

KIC 010905040

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})
010905040-01	OBS	No	414.463497	210.683462	735.0	8.739	15.6	6.2	0.70	5126	1.89	0.33
010905040-02	OBS	No	251.140477	224.879202	1031.3	12.719	16.6	8.0	0.70	5126	2.78	0.65
010905040-03	OBS	No	348.542561	386.512414	2135.0	11.615	16.5	13.4	0.70	5126	4.76	0.42
010905040-04	OBS	No	519.815036	497.725959	1164.0	6.609	14.8	8.3	0.70	5126	2.39	0.24
010905040-05	OBS	No	523.513314	453.336255	1219.3	3.269	10.7	8.8	0.70	5126	2.83	0.24
010905040-06	OBS	No	341.151907	165.641850	821.9	15.000	12.7	-1.0	0.70	5126	1.95	0.43
010905040-07	OBS	No	440.968538	480.754313	1250.4	16.375	11.4	8.9	0.70	5126	2.94	0.30
010905040-08	OBS	No	399.619133	456.057227	967.7	4.500	9.9	-1.0	0.70	5126	2.12	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010905040-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010905040-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010905040-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

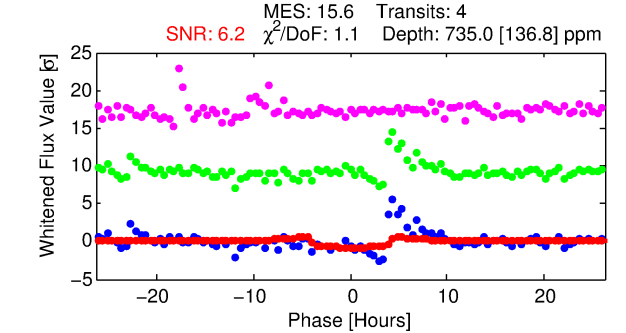
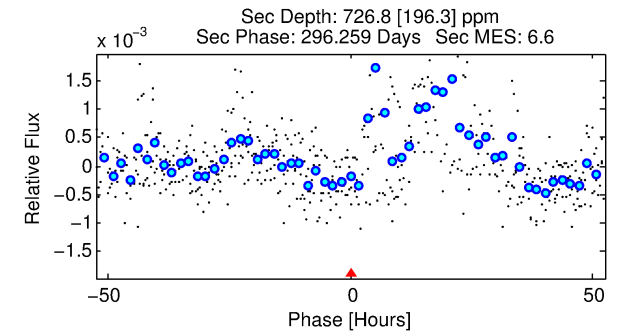
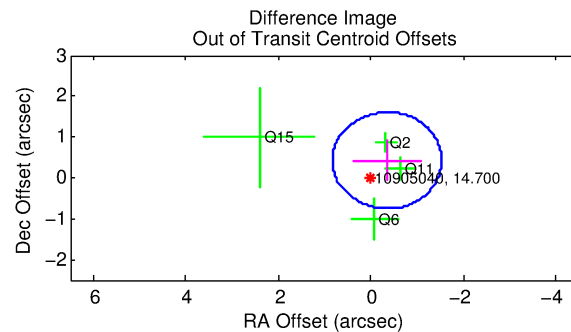
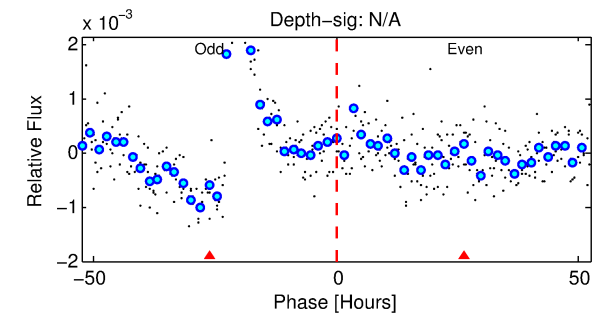
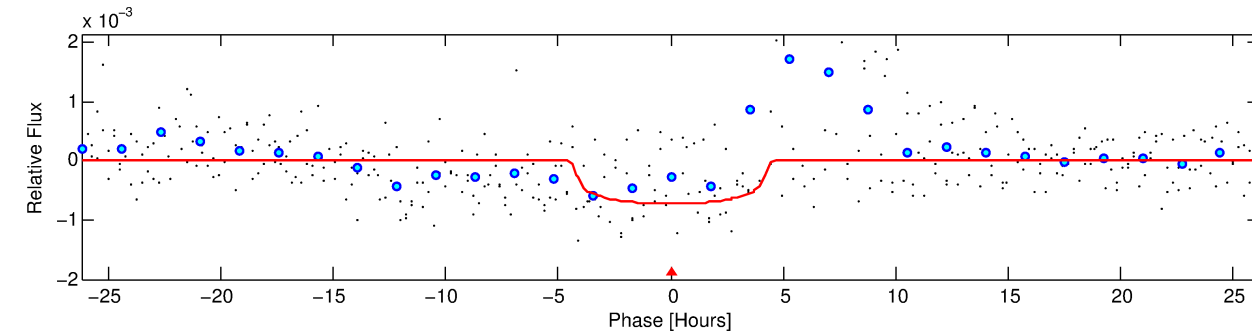
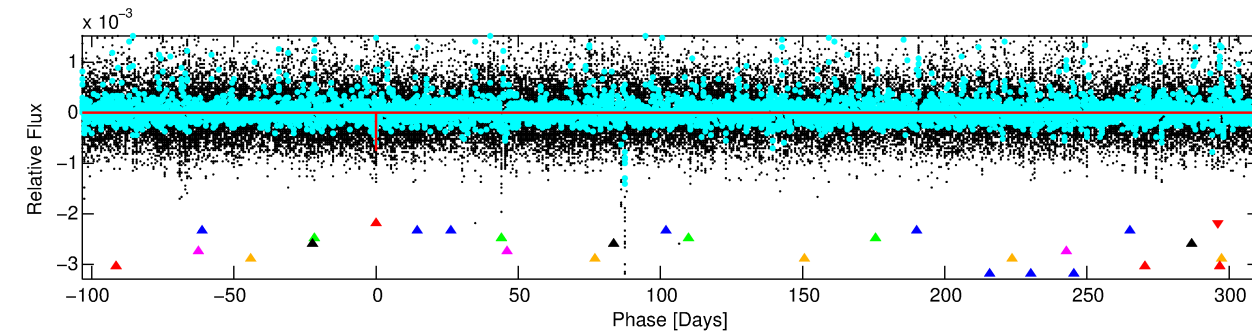
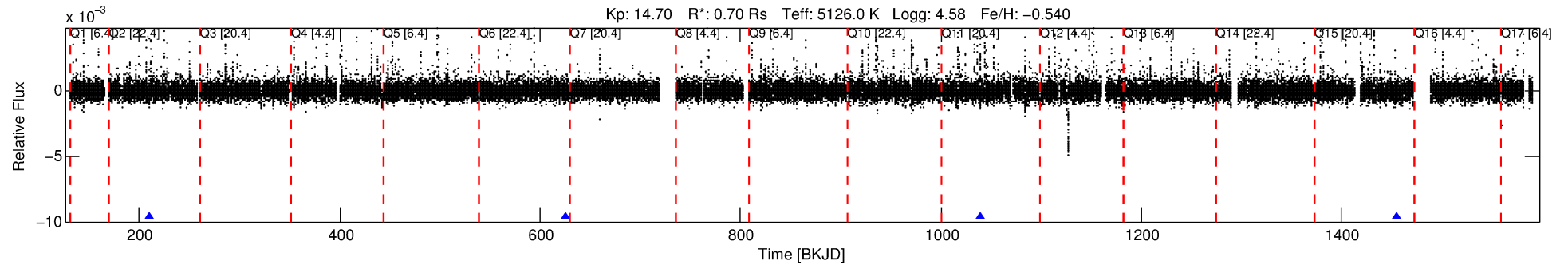
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010905040-01

No Significant Match Found

DV One-Page Summary

KIC: 10905040 Candidate: 1 of 8 Period: 414.463 d



DV Fit Results:

Period = 414.46350 [0.00762] d
Epoch = 210.6835 [0.0131] BKJD
Rp/R* = 0.0249 [0.0409]
a/R* = 337.00 [2114.61]
b = 0.43 [12.02]
Seff = 0.33 [0.06]
Teq = 193 [9] K
Rp = 1.89 [3.11] Re
a = 0.9515 [0.0876] AU
Ag = 100911.34 [332329.54] [0.30σ]
Teffp = 5330 [4387] K [1.17σ]

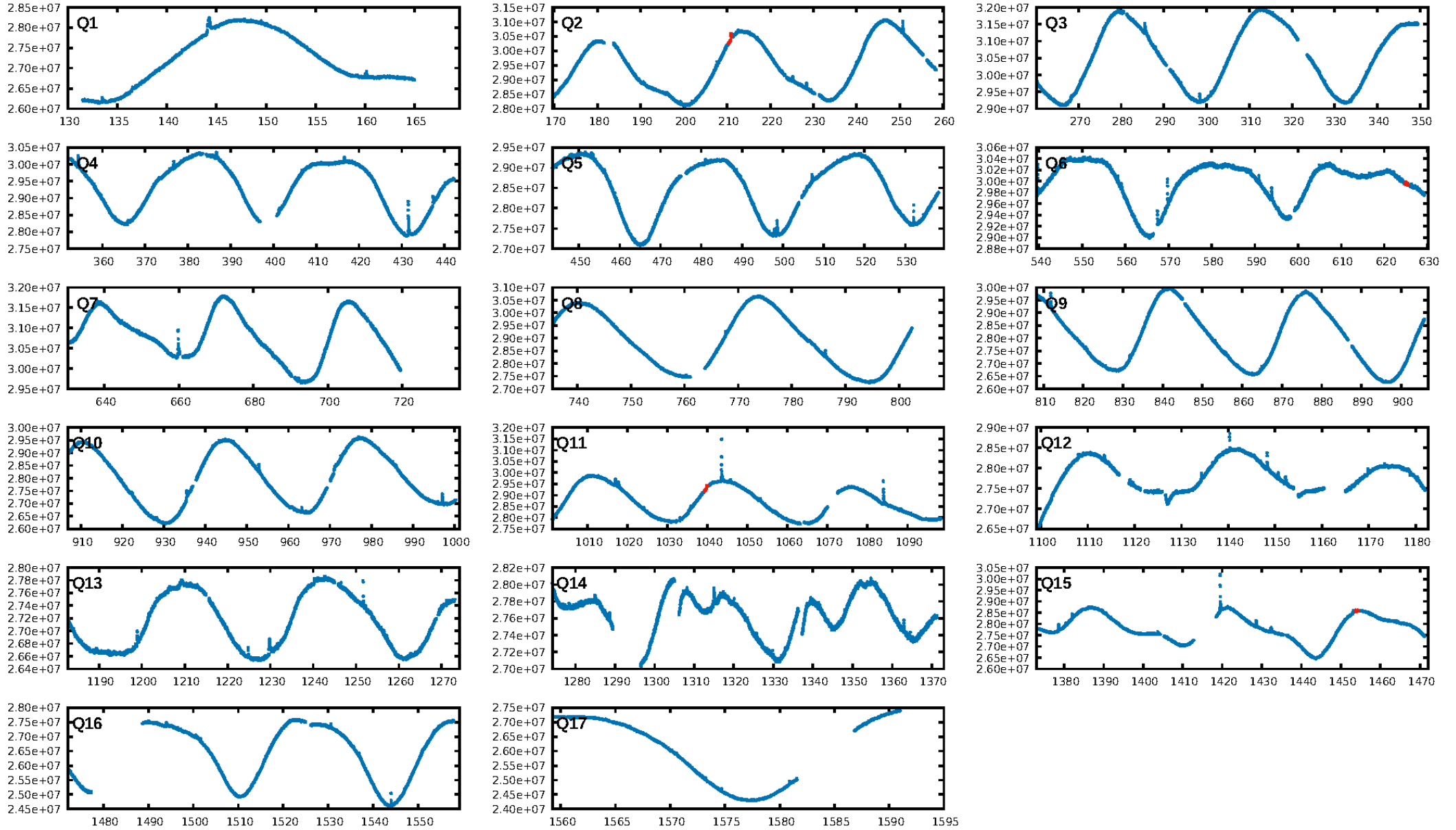
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [36.24σ]
LongPeriod-sig: 100.0% [34.27σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 82.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.218
Centroid-sig: 62.7%
Centroid-so: 0.760 arcsec [0.63σ]
OotOffset-rm: 0.548 arcsec [1.39σ]
OotOffset-st: 2/2/0/0 [4]
KicOffset-rm: 0.713 arcsec [1.68σ]
KicOffset-st: 2/2/0/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

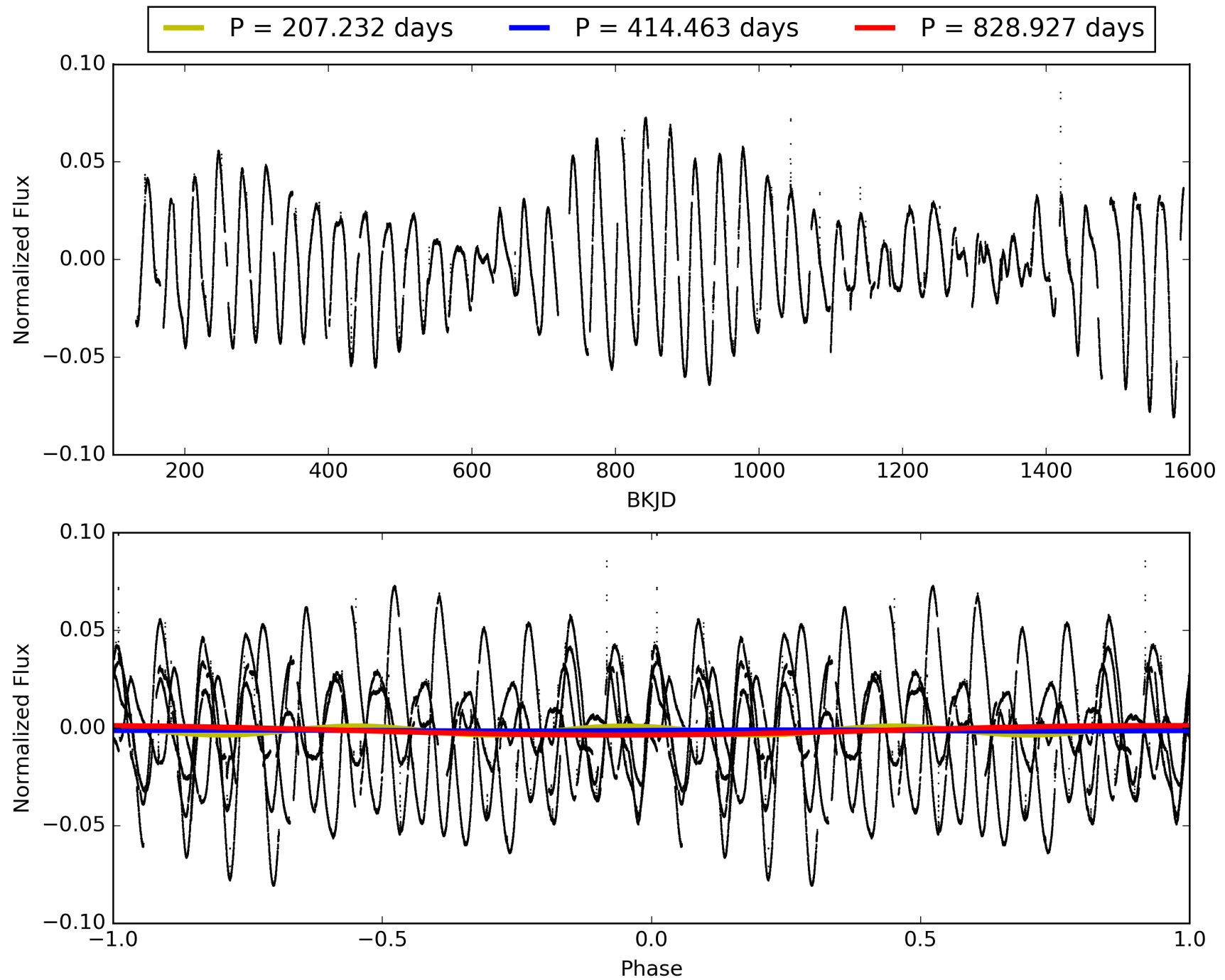
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:05:10 Z

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

TCE 010905040-01, PDC Light Curves

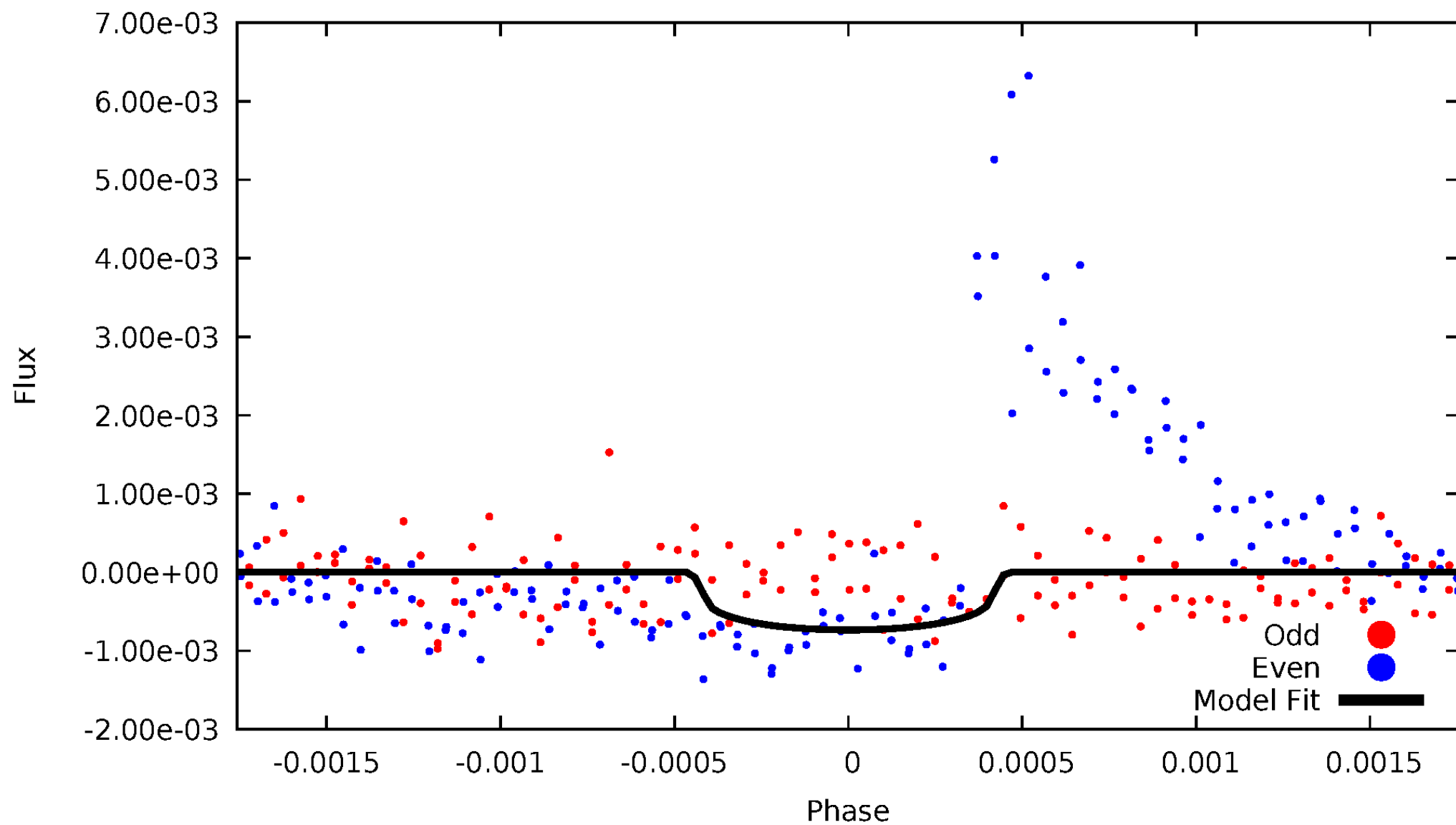


TCE 010905040-01



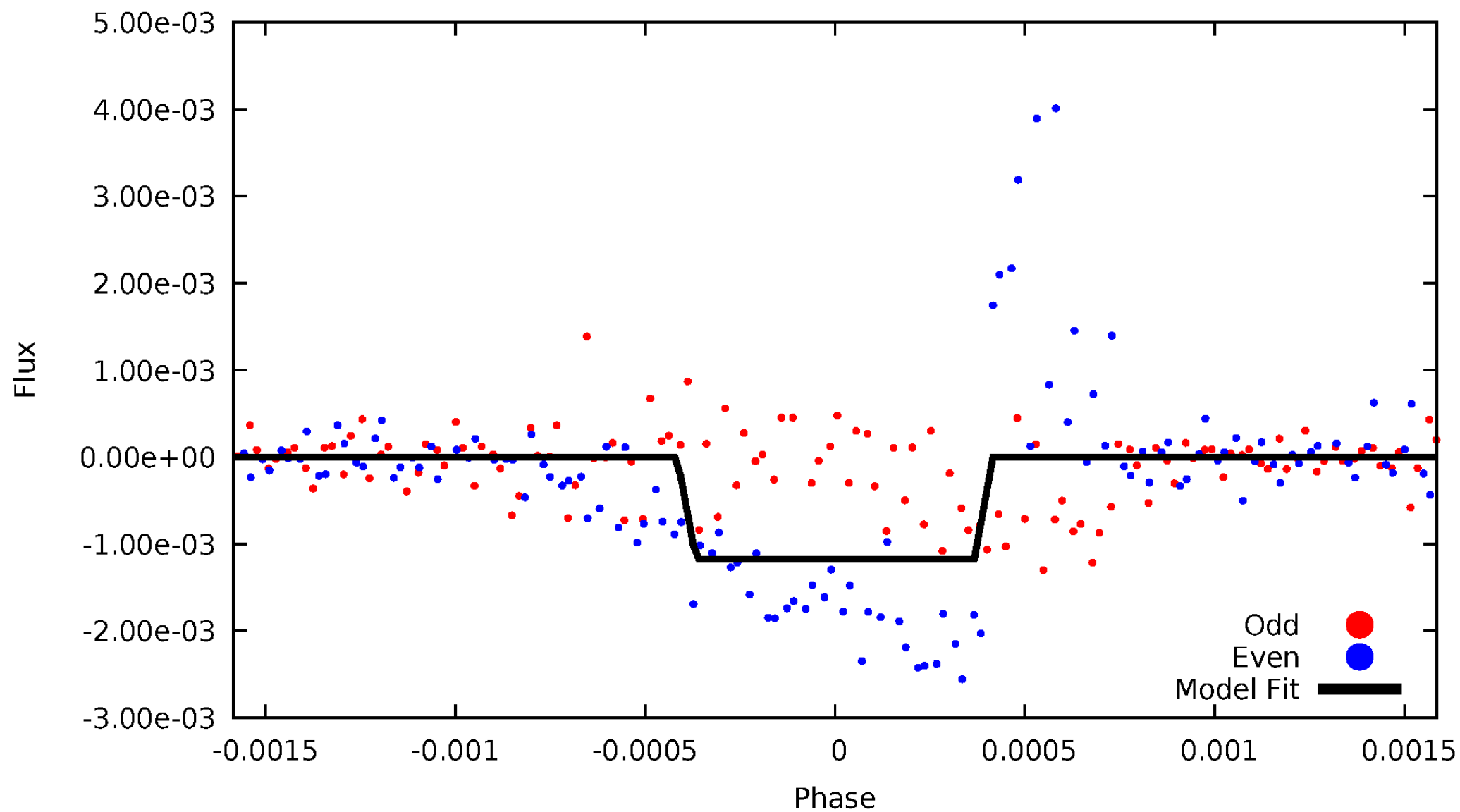
DV Odd/Even

TCE 010905040-01



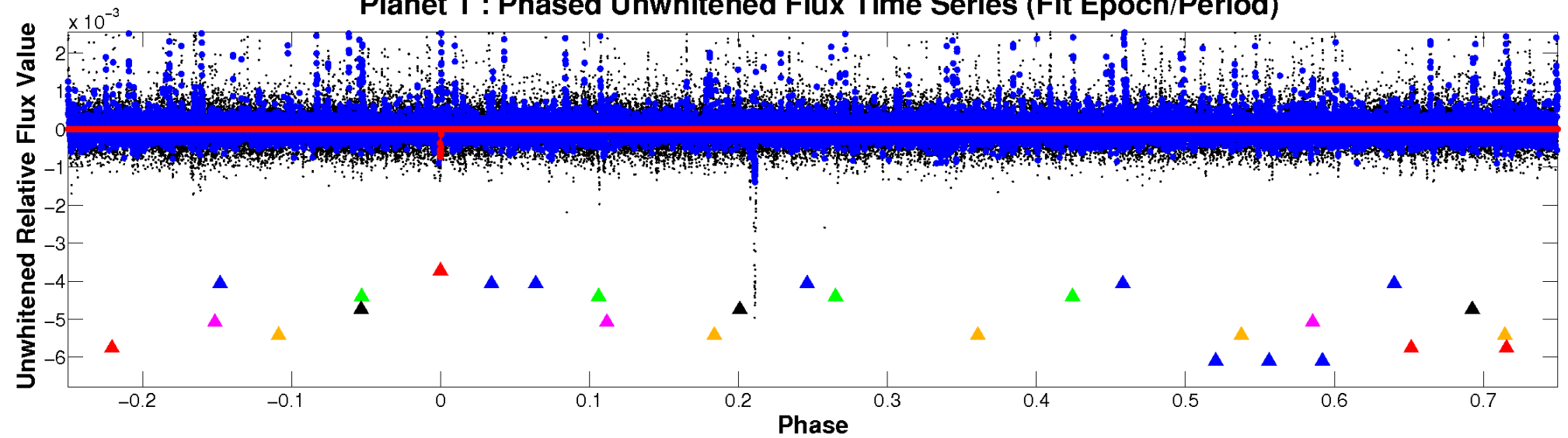
ALT Odd/Even

TCE 010905040-01

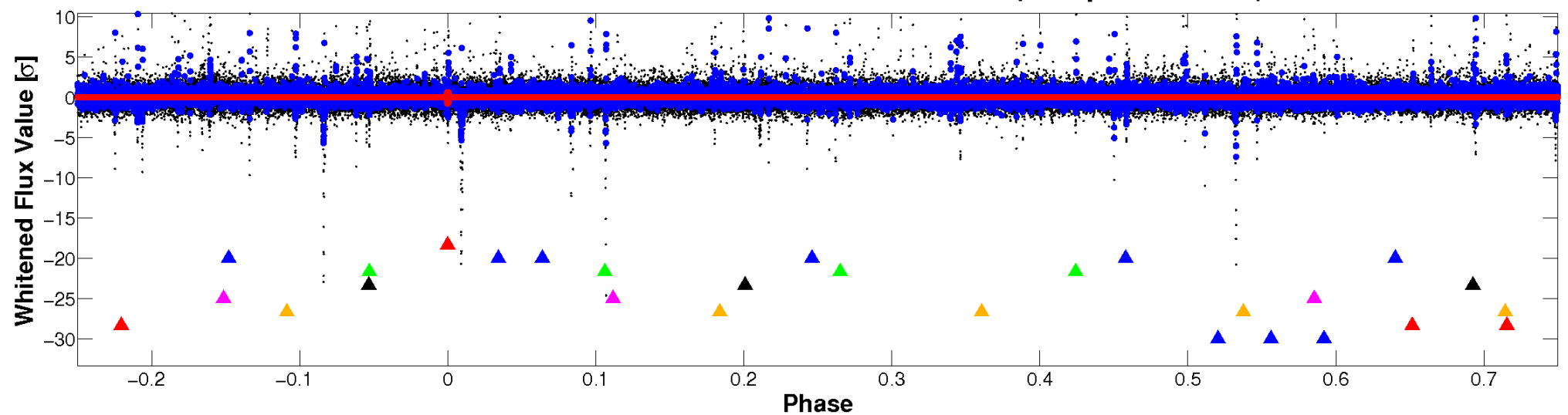


Non-Whitened Vs. Whitened Light Curve

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

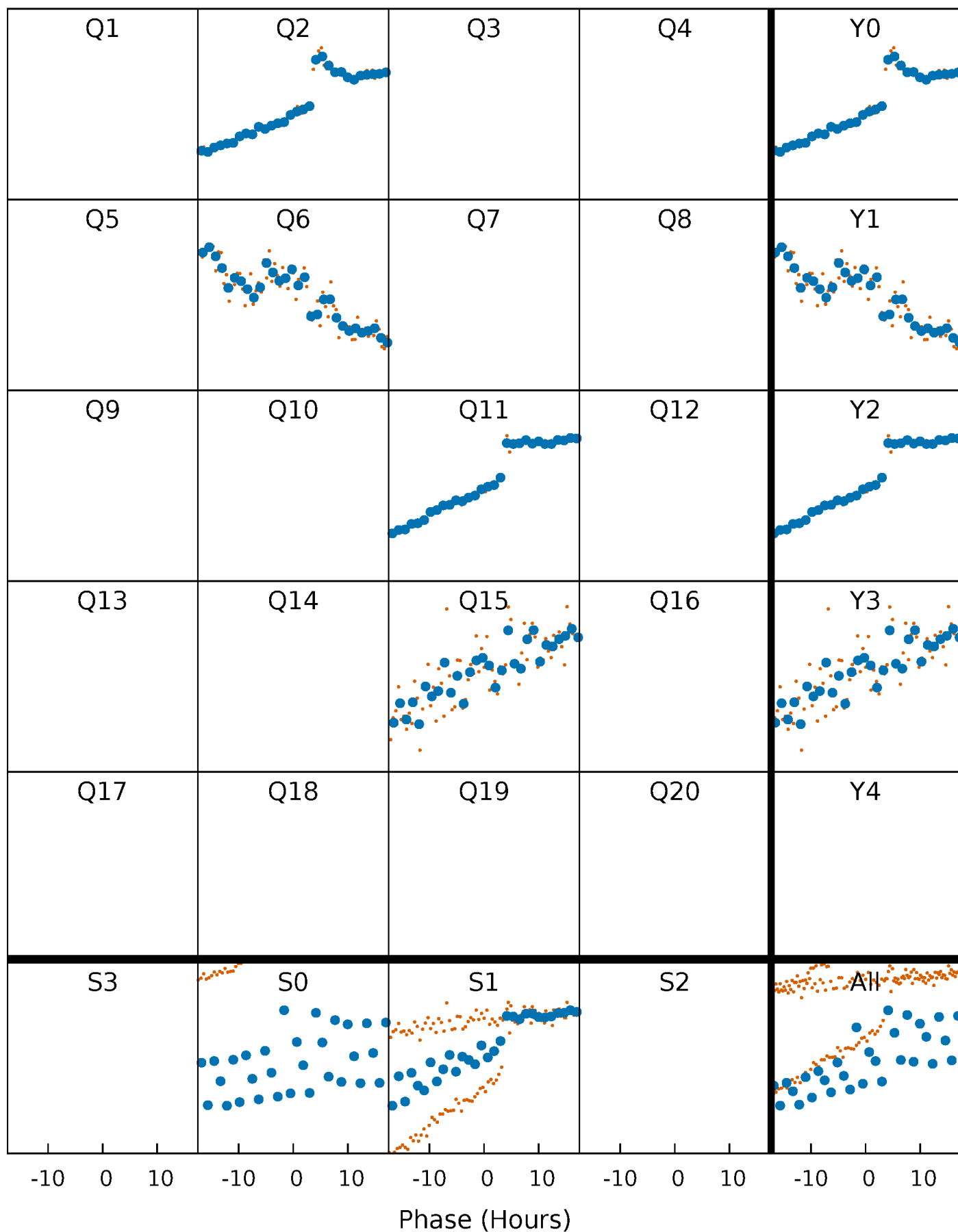


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



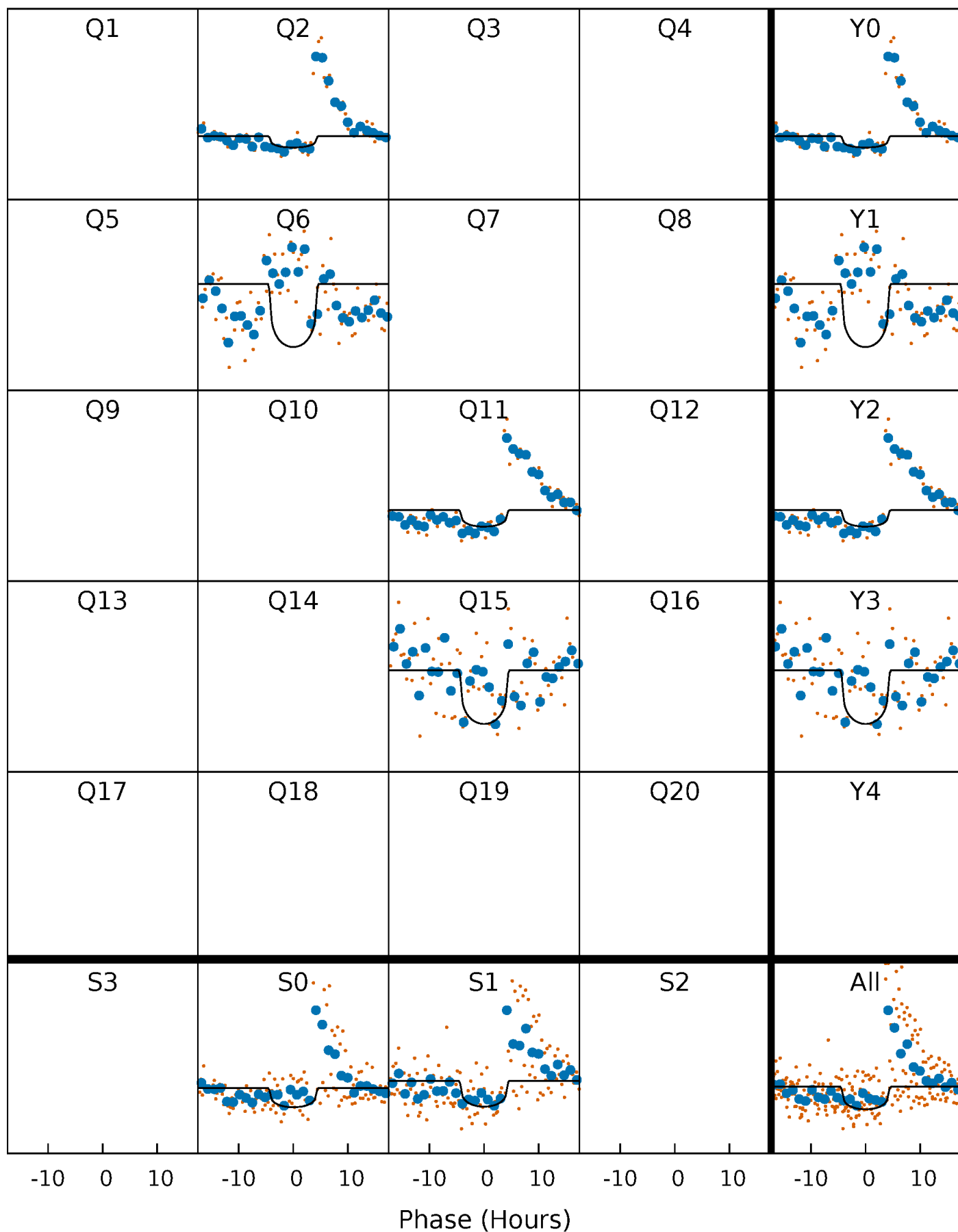
PDC Quarter-Phased Transit Curves

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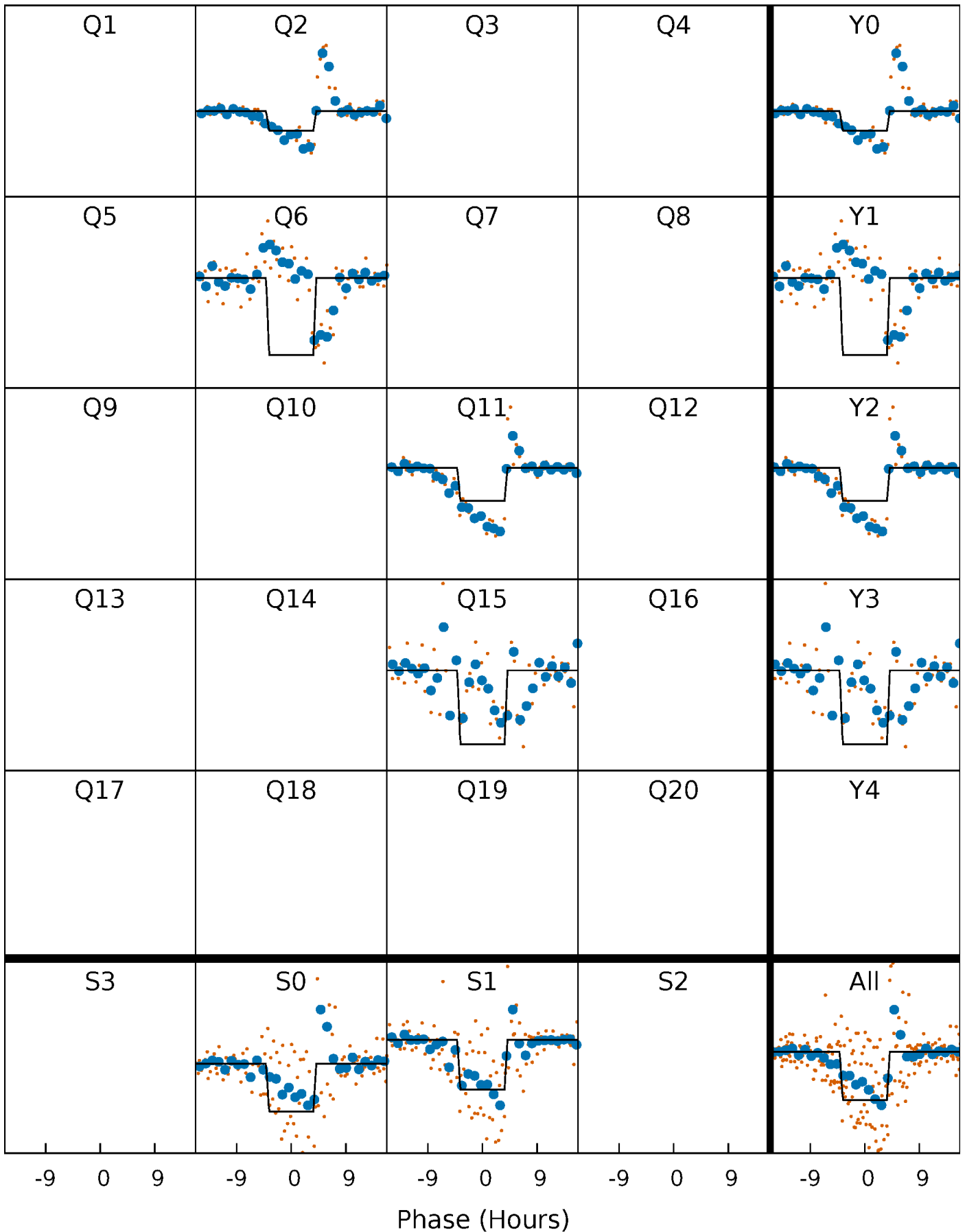
DV Quarter-Phased Transit Curves

TCE 010905040-01 P=414.463497 Days $T_0=210.683462$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

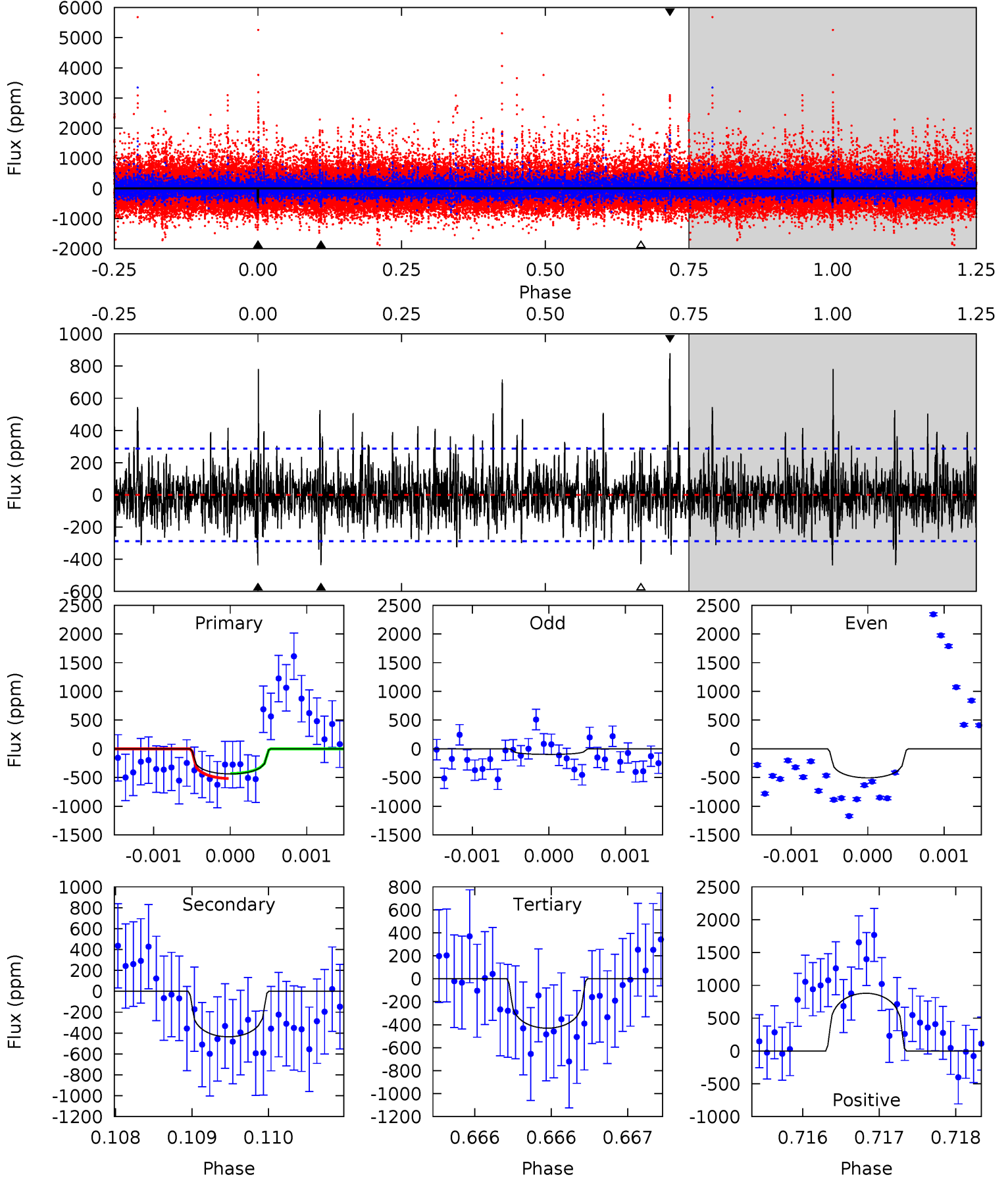
TCE 010905040-01 P=414.467520 Days $T_0=210.657444$ (BKJD)



DV Model-Shift Uniqueness Test

010905040-01, P = 414.463497 Days, E = 210.683462 Days

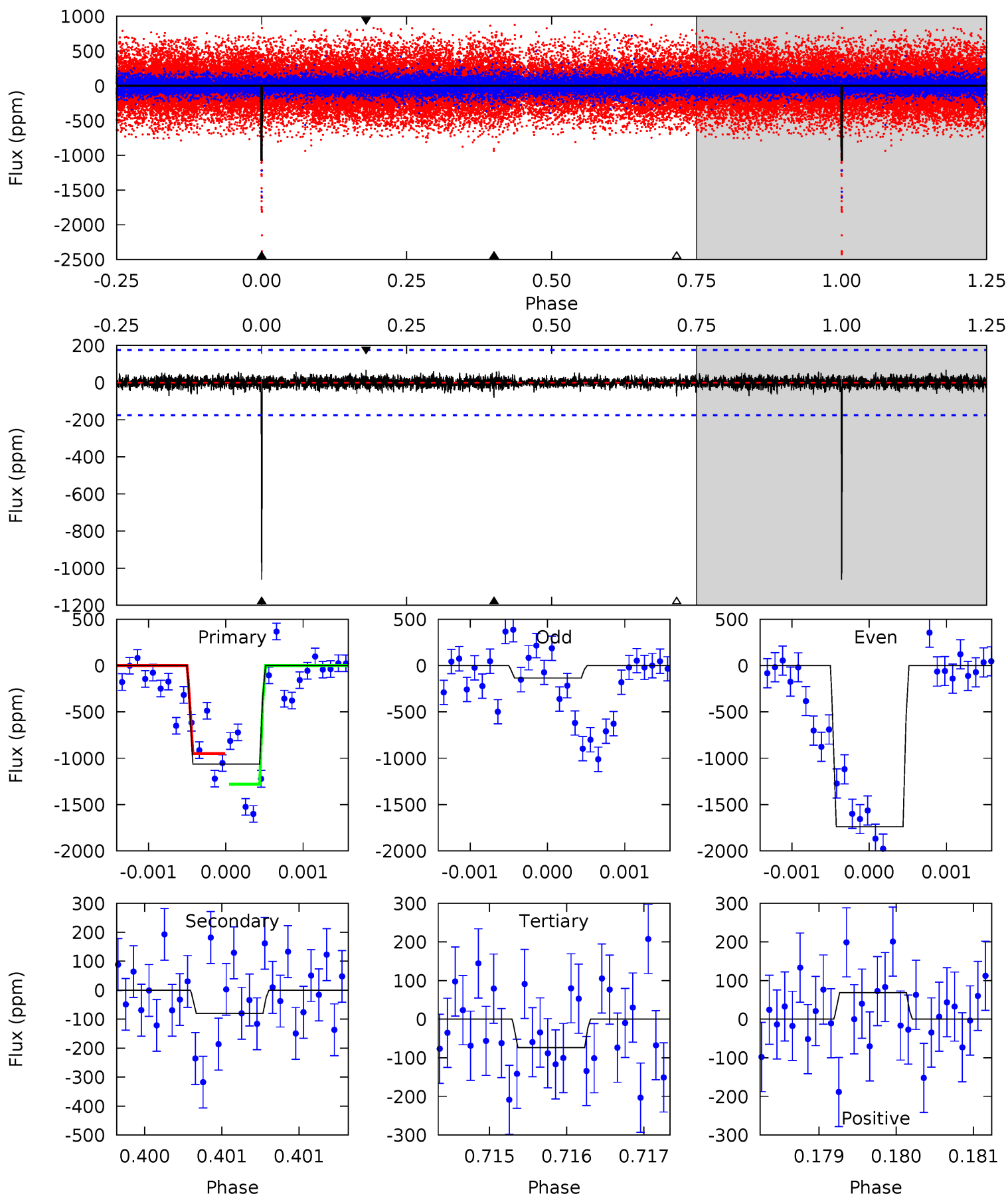
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.30	8.28	8.17	16.7	5.47	3.32	2.23	0.13	-8.39	0.10	-8.42	3.06	0.83	0.67	0.82



Alt Model-Shift Uniqueness Test

010905040-01, P = 414.467520 Days, E = 210.657444 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.1	2.48	2.29	2.14	5.48	3.34	0.48	30.8	31.0	0.19	0.34	30.4	0.93	0.06	5.12



Stellar Parameters For KIC 010905040

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5126^{+154}_{-138}	$4.578^{+0.078}_{-0.045}$	$-0.540^{+0.350}_{-0.300}$	$0.696^{+0.073}_{-0.073}$	$0.668^{+0.087}_{-0.037}$	$2.792^{+0.855}_{-0.493}$
	+3%/-3%	+2%/-1%	+65%/-56%	+10%/-10%	+13%/-6%	+31%/-18%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010905040-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-436 ± 53	$3.04^{+2.67}_{-2.09}$	269^{+10}_{-10}	3976^{+2496}_{-722}	$24178^{+225030}_{-17230}$
Alt.	-80 ± 32	$3.21^{+2.61}_{-2.06}$	269^{+10}_{-11}	2958^{+1117}_{-466}	3619^{+24745}_{-2632}

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 $A_{obs} \gg 1.0$

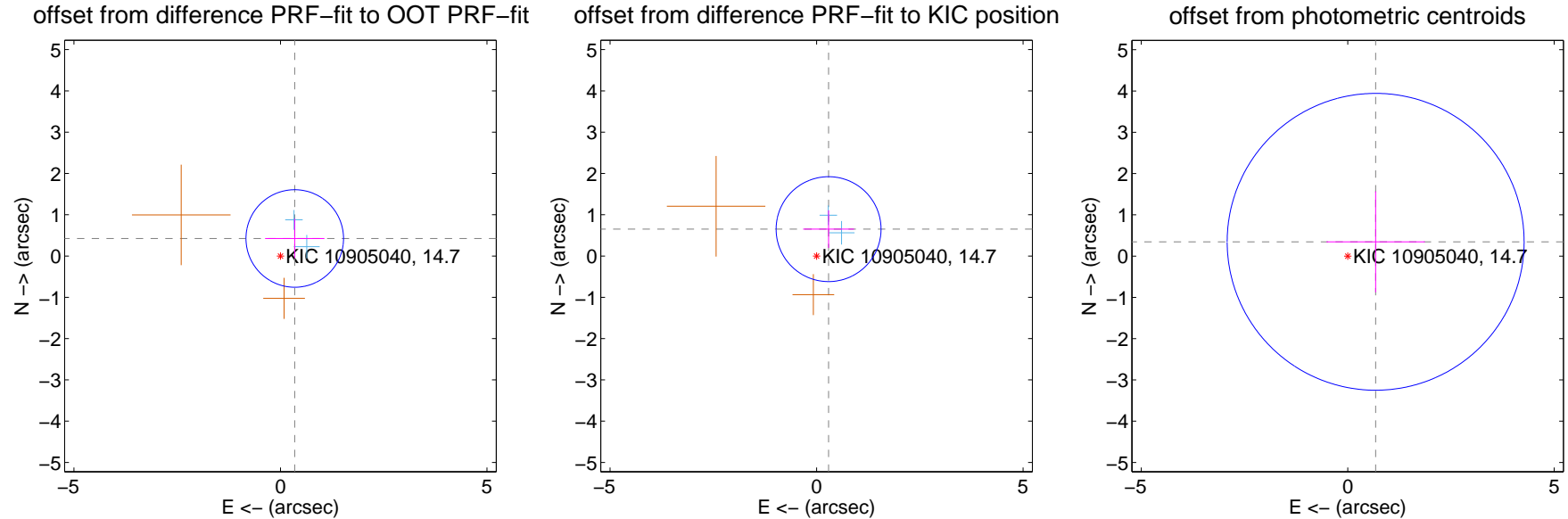
DV Centroid Data

Supplemental centroid analysis for 010905040-01. Kepler magnitude: 14.70. Transit SNR 6.16

There are 2 quarters with good PRF difference image offsets

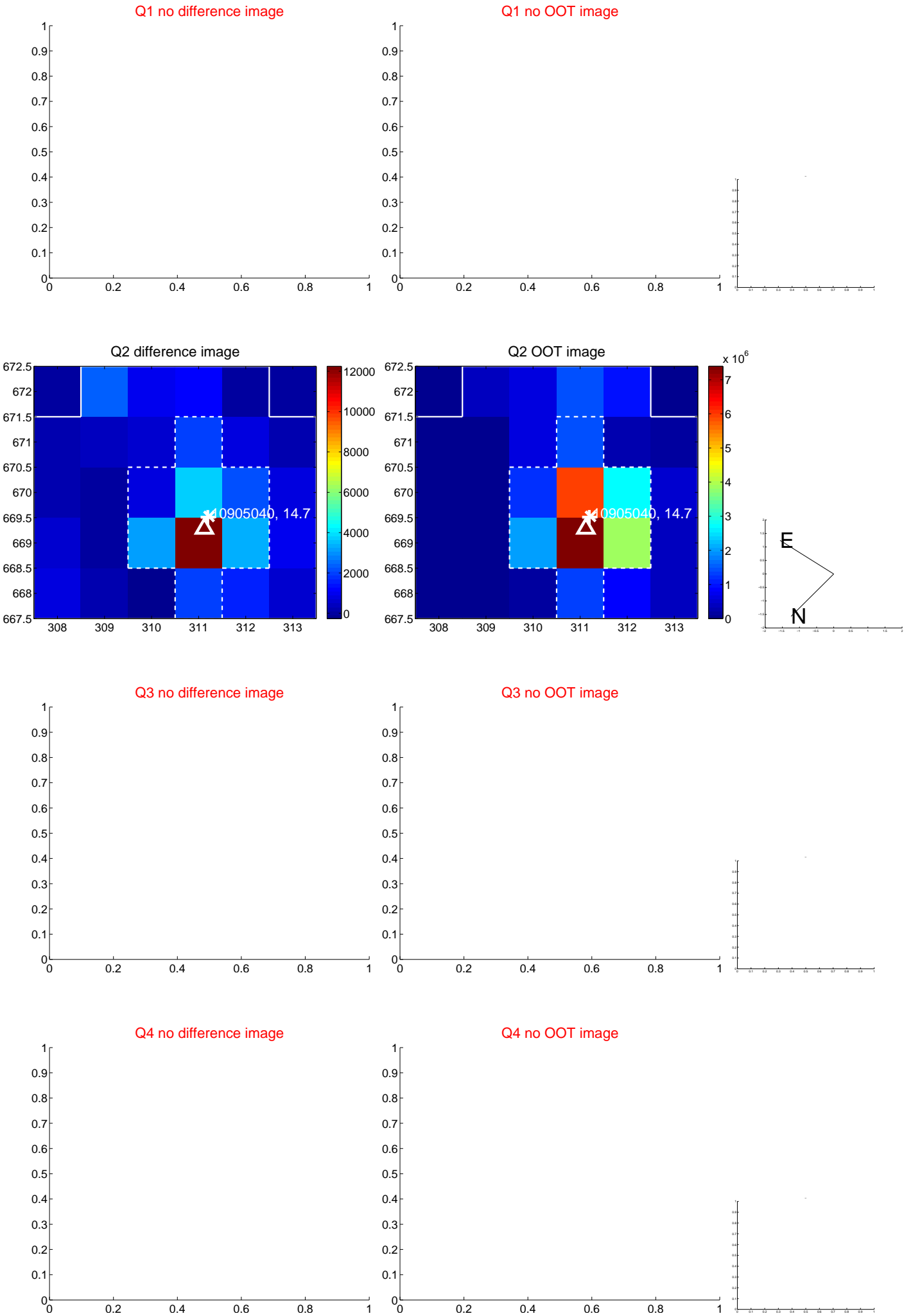
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.548 ± 0.394	1.39	-0.346 ± 0.718	0.425 ± 0.476
PRF-fit source offset from KIC position	0.713 ± 0.423	1.68	-0.291 ± 0.616	0.651 ± 0.455
photometric centroid source offset	0.76 ± 1.20	0.63	-0.68 ± 1.19	0.35 ± 1.22

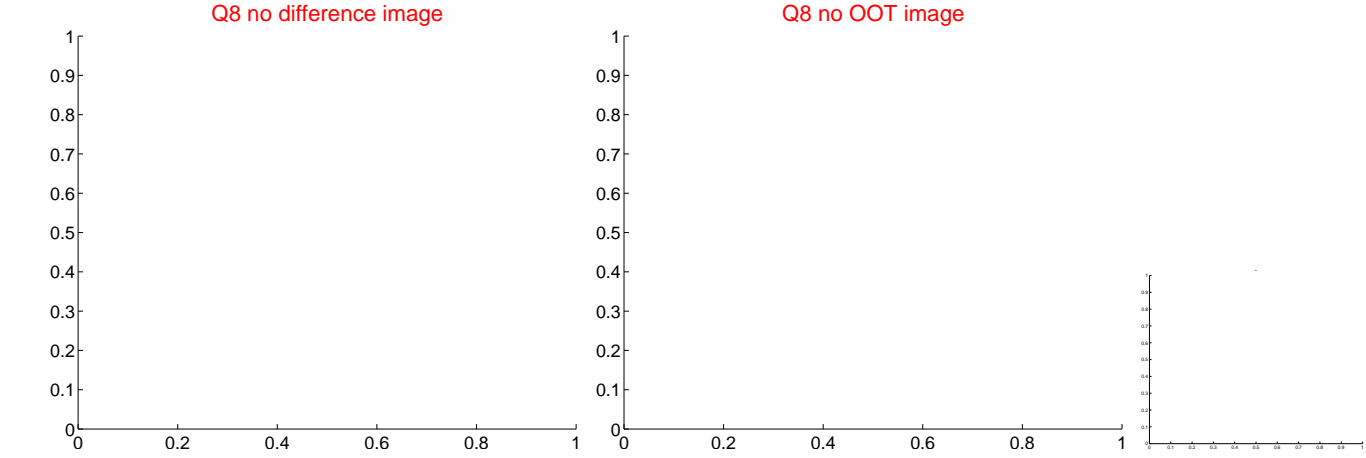
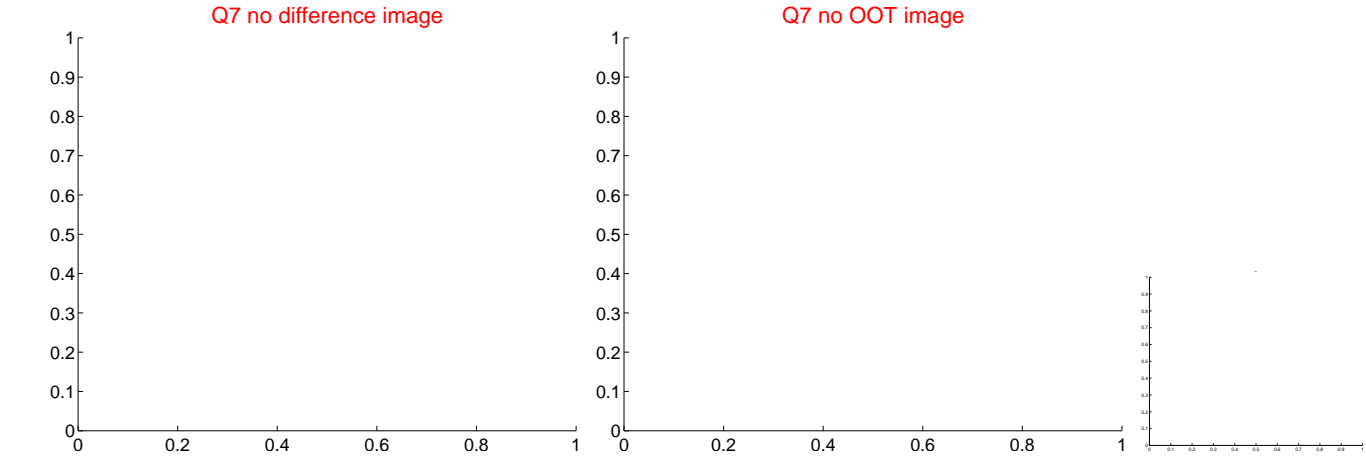
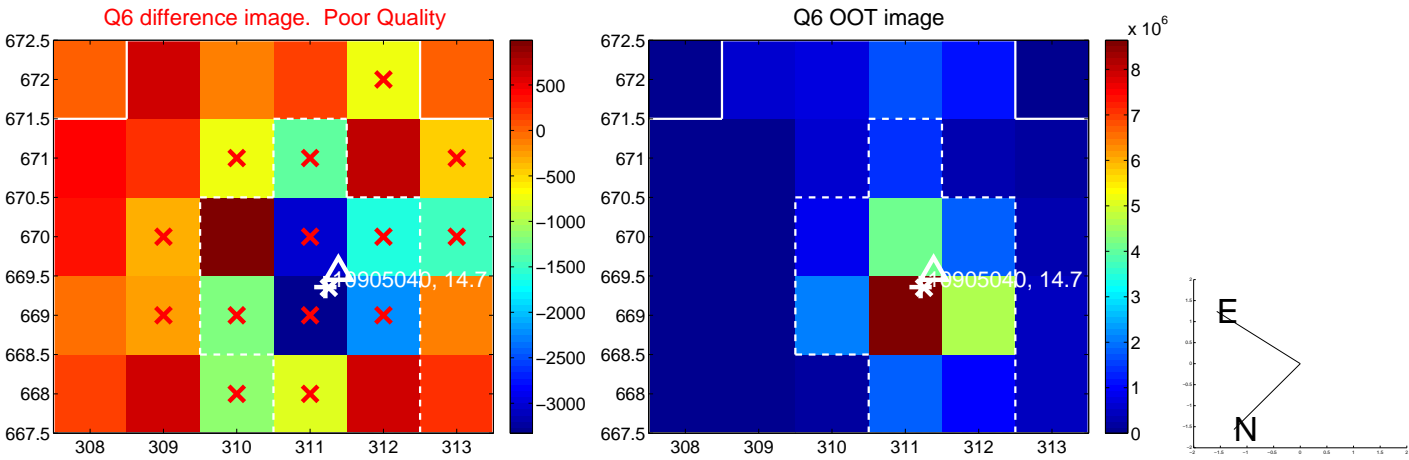
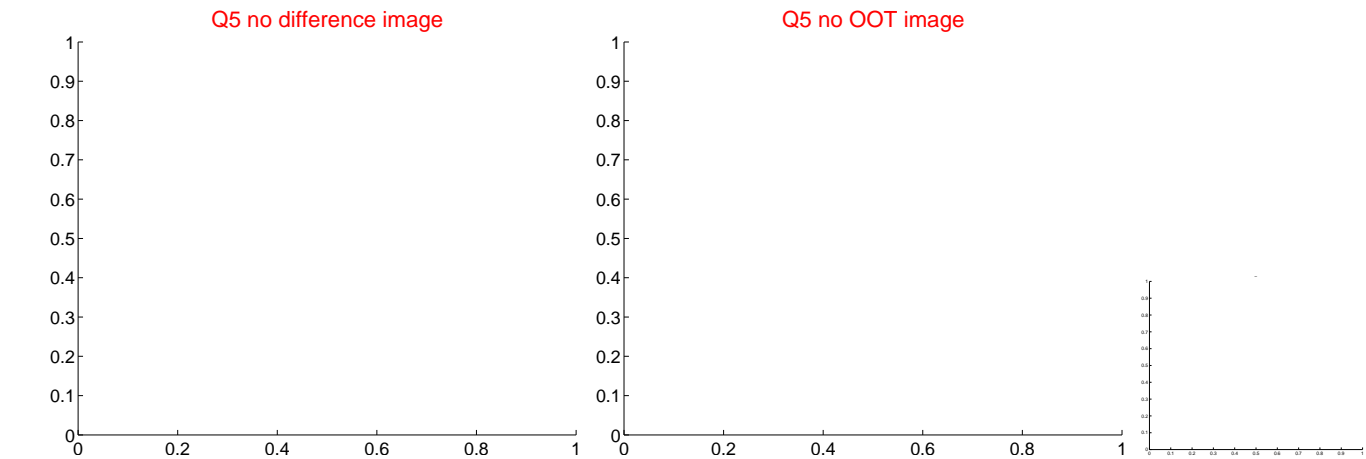


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

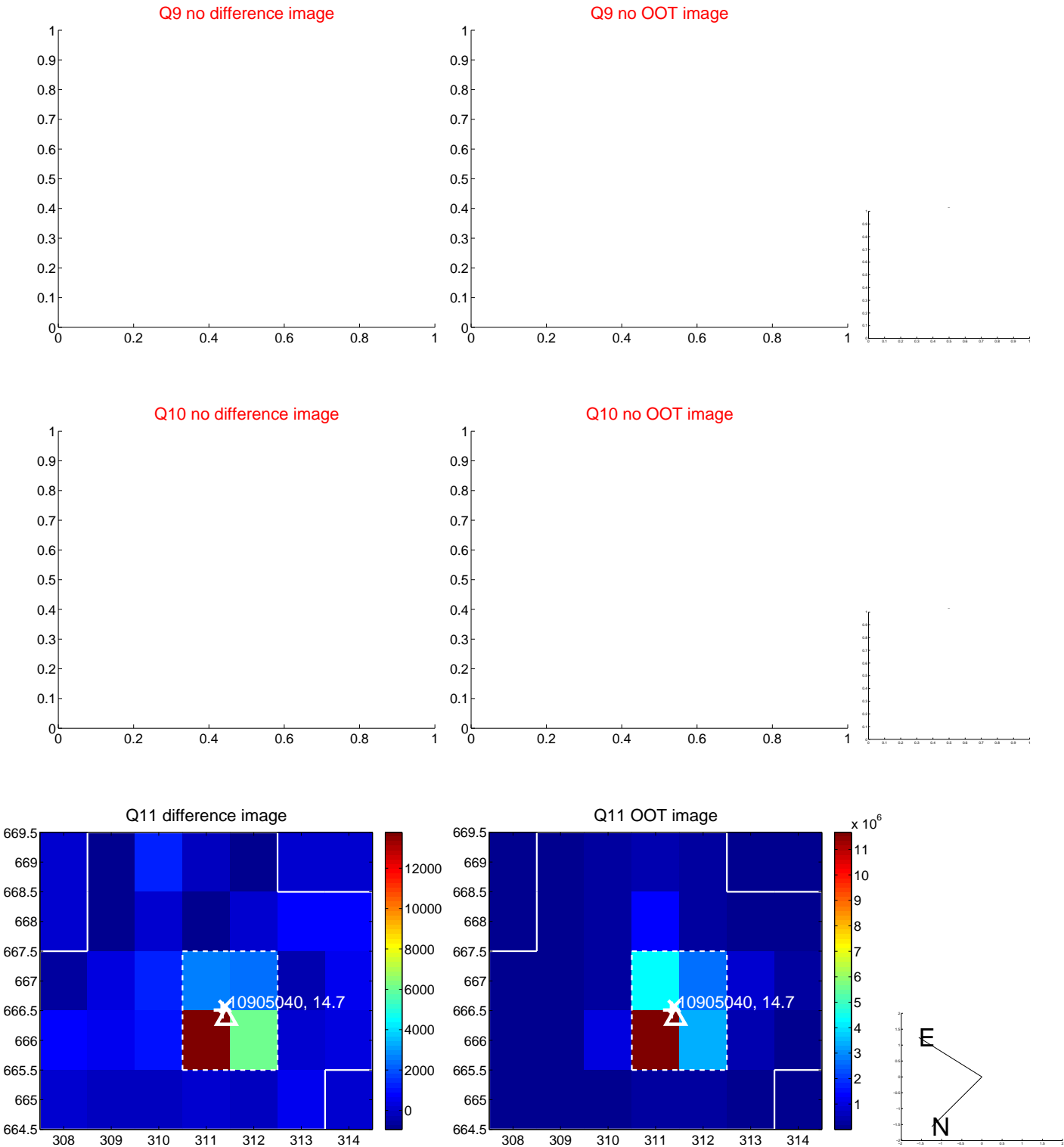
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



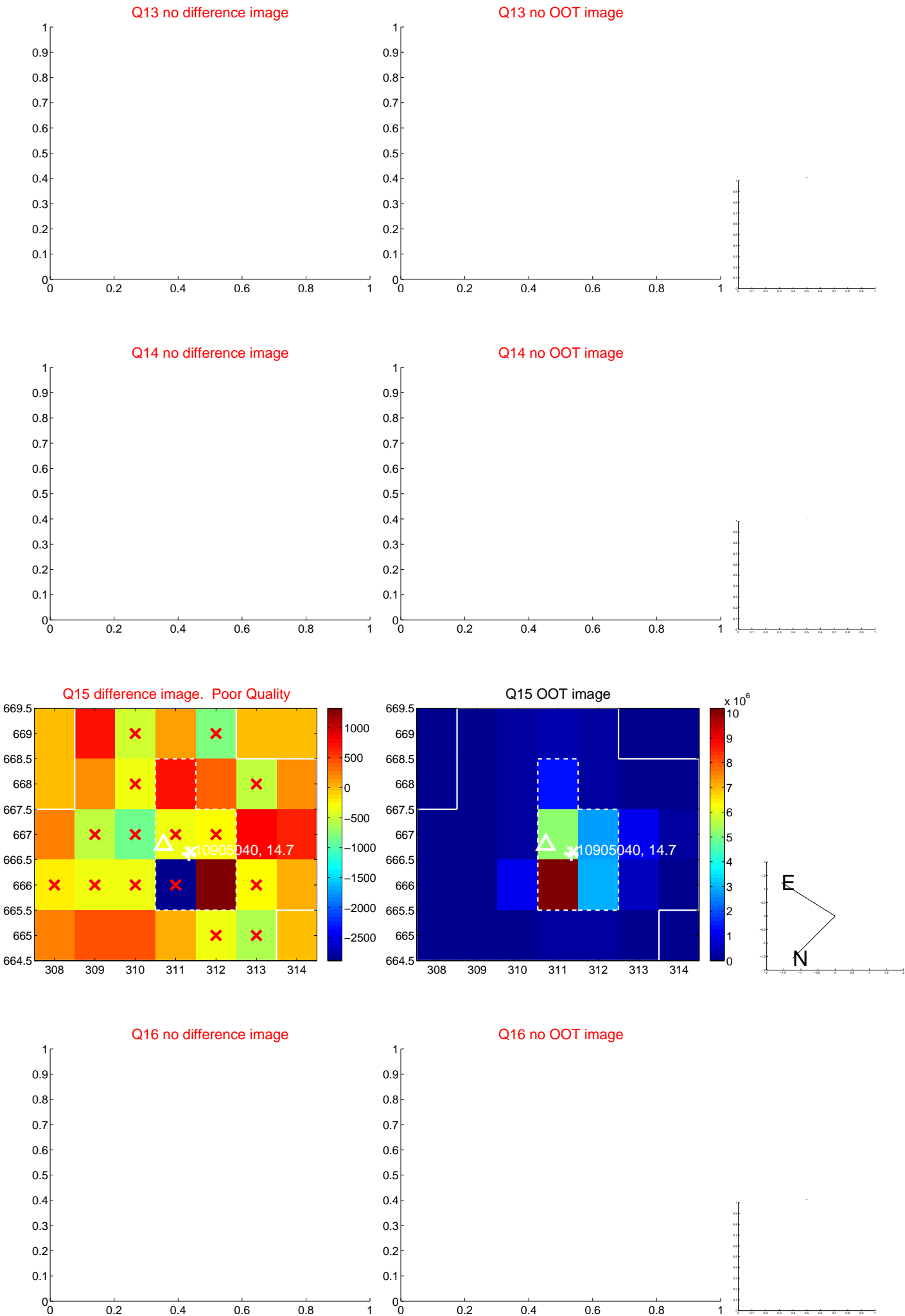
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



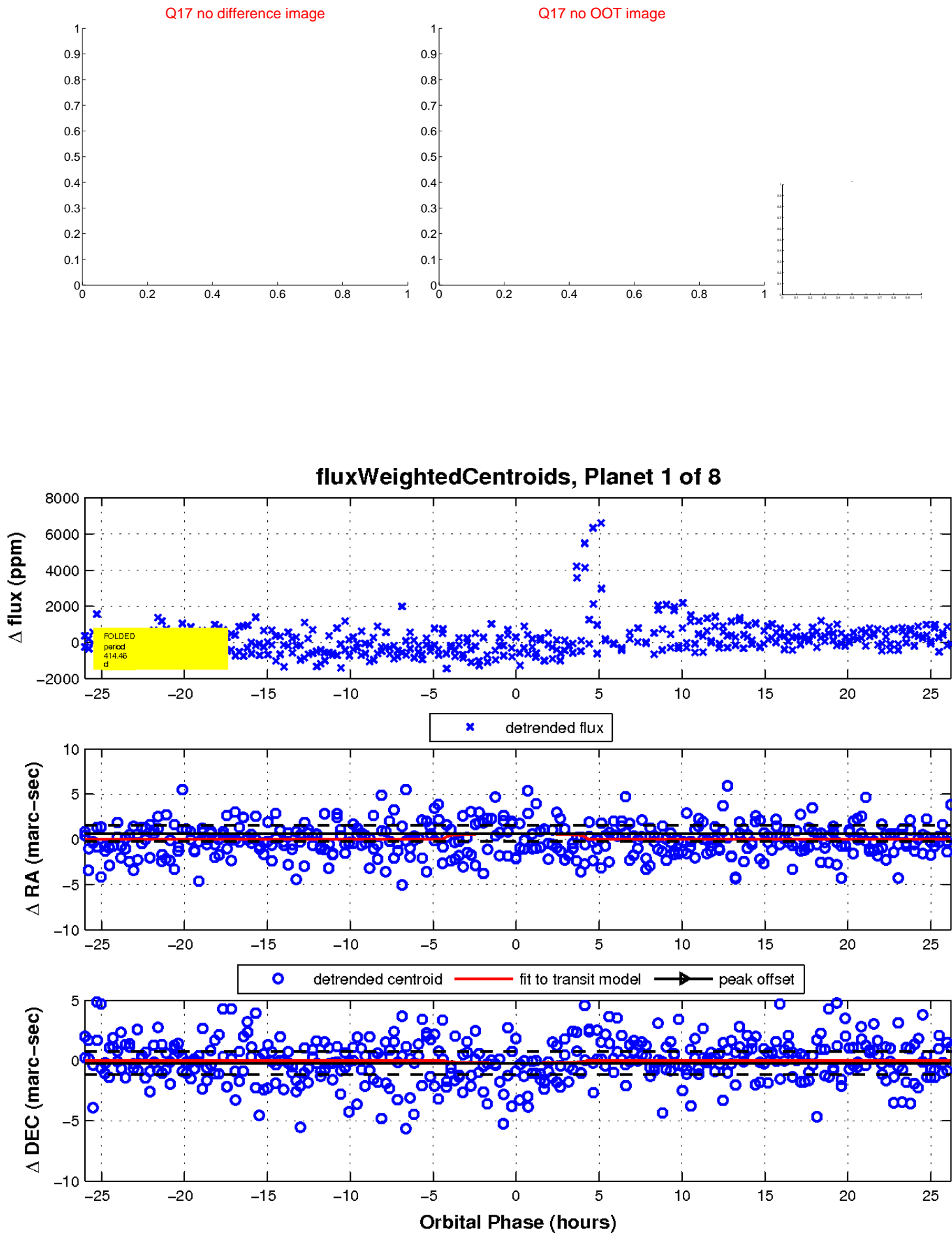
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



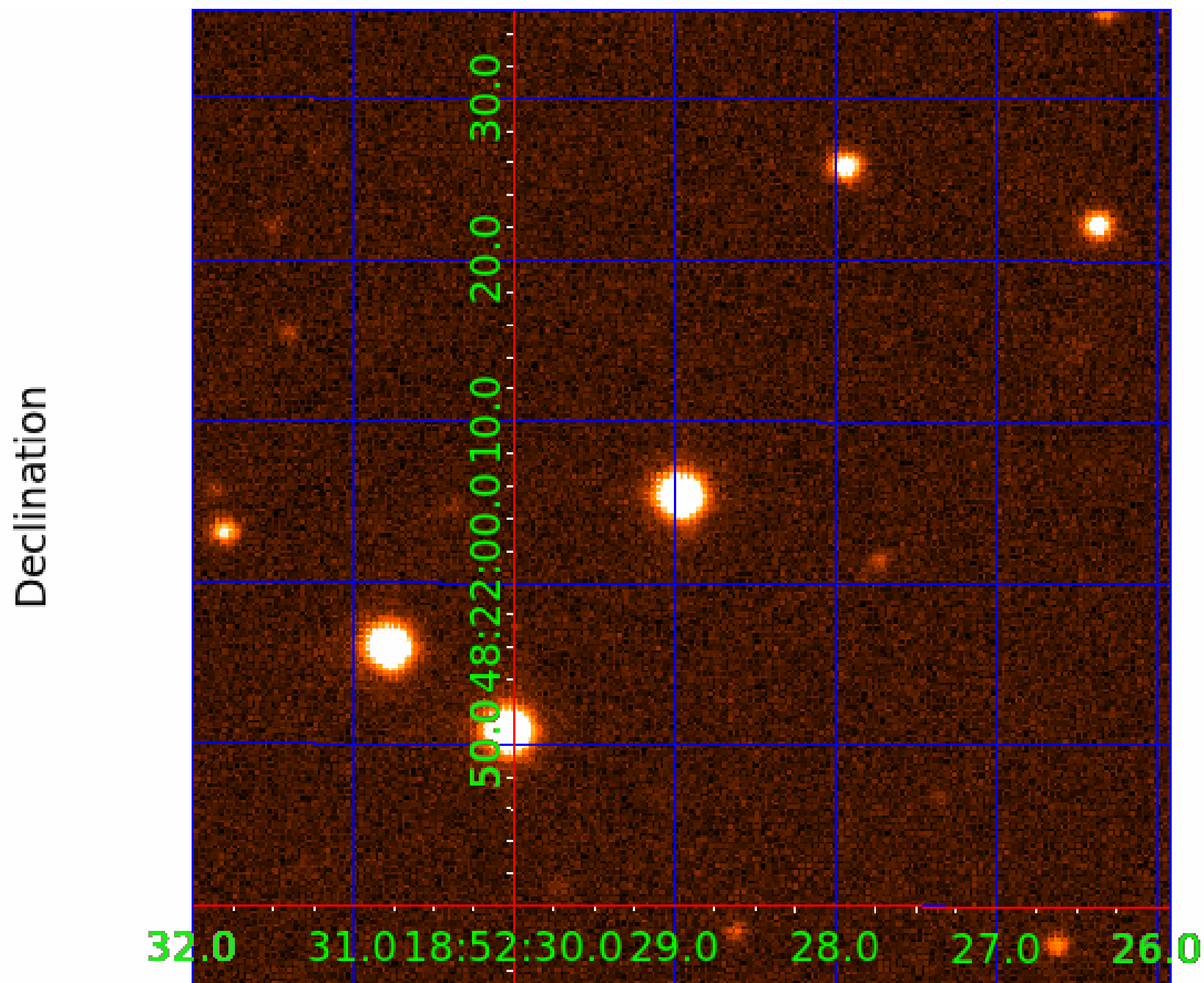
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image



KIC 010905040

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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010905040-08	OBS	No	399.619133	456.057227	967.7	4.500	9.9	-1.0	0.70	5126	2.12	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010905040-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010905040-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010905040-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

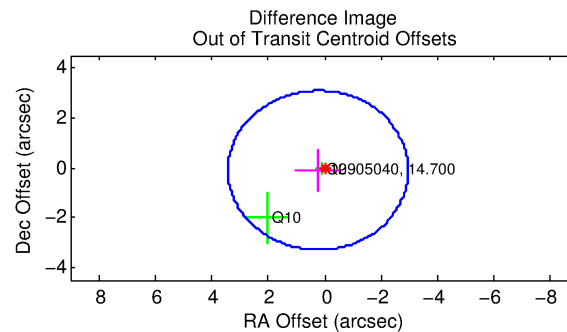
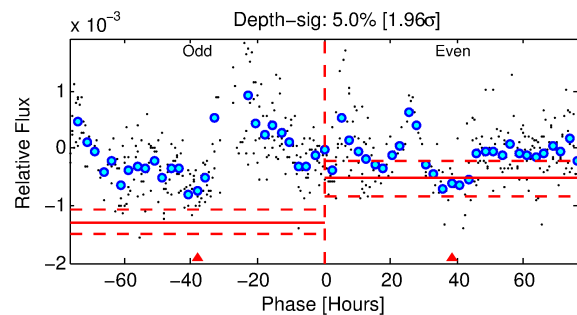
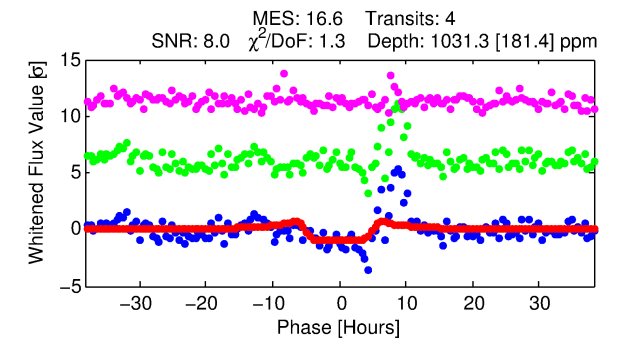
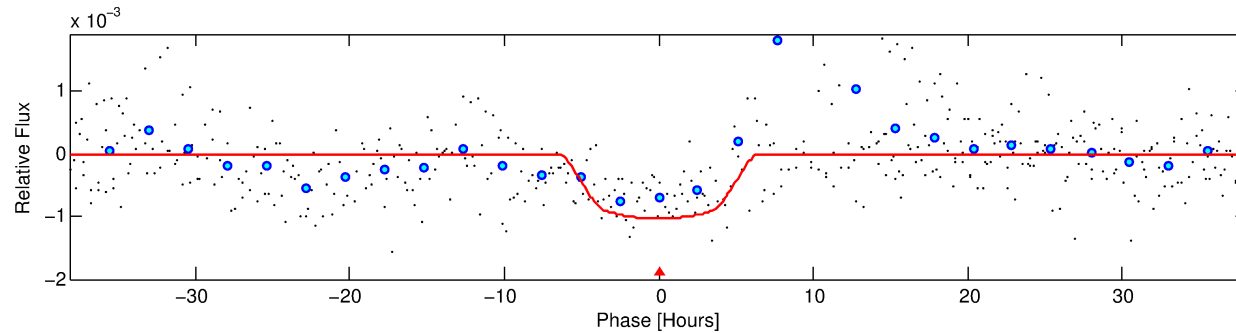
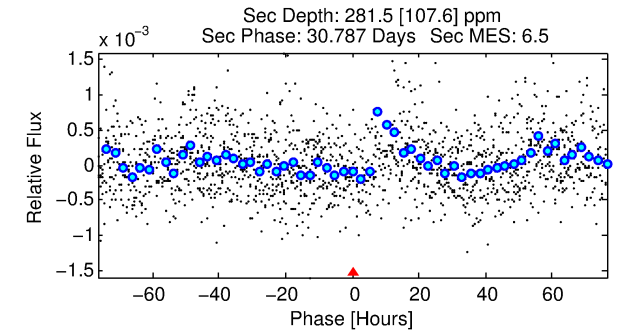
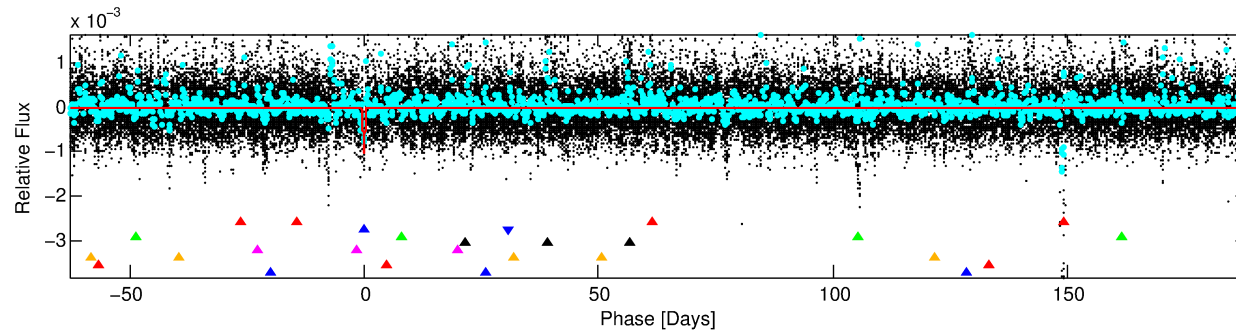
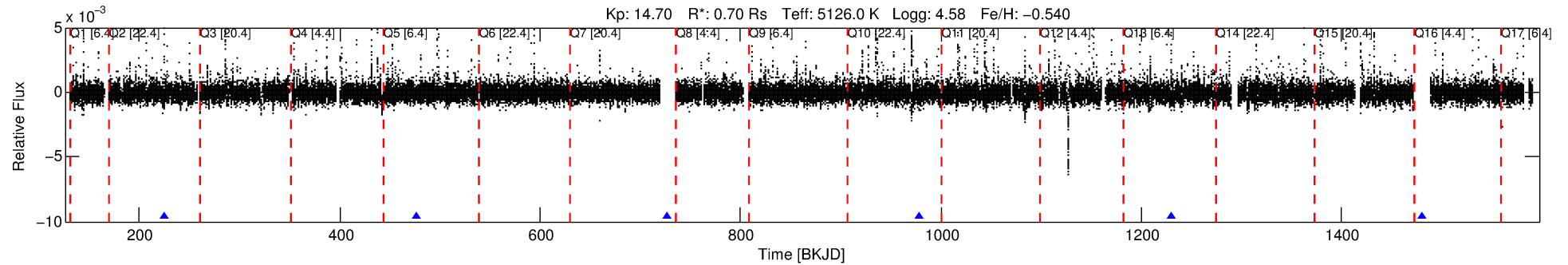
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010905040-02

No Significant Match Found

DV One-Page Summary

KIC: 10905040 Candidate: 2 of 8 Period: 251.140 d



DV Fit Results:

Period = 251.14048 [0.00842] d
Epoch = 224.8792 [0.0235] BKJD
Rp/R* = 0.0366 [0.0044]
a/R* = 70.44 [19.19]
b = 0.93 [0.04]
Seff = 0.65 [0.12]
Teq = 229 [10] K
Rp = 2.78 [0.44] Re
a = 0.6814 [0.0627] AU
Ag = 9294.59 [4385.28] [2.12σ]
Teffp = 3470 [405] K [8.00σ]

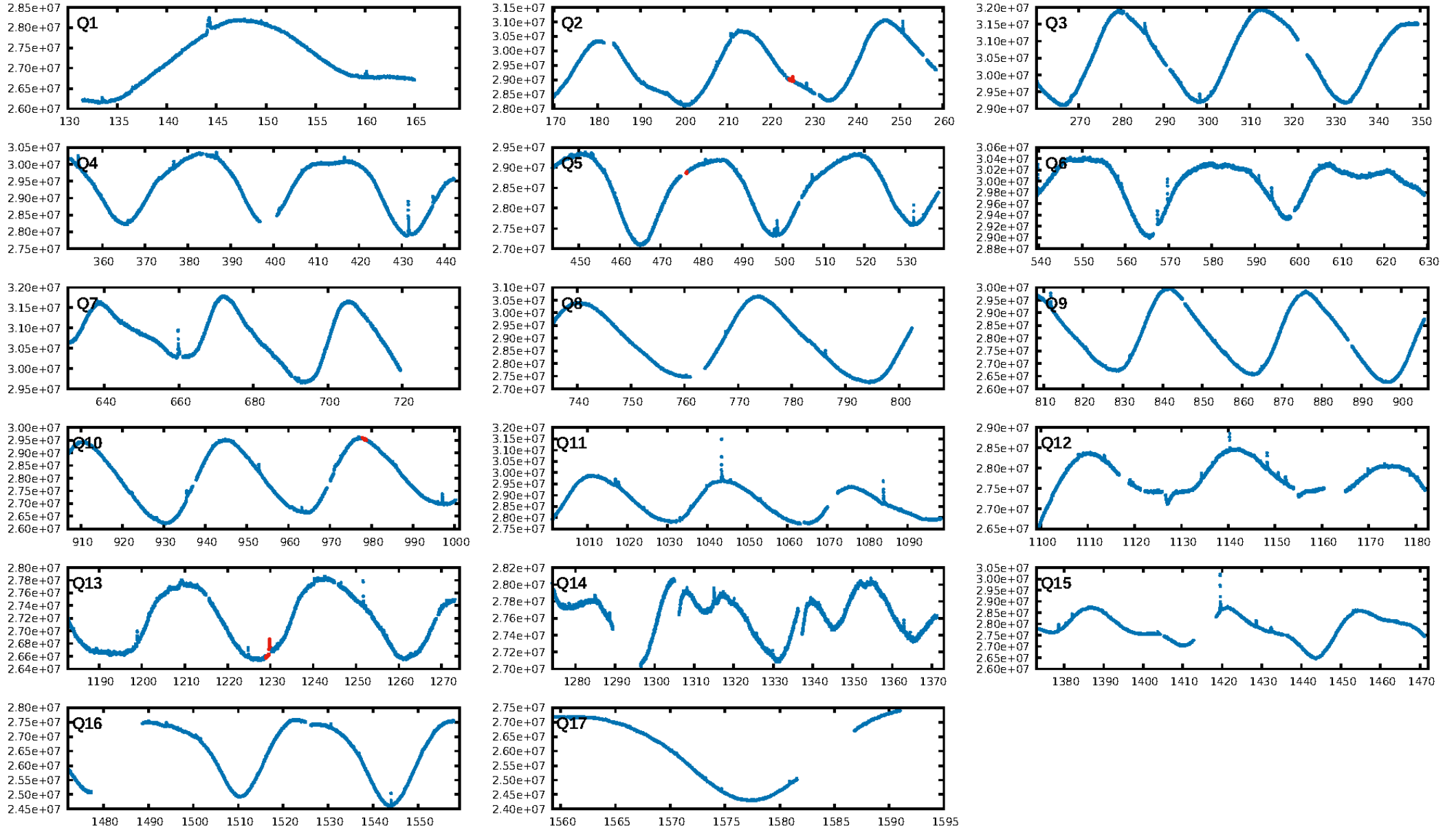
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [109.85σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -44.42
Centroid-sig: 1.3%
Centroid-so: 2.104 arcsec [1.97σ]
OotOffset-rm: 0.257 arcsec [0.24σ]
KicOffset-rm: 0.275 arcsec [0.45σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
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DiffImageOverlap-fno: 1.00 [2/2]

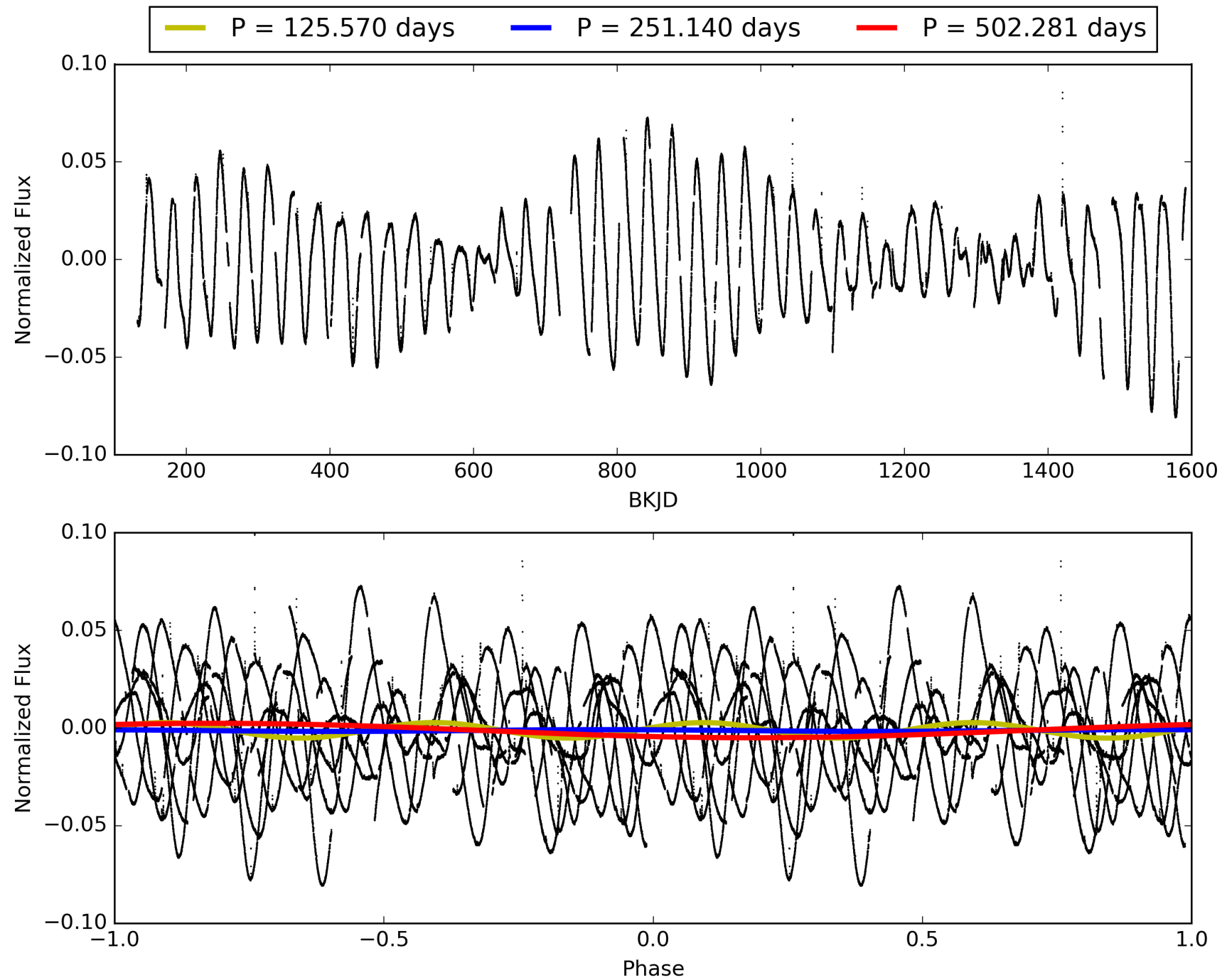
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:05:18 Z

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

TCE 010905040-02, PDC Light Curves

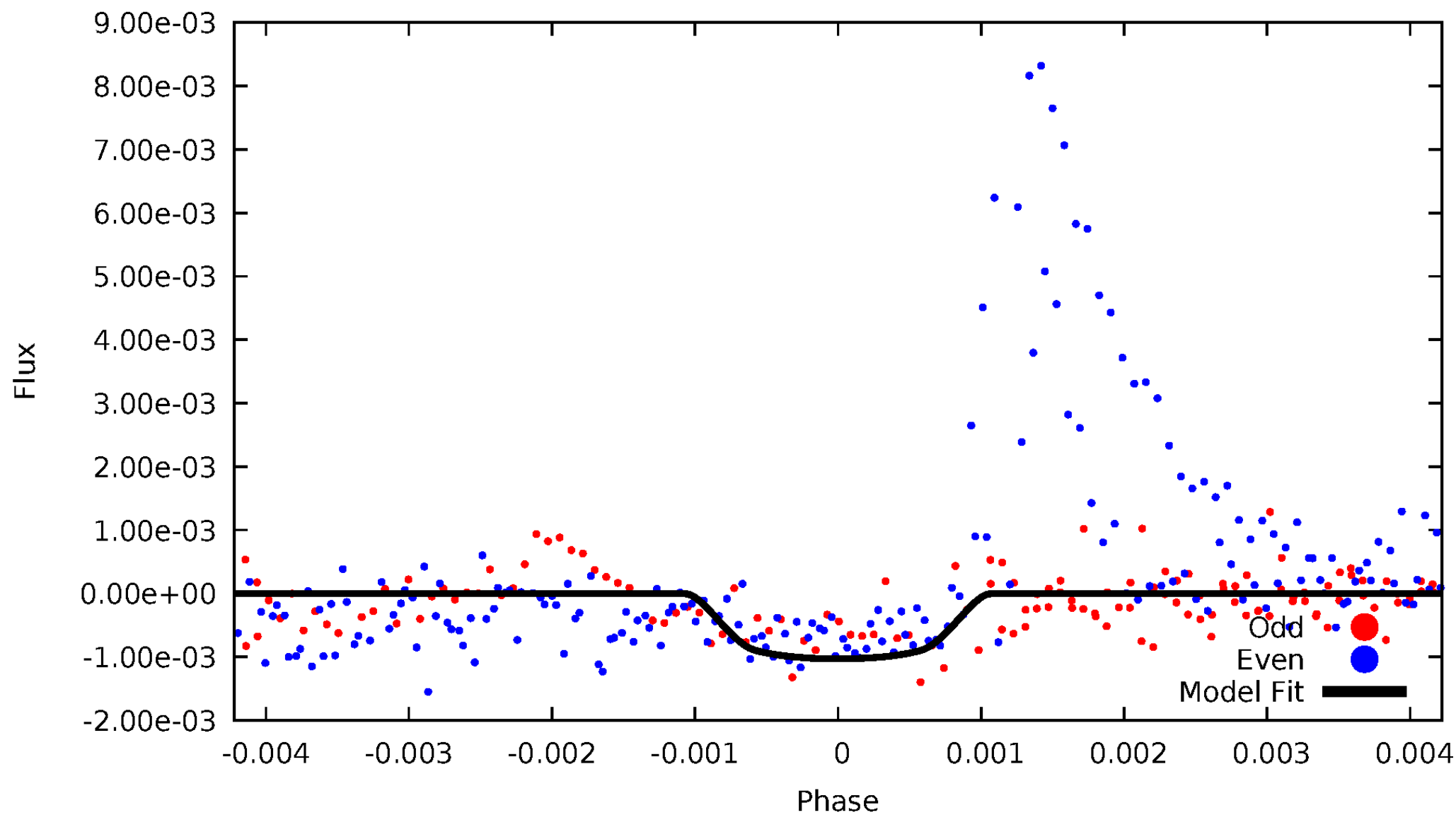


TCE 010905040-02



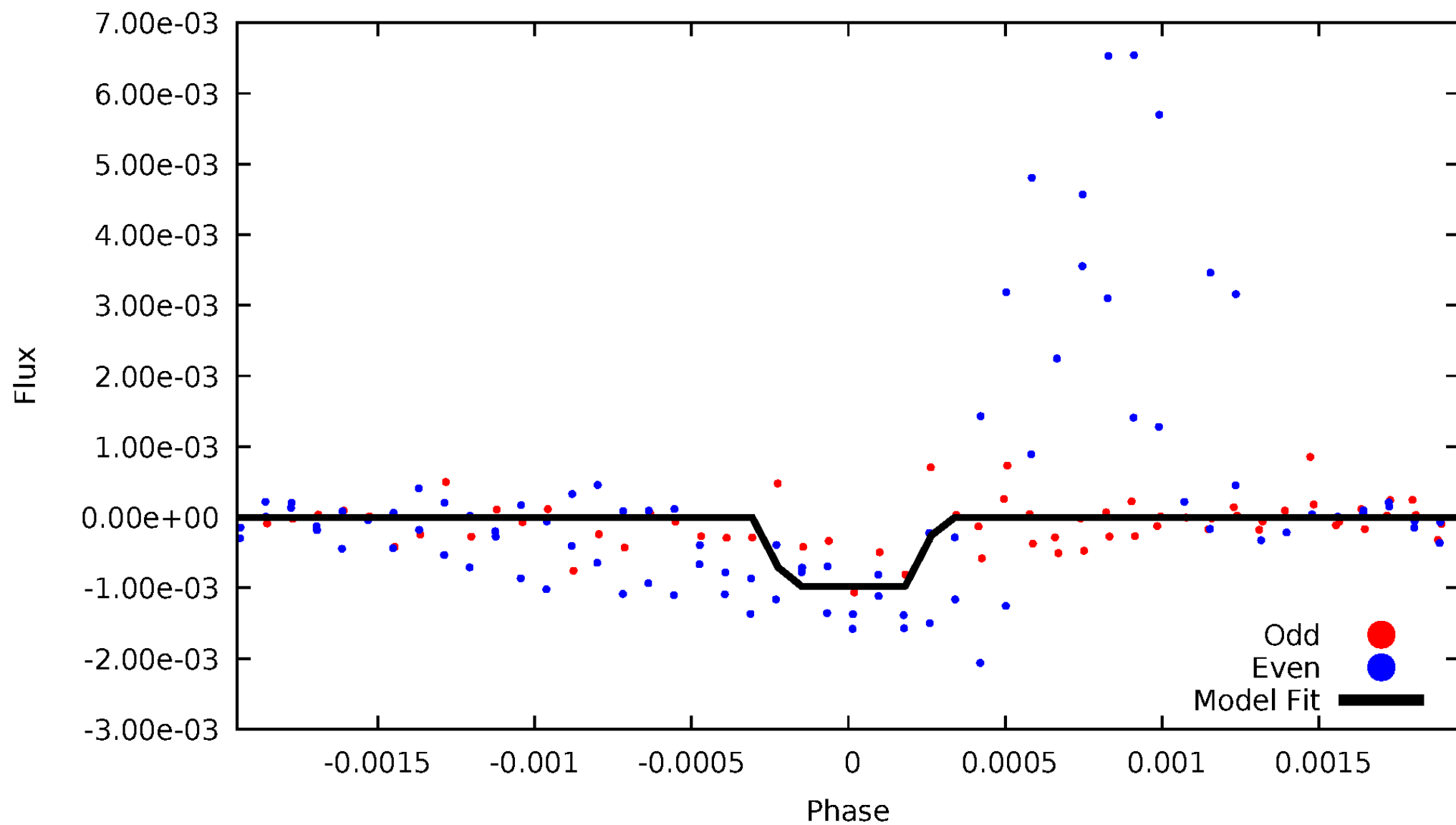
DV Odd/Even

TCE 010905040-02



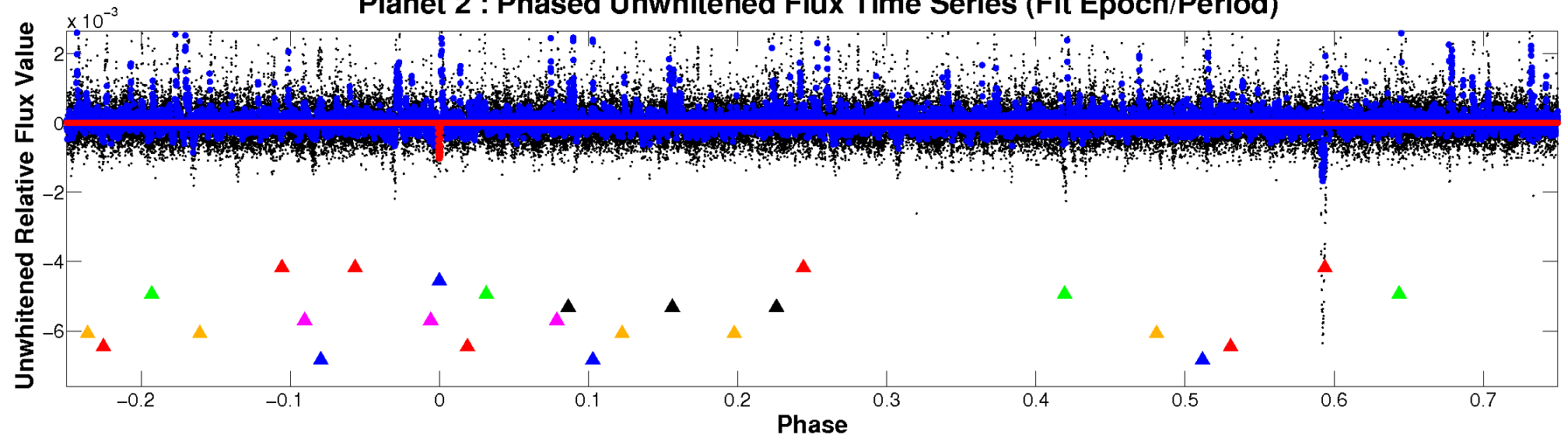
ALT Odd/Even

TCE 010905040-02

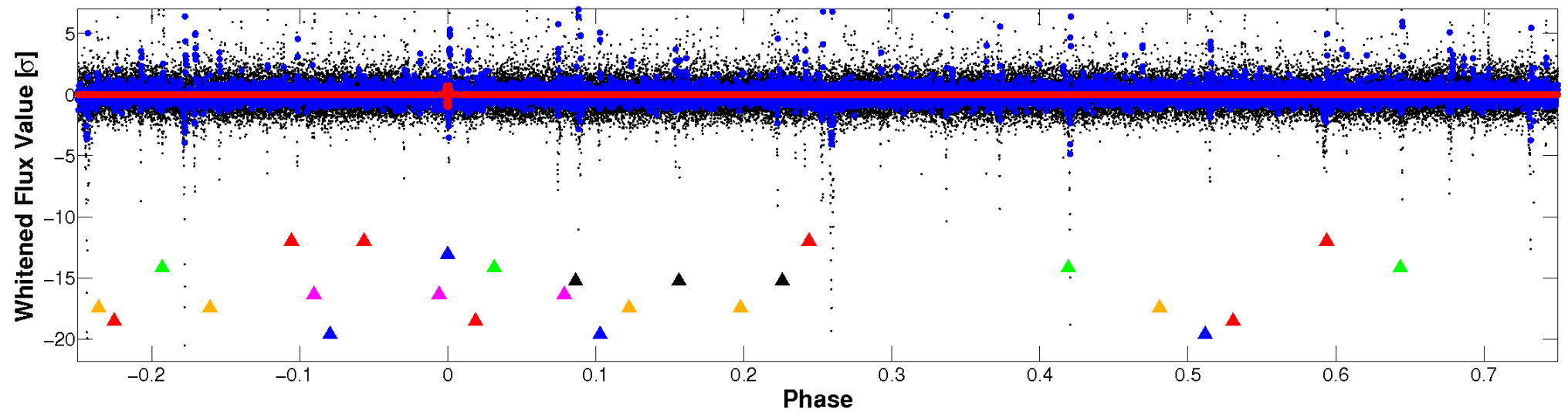


Non-Whitened Vs. Whitened Light Curve

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

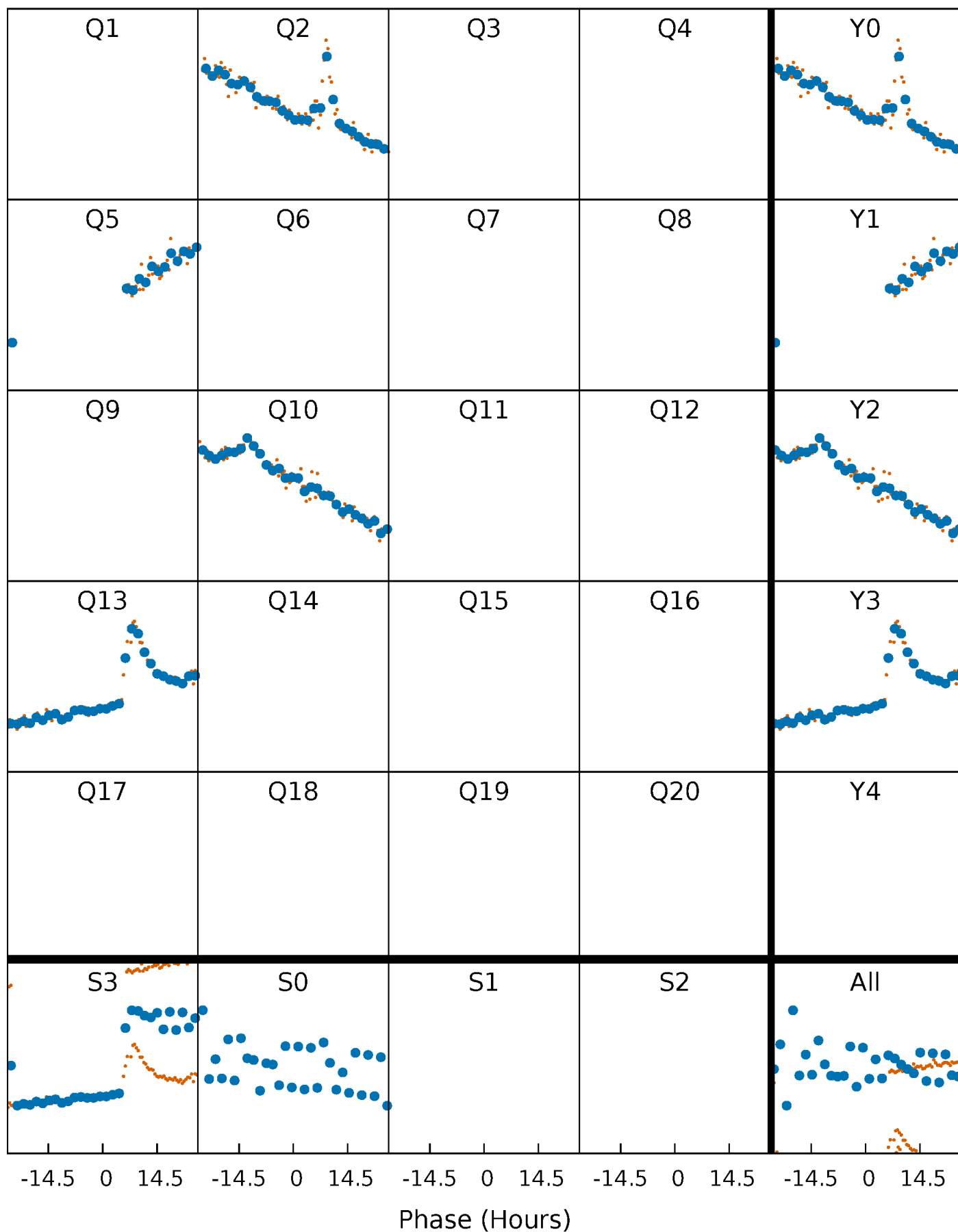


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



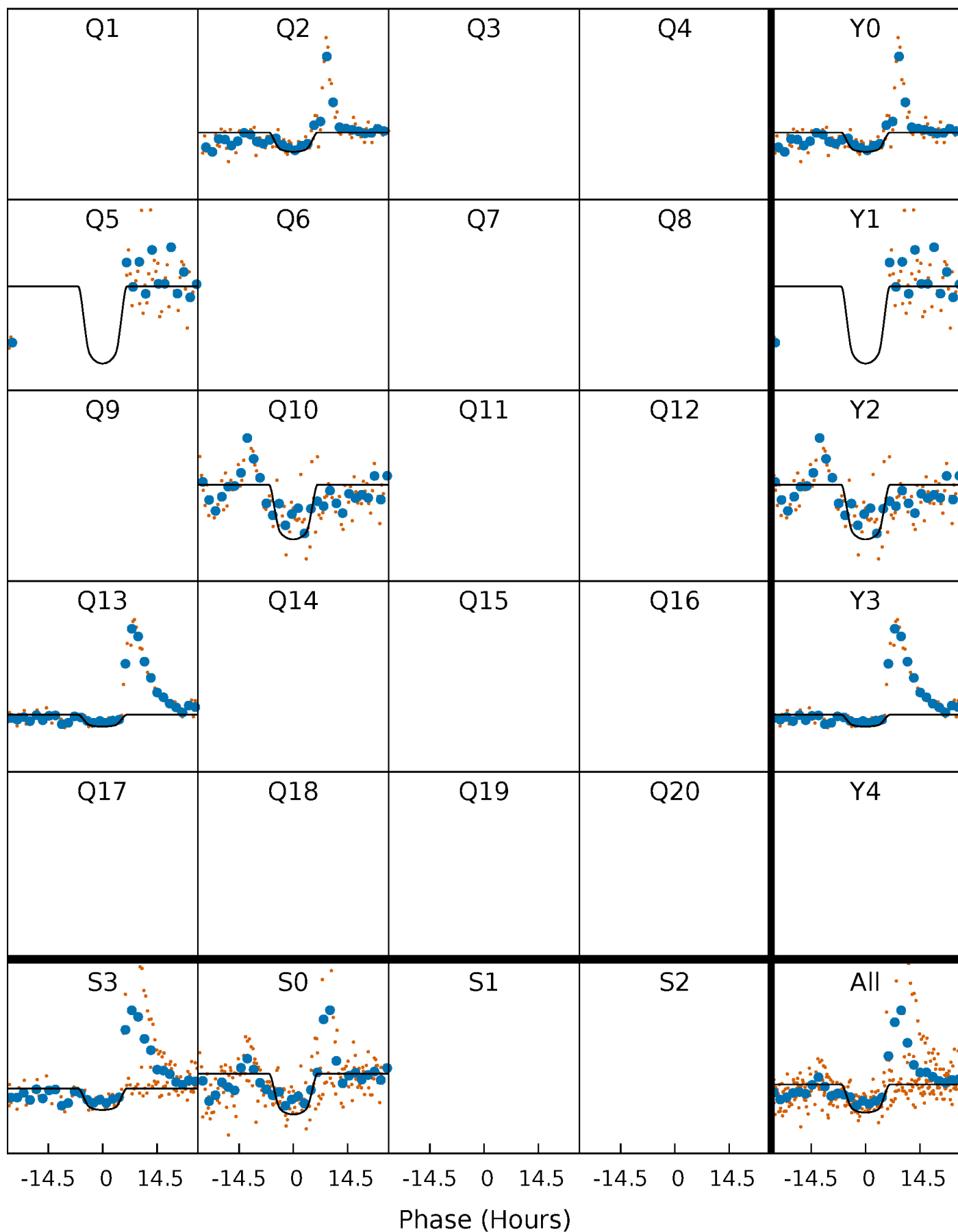
PDC Quarter-Phased Transit Curves

TCE 010905040-02 P=251.140477 Days $T_0=224.879202$ (BKJD)



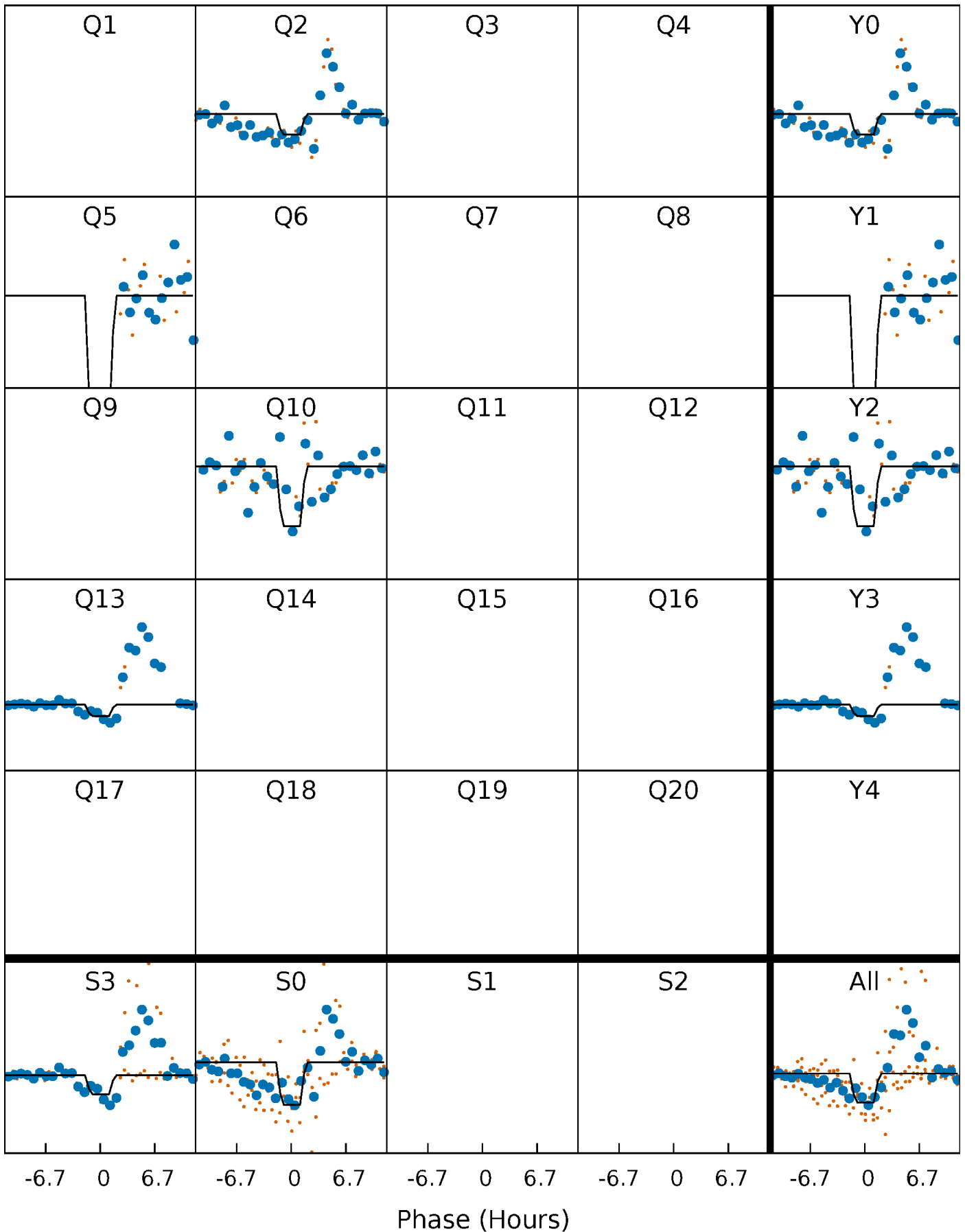
DV Quarter-Phased Transit Curves

TCE 010905040-02 P=251.140477 Days $T_0=224.879202$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

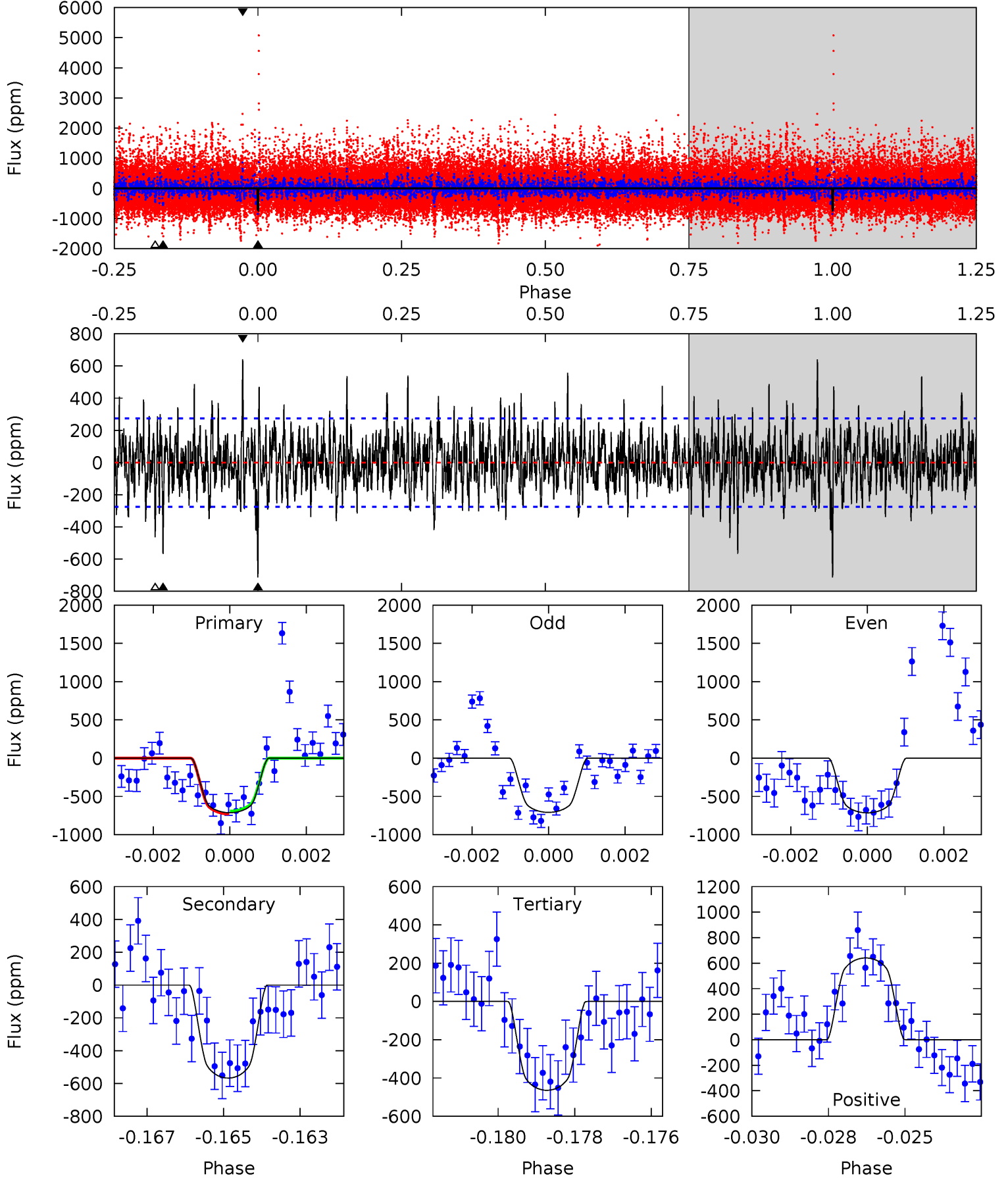
TCE 010905040-02 P=251.128452 Days $T_0=225.055191$ (BKJD)



DV Model-Shift Uniqueness Test

010905040-02, P = 251.140477 Days, E = 224.879202 Days

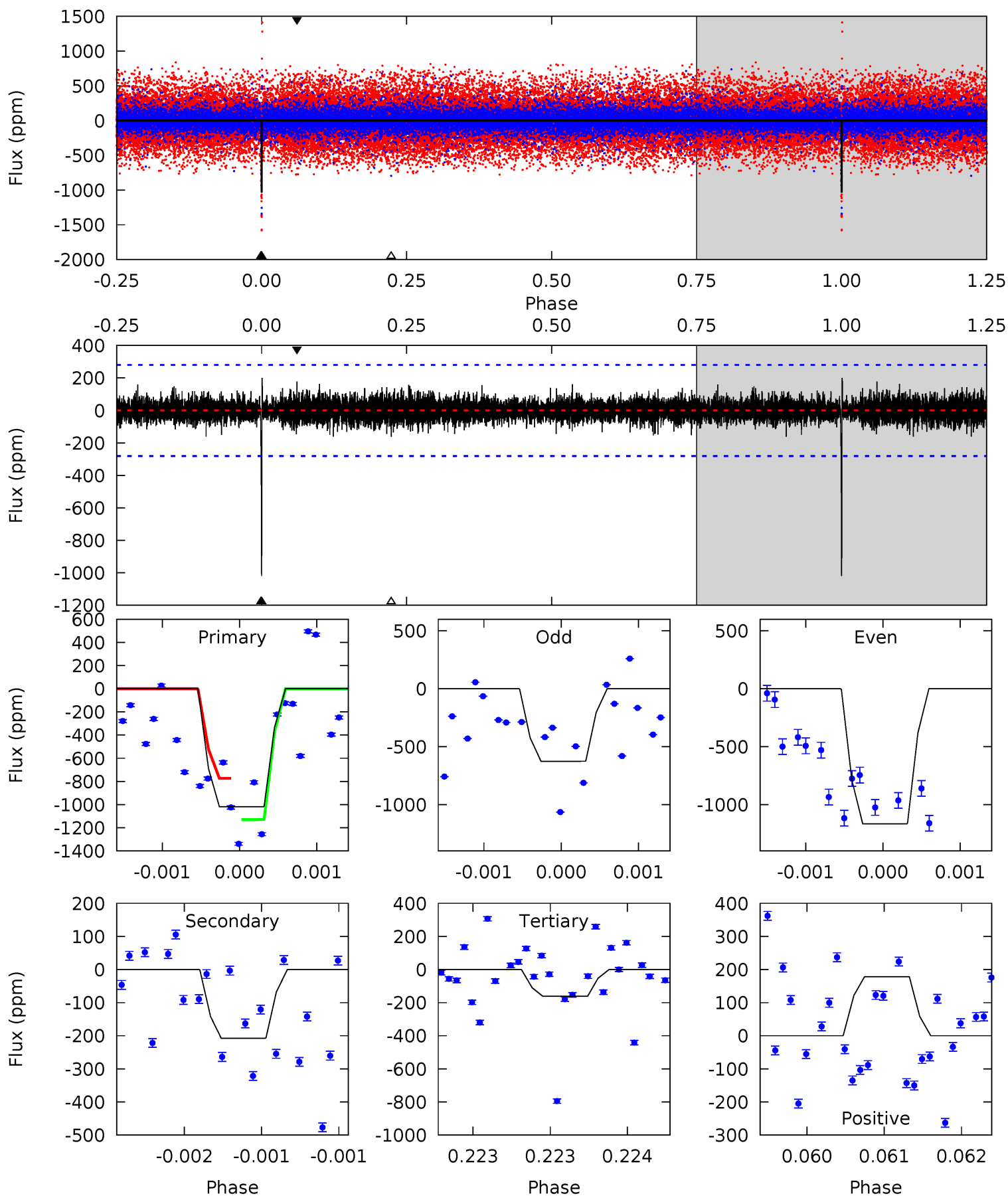
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	11.0	8.98	12.4	5.32	3.07	2.65	4.81	1.38	1.99	-1.43	0.05	0.99	0.47	0.37



Alt Model-Shift Uniqueness Test

010905040-02, P = 251.128452 Days, E = 225.055191 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	4.10	3.20	3.53	5.55	3.45	0.77	16.9	16.6	0.90	0.57	5.08	0.84	0.16	3.66



Stellar Parameters For KIC 010905040

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5126^{+154}_{-138}	$4.578^{+0.078}_{-0.045}$	$-0.540^{+0.350}_{-0.300}$	$0.696^{+0.073}_{-0.073}$	$0.668^{+0.087}_{-0.037}$	$2.792^{+0.855}_{-0.493}$
	+3%/-3%	+2%/-1%	+65%/-56%	+10%/-10%	+13%/-6%	+31%/-18%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010905040-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-567 ± 52	$2.77^{+0.37}_{-0.35}$	318^{+13}_{-12}	4336^{+239}_{-222}	19544^{+5942}_{-4603}
Alt.	-207 ± 51	$2.34^{+0.40}_{-0.35}$	318^{+11}_{-11}	3816^{+261}_{-263}	9427^{+4677}_{-2977}

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

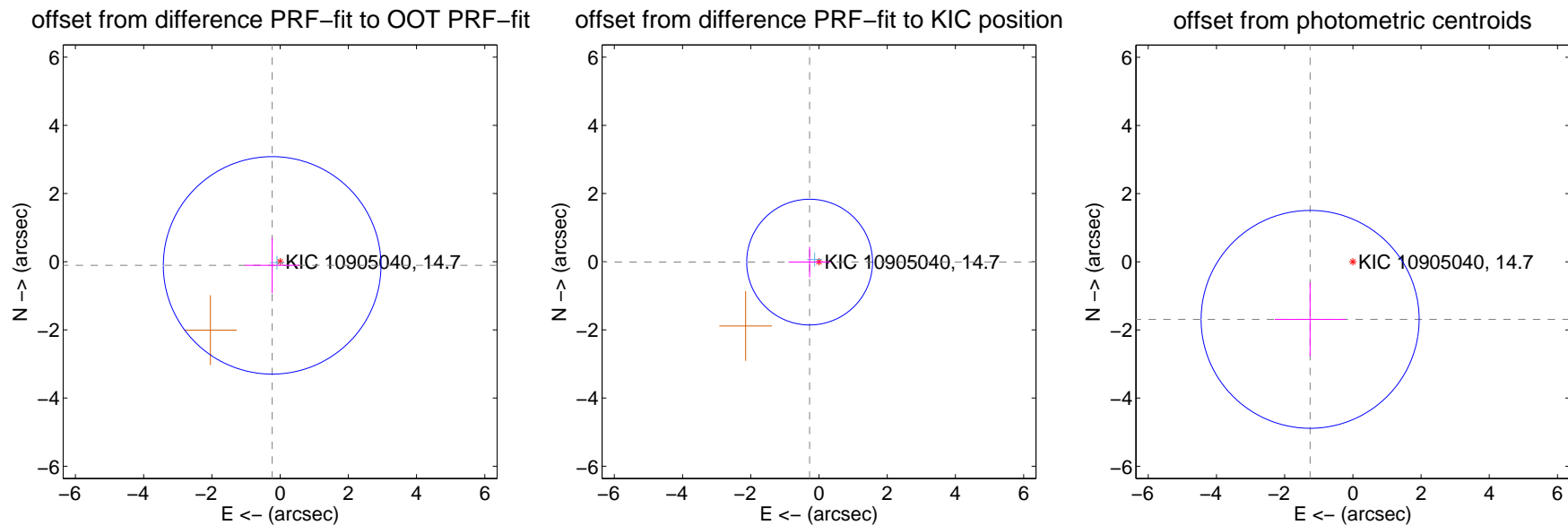
DV Centroid Data

Supplemental centroid analysis for 010905040-02. Kepler magnitude: 14.70. Transit SNR 8.03

There are 1 quarters with good PRF difference image offsets

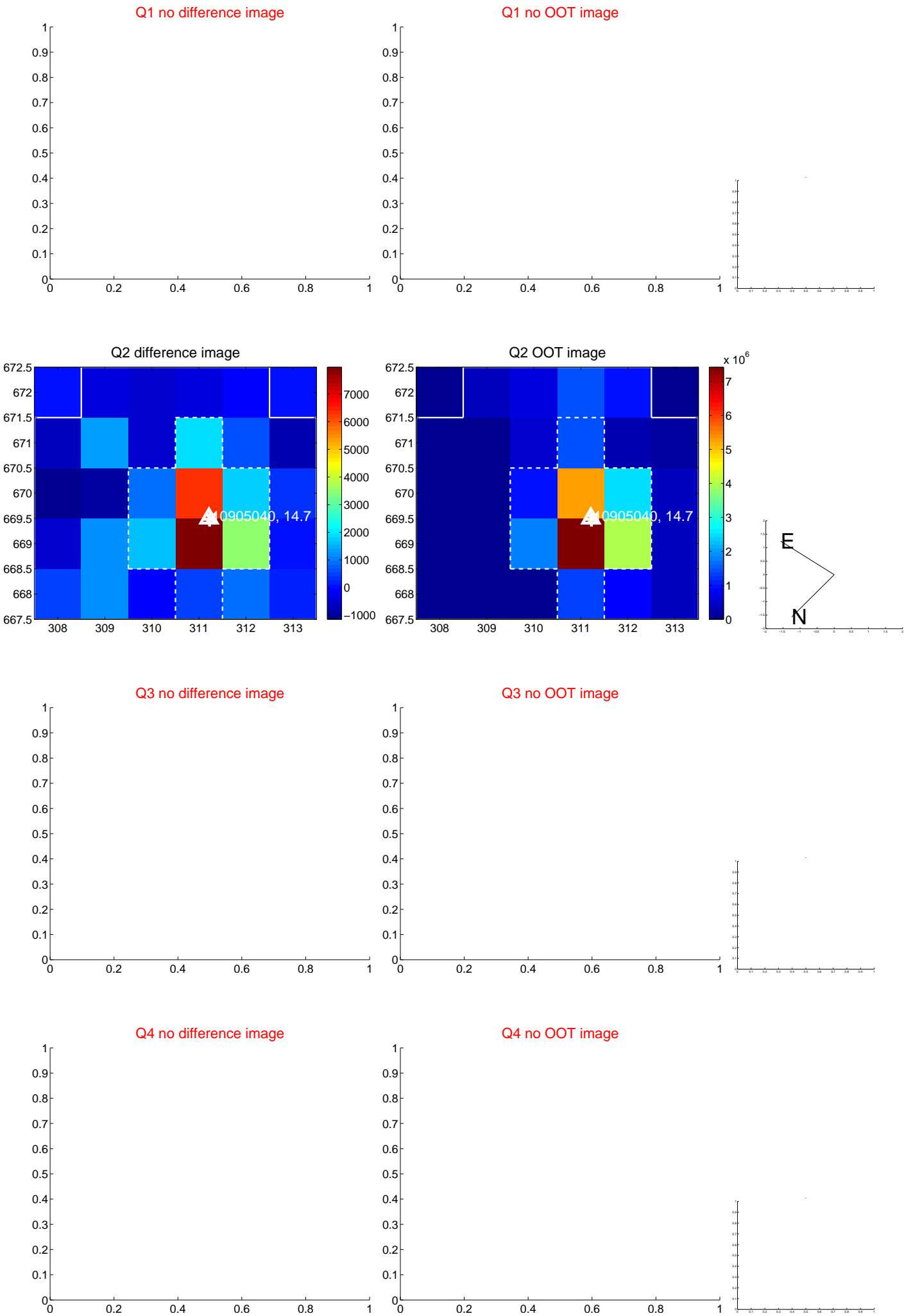
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.257 ± 1.063	0.24	0.233 ± 0.799	-0.108 ± 0.811
PRF-fit source offset from KIC position	0.275 ± 0.615	0.45	0.275 ± 0.615	-0.012 ± 0.448
photometric centroid source offset	2.10 ± 1.07	1.97	1.25 ± 1.04	-1.69 ± 1.08



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.

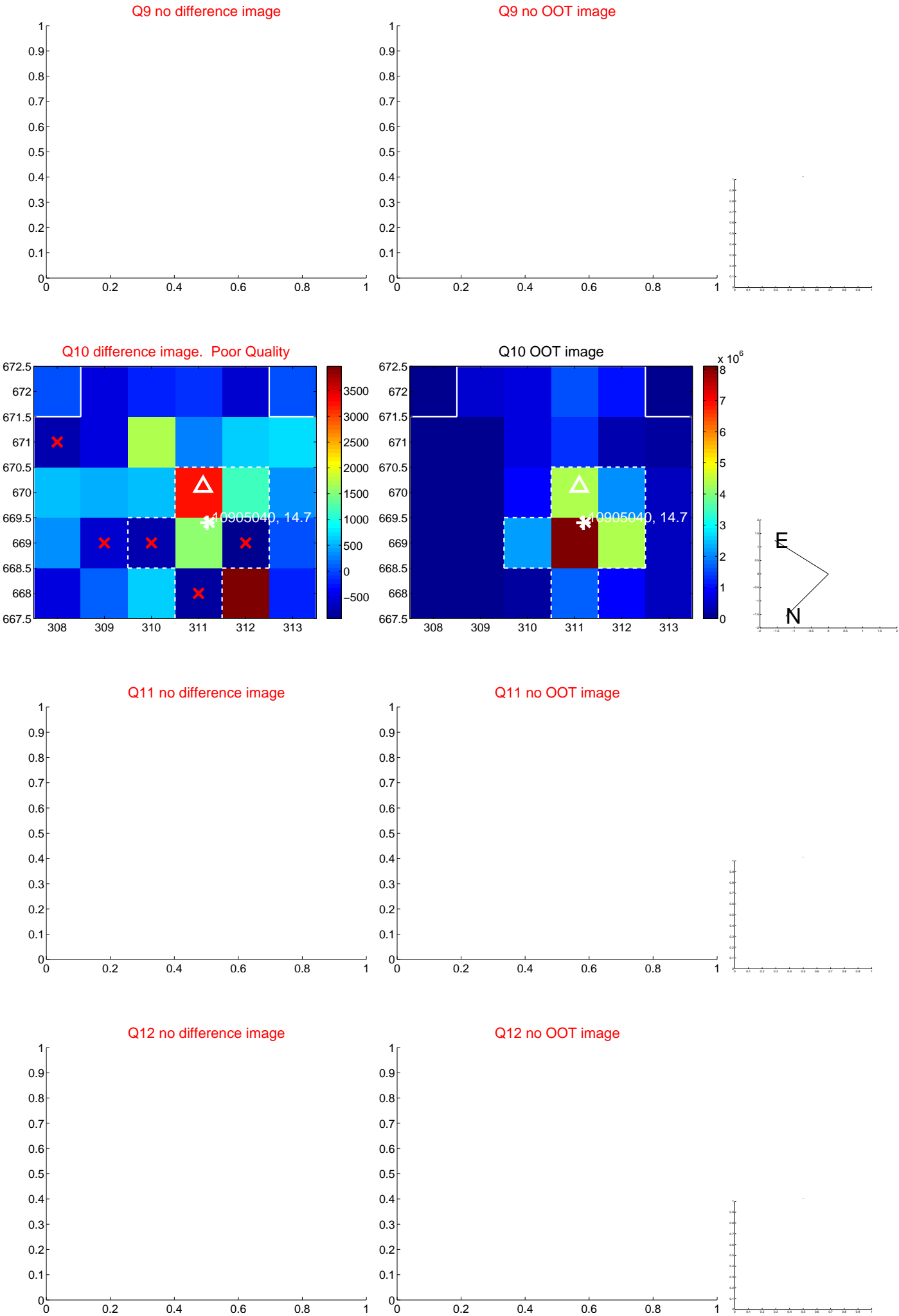
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



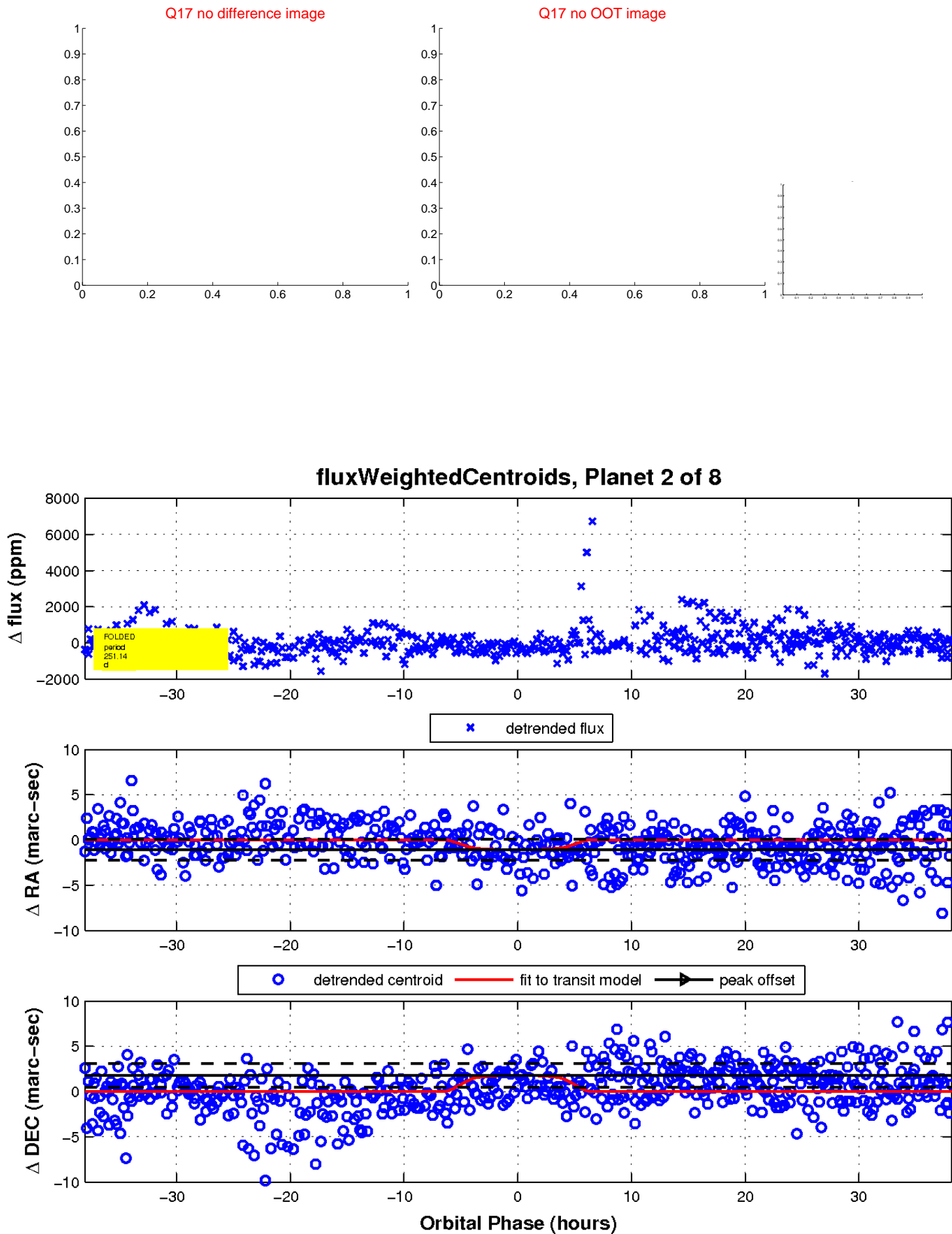
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



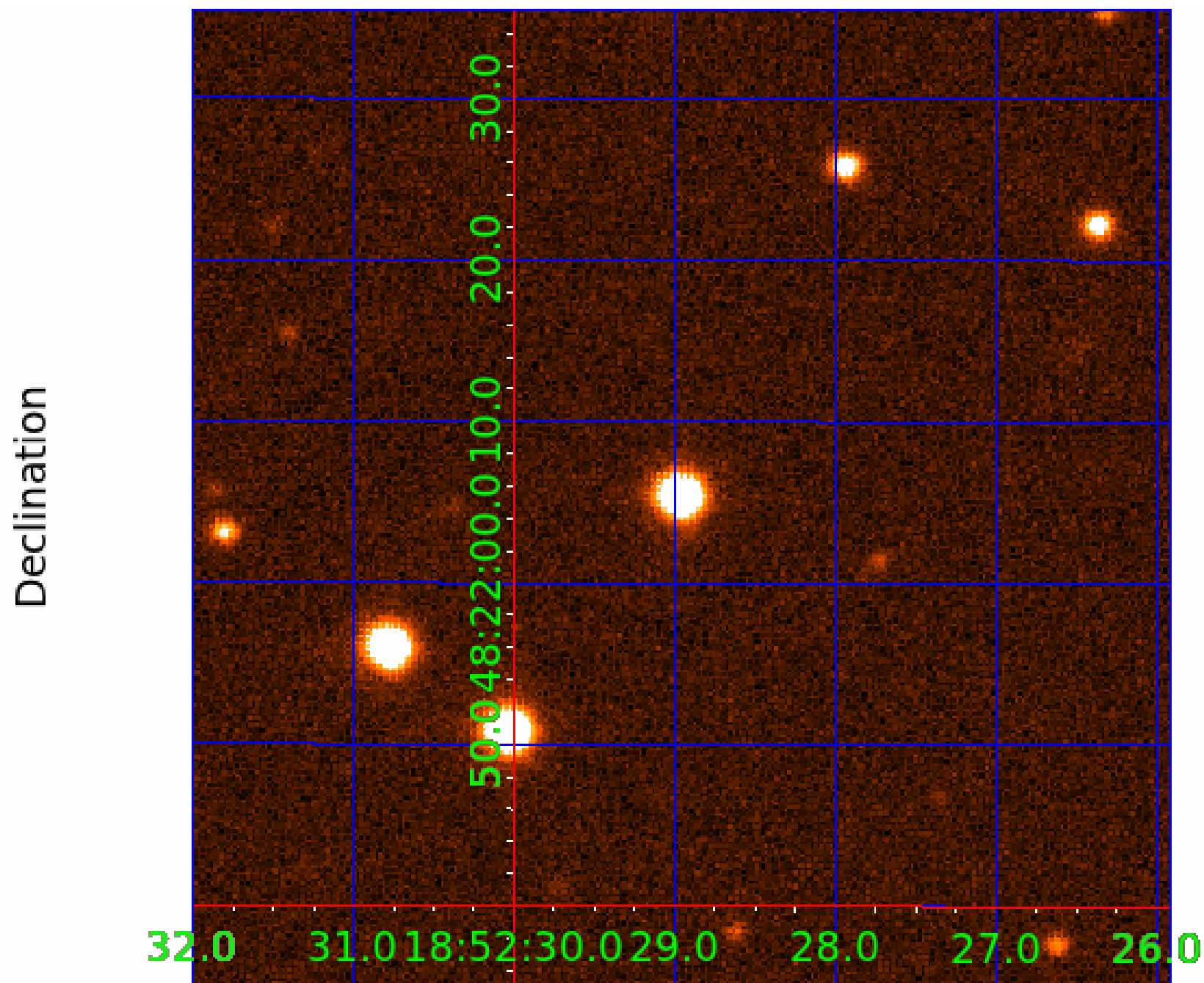
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010905040

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})
010905040-01	OBS	No	414.463497	210.683462	735.0	8.739	15.6	6.2	0.70	5126	1.89	0.33
010905040-02	OBS	No	251.140477	224.879202	1031.3	12.719	16.6	8.0	0.70	5126	2.78	0.65
010905040-03	OBS	No	348.542561	386.512414	2135.0	11.615	16.5	13.4	0.70	5126	4.76	0.42
010905040-04	OBS	No	519.815036	497.725959	1164.0	6.609	14.8	8.3	0.70	5126	2.39	0.24
010905040-05	OBS	No	523.513314	453.336255	1219.3	3.269	10.7	8.8	0.70	5126	2.83	0.24
010905040-06	OBS	No	341.151907	165.641850	821.9	15.000	12.7	-1.0	0.70	5126	1.95	0.43
010905040-07	OBS	No	440.968538	480.754313	1250.4	16.375	11.4	8.9	0.70	5126	2.94	0.30
010905040-08	OBS	No	399.619133	456.057227	967.7	4.500	9.9	-1.0	0.70	5126	2.12	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010905040-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010905040-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010905040-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

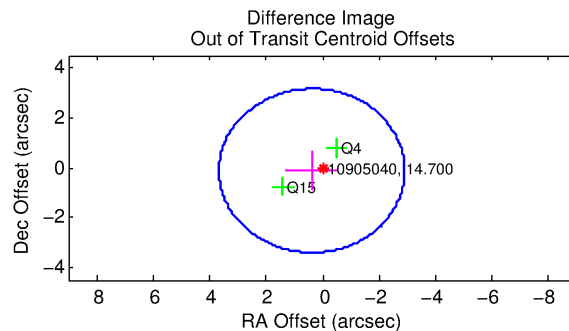
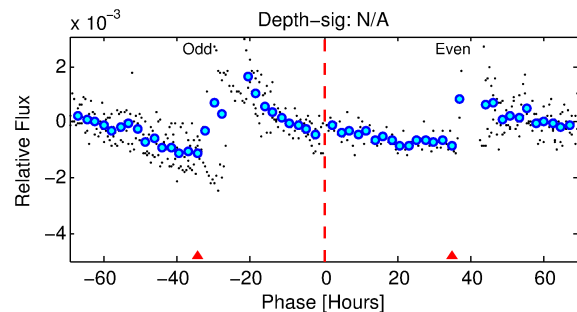
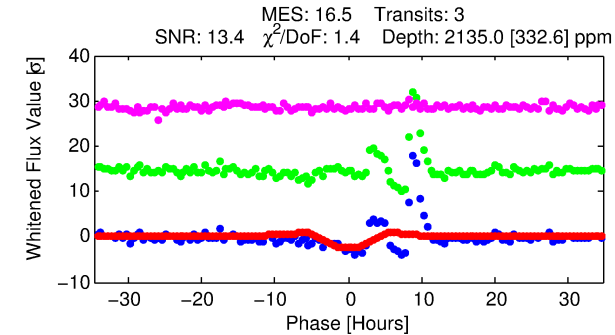
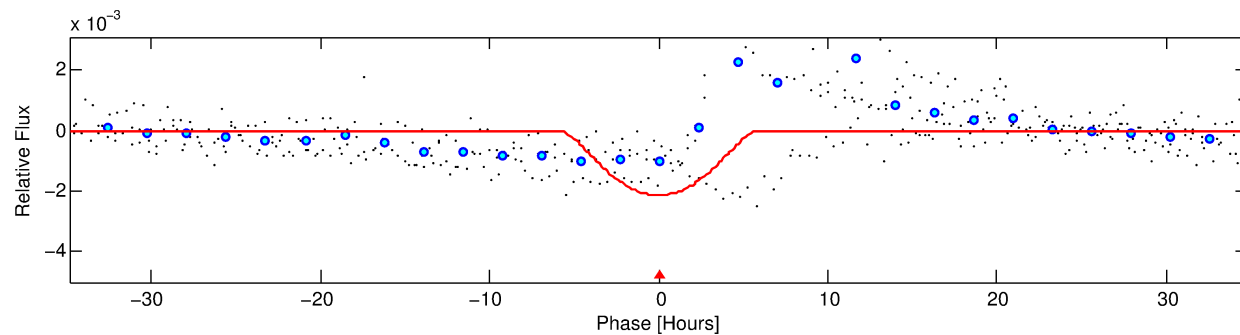
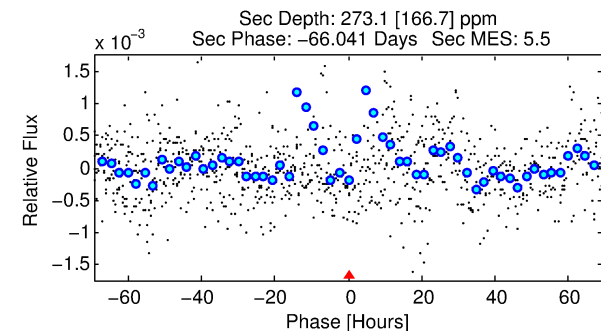
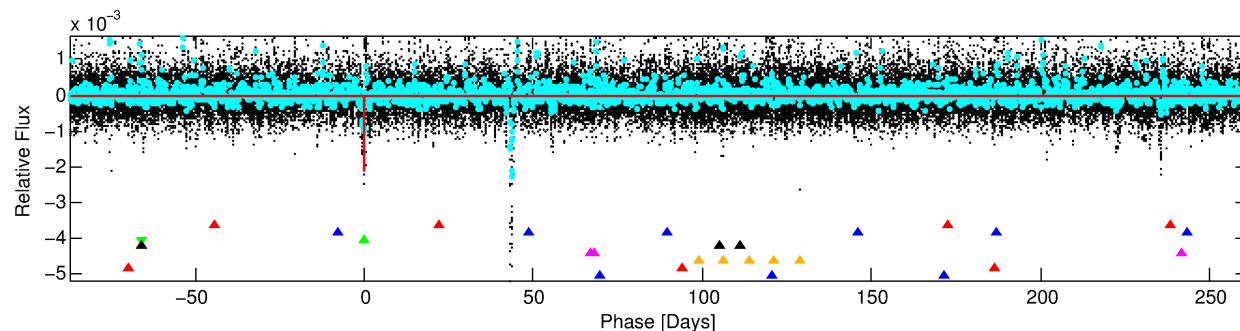
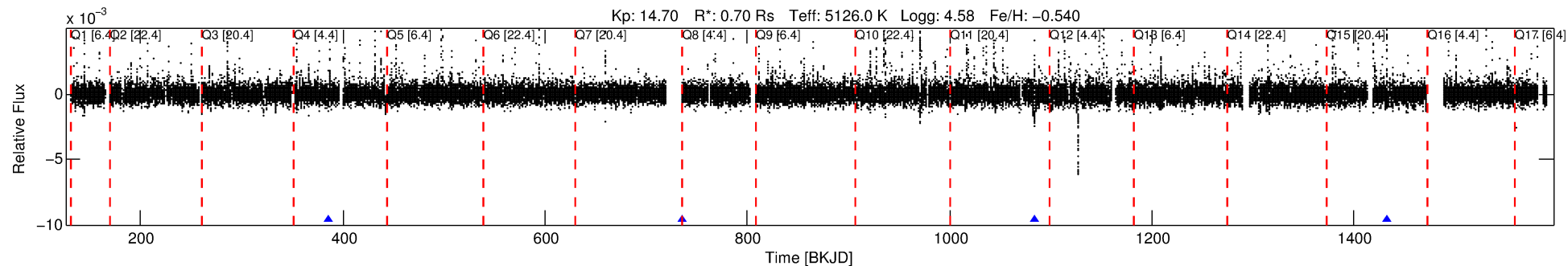
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010905040-03

No Significant Match Found

DV One-Page Summary

KIC: 10905040 Candidate: 3 of 8 Period: 348.543 d



DV Fit Results:

Period = 348.54256 [0.00970] d
Epoch = 386.5124 [0.0204] BKJD
Rp/R* = 0.0627 [0.0496]
a/R* = 100.87 [31.38]
b = 0.97 [0.10]
Seff = 0.42 [0.08]
Teq = 205 [9] K
Rp = 4.76 [3.80] Re
a = 0.8478 [0.0780] AU
Ag = 4757.55 [8093.44] [0.59] σ
Teffp = 2631 [1118] K [2.17] σ

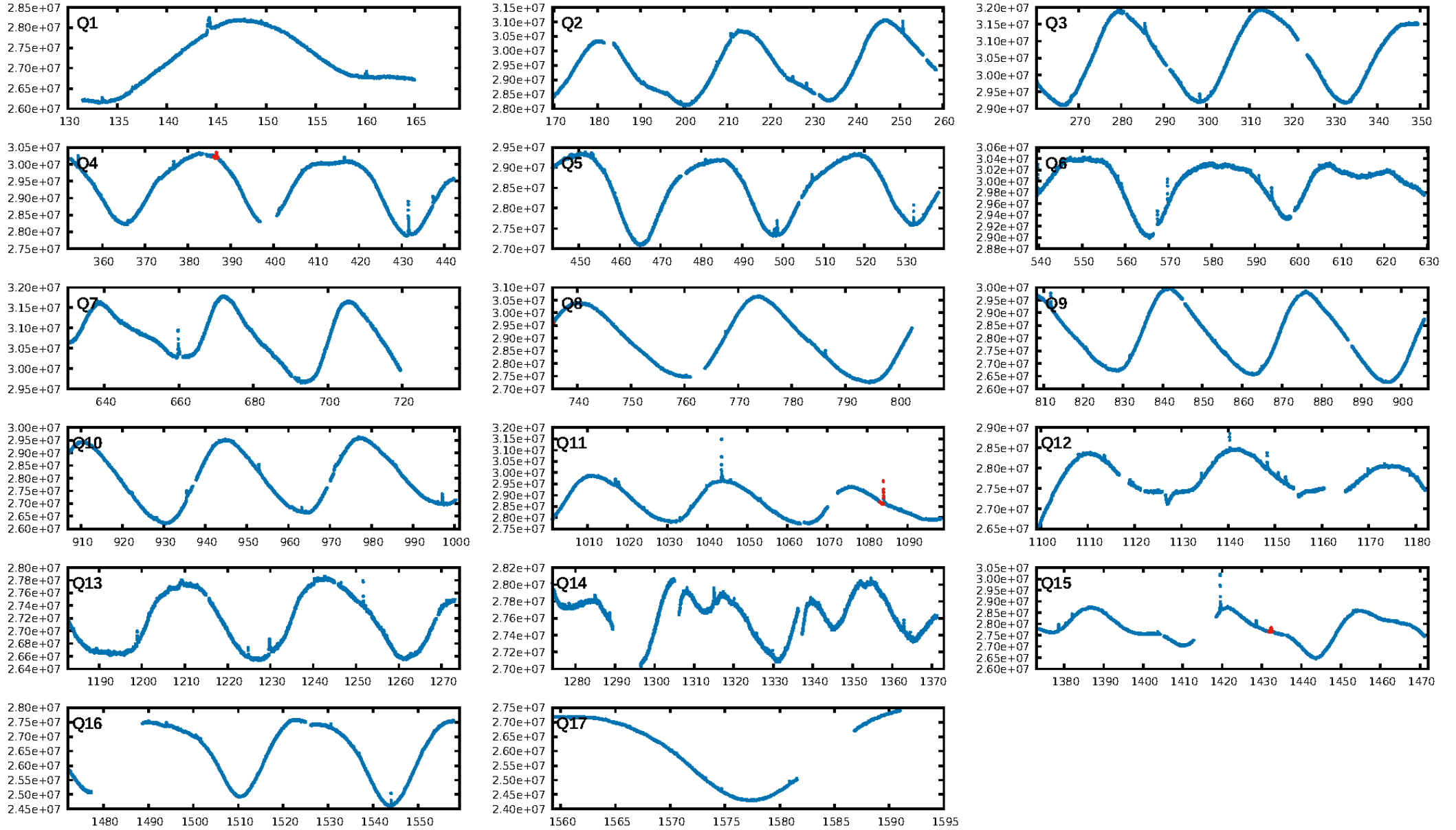
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.35] σ
LongPeriod-sig: 100.0% [98.41] σ
ModelChiSquare2-sig: 4.0%
ModelChiSquareGof-sig: 28.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.16
Centroid-sig: 96.4%
Centroid-so: 0.117 arcsec [0.27] σ
OotOffset-rm: 0.402 arcsec [0.37] σ
KicOffset-rm: 0.422 arcsec [0.38] σ
OotOffset-st: 0/1/0 [2]
KicOffset-st: 0/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

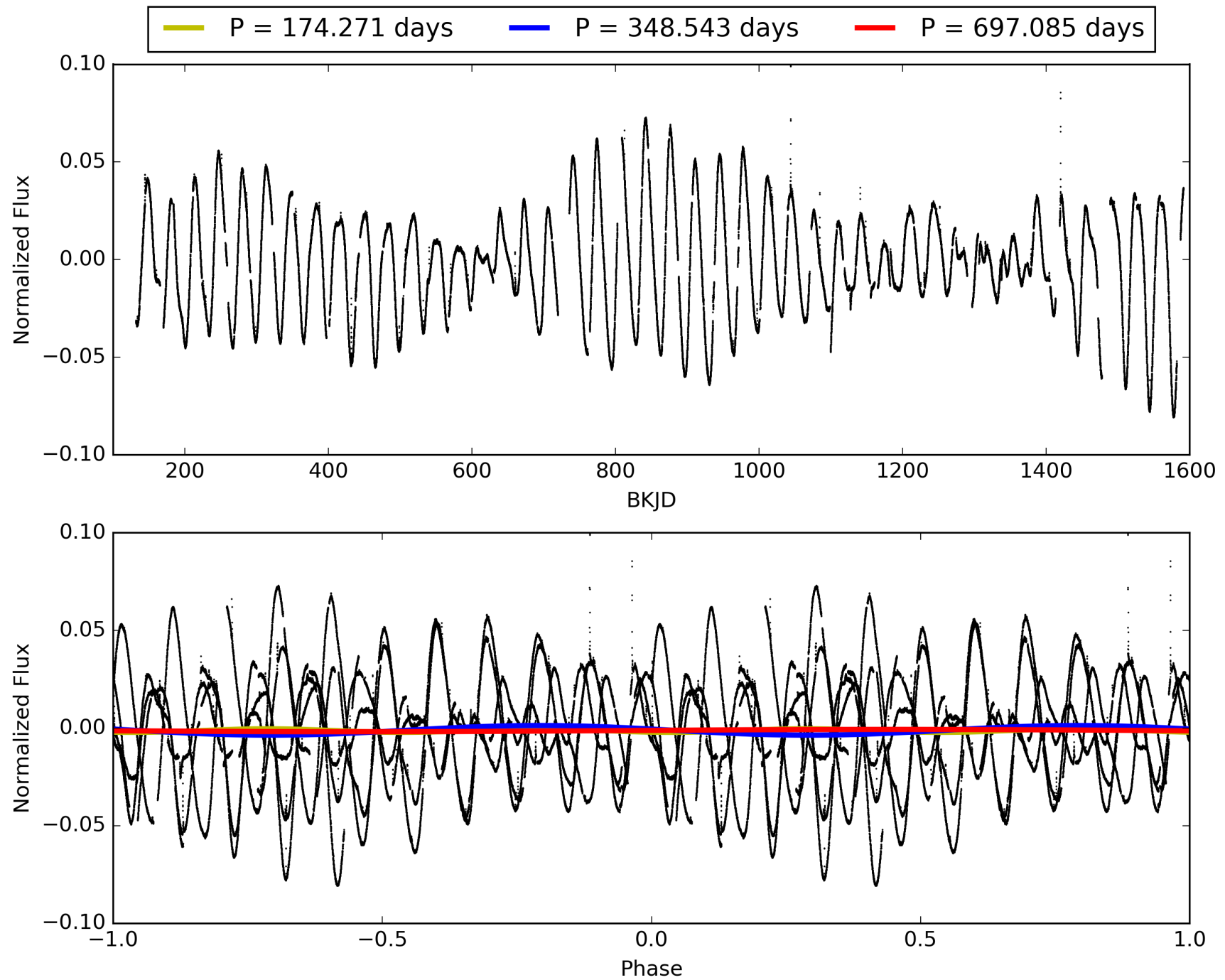
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:05:27 Z

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

TCE 010905040-03, PDC Light Curves

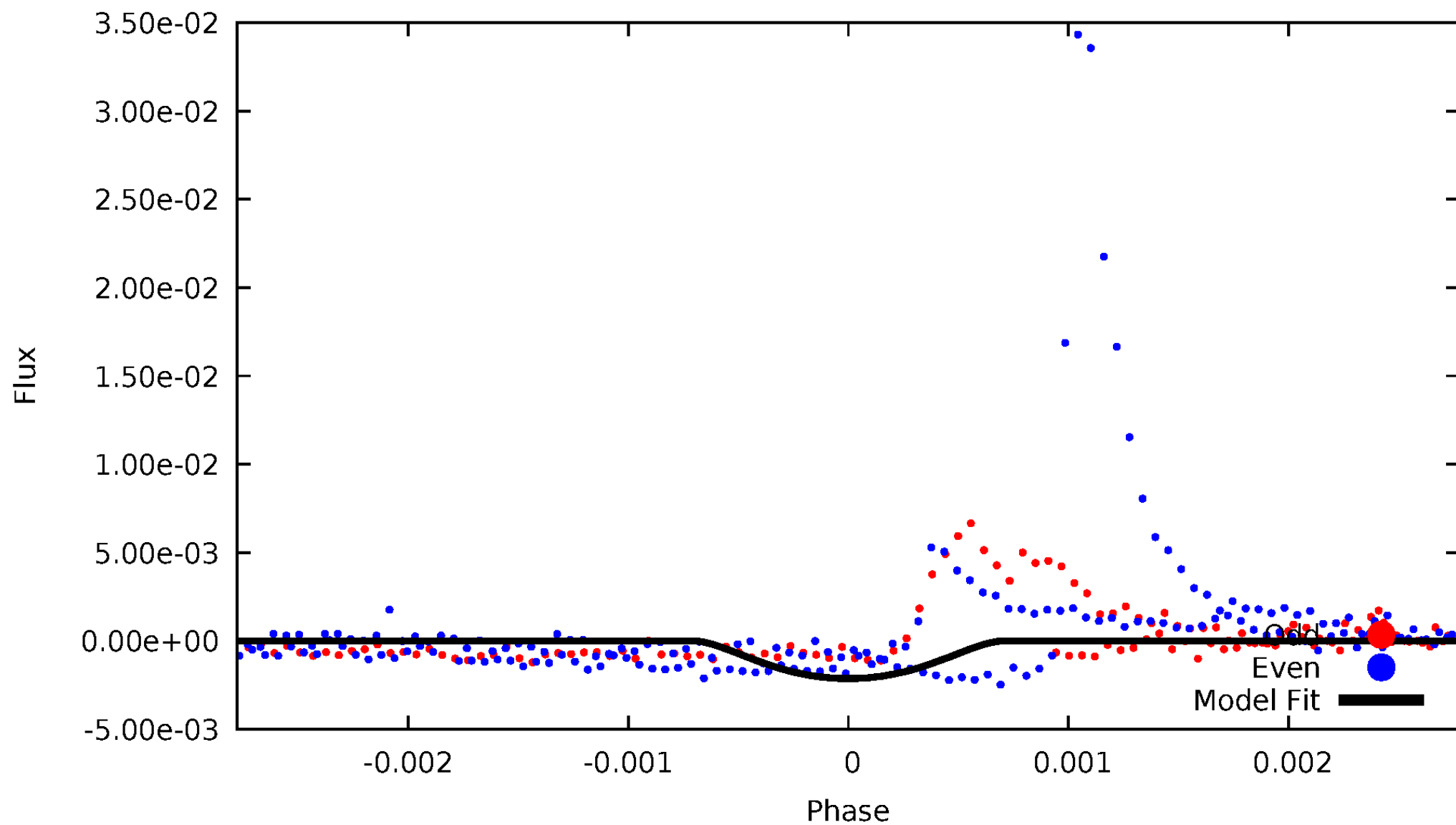


TCE 010905040-03



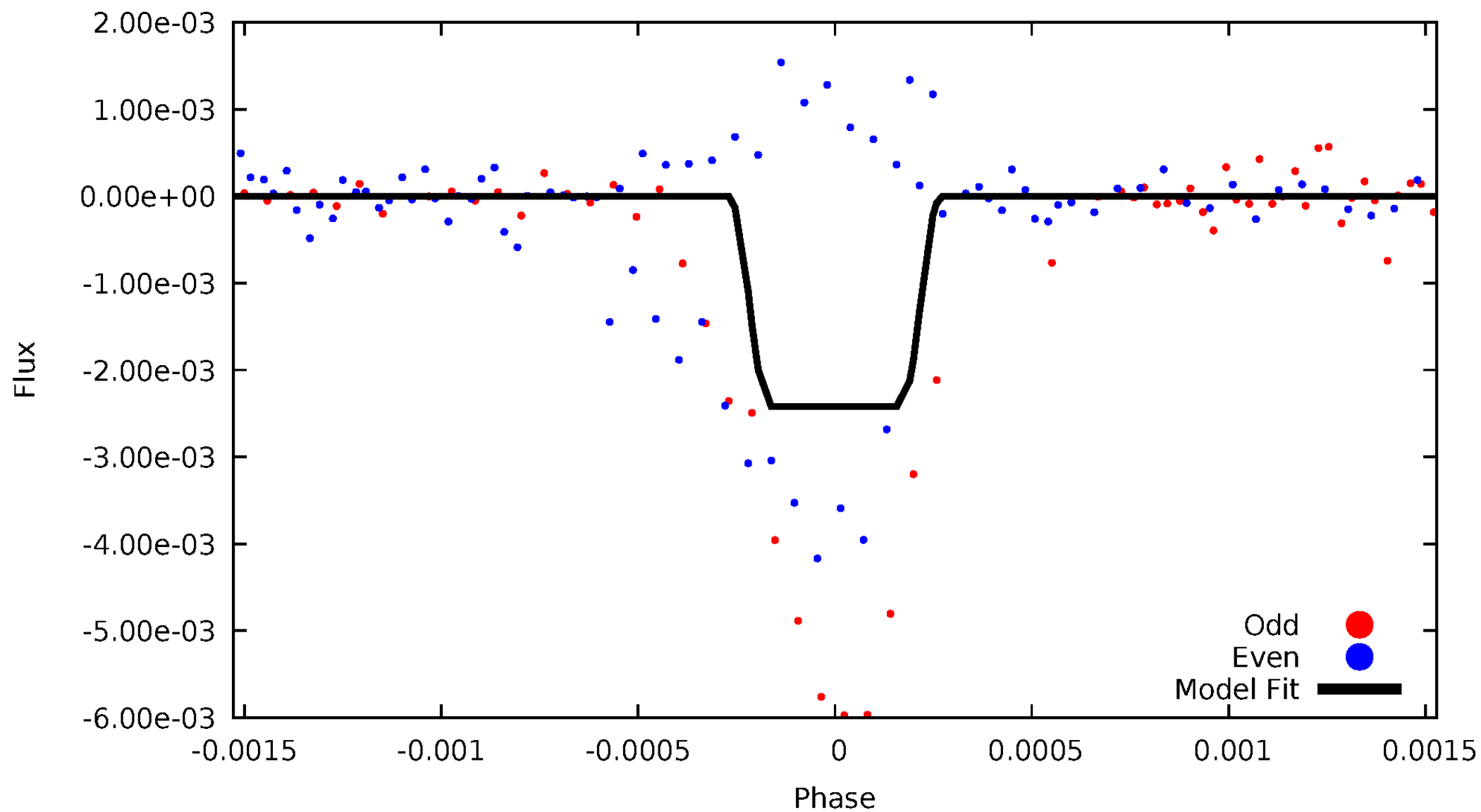
DV Odd/Even

TCE 010905040-03



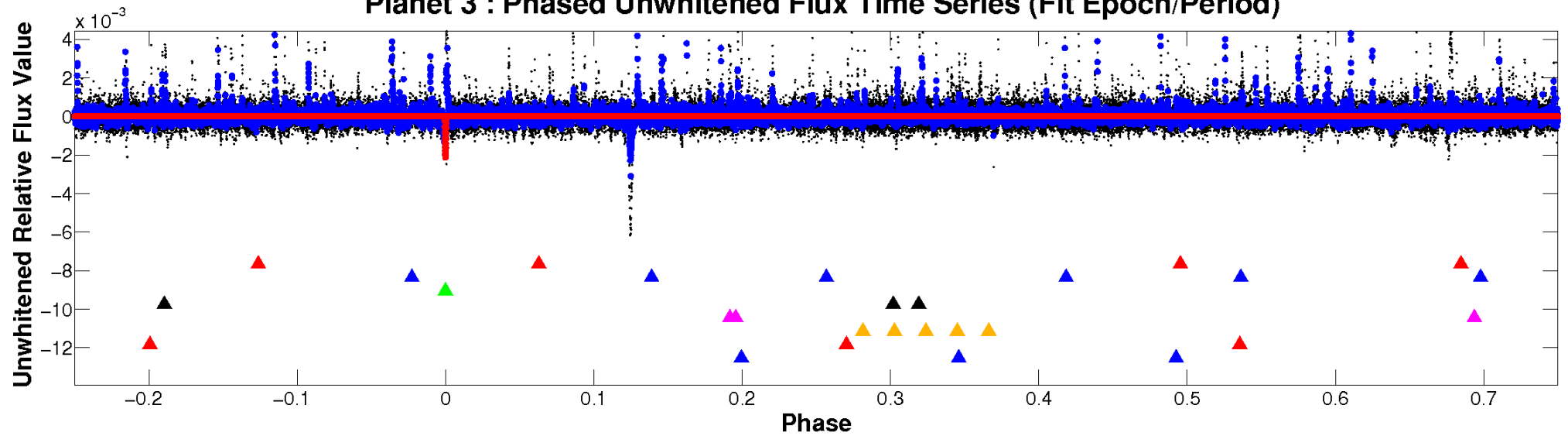
ALT Odd/Even

TCE 010905040-03

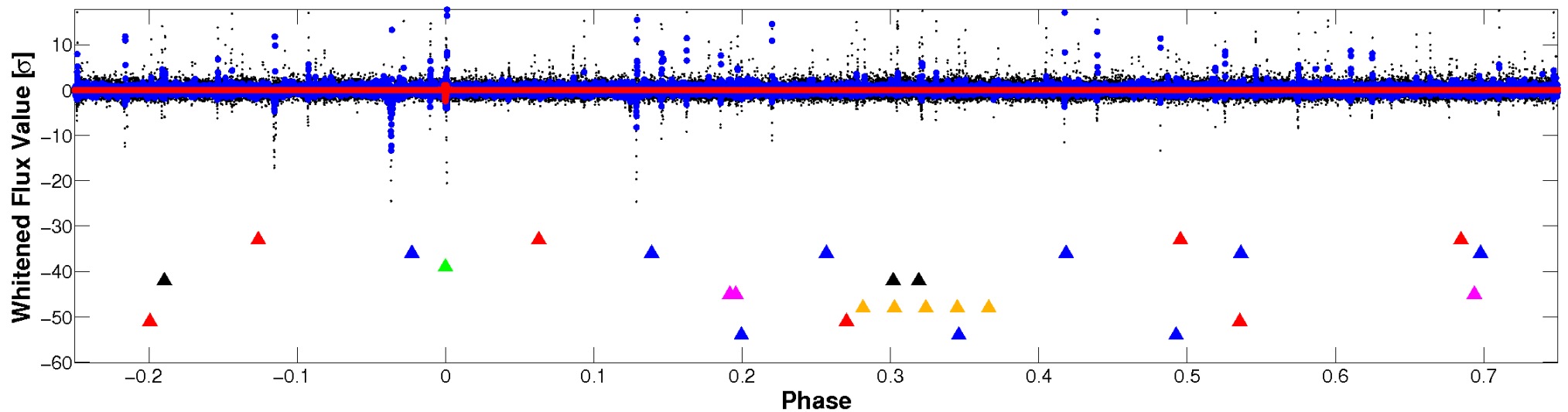


Non-Whitened Vs. Whitened Light Curve

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

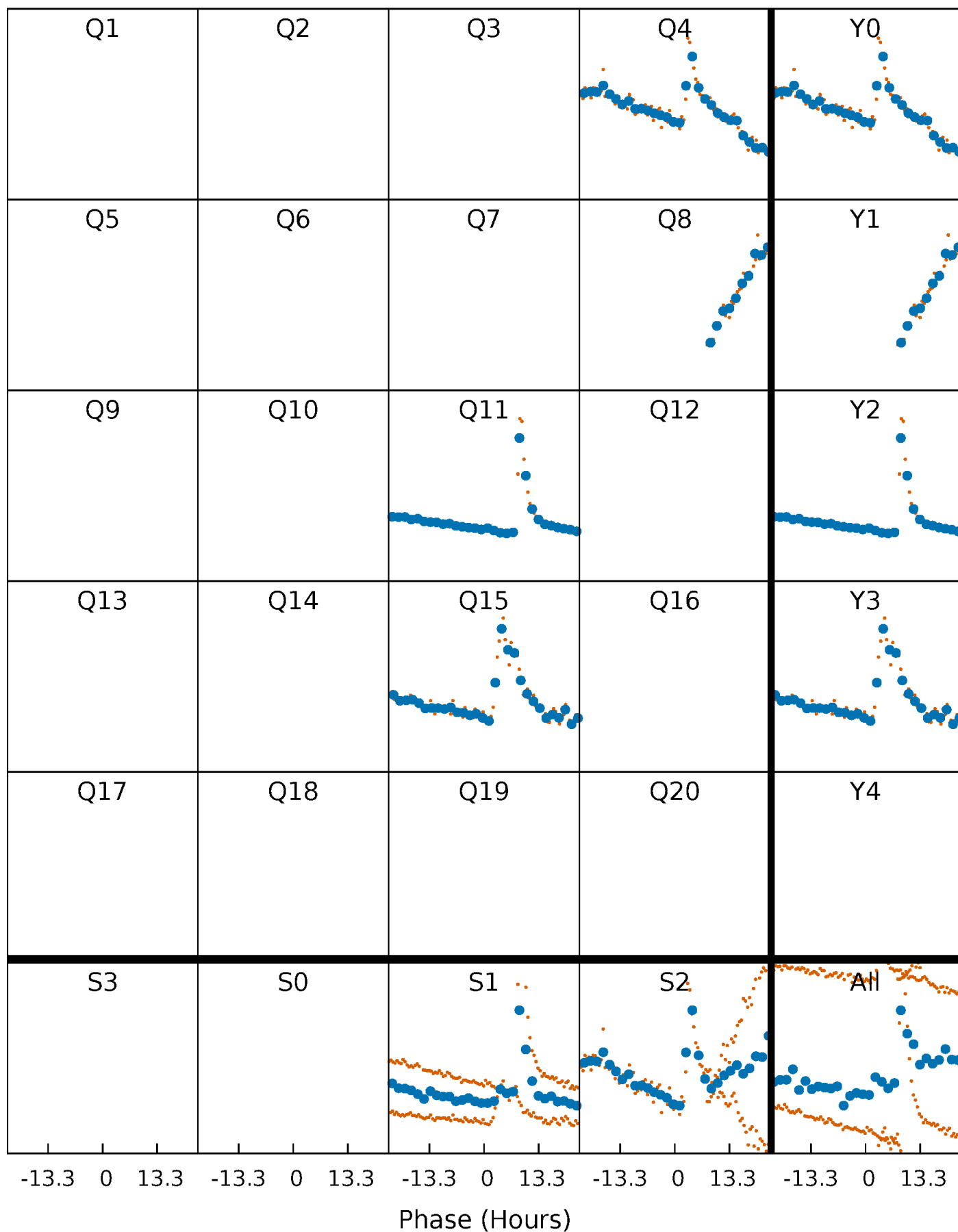


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



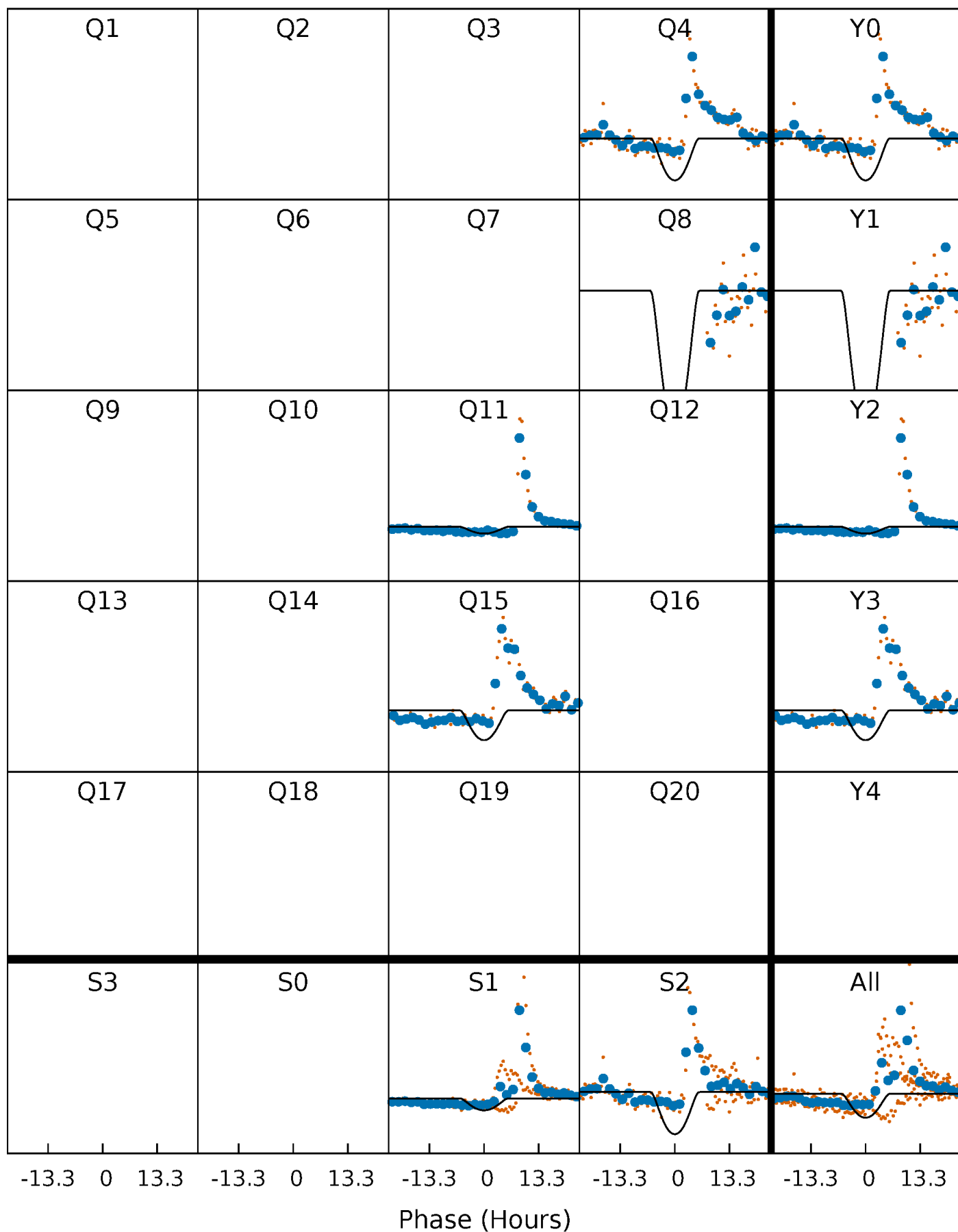
PDC Quarter-Phased Transit Curves

TCE 010905040-03 $P=348.542561$ Days $T_0=386.512413$ (BKJD)



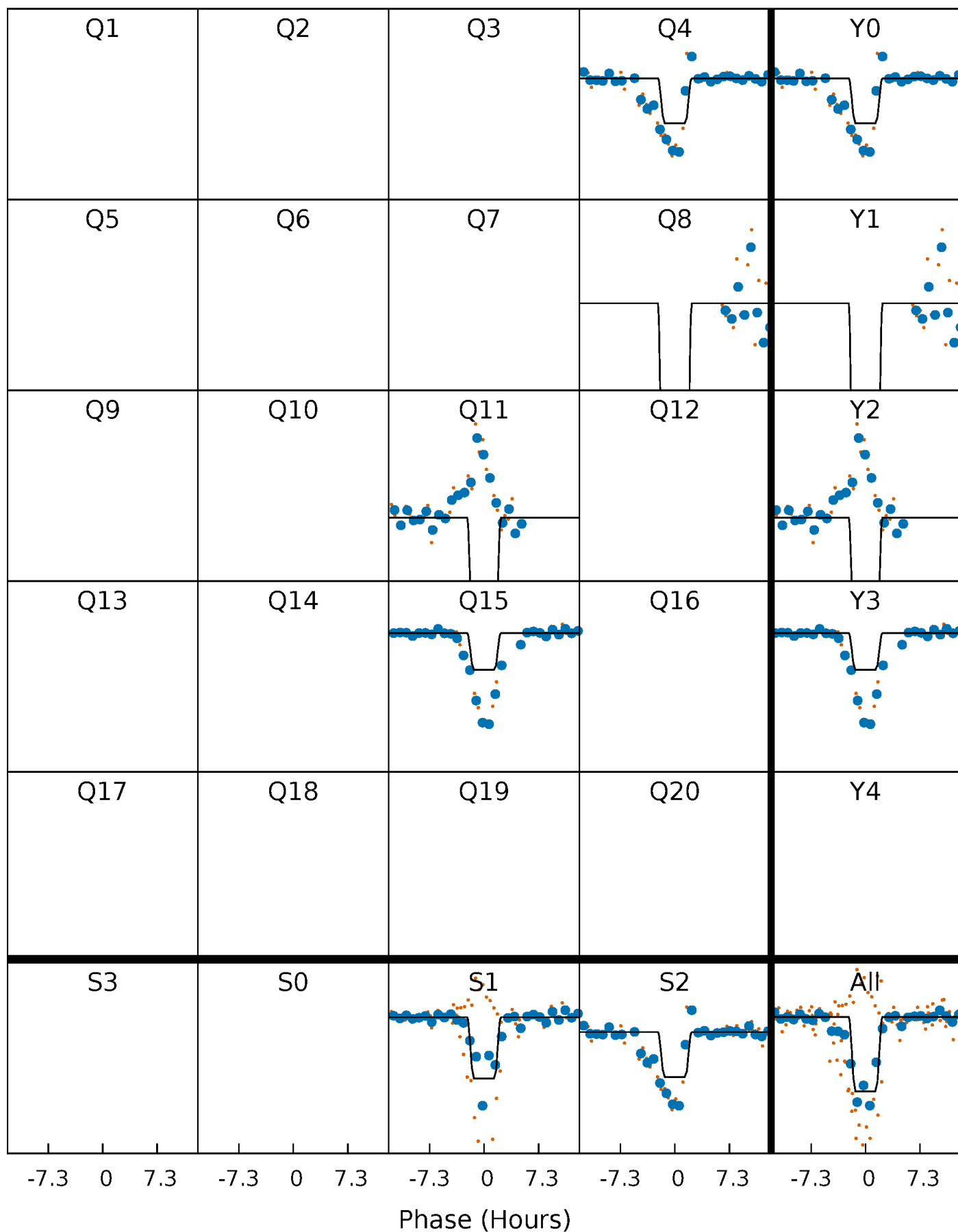
DV Quarter-Phased Transit Curves

TCE 010905040-03 $P=348.542561$ Days $T_0=386.512413$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

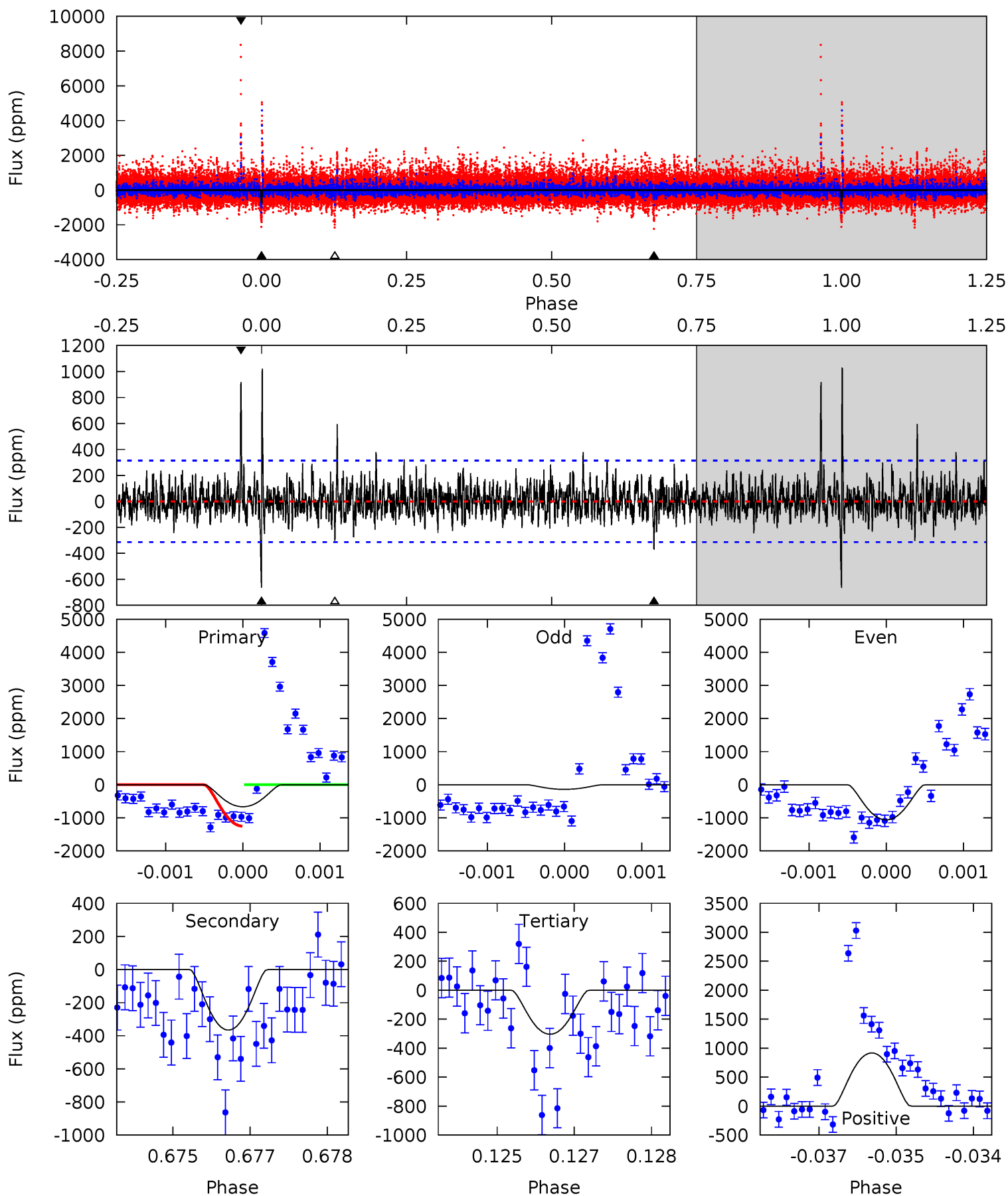
TCE 010905040-03 $P=348.542044$ Days $T_0=386.577479$ (BKJD)



DV Model-Shift Uniqueness Test

010905040-03, P = 348.542561 Days, E = 37.969852 Days

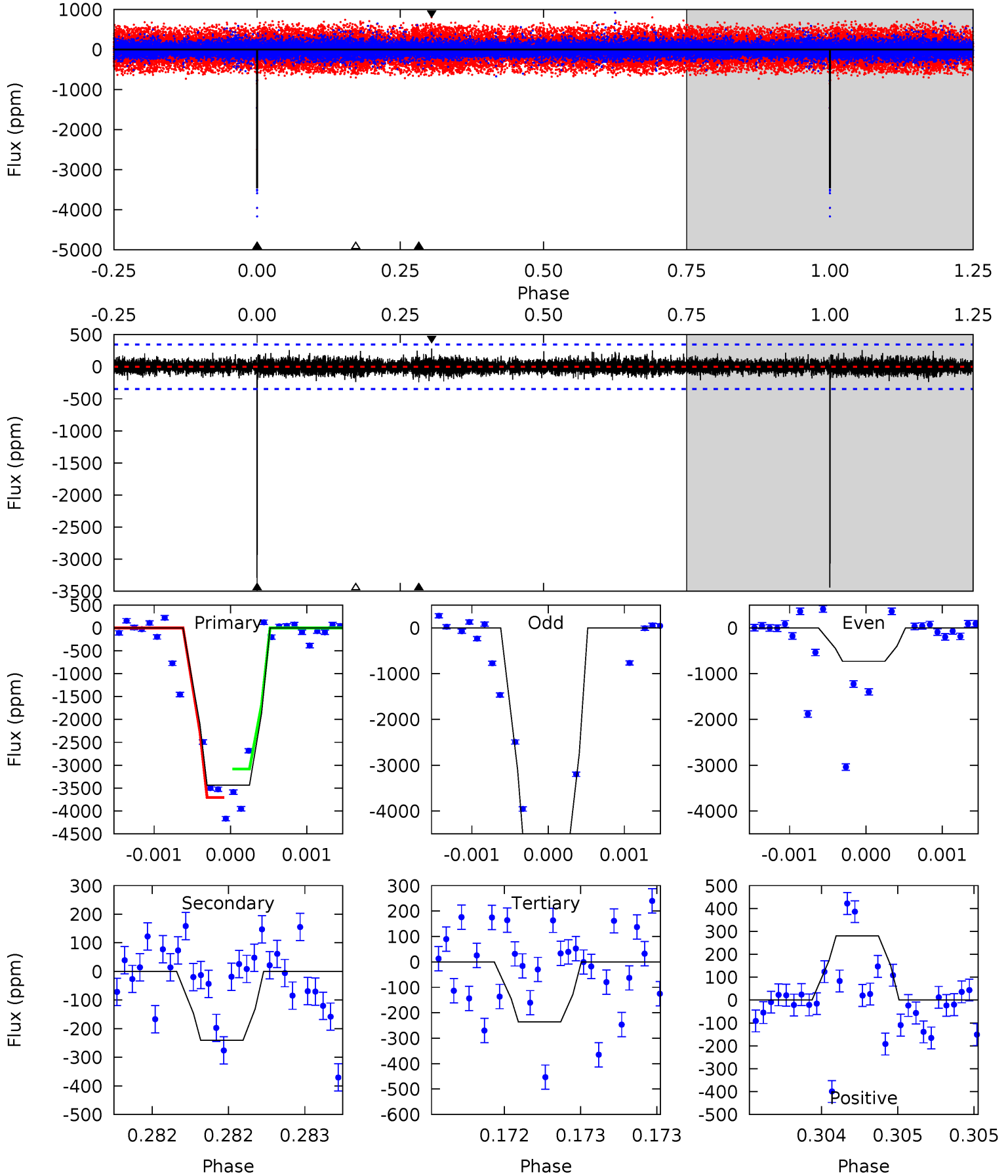
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	6.28	5.21	15.7	5.39	3.19	1.66	6.21	-4.32	1.06	-9.47	6.79	-3.93	0.61	10.6



Alt Model-Shift Uniqueness Test

010905040-03, P = 348.542044 Days, E = 38.035435 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.2	3.86	3.79	4.50	5.56	3.47	0.85	51.5	50.7	0.07	-0.64	47.1	0.80	0.08	0



Stellar Parameters For KIC 010905040

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5126^{+154}_{-138}	$4.578^{+0.078}_{-0.045}$	$-0.540^{+0.350}_{-0.300}$	$0.696^{+0.073}_{-0.073}$	$0.668^{+0.087}_{-0.037}$	$2.792^{+0.855}_{-0.493}$
	+3%/-3%	+2%/-1%	+65%/-56%	+10%/-10%	+13%/-6%	+31%/-18%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010905040-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-366 ± 58	$5.31^{+3.28}_{-3.00}$	285^{+10}_{-12}	3241^{+1036}_{-447}	5176^{+20976}_{-3288}
Alt.	-241 ± 62	$4.35^{+3.63}_{-2.94}$	285^{+12}_{-11}	3182^{+1486}_{-486}	4873^{+42822}_{-3449}

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 $A_{obs} \gg 1.0$

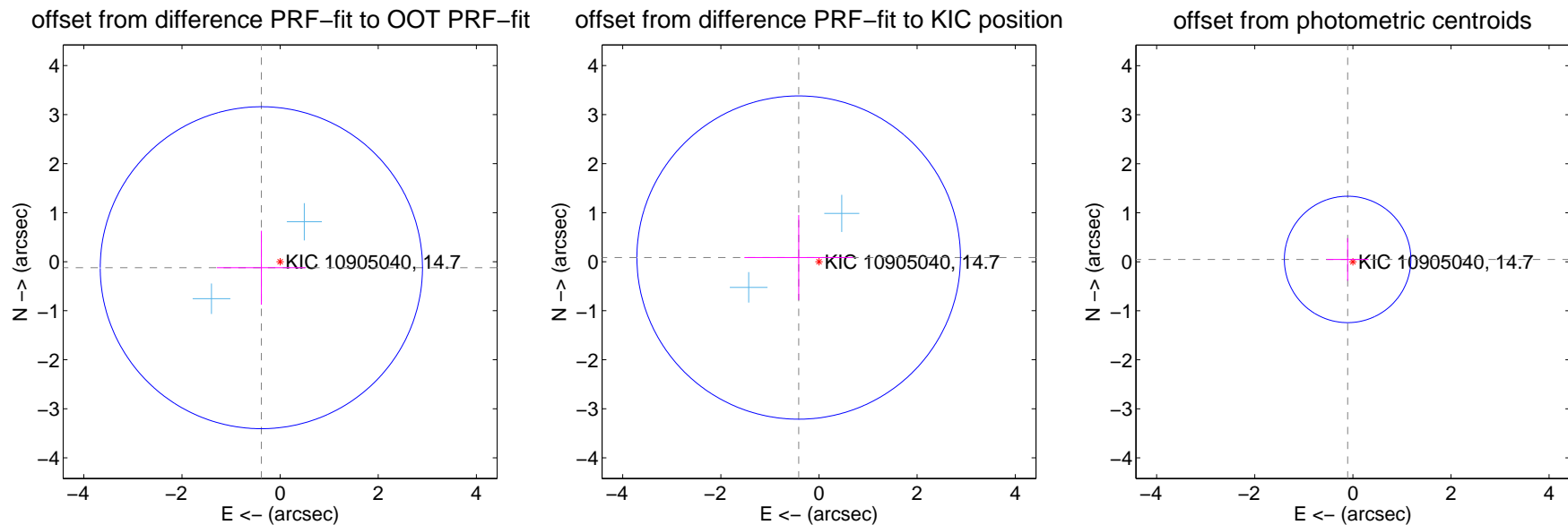
DV Centroid Data

Supplemental centroid analysis for 010905040-03. Kepler magnitude: 14.70. Transit SNR 13.42

There are 2 quarters with good PRF difference image offsets

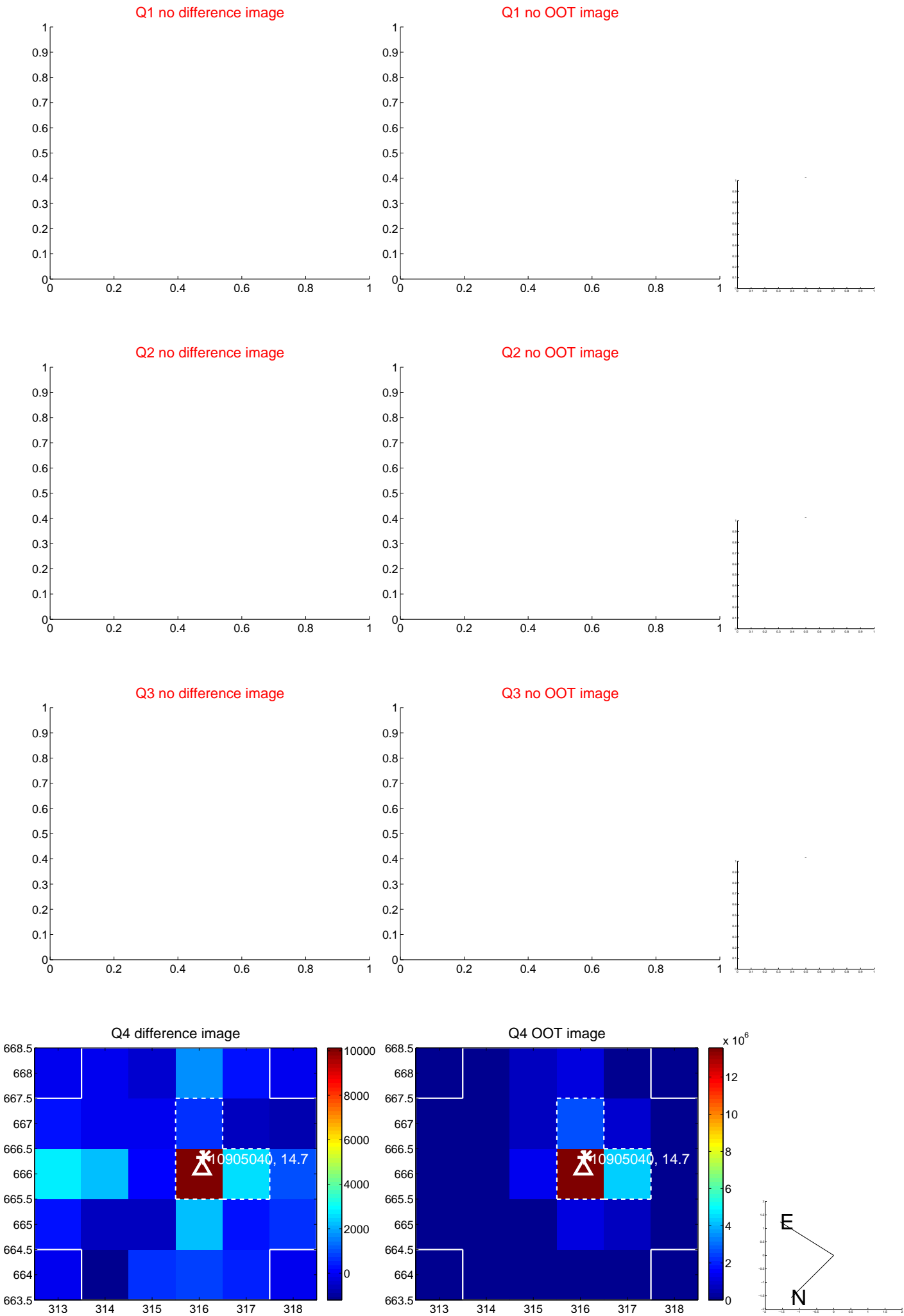
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.402 ± 1.094	0.37	0.382 ± 0.908	-0.123 ± 0.754
PRF-fit source offset from KIC position	0.422 ± 1.099	0.38	0.414 ± 1.107	0.084 ± 0.867
photometric centroid source offset	0.12 ± 0.43	0.27	0.11 ± 0.43	0.05 ± 0.44



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

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



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



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



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

Q13 no difference image



Q13 no OOT image



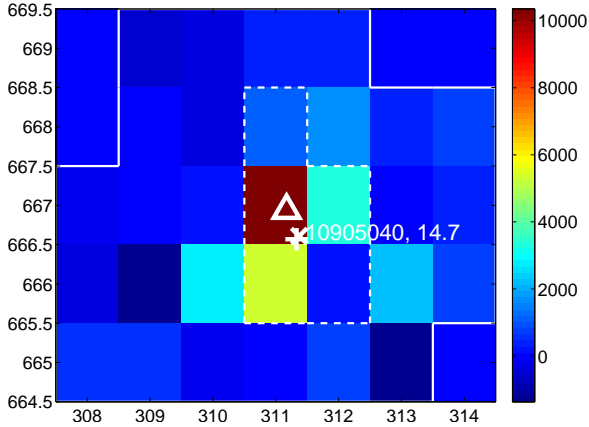
Q14 no difference image



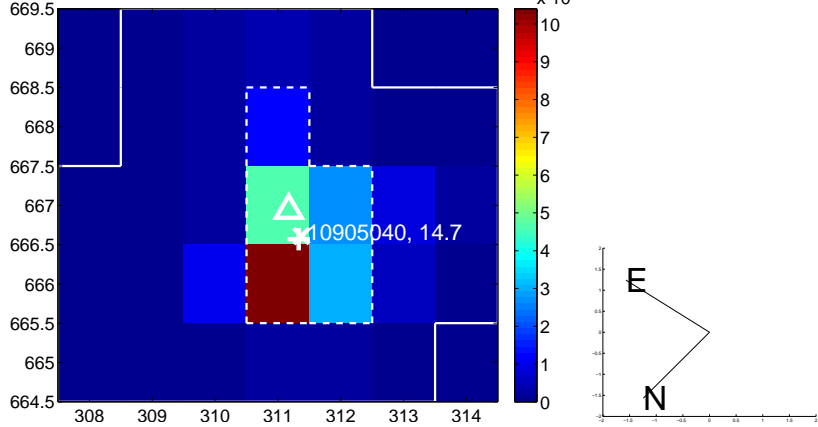
Q14 no OOT image



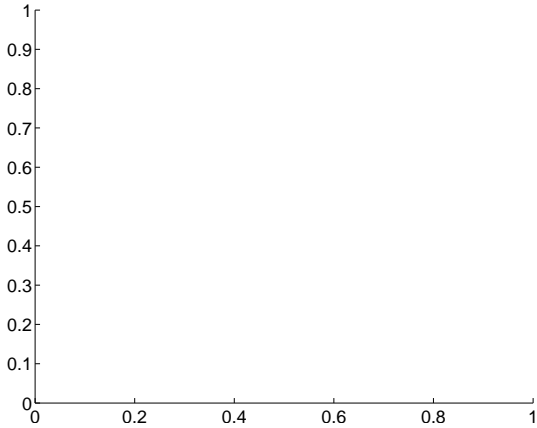
Q15 difference image



Q15 OOT image



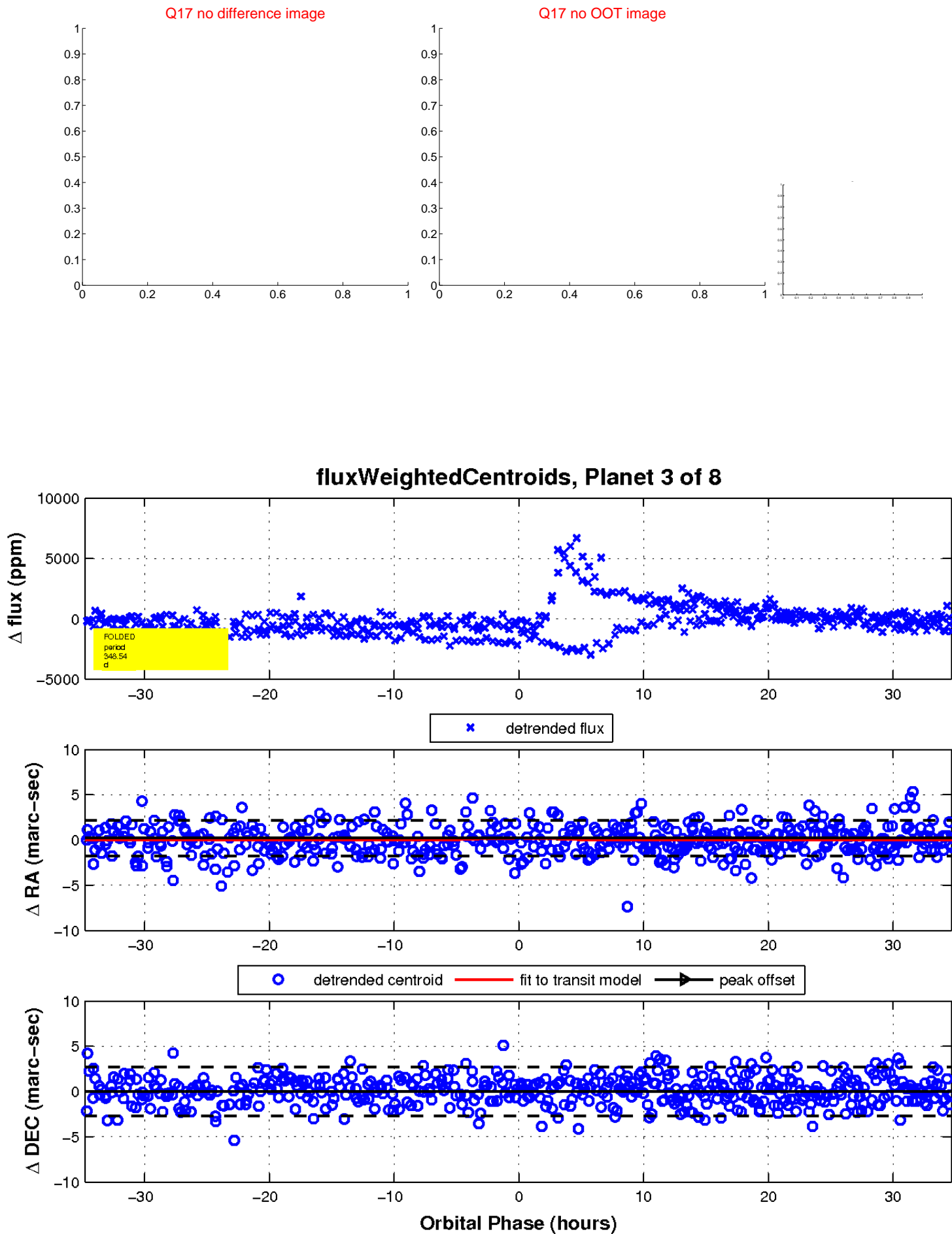
Q16 no difference image



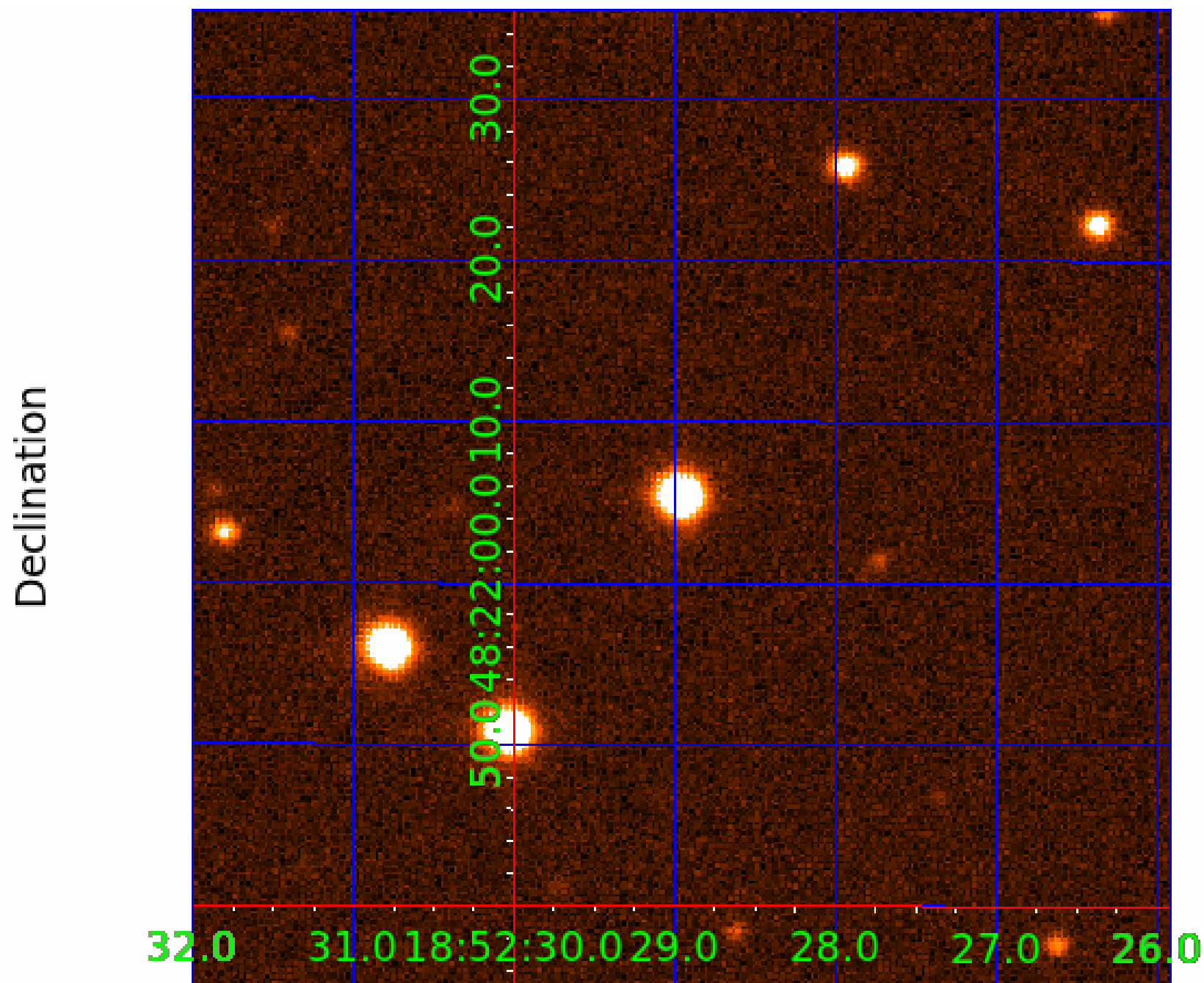
Q16 no OOT image



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



UKIRT Image



KIC 010905040

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})
010905040-01	OBS	No	414.463497	210.683462	735.0	8.739	15.6	6.2	0.70	5126	1.89	0.33
010905040-02	OBS	No	251.140477	224.879202	1031.3	12.719	16.6	8.0	0.70	5126	2.78	0.65
010905040-03	OBS	No	348.542561	386.512414	2135.0	11.615	16.5	13.4	0.70	5126	4.76	0.42
010905040-04	OBS	No	519.815036	497.725959	1164.0	6.609	14.8	8.3	0.70	5126	2.39	0.24
010905040-05	OBS	No	523.513314	453.336255	1219.3	3.269	10.7	8.8	0.70	5126	2.83	0.24
010905040-06	OBS	No	341.151907	165.641850	821.9	15.000	12.7	-1.0	0.70	5126	1.95	0.43
010905040-07	OBS	No	440.968538	480.754313	1250.4	16.375	11.4	8.9	0.70	5126	2.94	0.30
010905040-08	OBS	No	399.619133	456.057227	967.7	4.500	9.9	-1.0	0.70	5126	2.12	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010905040-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010905040-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010905040-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

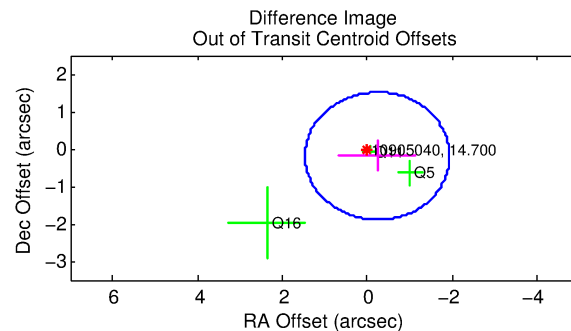
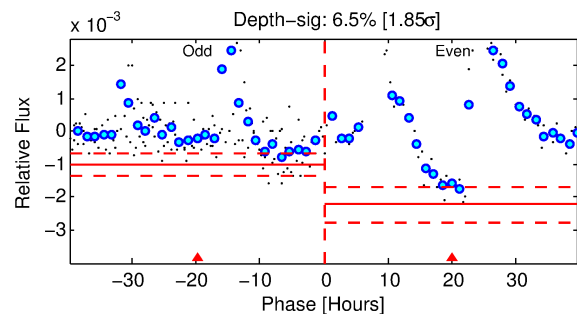
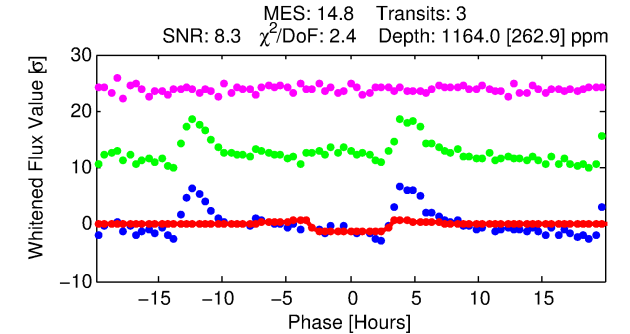
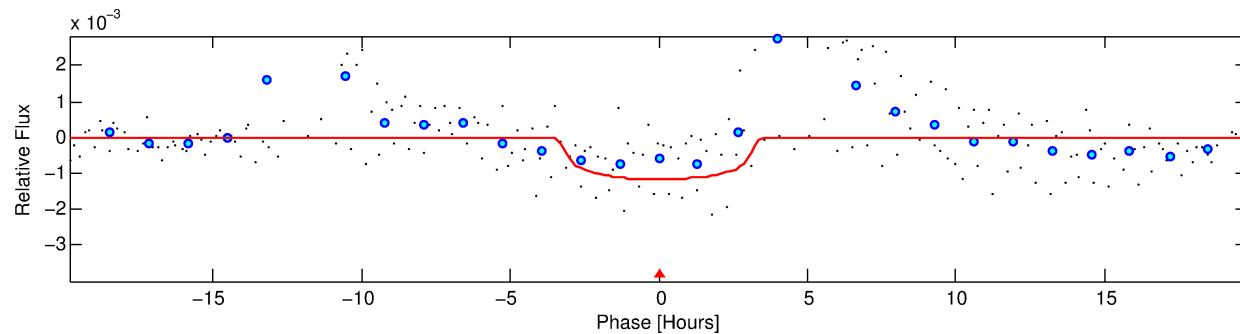
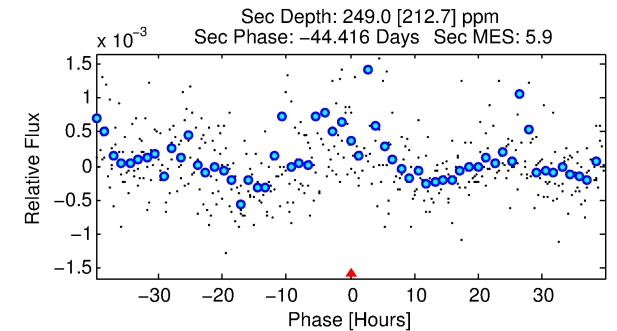
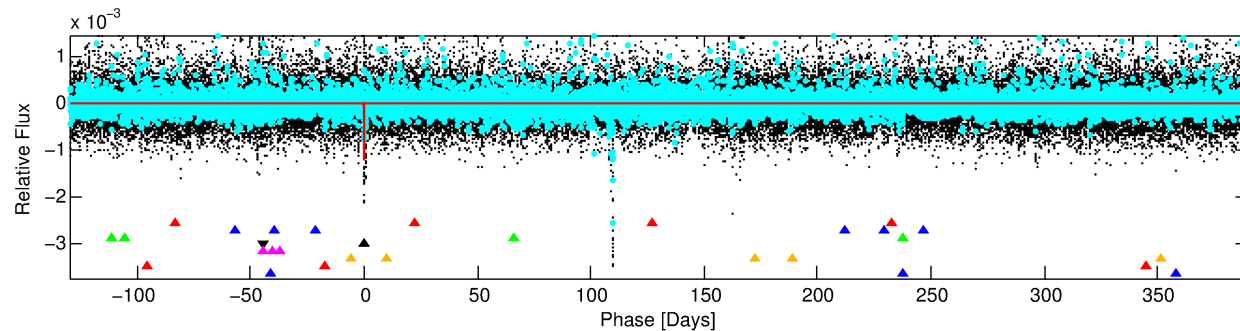
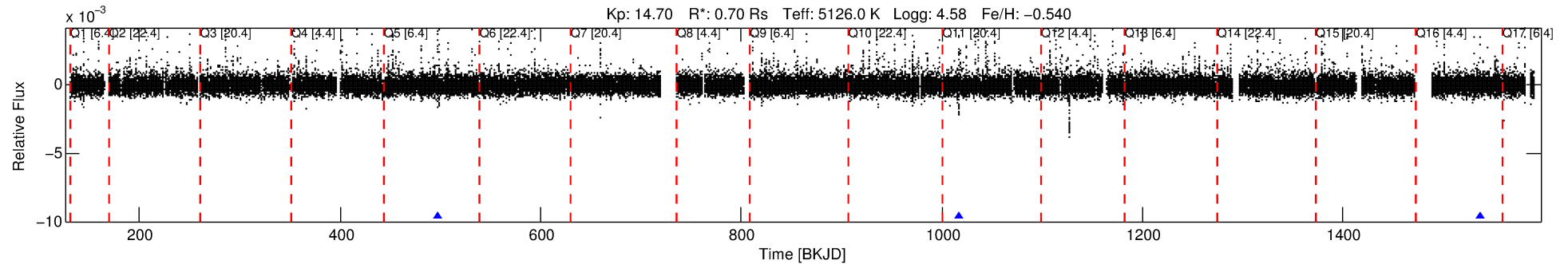
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010905040-04

No Significant Match Found

DV One-Page Summary

KIC: 10905040 Candidate: 4 of 8 Period: 519.815 d



DV Fit Results:

Period = 519.81504 [0.01004] d
Epoch = 497.7260 [0.0131] BKJD
Rp/R* = 0.0315 [0.0601]
a/R* = 556.79 [4048.74]
b = 0.45 [12.92]
Seff = 0.24 [0.04]
Teq = 179 [8] K
Rp = 2.39 [4.57] Re
a = 1.1066 [0.1019] AU
Ag = 29325.62 [114711.10] [0.26σ]
Teffp = 3629 [3548] K [0.97σ]

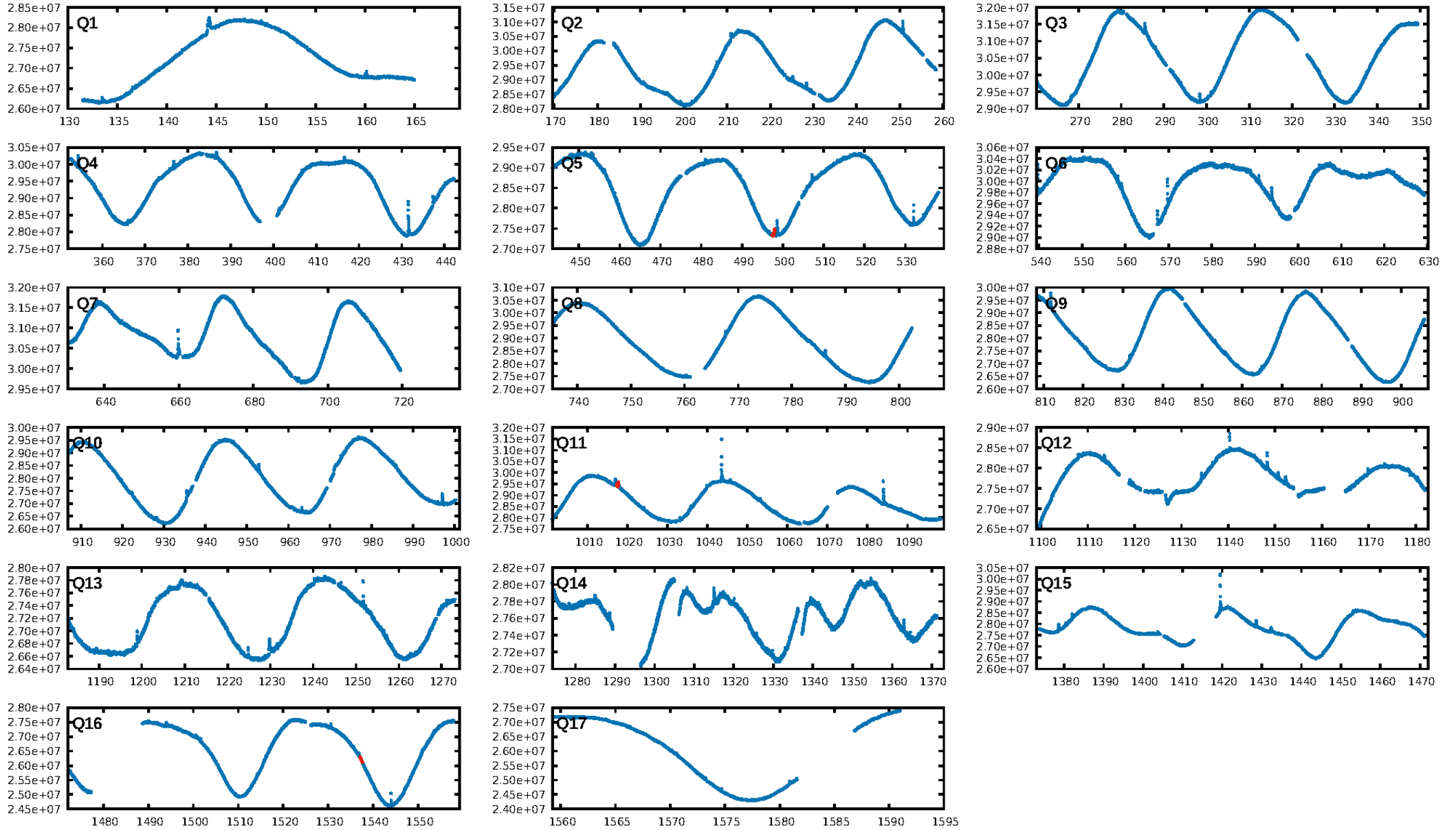
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [107.16σ]
LongPeriod-sig: 100.0% [12.04σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 22.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.9281
Centroid-sig: 58.8%
Centroid-so: 0.354 arcsec [0.42σ]
OotOffset-rm: 0.309 arcsec [0.54σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.239 arcsec [0.29σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

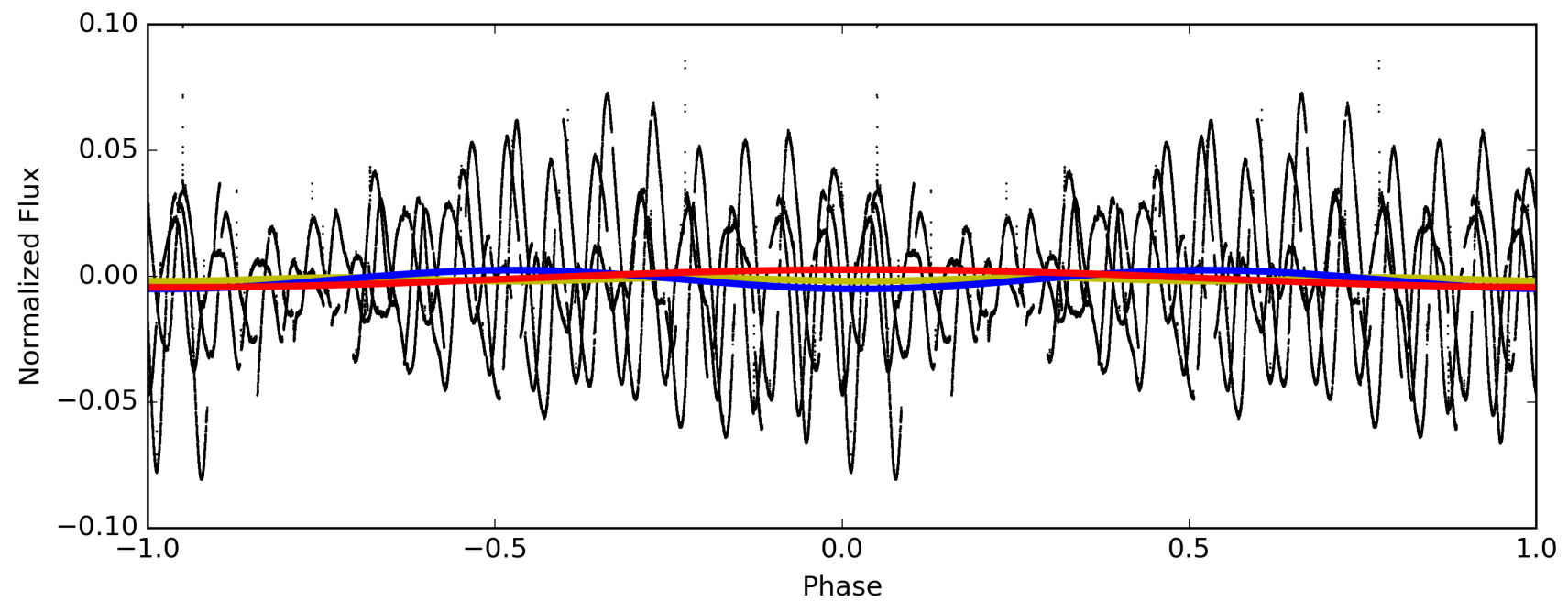
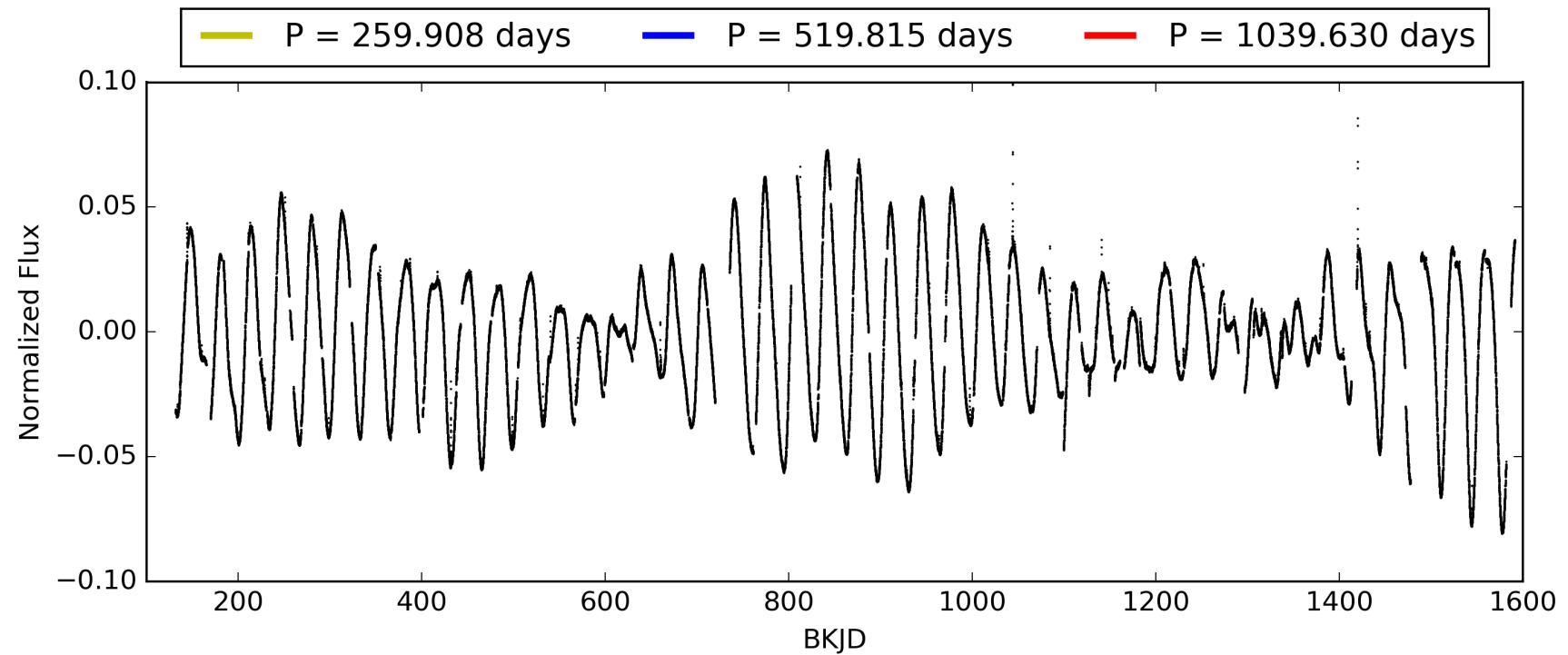
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:05:41 Z

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

TCE 010905040-04, PDC Light Curves

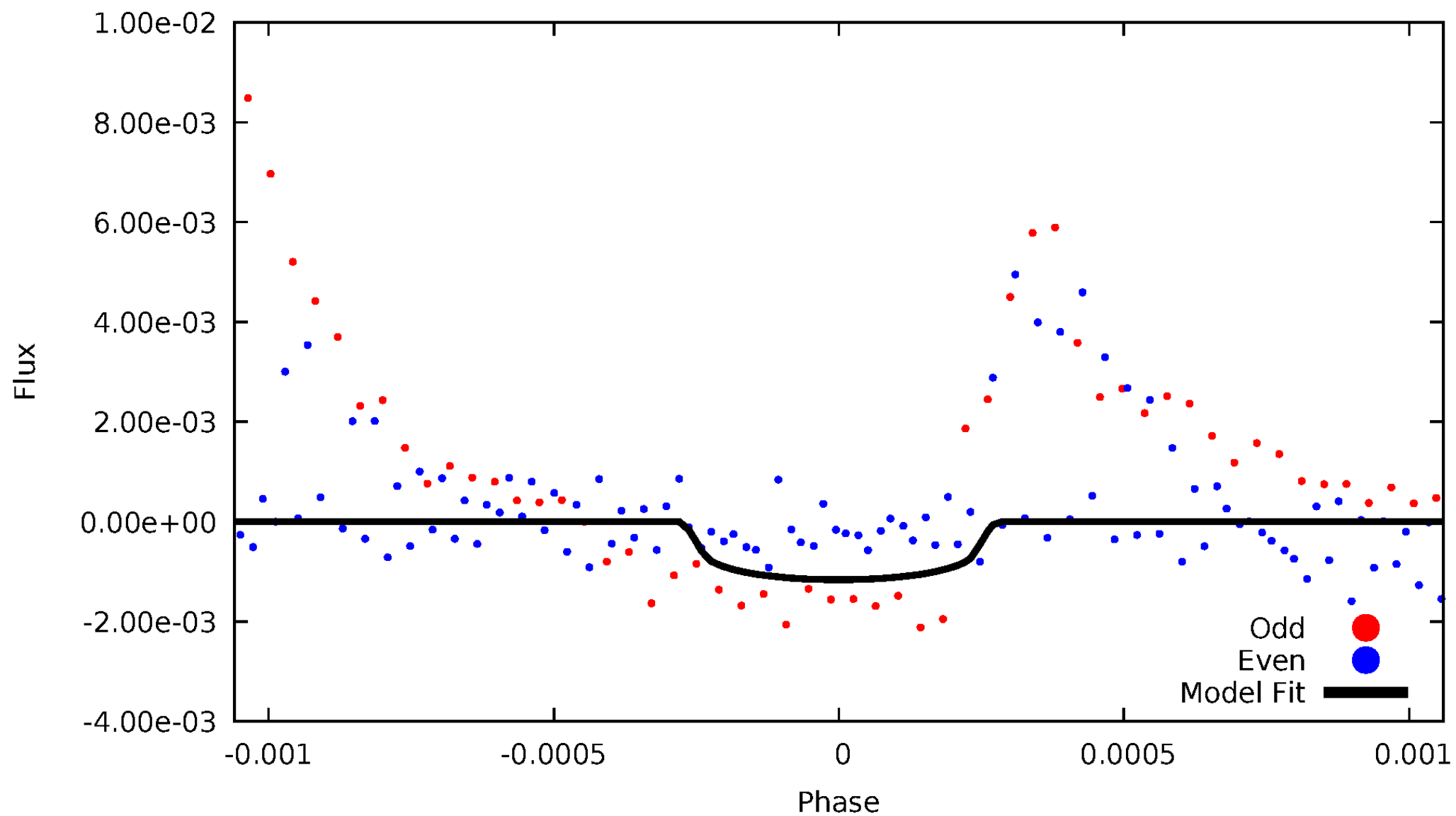


TCE 010905040-04



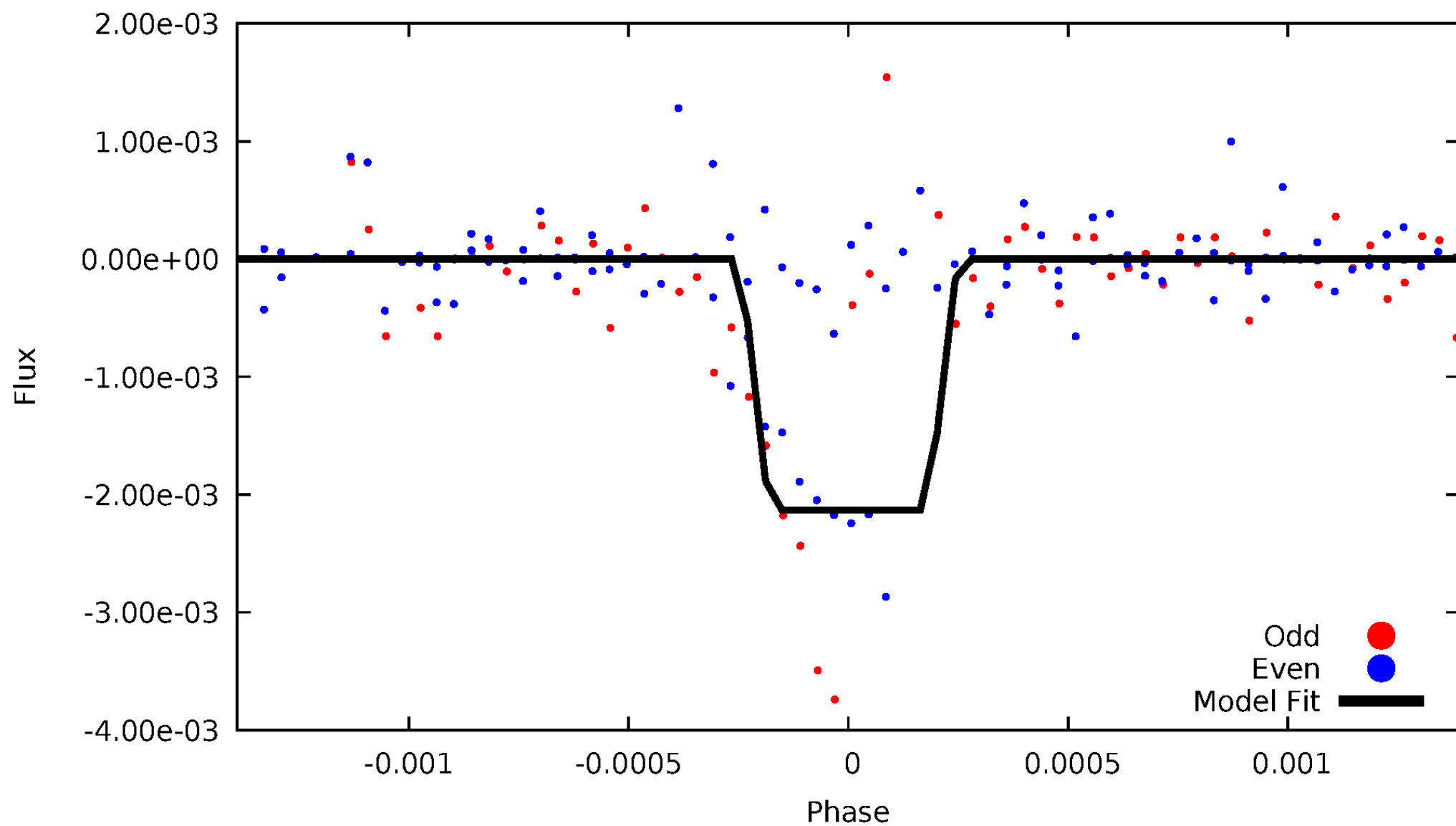
DV Odd/Even

TCE 010905040-04



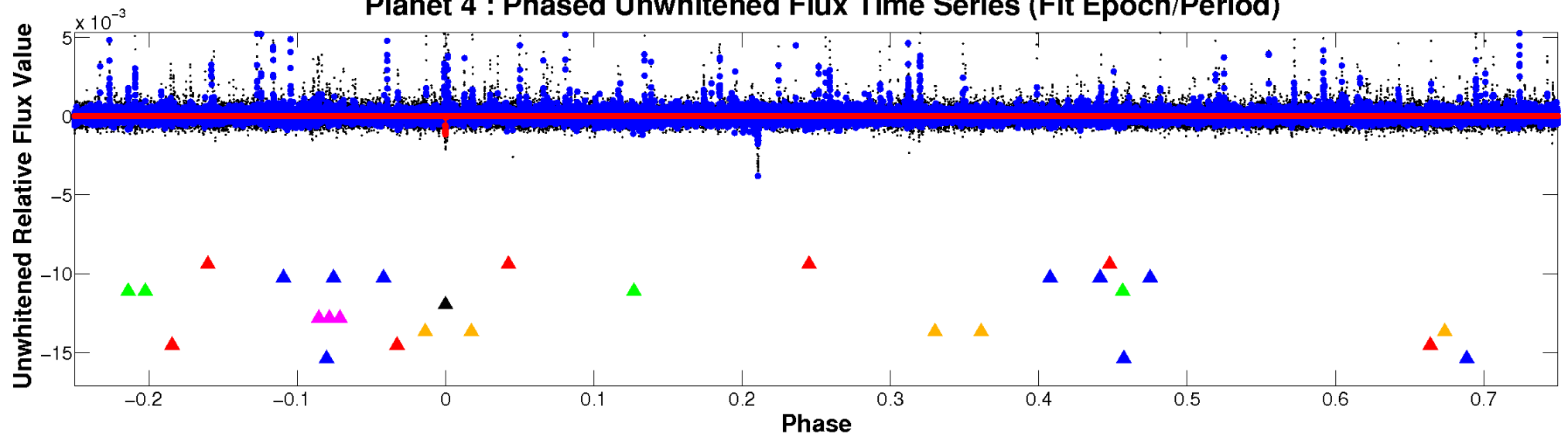
ALT Odd/Even

TCE 010905040-04

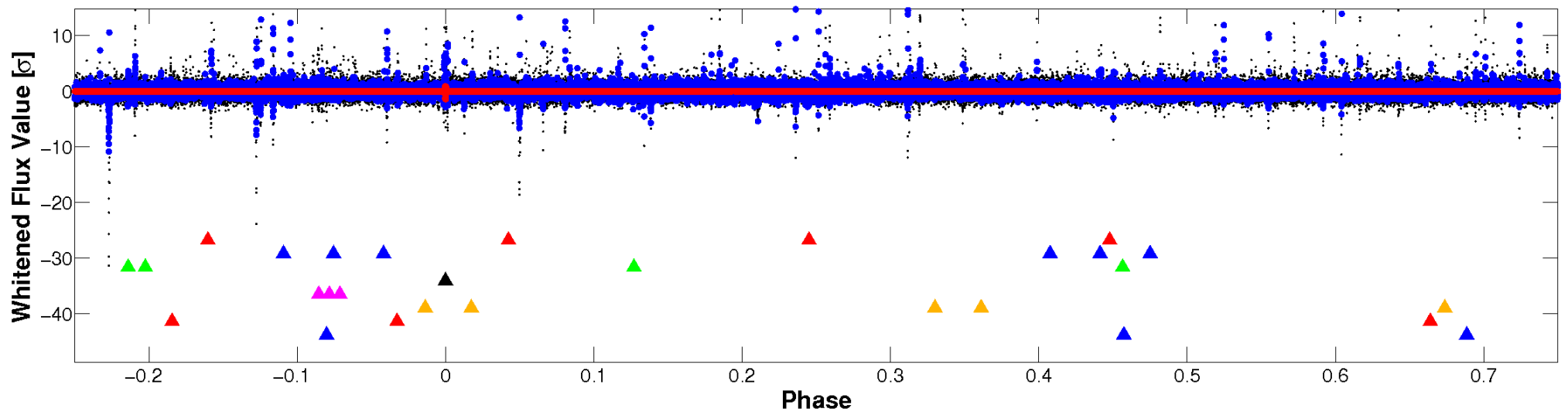


Non-Whitened Vs. Whitened Light Curve

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

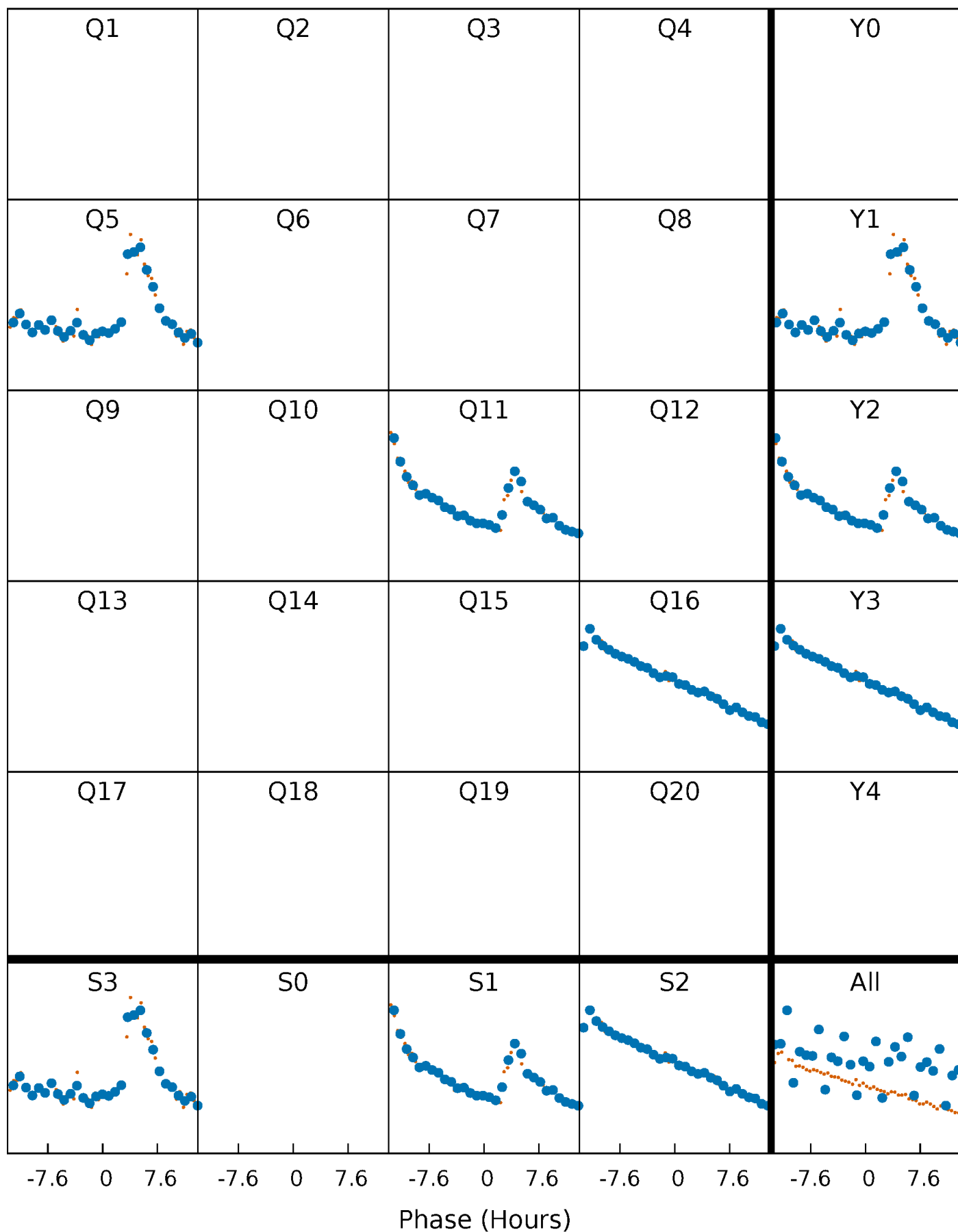


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



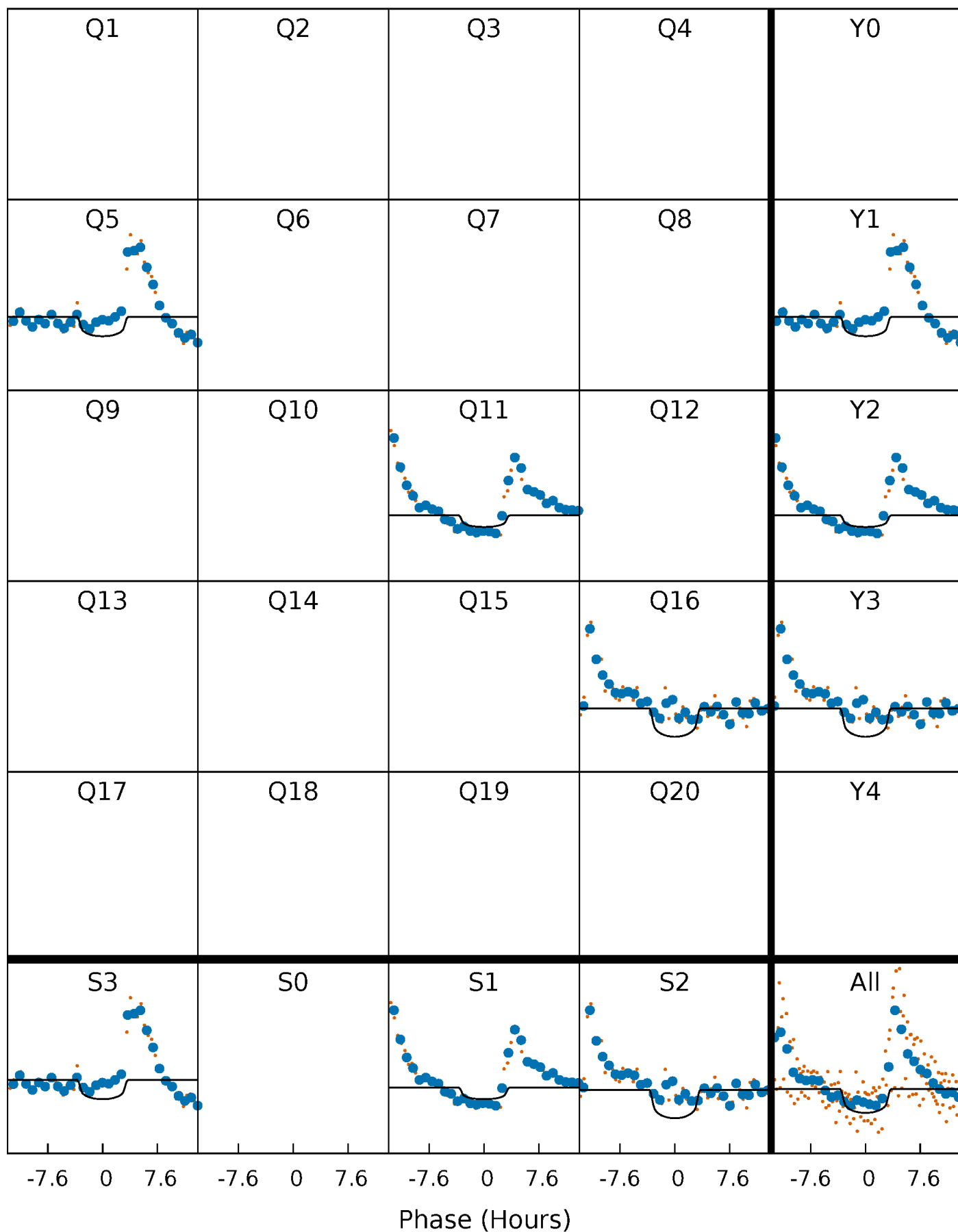
PDC Quarter-Phased Transit Curves

TCE 010905040-04 $P=519.815036$ Days $T_0=497.725959$ (BKJD)



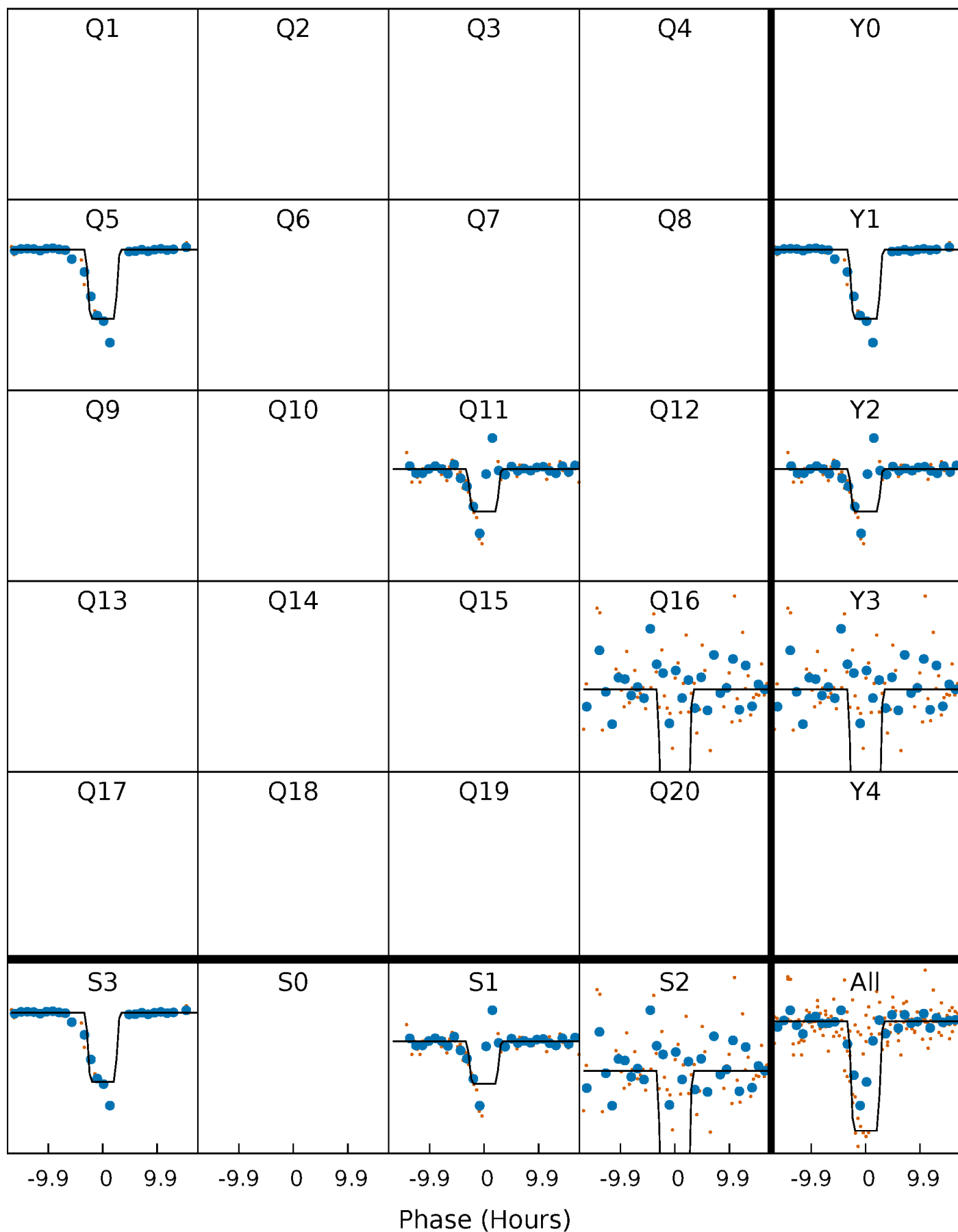
DV Quarter-Phased Transit Curves

TCE 010905040-04 $P=519.815036$ Days $T_0=497.725959$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

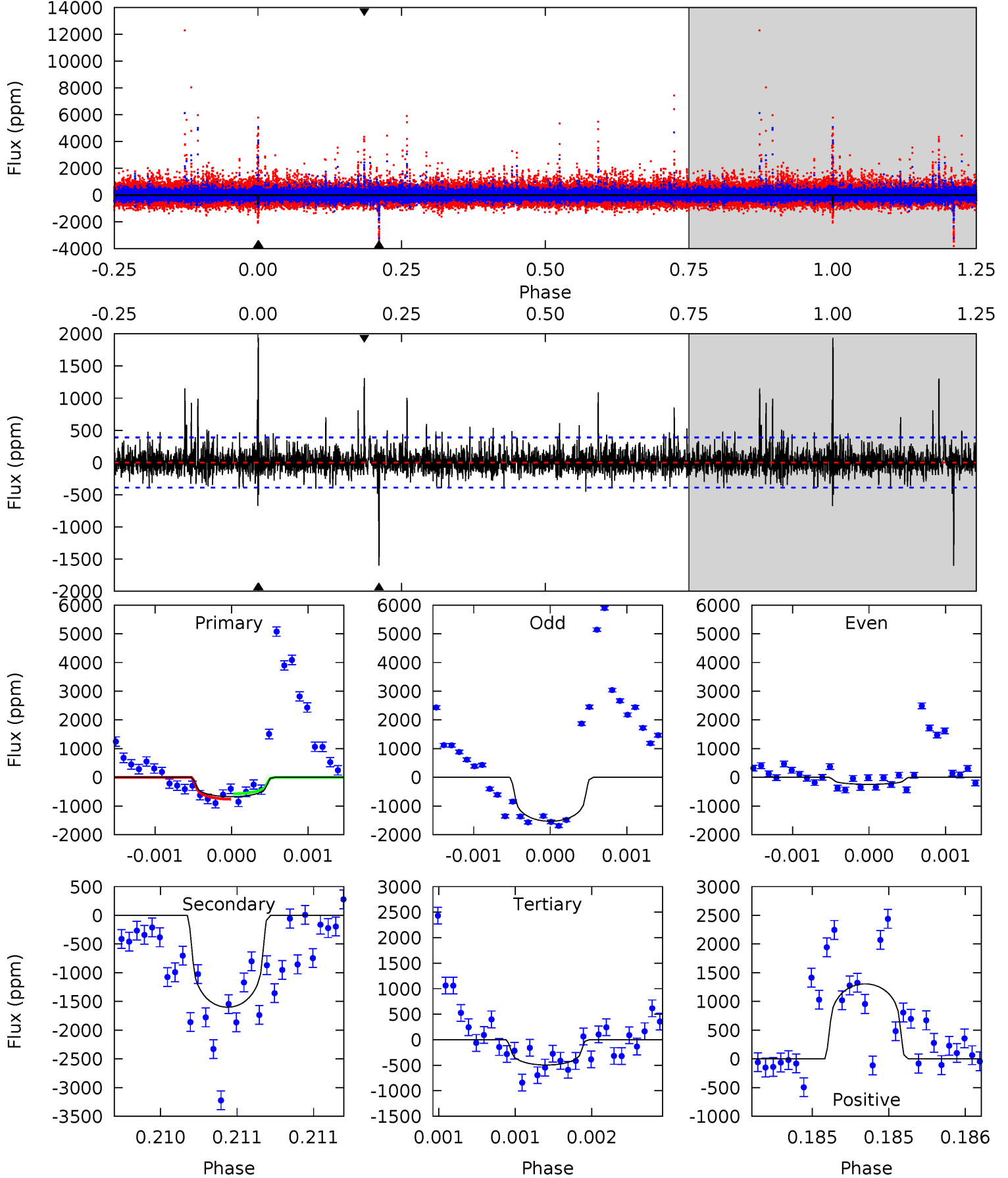
TCE 010905040-04 $P=519.850200$ Days $T_0=497.801525$ (BKJD)



DV Model-Shift Uniqueness Test

010905040-04, P = 519.815036 Days, E = 497.725959 Days

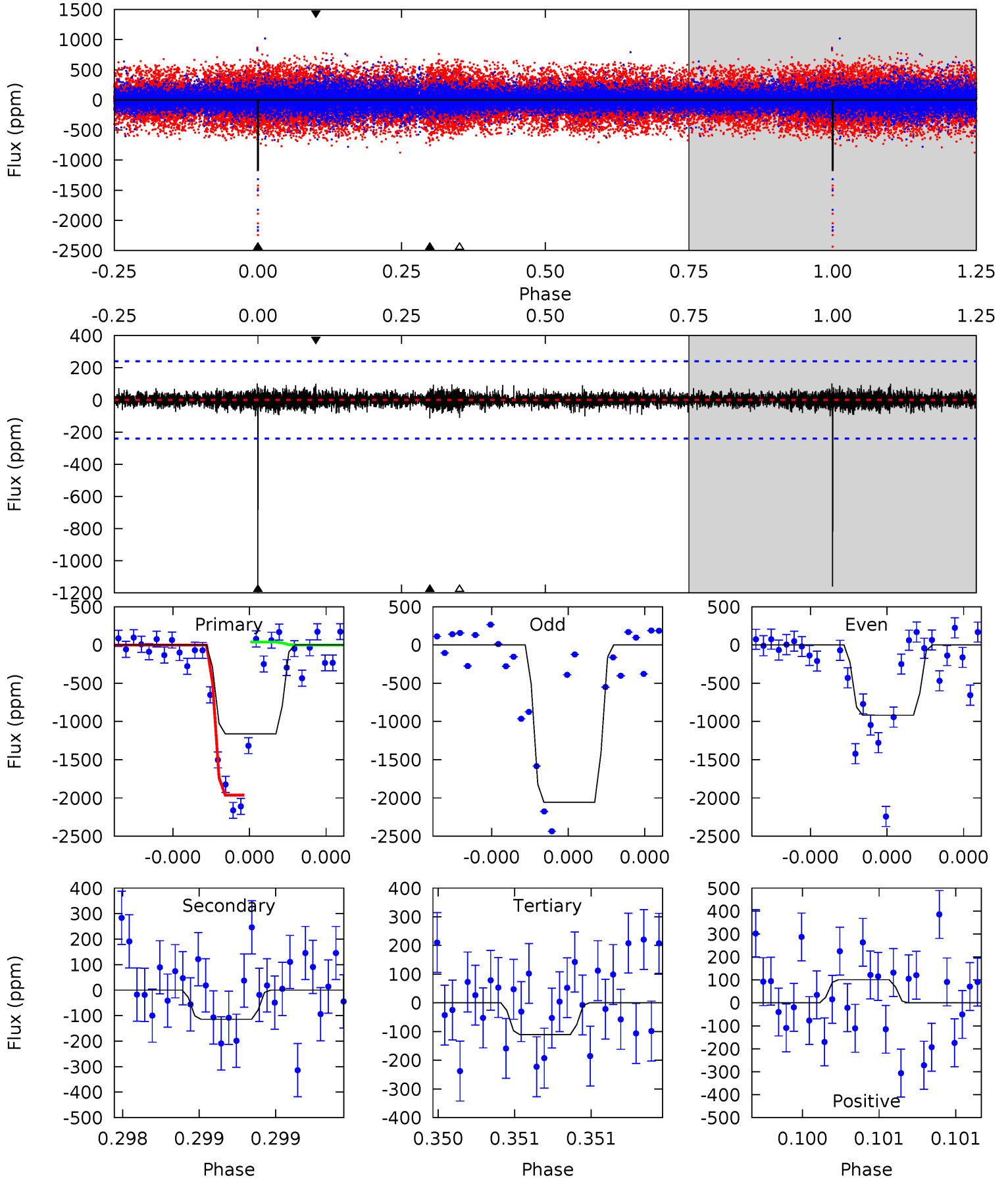
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.66	22.9	7.09	18.7	5.56	3.46	2.06	2.57	-9.03	15.8	4.22	4.97	2.75	0.55	1.36



Alt Model-Shift Uniqueness Test

010905040-04, P = 519.850200 Days, E = 497.801525 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.0	2.65	2.56	2.35	5.58	3.50	0.49	24.4	24.6	0.09	0.31	14.6	0.80	0.08	0



Stellar Parameters For KIC 010905040

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5126^{+154}_{-138}	$4.578^{+0.078}_{-0.045}$	$-0.540^{+0.350}_{-0.300}$	$0.696^{+0.073}_{-0.073}$	$0.668^{+0.087}_{-0.037}$	$2.792^{+0.855}_{-0.493}$
	+3%/-3%	+2%/-1%	+65%/-56%	+10%/-10%	+13%/-6%	+31%/-18%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010905040-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1600 ± 70	$4.11^{+3.72}_{-2.71}$	249^{+10}_{-9}	4512^{+2960}_{-899}	$65312^{+468783}_{-46726}$
Alt.	-114 ± 43	$4.70^{+3.83}_{-2.89}$	250^{+9}_{-10}	2805^{+908}_{-414}	3317^{+18404}_{-2366}

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 $A_{obs} \gg 1.0$

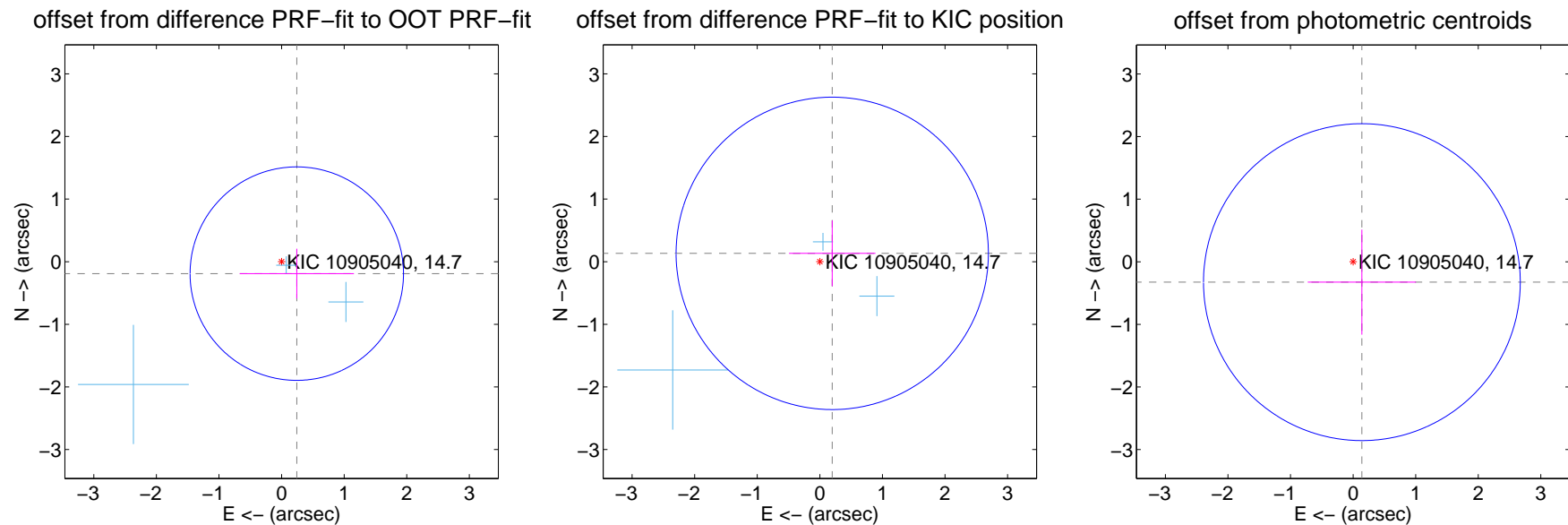
DV Centroid Data

Supplemental centroid analysis for 010905040-04. Kepler magnitude: 14.70. Transit SNR 8.31

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.309 ± 0.568	0.54	-0.243 ± 0.912	-0.190 ± 0.398
PRF-fit source offset from KIC position	0.239 ± 0.831	0.29	-0.198 ± 0.690	0.133 ± 0.524
photometric centroid source offset	0.35 ± 0.84	0.42	-0.14 ± 0.87	-0.33 ± 0.84

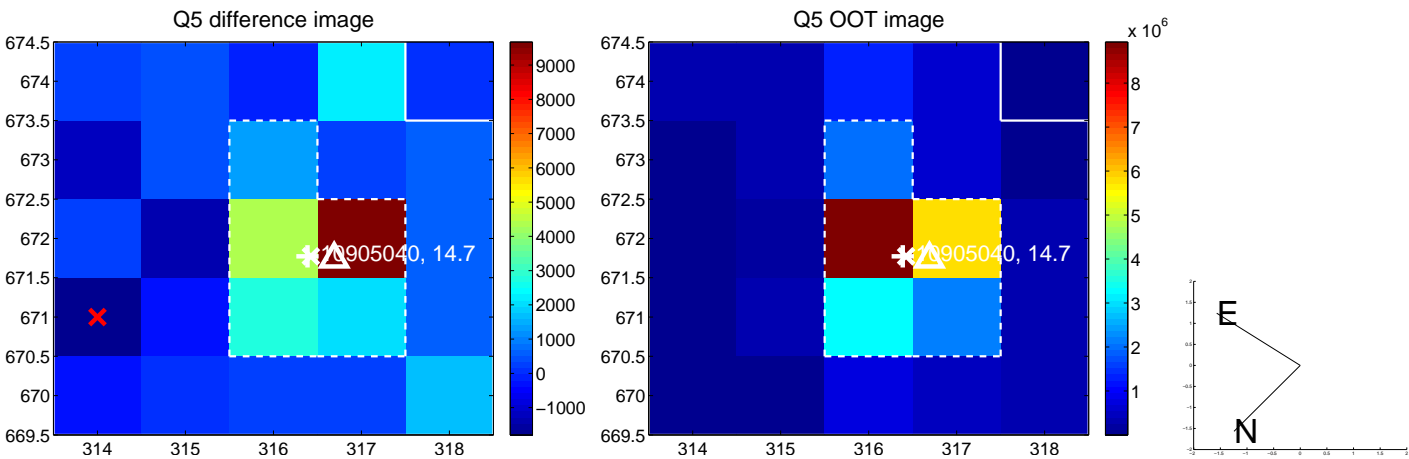


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

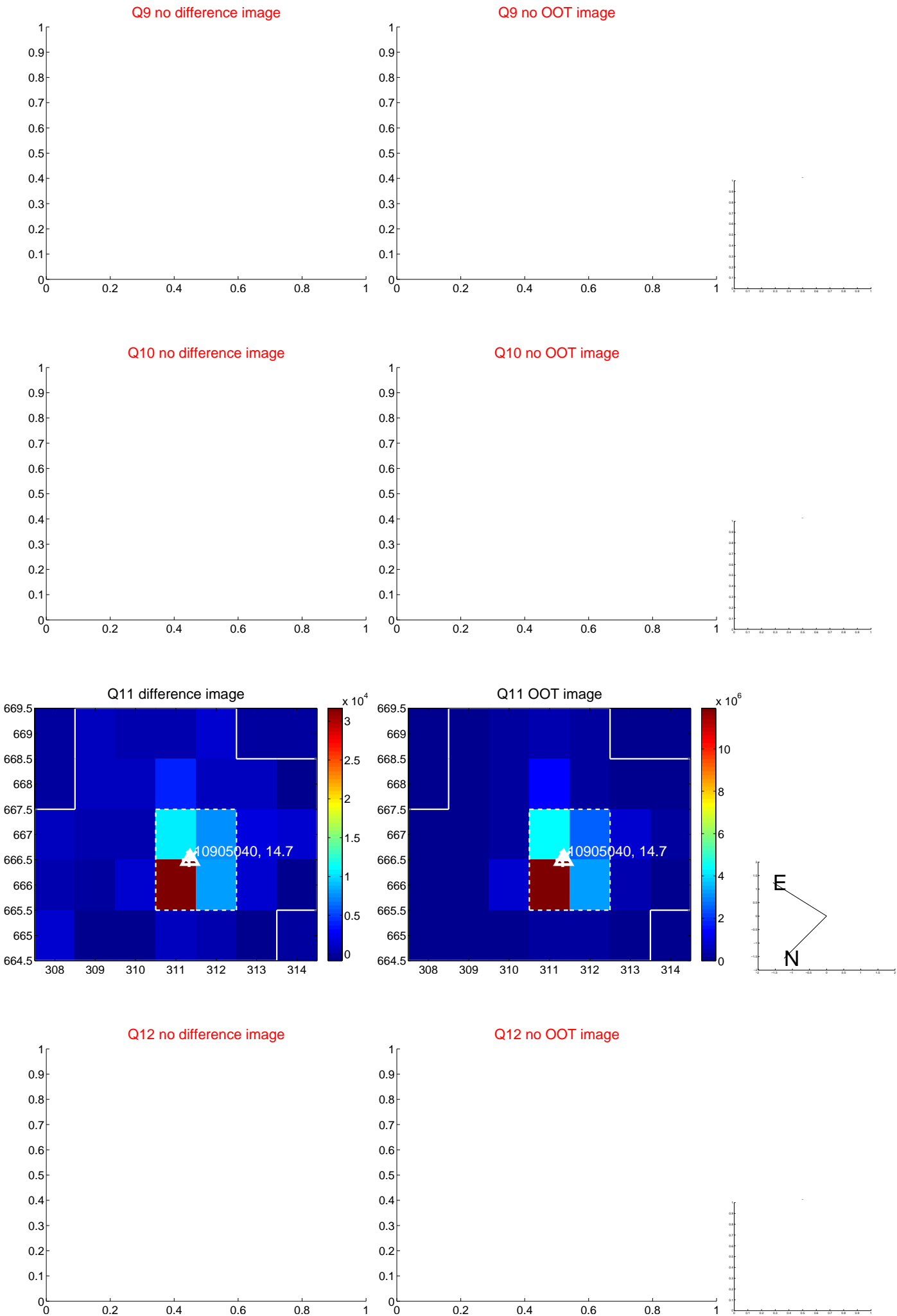
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



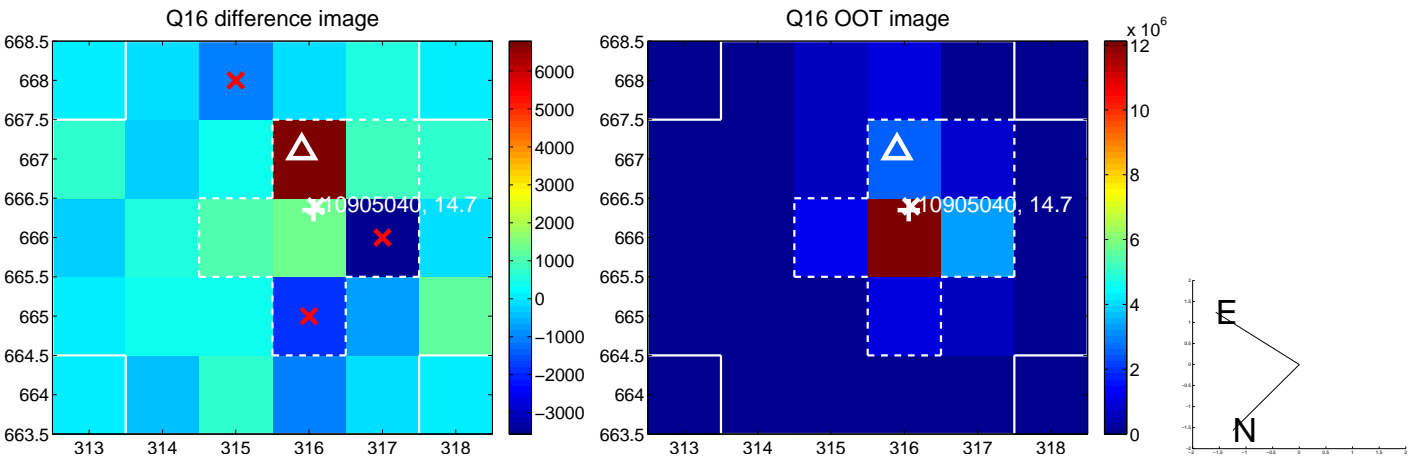
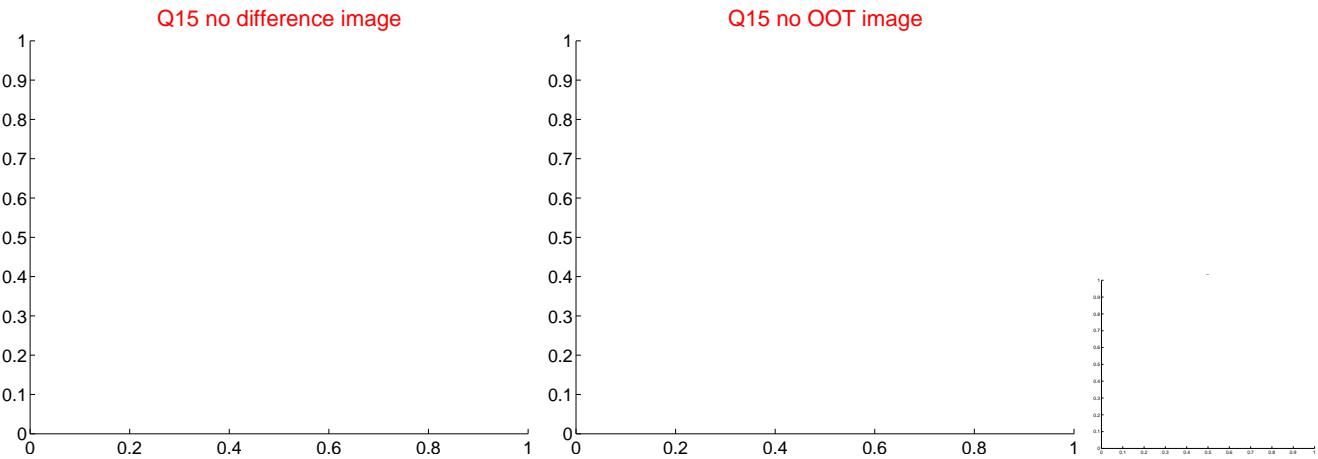
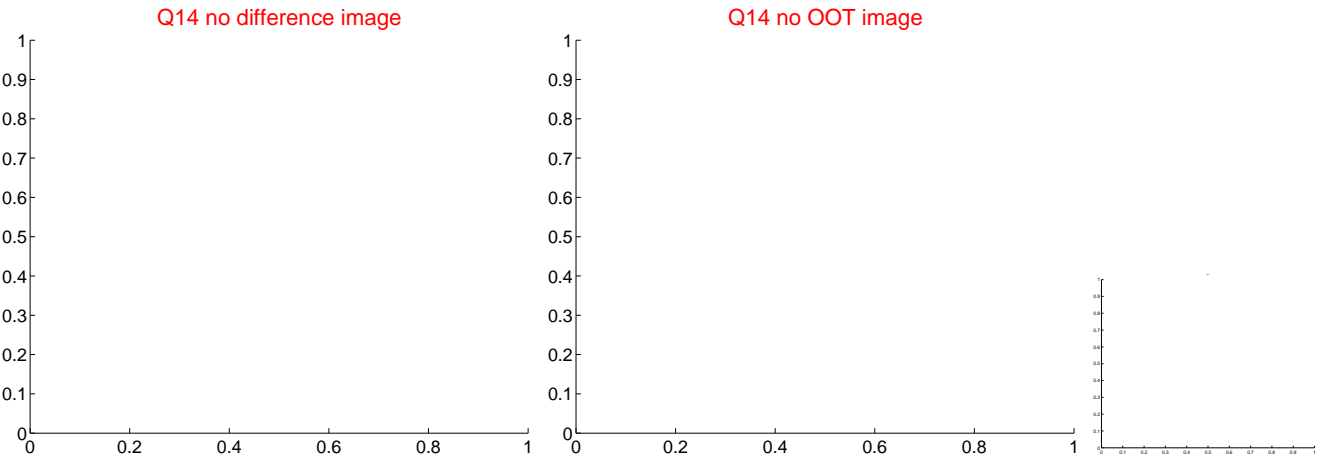
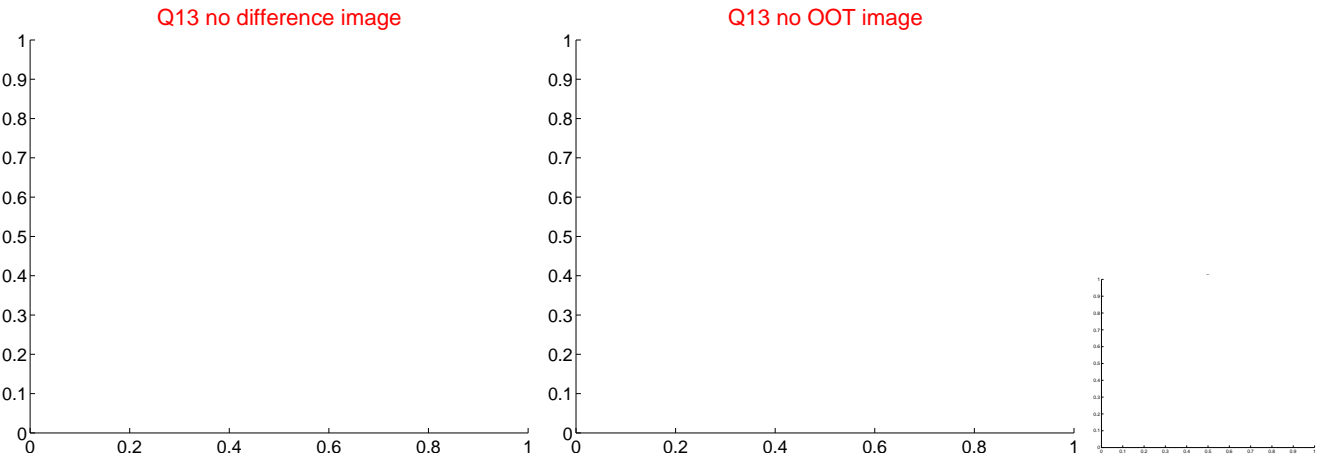
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



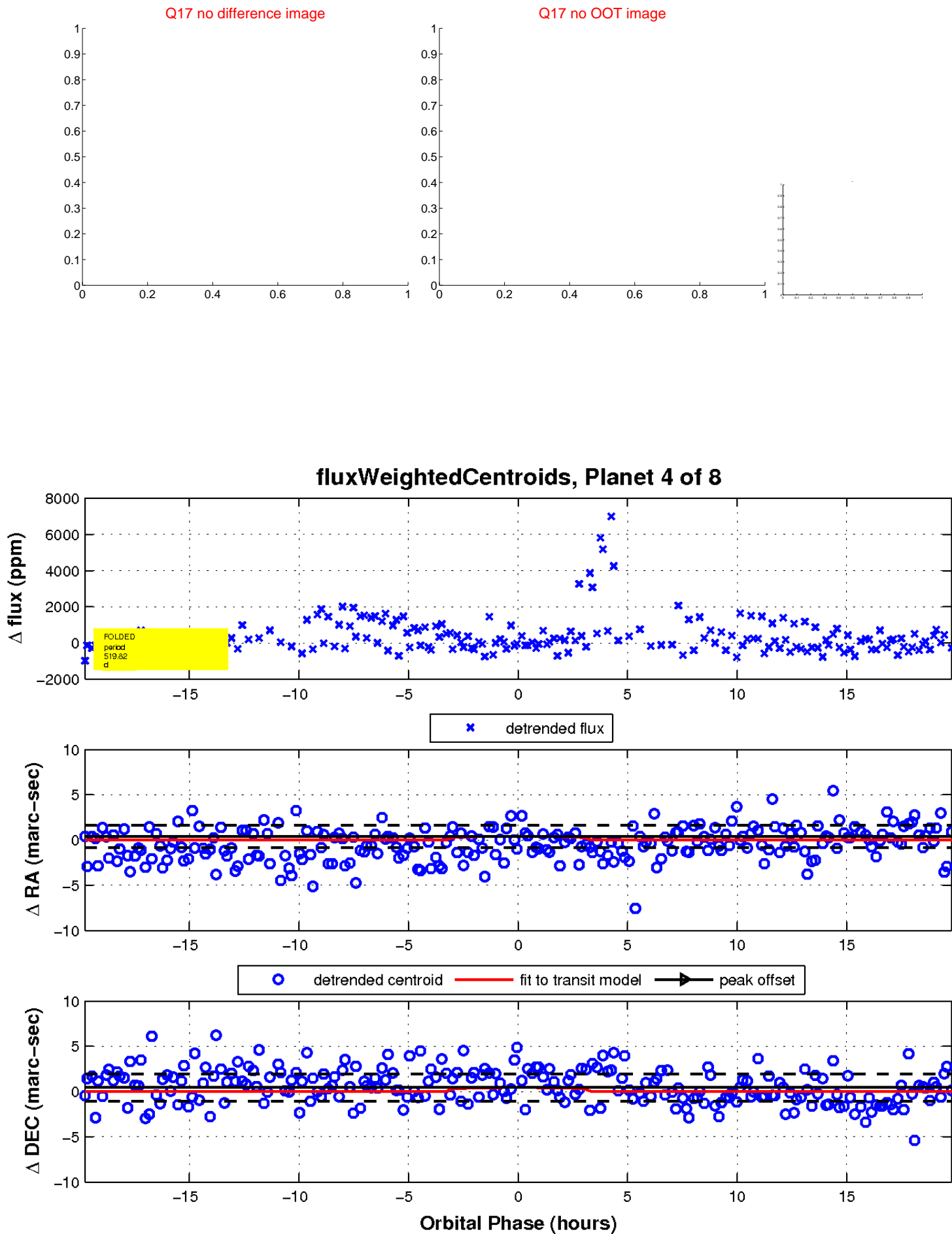
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



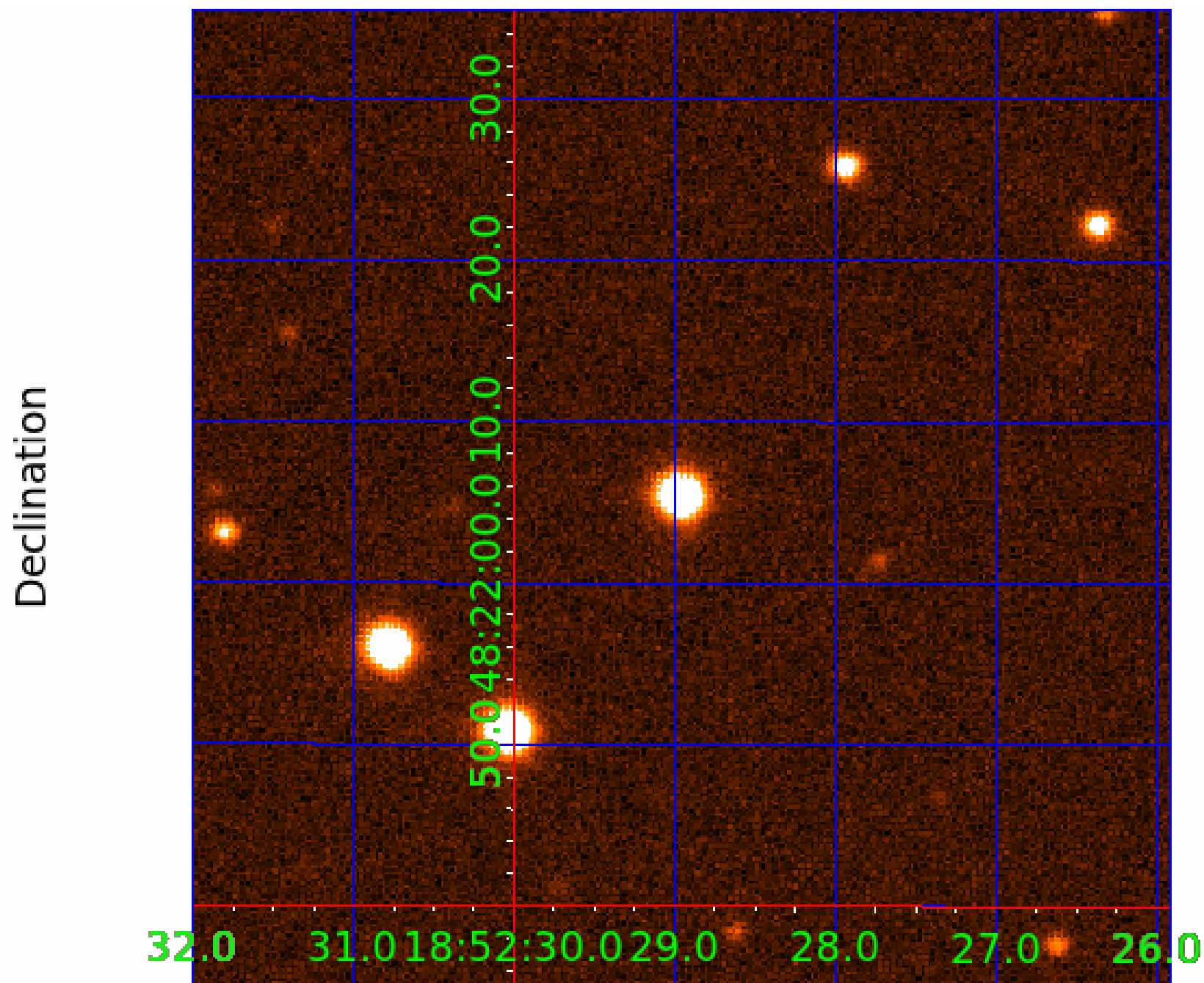
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010905040

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})
010905040-01	OBS	No	414.463497	210.683462	735.0	8.739	15.6	6.2	0.70	5126	1.89	0.33
010905040-02	OBS	No	251.140477	224.879202	1031.3	12.719	16.6	8.0	0.70	5126	2.78	0.65
010905040-03	OBS	No	348.542561	386.512414	2135.0	11.615	16.5	13.4	0.70	5126	4.76	0.42
010905040-04	OBS	No	519.815036	497.725959	1164.0	6.609	14.8	8.3	0.70	5126	2.39	0.24
010905040-05	OBS	No	523.513314	453.336255	1219.3	3.269	10.7	8.8	0.70	5126	2.83	0.24
010905040-06	OBS	No	341.151907	165.641850	821.9	15.000	12.7	-1.0	0.70	5126	1.95	0.43
010905040-07	OBS	No	440.968538	480.754313	1250.4	16.375	11.4	8.9	0.70	5126	2.94	0.30
010905040-08	OBS	No	399.619133	456.057227	967.7	4.500	9.9	-1.0	0.70	5126	2.12	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010905040-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010905040-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010905040-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

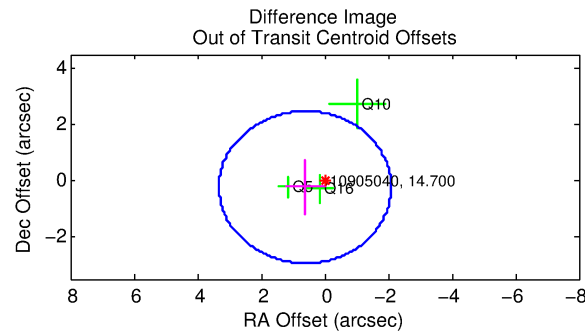
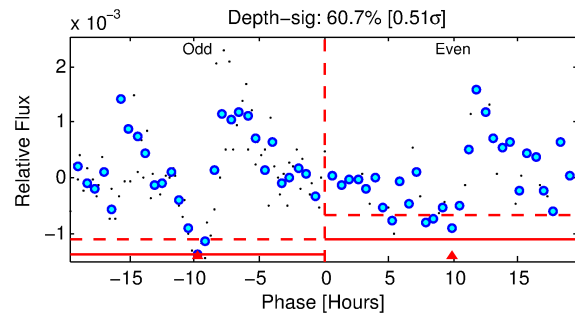
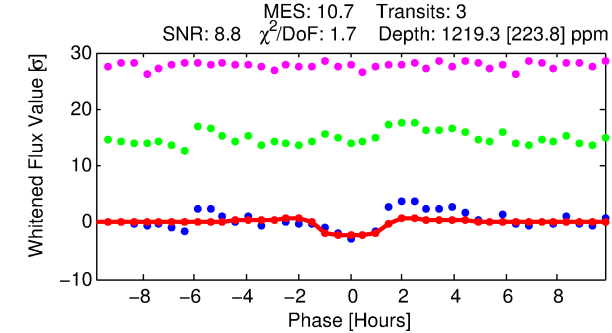
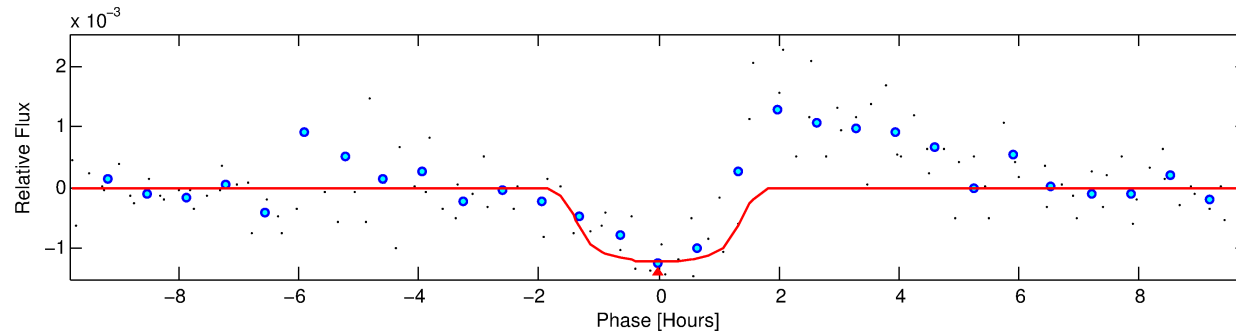
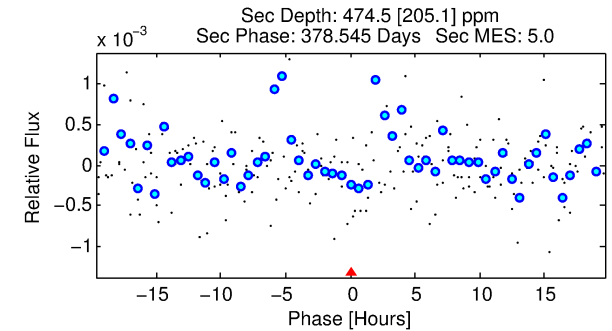
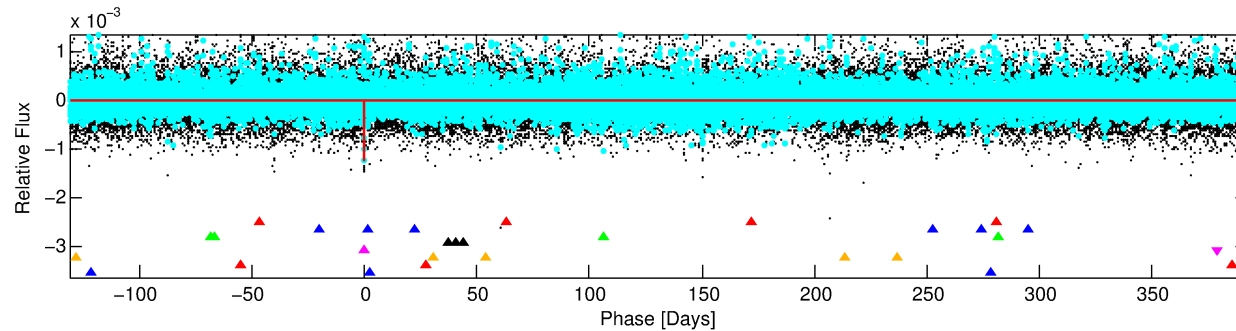
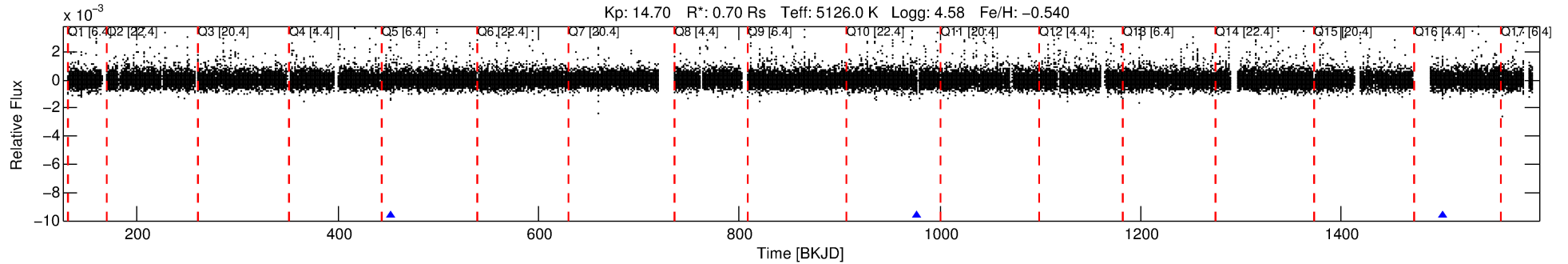
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010905040-05

No Significant Match Found

DV One-Page Summary

KIC: 10905040 Candidate: 5 of 8 Period: 523.513 d



DV Fit Results:

Period = 523.51331 [0.00623] d
Epoch = 453.3363 [0.0086] BKJD
Rp/R* = 0.0373 [0.0156]
a/R* = 700.94 [1082.85]
b = 0.86 [0.47]
Seff = 0.24 [0.04]
Teq = 179 [8] K
Rp = 2.83 [1.22] Re
a = 1.1119 [0.1023] AU
Ag = 40201.61 [38190.85] [1.05 σ]
Teffp = 3917 [928] K [4.03 σ]

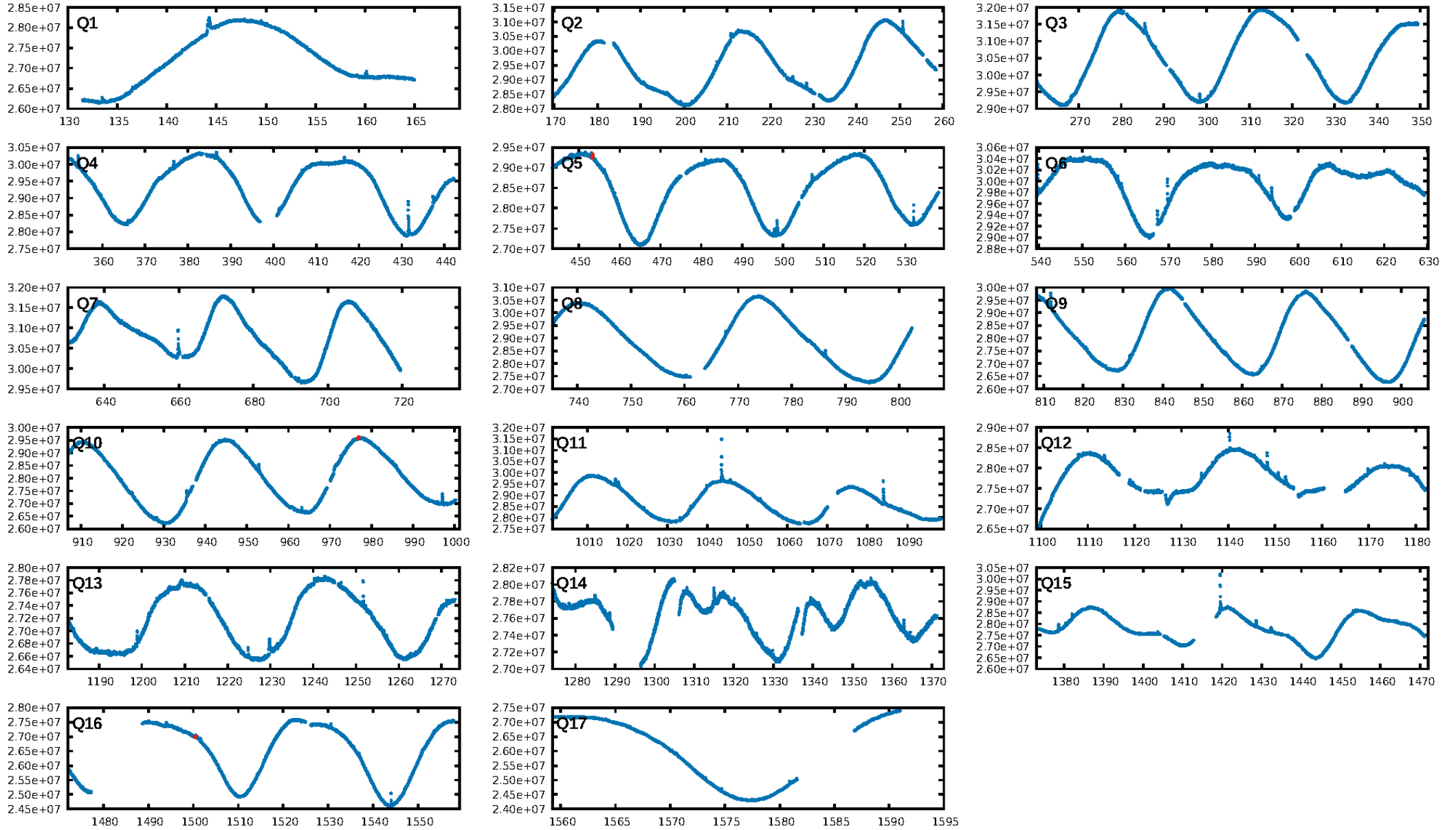
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.04 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.5%
ModelChiSquareGof-sig: 74.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.038
Centroid-sig: 19.1%
Centroid-so: 1.578 arcsec [1.29 σ]
OotOffset-rm: 0.655 arcsec [0.73 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.713 arcsec [1.26 σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

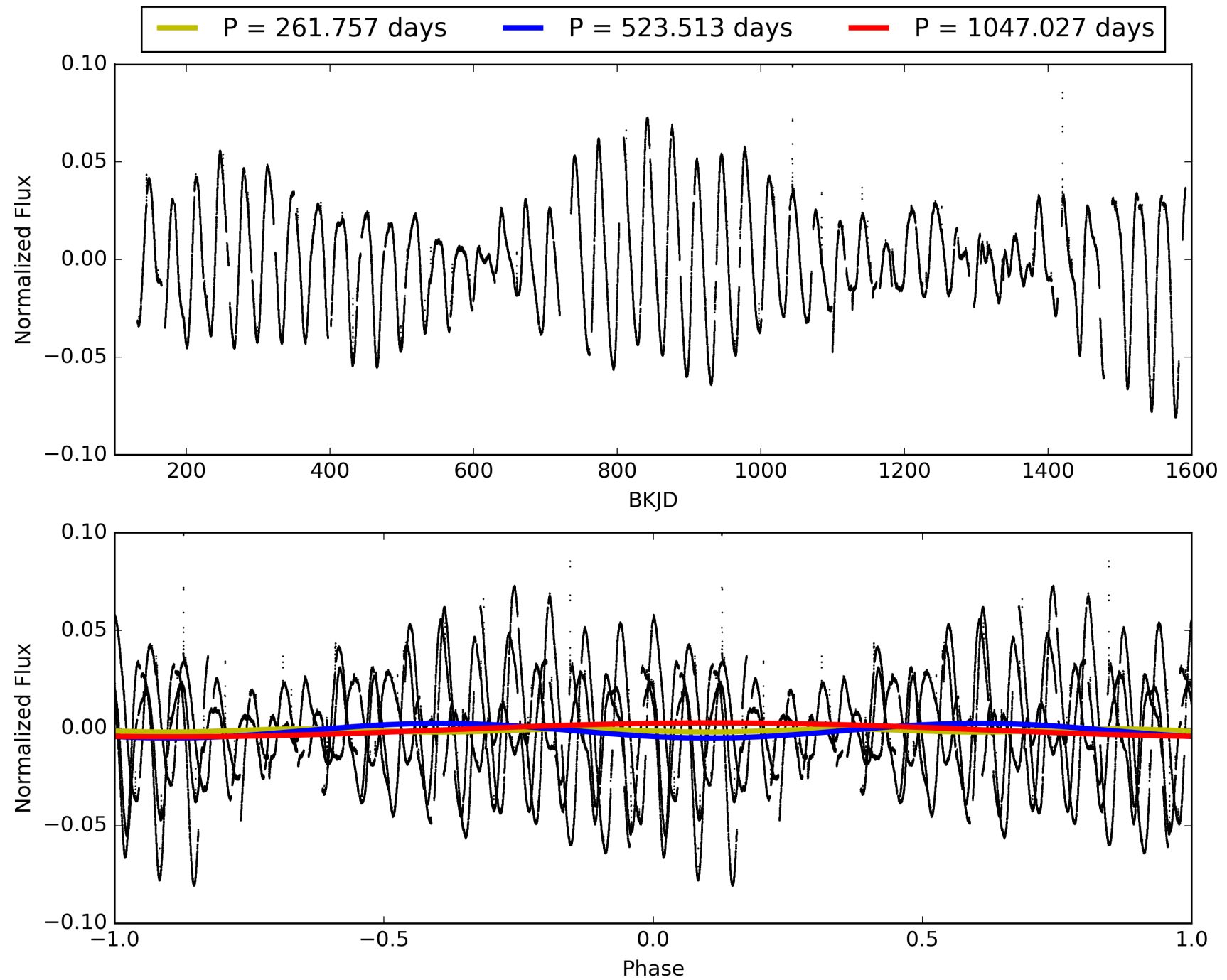
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:06:02 Z

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

TCE 010905040-05, PDC Light Curves

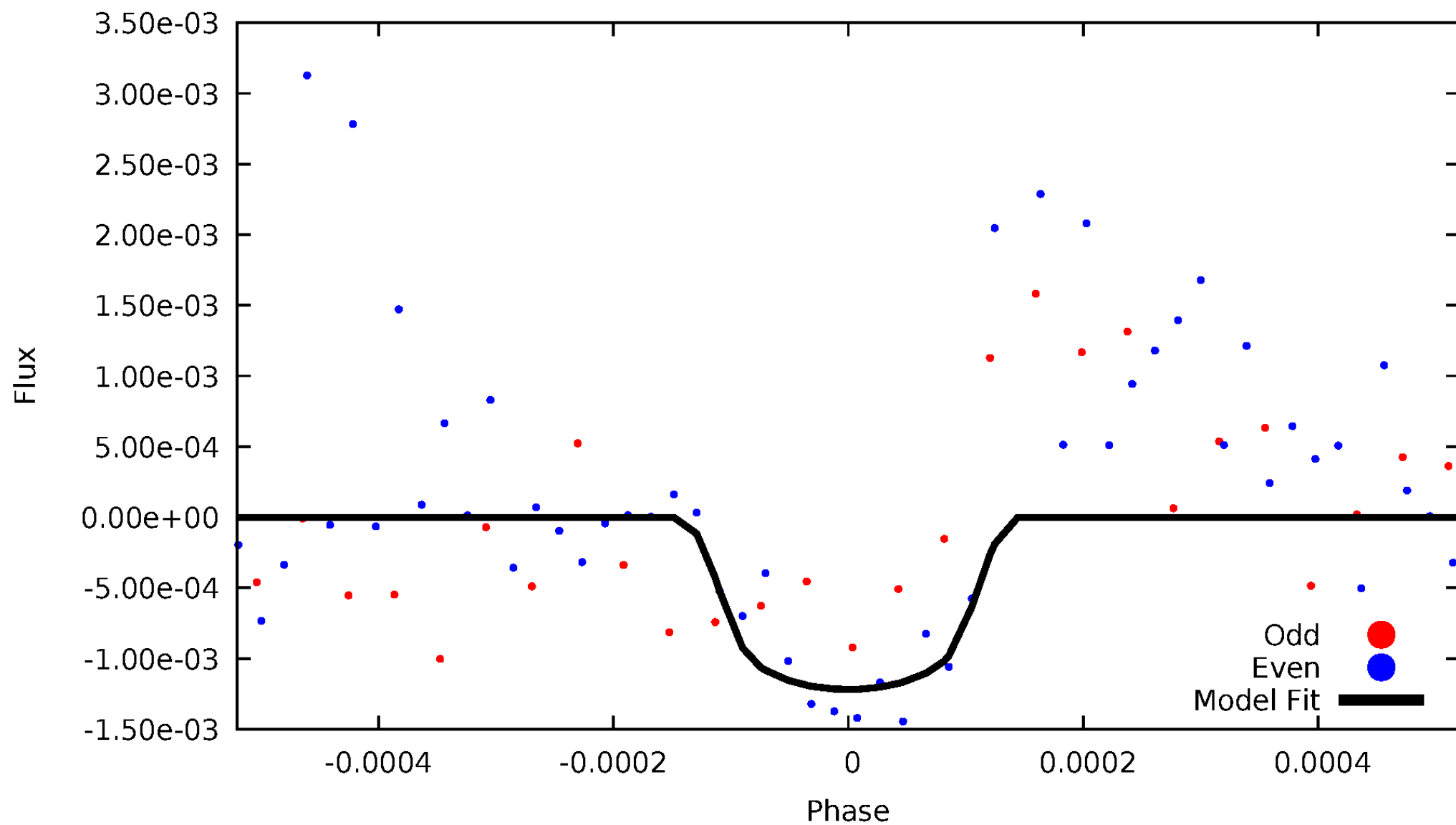


TCE 010905040-05



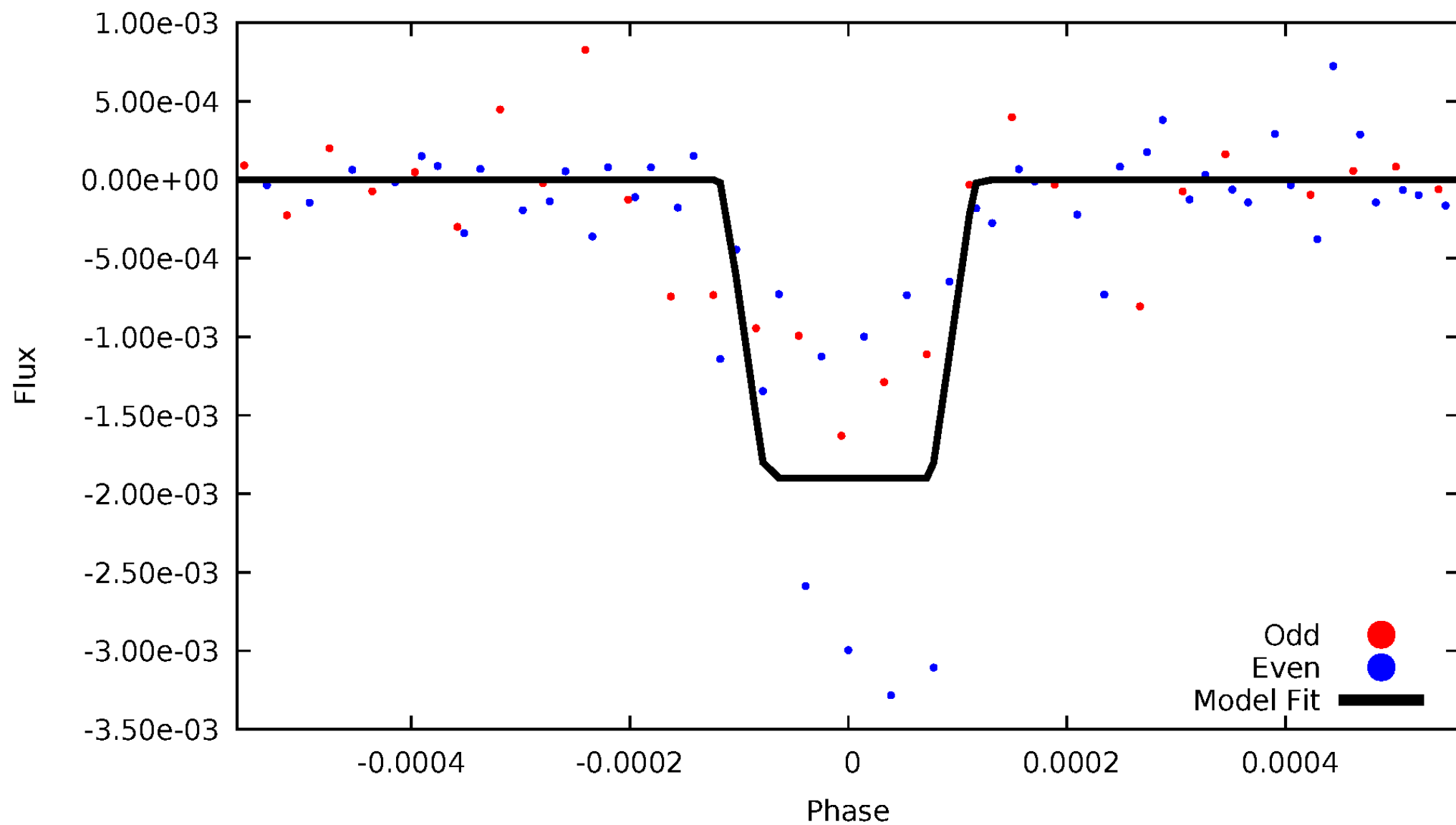
DV Odd/Even

TCE 010905040-05



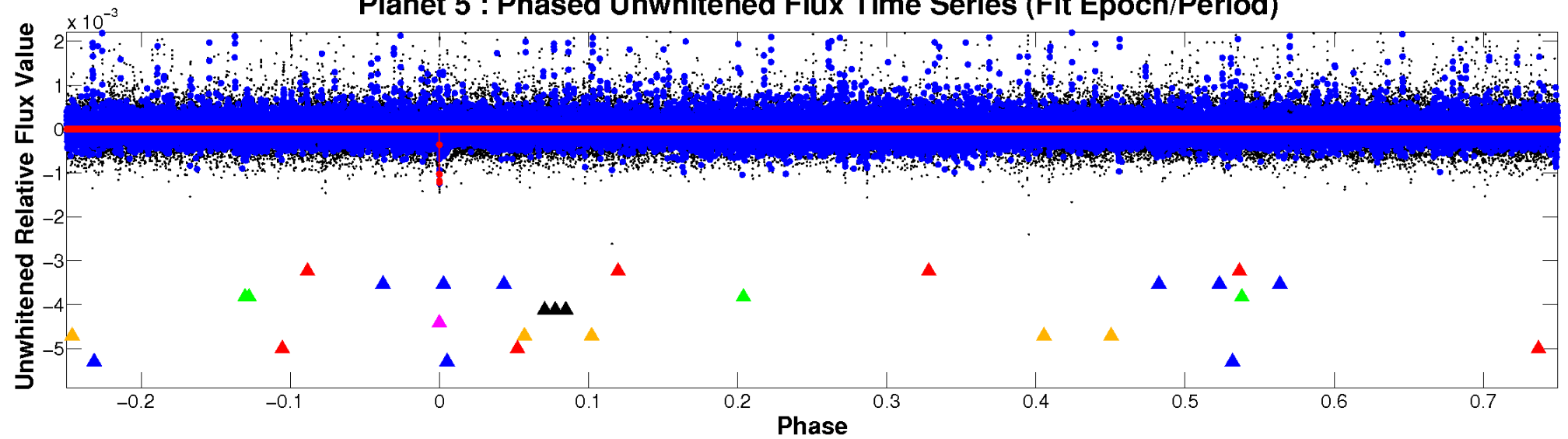
ALT Odd/Even

TCE 010905040-05

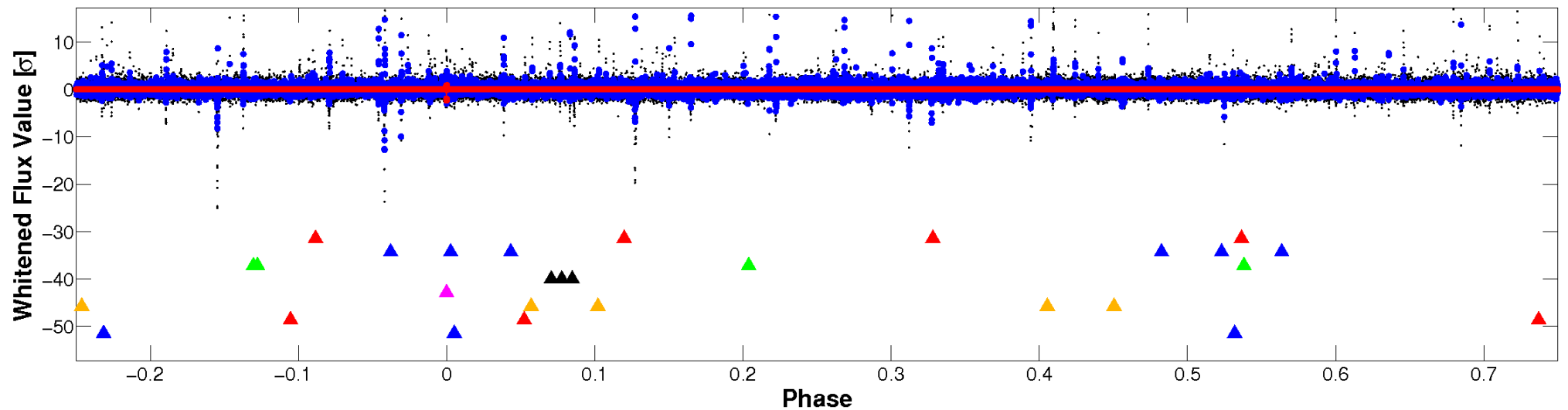


Non-Whitened Vs. Whitened Light Curve

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

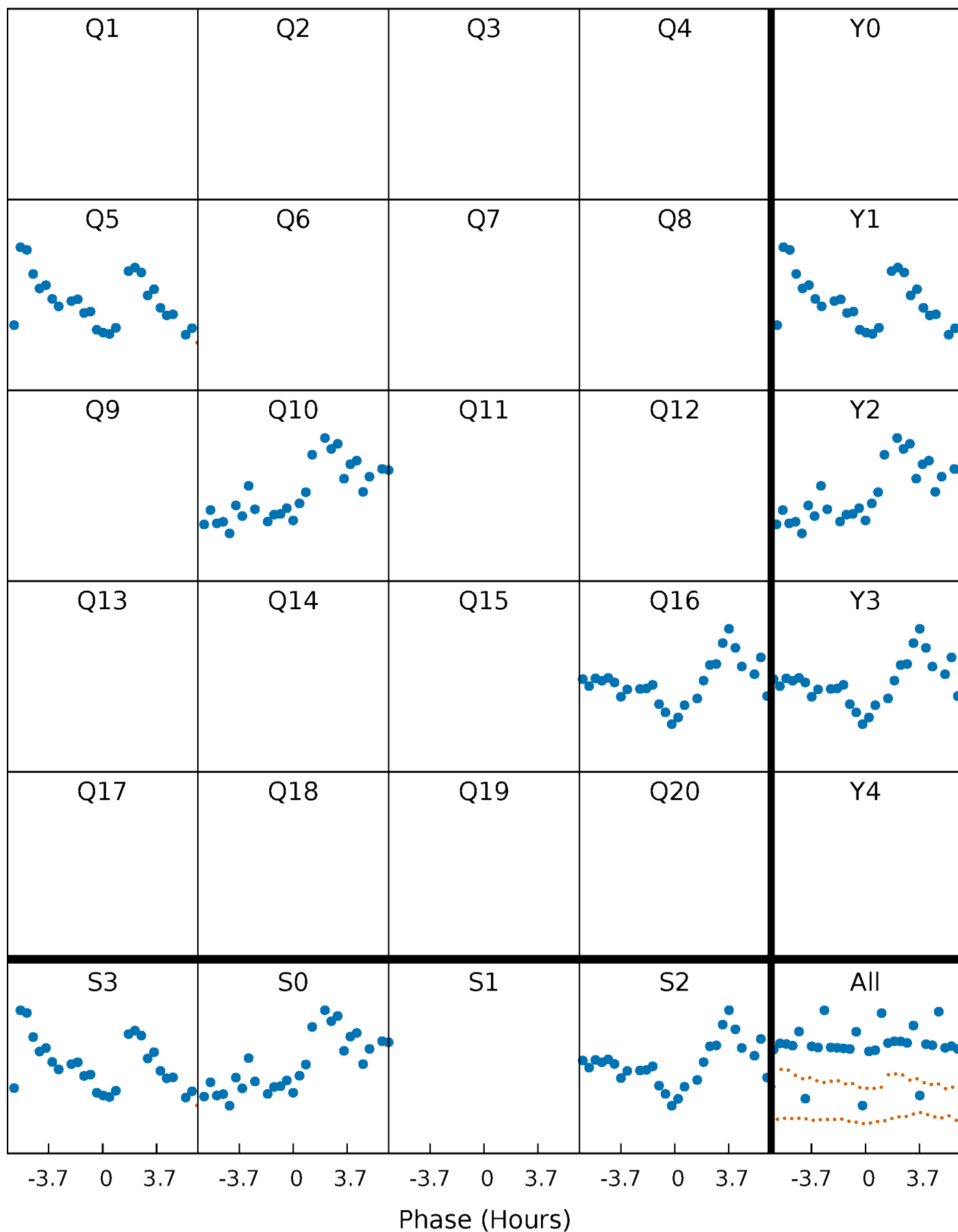


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



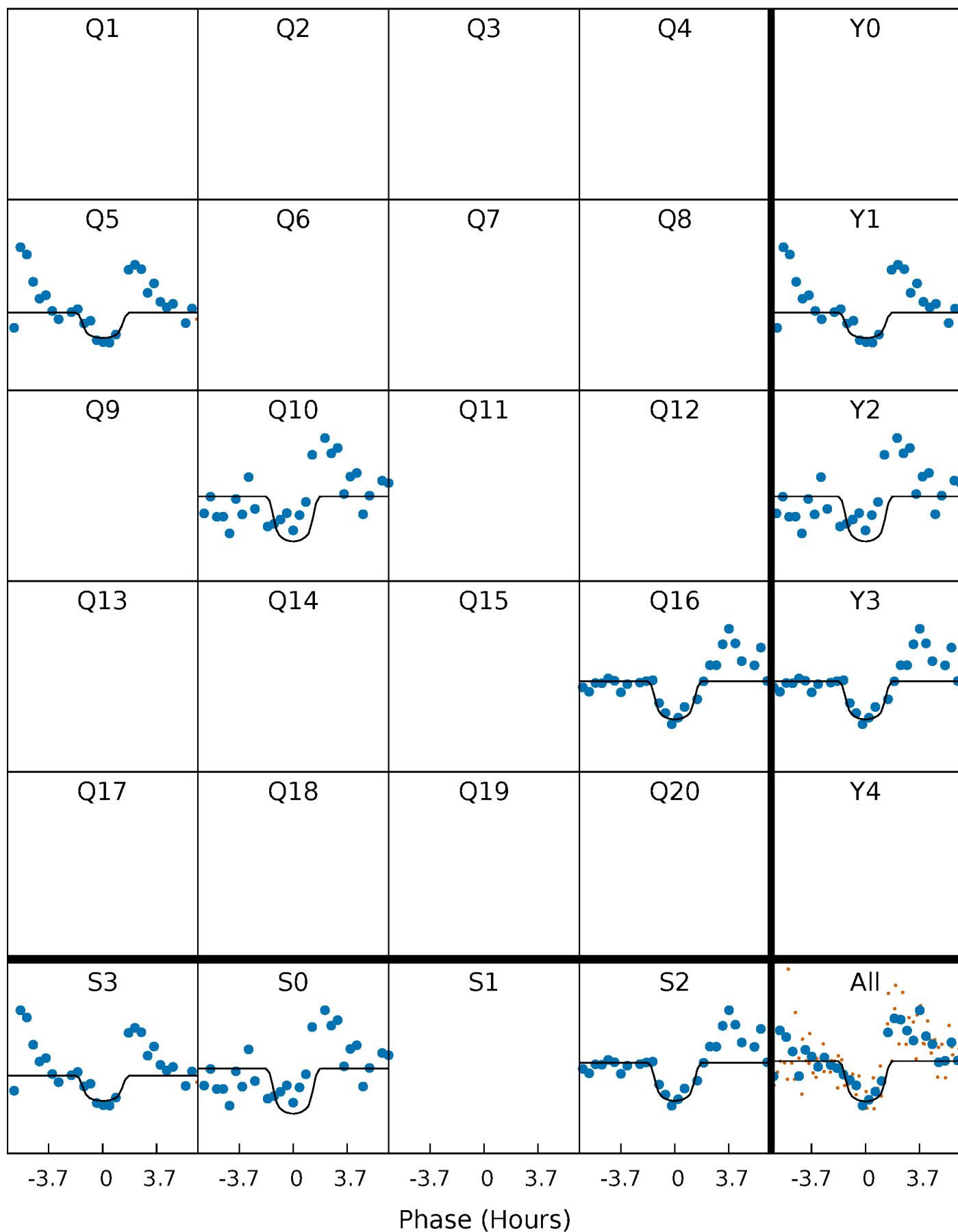
PDC Quarter-Phased Transit Curves

TCE 010905040-05 $P=523.513314$ Days $T_0=453.336255$ (BKJD)



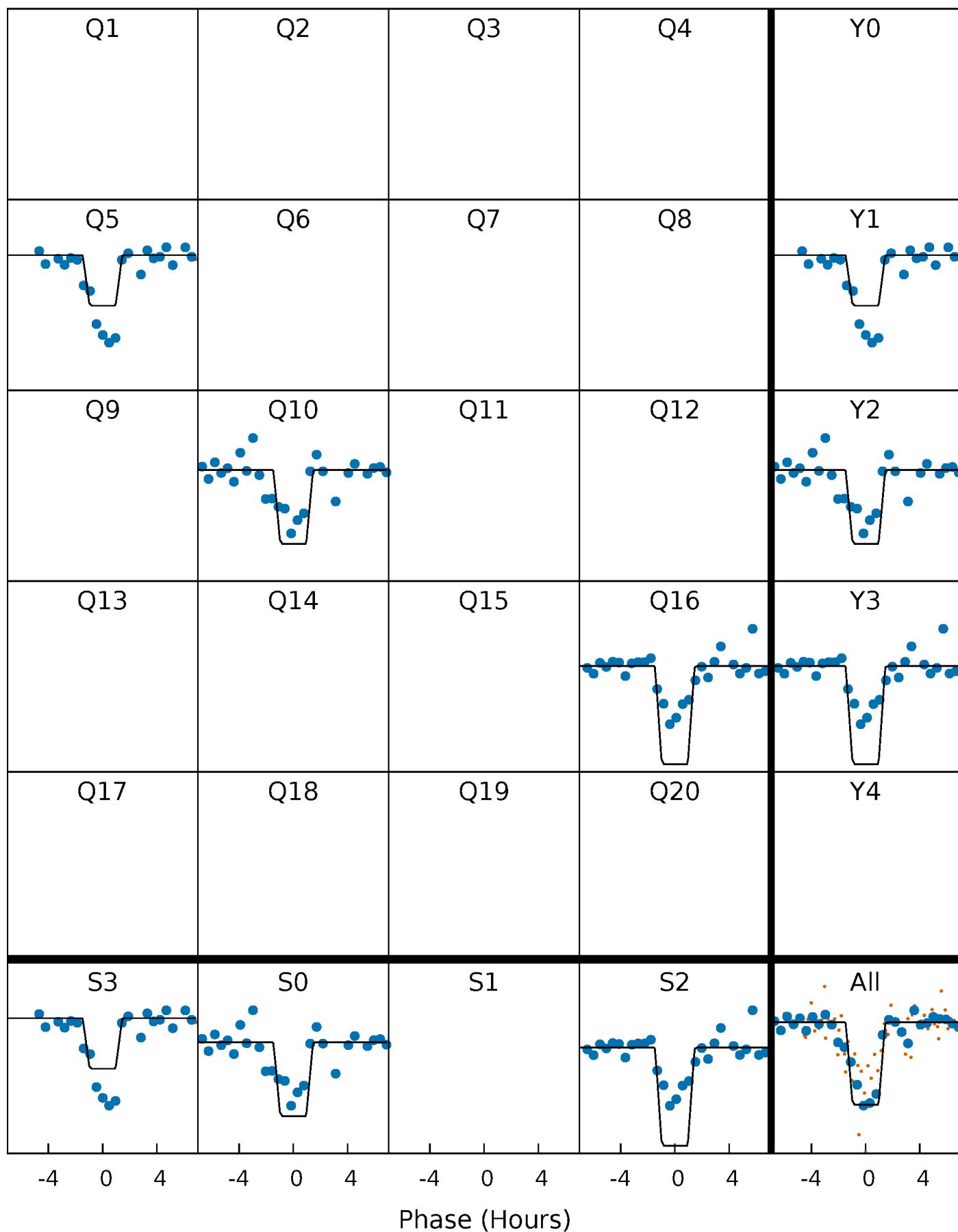
DV Quarter-Phased Transit Curves

TCE 010905040-05 $P=523.513314$ Days $T_0=453.336255$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

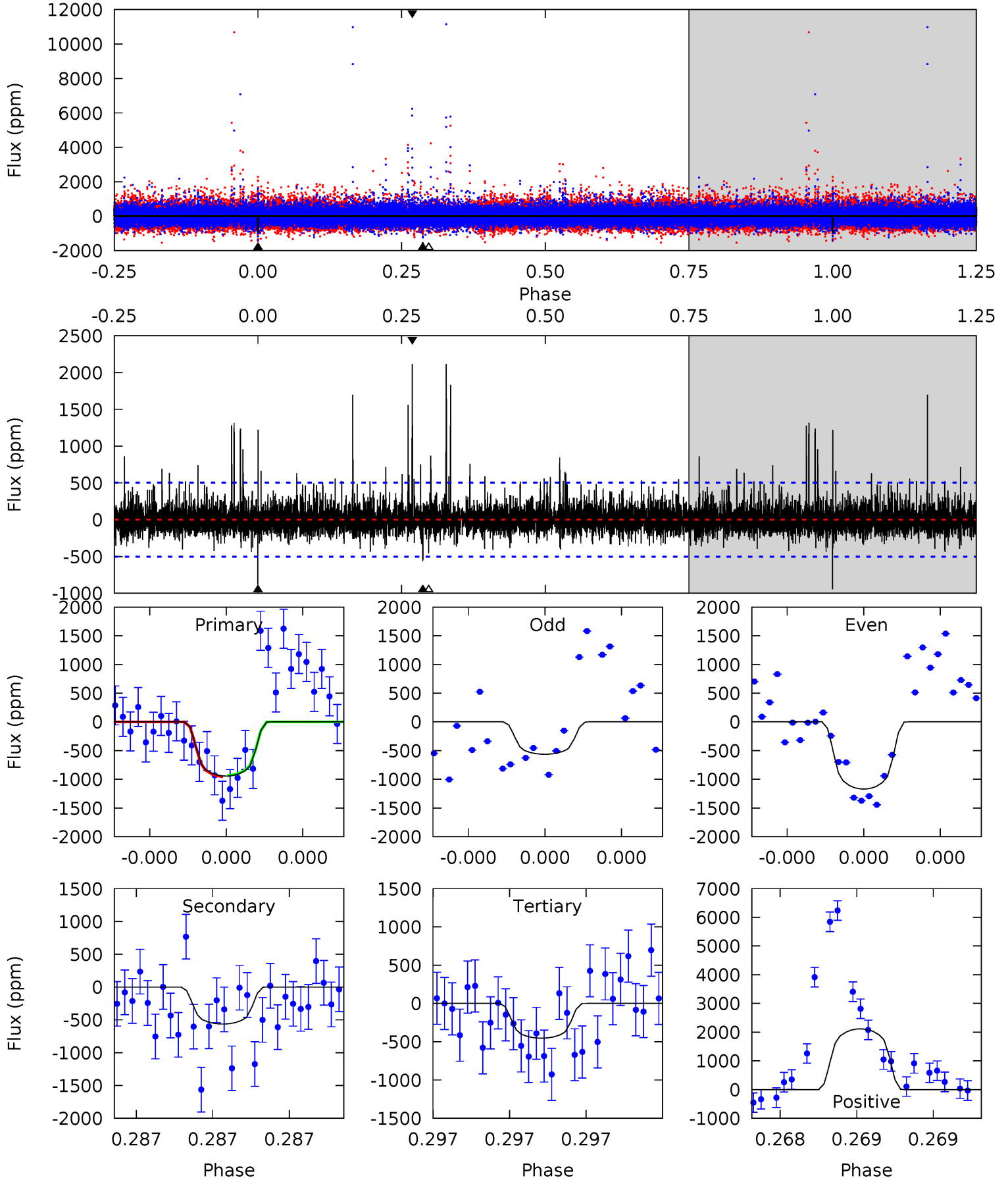
TCE 010905040-05 $P=523.514618$ Days $T_0=453.340187$ (BKJD)



DV Model-Shift Uniqueness Test

010905040-05, P = 523.513314 Days, E = 453.336255 Days

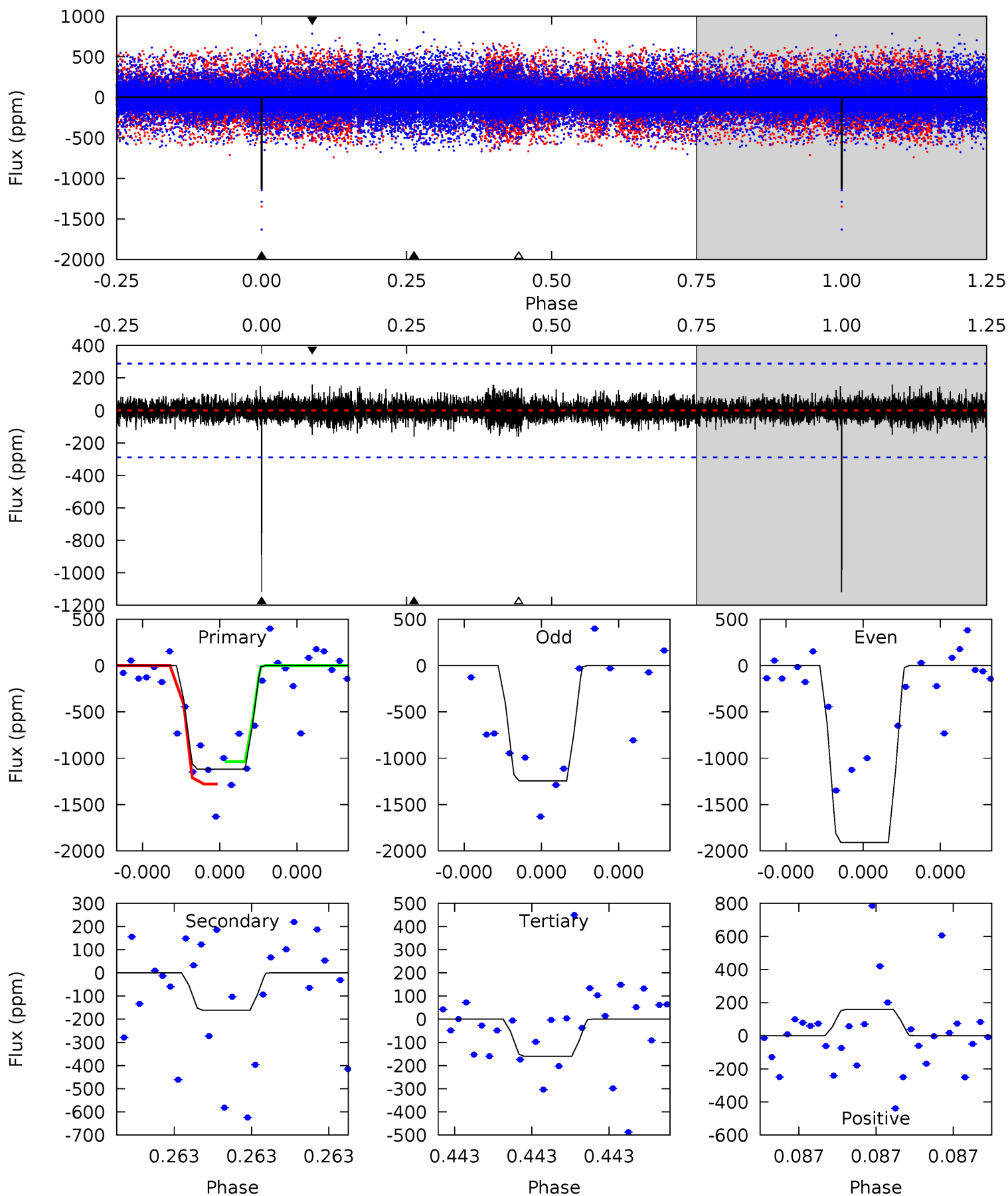
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	6.36	5.12	23.9	5.68	3.64	1.67	5.54	-13.2	1.24	-17.5	1.70	0.85	0.69	0.12



Alt Model-Shift Uniqueness Test

010905040-05, P = 523.514618 Days, E = 453.340187 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	3.18	3.17	3.15	5.71	3.70	0.64	19.0	19.0	0.02	0.04	7.16	1.31	0.12	0



Stellar Parameters For KIC 010905040

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5126^{+154}_{-138}	$4.578^{+0.078}_{-0.045}$	$-0.540^{+0.350}_{-0.300}$	$0.696^{+0.073}_{-0.073}$	$0.668^{+0.087}_{-0.037}$	$2.792^{+0.855}_{-0.493}$
	+3%/-3%	+2%/-1%	+65%/-56%	+10%/-10%	+13%/-6%	+31%/-18%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010905040-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-564 ± 89	$2.75^{+1.20}_{-1.15}$	249^{+10}_{-9}	4325^{+1049}_{-548}	52564^{+98896}_{-27858}
Alt.	-161 ± 51	$3.30^{+1.15}_{-1.18}$	249^{+9}_{-8}	3278^{+533}_{-322}	9792^{+14676}_{-5033}

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

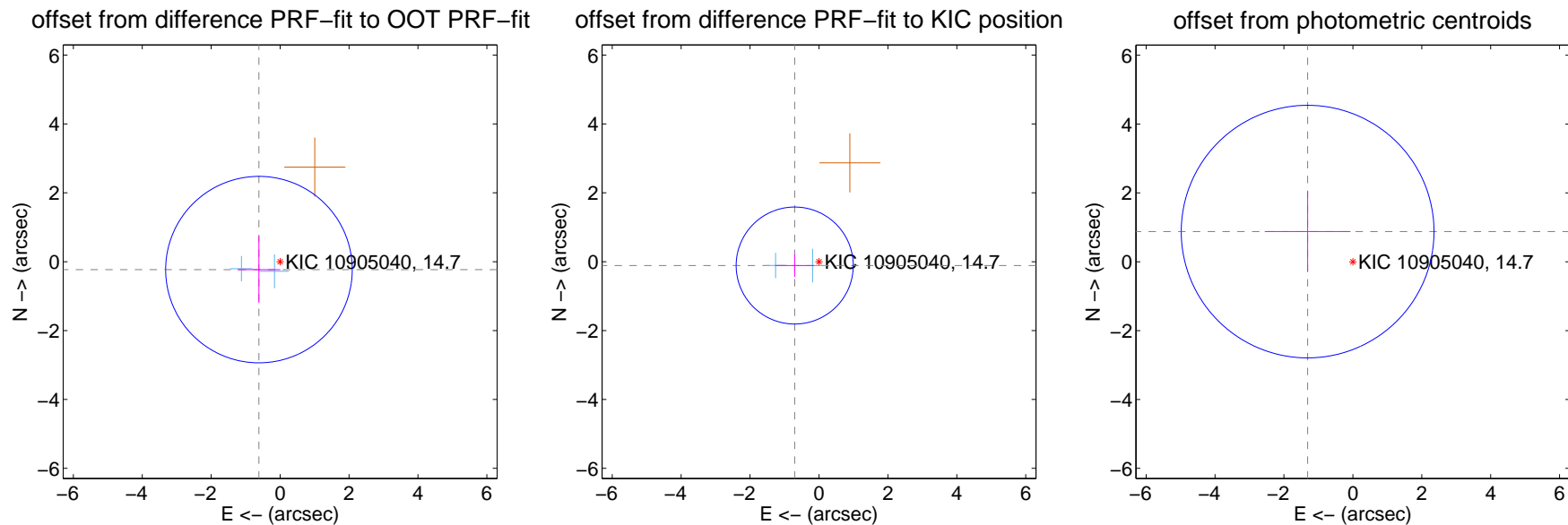
DV Centroid Data

Supplemental centroid analysis for 010905040-05. Kepler magnitude: 14.70. Transit SNR 8.83

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.655 ± 0.902	0.73	0.614 ± 0.620	-0.230 ± 0.966
PRF-fit source offset from KIC position	0.713 ± 0.566	1.26	0.705 ± 0.571	-0.111 ± 0.330
photometric centroid source offset	1.58 ± 1.22	1.29	1.31 ± 1.25	0.88 ± 1.17

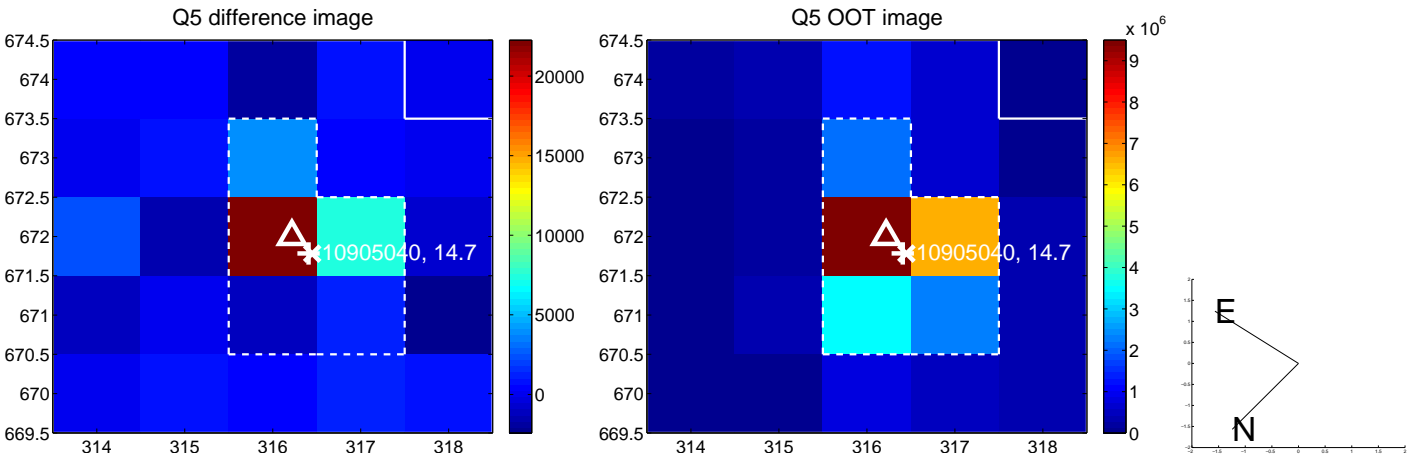


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

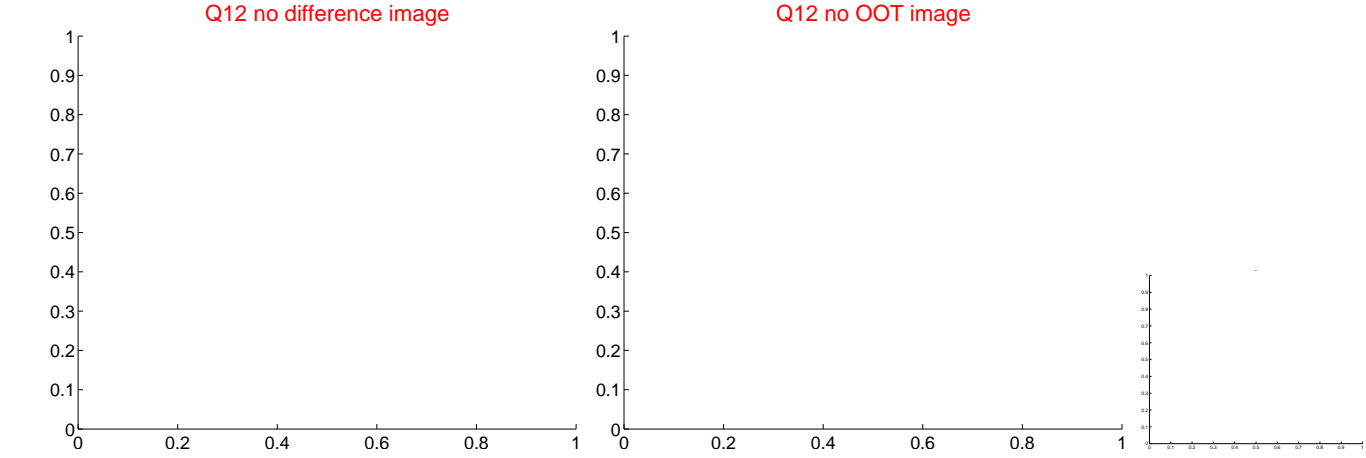
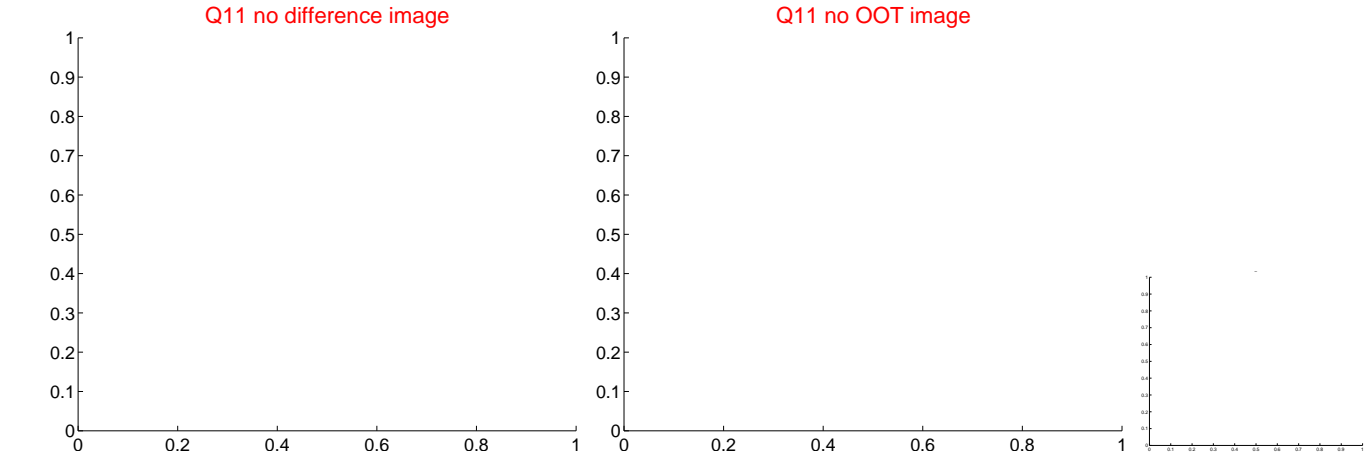
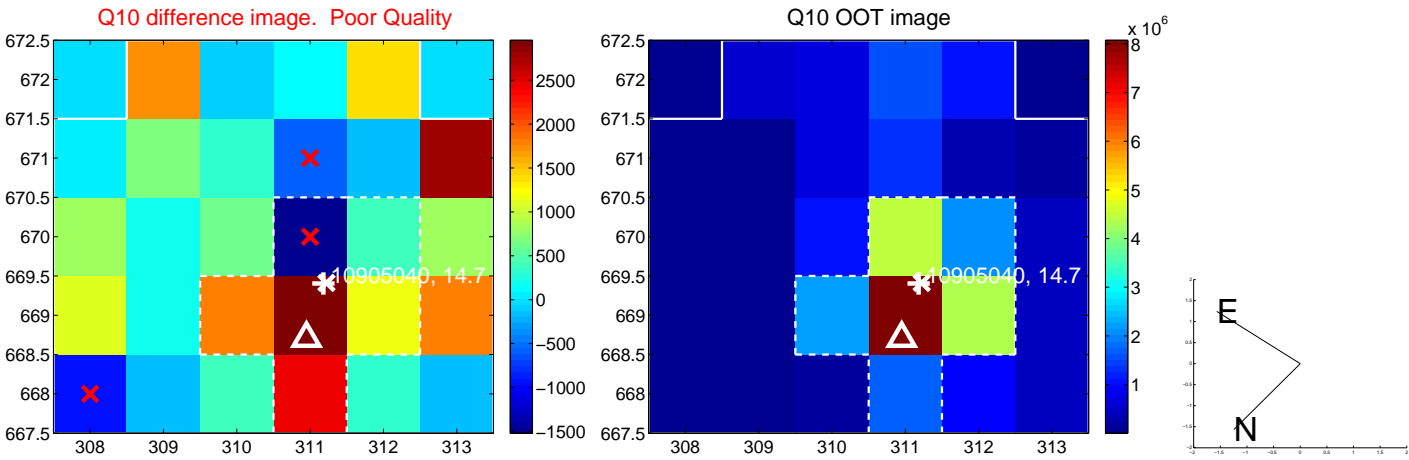
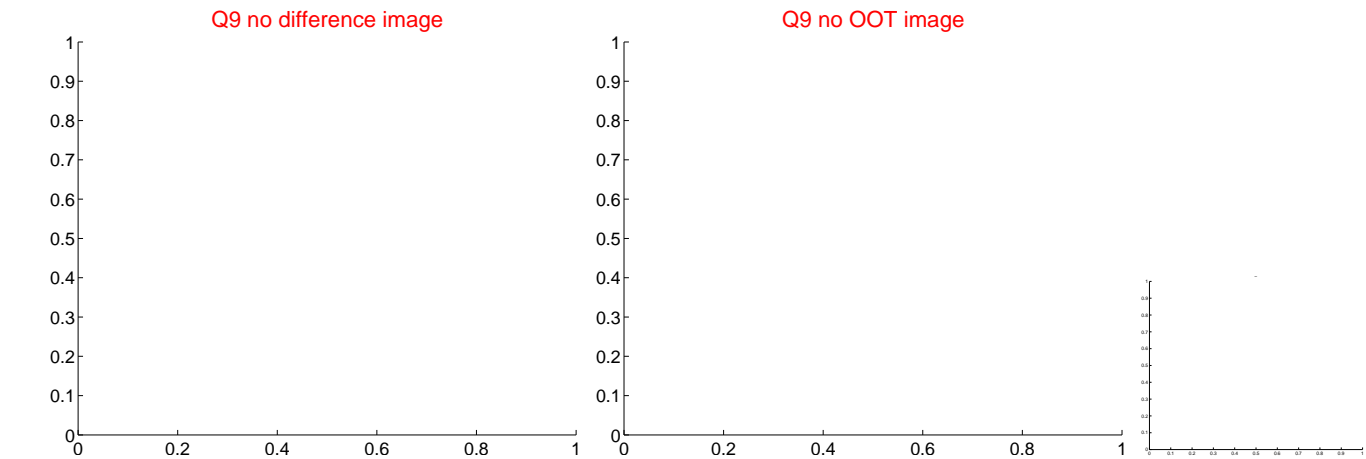
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



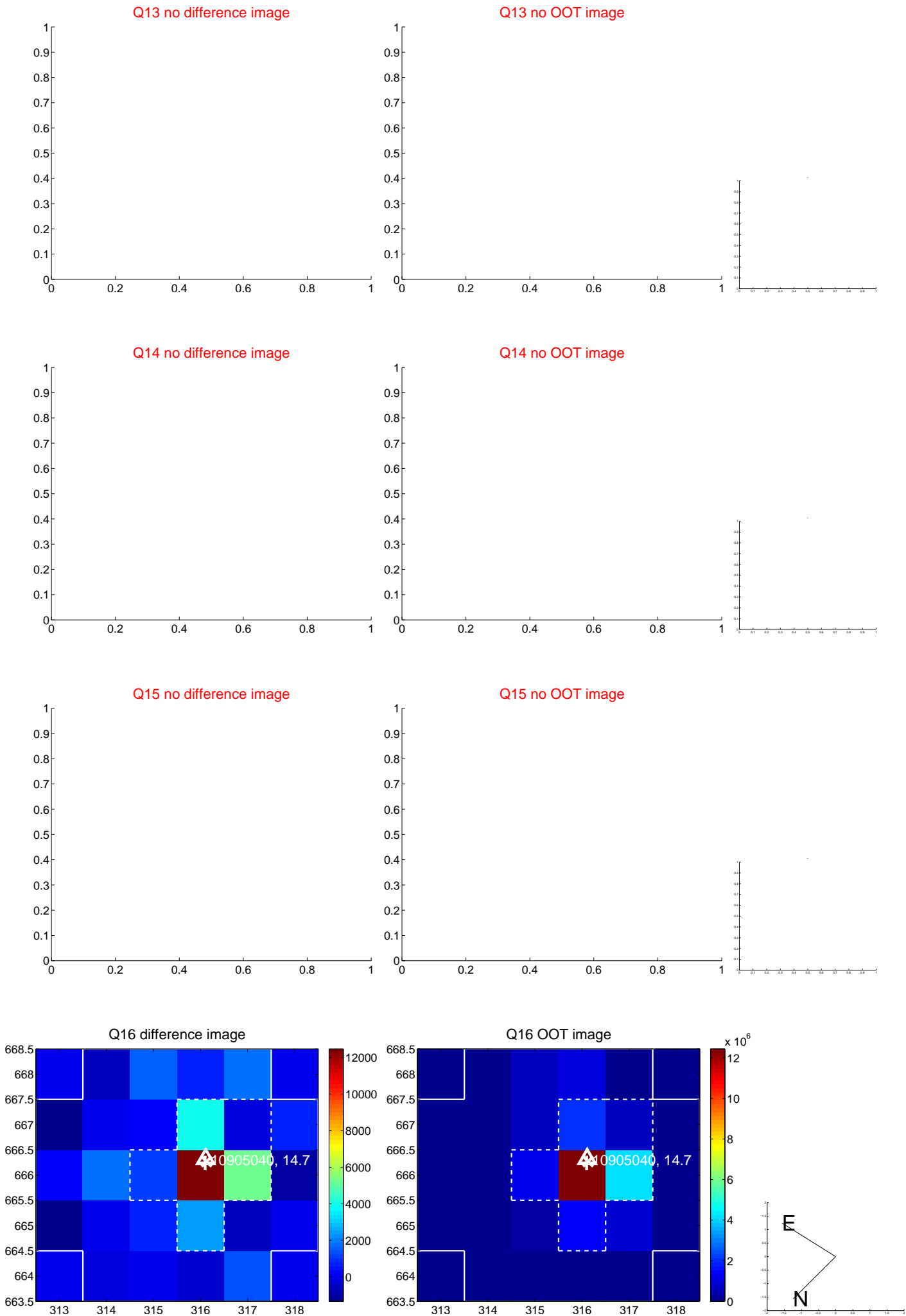
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



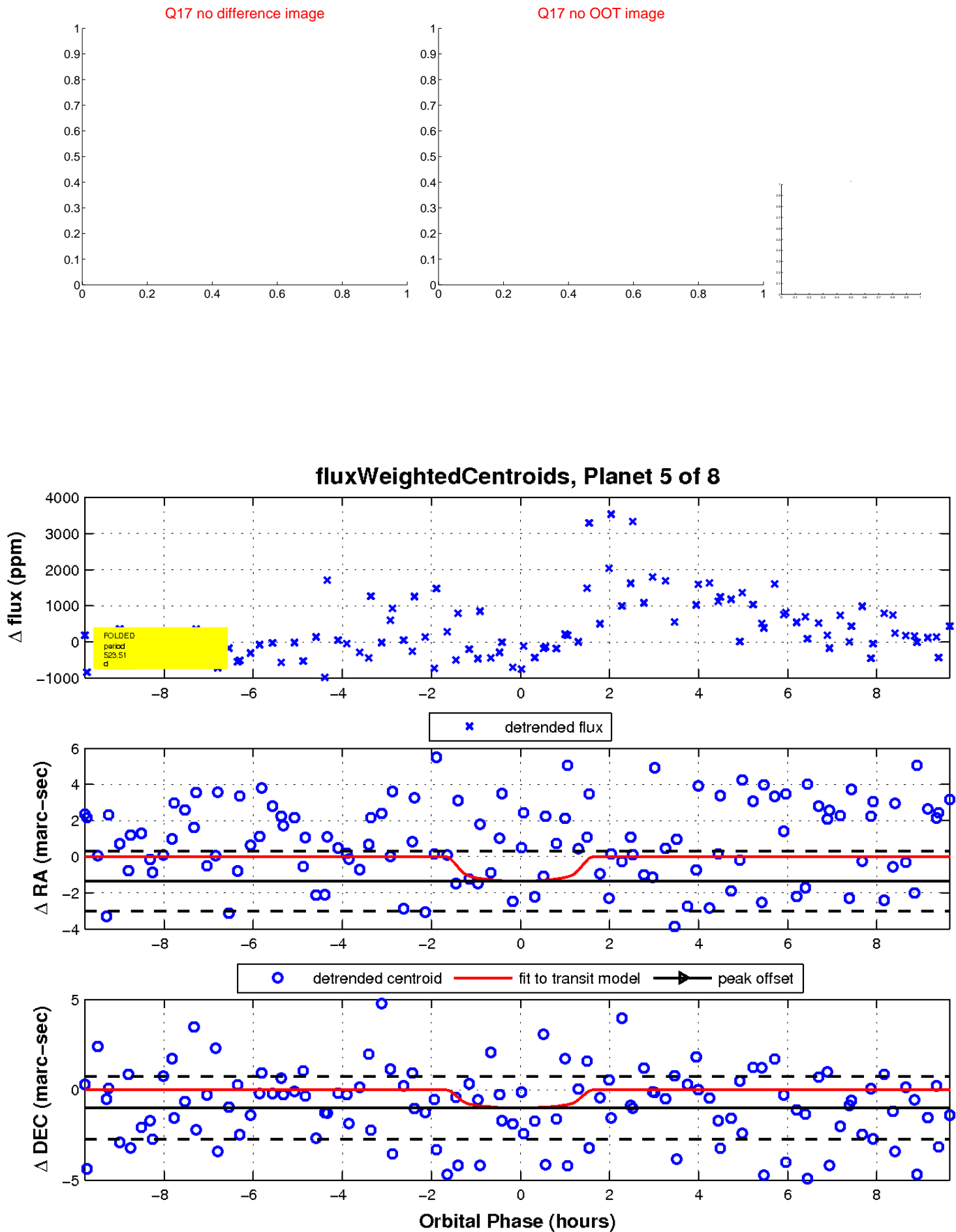
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



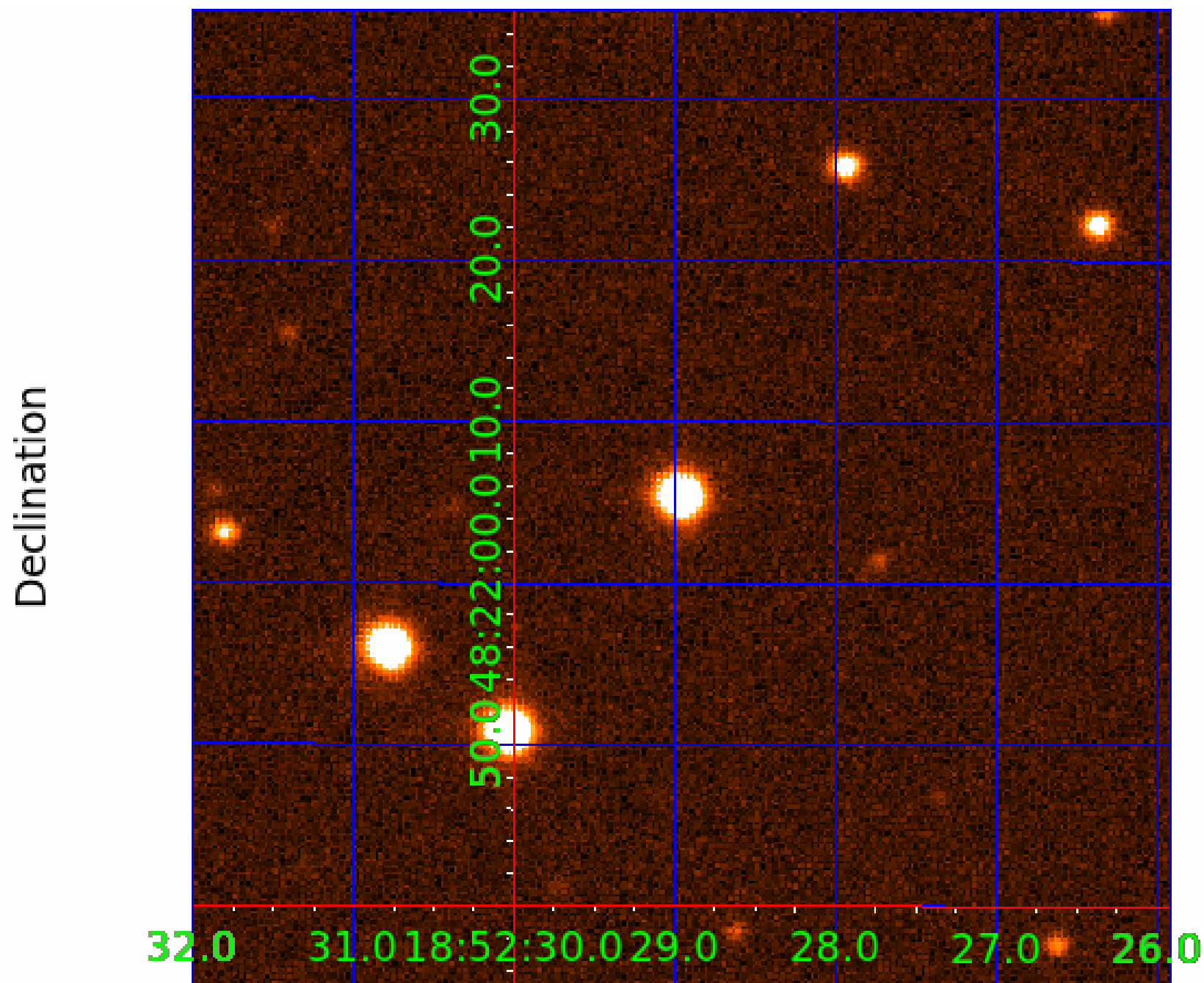
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010905040

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})
010905040-01	OBS	No	414.463497	210.683462	735.0	8.739	15.6	6.2	0.70	5126	1.89	0.33
010905040-02	OBS	No	251.140477	224.879202	1031.3	12.719	16.6	8.0	0.70	5126	2.78	0.65
010905040-03	OBS	No	348.542561	386.512414	2135.0	11.615	16.5	13.4	0.70	5126	4.76	0.42
010905040-04	OBS	No	519.815036	497.725959	1164.0	6.609	14.8	8.3	0.70	5126	2.39	0.24
010905040-05	OBS	No	523.513314	453.336255	1219.3	3.269	10.7	8.8	0.70	5126	2.83	0.24
010905040-06	OBS	No	341.151907	165.641850	821.9	15.000	12.7	-1.0	0.70	5126	1.95	0.43
010905040-07	OBS	No	440.968538	480.754313	1250.4	16.375	11.4	8.9	0.70	5126	2.94	0.30
010905040-08	OBS	No	399.619133	456.057227	967.7	4.500	9.9	-1.0	0.70	5126	2.12	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010905040-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010905040-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010905040-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

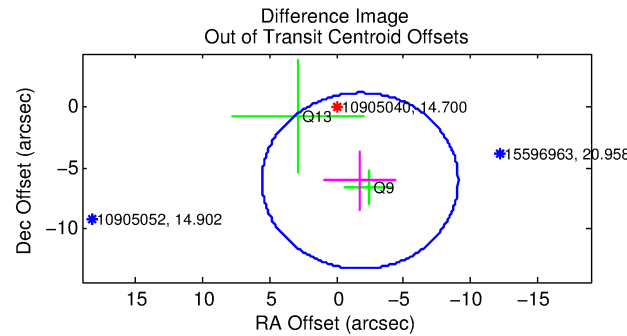
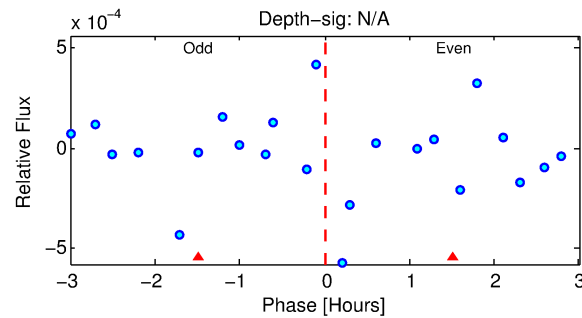
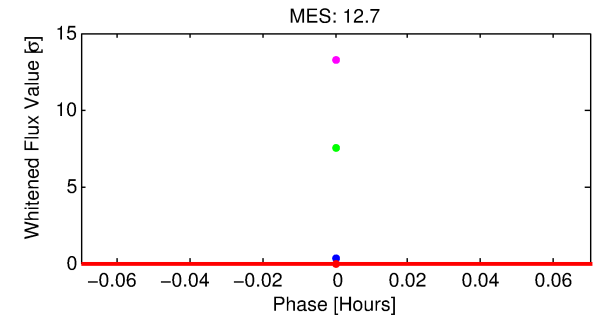
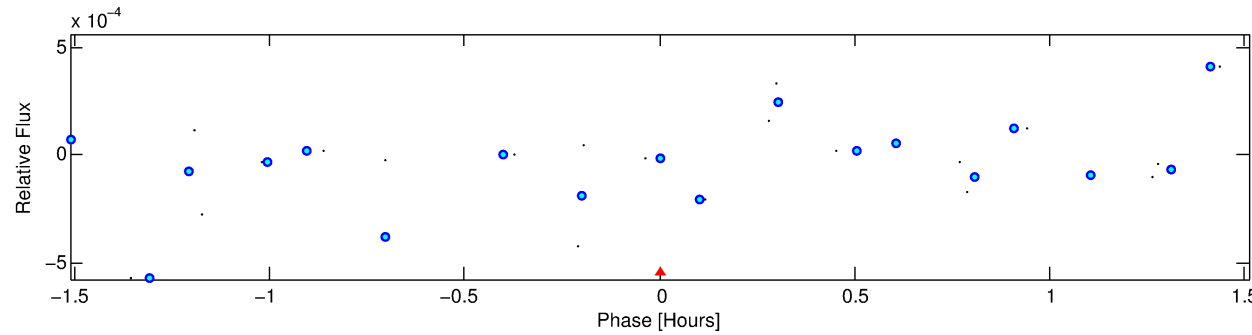
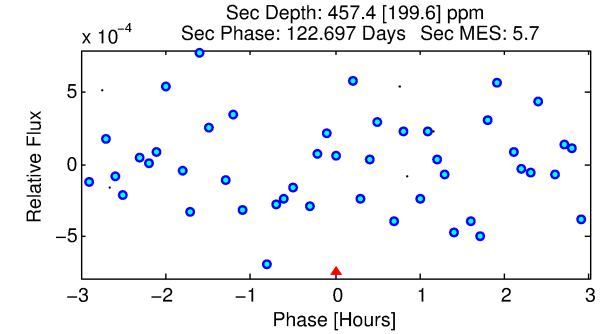
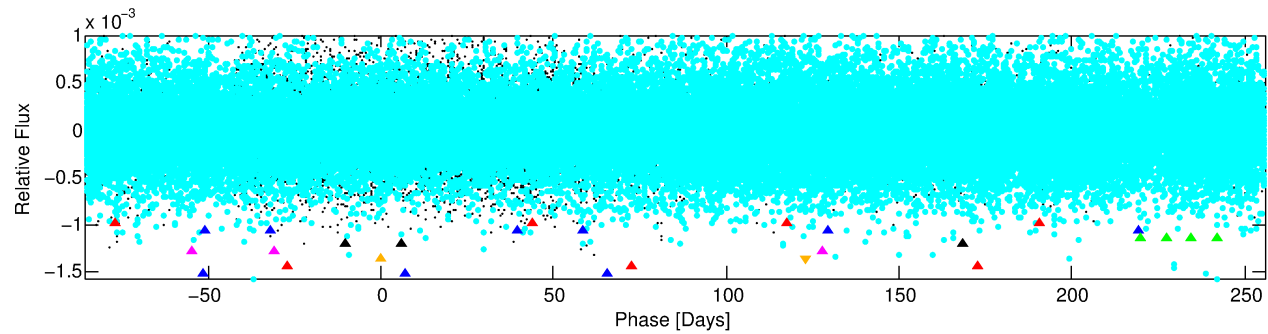
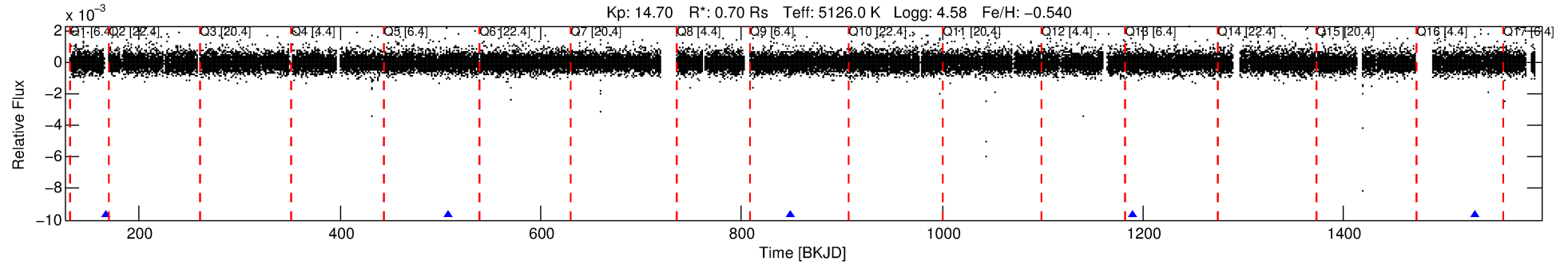
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010905040-06

No Significant Match Found

DV One-Page Summary

KIC: 10905040 Candidate: 6 of 8 Period: 341.152 d



TPS TCE Results:

Period = 341.15191 d
Epoch = 165.6419 BKJD

DV fit results are unavailable

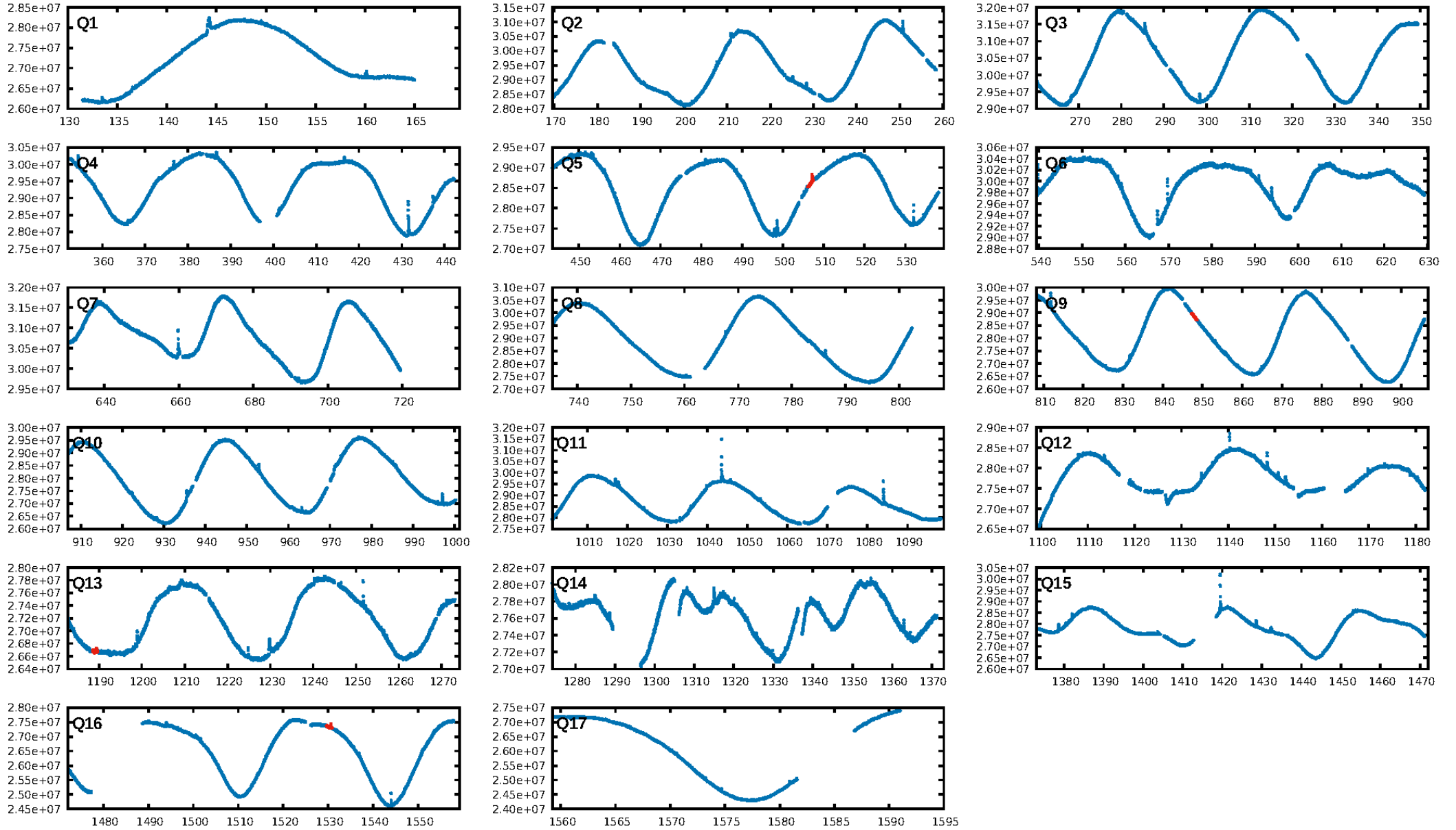
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [109.85σ]
LongPeriod-sig: 100.0% [9.35σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4516
Centroid-sig: 10.4%
Centroid-so: N/A
OotOffset-rm: 6.339 arcsec [2.60σ]
KicOffset-rm: 6.244 arcsec [2.56σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

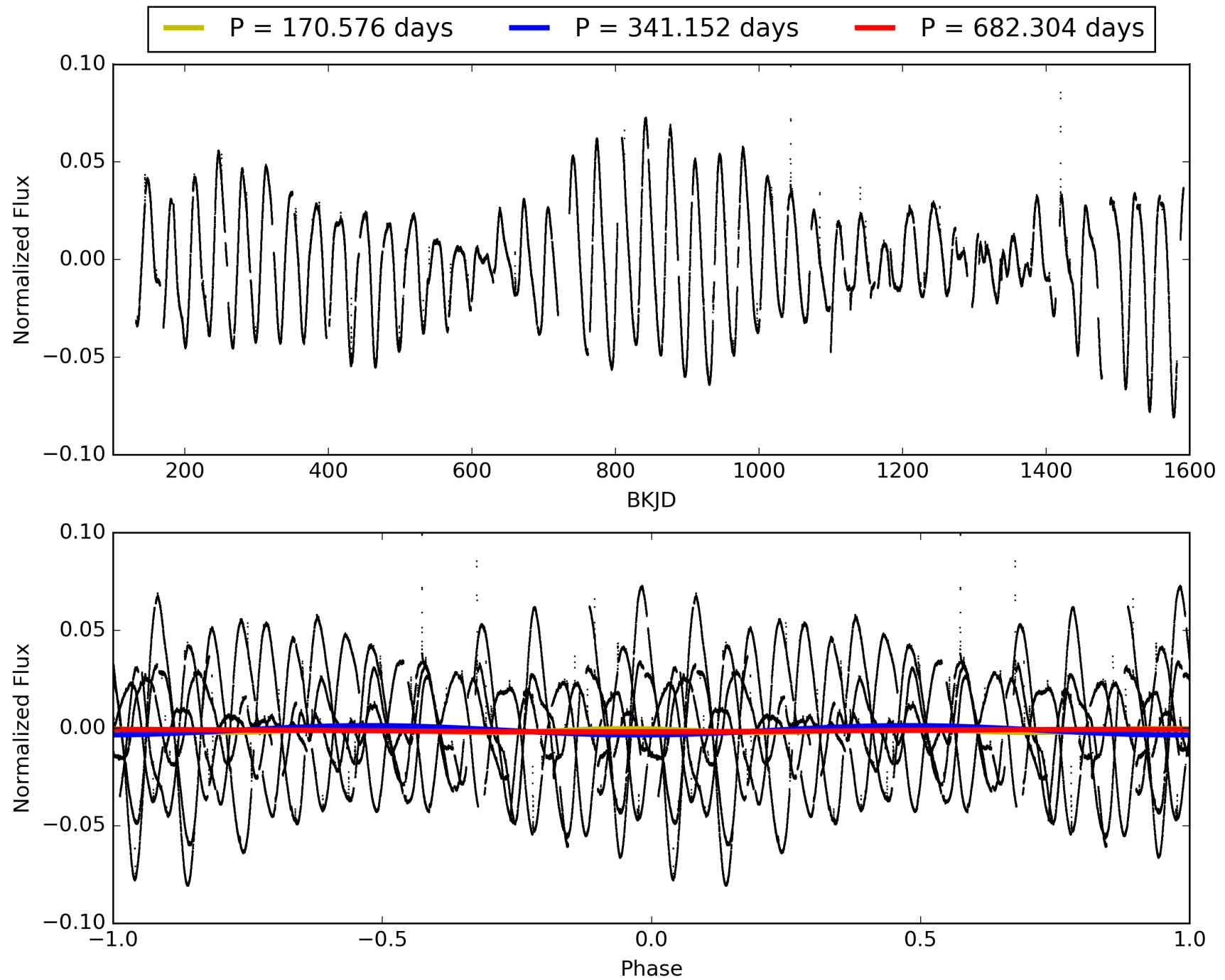
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:07:15 Z

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

TCE 010905040-06, PDC Light Curves

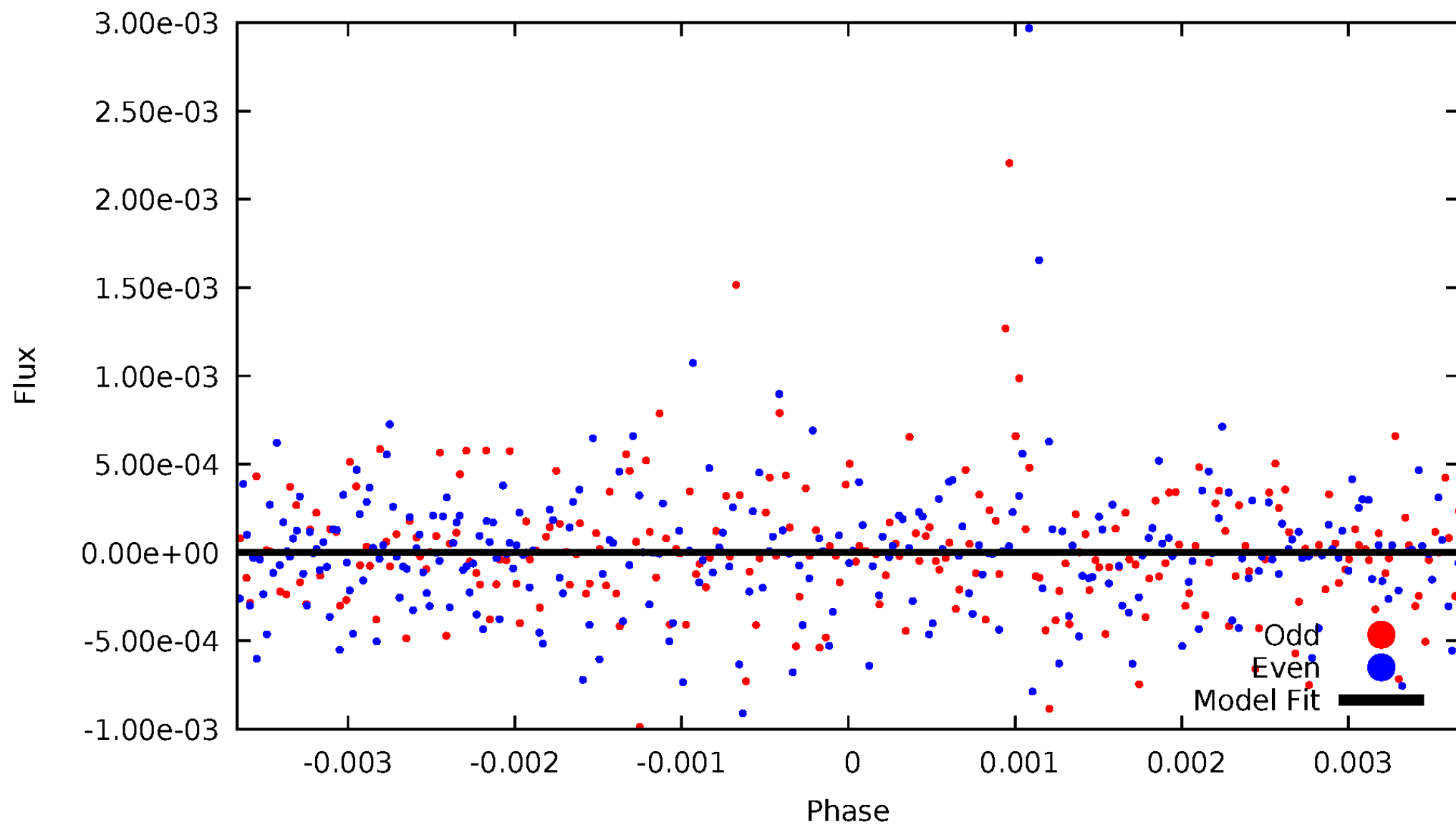


TCE 010905040-06



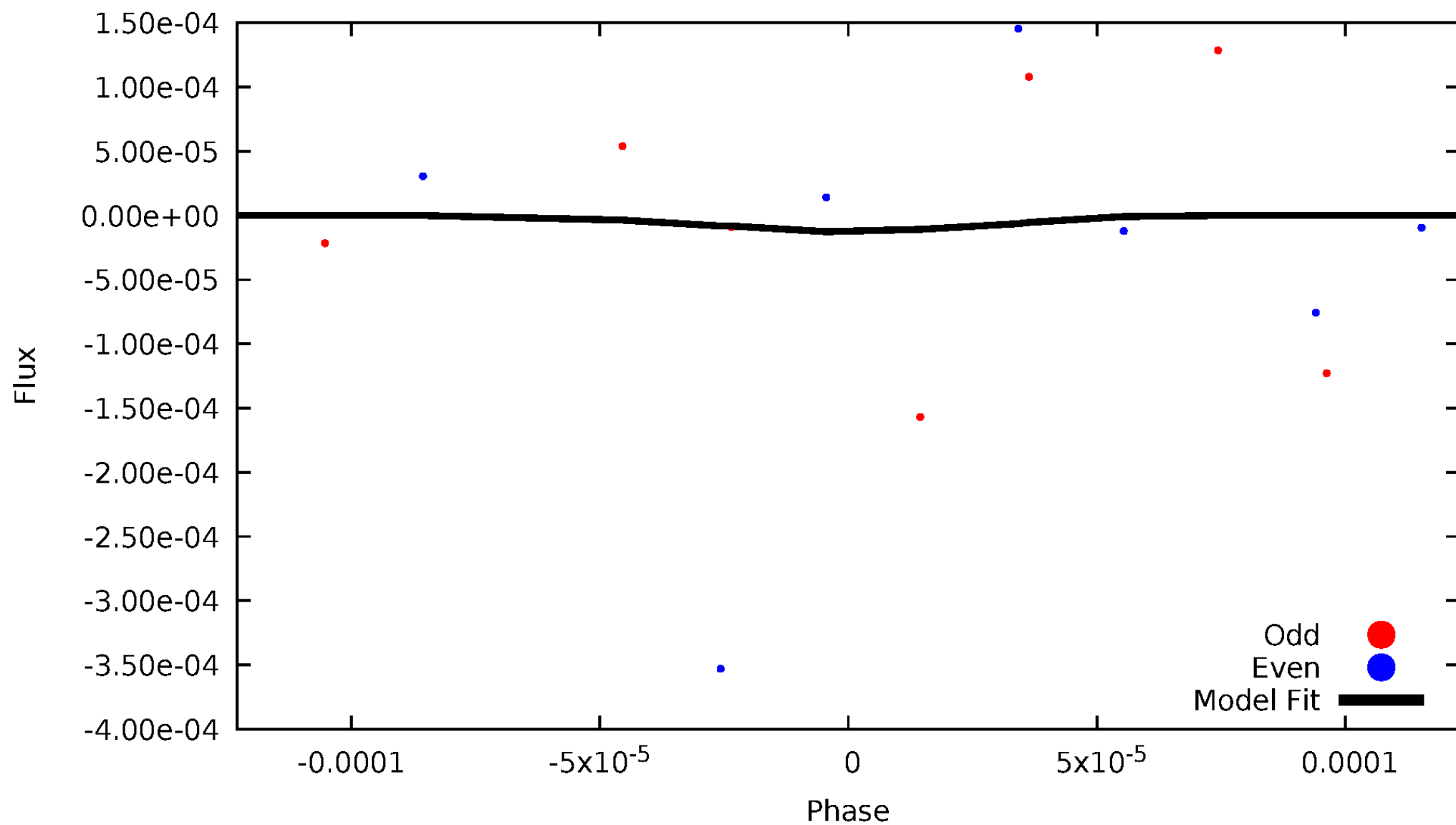
DV Odd/Even

TCE 010905040-06



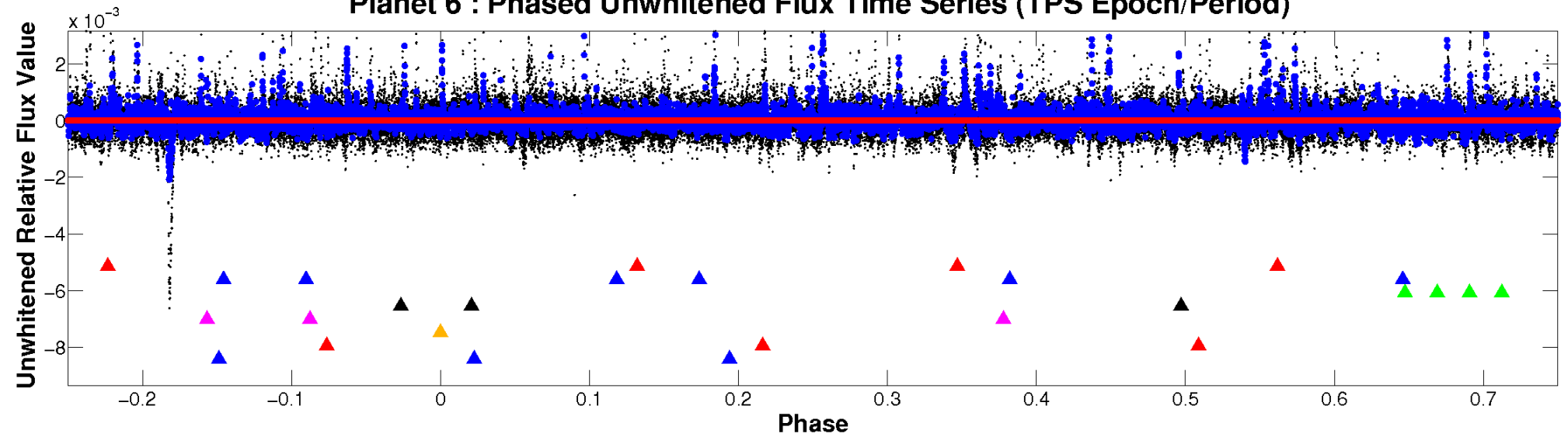
ALT Odd/Even

TCE 010905040-06



Non-Whitened Vs. Whitened Light Curve

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

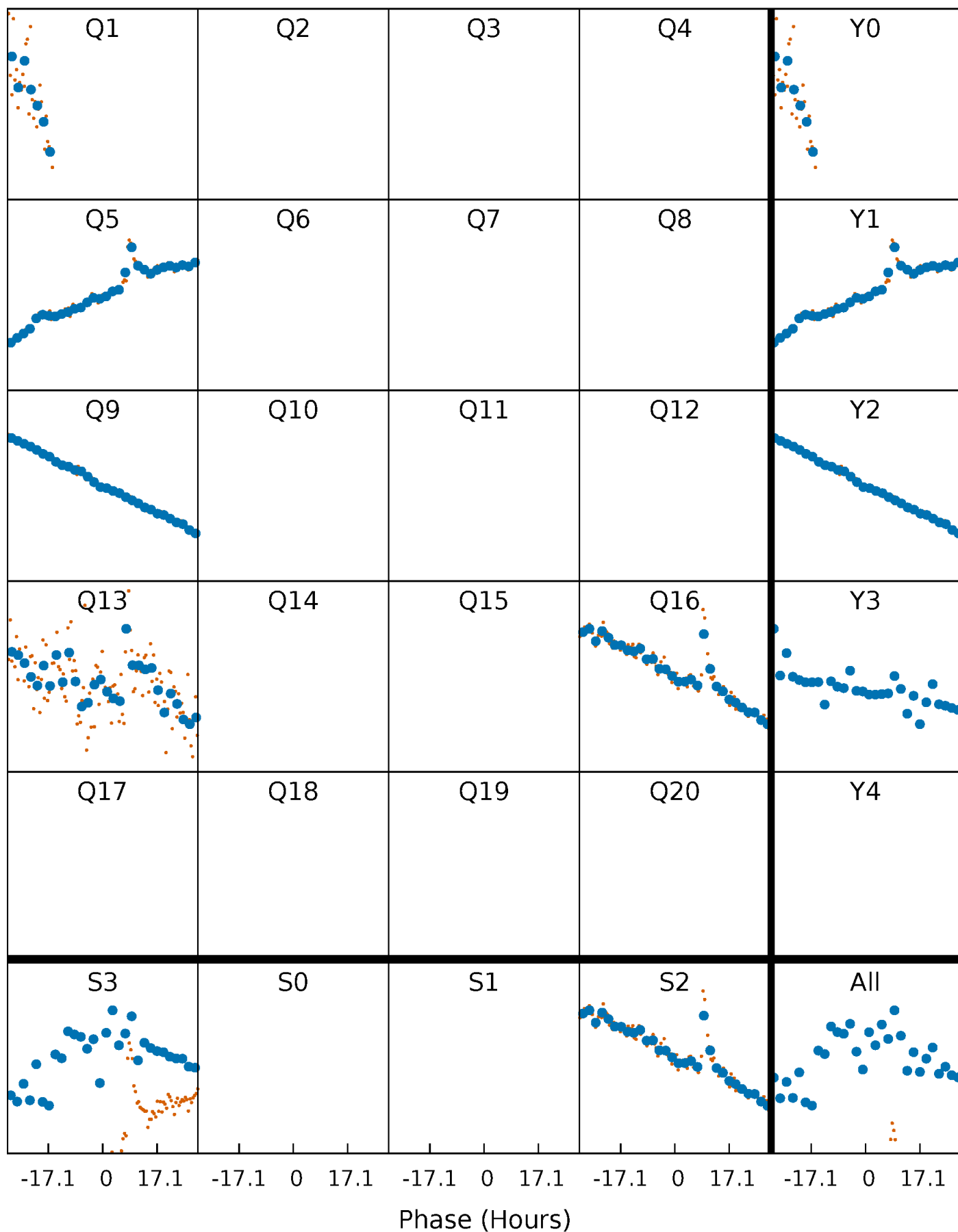


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



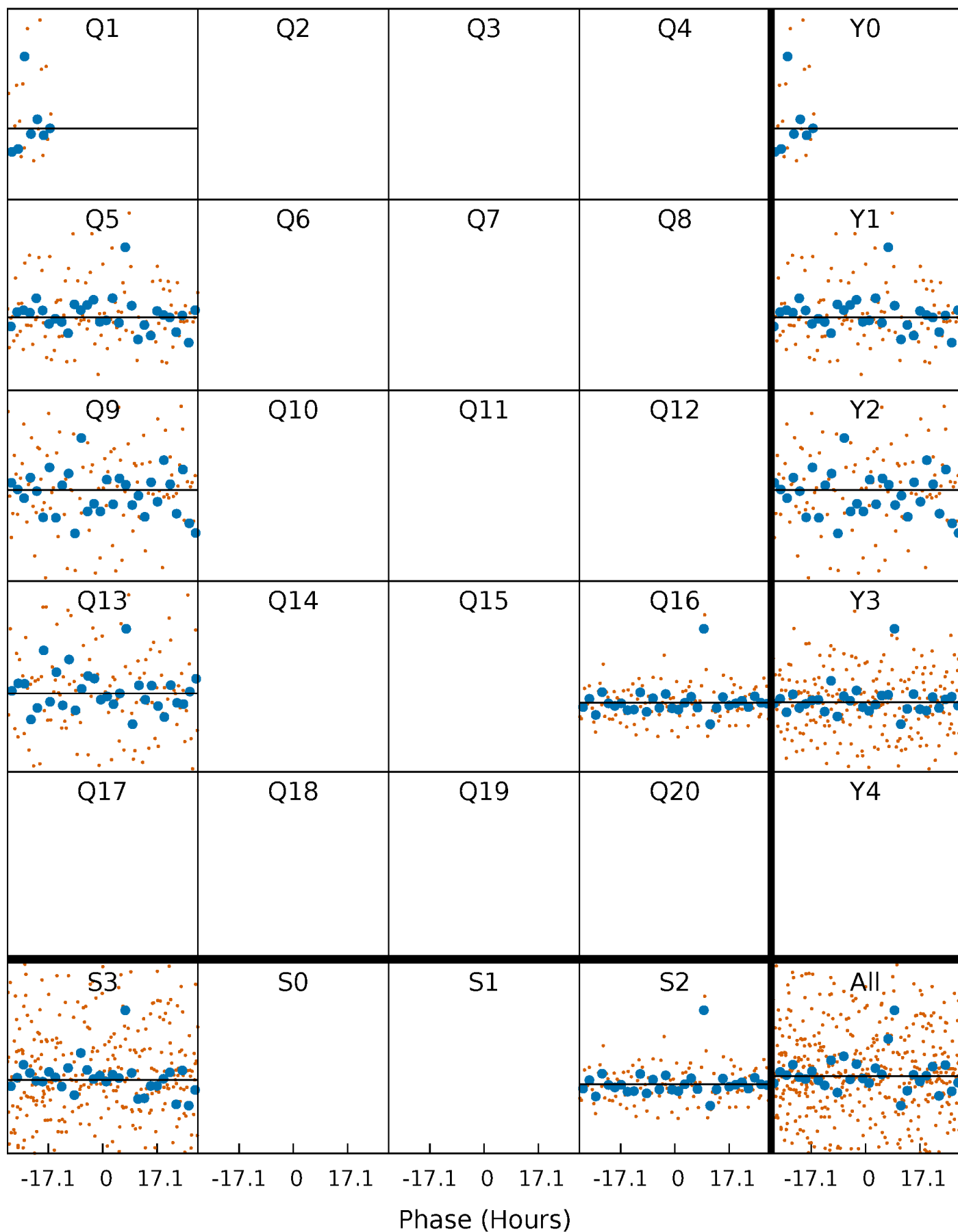
PDC Quarter-Phased Transit Curves

TCE 010905040-06 P=341.151907 Days $T_0=165.641850$ (BKJD)



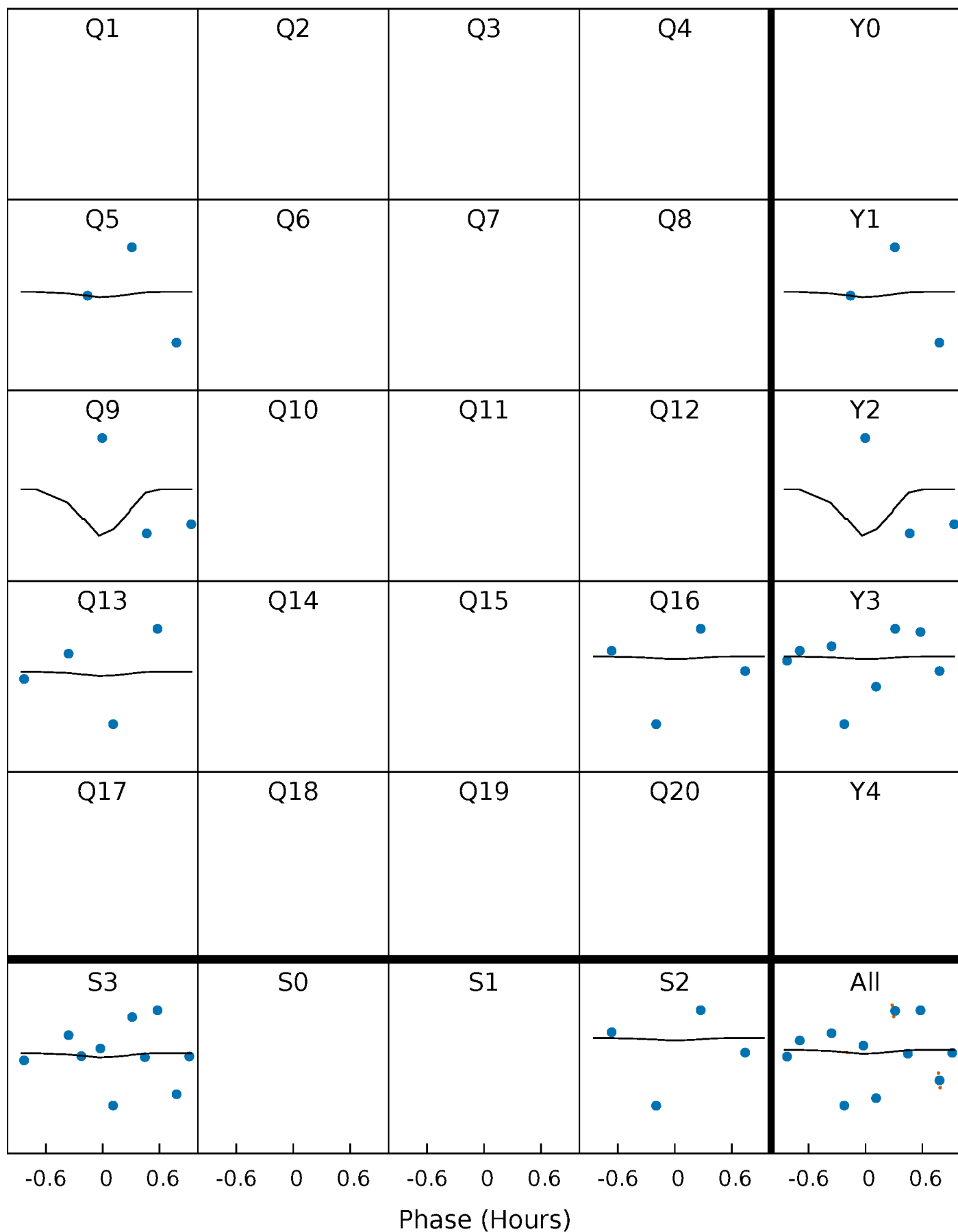
DV Quarter-Phased Transit Curves

TCE 010905040-06 P=341.151907 Days $T_0=165.641850$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

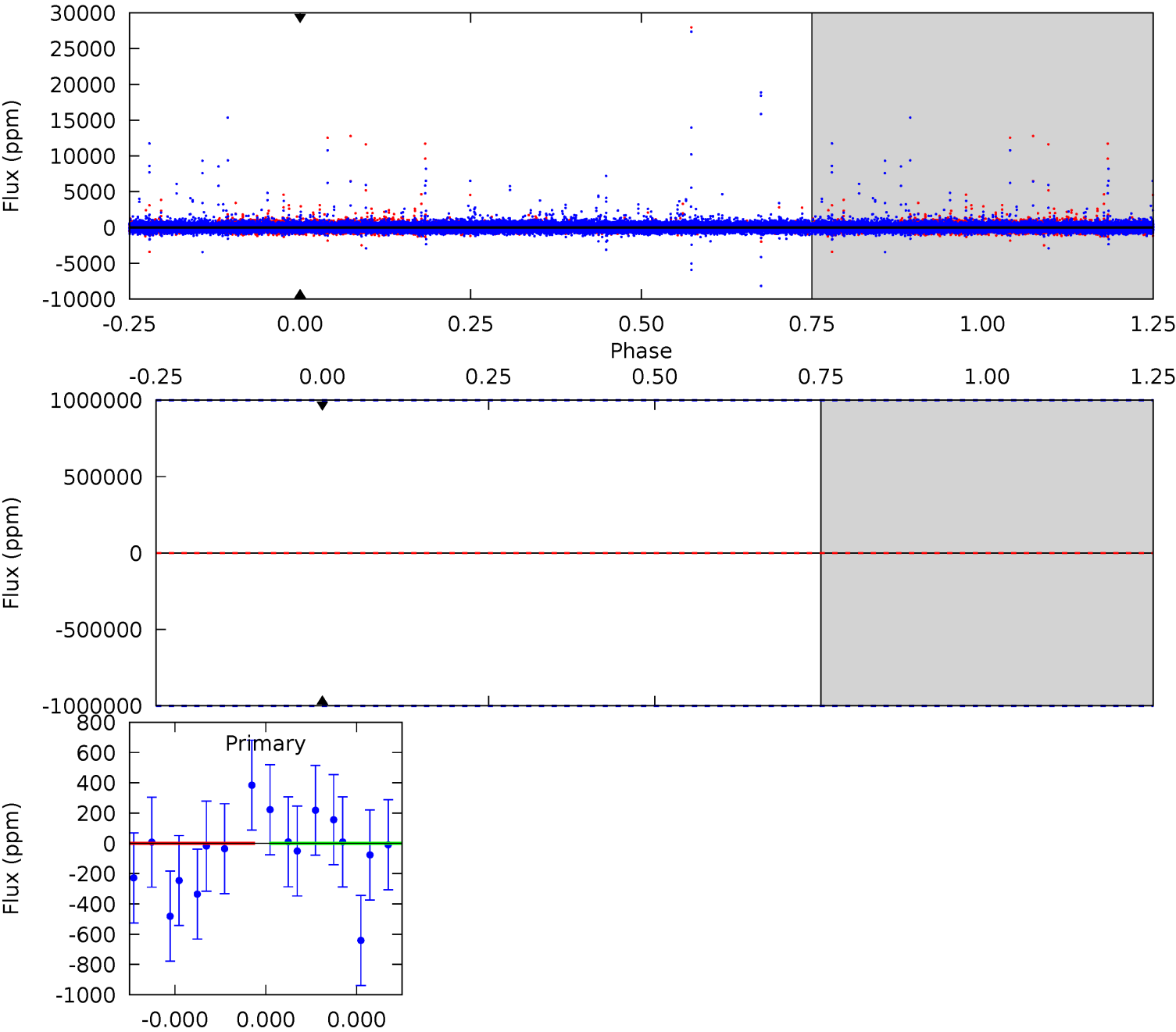
TCE 010905040-06 P=341.151907 Days $T_0=166.612701$ (BKJD)



DV Model-Shift Uniqueness Test

010905040-06, P = 341.151907 Days, E = 165.641850 Days

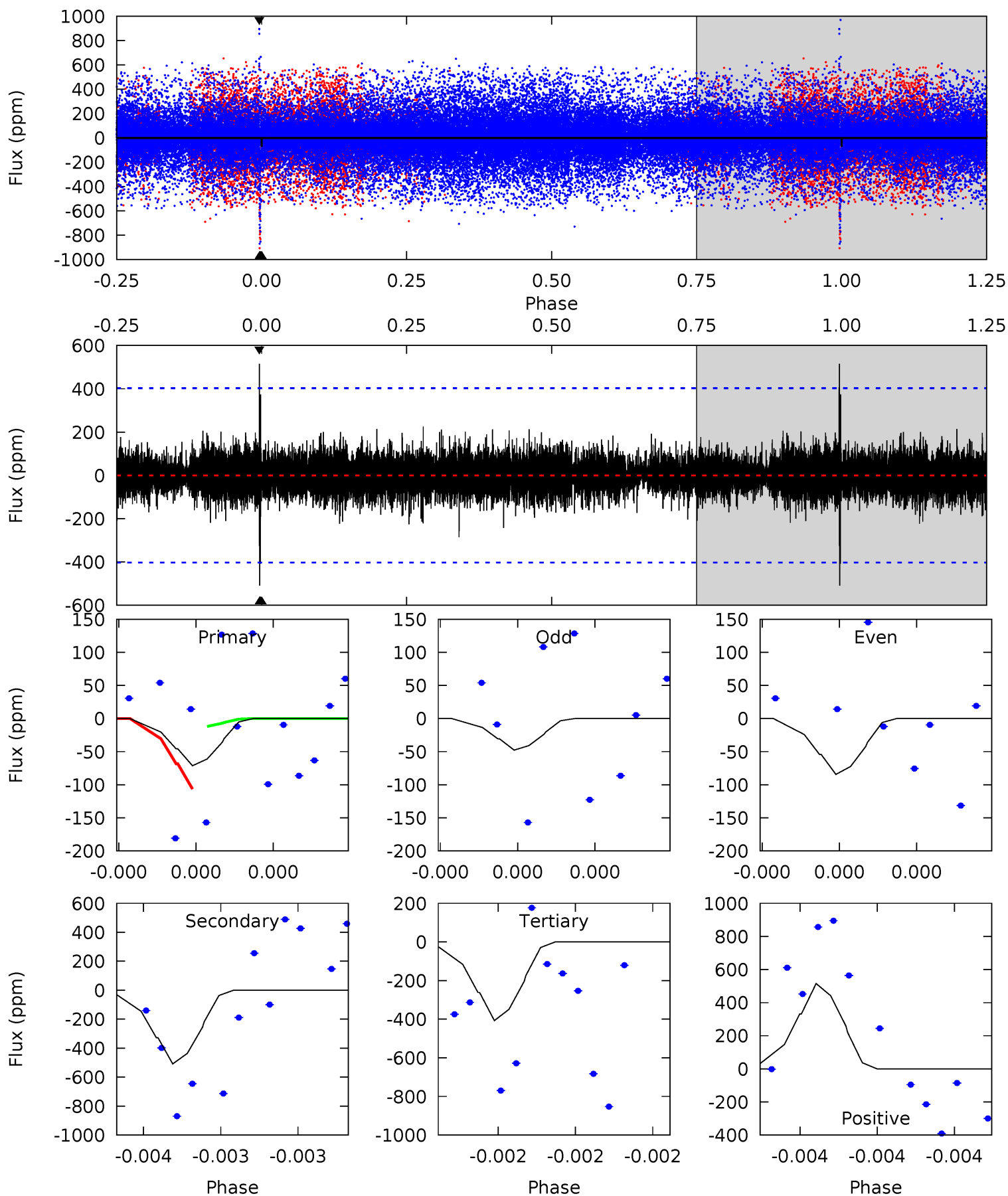
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010905040-06, P = 341.151907 Days, E = 166.612701 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.03	7.39	5.91	7.48	5.85	3.89	0.75	-4.88	-6.45	1.47	-0.09	0.28	1.12	0.50	0.66



Stellar Parameters For KIC 010905040

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5126^{+154}_{-138}	$4.578^{+0.078}_{-0.045}$	$-0.540^{+0.350}_{-0.300}$	$0.696^{+0.073}_{-0.073}$	$0.668^{+0.087}_{-0.037}$	$2.792^{+0.855}_{-0.493}$
	+3%/-3%	+2%/-1%	+65%/-56%	+10%/-10%	+13%/-6%	+31%/-18%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010905040-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$5.56^{+6.20}_{-3.97}$	286^{+11}_{-10}	4053^{+14996}_{-17667}	$19042^{+3031947}_{-1568073}$
Alt.	-509 ± 69	$5.34^{+5.38}_{-3.80}$	288^{+12}_{-12}	3413^{+1952}_{-617}	7110^{+75148}_{-5336}

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 $A_{obs} \gg 1.0$

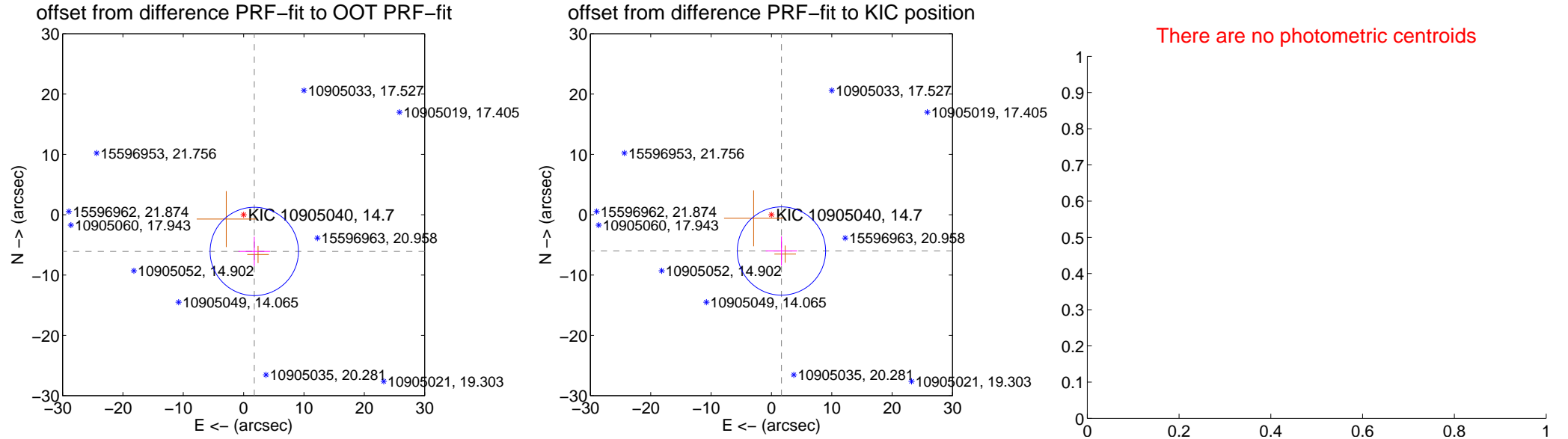
DV Centroid Data

Supplemental centroid analysis for 010905040-06. Kepler magnitude: 14.70. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.339 ± 2.440	2.60	-1.769 ± 2.608	-6.087 ± 2.426
PRF-fit source offset from KIC position	6.244 ± 2.439	2.56	-1.664 ± 2.608	-6.018 ± 2.426
photometric centroid source offset	—	—	—	—



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.

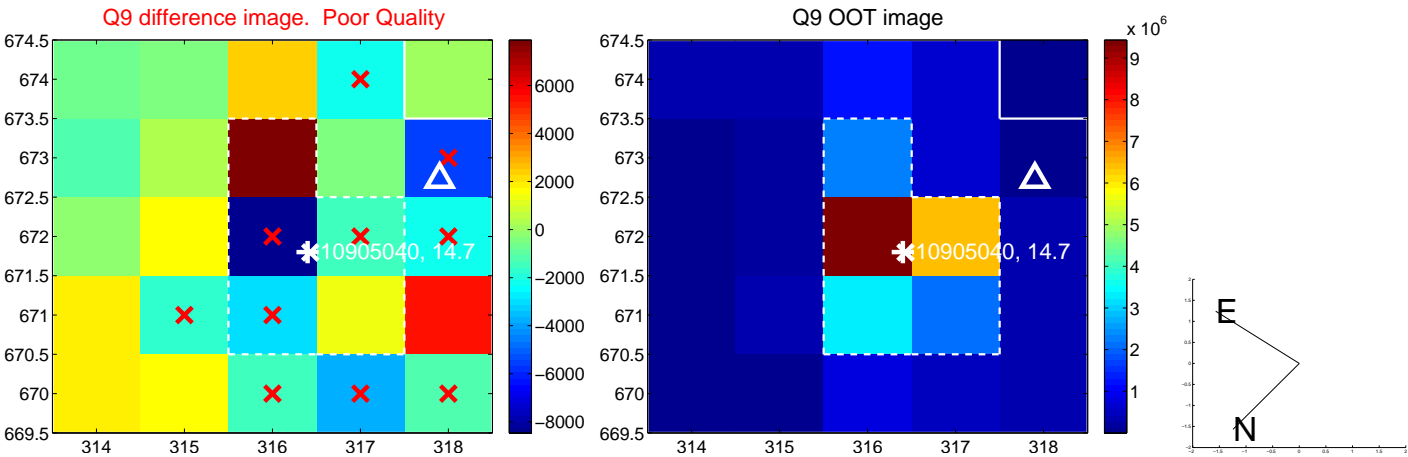
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



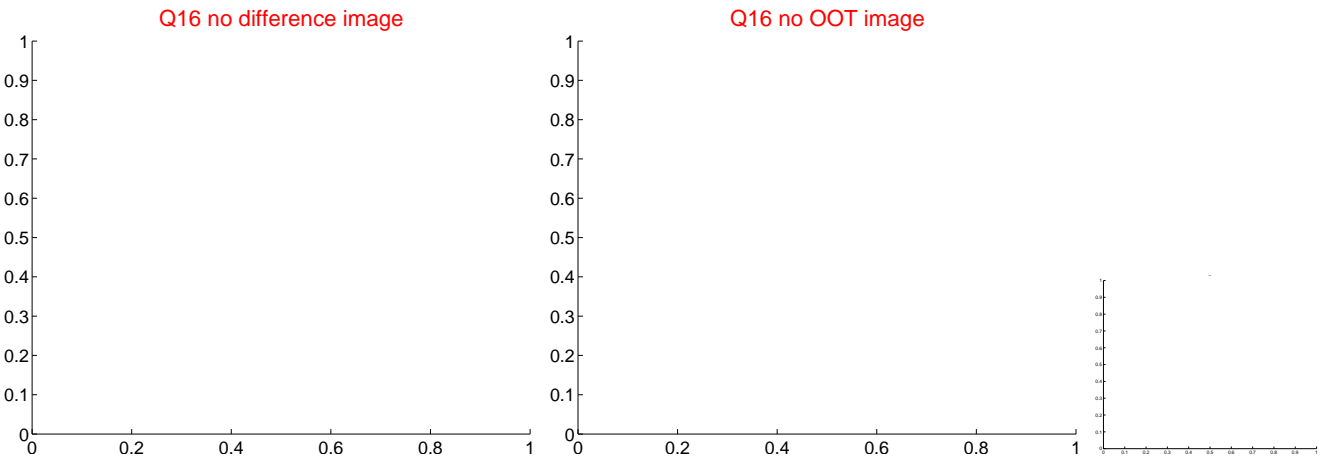
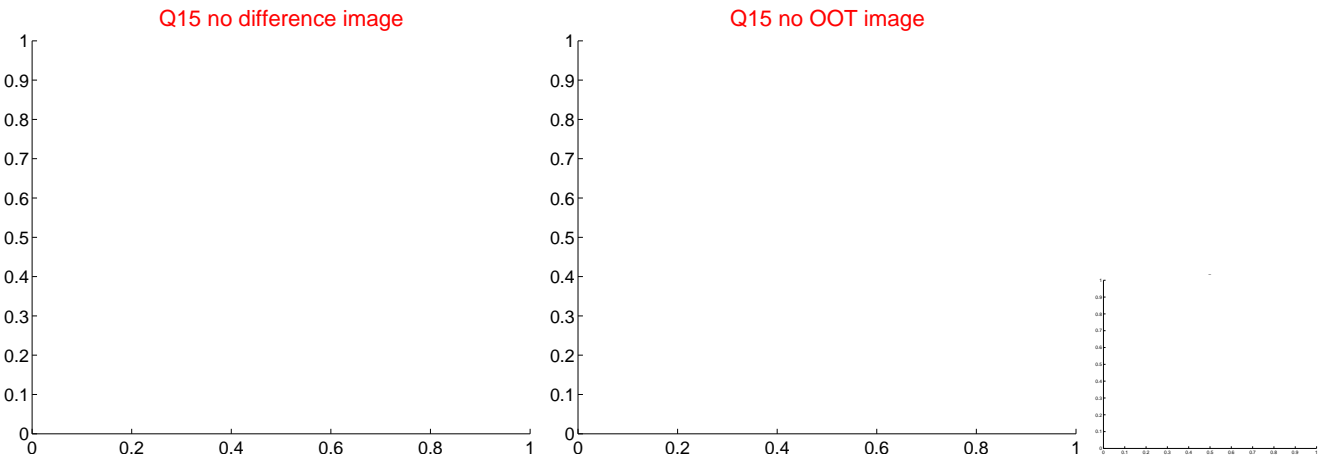
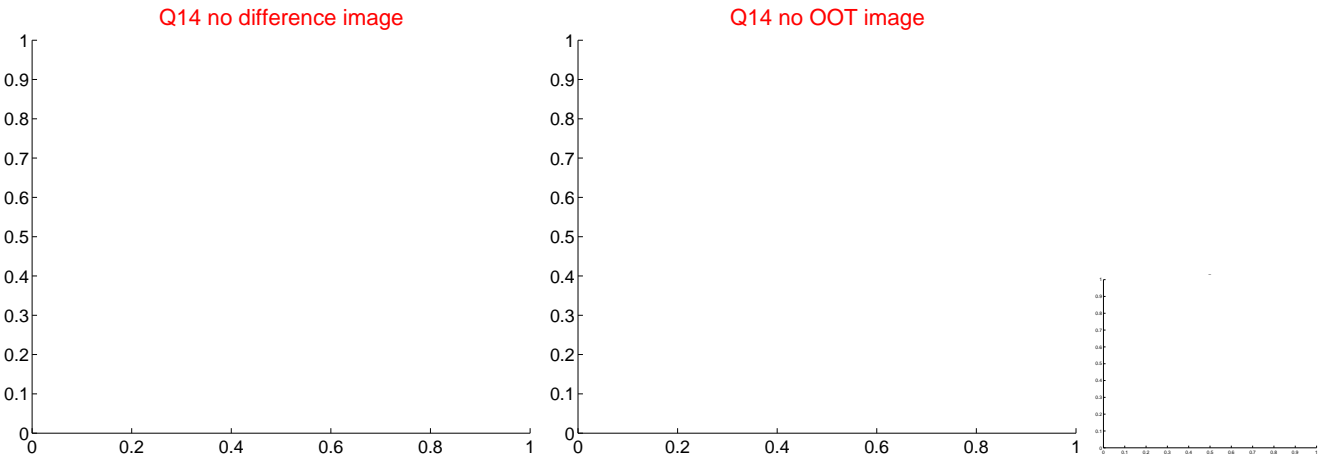
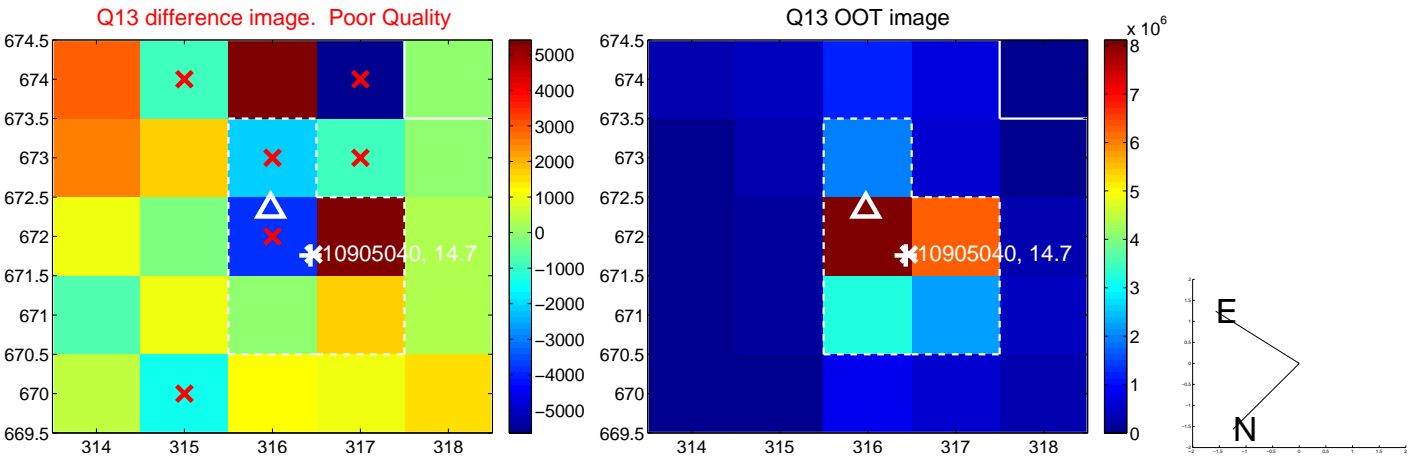
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



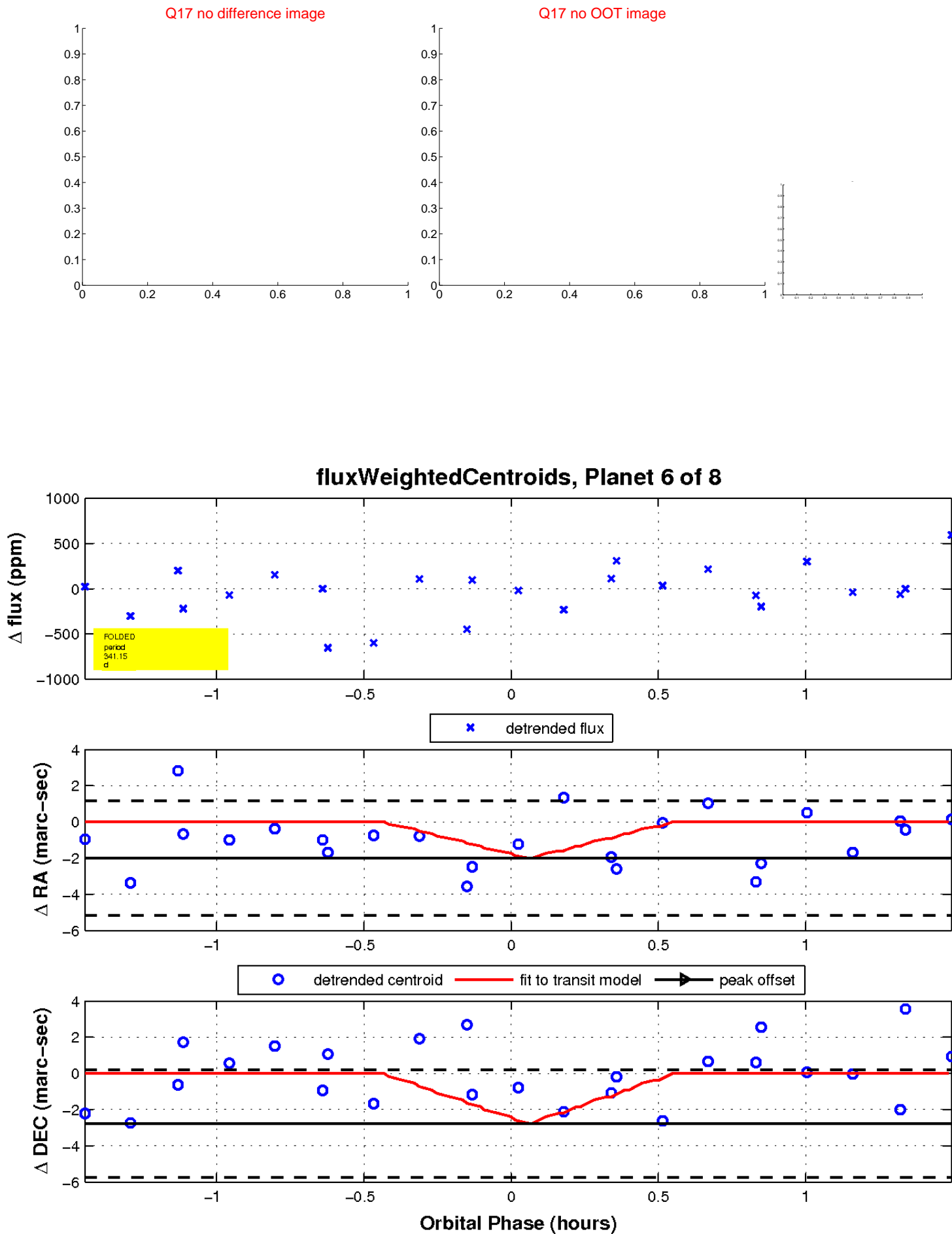
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



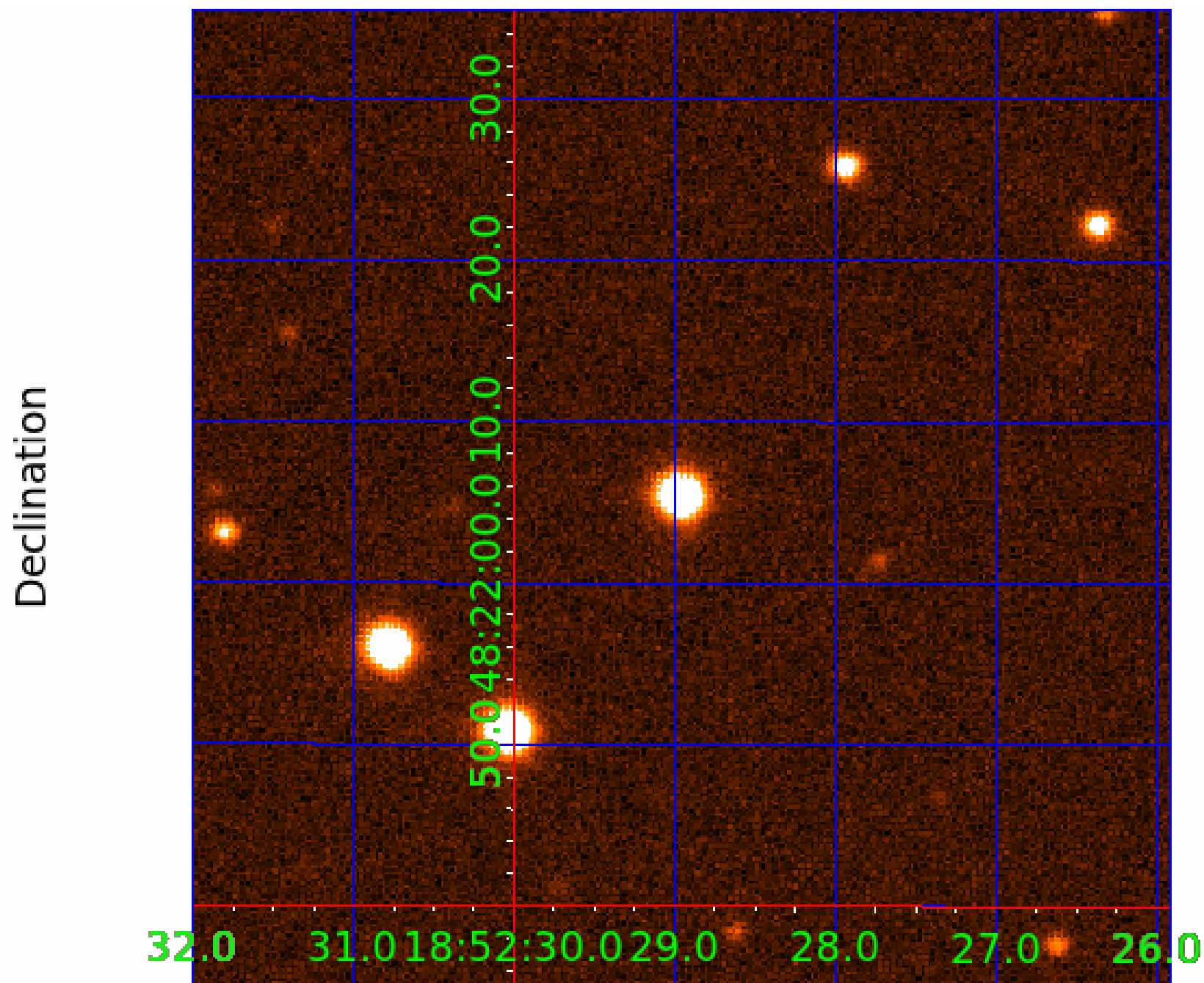
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image



KIC 010905040

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})
010905040-01	OBS	No	414.463497	210.683462	735.0	8.739	15.6	6.2	0.70	5126	1.89	0.33
010905040-02	OBS	No	251.140477	224.879202	1031.3	12.719	16.6	8.0	0.70	5126	2.78	0.65
010905040-03	OBS	No	348.542561	386.512414	2135.0	11.615	16.5	13.4	0.70	5126	4.76	0.42
010905040-04	OBS	No	519.815036	497.725959	1164.0	6.609	14.8	8.3	0.70	5126	2.39	0.24
010905040-05	OBS	No	523.513314	453.336255	1219.3	3.269	10.7	8.8	0.70	5126	2.83	0.24
010905040-06	OBS	No	341.151907	165.641850	821.9	15.000	12.7	-1.0	0.70	5126	1.95	0.43
010905040-07	OBS	No	440.968538	480.754313	1250.4	16.375	11.4	8.9	0.70	5126	2.94	0.30
010905040-08	OBS	No	399.619133	456.057227	967.7	4.500	9.9	-1.0	0.70	5126	2.12	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010905040-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010905040-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010905040-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

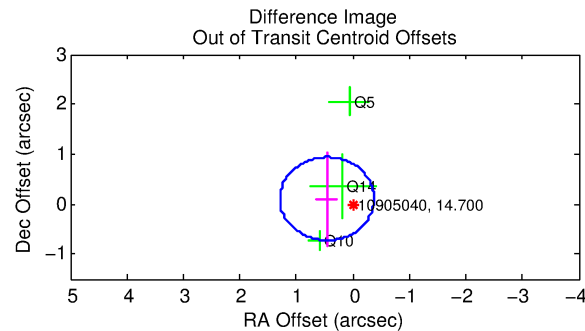
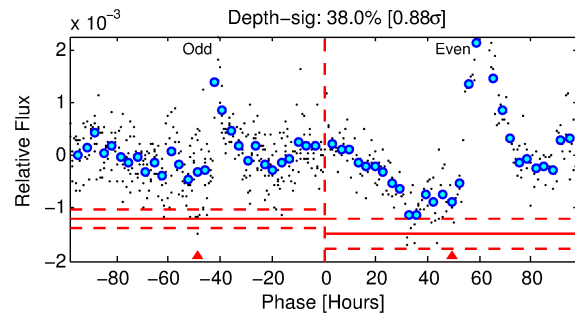
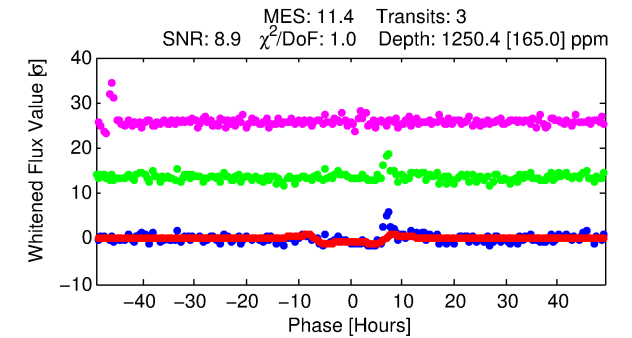
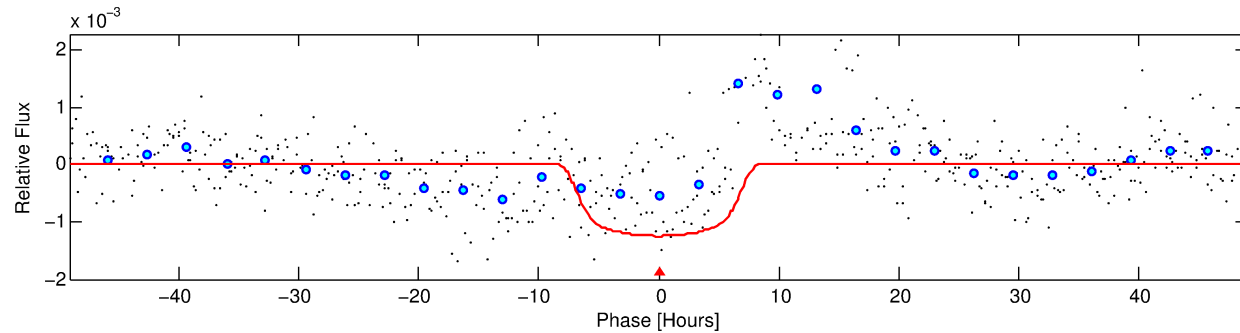
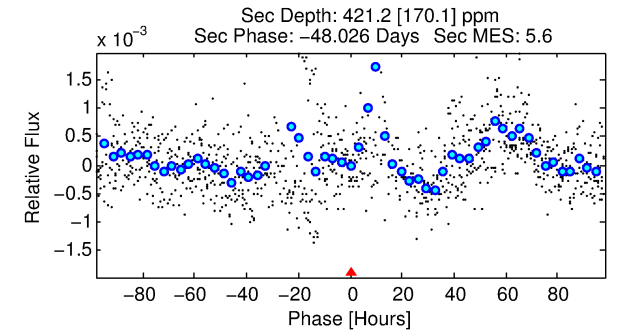
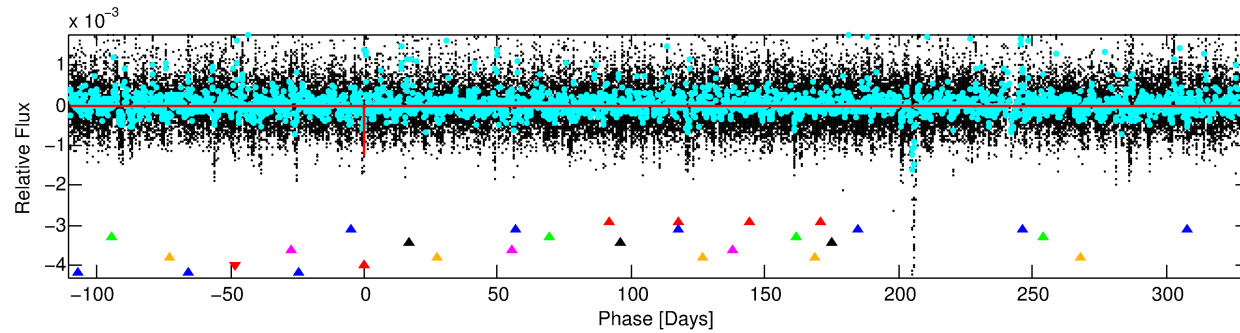
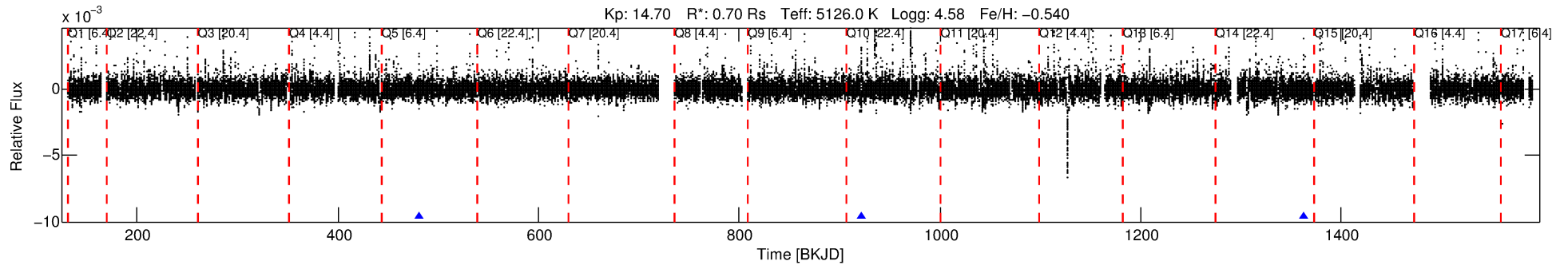
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010905040-07

No Significant Match Found

DV One-Page Summary

KIC: 10905040 Candidate: 7 of 8 Period: 440.969 d



DV Fit Results:

Period = 440.96854 [0.01383] d
Epoch = 480.7543 [0.0168] BKJD
Rp/R* = 0.0387 [0.0034]
a/R* = 109.64 [21.61]
b = 0.89 [0.05]
Seff = 0.30 [0.06]
Teq = 189 [9] K
Rp = 2.94 [0.40] Re
a = 0.9917 [0.0913] AU
Ag = 26398.68 [12192.87] [2.17 σ]
Teffp = 3734 [426] K [8.31 σ]

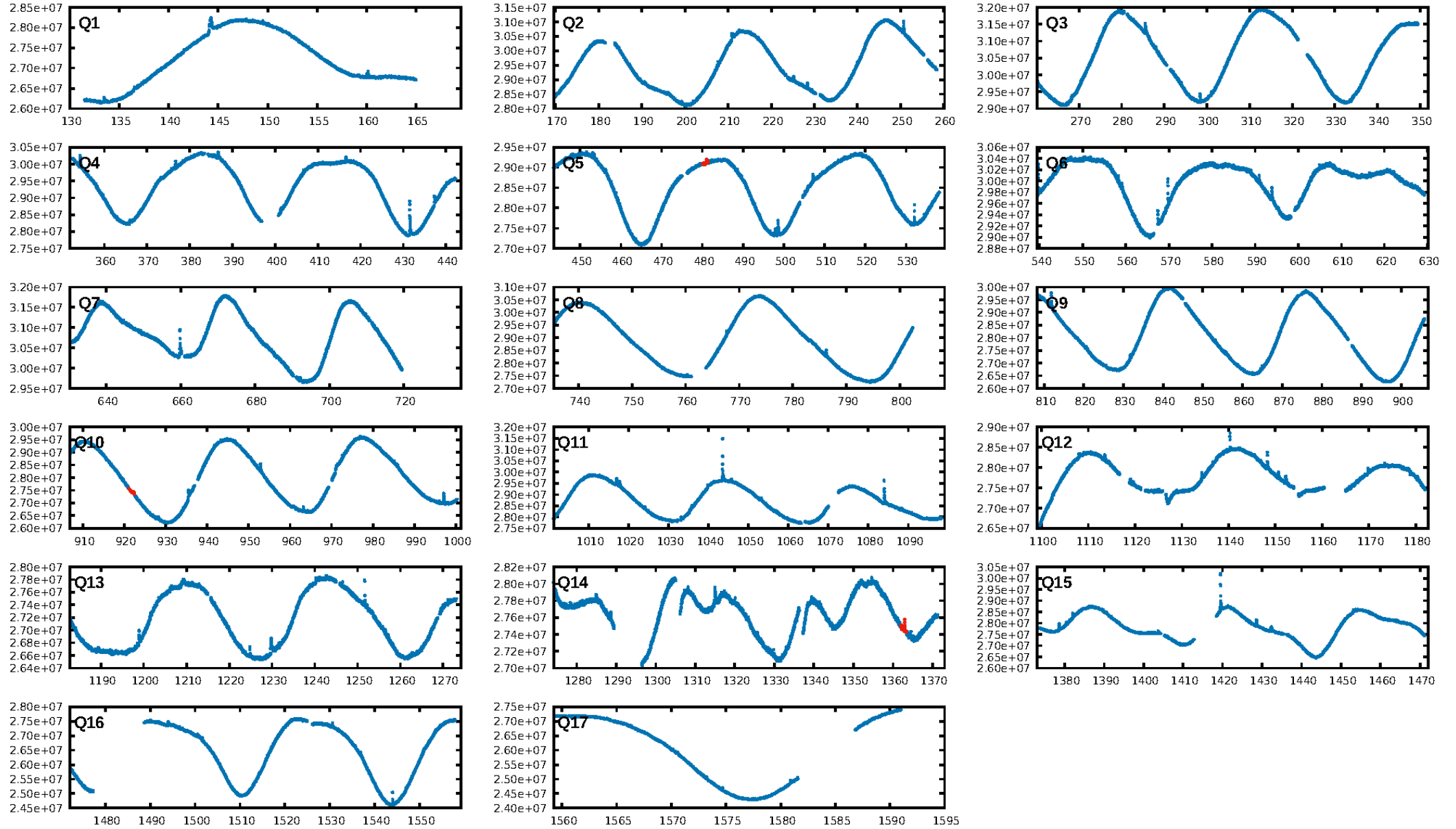
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [34.27 σ]
LongPeriod-sig: 100.0% [107.16 σ]
ModelChiSquare2-sig: 89.1%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 18.02
Centroid-sig: 10.1%
Centroid-so: 0.971 arcsec [1.17 σ]
OotOffset-rm: 0.472 arcsec [1.70 σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-rm: 0.617 arcsec [1.66 σ]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

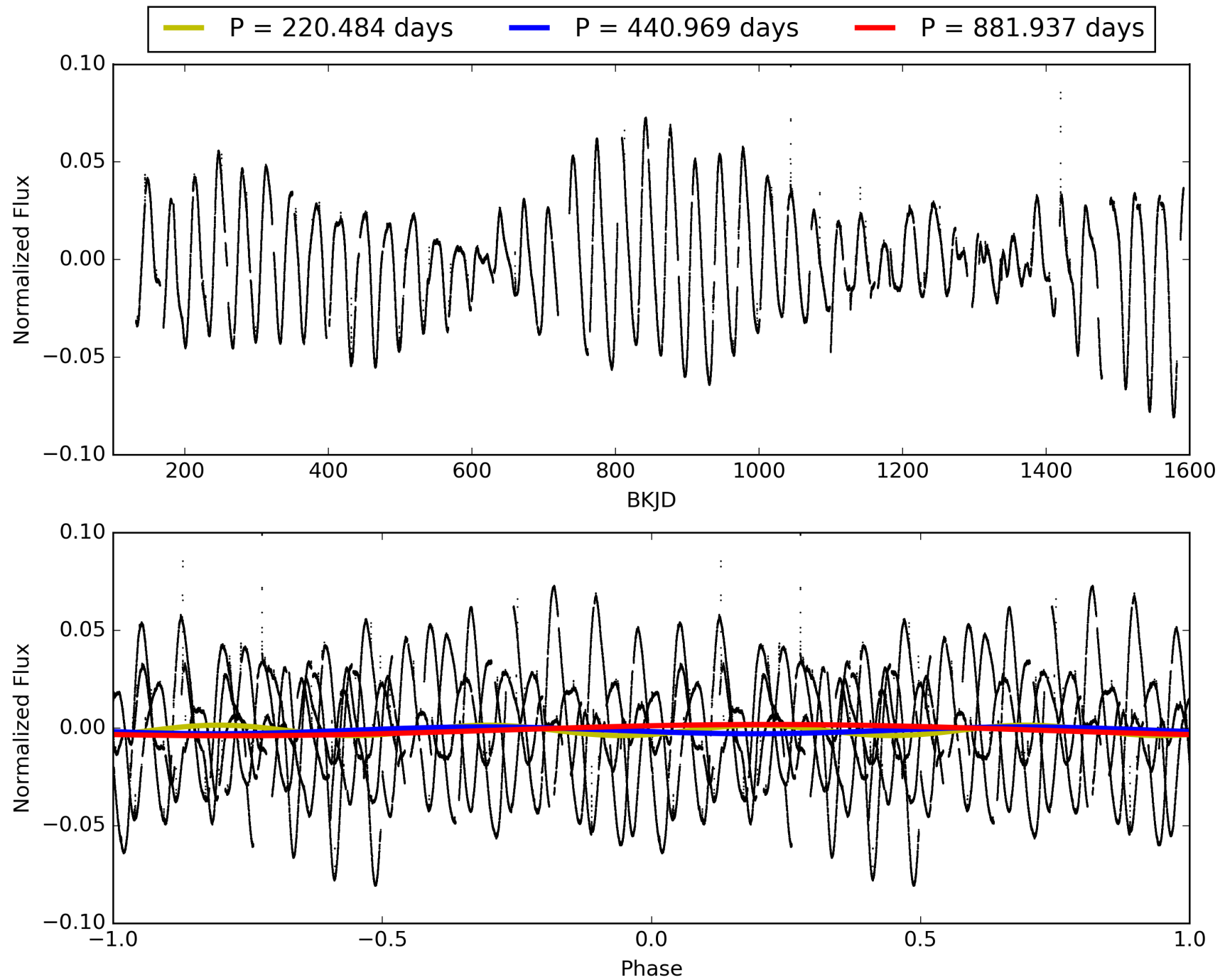
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:07:26 Z

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

TCE 010905040-07, PDC Light Curves

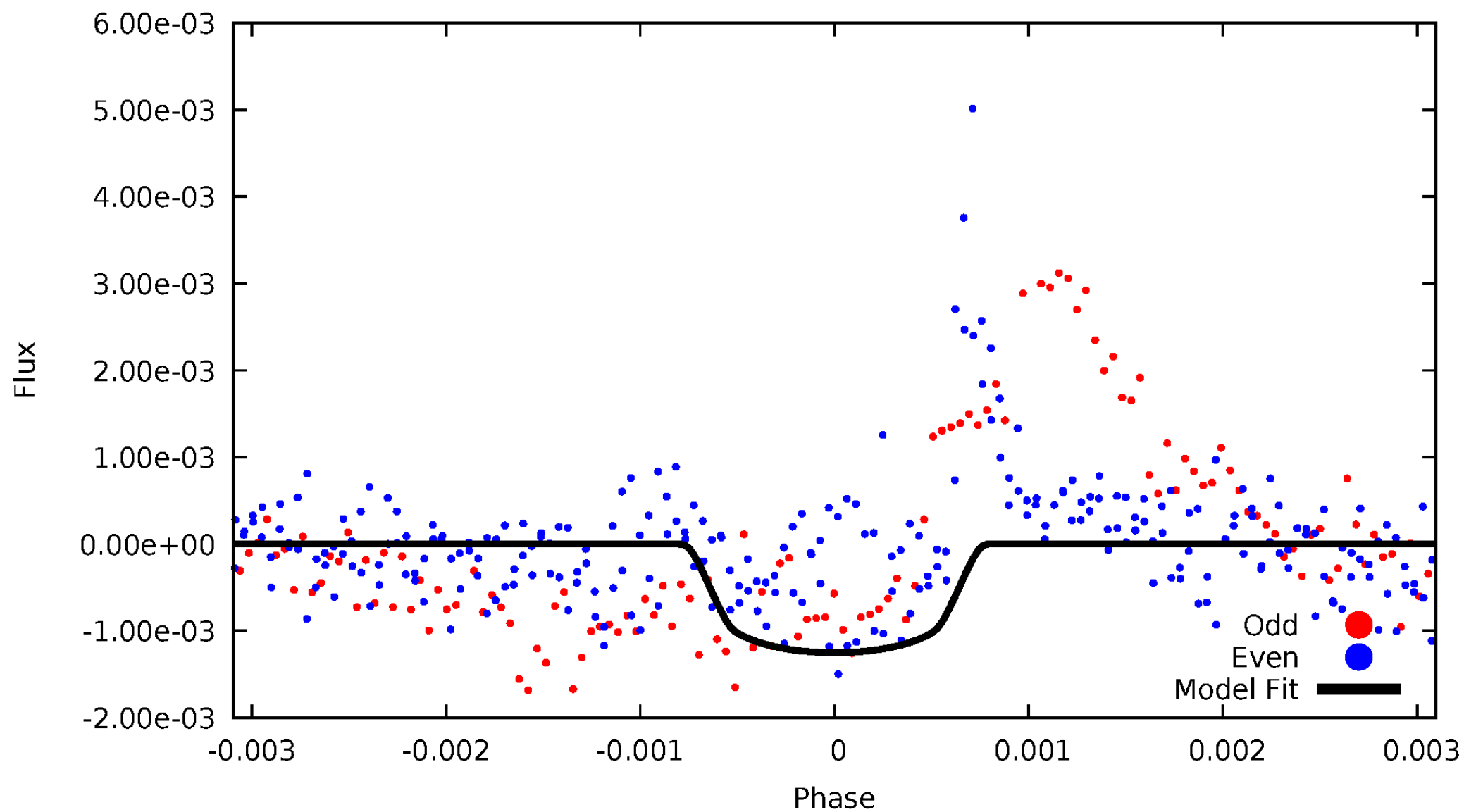


TCE 010905040-07



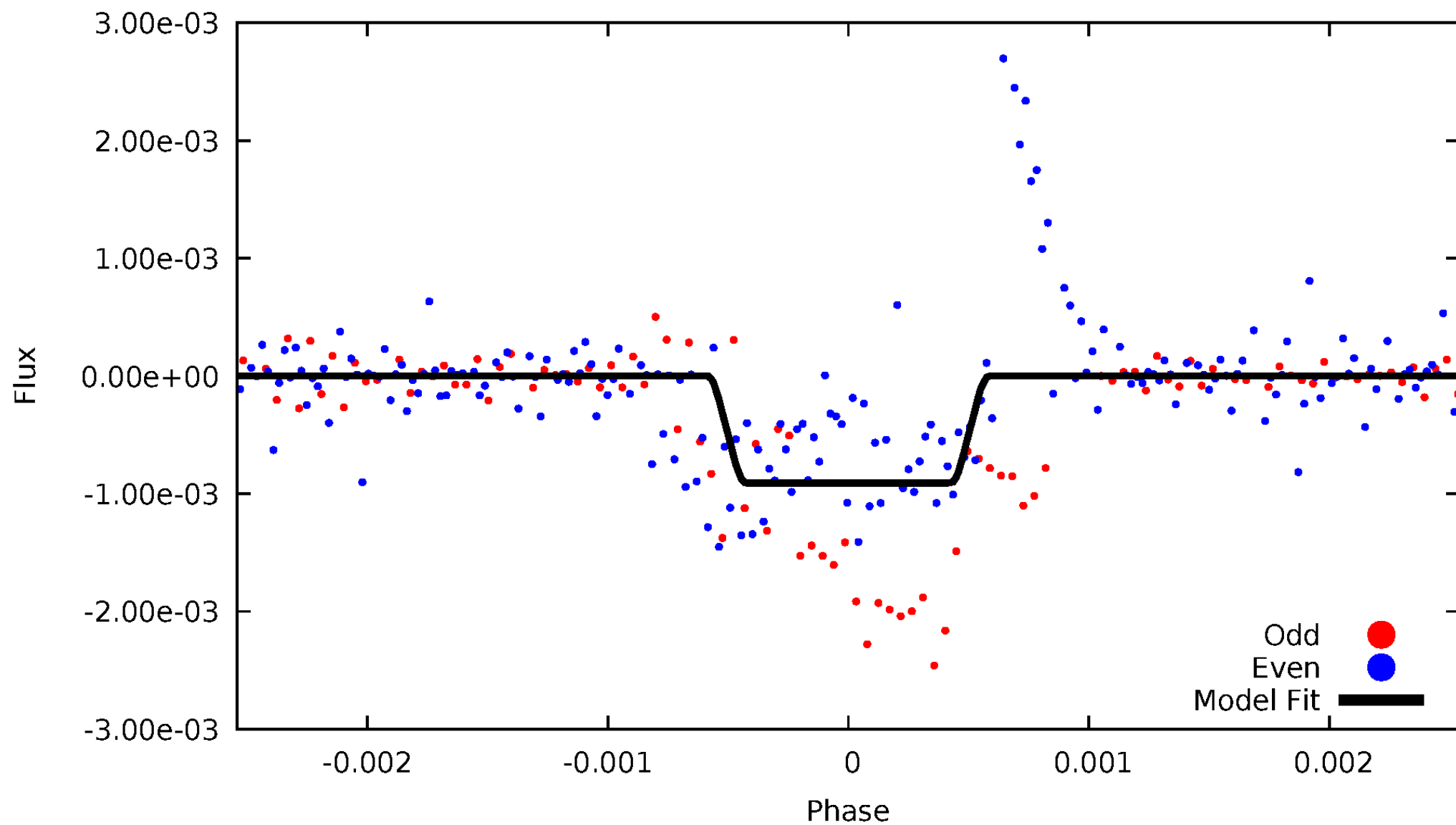
DV Odd/Even

TCE 010905040-07



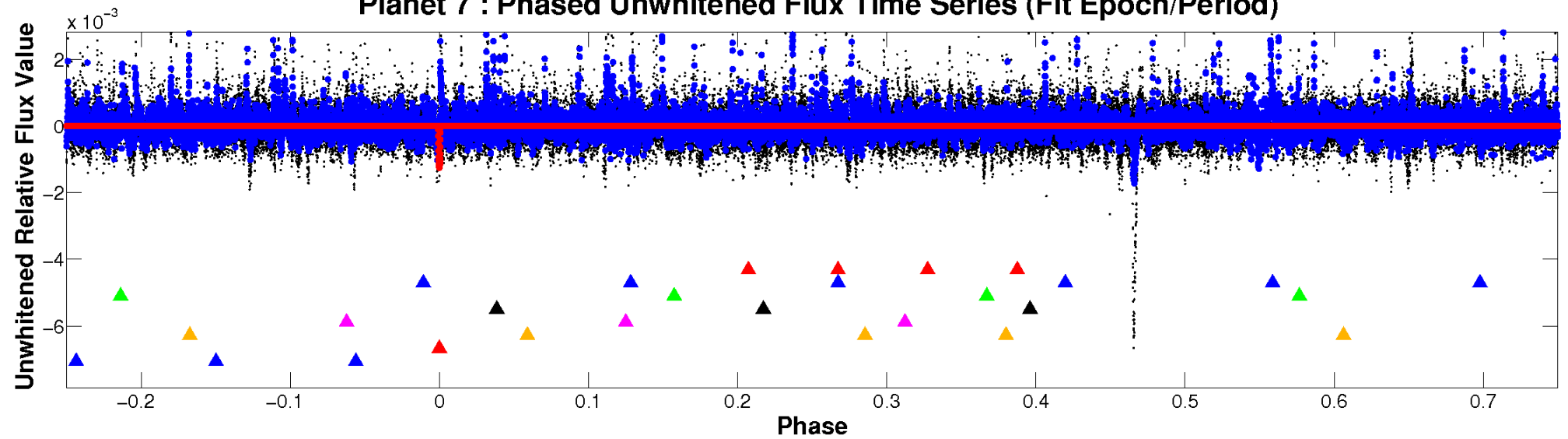
ALT Odd/Even

TCE 010905040-07

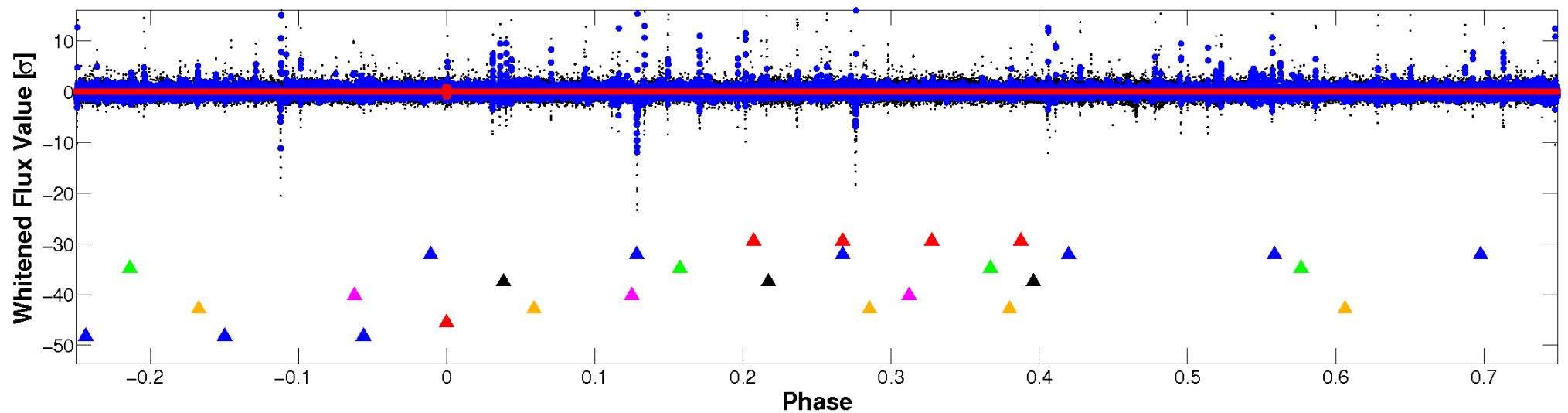


Non-Whitened Vs. Whitened Light Curve

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

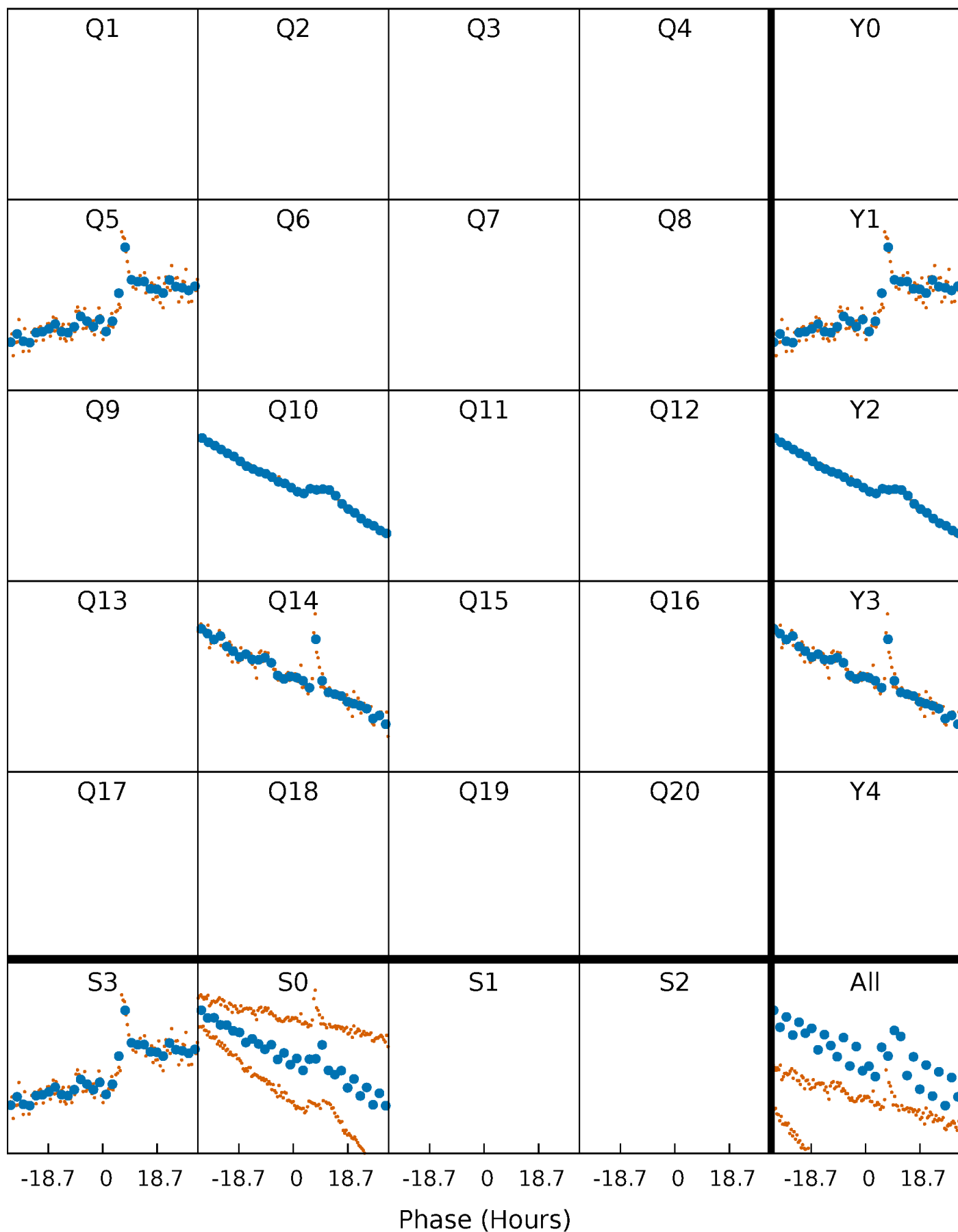


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



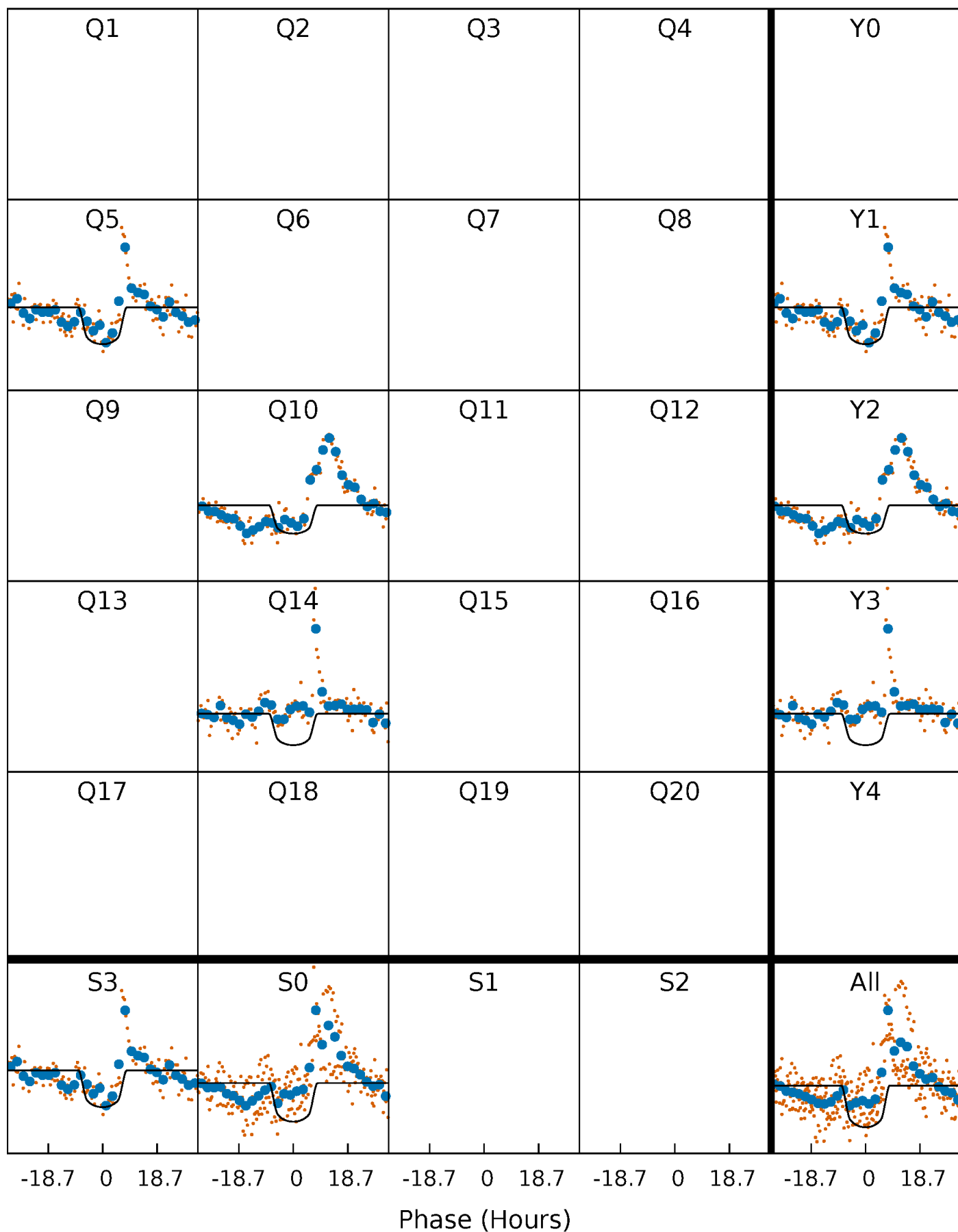
PDC Quarter-Phased Transit Curves

TCE 010905040-07 $P=440.968538$ Days $T_0=480.754313$ (BKJD)



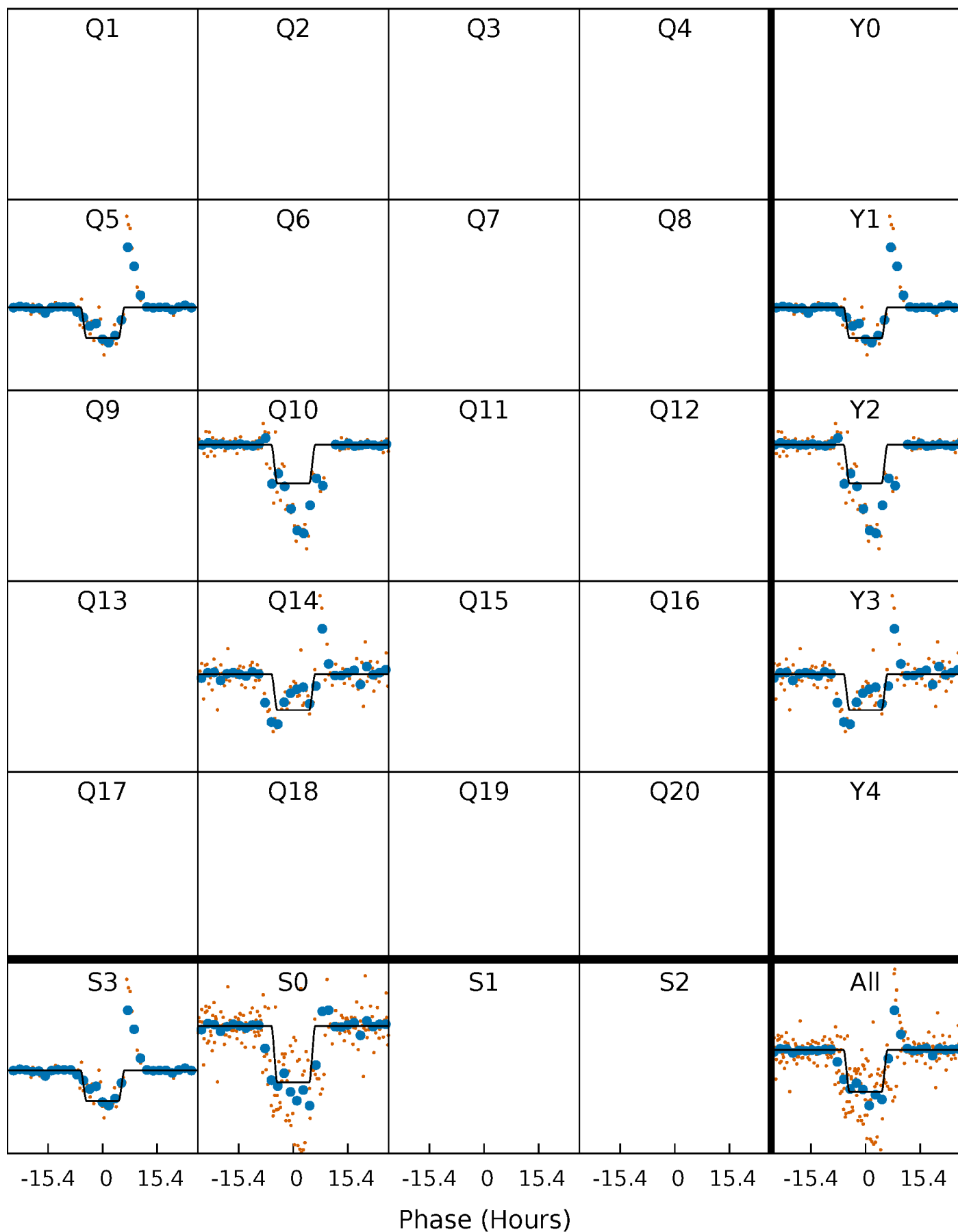
DV Quarter-Phased Transit Curves

TCE 010905040-07 $P=440.968538$ Days $T_0=480.754313$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

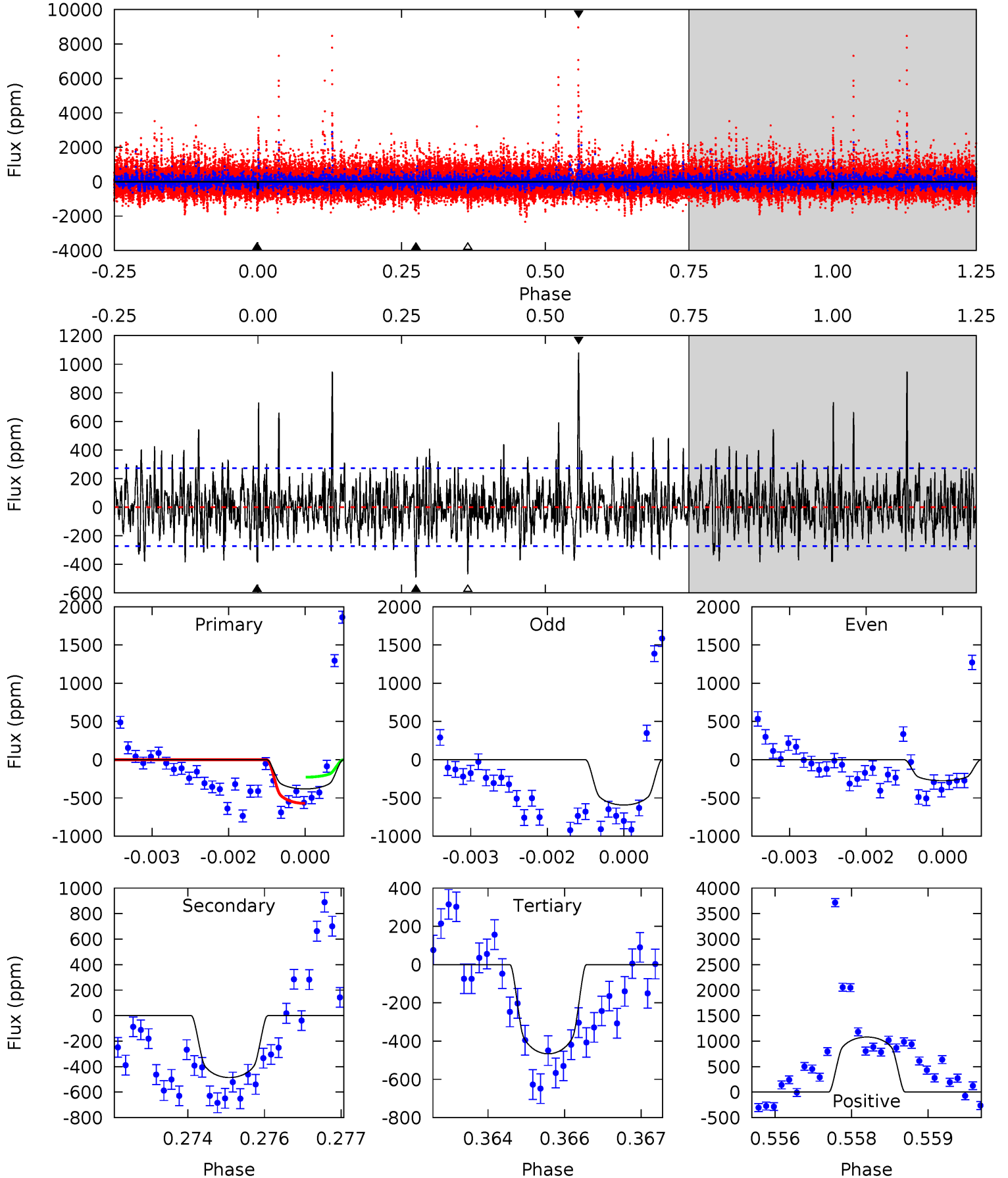
TCE 010905040-07 $P=440.983470$ Days $T_0=480.744341$ (BKJD)



DV Model-Shift Uniqueness Test

010905040-07, P = 440.968538 Days, E = 39.785775 Days

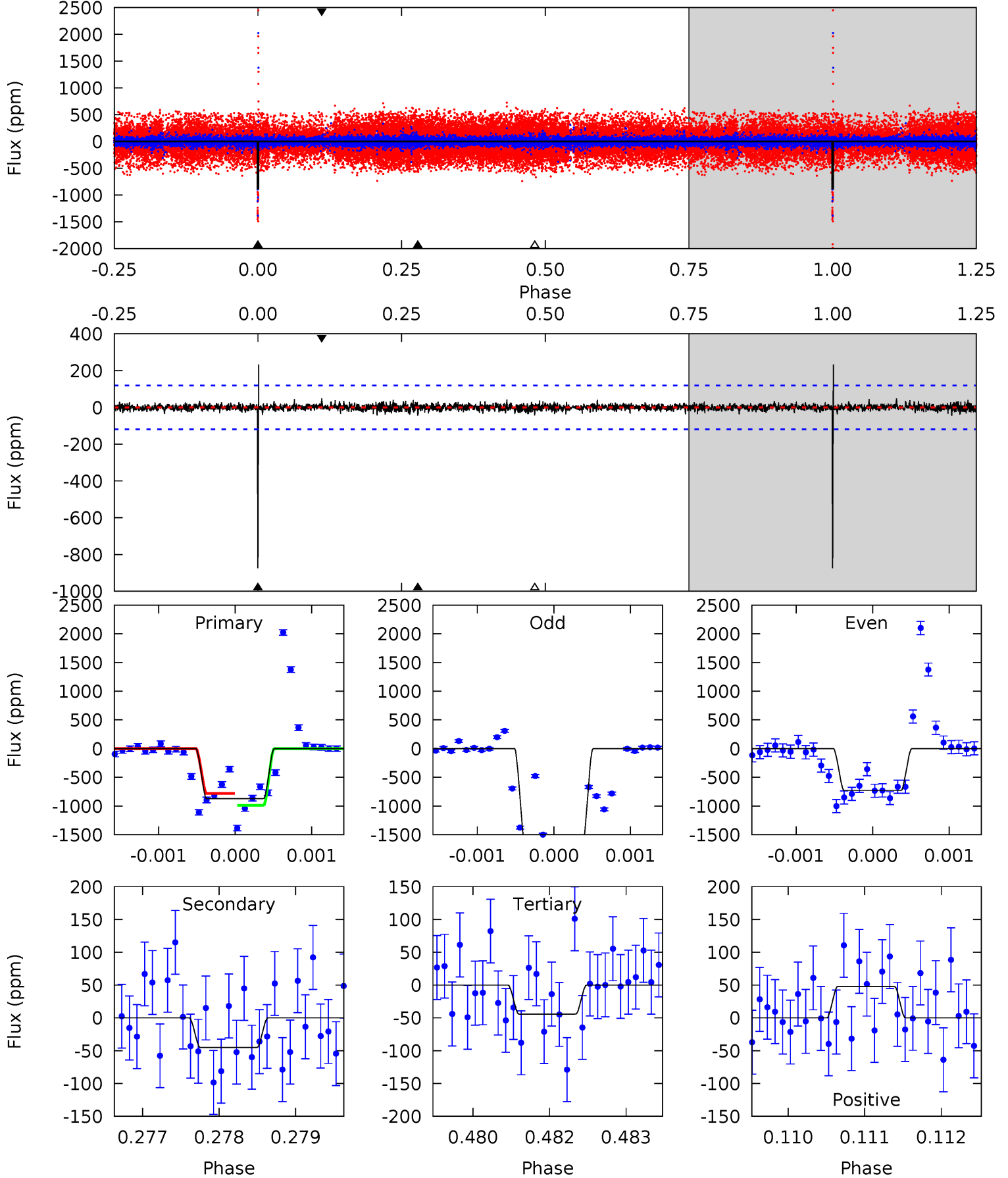
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.52	9.56	9.18	21.3	5.37	3.16	2.85	-1.66	-13.7	0.38	-11.7	2.33	0.64	0.69	3.39



Alt Model-Shift Uniqueness Test

010905040-07, P = 440.983470 Days, E = 39.760871 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.9	2.06	2.02	2.18	5.43	3.25	0.50	37.9	37.7	0.04	-0.12	24.4	1.33	0.21	4.65



Stellar Parameters For KIC 010905040

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5126^{+154}_{-138}	$4.578^{+0.078}_{-0.045}$	$-0.540^{+0.350}_{-0.300}$	$0.696^{+0.073}_{-0.073}$	$0.668^{+0.087}_{-0.037}$	$2.792^{+0.855}_{-0.493}$
	+3%/-3%	+2%/-1%	+65%/-56%	+10%/-10%	+13%/-6%	+31%/-18%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010905040-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-486 ± 51	$2.92^{+0.32}_{-0.30}$	263^{+10}_{-10}	4112^{+190}_{-183}	31076^{+7889}_{-6144}
Alt.	-45 ± 22	$2.27^{+0.29}_{-0.29}$	263^{+11}_{-10}	3047^{+235}_{-299}	4972^{+3088}_{-2636}

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 $A_{obs} \gg 1.0$

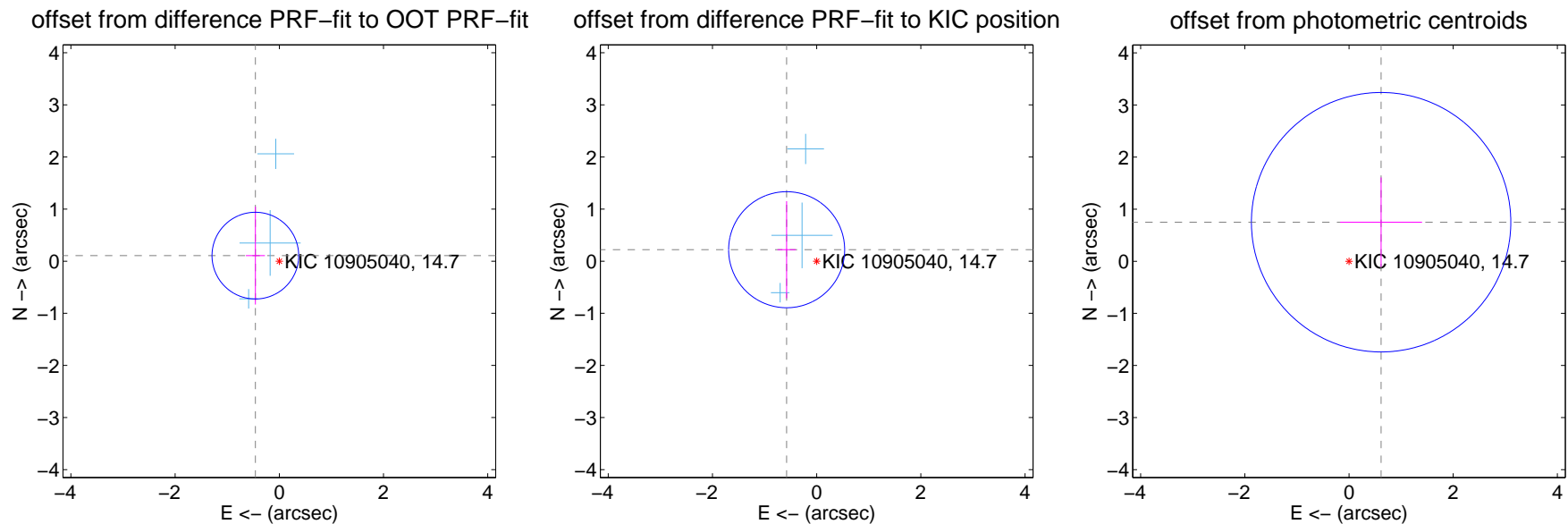
DV Centroid Data

Supplemental centroid analysis for 010905040-07. Kepler magnitude: 14.70. Transit SNR 8.88

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	0.472 ± 0.277	1.70	0.460 ± 0.183	0.107 ± 0.940
PRF-fit source offset from KIC position	0.617 ± 0.371	1.66	0.576 ± 0.176	0.220 ± 0.932
photometric centroid source offset	0.97 ± 0.83	1.17	-0.62 ± 0.79	0.75 ± 0.86

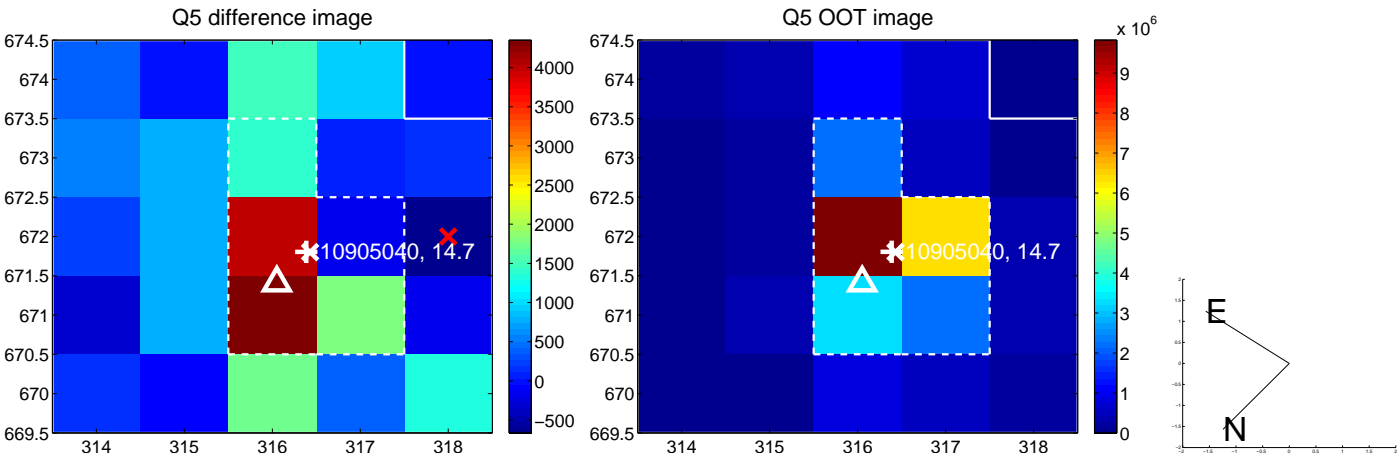


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

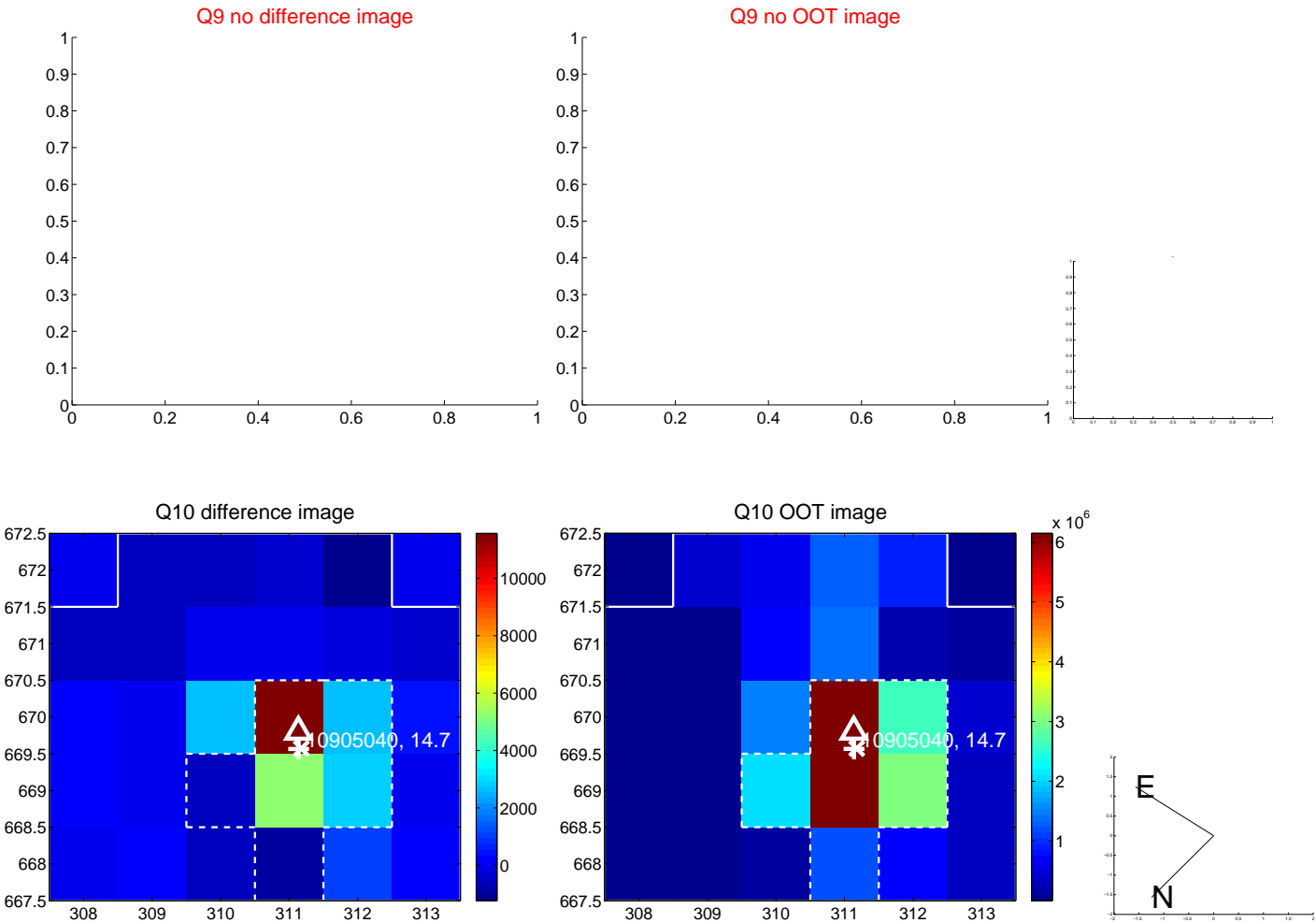
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

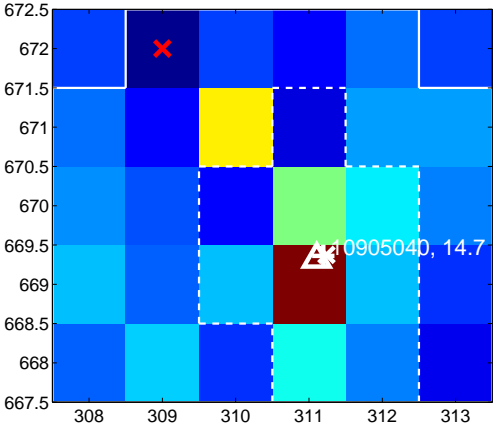
Q13 no difference image



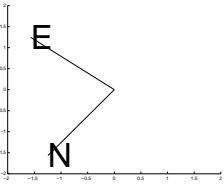
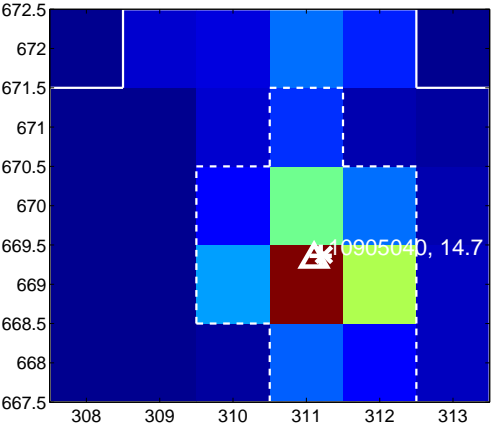
Q13 no OOT image



Q14 difference image



Q14 OOT image



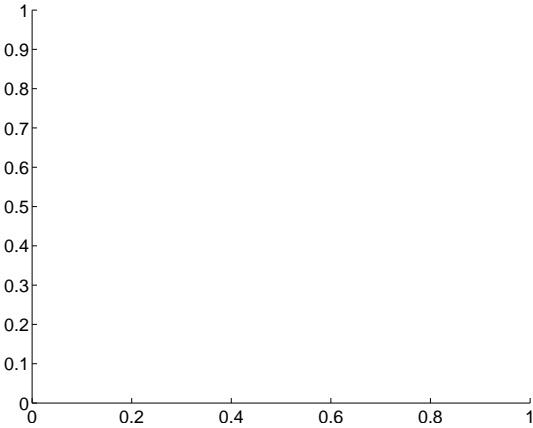
Q15 no difference image



Q15 no OOT image



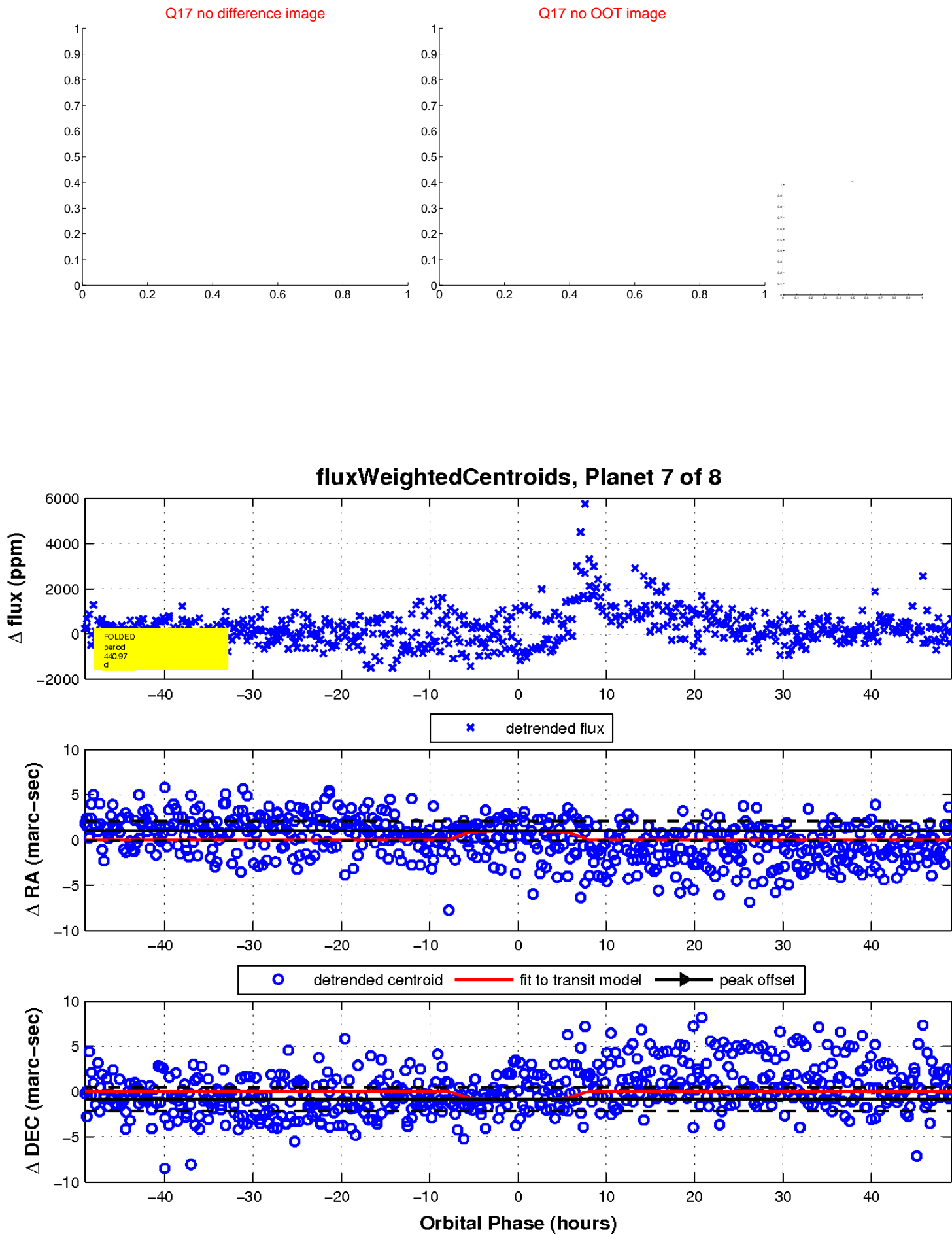
Q16 no difference image



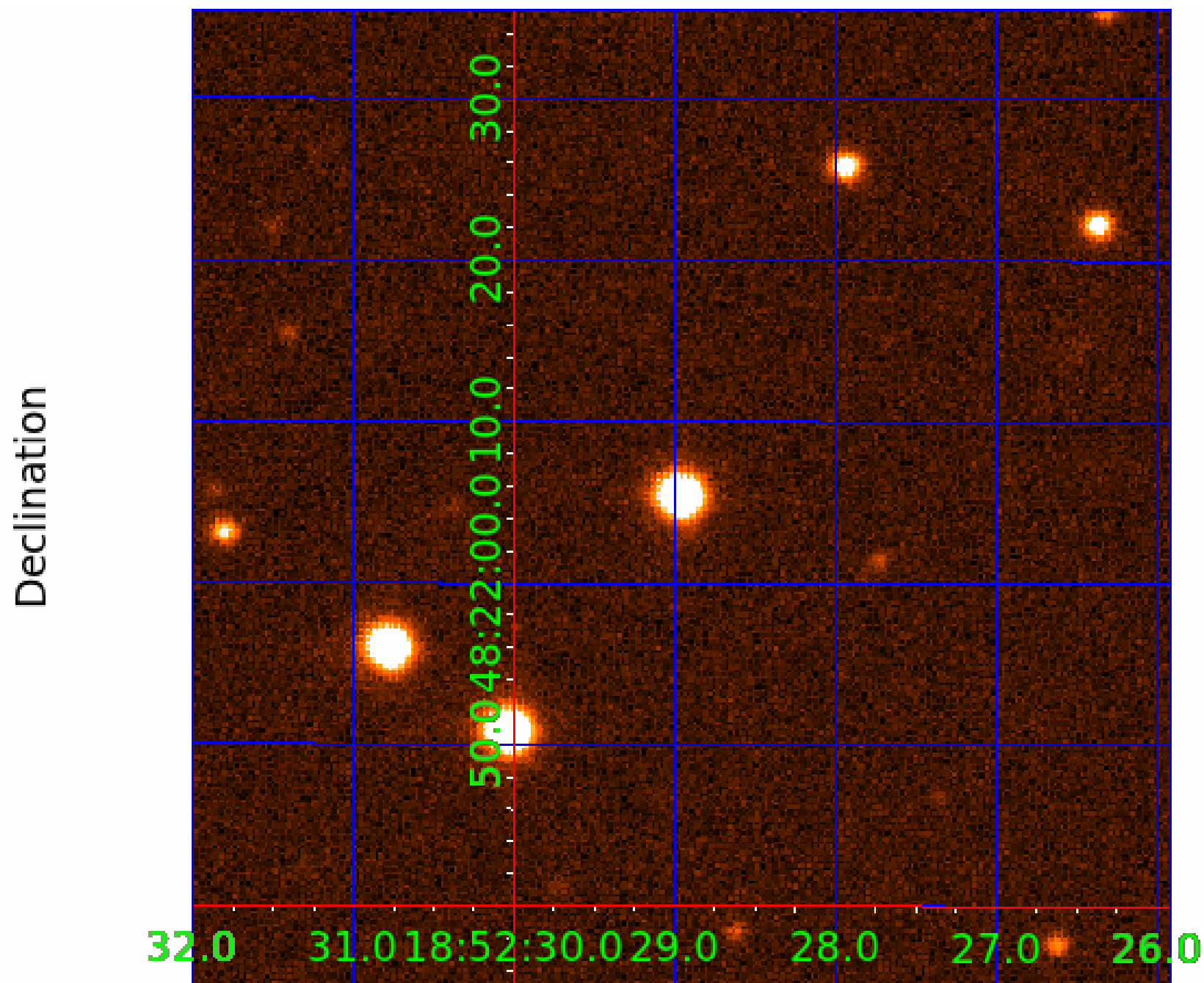
Q16 no OOT image



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



UKIRT Image



KIC 010905040

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})
010905040-01	OBS	No	414.463497	210.683462	735.0	8.739	15.6	6.2	0.70	5126	1.89	0.33
010905040-02	OBS	No	251.140477	224.879202	1031.3	12.719	16.6	8.0	0.70	5126	2.78	0.65
010905040-03	OBS	No	348.542561	386.512414	2135.0	11.615	16.5	13.4	0.70	5126	4.76	0.42
010905040-04	OBS	No	519.815036	497.725959	1164.0	6.609	14.8	8.3	0.70	5126	2.39	0.24
010905040-05	OBS	No	523.513314	453.336255	1219.3	3.269	10.7	8.8	0.70	5126	2.83	0.24
010905040-06	OBS	No	341.151907	165.641850	821.9	15.000	12.7	-1.0	0.70	5126	1.95	0.43
010905040-07	OBS	No	440.968538	480.754313	1250.4	16.375	11.4	8.9	0.70	5126	2.94	0.30
010905040-08	OBS	No	399.619133	456.057227	967.7	4.500	9.9	-1.0	0.70	5126	2.12	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010905040-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010905040-06	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010905040-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010905040-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

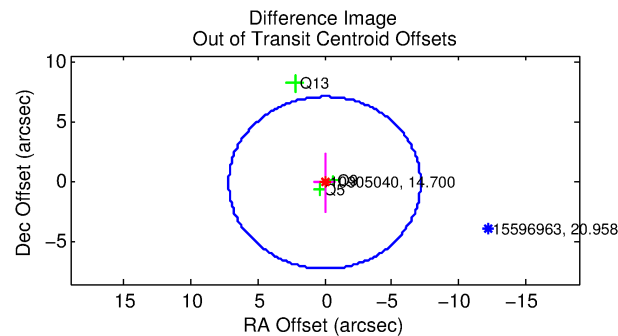
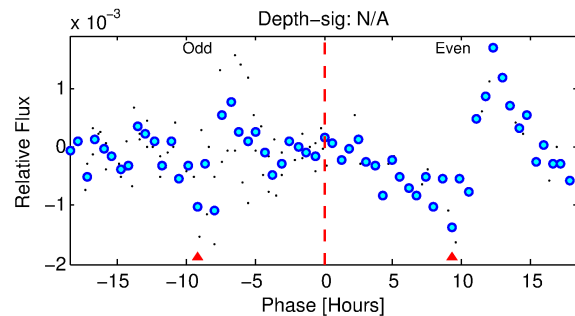
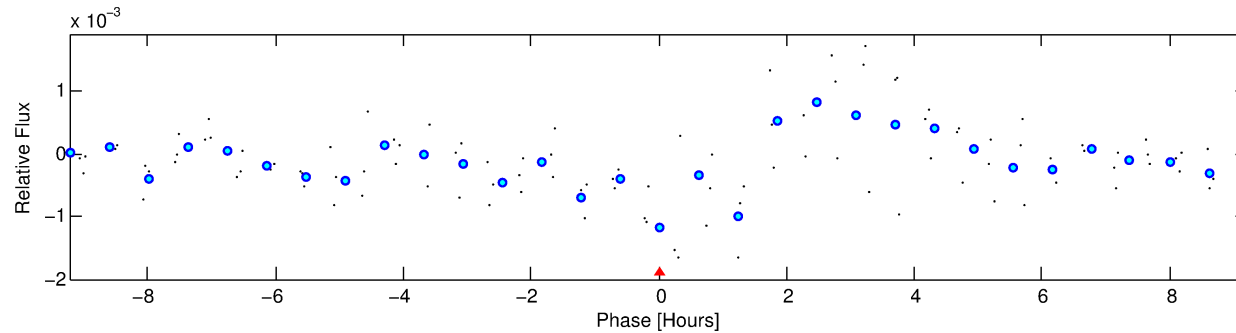
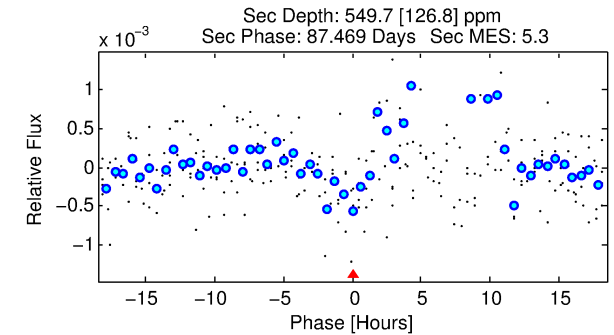
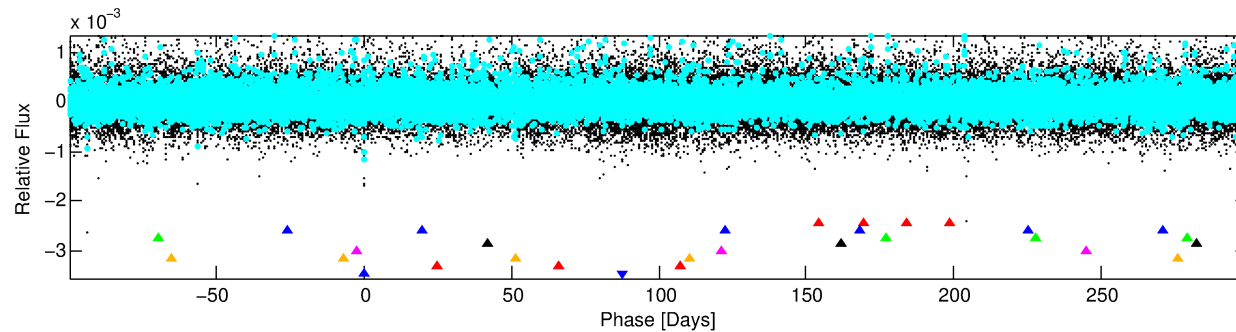
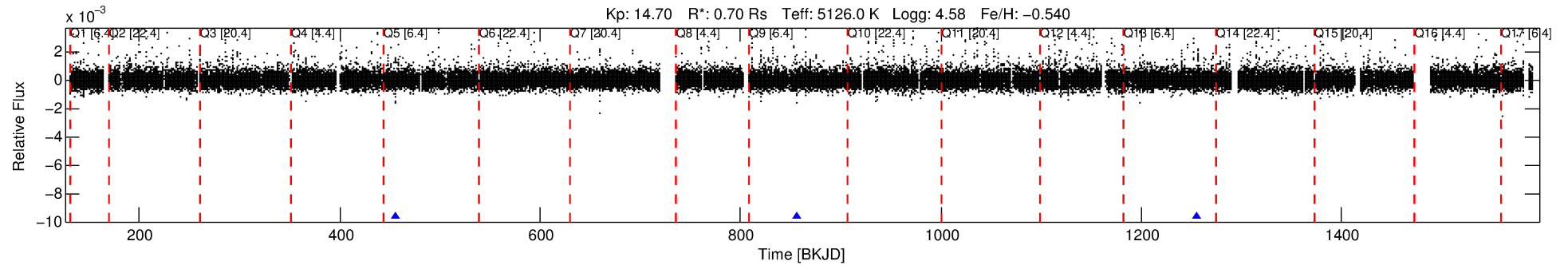
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010905040-08

No Significant Match Found

DV One-Page Summary

KIC: 10905040 Candidate: 8 of 8 Period: 399.619 d



TPS TCE Results:

Period = 399.61913 d
Epoch = 456.0572 BKJD

DV fit results are unavailable

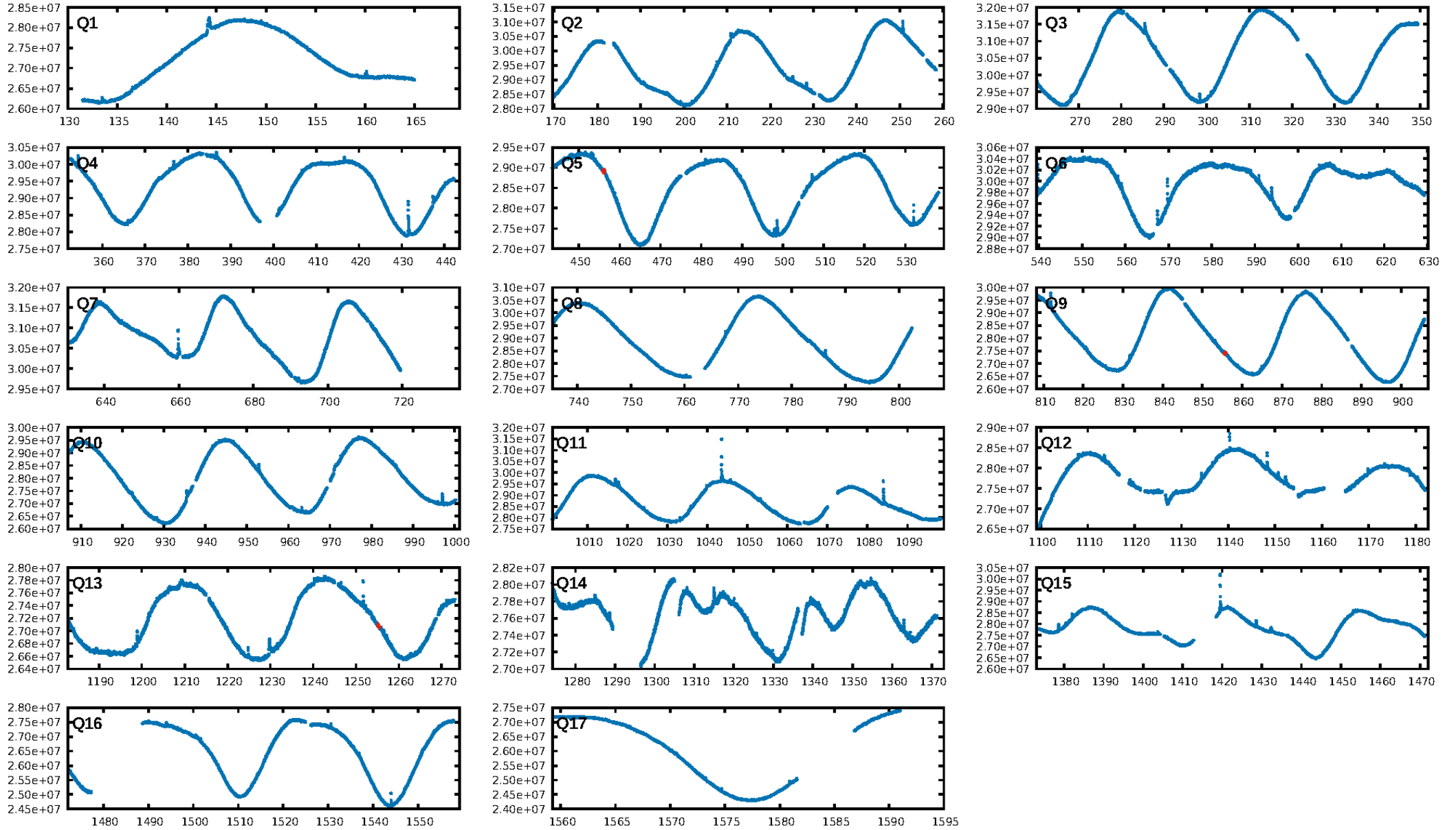
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [98.41 σ]
LongPeriod-sig: 100.0% [36.24 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.129
Centroid-sig: 79.9%
Centroid-so: 0.676 arcsec [0.55 σ]
OotOffset-rm: 0.081 arcsec [0.03 σ]
KicOffset-rm: 0.104 arcsec [0.14 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

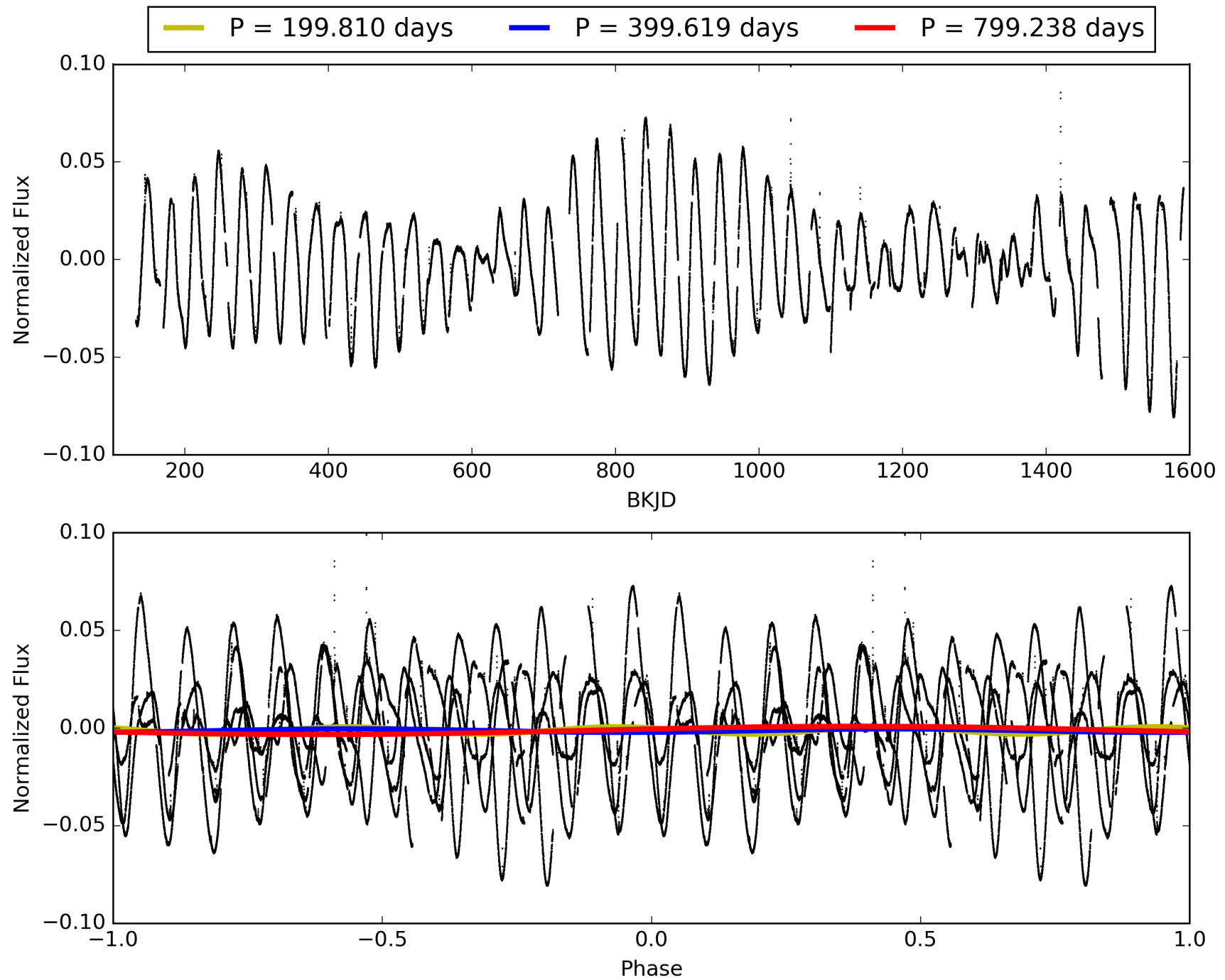
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:07:44 Z

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

TCE 010905040-08, PDC Light Curves

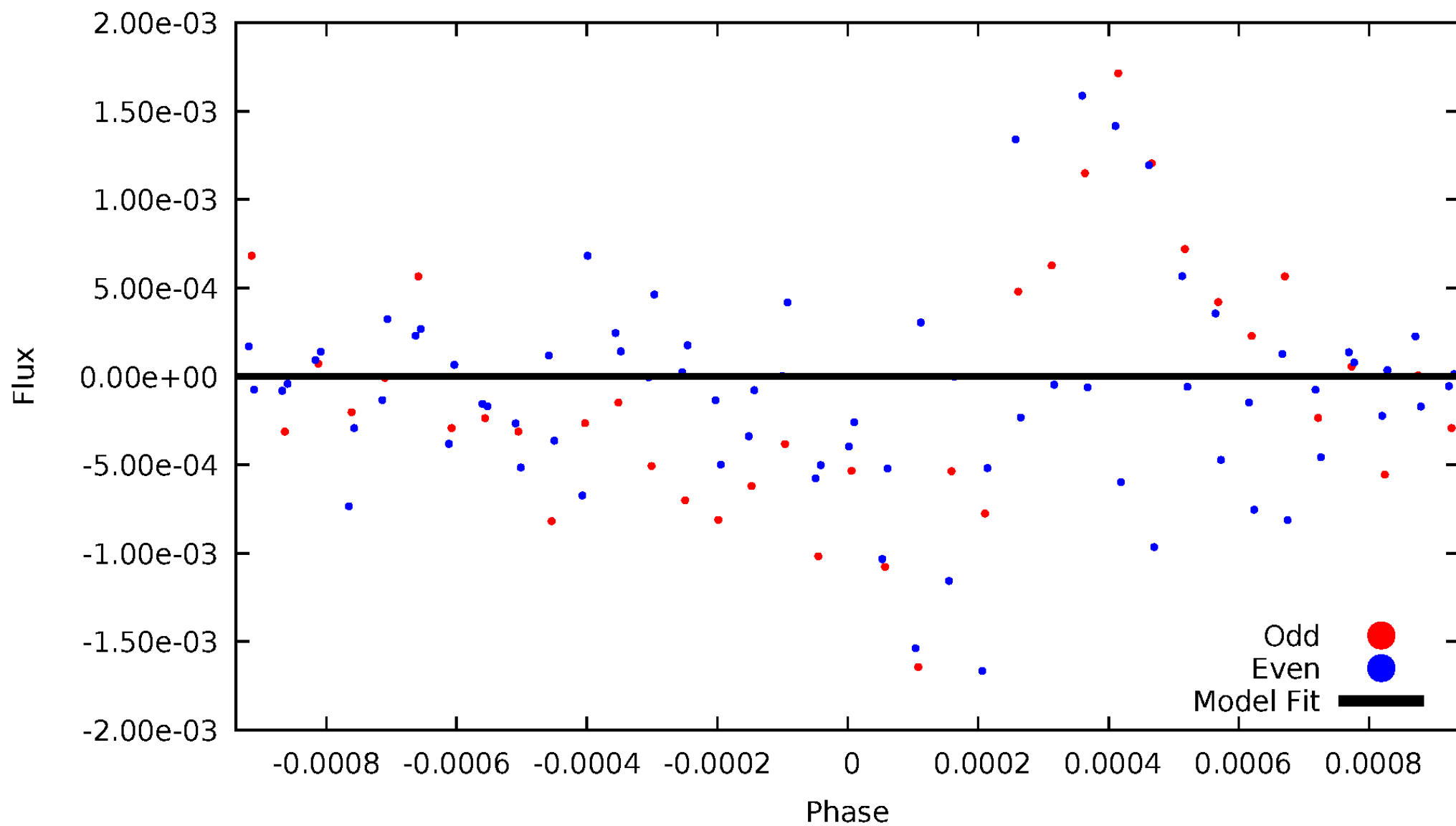


TCE 010905040-08



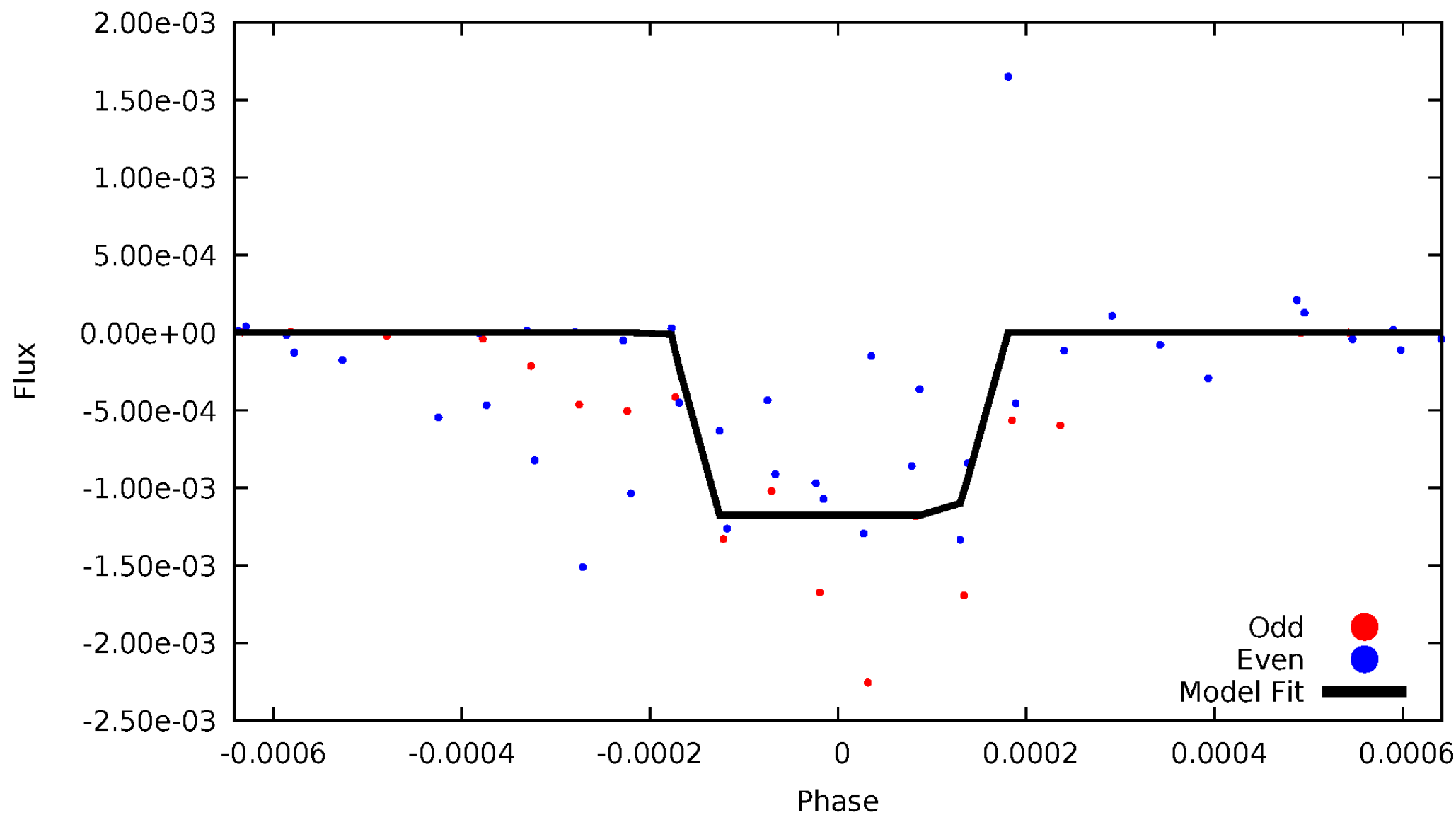
DV Odd/Even

TCE 010905040-08



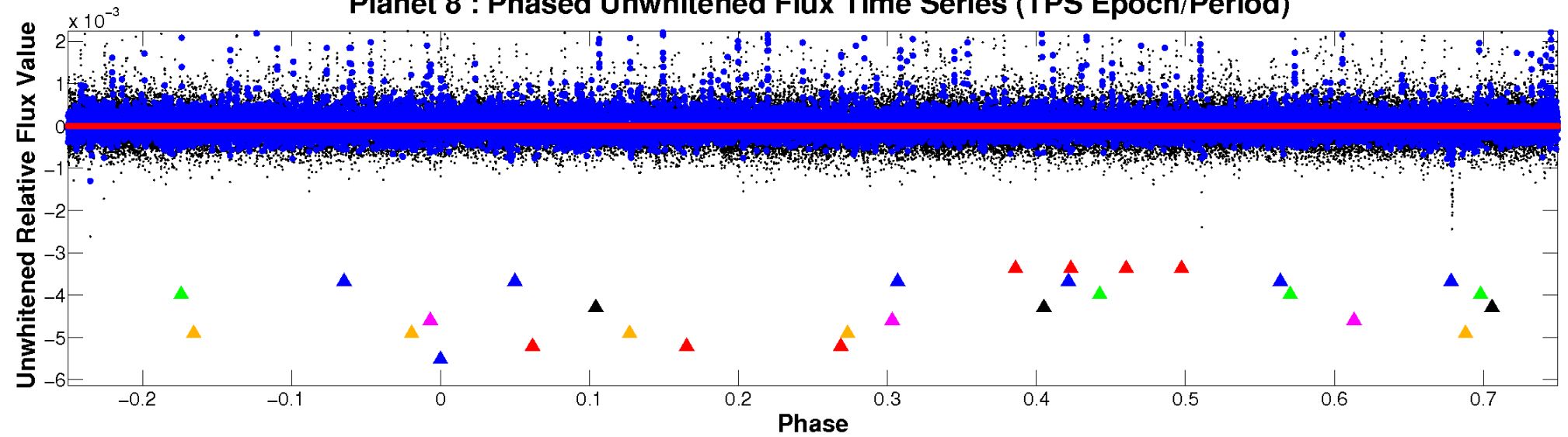
ALT Odd/Even

TCE 010905040-08



Non-Whitened Vs. Whitened Light Curve

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

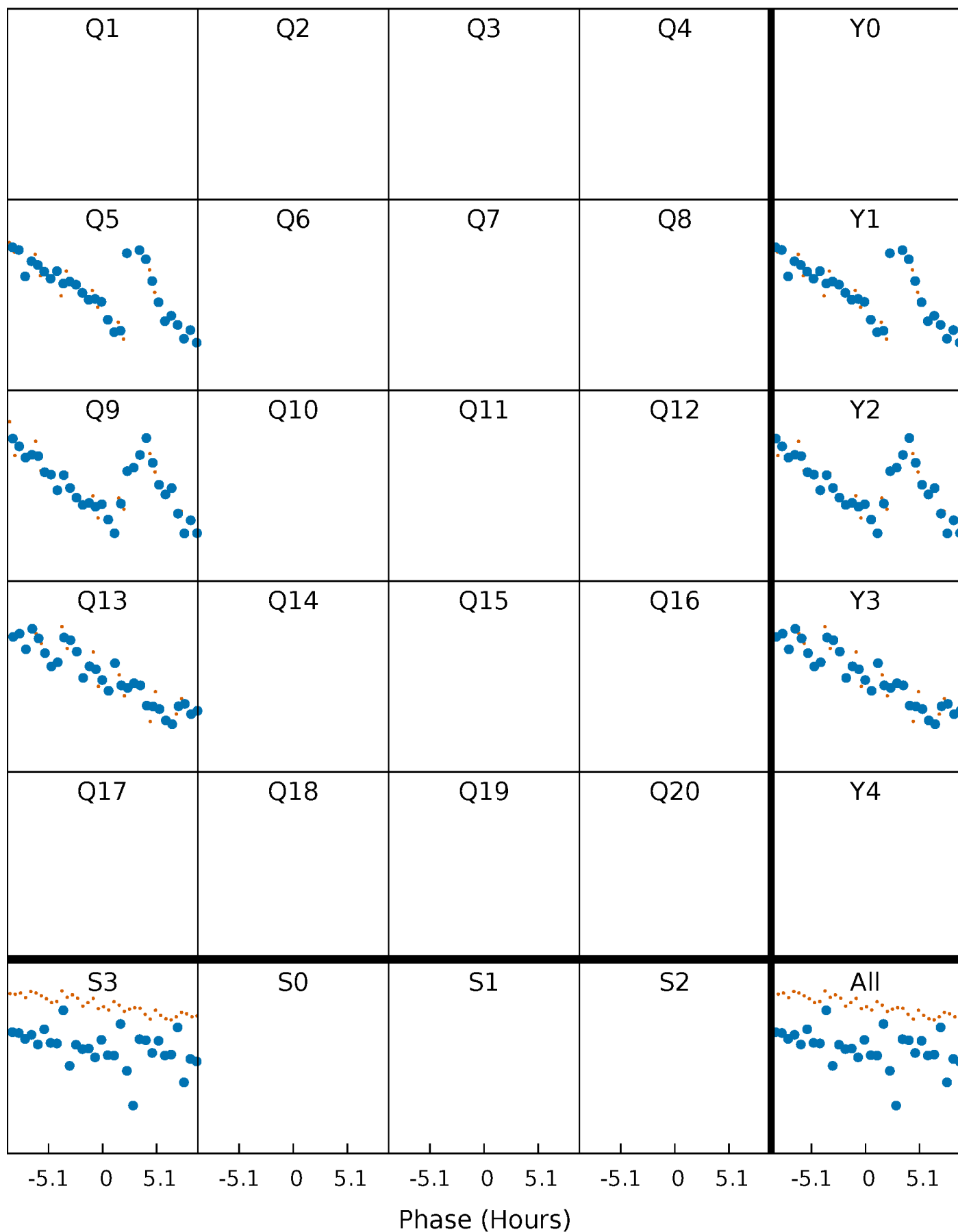


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



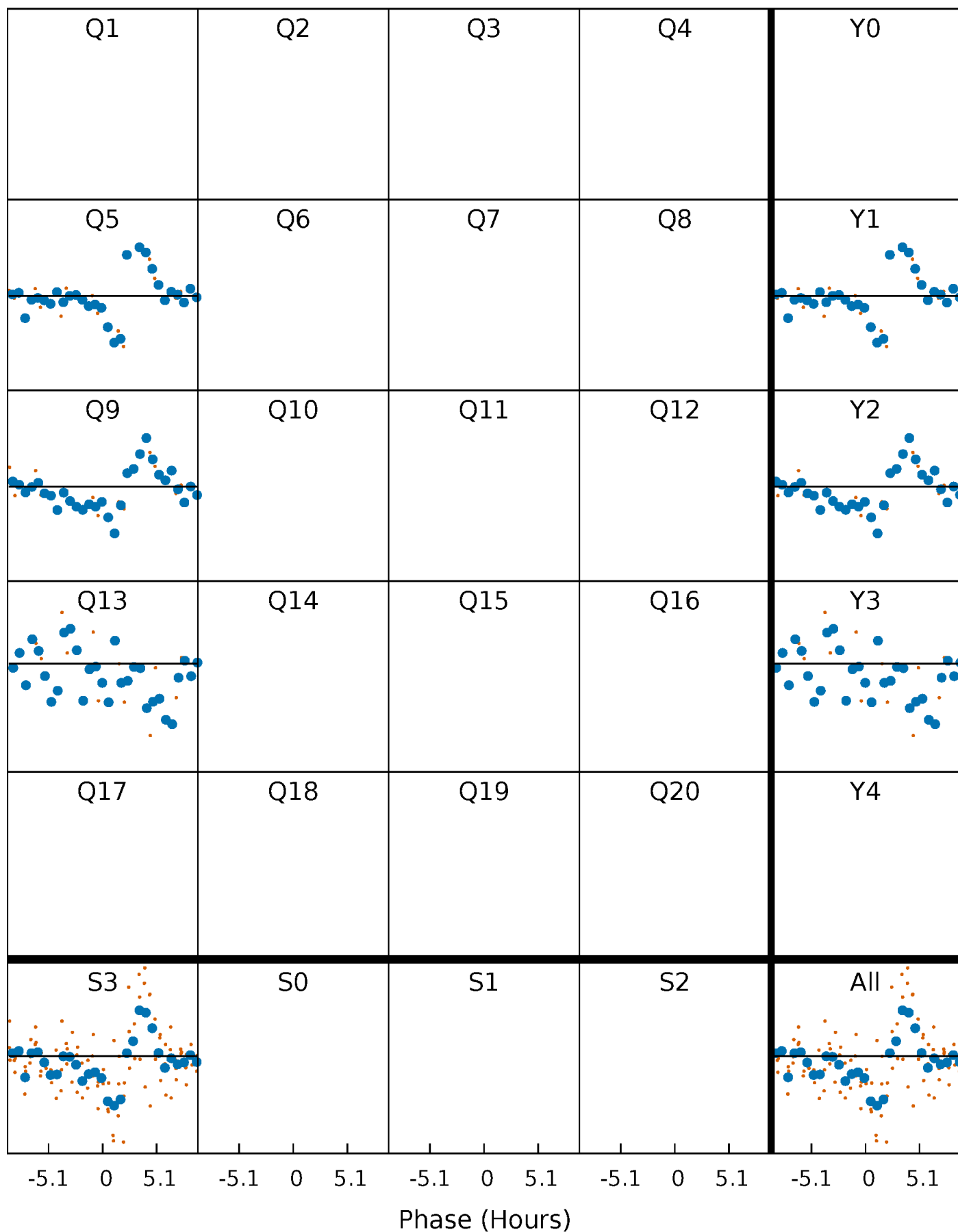
PDC Quarter-Phased Transit Curves

TCE 010905040-08 $P=399.619133$ Days $T_0=456.057227$ (BKJD)



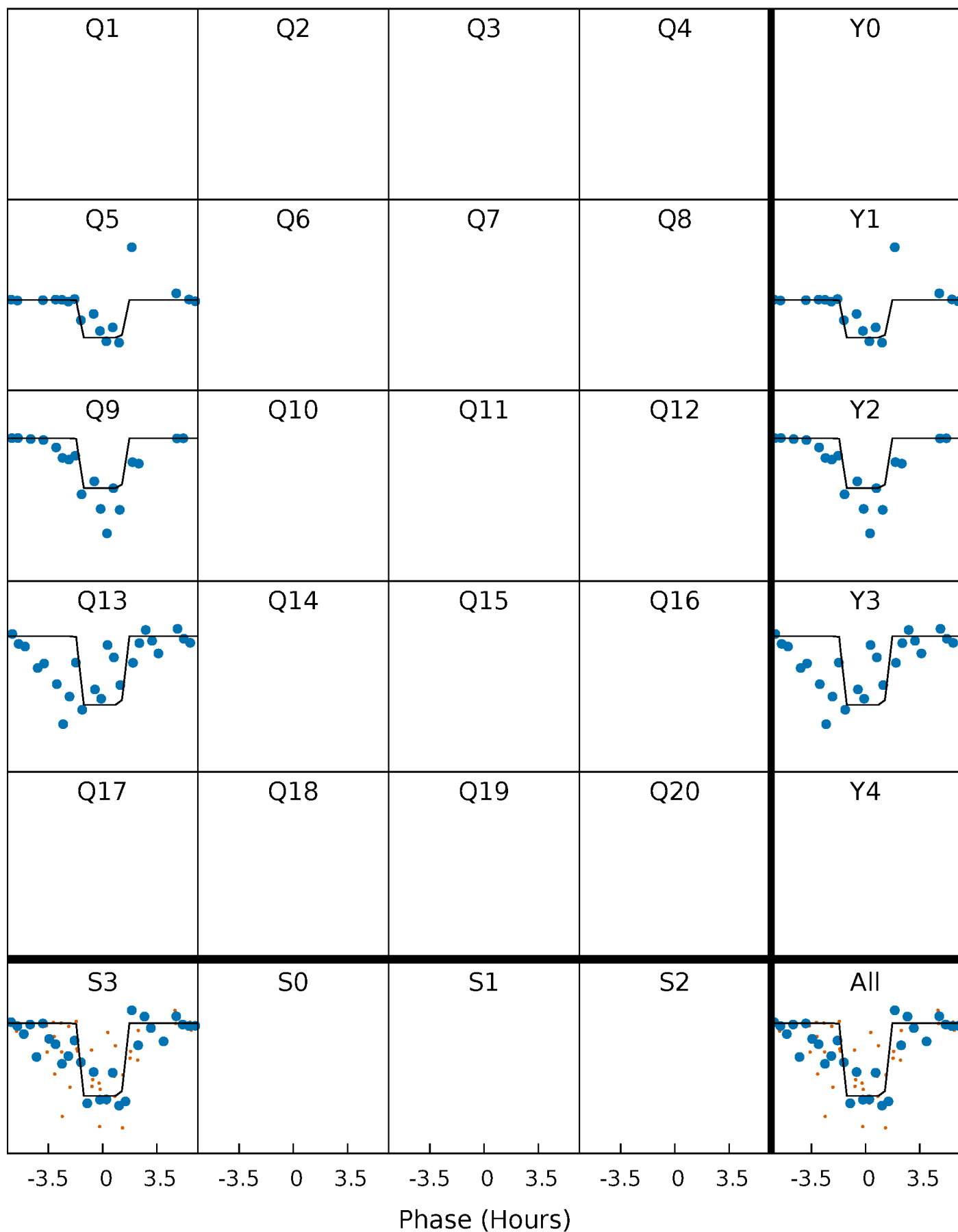
DV Quarter-Phased Transit Curves

TCE 010905040-08 $P=399.619133$ Days $T_0=456.057227$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

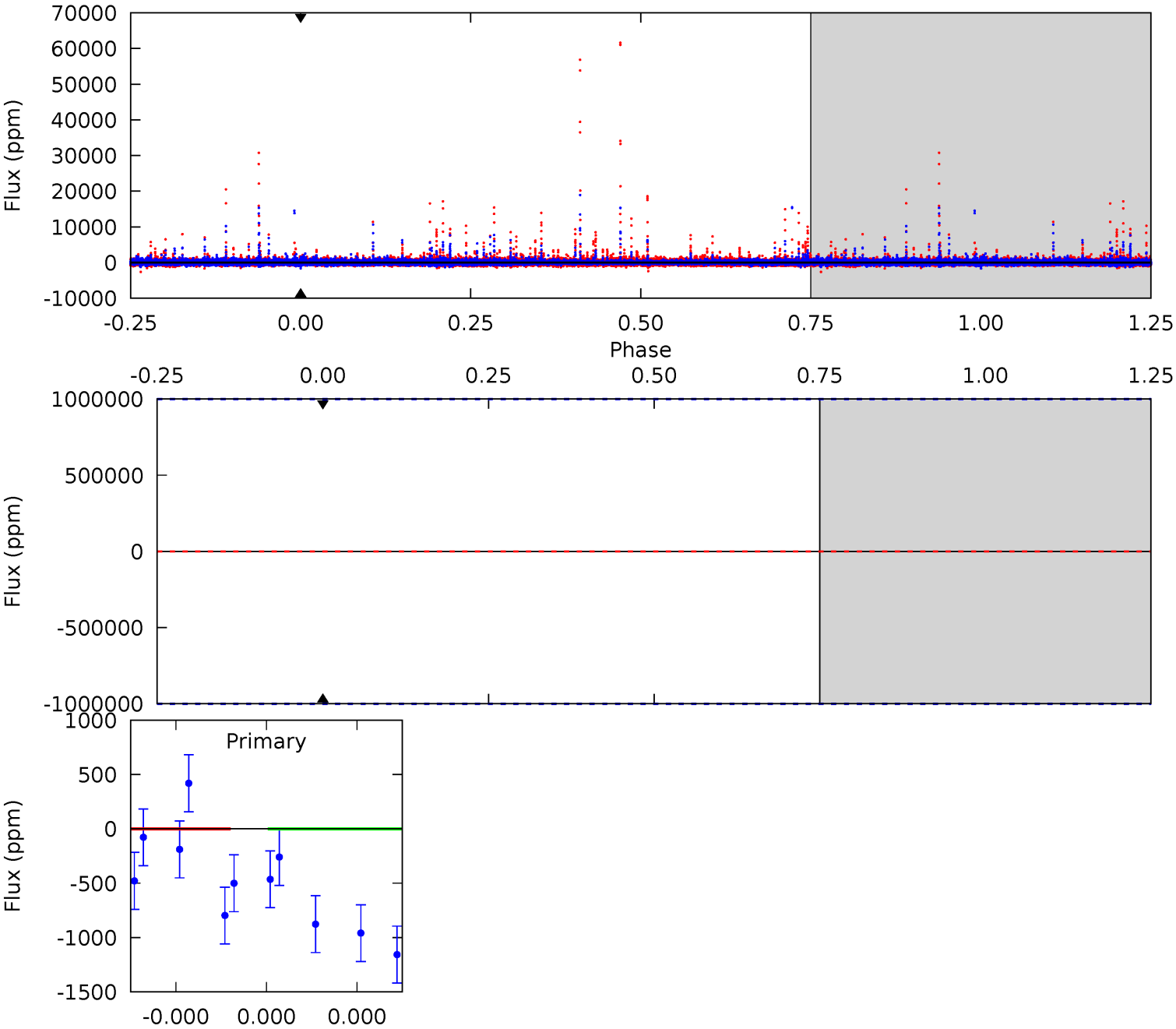
TCE 010905040-08 $P=399.619133$ Days $T_0=456.087831$ (BKJD)



DV Model-Shift Uniqueness Test

010905040-08, P = 399.619133 Days, E = 56.438094 Days

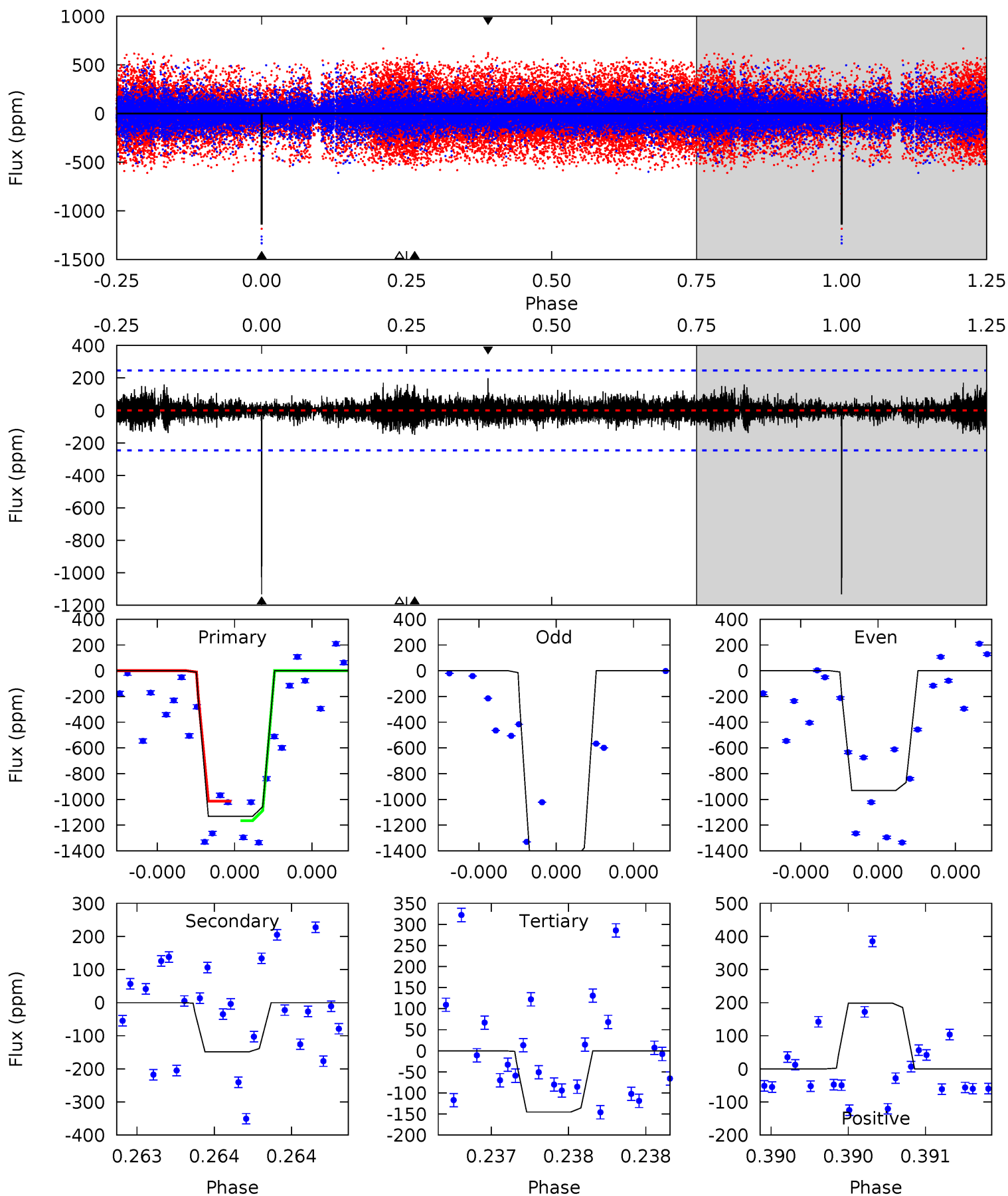
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010905040-08, P = 399.619133 Days, E = 56.468698 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.9	3.40	3.33	4.55	5.63	3.57	0.73	22.6	21.4	0.07	-1.14	7.10	1.18	0.15	1.80



Stellar Parameters For KIC 010905040

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5126^{+154}_{-138}	$4.578^{+0.078}_{-0.045}$	$-0.540^{+0.350}_{-0.300}$	$0.696^{+0.073}_{-0.073}$	$0.668^{+0.087}_{-0.037}$	$2.792^{+0.855}_{-0.493}$
	+3%/-3%	+2%/-1%	+65%/-56%	+10%/-10%	+13%/-6%	+31%/-18%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010905040-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$6.25^{+5.53}_{-4.31}$	272^{+10}_{-10}	-3191^{+17315}_{-10556}	$-5522.146^{+2133743.585}_{-1888890.139}$
Alt.	-149 ± 44	$5.97^{+5.99}_{-3.99}$	272^{+10}_{-9}	2756^{+1068}_{-441}	1953^{+16928}_{-1459}

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 $A_{obs} \gg 1.0$

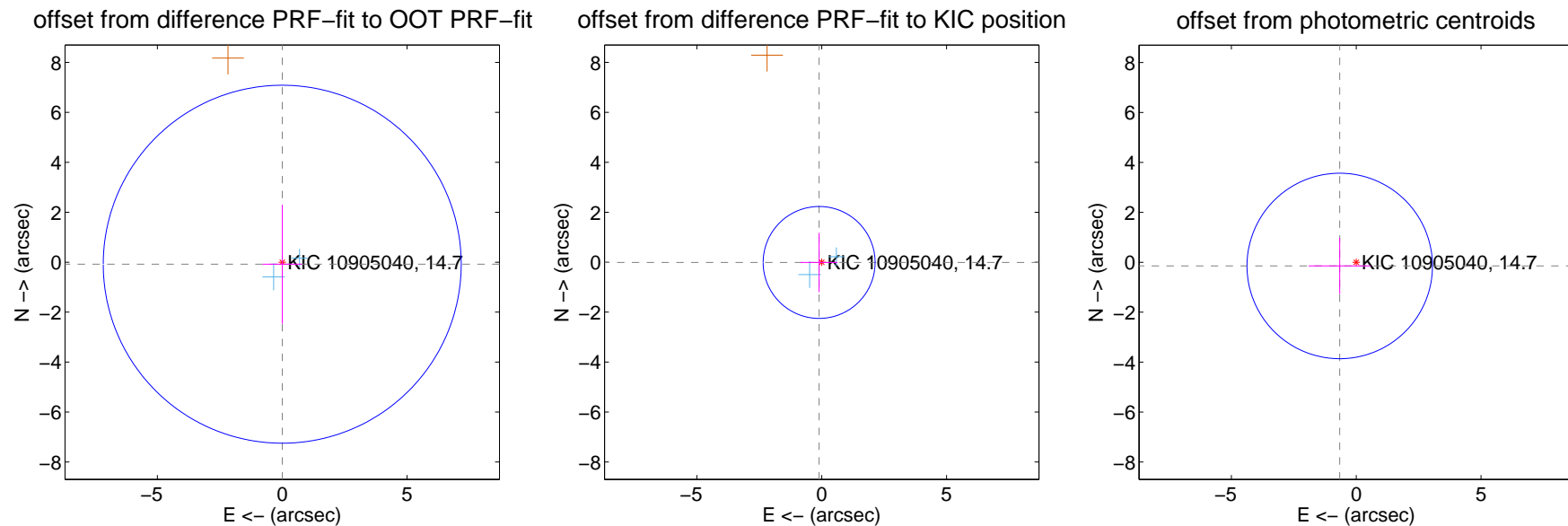
DV Centroid Data

Supplemental centroid analysis for 010905040-08. Kepler magnitude: 14.70. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

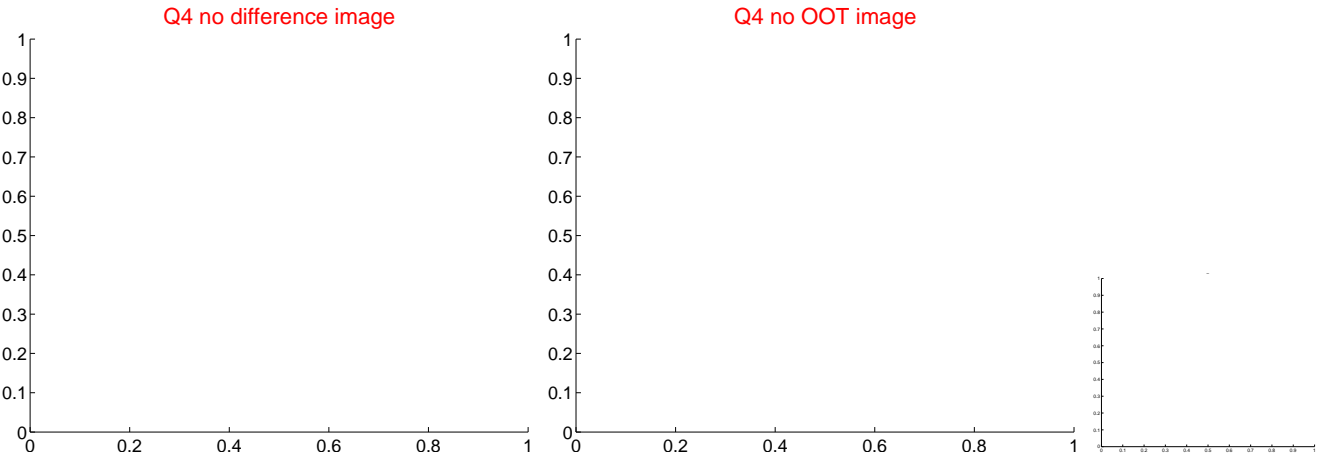
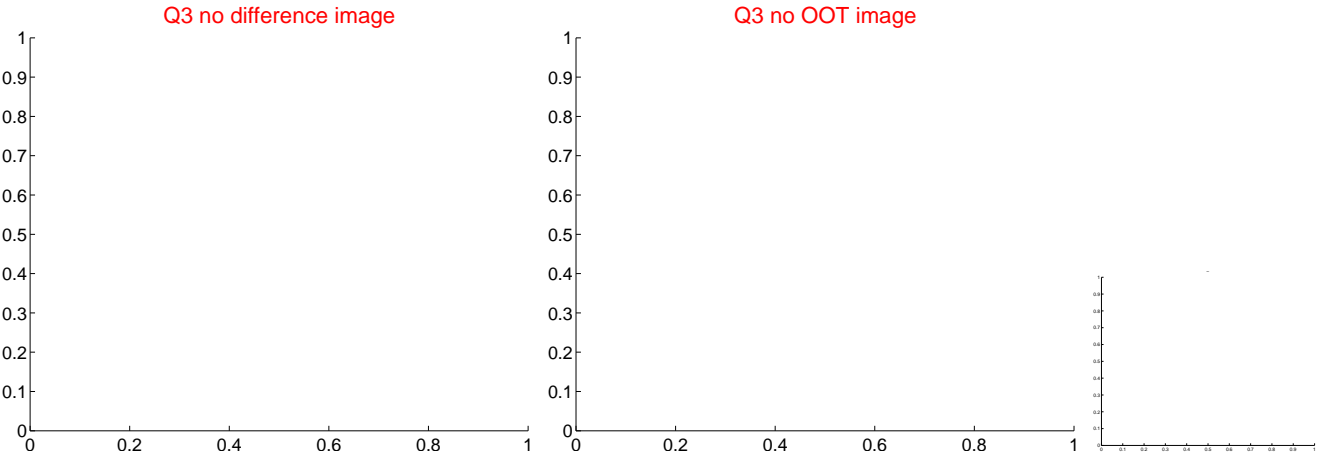
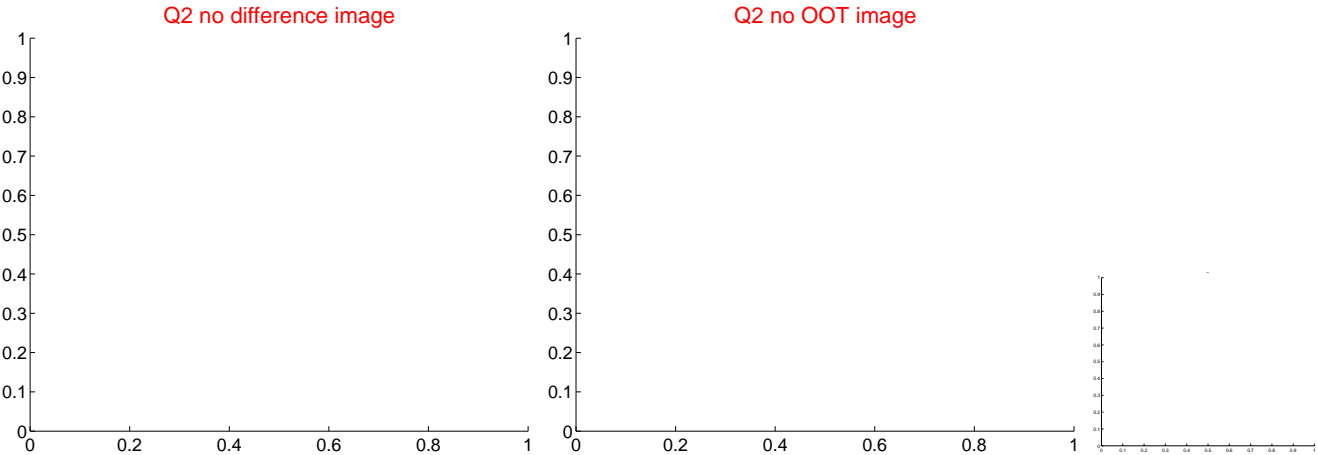
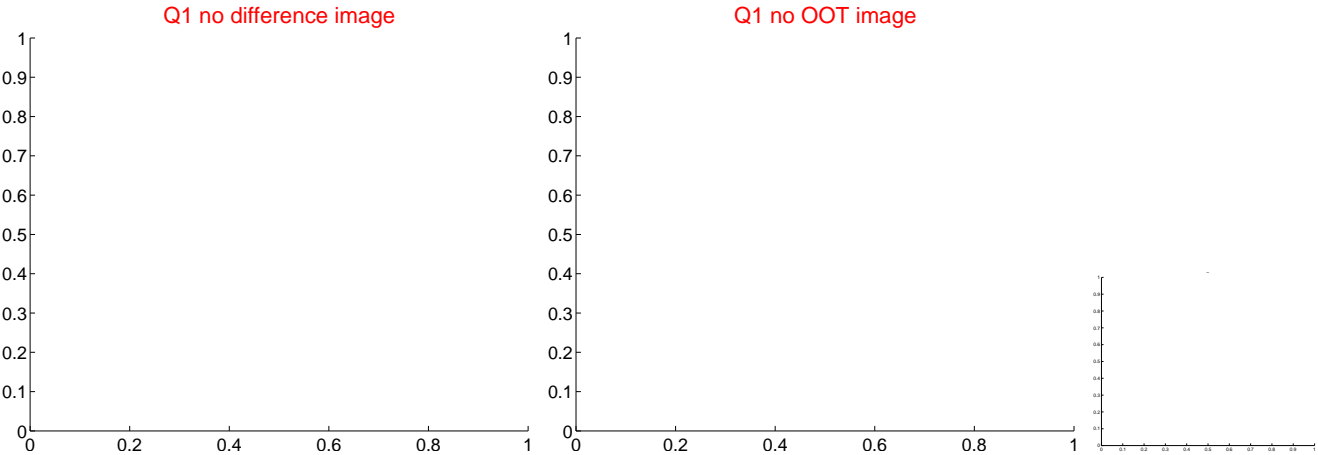
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.081 ± 2.388	0.03	-0.001 ± 0.790	-0.081 ± 2.381
PRF-fit source offset from KIC position	0.104 ± 0.747	0.14	0.104 ± 0.741	-0.010 ± 1.187
photometric centroid source offset	0.68 ± 1.24	0.55	0.66 ± 1.24	-0.15 ± 1.13

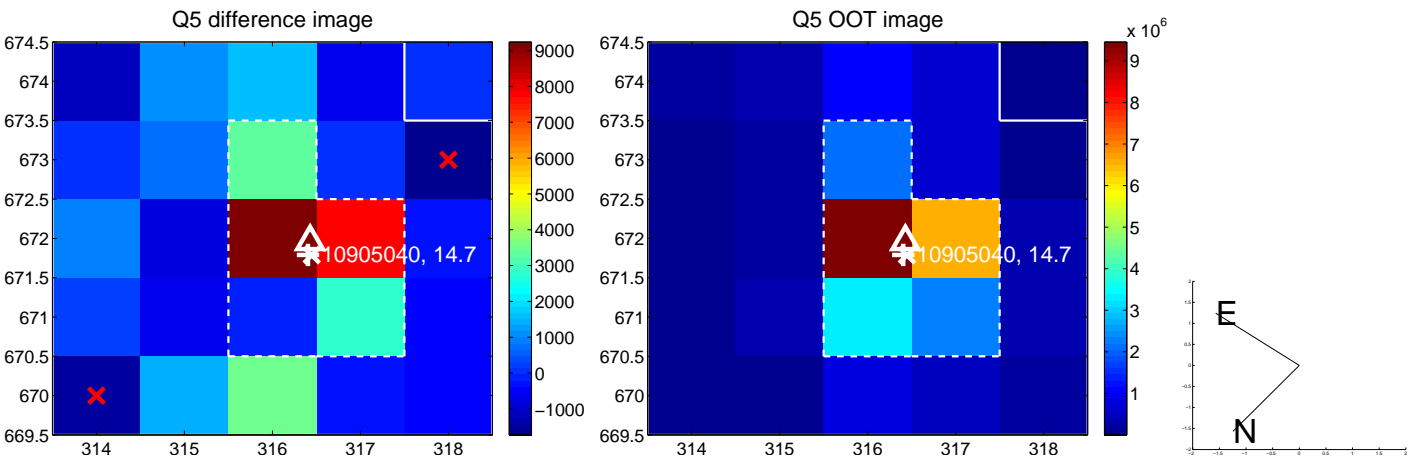


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

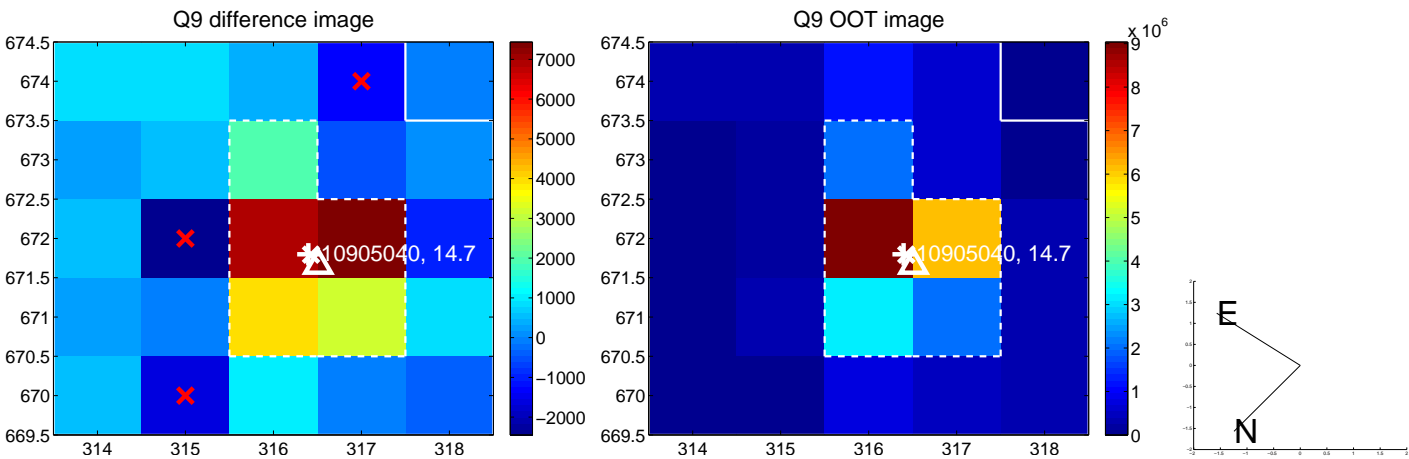
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



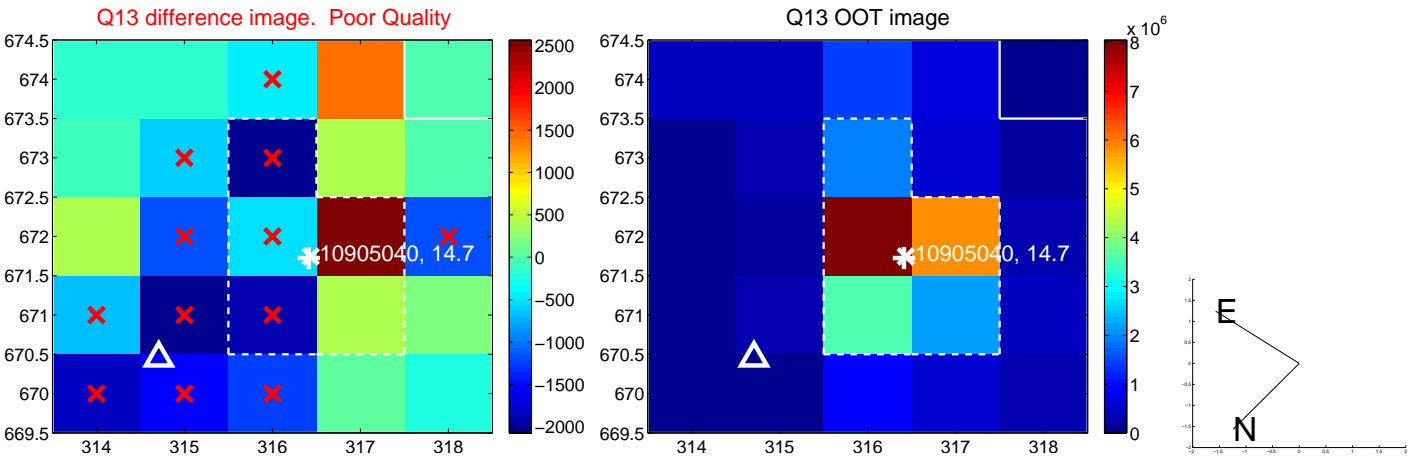
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



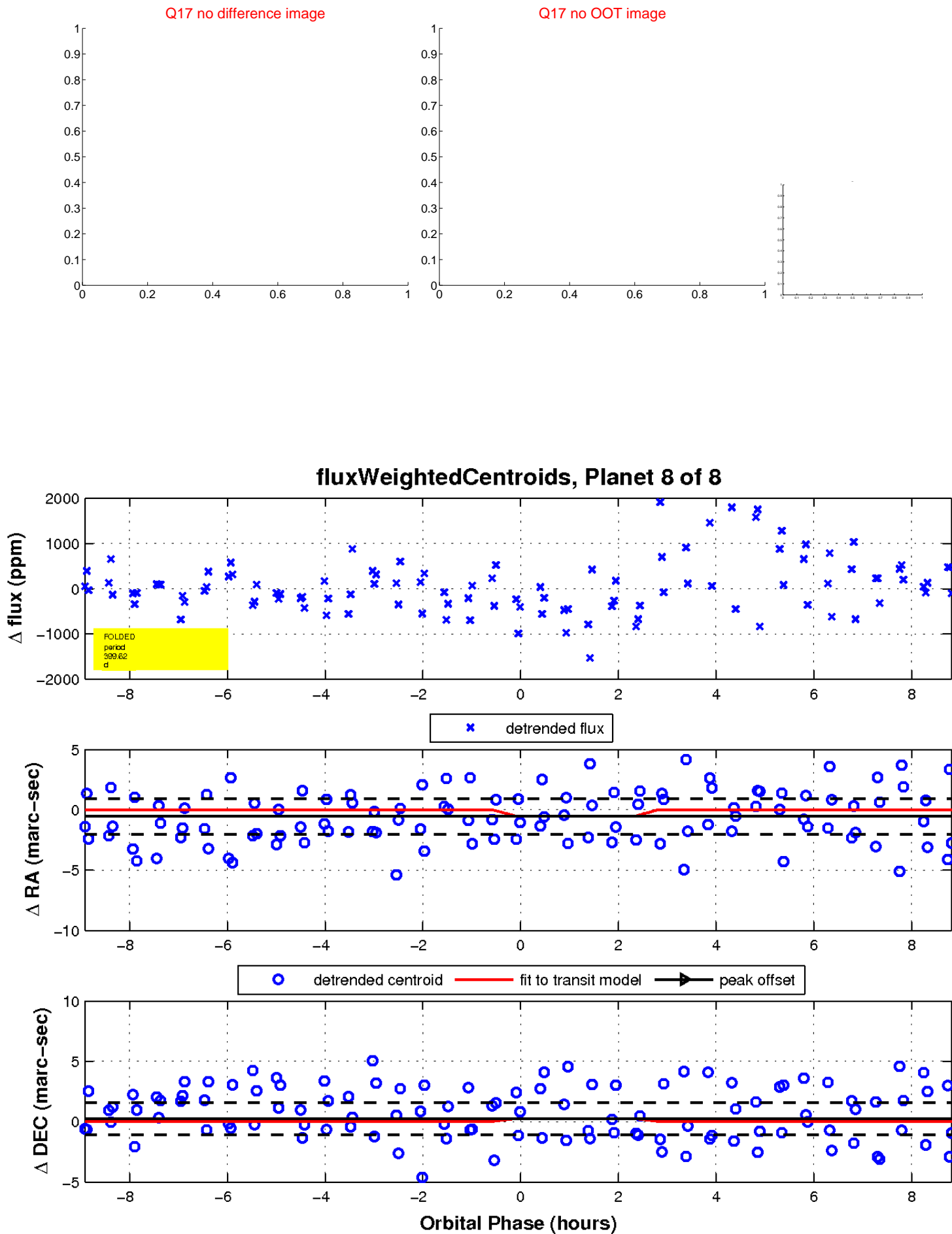
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

