

KIC 001026474

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})
001026474-01	OBS	No	223.399309	198.614818	2545.8	3.991	11.3	6.1	0.69	4276	3.35	0.35
001026474-02	OBS	No	205.852555	250.645458	1451.2	19.066	10.0	3.5	0.69	4276	3.09	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001026474-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
001026474-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

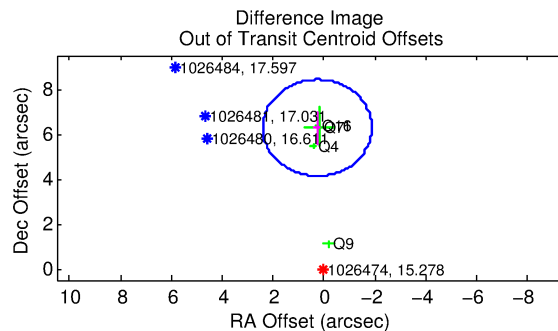
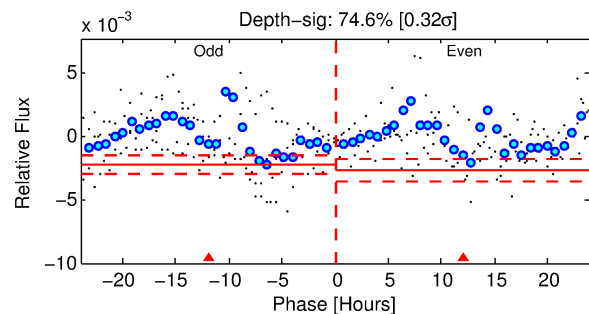
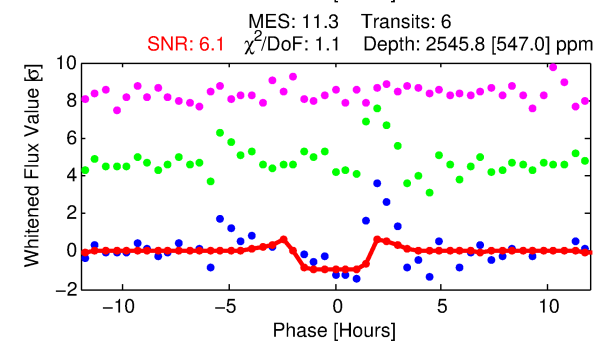
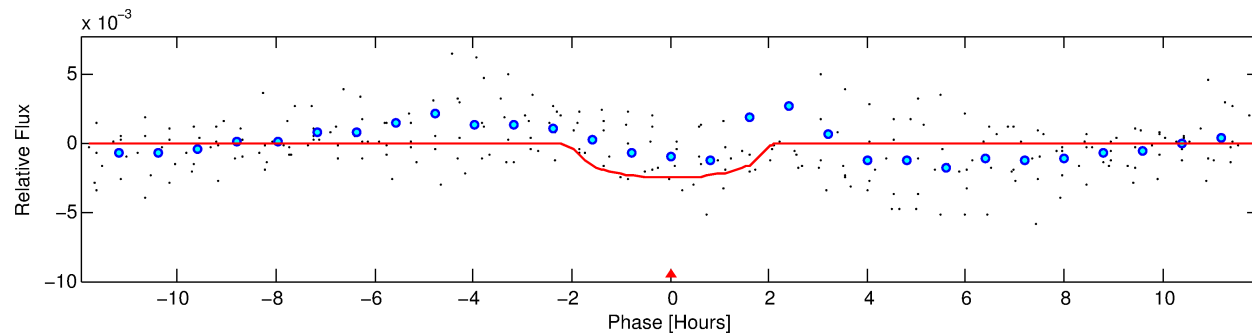
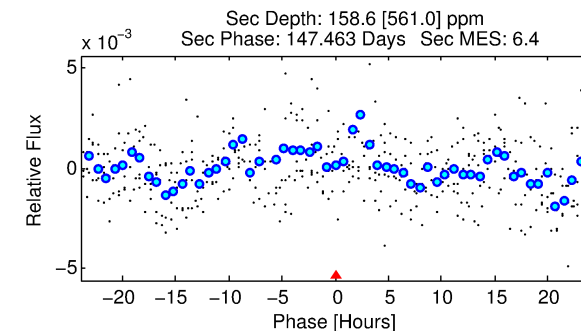
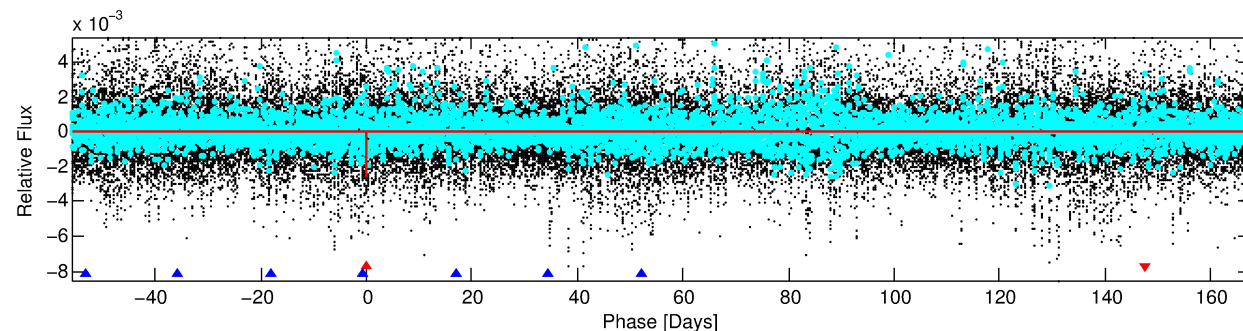
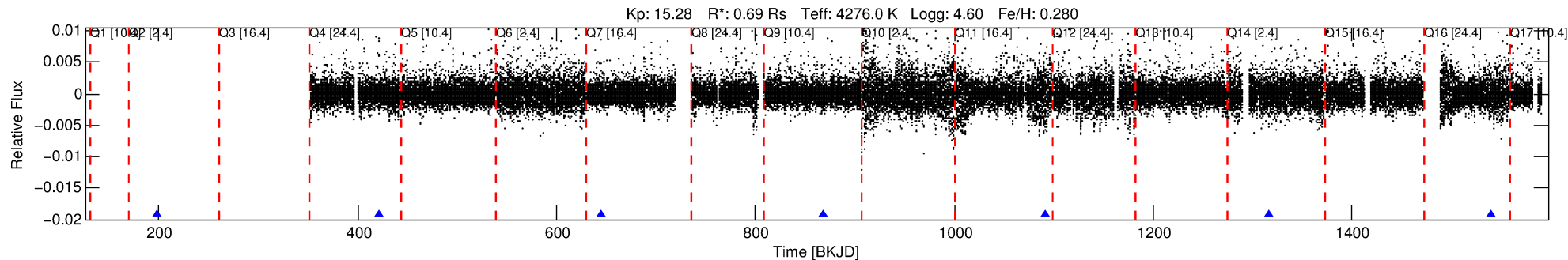
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001026474-01

No Significant Match Found

DV One-Page Summary

KIC: 1026474 Candidate: 1 of 2 Period: 223.399 d



DV Fit Results:

Period = 223.39931 [0.00293] d
Epoch = 198.6148 [0.0107] BKJD
Rp/R* = 0.0445 [0.0647]
a/R* = 432.46 [1737.89]
b = 0.26 [14.77]
Seff = 0.35 [0.06]
Teq = 196 [9] K
Rp = 3.35 [4.88] Re
a = 0.6368 [0.0453] AU
Ag = 3157.53 [14468.07] [0.22σ]
Teff = 2276 [2608] K [0.80σ]

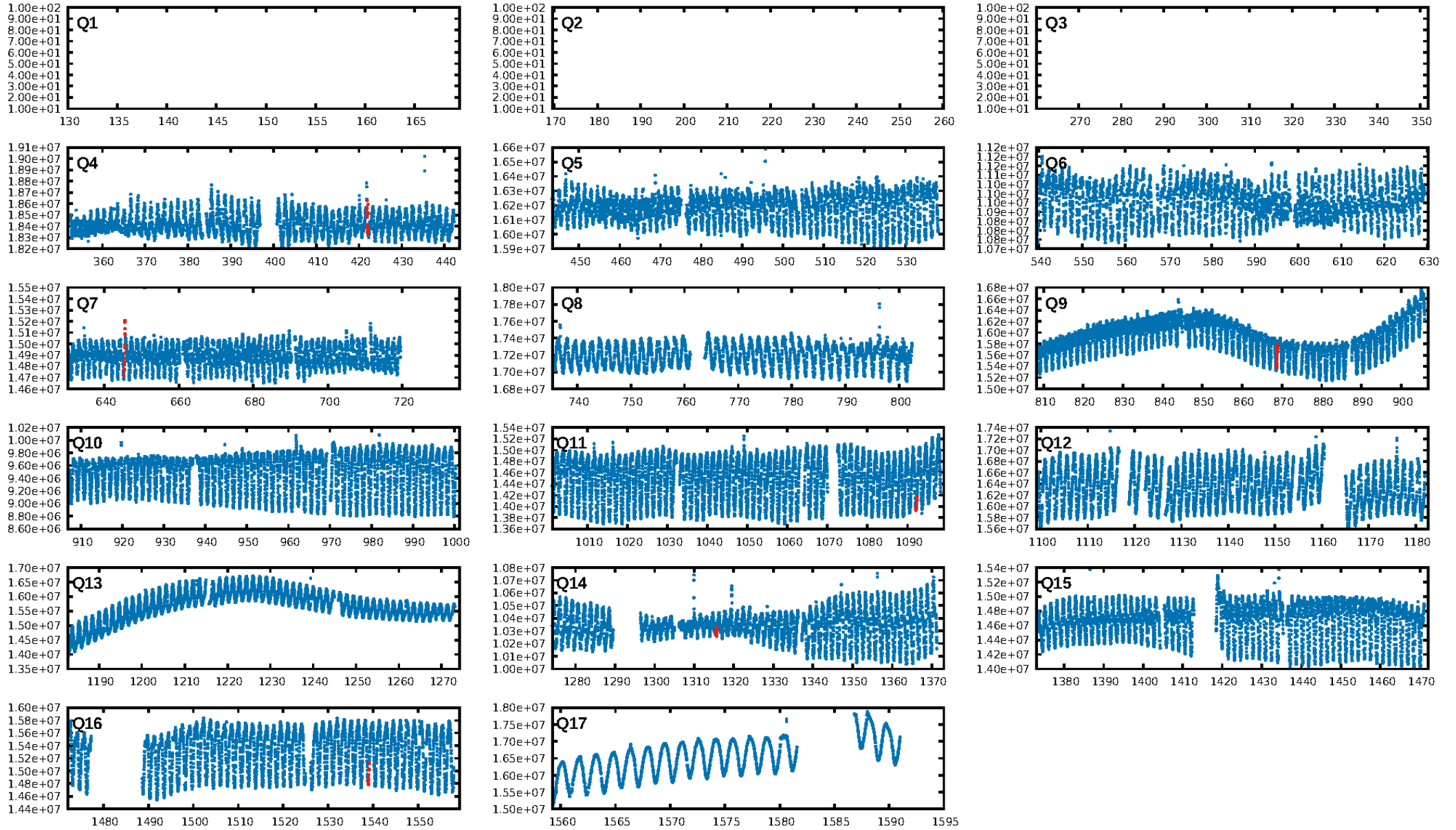
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.62σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 85.9%
Bootstrap-pfa: 5.49e-12
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -16.32
Centroid-sig: 4.1%
Centroid-so: 4.716 arcsec [7.77σ]
OotOffset-rm: 6.280 arcsec [8.78σ]
KicOffset-rm: 0.208 arcsec [0.96σ]
OotOffset-st: 0/2/2/1 [5]
KicOffset-st: 0/2/2/1 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.83 [5/6]

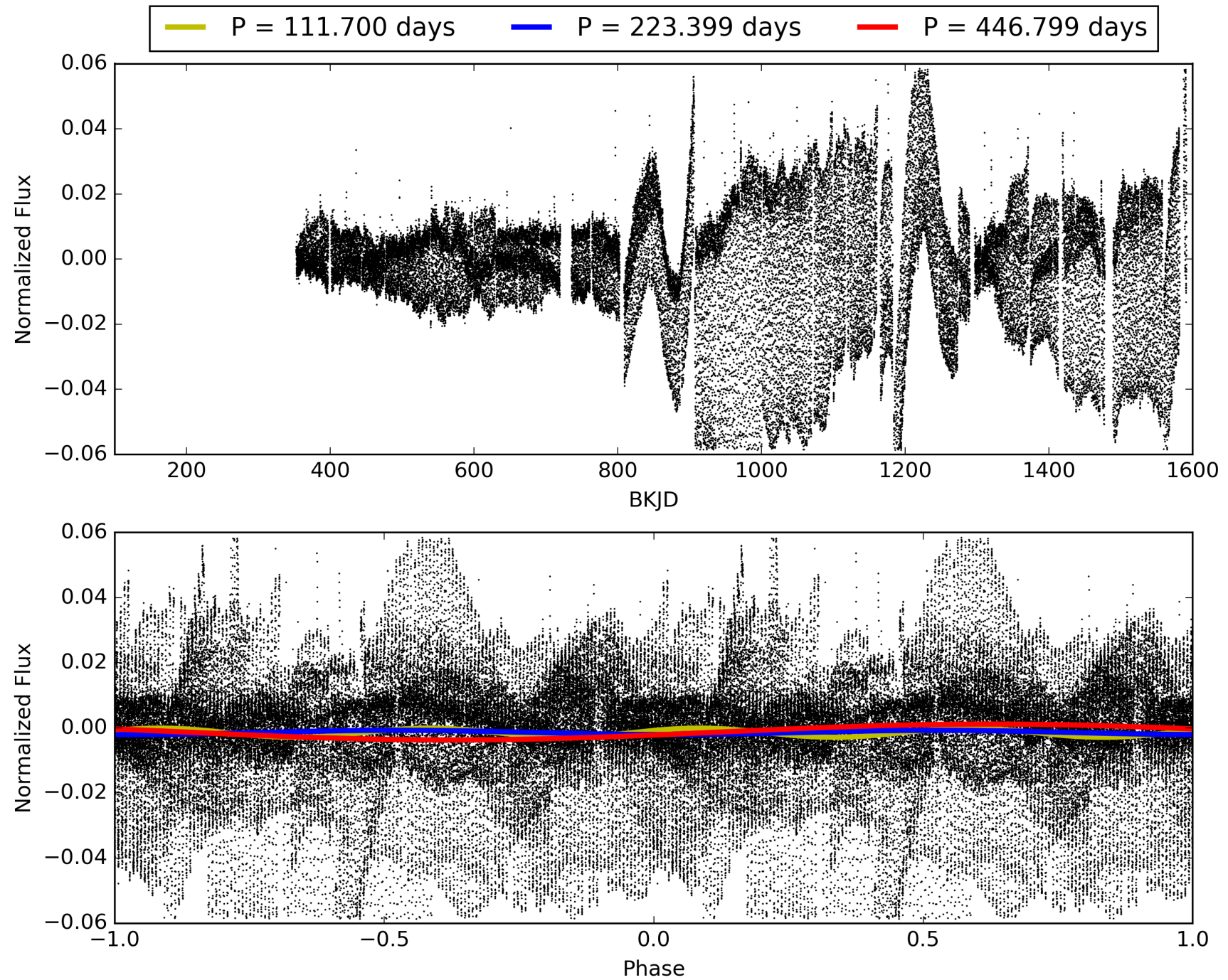
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:25:10 Z

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

TCE 001026474-01, PDC Light Curves

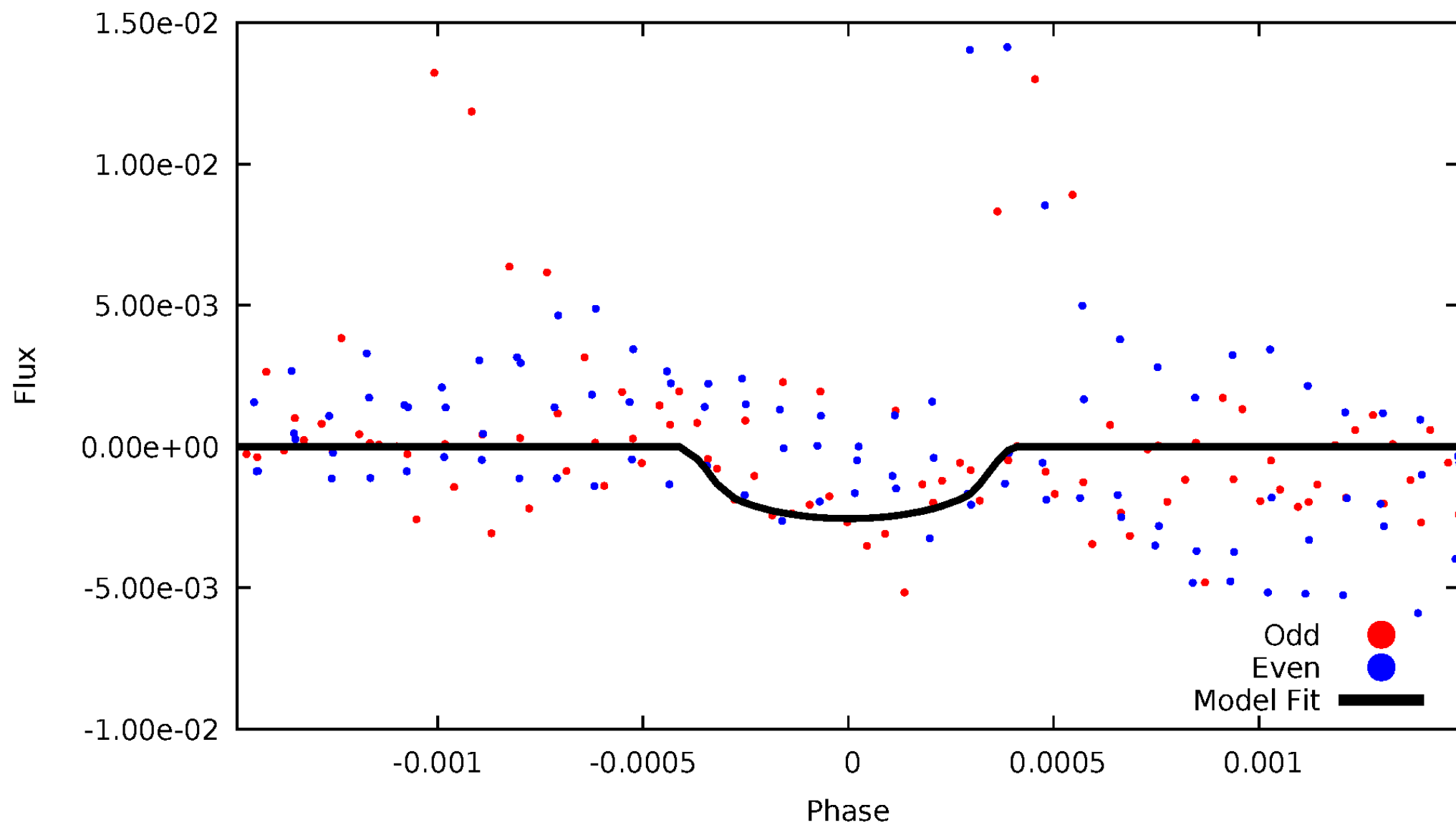


TCE 001026474-01



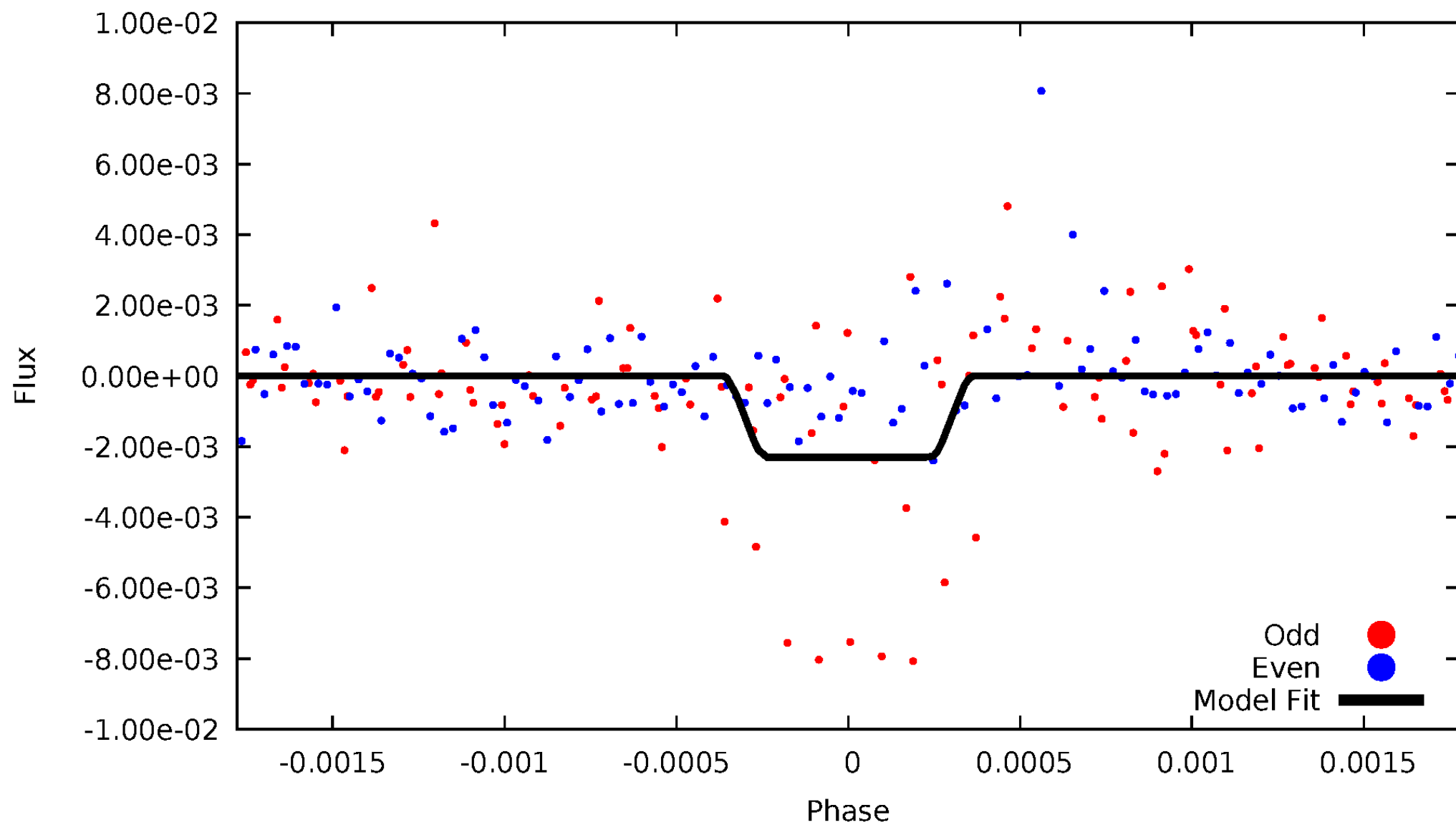
DV Odd/Even

TCE 001026474-01

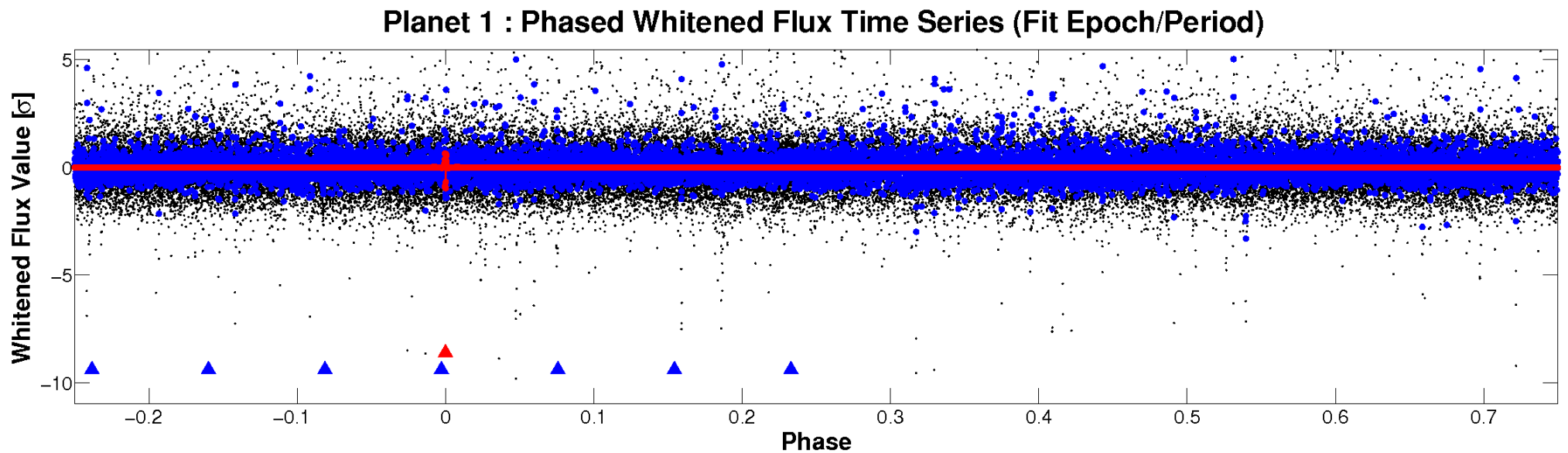
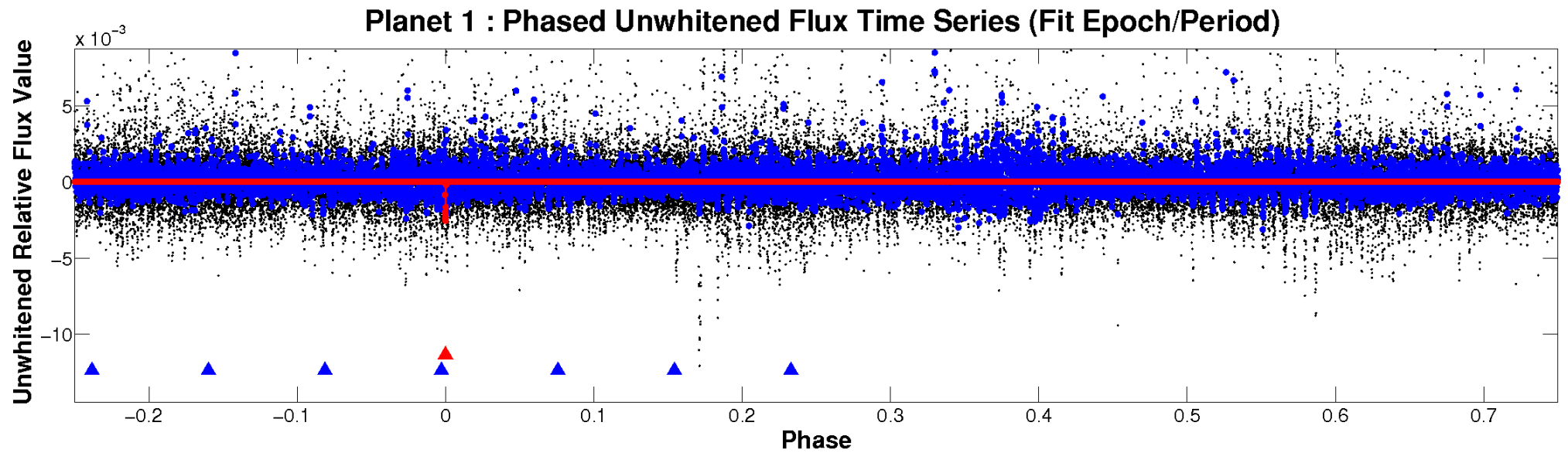


ALT Odd/Even

TCE 001026474-01

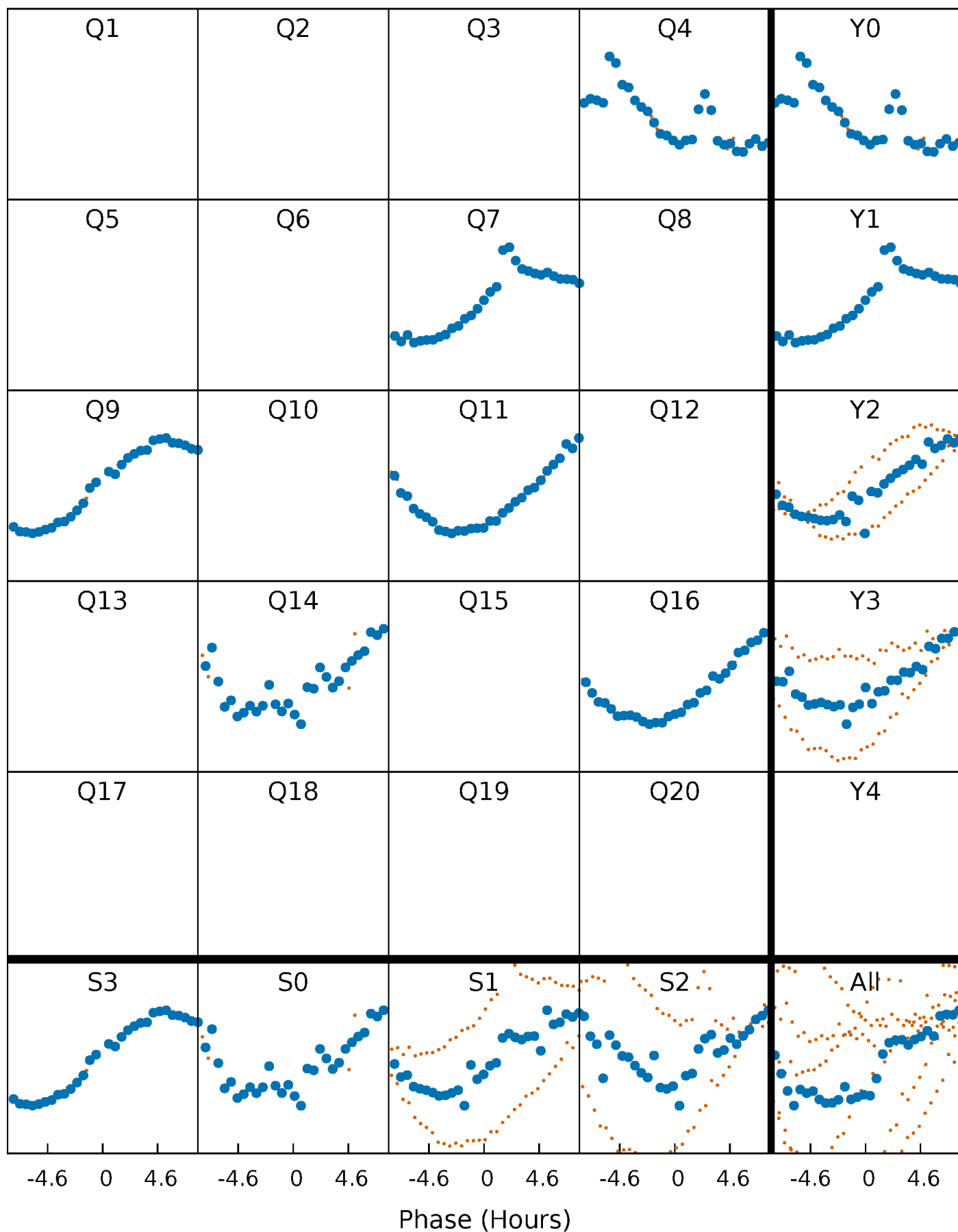


Non-Whitened Vs. Whitened Light Curve



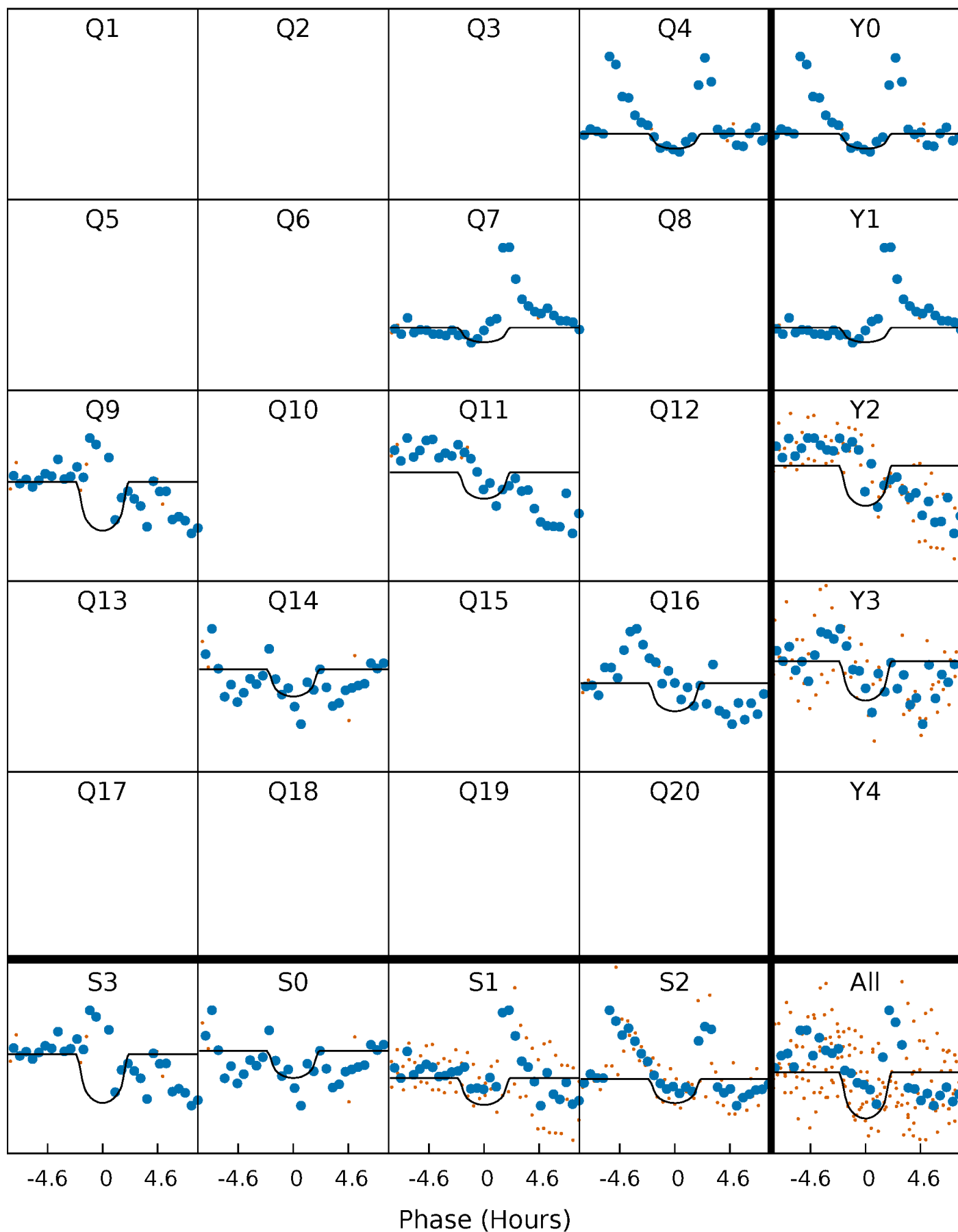
PDC Quarter-Phased Transit Curves

TCE 001026474-01 P=223.399309 Days $T_0=198.614818$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 001026474-01 P=223.399309 Days $T_0=198.614818$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

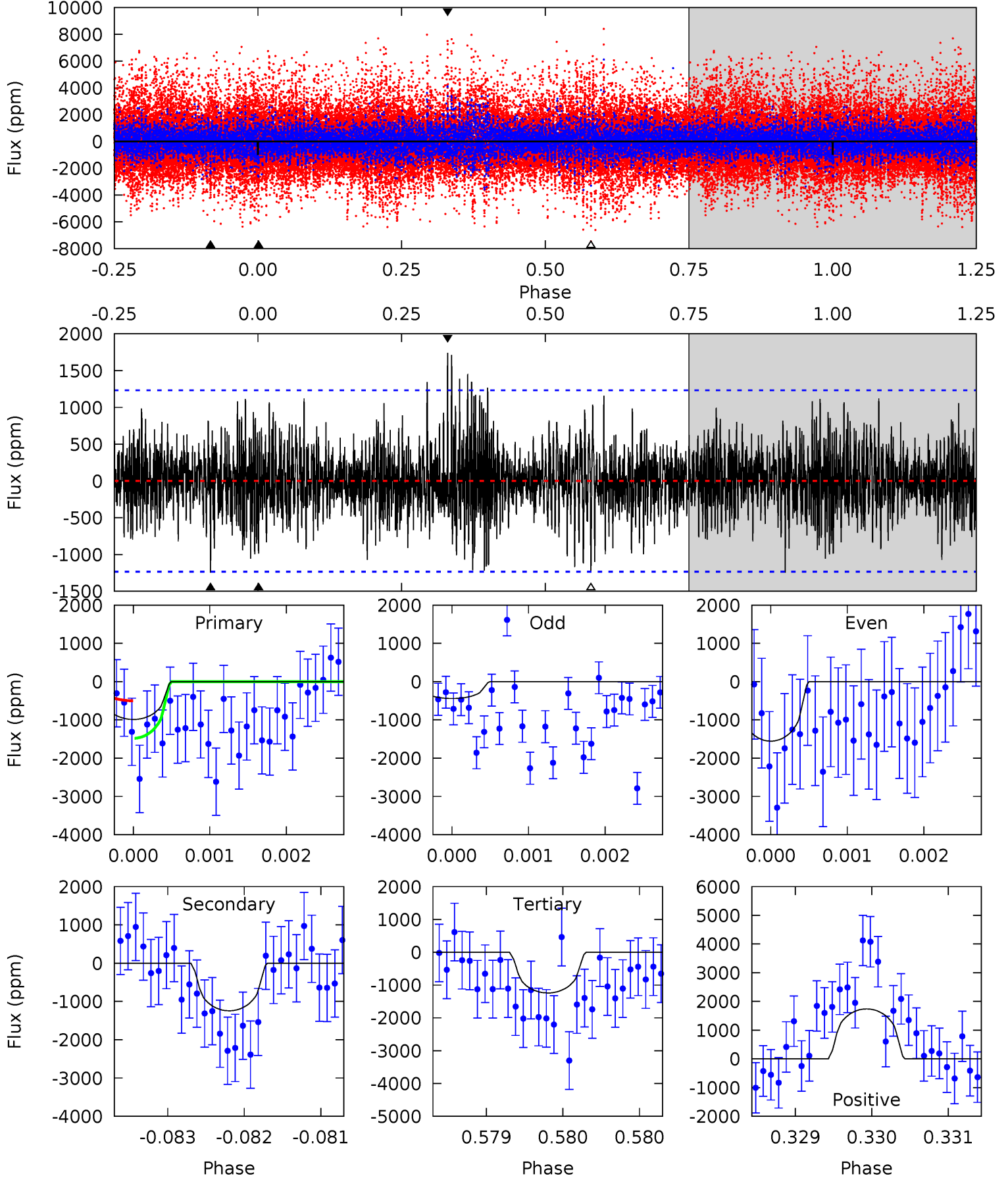
TCE 001026474-01 P=223.403153 Days $T_0=198.588670$ (BKJD)



DV Model-Shift Uniqueness Test

001026474-01, P = 223.399309 Days, E = 198.614818 Days

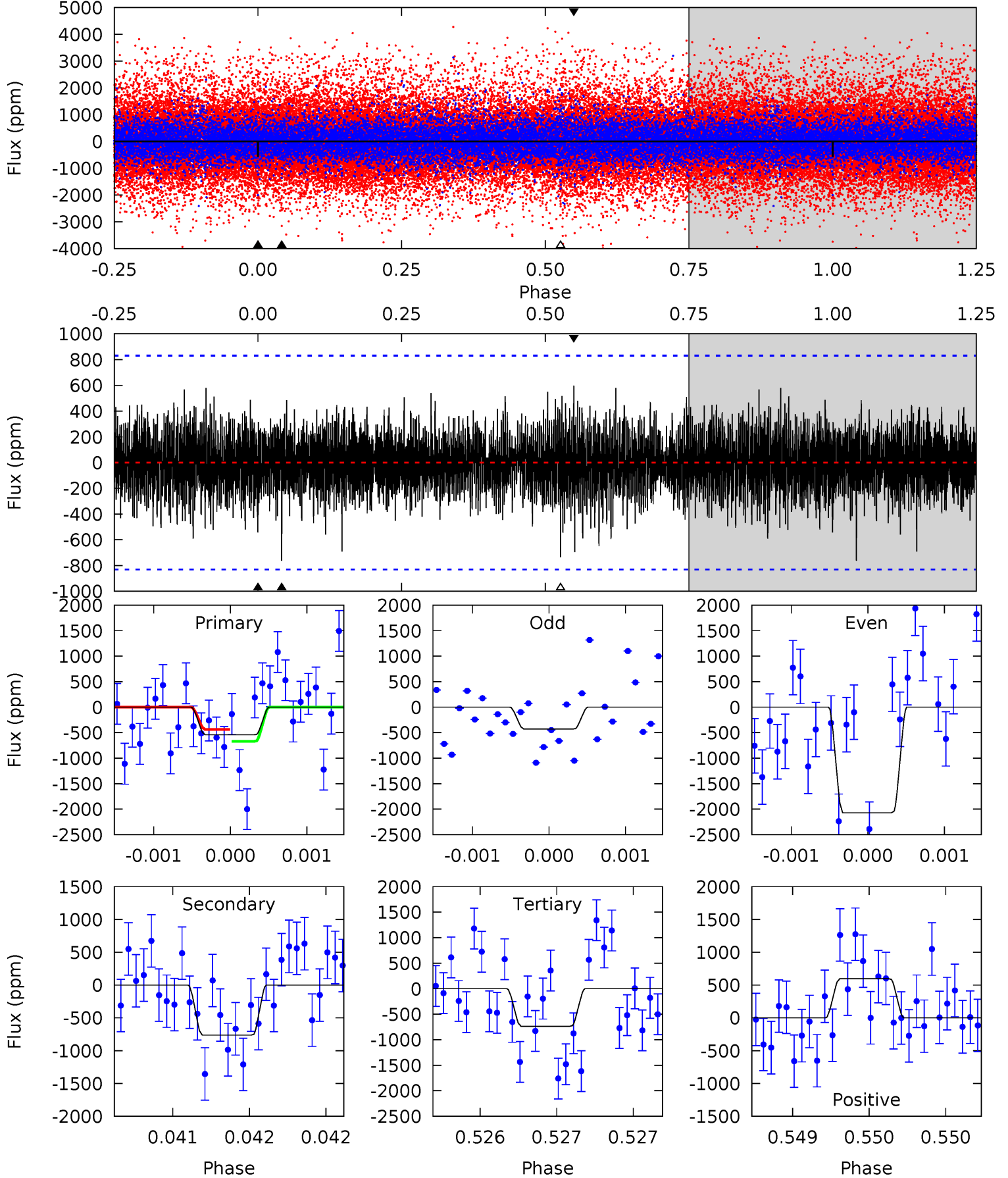
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.40	5.53	5.52	7.74	5.49	3.34	1.62	-1.12	-3.34	0.01	-2.20	2.44	1.93	0.58	2.20



Alt Model-Shift Uniqueness Test

001026474-01, P = 223.403153 Days, E = 198.588670 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.60	5.06	4.88	3.96	5.51	3.38	1.18	-1.28	-0.36	0.18	1.11	5.55	1.69	0.44	0.78



Stellar Parameters For KIC 001026474

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4276^{+150}_{-165}	$4.599^{+0.052}_{-0.017}$	$0.280^{+0.150}_{-0.300}$	$0.690^{+0.028}_{-0.061}$	$0.690^{+0.042}_{-0.052}$	$2.959^{+0.680}_{-0.235}$
	+4%/-4%	+1%/-0%	+54%/-107%	+4%/-9%	+6%/-8%	+23%/-8%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 001026474-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1245 ± 225	$4.95^{+4.06}_{-3.25}$	272^{+11}_{-11}	3468^{+1627}_{-603}	11904^{+84189}_{-8555}
Alt.	-763 ± 151	$5.10^{+4.13}_{-3.25}$	272^{+11}_{-11}	3190^{+1236}_{-515}	6845^{+42450}_{-4878}

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

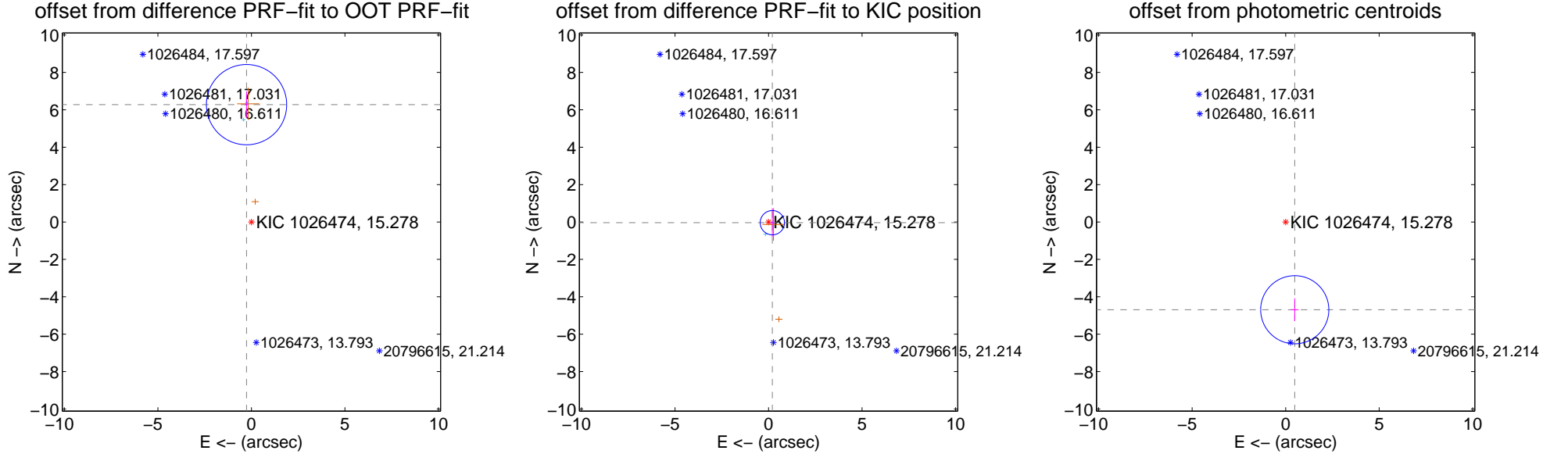
DV Centroid Data

Supplemental centroid analysis for 001026474-01. Kepler magnitude: 15.28. Transit SNR 6.07

There are 3 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 6.45 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.280 ± 0.715	8.78	0.261 ± 0.098	6.274 ± 0.714
PRF-fit source offset from KIC position	0.208 ± 0.216	0.96	-0.204 ± 0.113	-0.037 ± 0.770
photometric centroid source offset	4.72 ± 0.61	7.77	-0.49 ± 0.21	-4.69 ± 0.61



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



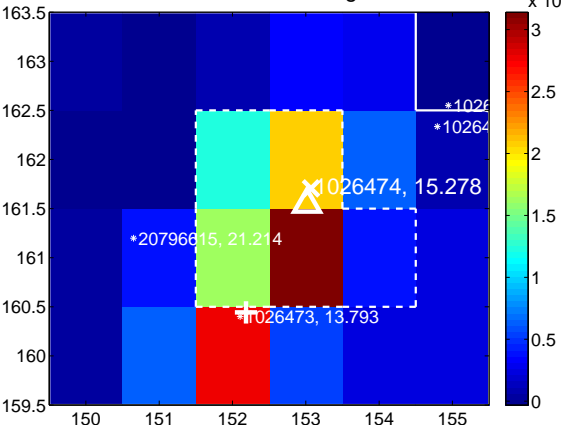
Q3 no difference image



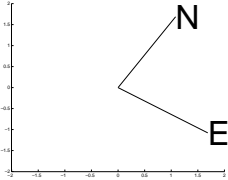
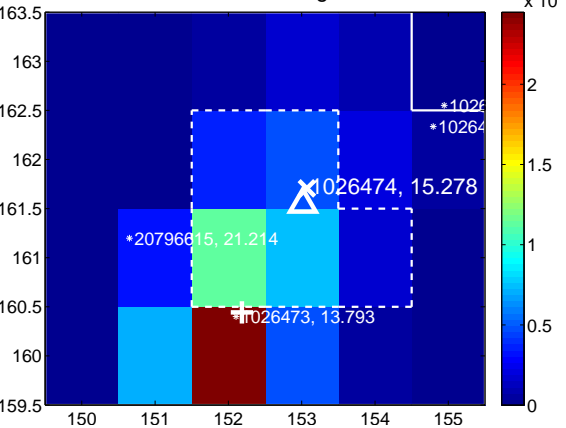
Q3 no OOT image



Q4 difference image



Q4 OOT image



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

Q5 no difference image



Q5 no OOT image



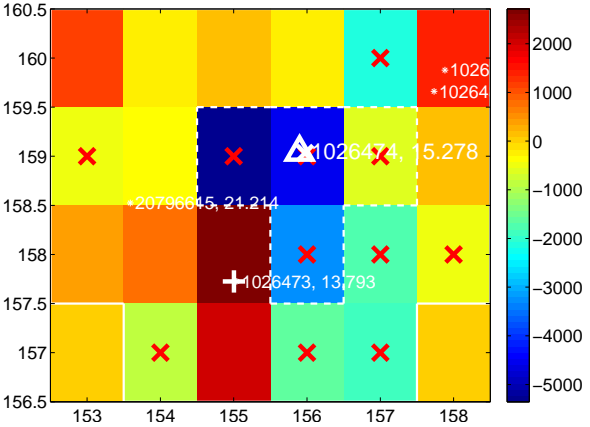
Q6 no difference image



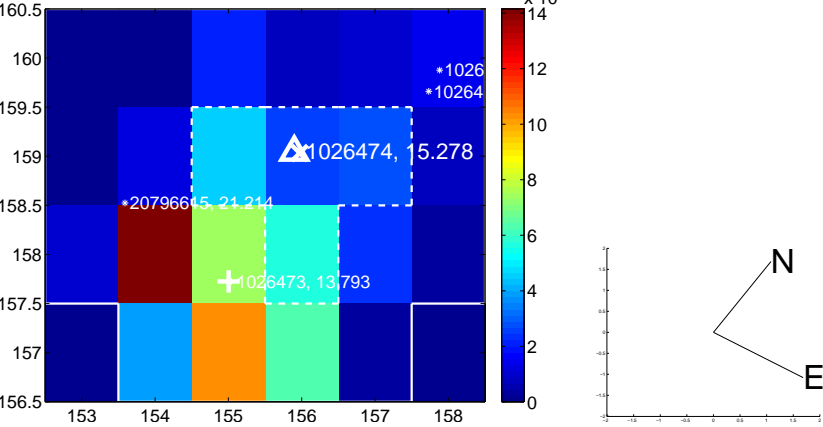
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



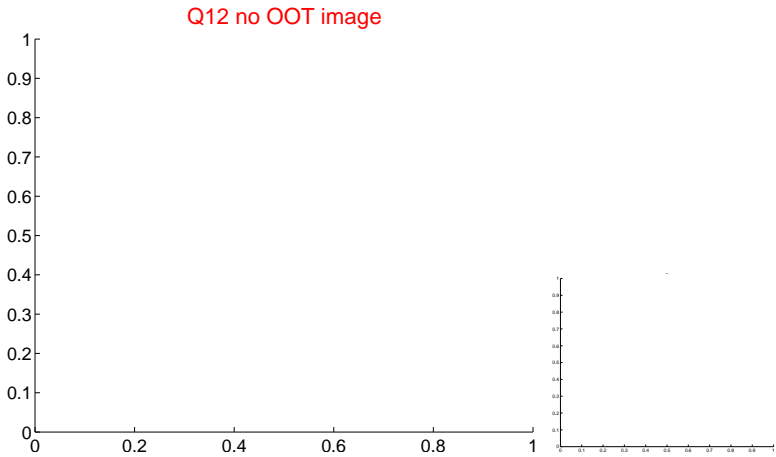
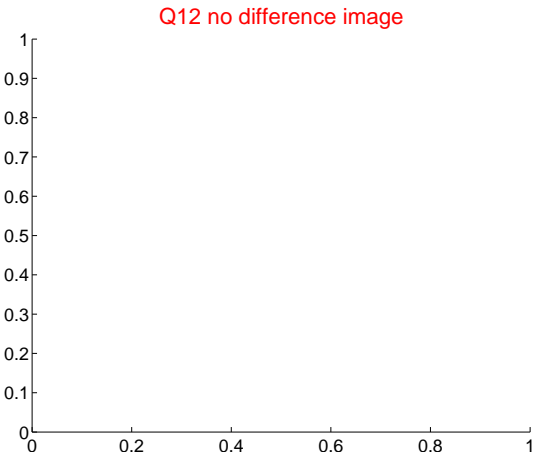
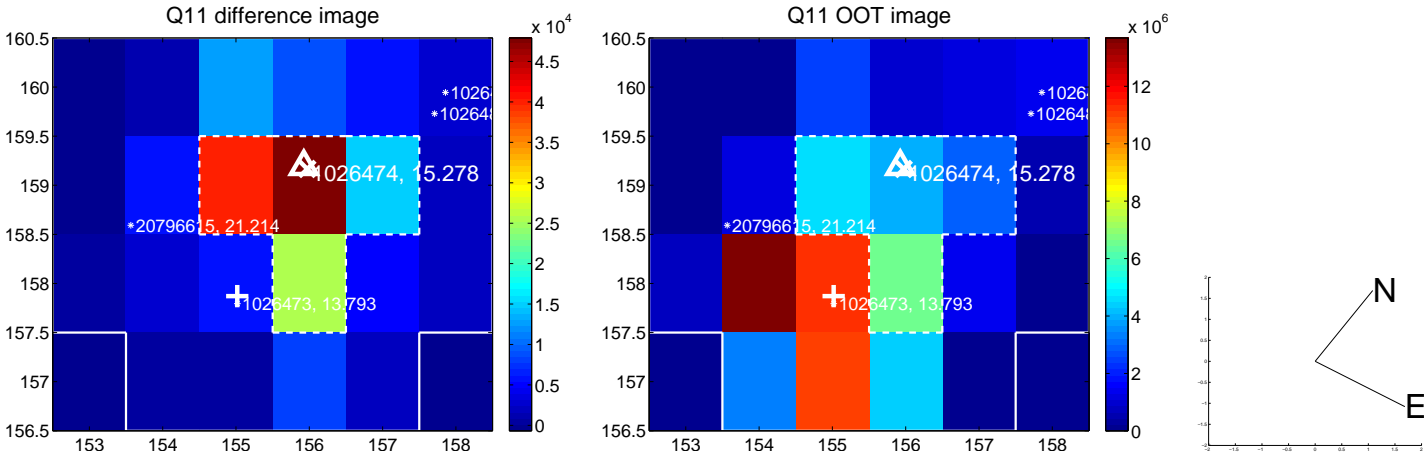
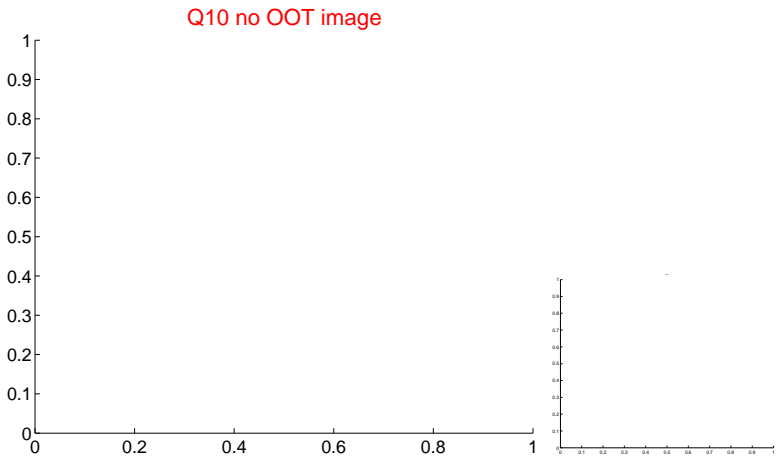
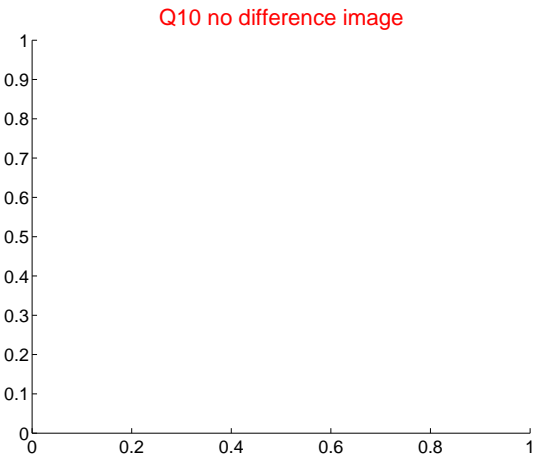
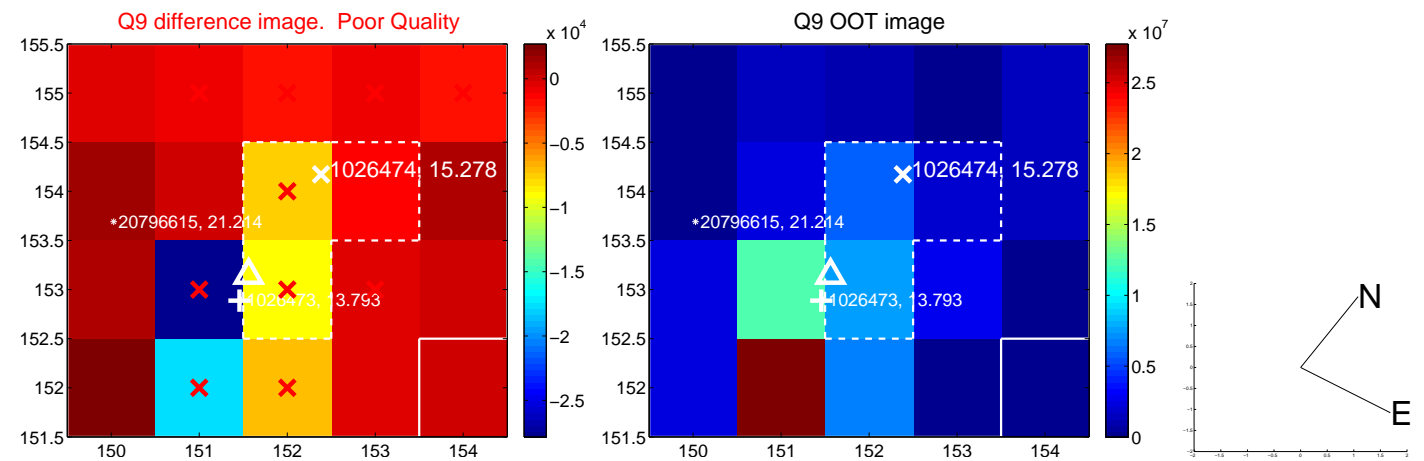
Q8 no difference image



Q8 no OOT image



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



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

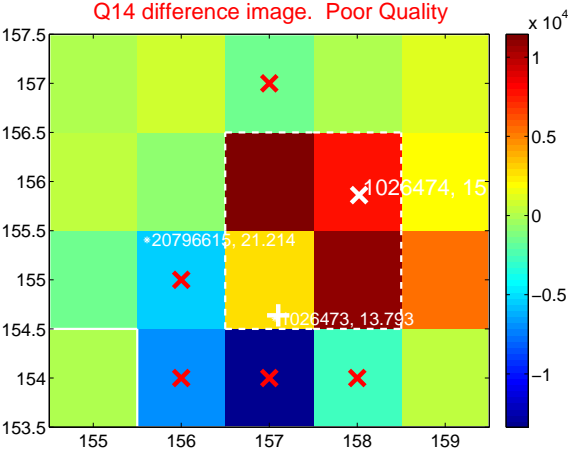
Q13 no difference image



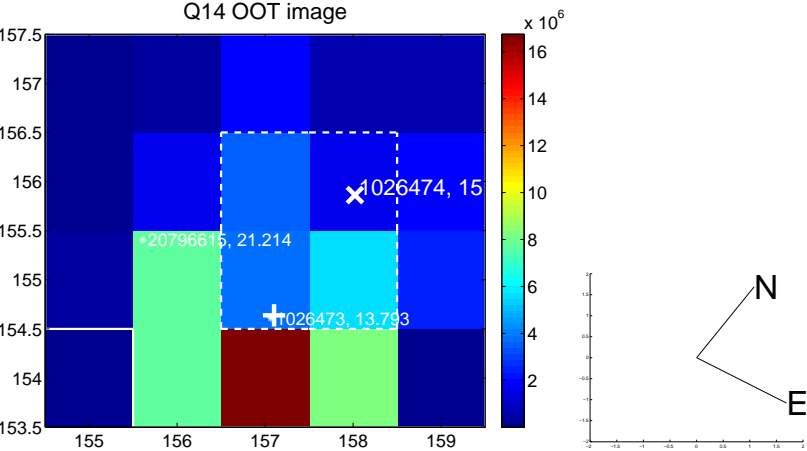
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



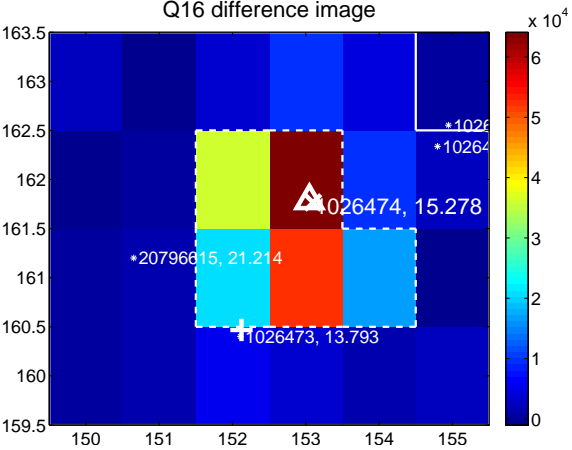
Q15 no difference image



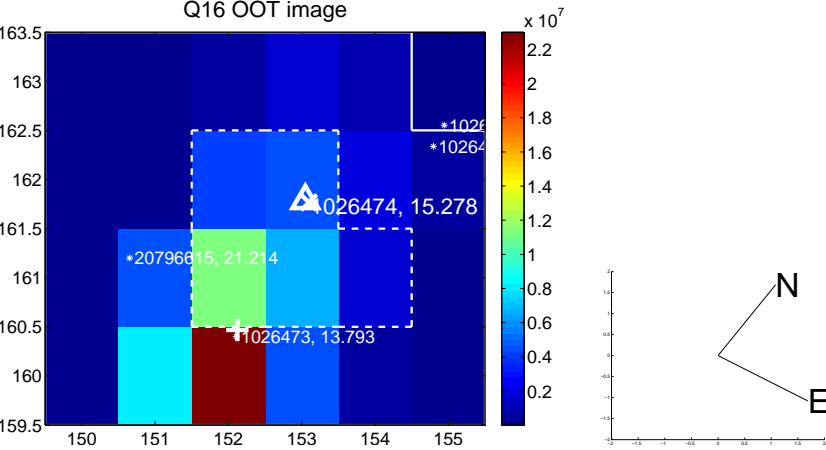
Q15 no OOT image



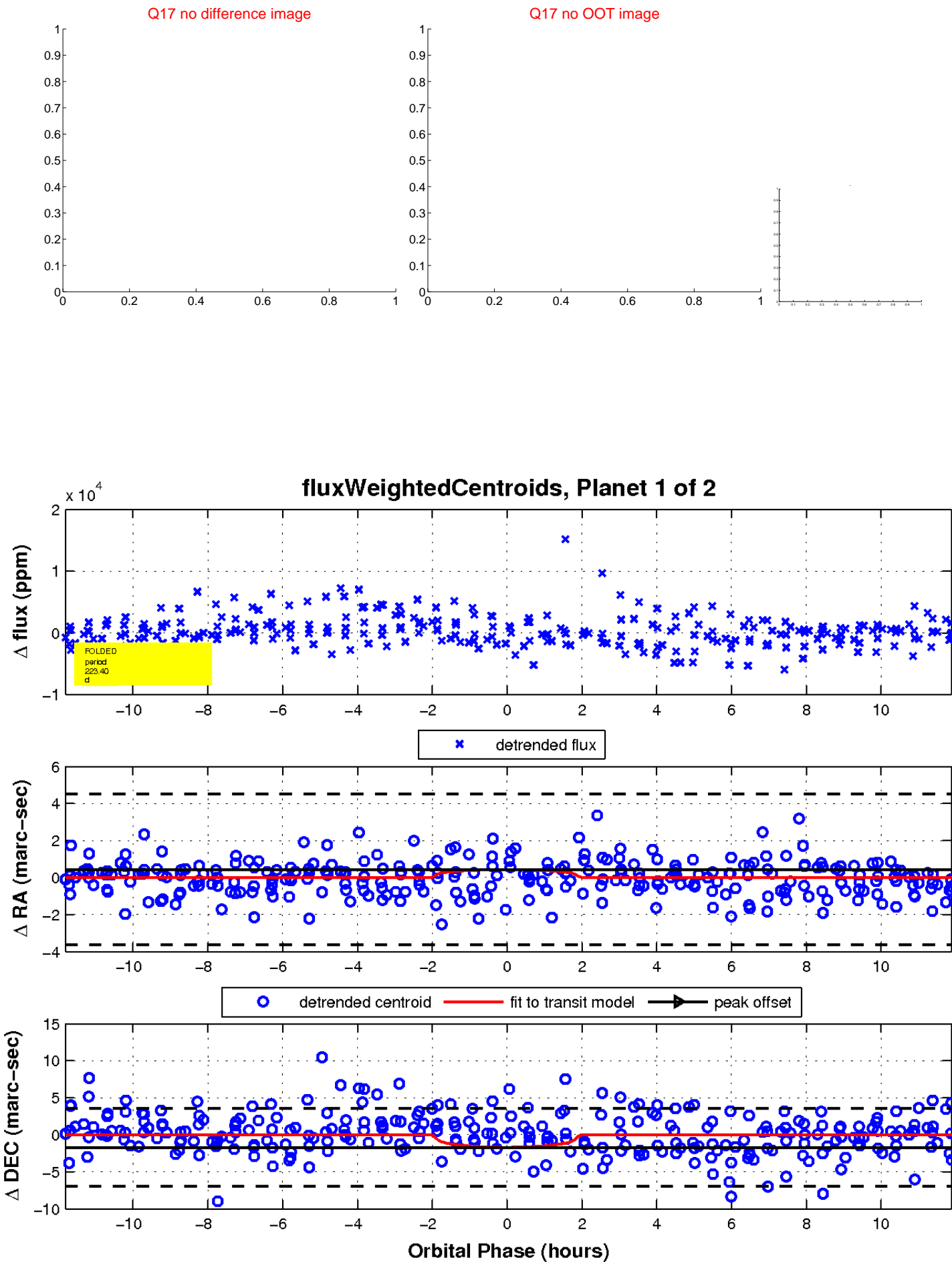
Q16 difference image



Q16 OOT image

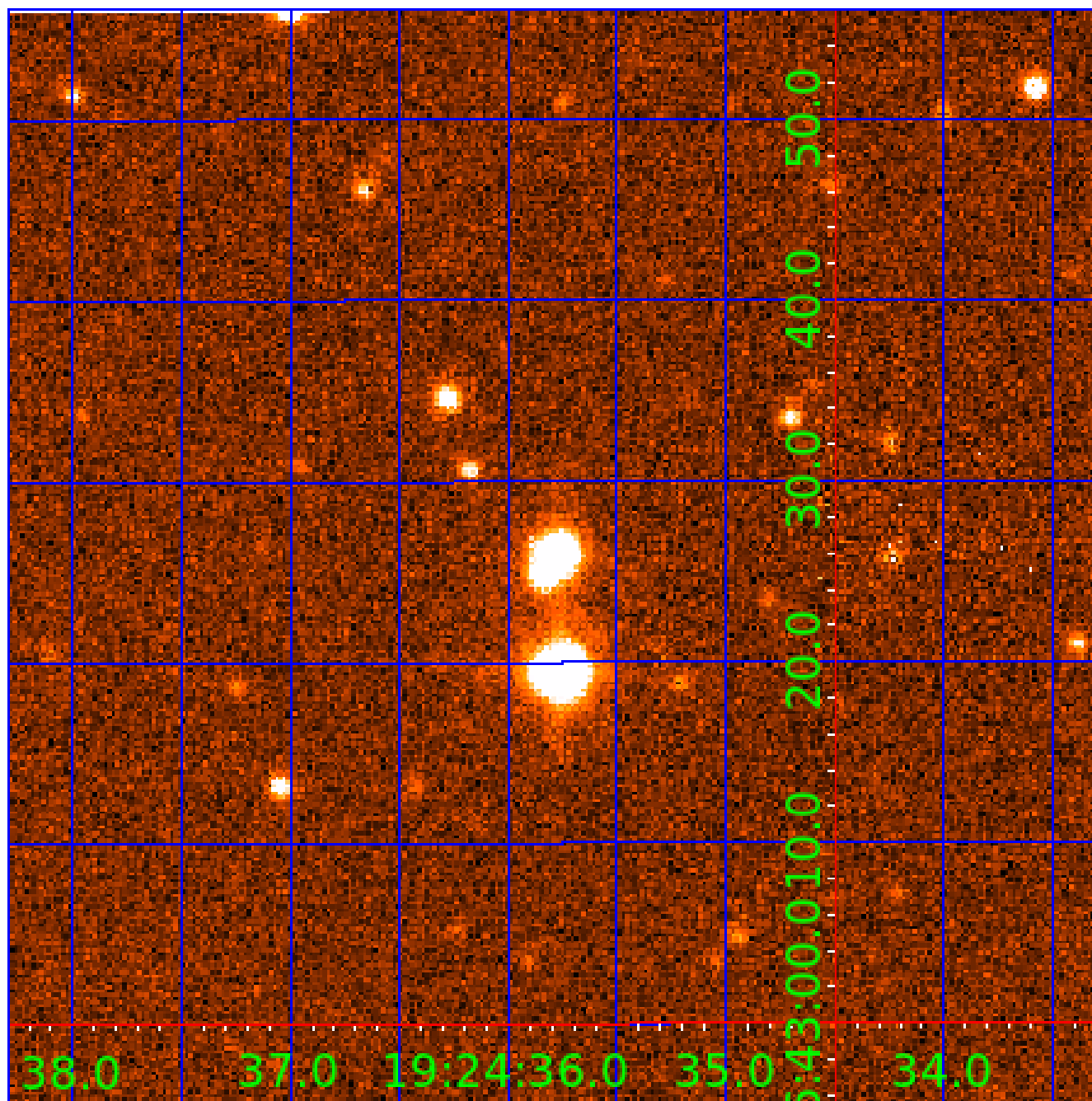


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 001026474

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})
001026474-01	OBS	No	223.399309	198.614818	2545.8	3.991	11.3	6.1	0.69	4276	3.35	0.35
001026474-02	OBS	No	205.852555	250.645458	1451.2	19.066	10.0	3.5	0.69	4276	3.09	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001026474-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_KIC_POS
001026474-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

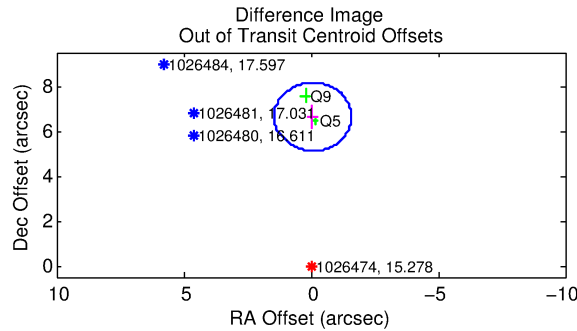
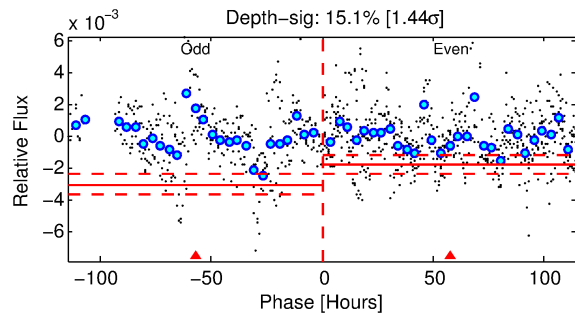
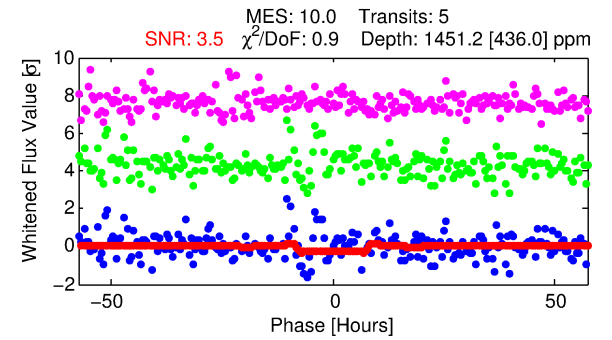
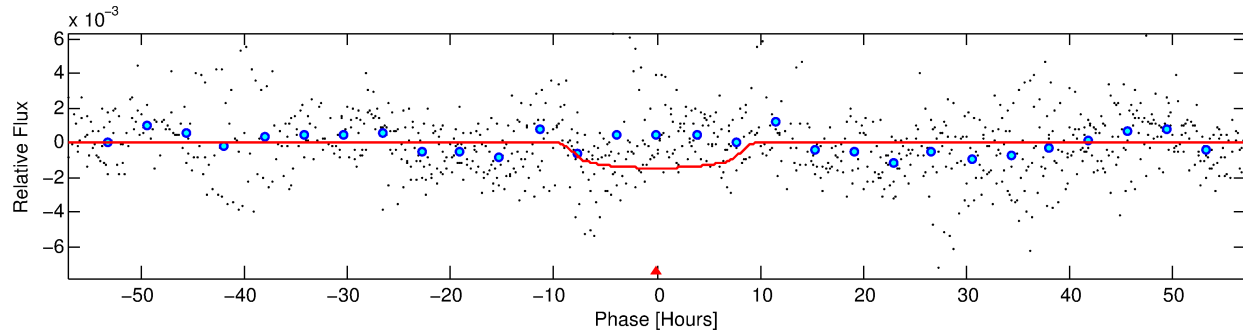
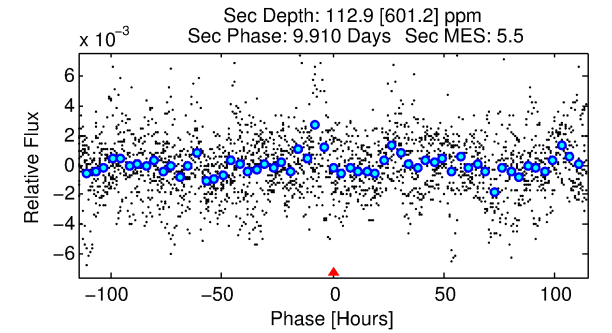
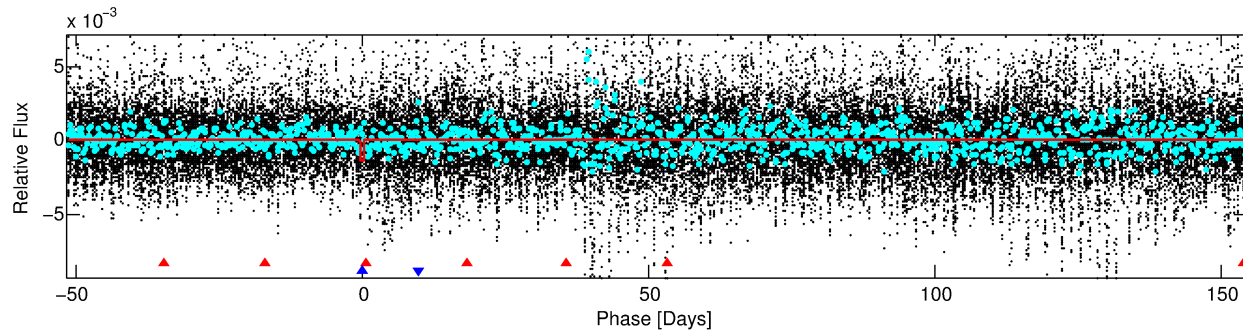
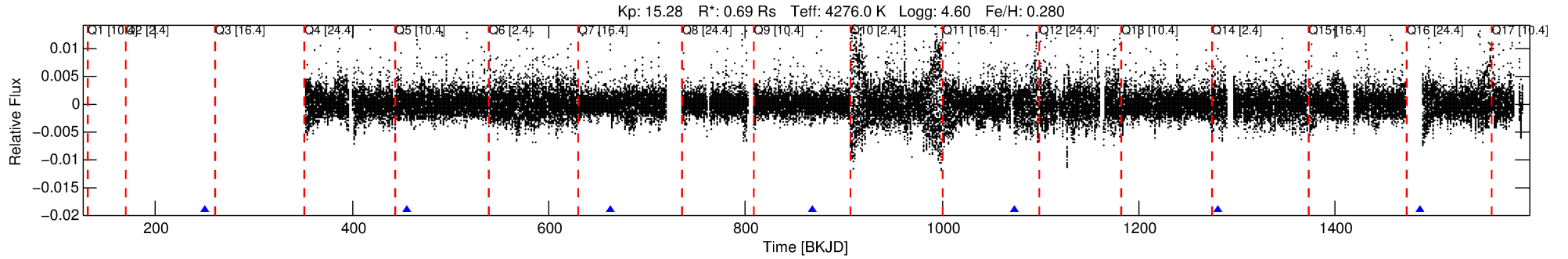
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001026474-02

No Significant Match Found

DV One-Page Summary

KIC: 1026474 Candidate: 2 of 2 Period: 205.853 d



DV Fit Results:

Period = 205.85256 [0.02269] d
Epoch = 250.6455 [0.0637] BKJD
Rp/R* = 0.0410 [0.0084]
a/R* = 49.62 [20.74]
b = 0.85 [0.14]
Seff = 0.39 [0.07]
Teq = 202 [9] K
Rp = 3.09 [0.69] Re
a = 0.6030 [0.0429] AU
Ag = 2368.57 [12647.39] [0.19σ]
Teffp = 2177 [2906] K [0.68σ]

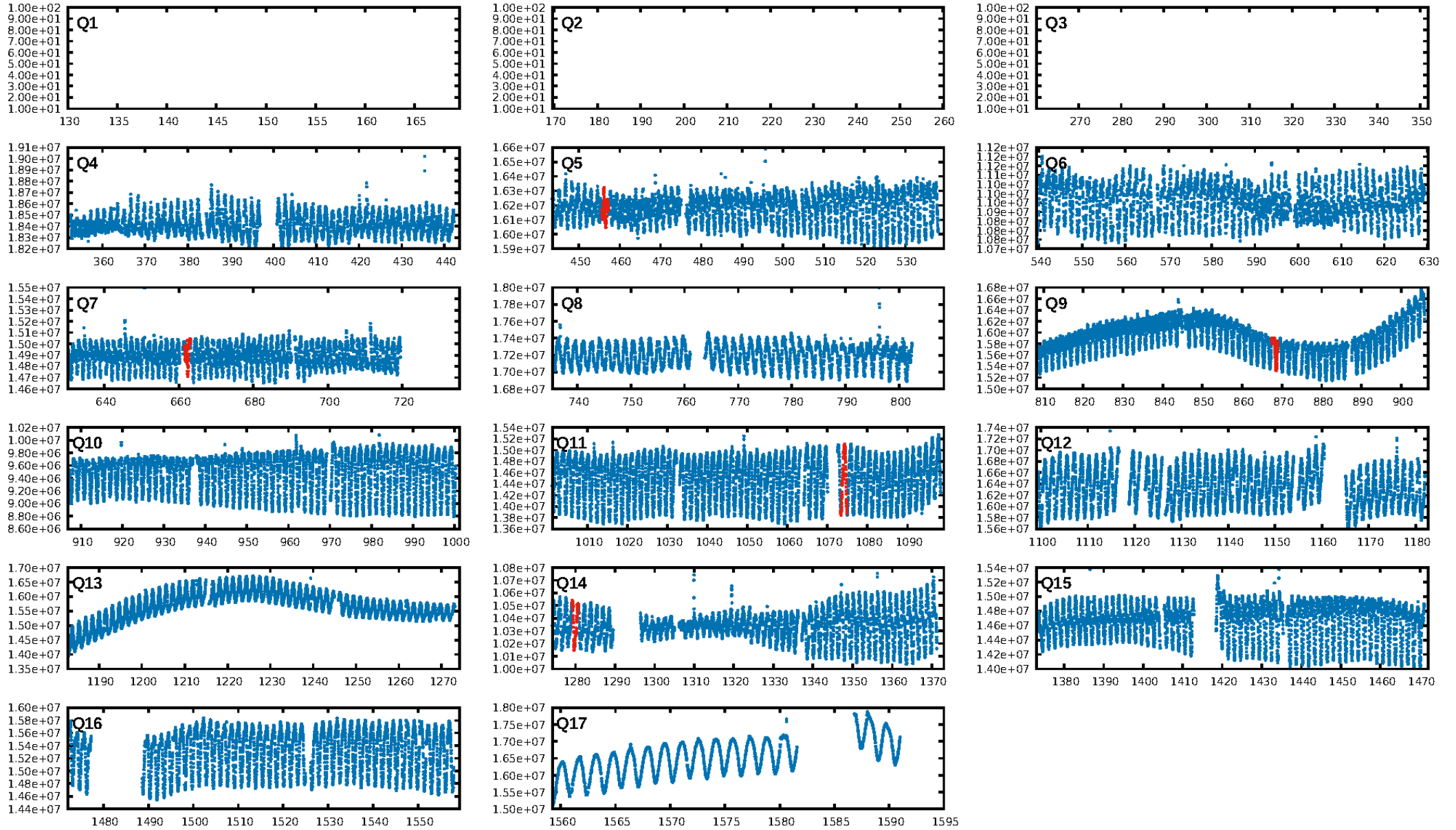
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [21.62σ]
ModelChiSquare2-sig: 32.9%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 3.44e-10
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 1.869
Centroid-sig: 0.0%
Centroid-so: 3.418 arcsec [3.36σ]
OotOffset-rm: 6.633 arcsec [13.12σ]
KicOffset-rm: 0.485 arcsec [1.37σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.50 [1/2]

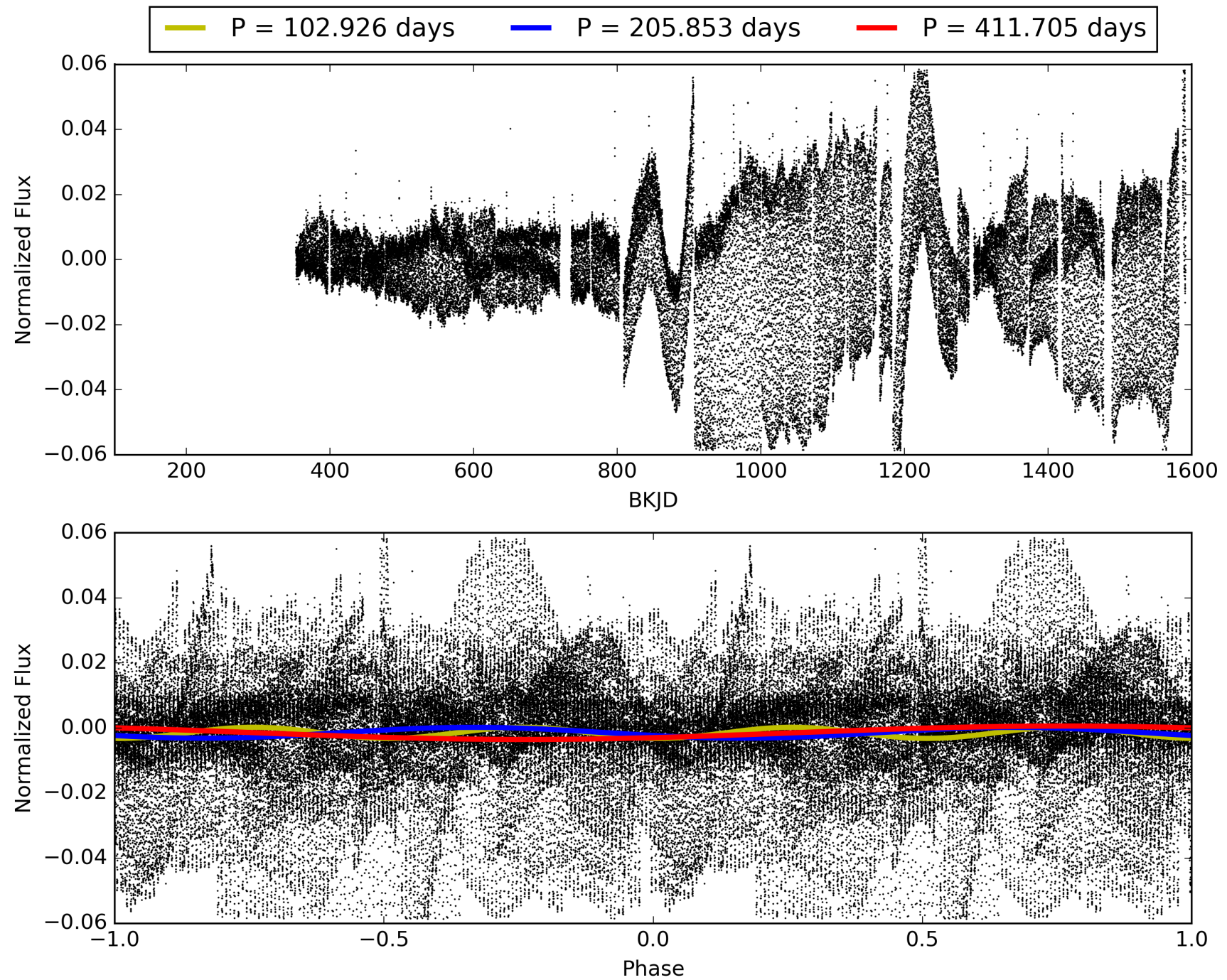
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:25:16 Z

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

TCE 001026474-02, PDC Light Curves

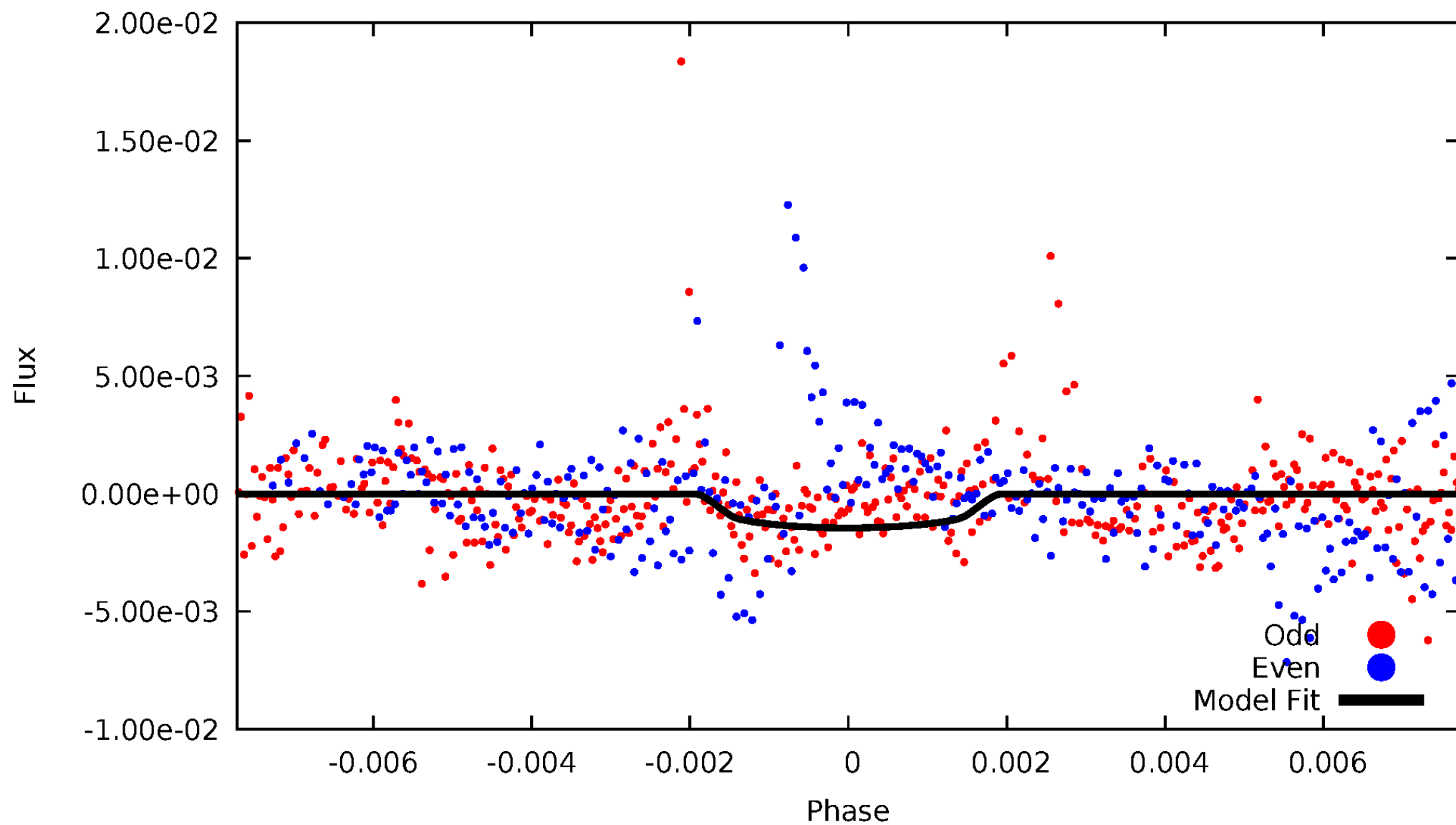


TCE 001026474-02



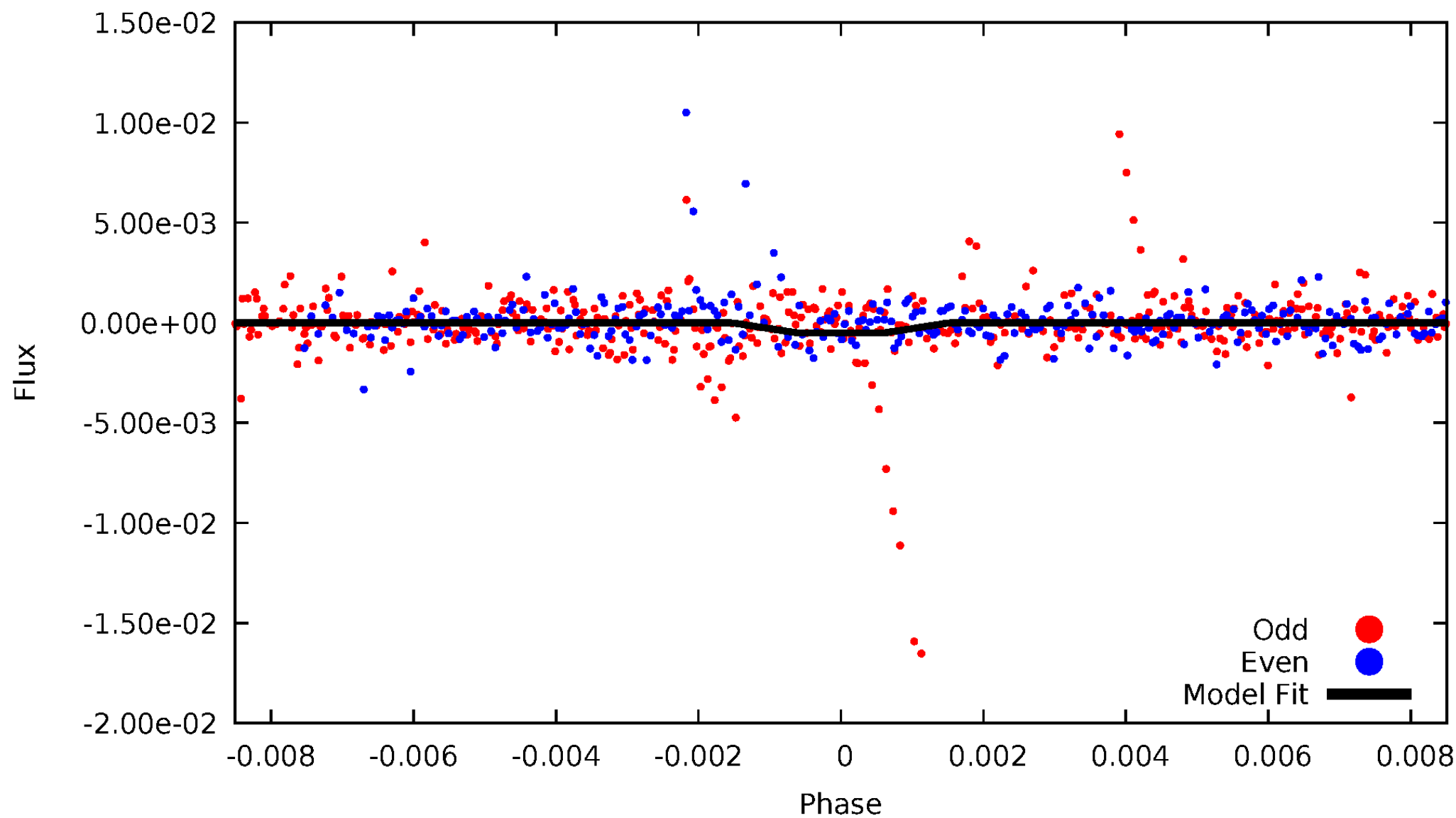
DV Odd/Even

TCE 001026474-02



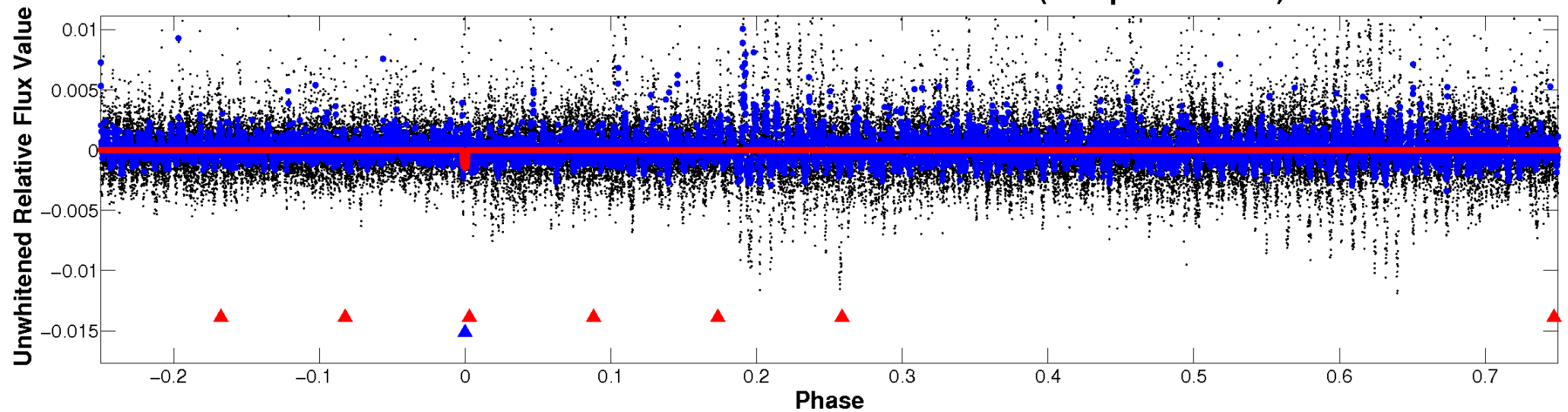
ALT Odd/Even

TCE 001026474-02

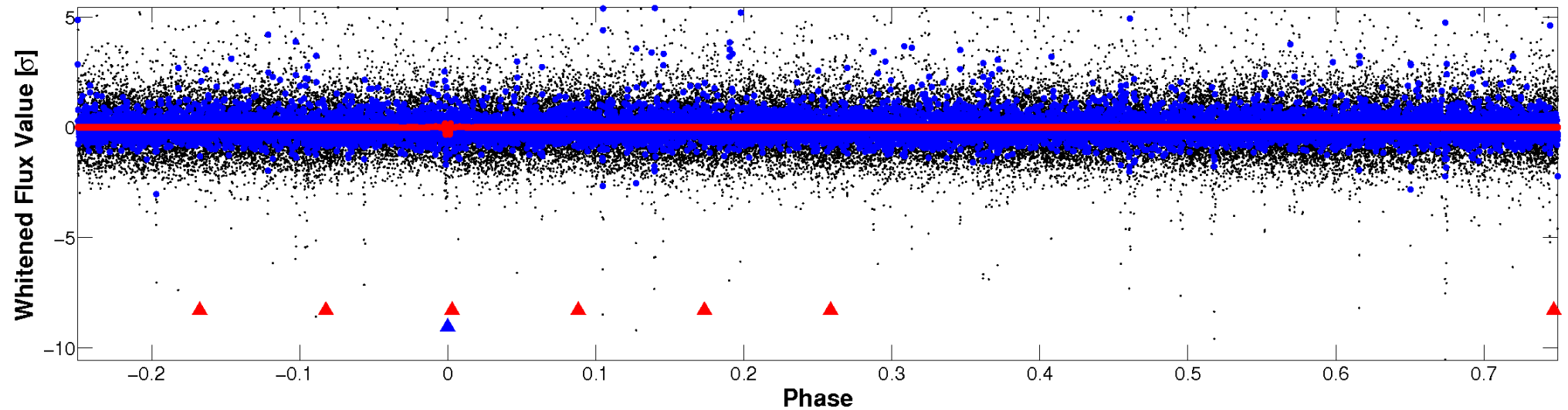


Non-Whitened Vs. Whitened Light Curve

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

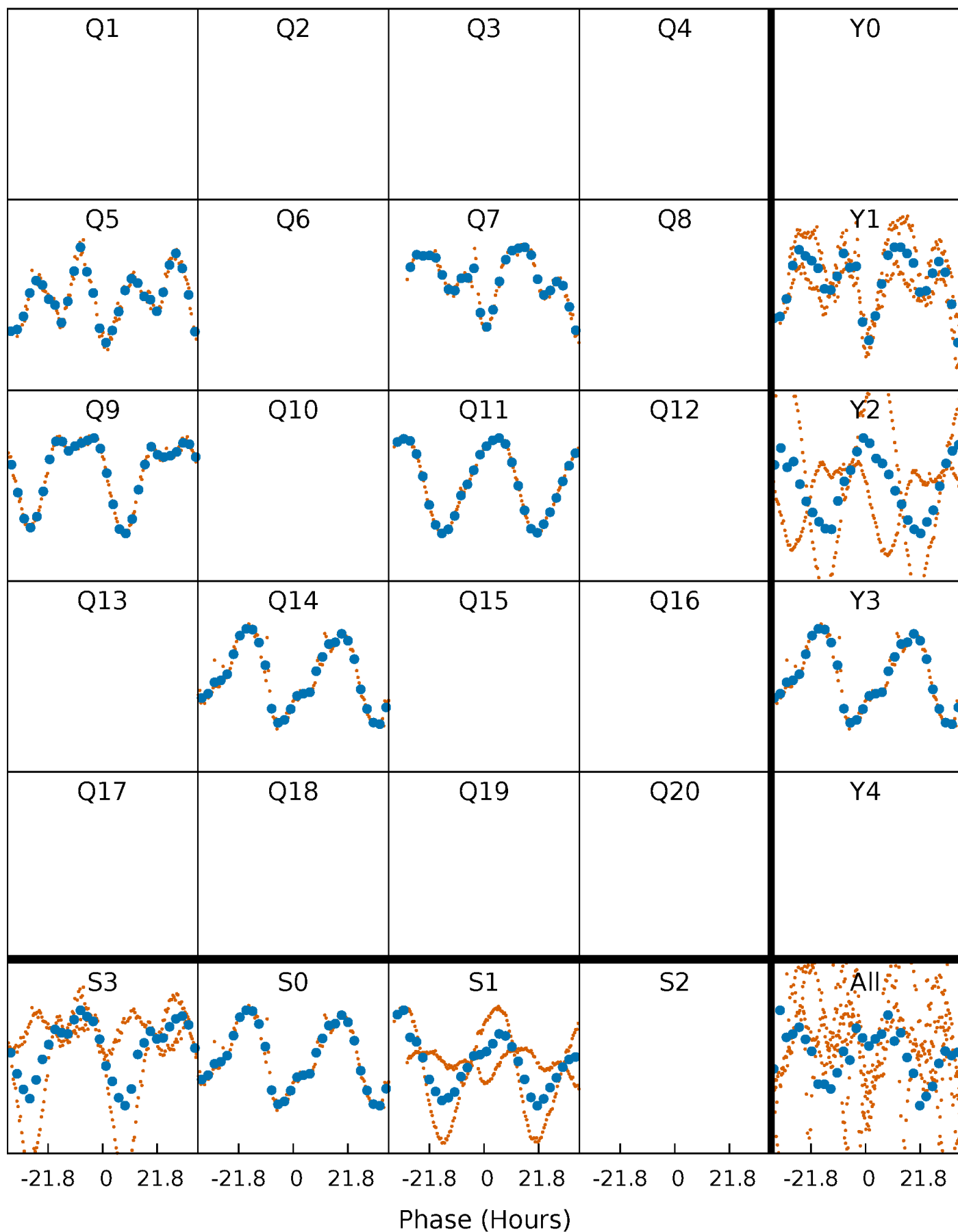


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



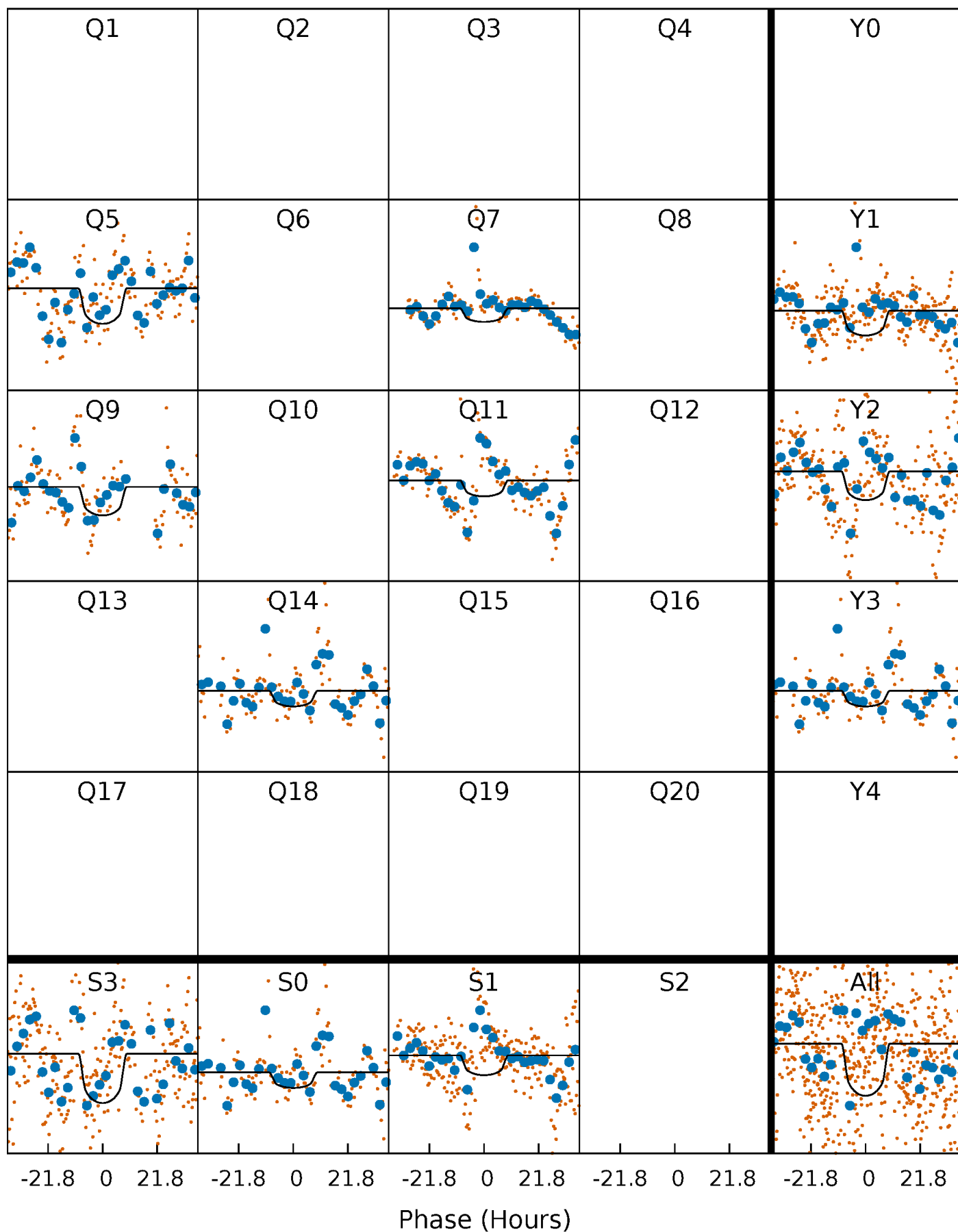
PDC Quarter-Phased Transit Curves

TCE 001026474-02 $P=205.852555$ Days $T_0=250.645458$ (BKJD)



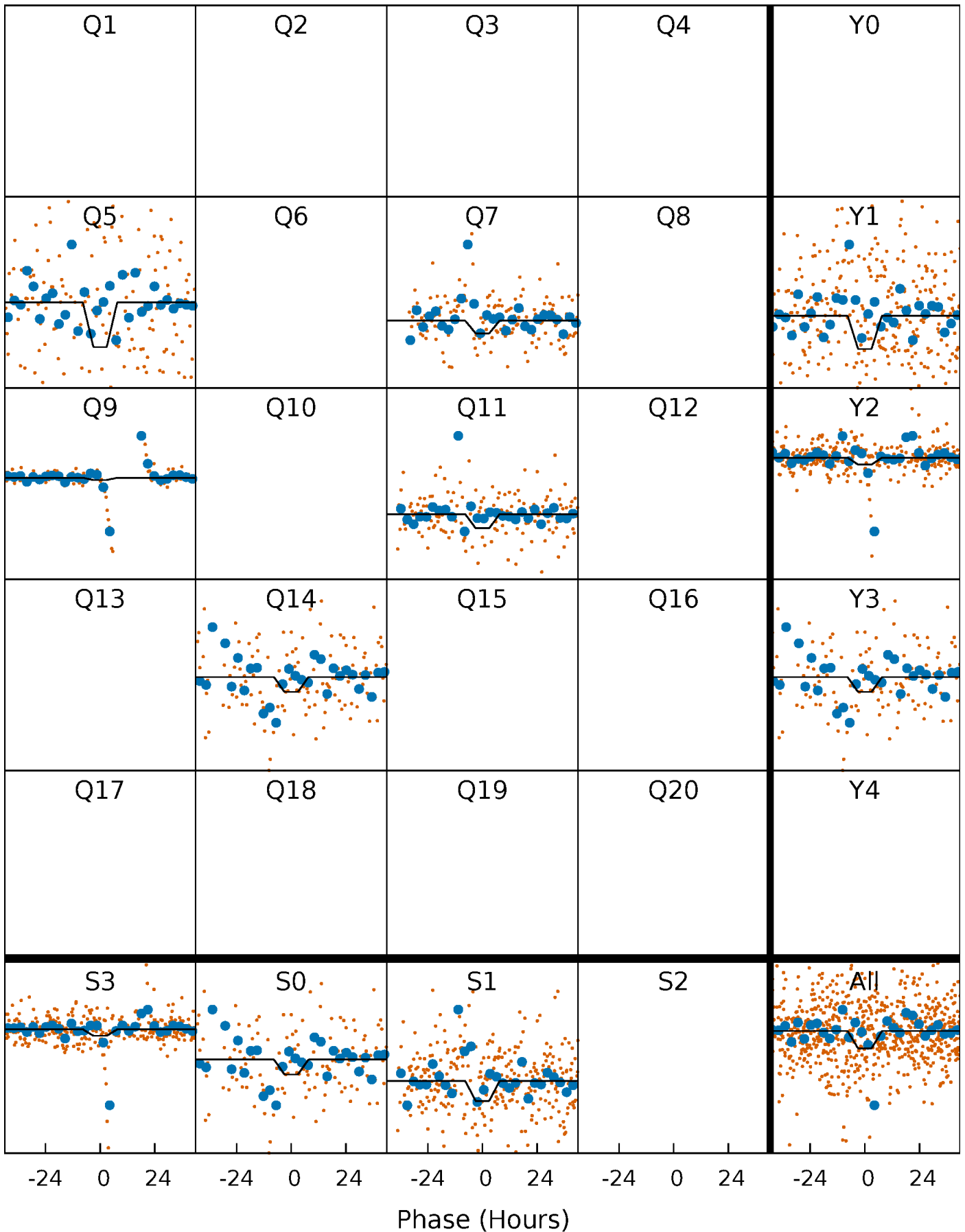
DV Quarter-Phased Transit Curves

TCE 001026474-02 $P=205.852555$ Days $T_0=250.645458$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

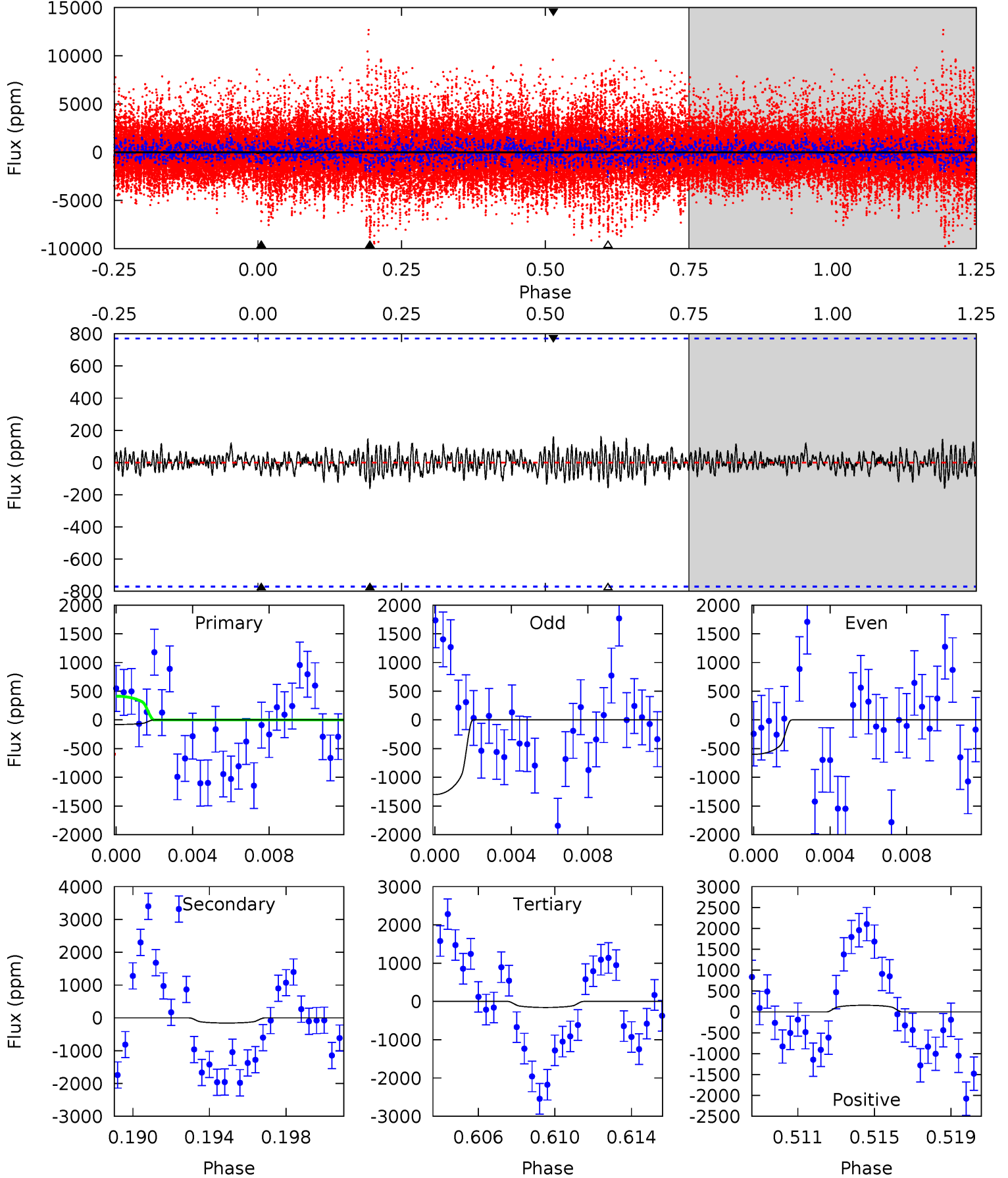
TCE 001026474-02 P=205.830813 Days $T_0=250.786426$ (BKJD)



DV Model-Shift Uniqueness Test

001026474-02, P = 205.852555 Days, E = 250.645458 Days

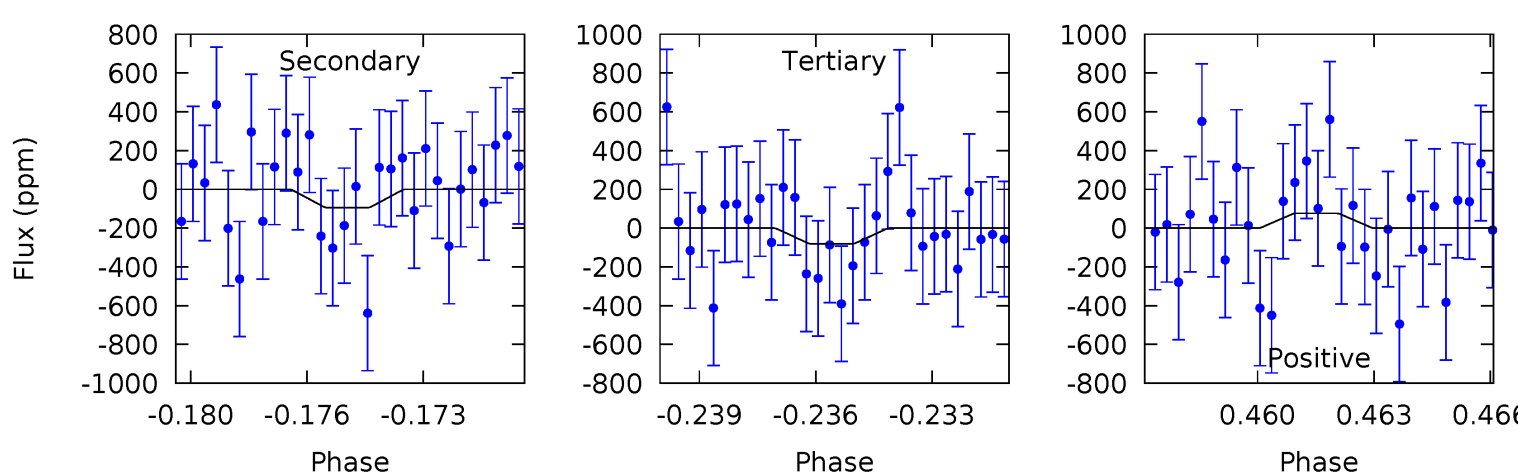
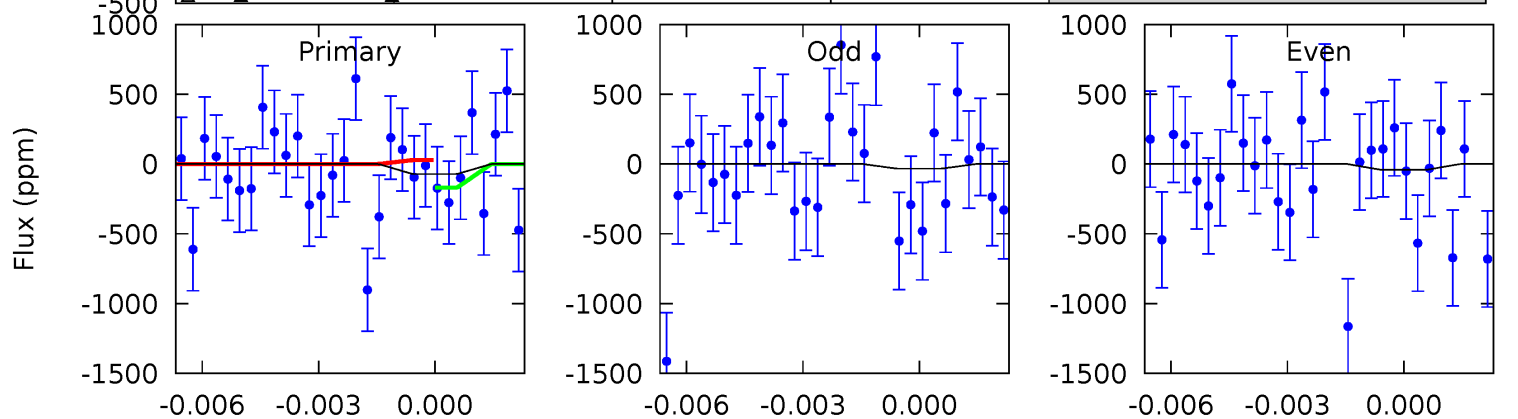
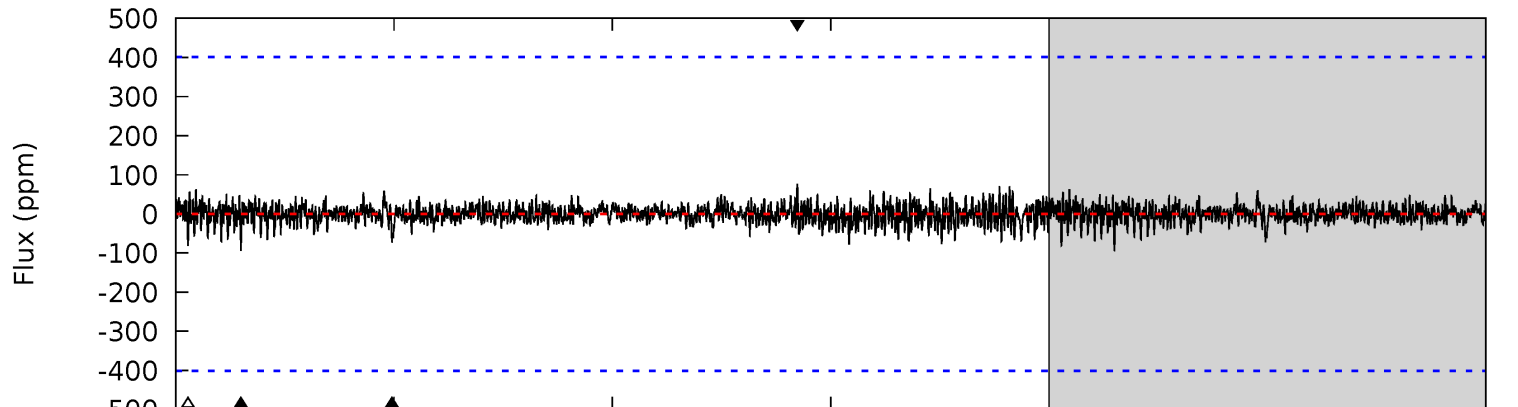
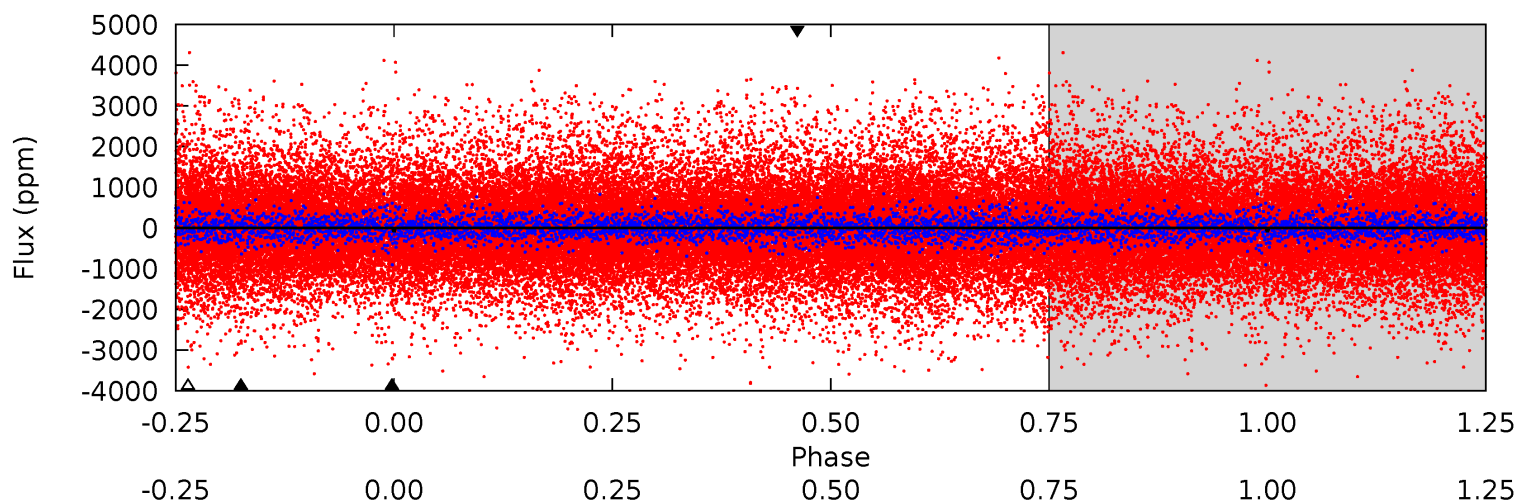
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.54	1.07	1.06	1.08	5.20	2.88	0.34	-0.51	-0.53	0.01	-0.00	2.27	-0.44	0.50	0.63



Alt Model-Shift Uniqueness Test

001026474-02, P = 205.830813 Days, E = 250.786426 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.94	1.24	1.06	1.00	5.24	2.95	0.28	-0.12	-0.06	0.17	0.24	0.06	15.1	0.45	0.93



Stellar Parameters For KIC 001026474

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4276^{+150}_{-165}	$4.599^{+0.052}_{-0.017}$	$0.280^{+0.150}_{-0.300}$	$0.690^{+0.028}_{-0.061}$	$0.690^{+0.042}_{-0.052}$	$2.959^{+0.680}_{-0.235}$
	+4%/-4%	+1%/-0%	+54%/-107%	+4%/-9%	+6%/-8%	+23%/-8%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 001026474-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-159±148	$3.05^{+0.71}_{-0.67}$	281^{+10}_{-12}	2906^{+406}_{-903}	3302^{+4539}_{-3154}
Alt.	-94±76	$1.69^{+0.67}_{-0.67}$	281^{+10}_{-12}	3184^{+619}_{-736}	6142^{+13567}_{-5264}

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

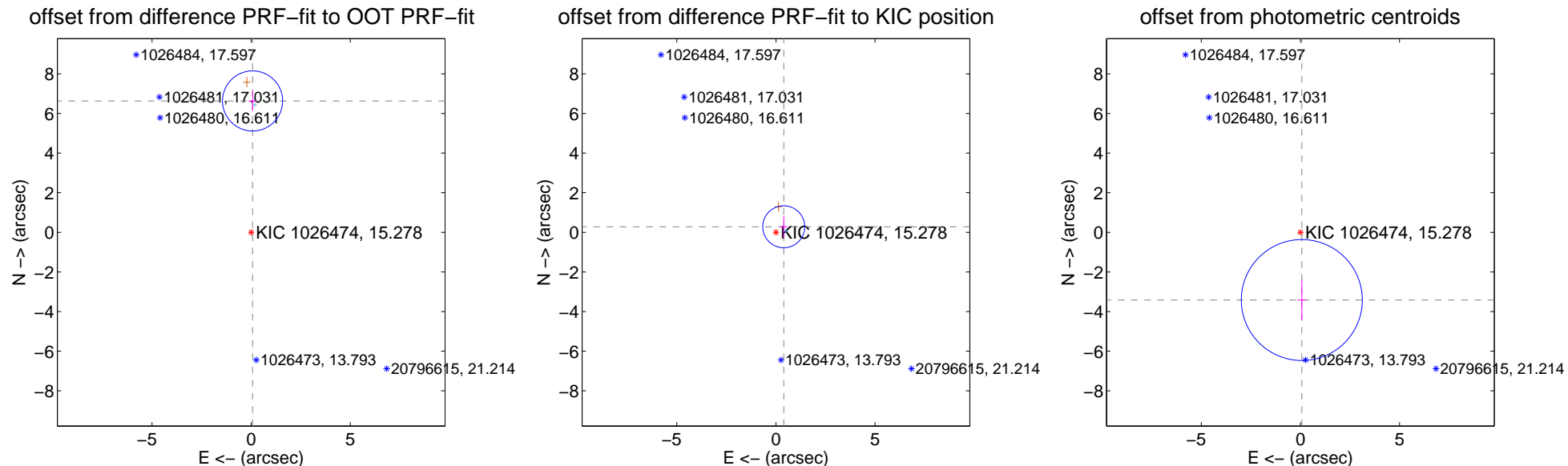
DV Centroid Data

Supplemental centroid analysis for 001026474-02. Kepler magnitude: 15.28. Transit SNR 3.49

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 6.30 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.633 \pm 0.506	13.12	-0.070 \pm 0.216	6.633 \pm 0.506
PRF-fit source offset from KIC position	0.485 \pm 0.353	1.37	-0.394 \pm 0.199	0.282 \pm 0.539
photometric centroid source offset	3.42 \pm 1.02	3.36	-0.07 \pm 0.22	-3.42 \pm 1.02

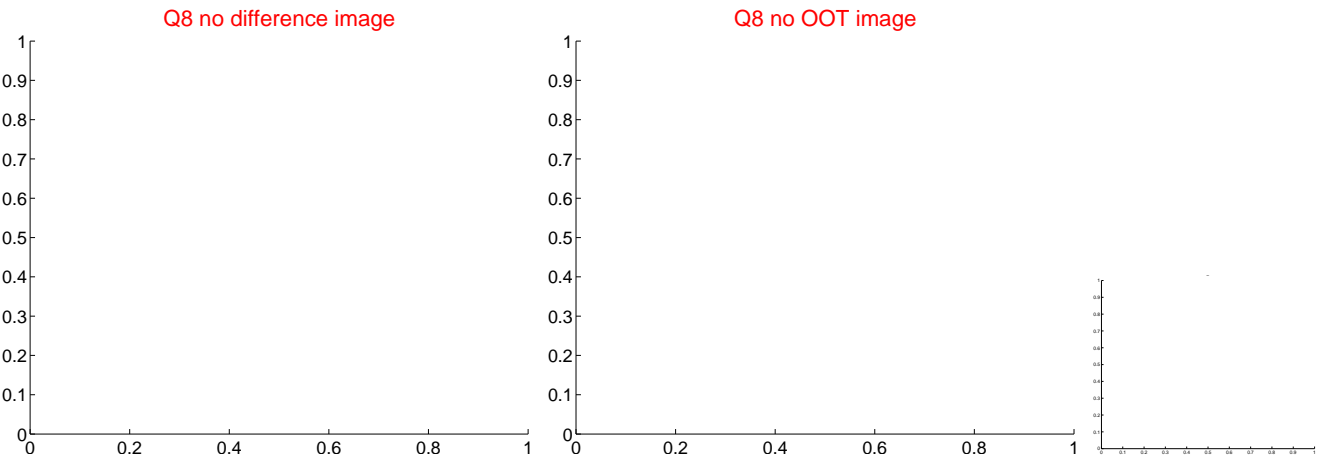
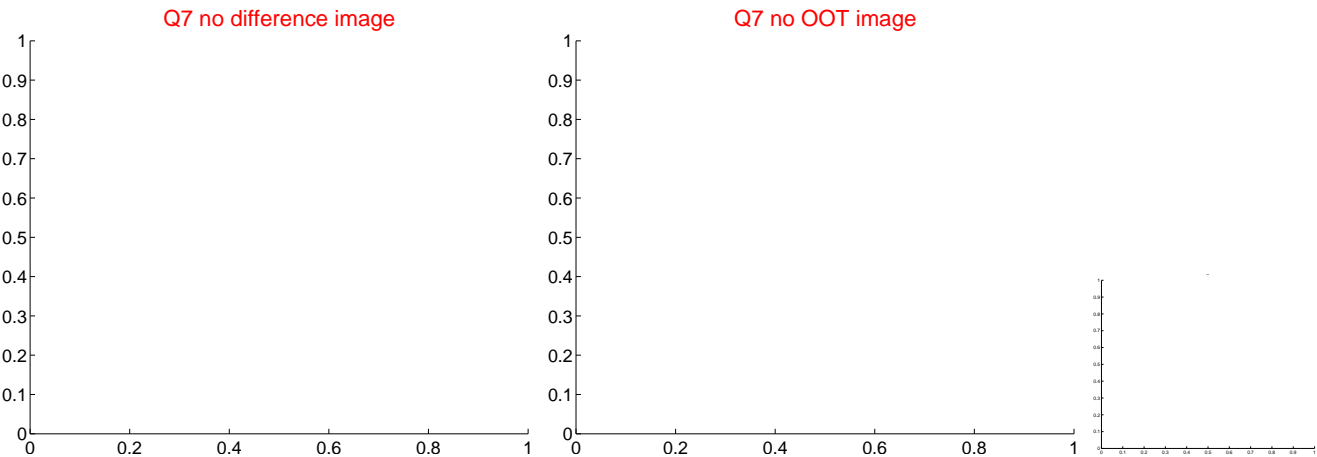
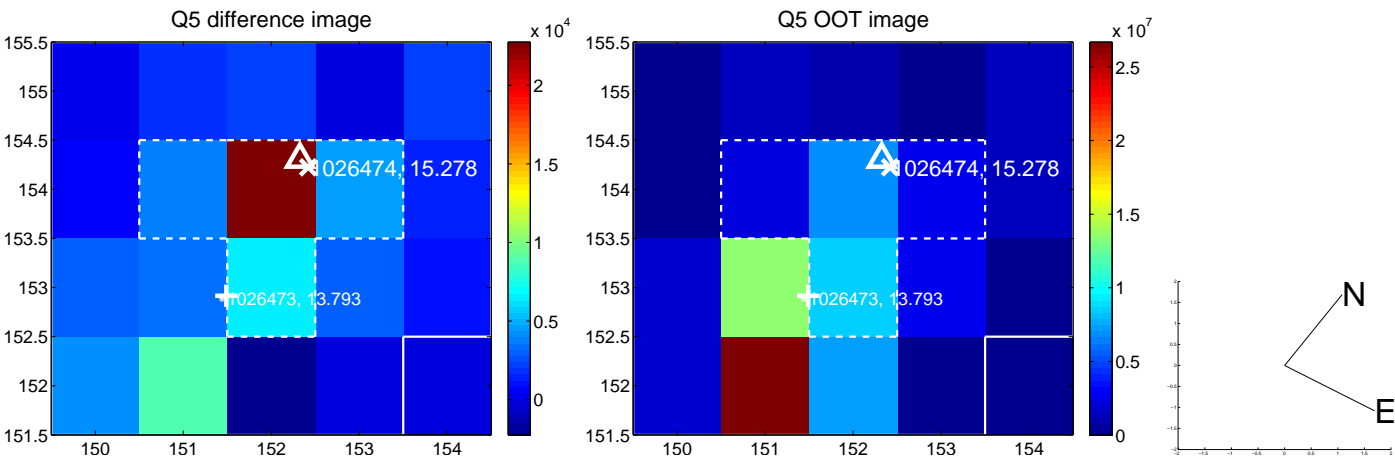


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

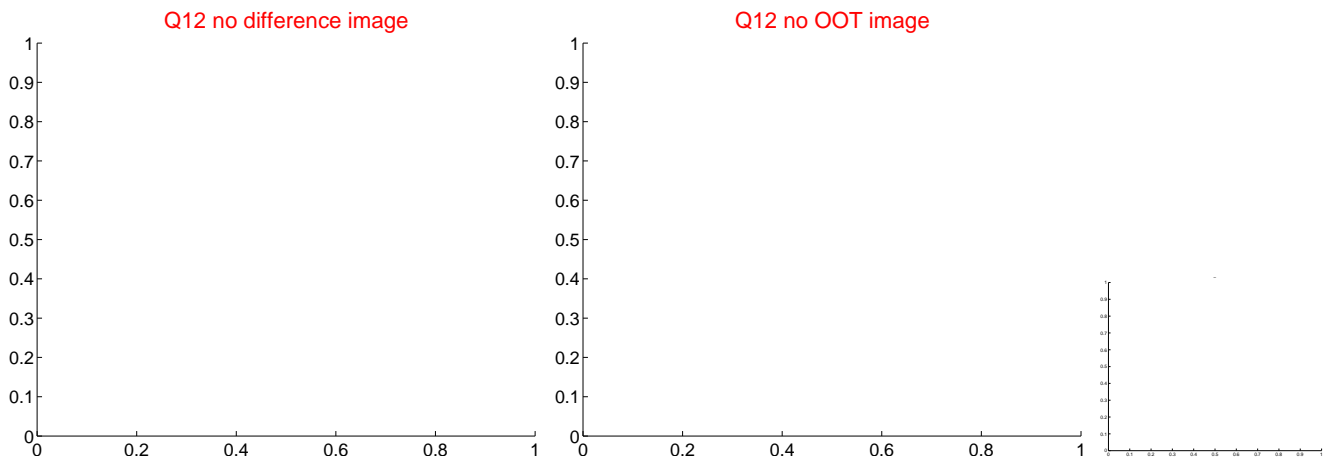
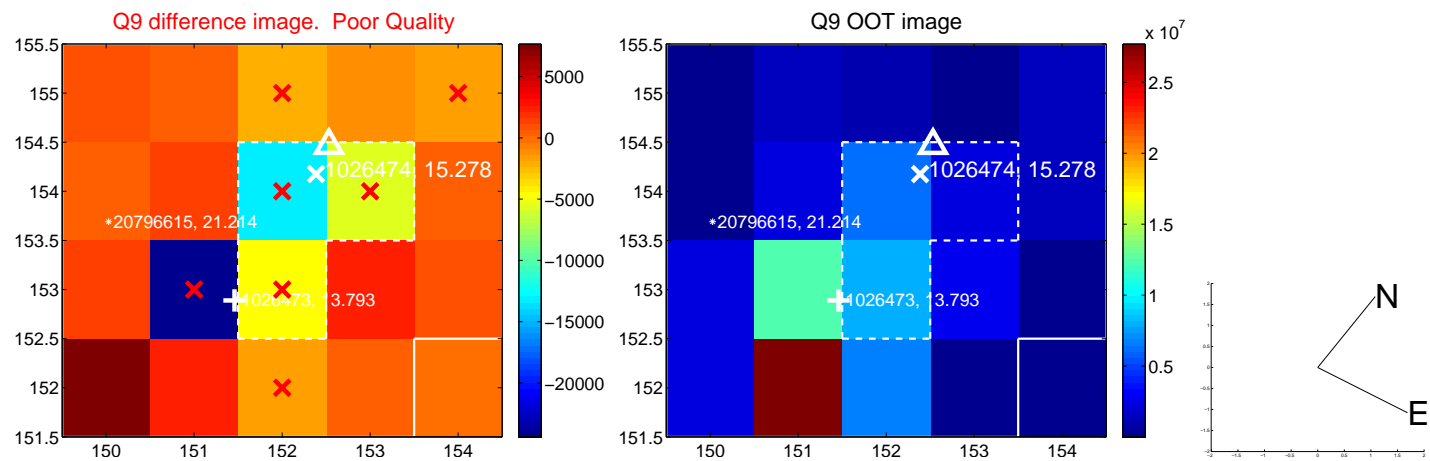
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



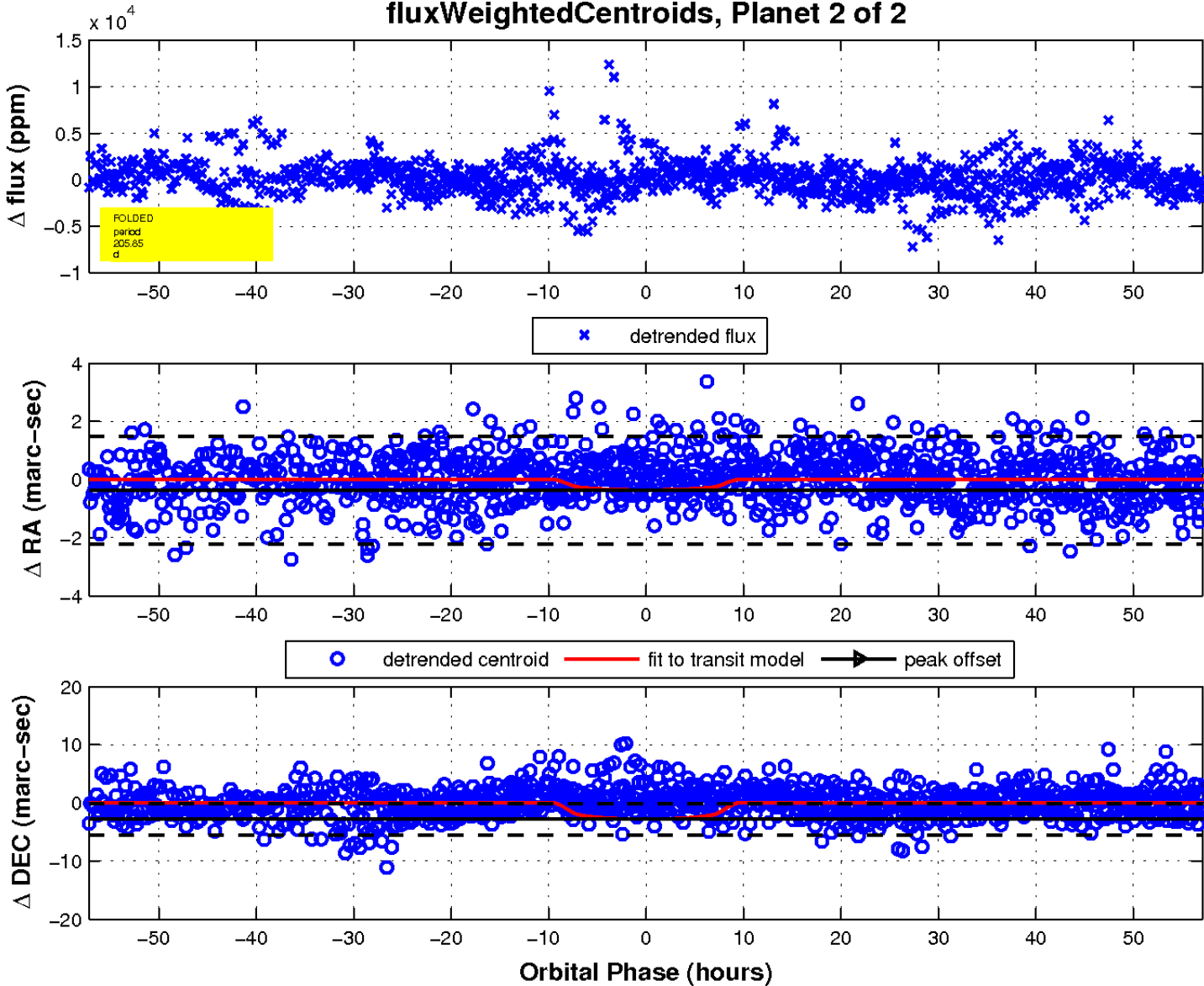
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

