

KIC 010536761

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})
010536761-01	OBS	No	511.116450	154.246246	1606.5	5.275	13.9	7.3	0.36	3464	1.51	0.02
010536761-02	OBS	No	541.306589	235.415726	1914.4	7.460	14.0	7.4	0.36	3464	1.67	0.02
010536761-03	OBS	No	198.531275	325.105692	1281.5	12.491	15.5	7.0	0.36	3464	1.28	0.07
010536761-04	OBS	No	177.099312	195.803042	1157.1	3.993	11.4	7.7	0.36	3464	1.59	0.09
010536761-05	OBS	No	246.234681	219.942313	3082.0	38.499	12.0	8.9	0.36	3464	3.85	0.06
010536761-06	OBS	No	210.300550	323.349581	930.7	2.500	11.3	-1.0	0.36	3464	1.09	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010536761-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_MEAS
010536761-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
010536761-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010536761-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS
010536761-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010536761-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

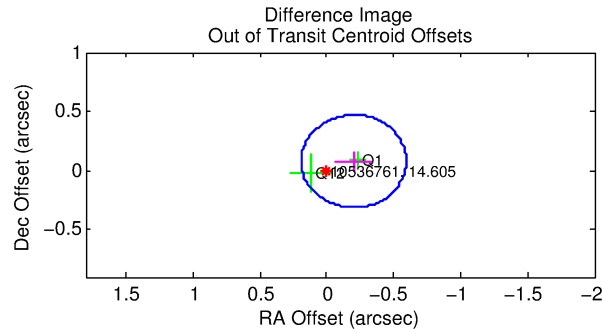
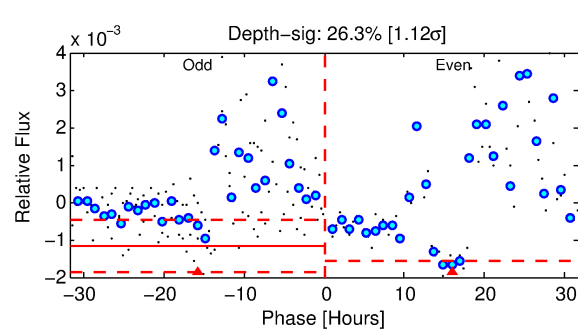
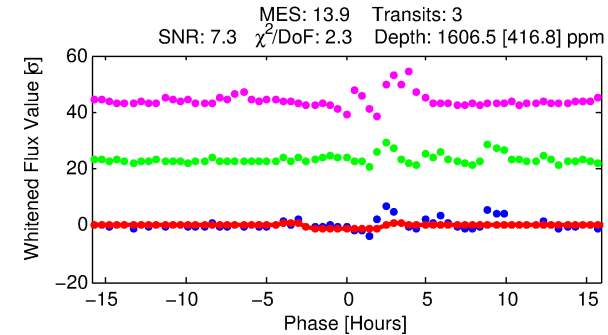
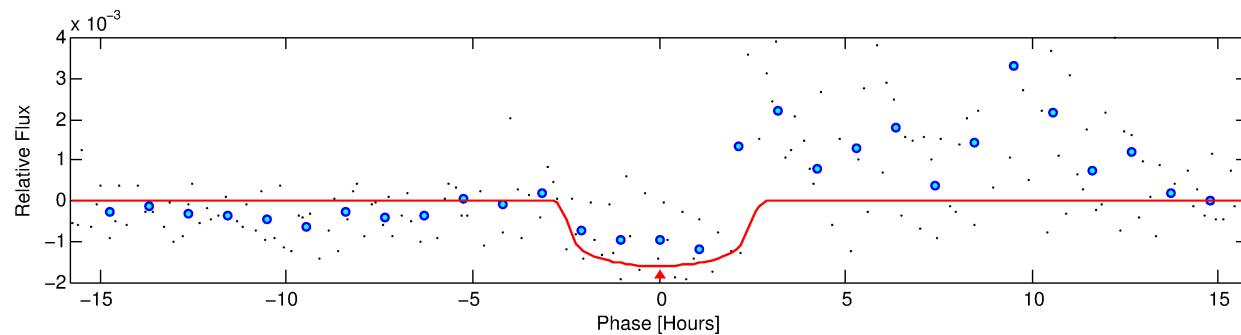
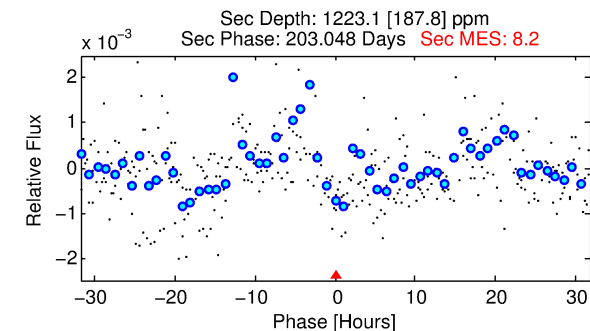
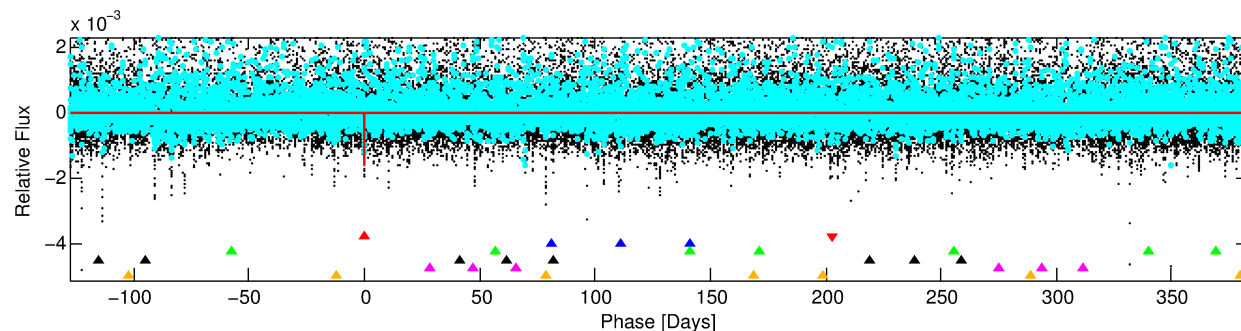
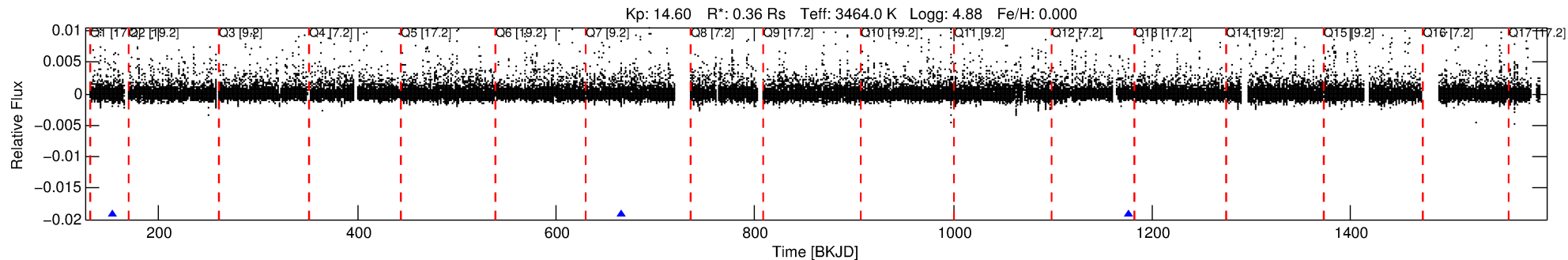
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010536761-01

No Significant Match Found

DV One-Page Summary

KIC: 10536761 Candidate: 1 of 6 Period: 511.116 d



DV Fit Results:

Period = 511.11645 [0.01005] d
Epoch = 154.2462 [0.0159] BKJD
Rp/R* = 0.0381 [0.0395]
a/R* = 629.26 [2668.66]
b = 0.60 [4.61]
Seff = 0.02 [0.00]
Teq = 97 [2] K
Rp = 1.51 [1.57] Re
a = 0.8974 [0.0583] AU
Ag = 238376.18 [496914.44] [0.48σ]
Teff = 3320 [1730] K [1.86σ]

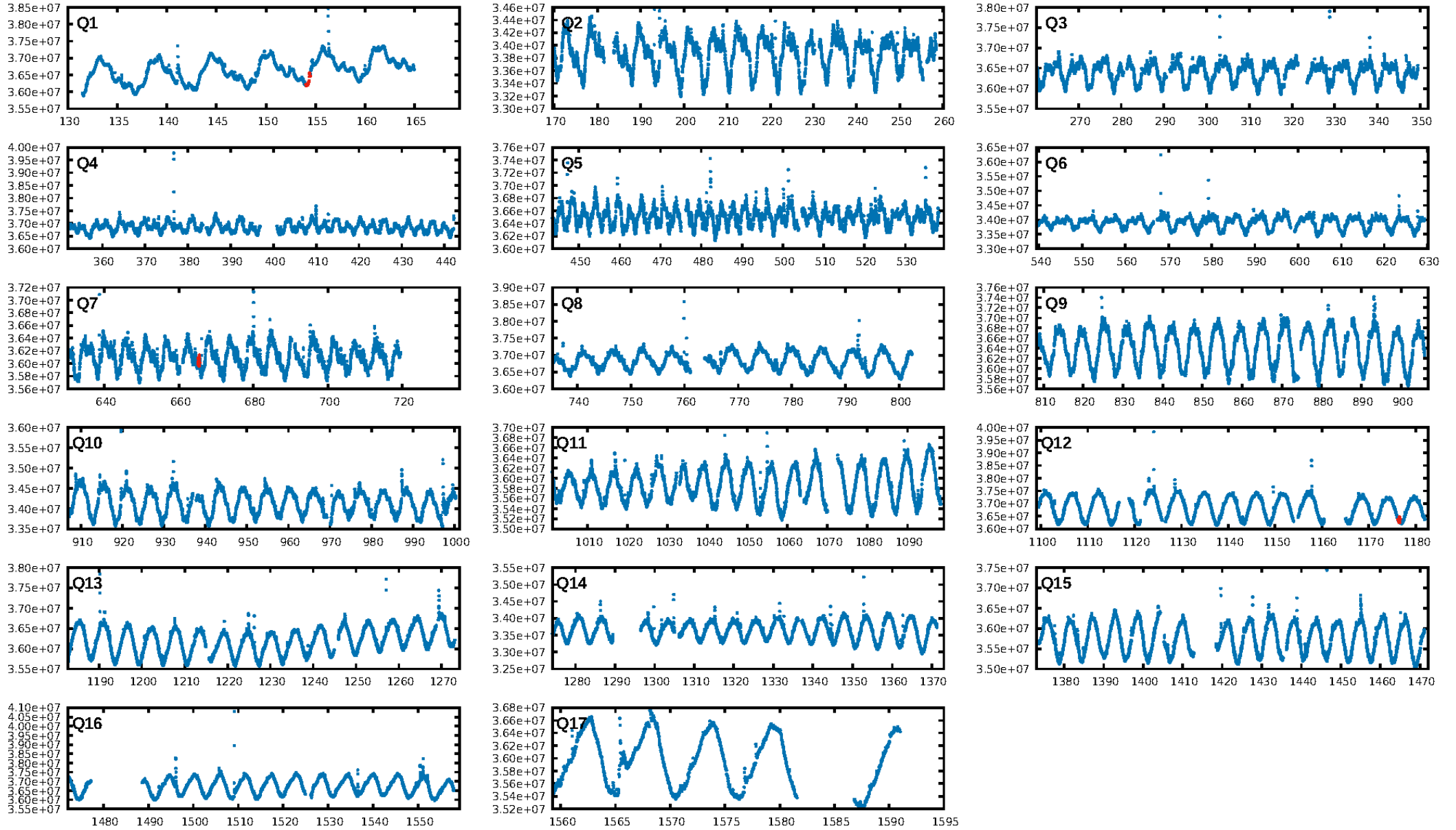
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [163.60σ]
LongPeriod-sig: 100.0% [79.30σ]
ModelChiSquare2-sig: 13.0%
ModelChiSquareGof-sig: 47.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 6.585
Centroid-sig: 44.3%
Centroid-so: 0.615 arcsec [1.14σ]
OotOffset-rm: 0.215 arcsec [1.65σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

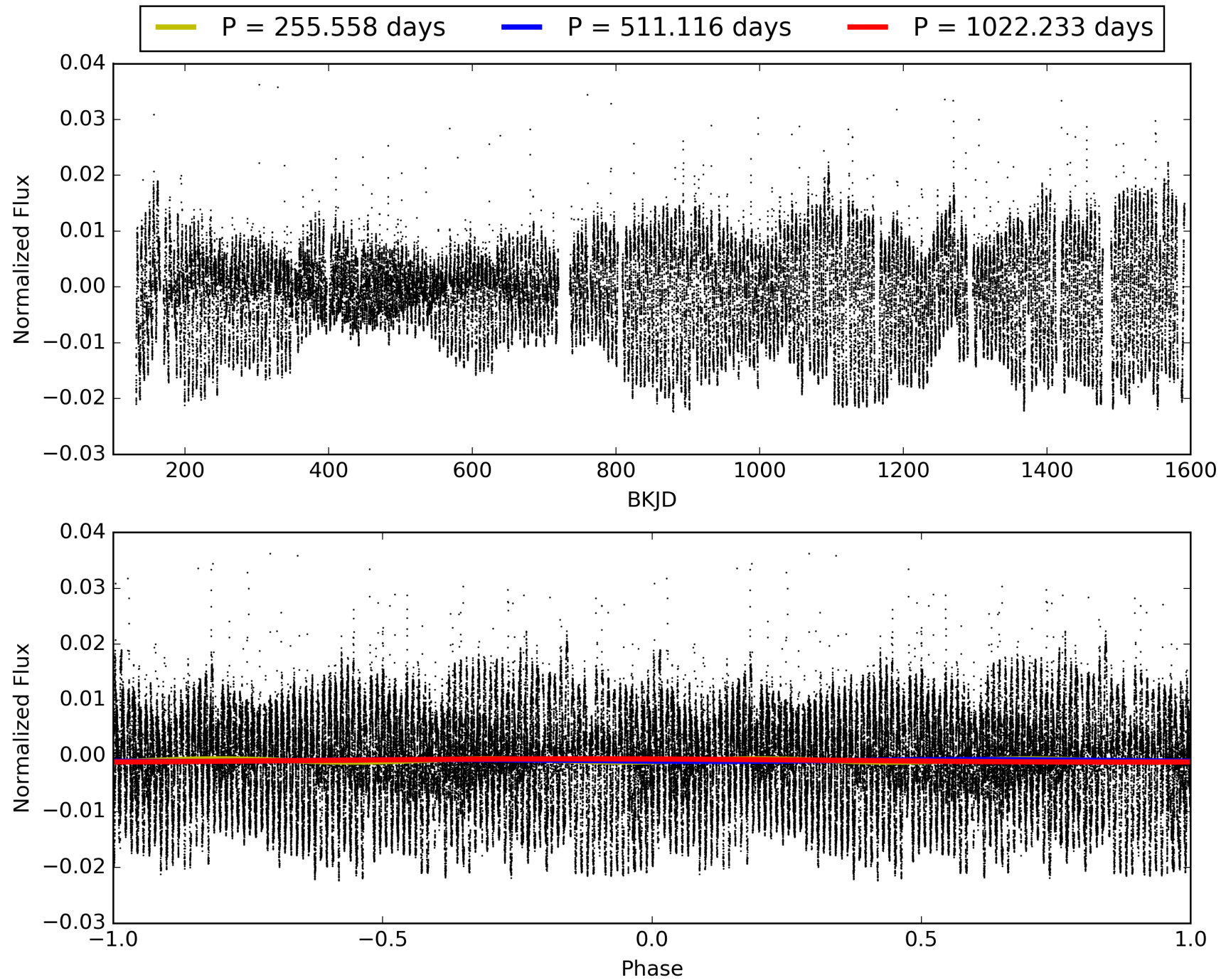
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:26:40 Z

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

TCE 010536761-01, PDC Light Curves

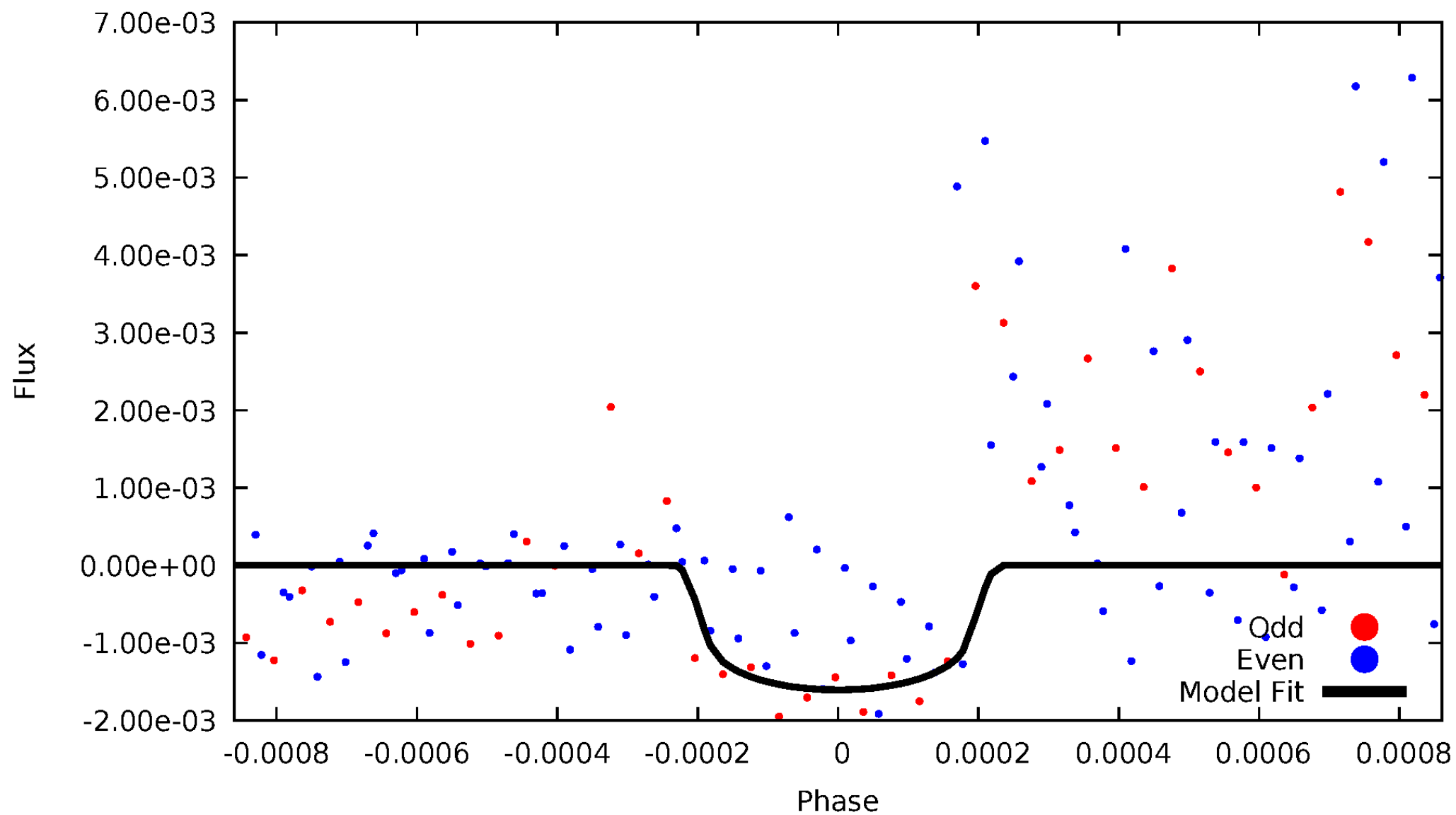


TCE 010536761-01



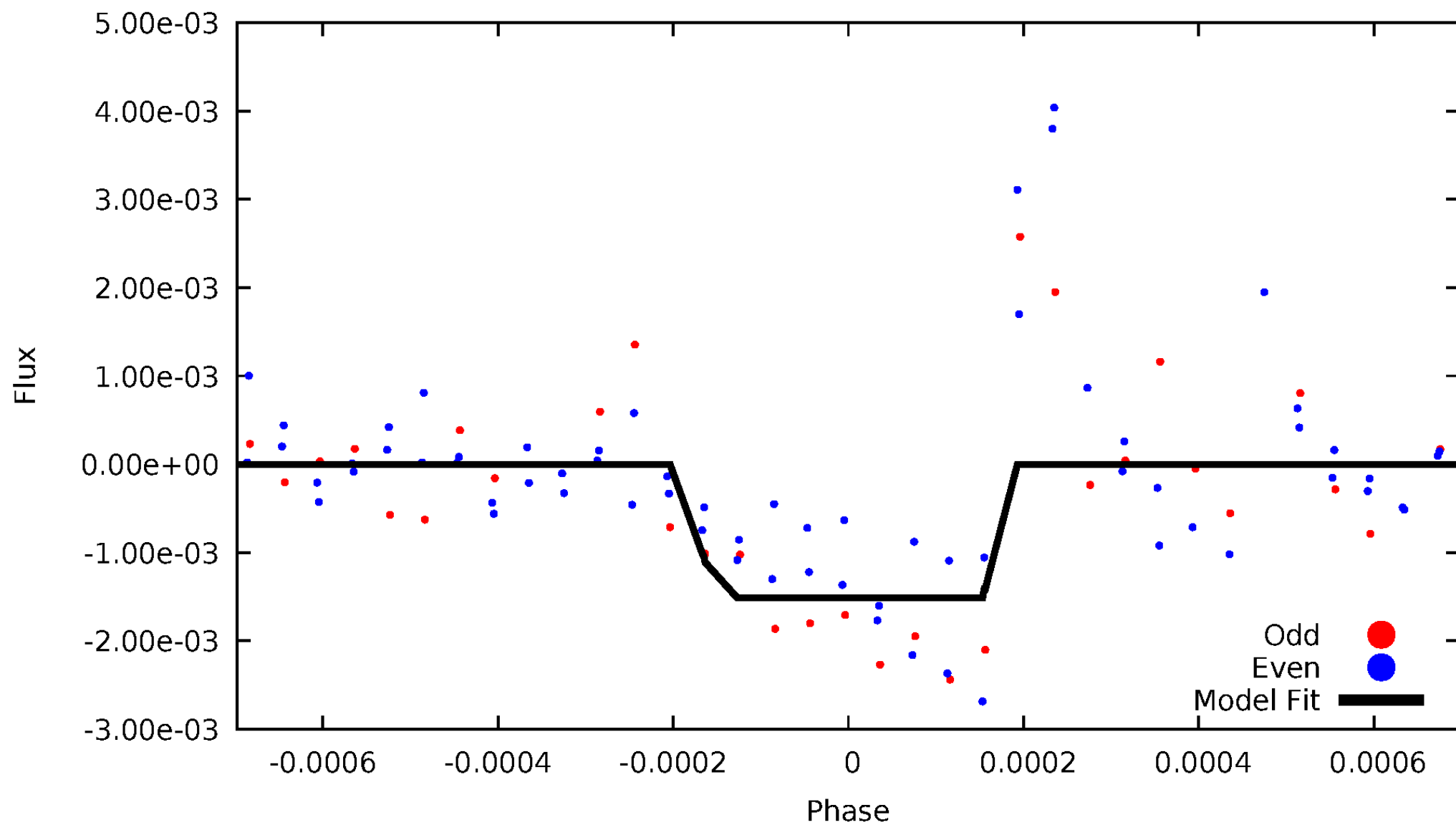
DV Odd/Even

TCE 010536761-01



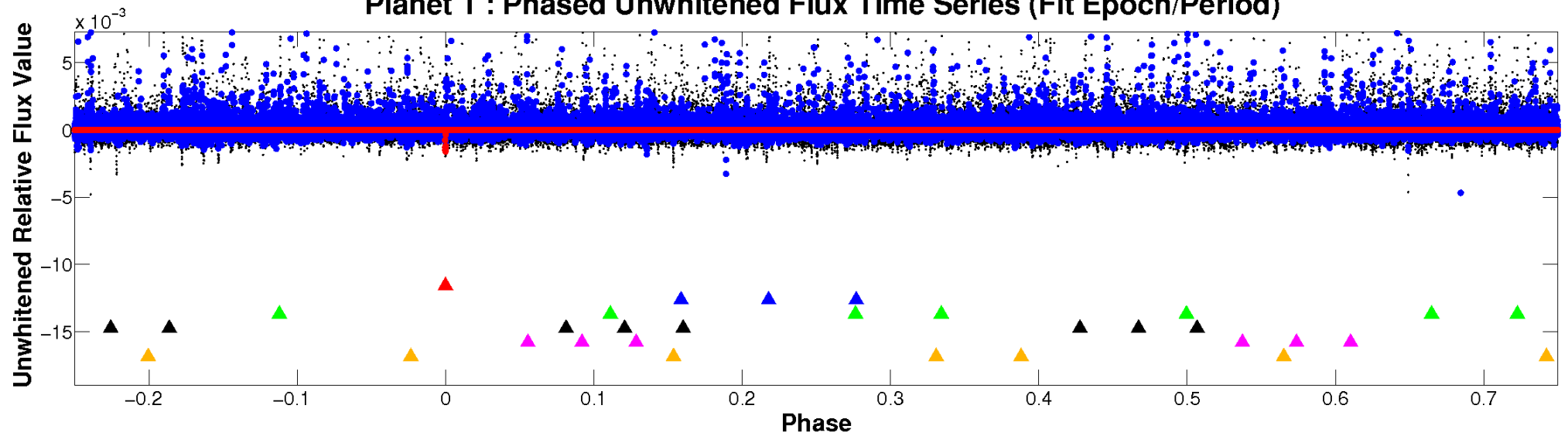
ALT Odd/Even

TCE 010536761-01

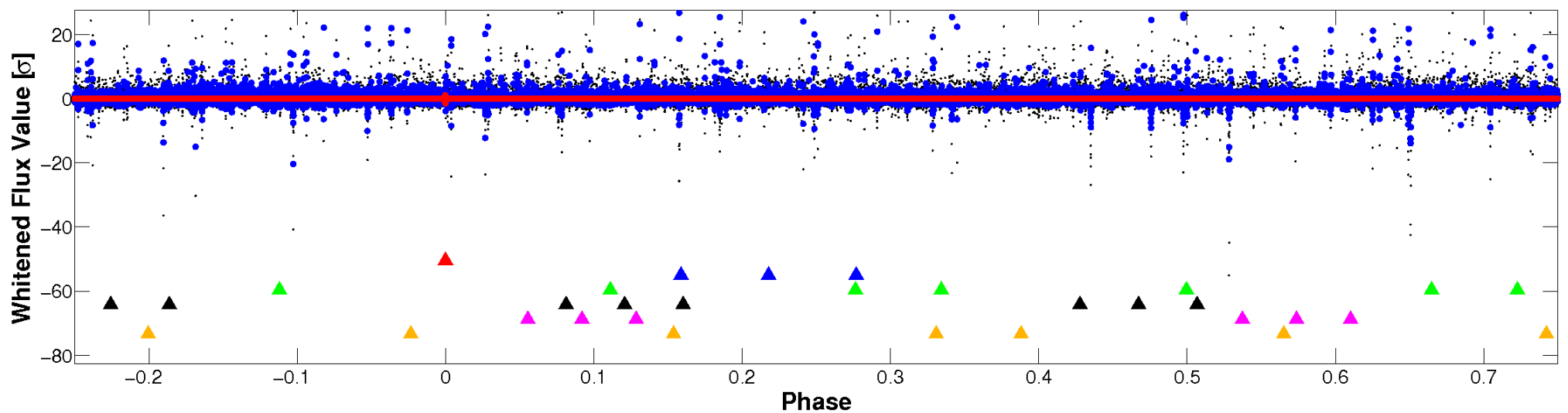


Non-Whitened Vs. Whitened Light Curve

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

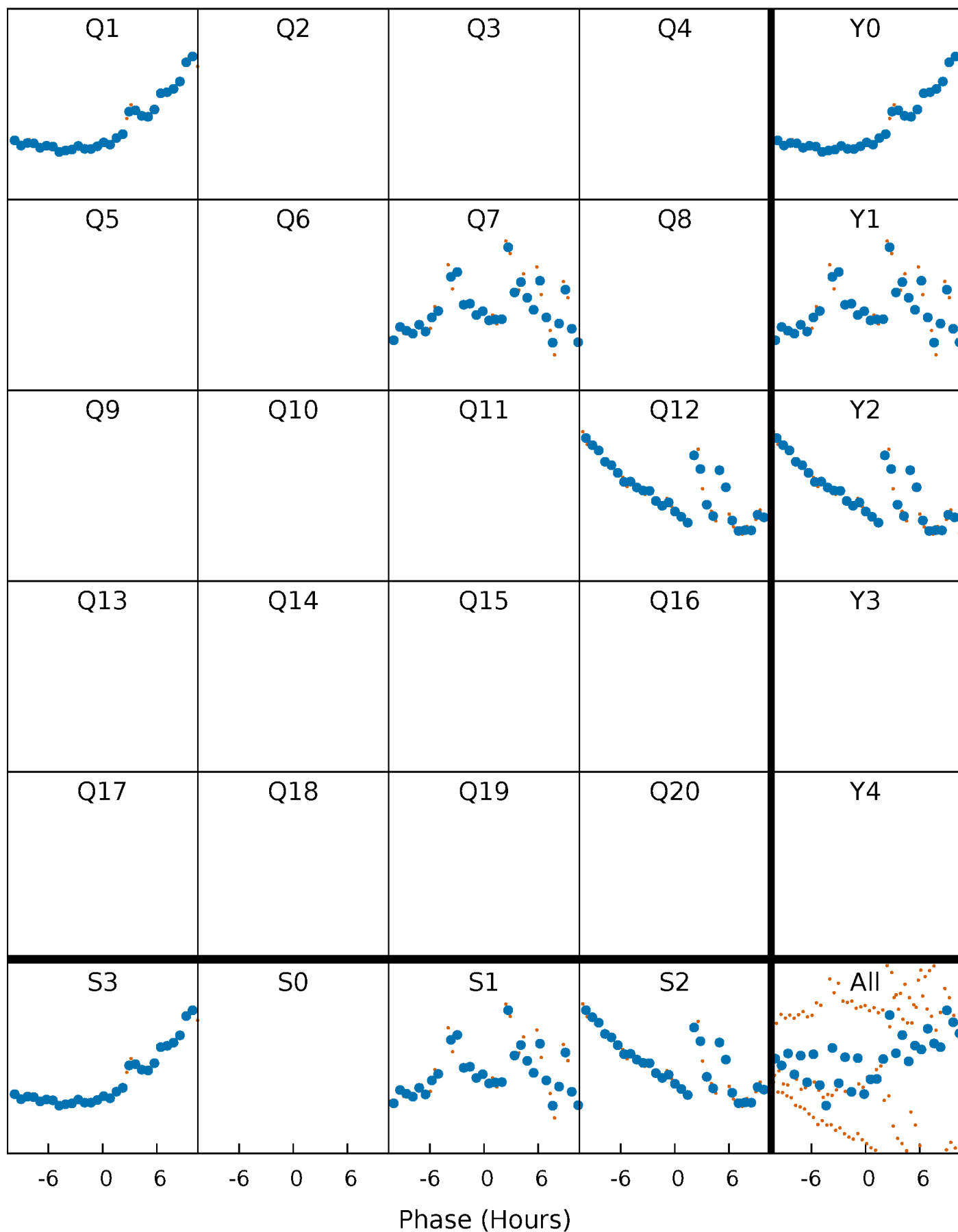


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



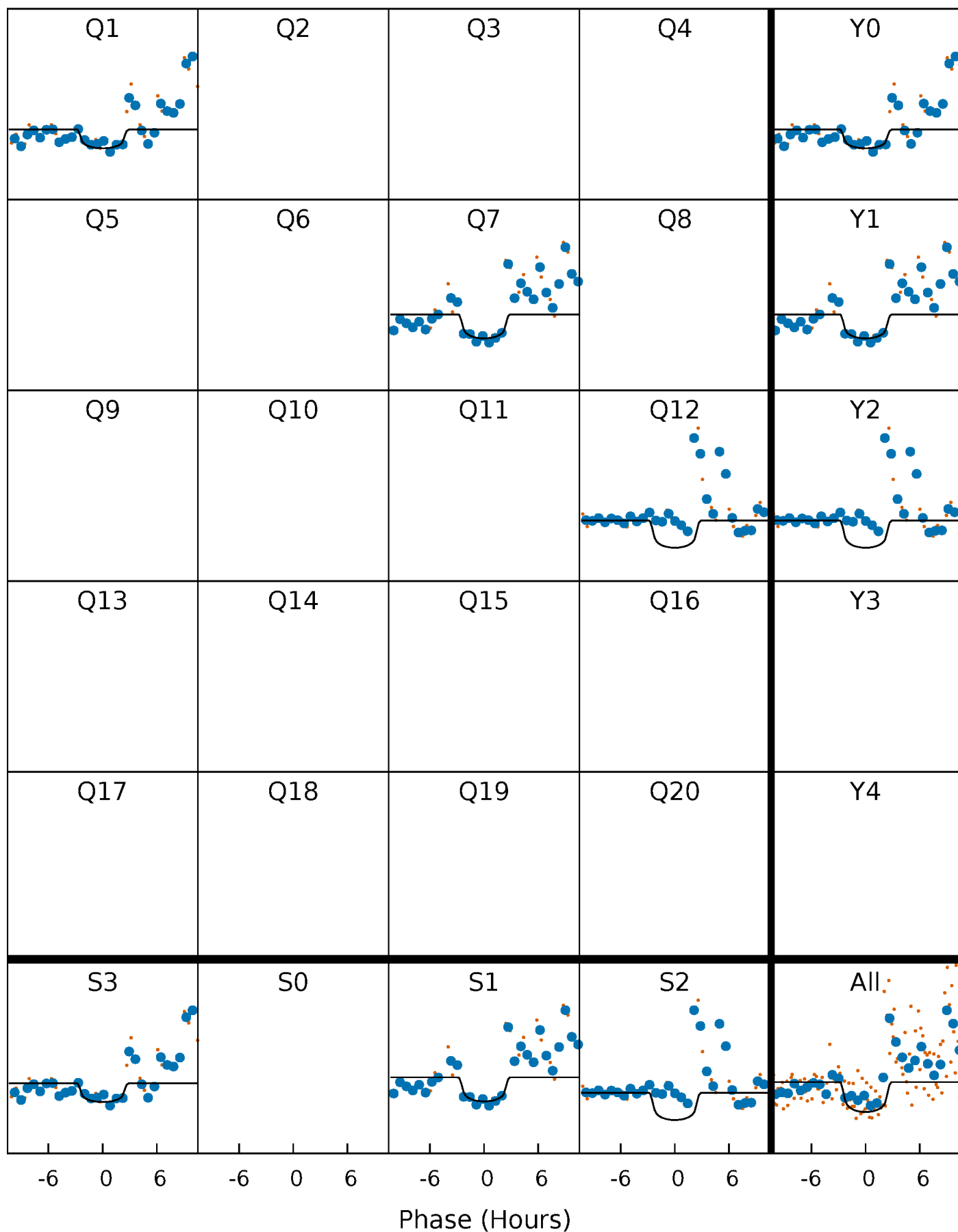
PDC Quarter-Phased Transit Curves

TCE 010536761-01 P=511.116450 Days $T_0=154.246246$ (BKJD)



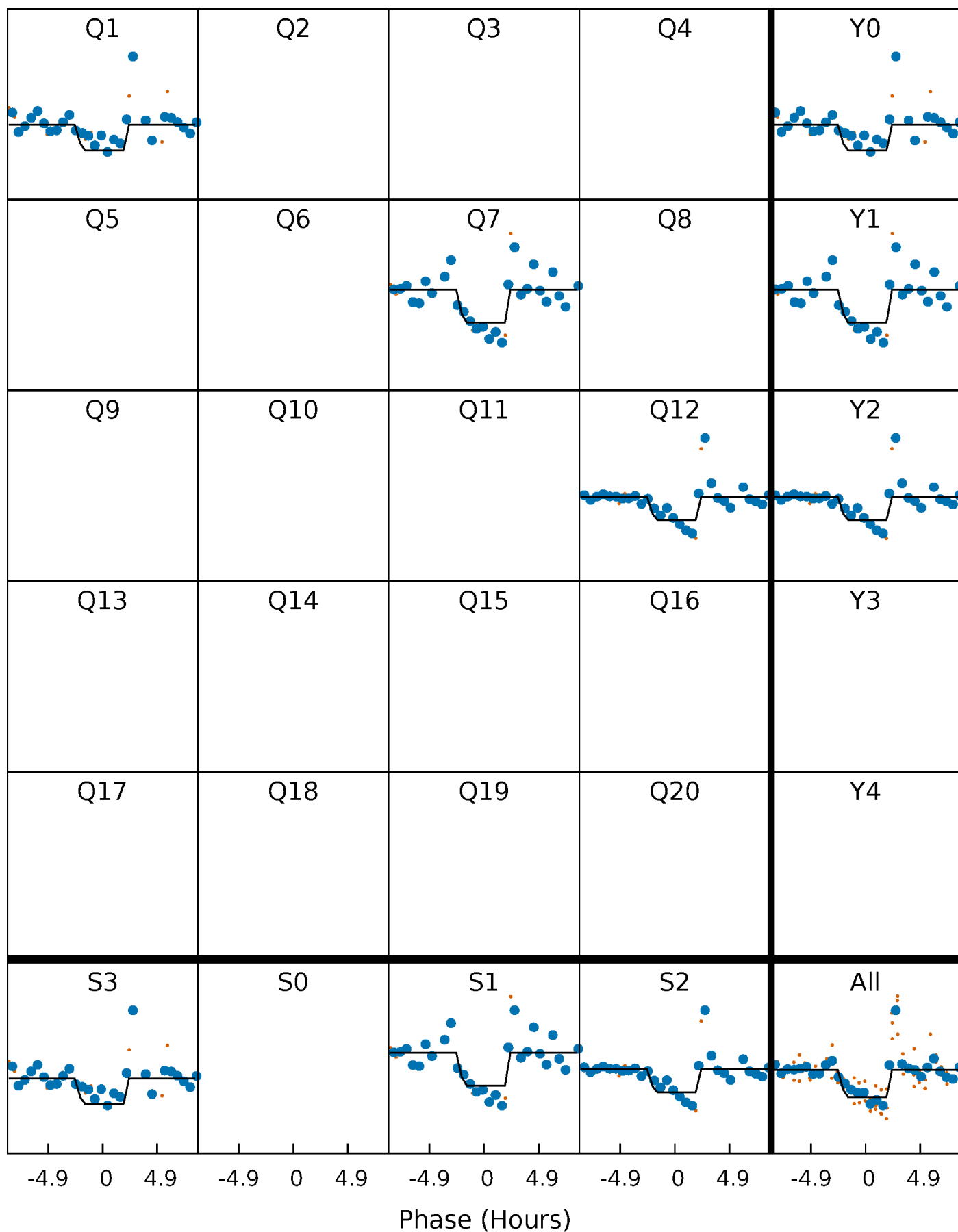
DV Quarter-Phased Transit Curves

TCE 010536761-01 P=511.116450 Days $T_0=154.246246$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

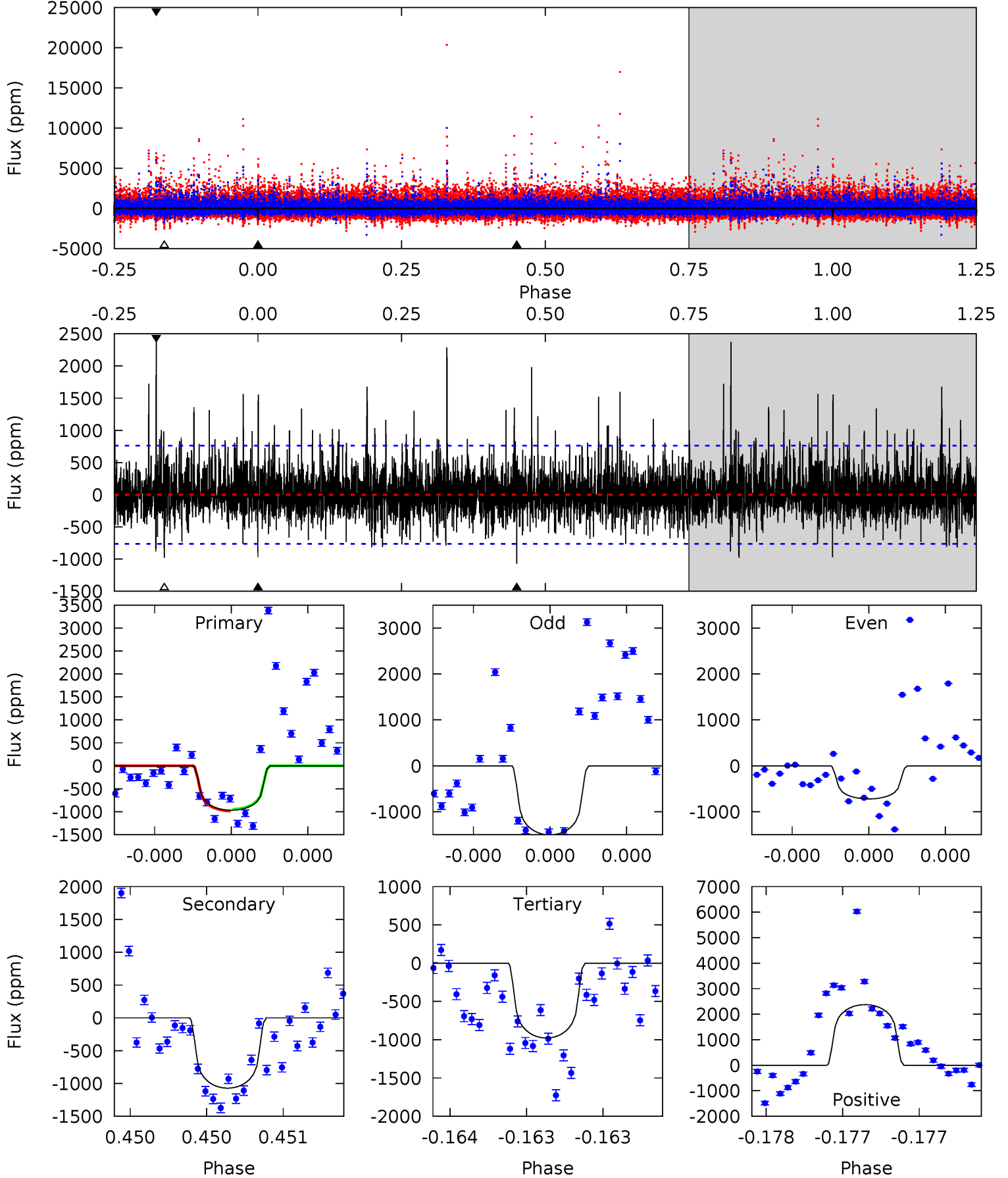
TCE 010536761-01 P=511.104636 Days $T_0=154.257908$ (BKJD)



DV Model-Shift Uniqueness Test

010536761-01, P = 511.116450 Days, E = 154.246246 Days

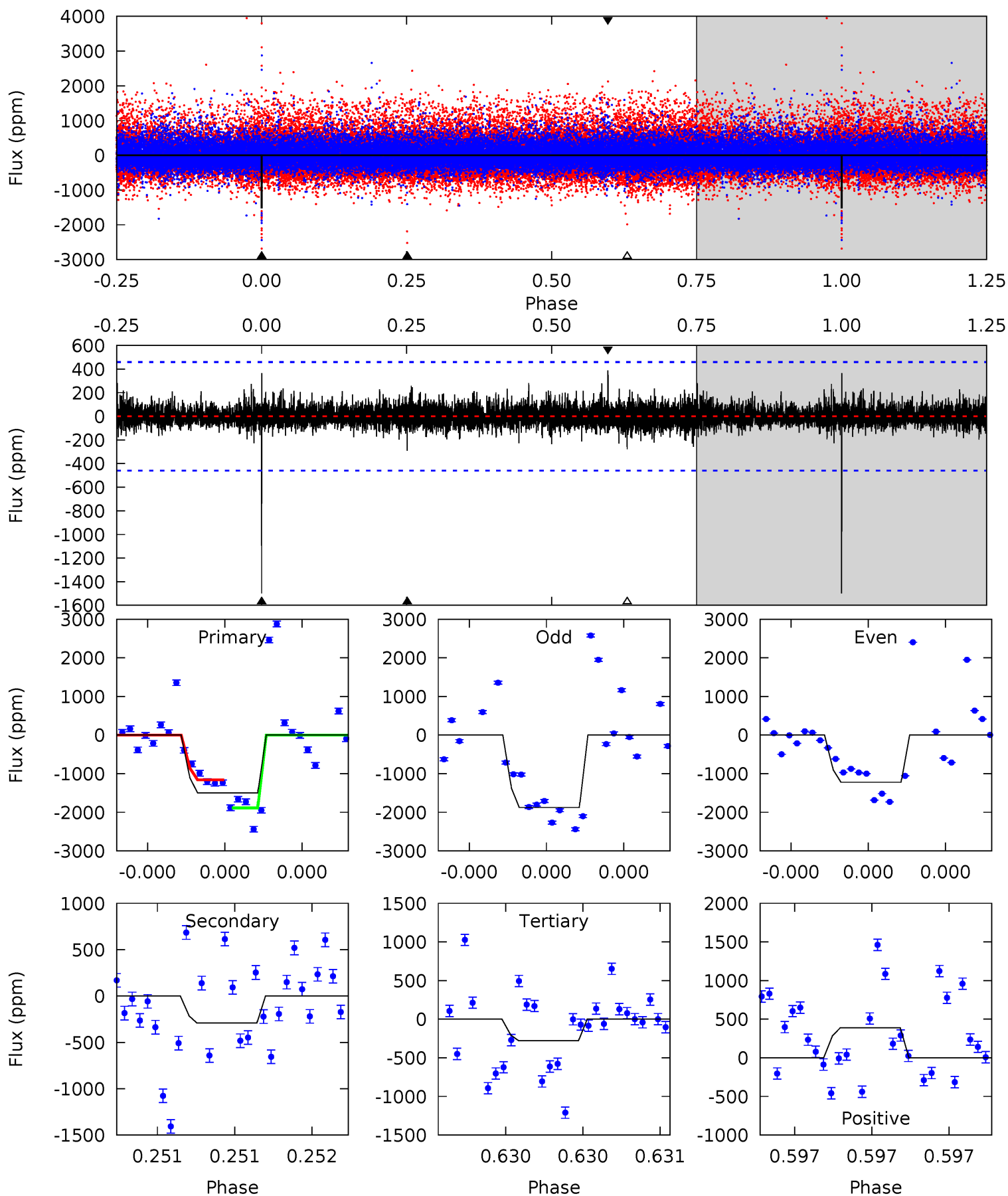
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.07	7.84	7.15	17.4	5.59	3.50	2.12	-0.08	-10.3	0.69	-9.54	1.90	0.58	0.69	0.13



Alt Model-Shift Uniqueness Test

010536761-01, P = 511.104636 Days, E = 154.257908 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	3.56	3.39	4.74	5.63	3.57	0.74	15.0	13.6	0.16	-1.19	3.59	0.91	0.21	4.48



Stellar Parameters For KIC 010536761

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3464^{+45}_{-45}	$4.885^{+0.036}_{-0.030}$	$0.000^{+0.100}_{-0.100}$	$0.363^{+0.032}_{-0.032}$	$0.370^{+0.041}_{-0.041}$	$10.890^{+1.912}_{-1.628}$
	+1%/-1%	+1%/-1%	+inf%/-inf%	+9%/-9%	+11%/-11%	+18%/-15%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010536761-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1071 ± 137	$1.83^{+1.44}_{-1.19}$	136^{+3}_{-3}	3115^{+1215}_{-455}	$142919^{+994164}_{-100081}$
Alt.	-290 ± 82	$1.89^{+1.48}_{-1.20}$	136^{+3}_{-3}	2595^{+832}_{-353}	$35881^{+228268}_{-25247}$

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

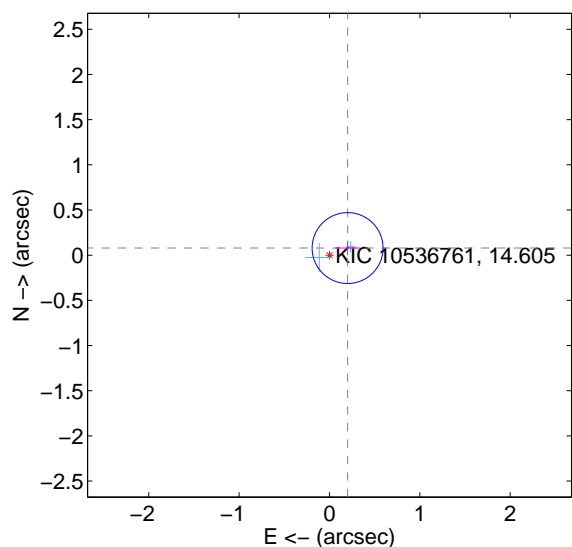
Supplemental centroid analysis for 010536761-01. Kepler magnitude: 14.61. Transit SNR 7.28

There are 2 quarters with good PRF difference image offsets

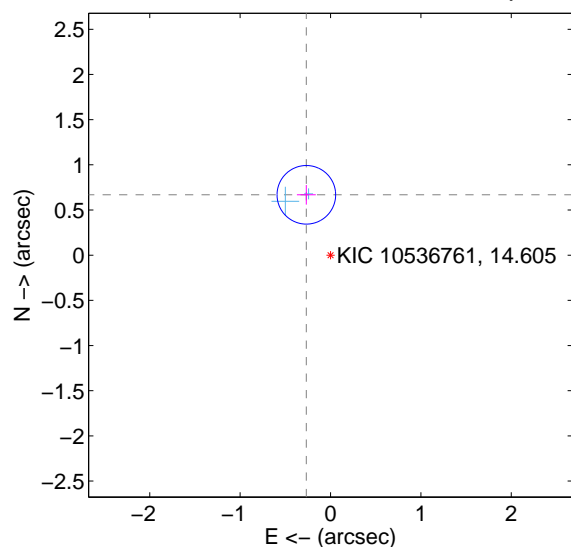
The direct PRF centroid is offset from the target star catalog position by about 0.73 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.215 ± 0.131	1.65	-0.200 ± 0.137	0.079 ± 0.081
PRF-fit source offset from KIC position	0.720 ± 0.108	6.66	0.267 ± 0.105	0.668 ± 0.109
photometric centroid source offset	0.62 ± 0.54	1.14	-0.23 ± 0.64	0.57 ± 0.52

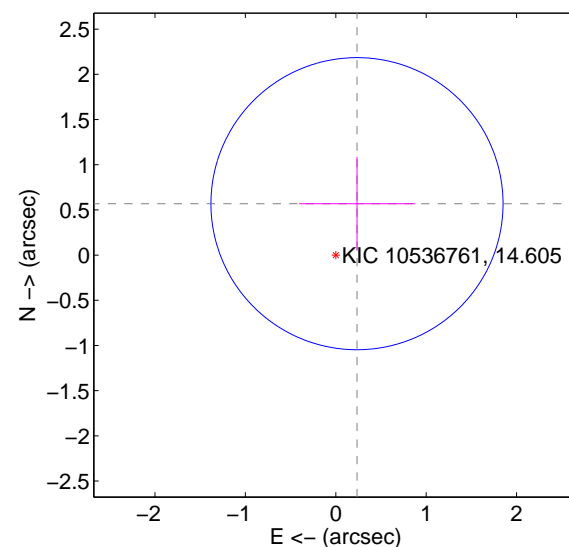
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

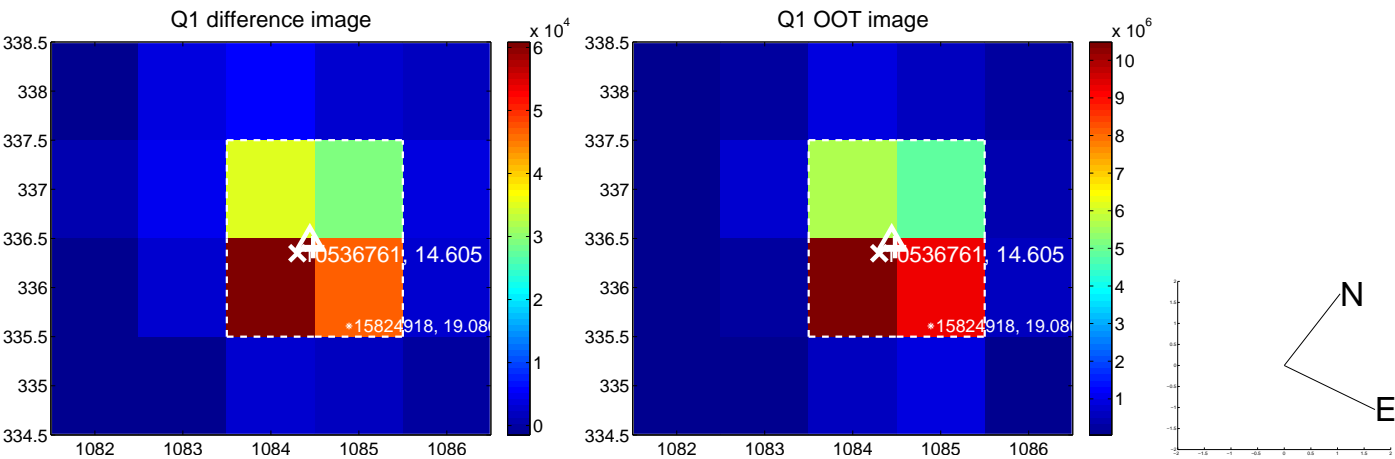


offset from photometric centroids

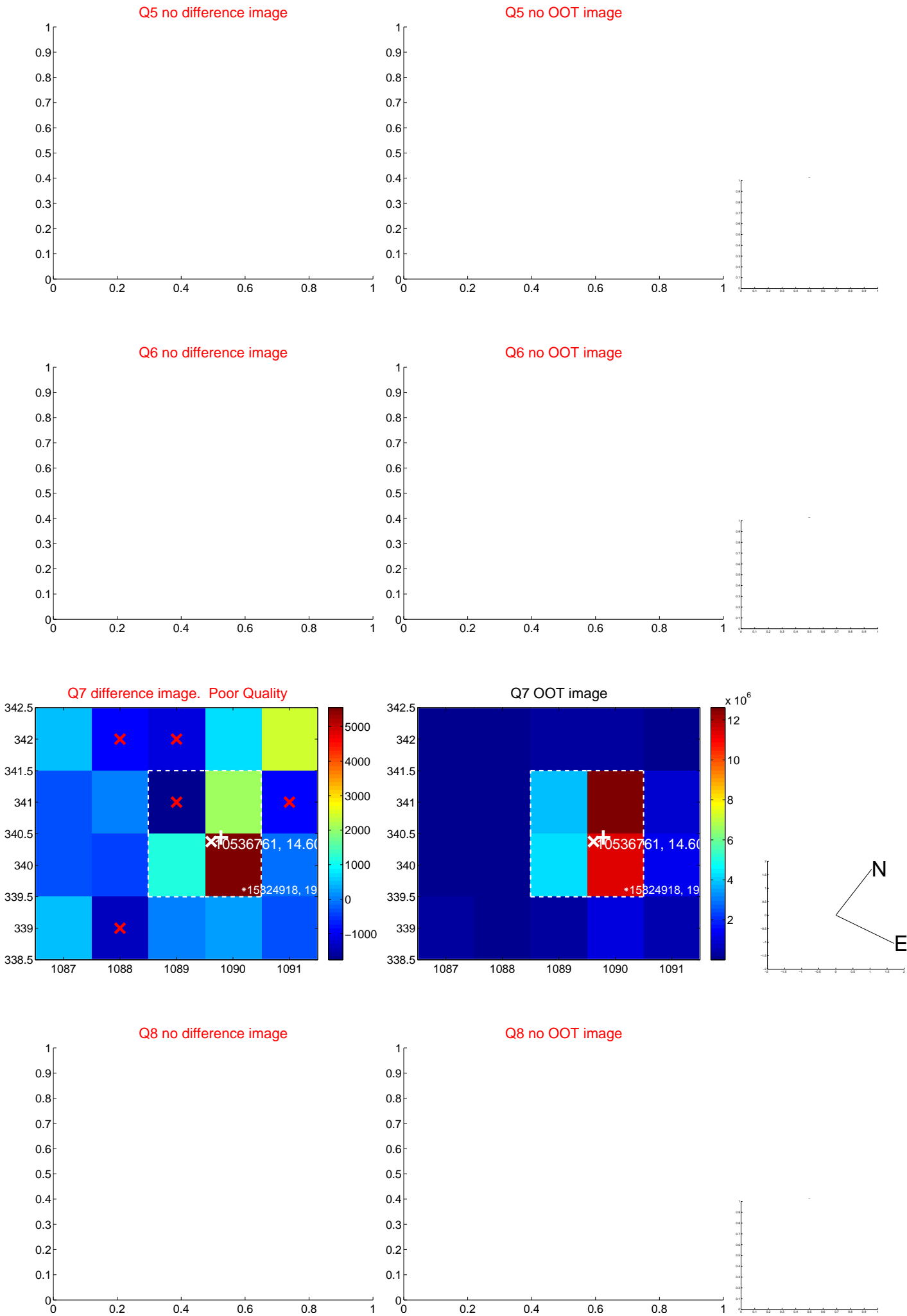


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

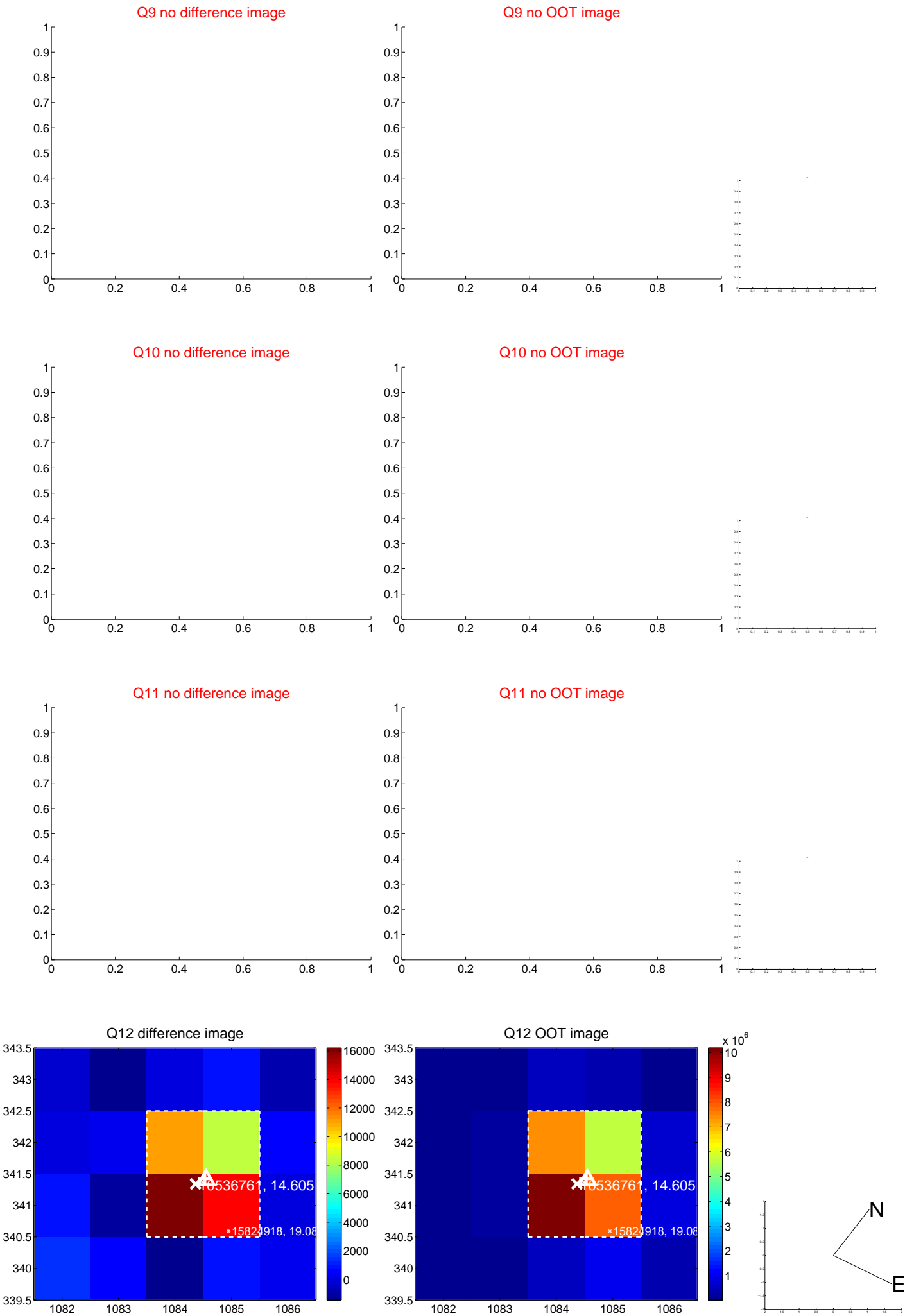
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



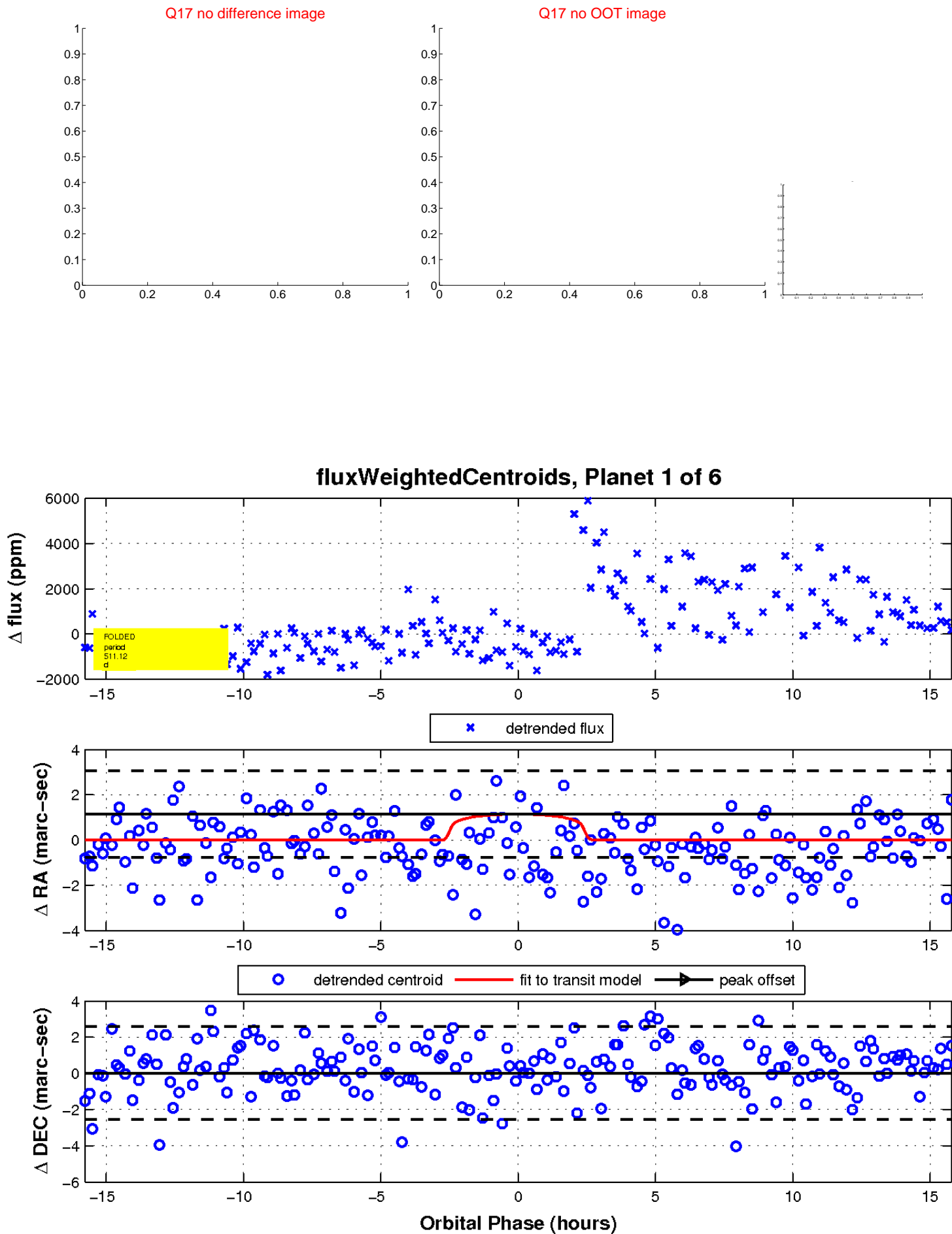
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

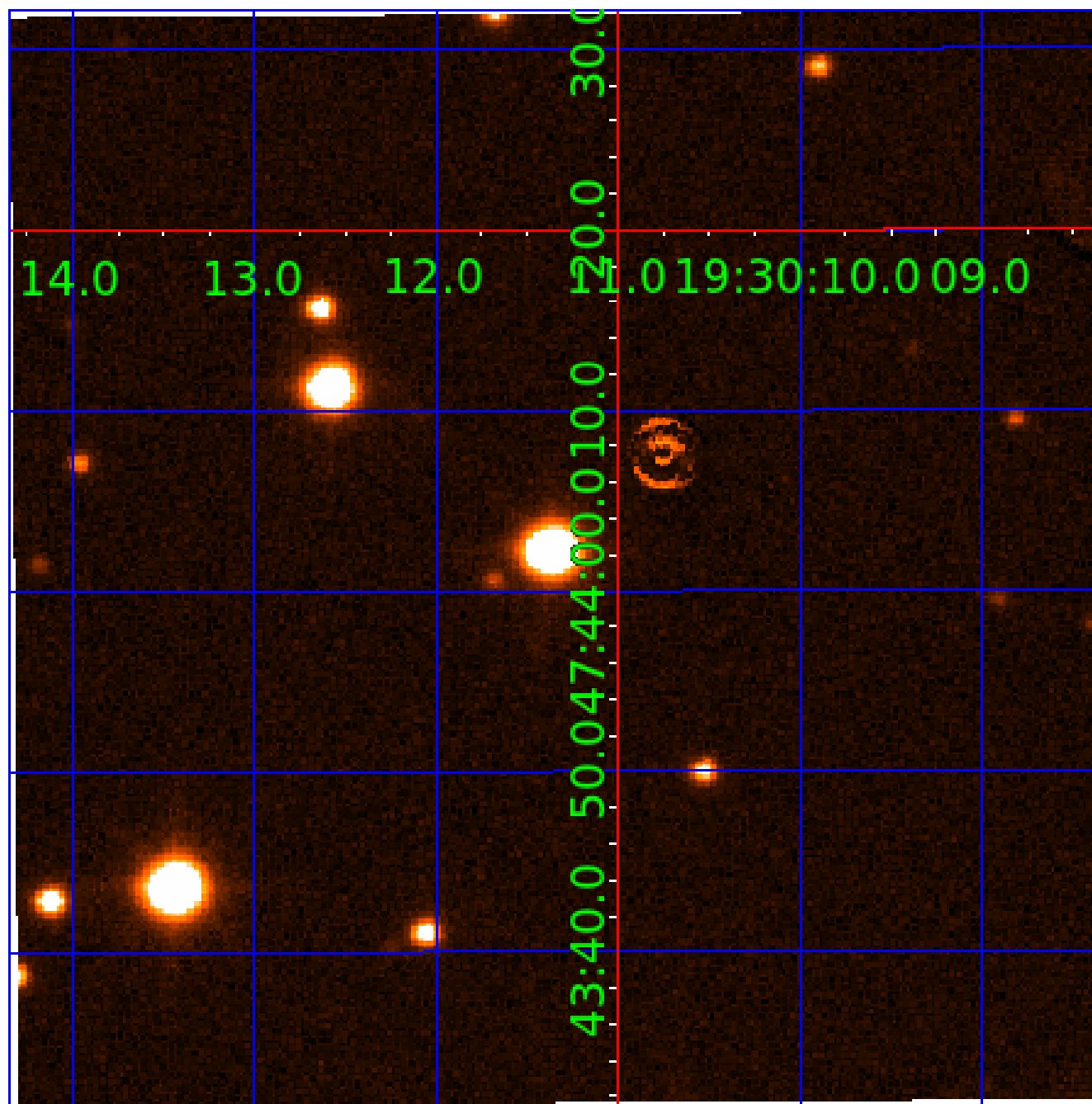


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010536761

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})
010536761-01	OBS	No	511.116450	154.246246	1606.5	5.275	13.9	7.3	0.36	3464	1.51	0.02
010536761-02	OBS	No	541.306589	235.415726	1914.4	7.460	14.0	7.4	0.36	3464	1.67	0.02
010536761-03	OBS	No	198.531275	325.105692	1281.5	12.491	15.5	7.0	0.36	3464	1.28	0.07
010536761-04	OBS	No	177.099312	195.803042	1157.1	3.993	11.4	7.7	0.36	3464	1.59	0.09
010536761-05	OBS	No	246.234681	219.942313	3082.0	38.499	12.0	8.9	0.36	3464	3.85	0.06
010536761-06	OBS	No	210.300550	323.349581	930.7	2.500	11.3	-1.0	0.36	3464	1.09	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010536761-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_MEAS
010536761-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
010536761-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010536761-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS
010536761-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010536761-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

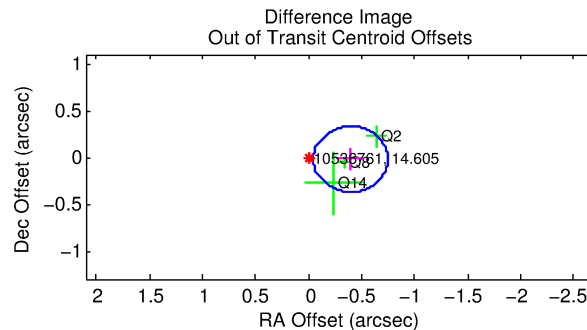
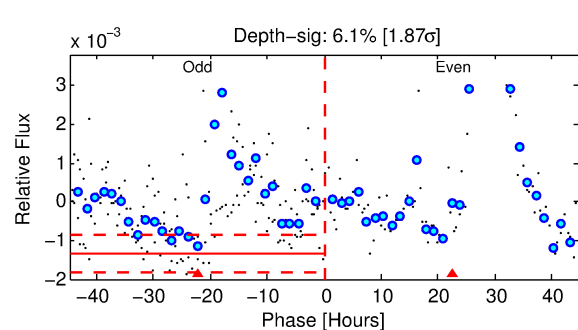
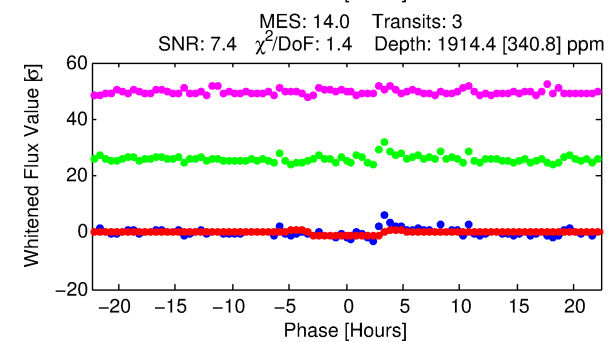
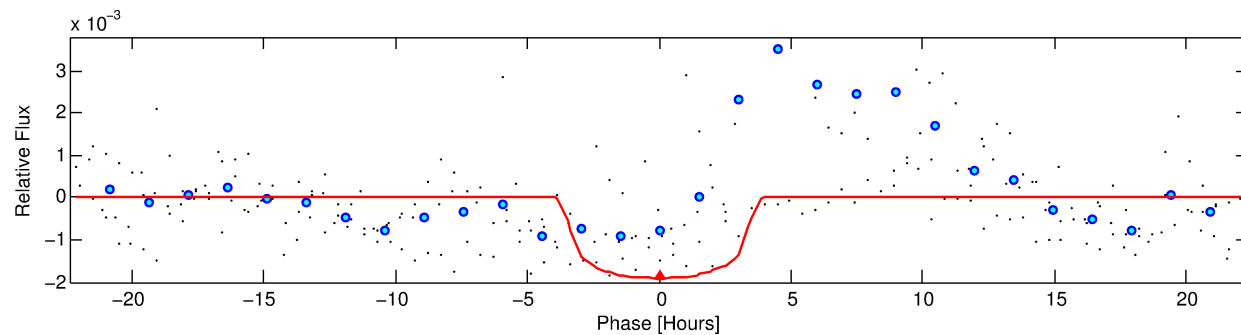
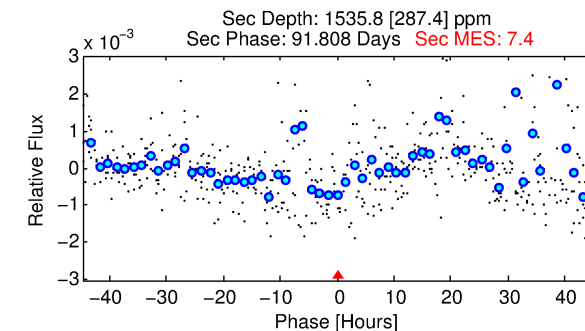
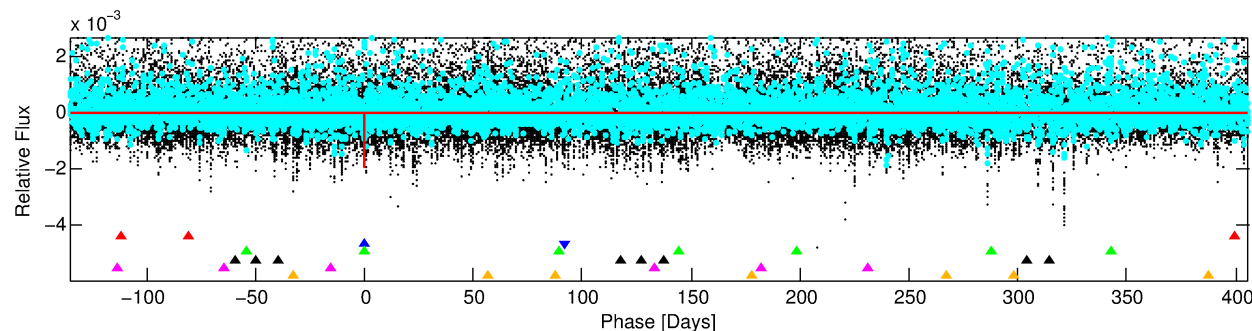
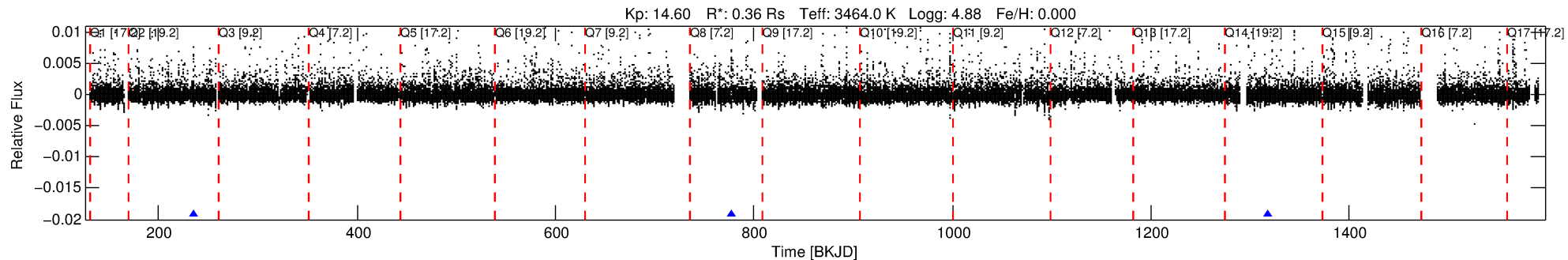
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010536761-02

No Significant Match Found

DV One-Page Summary

KIC: 10536761 Candidate: 2 of 6 Period: 541.307 d



DV Fit Results:

Period = 541.30659 [0.00588] d
Epoch = 235.4157 [0.0083] BKJD
Rp/R* = 0.0422 [0.0182]
a/R* = 445.84 [754.92]
b = 0.66 [1.44]
Seff = 0.02 [0.00]
Teq = 95 [2] K
Rp = 1.67 [0.74] Re
a = 0.9324 [0.0606] AU
Ag = 262487.04 [233015.43] [1.13σ]
Teff = 3337 [739] K [4.39σ]

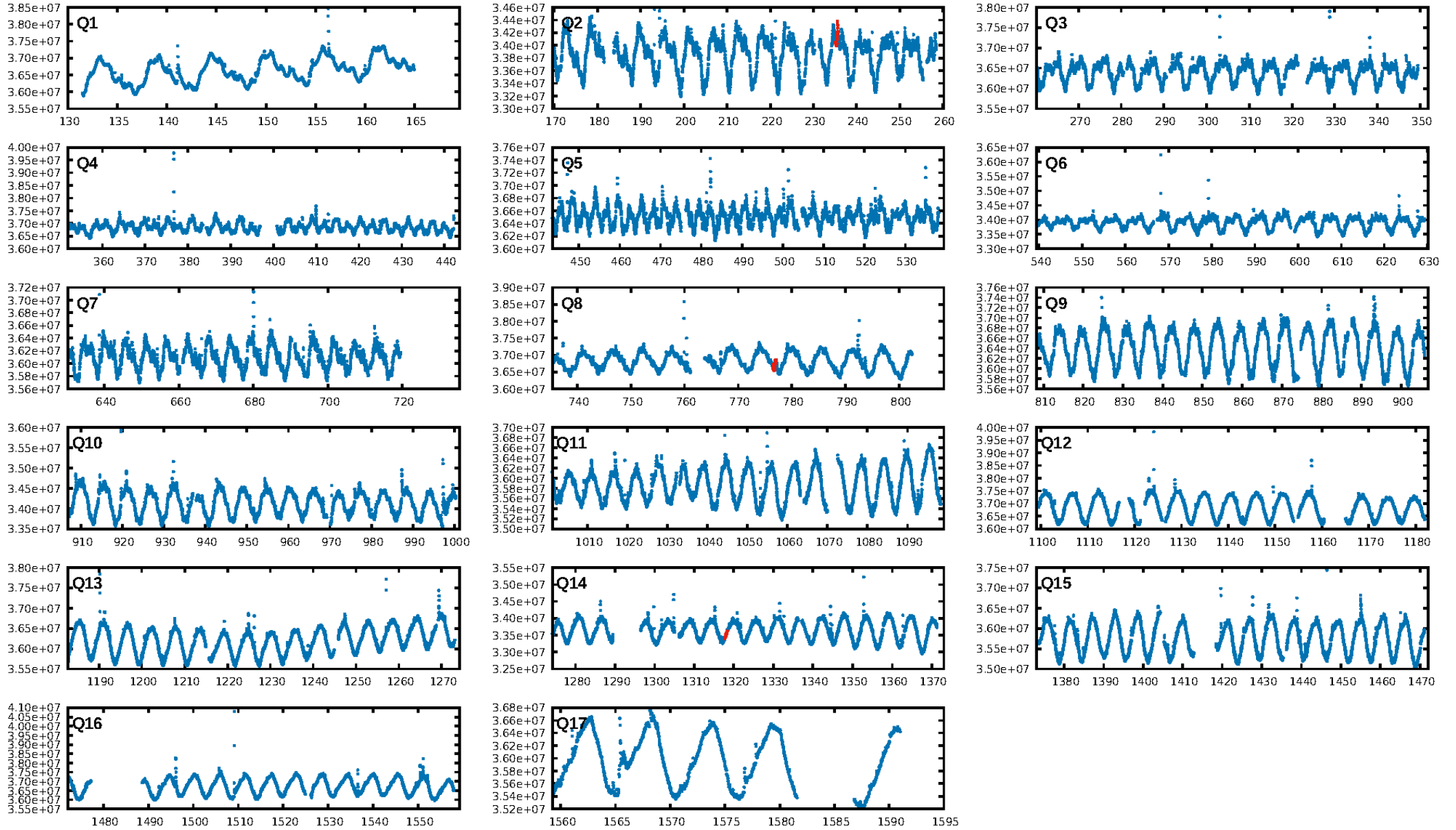
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [79.30σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.6%
ModelChiSquareGof-sig: 72.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.654
Centroid-sig: 13.5%
Centroid-so: 0.356 arcsec [1.11σ]
OotOffset-rm: 0.398 arcsec [3.41σ]
KicOffset-rm: 0.606 arcsec [4.46σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.67 [2/3]

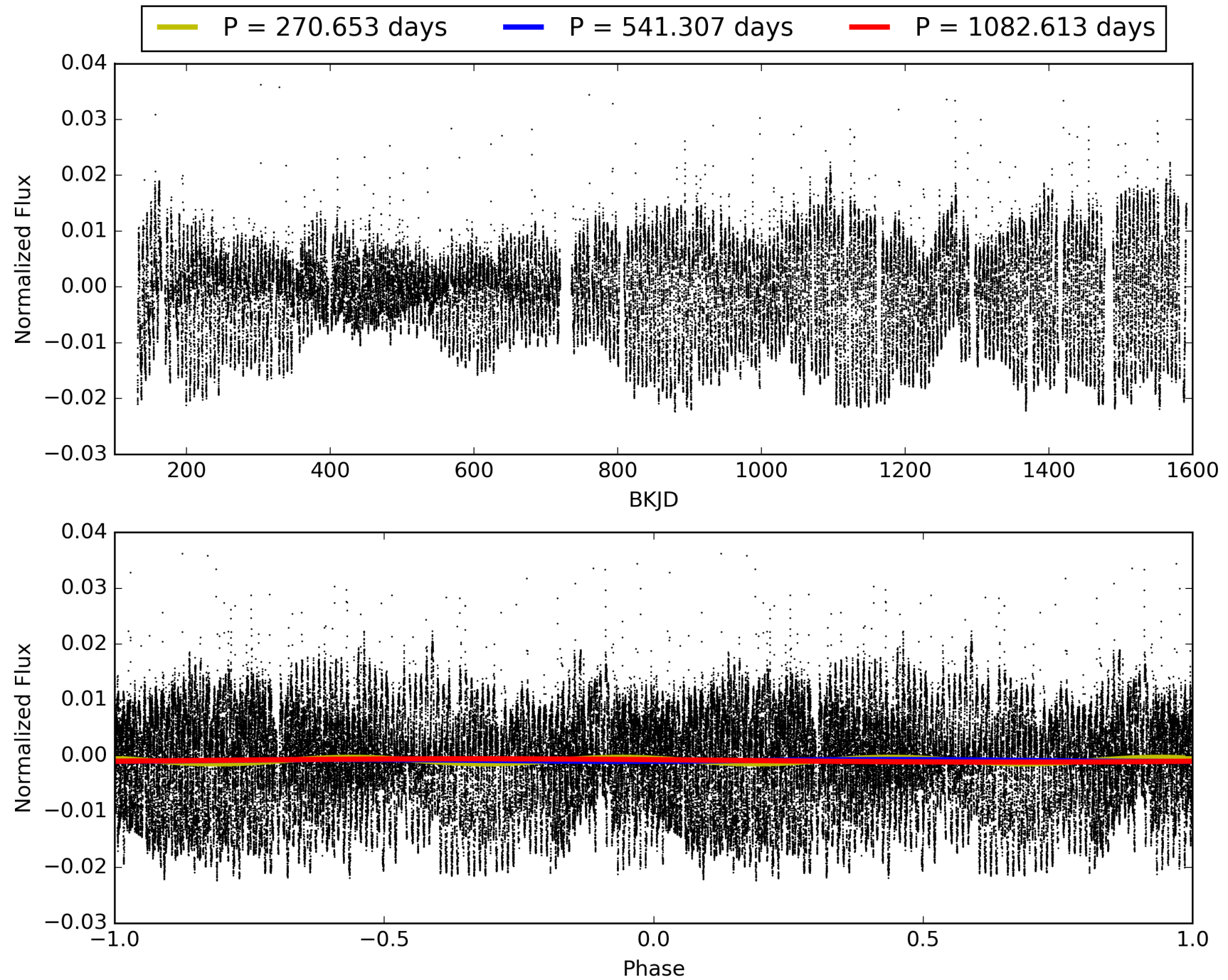
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:26:53 Z

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

TCE 010536761-02, PDC Light Curves

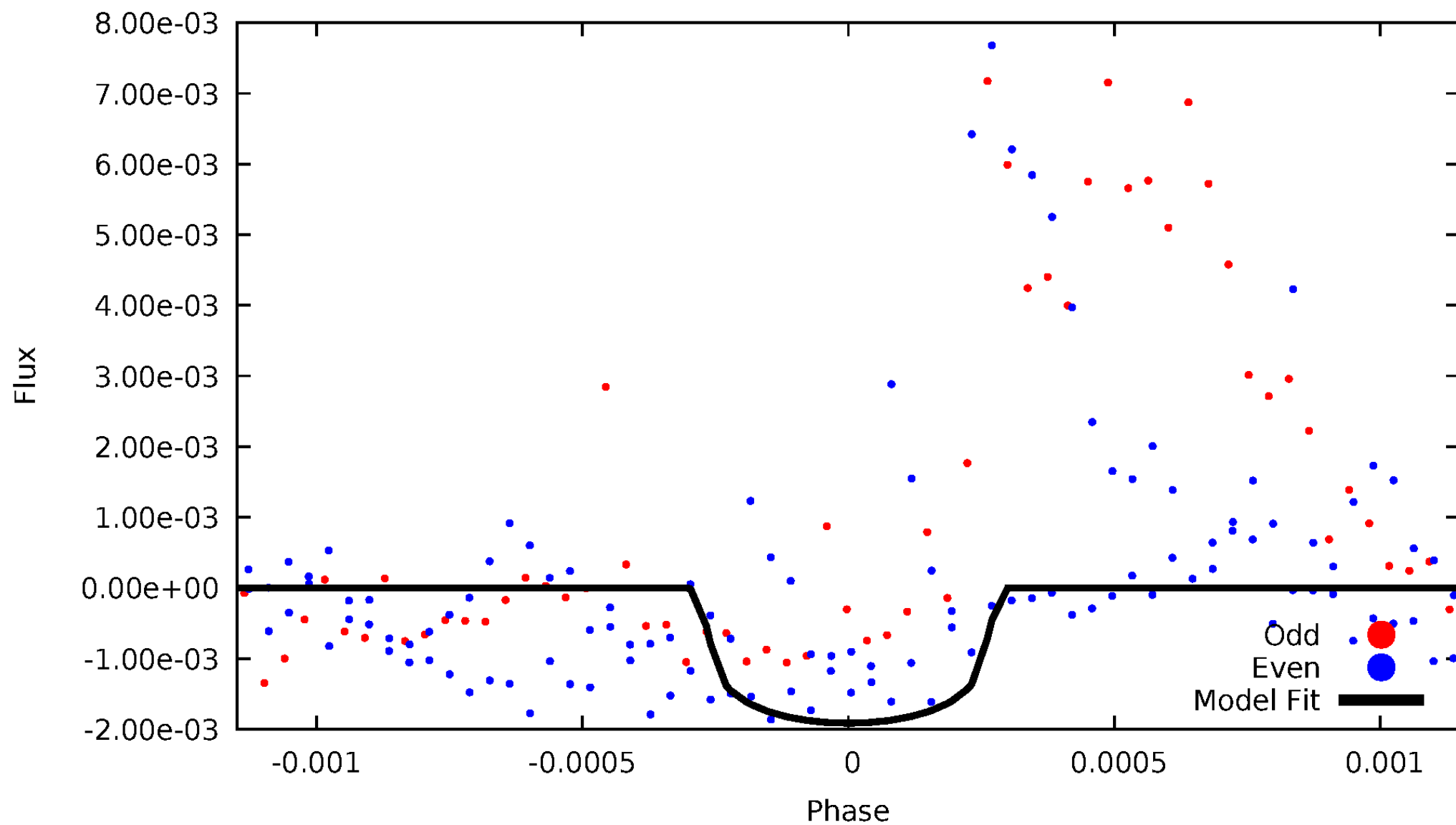


TCE 010536761-02



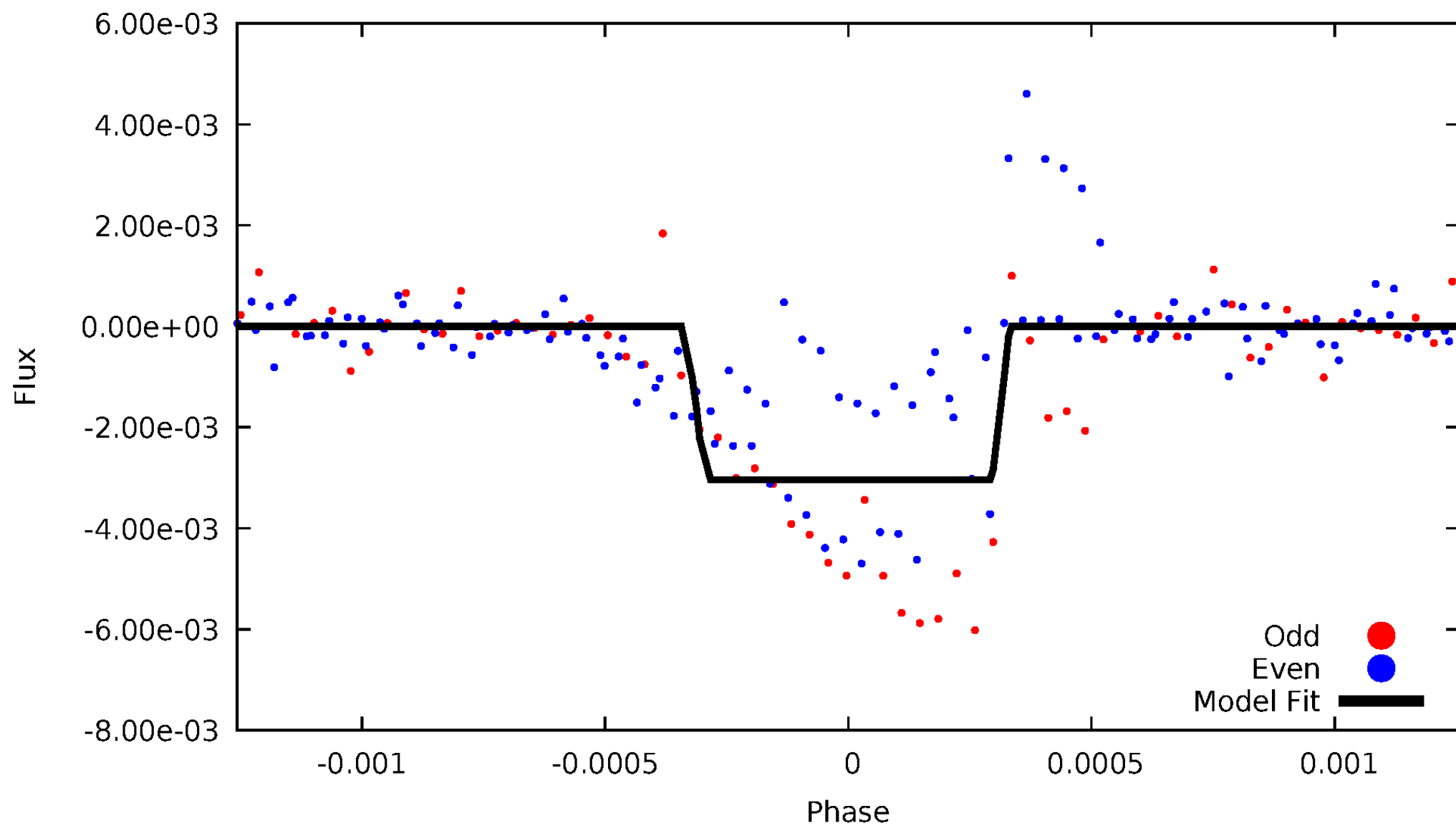
DV Odd/Even

TCE 010536761-02



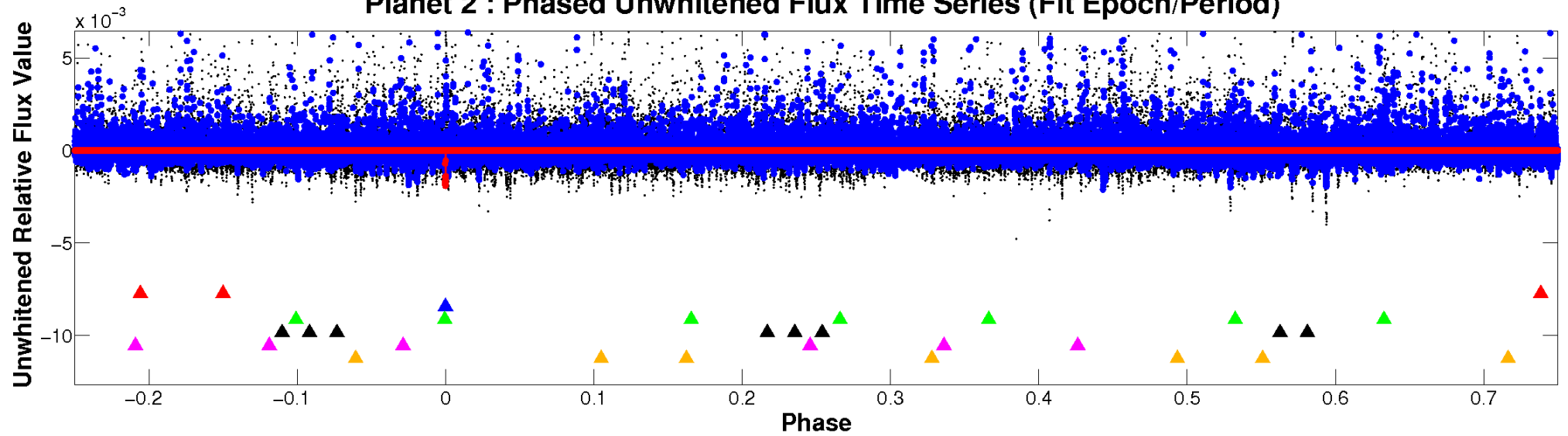
ALT Odd/Even

TCE 010536761-02

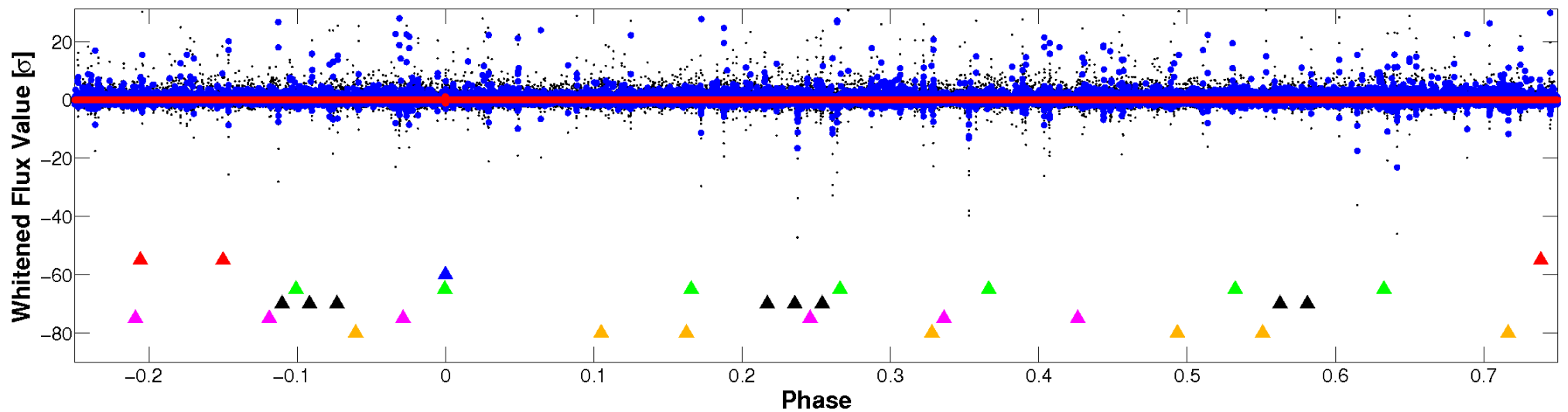


Non-Whitened Vs. Whitened Light Curve

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

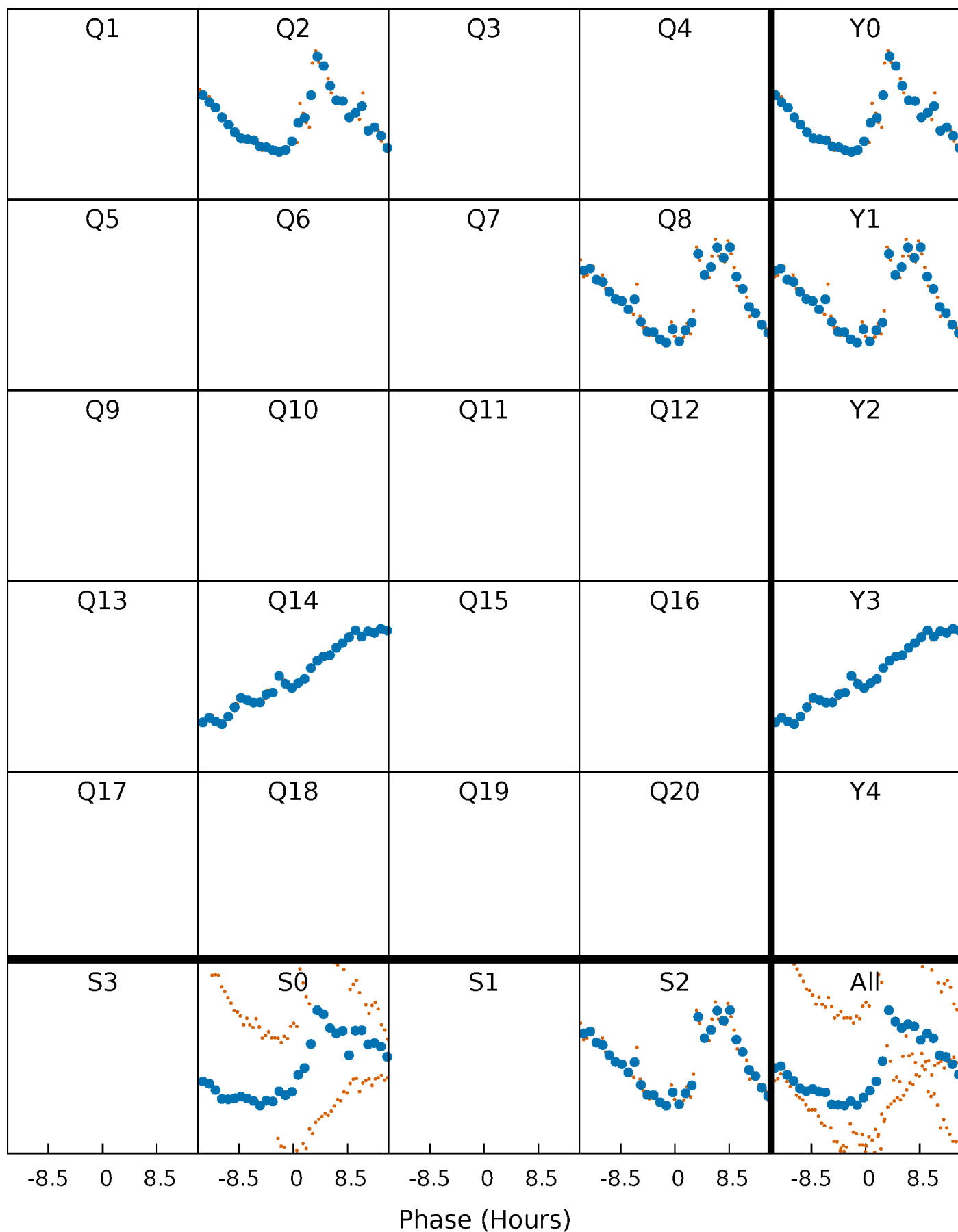


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



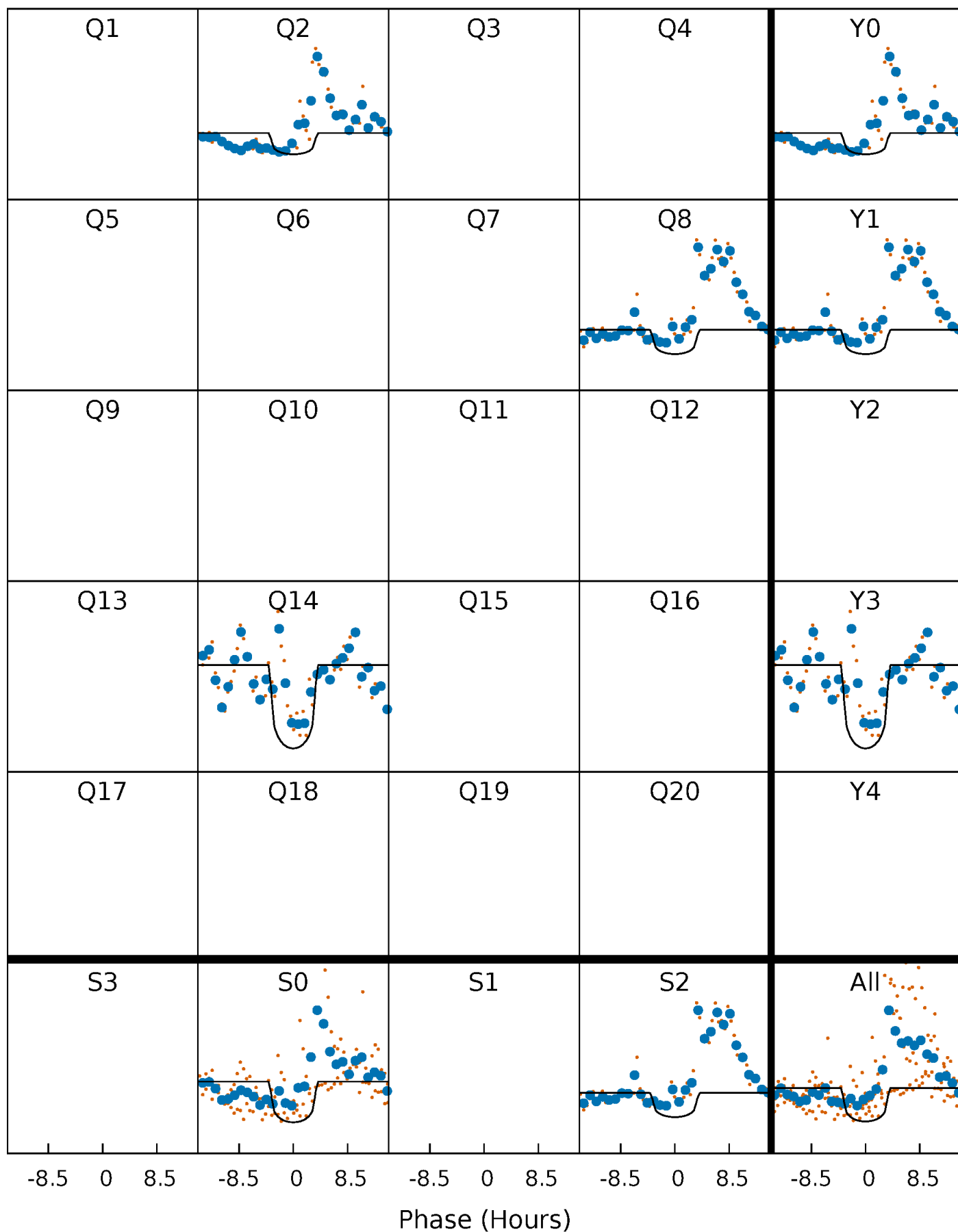
PDC Quarter-Phased Transit Curves

TCE 010536761-02 P=541.306589 Days $T_0=235.415726$ (BKJD)



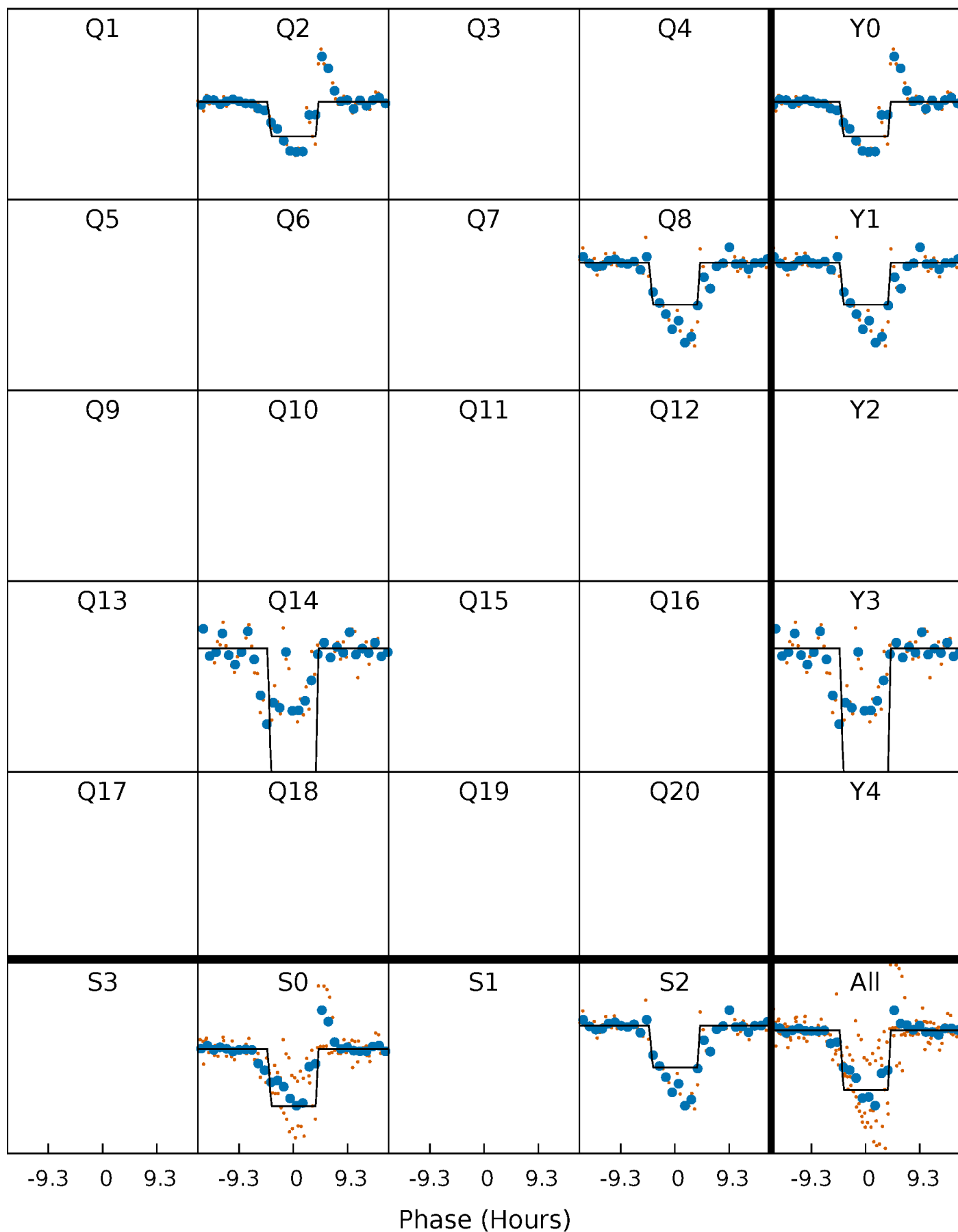
DV Quarter-Phased Transit Curves

TCE 010536761-02 $P=541.306589$ Days $T_0=235.415726$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

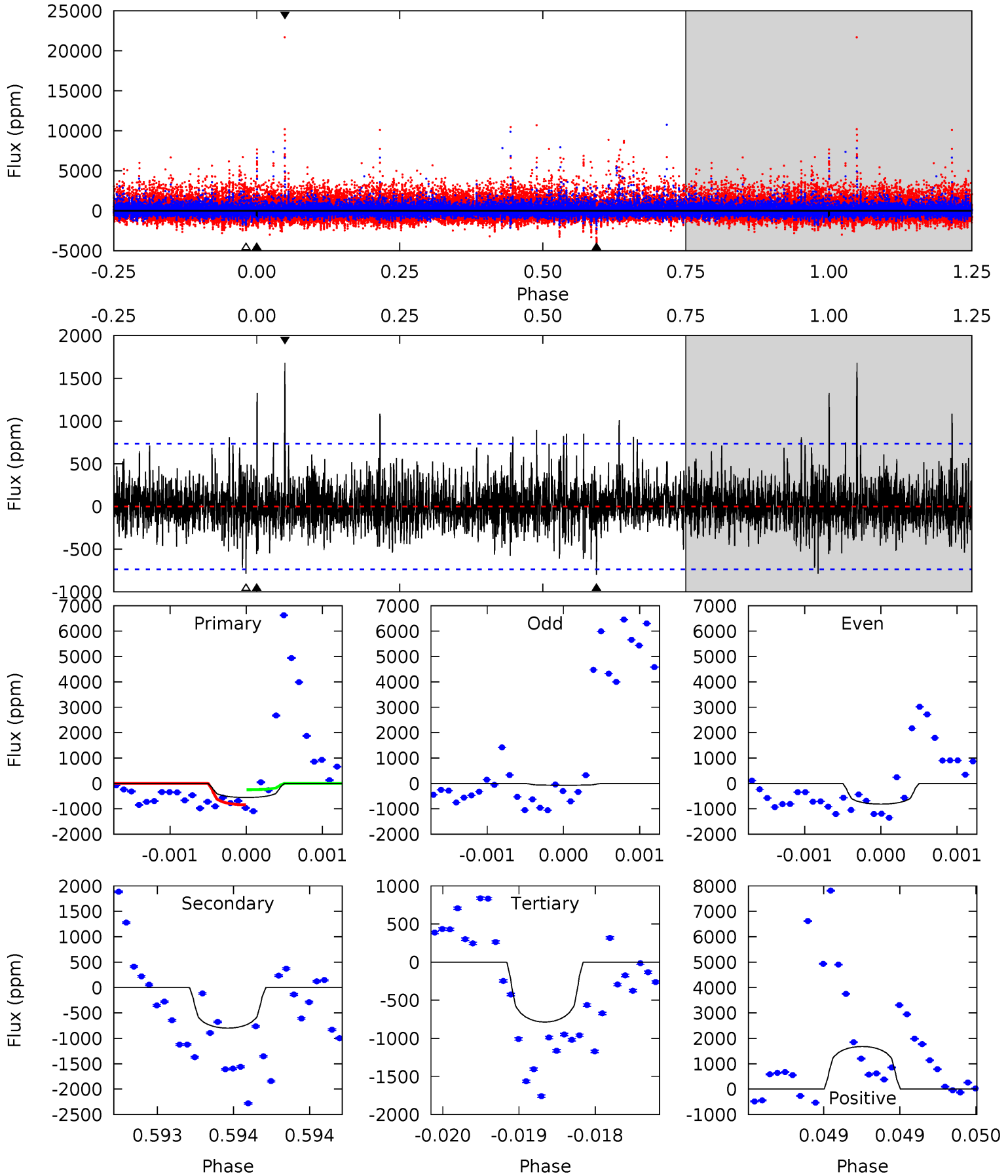
TCE 010536761-02 P=541.319060 Days $T_0=235.363048$ (BKJD)



DV Model-Shift Uniqueness Test

010536761-02, P = 541.306589 Days, E = 235.415726 Days

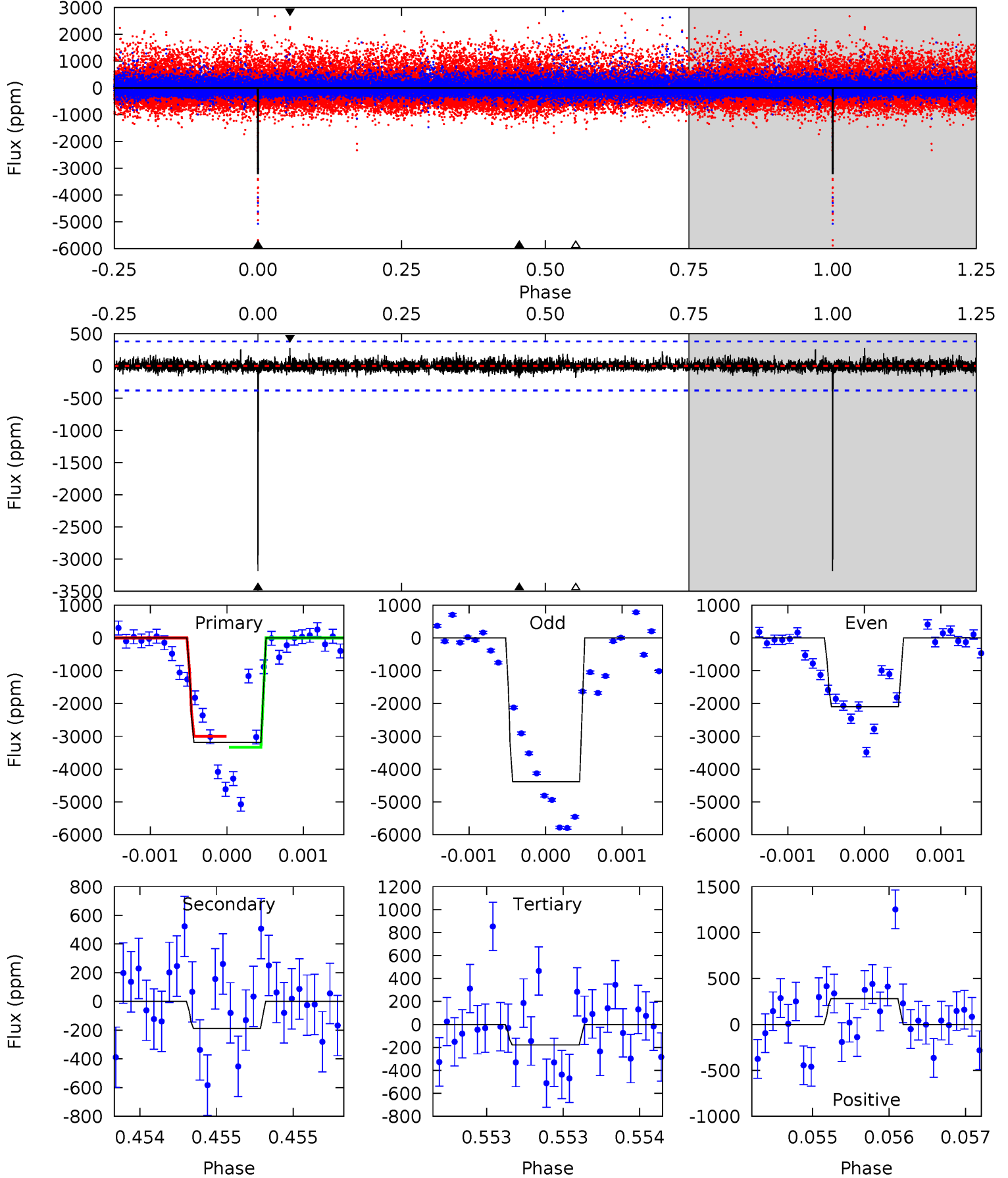
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.19	6.02	5.93	12.7	5.54	3.43	1.54	-1.74	-8.48	0.10	-6.64	1.85	4.29	0.68	2.25



Alt Model-Shift Uniqueness Test

010536761-02, P = 541.319060 Days, E = 235.363048 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.3	2.74	2.59	4.06	5.53	3.41	0.68	43.7	42.2	0.15	-1.32	17.0	0.88	0.08	2.41



Stellar Parameters For KIC 010536761

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3464^{+45}_{-45}	$4.885^{+0.036}_{-0.030}$	$0.000^{+0.100}_{-0.100}$	$0.363^{+0.032}_{-0.032}$	$0.370^{+0.041}_{-0.041}$	$10.890^{+1.912}_{-1.628}$
	+1%/-1%	+1%/-1%	+inf%/-inf%	+9%/-9%	+11%/-11%	+18%/-15%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010536761-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-799 ± 133	$1.69^{+0.75}_{-0.71}$	133^{+3}_{-3}	3057^{+578}_{-293}	$133175^{+271719}_{-69984}$
Alt.	-189 ± 69	$2.21^{+0.69}_{-0.71}$	133^{+3}_{-3}	2369^{+241}_{-190}	18198^{+22985}_{-9410}

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 $A_{obs} \gg 1.0$

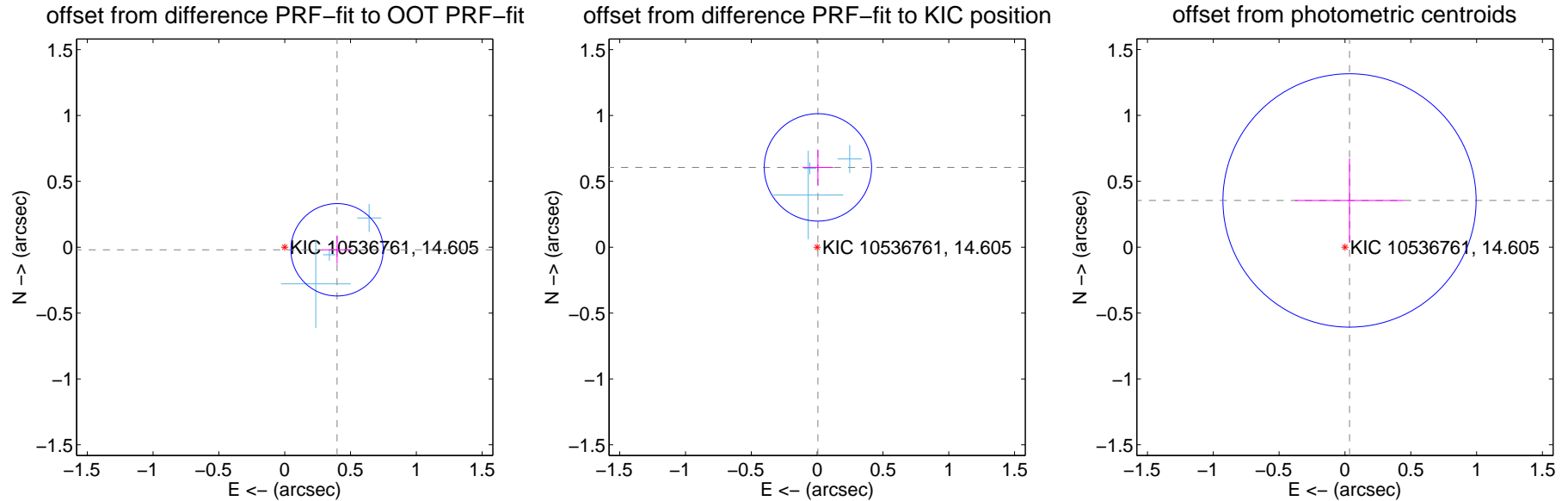
DV Centroid Data

Supplemental centroid analysis for 010536761-02. Kepler magnitude: 14.61. Transit SNR 7.37

There are 3 quarters with good PRF difference image offsets

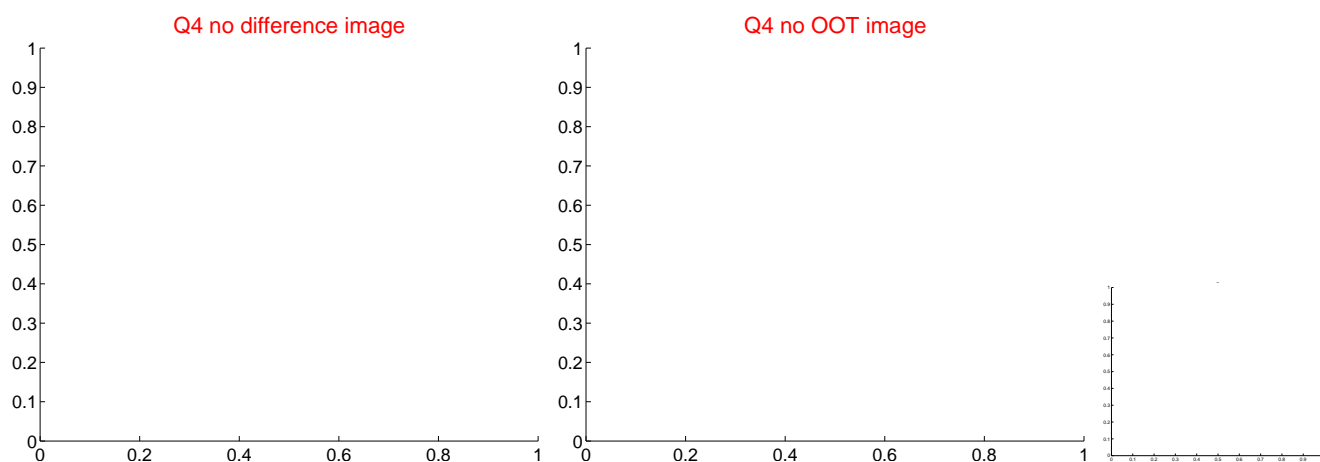
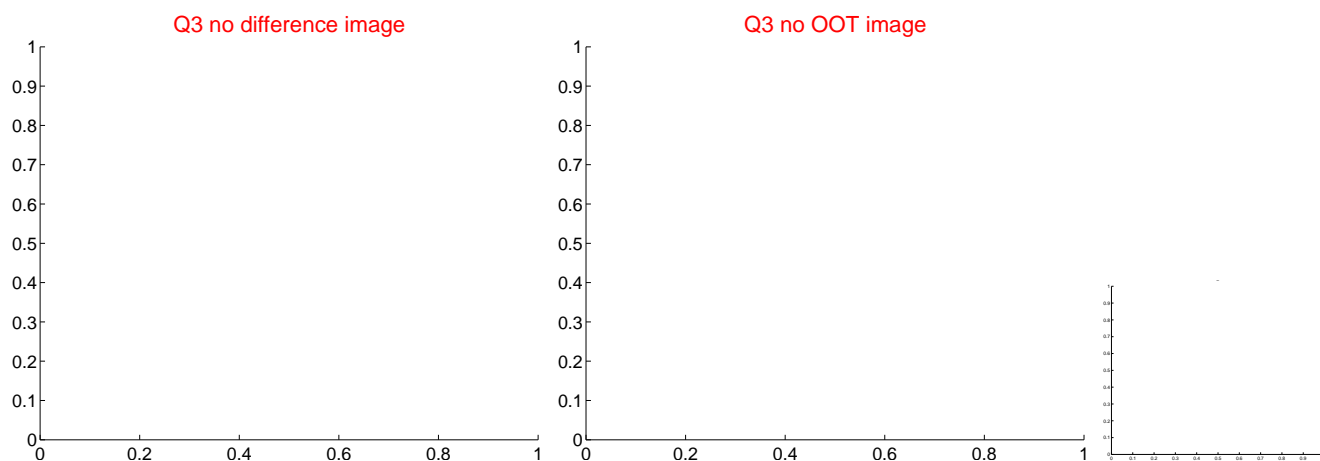
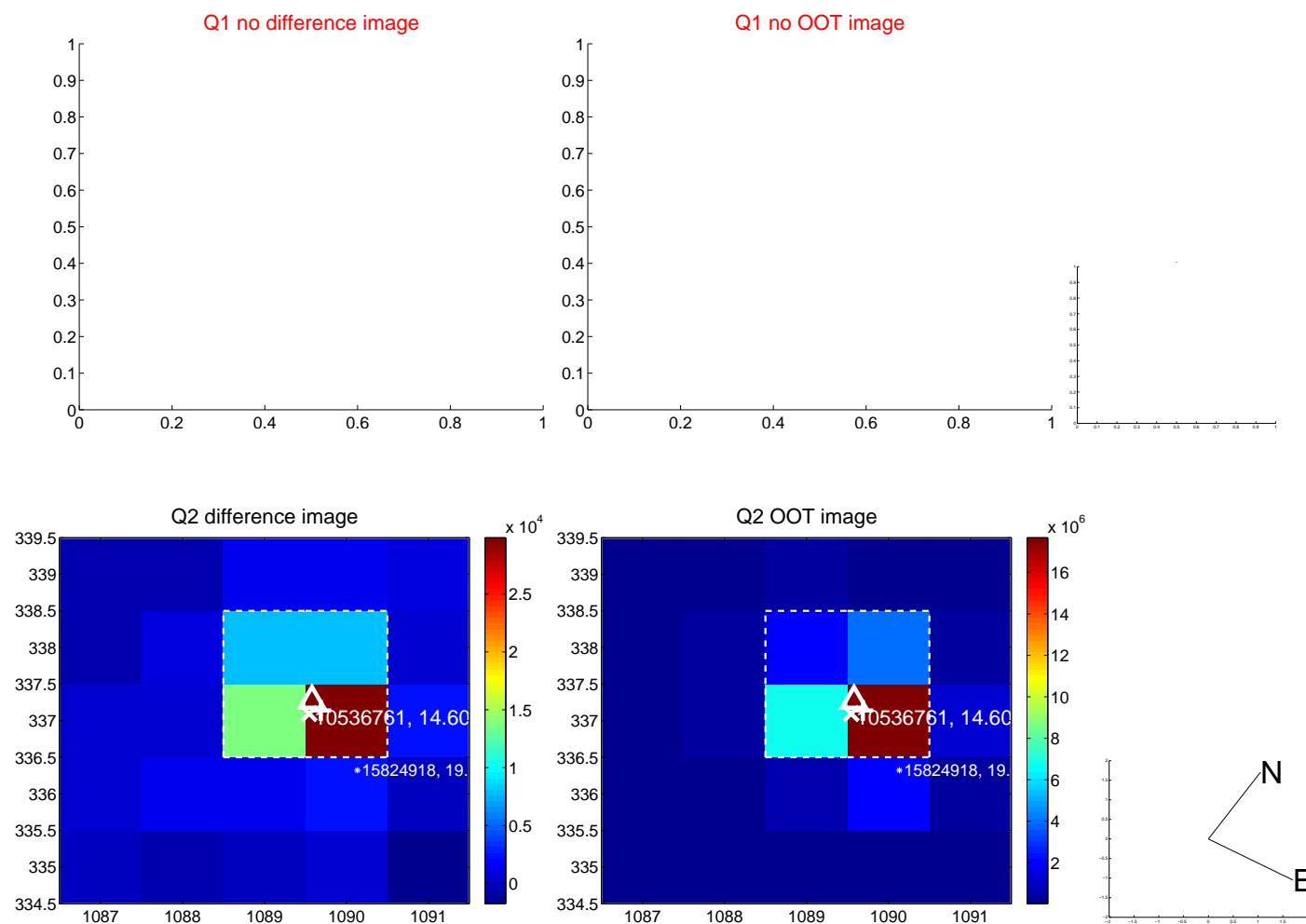
The direct PRF centroid is offset from the target star catalog position by about 0.74 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.398 ± 0.117	3.41	-0.398 ± 0.117	-0.020 ± 0.105
PRF-fit source offset from KIC position	0.606 ± 0.136	4.46	-0.006 ± 0.116	0.606 ± 0.136
photometric centroid source offset	0.36 ± 0.32	1.11	-0.03 ± 0.41	0.35 ± 0.32

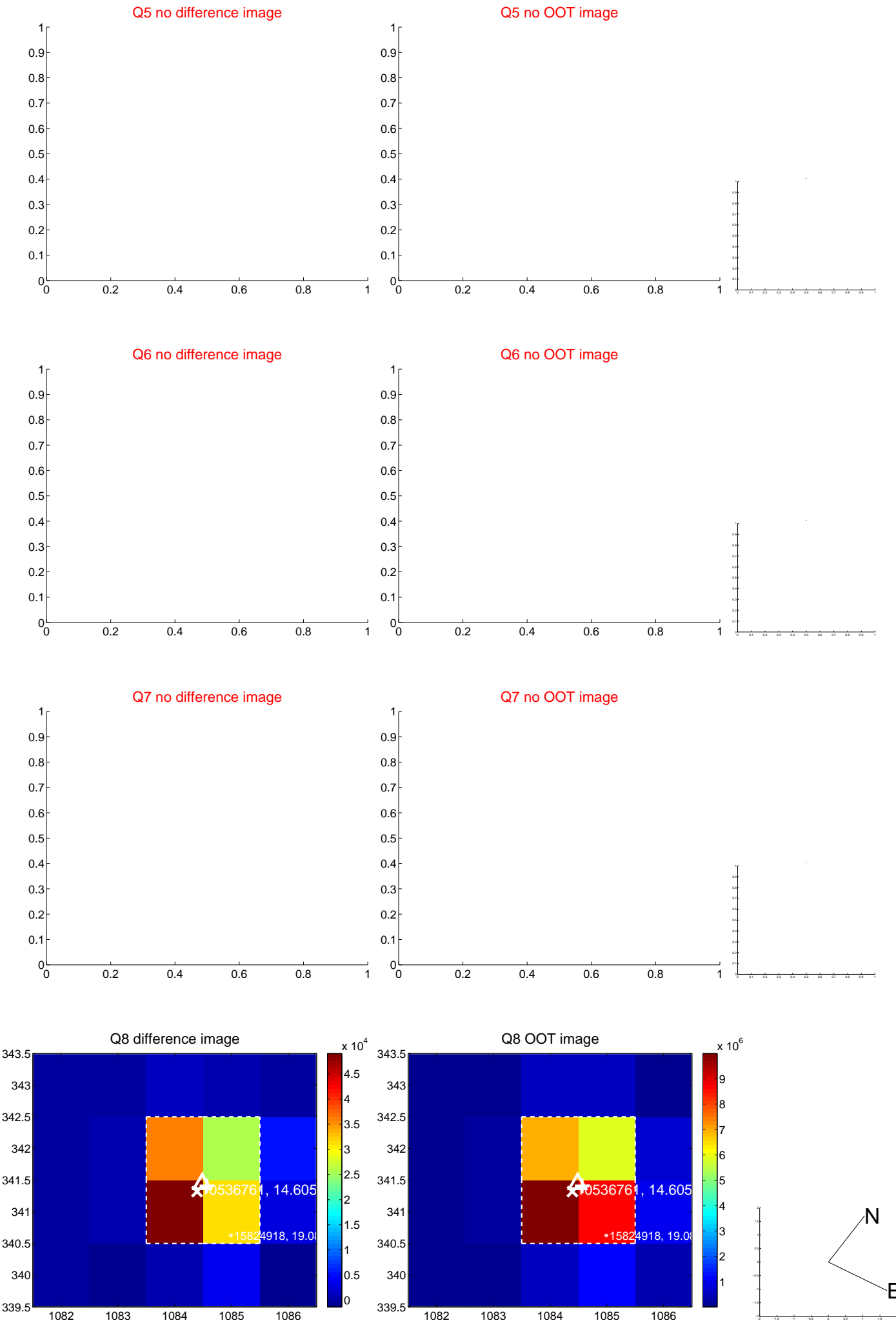


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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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.

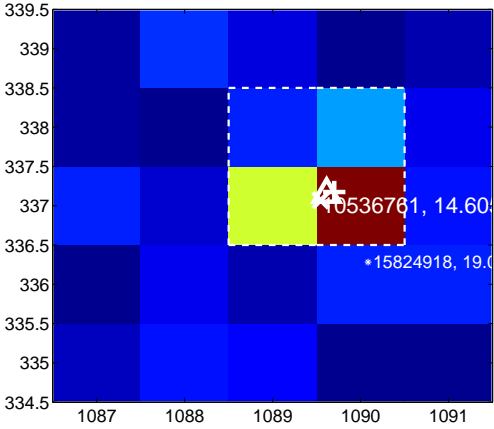
Q13 no difference image



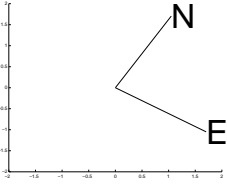
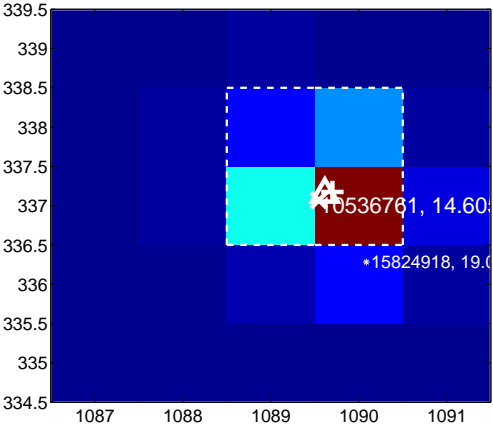
Q13 no OOT image



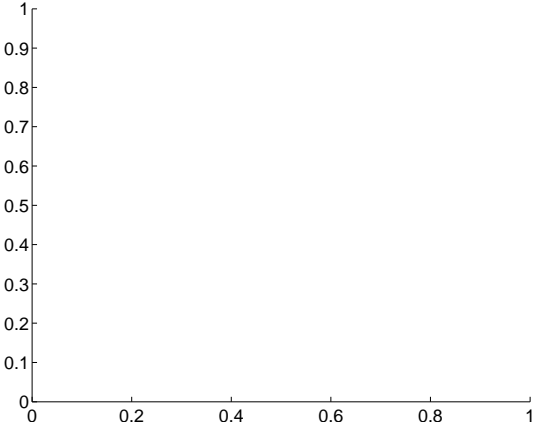
Q14 difference image



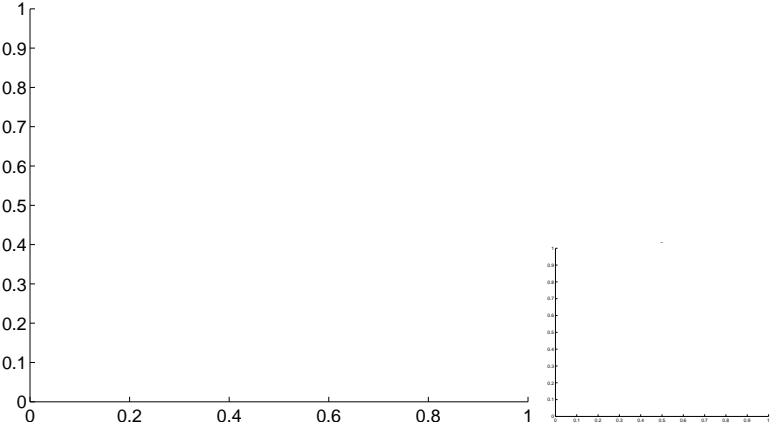
Q14 OOT image



Q15 no difference image



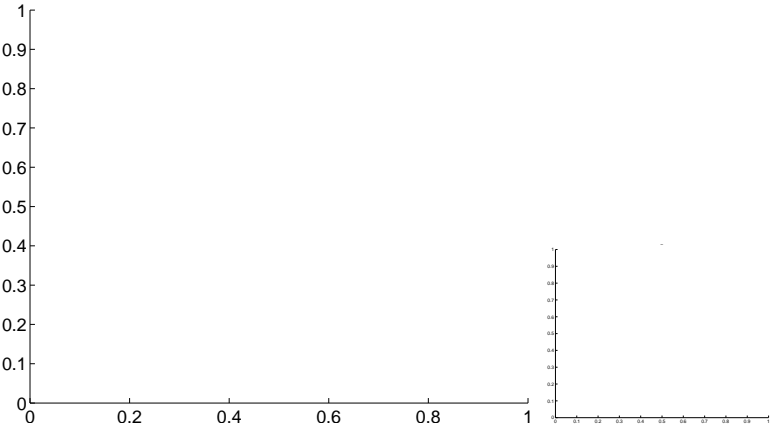
Q15 no OOT image



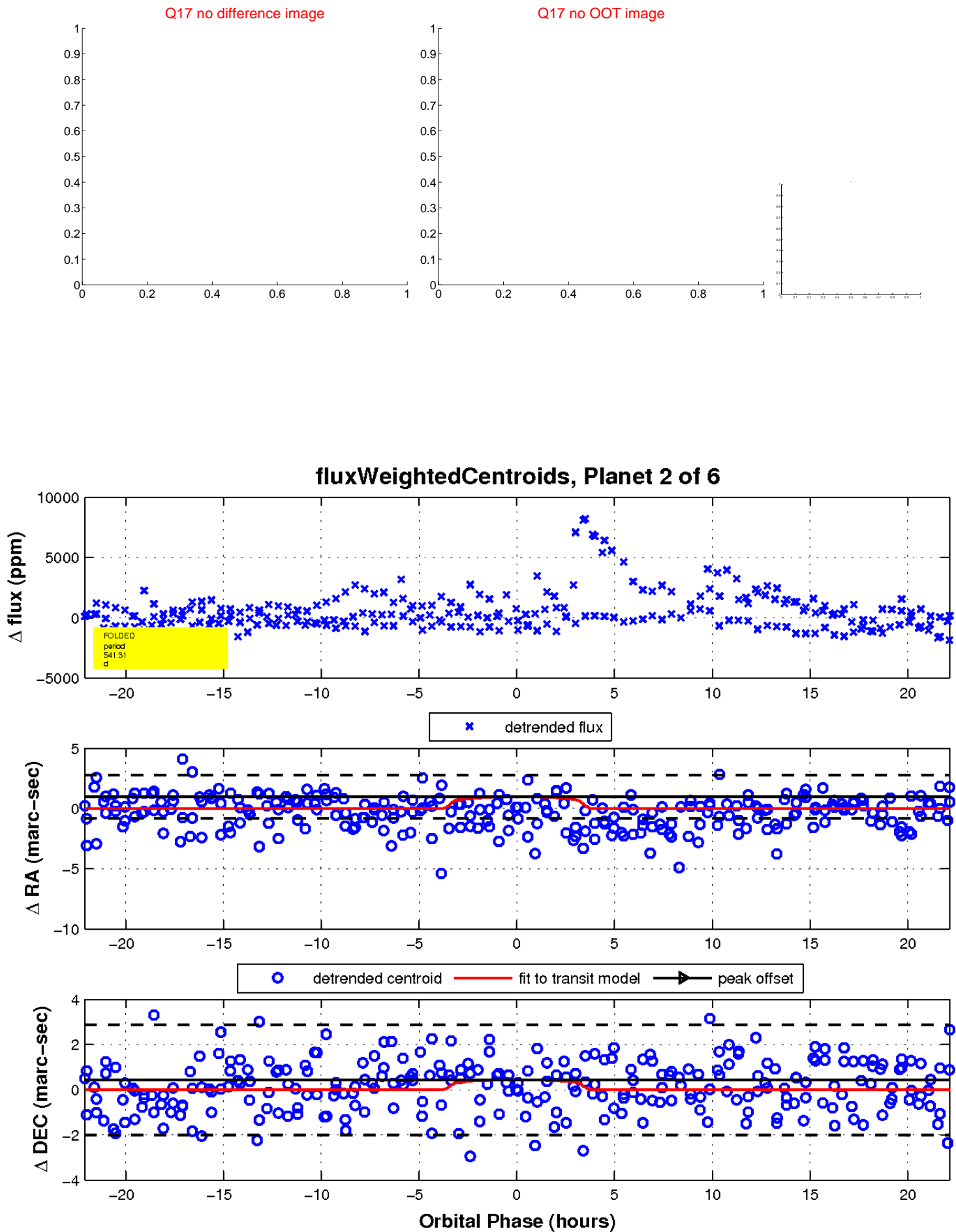
Q16 no difference image



Q16 no OOT image

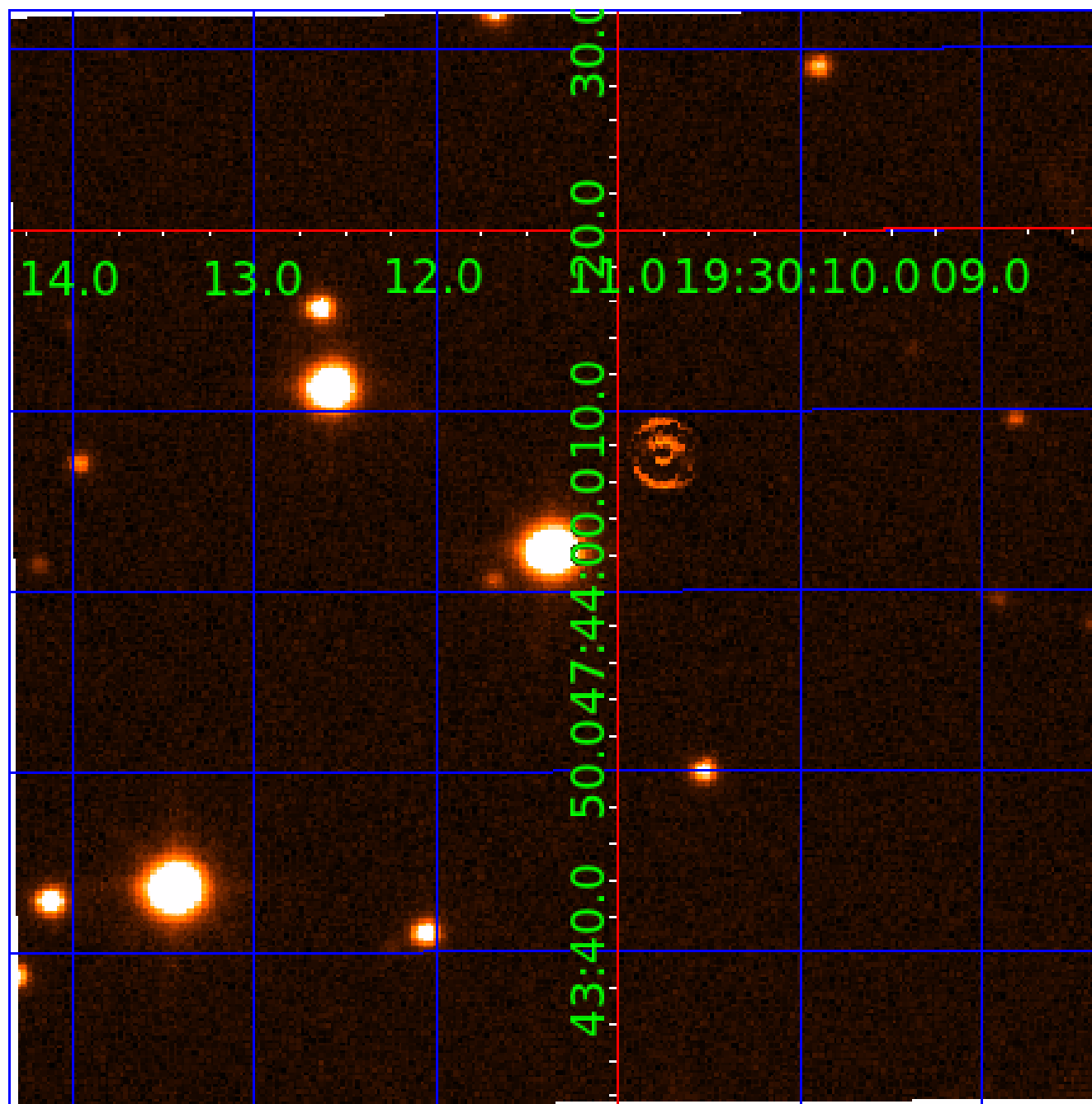


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010536761

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})
010536761-01	OBS	No	511.116450	154.246246	1606.5	5.275	13.9	7.3	0.36	3464	1.51	0.02
010536761-02	OBS	No	541.306589	235.415726	1914.4	7.460	14.0	7.4	0.36	3464	1.67	0.02
010536761-03	OBS	No	198.531275	325.105692	1281.5	12.491	15.5	7.0	0.36	3464	1.28	0.07
010536761-04	OBS	No	177.099312	195.803042	1157.1	3.993	11.4	7.7	0.36	3464	1.59	0.09
010536761-05	OBS	No	246.234681	219.942313	3082.0	38.499	12.0	8.9	0.36	3464	3.85	0.06
010536761-06	OBS	No	210.300550	323.349581	930.7	2.500	11.3	-1.0	0.36	3464	1.09	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010536761-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_MEAS
010536761-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
010536761-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010536761-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS
010536761-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010536761-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

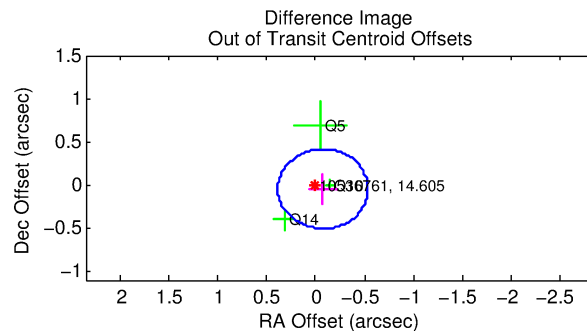
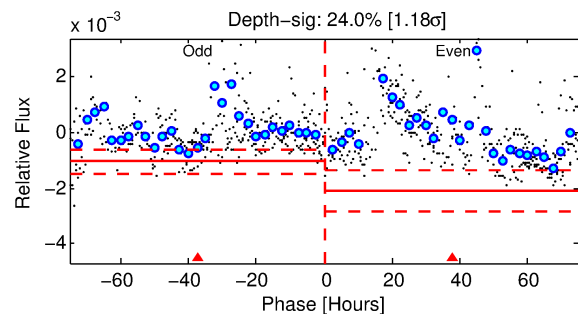
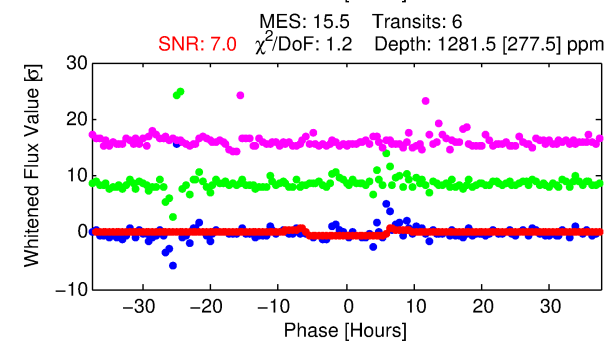
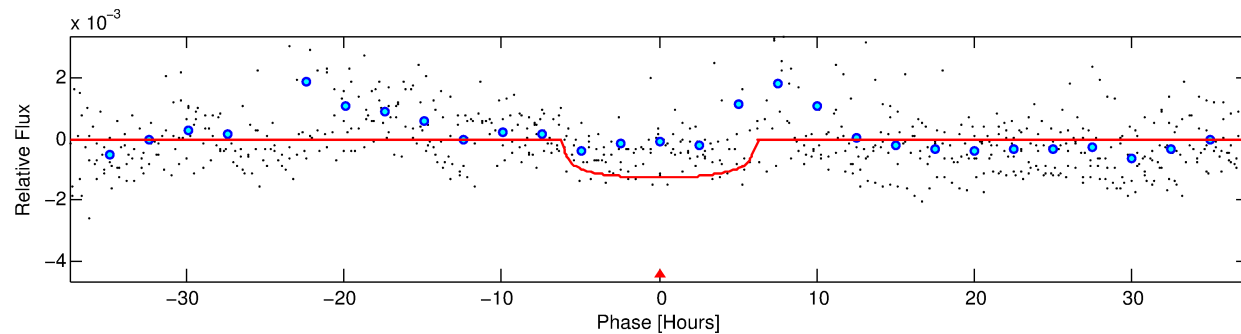
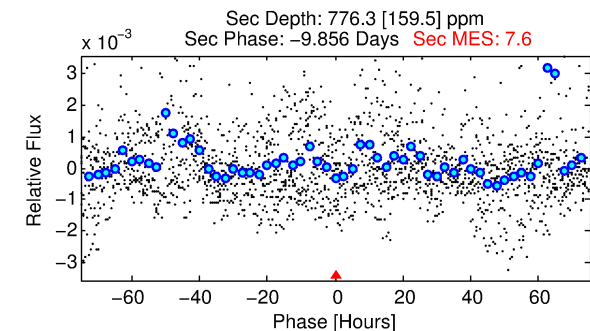
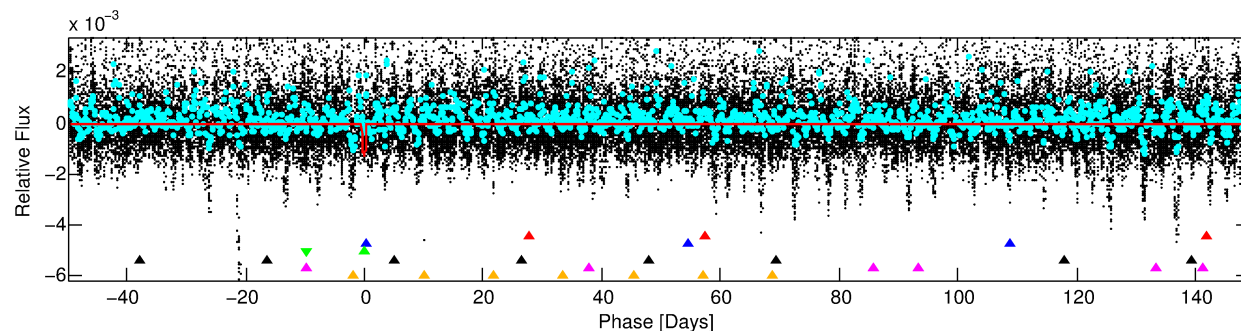
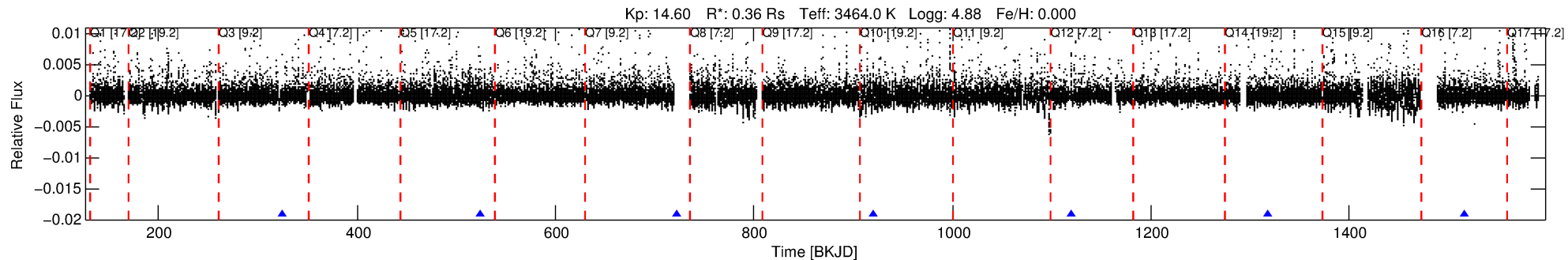
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010536761-03

No Significant Match Found

DV One-Page Summary

KIC: 10536761 Candidate: 3 of 6 Period: 198.531 d



DV Fit Results:

Period = 198.53128 [0.00368] d
Epoch = 325.1057 [0.0125] BKJD
Rp/R* = 0.0323 [0.0156]
a/R* = 124.52 [236.45]
b = 0.12 [15.79]
Seff = 0.07 [0.01]
Teq = 133 [3] K
Rp = 1.28 [0.63] Re
a = 0.4777 [0.0310] AU
Ag = 59358.82 [58579.64] [1.01σ]
Teff = 3215 [792] K [3.89σ]

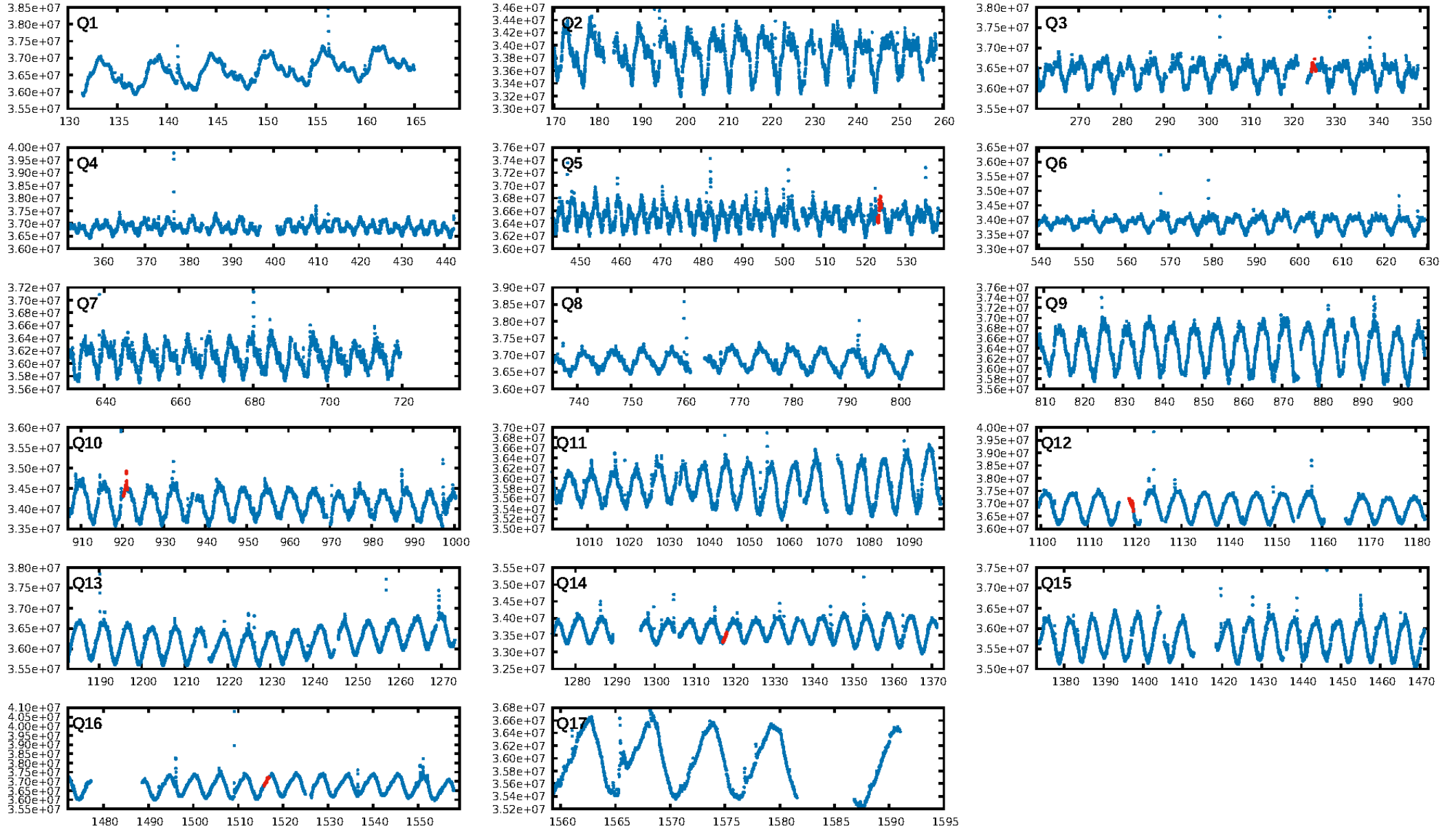
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [39.22σ]
LongPeriod-sig: 100.0% [22.17σ]
ModelChiSquare2-sig: 27.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.6305
Centroid-sig: 38.0%
Centroid-so: 0.510 arcsec [1.62σ]
OotOffset-rm: 0.086 arcsec [0.56σ]
KicOffset-rm: 0.640 arcsec [2.50σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.67 [2/3]

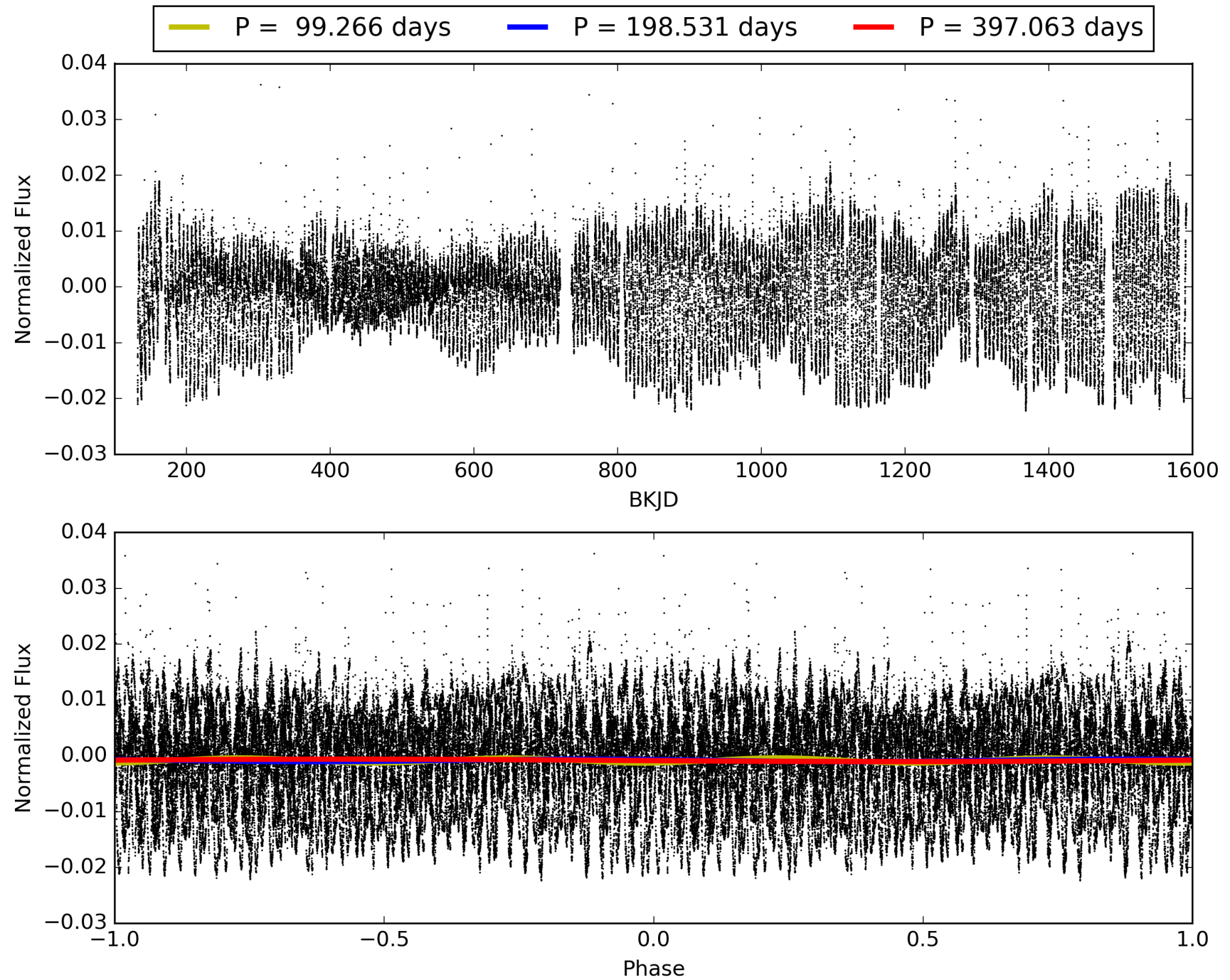
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:27:01 Z

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

TCE 010536761-03, PDC Light Curves

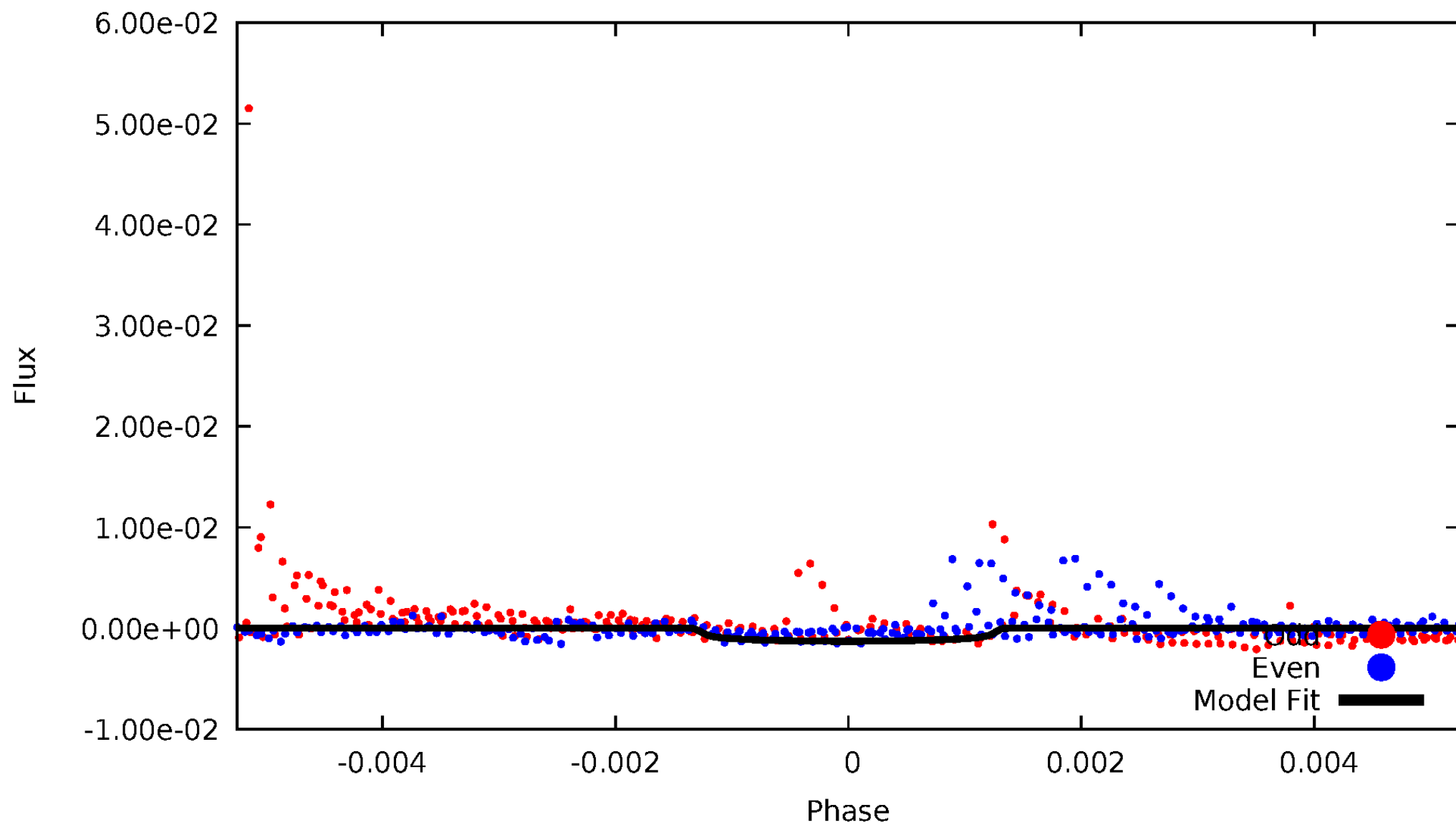


TCE 010536761-03



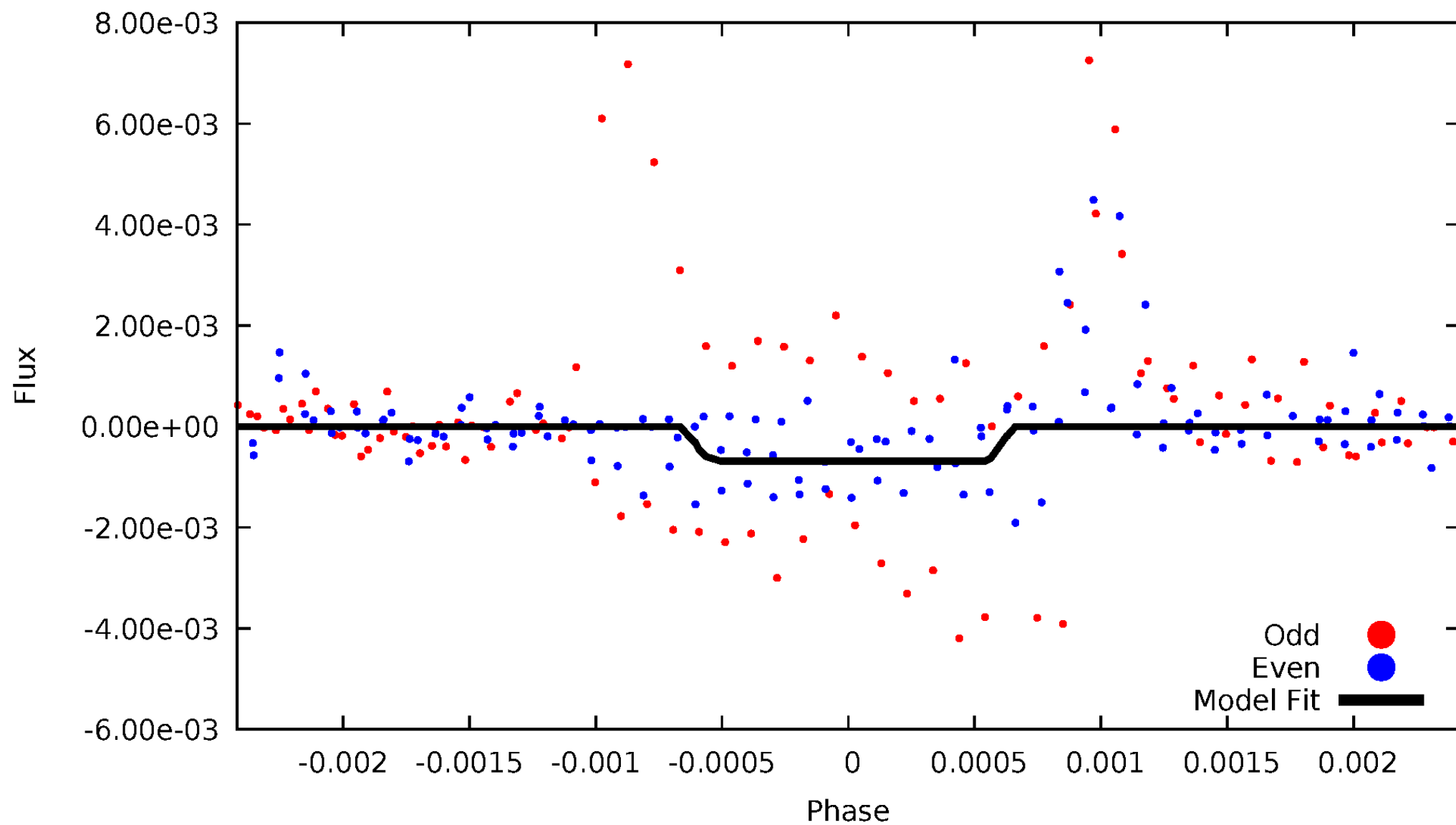
DV Odd/Even

TCE 010536761-03

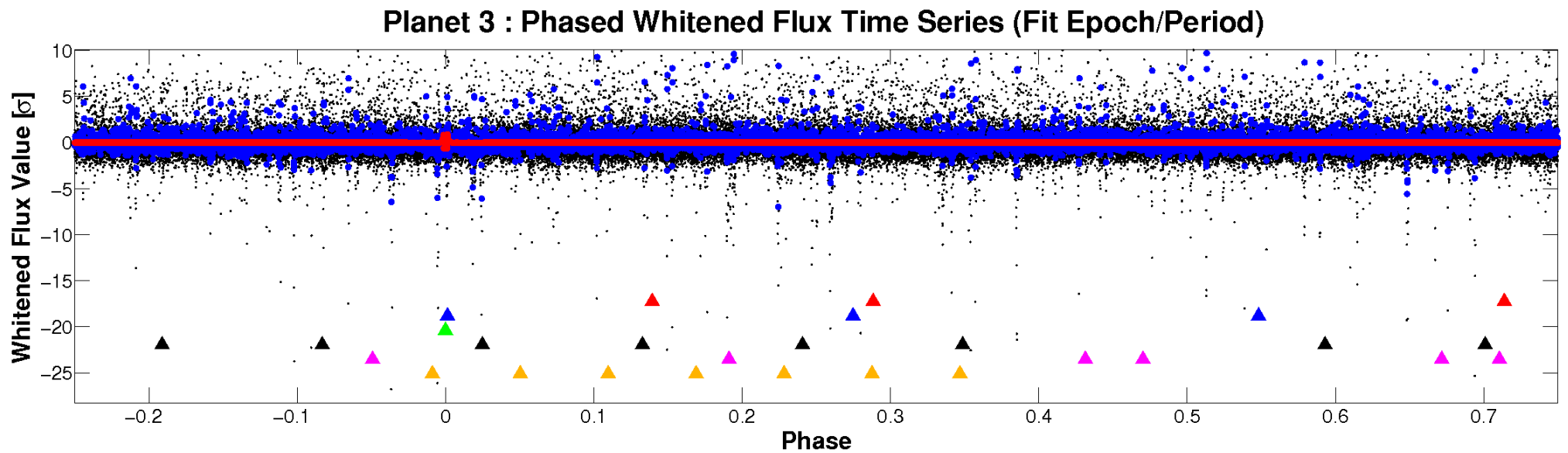
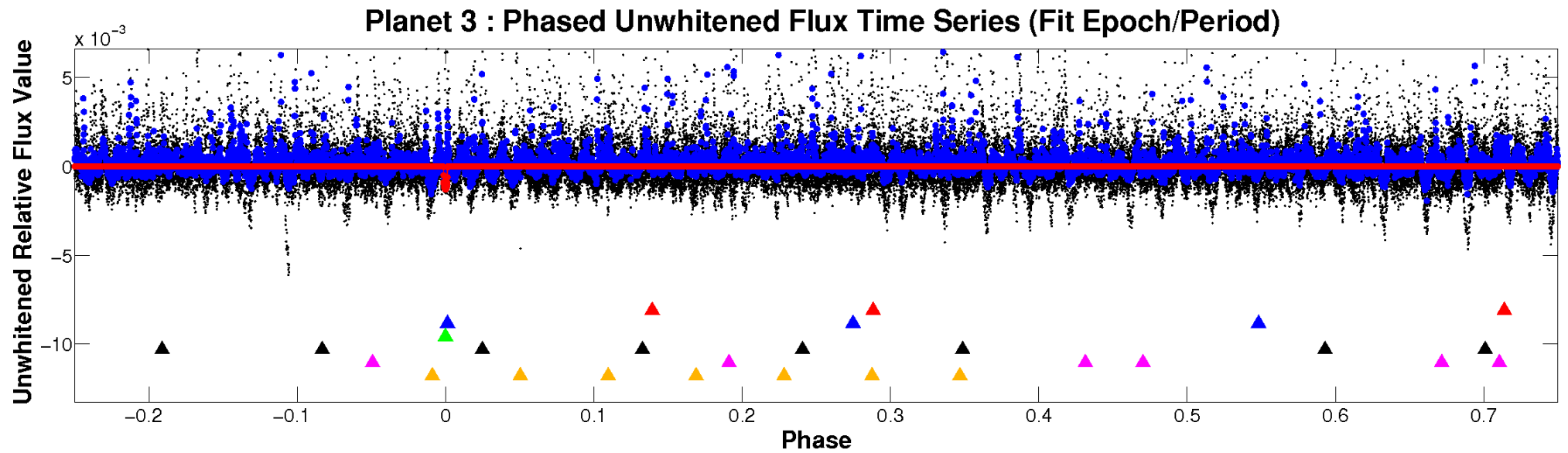


ALT Odd/Even

TCE 010536761-03

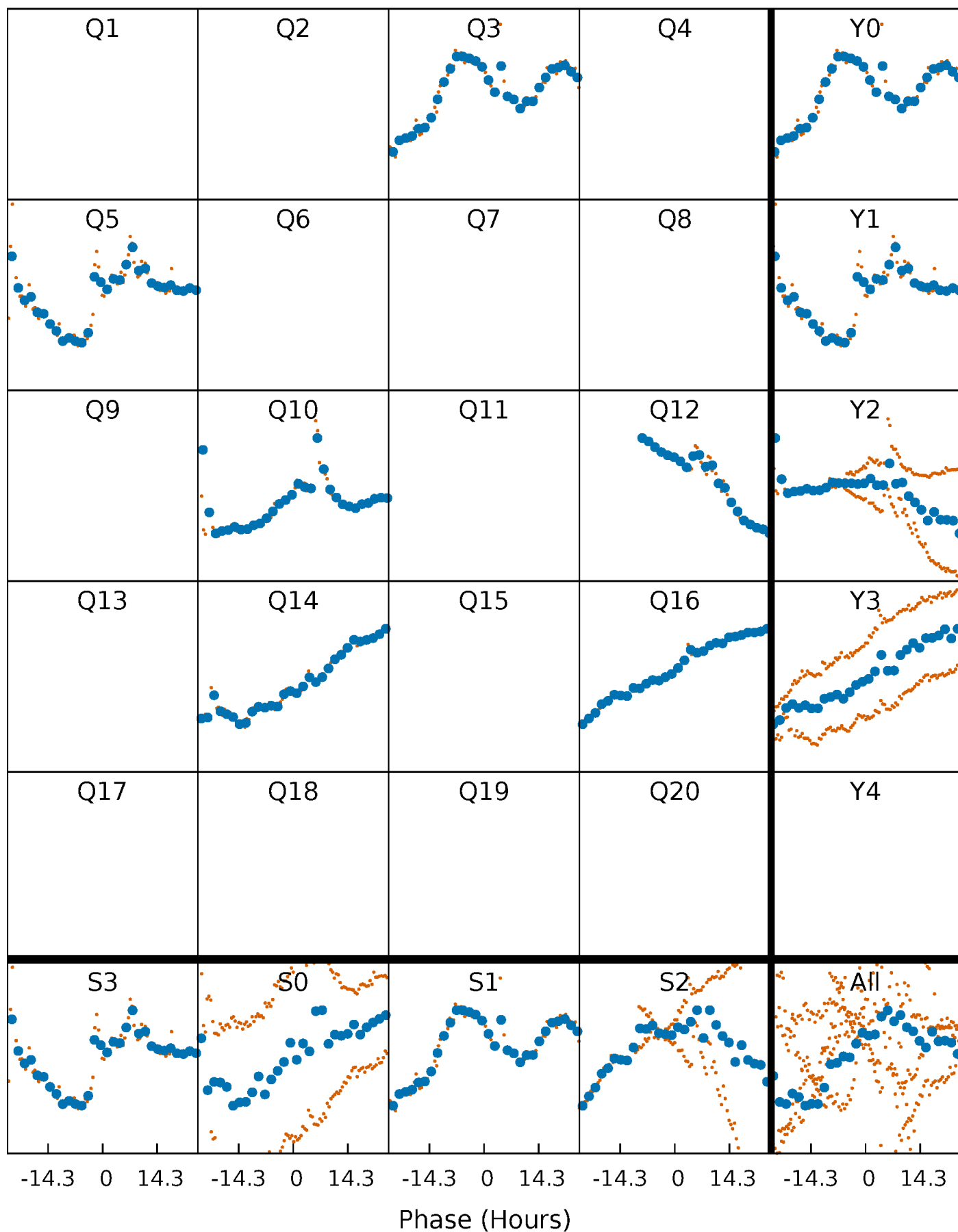


Non-Whitened Vs. Whitened Light Curve



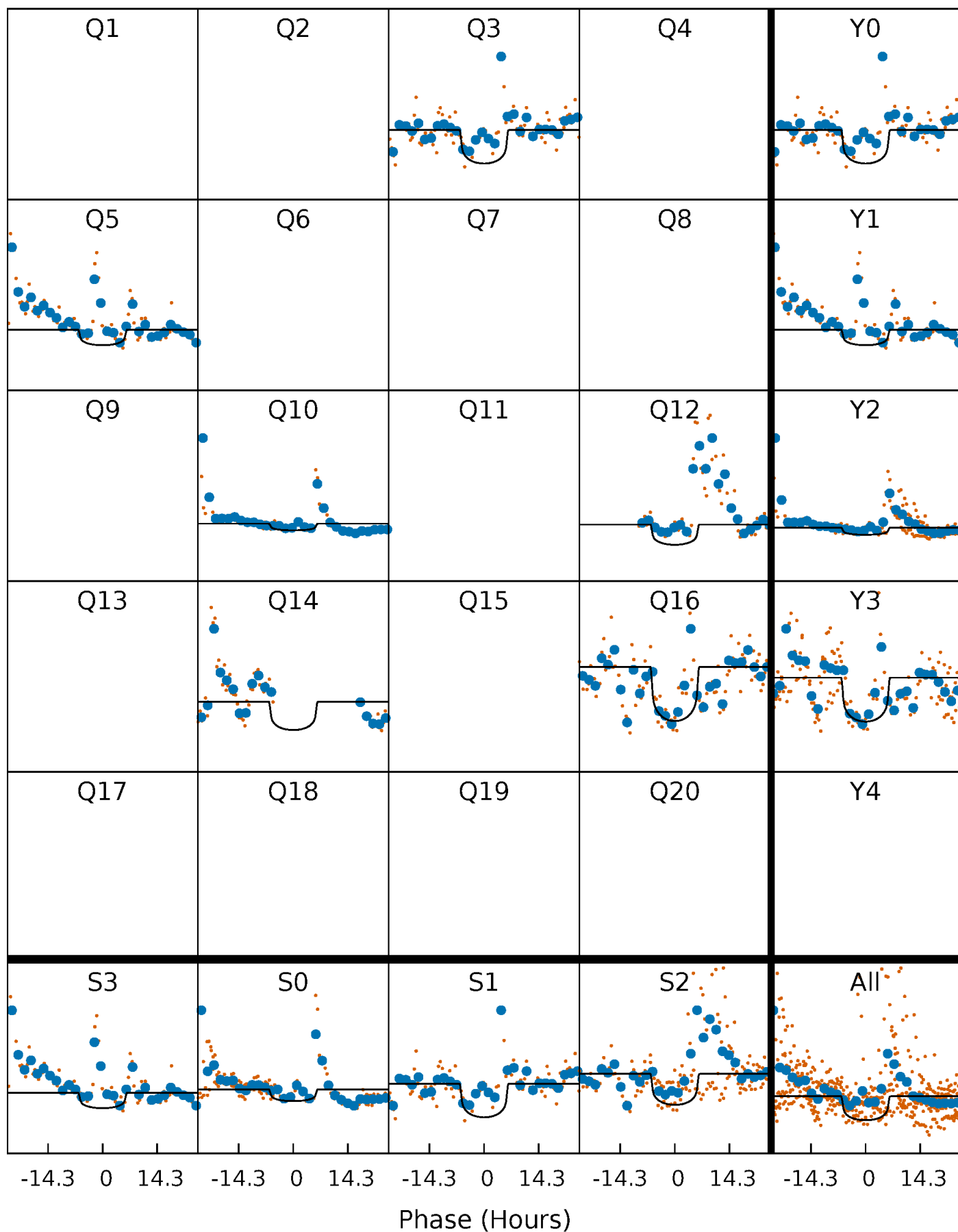
PDC Quarter-Phased Transit Curves

TCE 010536761-03 P=198.531275 Days $T_0=325.105692$ (BKJD)



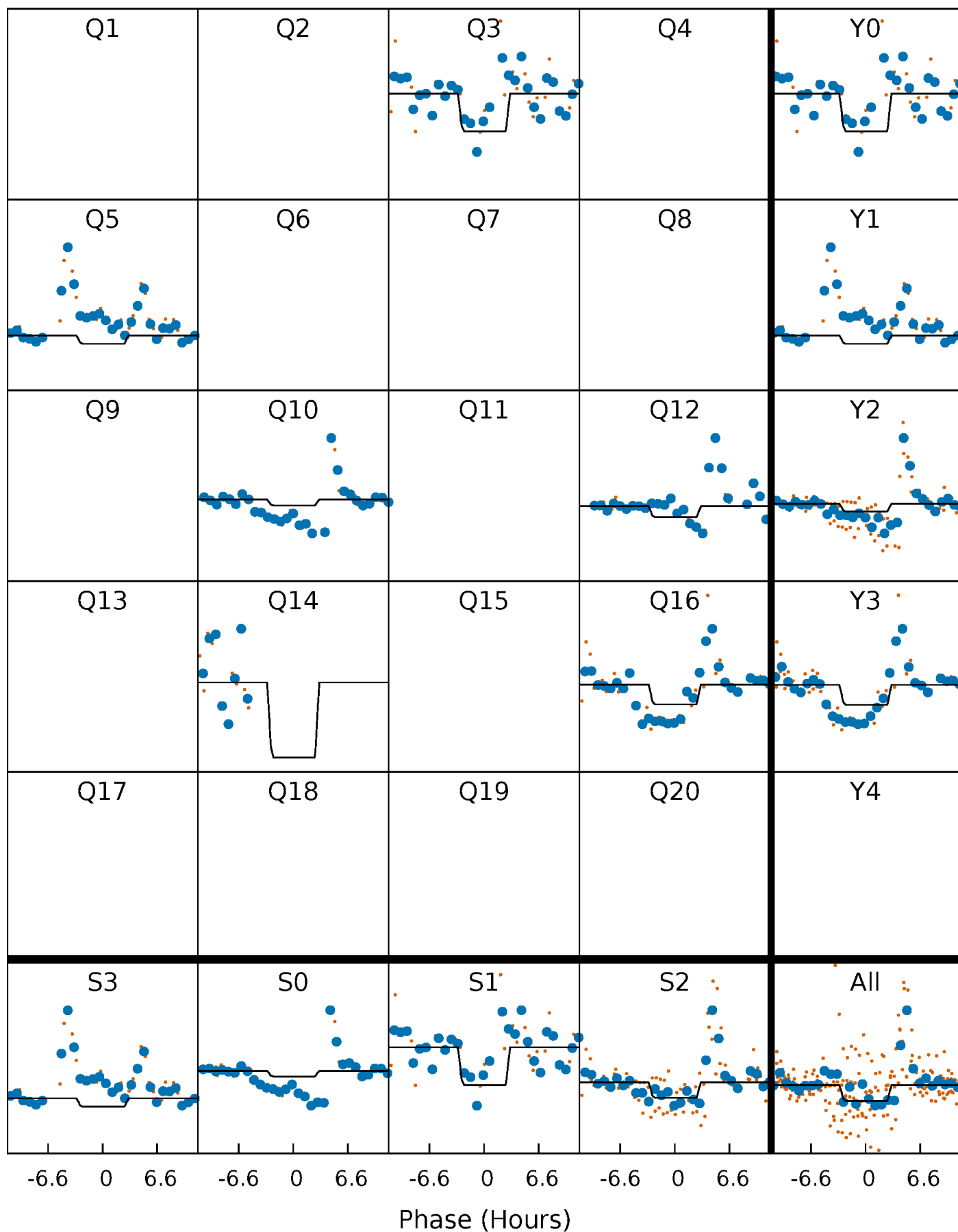
DV Quarter-Phased Transit Curves

TCE 010536761-03 $P=198.531275$ Days $T_0=325.105692$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

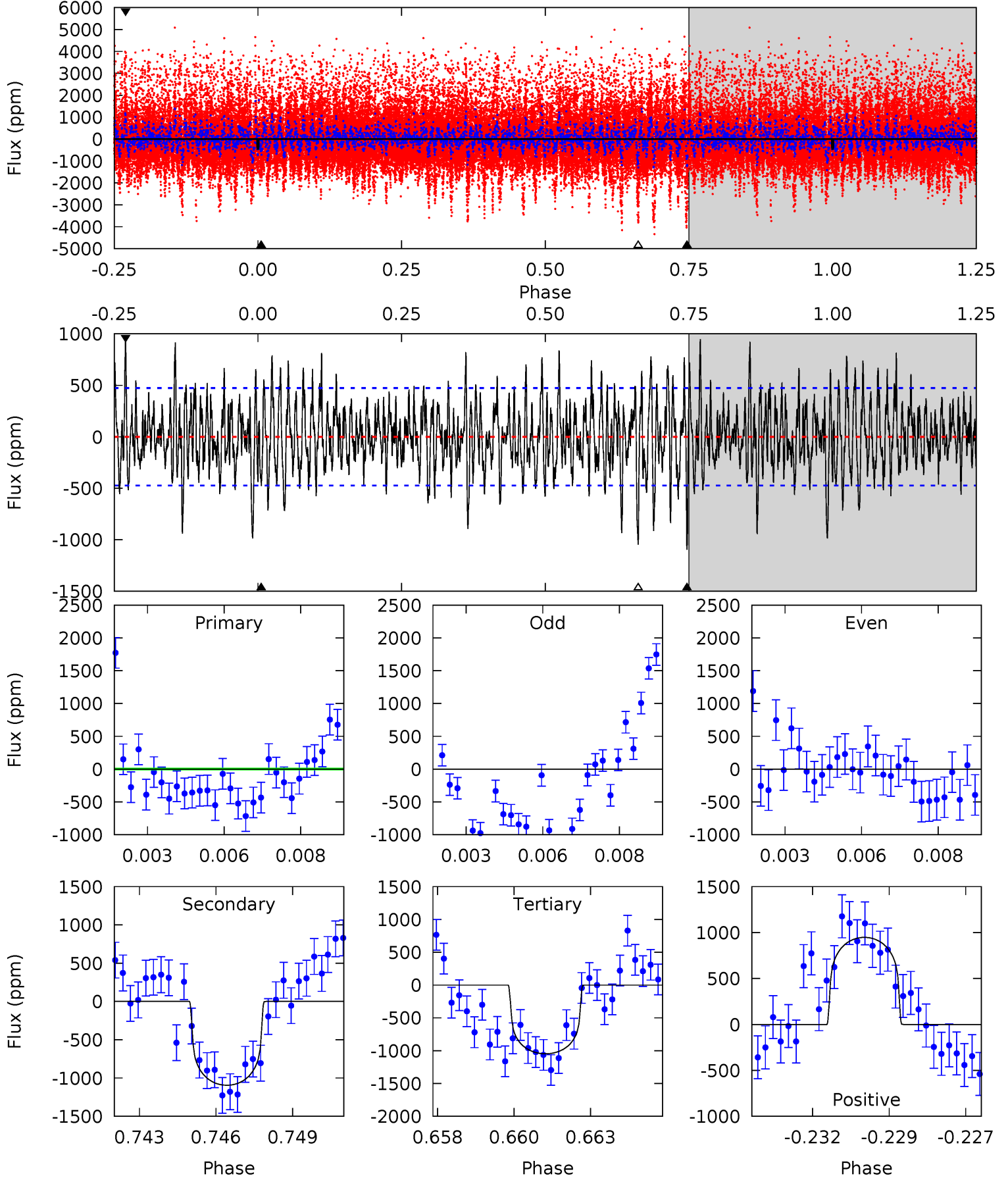
TCE 010536761-03 $P=198.505224$ Days $T_0=325.240234$ (BKJD)



DV Model-Shift Uniqueness Test

010536761-03, P = 198.531275 Days, E = 126.574417 Days

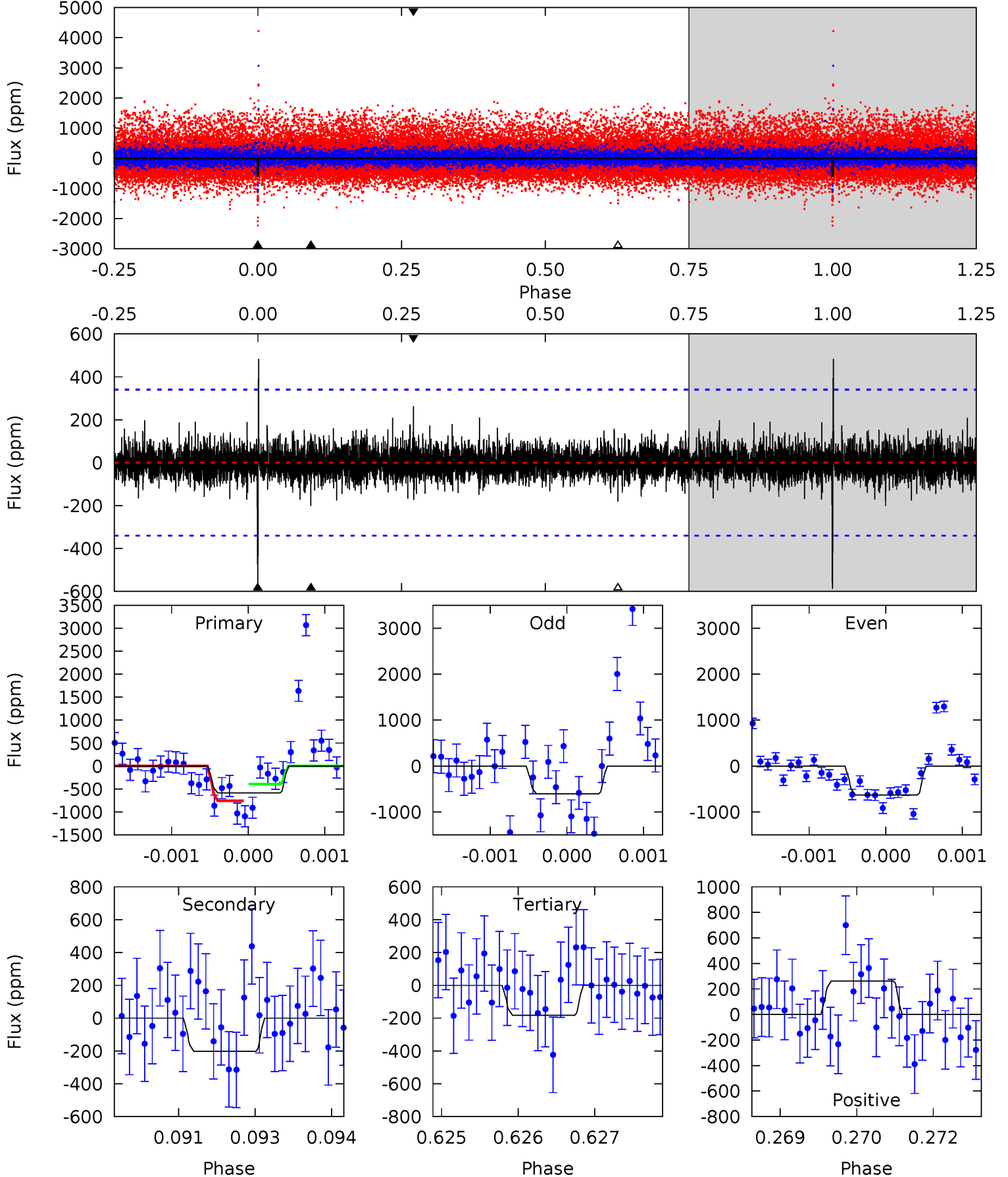
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.97	12.2	11.7	10.6	5.27	2.99	3.32	-6.70	-5.58	0.52	1.64	1.94	0.10	0.46	1.21



Alt Model-Shift Uniqueness Test

010536761-03, P = 198.505224 Days, E = 126.735010 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.34	3.21	2.89	4.18	5.41	3.22	0.80	6.45	5.16	0.32	-0.97	0.20	2.11	0.45	0



Stellar Parameters For KIC 010536761

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3464^{+45}_{-45}	$4.885^{+0.036}_{-0.030}$	$0.000^{+0.100}_{-0.100}$	$0.363^{+0.032}_{-0.032}$	$0.370^{+0.041}_{-0.041}$	$10.890^{+1.912}_{-1.628}$
	+1%/-1%	+1%/-1%	+inf%/-inf%	+9%/-9%	+11%/-11%	+18%/-15%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010536761-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1095 ± 90	$1.31^{+0.63}_{-0.61}$	186^{+4}_{-4}	3469^{+849}_{-406}	$80567^{+208646}_{-43855}$
Alt.	-202 ± 63	$1.08^{+0.65}_{-0.55}$	186^{+4}_{-4}	2844^{+662}_{-339}	20868^{+65956}_{-13236}

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 $A_{obs} \gg 1.0$

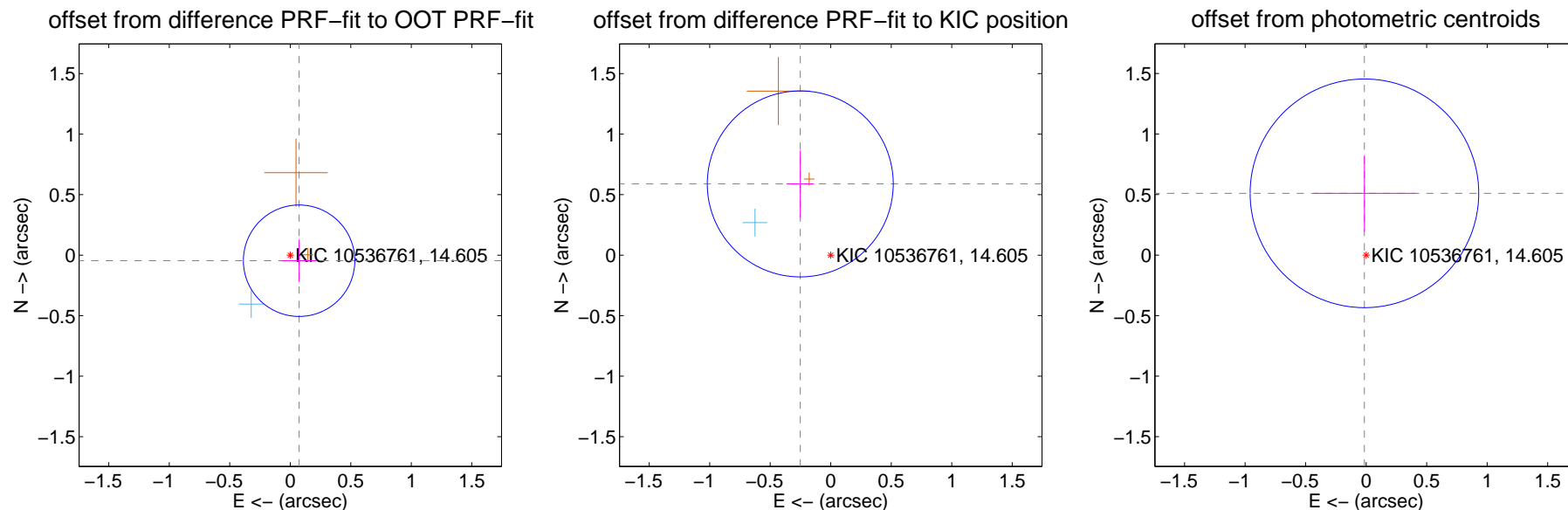
DV Centroid Data

Supplemental centroid analysis for 010536761-03. Kepler magnitude: 14.61. Transit SNR 7.01

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.74 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.086 ± 0.153	0.56	-0.073 ± 0.144	-0.046 ± 0.175
PRF-fit source offset from KIC position	0.640 ± 0.256	2.50	0.252 ± 0.113	0.589 ± 0.277
photometric centroid source offset	0.51 ± 0.31	1.62	0.01 ± 0.42	0.51 ± 0.31

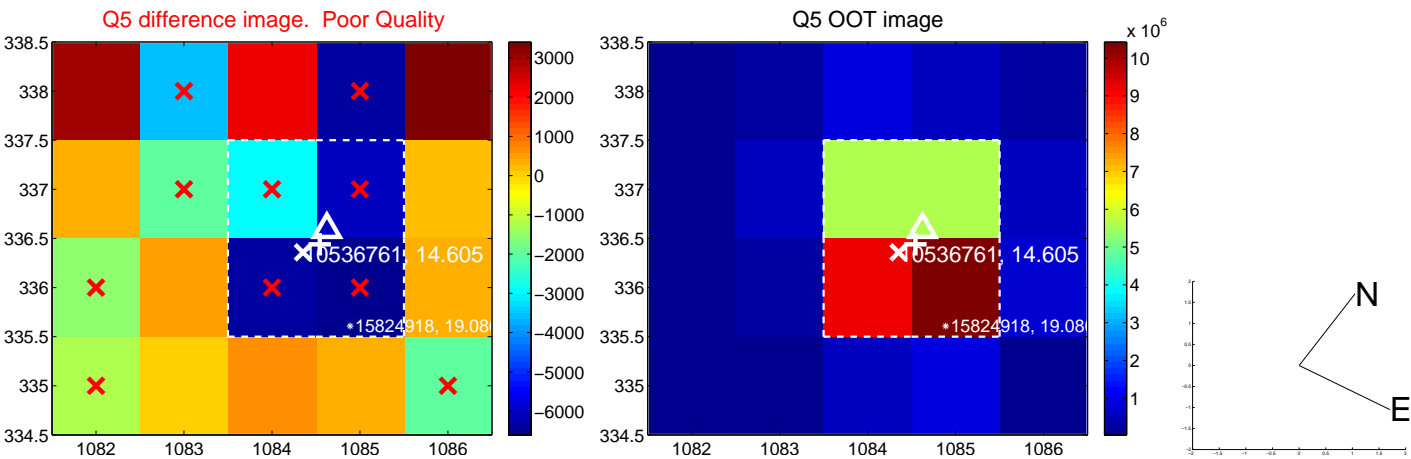


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

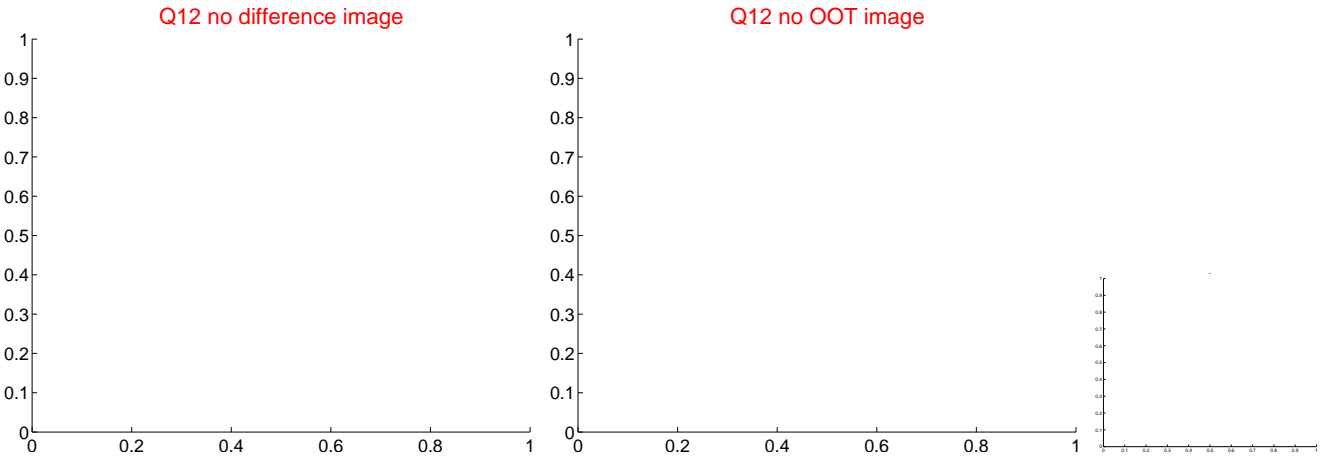
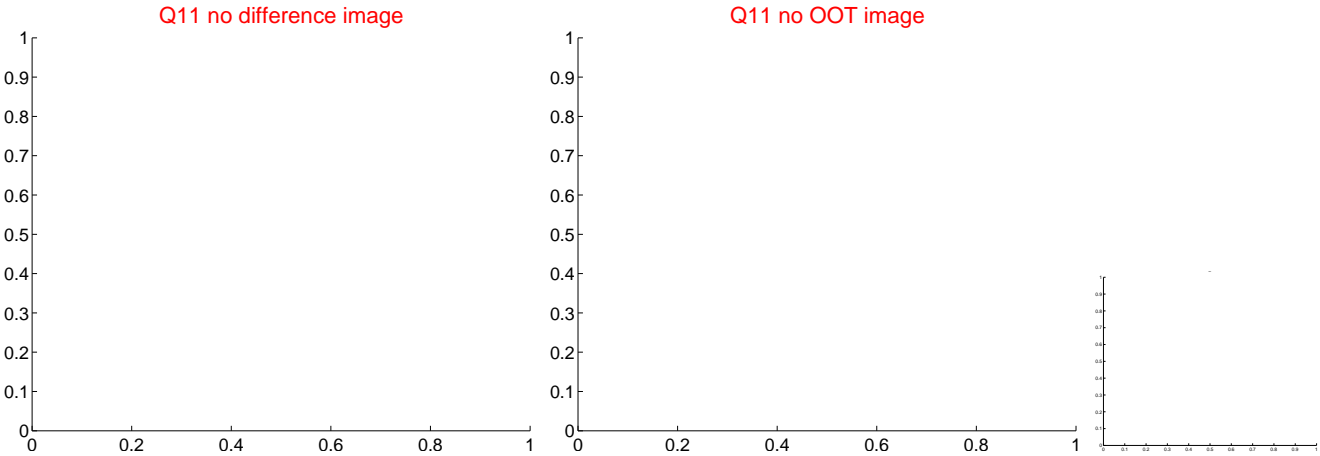
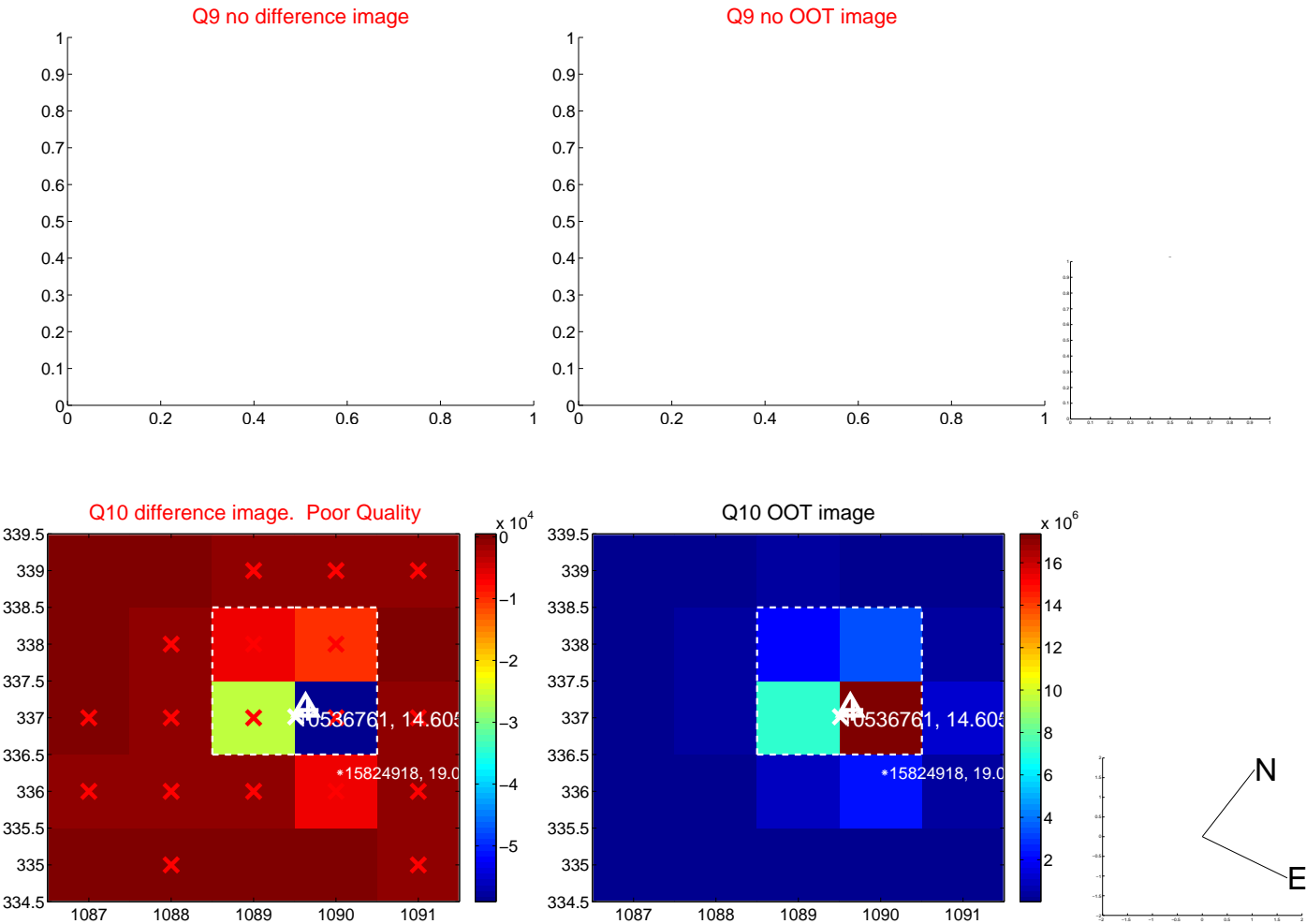
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



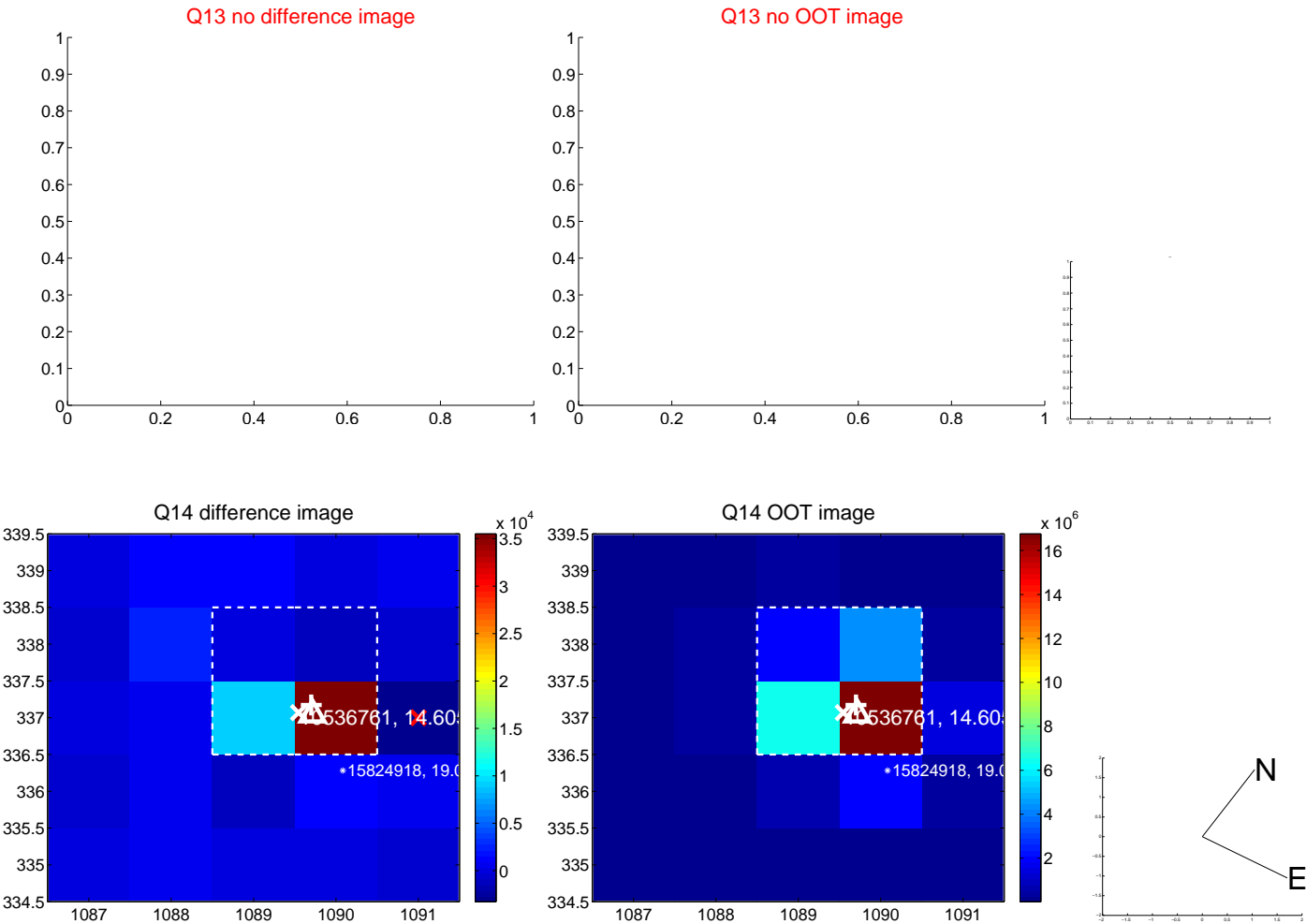
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



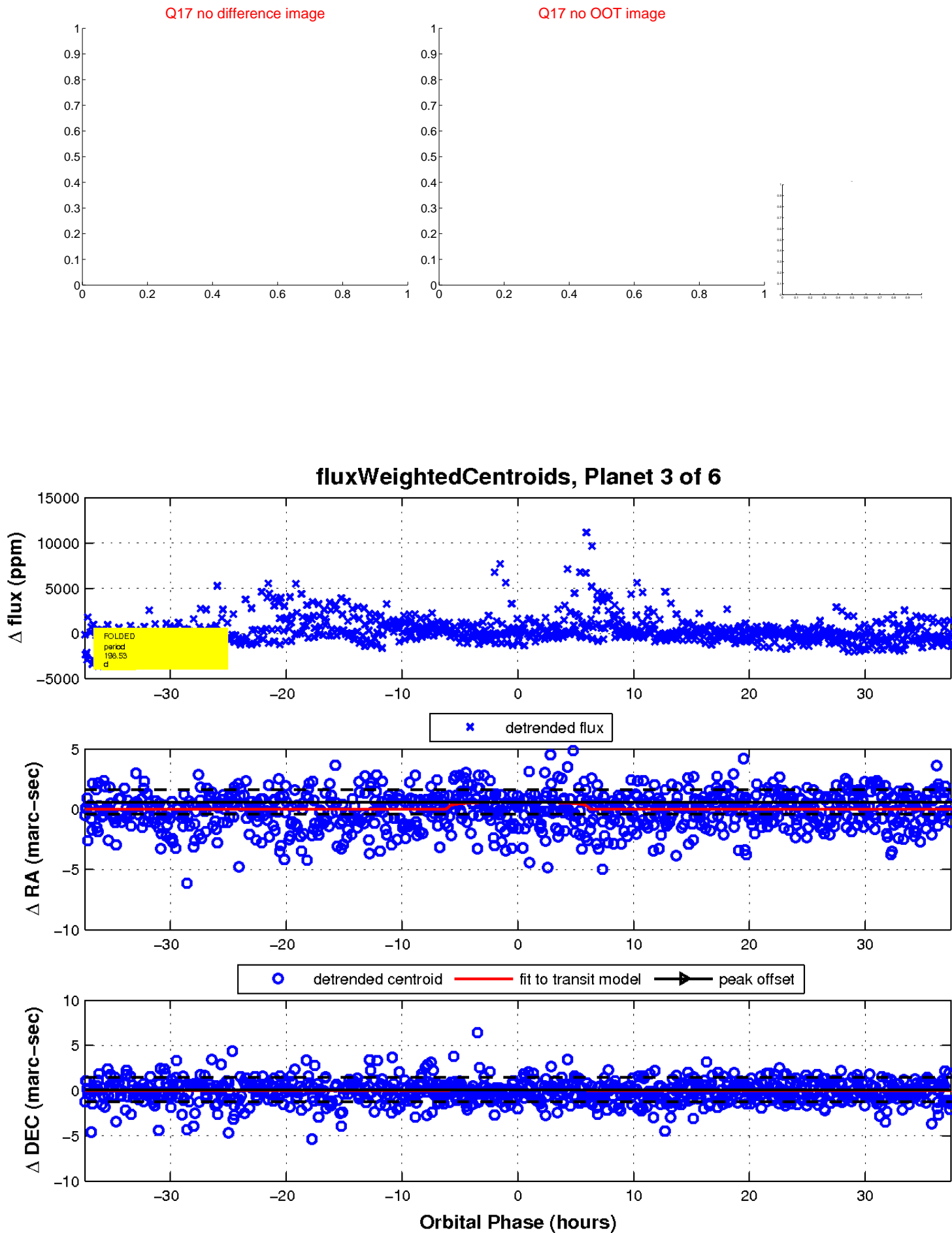
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

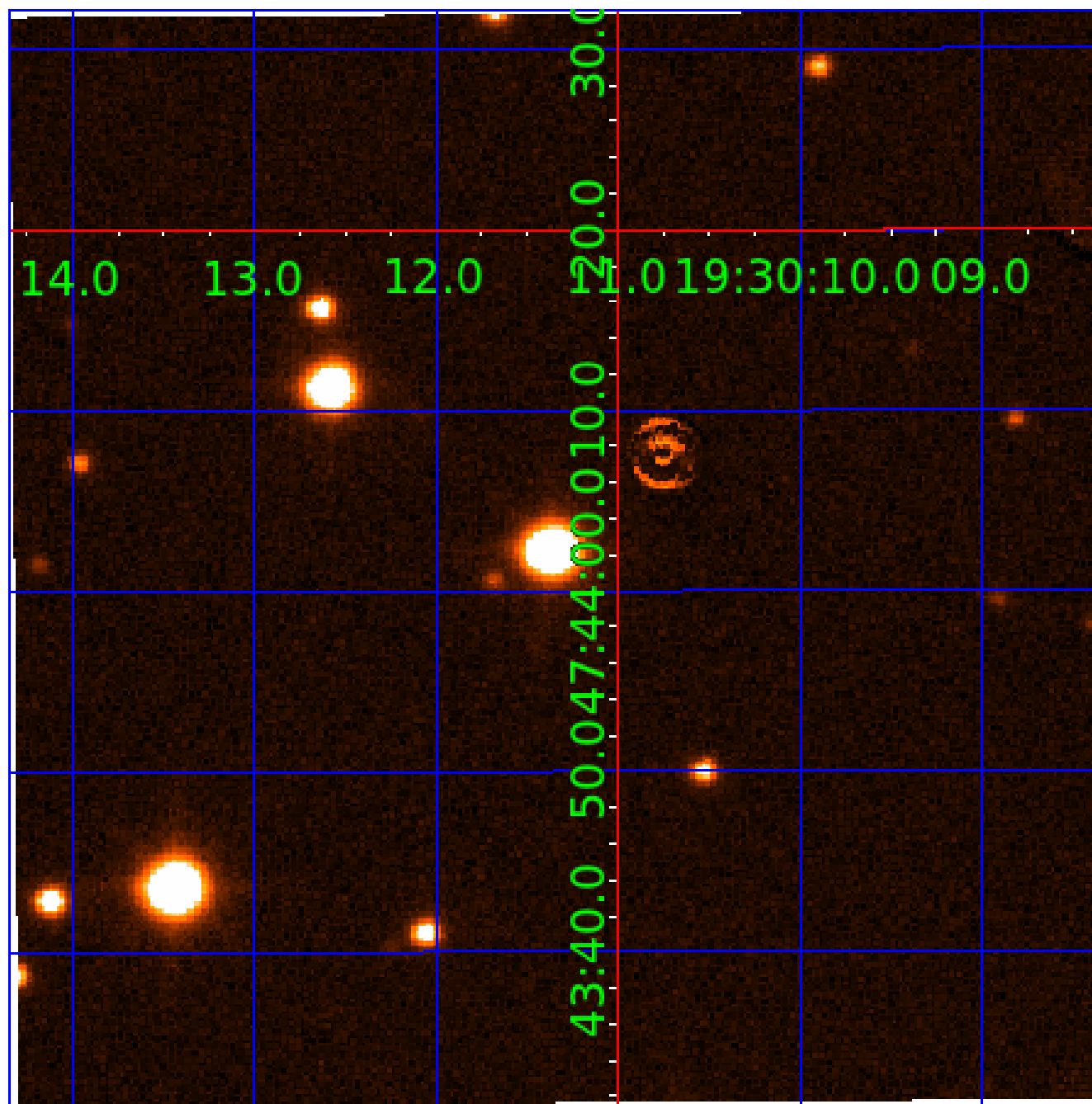


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010536761

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})
010536761-01	OBS	No	511.116450	154.246246	1606.5	5.275	13.9	7.3	0.36	3464	1.51	0.02
010536761-02	OBS	No	541.306589	235.415726	1914.4	7.460	14.0	7.4	0.36	3464	1.67	0.02
010536761-03	OBS	No	198.531275	325.105692	1281.5	12.491	15.5	7.0	0.36	3464	1.28	0.07
010536761-04	OBS	No	177.099312	195.803042	1157.1	3.993	11.4	7.7	0.36	3464	1.59	0.09
010536761-05	OBS	No	246.234681	219.942313	3082.0	38.499	12.0	8.9	0.36	3464	3.85	0.06
010536761-06	OBS	No	210.300550	323.349581	930.7	2.500	11.3	-1.0	0.36	3464	1.09	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010536761-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_MEAS
010536761-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
010536761-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010536761-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS
010536761-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010536761-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

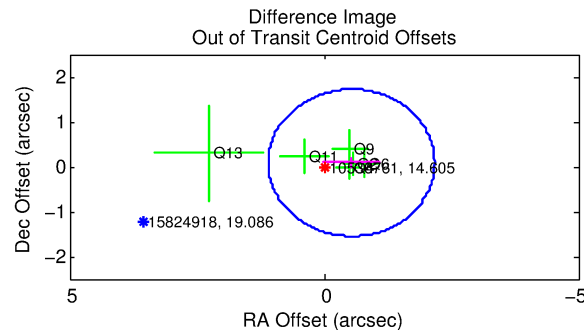
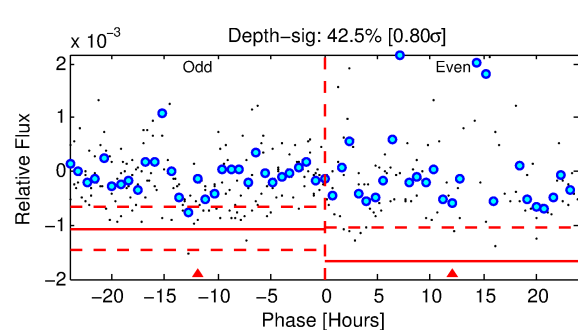
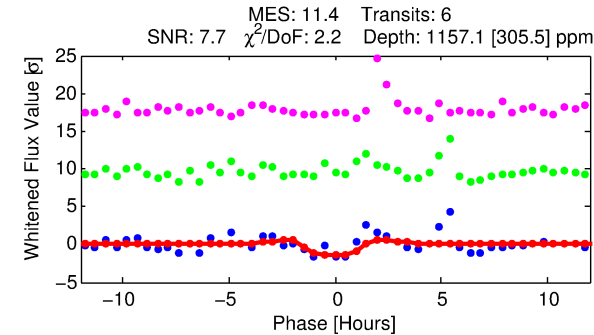
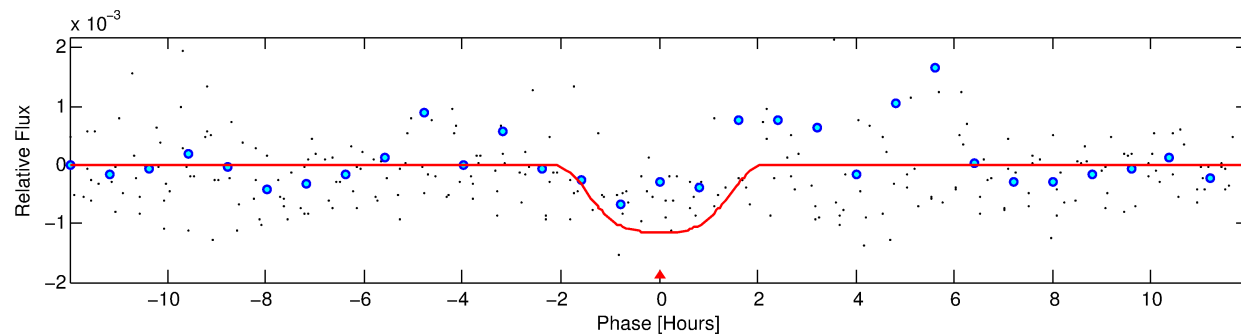
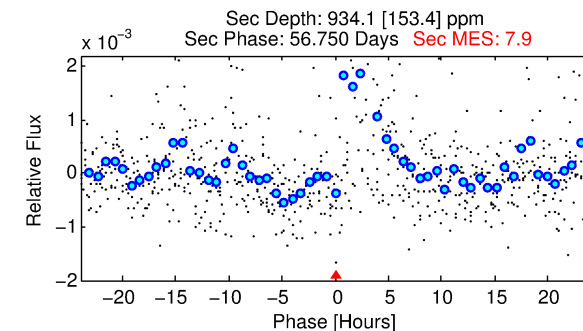
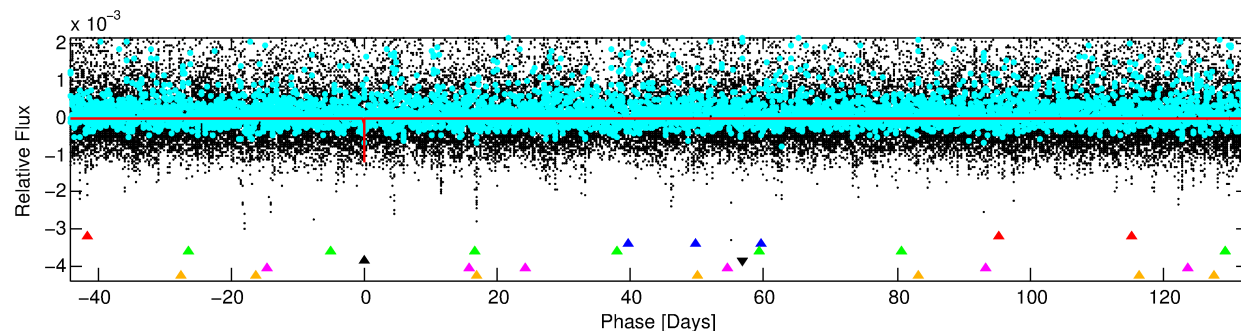
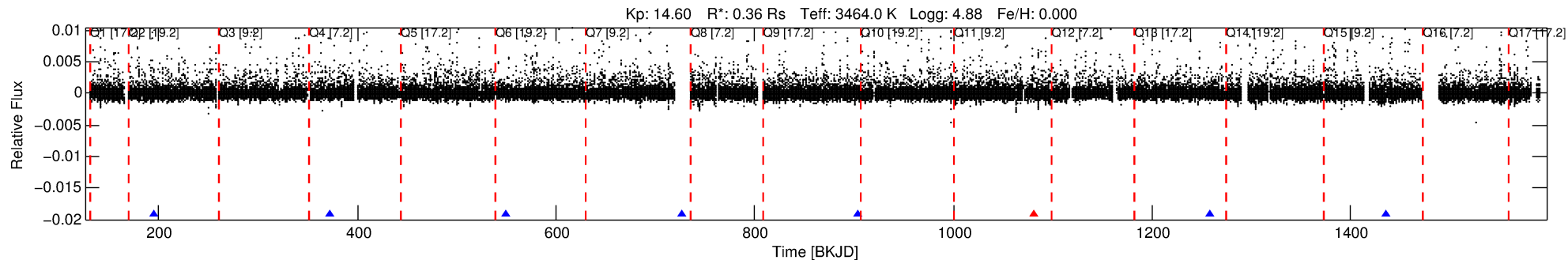
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010536761-04

No Significant Match Found

DV One-Page Summary

KIC: 10536761 Candidate: 4 of 6 Period: 177.099 d



DV Fit Results:

Period = 177.09931 [0.00337] d
Epoch = 195.8030 [0.0123] BKJD
Rp/R* = 0.0401 [0.0077]
a/R* = 145.90 [51.07]
b = 0.95 [0.04]
Seff = 0.09 [0.01]
Teq = 138 [3] K
Rp = 1.59 [0.33] Re
a = 0.4427 [0.0287] AU
Ag = 39918.12 [16909.27] [2.36σ]
Teff = 3024 [317] K [9.11σ]

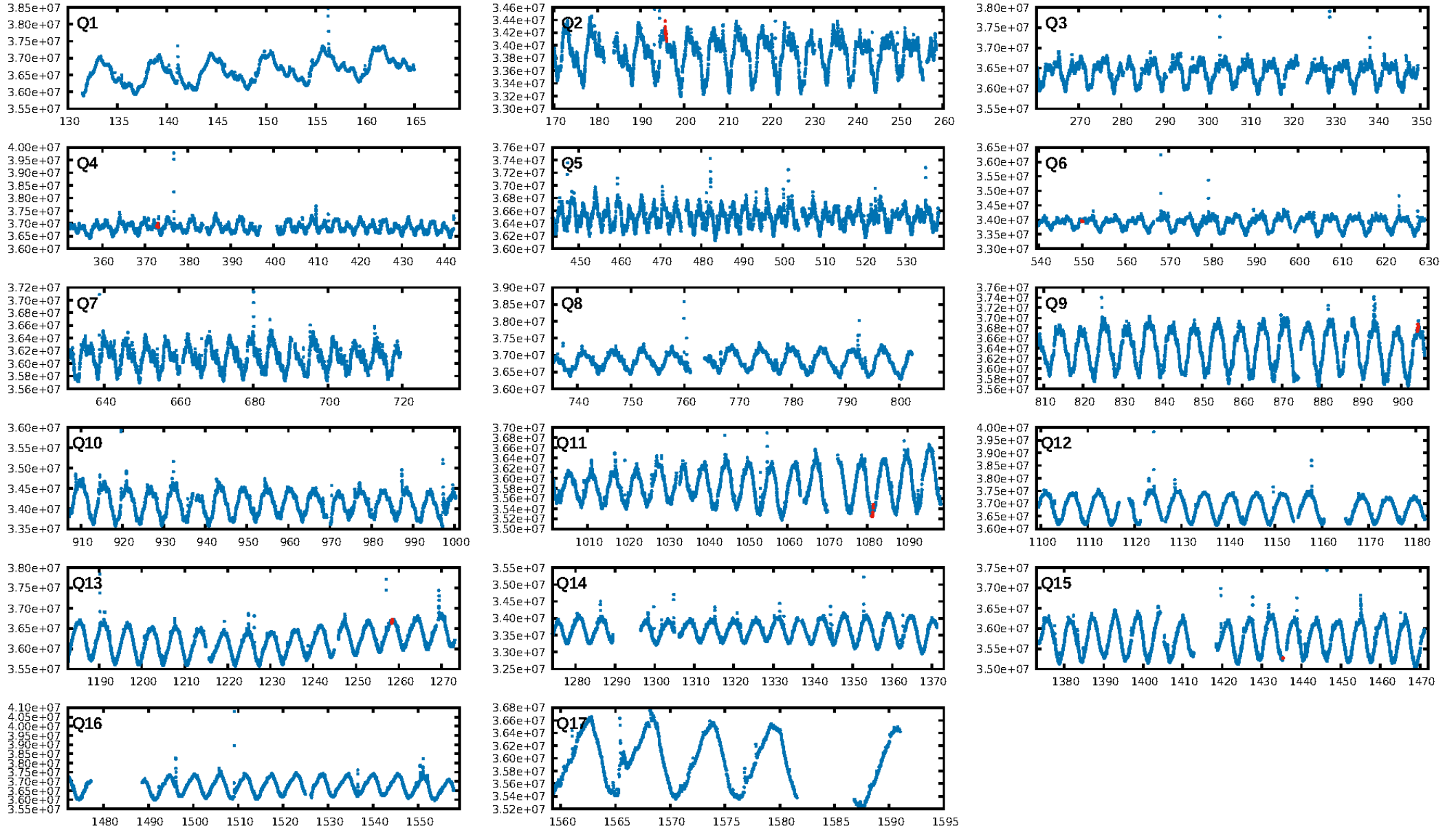
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [39.22σ]
ModelChiSquare2-sig: 4.6%
ModelChiSquareGof-sig: 26.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.83 [5/6]
GhostDiagnostic-chr: 0.6844
Centroid-sig: 92.9%
Centroid-so: 0.891 arcsec [1.33σ]
OotOffset-rm: 0.543 arcsec [1.00σ]
KicOffset-rm: 0.626 arcsec [2.80σ]
OotOffset-st: 2/1/1/2 [6]
KicOffset-st: 2/1/1/2 [6]
DiffImageQuality-fgm: 0.67 [4/6]
DiffImageOverlap-fno: 1.00 [6/6]

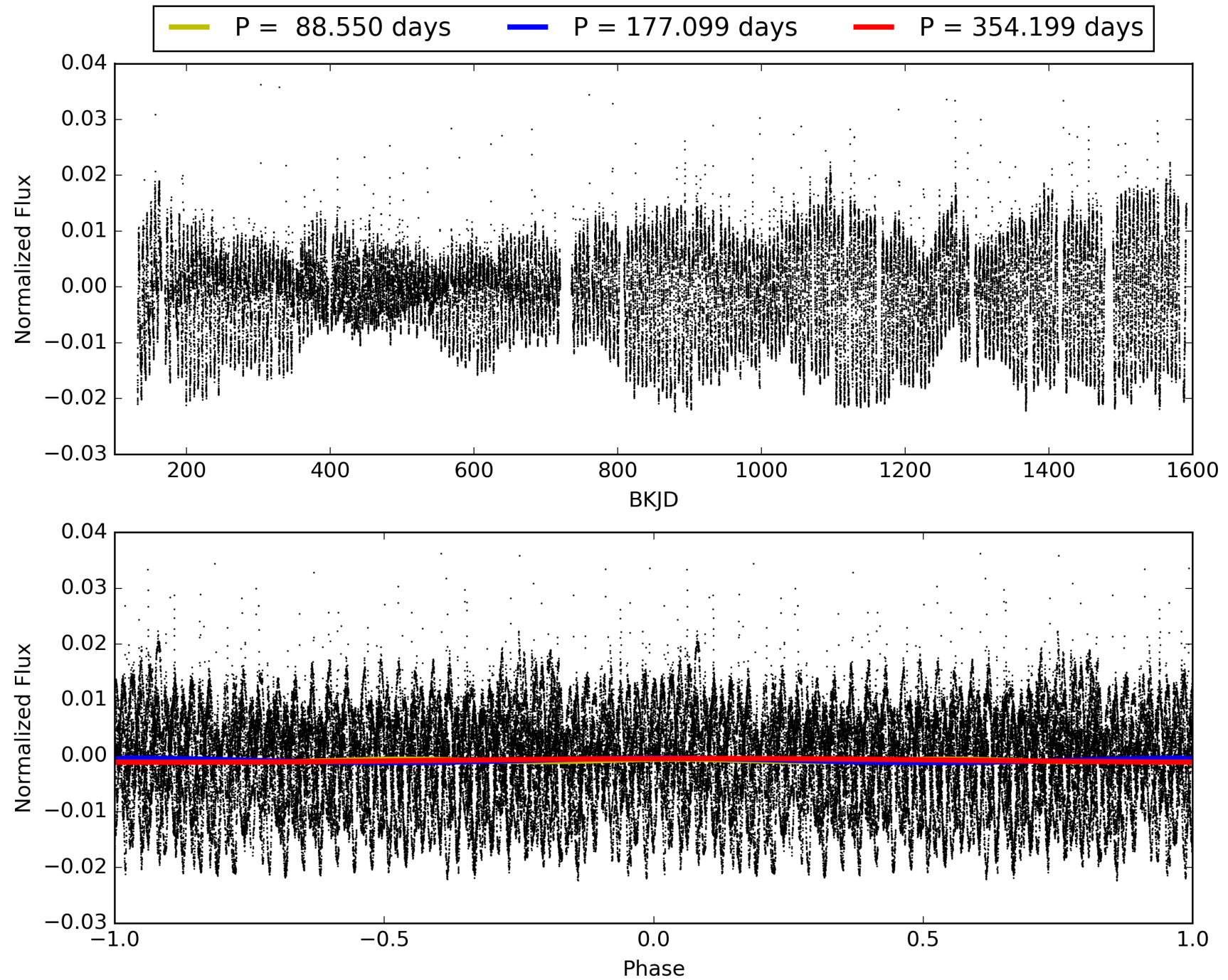
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010536761-04, PDC Light Curves

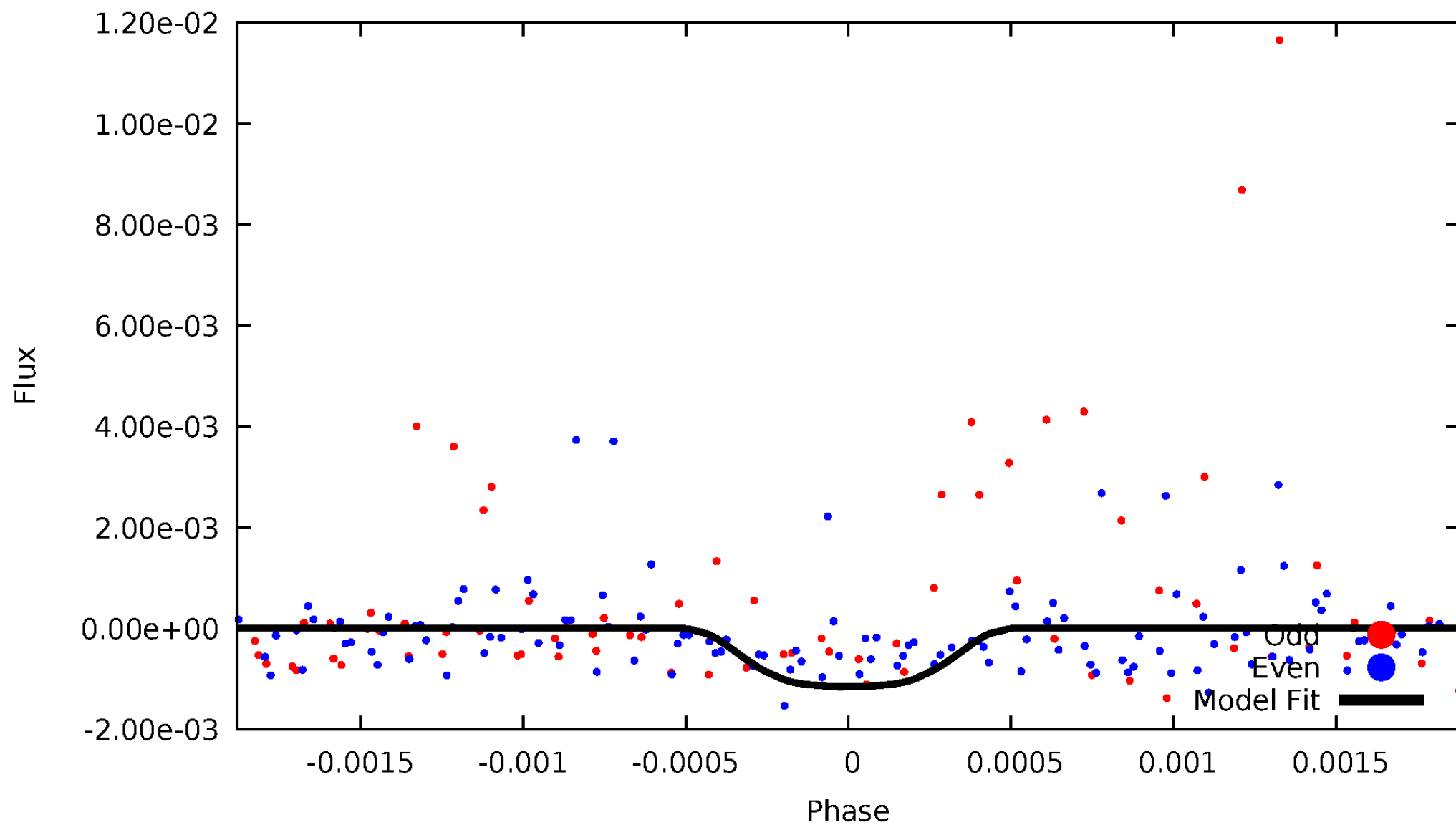


TCE 010536761-04



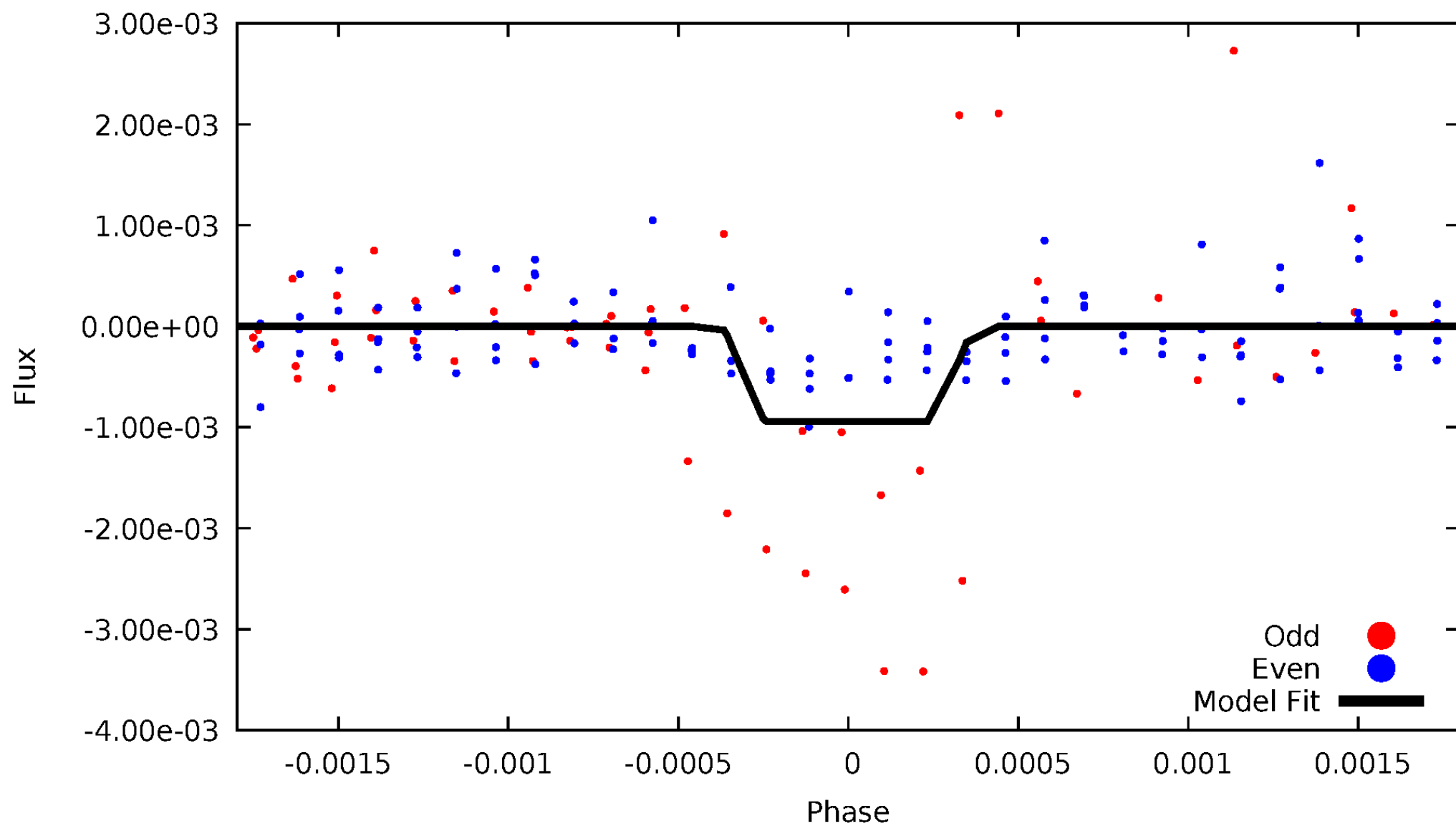
DV Odd/Even

TCE 010536761-04



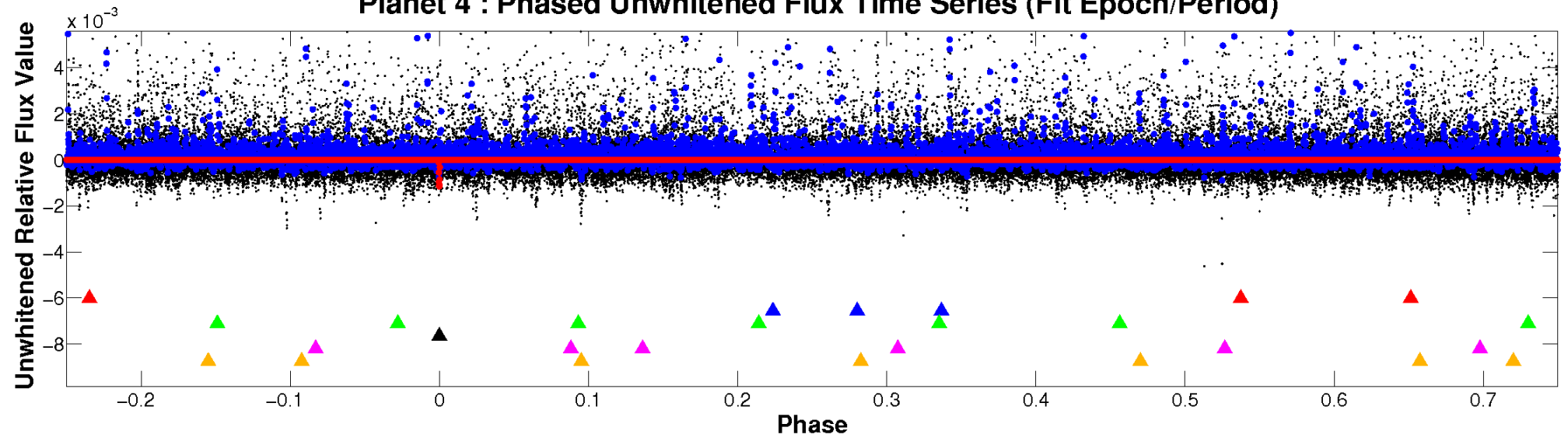
ALT Odd/Even

TCE 010536761-04

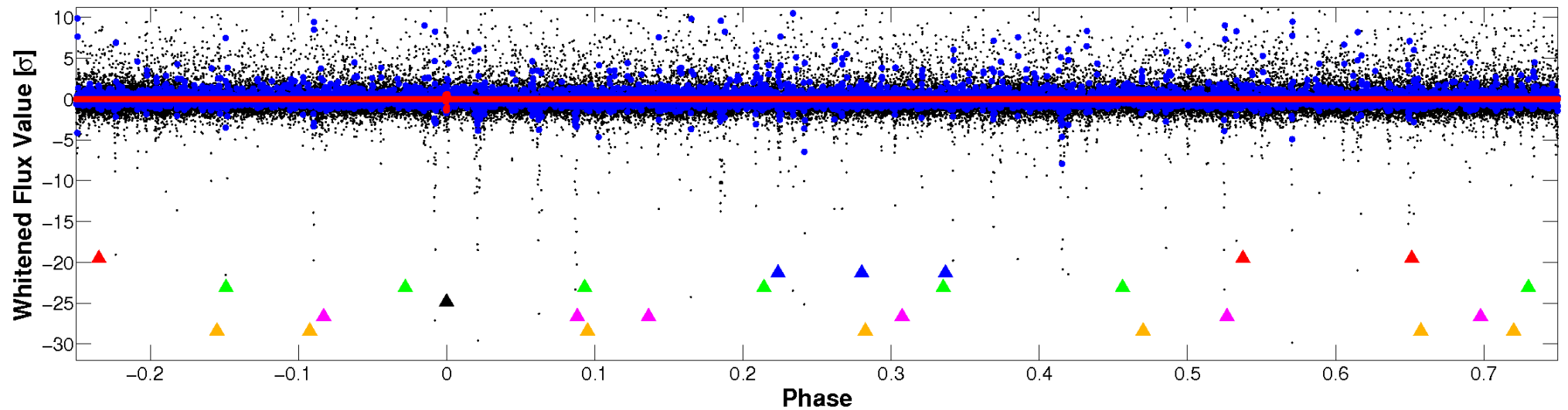


Non-Whitened Vs. Whitened Light Curve

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

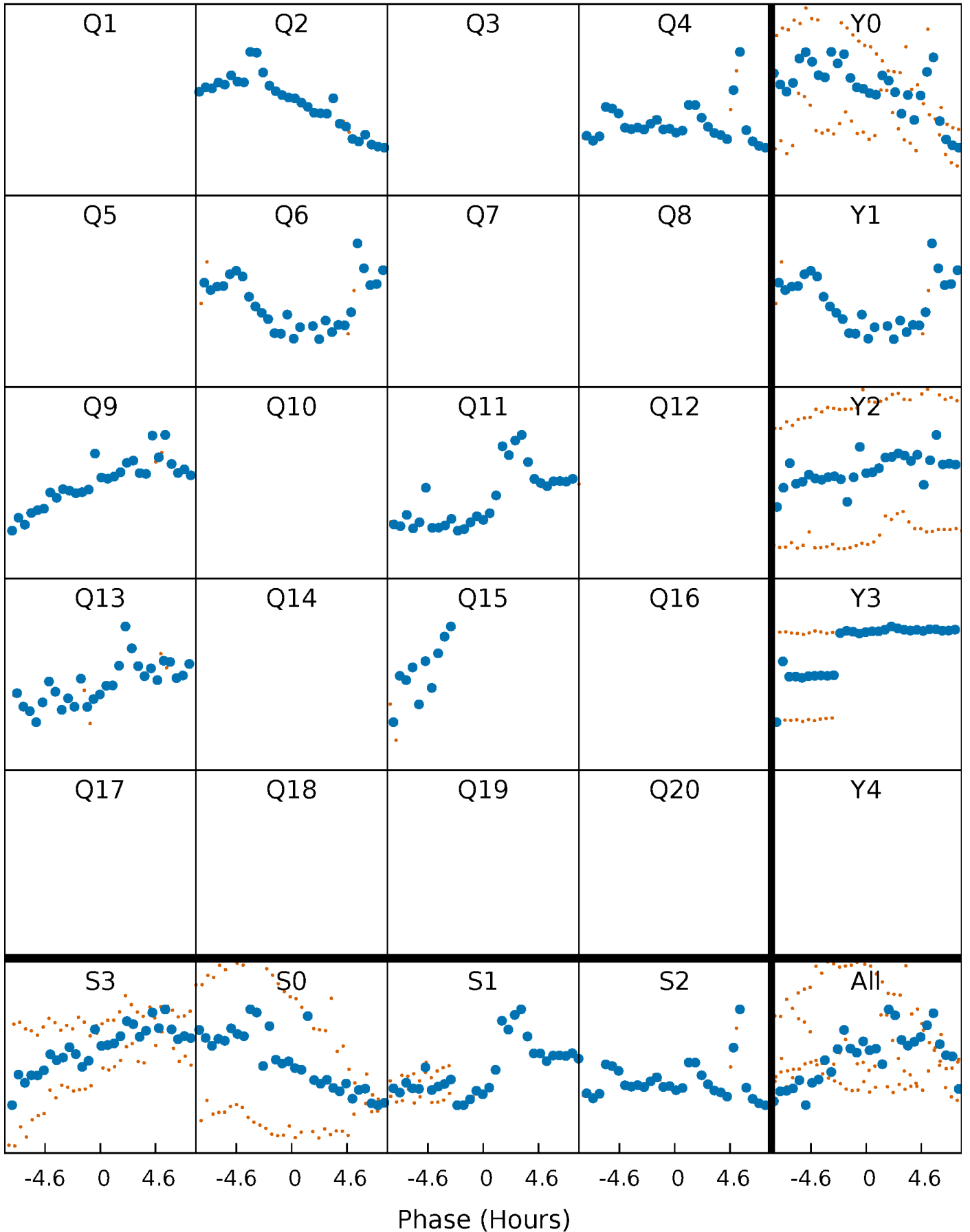


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



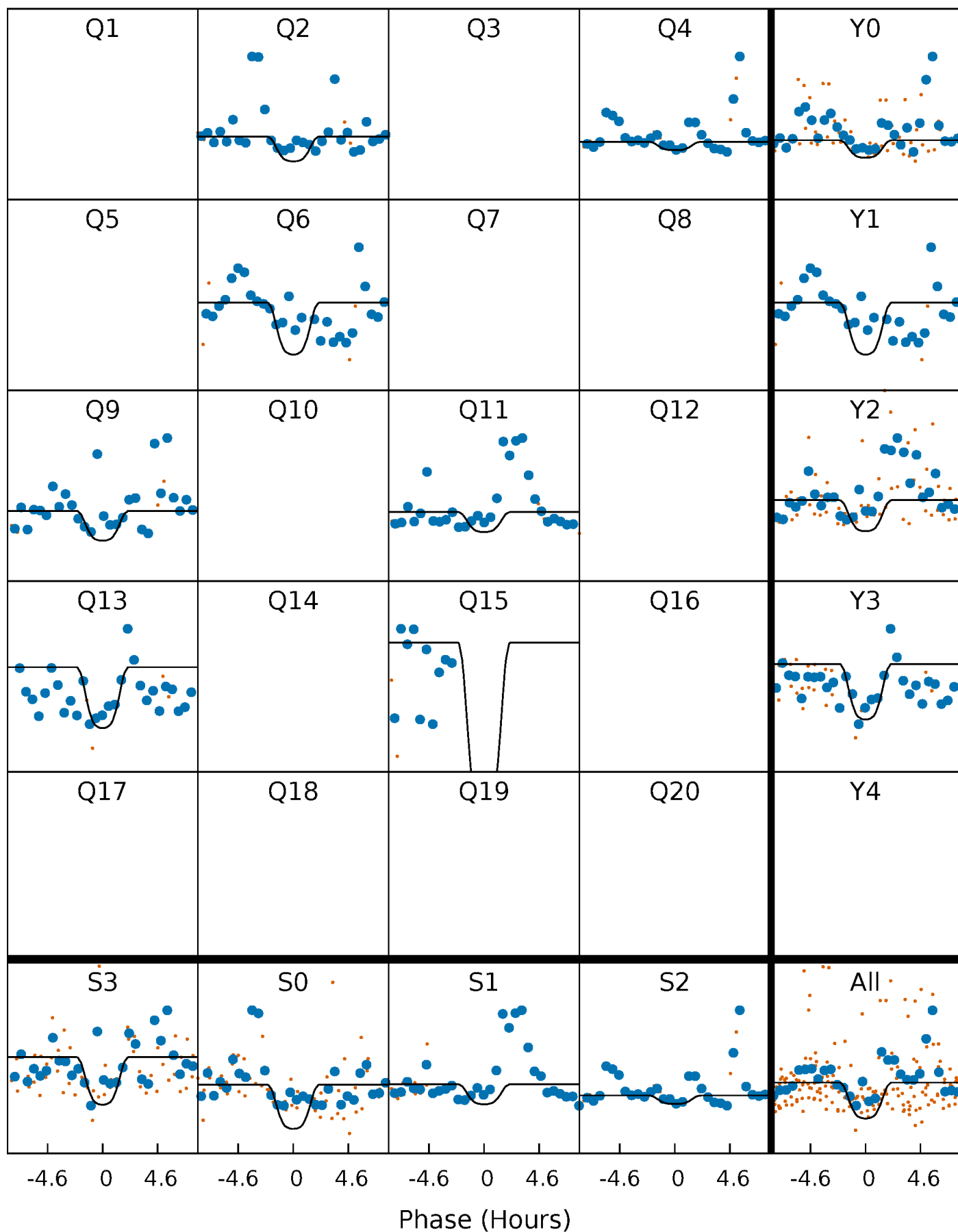
PDC Quarter-Phased Transit Curves

TCE 010536761-04 P=177.099312 Days $T_0=195.803042$ (BKJD)



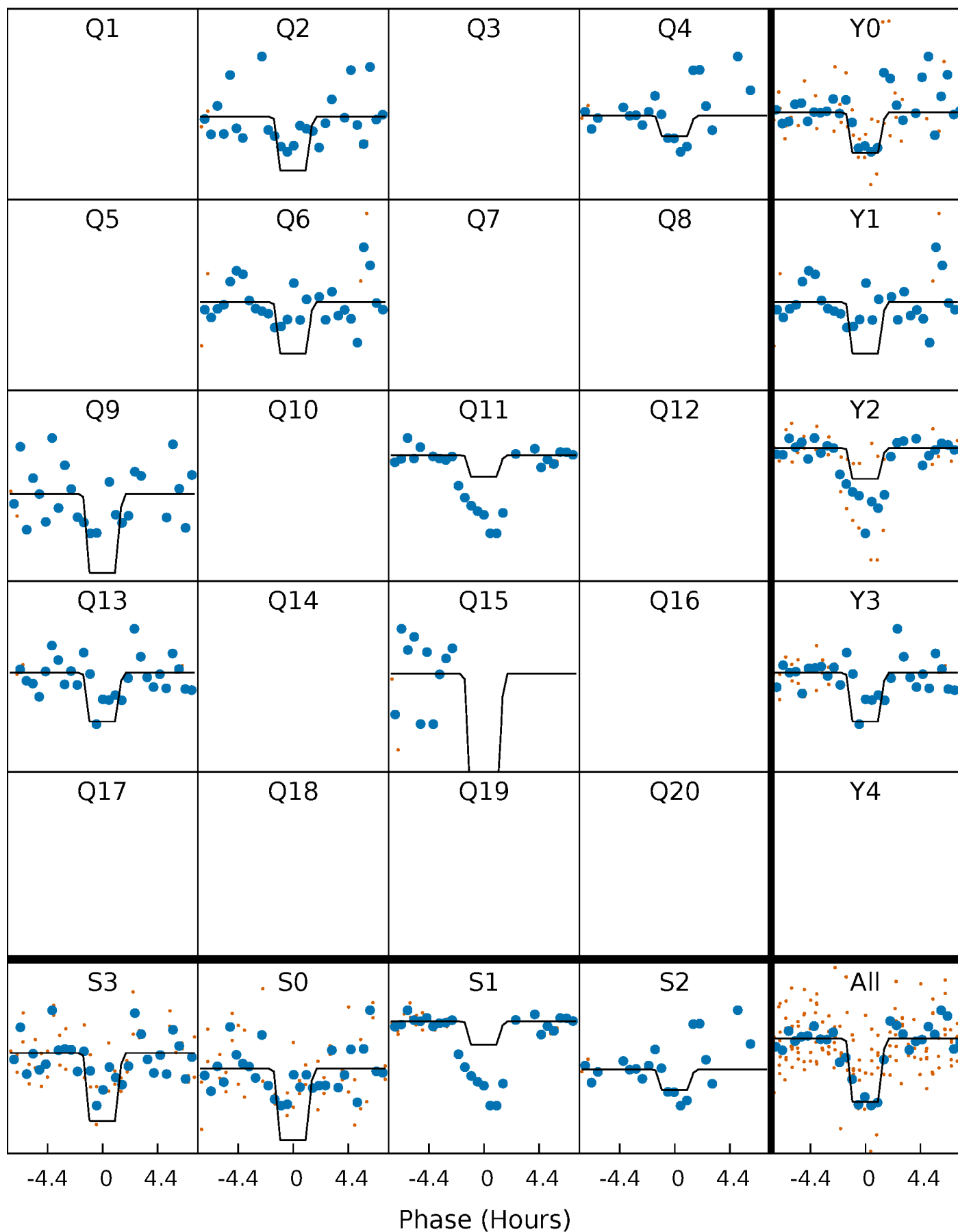
DV Quarter-Phased Transit Curves

TCE 010536761-04 $P=177.099312$ Days $T_0=195.803042$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

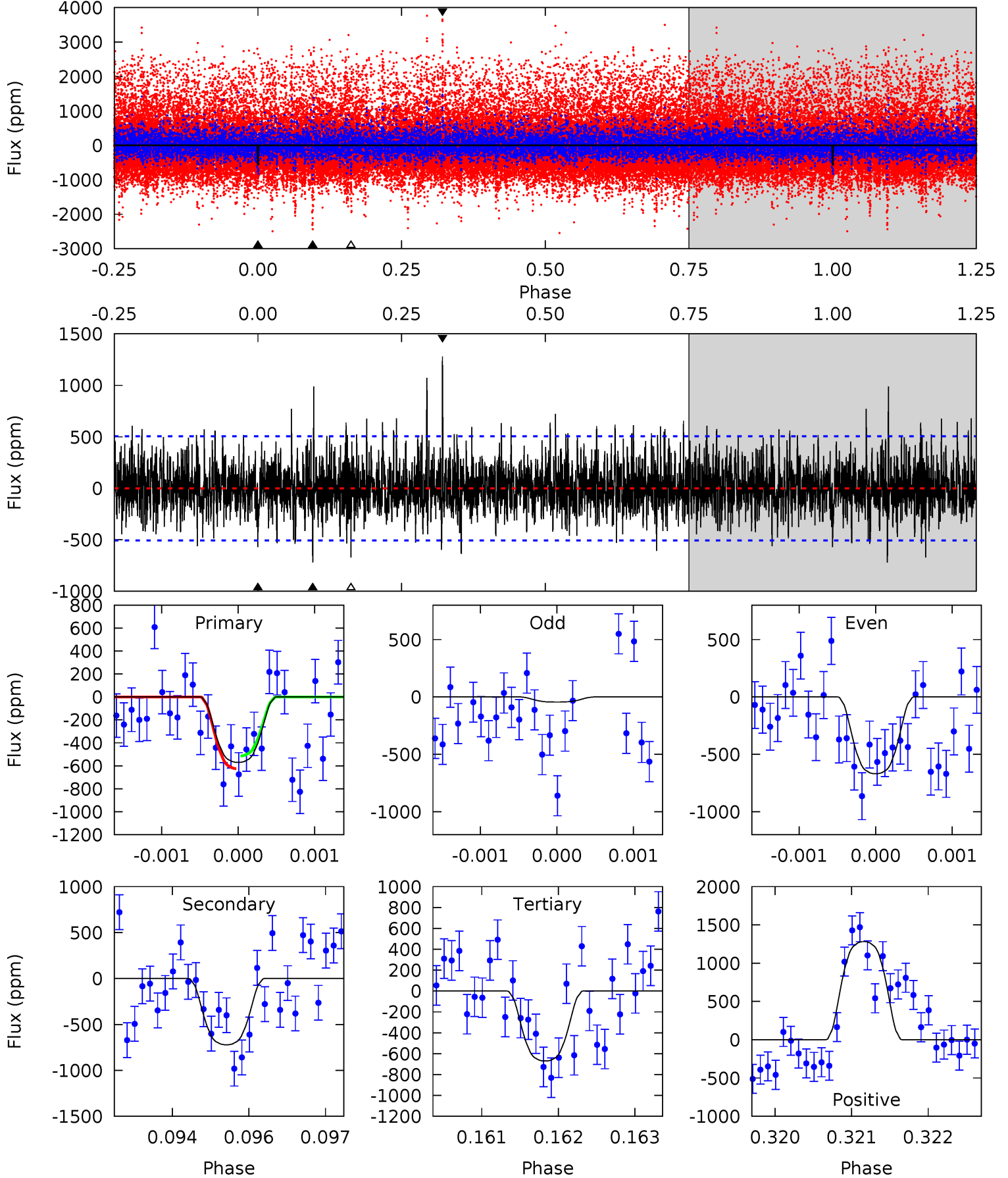
TCE 010536761-04 P=177.097831 Days $T_0=195.797608$ (BKJD)



DV Model-Shift Uniqueness Test

010536761-04, $P = 177.099312$ Days, $E = 18.703730$ Days

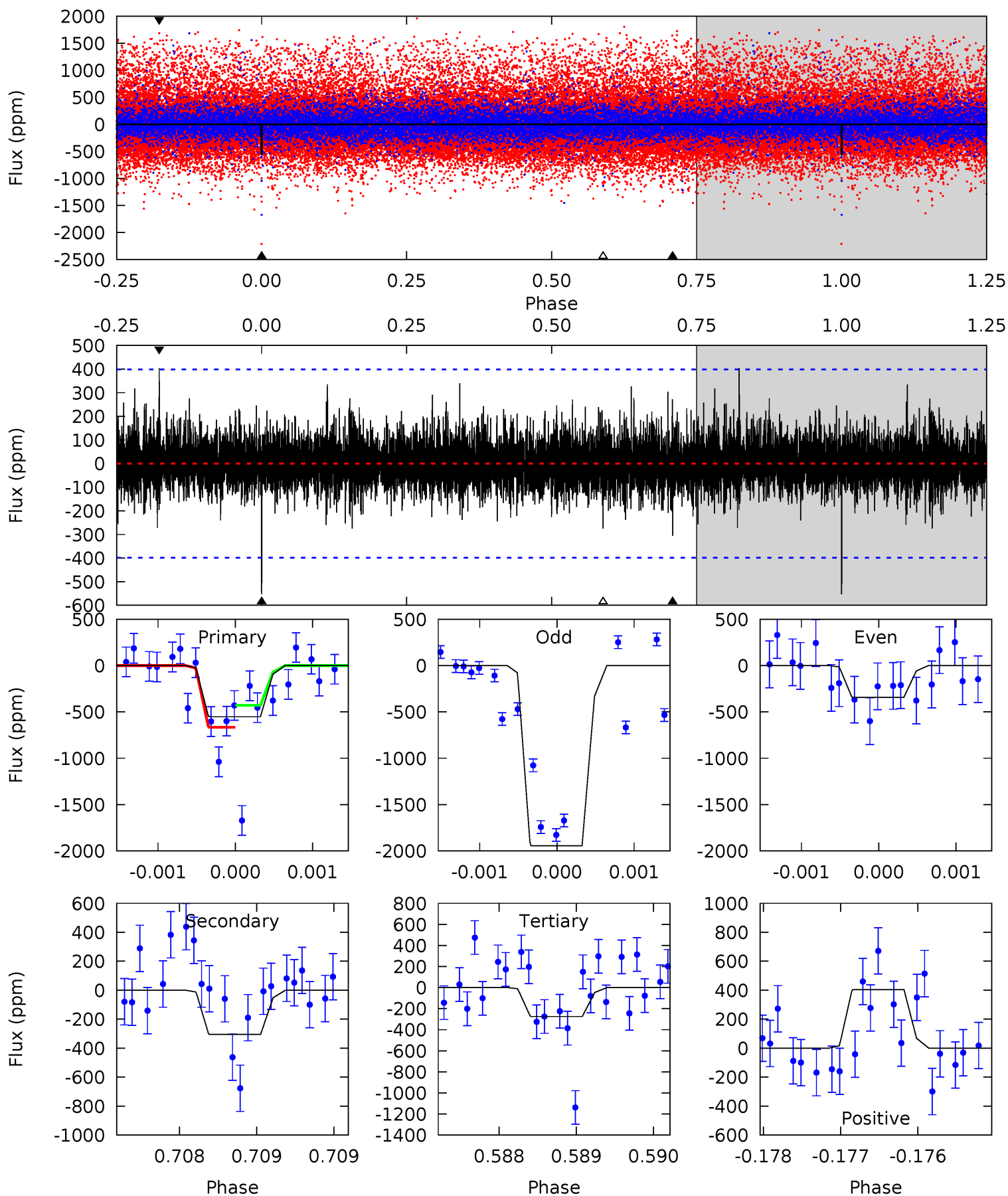
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.12	7.75	7.21	13.8	5.44	3.28	2.08	-1.08	-7.65	0.55	-6.02	3.19	1.47	0.64	0.60



Alt Model-Shift Uniqueness Test

010536761-04, $P = 177.097831$ Days, $E = 18.699777$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.64	4.22	3.80	5.59	5.51	3.38	1.05	3.84	2.05	0.42	-1.37	11.0	1.88	0.42	1.66



Stellar Parameters For KIC 010536761

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3464^{+45}_{-45}	$4.885^{+0.036}_{-0.030}$	$0.000^{+0.100}_{-0.100}$	$0.363^{+0.032}_{-0.032}$	$0.370^{+0.041}_{-0.041}$	$10.890^{+1.912}_{-1.628}$
	+1%/-1%	+1%/-1%	+inf%/-inf%	+9%/-9%	+11%/-11%	+18%/-15%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010536761-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-721 ± 93	$1.57^{+0.32}_{-0.29}$	193^{+4}_{-4}	3072^{+208}_{-160}	30780^{+17150}_{-9345}
Alt.	-305 ± 72	$1.23^{+0.31}_{-0.31}$	193^{+4}_{-4}	2911^{+295}_{-190}	21420^{+18449}_{-8621}

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 $A_{obs} \gg 1.0$

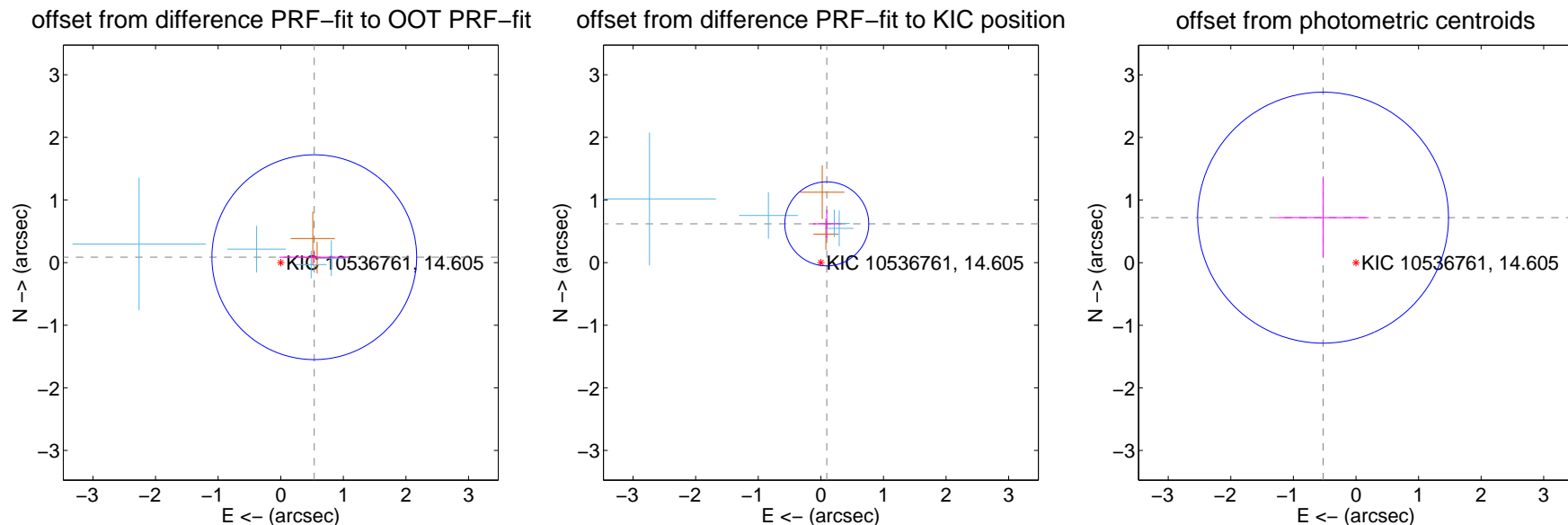
DV Centroid Data

Supplemental centroid analysis for 010536761-04. Kepler magnitude: 14.61. Transit SNR 7.68

There are 4 quarters with good PRF difference image offsets

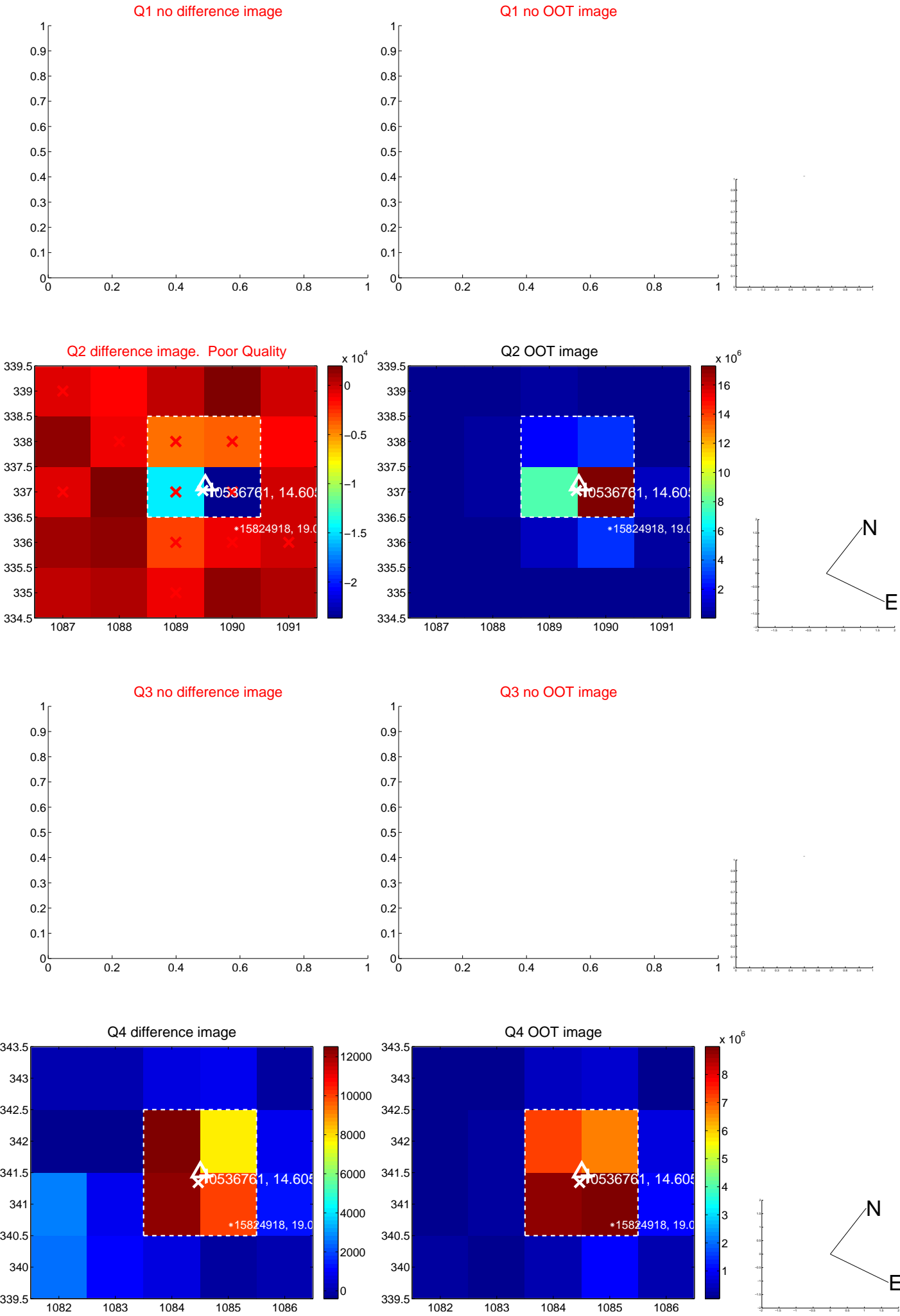
The direct PRF centroid is offset from the target star catalog position by about 0.86 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.543 ± 0.545	1.00	-0.536 ± 0.558	0.086 ± 0.092
PRF-fit source offset from KIC position	0.626 ± 0.224	2.80	-0.094 ± 0.223	0.619 ± 0.224
photometric centroid source offset	0.89 ± 0.67	1.33	0.53 ± 0.73	0.72 ± 0.63



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.

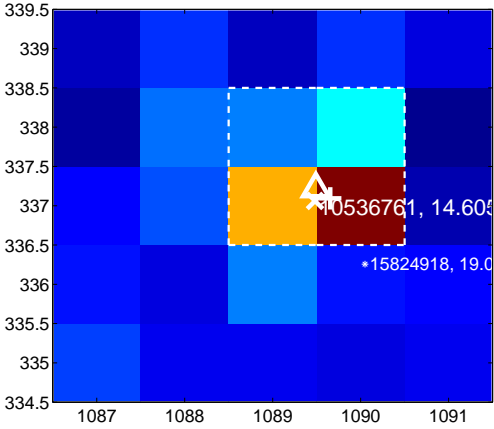
Q5 no difference image



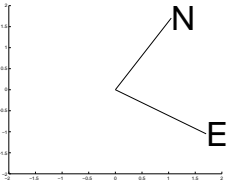
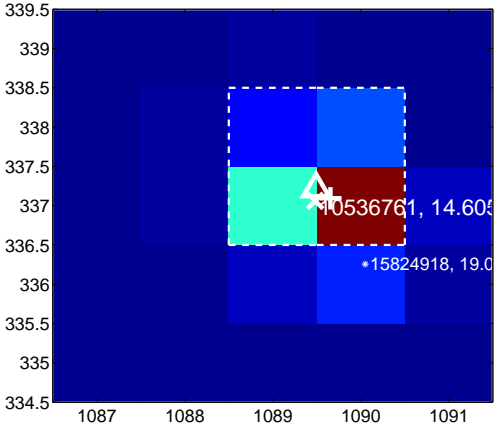
Q5 no OOT image



Q6 difference image



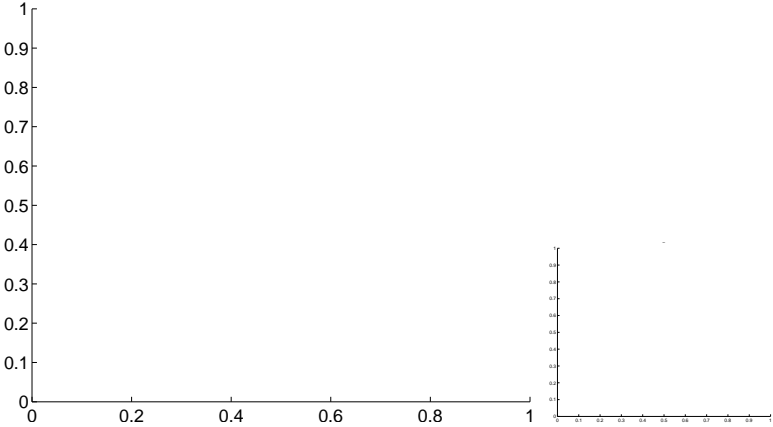
Q6 OOT image



Q7 no difference image



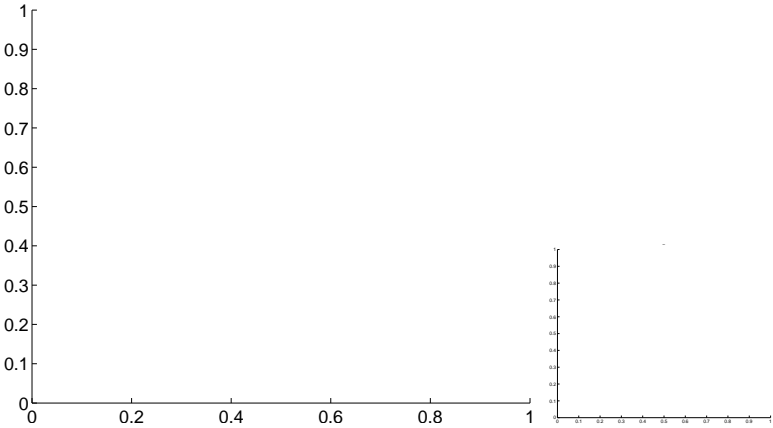
Q7 no OOT image



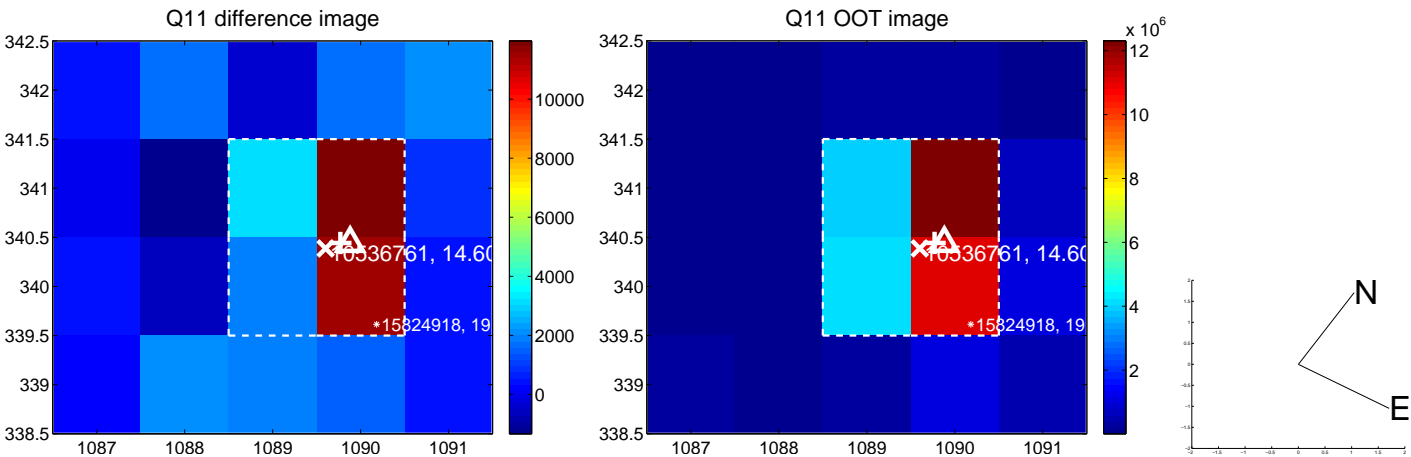
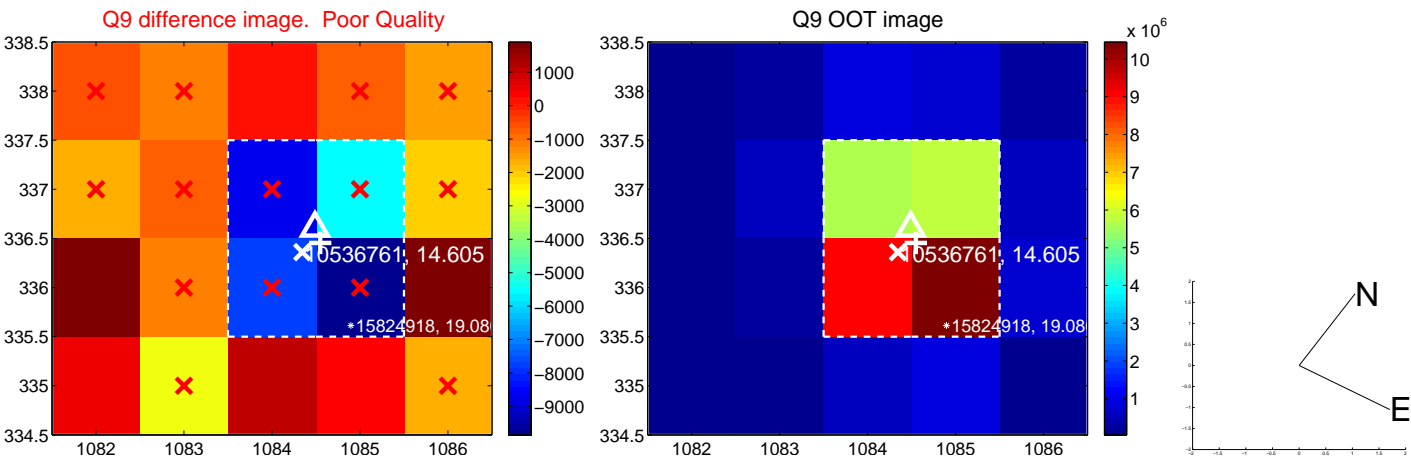
Q8 no difference image



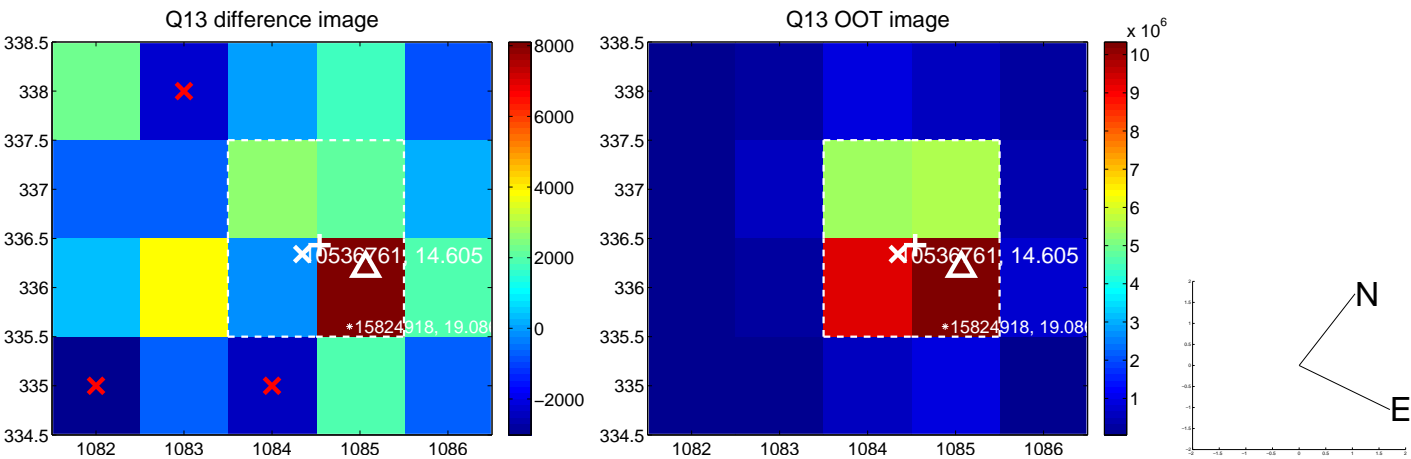
Q8 no OOT image



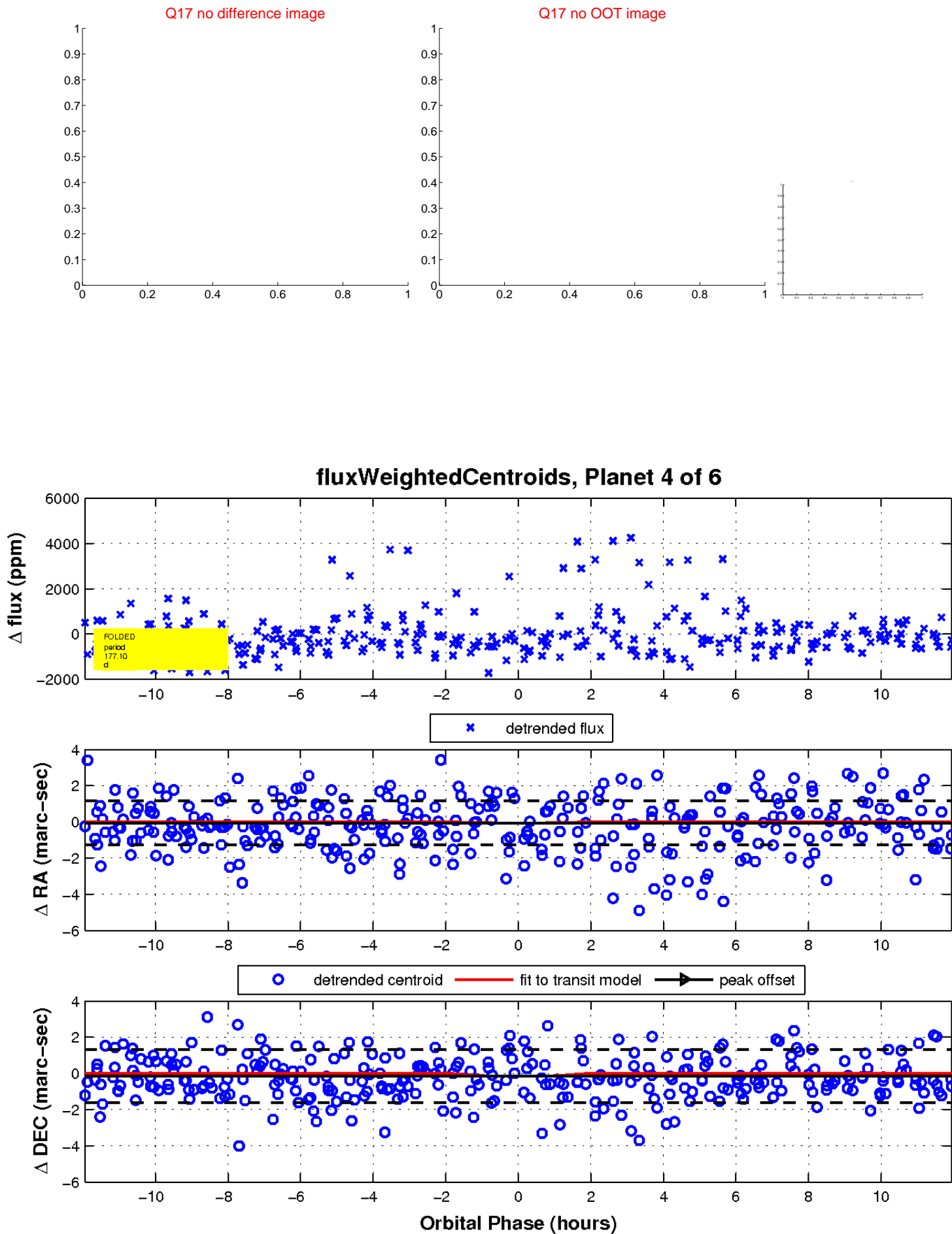
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

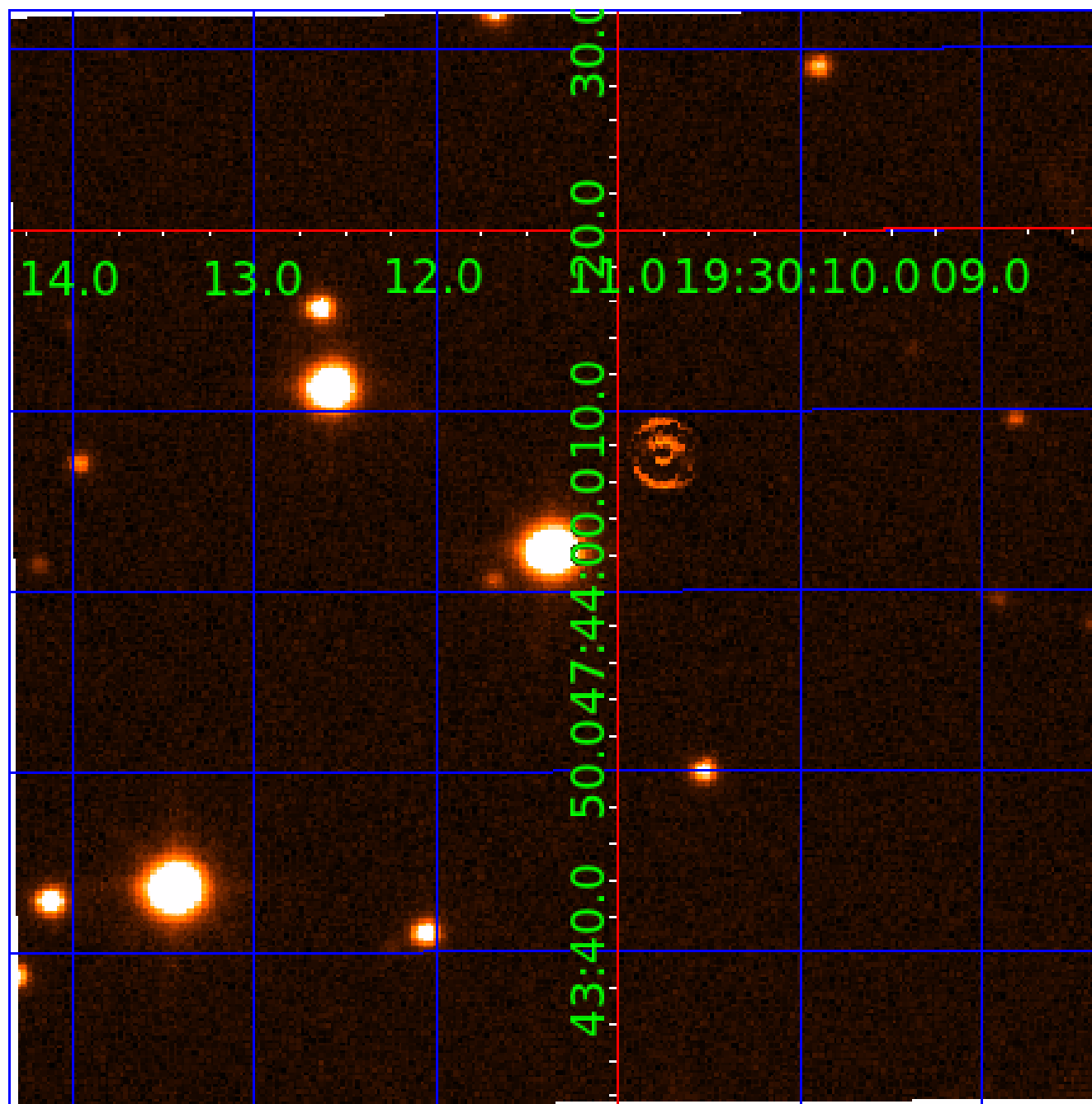


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010536761

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})
010536761-01	OBS	No	511.116450	154.246246	1606.5	5.275	13.9	7.3	0.36	3464	1.51	0.02
010536761-02	OBS	No	541.306589	235.415726	1914.4	7.460	14.0	7.4	0.36	3464	1.67	0.02
010536761-03	OBS	No	198.531275	325.105692	1281.5	12.491	15.5	7.0	0.36	3464	1.28	0.07
010536761-04	OBS	No	177.099312	195.803042	1157.1	3.993	11.4	7.7	0.36	3464	1.59	0.09
010536761-05	OBS	No	246.234681	219.942313	3082.0	38.499	12.0	8.9	0.36	3464	3.85	0.06
010536761-06	OBS	No	210.300550	323.349581	930.7	2.500	11.3	-1.0	0.36	3464	1.09	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010536761-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_MEAS
010536761-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
010536761-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010536761-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS
010536761-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010536761-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

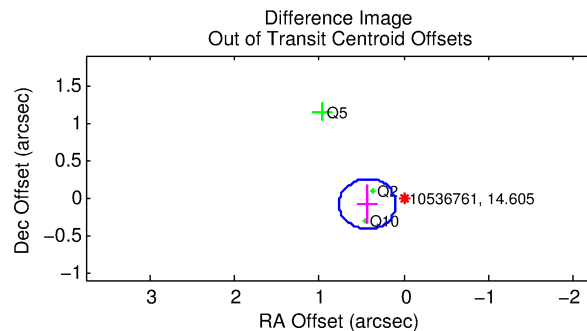
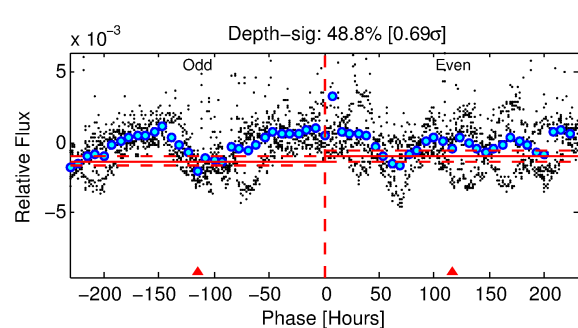
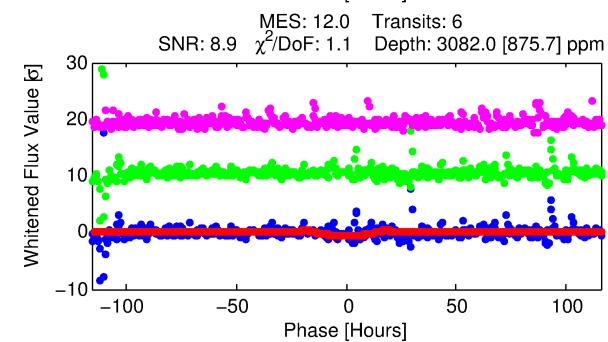
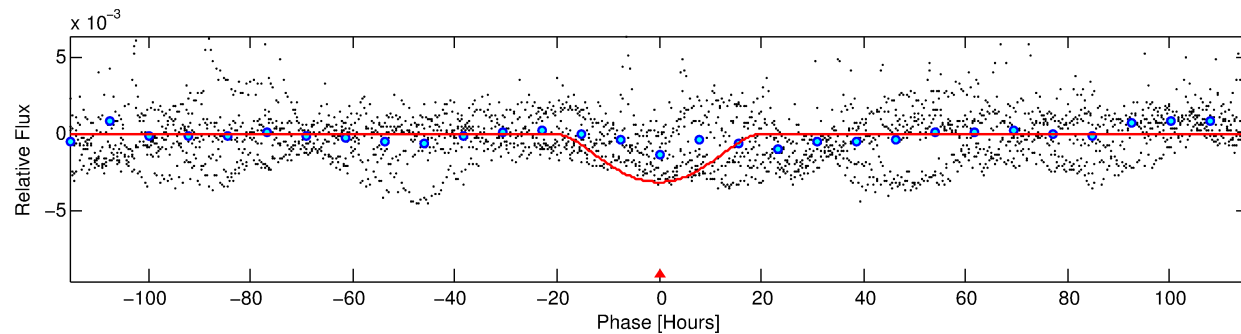
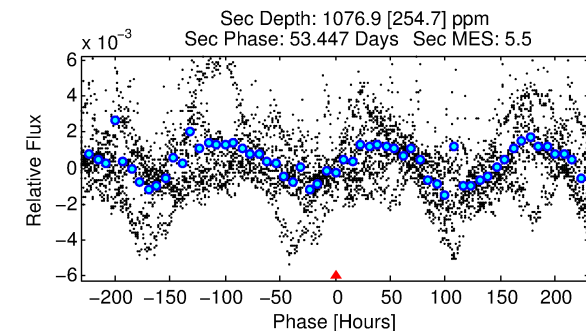
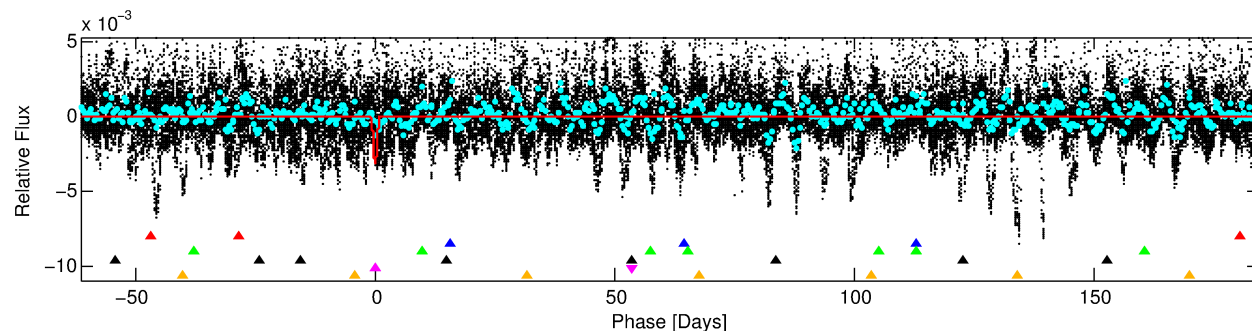
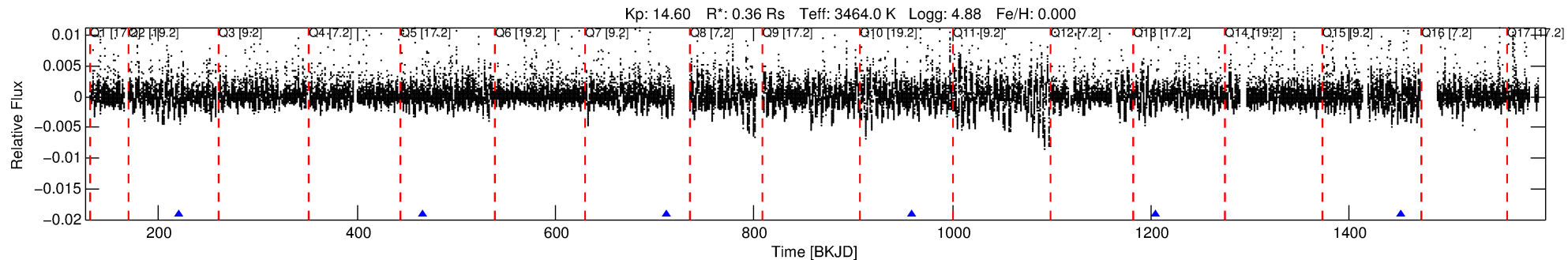
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010536761-05

No Significant Match Found

DV One-Page Summary

KIC: 10536761 Candidate: 5 of 6 Period: 246.235 d



DV Fit Results:

Period = 246.23468 [0.02121] d
Epoch = 219.9423 [0.0626] BKJD
Rp/R* = 0.0973 [0.1535]
a/R* = 22.11 [6.43]
b = 1.00 [0.23]
Seff = 0.06 [0.01]
Teq = 124 [3] K
Rp = 3.85 [6.09] Re
a = 0.5515 [0.0358] AU
Ag = 12130.46 [38386.05] [0.32σ]
Teffp = 2012 [1591] K [1.19σ]

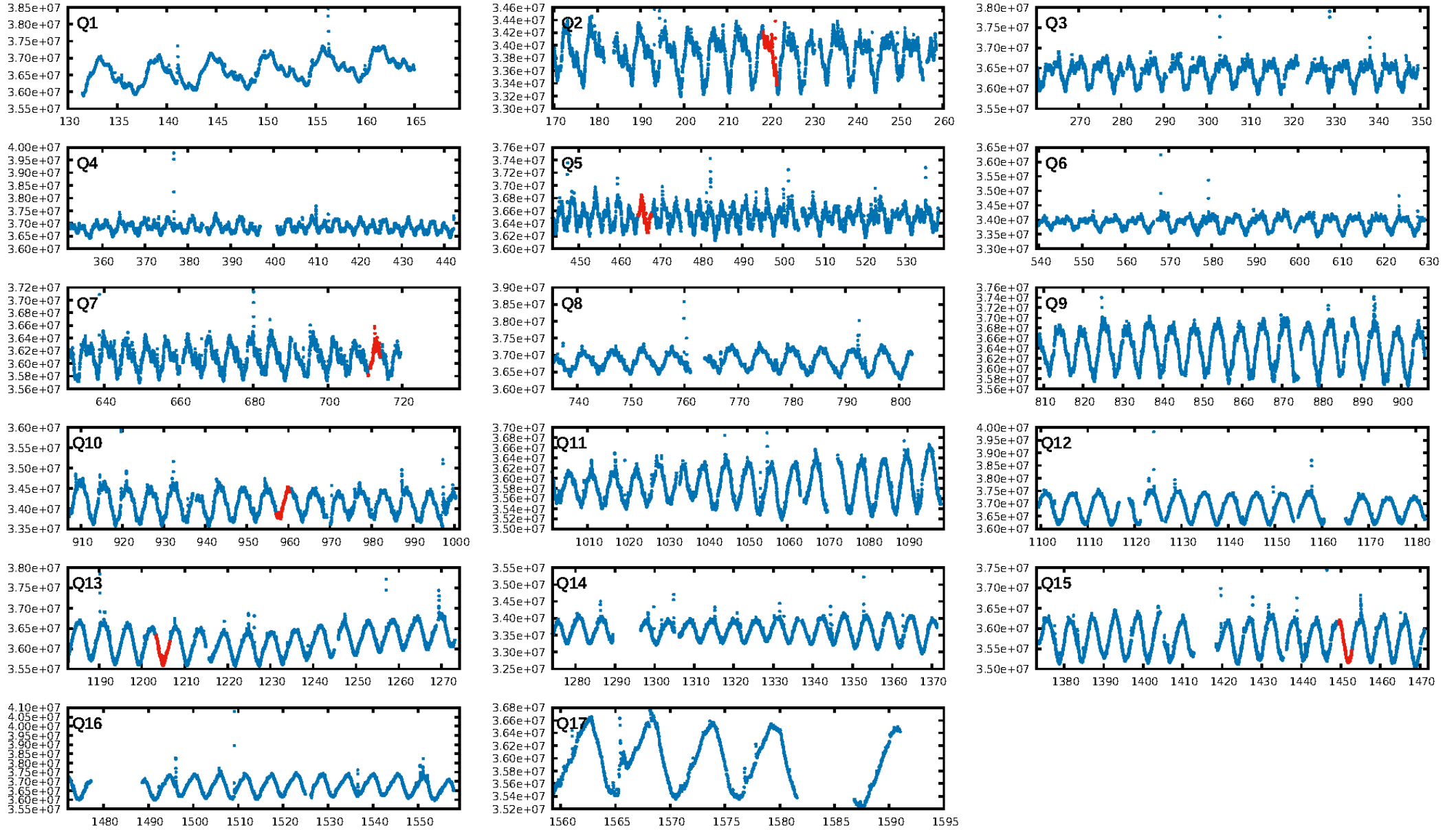
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.35σ]
LongPeriod-sig: 100.0% [163.60σ]
ModelChiSquare2-sig: 11.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 4.164
Centroid-sig: 52.3%
Centroid-so: 0.823 arcsec [4.52σ]
OotOffset-rm: 0.438 arcsec [3.91σ]
KicOffset-rm: 0.895 arcsec [2.66σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

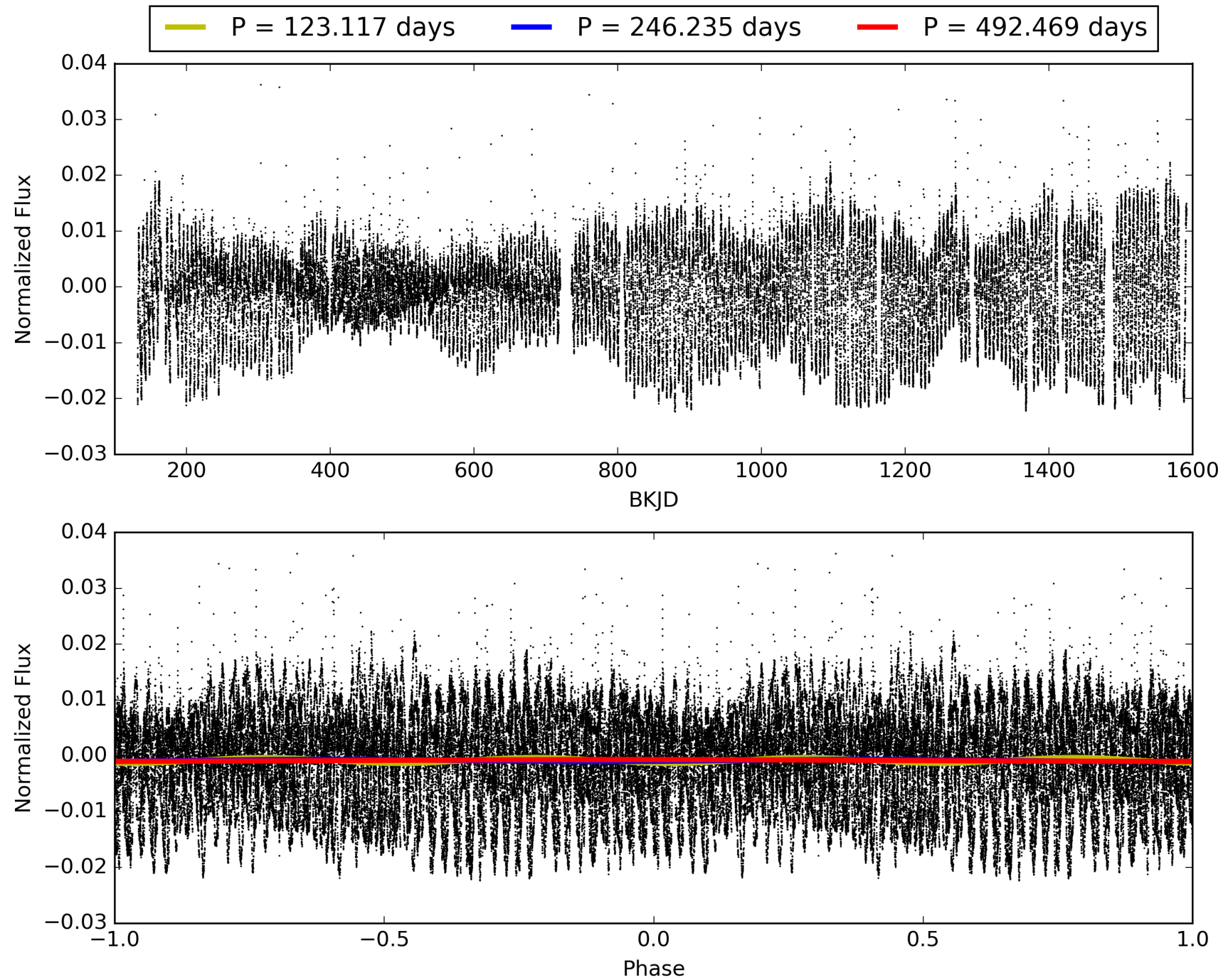
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:27:18 Z

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

TCE 010536761-05, PDC Light Curves

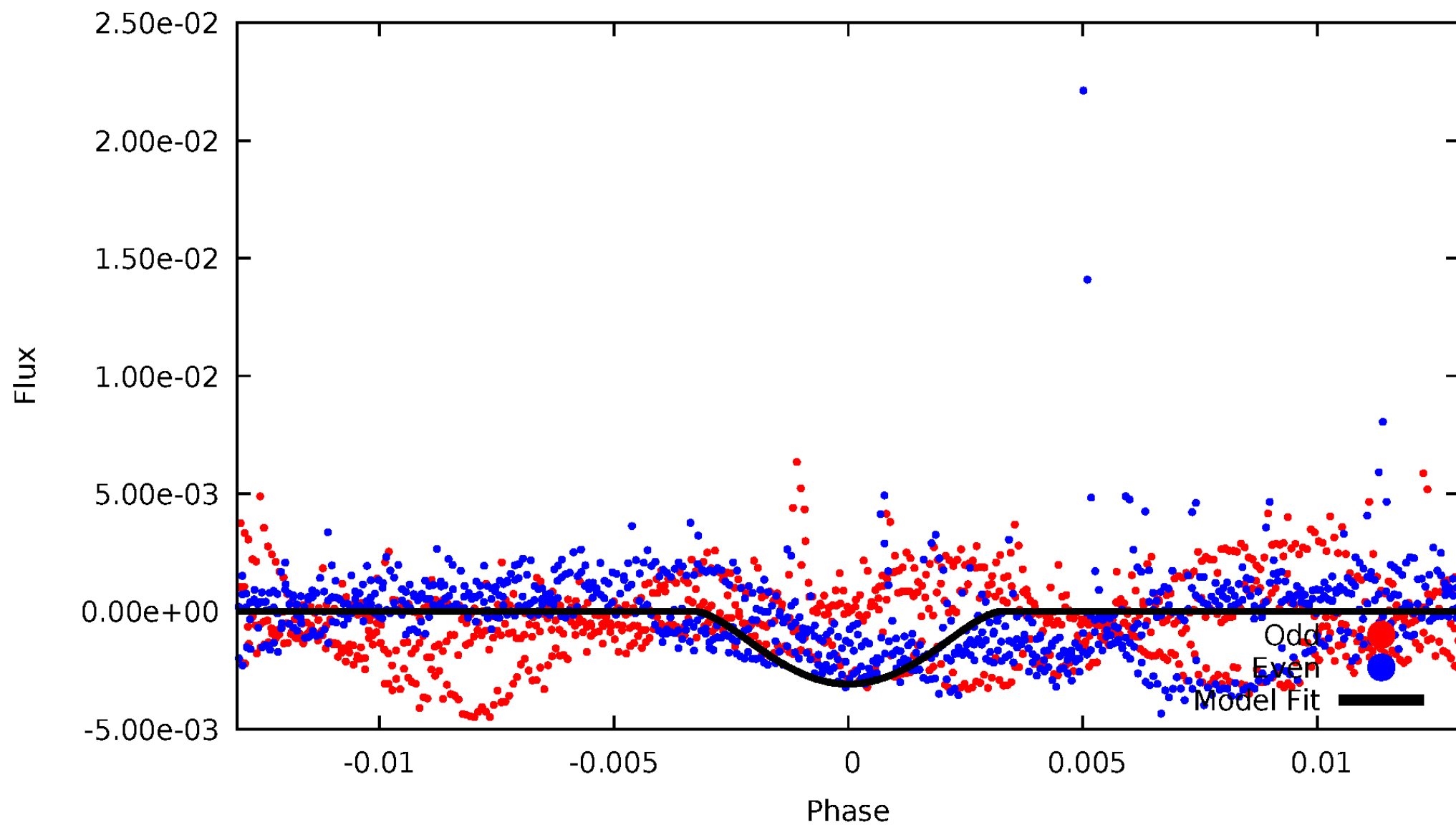


TCE 010536761-05



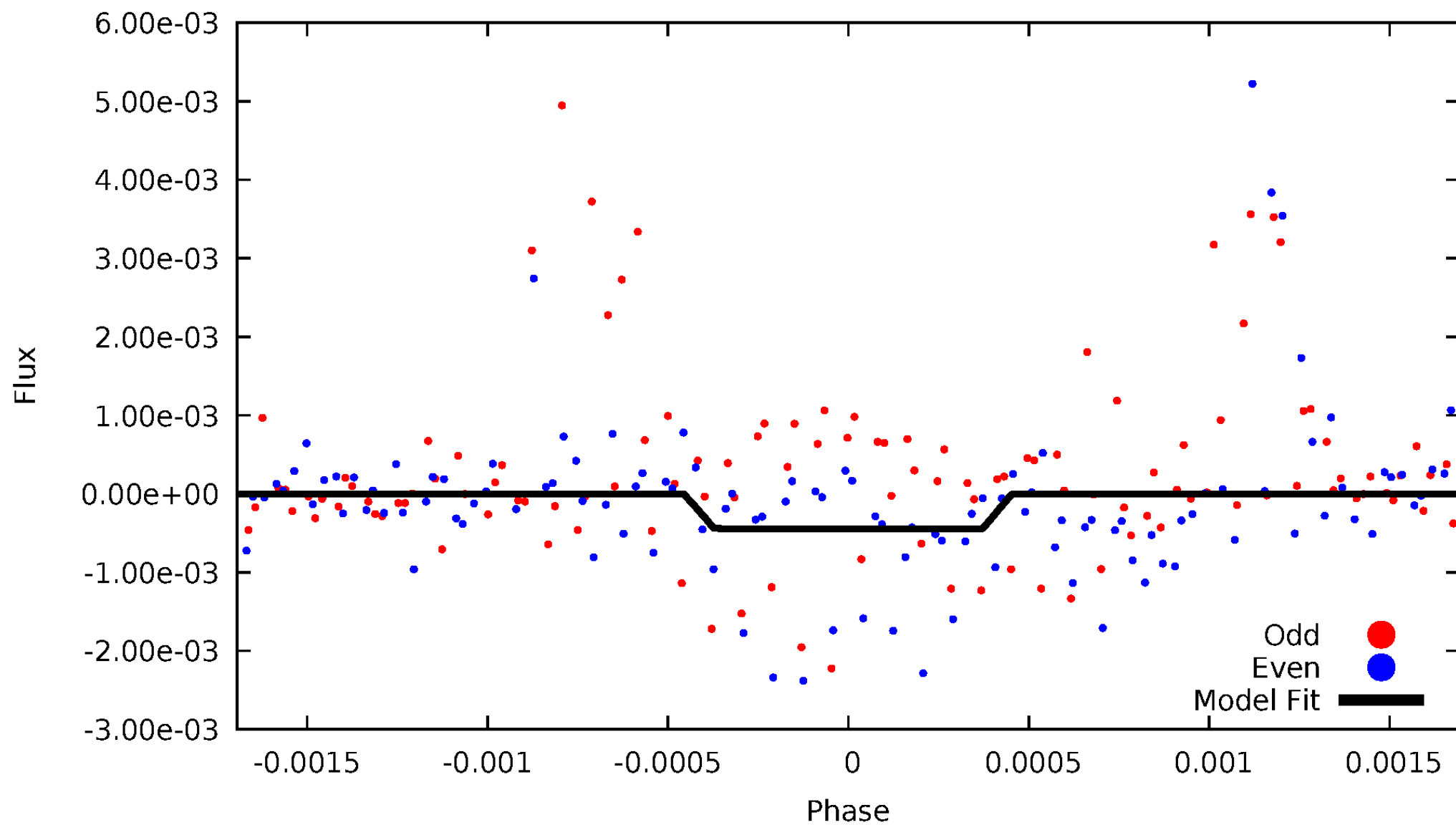
DV Odd/Even

TCE 010536761-05



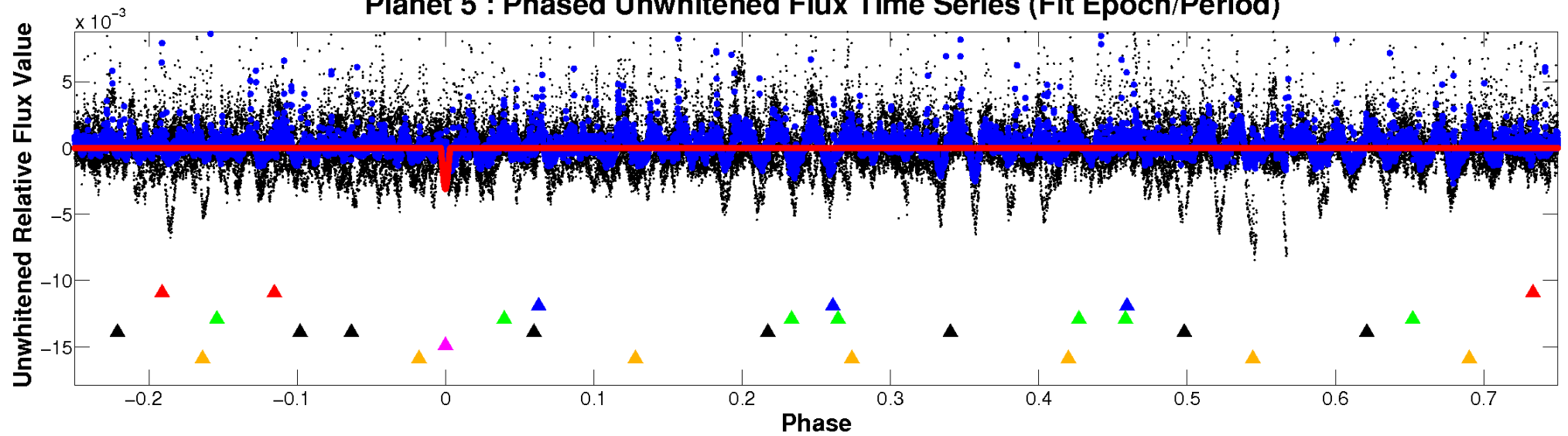
ALT Odd/Even

TCE 010536761-05

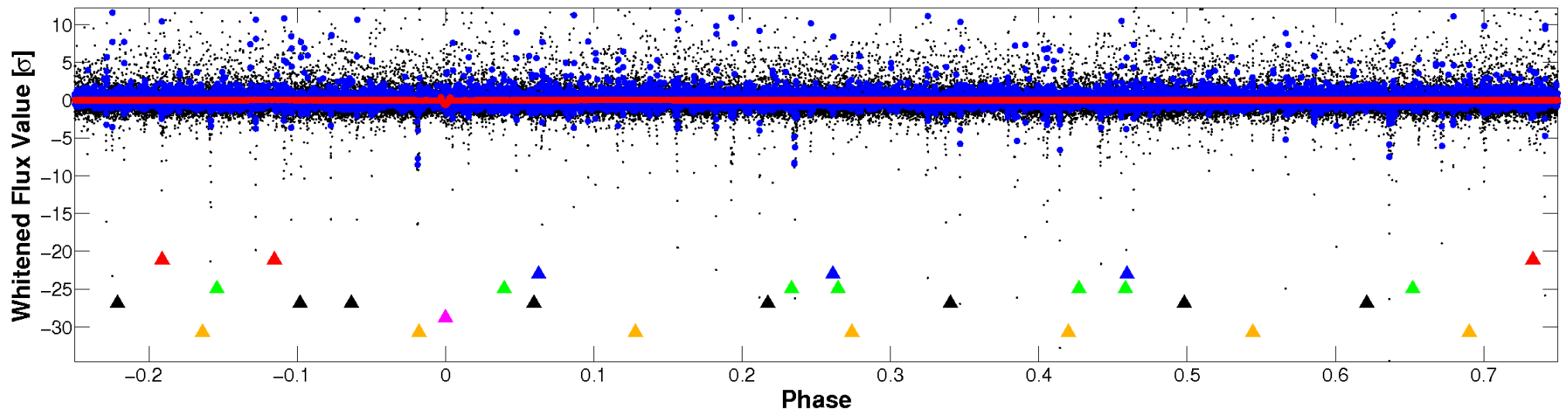


Non-Whitened Vs. Whitened Light Curve

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

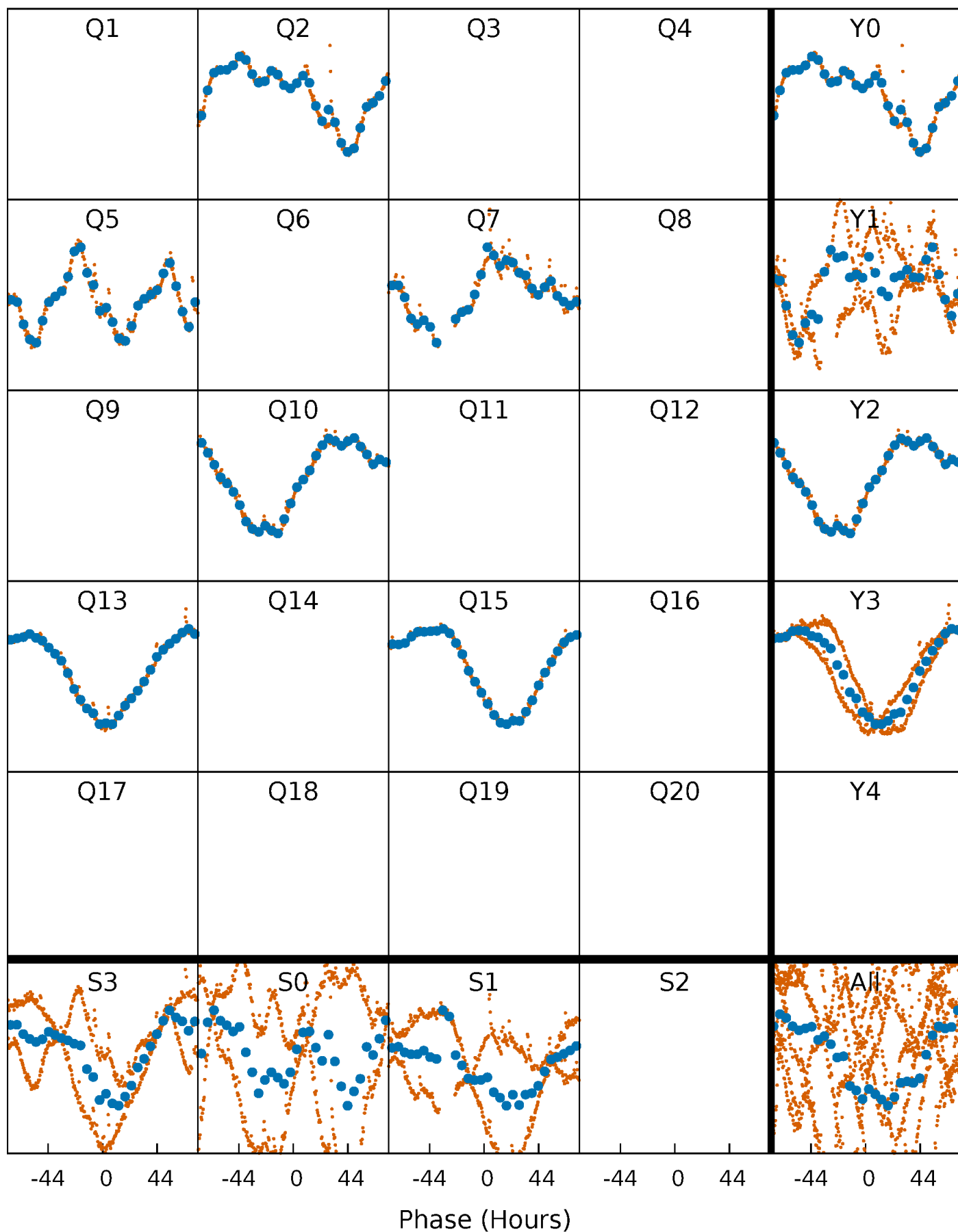


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



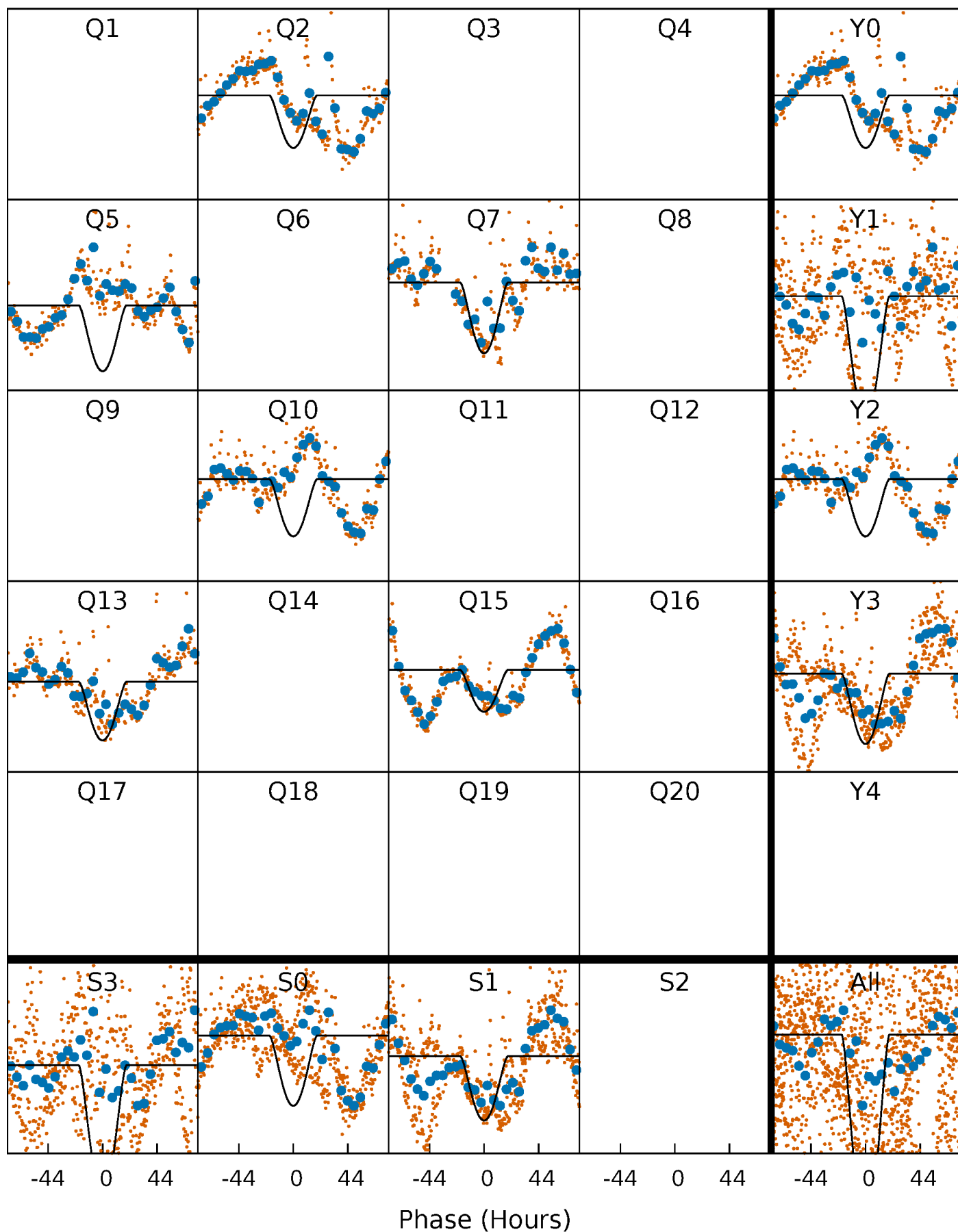
PDC Quarter-Phased Transit Curves

TCE 010536761-05 $P=246.234681$ Days $T_0=219.942313$ (BKJD)



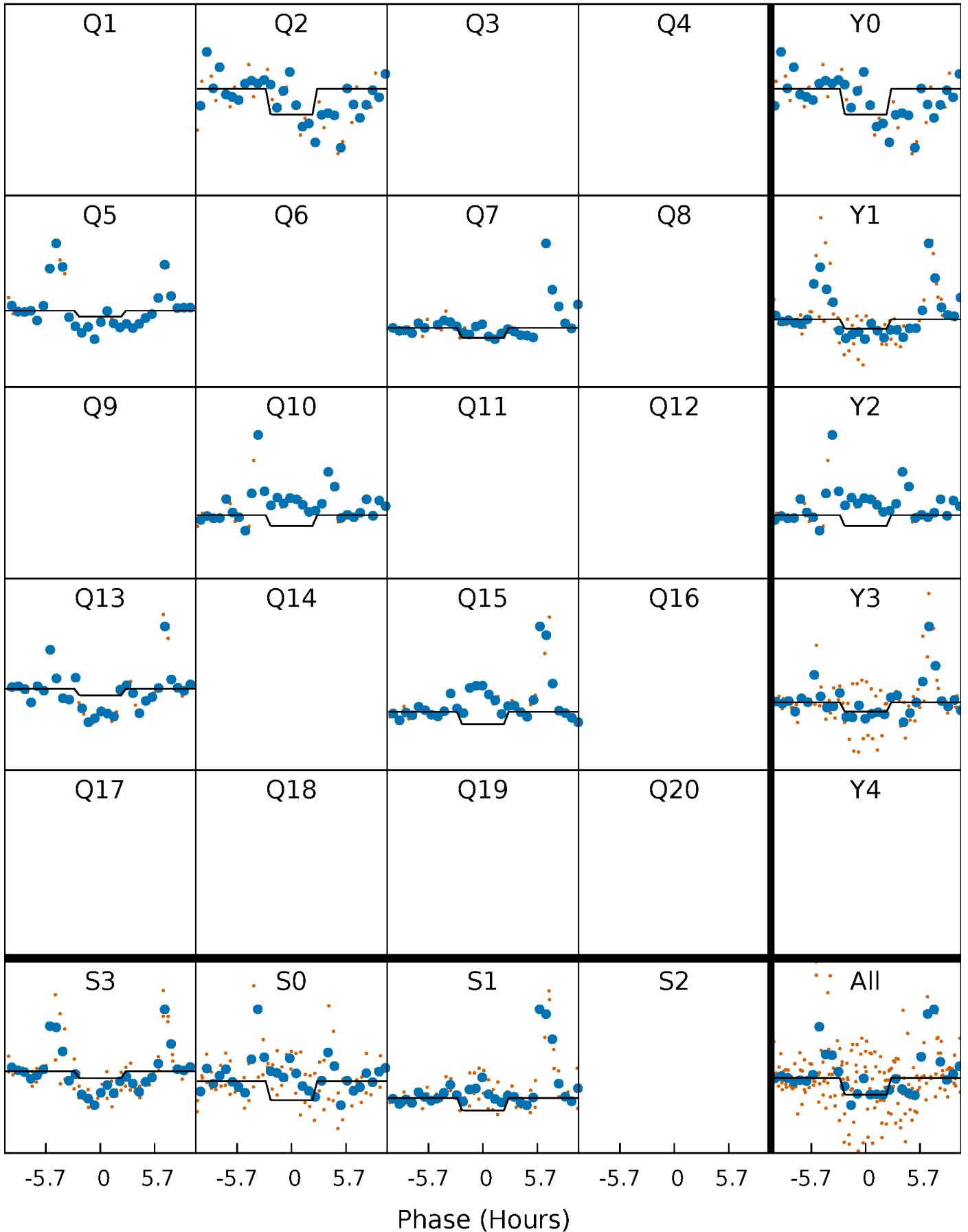
DV Quarter-Phased Transit Curves

TCE 010536761-05 $P=246.234681$ Days $T_0=219.942313$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

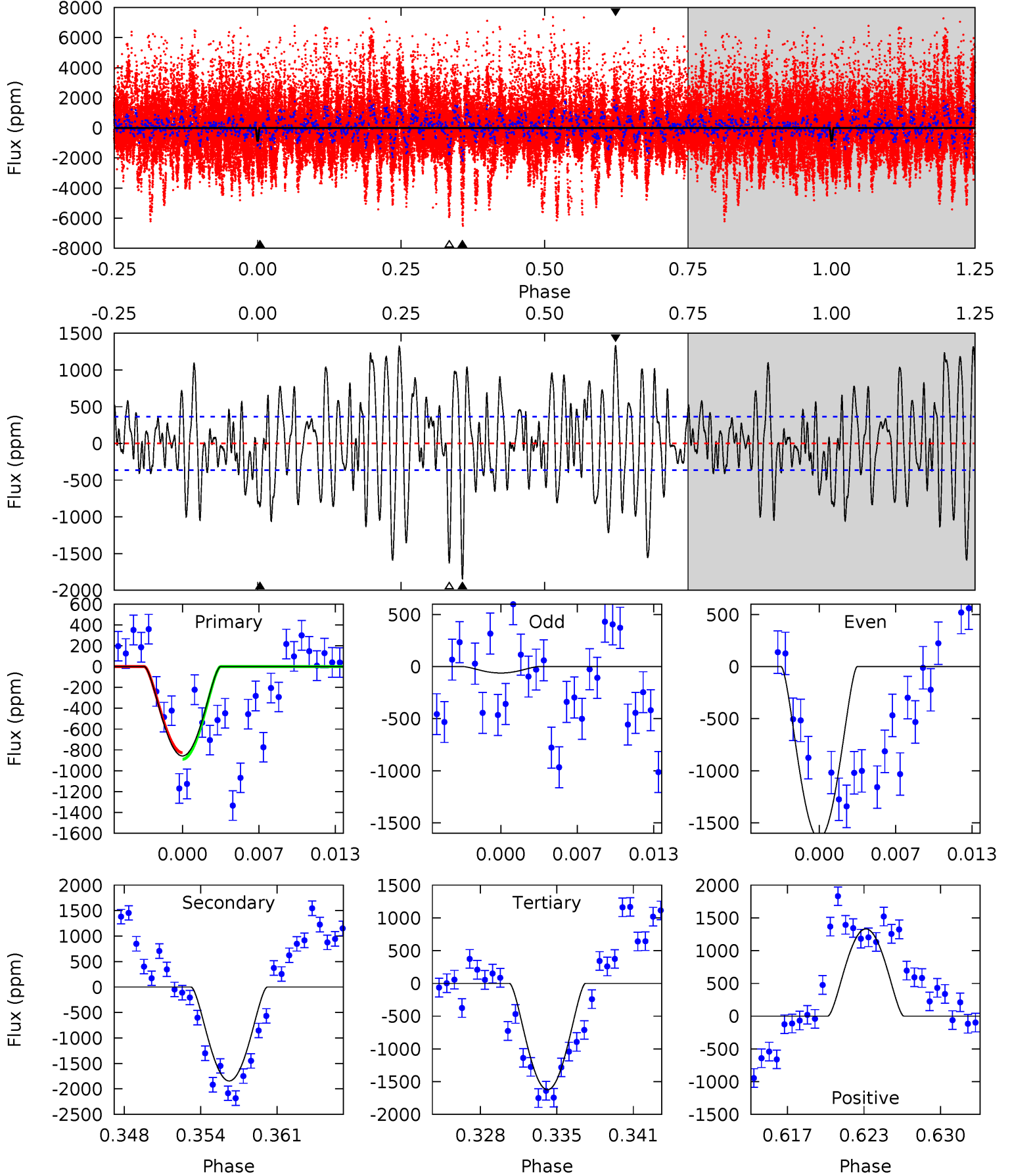
TCE 010536761-05 $P=246.231209$ Days $T_0=219.870799$ (BKJD)



DV Model-Shift Uniqueness Test

010536761-05, P = 246.234681 Days, E = 219.942313 Days

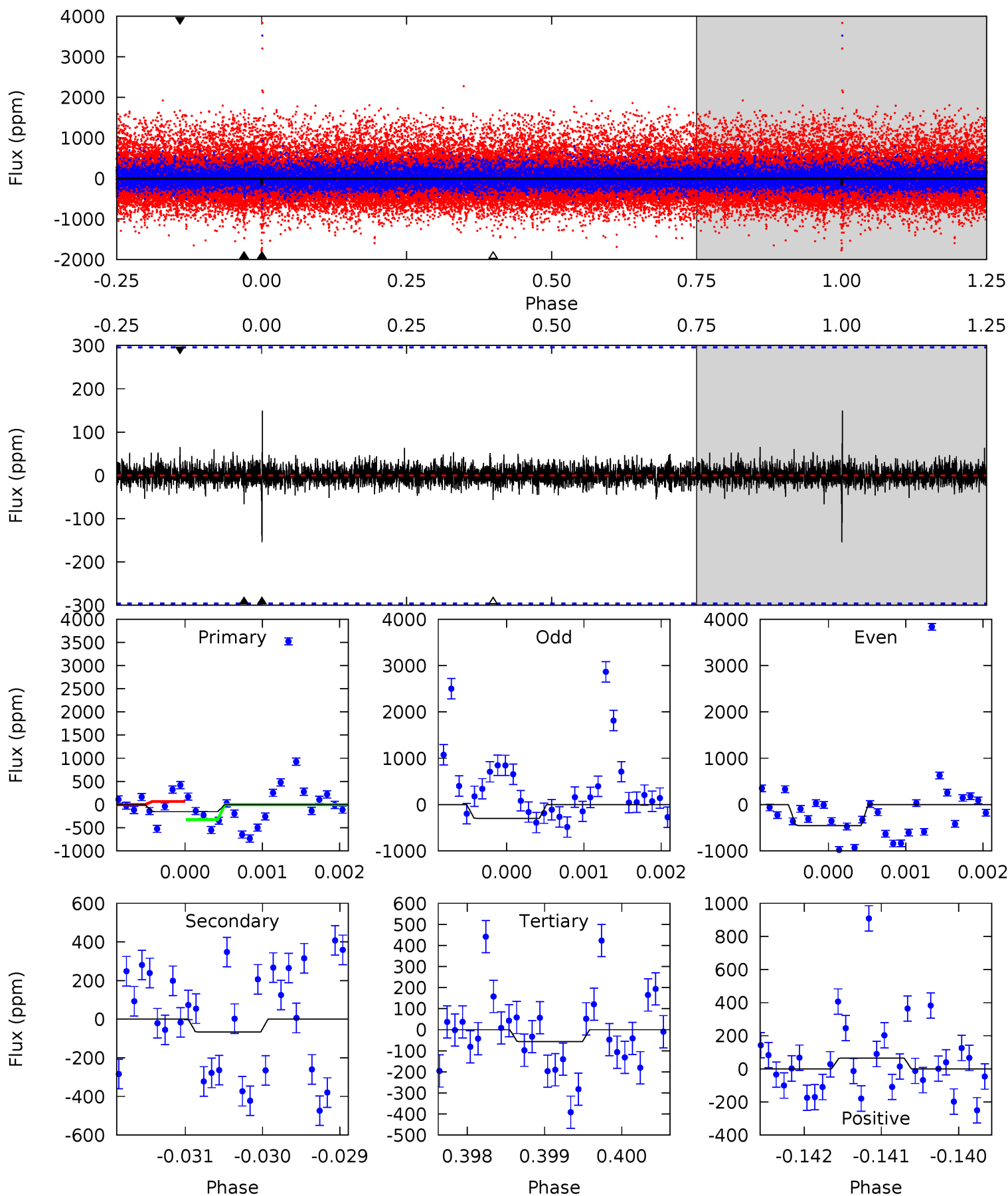
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	25.9	22.8	18.7	5.11	2.72	7.44	-10.8	-6.65	3.08	7.18	10.9	0.66	0.42	0.45



Alt Model-Shift Uniqueness Test

010536761-05, P = 246.231209 Days, E = 219.870799 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.86	1.23	1.05	1.21	5.47	3.33	0.27	1.81	1.65	0.18	0.02	1.40	1.54	0.49	2.38



Stellar Parameters For KIC 010536761

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3464^{+45}_{-45}	$4.885^{+0.036}_{-0.030}$	$0.000^{+0.100}_{-0.100}$	$0.363^{+0.032}_{-0.032}$	$0.370^{+0.041}_{-0.041}$	$10.890^{+1.912}_{-1.628}$
	+1%/-1%	+1%/-1%	+inf%/-inf%	+9%/-9%	+11%/-11%	+18%/-15%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010536761-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1844 ± 71	$6.01^{+5.33}_{-4.13}$	173^{+4}_{-3}	2445^{+914}_{-330}	8774^{+78876}_{-6365}
Alt.	-67 ± 54	$4.53^{+4.58}_{-3.13}$	173^{+4}_{-4}	1787^{+525}_{-308}	432^{+4670}_{-384}

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

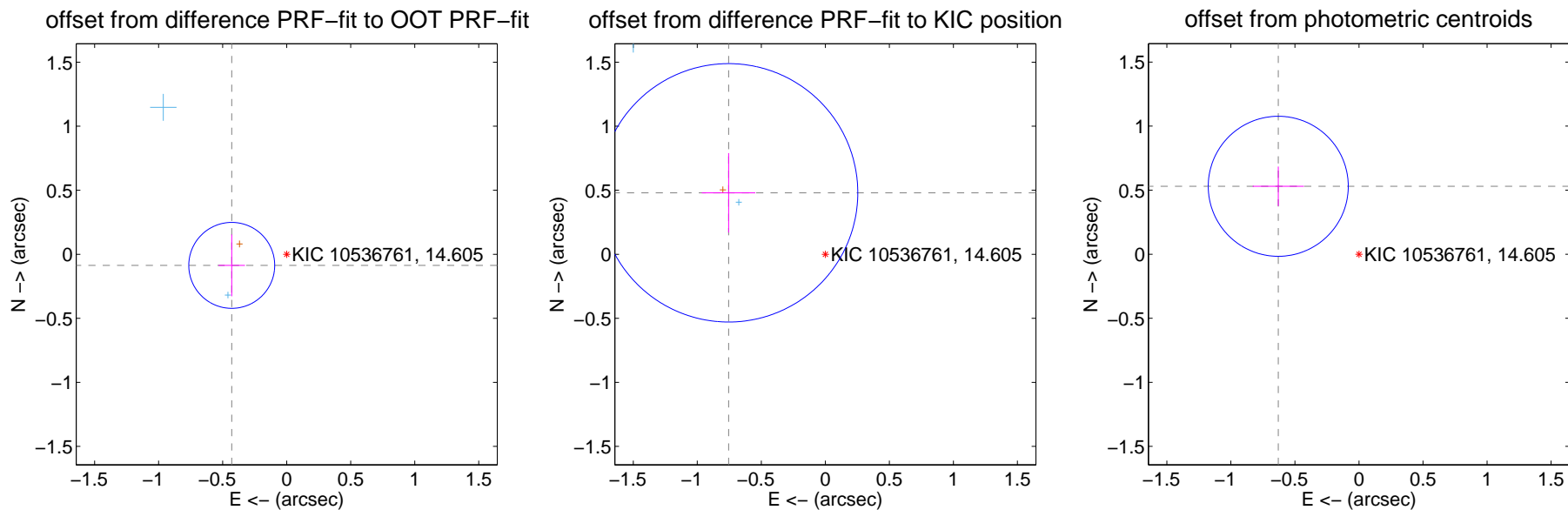
DV Centroid Data

Supplemental centroid analysis for 010536761-05. Kepler magnitude: 14.61. Transit SNR 8.93

There are 2 quarters with good PRF difference image offsets

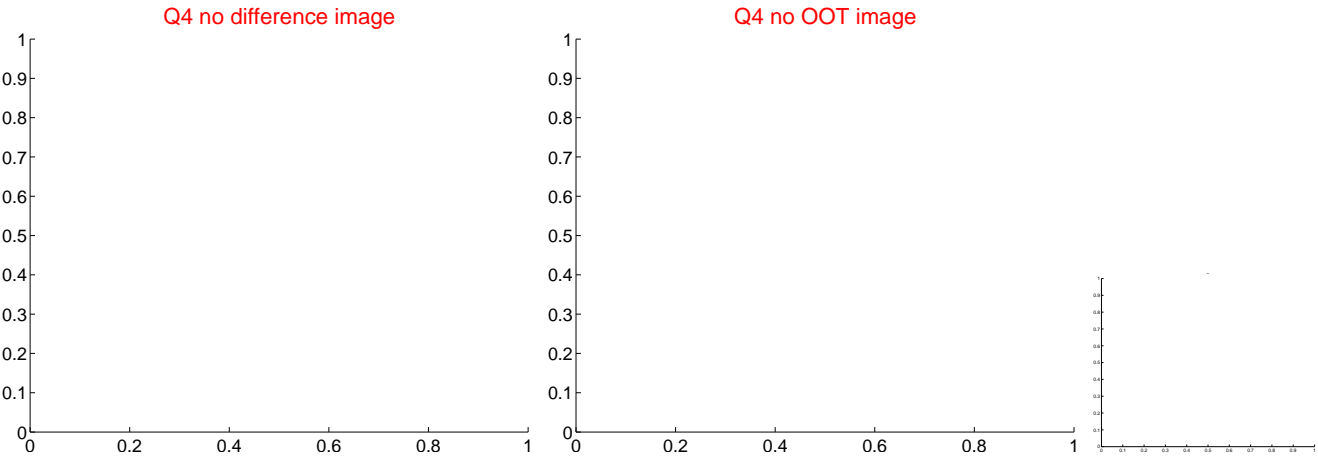
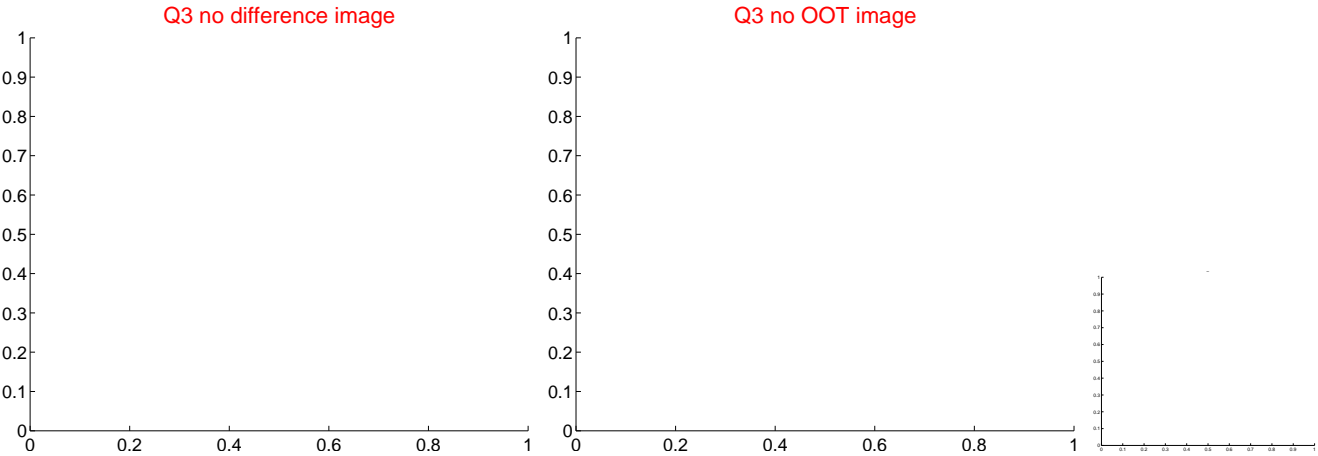
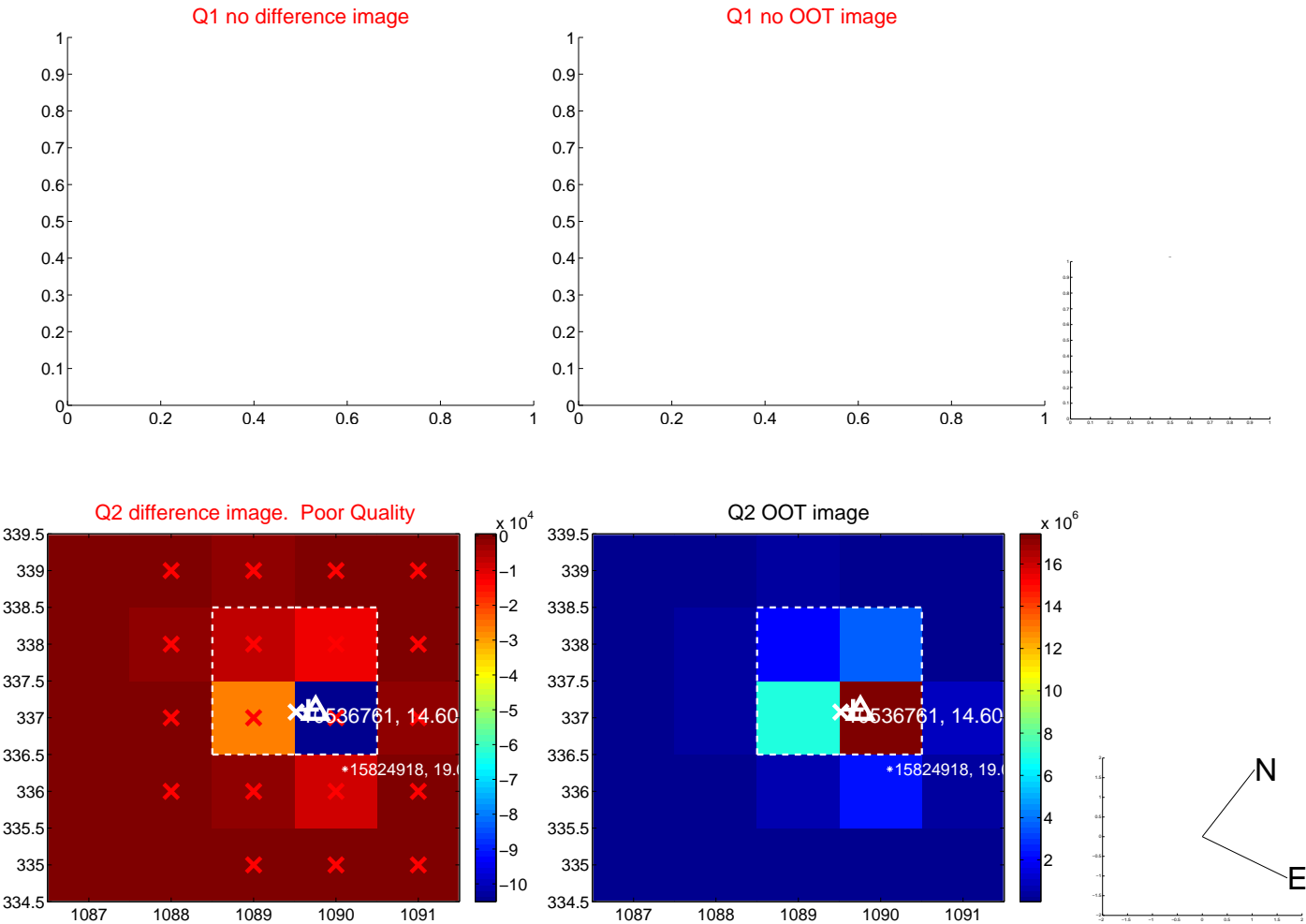
The direct PRF centroid is offset from the target star catalog position by about 0.76 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.438 ± 0.112	3.91	0.429 ± 0.103	-0.087 ± 0.241
PRF-fit source offset from KIC position	0.895 ± 0.336	2.66	0.755 ± 0.209	0.480 ± 0.310
photometric centroid source offset	0.82 ± 0.18	4.52	0.63 ± 0.20	0.53 ± 0.15

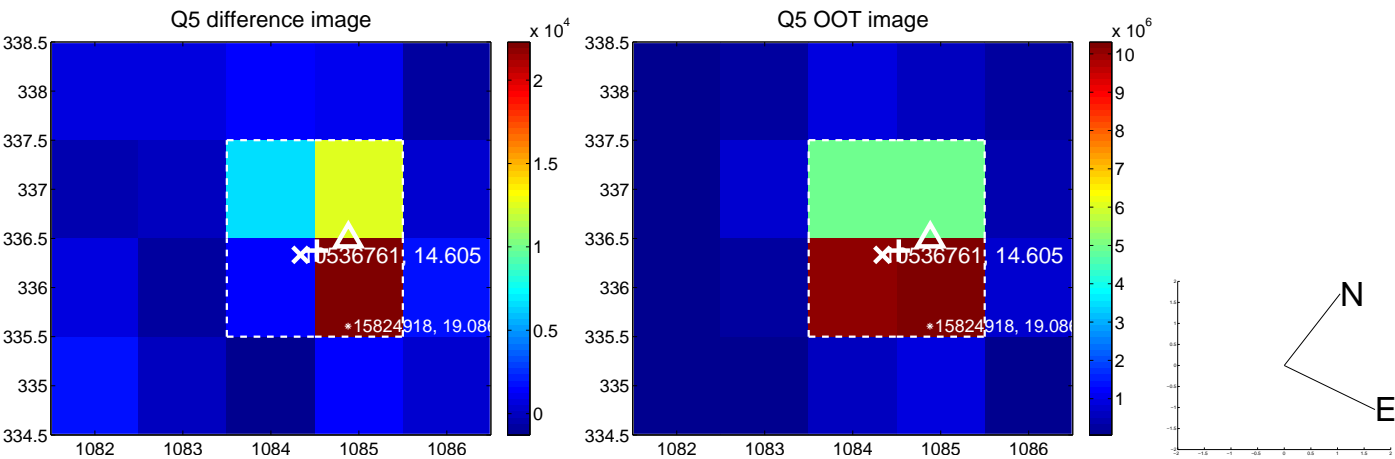


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

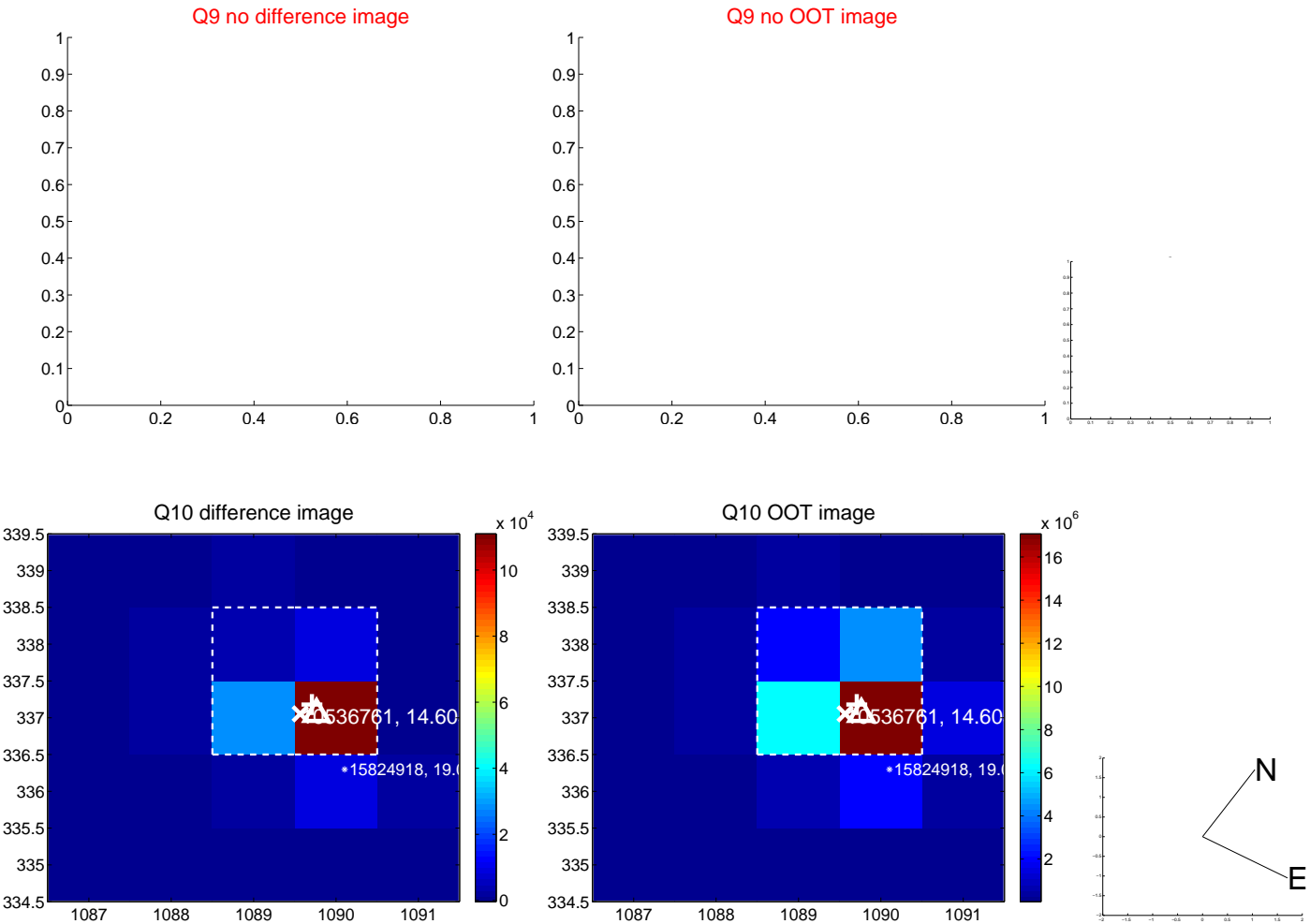
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



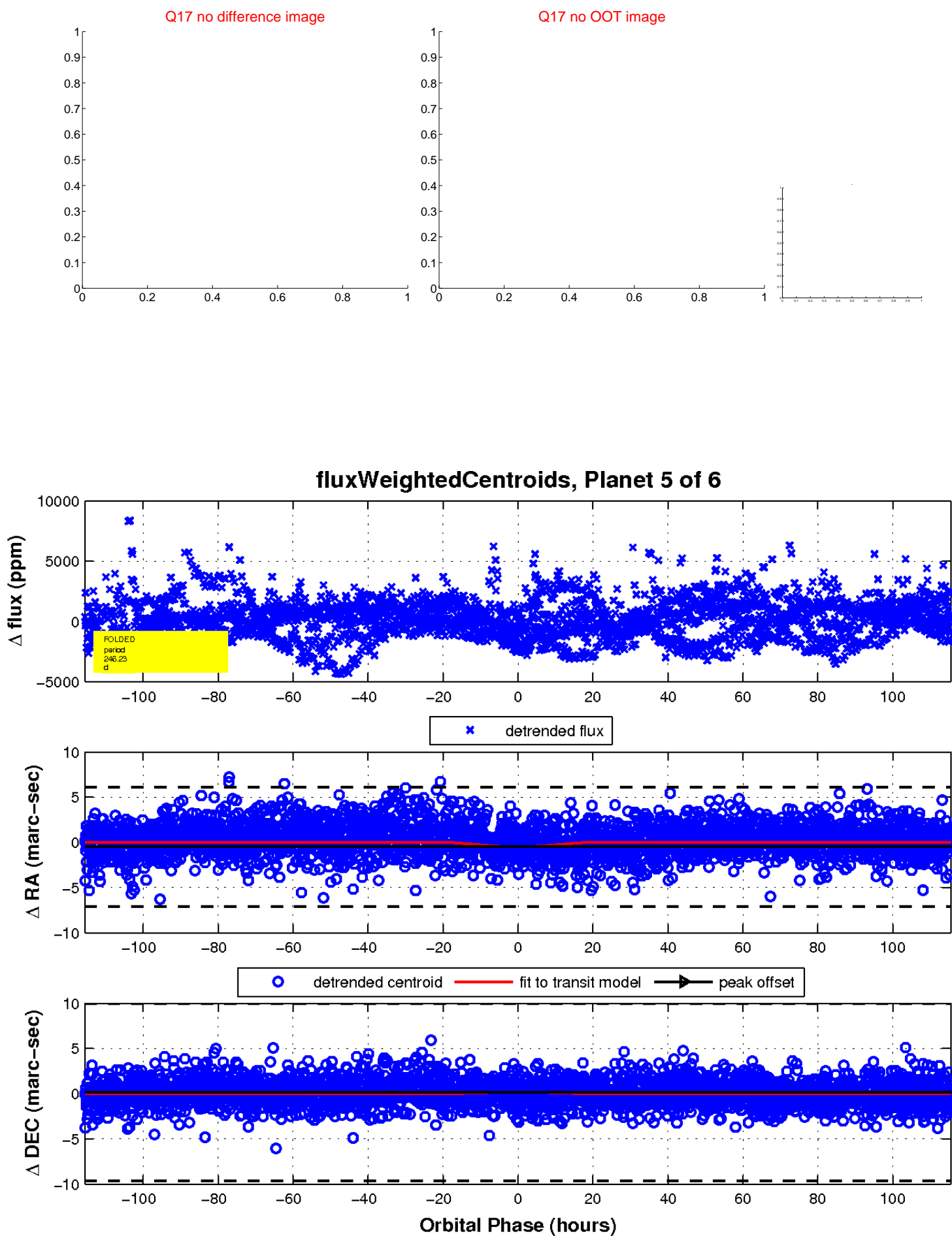
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

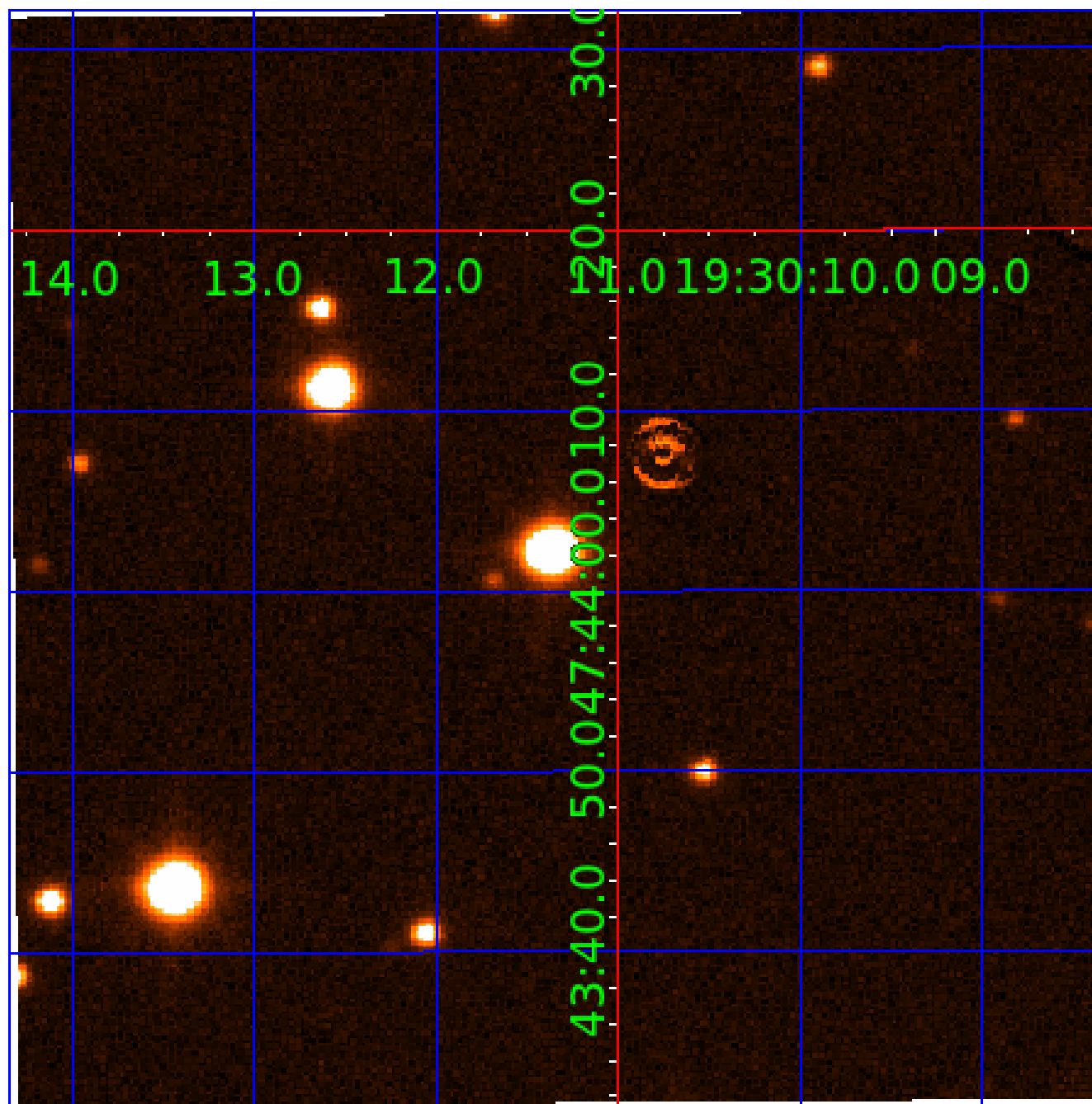


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010536761

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})
010536761-01	OBS	No	511.116450	154.246246	1606.5	5.275	13.9	7.3	0.36	3464	1.51	0.02
010536761-02	OBS	No	541.306589	235.415726	1914.4	7.460	14.0	7.4	0.36	3464	1.67	0.02
010536761-03	OBS	No	198.531275	325.105692	1281.5	12.491	15.5	7.0	0.36	3464	1.28	0.07
010536761-04	OBS	No	177.099312	195.803042	1157.1	3.993	11.4	7.7	0.36	3464	1.59	0.09
010536761-05	OBS	No	246.234681	219.942313	3082.0	38.499	12.0	8.9	0.36	3464	3.85	0.06
010536761-06	OBS	No	210.300550	323.349581	930.7	2.500	11.3	-1.0	0.36	3464	1.09	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010536761-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_MEAS
010536761-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
010536761-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010536761-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS
010536761-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010536761-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

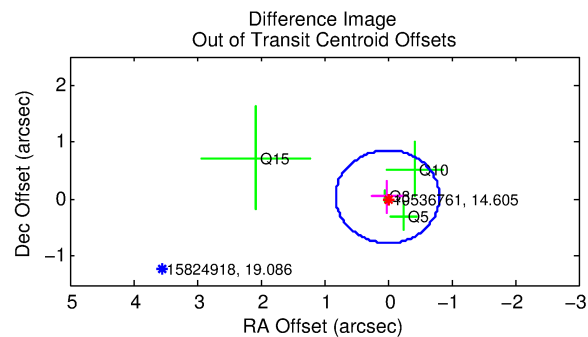
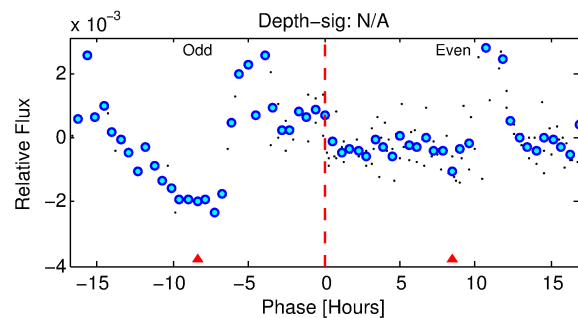
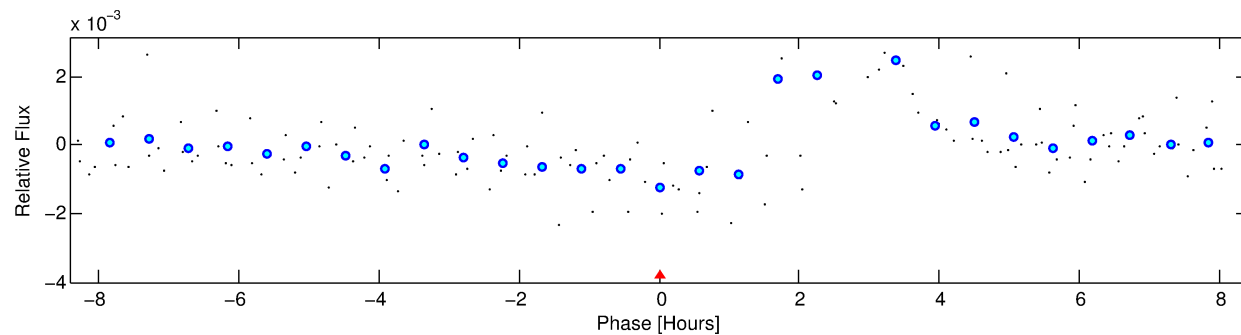
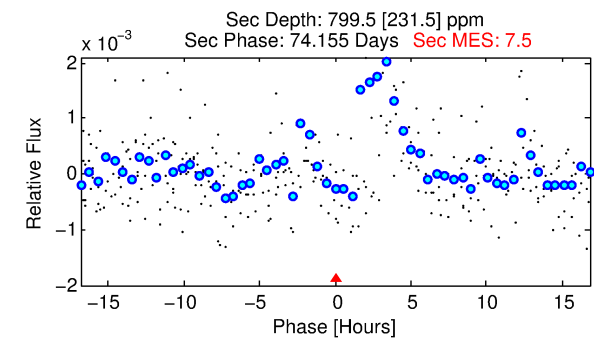
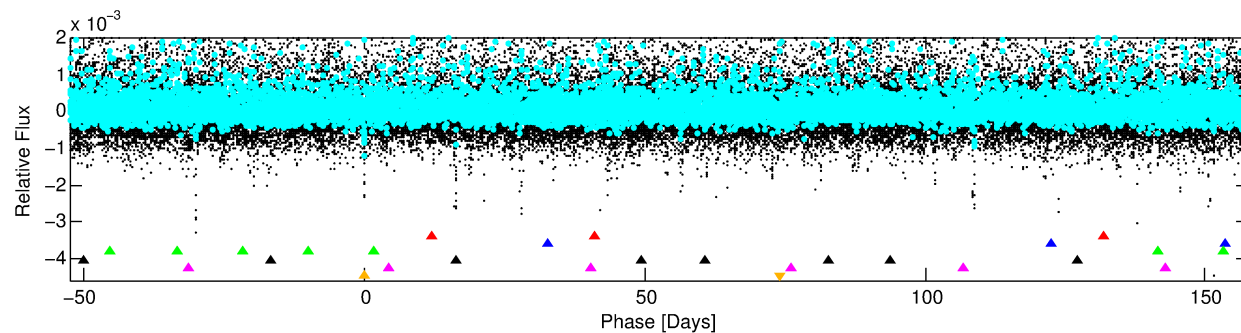
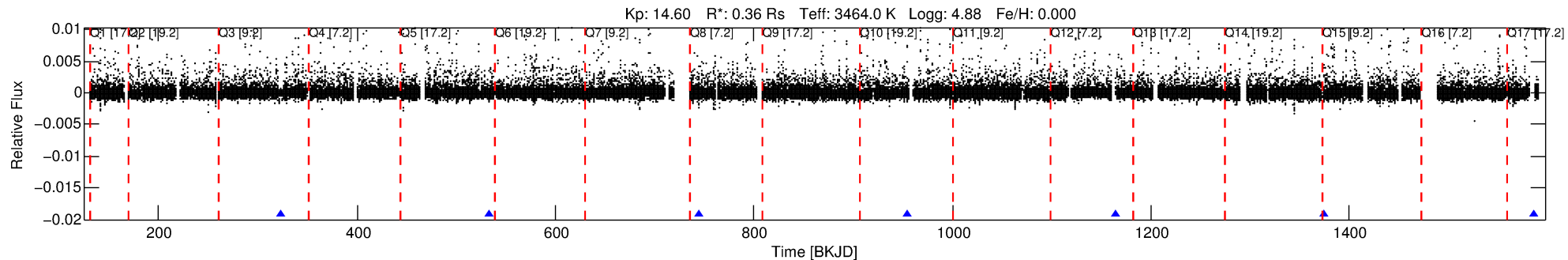
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010536761-06

No Significant Match Found

DV One-Page Summary

KIC: 10536761 Candidate: 6 of 6 Period: 210.301 d



TPS TCE Results:

Period = 210.30055 d
Epoch = 323.3496 BKJD

DV fit results are unavailable

DV Diagnostic Results:

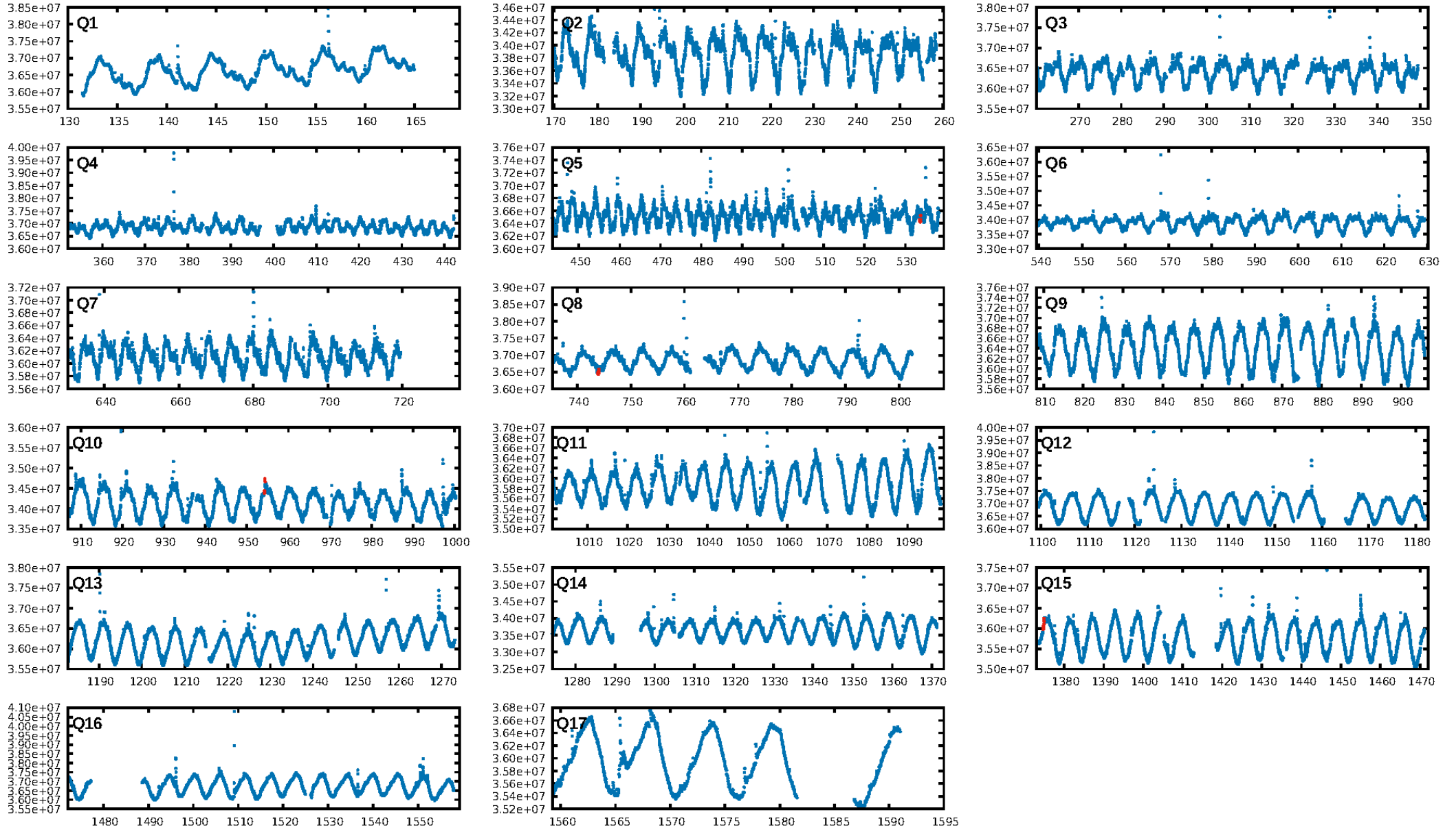
ShortPeriod-sig: 100.0% [22.17 σ]
LongPeriod-sig: 100.0% [22.35 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.05909

Centroid-sig: 72.7%
Centroid-so: 0.545 arcsec [0.94 σ]
OotOffset-rm: 0.046 arcsec [0.17 σ]
KicOffset-rm: 0.869 arcsec [1.91 σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

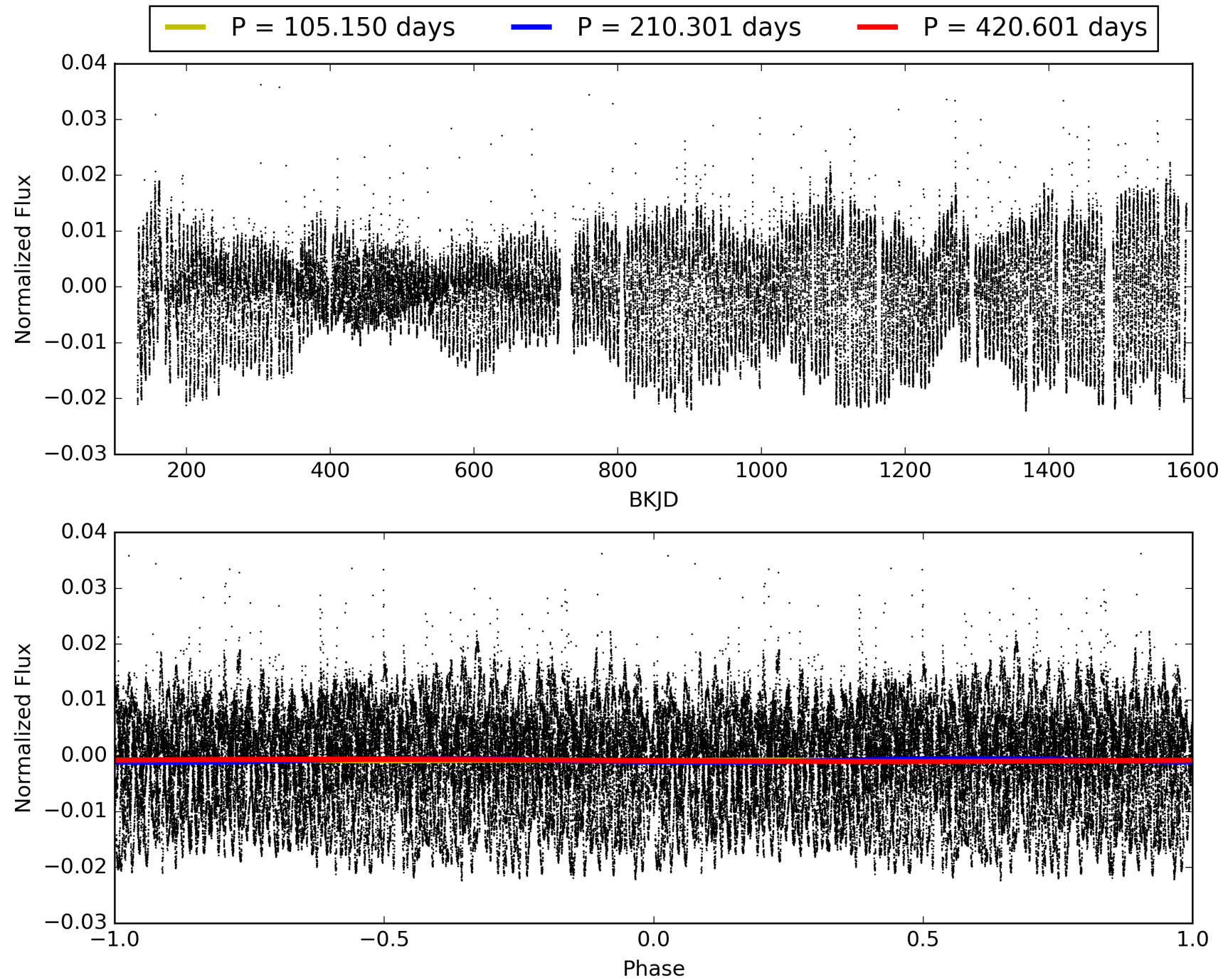
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:27:31 Z

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

TCE 010536761-06, PDC Light Curves

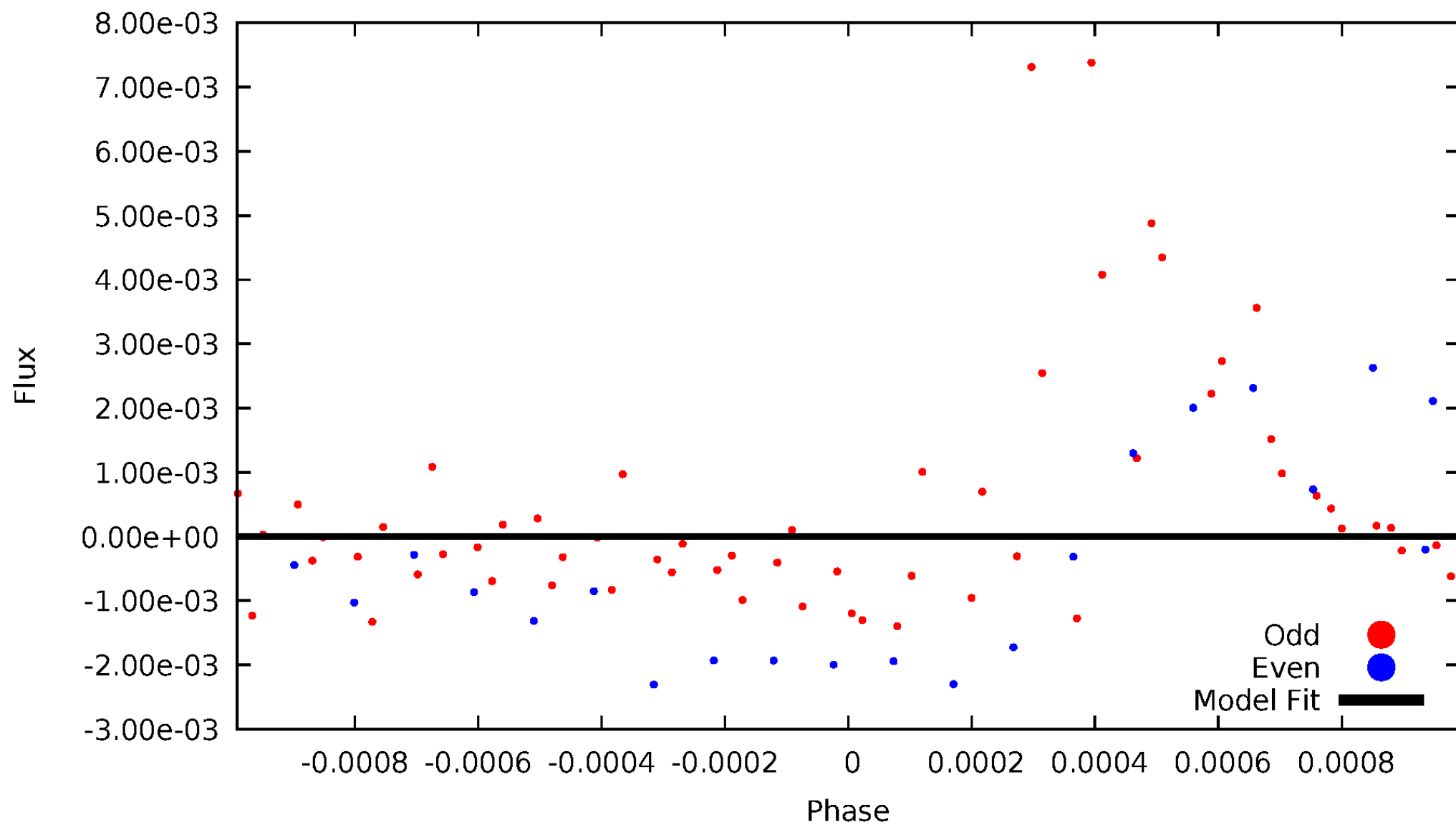


TCE 010536761-06



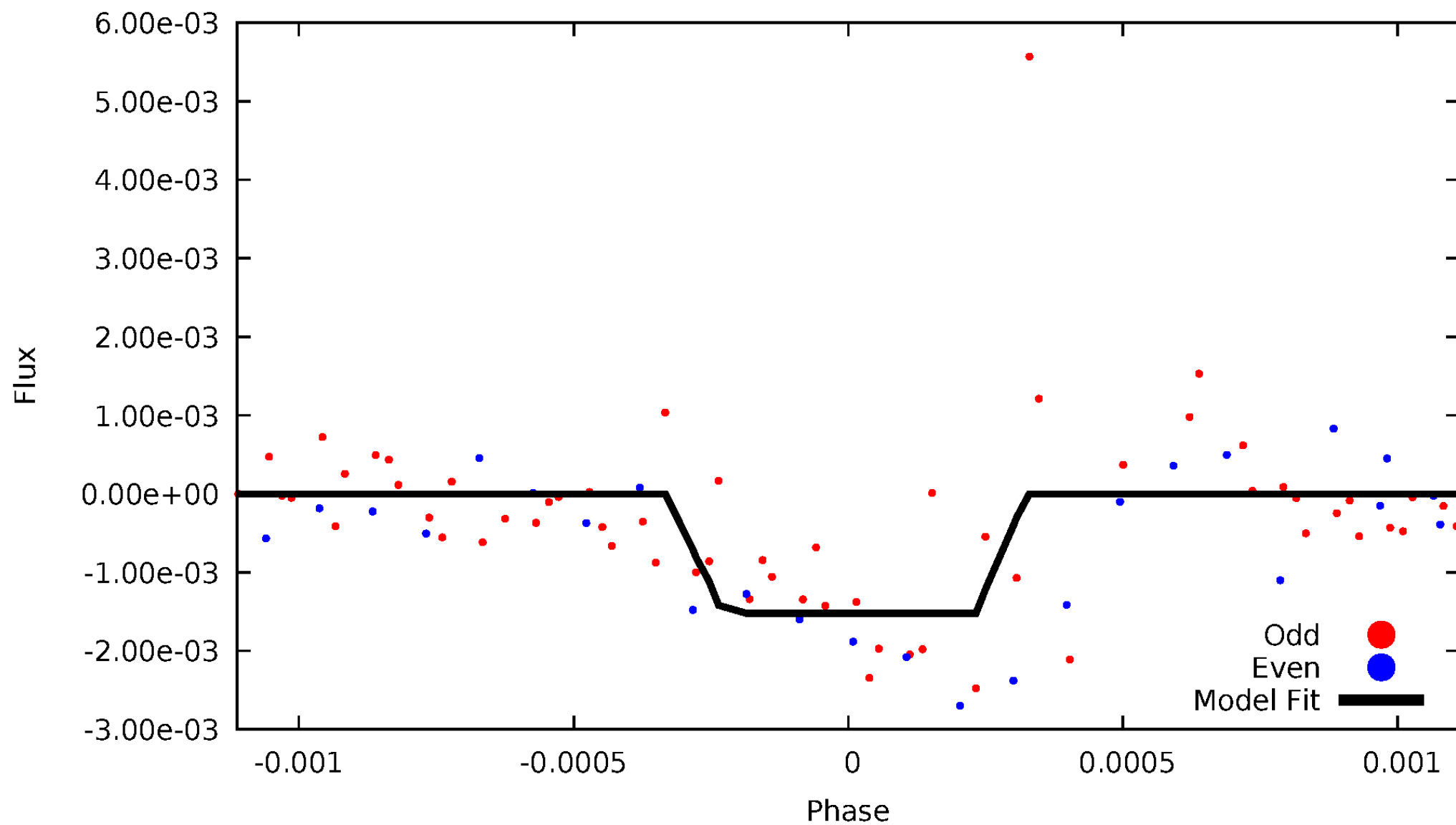
DV Odd/Even

TCE 010536761-06



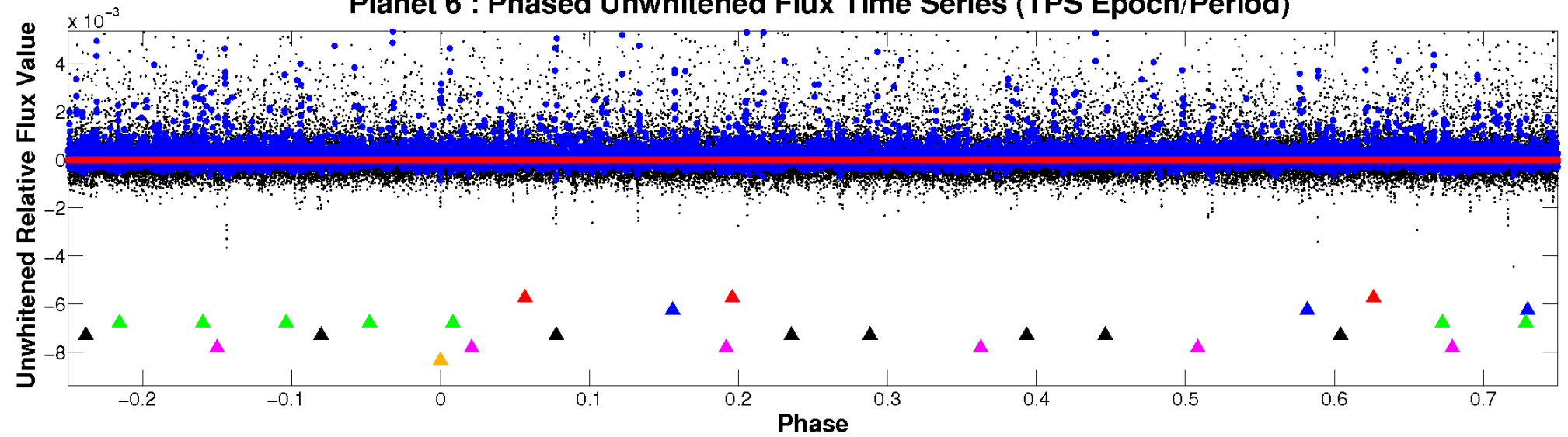
ALT Odd/Even

TCE 010536761-06



Non-Whitened Vs. Whitened Light Curve

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

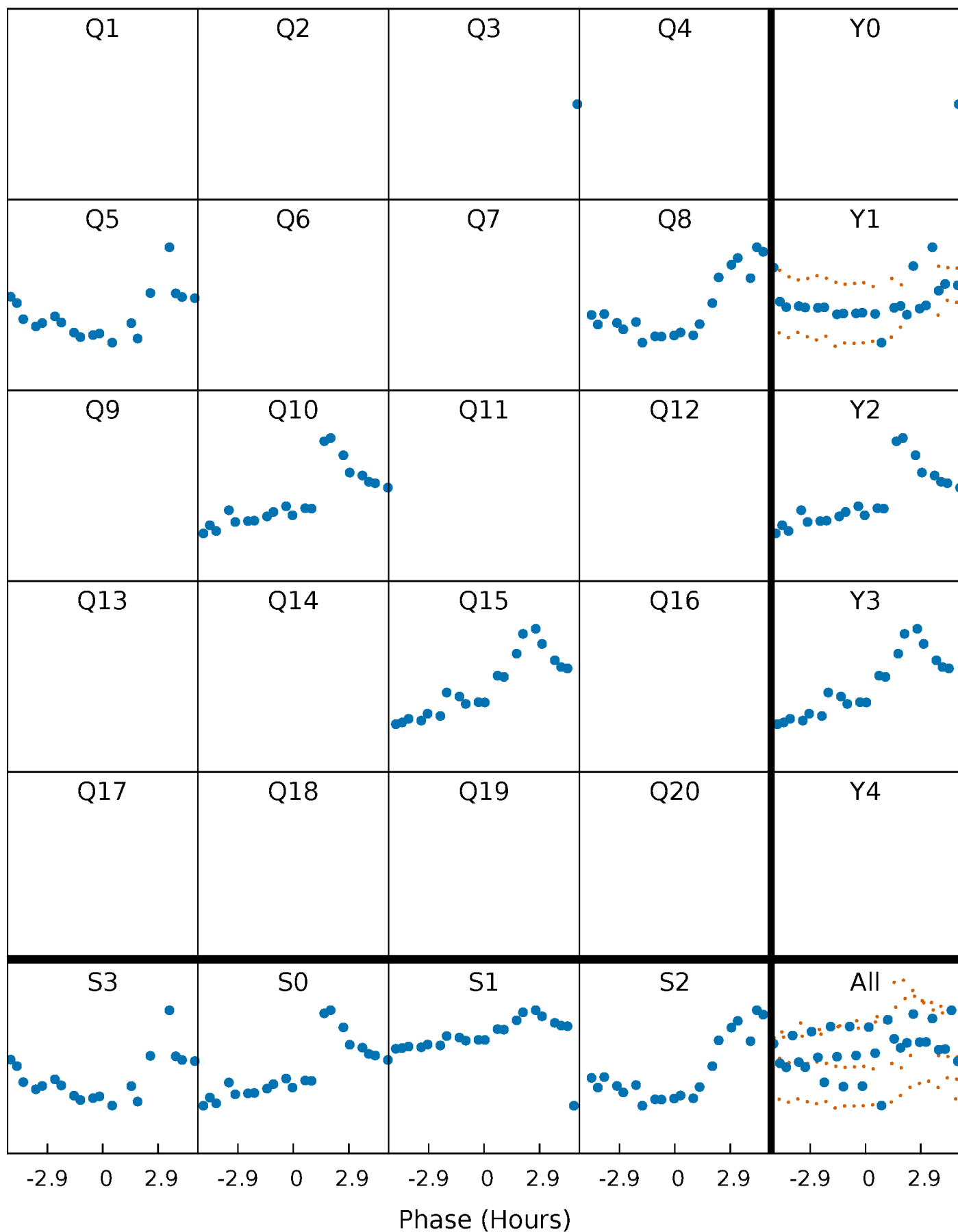


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



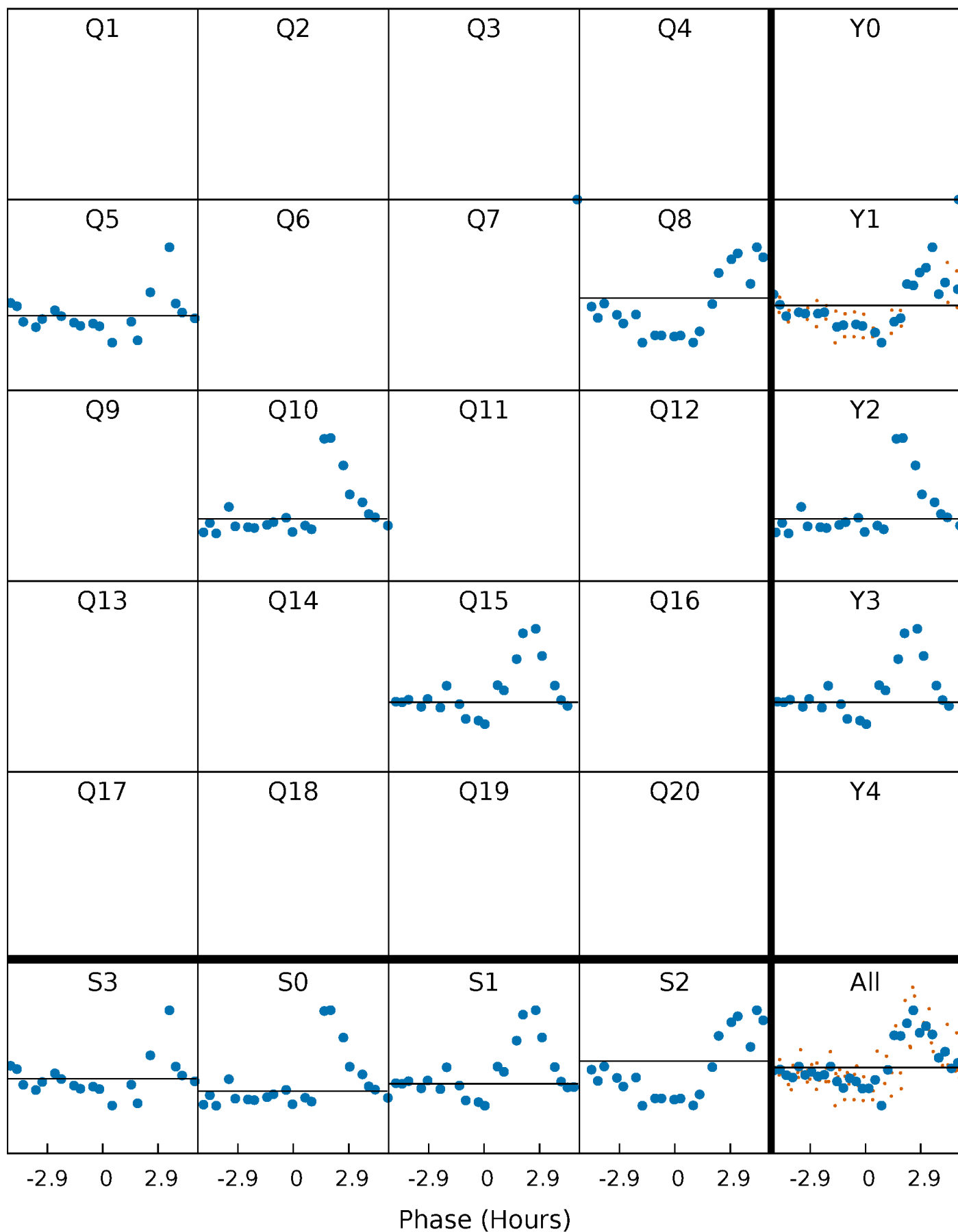
PDC Quarter-Phased Transit Curves

TCE 010536761-06 P=210.300551 Days $T_0=323.349581$ (BKJD)



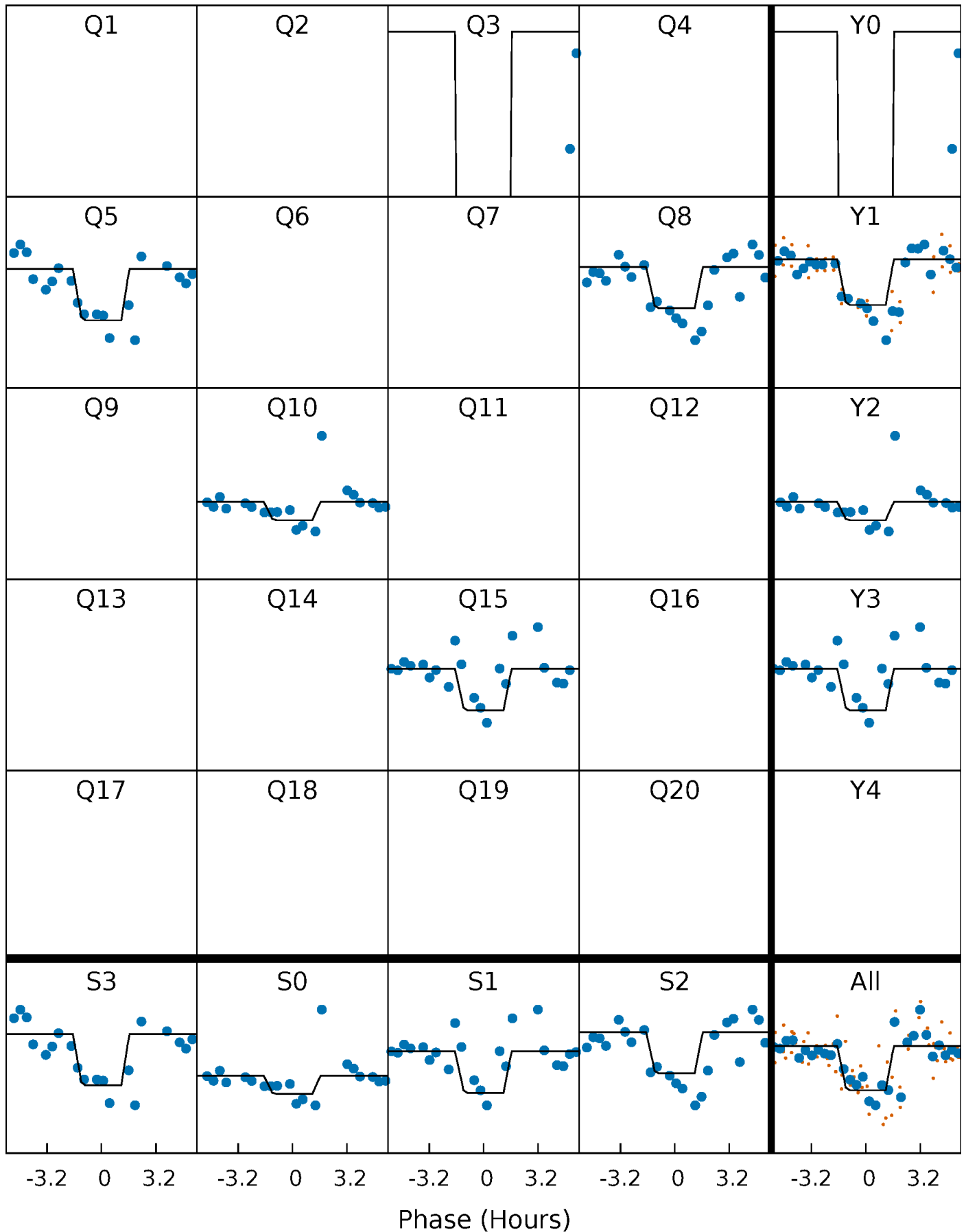
DV Quarter-Phased Transit Curves

TCE 010536761-06 P=210.300551 Days $T_0=323.349581$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

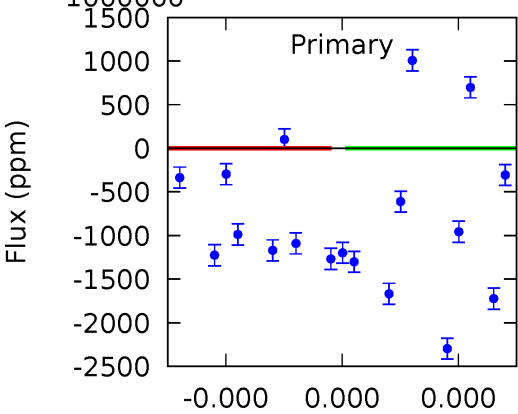
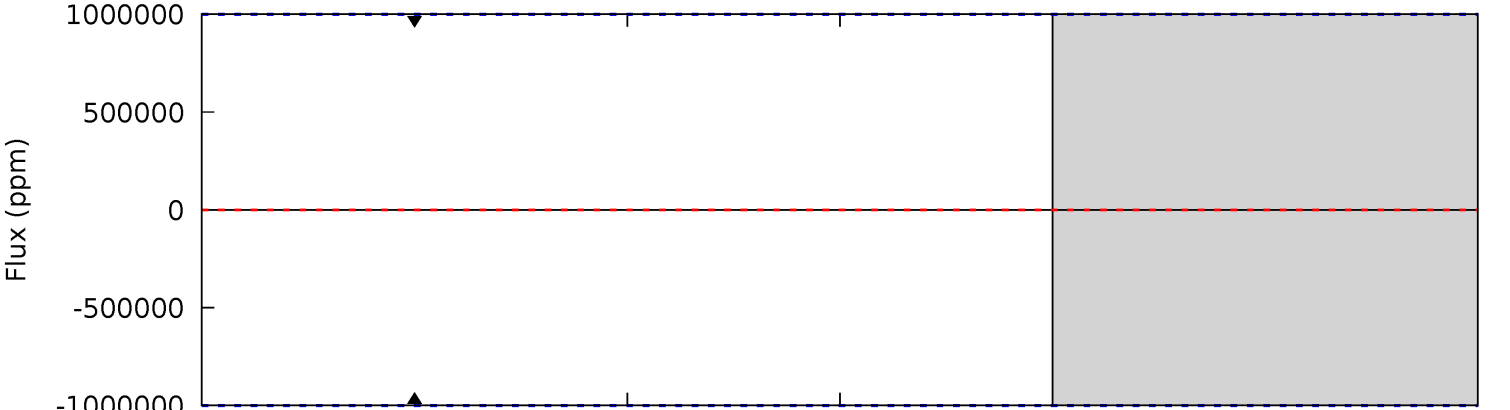
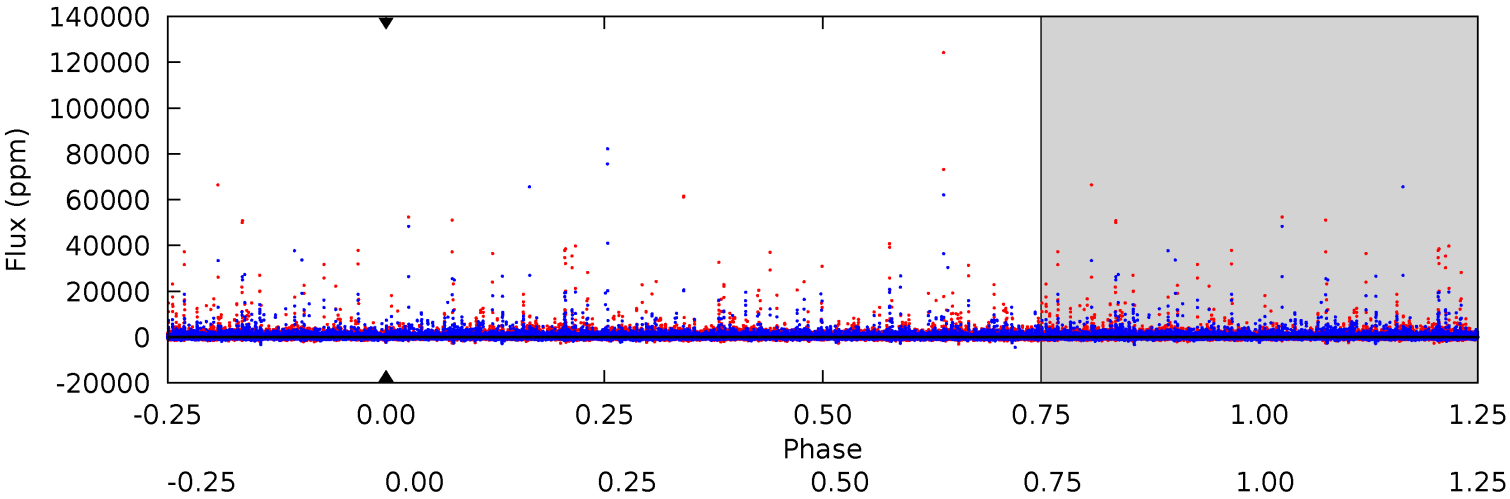
TCE 010536761-06 P=210.300551 Days $T_0=323.342721$ (BKJD)



DV Model-Shift Uniqueness Test

010536761-06, P = 210.300551 Days, E = 113.049030 Days

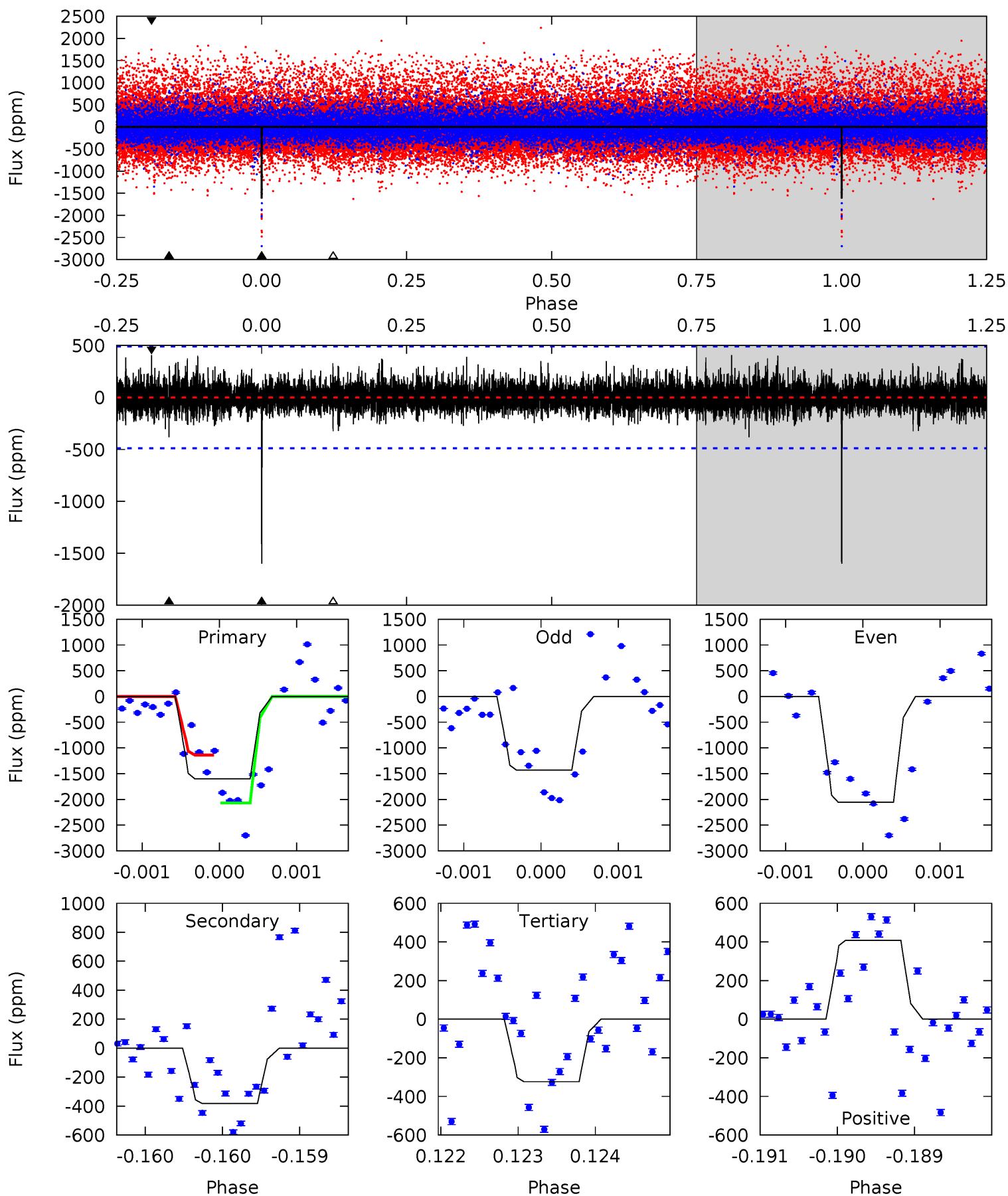
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010536761-06, P = 210.300551 Days, E = 113.042170 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	4.33	3.67	4.63	5.55	3.44	1.02	14.5	13.5	0.66	-0.29	3.21	0.95	0.20	5.31



Stellar Parameters For KIC 010536761

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3464^{+45}_{-45}	$4.885^{+0.036}_{-0.030}$	$0.000^{+0.100}_{-0.100}$	$0.363^{+0.032}_{-0.032}$	$0.370^{+0.041}_{-0.041}$	$10.890^{+1.912}_{-1.628}$
	+1%/-1%	+1%/-1%	+inf%/-inf%	+9%/-9%	+11%/-11%	+18%/-15%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 010536761-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$3.25^{+3.12}_{-2.14}$	182^{+4}_{-3}	2013^{+4847}_{-8250}	$1068^{+2411190}_{-1758295}$
Alt.	-382 ± 88	$3.36^{+3.30}_{-2.26}$	182^{+3}_{-4}	2330^{+801}_{-321}	4470^{+40168}_{-3328}

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 $A_{obs} \gg 1.0$

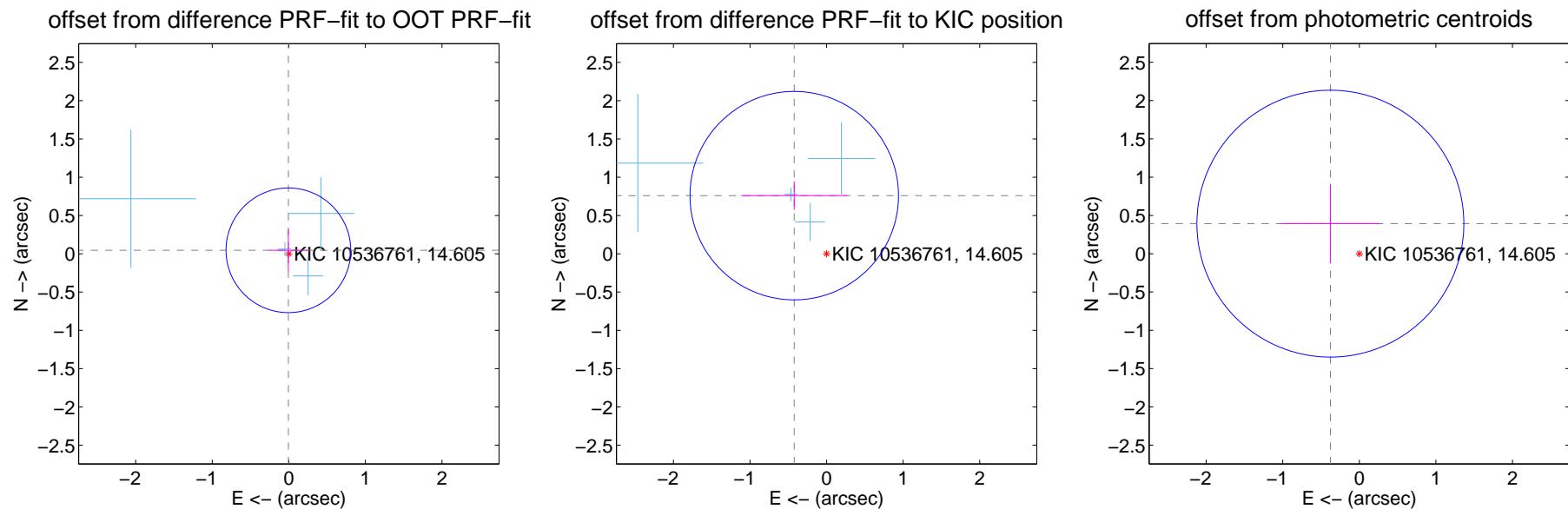
DV Centroid Data

Supplemental centroid analysis for 010536761-06. Kepler magnitude: 14.61. Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.046 ± 0.271	0.17	0.006 ± 0.255	0.046 ± 0.272
PRF-fit source offset from KIC position	0.869 ± 0.454	1.91	0.422 ± 0.693	0.759 ± 0.185
photometric centroid source offset	0.55 ± 0.58	0.94	0.38 ± 0.64	0.39 ± 0.52

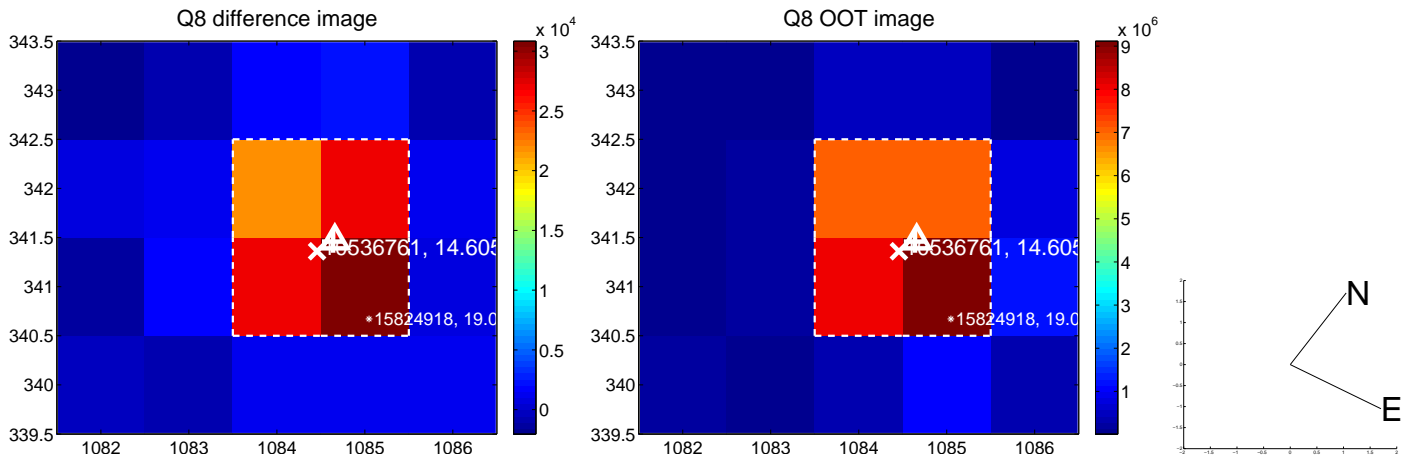
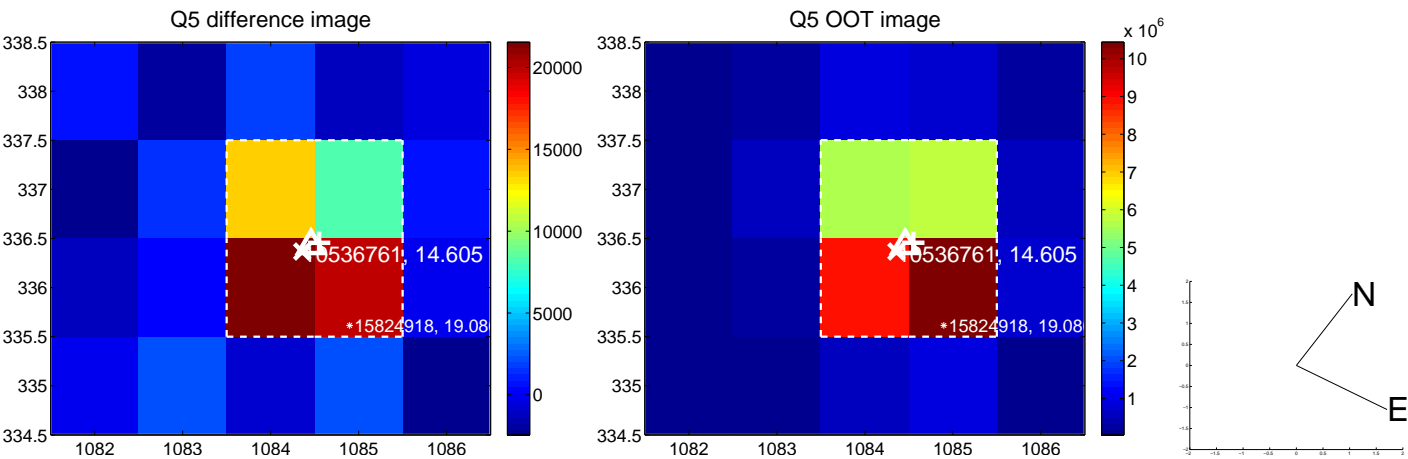


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

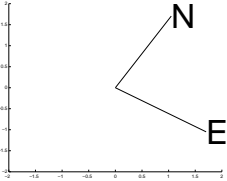
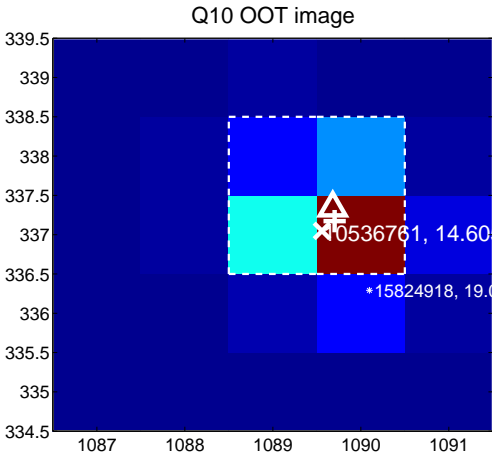
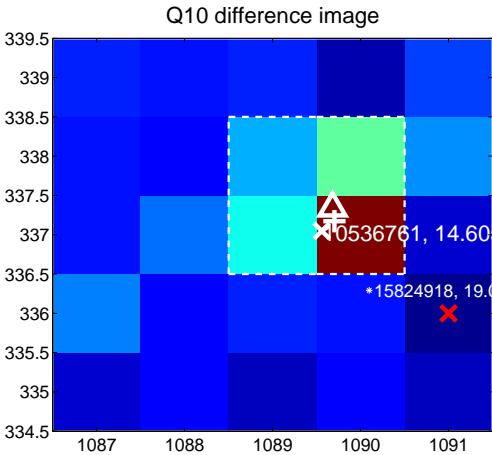


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

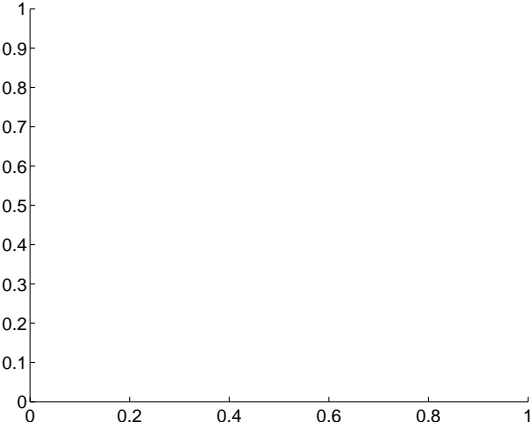
Q9 no difference image



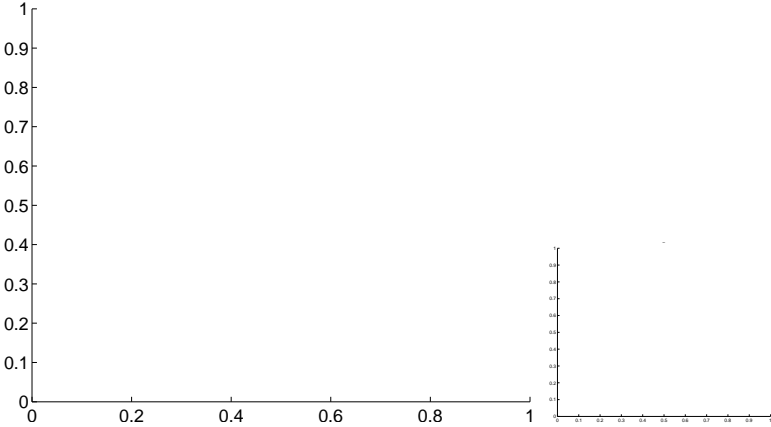
Q9 no OOT image



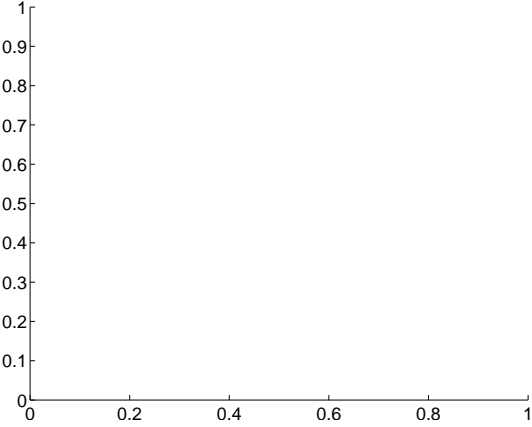
Q11 no difference image



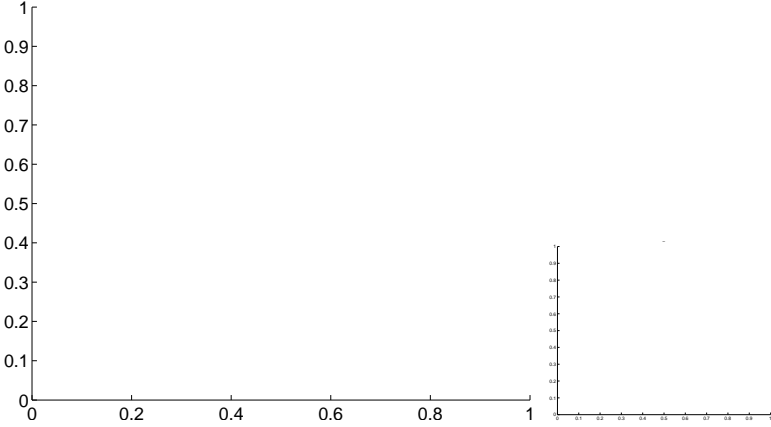
Q11 no OOT image



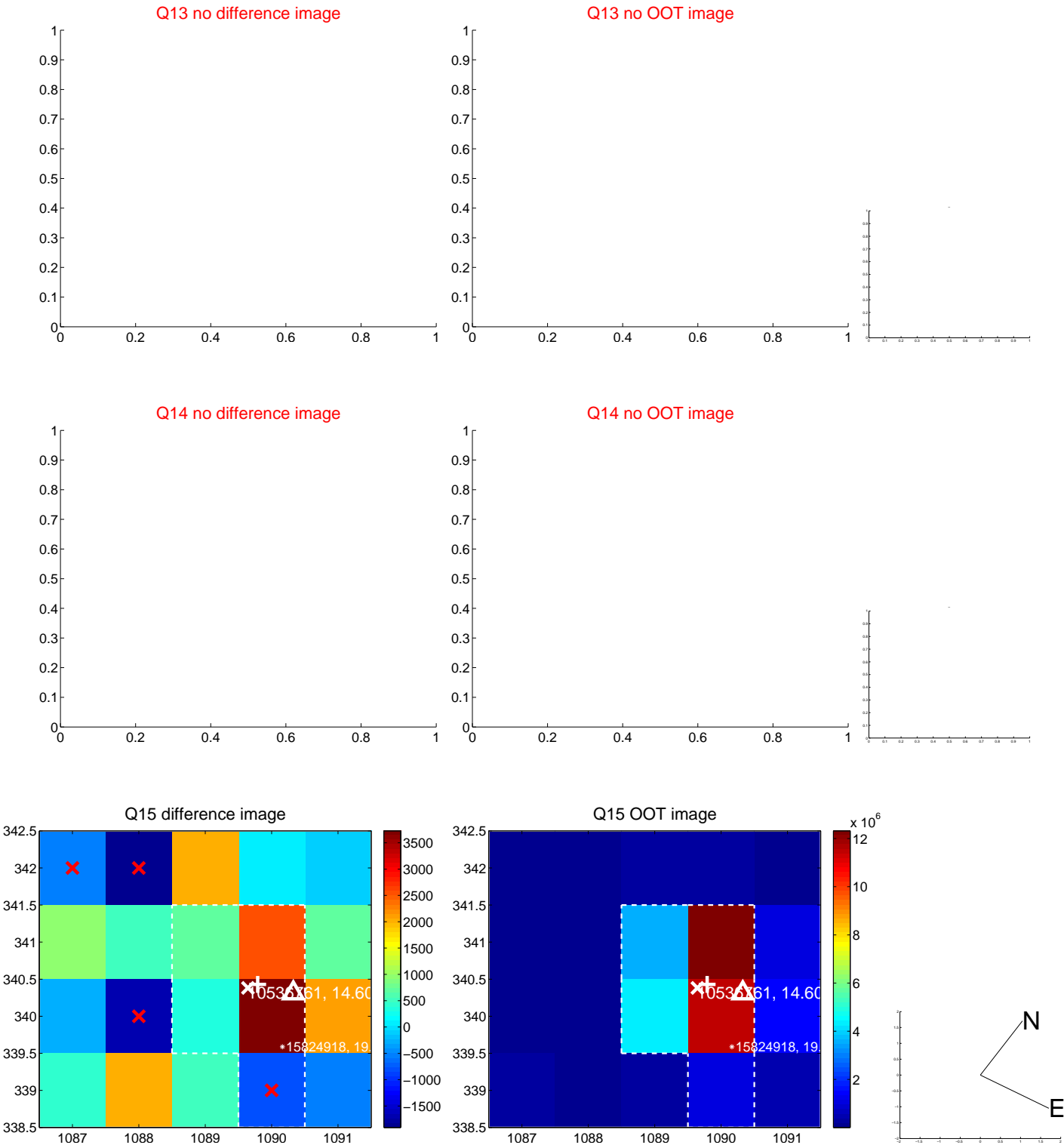
Q12 no difference image



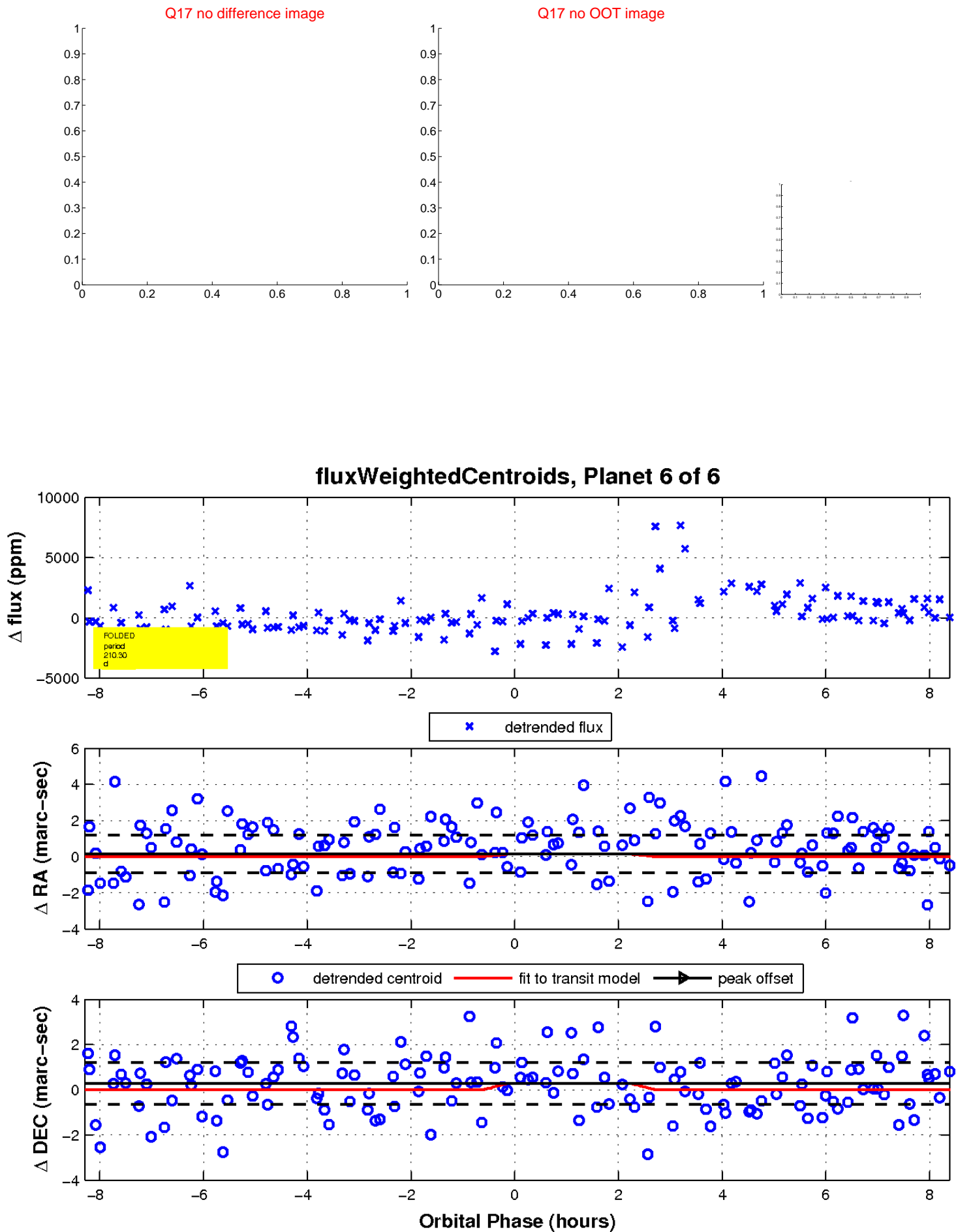
Q12 no OOT image



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

