

KIC 012253350

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})
012253350-01	OBS	No	408.497605	449.229090	528.6	3.148	21.1	4.3	1.30	5860	3.92	1.52
012253350-02	OBS	No	649.548954	240.927251	1543.0	13.438	14.6	3.1	1.30	5860	6.48	0.82
012253350-03	OBS	No	577.953207	363.294571	324.1	34.934	16.5	2.3	1.30	5860	2.35	0.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012253350-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_SATURATED
012253350-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
012253350-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED

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

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

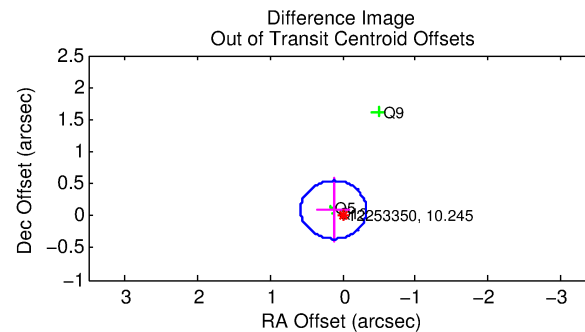
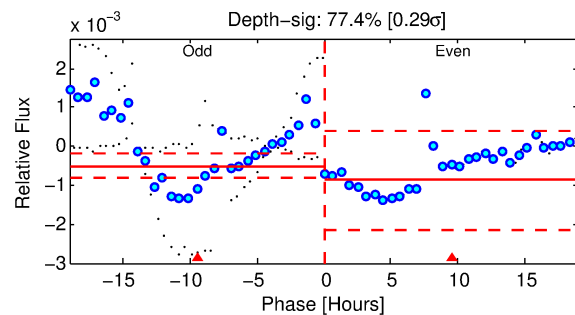
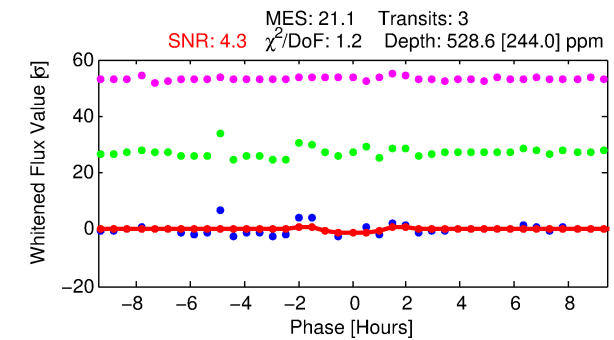
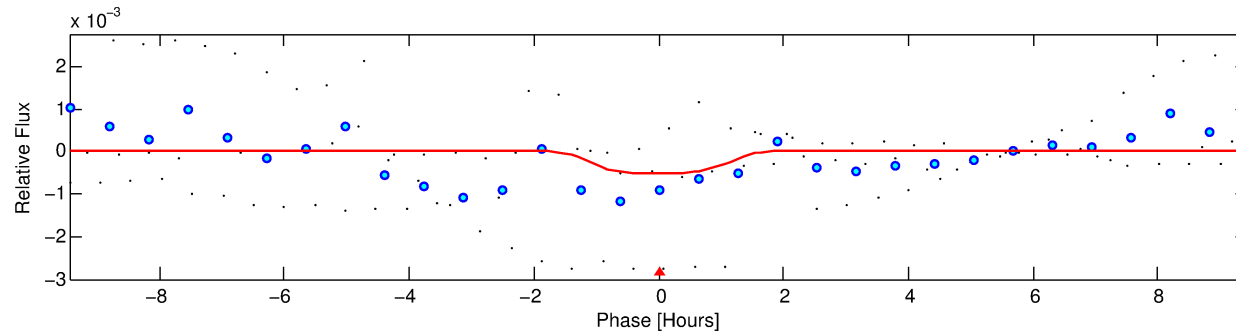
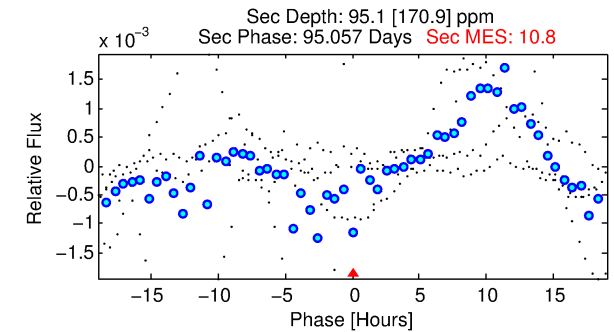
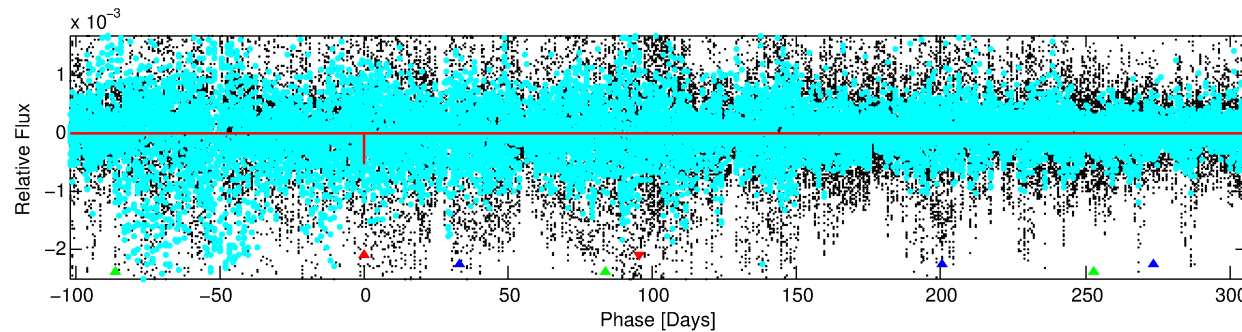
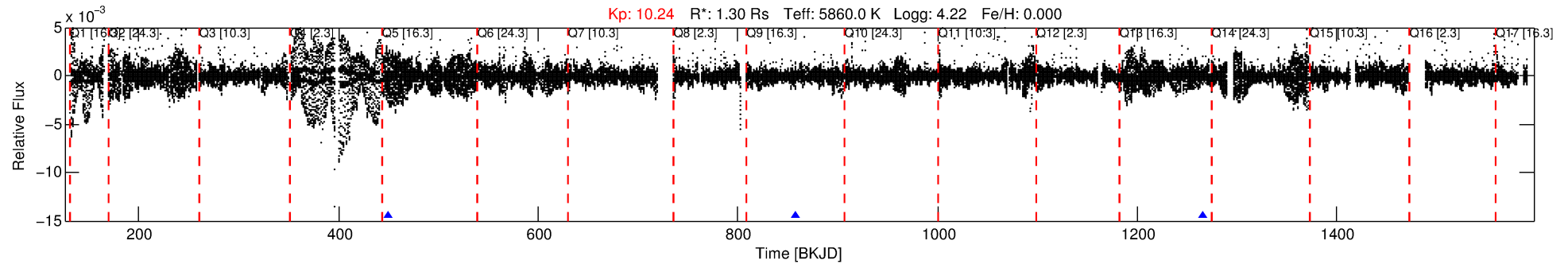
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012253350-01

No Significant Match Found

DV One-Page Summary

KIC: 12253350 Candidate: 1 of 3 Period: 408.498 d



DV Fit Results:

Period = 408.49761 [0.01252] d
Epoch = 449.2291 [0.0205] BKJD
Rp/R* = 0.0277 [0.0075]
a/R* = 347.44 [141.12]
b = 0.97 [0.03]
Seff = 1.52 [0.61]
Teq = 283 [29] K
Rp = 3.92 [1.49] Re
a = 1.0812 [0.2657] AU
Ag = 3974.15 [7608.35] [0.52 sigma]
Teffp = 3475 [1634] K [1.95 sigma]

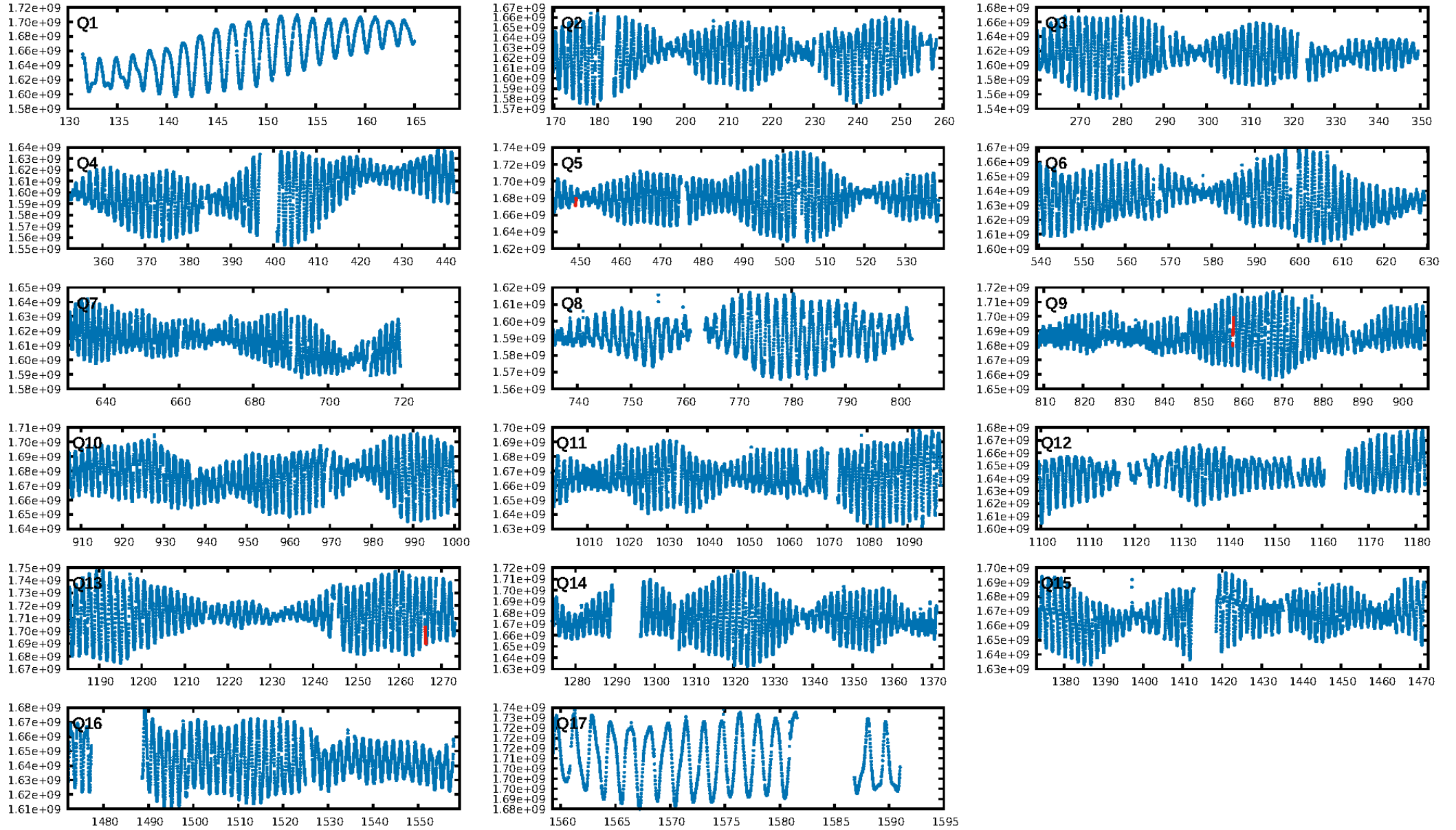
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [115.95 sigma]
ModelChiSquare2-sig: 35.8%
ModelChiSquareGof-sig: 89.0%
Bootstrap-pfa: 4.79e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 57.1%
Centroid-so: 0.593 arcsec [0.66 sigma]
OotOffset-rm: 0.158 arcsec [1.05 sigma]
KicOffset-rm: 0.389 arcsec [1.01 sigma]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

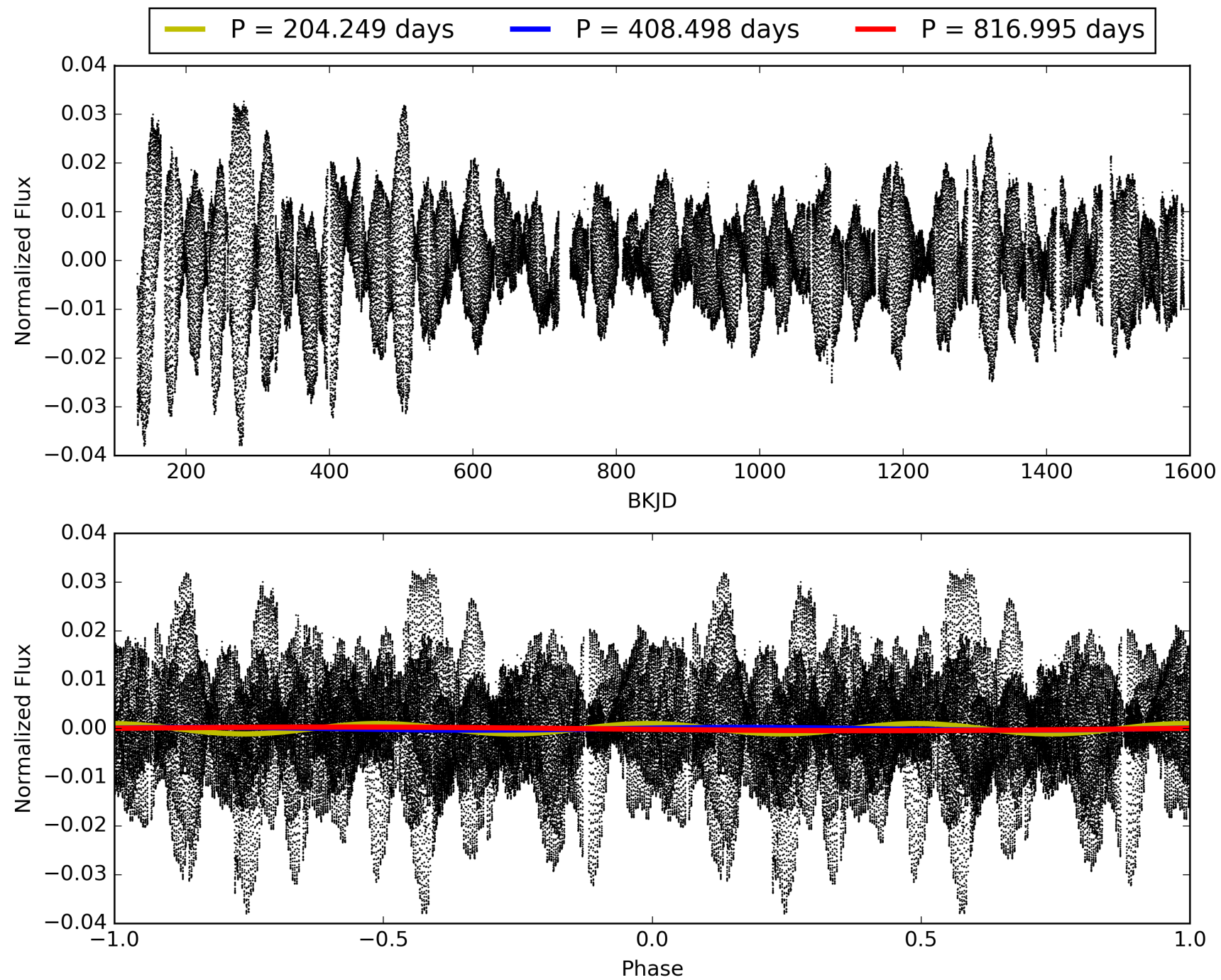
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:52:42 Z

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

TCE 012253350-01, PDC Light Curves

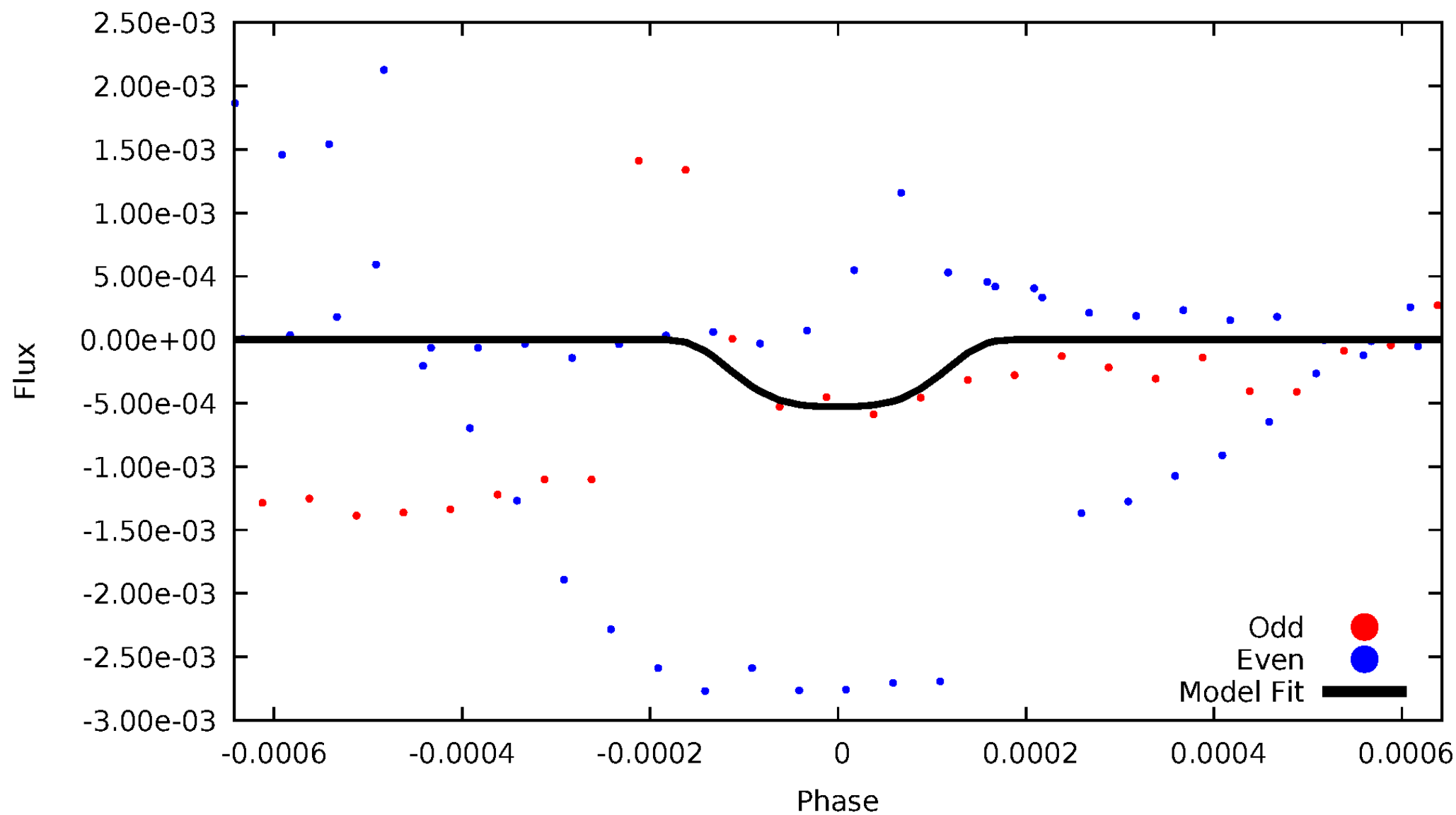


TCE 012253350-01



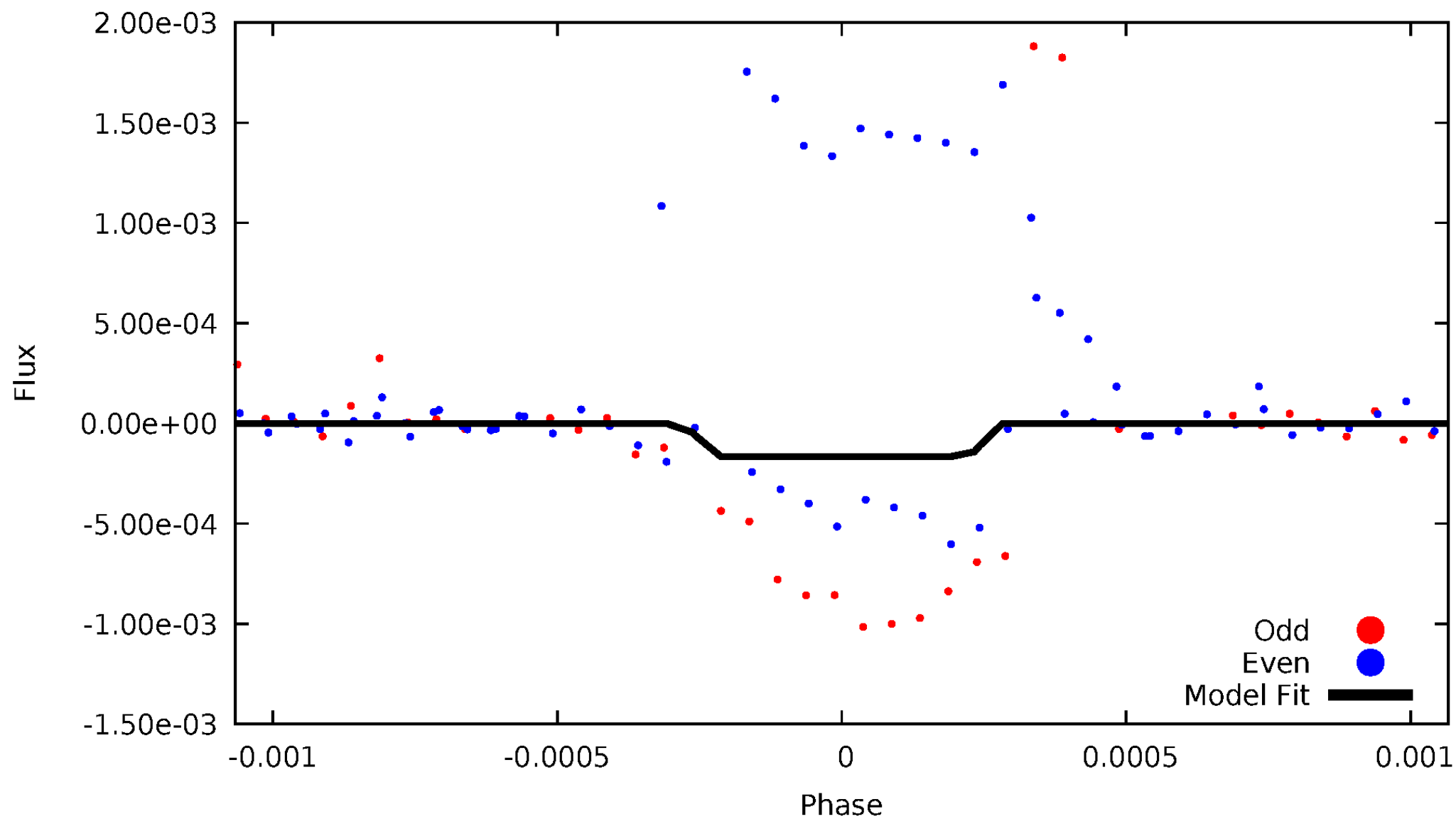
DV Odd/Even

TCE 012253350-01



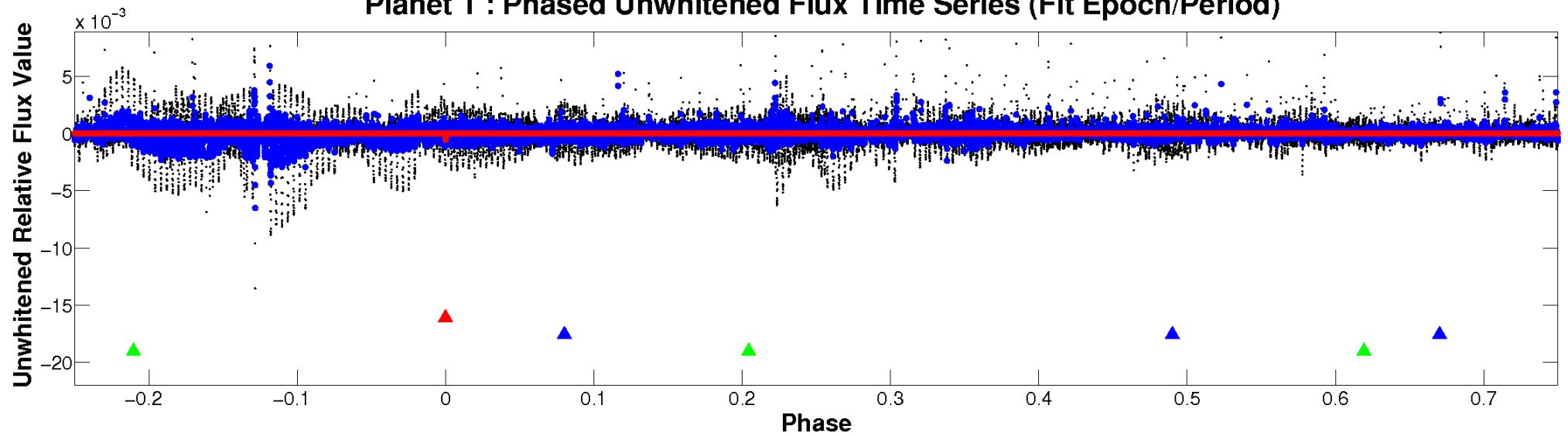
ALT Odd/Even

TCE 012253350-01

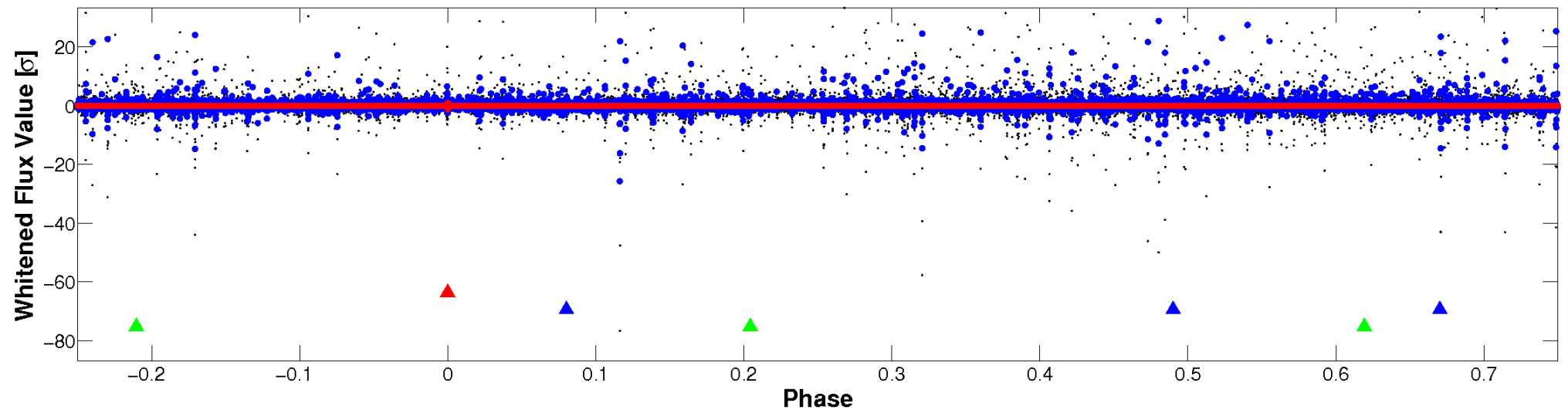


Non-Whitened Vs. Whitened Light Curve

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

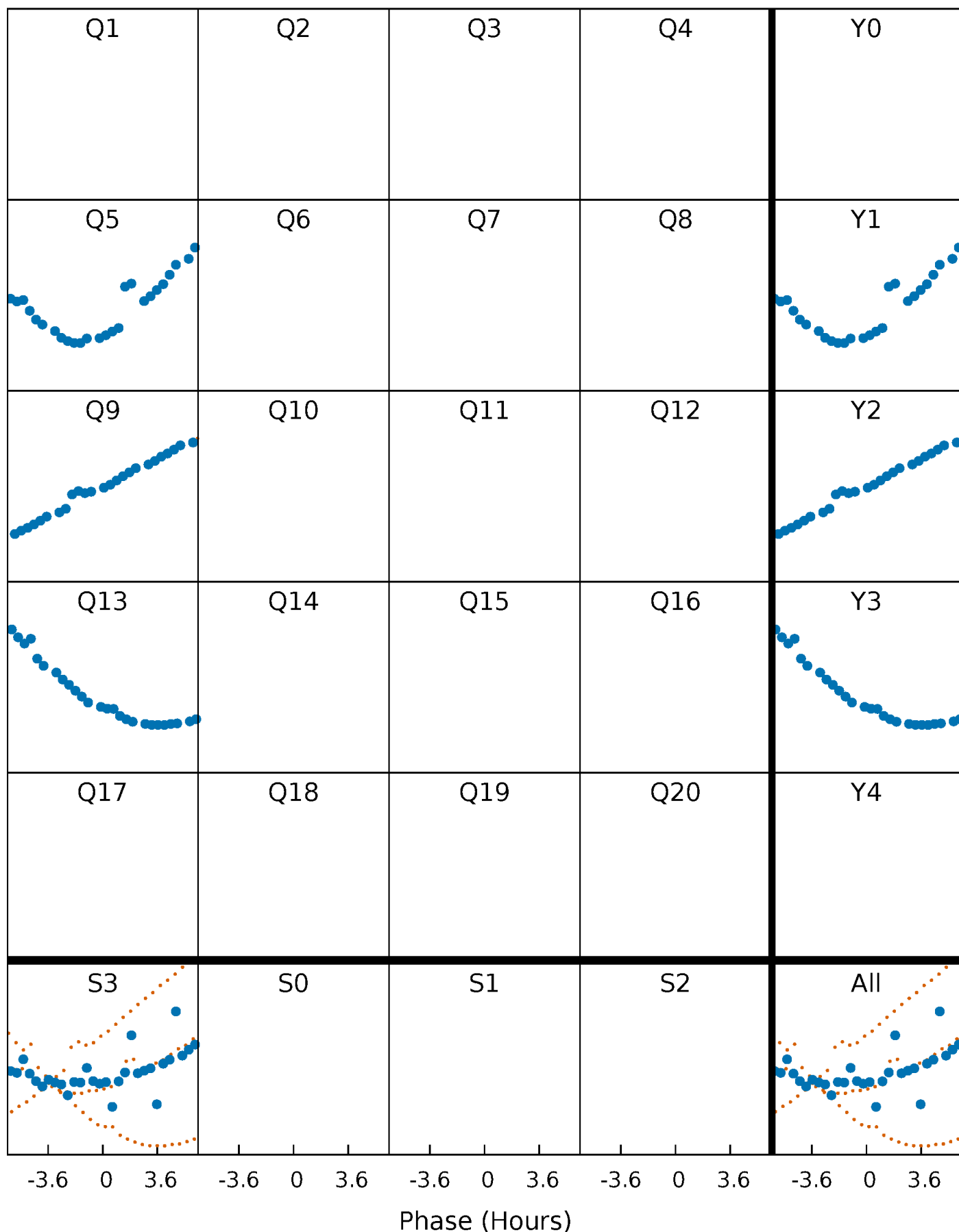


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



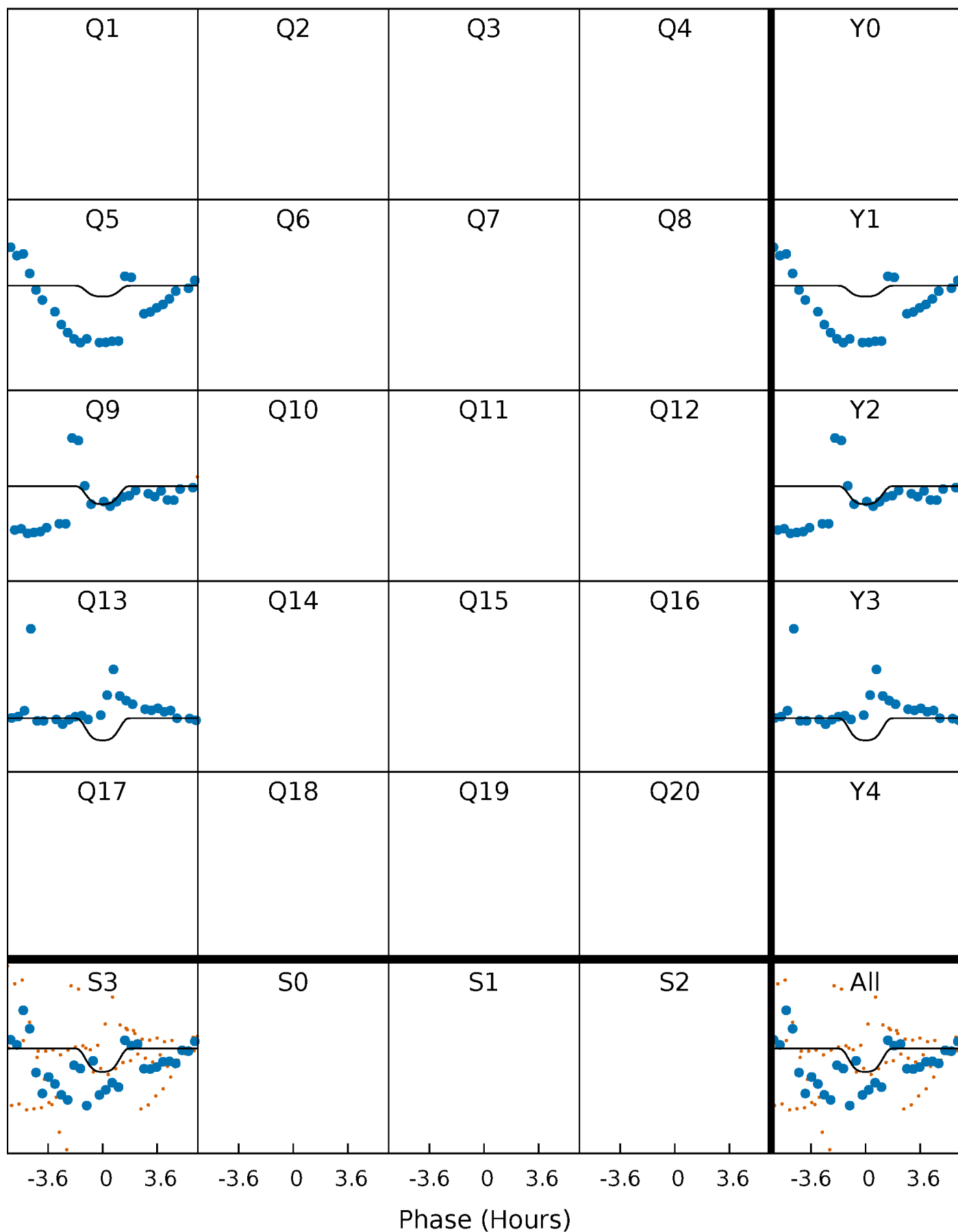
PDC Quarter-Phased Transit Curves

TCE 012253350-01 P=408.497605 Days $T_0=449.229090$ (BKJD)



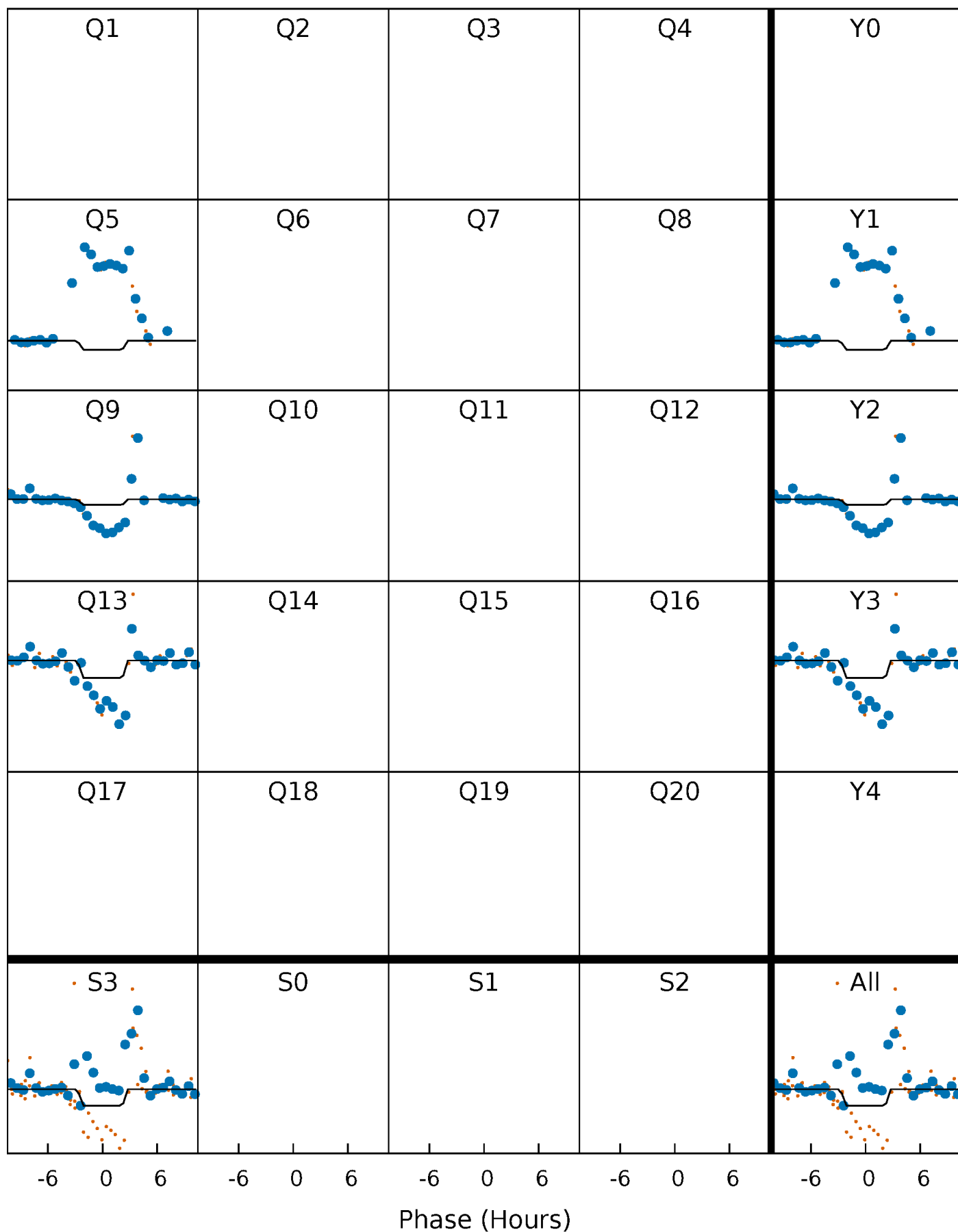
DV Quarter-Phased Transit Curves

TCE 012253350-01 $P=408.497605$ Days $T_0=449.229090$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

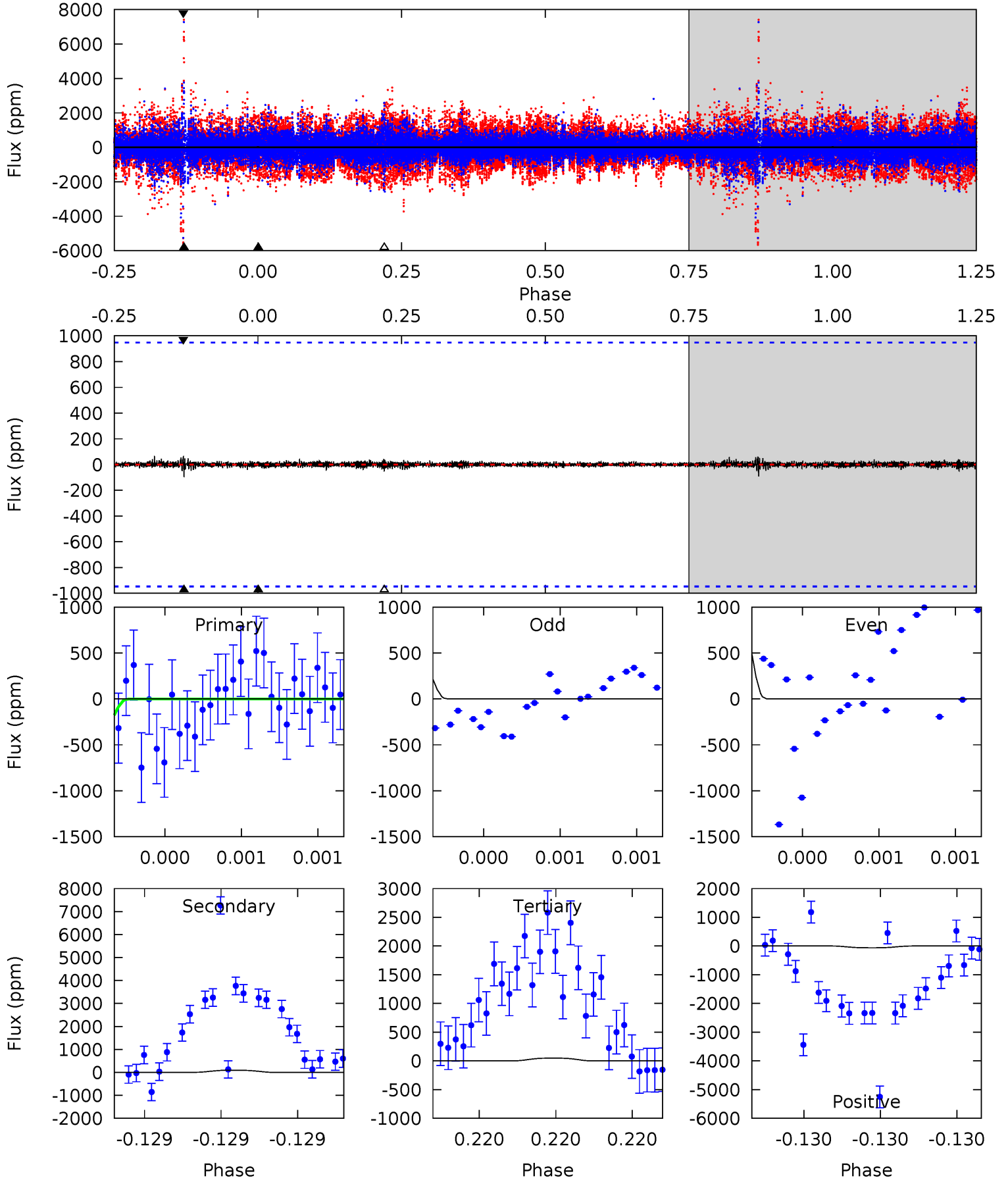
TCE 012253350-01 P=408.609899 Days $T_0=448.892149$ (BKJD)



DV Model-Shift Uniqueness Test

012253350-01, $P = 408.497605$ Days, $E = 40.731485$ Days

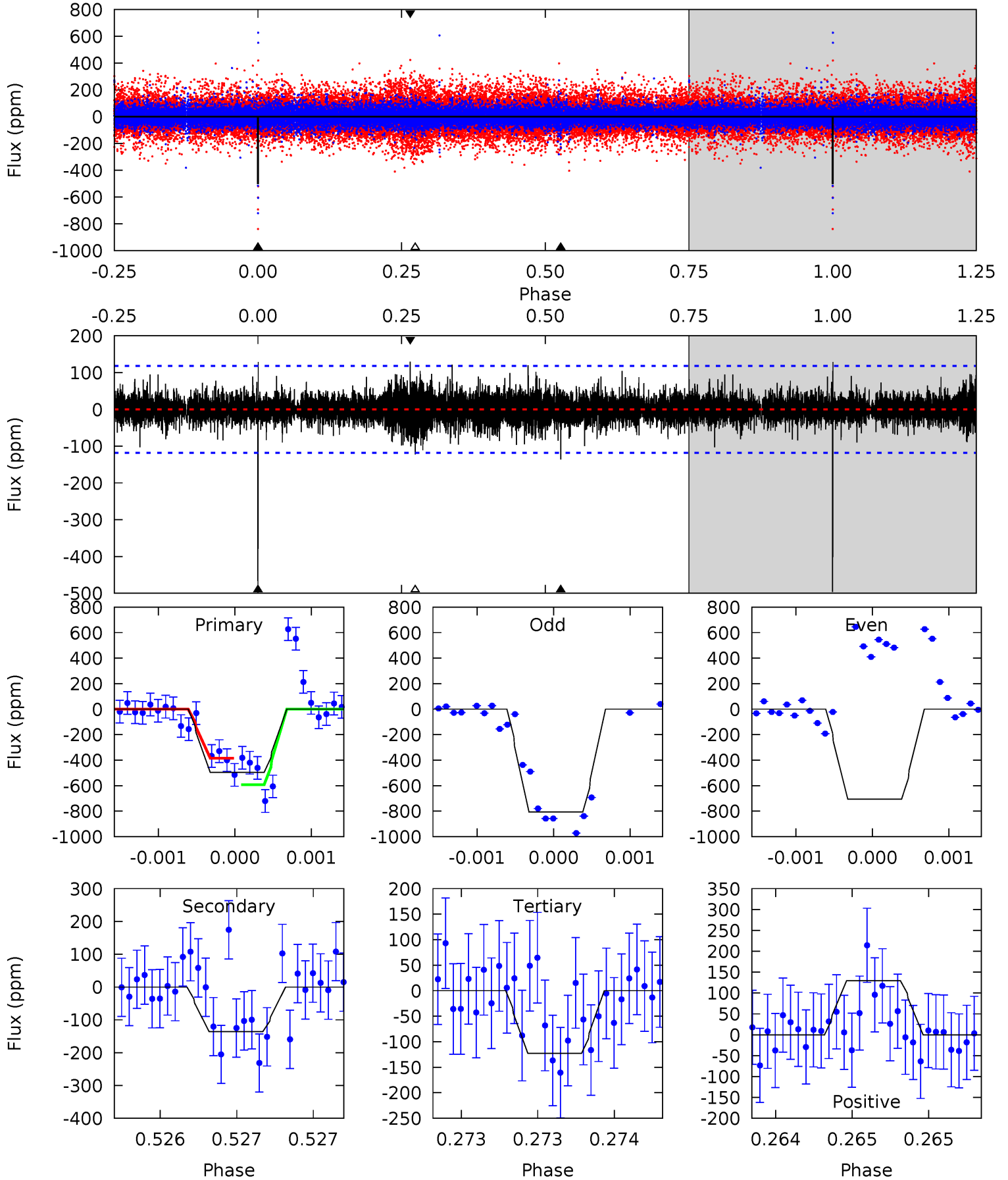
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.03	0.55	0.29	0.36	5.63	3.58	0.05	-0.26	-0.33	0.26	0.19	1.89	2.08	0.40	0.64



Alt Model-Shift Uniqueness Test

012253350-01, $P = 408.609899$ Days, $E = 40.282250$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.4	6.40	5.79	6.12	5.57	3.48	1.13	17.7	17.3	0.61	0.28	2.98	-0.19	0.21	4.95



Stellar Parameters For KIC 012253350

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5860^{+176}_{-193}	$4.217^{+0.220}_{-0.180}$	$0.000^{+0.250}_{-0.300}$	$1.296^{+0.347}_{-0.312}$	$1.009^{+0.152}_{-0.110}$	$0.652^{+0.808}_{-0.314}$
	+3%/-3%	+5%/-4%	+inf%/-inf%	+27%/-24%	+15%/-11%	+124%/-48%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 012253350-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-92 ± 168	$3.86^{+1.24}_{-1.14}$	394^{+30}_{-28}	3777^{+1057}_{-7480}	3377^{+10591}_{-6658}
Alt.	-136 ± 21	$1.87^{+1.11}_{-0.97}$	396^{+30}_{-30}	5437^{+2510}_{-873}	23555^{+85012}_{-13919}

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

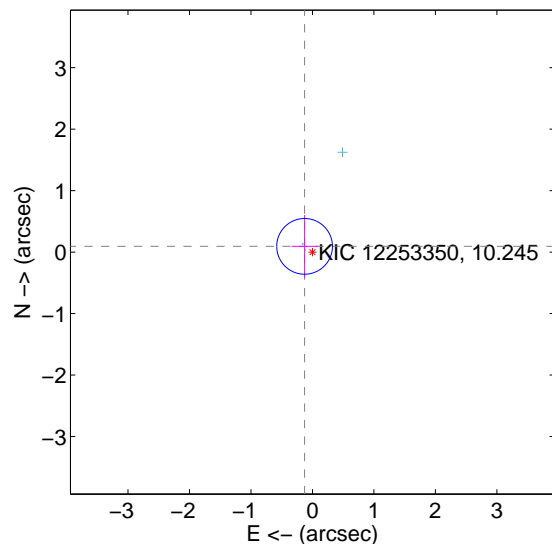
Supplemental centroid analysis for 012253350-01. **Kepler magnitude: 10.24**. Transit SNR 4.25

There are 3 quarters with good PRF difference image offsets

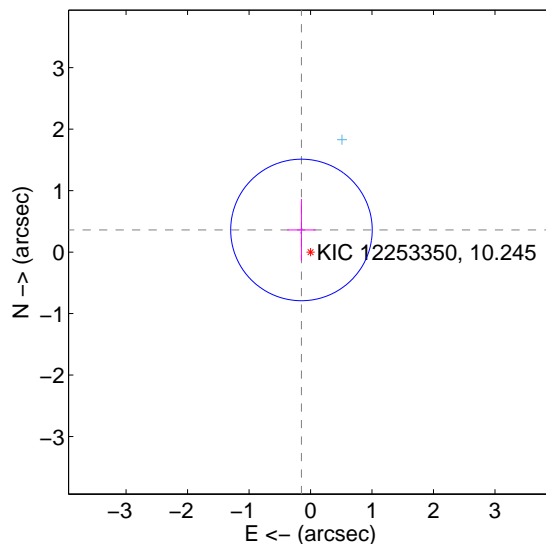
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.158 ± 0.151	1.05	0.128 ± 0.212	0.093 ± 0.509
PRF-fit source offset from KIC position	0.389 ± 0.384	1.01	0.148 ± 0.231	0.360 ± 0.503
photometric centroid source offset	0.59 ± 0.90	0.66	-0.56 ± 0.81	-0.21 ± 1.34

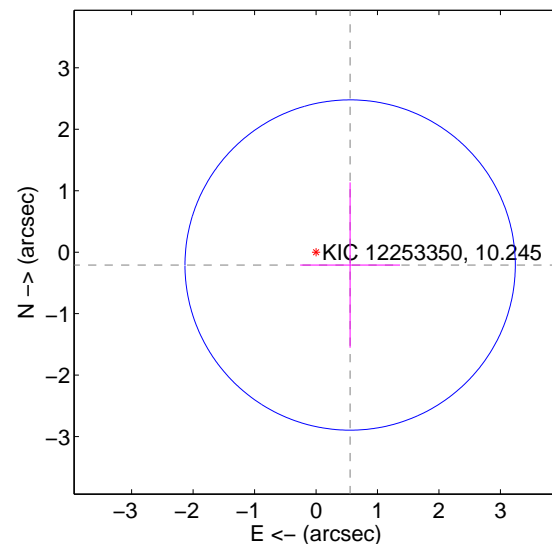
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

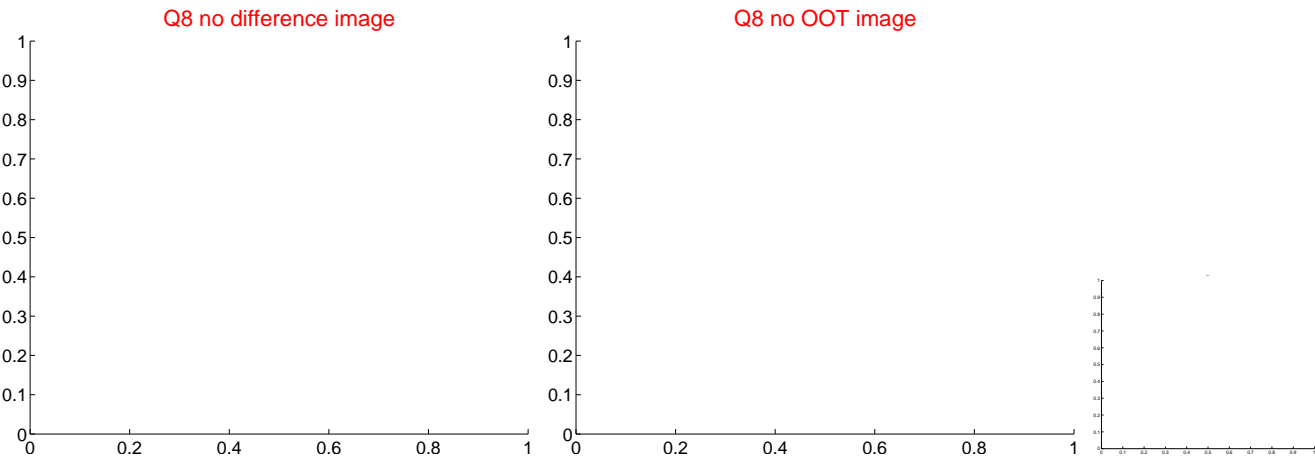
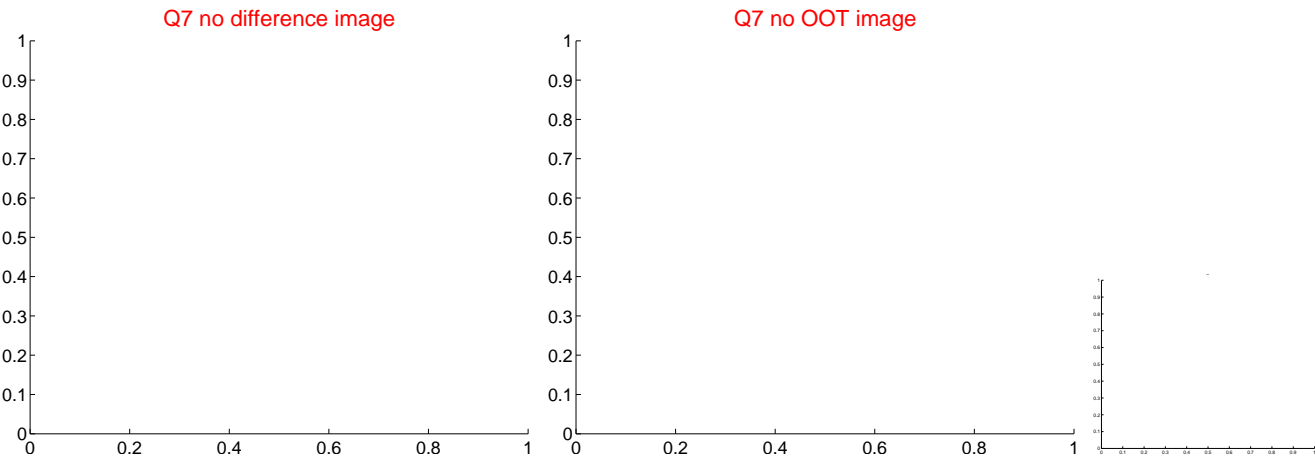
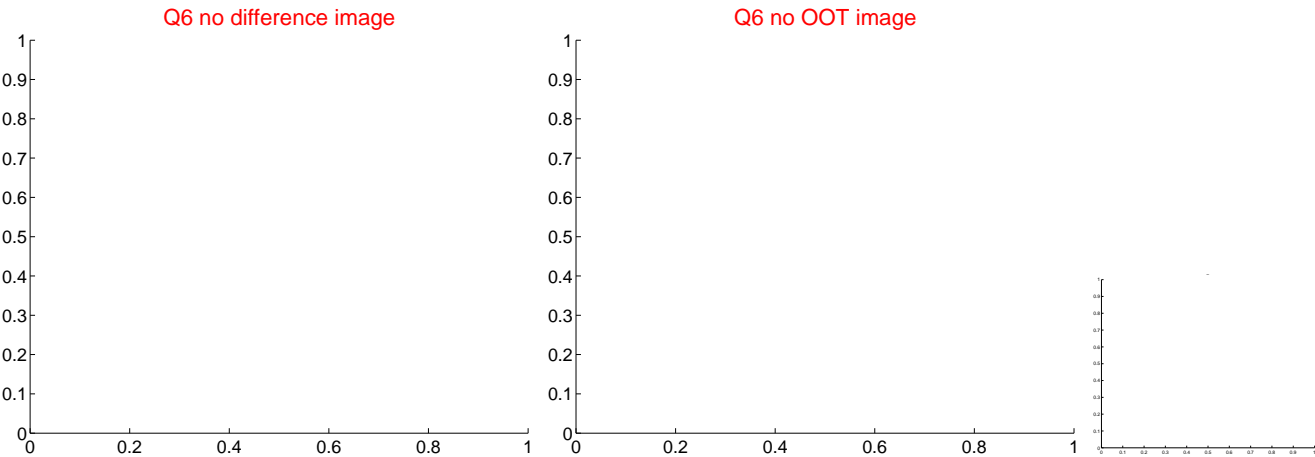
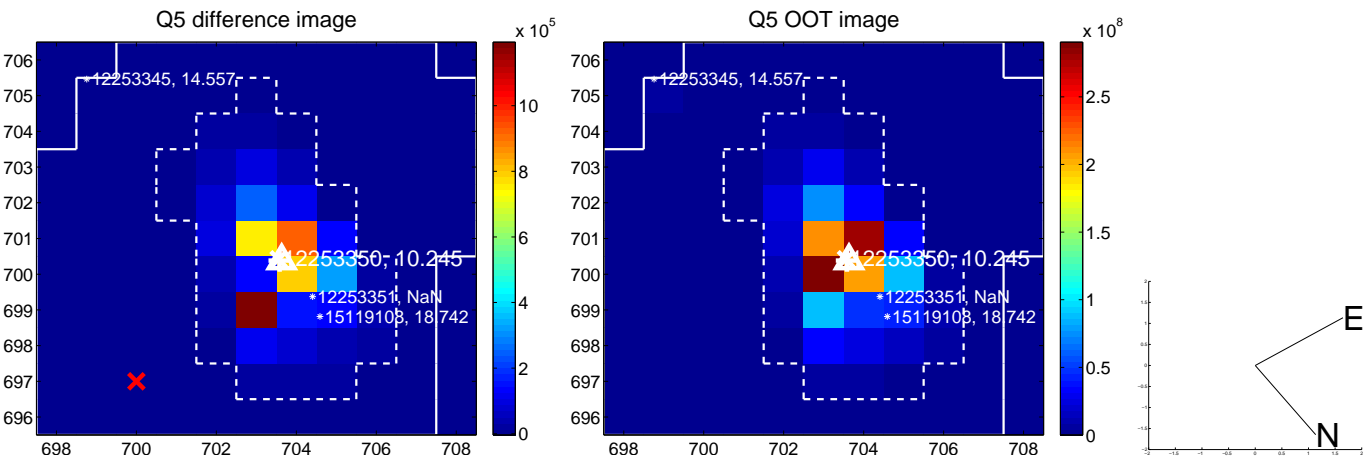


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

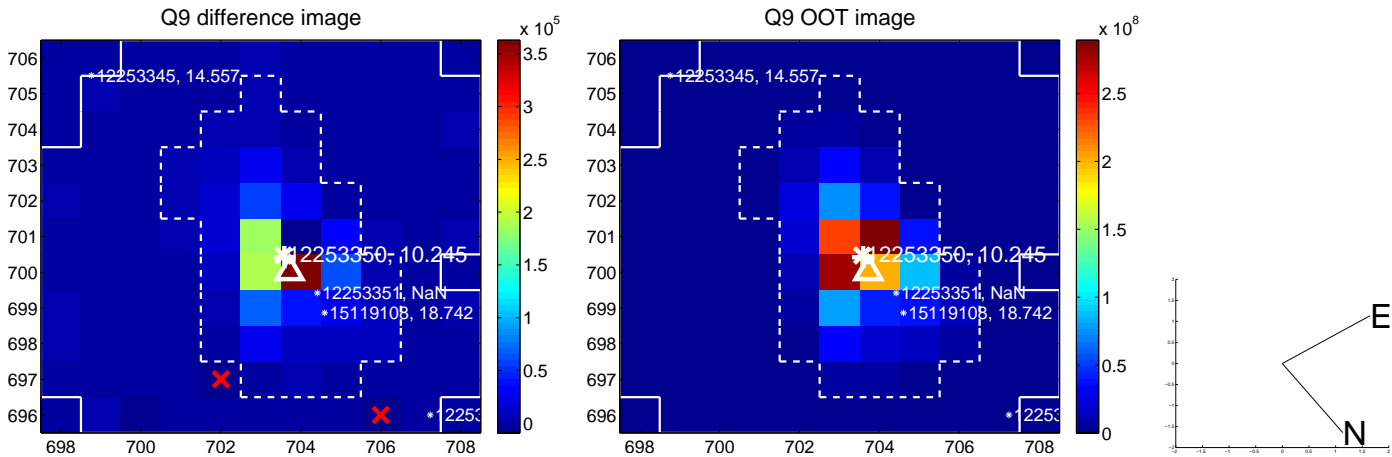
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



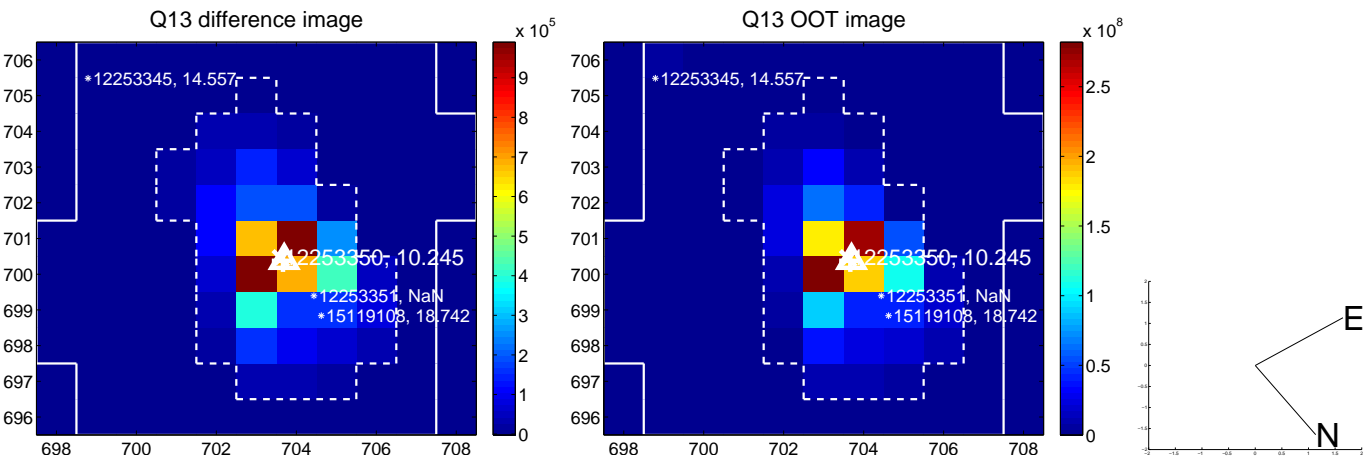
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



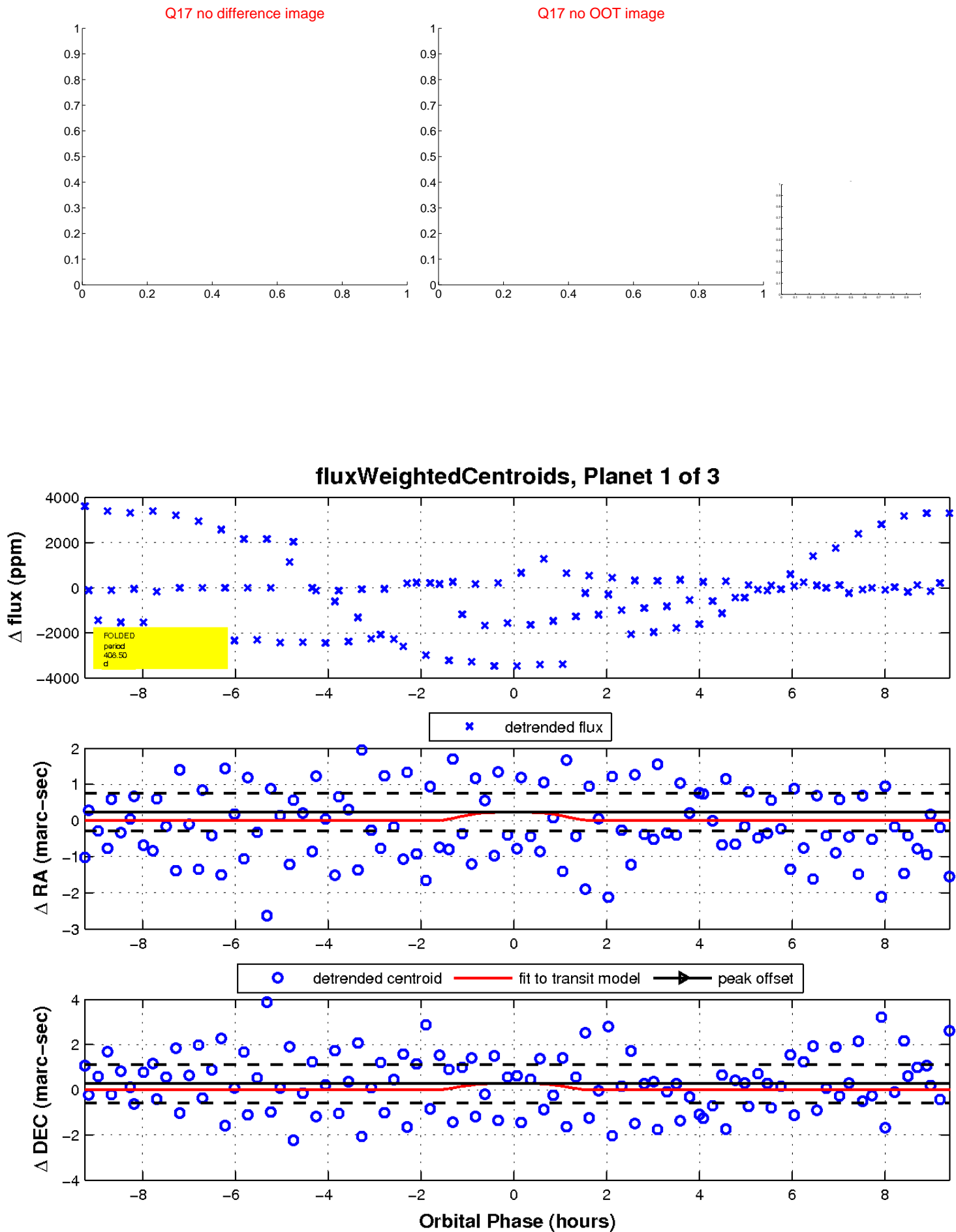
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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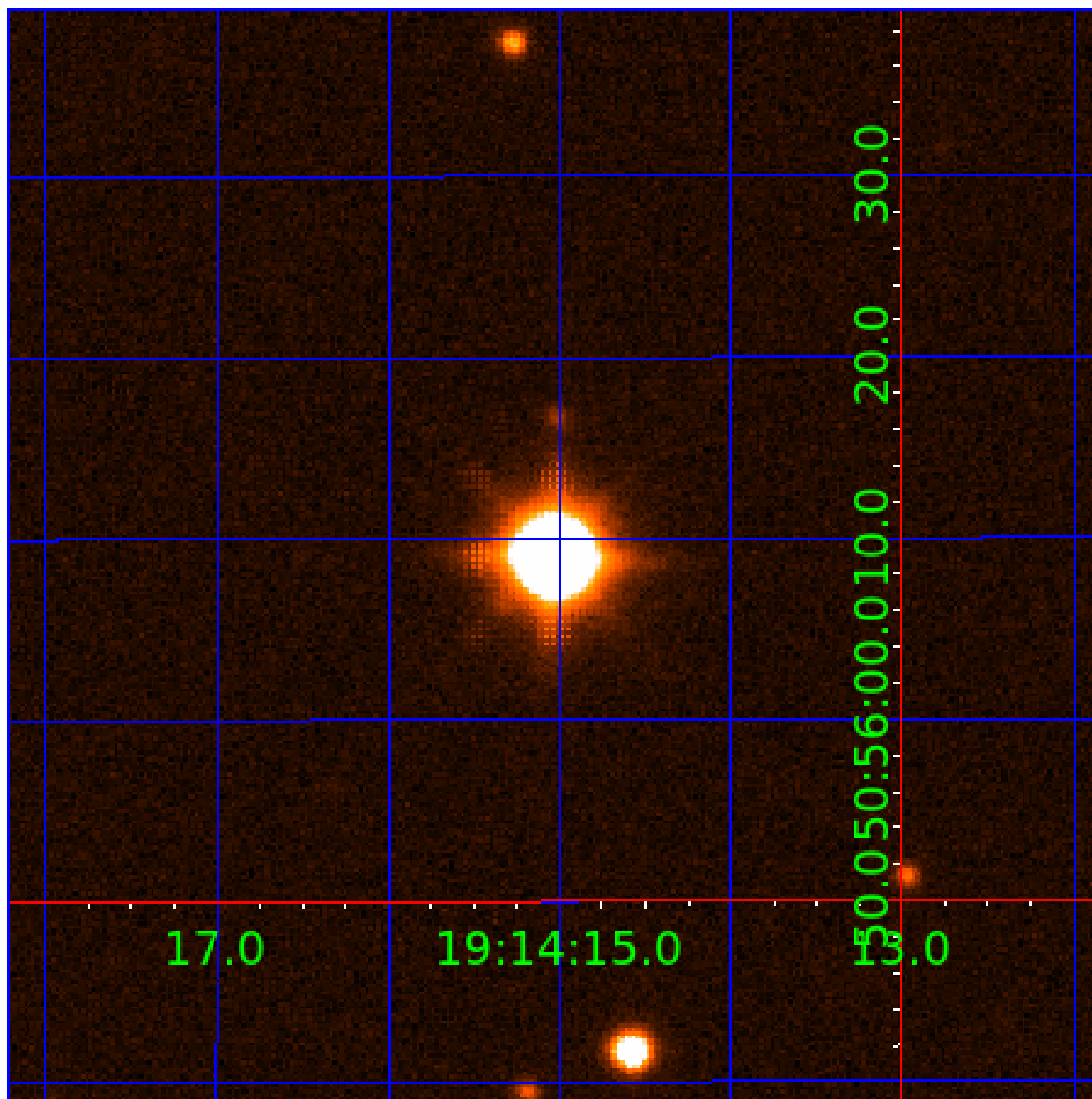


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012253350

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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012253350-02	OBS	No	649.548954	240.927251	1543.0	13.438	14.6	3.1	1.30	5860	6.48	0.82
012253350-03	OBS	No	577.953207	363.294571	324.1	34.934	16.5	2.3	1.30	5860	2.35	0.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012253350-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_SATURATED
012253350-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
012253350-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED

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

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

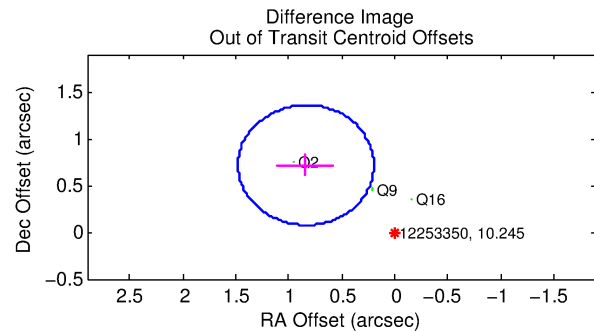
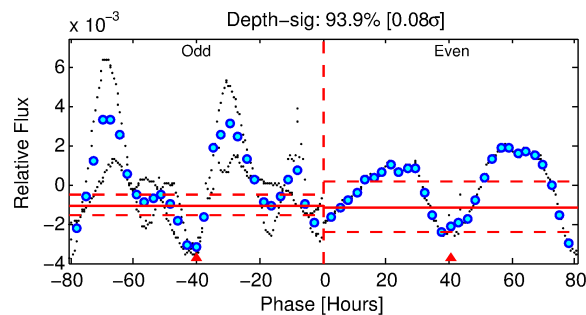
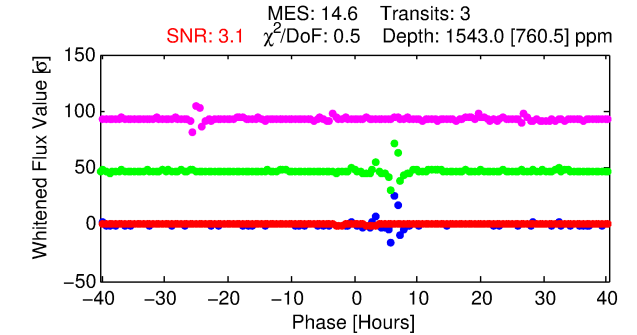
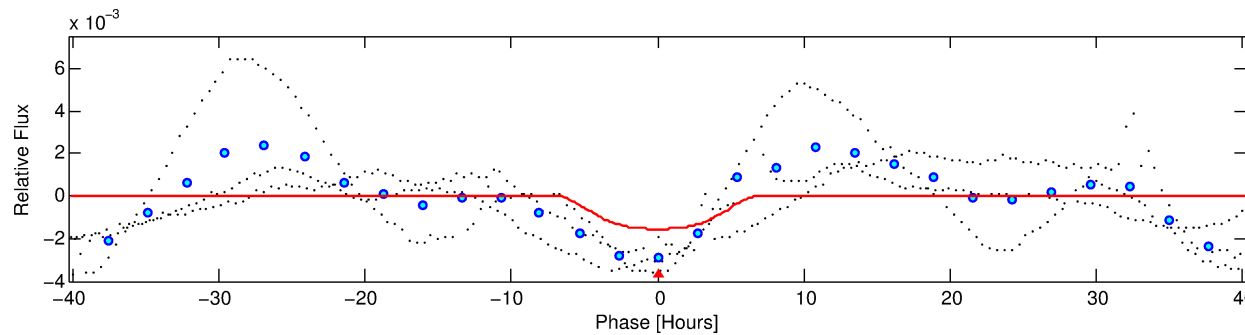
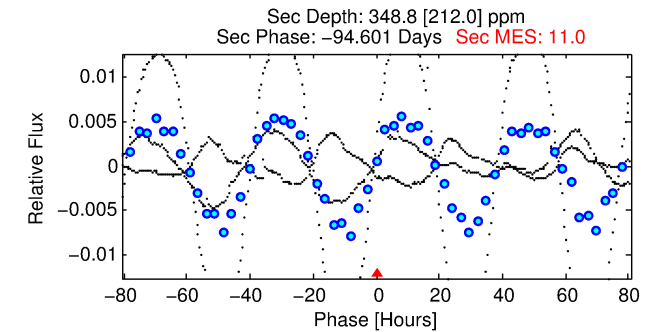
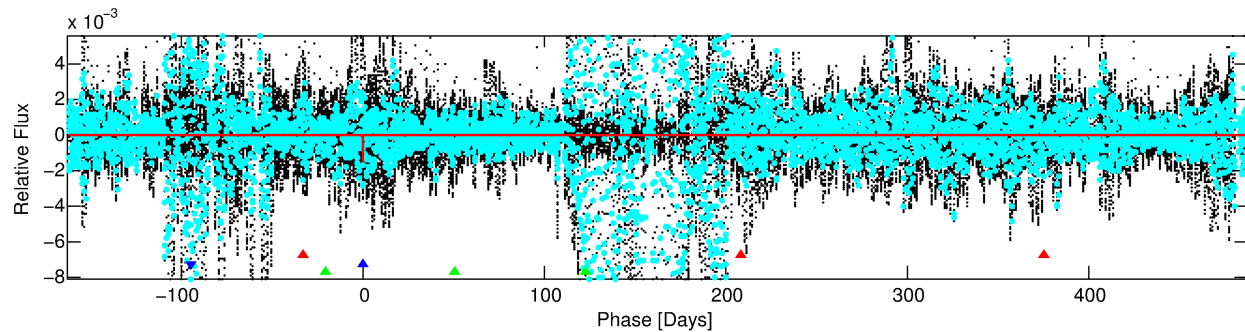
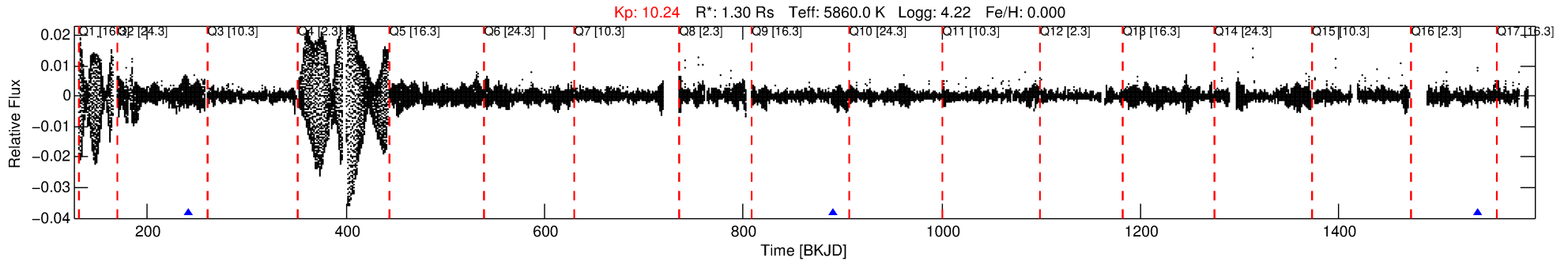
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012253350-02

No Significant Match Found

DV One-Page Summary

KIC: 12253350 Candidate: 2 of 3 Period: 649.549 d



DV Fit Results:

Period = 649.54895 [0.02629] d
Epoch = 240.9273 [0.0429] BKJD
Rp/R* = 0.0458 [0.0117]
a/R* = 161.78 [19.12]
b = 0.95 [0.02]
Seff = 0.82 [0.33]
Teq = 242 [24] K
Rp = 6.48 [2.40] Re
a = 1.4729 [0.3619] AU
Ag = 9911.49 [8732.07] [1.13σ]
Teffp = 3741 [753] K [4.65σ]

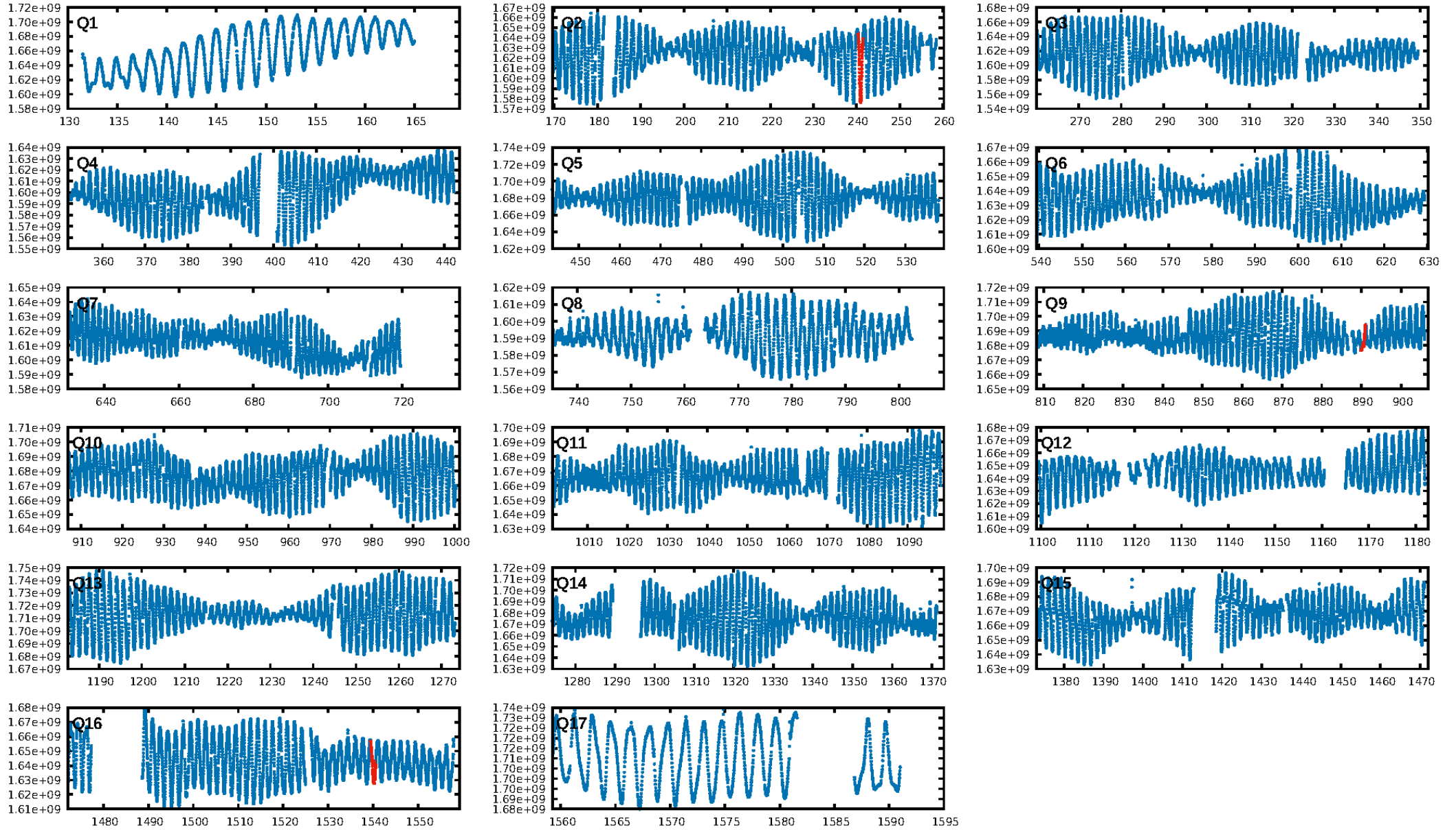
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [45.91σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 91.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.32e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 50.0%
Centroid-so: 0.517 arcsec [0.85σ]
OotOffset-rm: 1.101 arcsec [5.16σ]
KicOffset-rm: 1.432 arcsec [3.50σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

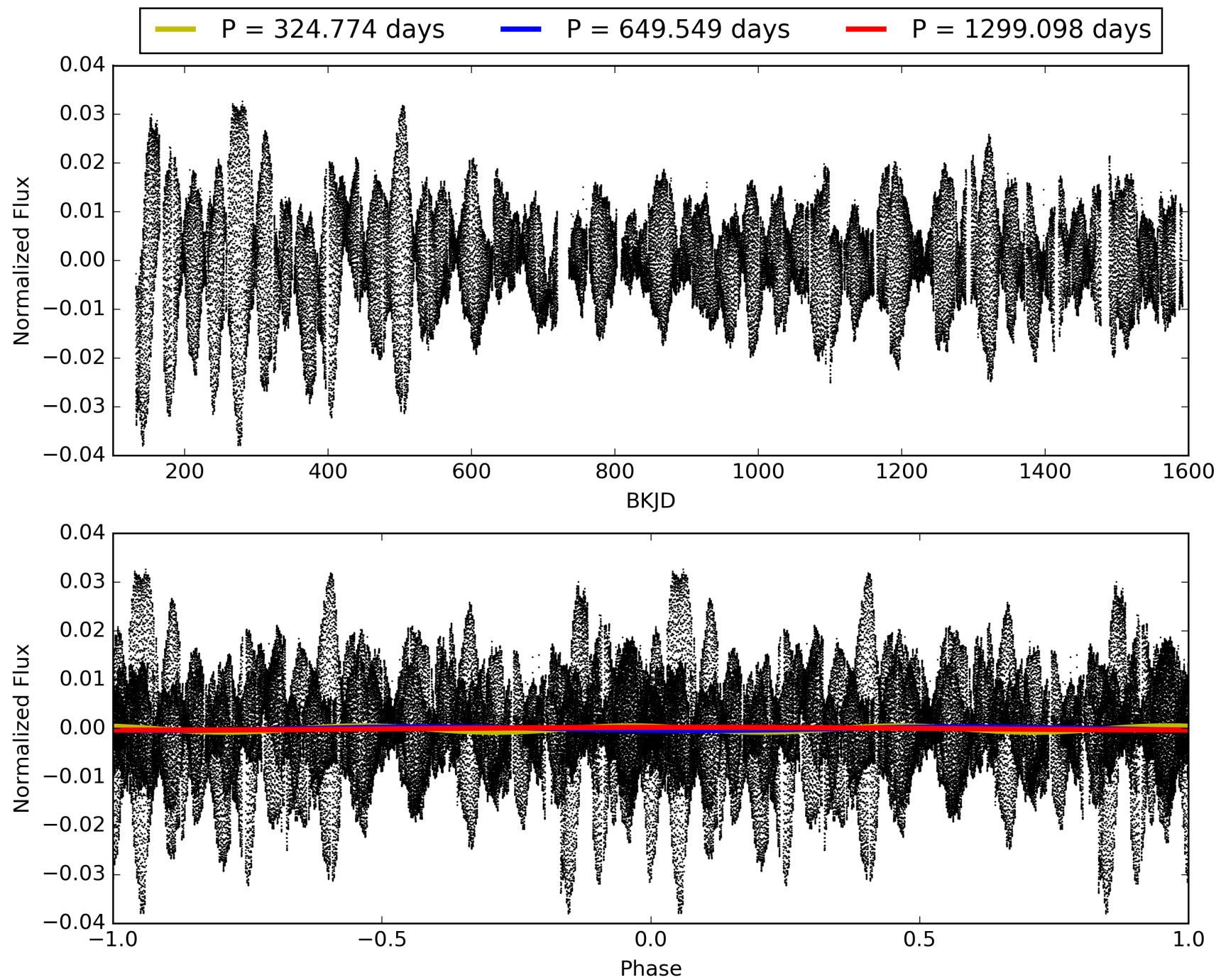
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:52:53 Z

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

TCE 012253350-02, PDC Light Curves

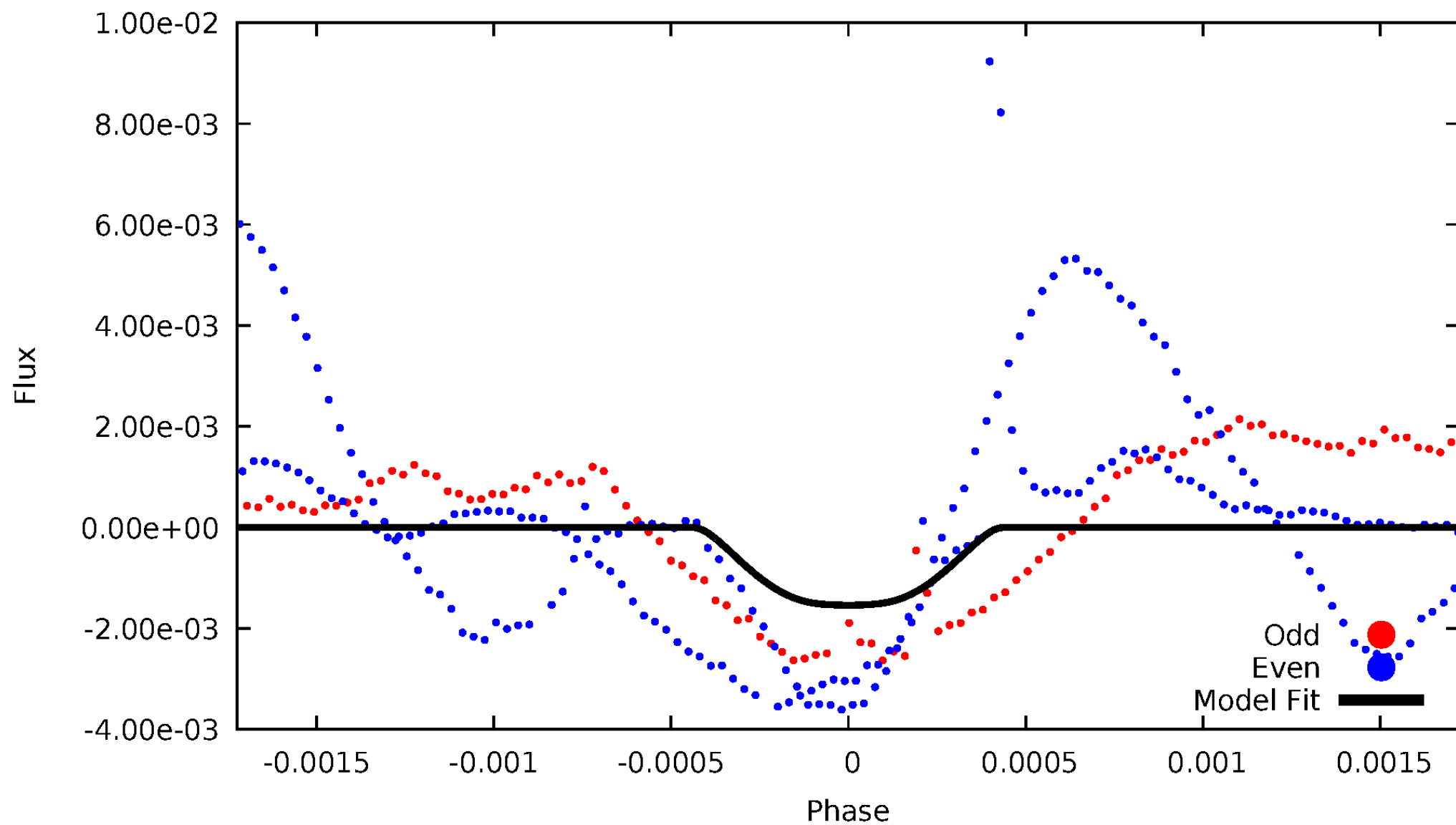


TCE 012253350-02



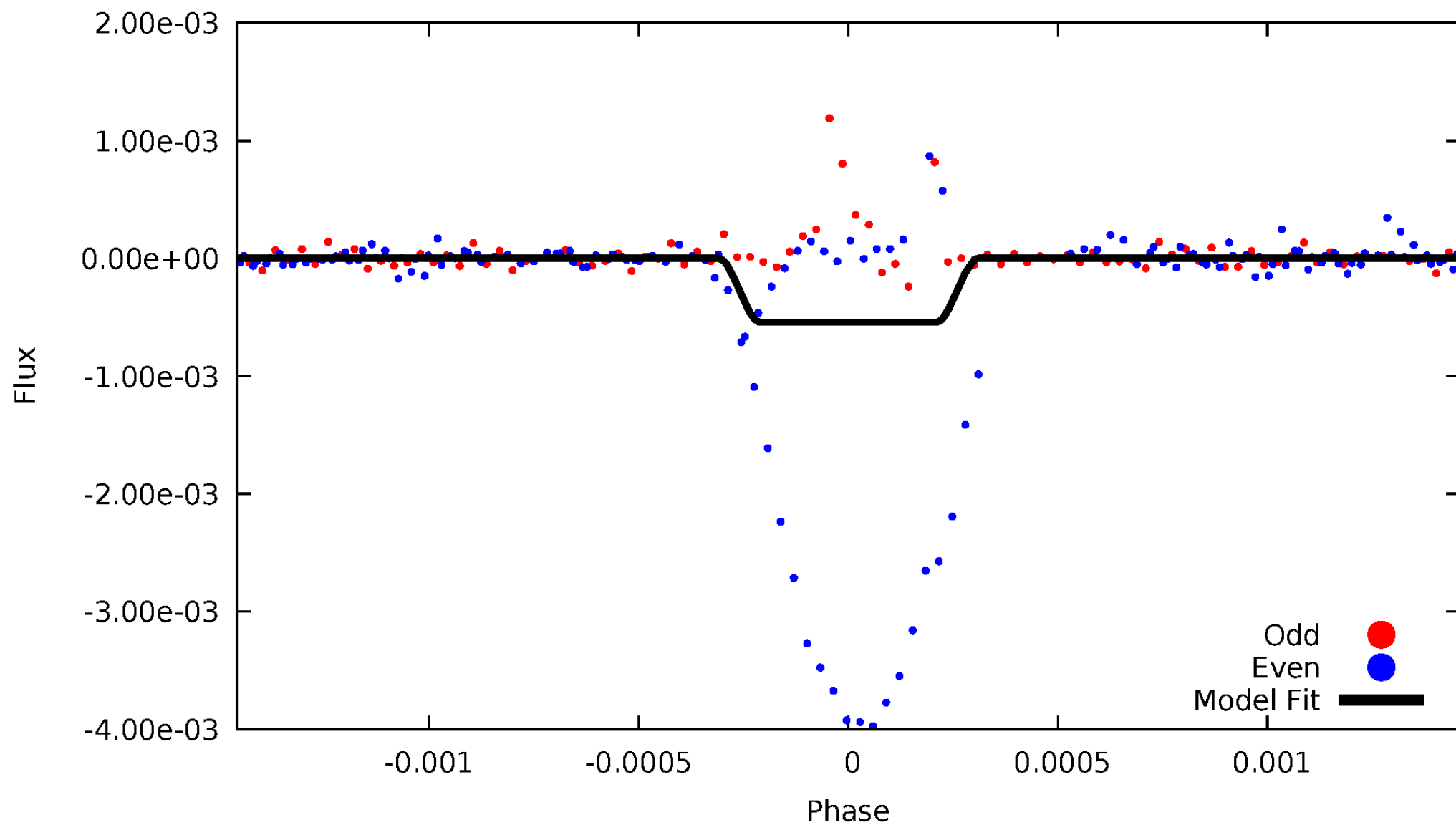
DV Odd/Even

TCE 012253350-02



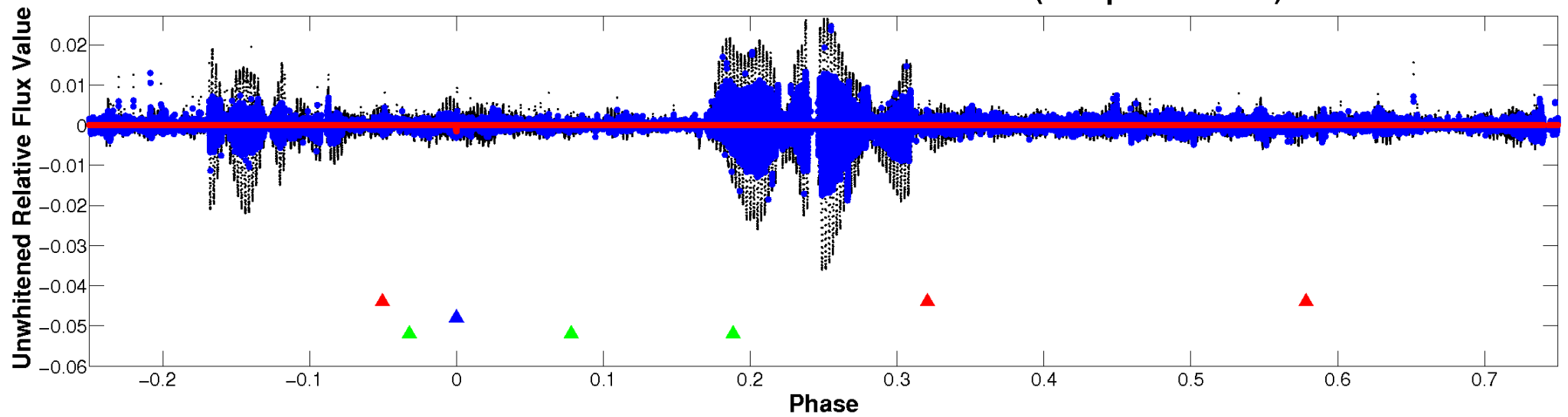
ALT Odd/Even

TCE 012253350-02

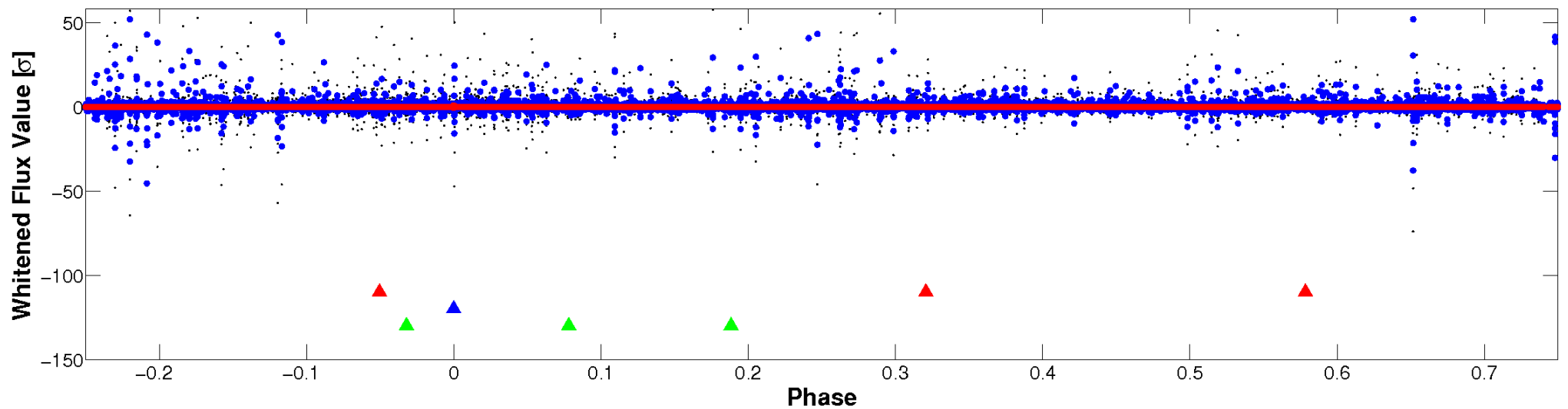


Non-Whitened Vs. Whitened Light Curve

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

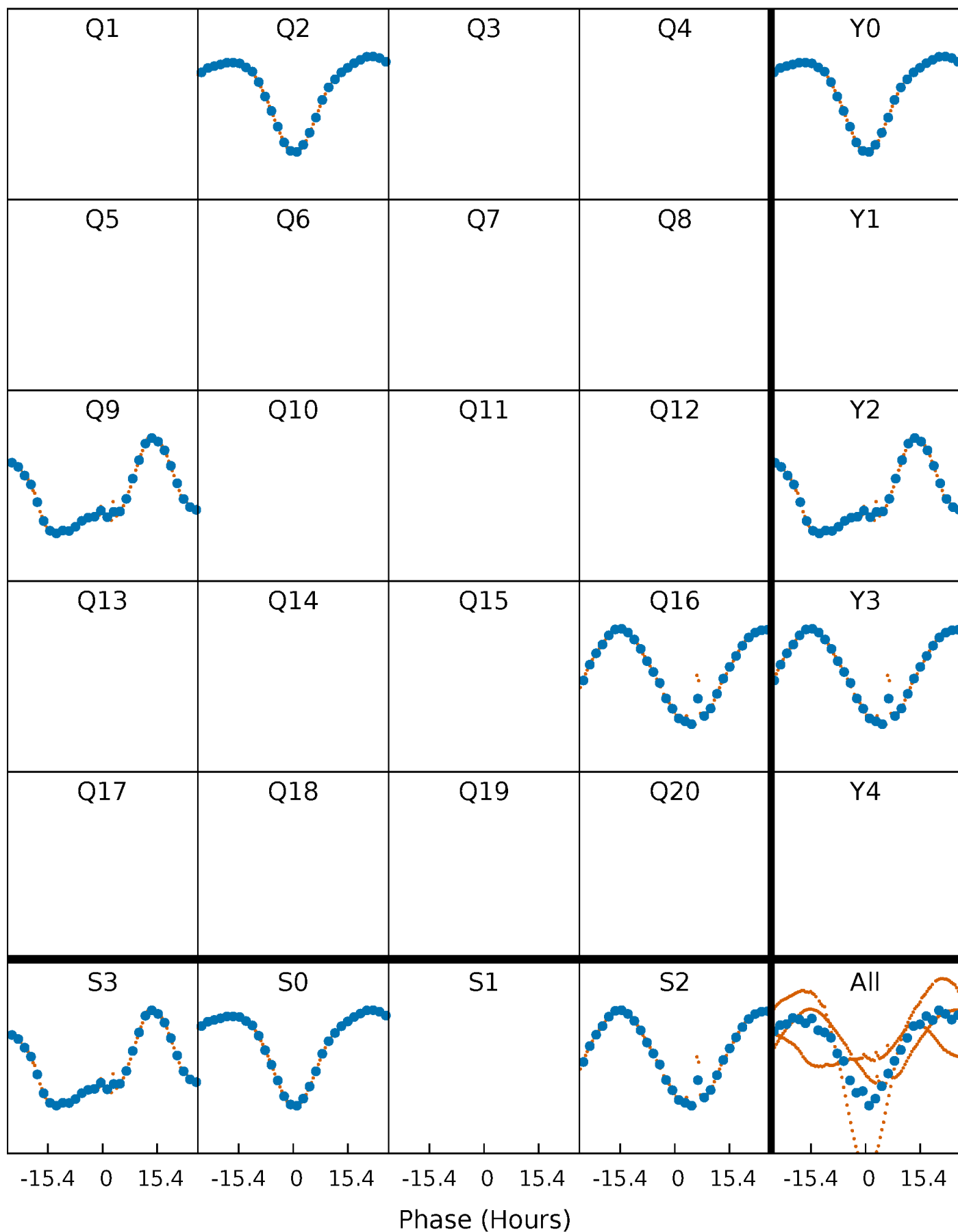


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



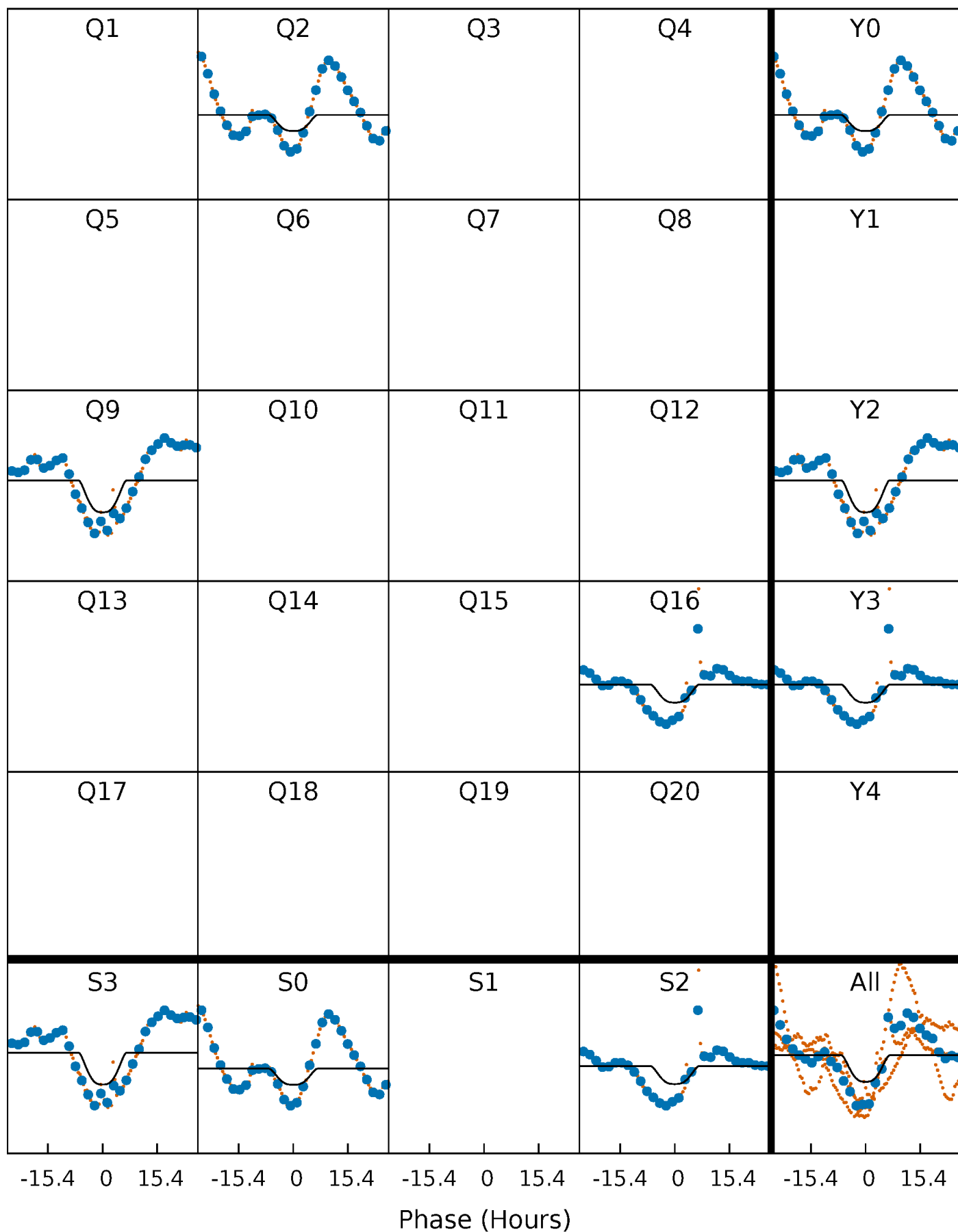
PDC Quarter-Phased Transit Curves

TCE 012253350-02 $P=649.548954$ Days $T_0=240.927251$ (BKJD)



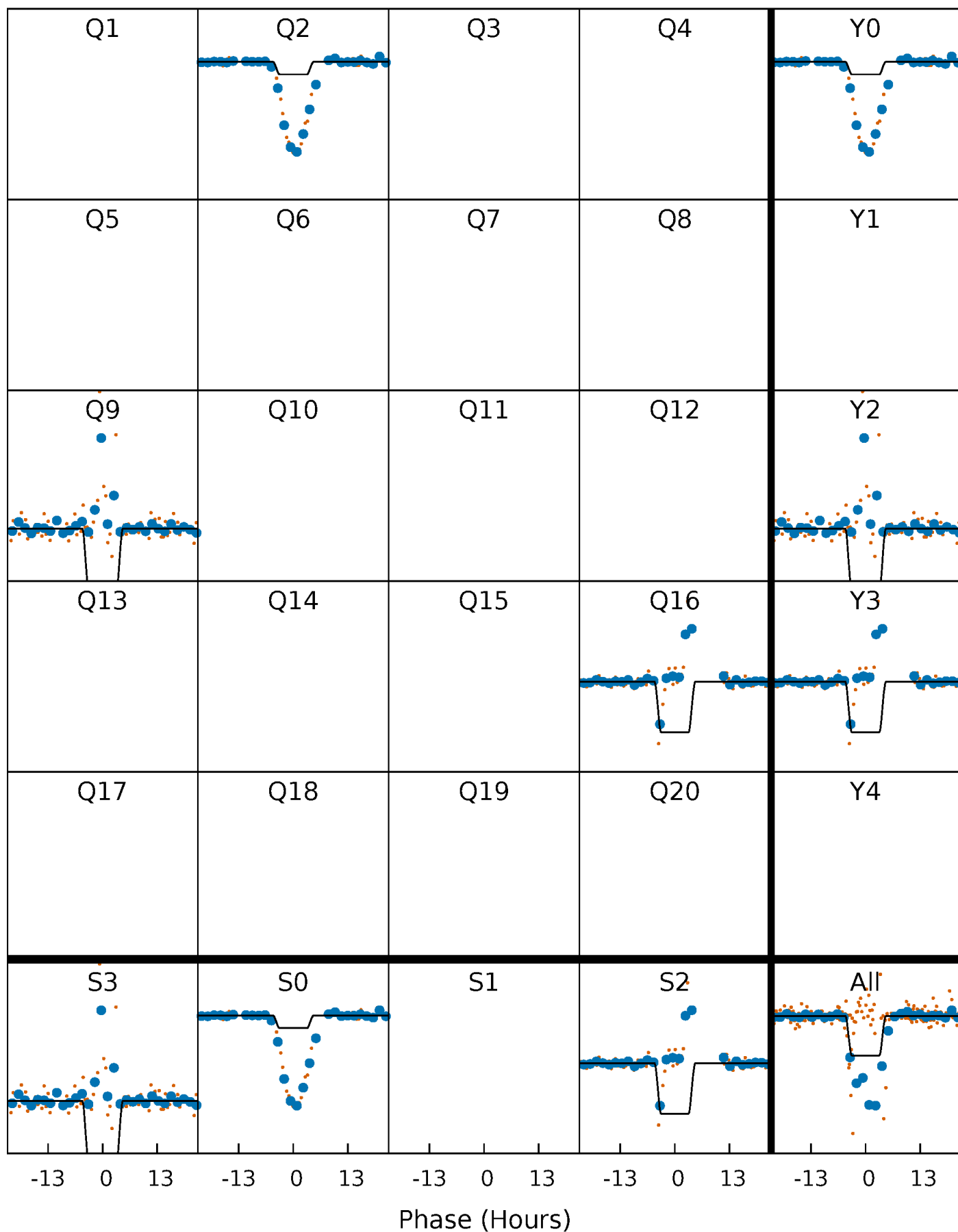
DV Quarter-Phased Transit Curves

TCE 012253350-02 $P=649.548954$ Days $T_0=240.927251$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

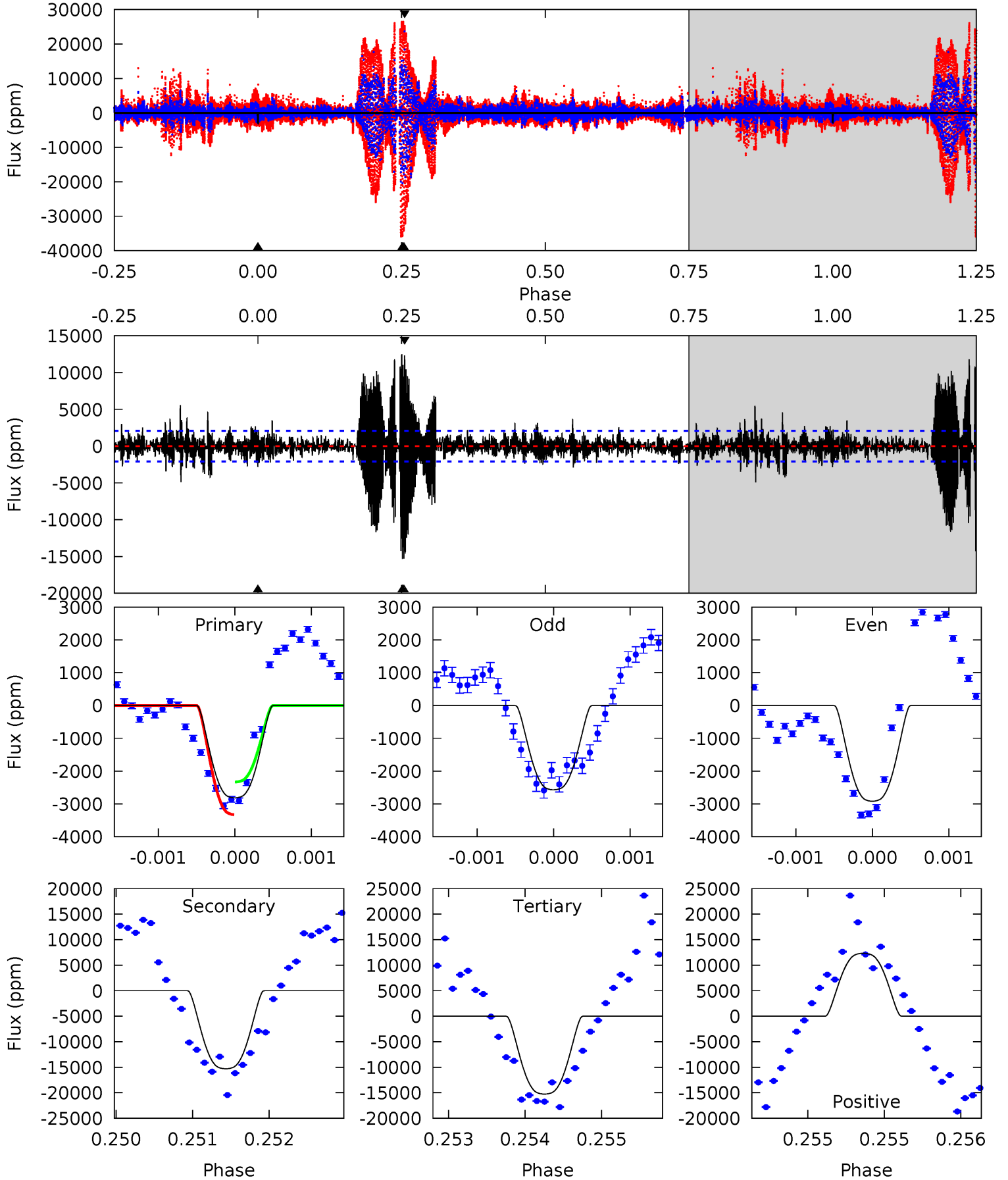
TCE 012253350-02 $P=649.569250$ Days $T_0=240.917544$ (BKJD)



DV Model-Shift Uniqueness Test

012253350-02, P = 649.548954 Days, E = 240.927251 Days

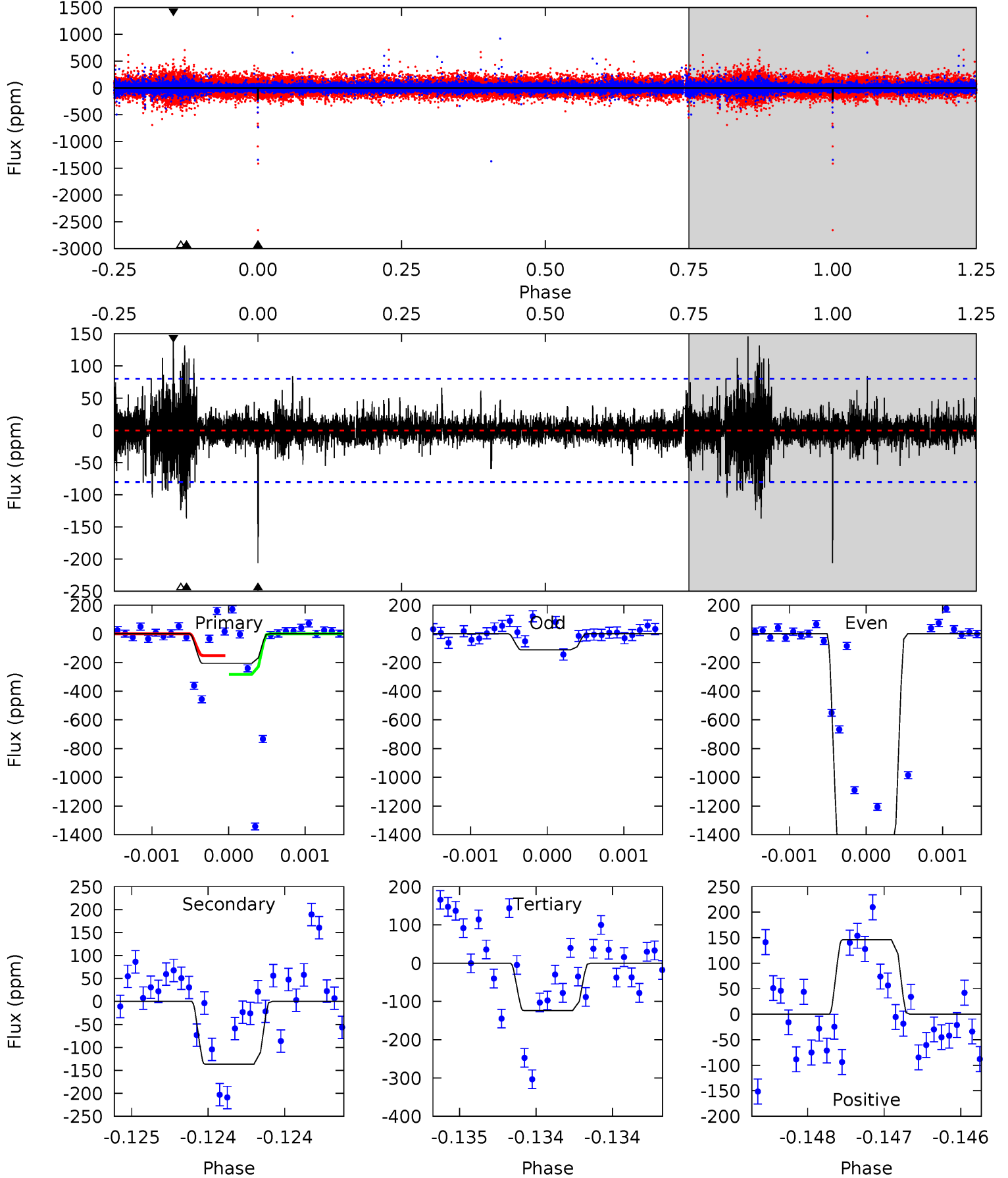
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.44	40.4	40.3	32.6	5.47	3.33	5.49	-32.9	-25.1	0.11	7.87	0.50	0.97	0.45	1.34



Alt Model-Shift Uniqueness Test

012253350-02, P = 649.569250 Days, E = 240.917544 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	9.42	8.54	10.1	5.54	3.43	1.15	5.67	4.16	0.88	-0.64	57.4	-15.2	0.41	0



Stellar Parameters For KIC 012253350

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5860^{+176}_{-193}	$4.217^{+0.220}_{-0.180}$	$0.000^{+0.250}_{-0.300}$	$1.296^{+0.347}_{-0.312}$	$1.009^{+0.152}_{-0.110}$	$0.652^{+0.808}_{-0.314}$
	+3%/-3%	+5%/-4%	+inf%/-inf%	+27%/-24%	+15%/-11%	+124%/-48%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 012253350-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-15300 ± 379	$6.45^{+2.04}_{-1.68}$	338^{+27}_{-25}	10709^{+3075}_{-1633}	$450026^{+382293}_{-185261}$
Alt.	-137 ± 14	$3.36^{+1.63}_{-1.48}$	336^{+27}_{-24}	4324^{+1204}_{-584}	14535^{+34002}_{-8096}

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

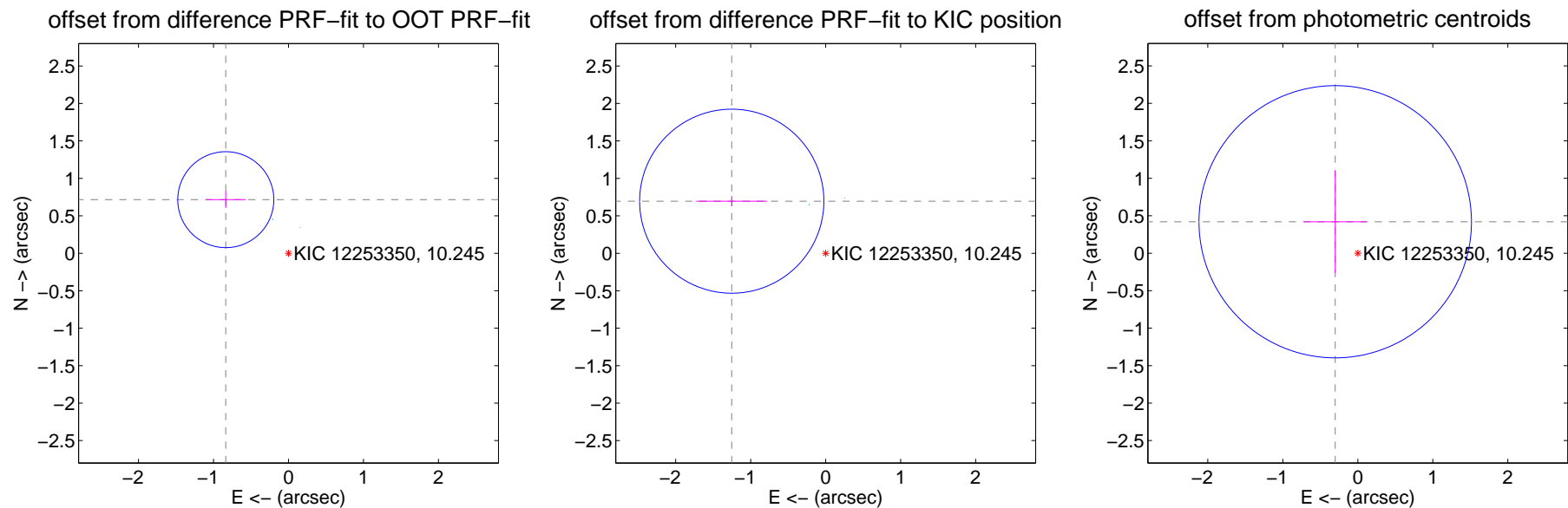
DV Centroid Data

Supplemental centroid analysis for 012253350-02. **Kepler magnitude: 10.24.** Transit SNR 3.09

There are 1 quarters with good PRF difference image offsets

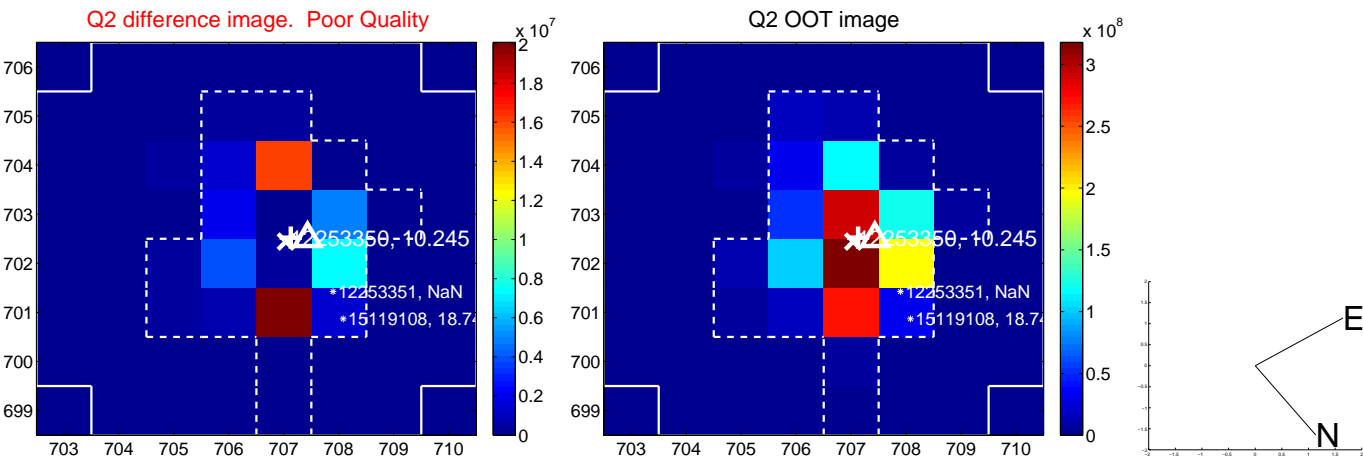
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.101 \pm 0.213	5.16	0.836 \pm 0.264	0.716 \pm 0.111
PRF-fit source offset from KIC position	1.432 \pm 0.409	3.50	1.252 \pm 0.473	0.695 \pm 0.070
photometric centroid source offset	0.52 \pm 0.61	0.85	0.30 \pm 0.42	0.42 \pm 0.68



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

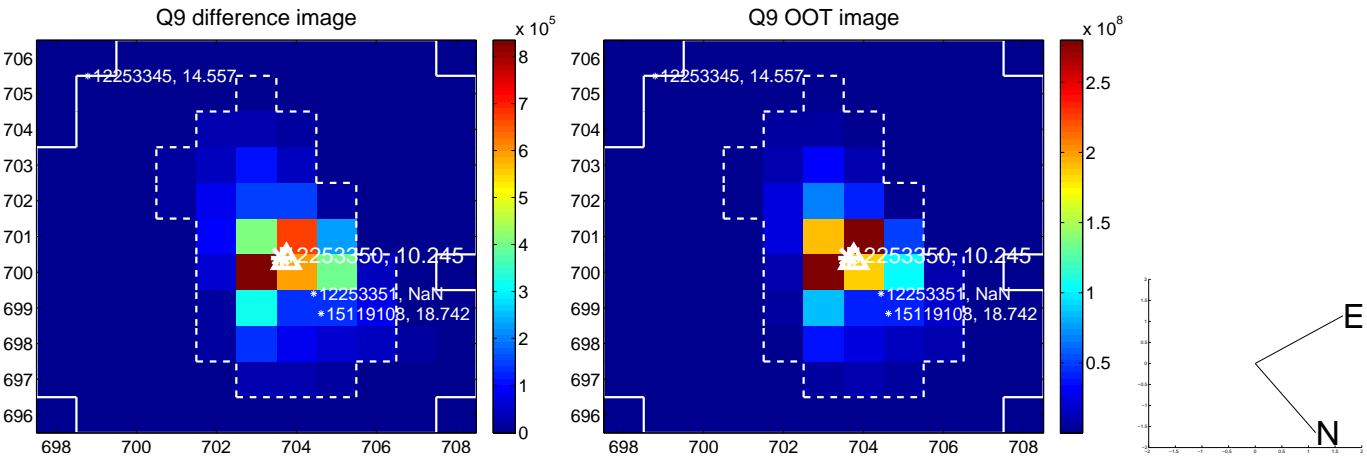
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



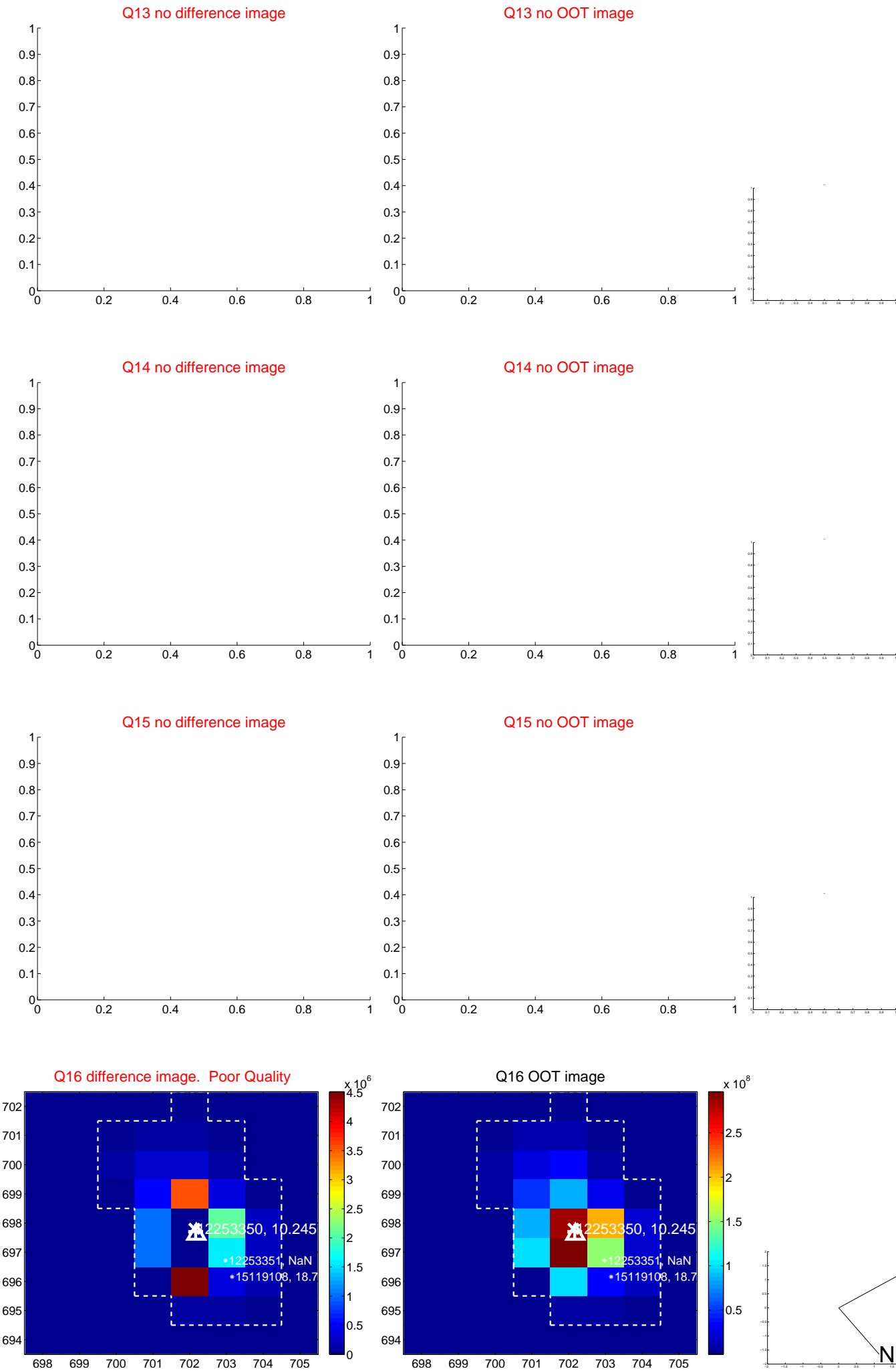
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



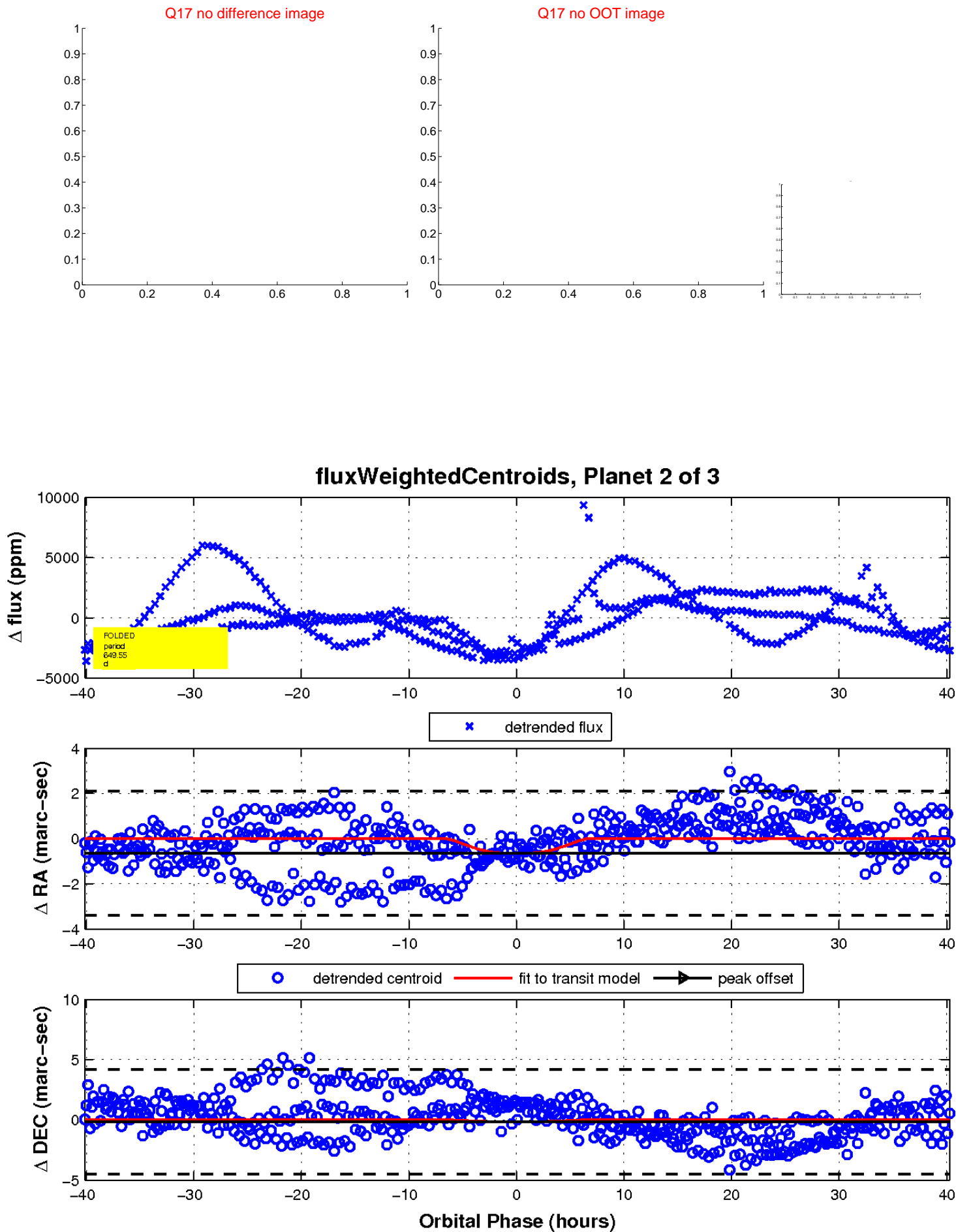
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

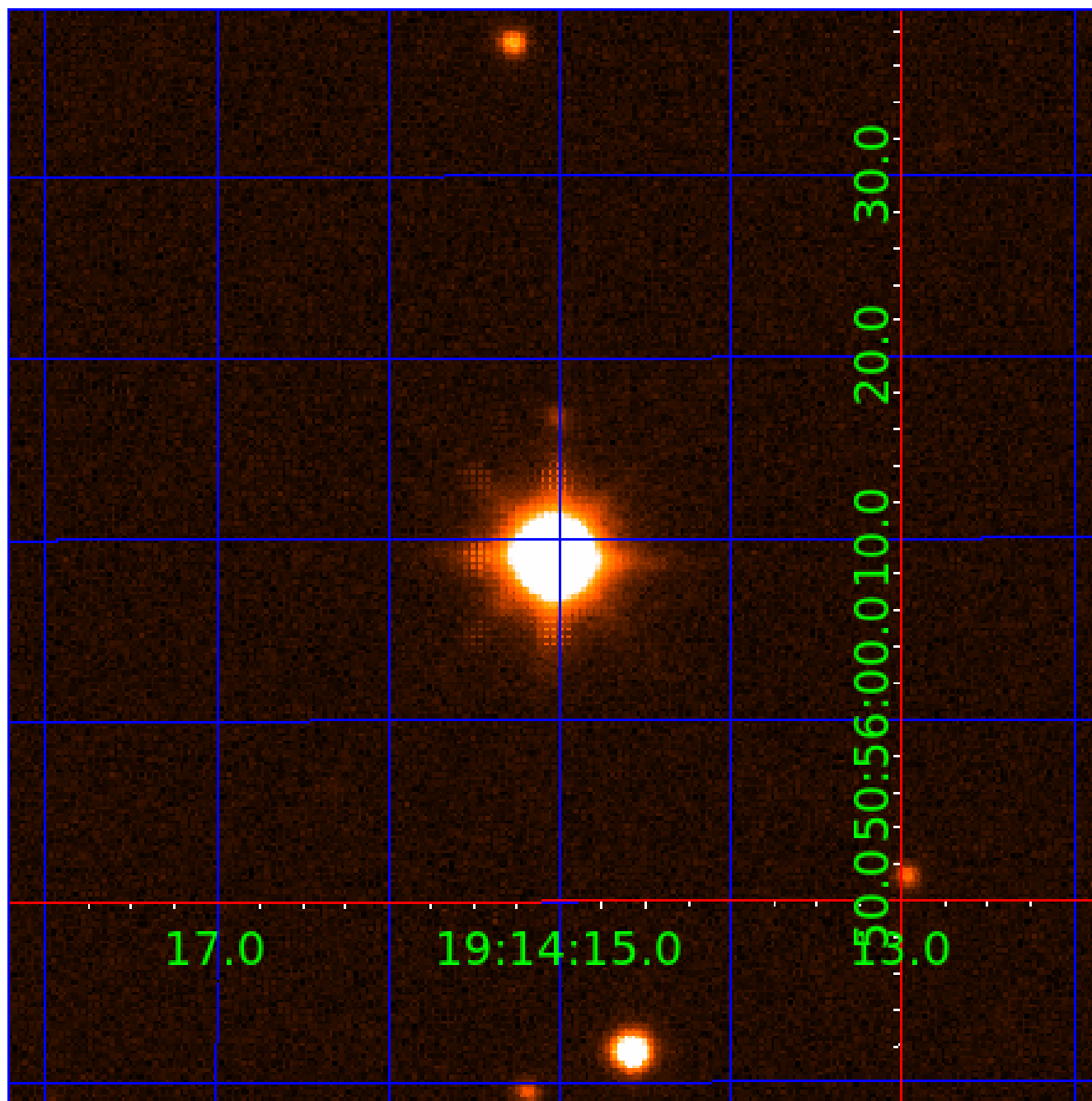


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012253350

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})
012253350-01	OBS	No	408.497605	449.229090	528.6	3.148	21.1	4.3	1.30	5860	3.92	1.52
012253350-02	OBS	No	649.548954	240.927251	1543.0	13.438	14.6	3.1	1.30	5860	6.48	0.82
012253350-03	OBS	No	577.953207	363.294571	324.1	34.934	16.5	2.3	1.30	5860	2.35	0.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012253350-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_SATURATED
012253350-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
012253350-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED

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

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

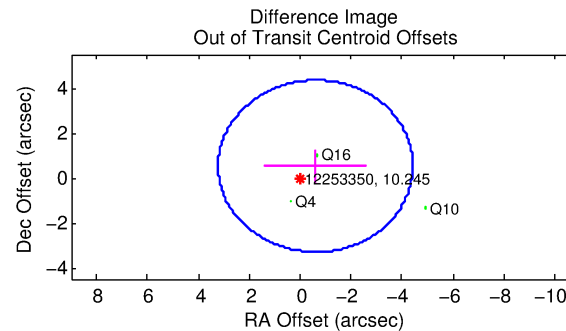
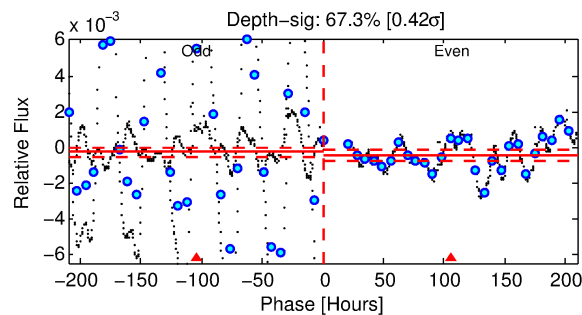
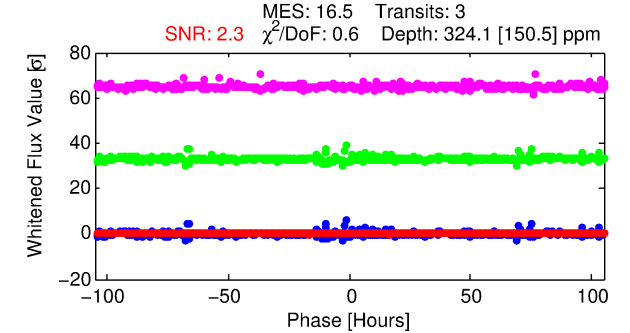
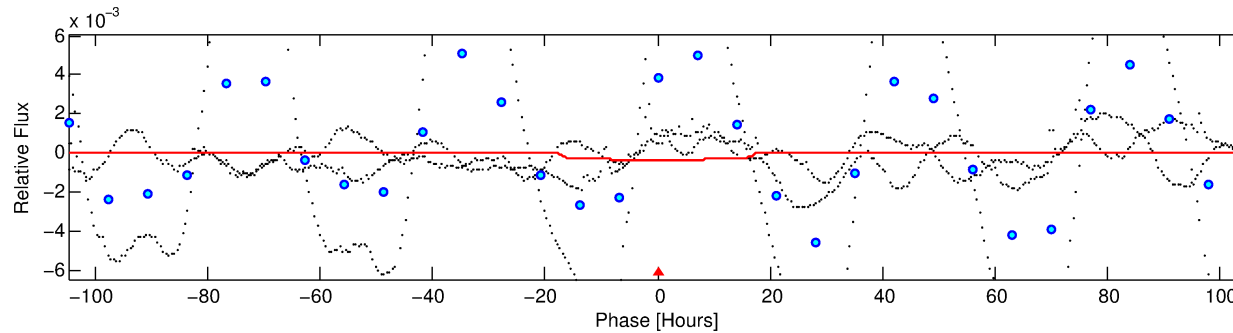
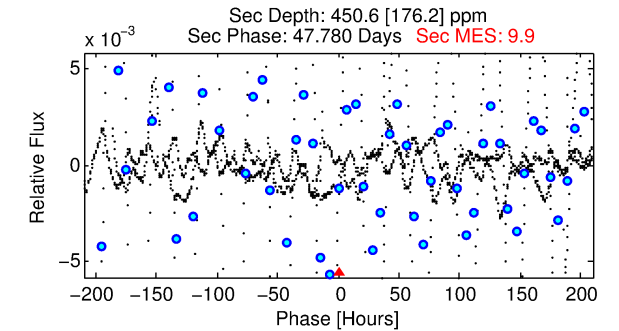
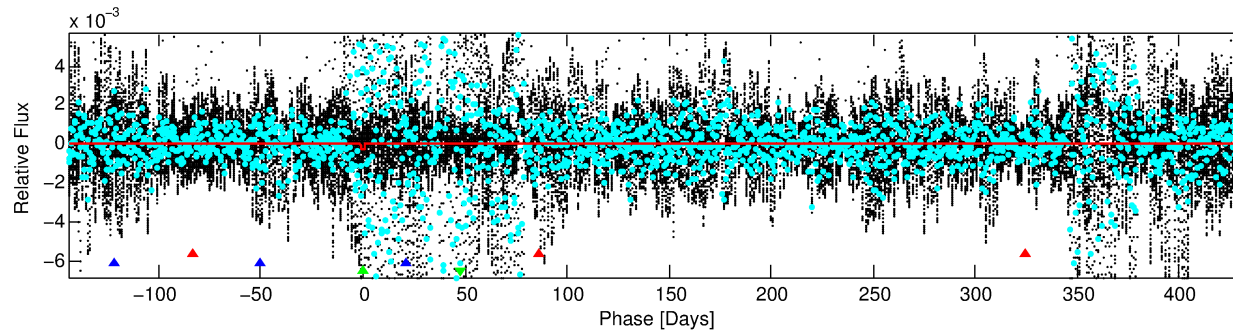
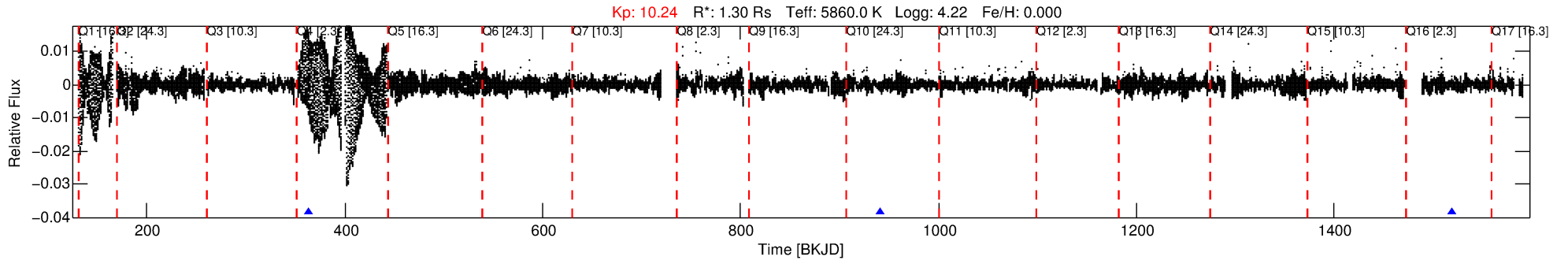
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012253350-03

No Significant Match Found

DV One-Page Summary

KIC: 12253350 Candidate: 3 of 3 Period: 577.953 d



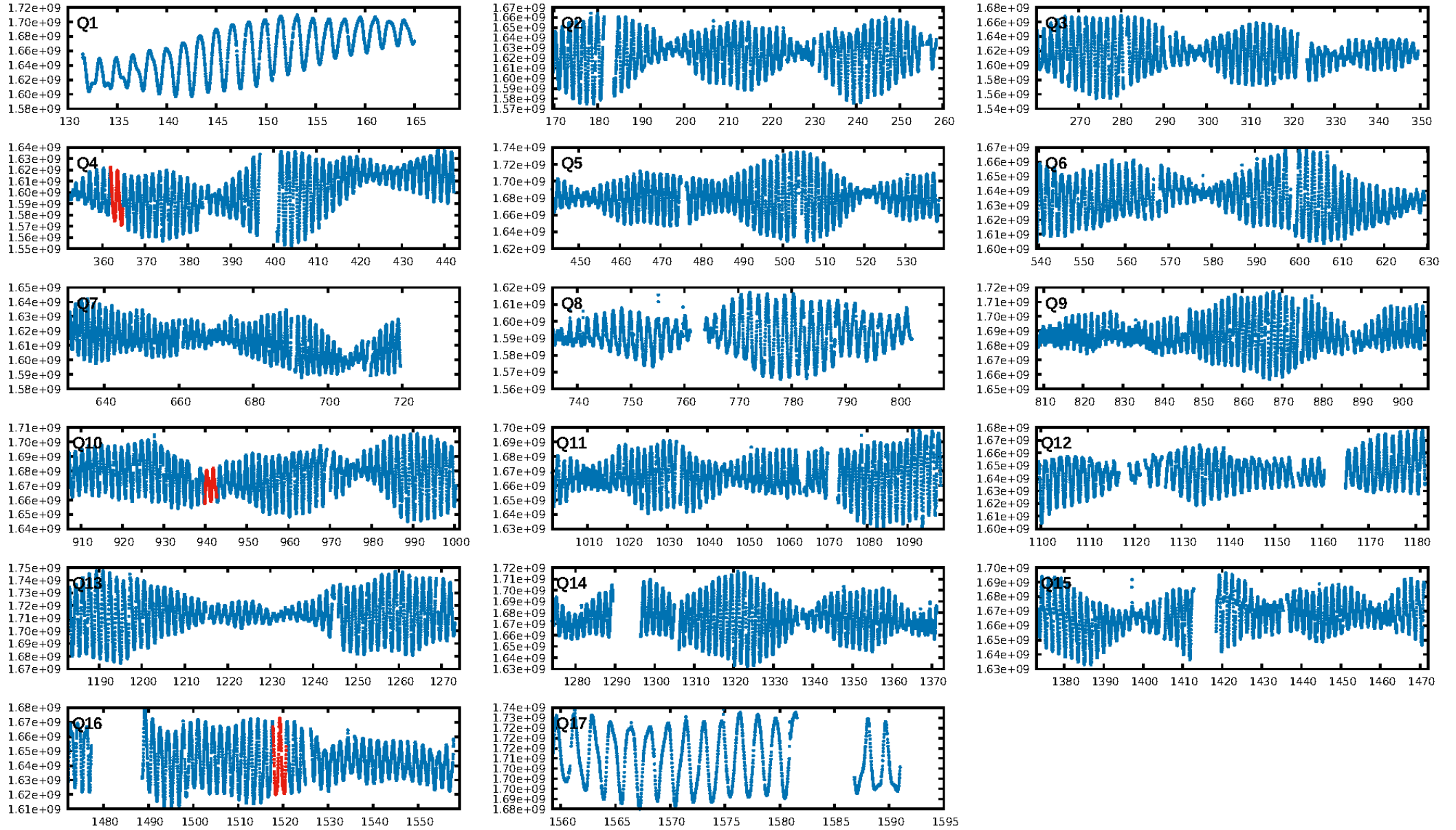
DV Fit Results:

Period = 577.95321 [0.00720] d
Epoch = 363.2946 [0.0098] BKJD
Rp/R* = 0.0166 [0.0046]
a/R* = 118.94 [43.54]
b = 0.38 [0.81]
Seff = 0.96 [0.39]
Teq = 252 [25] K
Rp = 2.35 [0.91] Re
a = 1.3626 [0.3348] AU
Ag = 83080.25 [64548.92] [1.29σ]
Teffp = 6618 [1140] K [5.58σ]

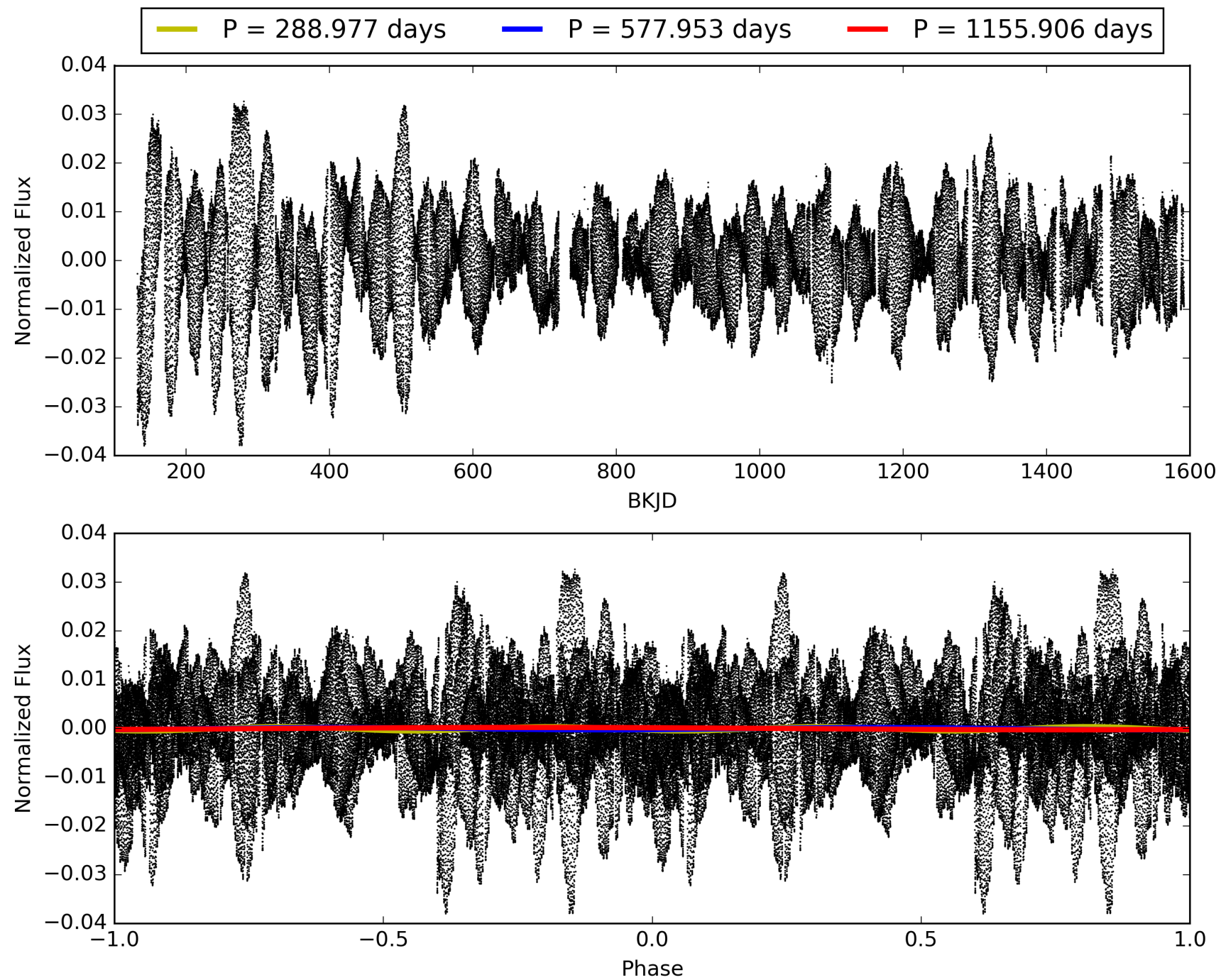
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [115.95σ]
LongPeriod-sig: 100.0% [45.91σ]
ModelChiSquare2-sig: 89.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.12e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 3.369 arcsec [2.83σ]
OotOffset-rm: 0.804 arcsec [0.63σ]
KicOffset-rm: 0.932 arcsec [1.11σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 012253350-03, PDC Light Curves

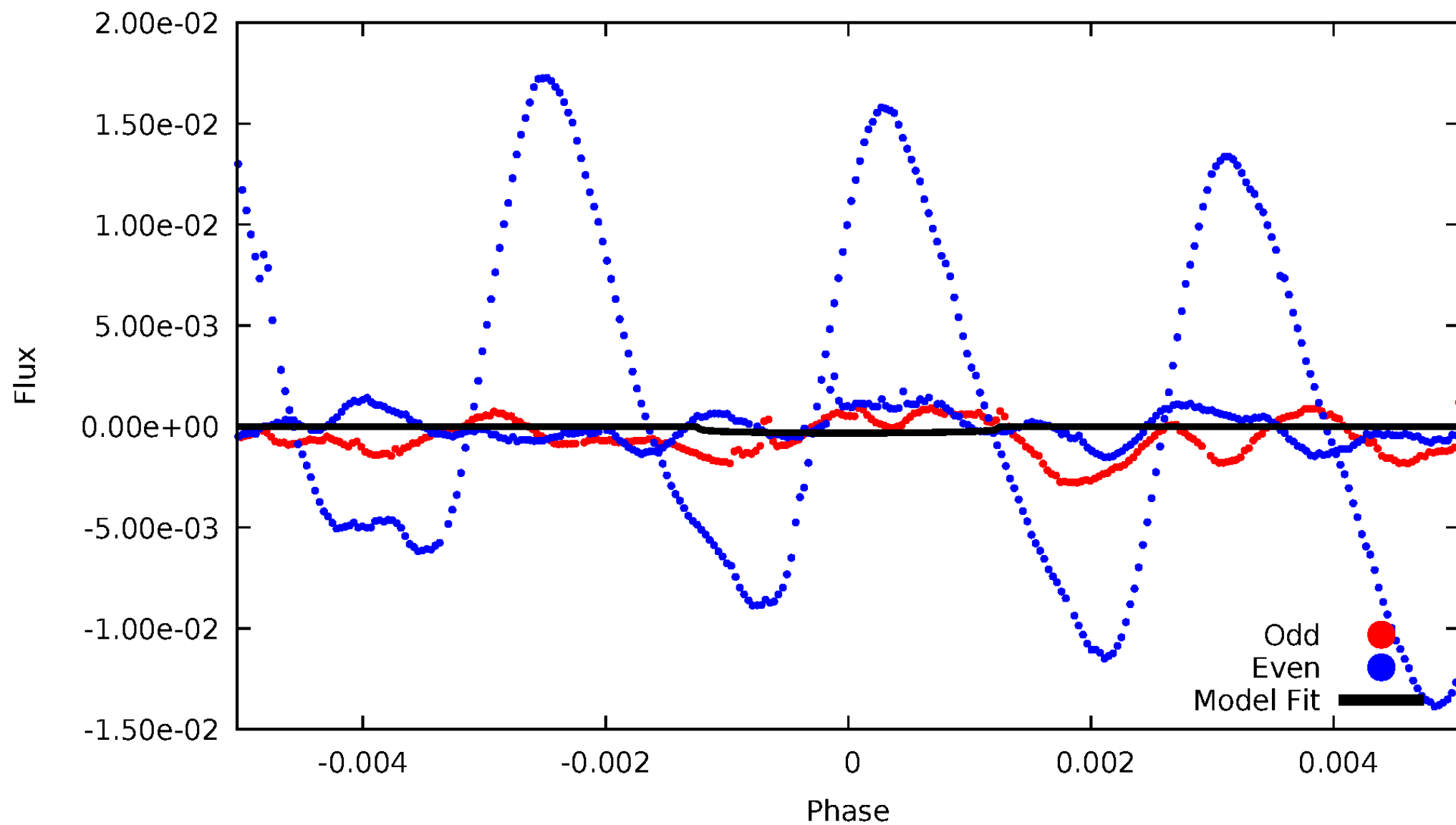


TCE 012253350-03



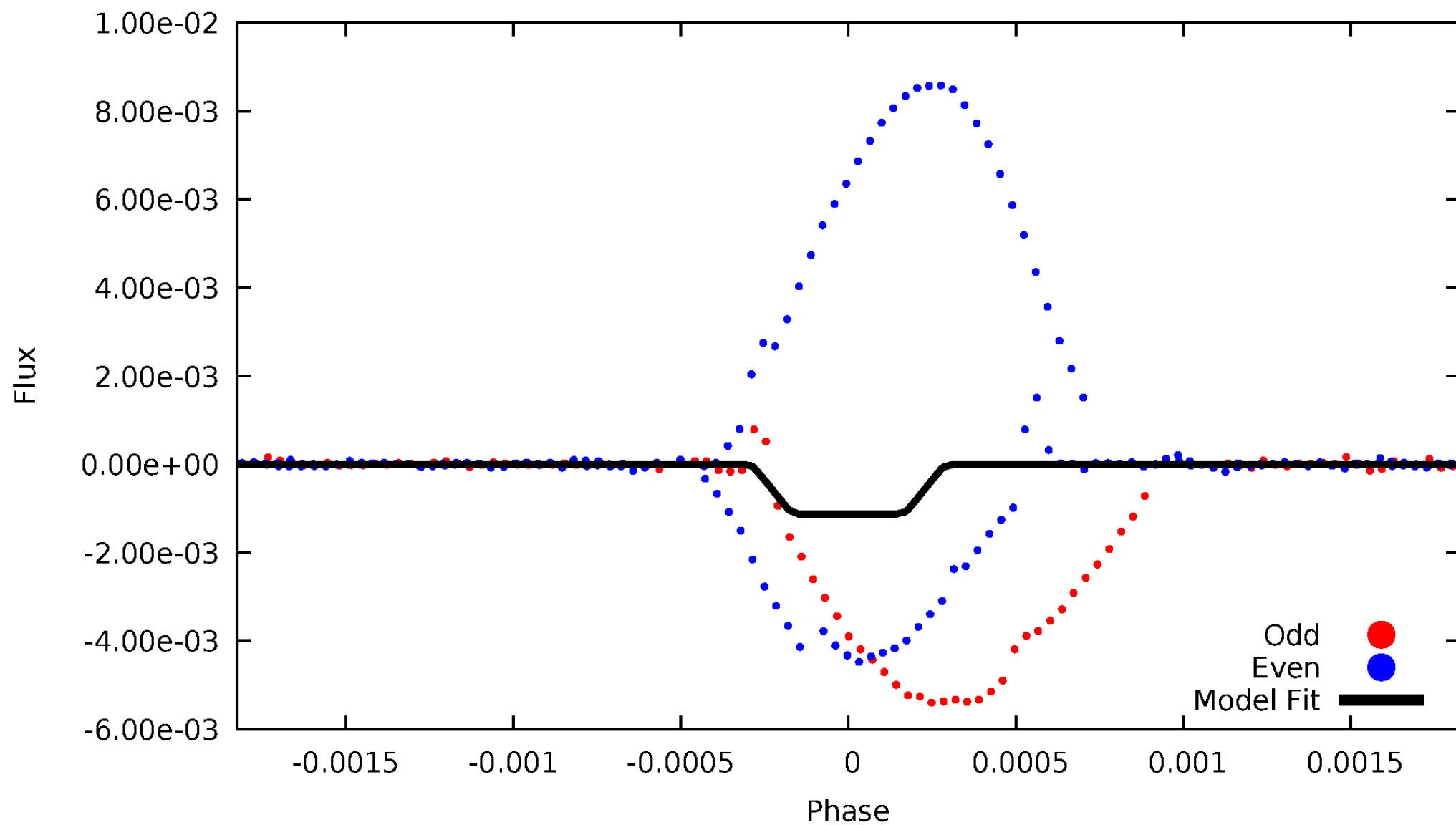
DV Odd/Even

TCE 012253350-03



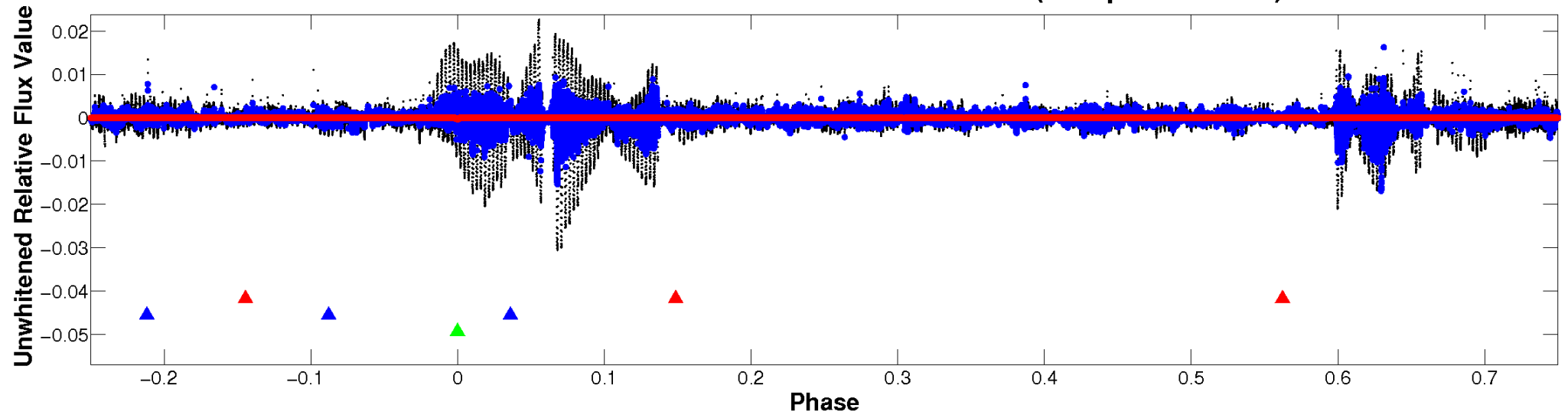
ALT Odd/Even

TCE 012253350-03

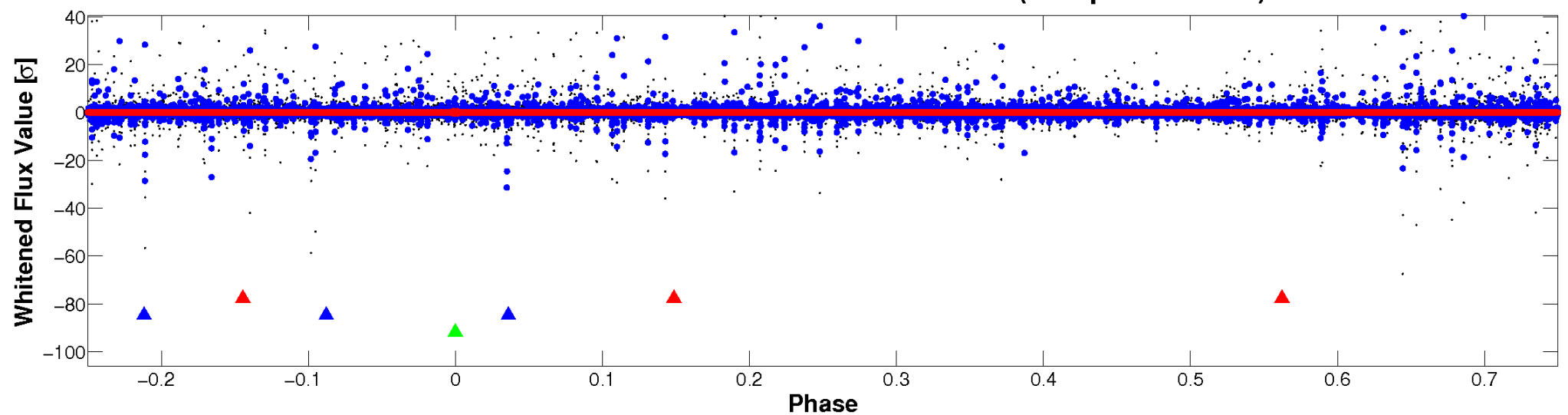


Non-Whitened Vs. Whitened Light Curve

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

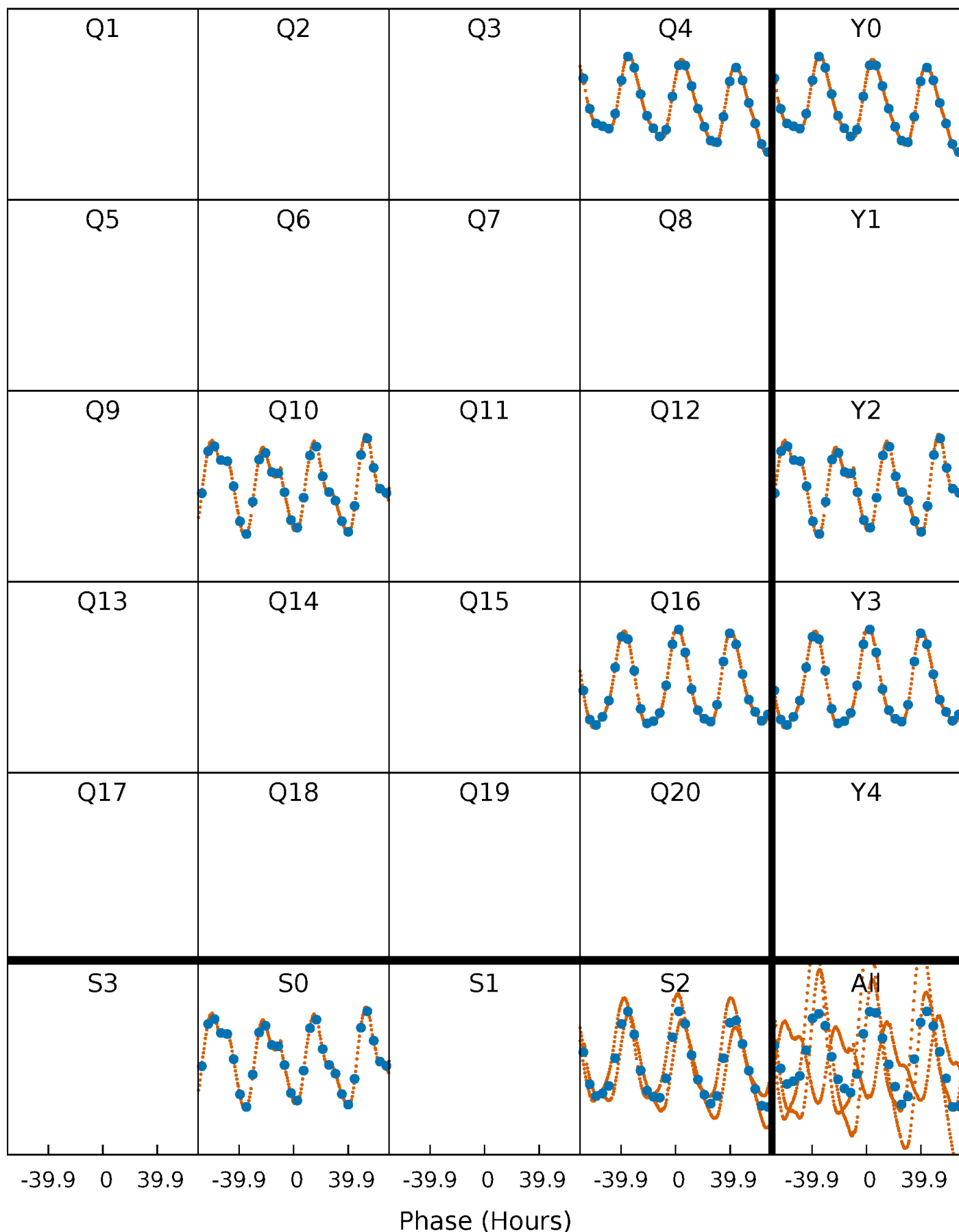


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



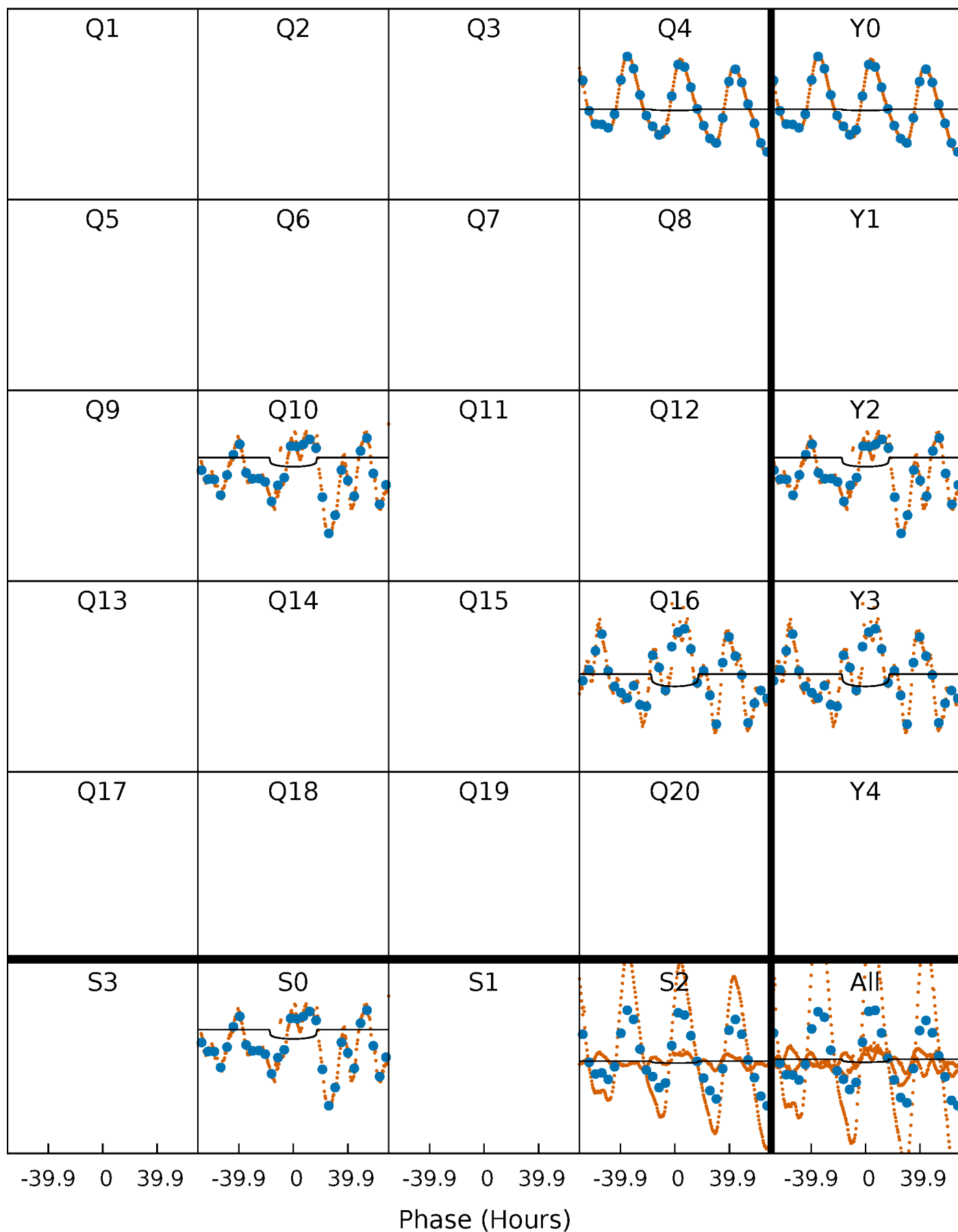
PDC Quarter-Phased Transit Curves

TCE 012253350-03 P=577.953207 Days $T_0=363.294571$ (BKJD)



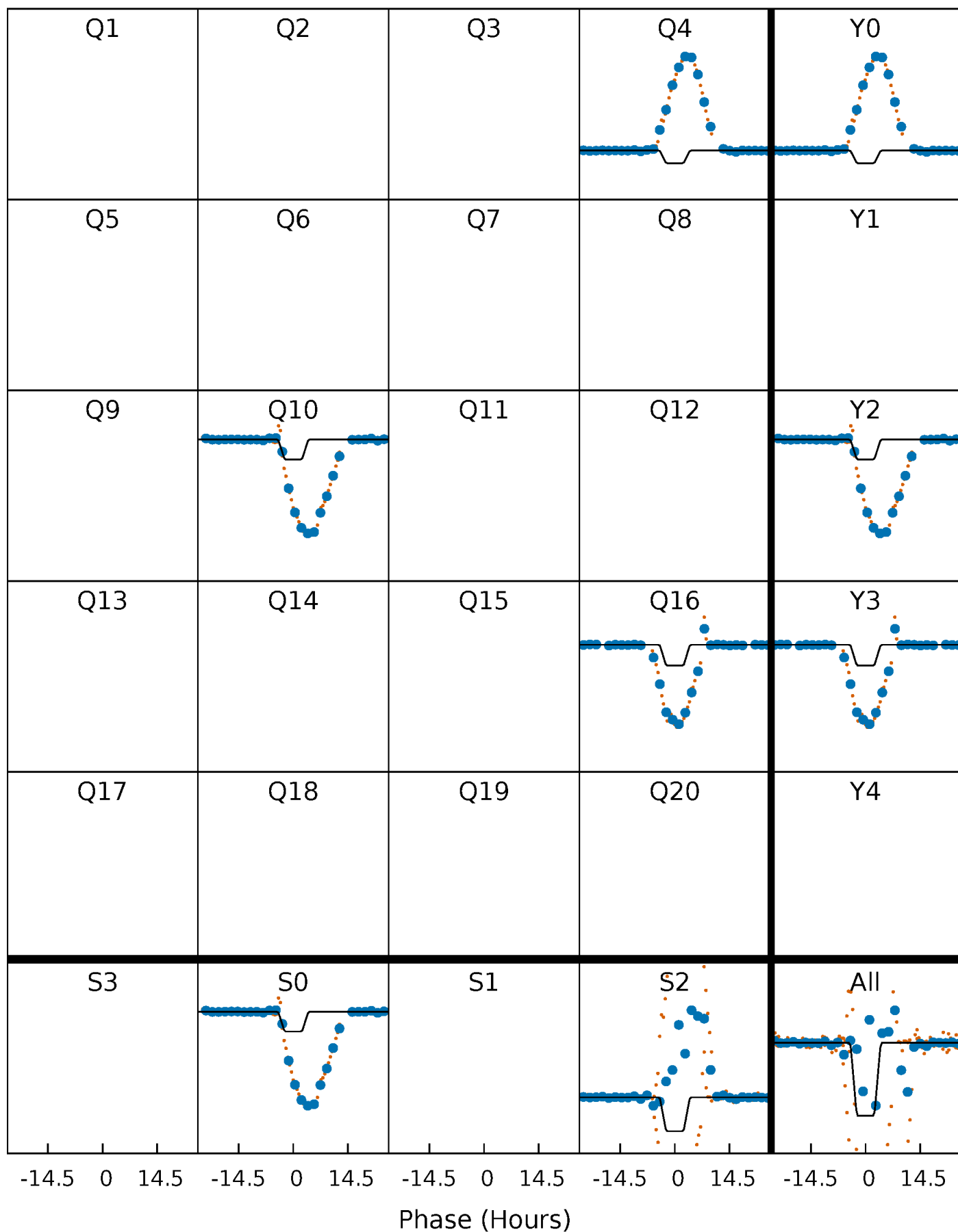
DV Quarter-Phased Transit Curves

TCE 012253350-03 $P=577.953207$ Days $T_0=363.294571$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

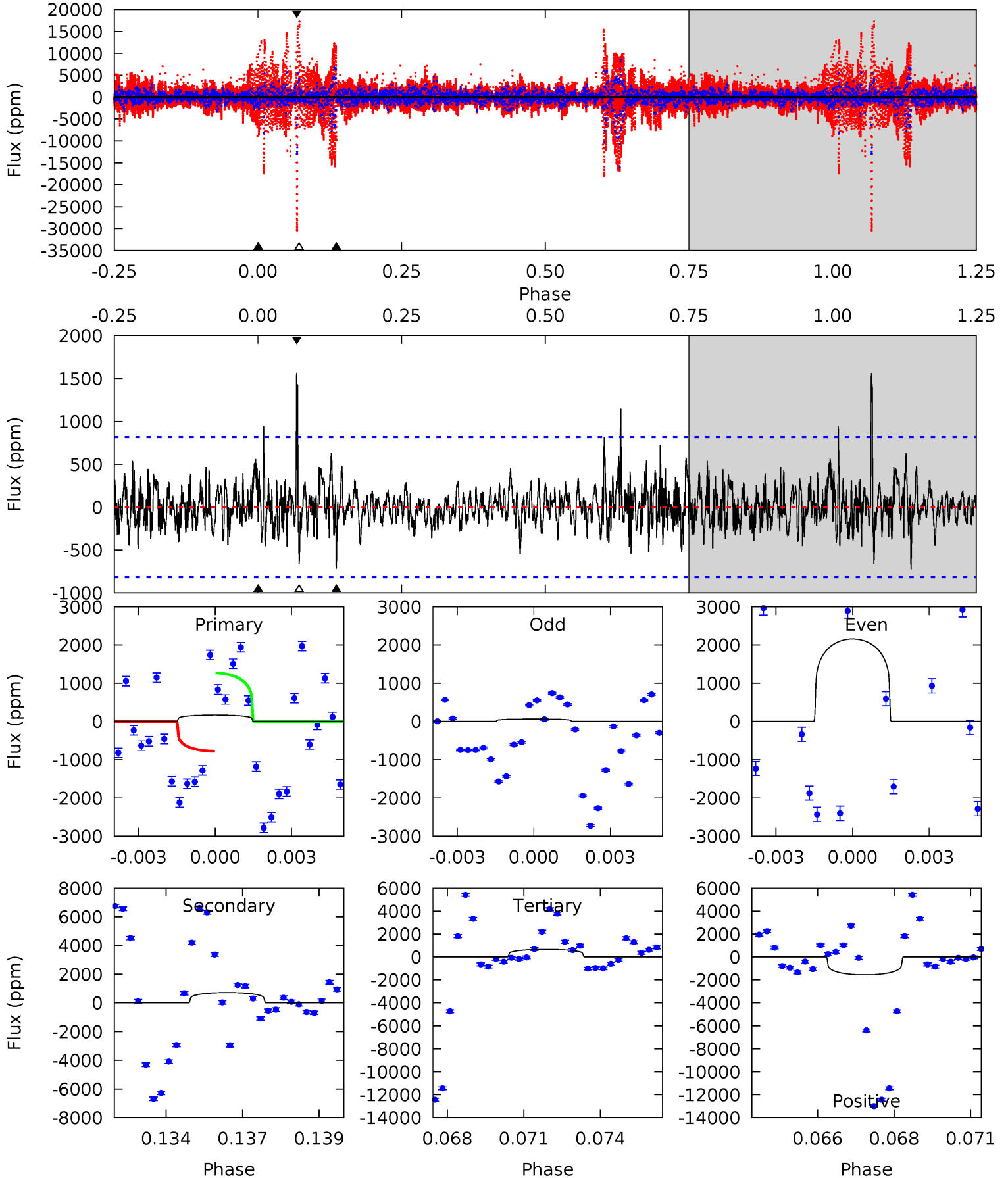
TCE 012253350-03 P=577.799776 Days $T_0=363.210477$ (BKJD)



DV Model-Shift Uniqueness Test

012253350-03, P = 577.953207 Days, E = 363.294571 Days

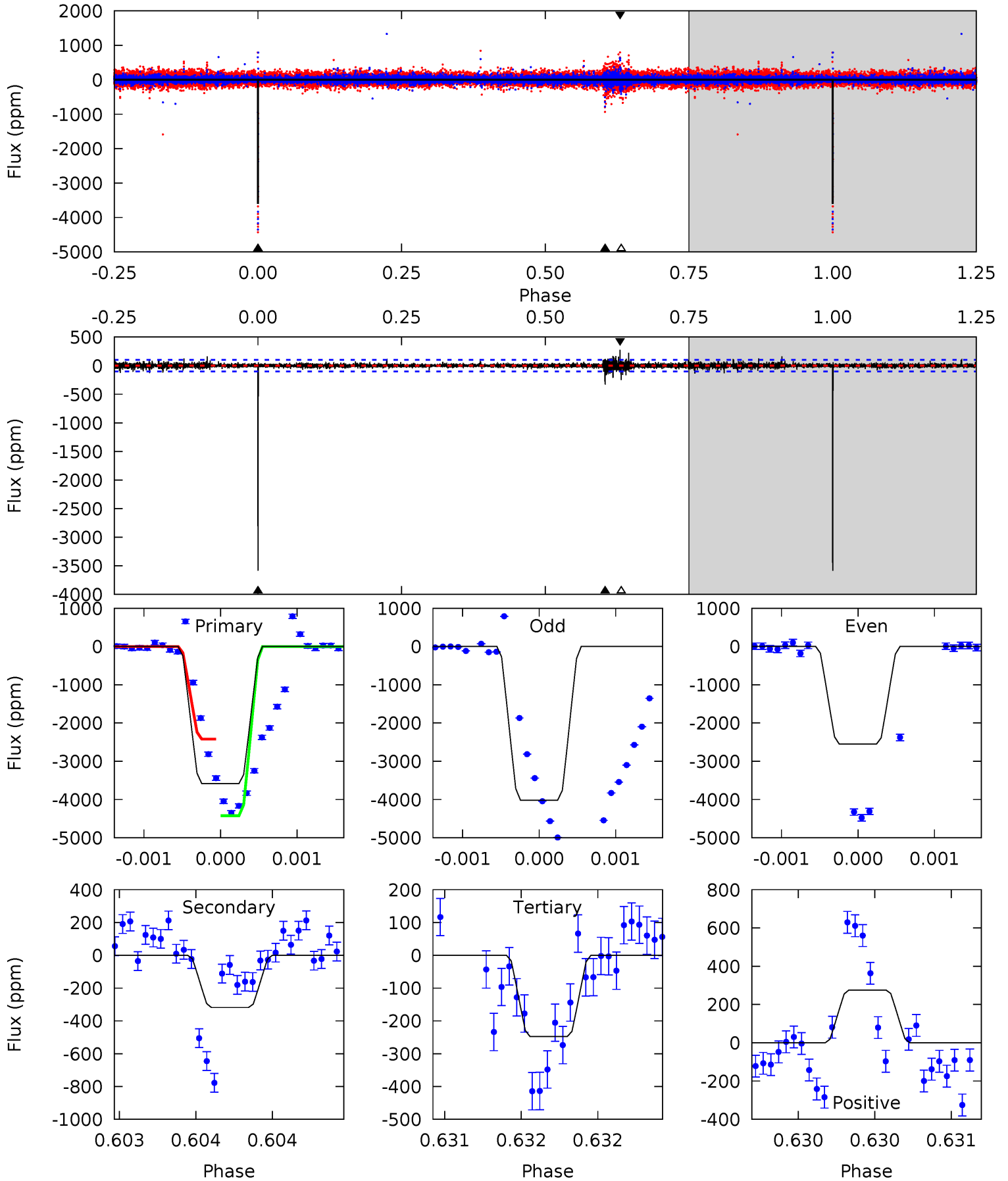
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.09	4.62	4.24	10.1	5.28	3.02	1.34	-3.15	-9.02	0.37	-5.49	6.27	2.43	0.69	1.64



Alt Model-Shift Uniqueness Test

012253350-03, P = 577.799776 Days, E = 363.210477 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
196.3	17.4	13.6	15.1	5.55	3.44	1.20	182.7	181.2	3.85	2.34	33.9	0.13	0.07	0



Stellar Parameters For KIC 012253350

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5860^{+176}_{-193}	$4.217^{+0.220}_{-0.180}$	$0.000^{+0.250}_{-0.300}$	$1.296^{+0.347}_{-0.312}$	$1.009^{+0.152}_{-0.110}$	$0.652^{+0.808}_{-0.314}$
	+3%/-3%	+5%/-4%	+inf%/-inf%	+27%/-24%	+15%/-11%	+124%/-48%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 012253350-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-714 ± 155	$2.37^{+0.73}_{-0.69}$	352^{+26}_{-26}	7493^{+1691}_{-1105}	$132571^{+134372}_{-62796}$
Alt.	-318 ± 18	$4.72^{+0.97}_{-0.87}$	351^{+26}_{-26}	4458^{+301}_{-241}	14706^{+7415}_{-4411}

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

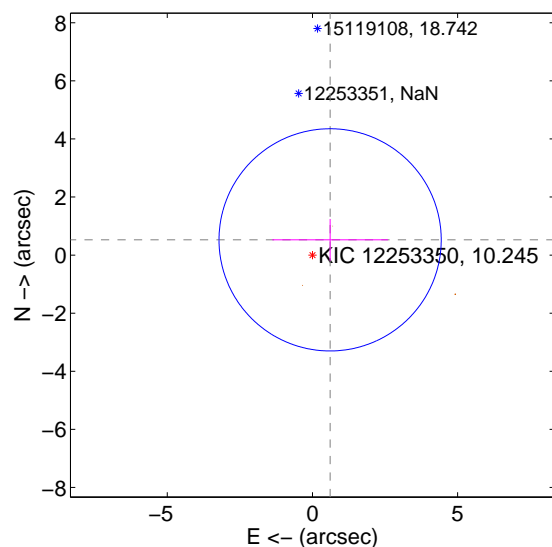
Supplemental centroid analysis for 012253350-03. **Kepler magnitude: 10.24**. Transit SNR 2.29

There are 0 quarters with good PRF difference image offsets

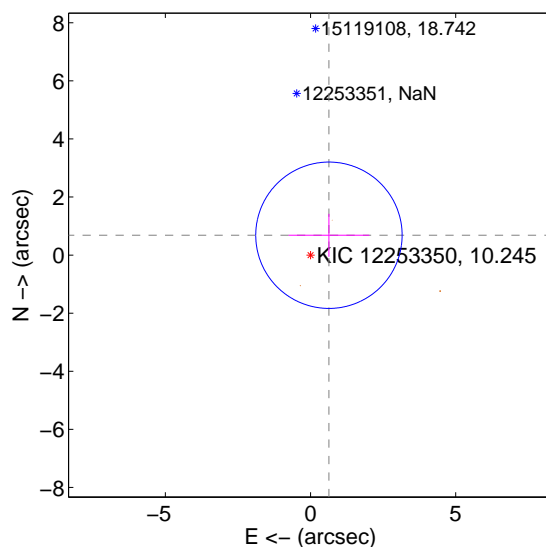
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.804 ± 1.275	0.63	-0.609 ± 1.991	0.525 ± 0.719
PRF-fit source offset from KIC position	0.932 ± 0.840	1.11	-0.634 ± 1.391	0.684 ± 0.739
photometric centroid source offset	3.37 ± 1.19	2.83	1.80 ± 1.21	2.85 ± 1.19

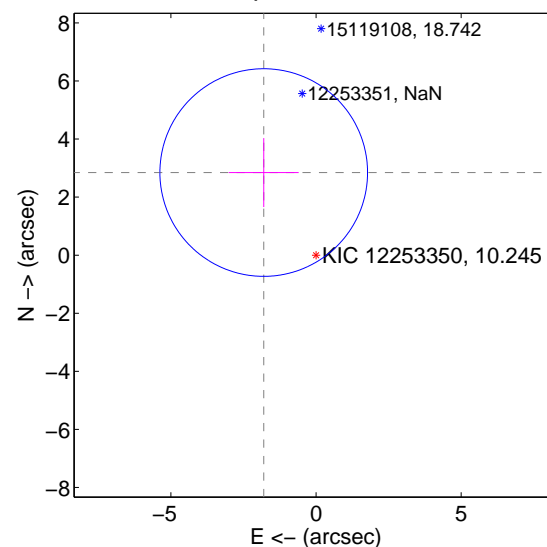
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

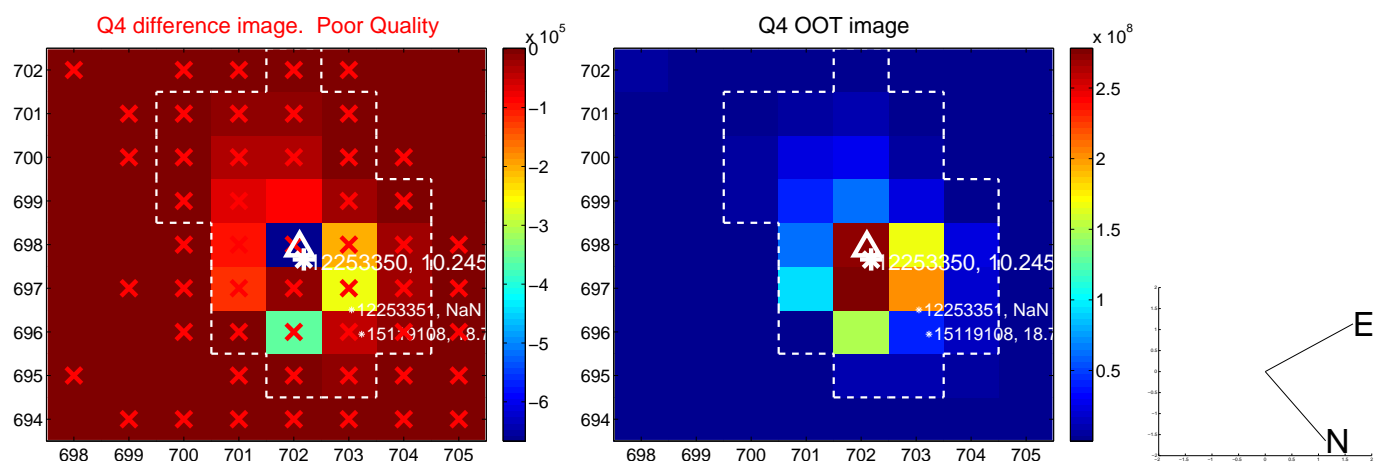
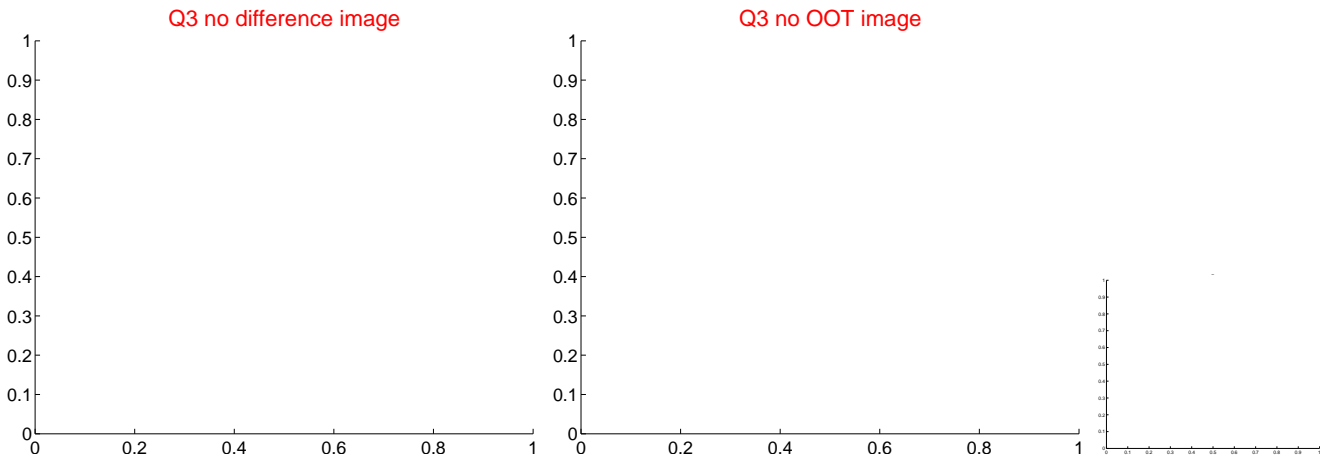
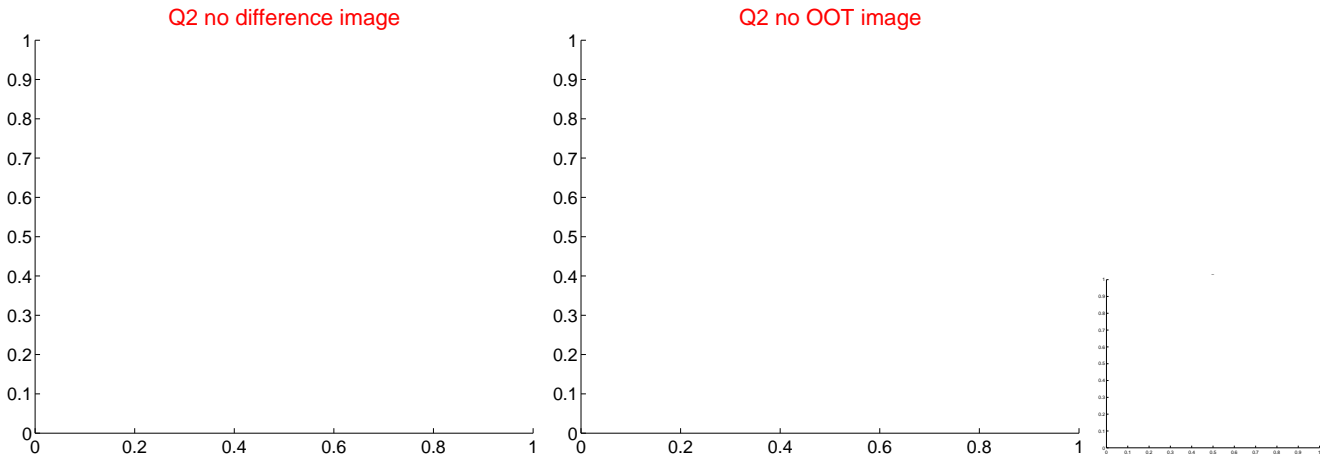
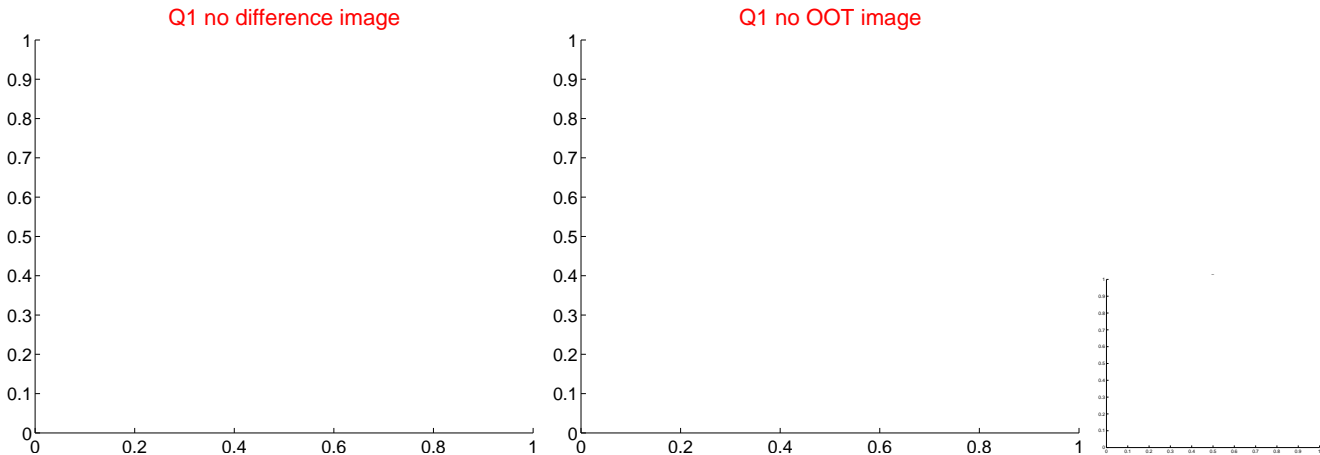


offset from photometric centroids



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

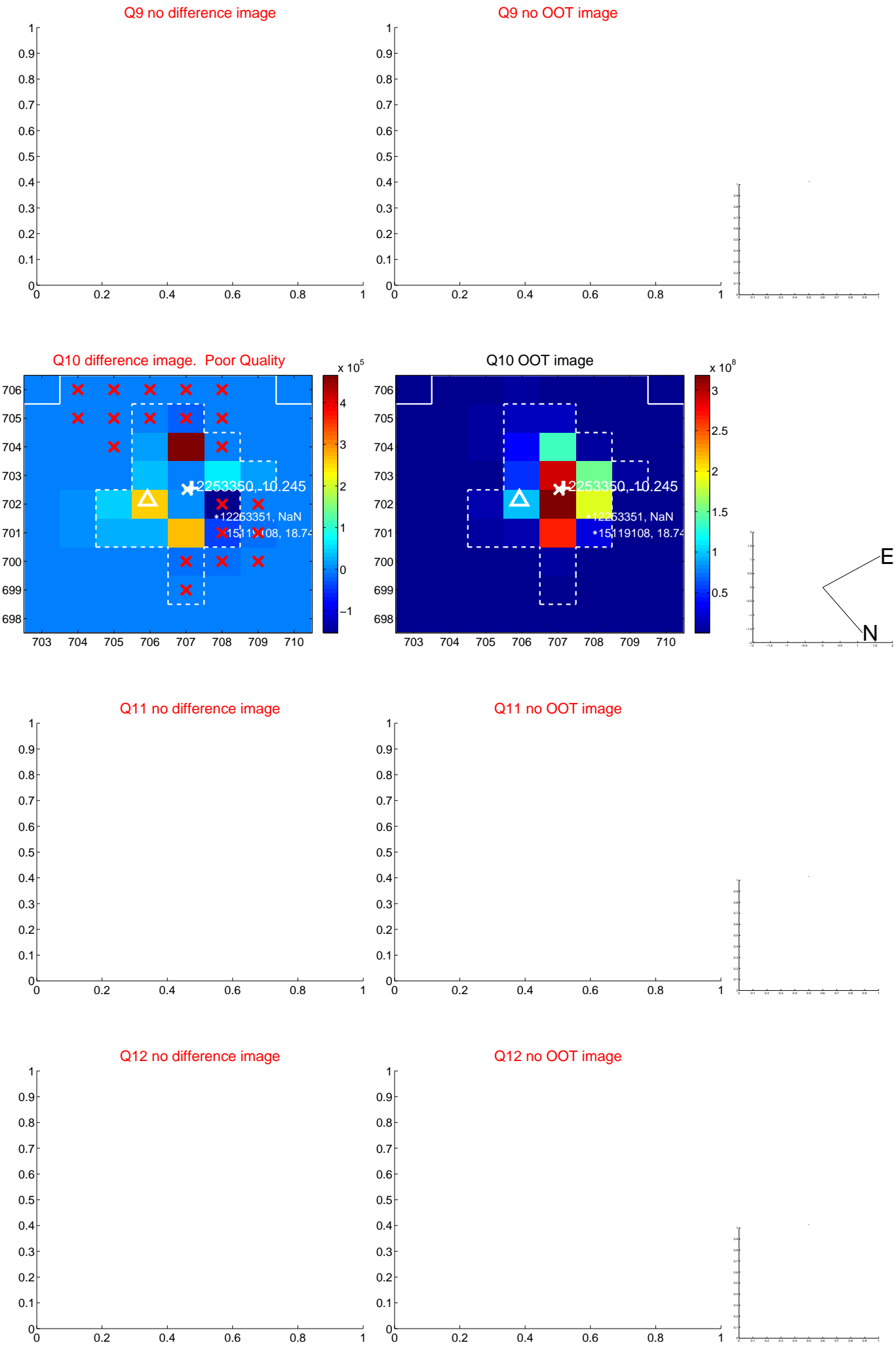
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



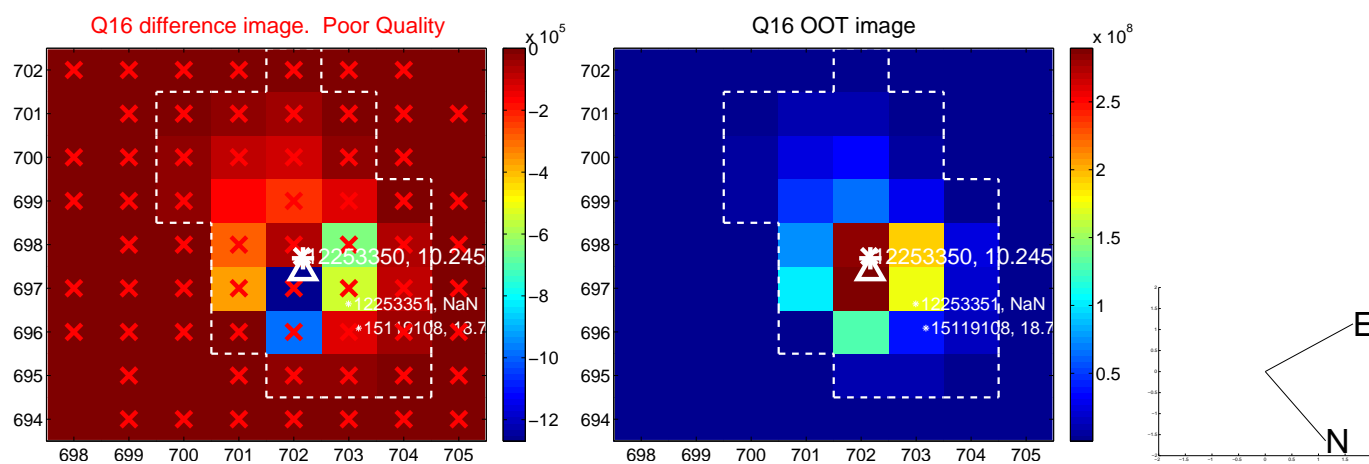
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



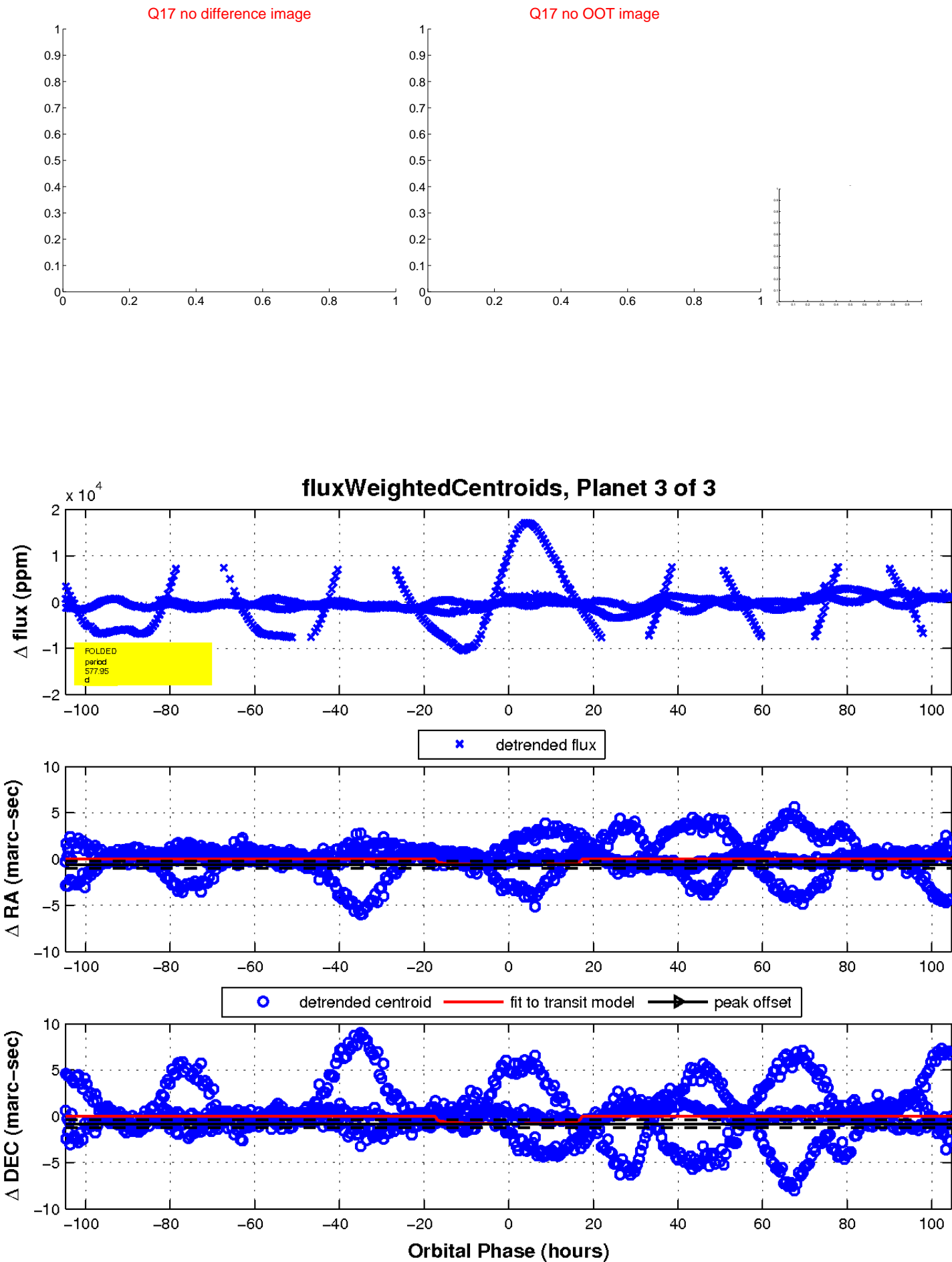
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

