000	45.0	-1.0	2.25	9296	29.72	16.36
007446357-06	OBS	No	471.933502	554.601476	15123.7	10.500	39.4	-1.0	2.25	9296	28.34	14.04
007446357-07	OBS	No	360.931593	213.027276	11585.2	12.500	39.3	-1.0	2.25	9296	24.79	20.08
007446357-08	OBS	No	535.626172	469.039656	494168.2	17.031	34.5	5.8	2.25	9296	165.06	11.86
007446357-09	OBS	No	511.261294	432.483710	9672.8	12.500	33.6	-1.0	2.25	9296	22.65	12.62
007446357-10	OBS	No	442.964688	271.184425	703902.5	24.810	32.9	4.2	2.25	9296	199.42	15.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007446357-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007446357-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS
007446357-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
007446357-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

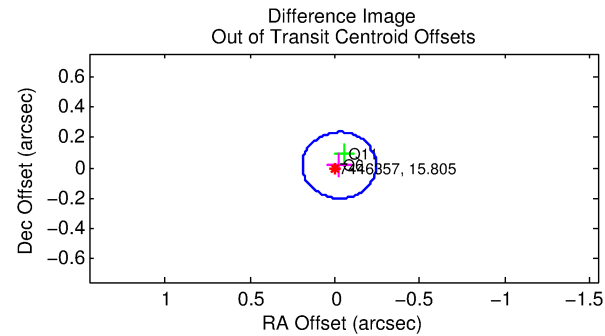
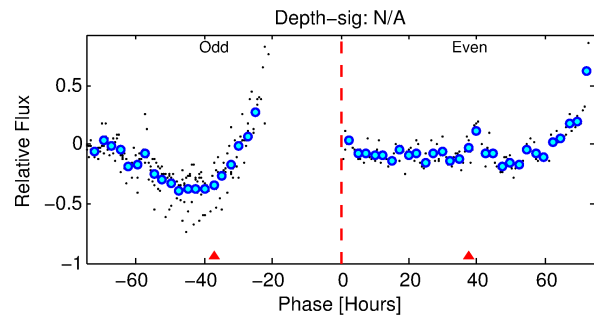
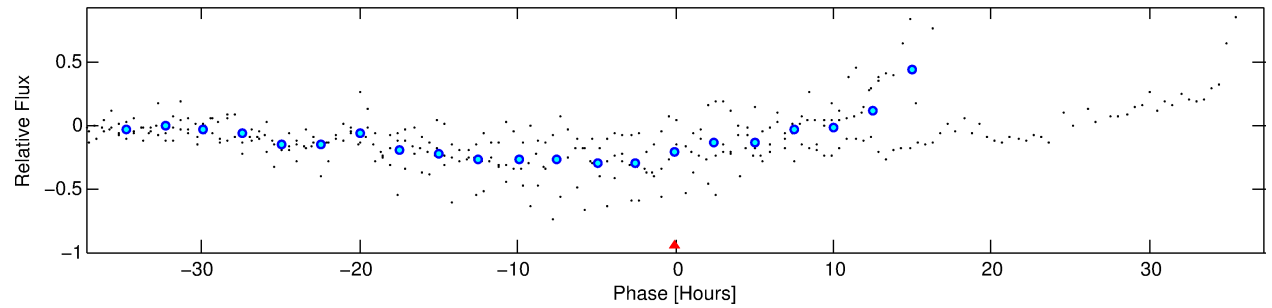
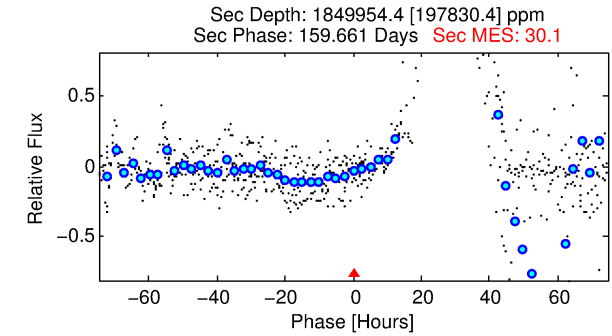
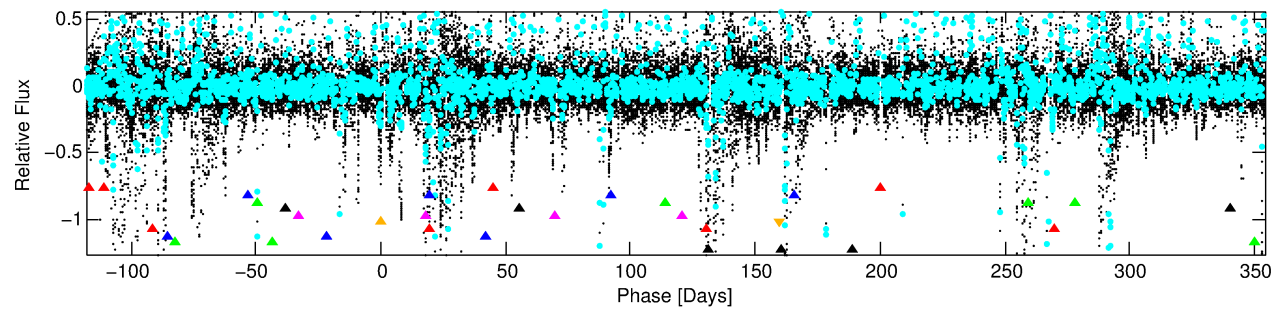
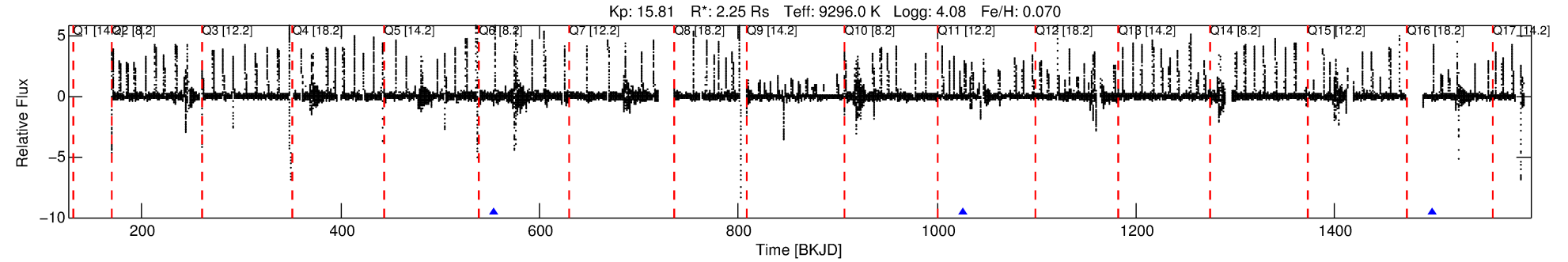
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007446357-06

No Significant Match Found

DV One-Page Summary

KIC: 7446357 Candidate: 6 of 10 Period: 471.934 d



TPS TCE Results:

Period = 471.93350 d
Epoch = 554.6015 BKJD

DV fit results are unavailable

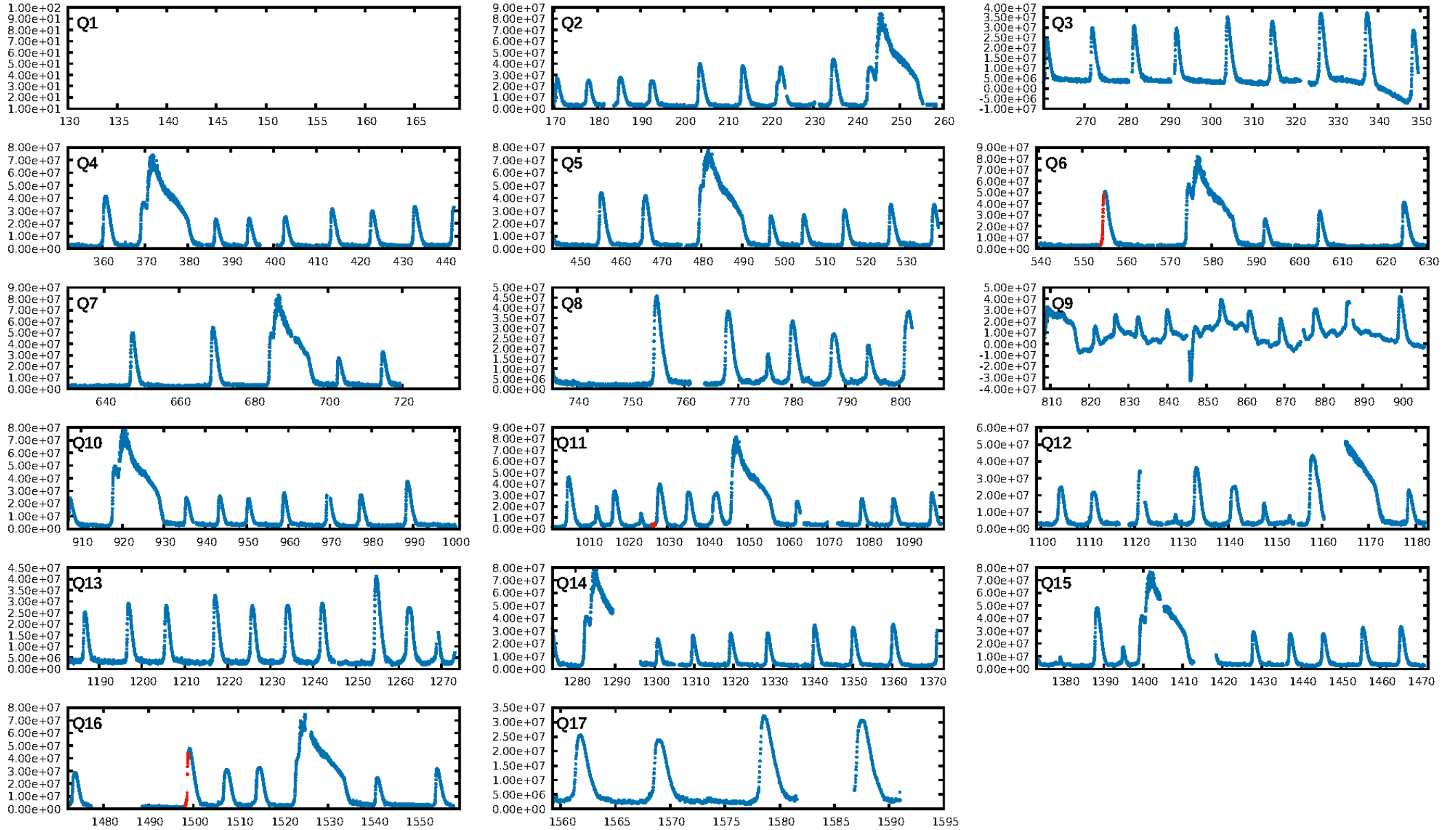
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [25.81 σ]
LongPeriod-sig: 100.0% [57.82 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.673
Centroid-sig: 35.7%
Centroid-so: 1.353 arcsec [5.21 σ]
OotOffset-rm: 0.030 arcsec [0.41 σ]
KicOffset-rm: 0.204 arcsec [2.62 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

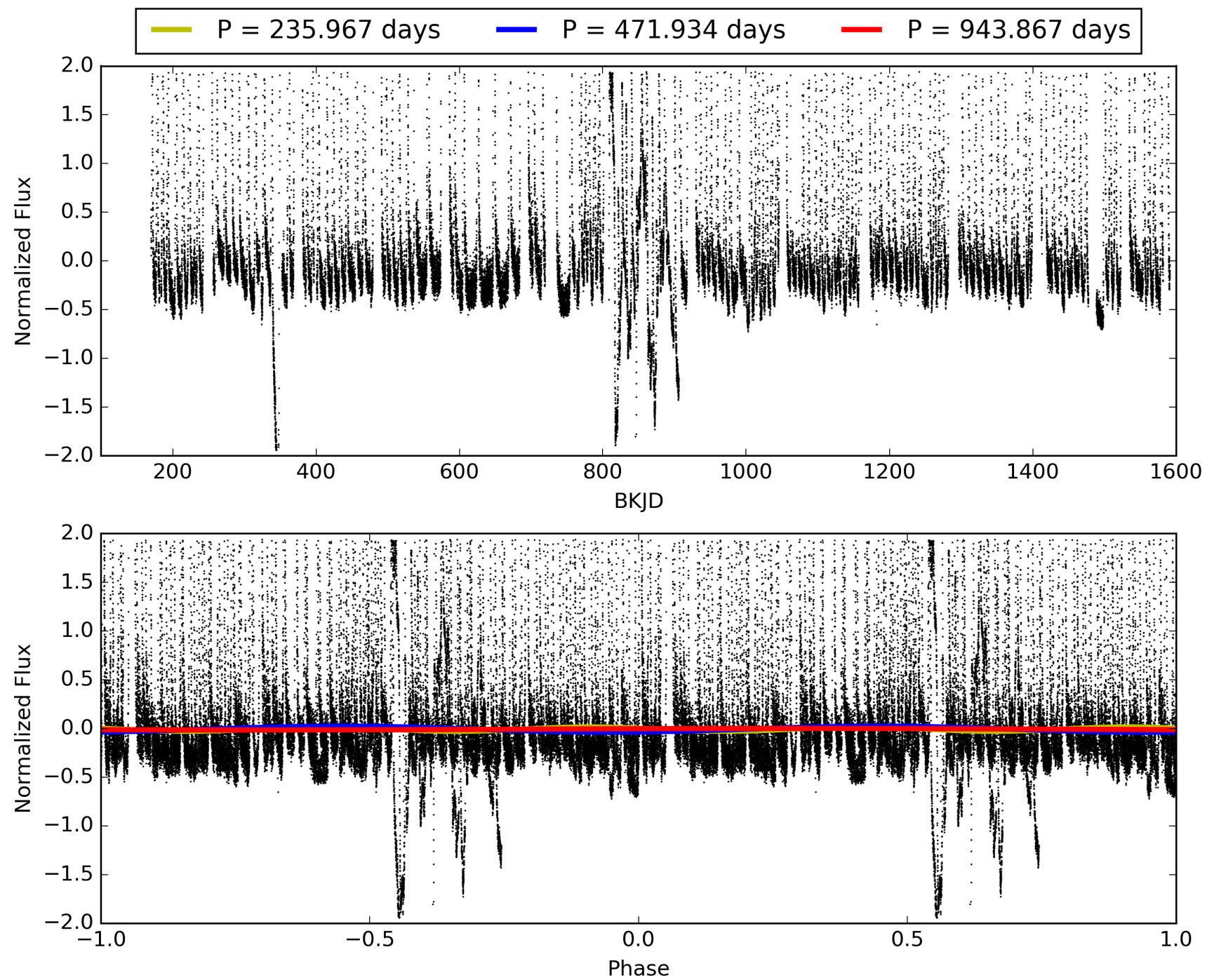
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:31:11 Z

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

TCE 007446357-06, PDC Light Curves

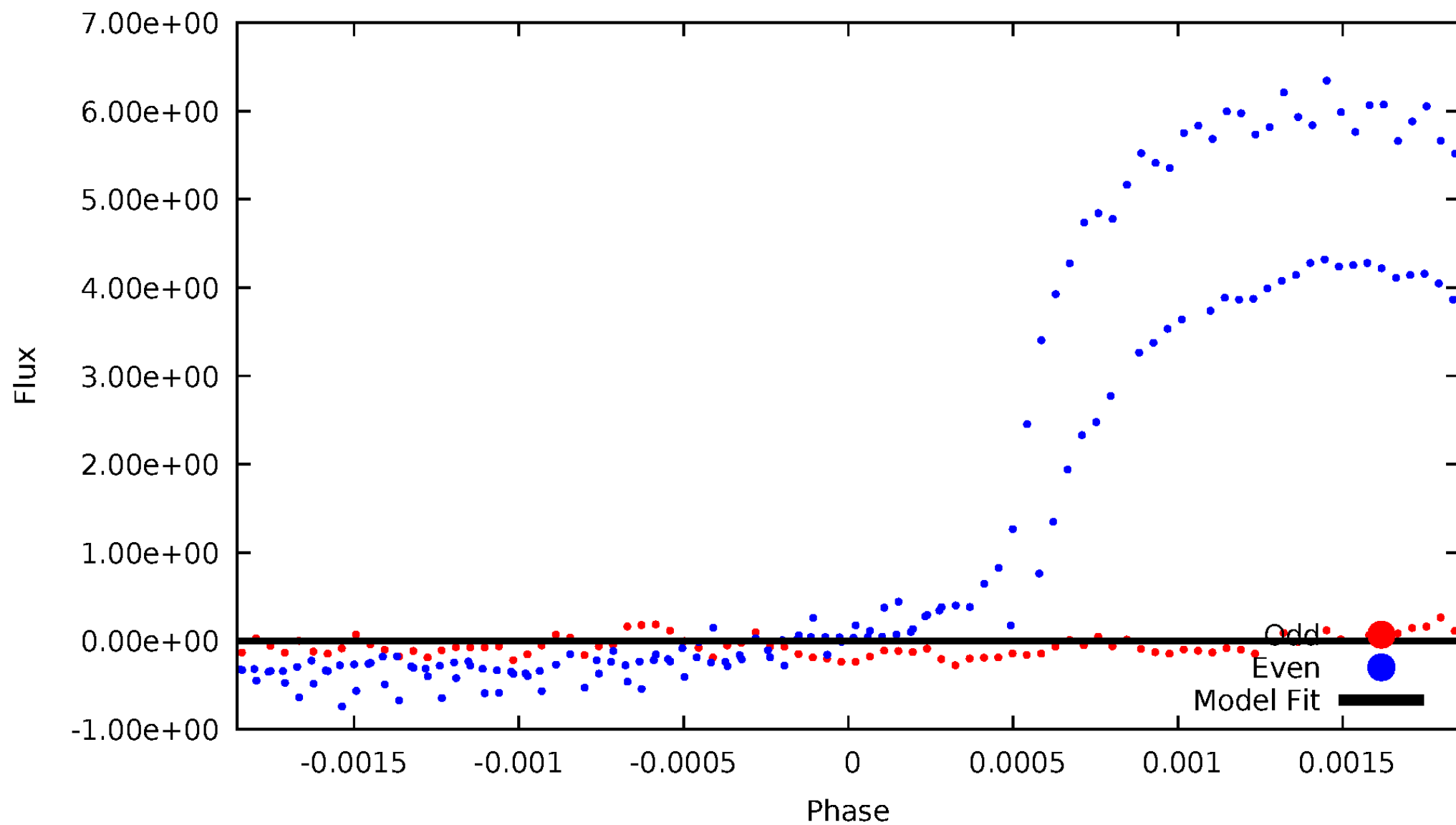


TCE 007446357-06



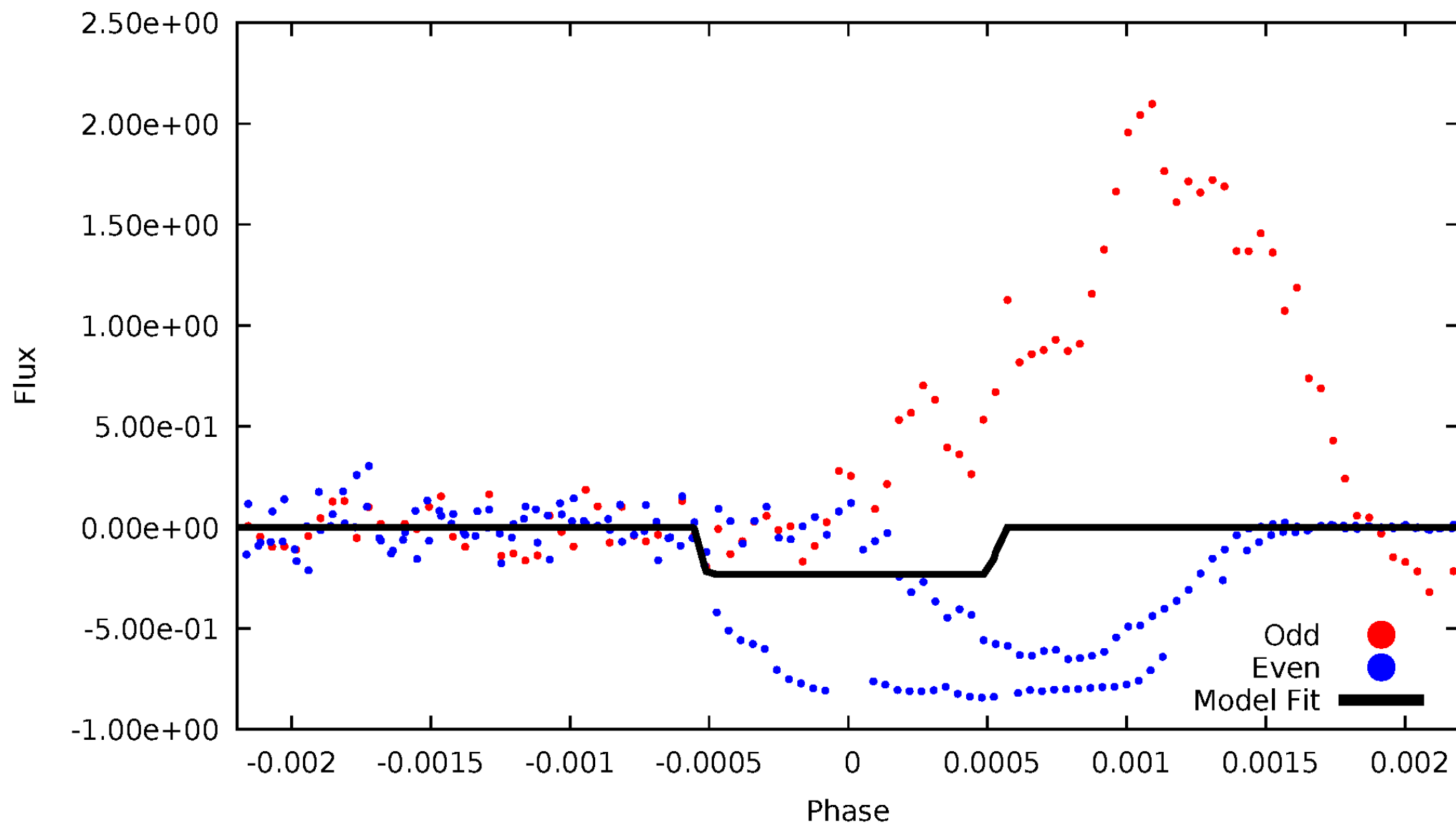
DV Odd/Even

TCE 007446357-06



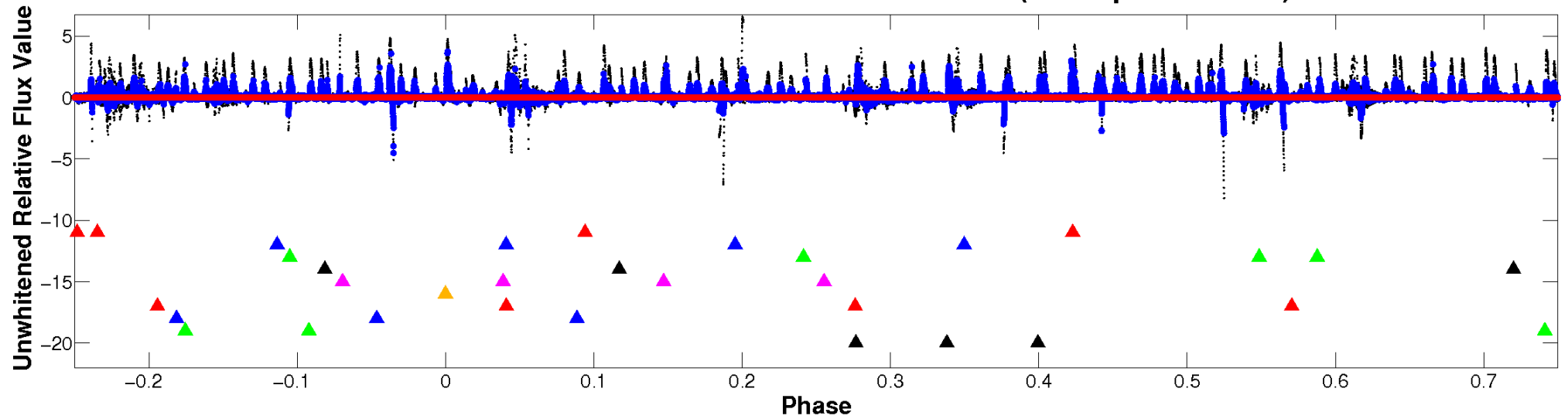
ALT Odd/Even

TCE 007446357-06

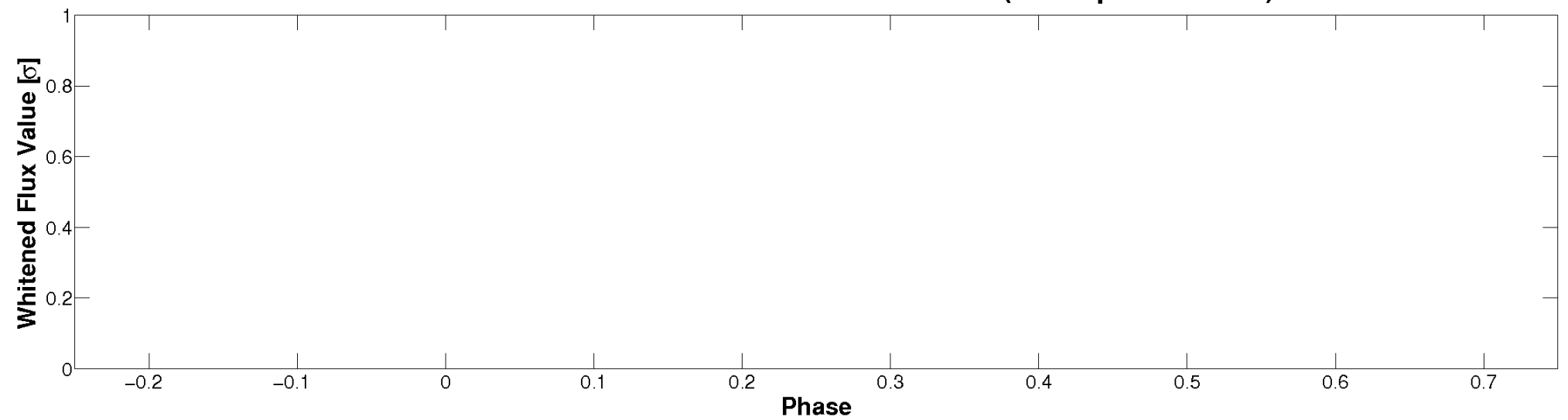


Non-Whitened Vs. Whitened Light Curve

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

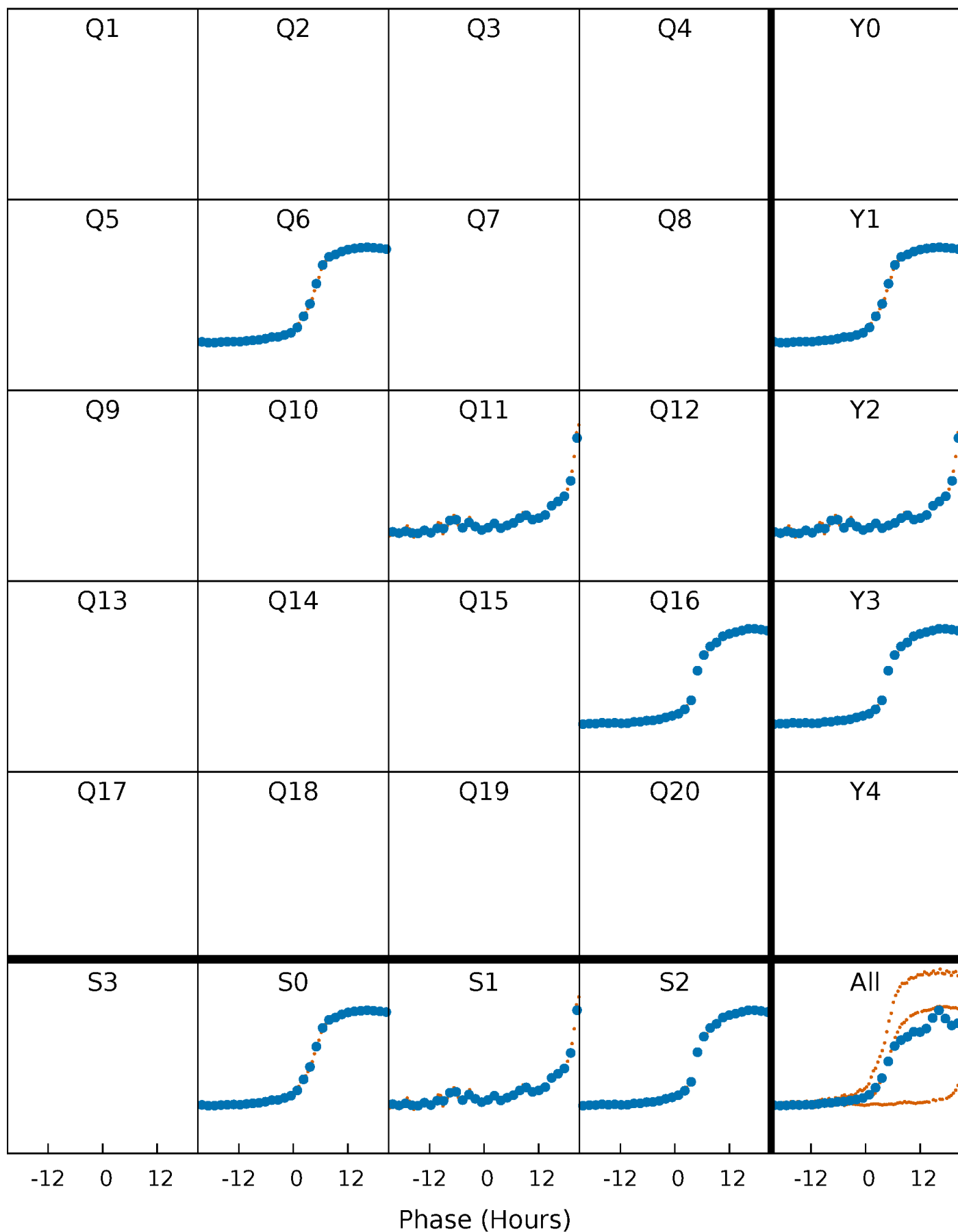


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



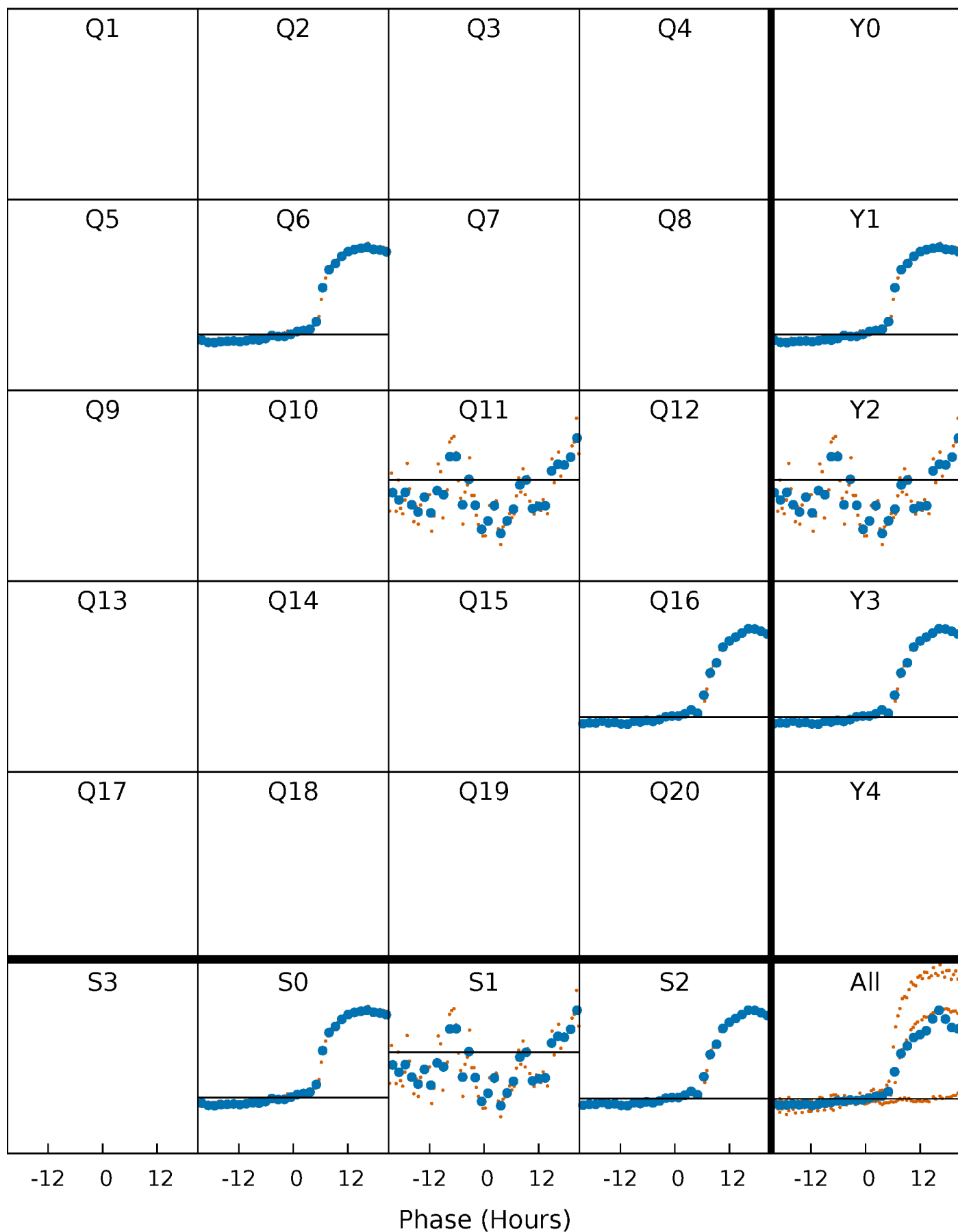
PDC Quarter-Phased Transit Curves

TCE 007446357-06 P=471.933502 Days $T_0=554.601476$ (BKJD)



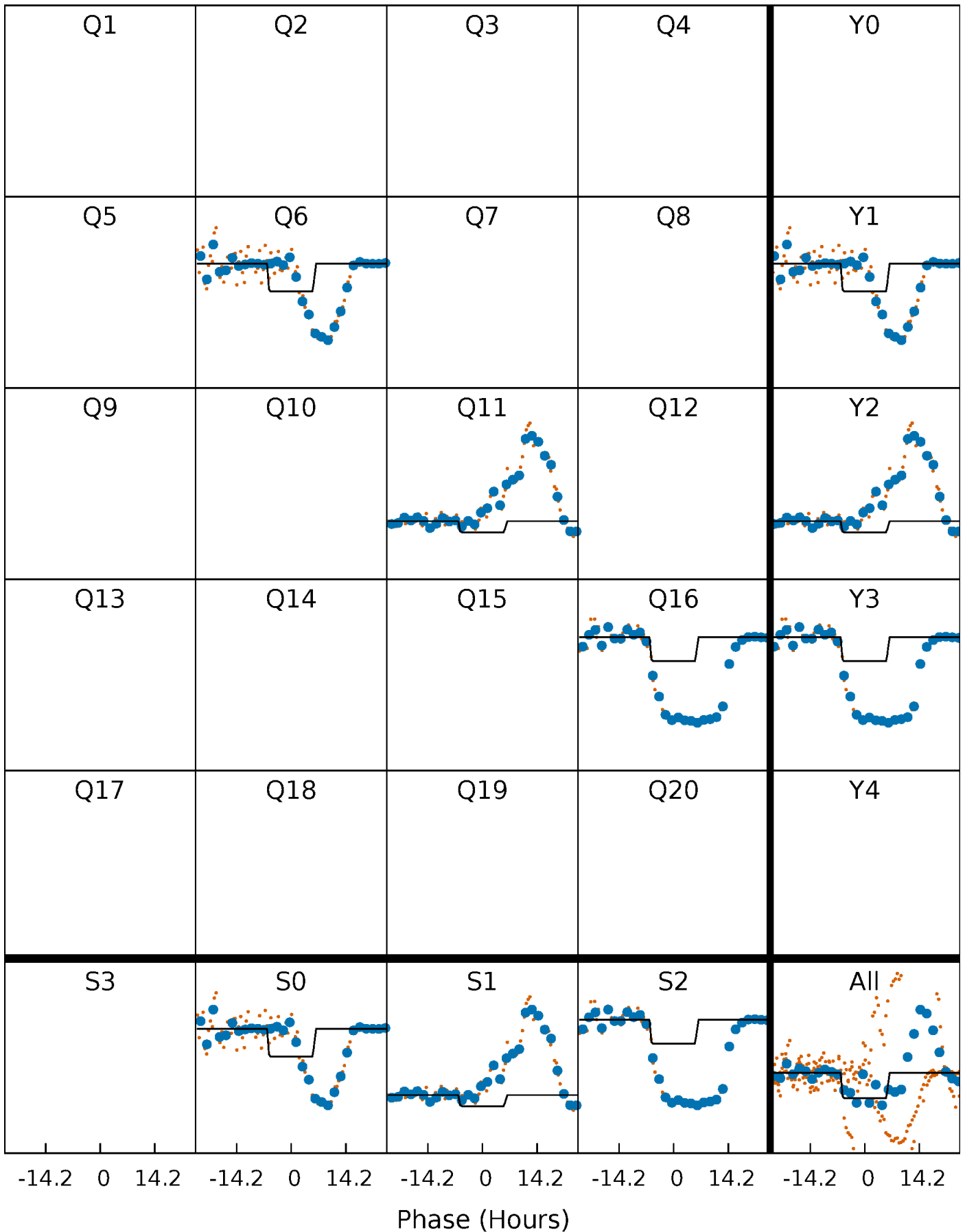
DV Quarter-Phased Transit Curves

TCE 007446357-06 P=471.933502 Days $T_0=554.601476$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

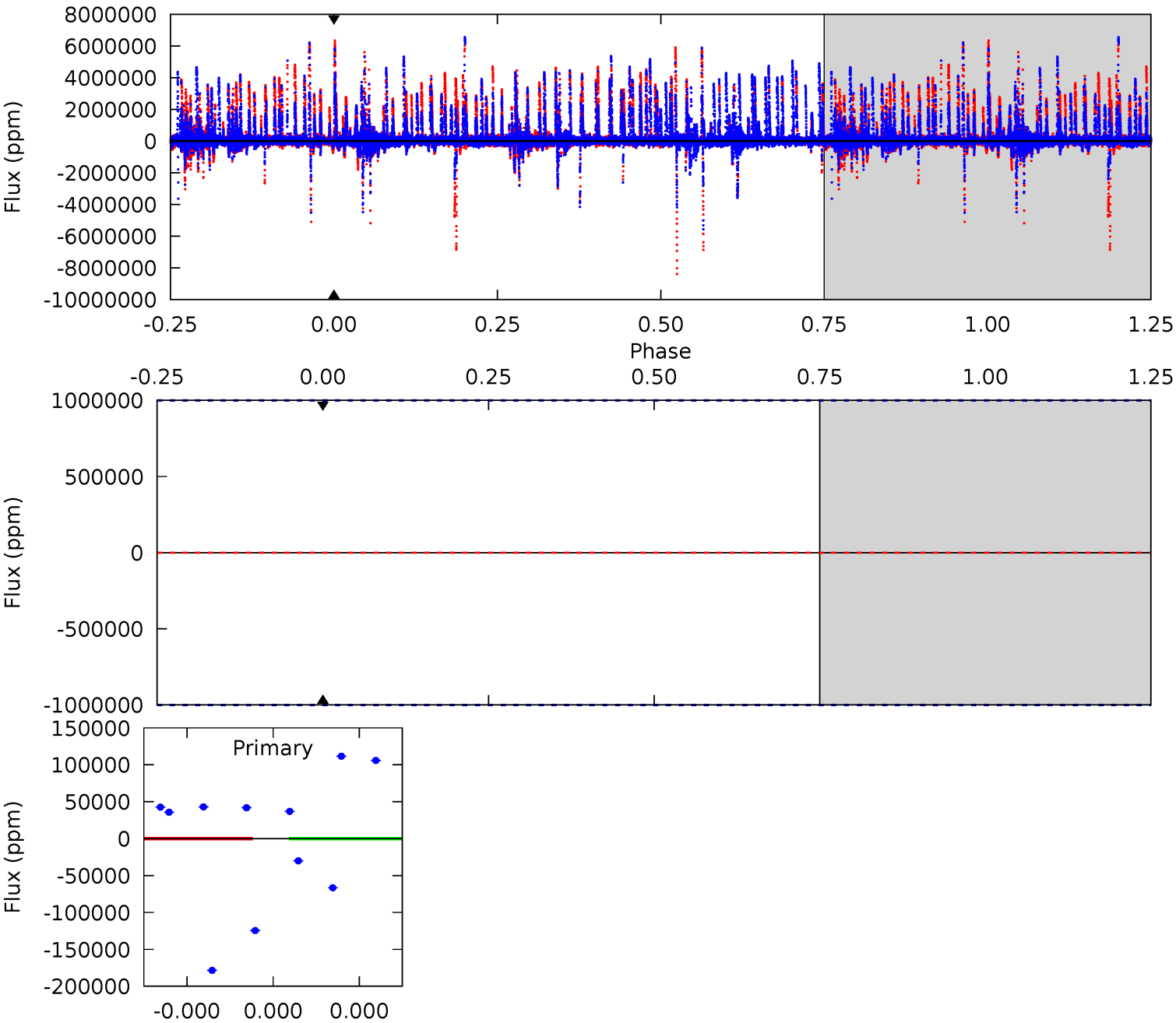
TCE 007446357-06 P=471.933502 Days $T_0=554.198928$ (BKJD)



DV Model-Shift Uniqueness Test

007446357-06, P = 471.933502 Days, E = 82.667974 Days

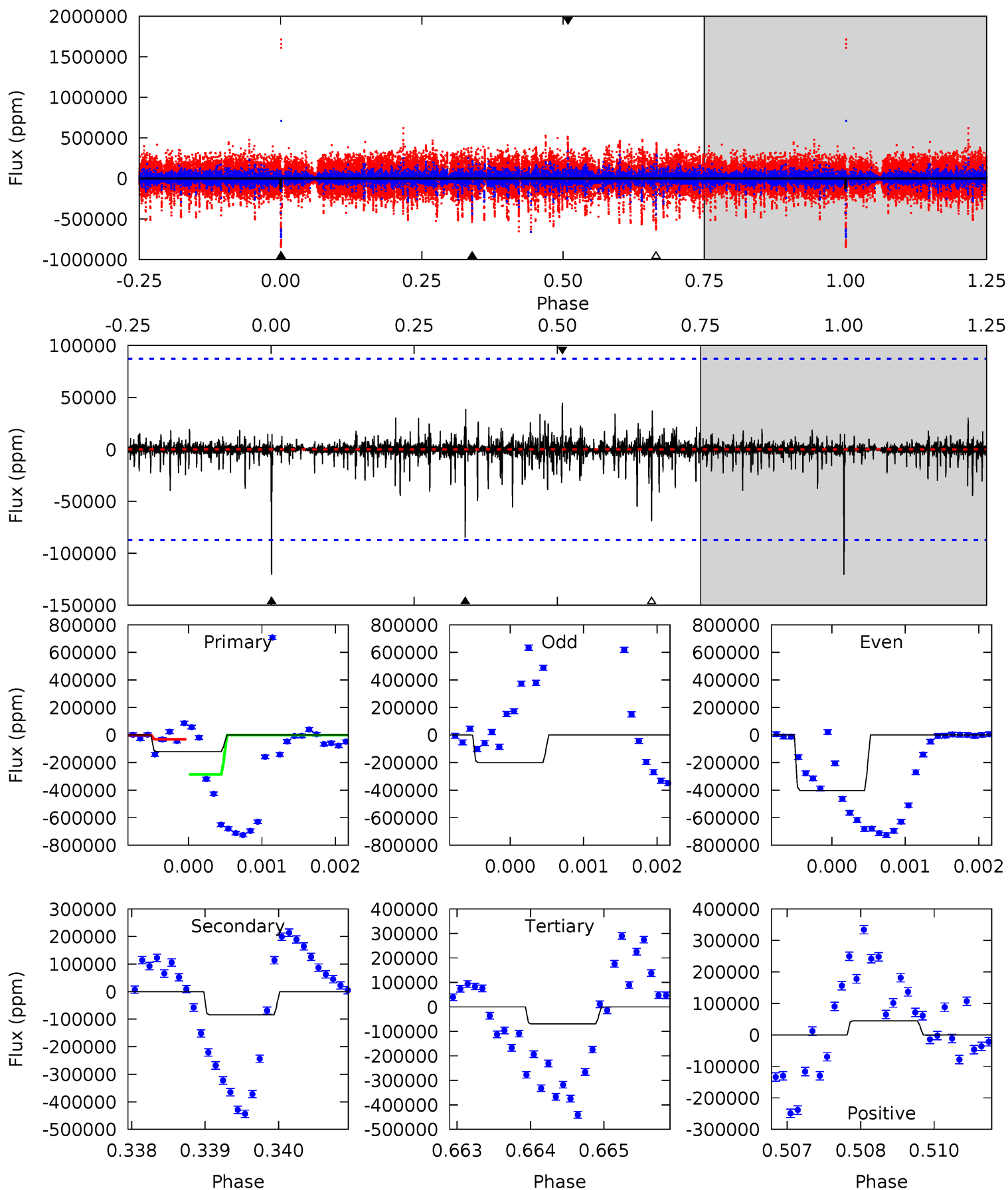
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007446357-06, P = 471.933502 Days, E = 82.265426 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.50	5.27	4.31	2.77	5.44	3.27	0.46	3.19	4.73	0.96	2.50	5.30	1.58	0.27	7.85



Stellar Parameters For KIC 007446357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9296^{+245}_{-449}	$4.085^{+0.170}_{-0.170}$	$0.070^{+0.150}_{-0.700}$	$2.253^{+0.774}_{-0.703}$	$2.251^{+0.399}_{-0.599}$	$0.277^{+0.285}_{-0.140}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+34%/-31%	+18%/-27%	+103%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007446357-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$30.72^{+25.82}_{-18.03}$	688^{+52}_{-52}	-4756^{+30646}_{-21269}	$-1754.876^{+199721.101}_{-191155.603}$
Alt.	-84678 ± 16068	$118.33^{+35.66}_{-31.05}$	686^{+56}_{-54}	6879^{+1084}_{-786}	8479^{+6671}_{-3533}

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

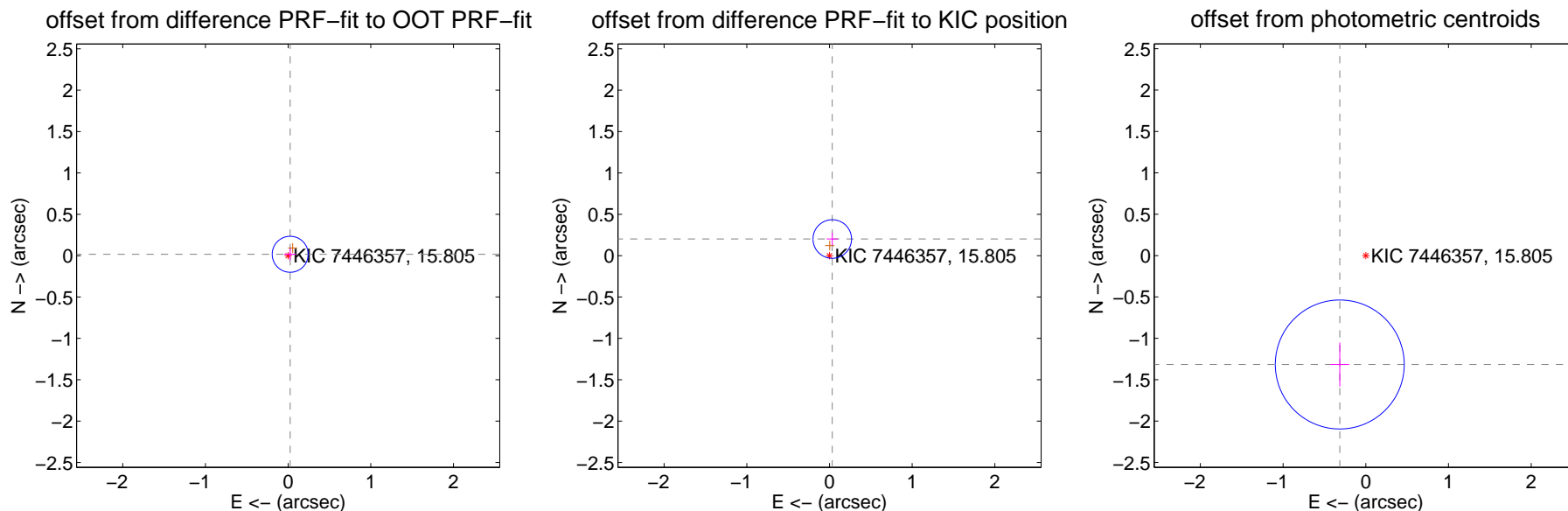
DV Centroid Data

Supplemental centroid analysis for 007446357-06. Kepler magnitude: 15.80. 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 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.030 ± 0.073	0.41	-0.025 ± 0.072	0.017 ± 0.073
PRF-fit source offset from KIC position	0.204 ± 0.078	2.62	-0.034 ± 0.068	0.201 ± 0.077
photometric centroid source offset	1.35 ± 0.26	5.21	0.31 ± 0.11	-1.32 ± 0.27

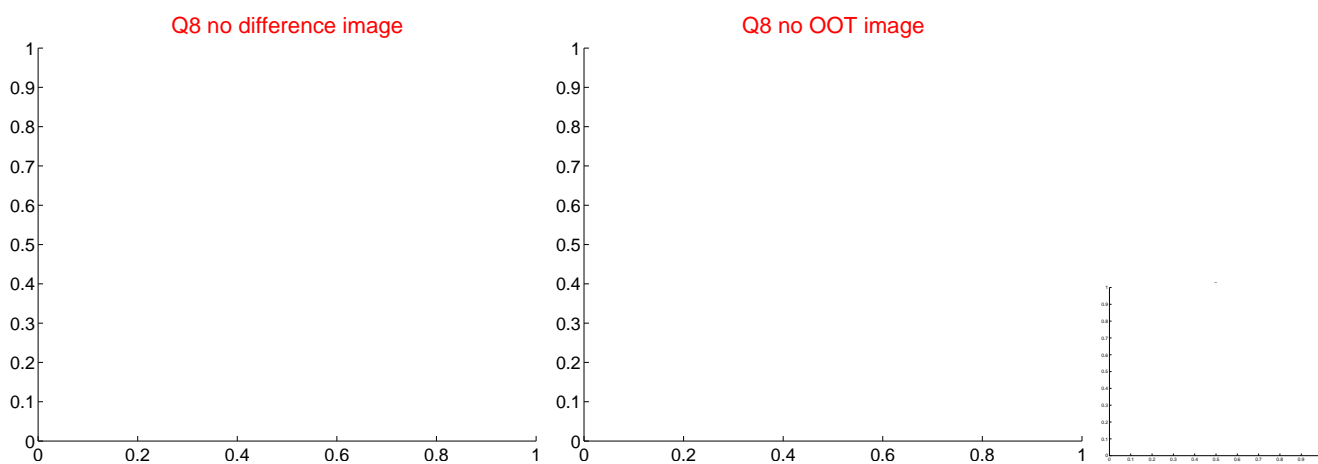
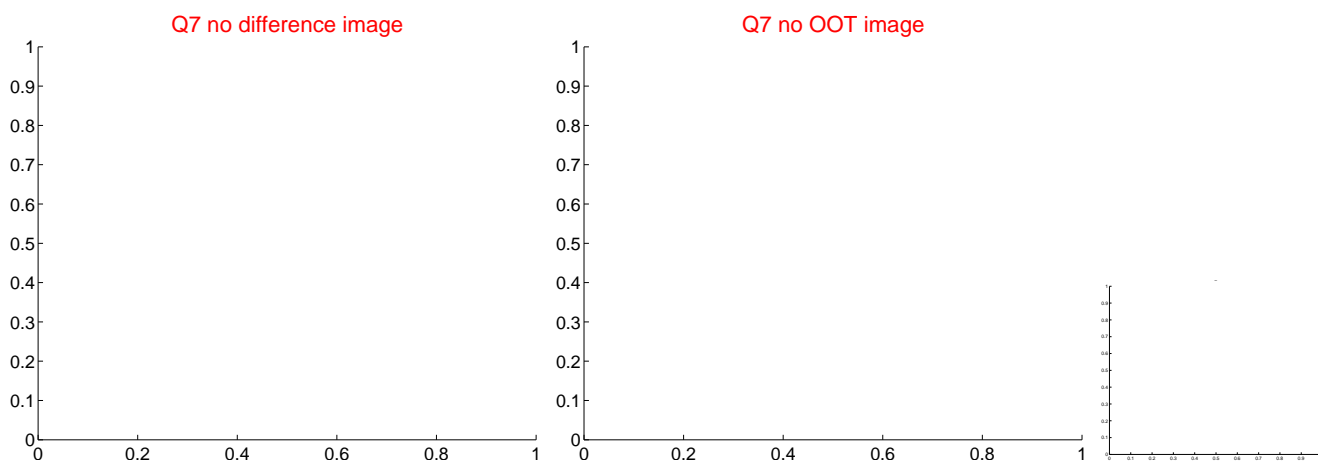
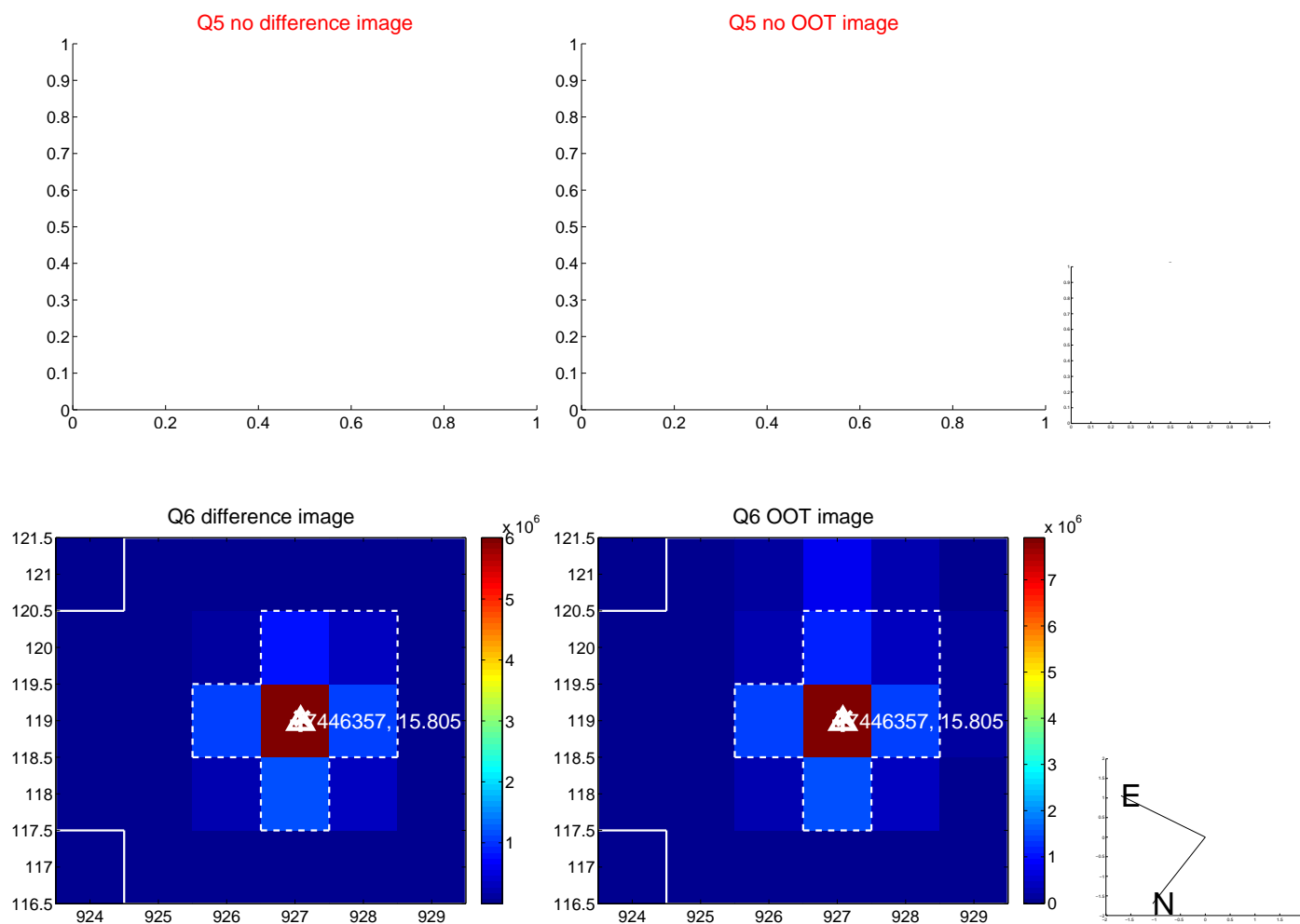


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

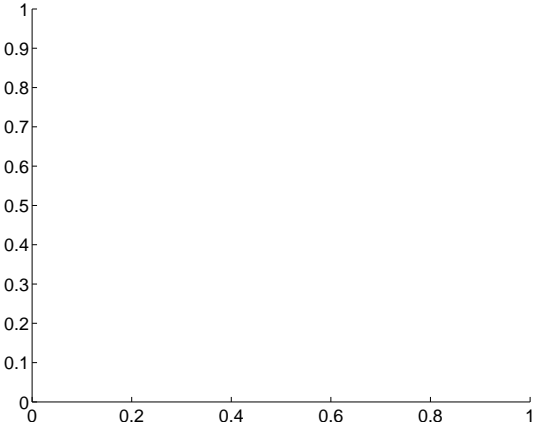


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value

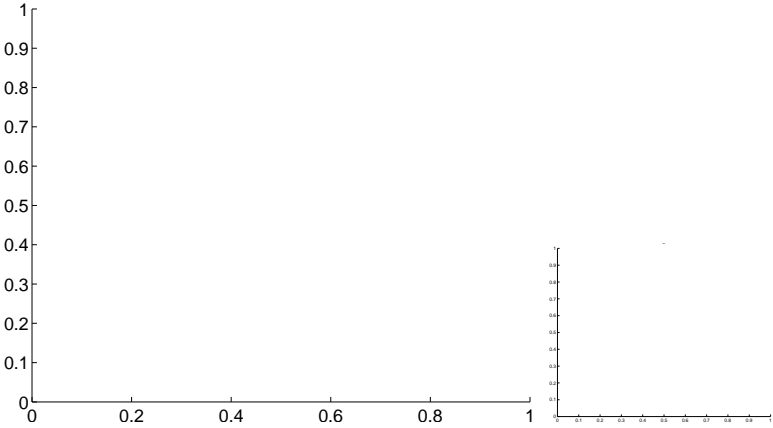


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q9 no difference image



Q9 no OOT image



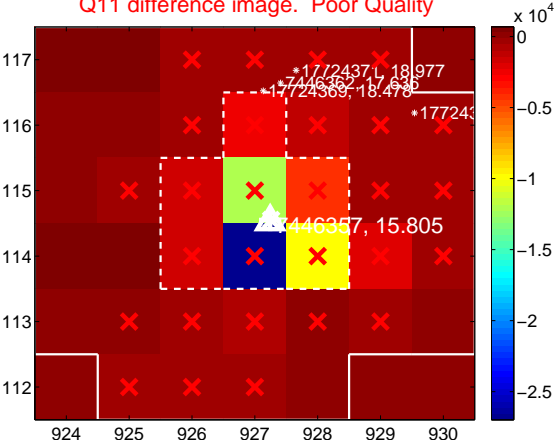
Q10 no difference image



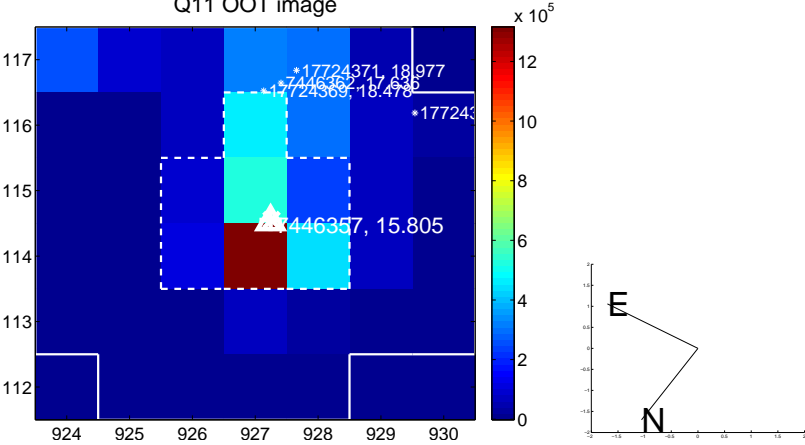
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



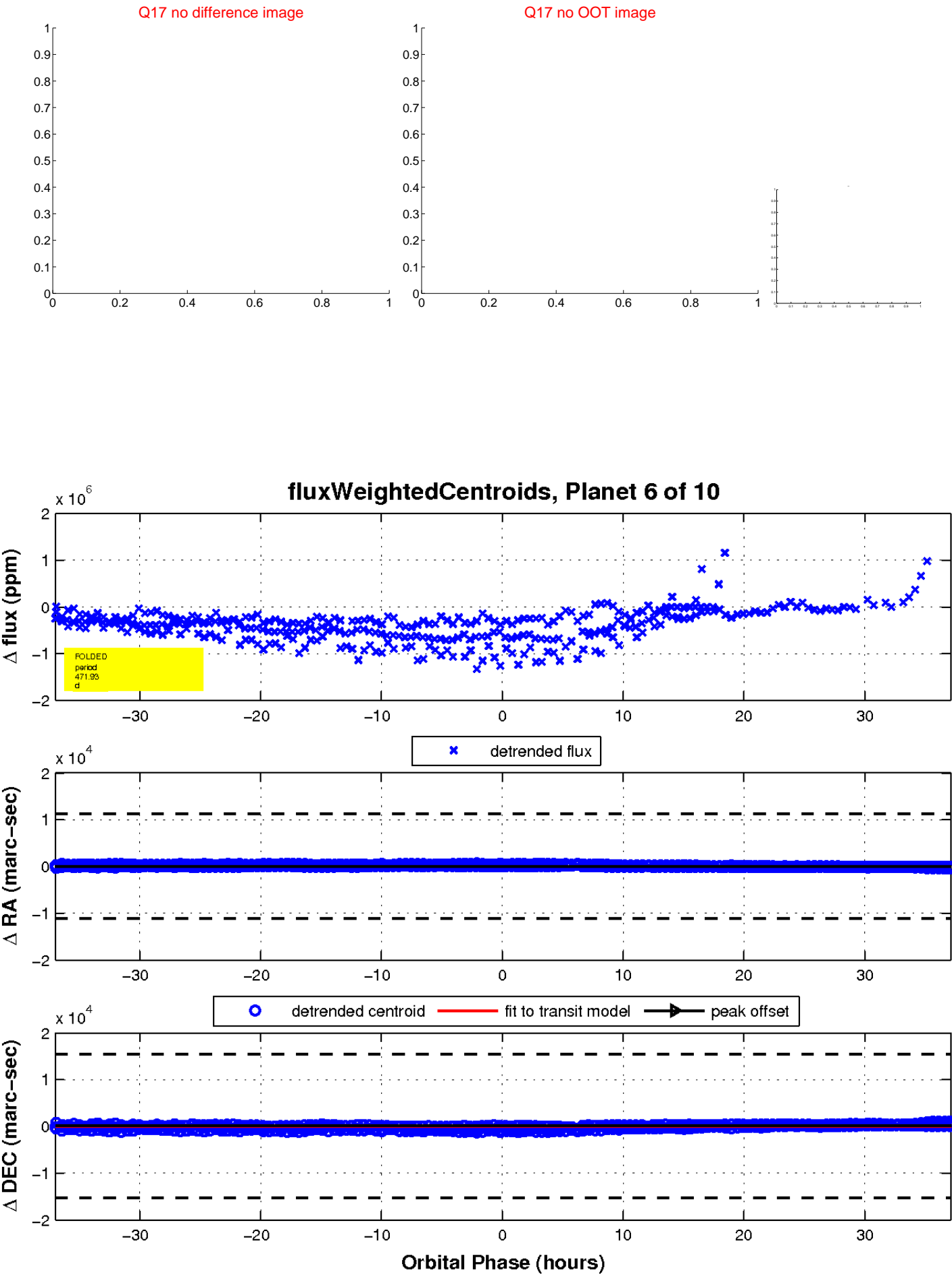
Q12 no OOT image



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

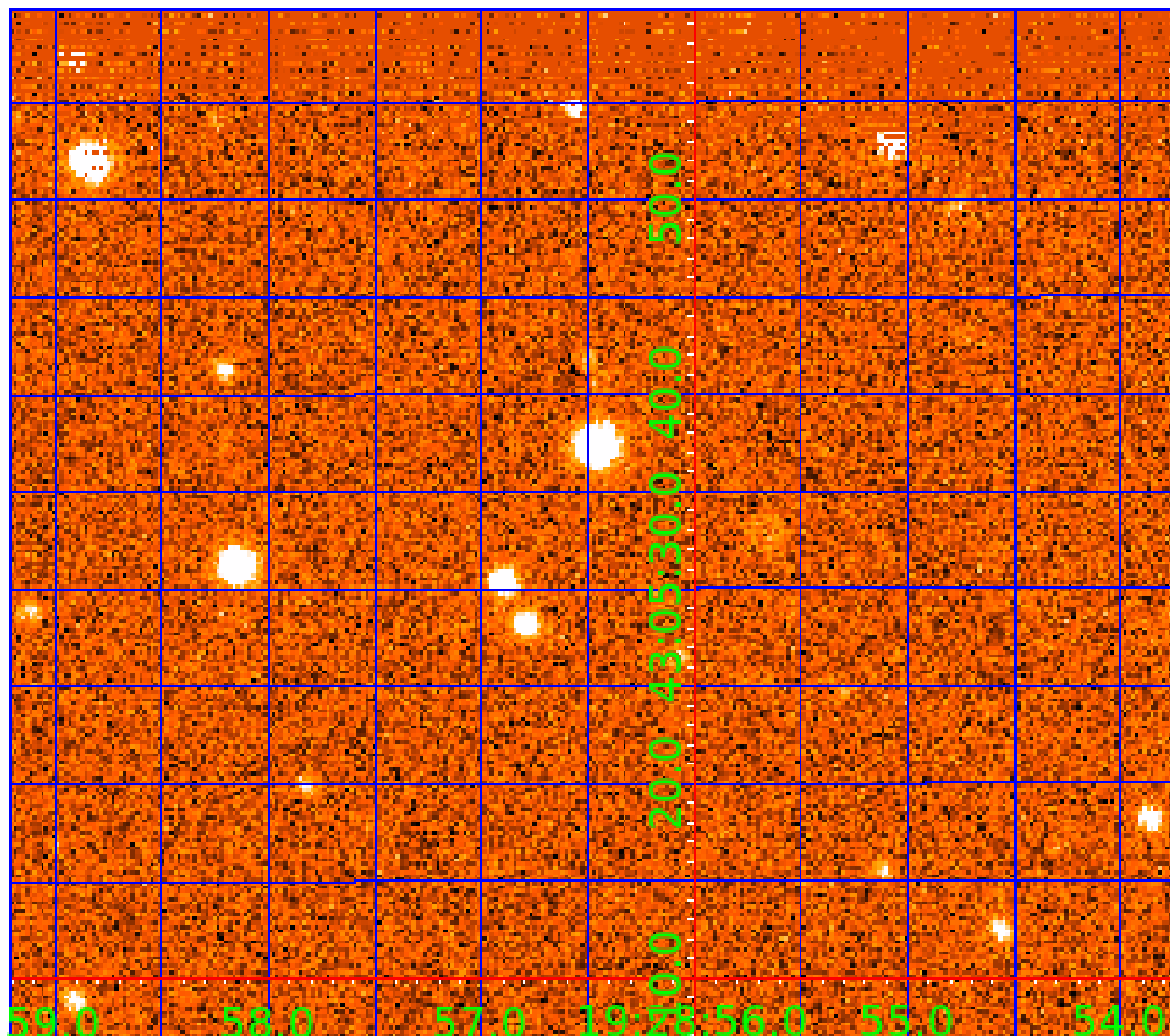


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
007446357-01	OBS	No	316.767858	437.415009	27390.2	7.500	58.5	-1.0	2.25	9296	38.15	23.89
007446357-02	OBS	No	399.067427	247.703027	17934.0	15.000	50.1	-1.0	2.25	9296	30.86	17.56
007446357-03	OBS	No	308.465022	360.053551	18752.3	10.500	50.8	-1.0	2.25	9296	31.55	24.75
007446357-04	OBS	No	565.634997	422.505322	11996.6	10.500	46.3	-1.0	2.25	9296	25.23	11.03
007446357-05	OBS	No	420.863224	203.147650	16636.7	12.000	45.0	-1.0	2.25	9296	29.72	16.36
007446357-06	OBS	No	471.933502	554.601476	15123.7	10.500	39.4	-1.0	2.25	9296	28.34	14.04
007446357-07	OBS	No	360.931593	213.027276	11585.2	12.500	39.3	-1.0	2.25	9296	24.79	20.08
007446357-08	OBS	No	535.626172	469.039656	494168.2	17.031	34.5	5.8	2.25	9296	165.06	11.86
007446357-09	OBS	No	511.261294	432.483710	9672.8	12.500	33.6	-1.0	2.25	9296	22.65	12.62
007446357-10	OBS	No	442.964688	271.184425	703902.5	24.810	32.9	4.2	2.25	9296	199.42	15.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007446357-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007446357-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS
007446357-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
007446357-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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.

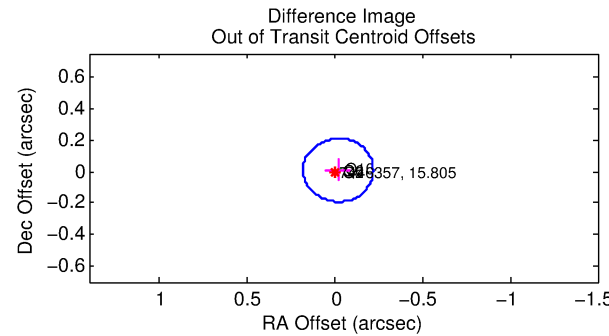
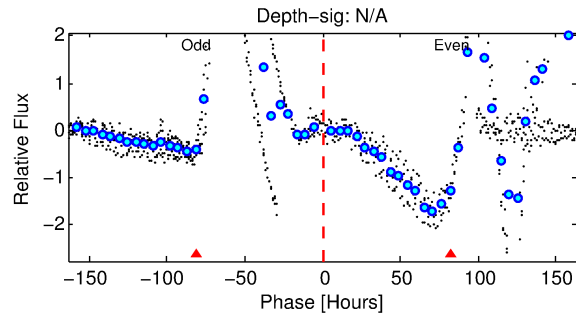
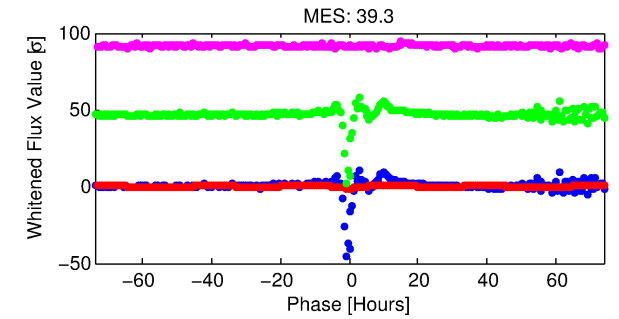
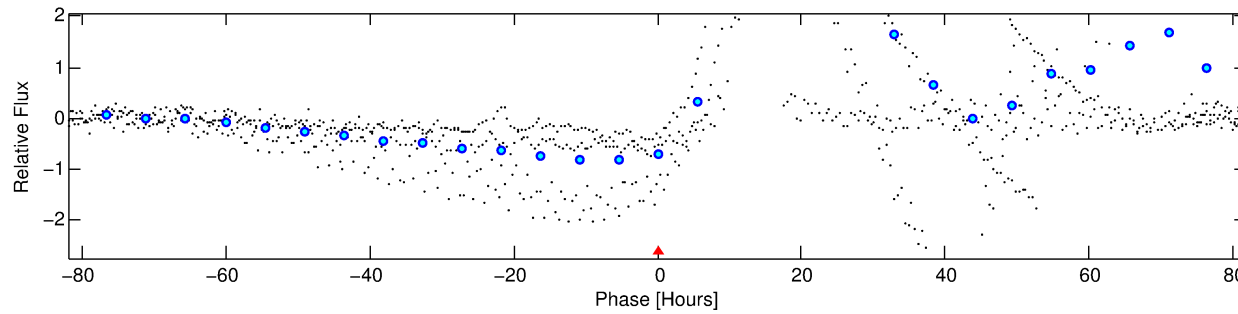
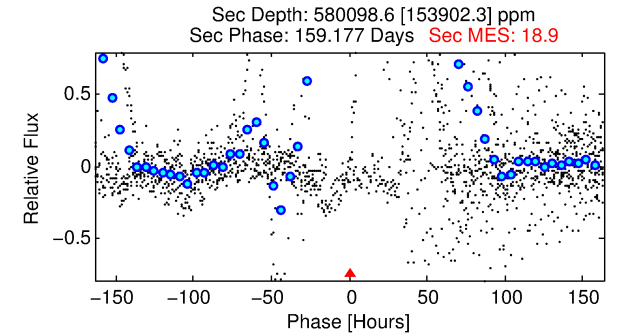
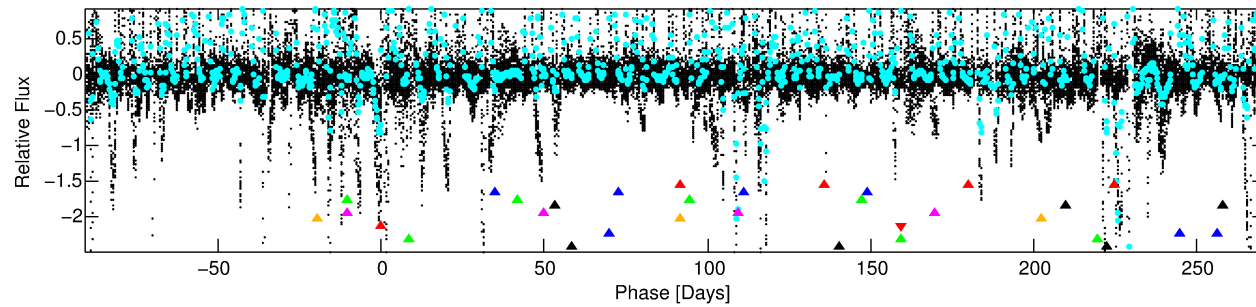
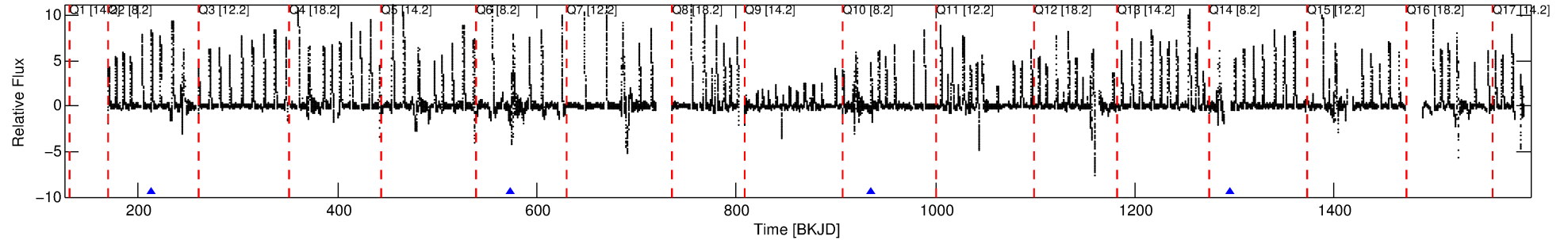
Ephemeris Match Information For 007446357-07

No Significant Match Found

DV One-Page Summary

KIC: 7446357 Candidate: 7 of 10 Period: 360.932 d

Kp: 15.81 R*: 2.25 Rs Teff: 9296.0 K Logg: 4.08 Fe/H: 0.070



TPS TCE Results:

Period = 360.93159 d
Epoch = 213.0273 BKJD

DV fit results are unavailable

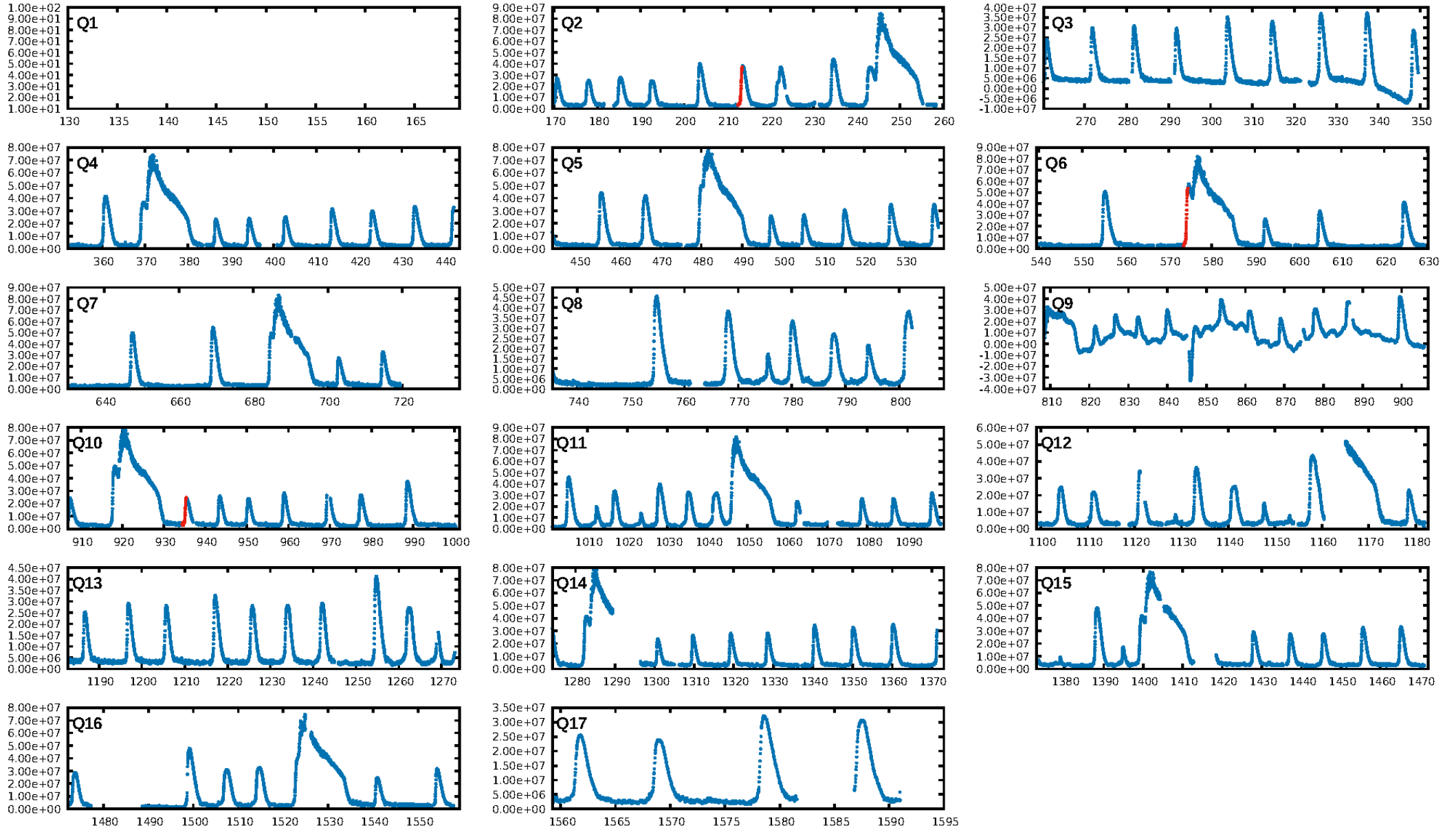
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [72.71σ]
LongPeriod-sig: 100.0% [46.87σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.49
Centroid-sig: 30.9%
Centroid-so: 1.120 arcsec [39.43σ]
OotOffset-rm: 0.023 arcsec [0.34σ]
KicOffset-rm: 0.208 arcsec [3.00σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

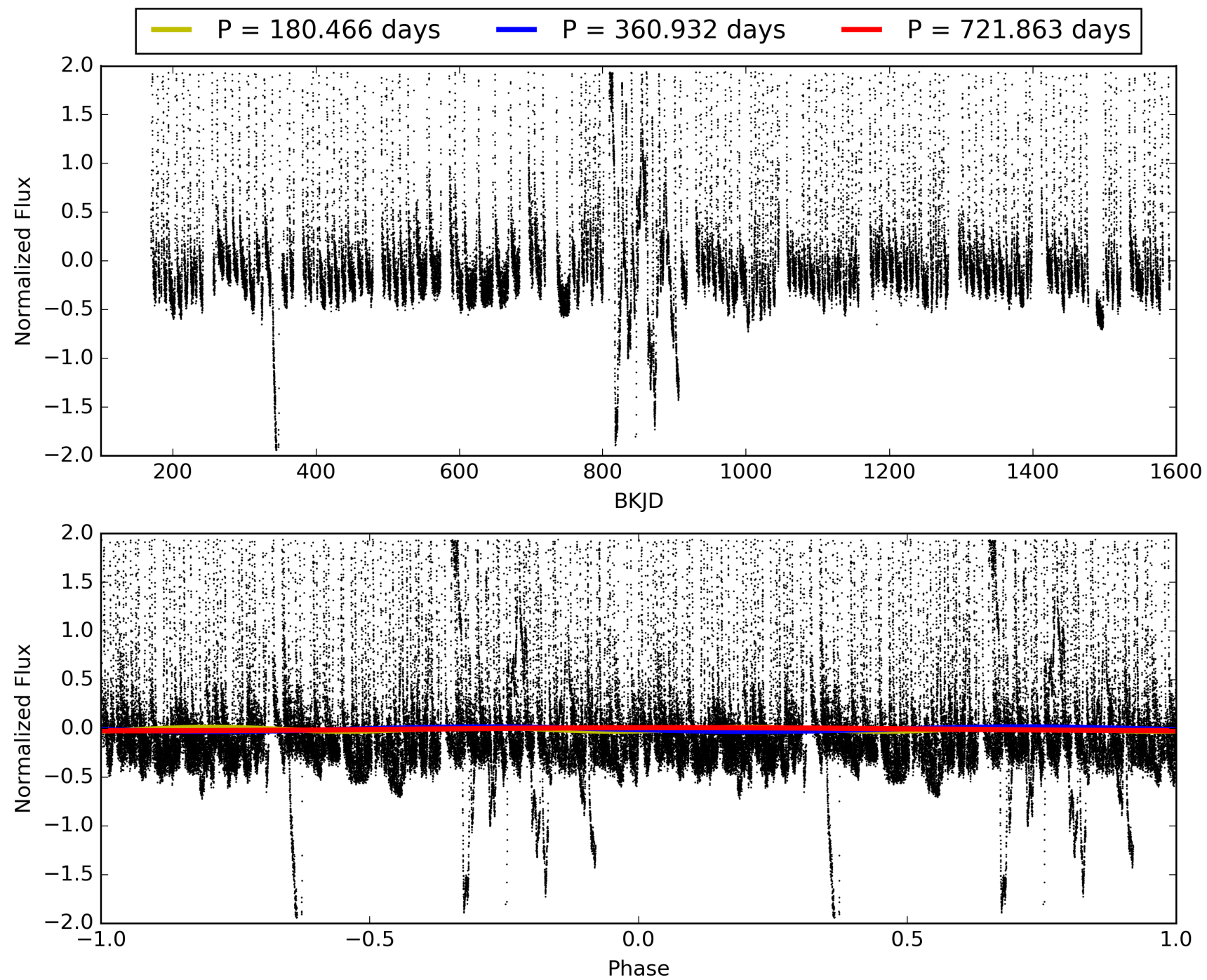
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:31:18 Z

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

TCE 007446357-07, PDC Light Curves

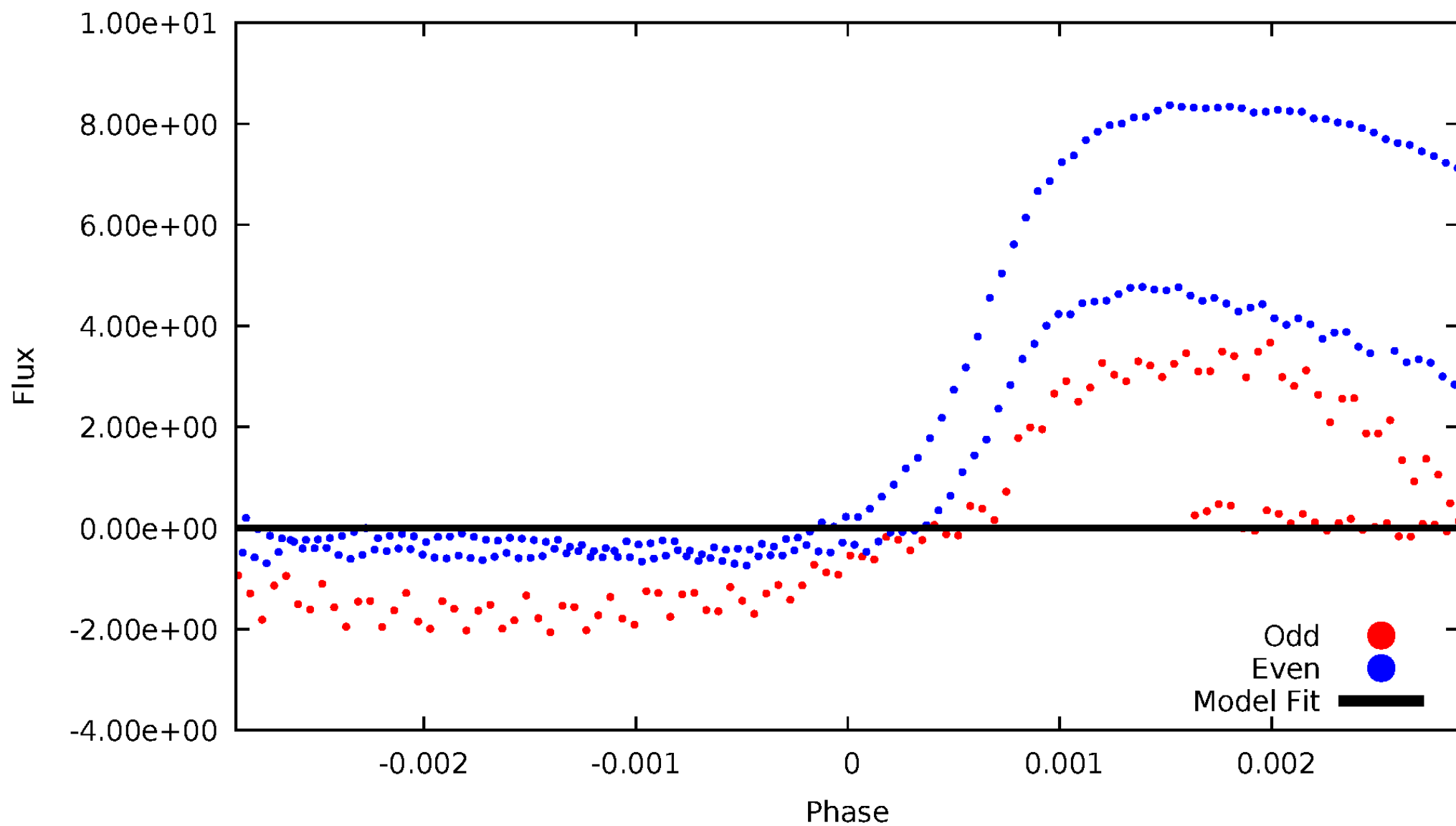


TCE 007446357-07



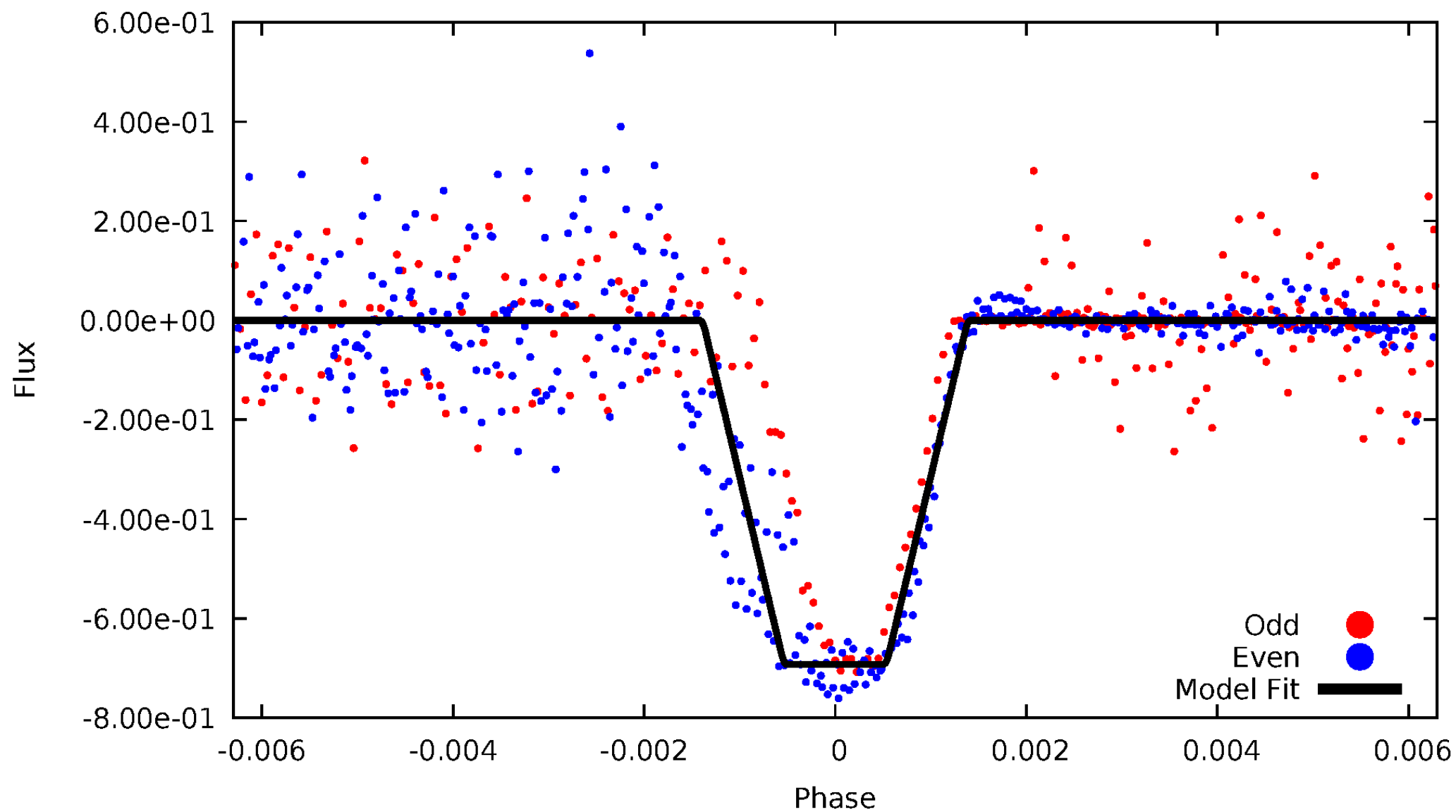
DV Odd/Even

TCE 007446357-07



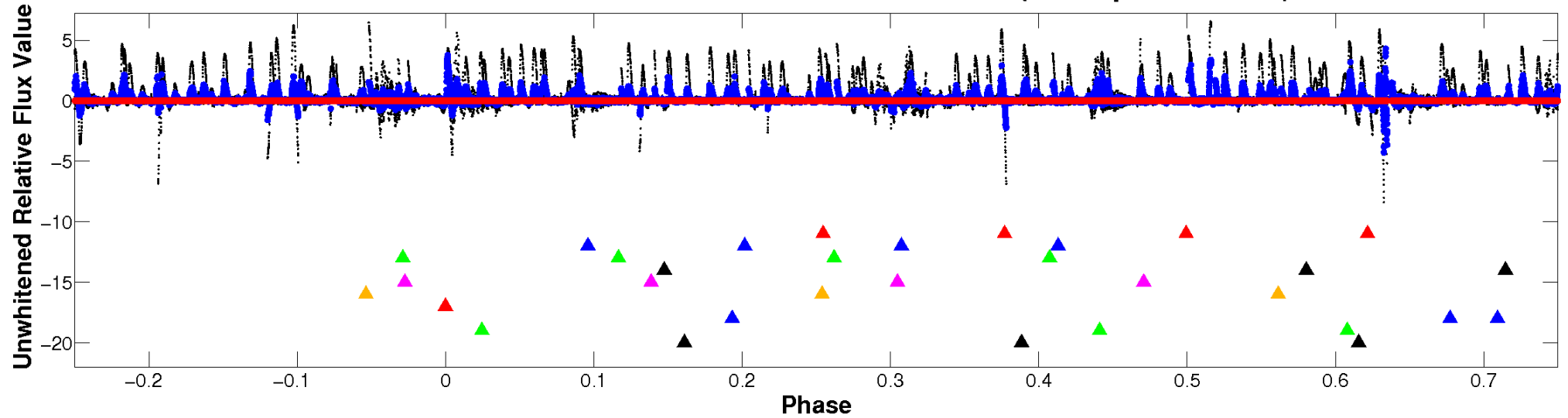
ALT Odd/Even

TCE 007446357-07



Non-Whitened Vs. Whitened Light Curve

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

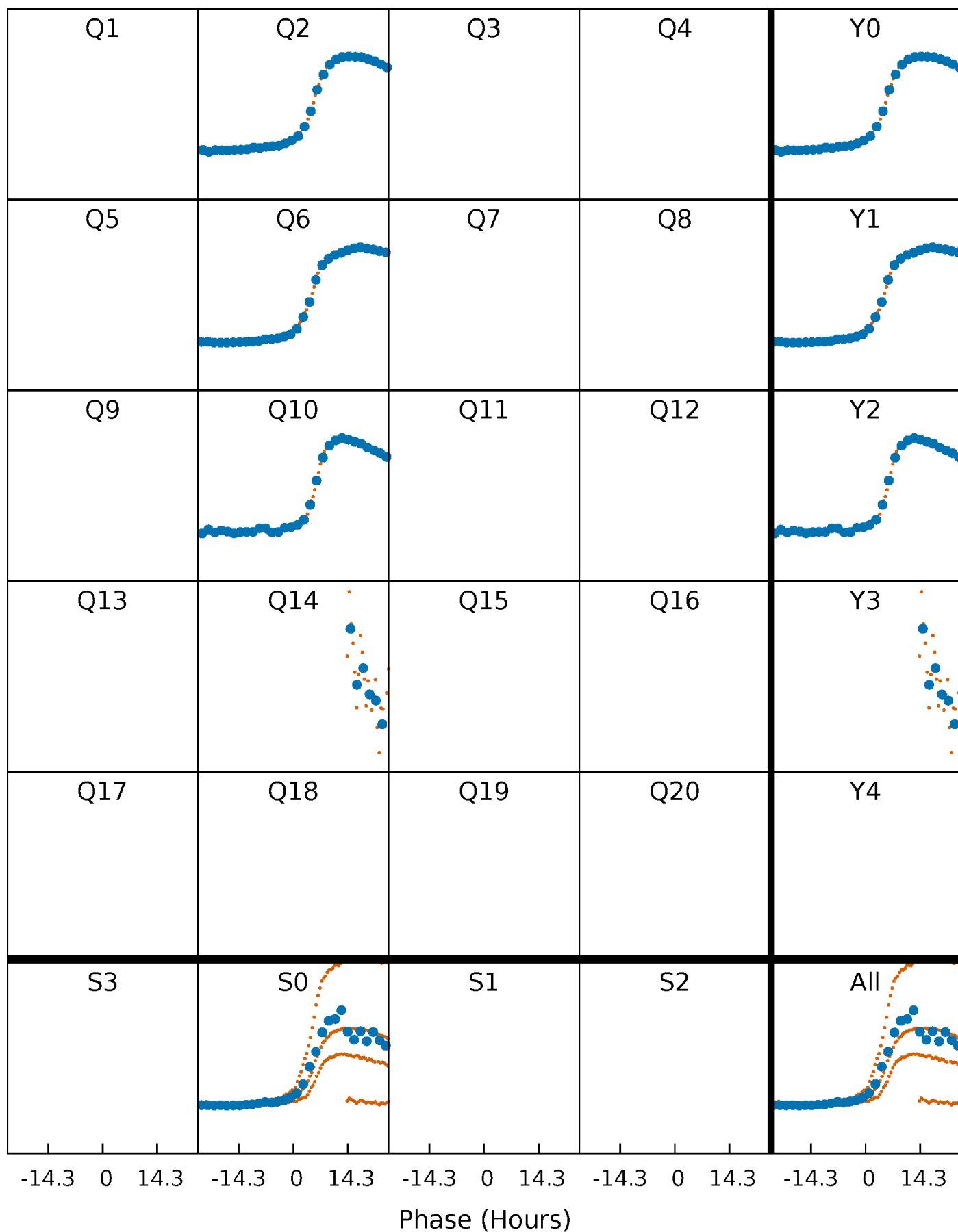


Planet 7 : Phased Whitened Flux Time Series (TPS Epoch/Period)



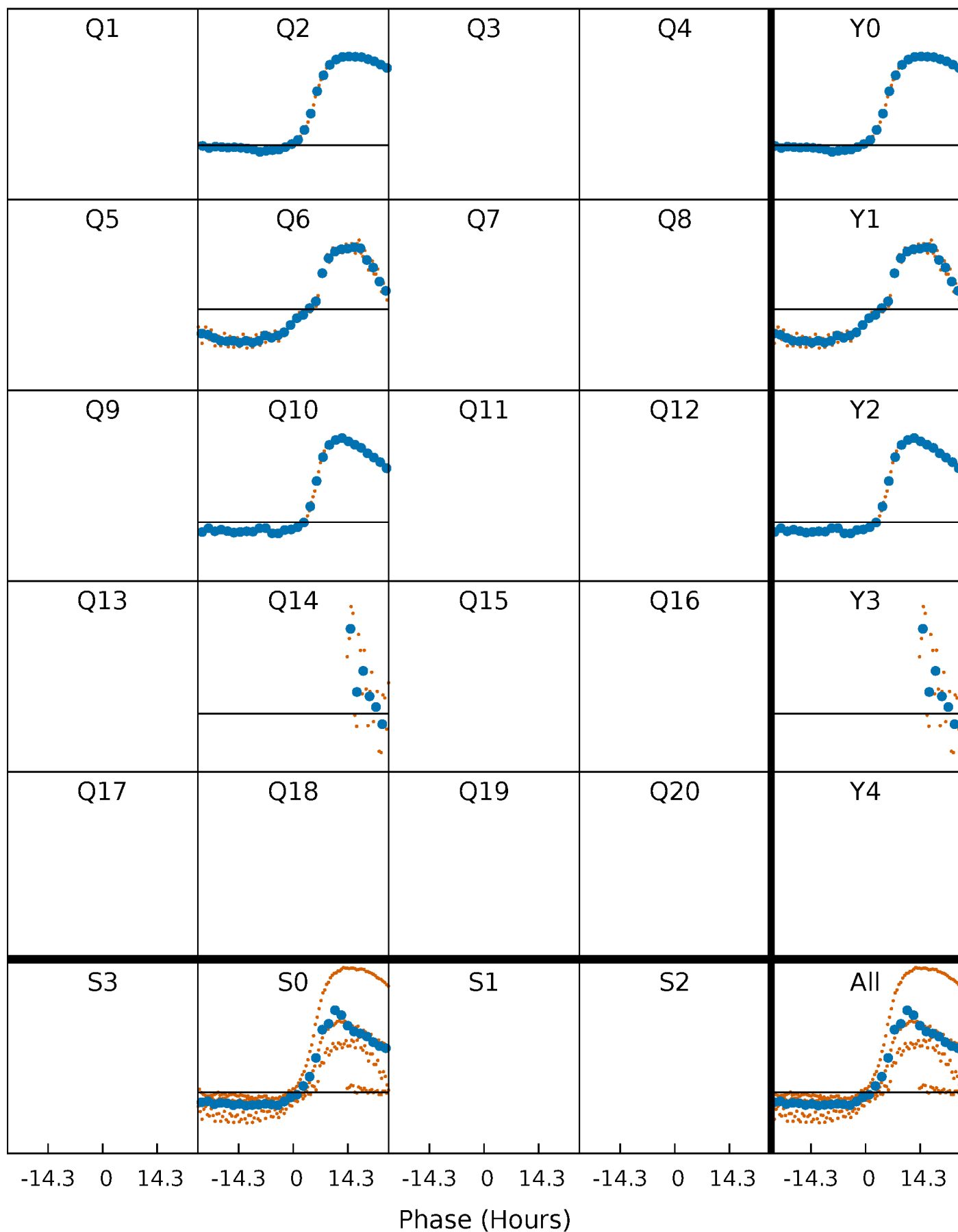
PDC Quarter-Phased Transit Curves

TCE 007446357-07 P=360.931593 Days $T_0=213.027276$ (BKJD)



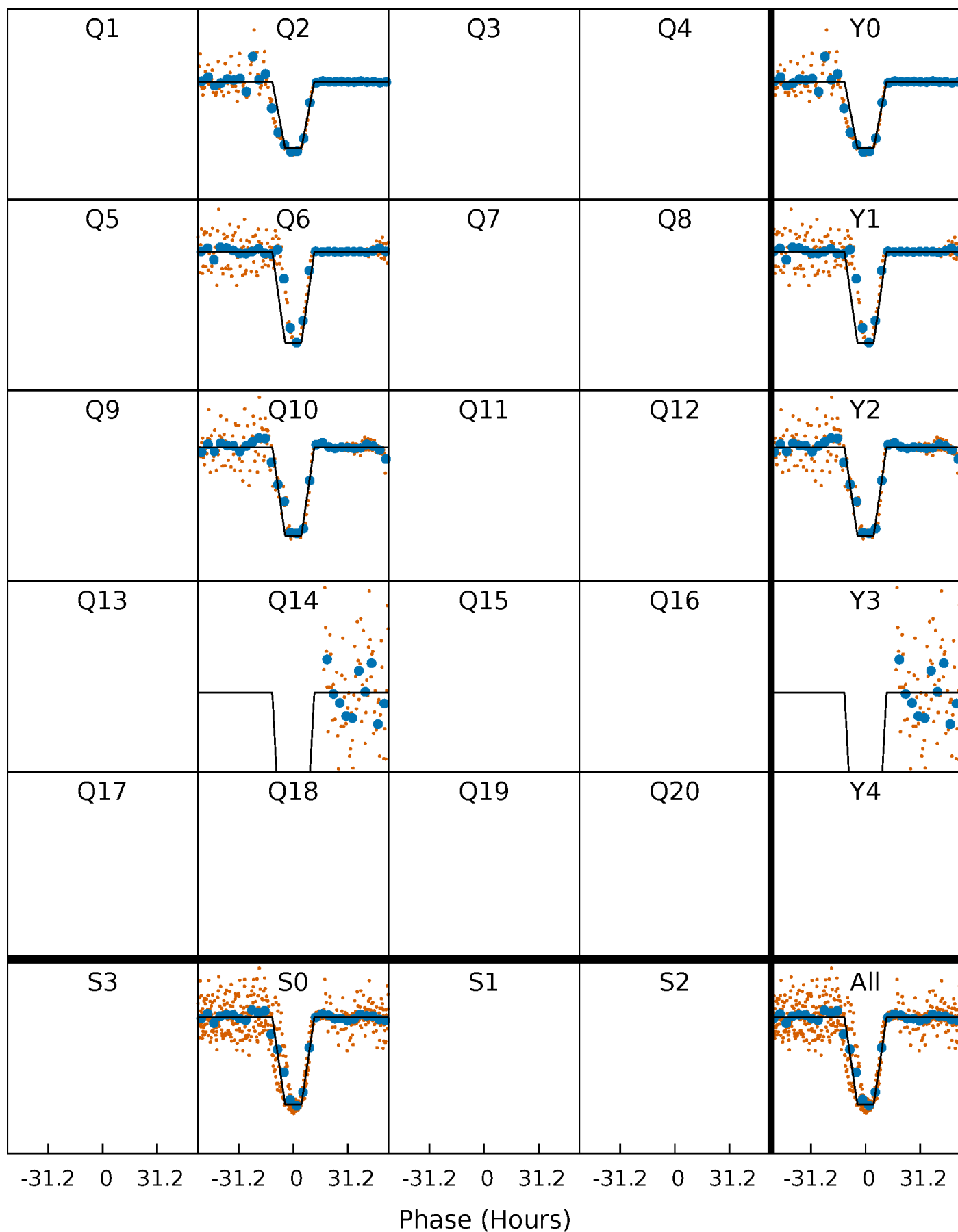
DV Quarter-Phased Transit Curves

TCE 007446357-07 P=360.931593 Days $T_0=213.027276$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

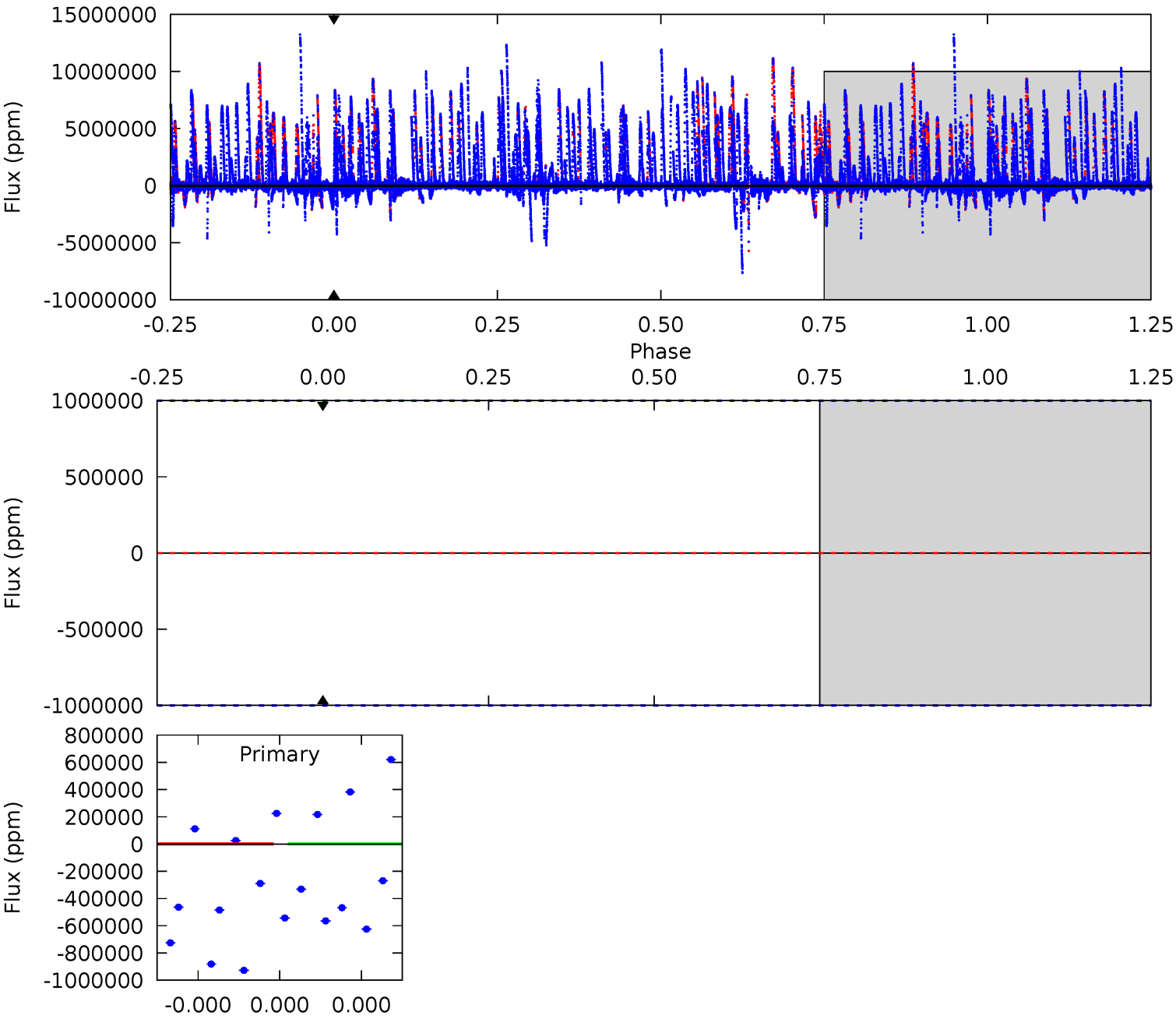
TCE 007446357-07 P=360.931593 Days $T_0=212.888799$ (BKJD)



DV Model-Shift Uniqueness Test

007446357-07, P = 360.931593 Days, E = 213.027276 Days

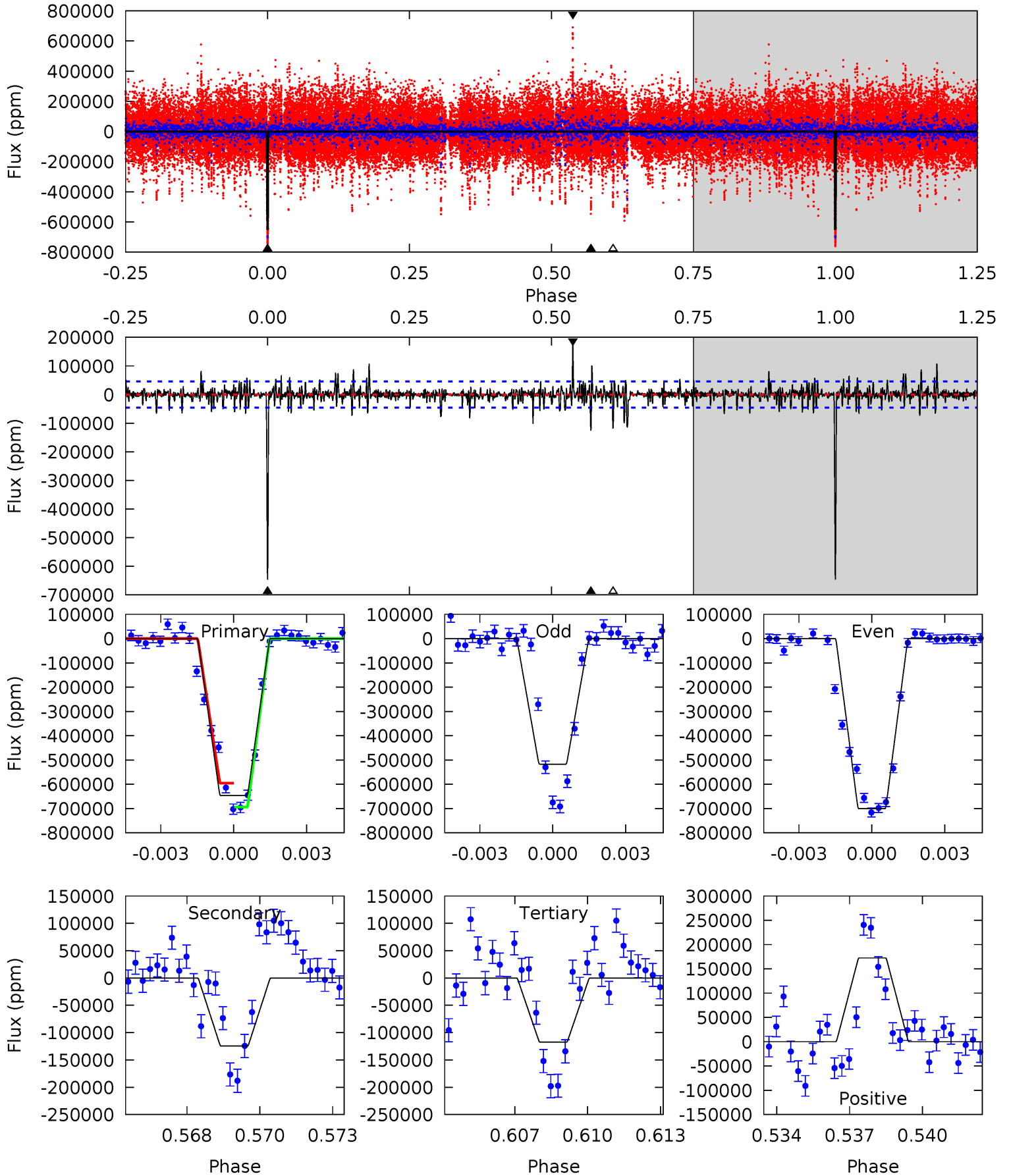
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007446357-07, P = 360.931593 Days, E = 212.888799 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
74.6	14.4	13.6	19.9	5.26	2.99	2.25	61.1	54.7	0.82	-5.52	8.38	0.98	0.21	5.68



Stellar Parameters For KIC 007446357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	9296^{+245}_{-449}	$4.085^{+0.170}_{-0.170}$	$0.070^{+0.150}_{-0.700}$	$2.253^{+0.774}_{-0.703}$	$2.251^{+0.399}_{-0.599}$	$0.277^{+0.285}_{-0.140}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+34%/-31%	+18%/-27%	+103%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007446357-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$30.34^{+23.89}_{-18.39}$	753^{+57}_{-60}	-5479^{+37333}_{-19072}	$-2288.062^{+192968.245}_{-129405.069}$
Alt.	-124659 ± 8664	$203.93^{+44.16}_{-38.76}$	751^{+60}_{-59}	5846^{+452}_{-354}	3124^{+1420}_{-997}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

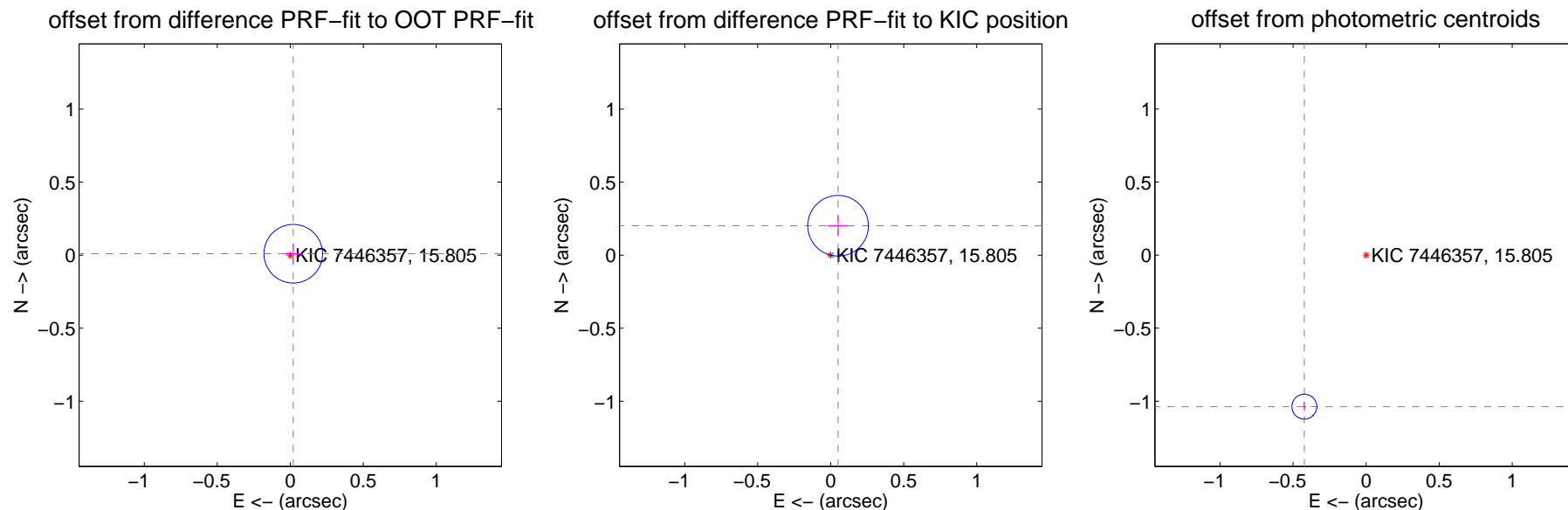
DV Centroid Data

Supplemental centroid analysis for 007446357-07. Kepler magnitude: 15.80. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

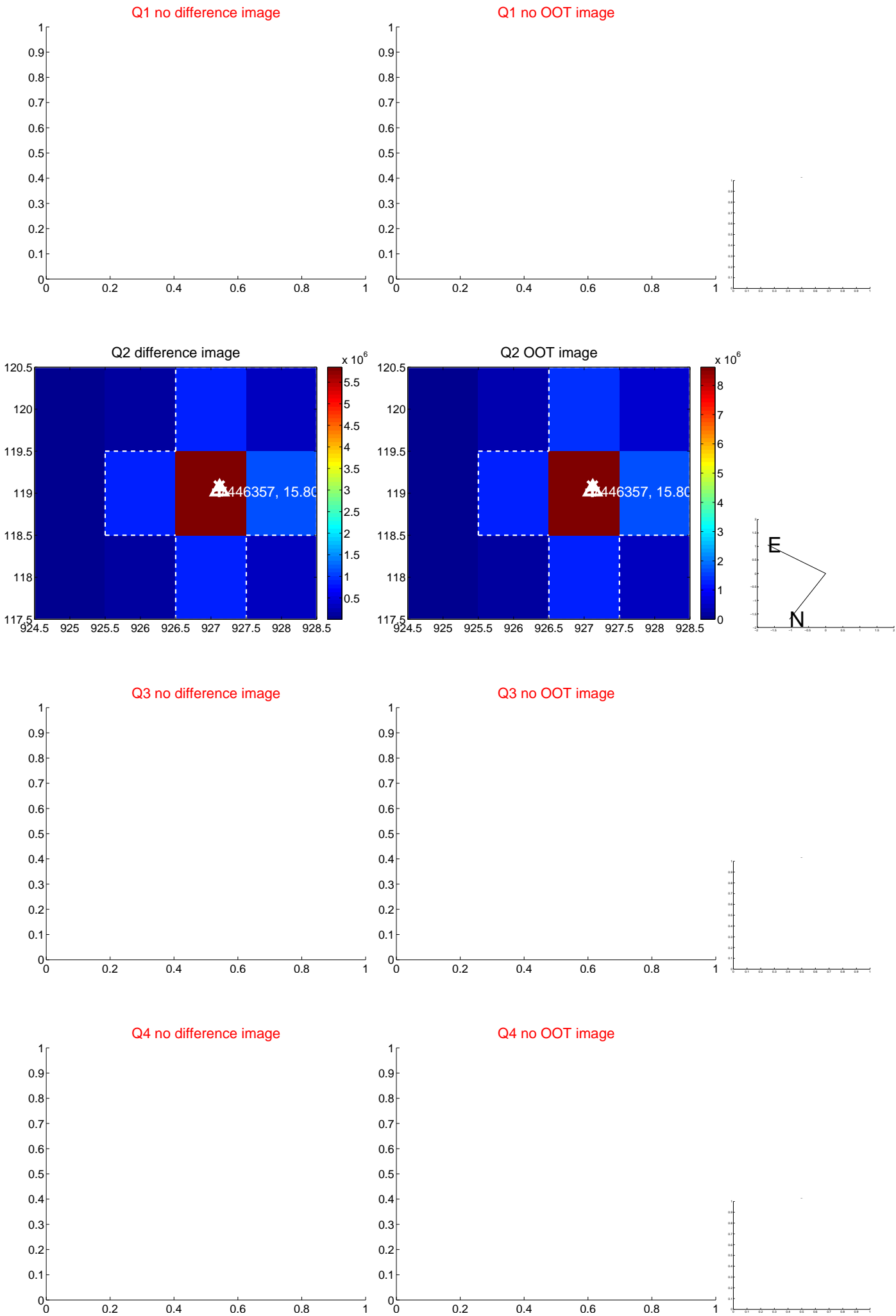
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.023 ± 0.067	0.34	-0.020 ± 0.067	0.010 ± 0.067
PRF-fit source offset from KIC position	0.208 ± 0.069	3.00	-0.050 ± 0.072	0.201 ± 0.069
photometric centroid source offset	1.12 ± 0.03	39.43	0.42 ± 0.01	-1.04 ± 0.03



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

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



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

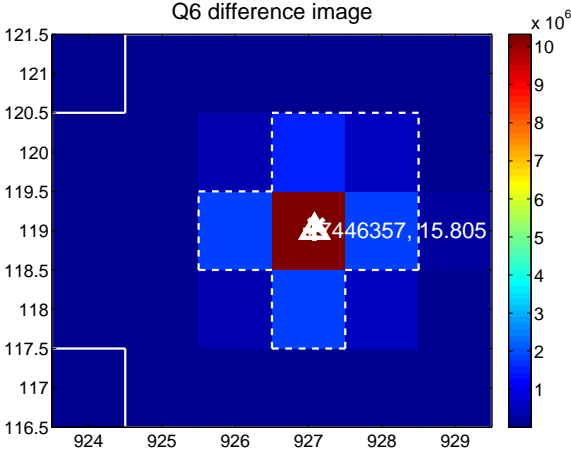
Q5 no difference image



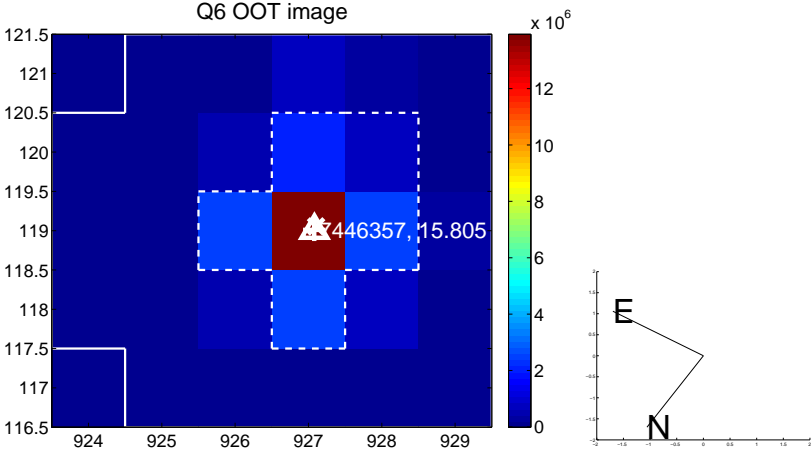
Q5 no OOT image



Q6 difference image



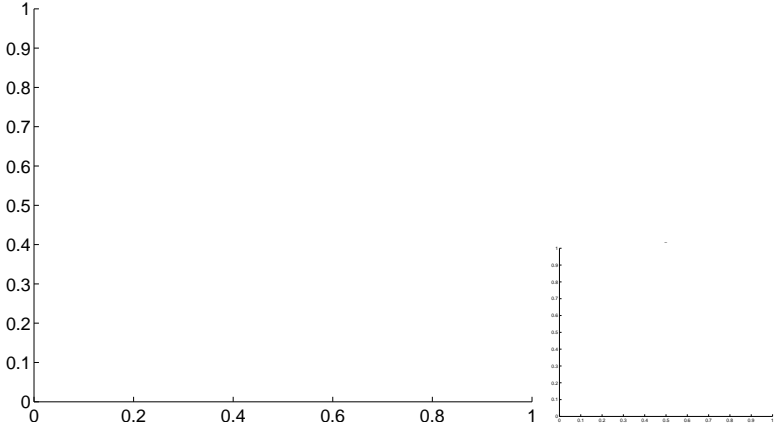
Q6 OOT image



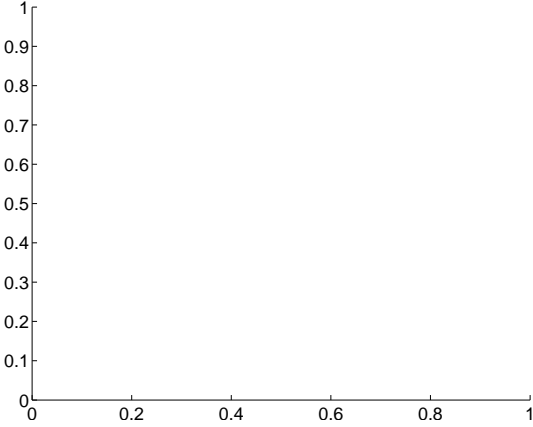
Q7 no difference image



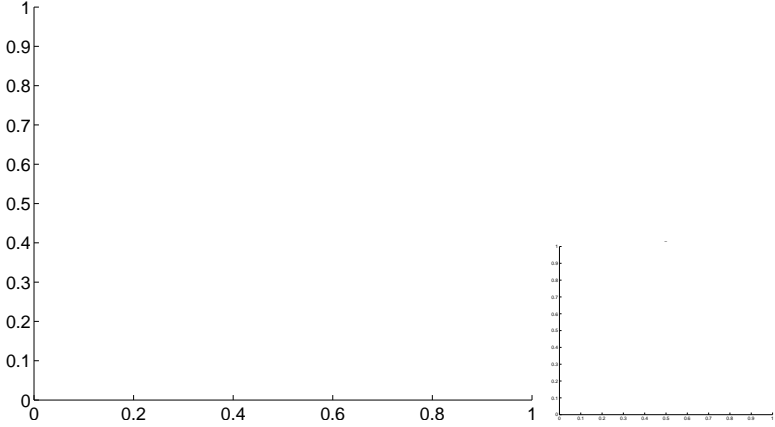
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

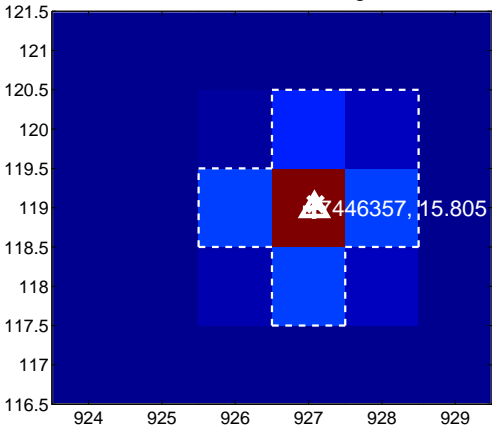
Q9 no difference image



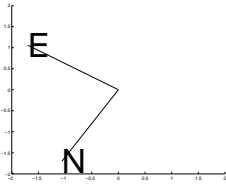
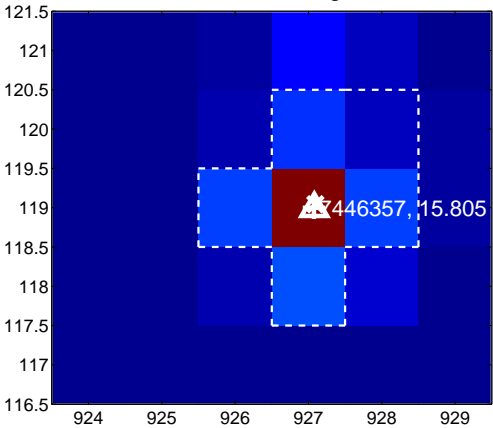
Q9 no OOT image



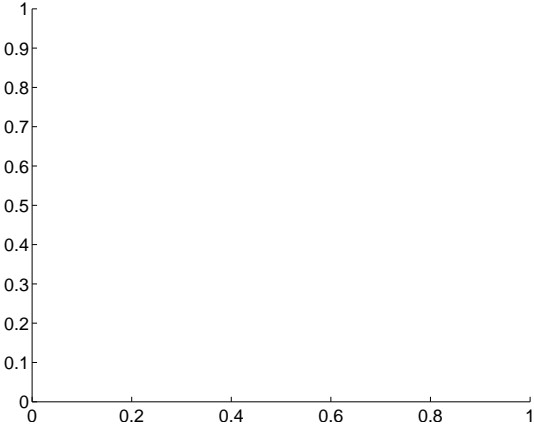
Q10 difference image



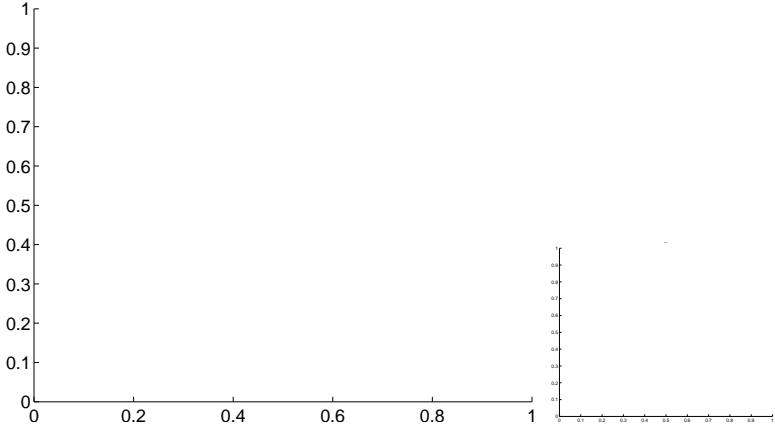
Q10 OOT image



Q11 no difference image



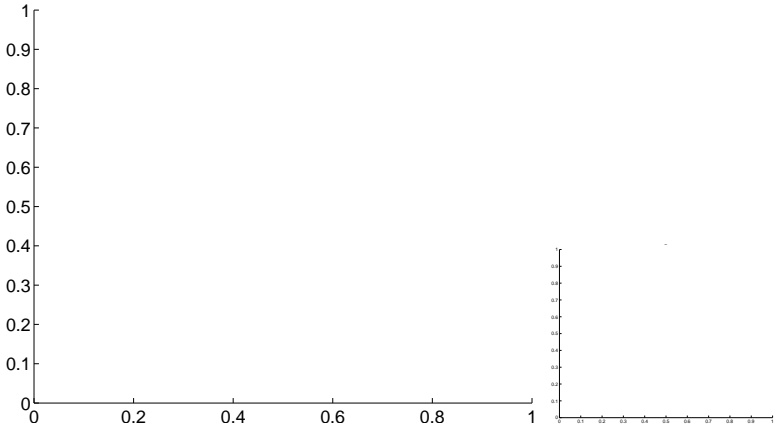
Q11 no OOT image



Q12 no difference image



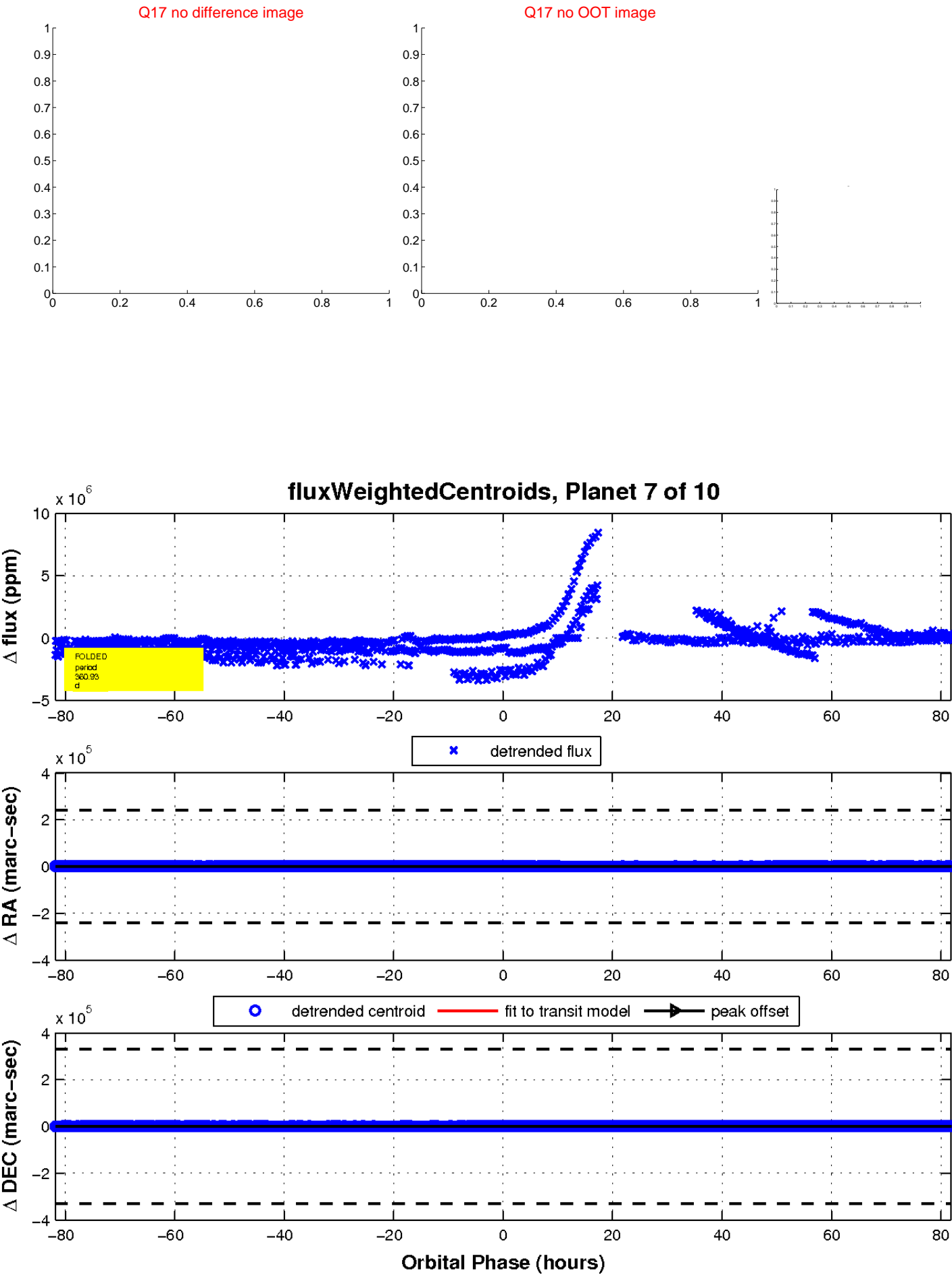
Q12 no OOT image



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

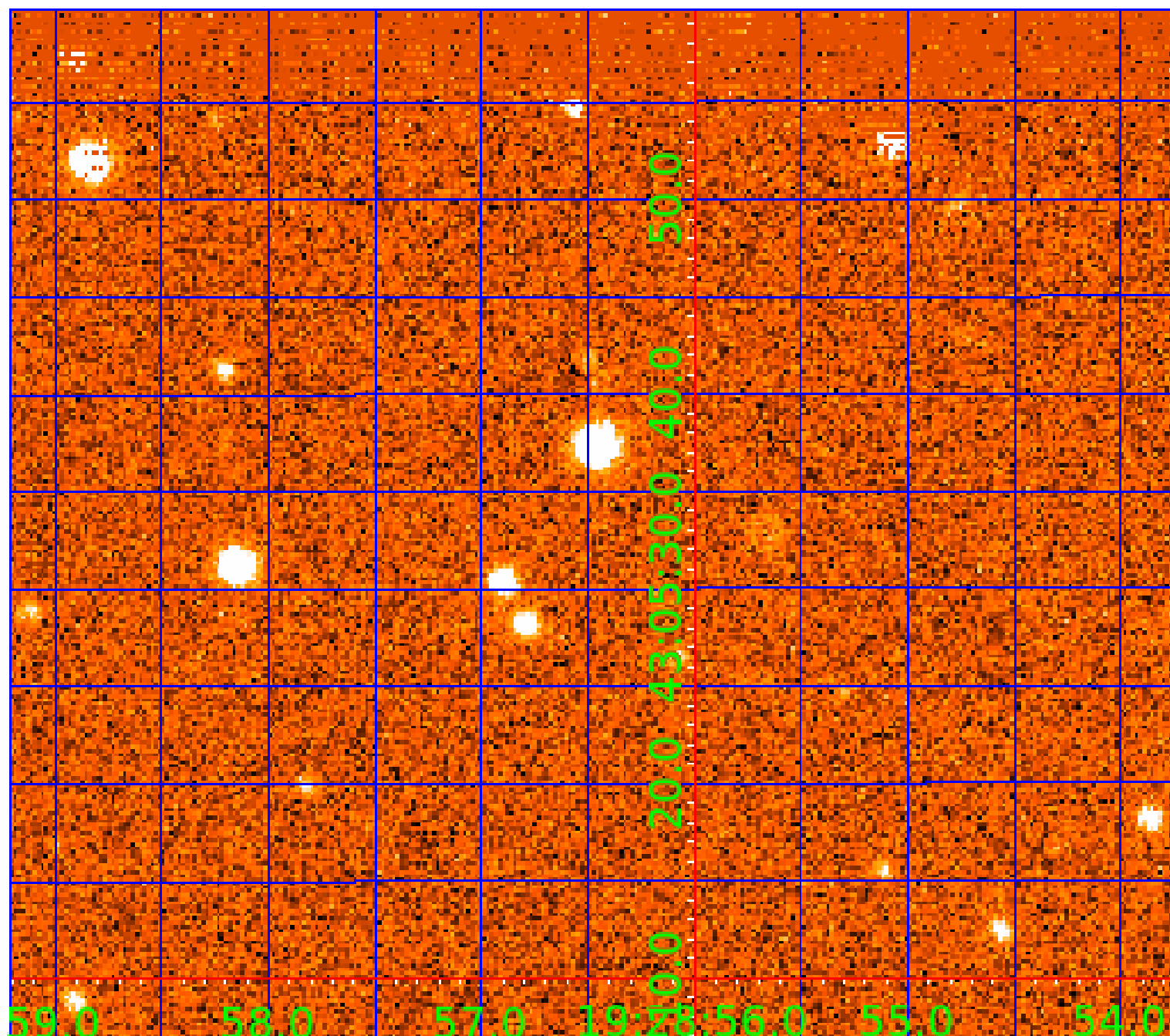


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
007446357-01	OBS	No	316.767858	437.415009	27390.2	7.500	58.5	-1.0	2.25	9296	38.15	23.89
007446357-02	OBS	No	399.067427	247.703027	17934.0	15.000	50.1	-1.0	2.25	9296	30.86	17.56
007446357-03	OBS	No	308.465022	360.053551	18752.3	10.500	50.8	-1.0	2.25	9296	31.55	24.75
007446357-04	OBS	No	565.634997	422.505322	11996.6	10.500	46.3	-1.0	2.25	9296	25.23	11.03
007446357-05	OBS	No	420.863224	203.147650	16636.7	12.000	45.0	-1.0	2.25	9296	29.72	16.36
007446357-06	OBS	No	471.933502	554.601476	15123.7	10.500	39.4	-1.0	2.25	9296	28.34	14.04
007446357-07	OBS	No	360.931593	213.027276	11585.2	12.500	39.3	-1.0	2.25	9296	24.79	20.08
007446357-08	OBS	No	535.626172	469.039656	494168.2	17.031	34.5	5.8	2.25	9296	165.06	11.86
007446357-09	OBS	No	511.261294	432.483710	9672.8	12.500	33.6	-1.0	2.25	9296	22.65	12.62
007446357-10	OBS	No	442.964688	271.184425	703902.5	24.810	32.9	4.2	2.25	9296	199.42	15.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007446357-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007446357-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS
007446357-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
007446357-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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

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

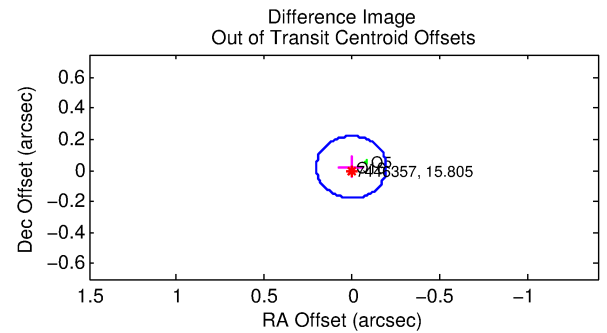
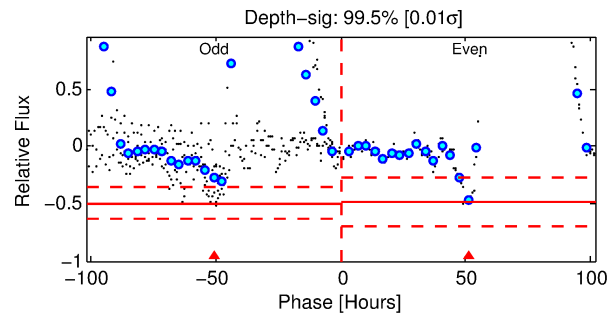
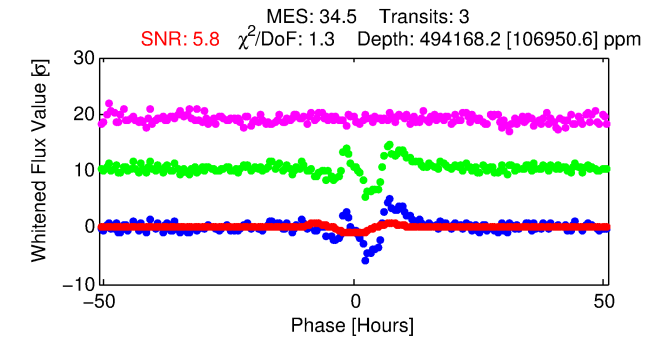
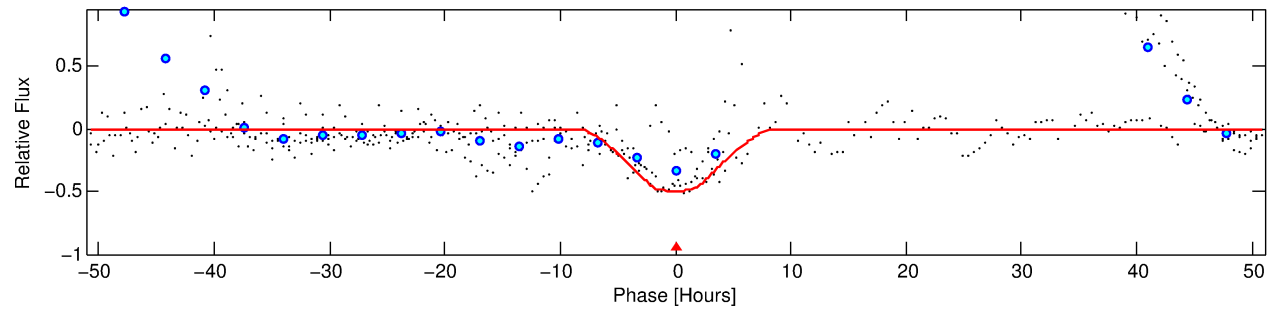
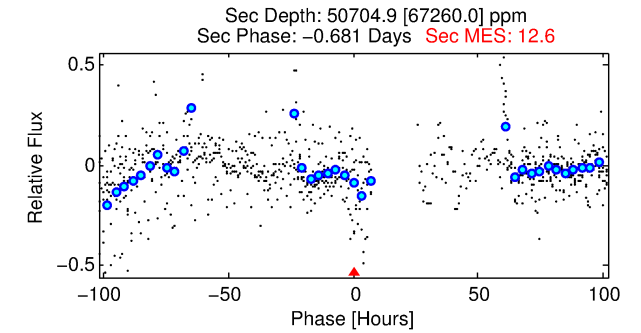
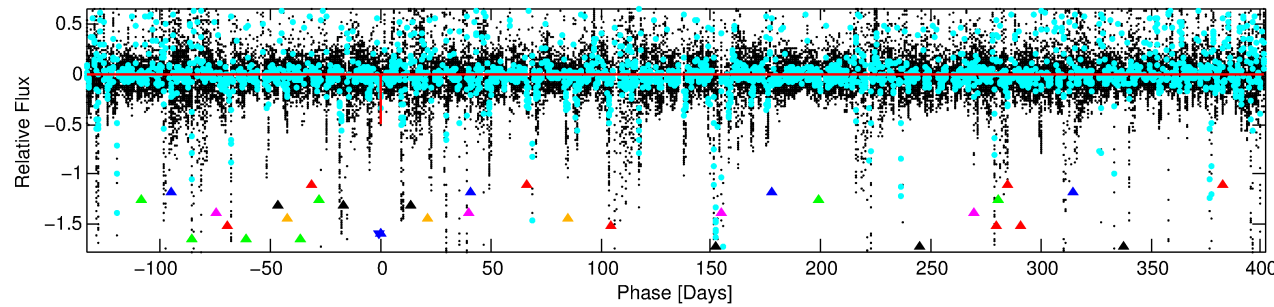
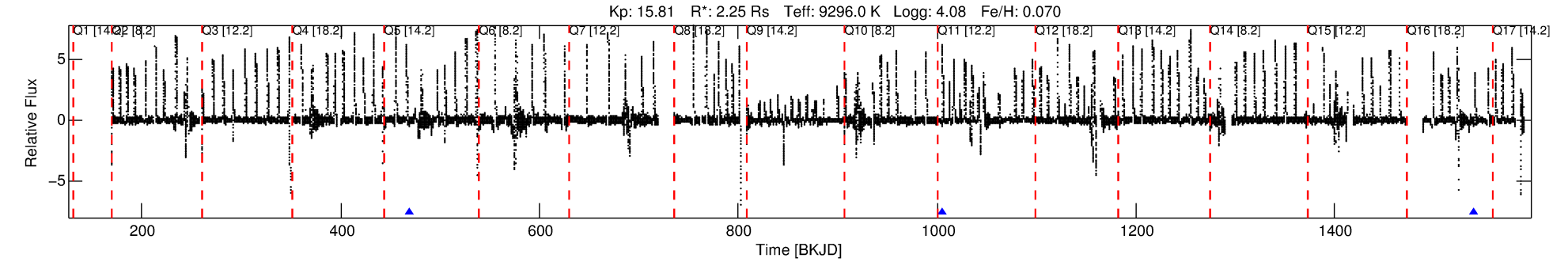
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007446357-08

No Significant Match Found

DV One-Page Summary

KIC: 7446357 Candidate: 8 of 10 Period: 535.626 d



DV Fit Results:

Period = 535.62617 [0.02687] d
Epoch = 469.0397 [0.0404] BKJD
Rp/R* = 0.6714 [0.0734]
a/R* = 401.54 [40.42]
b = 0.02 [3.74]
Seff = 11.86 [4.71]
Teq = 473 [47] K
Rp = 165.06 [59.50] Re
a = 1.6922 [0.4460] AU
Ag = 2931.95 [4071.01] [0.72σ]
Teffp = 5384 [1828] K [2.69σ]

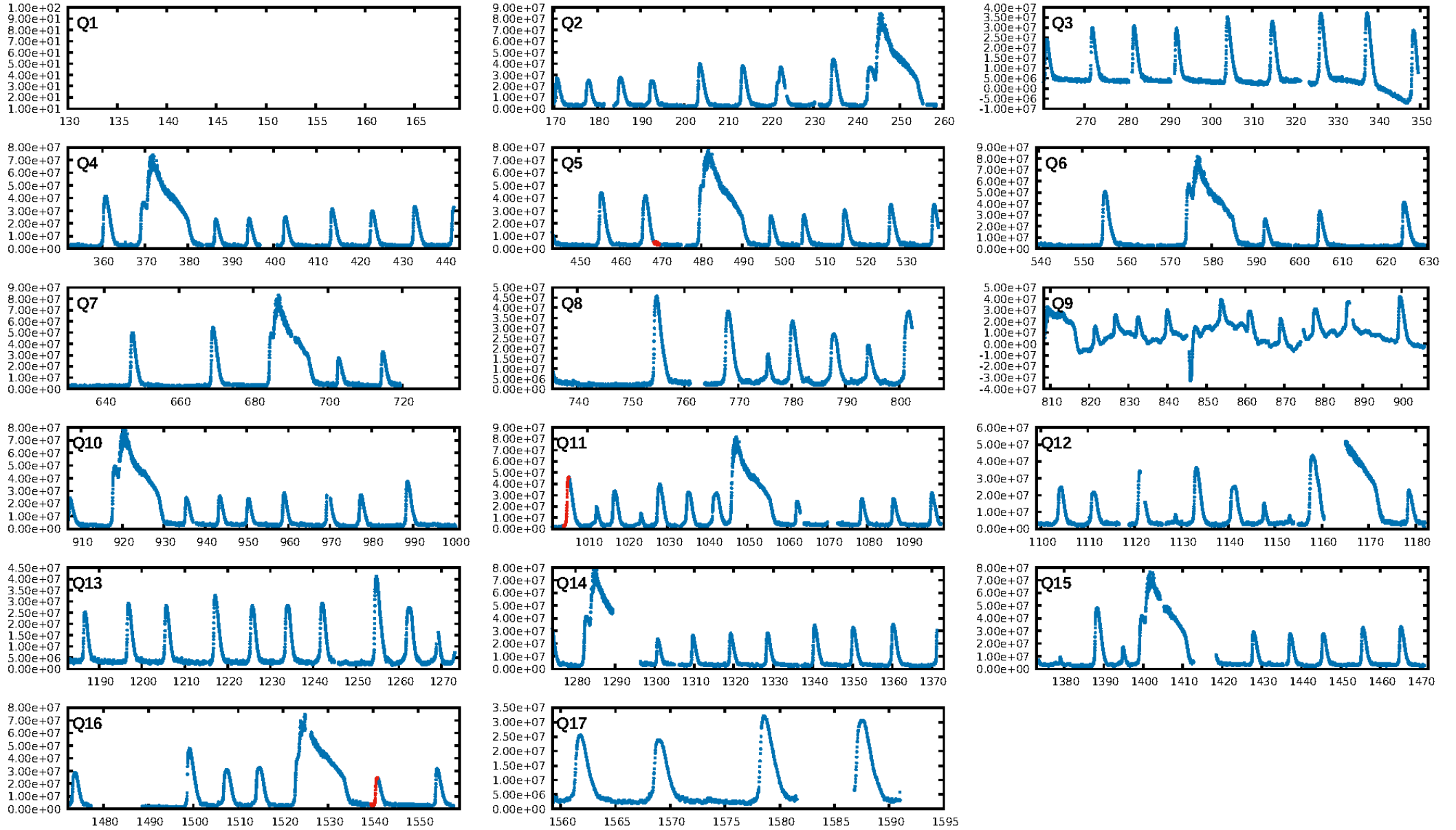
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [27.68σ]
LongPeriod-sig: 100.0% [36.00σ]
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1076
Centroid-sig: 0.0%
Centroid-so: 0.140 arcsec [1.07σ]
OotOffset-rm: 0.022 arcsec [0.33σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 0.200 arcsec [2.92σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

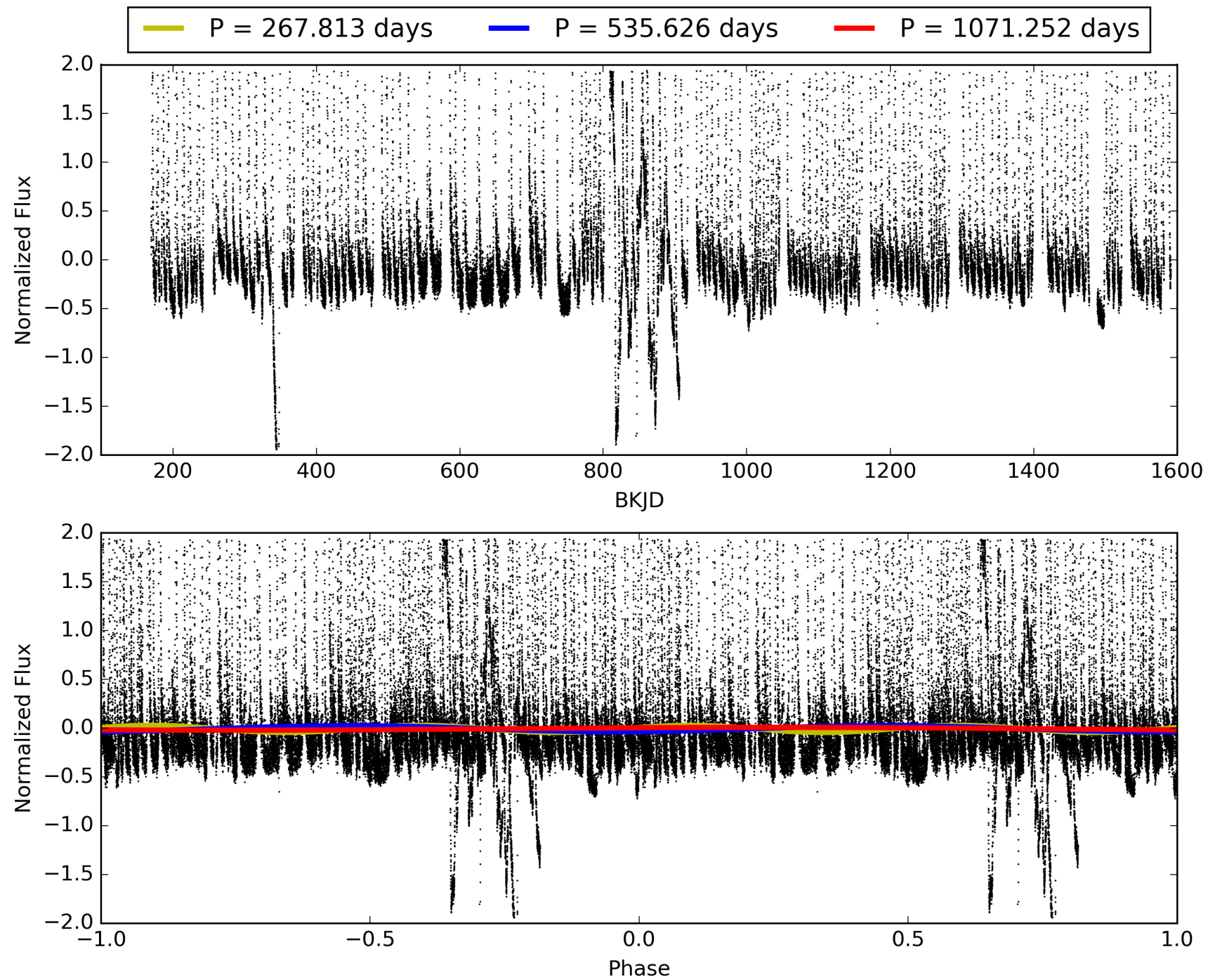
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:31:26 Z

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

TCE 007446357-08, PDC Light Curves

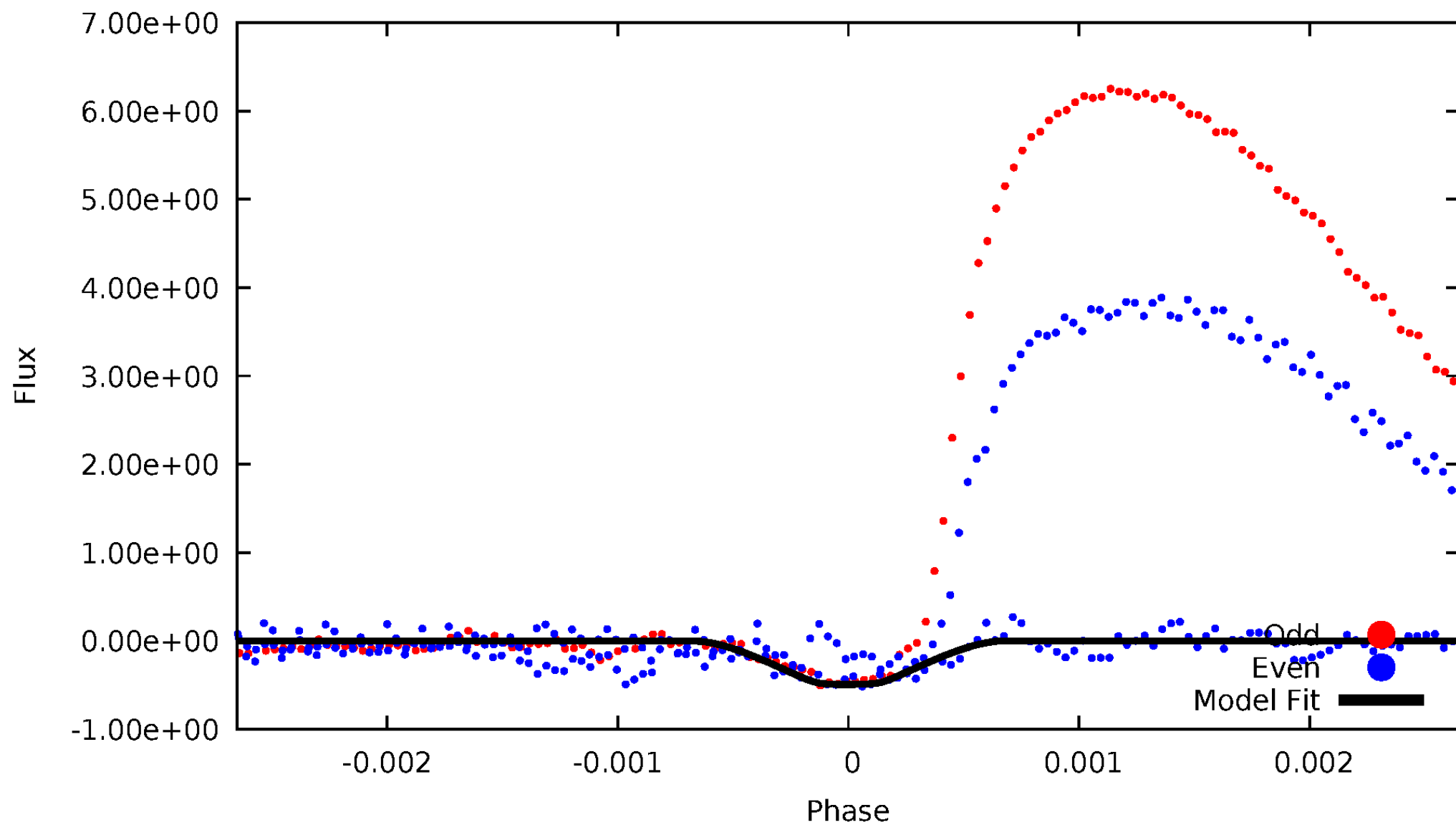


TCE 007446357-08



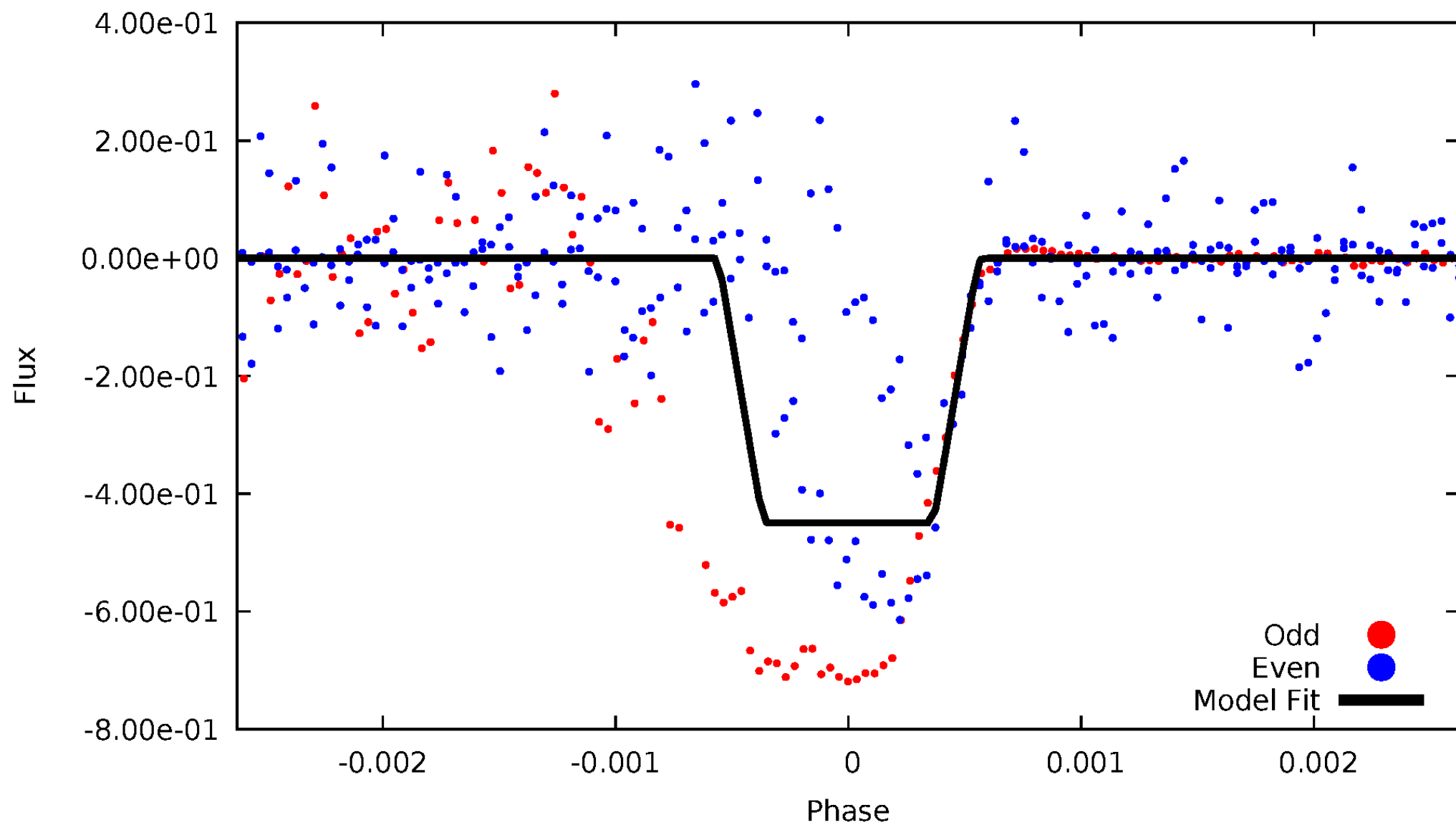
DV Odd/Even

TCE 007446357-08



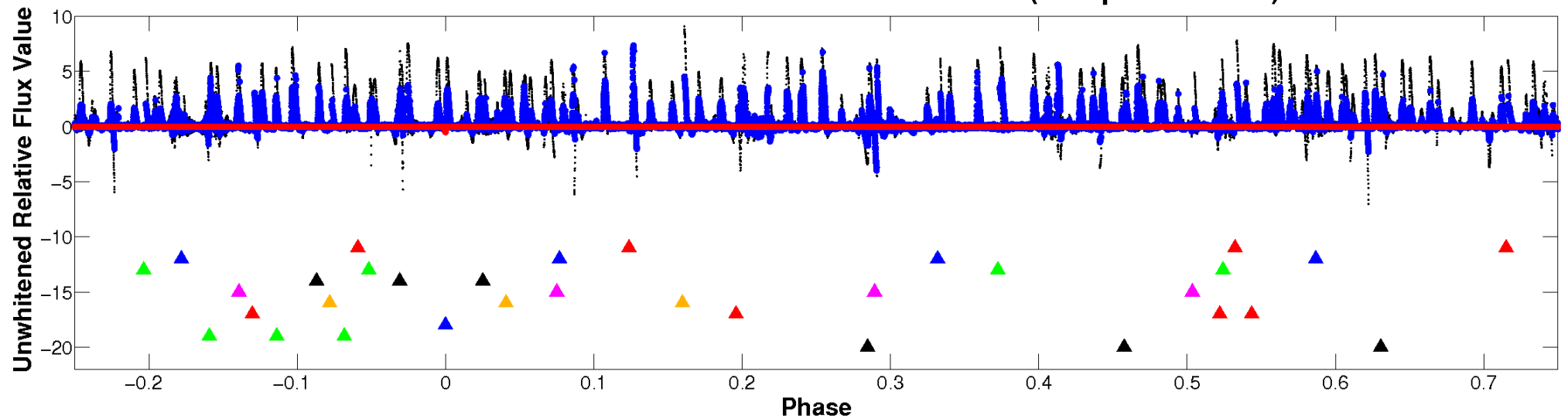
ALT Odd/Even

TCE 007446357-08

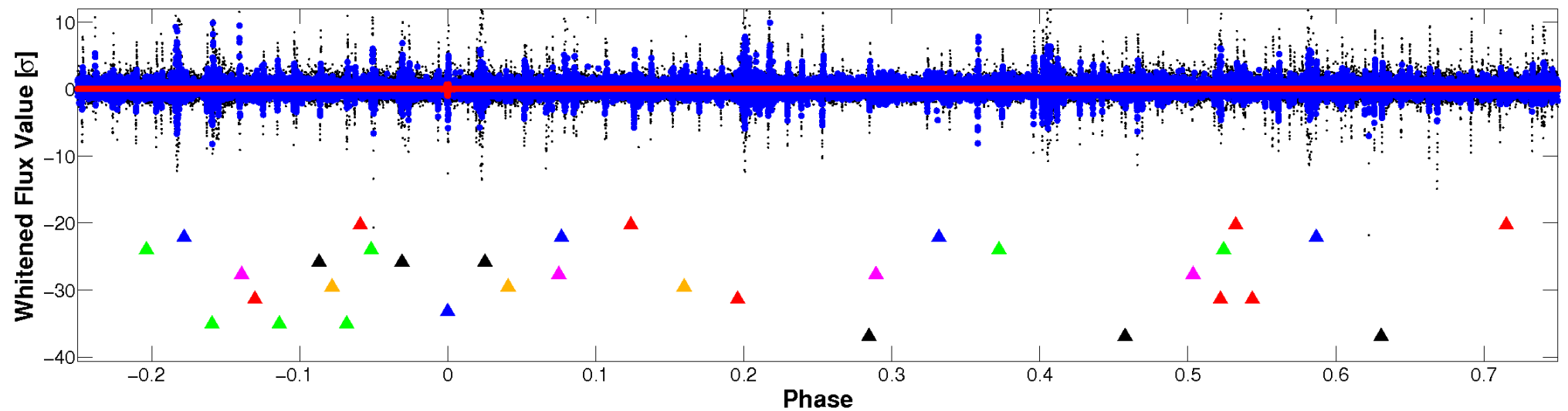


Non-Whitened Vs. Whitened Light Curve

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

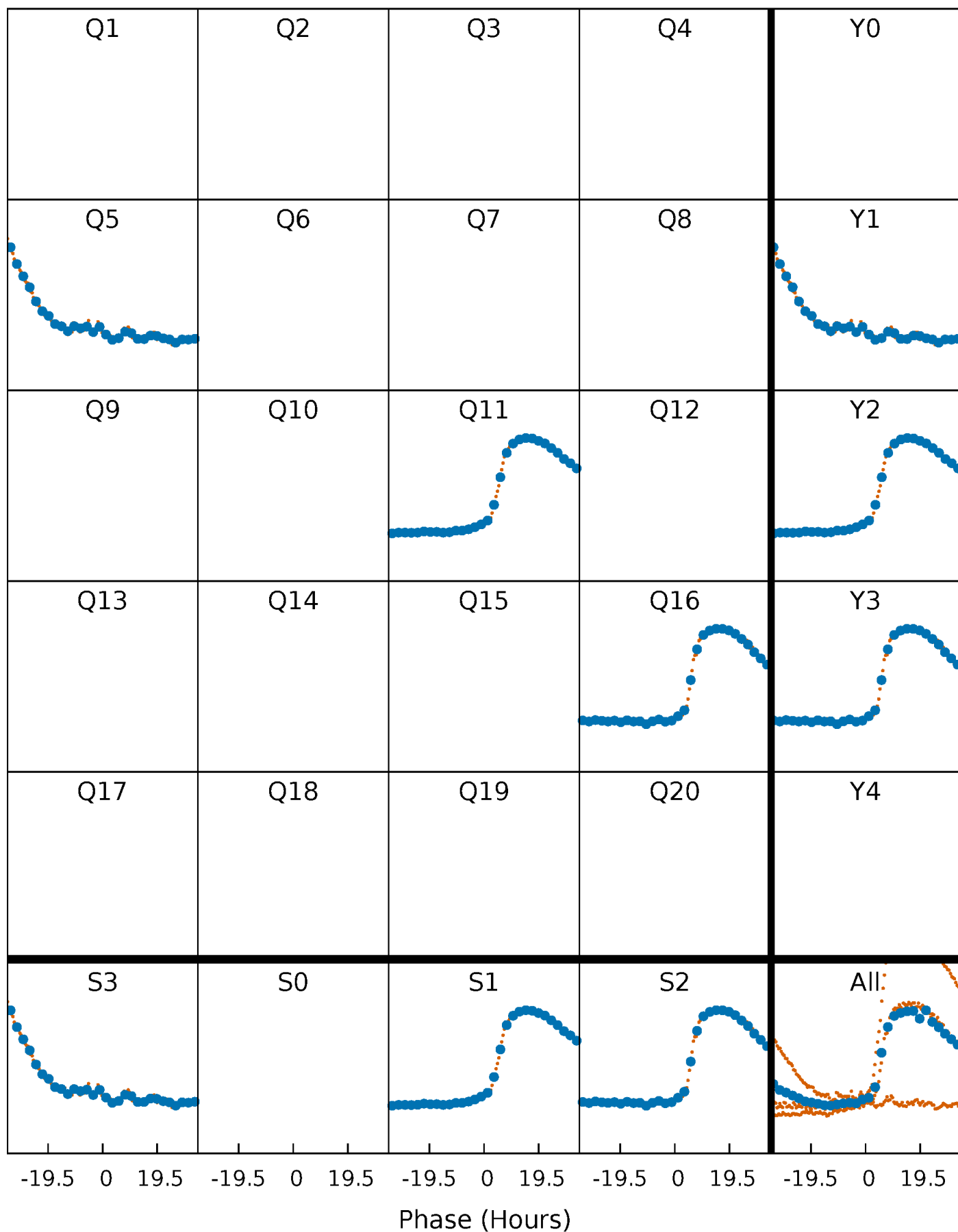


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



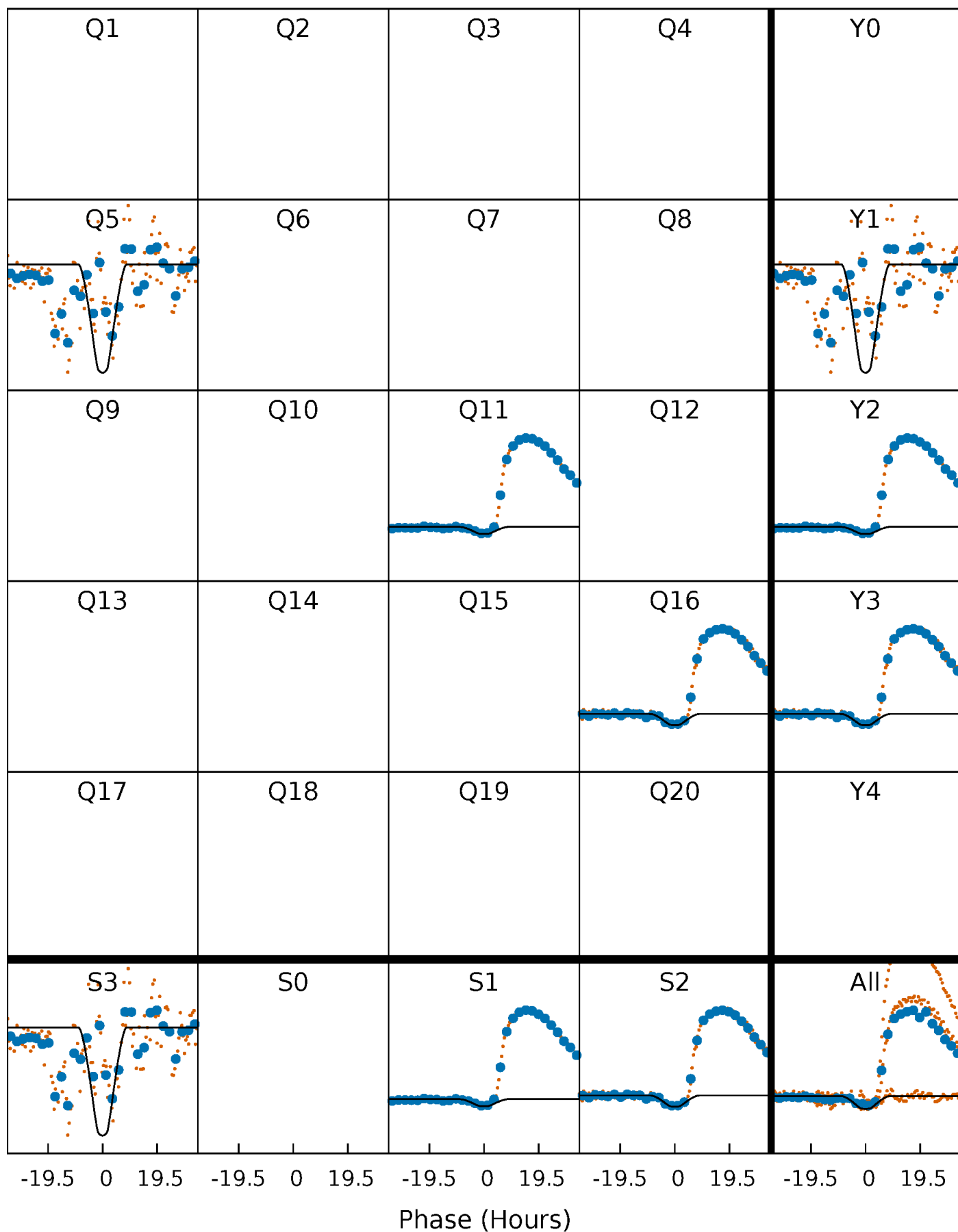
PDC Quarter-Phased Transit Curves

TCE 007446357-08 $P=535.626172$ Days $T_0=469.039656$ (BKJD)



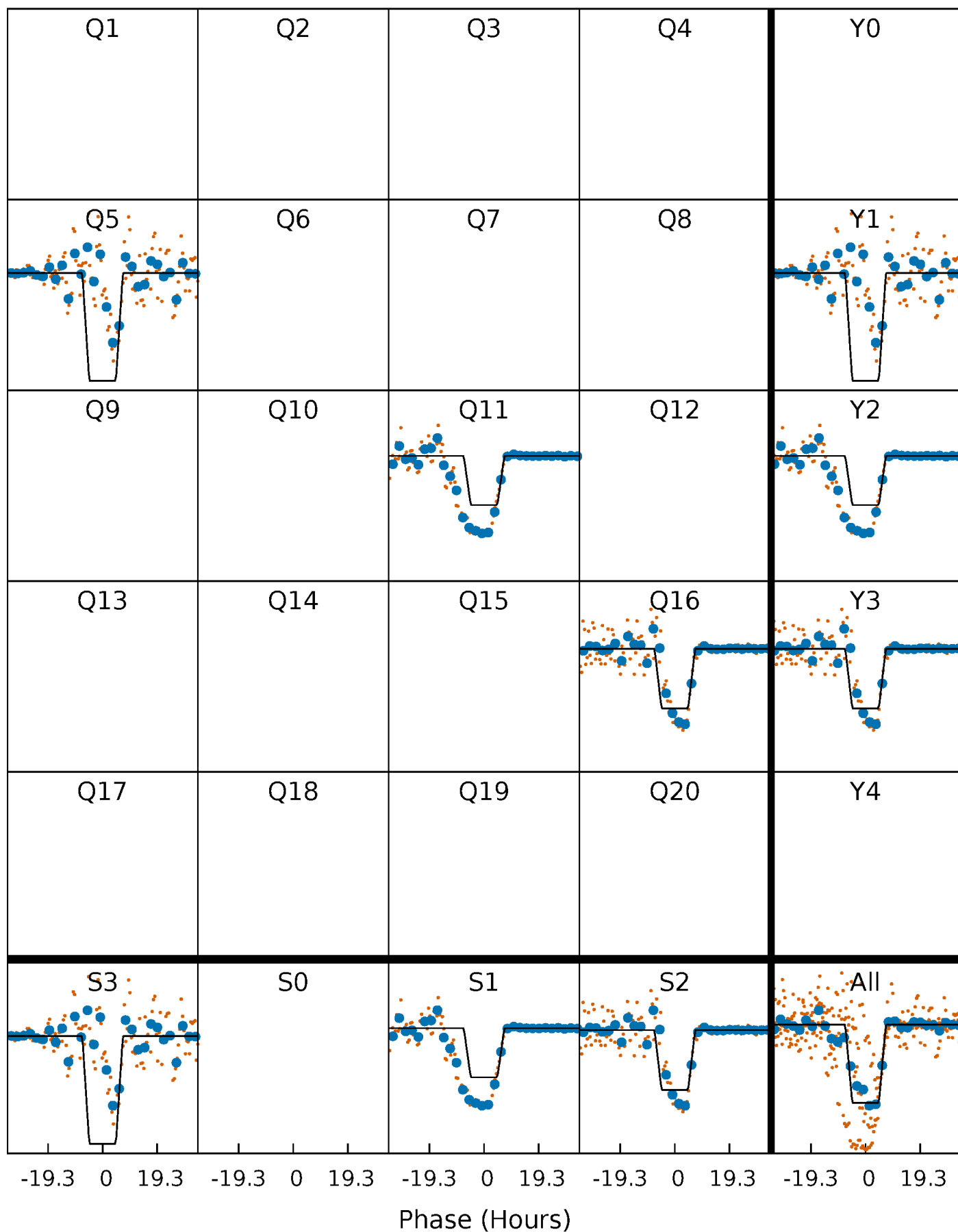
DV Quarter-Phased Transit Curves

TCE 007446357-08 $P=535.626172$ Days $T_0=469.039656$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

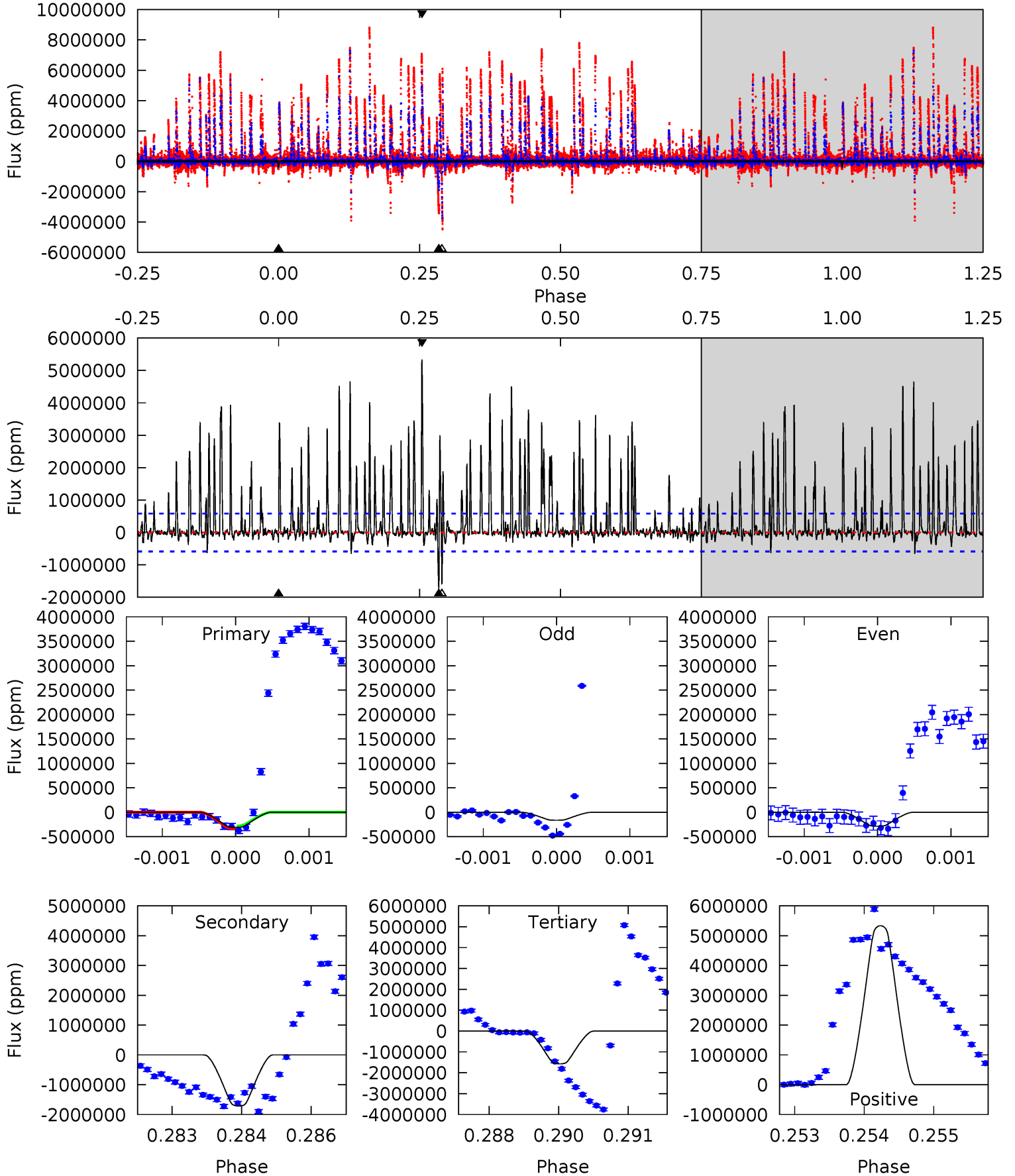
TCE 007446357-08 $P=535.624908$ Days $T_0=469.037775$ (BKJD)



DV Model-Shift Uniqueness Test

007446357-08, P = 535.626172 Days, E = 469.039656 Days

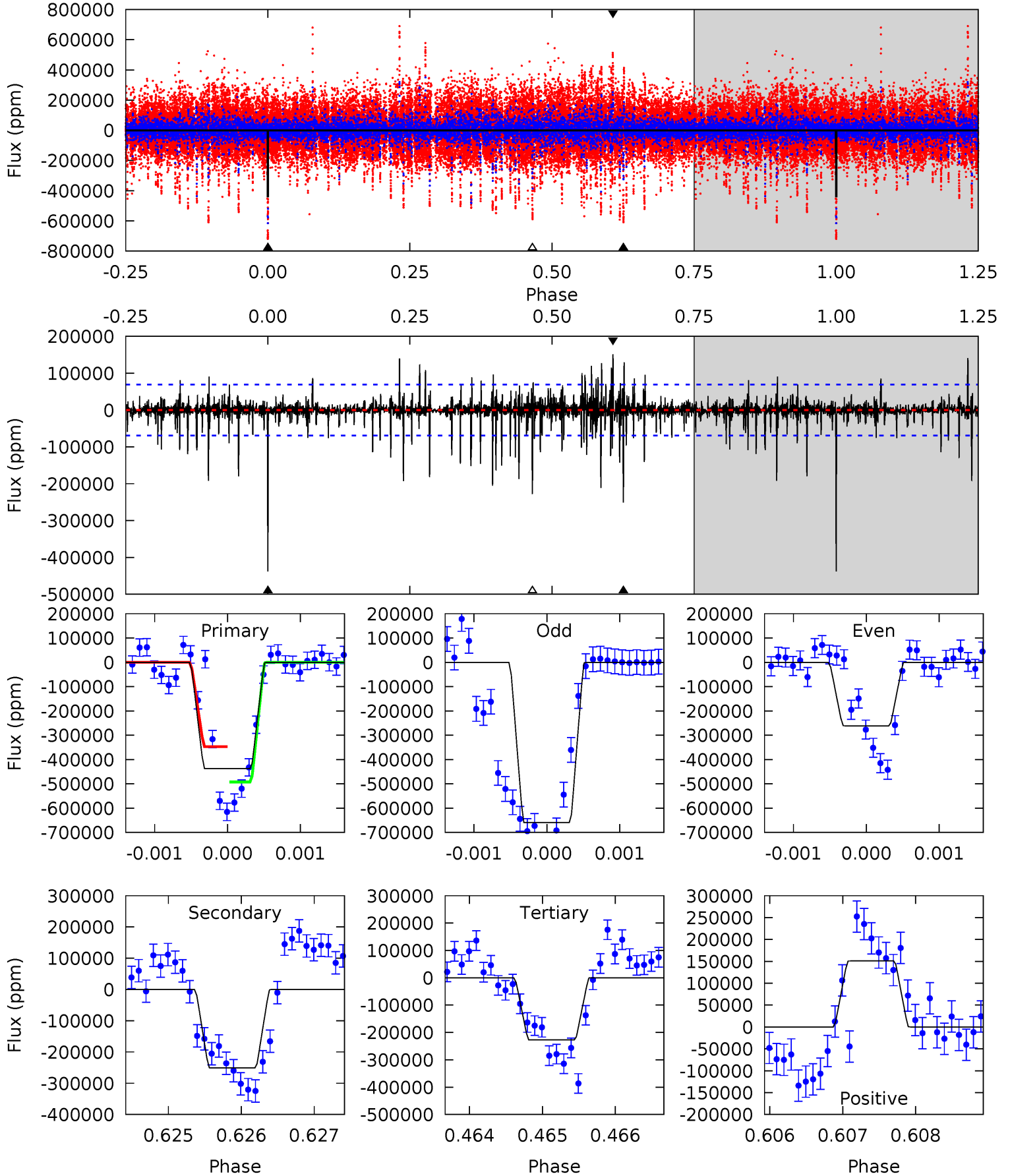
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.87	15.9	14.5	49.3	5.39	3.20	6.92	-11.7	-46.4	1.31	-33.4	0.44	1.24	0.76	0.24



Alt Model-Shift Uniqueness Test

007446357-08, P = 535.624908 Days, E = 469.037775 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.3	19.7	17.9	11.8	5.43	3.26	2.21	16.5	22.5	1.85	7.86	15.5	0.93	0.26	5.68



Stellar Parameters For KIC 007446357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9296^{+245}_{-449}	$4.085^{+0.170}_{-0.170}$	$0.070^{+0.150}_{-0.700}$	$2.253^{+0.774}_{-0.703}$	$2.251^{+0.399}_{-0.599}$	$0.277^{+0.285}_{-0.140}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+34%/-31%	+18%/-27%	+103%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007446357-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1716309 ± 108240	$165.40^{+34.25}_{-31.06}$	659^{+52}_{-54}	-18929^{+2183}_{-3349}	$-137069.467^{+40465.339}_{-60695.925}$
Alt.	-250974 ± 12737	$163.14^{+36.90}_{-29.93}$	658^{+59}_{-54}	8425^{+707}_{-657}	19546^{+8367}_{-5986}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

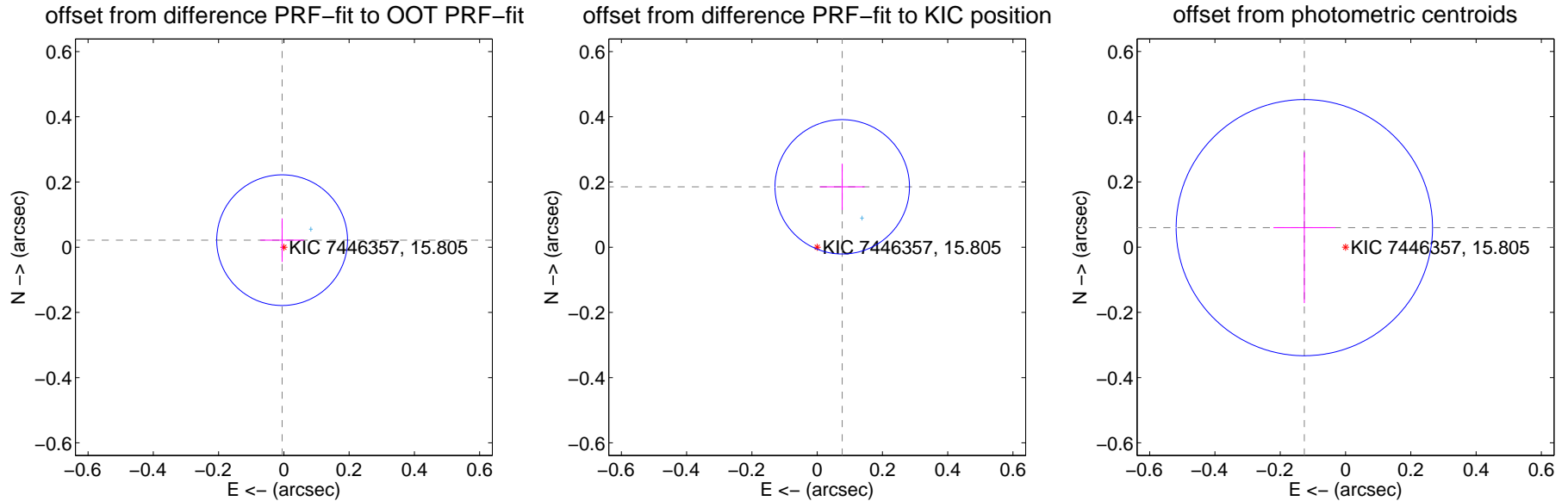
DV Centroid Data

Supplemental centroid analysis for 007446357-08. Kepler magnitude: 15.80. Transit SNR 5.81

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.022 ± 0.067	0.33	0.005 ± 0.067	0.022 ± 0.067
PRF-fit source offset from KIC position	0.200 ± 0.069	2.92	-0.077 ± 0.068	0.185 ± 0.071
photometric centroid source offset	0.14 ± 0.13	1.07	0.13 ± 0.09	0.06 ± 0.23

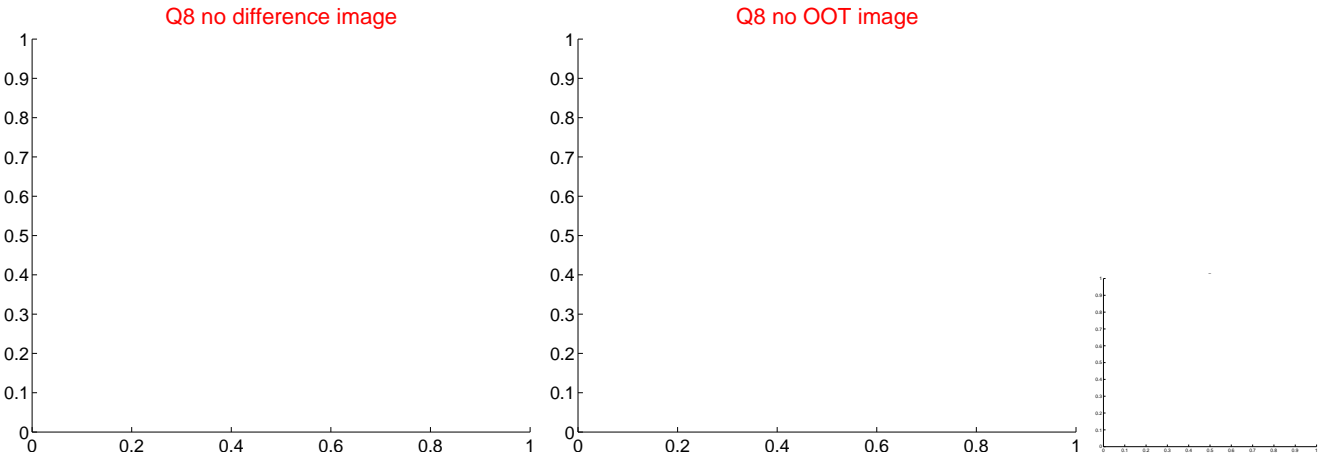
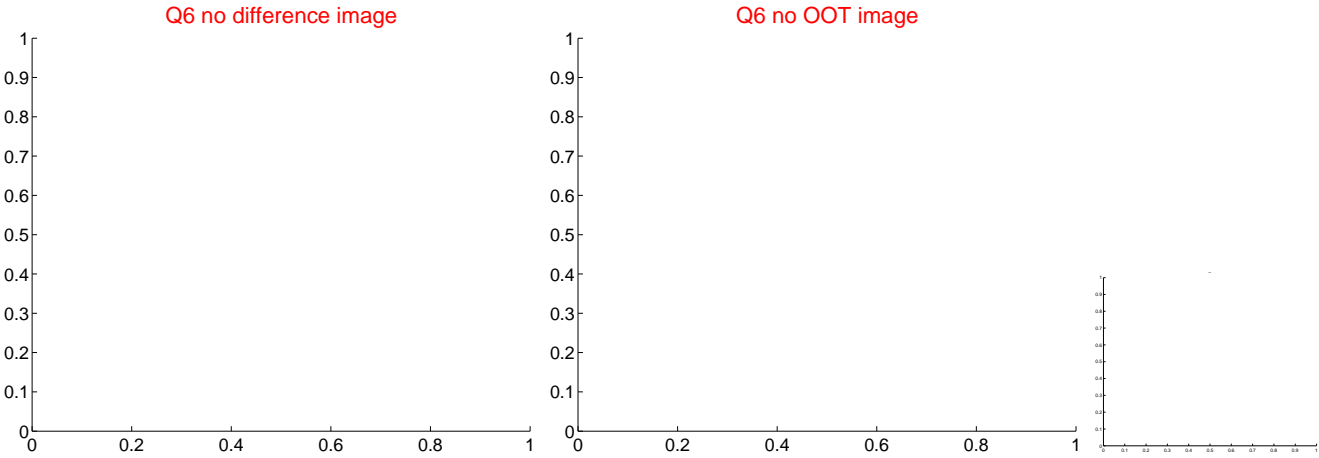
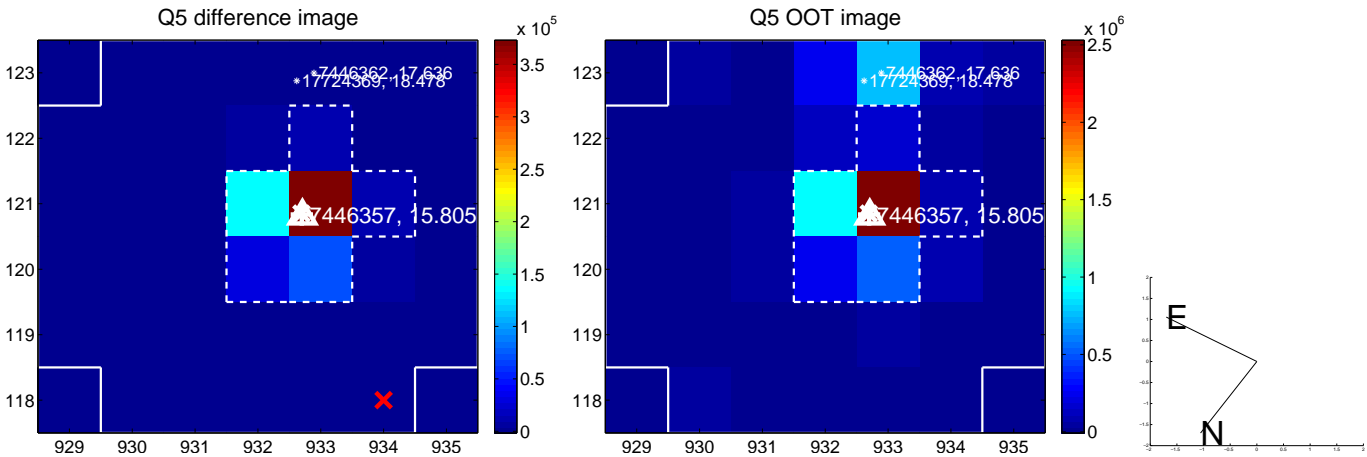


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



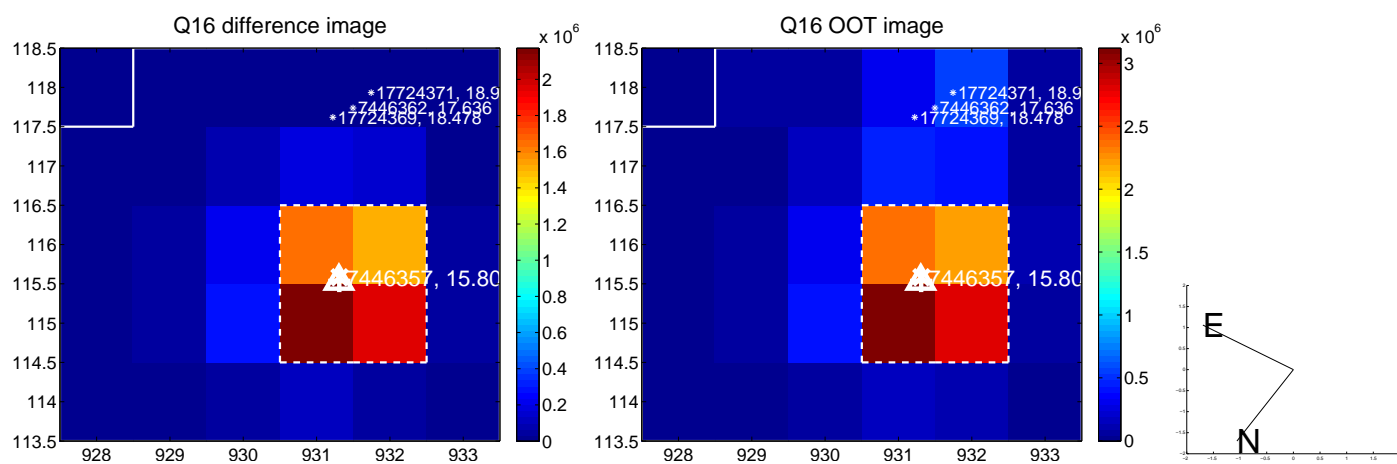
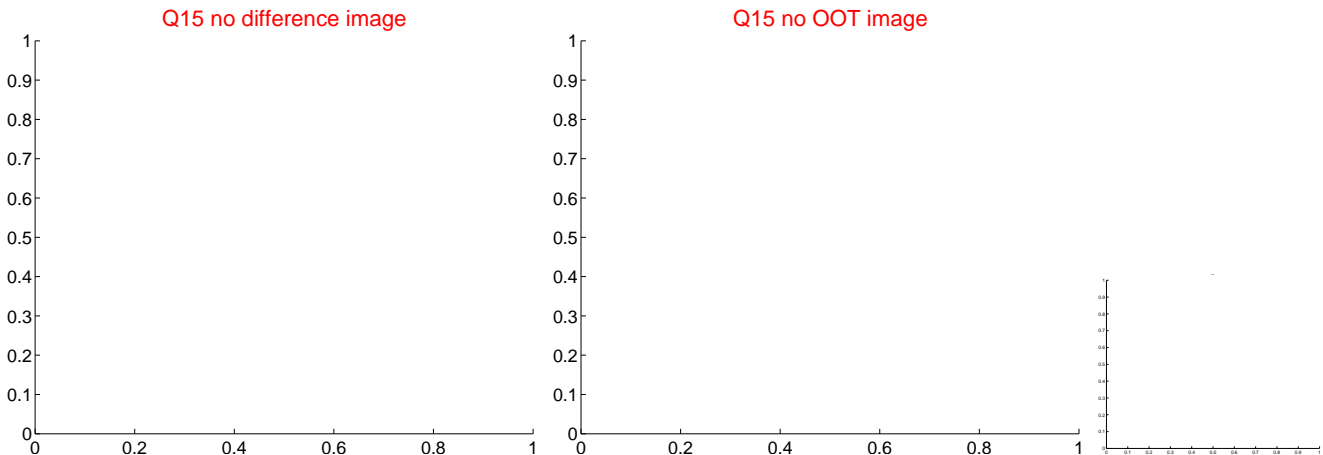
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



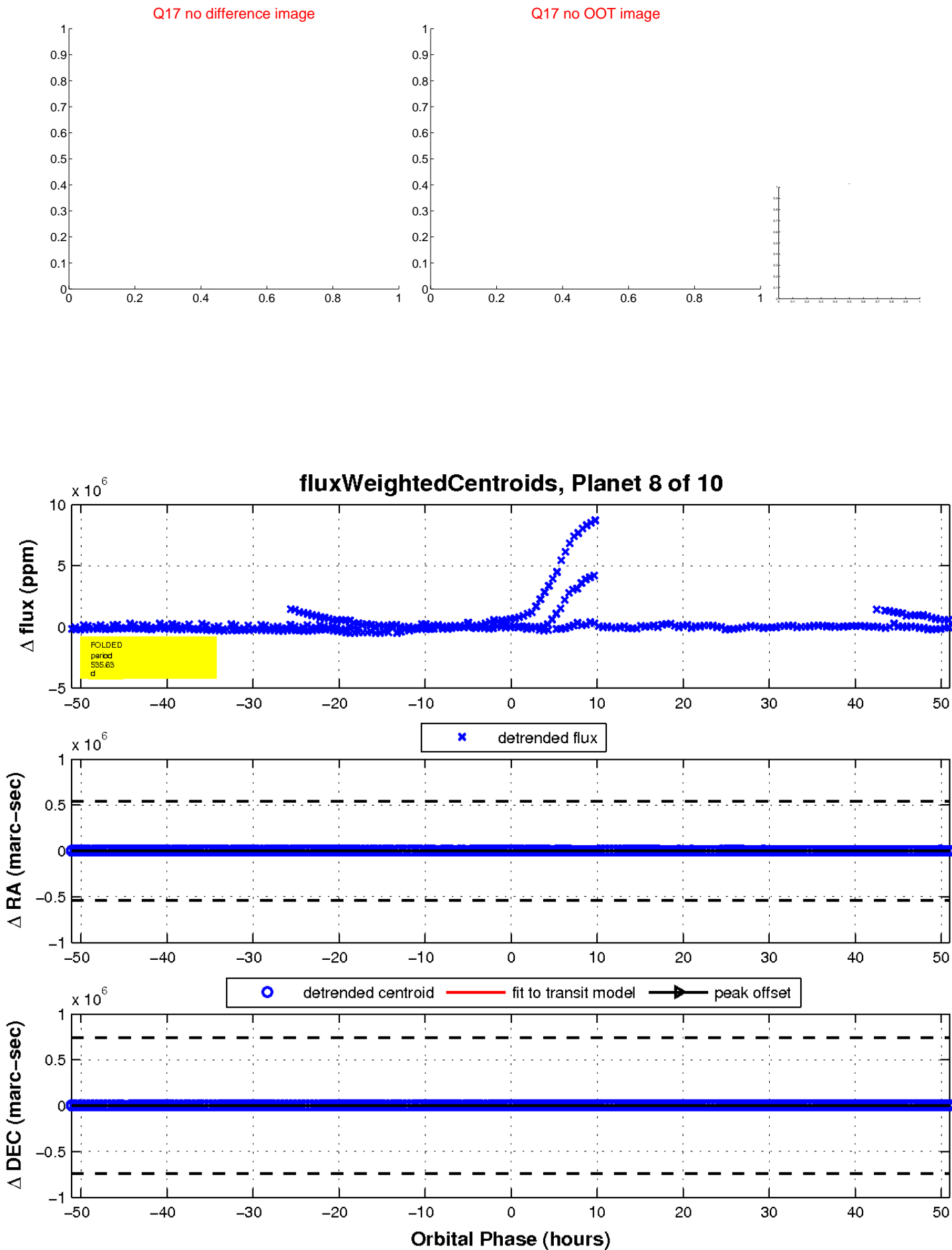
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

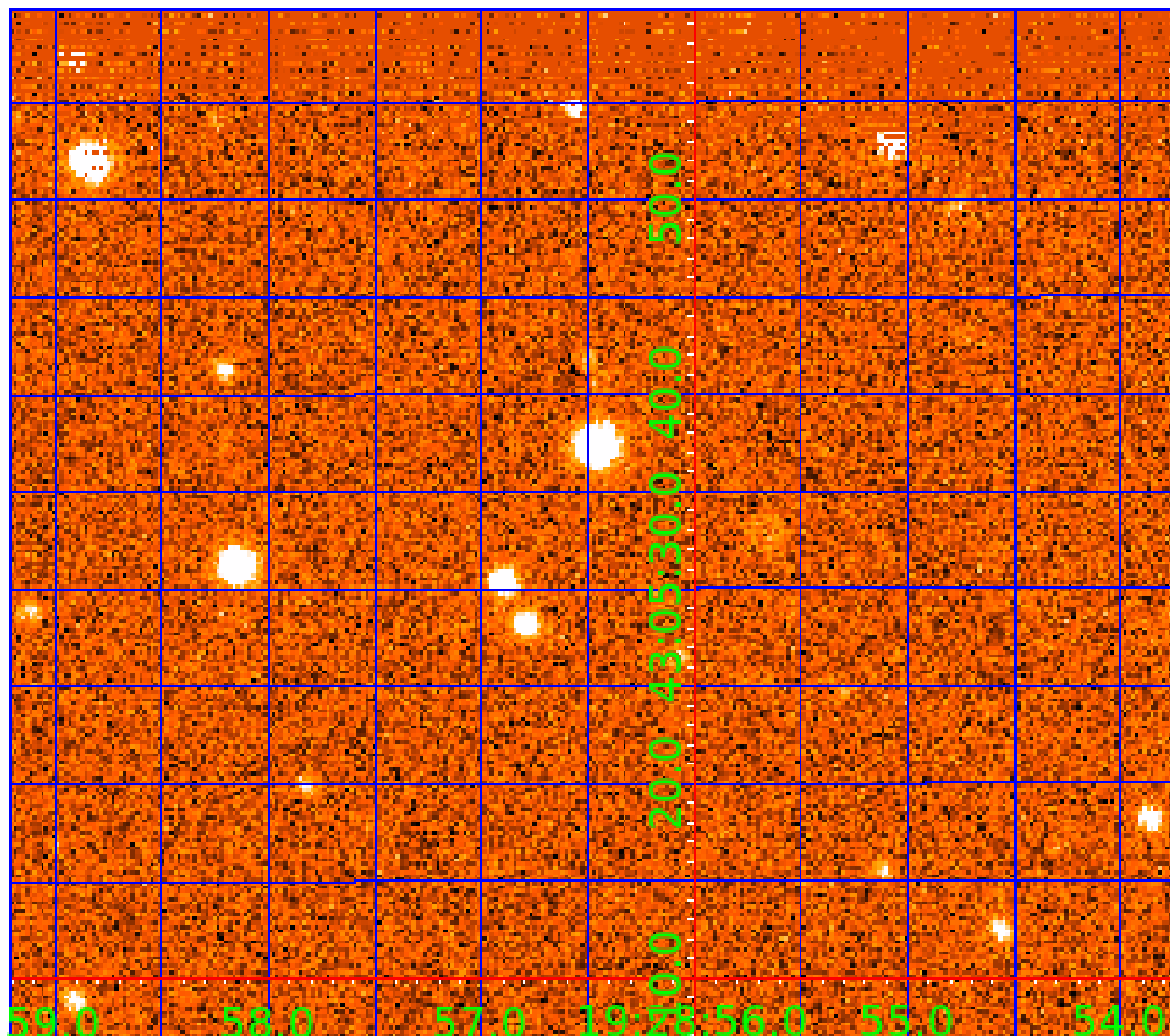


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
007446357-01	OBS	No	316.767858	437.415009	27390.2	7.500	58.5	-1.0	2.25	9296	38.15	23.89
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007446357-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007446357-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS
007446357-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
007446357-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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.

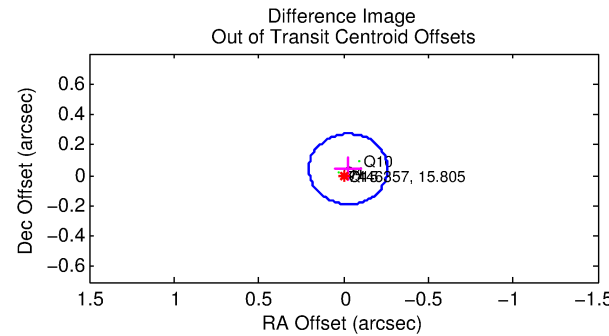
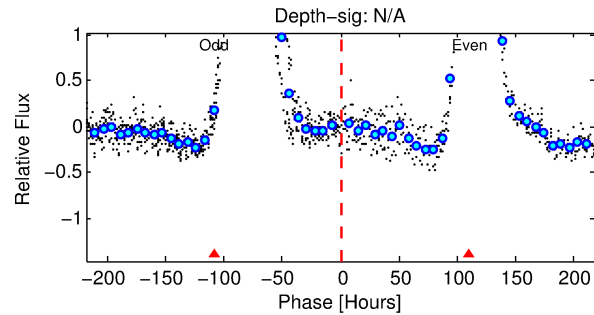
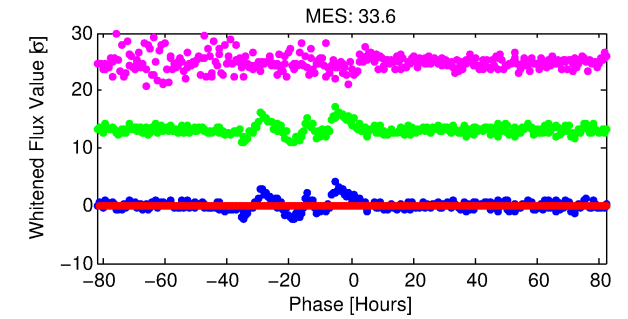
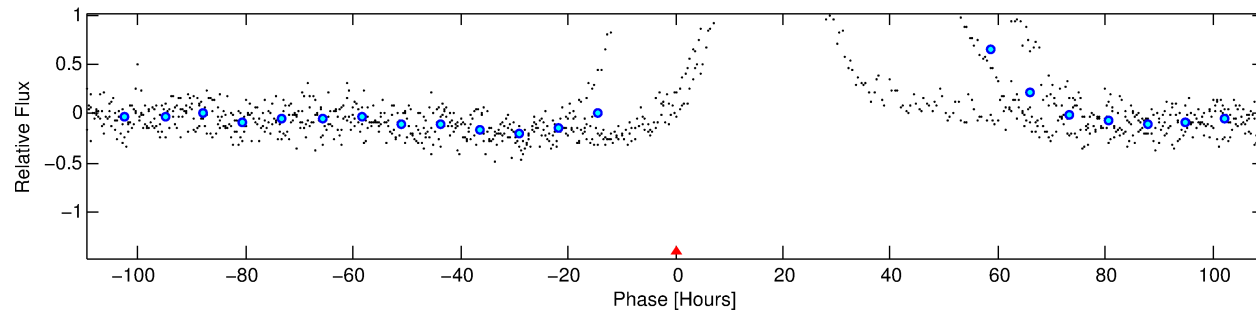
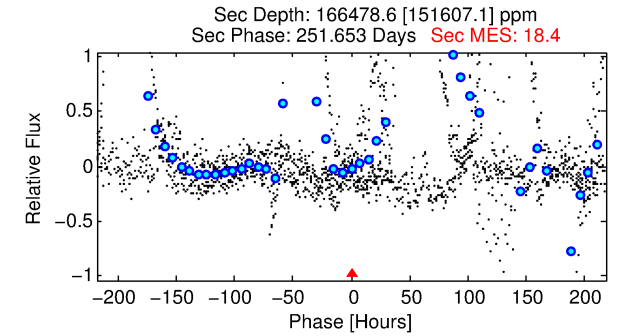
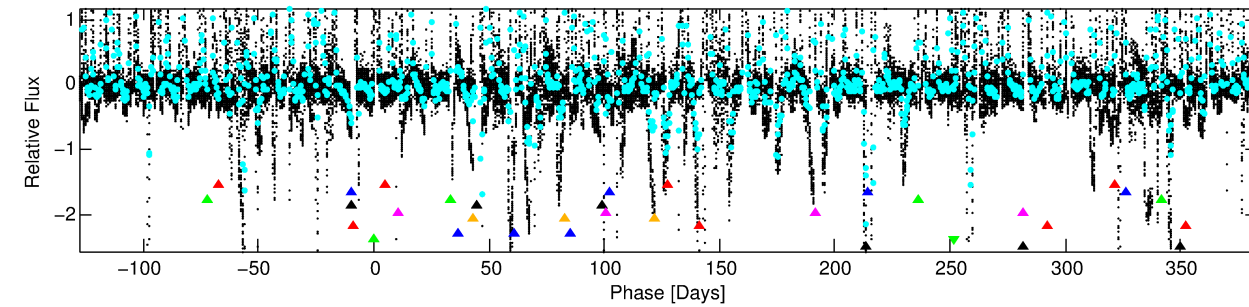
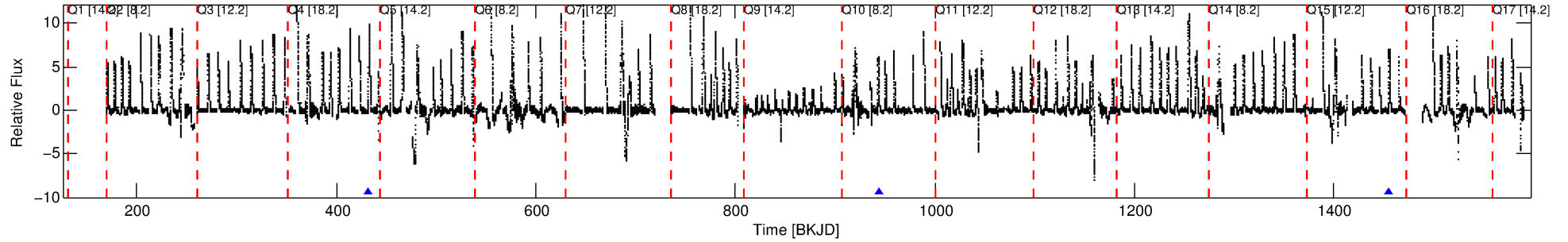
Ephemeris Match Information For 007446357-09

No Significant Match Found

DV One-Page Summary

KIC: 7446357 Candidate: 9 of 10 Period: 511.261 d

Kp: 15.81 R*: 2.25 Rs Teff: 9296.0 K Logg: 4.08 Fe/H: 0.070



TPS TCE Results:

Period = 511.26129 d
Epoch = 432.4837 BKJD

DV fit results are unavailable

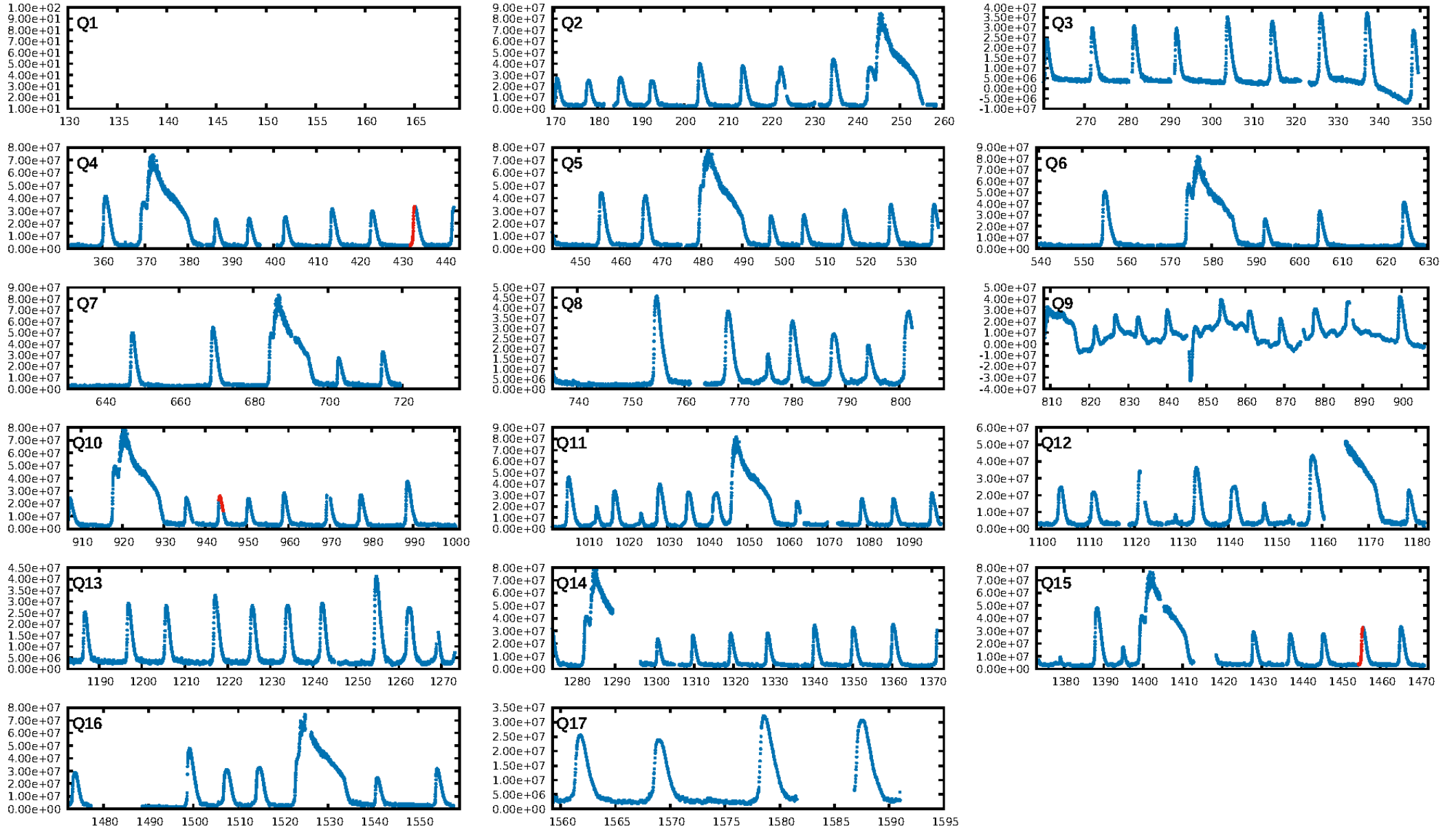
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [57.82σ]
LongPeriod-sig: 100.0% [27.68σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4883
Centroid-sig: 47.8%
Centroid-so: 1.362 arcsec [4.48σ]
OotOffset-rm: 0.050 arcsec [0.64σ]
KicOffset-rm: 0.199 arcsec [2.07σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

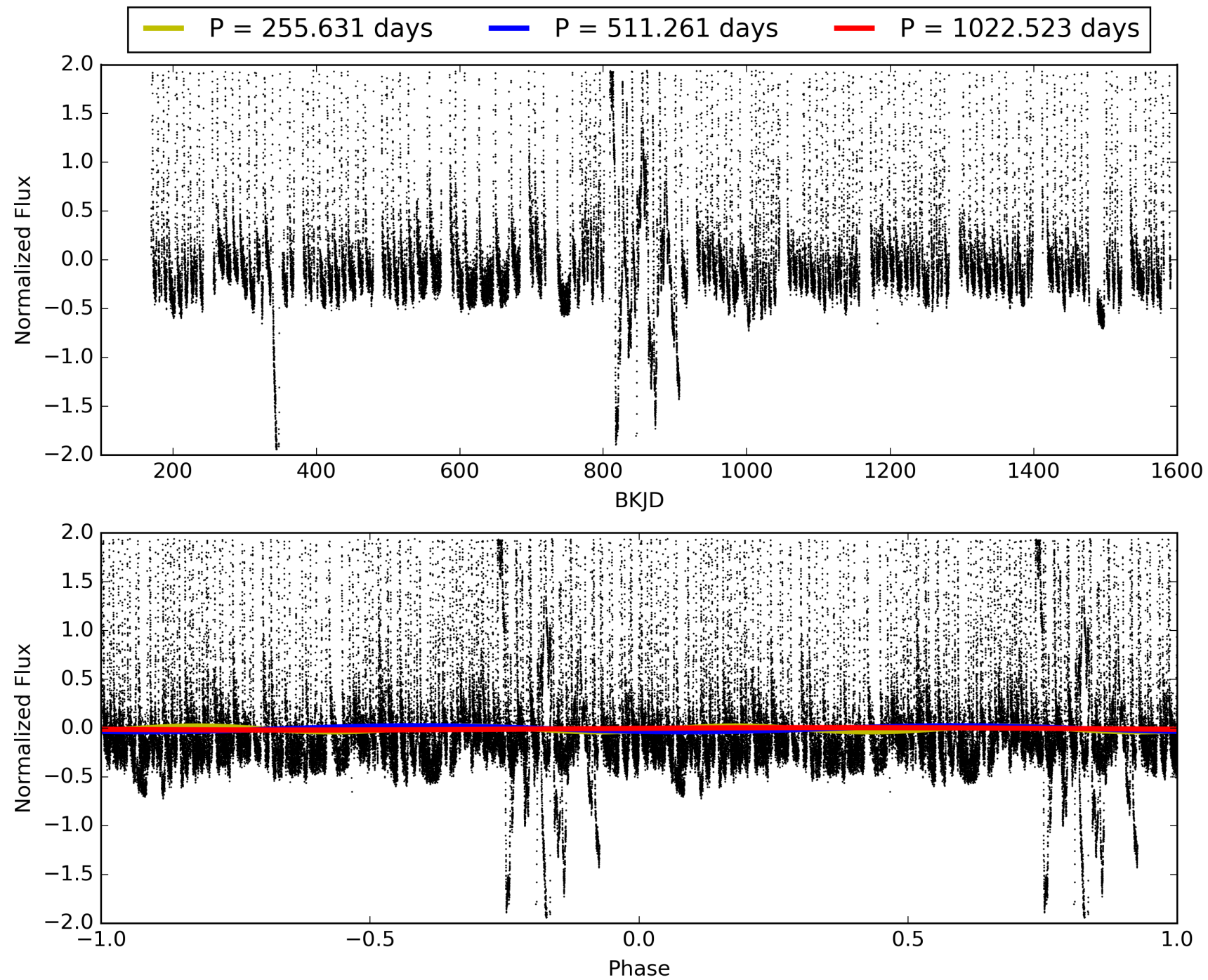
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:31:33 Z

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

TCE 007446357-09, PDC Light Curves

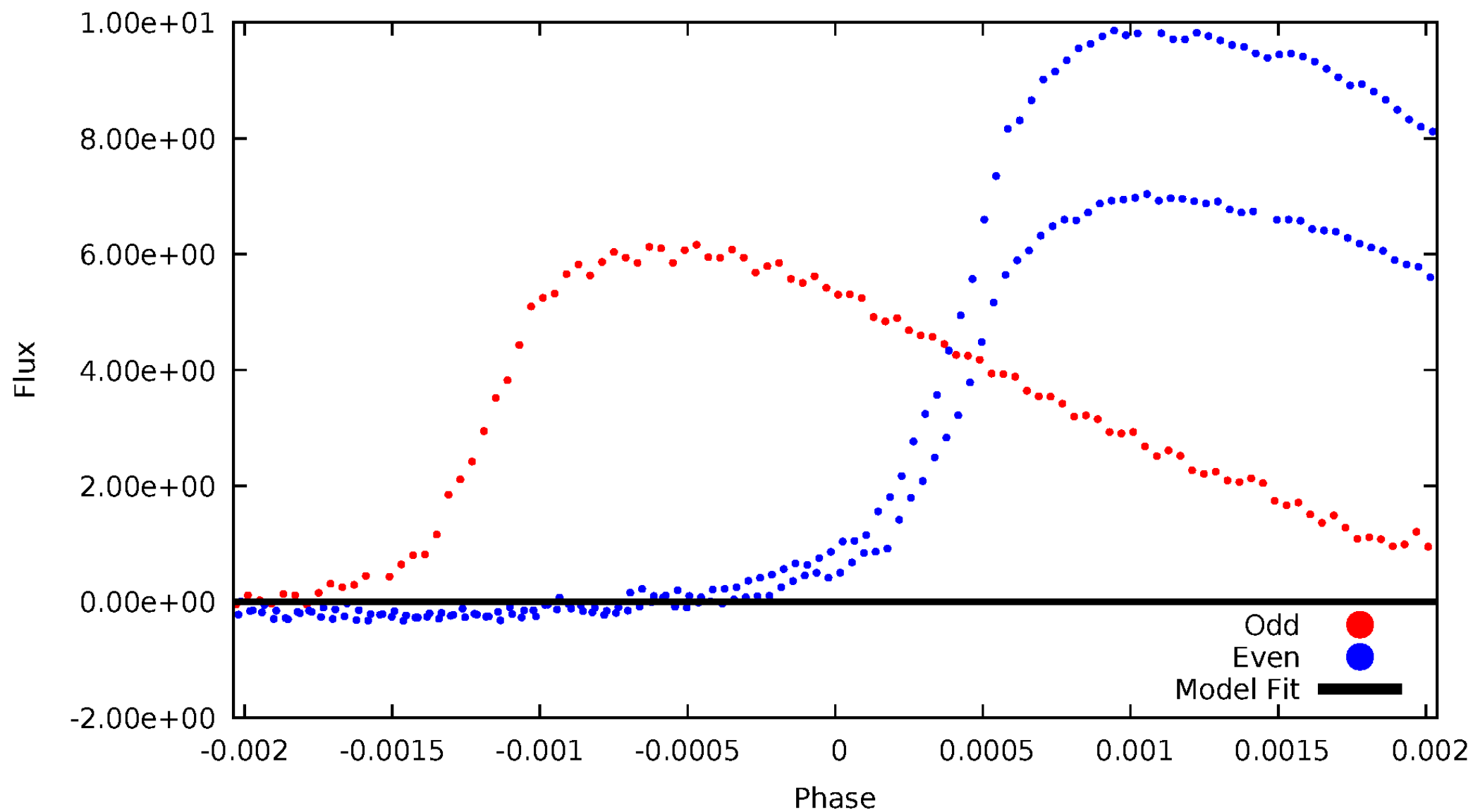


TCE 007446357-09



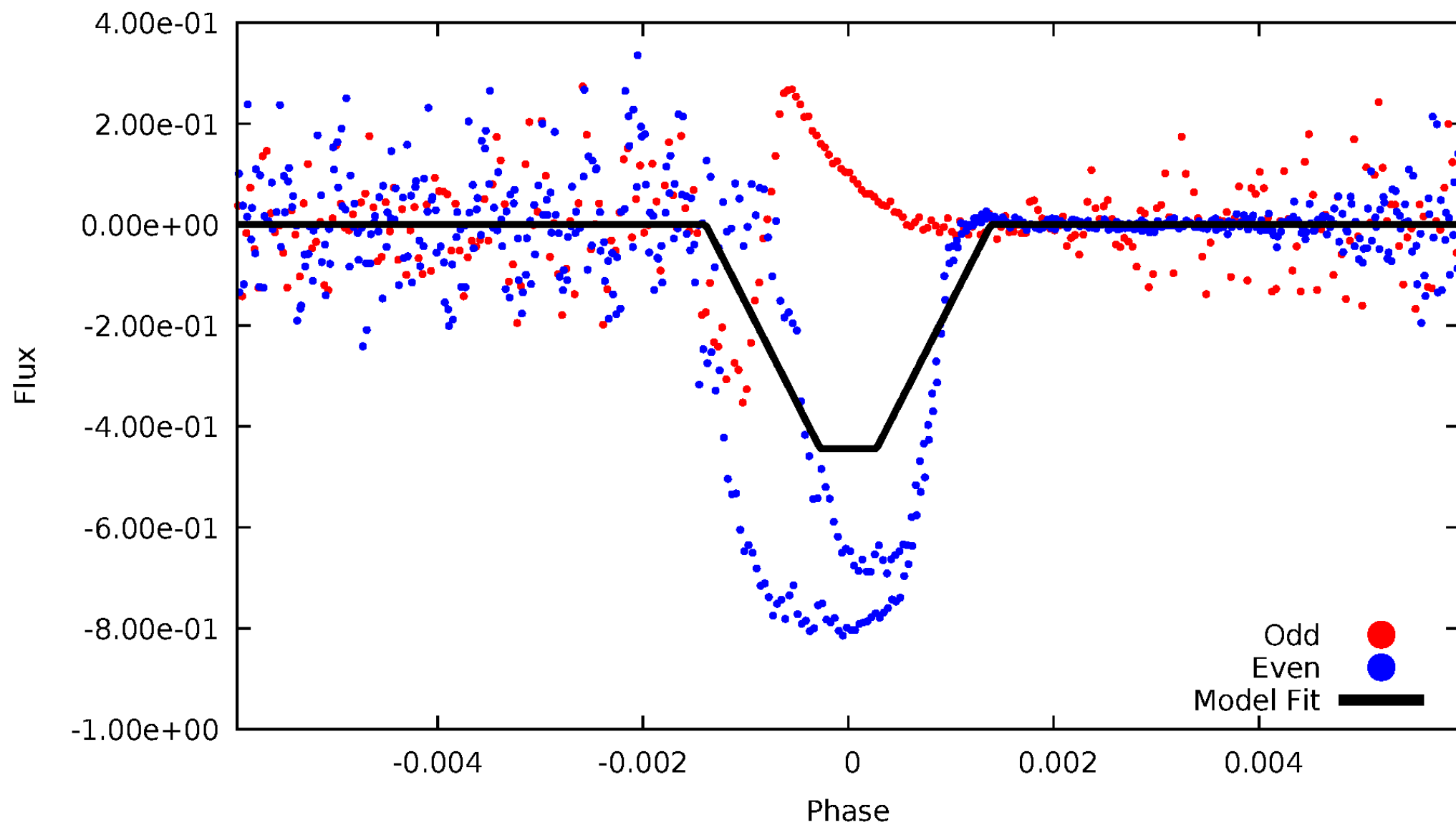
DV Odd/Even

TCE 007446357-09



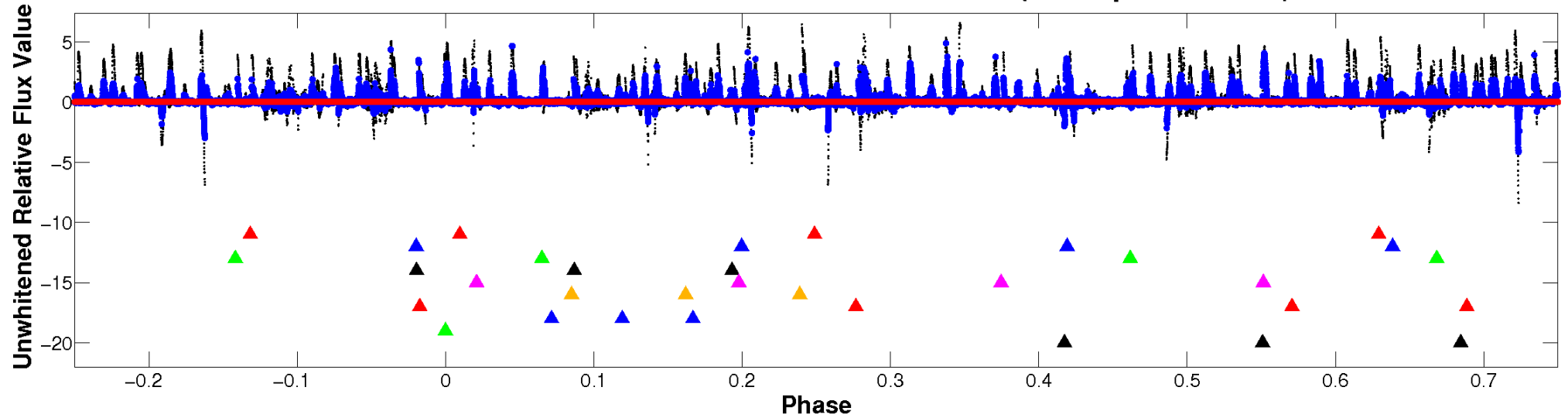
ALT Odd/Even

TCE 007446357-09

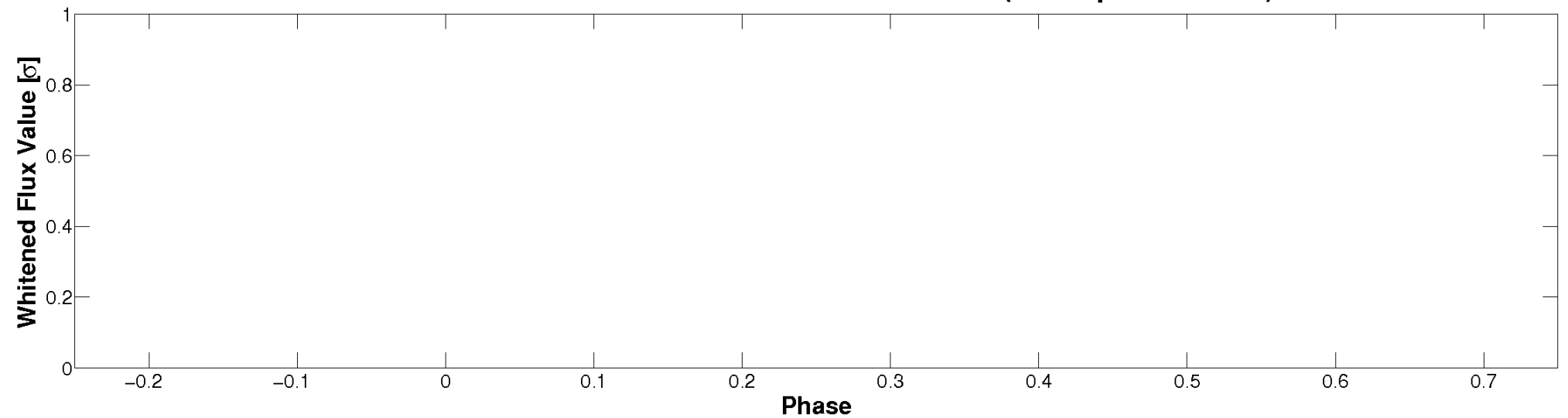


Non-Whitened Vs. Whitened Light Curve

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

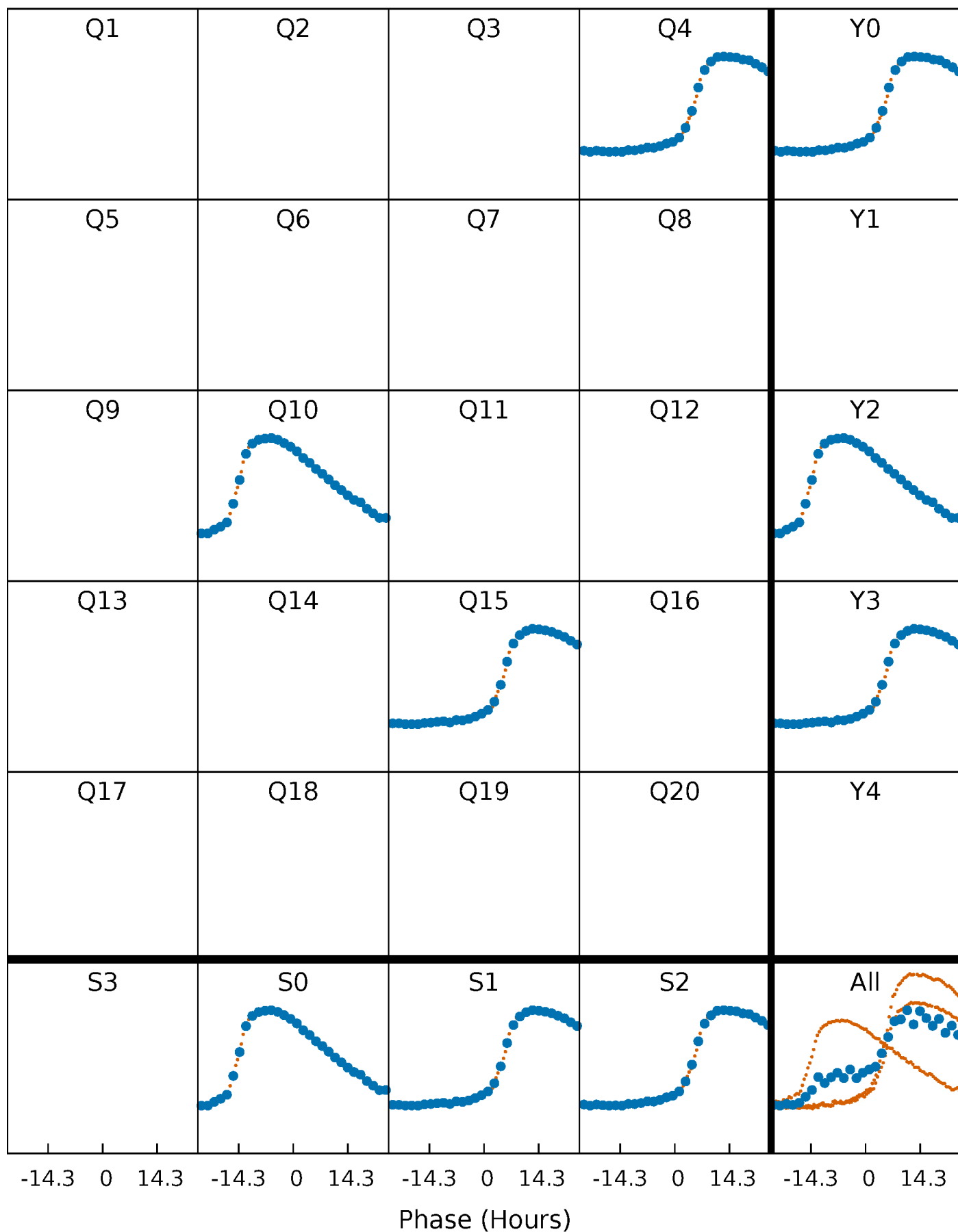


Planet 9 : Phased Whitened Flux Time Series (TPS Epoch/Period)



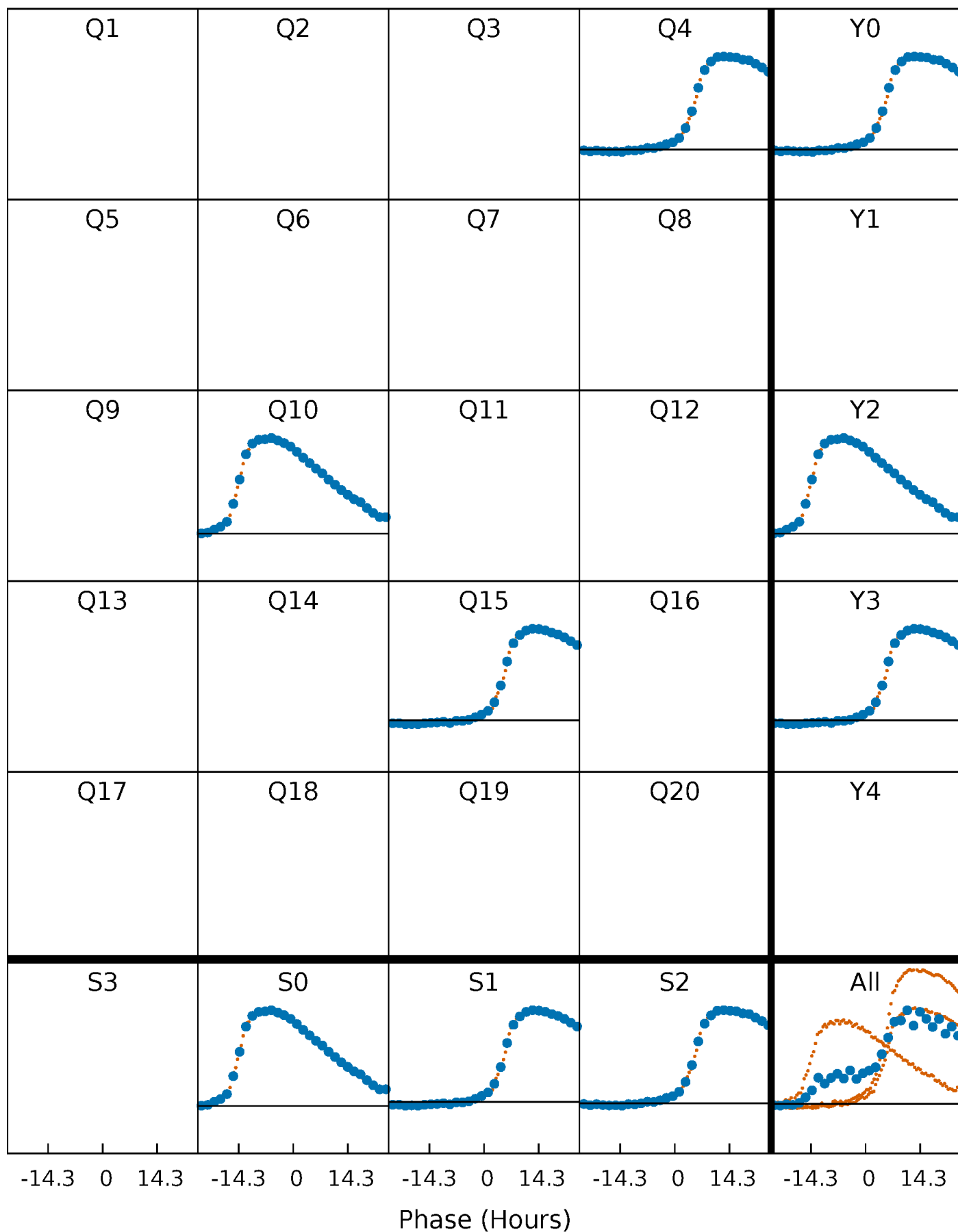
PDC Quarter-Phased Transit Curves

TCE 007446357-09 $P=511.261294$ Days $T_0=432.483710$ (BKJD)



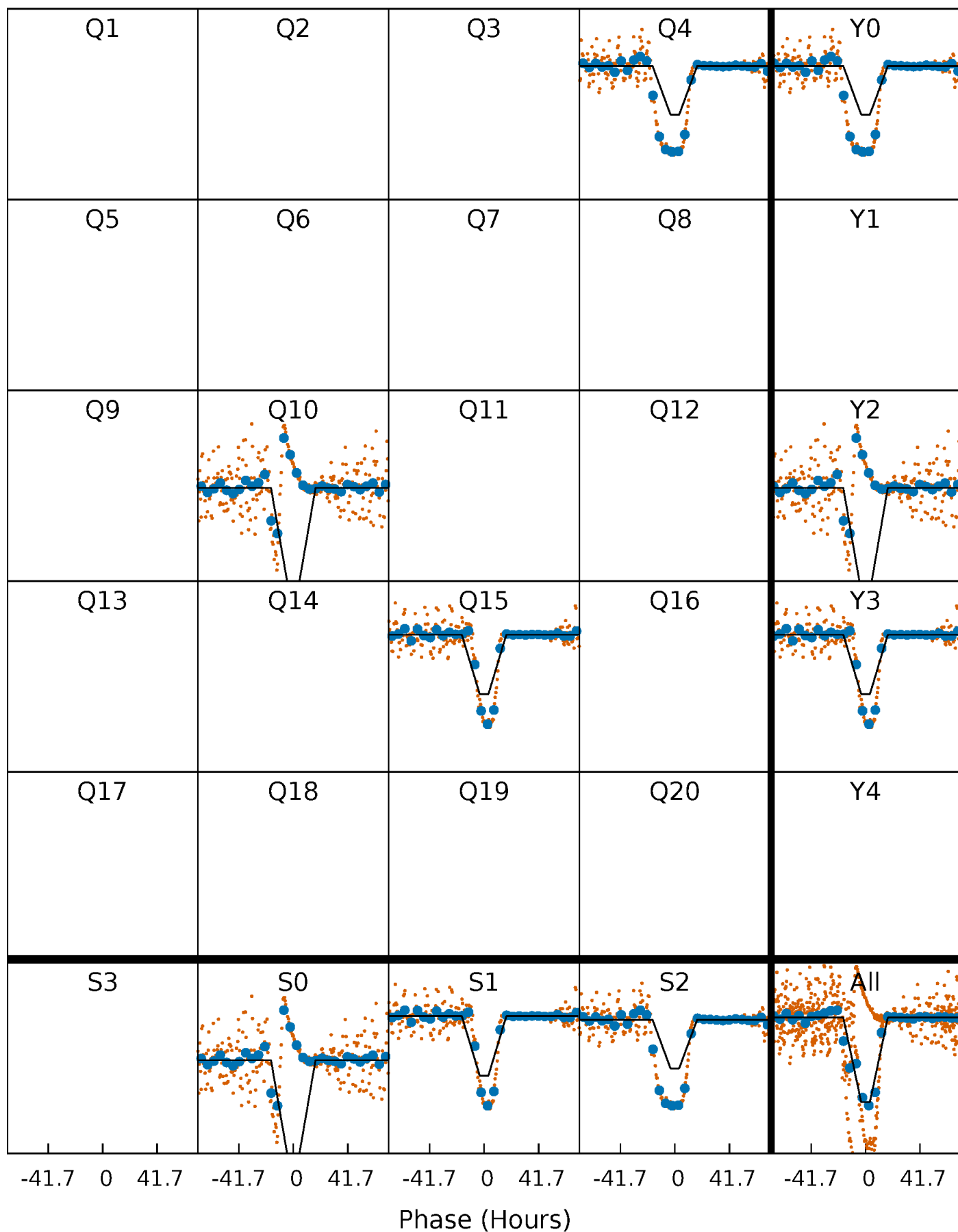
DV Quarter-Phased Transit Curves

TCE 007446357-09 P=511.261294 Days $T_0=432.483710$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

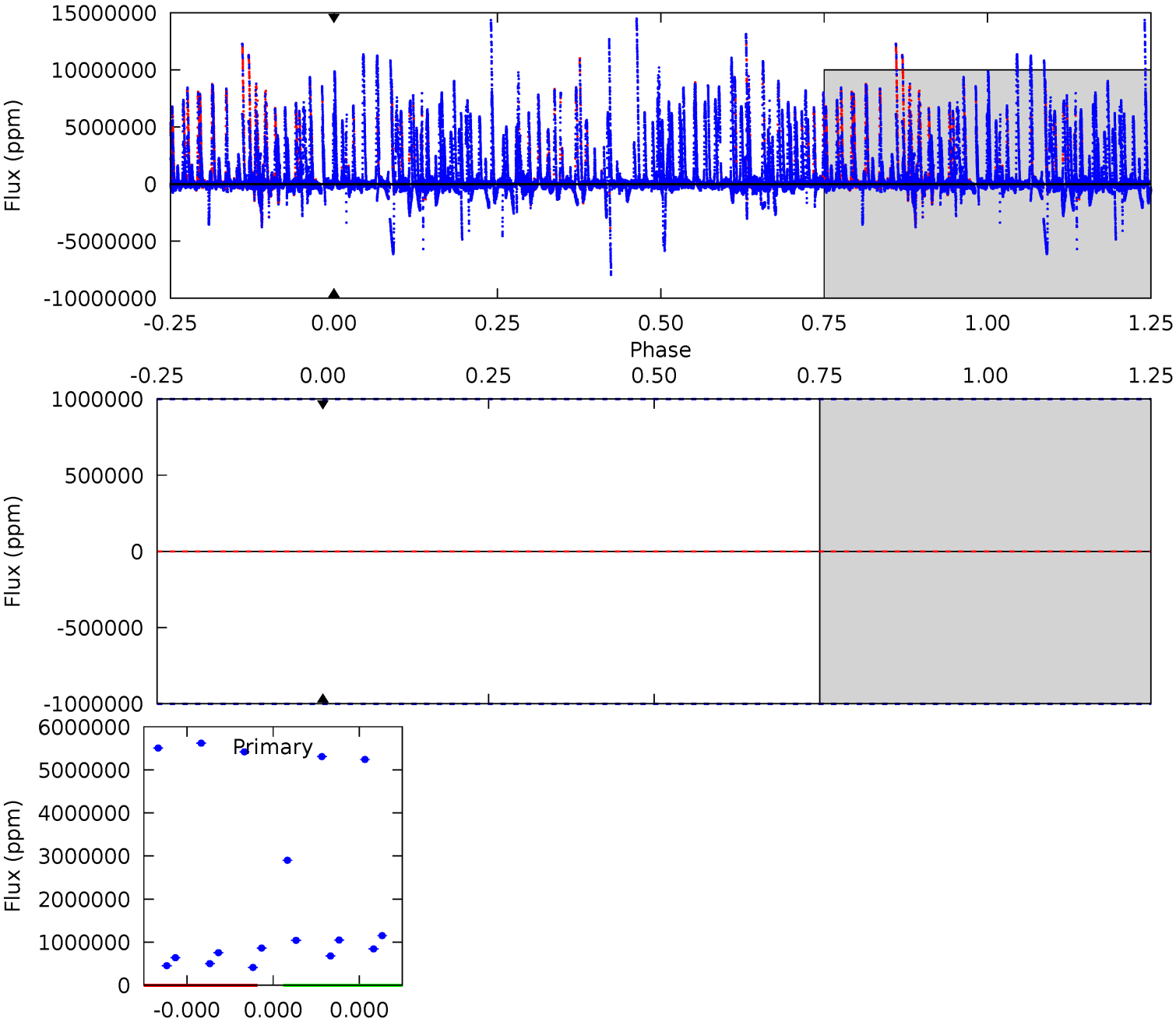
TCE 007446357-09 P=511.261294 Days $T_0=432.279037$ (BKJD)



DV Model-Shift Uniqueness Test

007446357-09, P = 511.261294 Days, E = 432.483710 Days

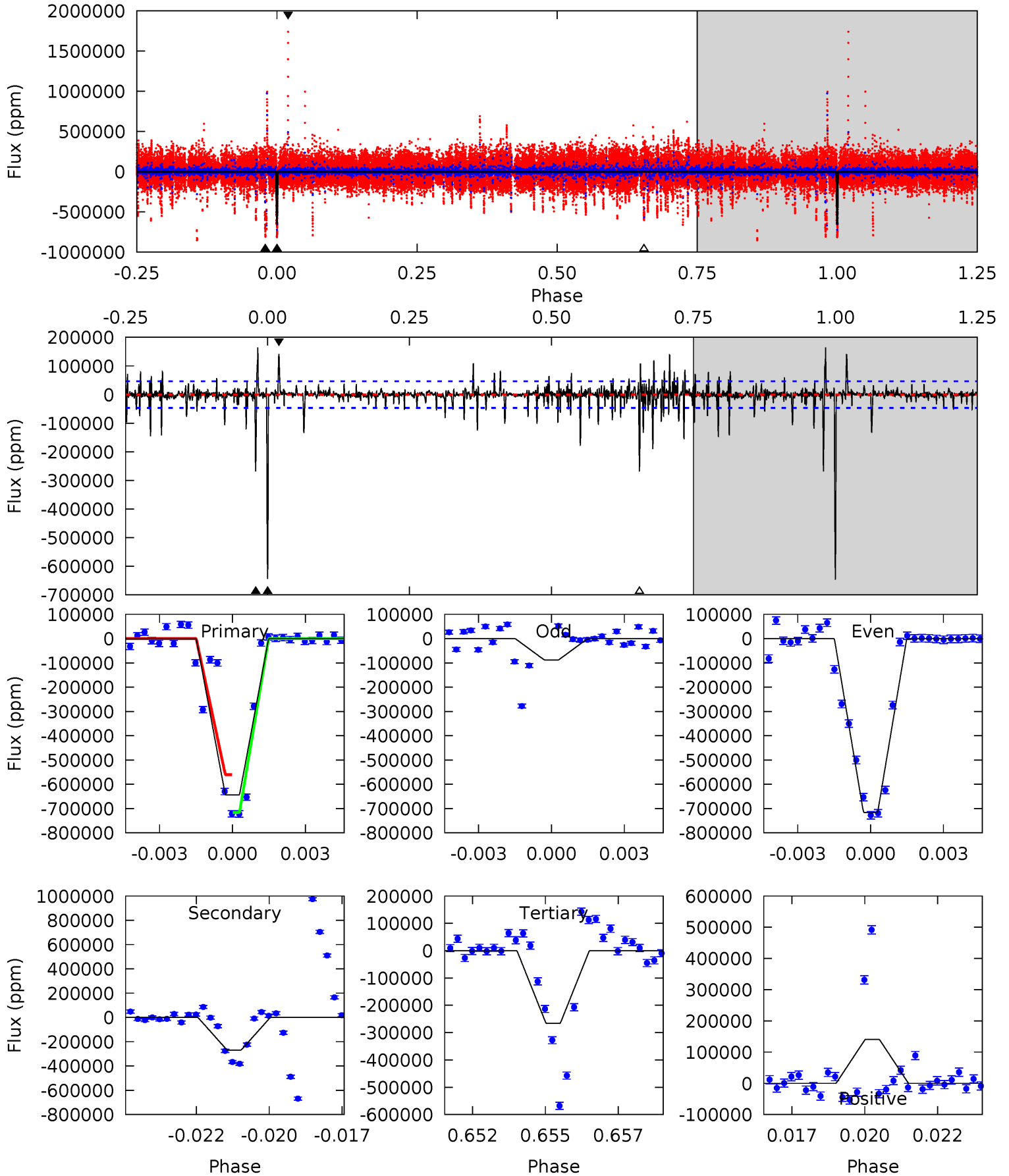
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007446357-09, P = 511.261294 Days, E = 432.279037 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.1	30.5	30.2	16.0	5.27	2.99	2.90	42.8	57.1	0.22	14.5	28.9	0.81	0.20	8.76



Stellar Parameters For KIC 007446357

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9296^{+245}_{-449}	$4.085^{+0.170}_{-0.170}$	$0.070^{+0.150}_{-0.700}$	$2.253^{+0.774}_{-0.703}$	$2.251^{+0.399}_{-0.599}$	$0.277^{+0.285}_{-0.140}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+34%/-31%	+18%/-27%	+103%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007446357-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$26.30^{+23.73}_{-15.56}$	671^{+54}_{-56}	6144^{+30911}_{-34474}	$5556^{+351966}_{-258243}$
Alt.	-268430 ± 8811	$163.27^{+38.11}_{-34.63}$	667^{+52}_{-51}	8647^{+1058}_{-812}	20140^{+10620}_{-6846}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

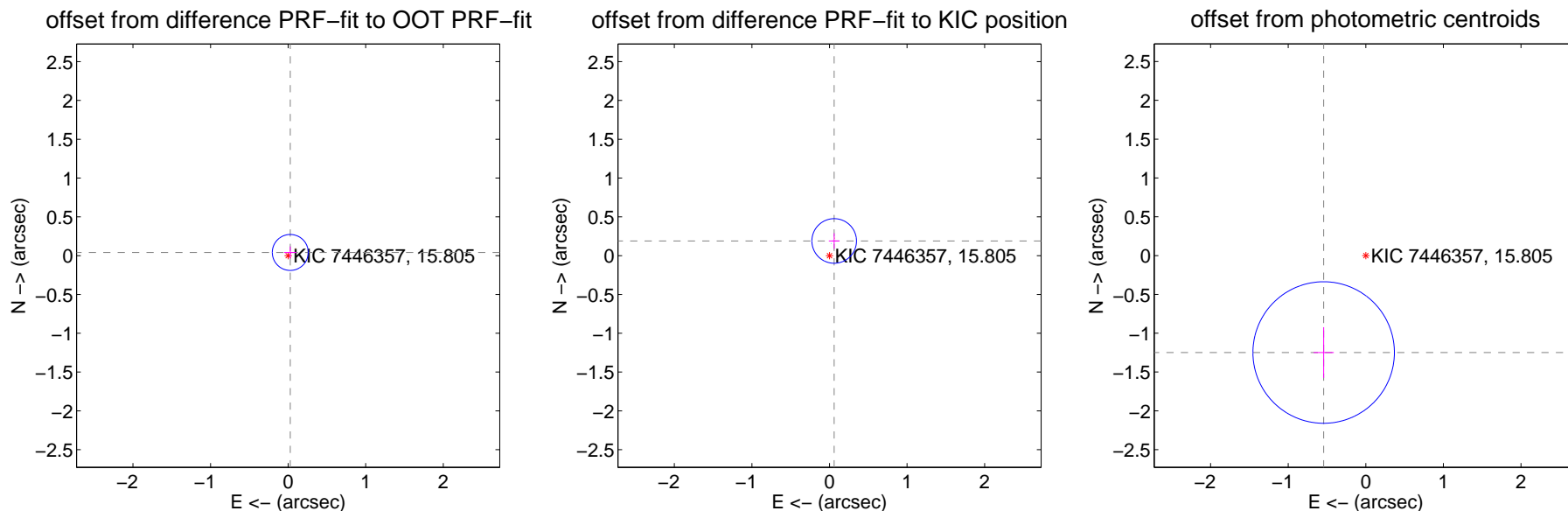
DV Centroid Data

Supplemental centroid analysis for 007446357-09. Kepler magnitude: 15.80. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

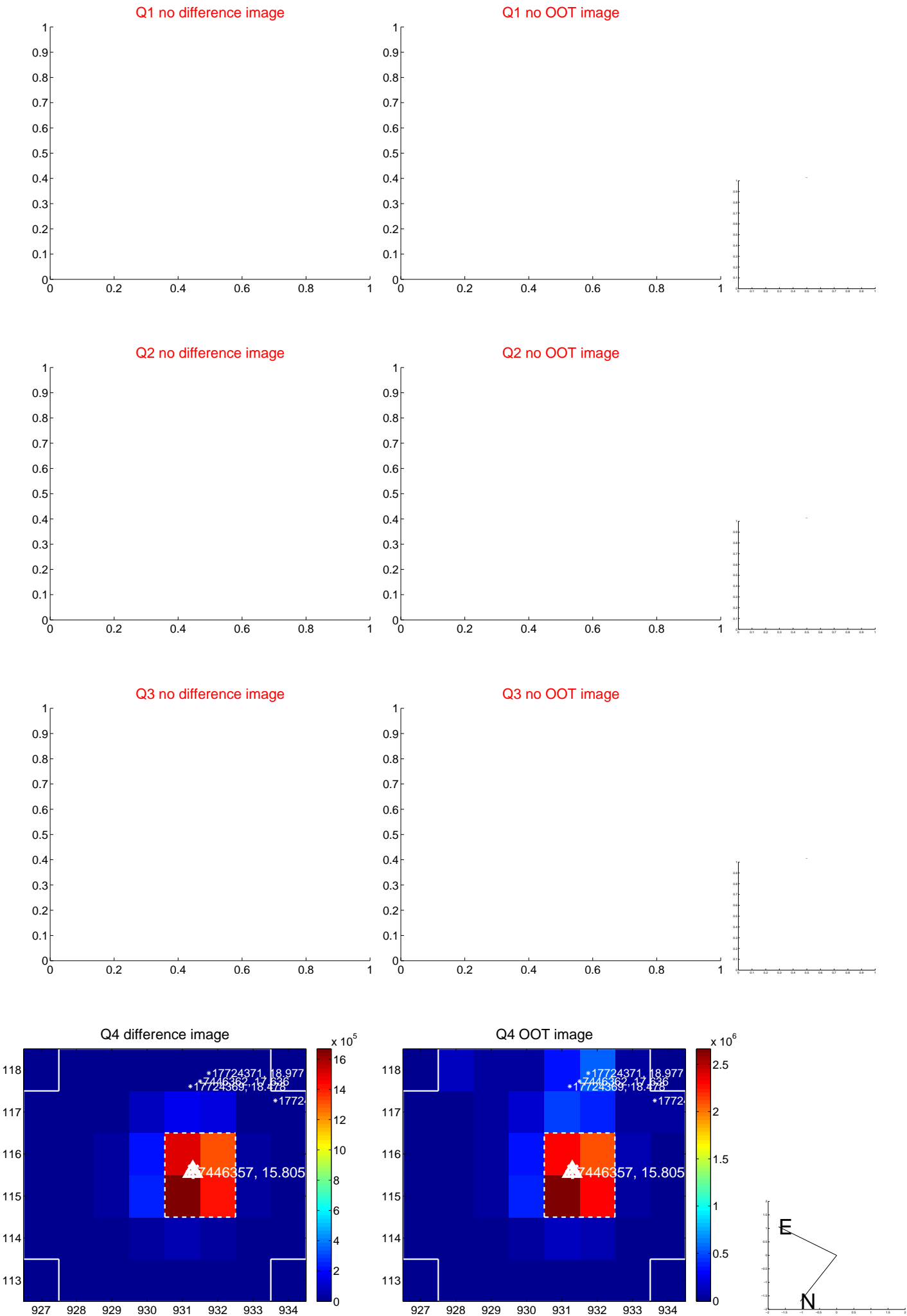
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.050 ± 0.077	0.64	-0.028 ± 0.079	0.041 ± 0.077
PRF-fit source offset from KIC position	0.199 ± 0.096	2.07	-0.061 ± 0.069	0.189 ± 0.101
photometric centroid source offset	1.36 ± 0.30	4.48	0.54 ± 0.13	-1.25 ± 0.33



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.

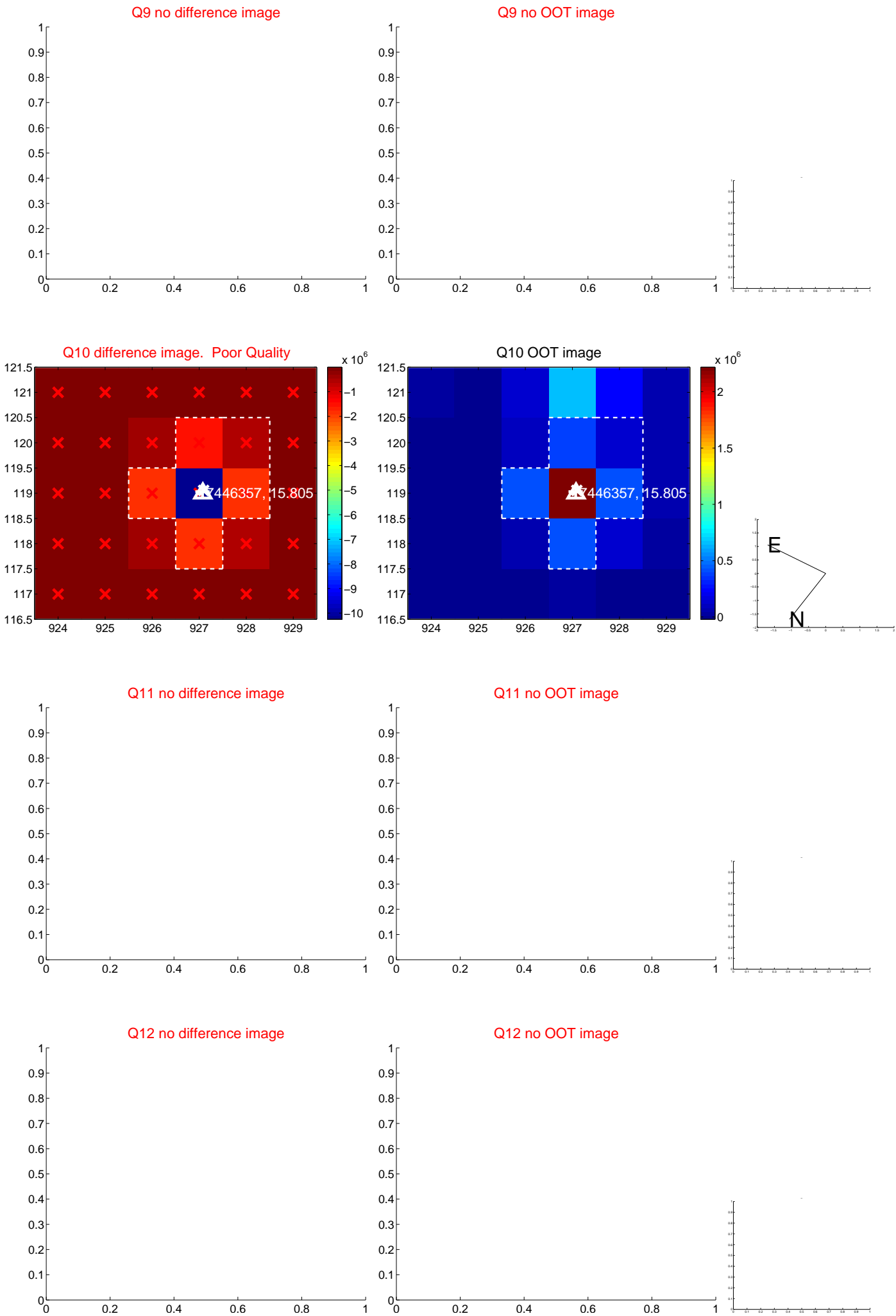
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

Q13 no difference image



Q13 no OOT image



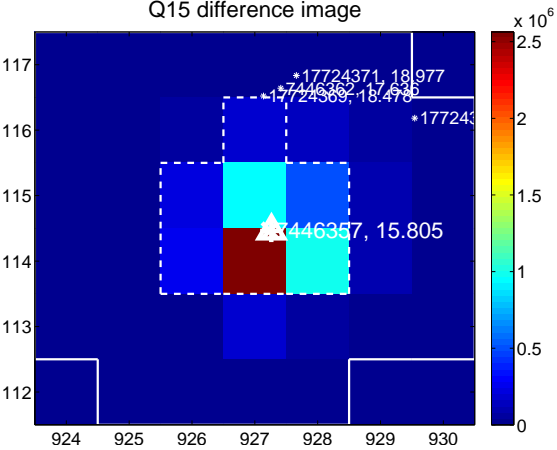
Q14 no difference image



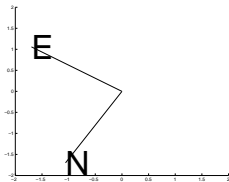
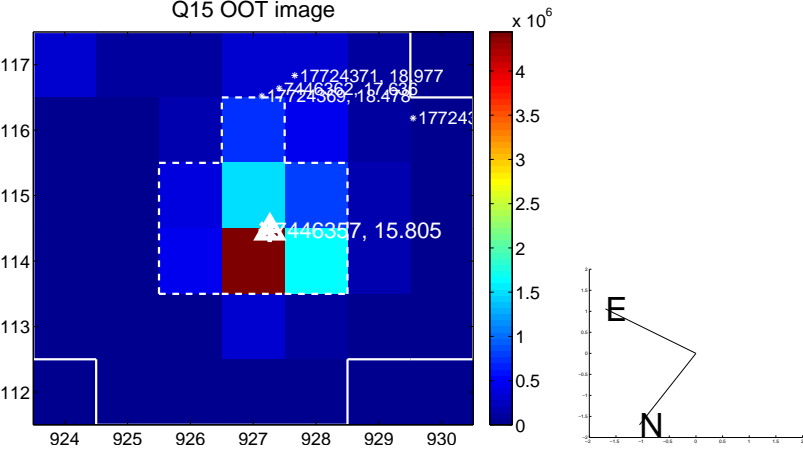
Q14 no OOT image



Q15 difference image



Q15 OOT image



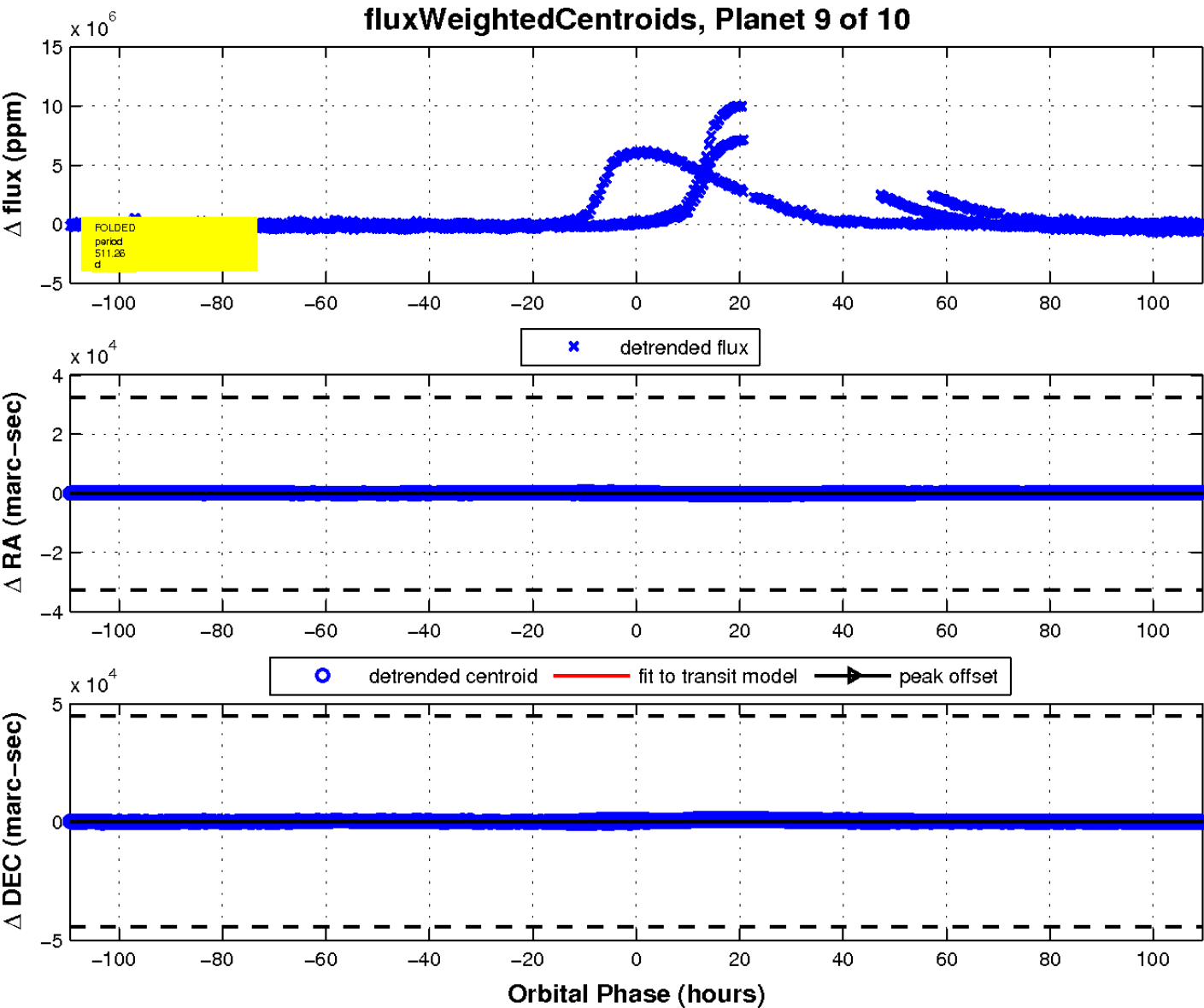
Q16 no difference image



Q16 no OOT image

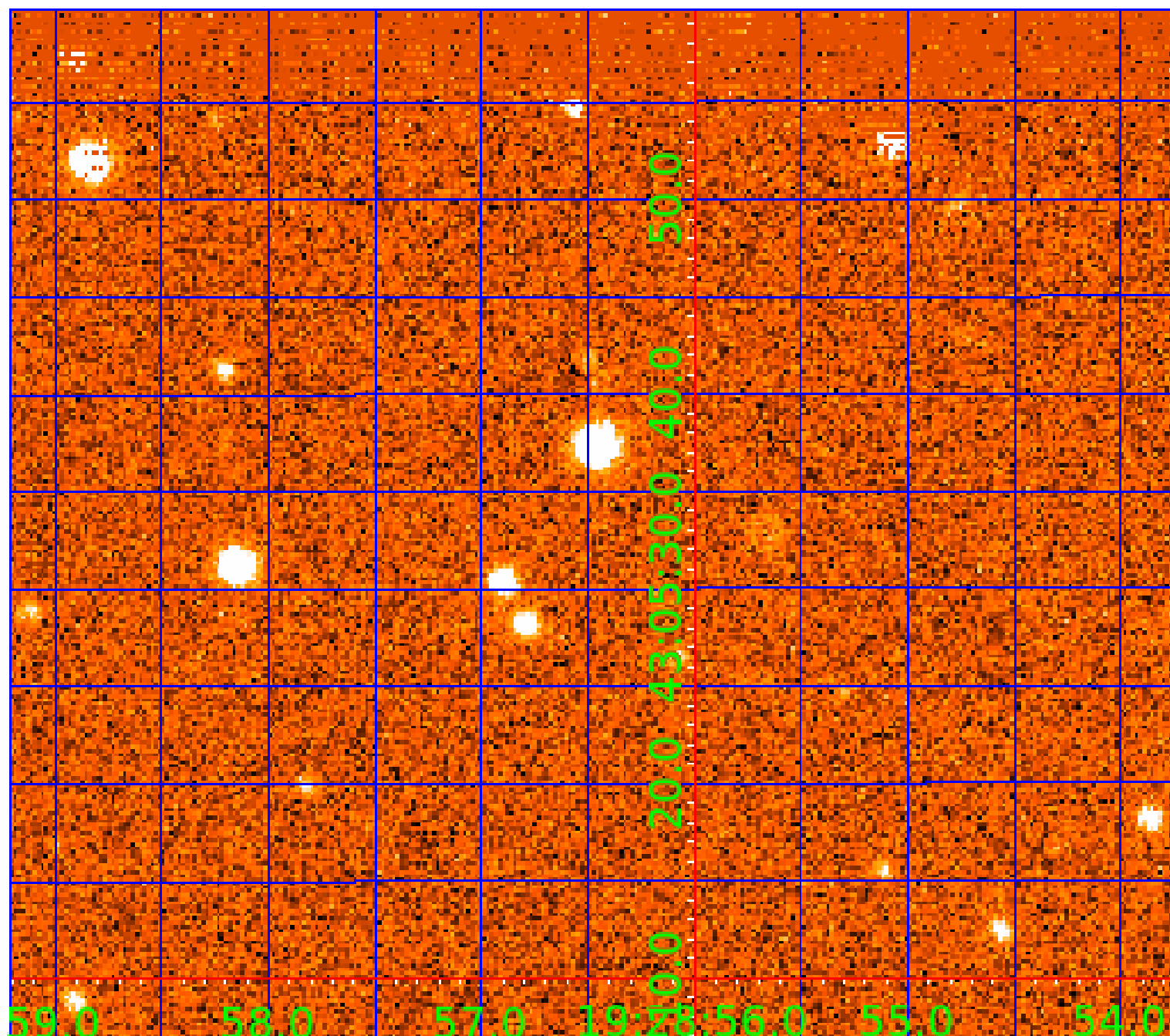


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007446357

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})
007446357-01	OBS	No	316.767858	437.415009	27390.2	7.500	58.5	-1.0	2.25	9296	38.15	23.89
007446357-02	OBS	No	399.067427	247.703027	17934.0	15.000	50.1	-1.0	2.25	9296	30.86	17.56
007446357-03	OBS	No	308.465022	360.053551	18752.3	10.500	50.8	-1.0	2.25	9296	31.55	24.75
007446357-04	OBS	No	565.634997	422.505322	11996.6	10.500	46.3	-1.0	2.25	9296	25.23	11.03
007446357-05	OBS	No	420.863224	203.147650	16636.7	12.000	45.0	-1.0	2.25	9296	29.72	16.36
007446357-06	OBS	No	471.933502	554.601476	15123.7	10.500	39.4	-1.0	2.25	9296	28.34	14.04
007446357-07	OBS	No	360.931593	213.027276	11585.2	12.500	39.3	-1.0	2.25	9296	24.79	20.08
007446357-08	OBS	No	535.626172	469.039656	494168.2	17.031	34.5	5.8	2.25	9296	165.06	11.86
007446357-09	OBS	No	511.261294	432.483710	9672.8	12.500	33.6	-1.0	2.25	9296	22.65	12.62
007446357-10	OBS	No	442.964688	271.184425	703902.5	24.810	32.9	4.2	2.25	9296	199.42	15.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007446357-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
007446357-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS
007446357-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-07	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
007446357-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
007446357-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS

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.

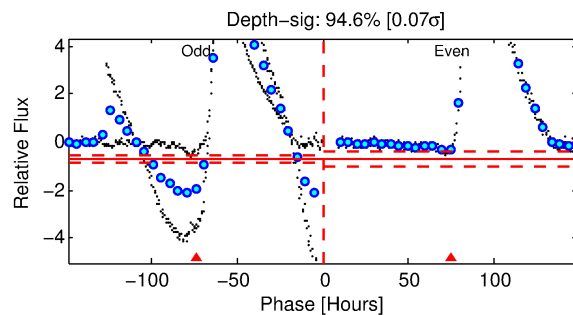
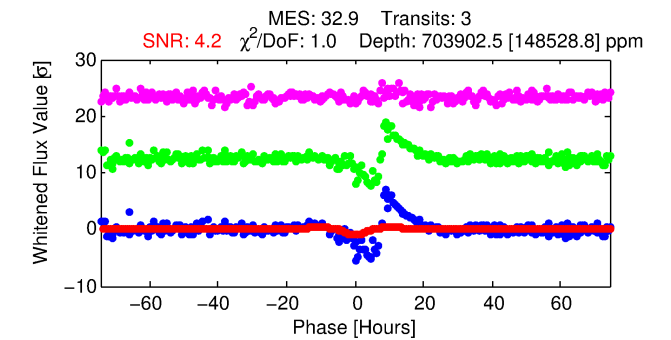
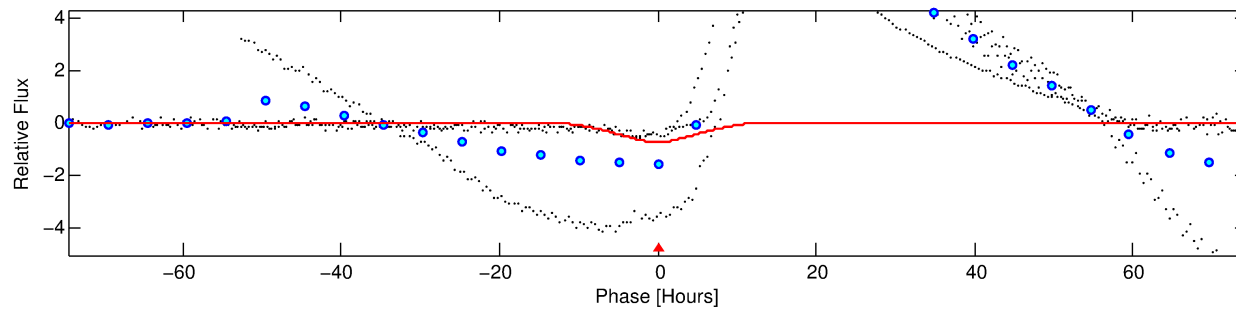
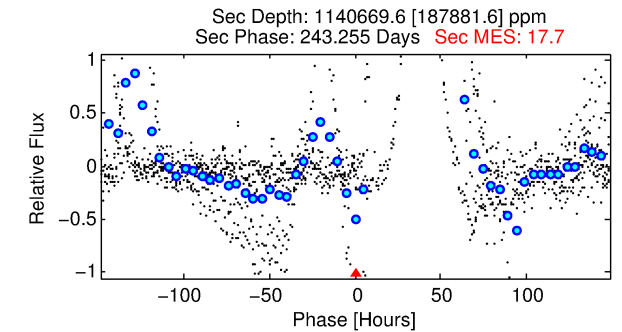
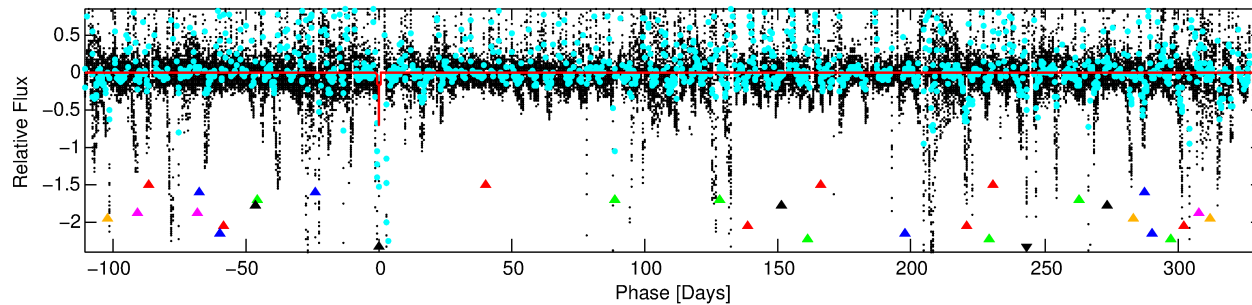
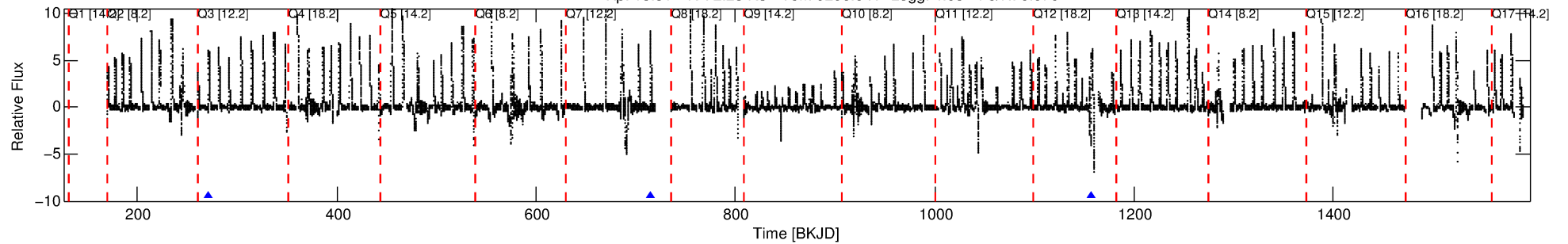
Ephemeris Match Information For 007446357-10

No Significant Match Found

DV One-Page Summary

KIC: 7446357 Candidate: 10 of 10 Period: 442.965 d

Kp: 15.81 R*: 2.25 Rs Teff: 9296.0 K Logg: 4.08 Fe/H: 0.070



DV Fit Results:

Period = 442.96469 [0.03147] d
Epoch = 271.1844 [0.0350] BKJD
Rp/R* = 0.8112 [0.0893]
a/R* = 247.03 [24.87]
b = 0.00 [161.22]
Seff = 15.28 [6.07]
Teq = 504 [50] K
Rp = 199.42 [71.94] Re
a = 1.4909 [0.3930] AU
Ag = 35073.64 [15532.63] [2.26σ]
Teffp = 10667 [896] K [11.3σ]

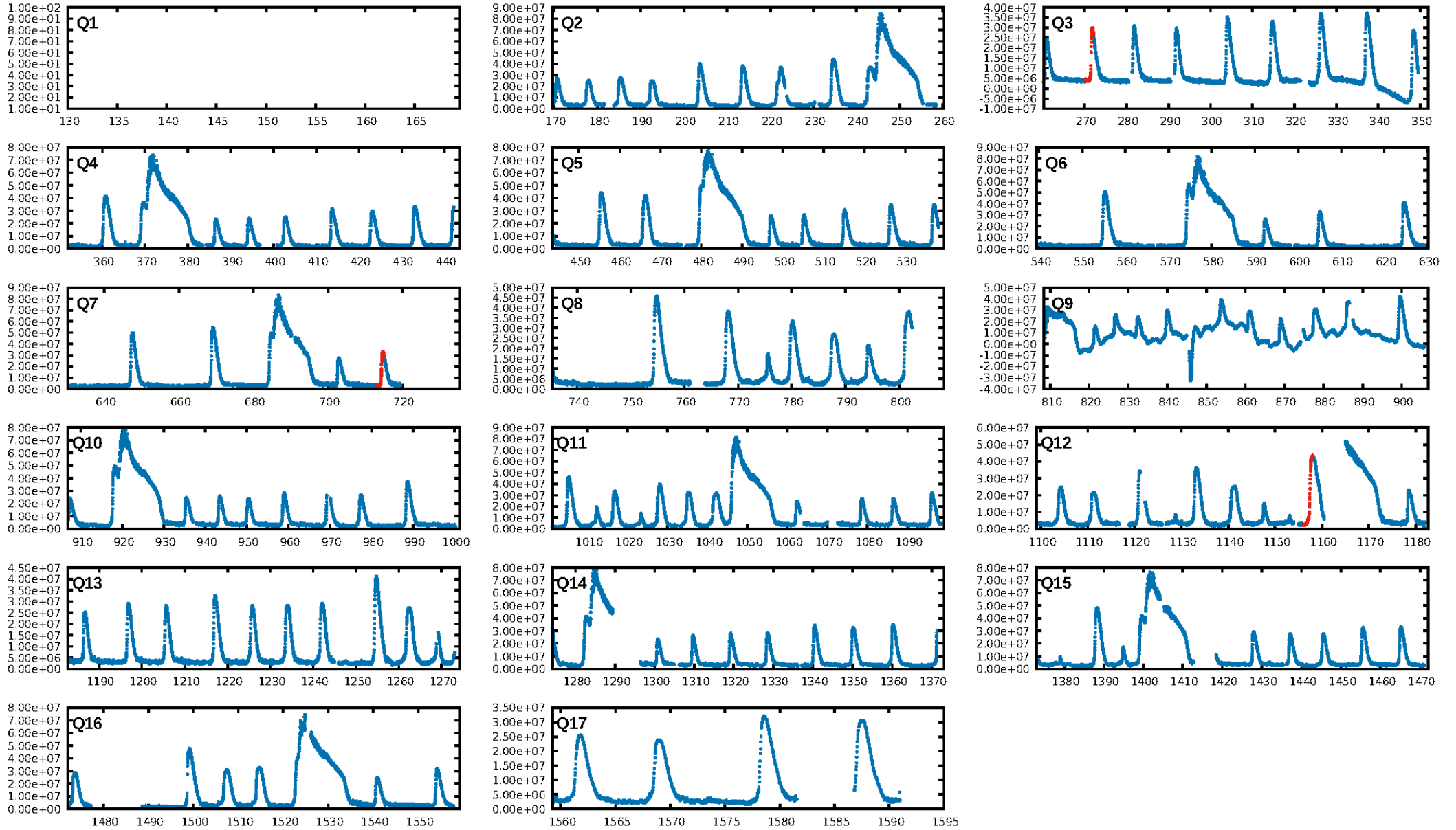
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.25σ]
LongPeriod-sig: 100.0% [25.81σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.9113
Centroid-sig: 0.0%
Centroid-so: 0.413 arcsec [1.42σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: N/A

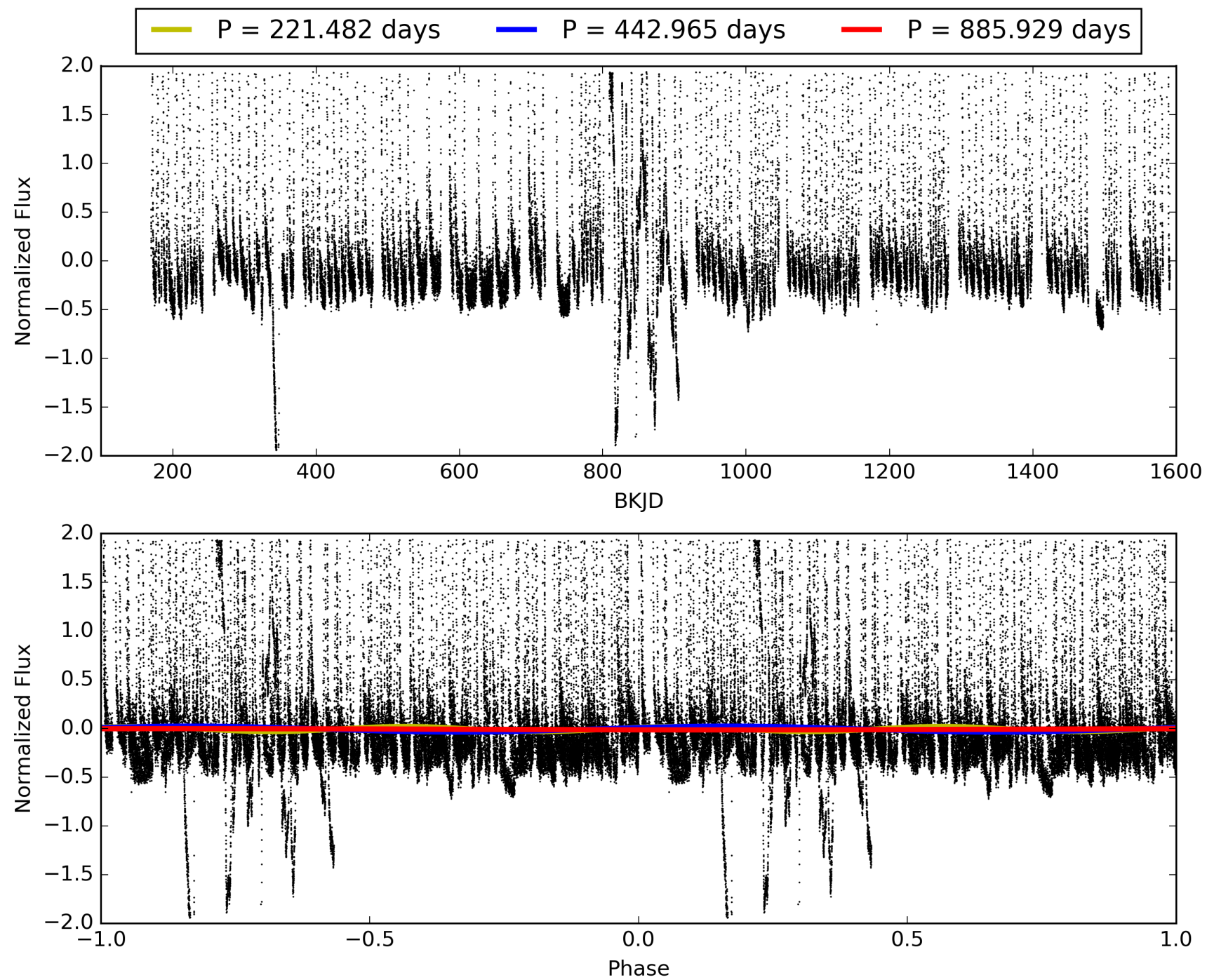
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:31:40 Z

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

TCE 007446357-10, PDC Light Curves

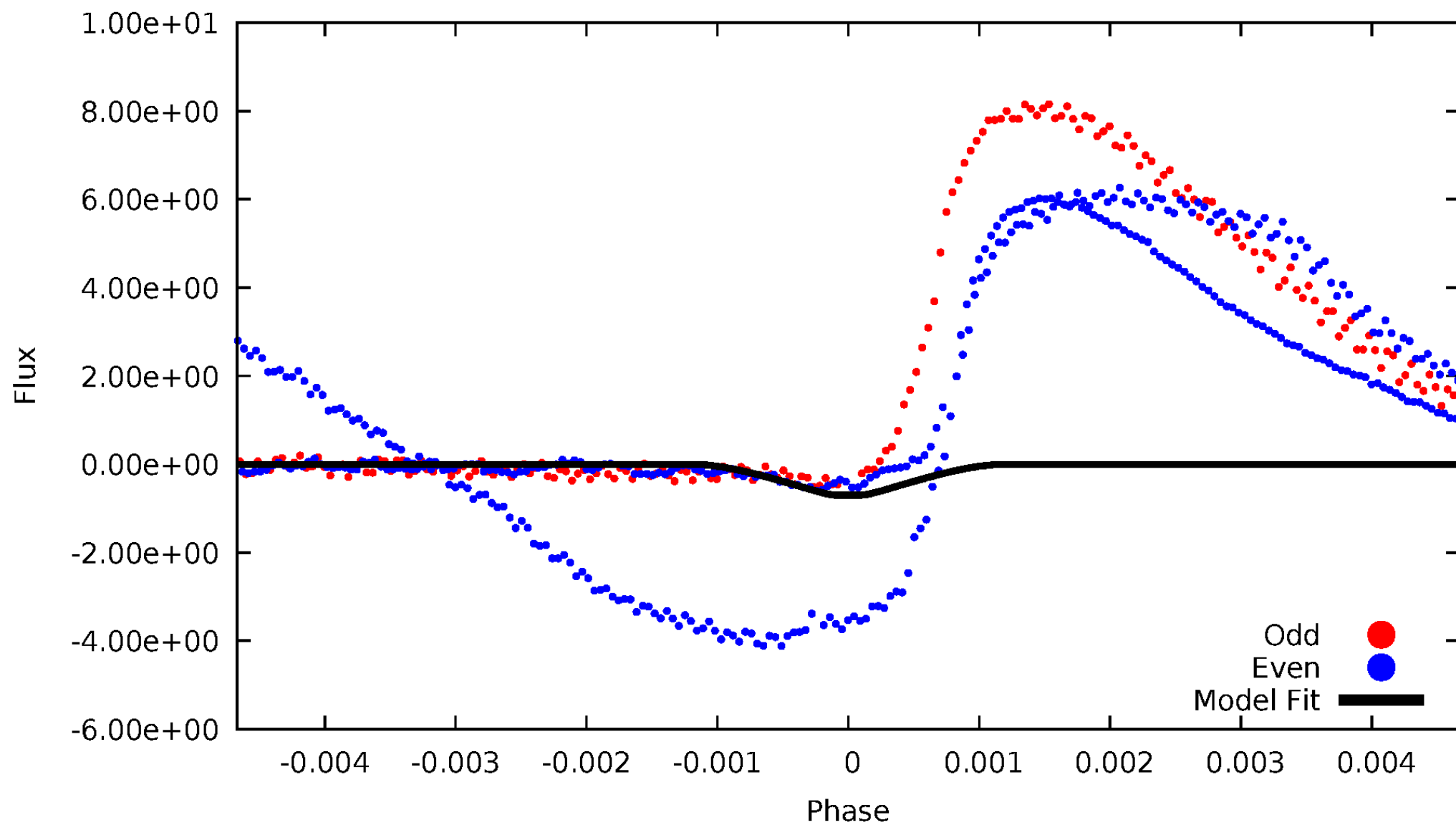


TCE 007446357-10



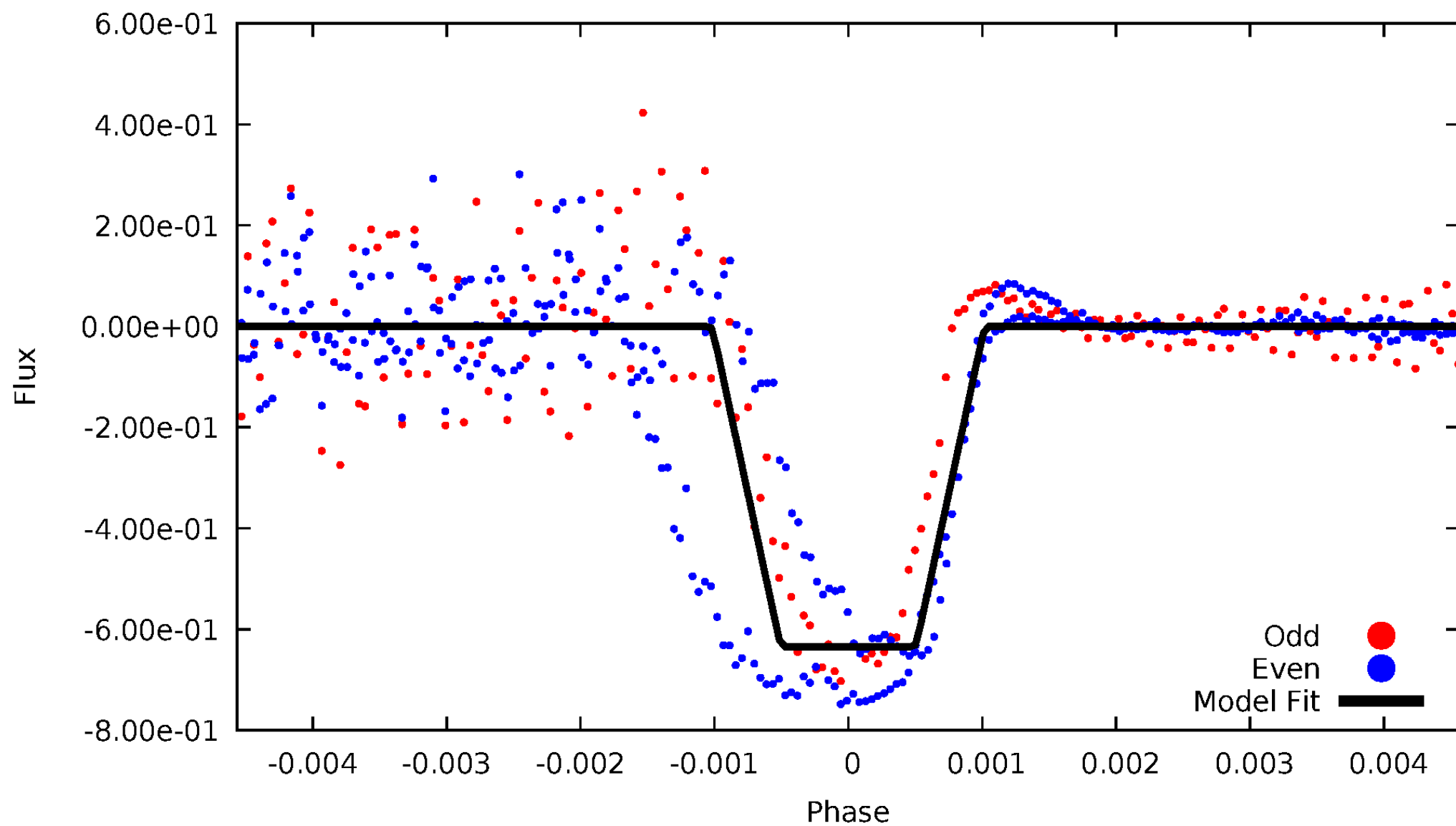
DV Odd/Even

TCE 007446357-10



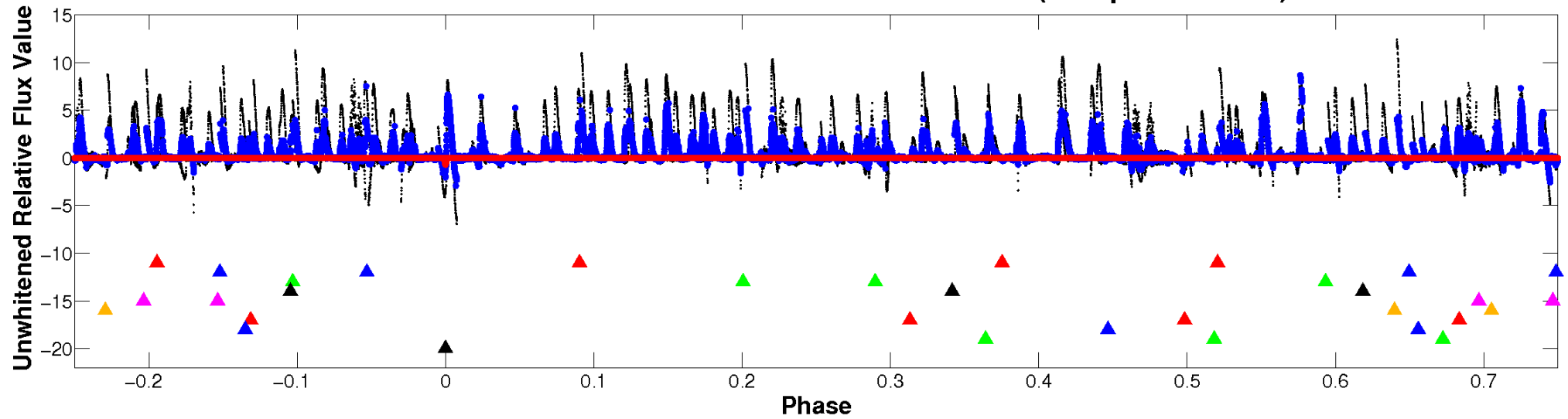
ALT Odd/Even

TCE 007446357-10

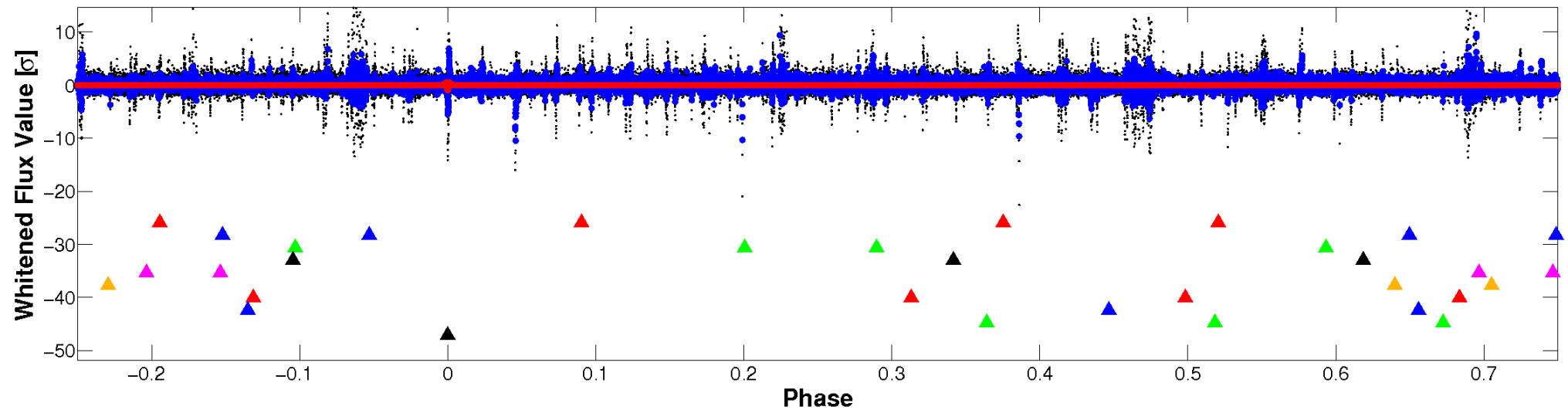


Non-Whitened Vs. Whitened Light Curve

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

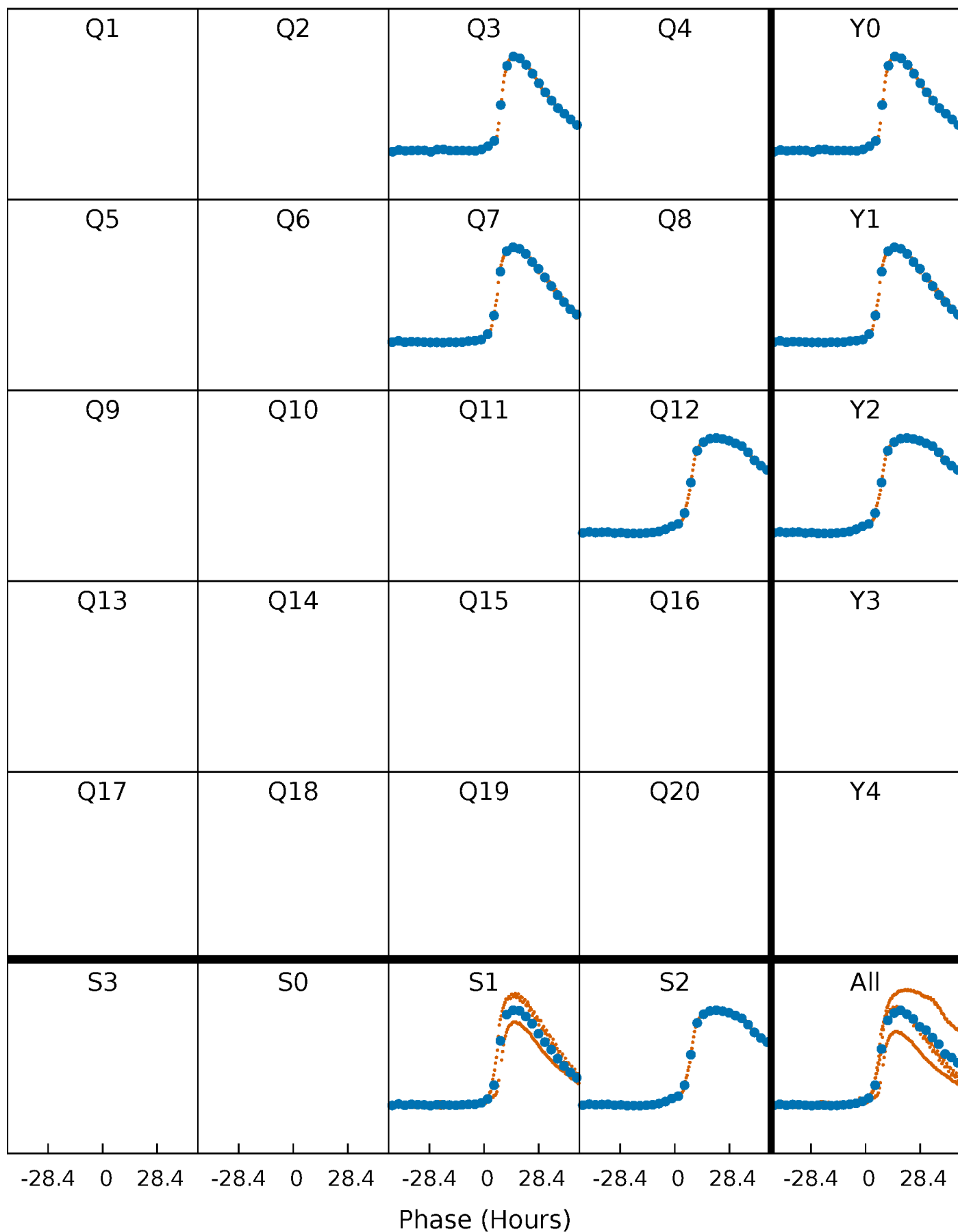


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



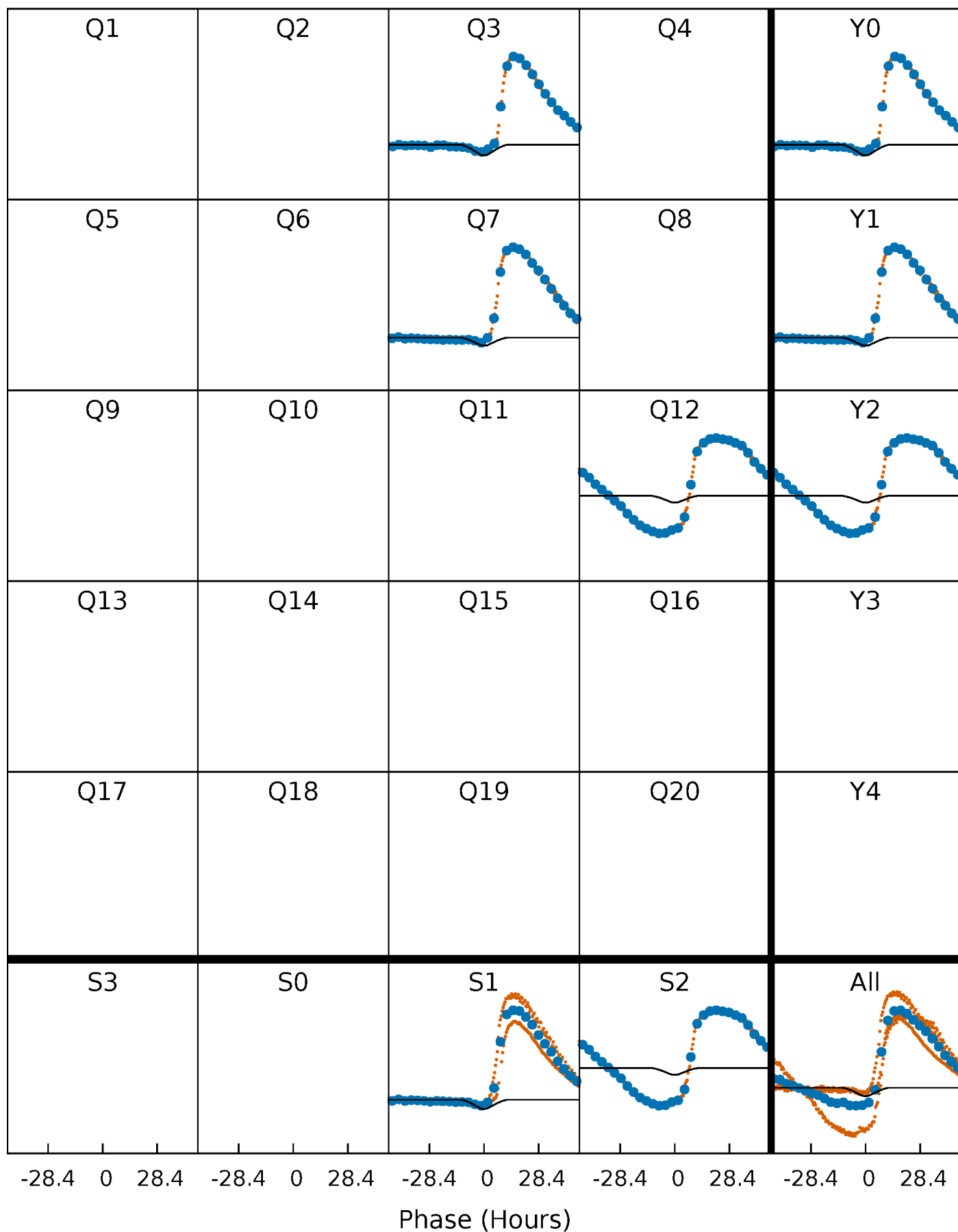
PDC Quarter-Phased Transit Curves

TCE 007446357-10 P=442.964688 Days $T_0=271.184425$ (BKJD)



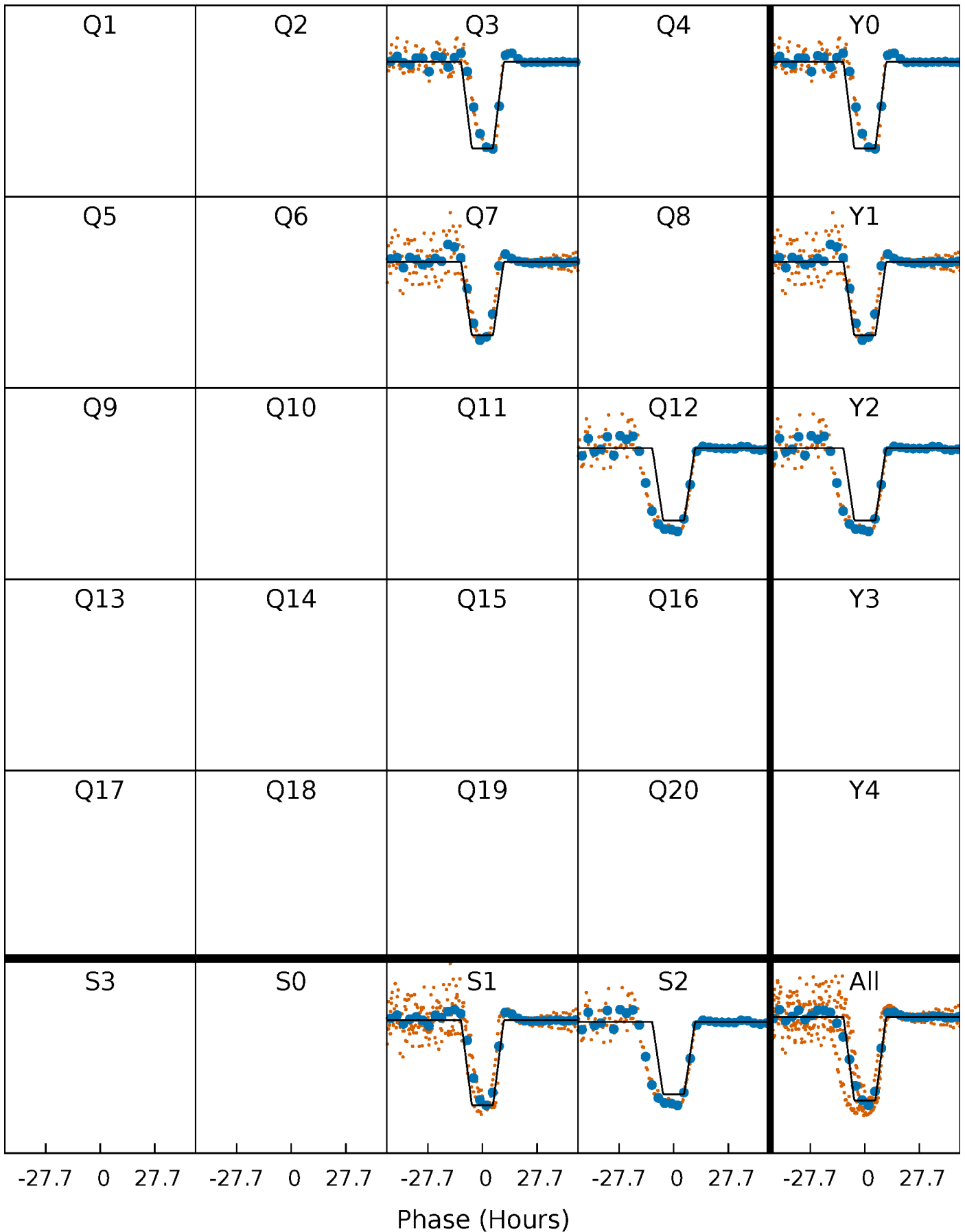
DV Quarter-Phased Transit Curves

TCE 007446357-10 $P=442.964688$ Days $T_0=271.184425$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

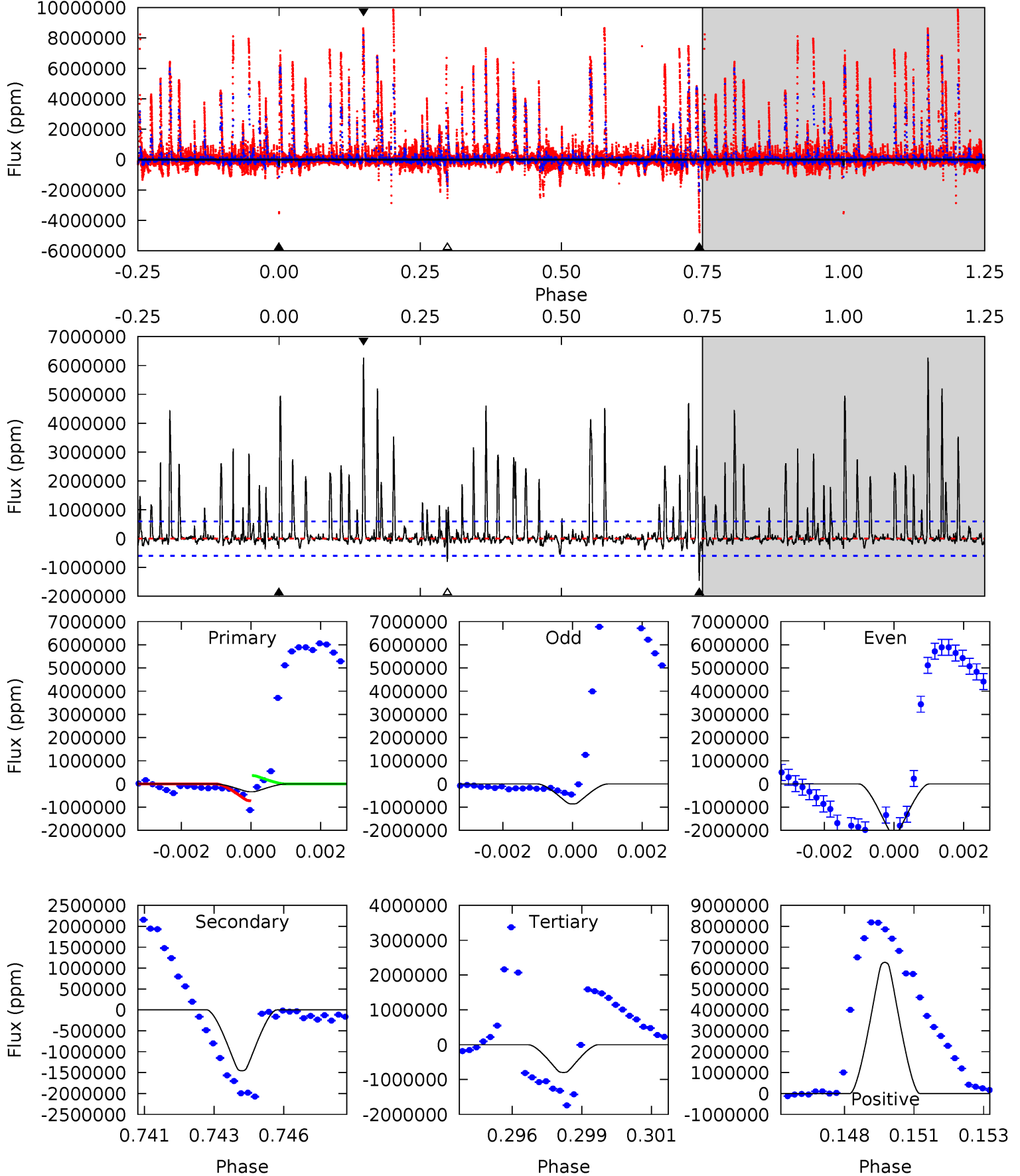
TCE 007446357-10 $P=442.958714$ Days $T_0=271.179209$ (BKJD)



DV Model-Shift Uniqueness Test

007446357-10, P = 442.964688 Days, E = 271.184425 Days

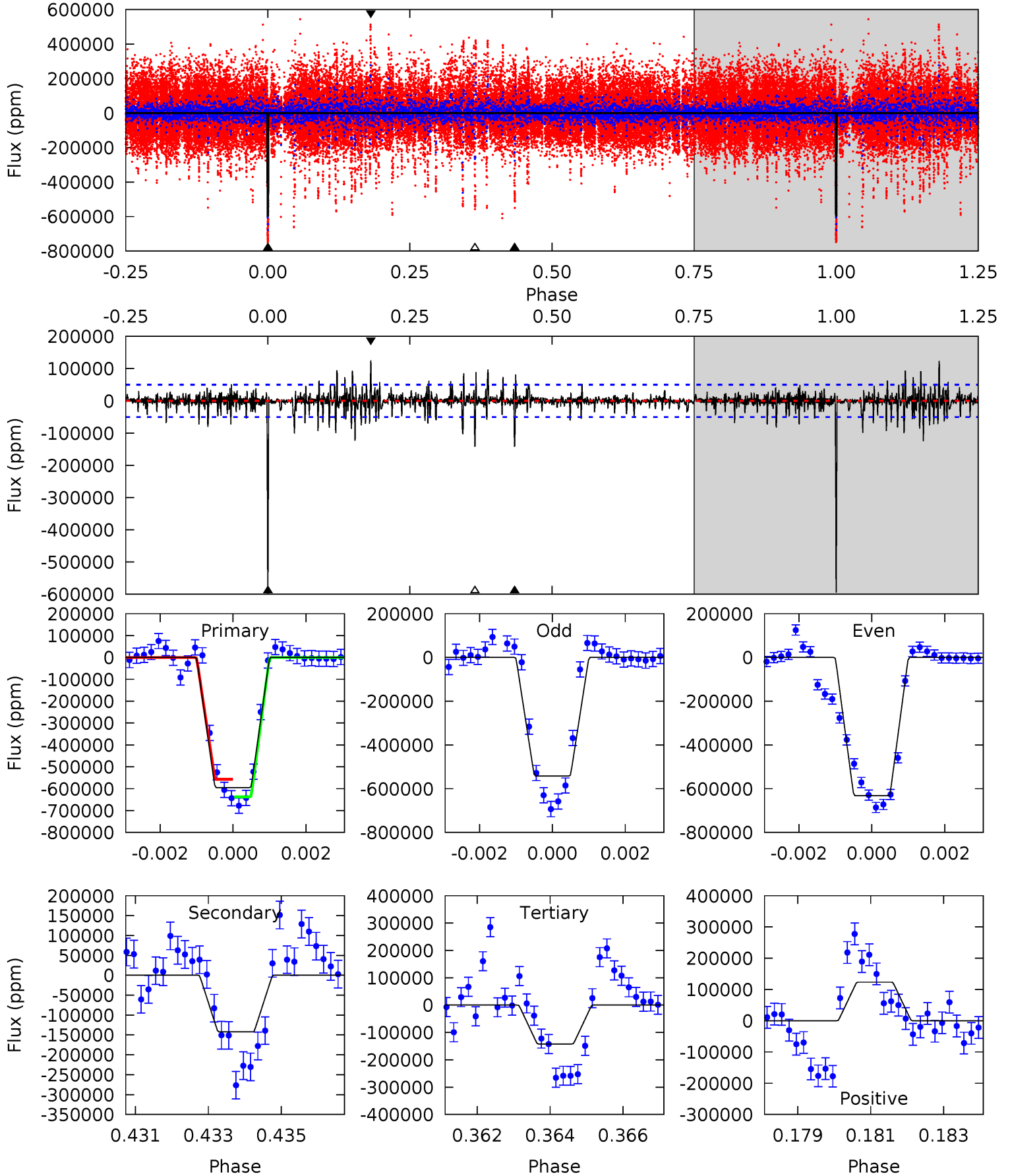
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.97	13.0	7.10	55.9	5.30	3.04	6.03	-4.13	-53.0	5.88	-42.9	4.00	4.74	0.81	1.63



Alt Model-Shift Uniqueness Test

007446357-10, P = 442.958714 Days, E = 271.179209 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
63.2	15.1	15.1	13.1	5.32	3.09	1.98	48.1	50.0	0.03	2.01	4.13	1.11	0.17	4.26



Stellar Parameters For KIC 007446357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	9296^{+245}_{-449}	$4.085^{+0.170}_{-0.170}$	$0.070^{+0.150}_{-0.700}$	$2.253^{+0.774}_{-0.703}$	$2.251^{+0.399}_{-0.599}$	$0.277^{+0.285}_{-0.140}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+34%/-31%	+18%/-27%	+103%/-50%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007446357-10 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1456271 ± 112195	$199.80^{+44.10}_{-35.79}$	703^{+51}_{-57}	-18285^{+2650}_{-3687}	$-99912.631^{+32565.724}_{-47095.225}$
Alt.	-142433 ± 9416	$194.95^{+42.62}_{-37.75}$	701^{+58}_{-55}	6215^{+450}_{-386}	5259^{+2238}_{-1555}

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

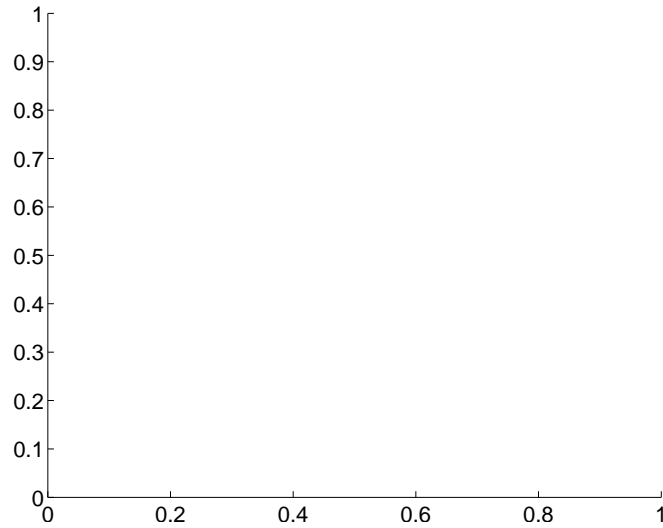
Supplemental centroid analysis for 007446357-10. Kepler magnitude: 15.80. Transit SNR 4.16

There are 0 quarters with good PRF difference image offsets

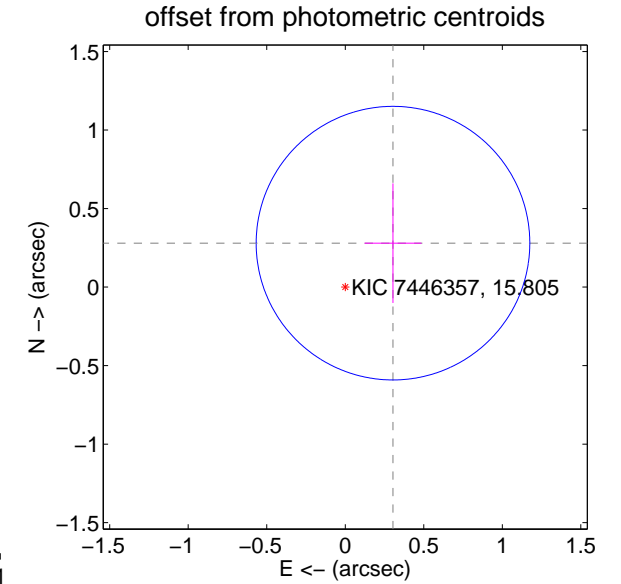
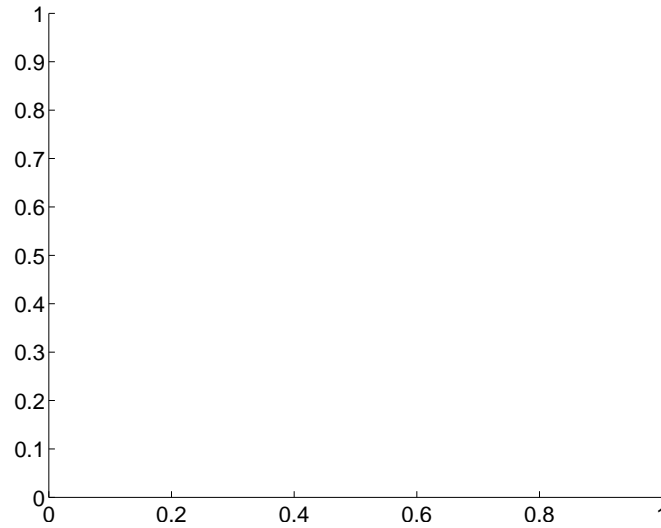
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	0.41 ± 0.29	1.42	-0.30 ± 0.18	0.28 ± 0.38

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC



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.



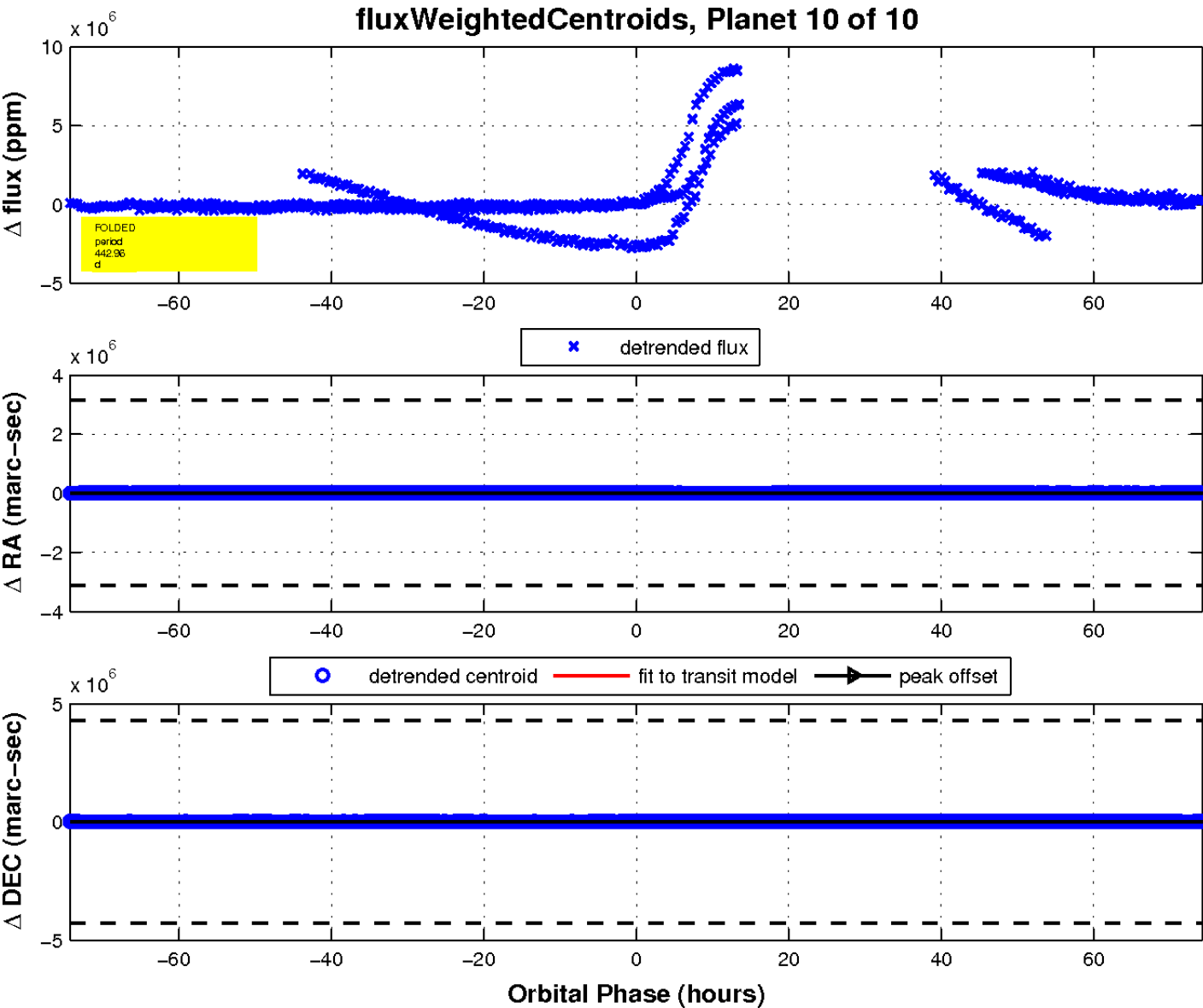
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

