

KIC 012168669

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})
012168669-01	OBS	No	364.290849	365.667745	1279.2	9.977	14.8	9.3	0.81	5462	3.04	0.64
012168669-02	OBS	No	330.176704	259.892595	1050.2	5.816	11.1	8.6	0.81	5462	2.74	0.73
012168669-03	OBS	No	342.856615	251.663781	1366.6	5.853	11.4	8.7	0.81	5462	2.99	0.70
012168669-04	OBS	No	502.045471	543.711844	1082.5	4.609	11.3	7.0	0.81	5462	2.71	0.42
012168669-05	OBS	No	371.511881	285.035971	885.9	4.373	9.2	6.9	0.81	5462	2.54	0.62
012168669-06	OBS	No	481.447688	235.131862	1061.7	11.882	9.3	7.2	0.81	5462	2.67	0.44
012168669-07	OBS	No	498.540131	394.882681	1130.2	4.013	11.9	8.1	0.81	5462	2.88	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012168669-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
012168669-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV
012168669-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
012168669-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012168669-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

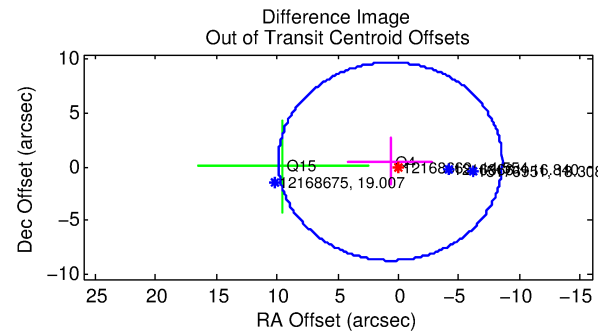
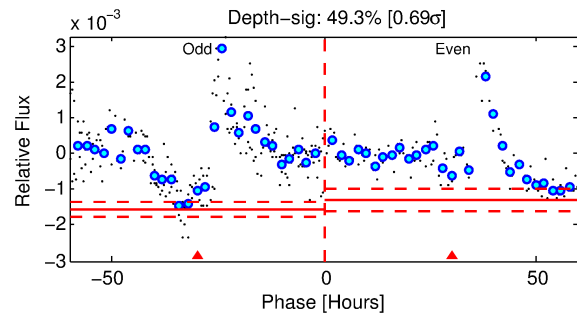
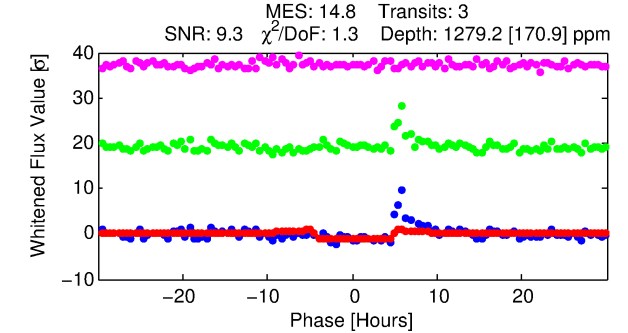
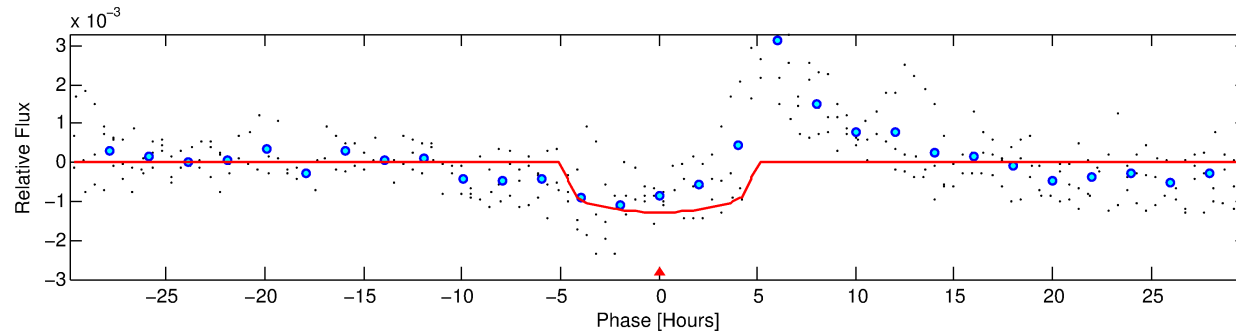
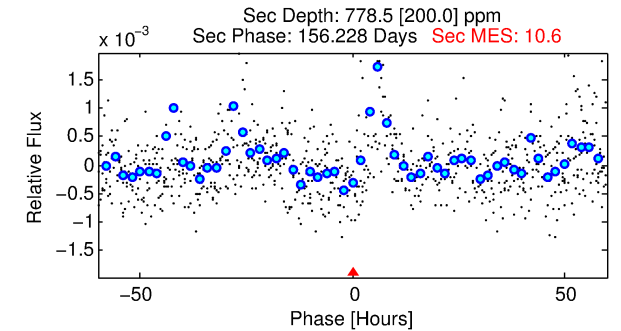
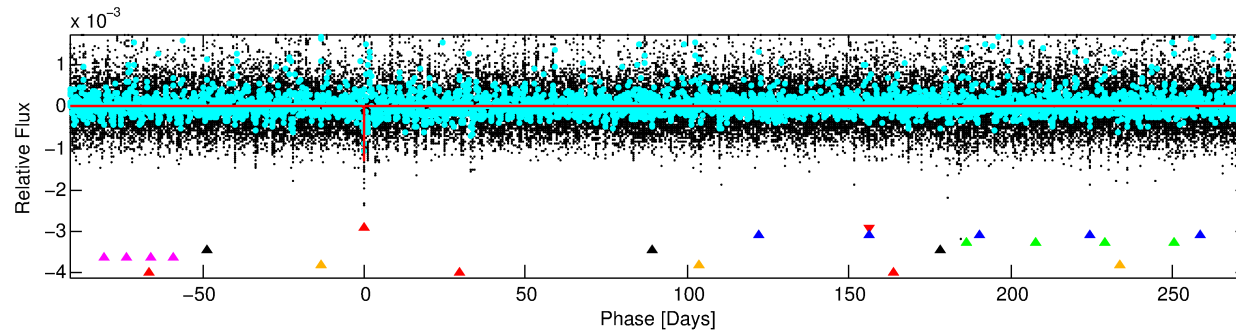
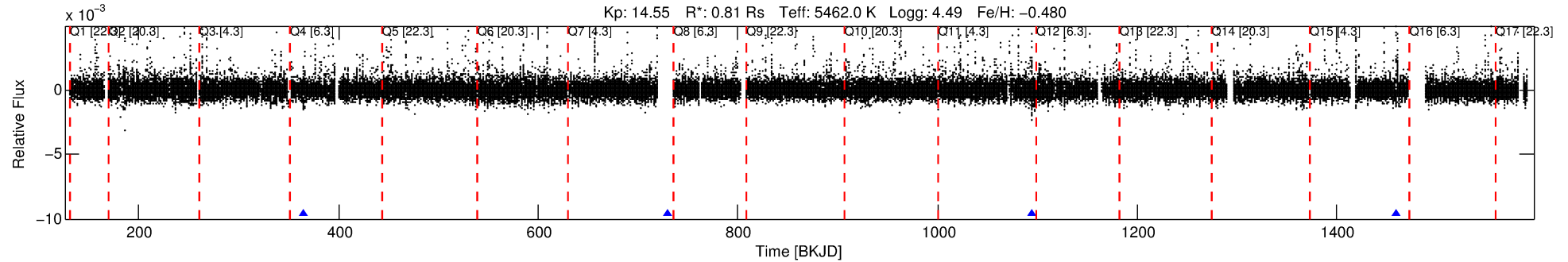
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012168669-01

No Significant Match Found

DV One-Page Summary

KIC: 12168669 Candidate: 1 of 7 Period: 364.291 d



DV Fit Results:

Period = 364.29085 [0.00531] d
Epoch = 365.6677 [0.0101] BKJD
Rp/R* = 0.0346 [0.0225]
a/R* = 222.39 [610.44]
b = 0.66 [2.37]
Seff = 0.64 [0.17]
Teq = 228 [15] K
Rp = 3.04 [2.05] Re
a = 0.8986 [0.1411] AU
Ag = 37406.76 [50339.84] [0.74 σ]
Teffp = 4907 [1631] K [2.87 σ]

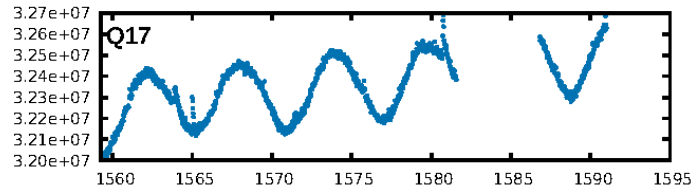
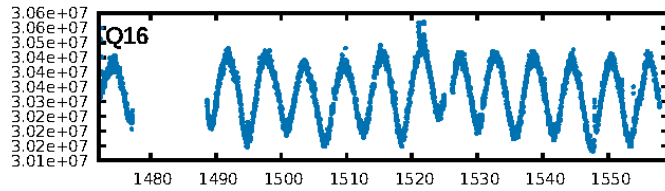
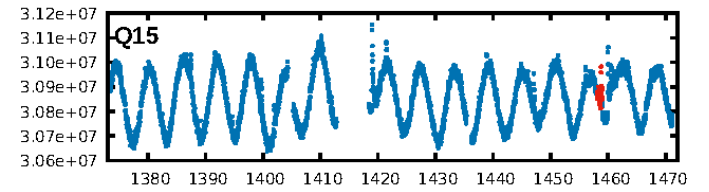
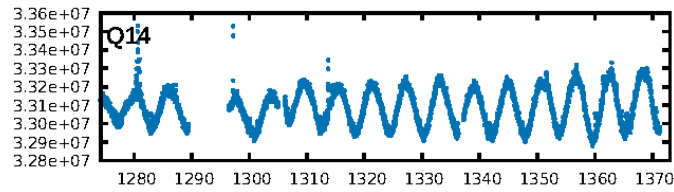
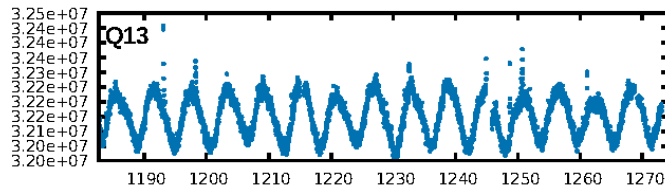
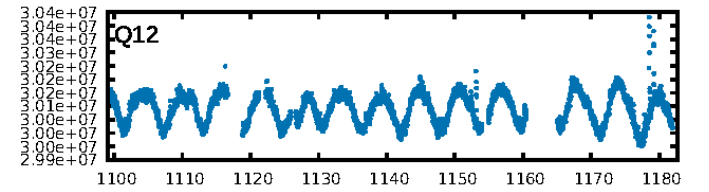
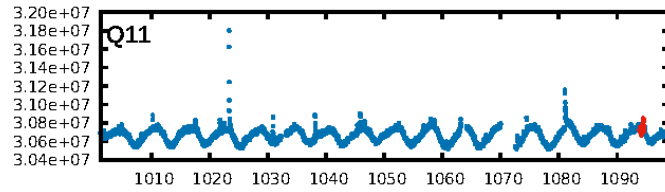
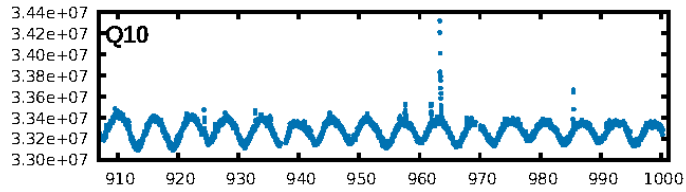
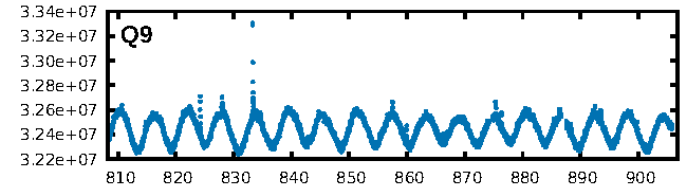
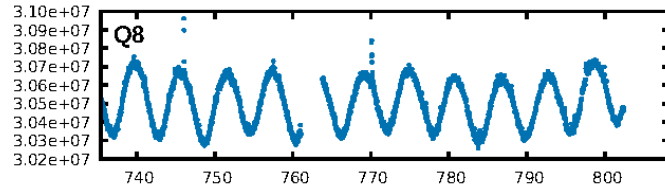
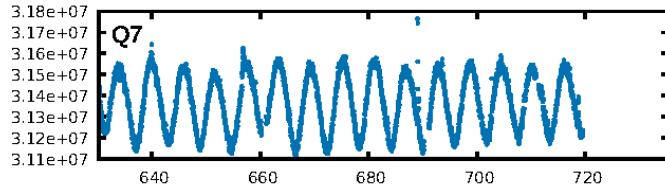
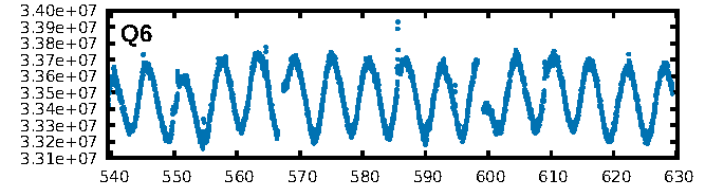
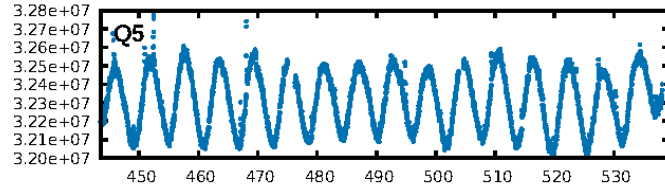
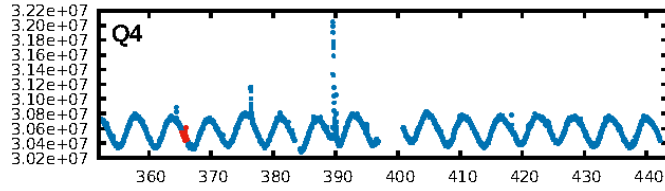
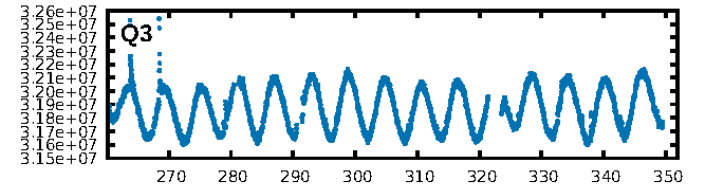
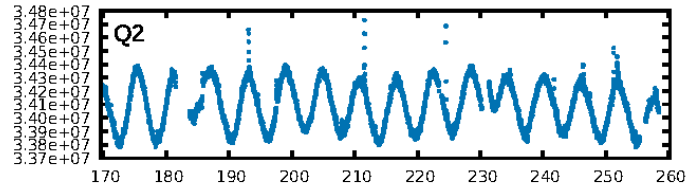
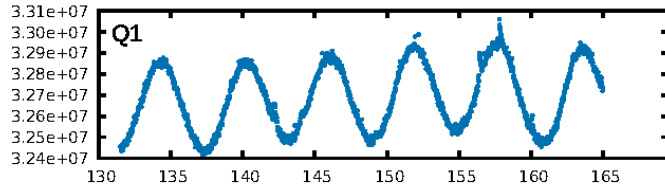
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [44.47 σ]
LongPeriod-sig: 100.0% [15.91 σ]
ModelChiSquare2-sig: 9.7%
ModelChiSquareGof-sig: 49.9%
Bootstrap-pfa: 4.69e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.9217
Centroid-sig: 20.6%
Centroid-so: 1.432 arcsec [2.00 σ]
OotOffset-rm: 0.818 arcsec [0.26 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 0.674 arcsec [0.23 σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

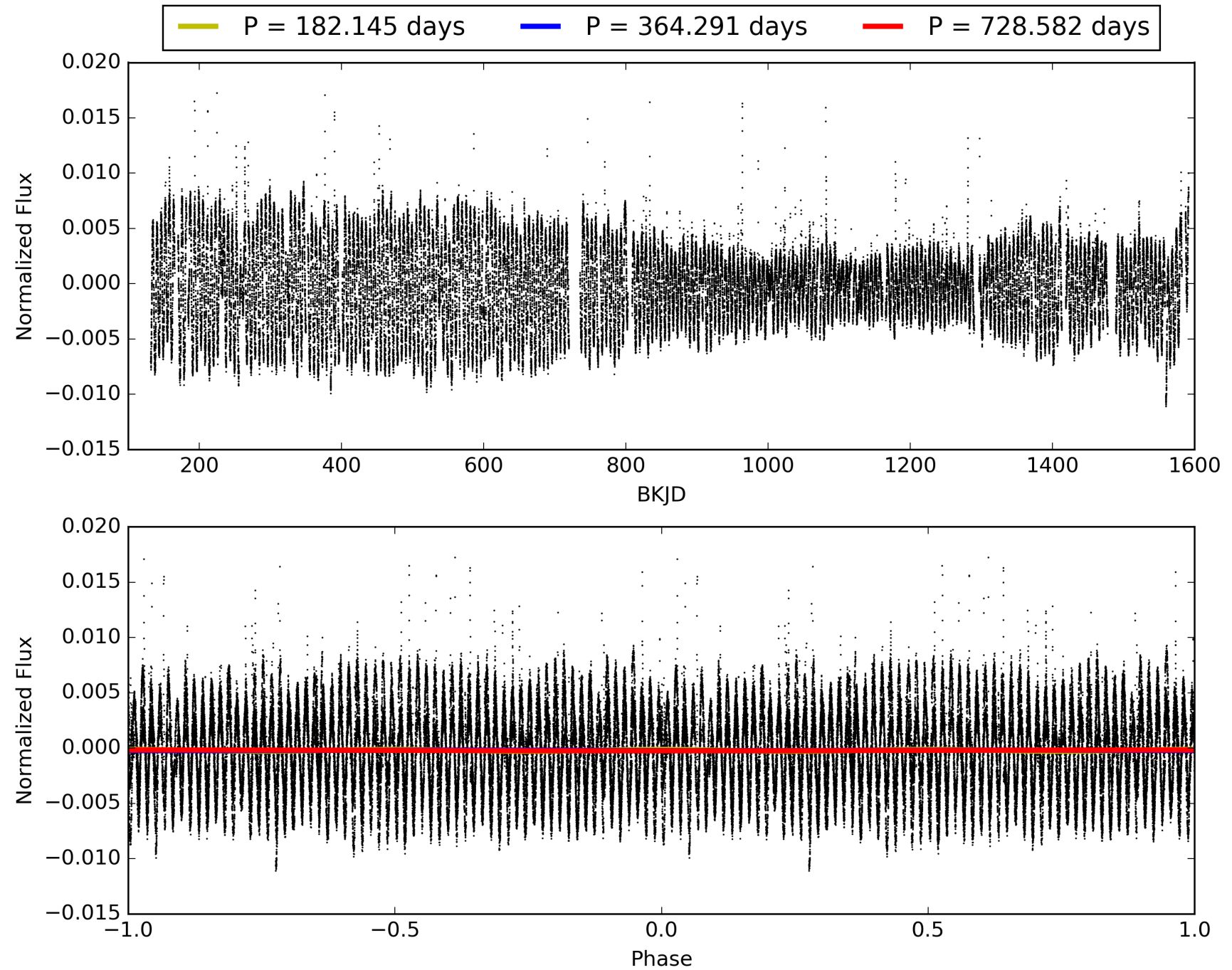
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 012168669-01, PDC Light Curves

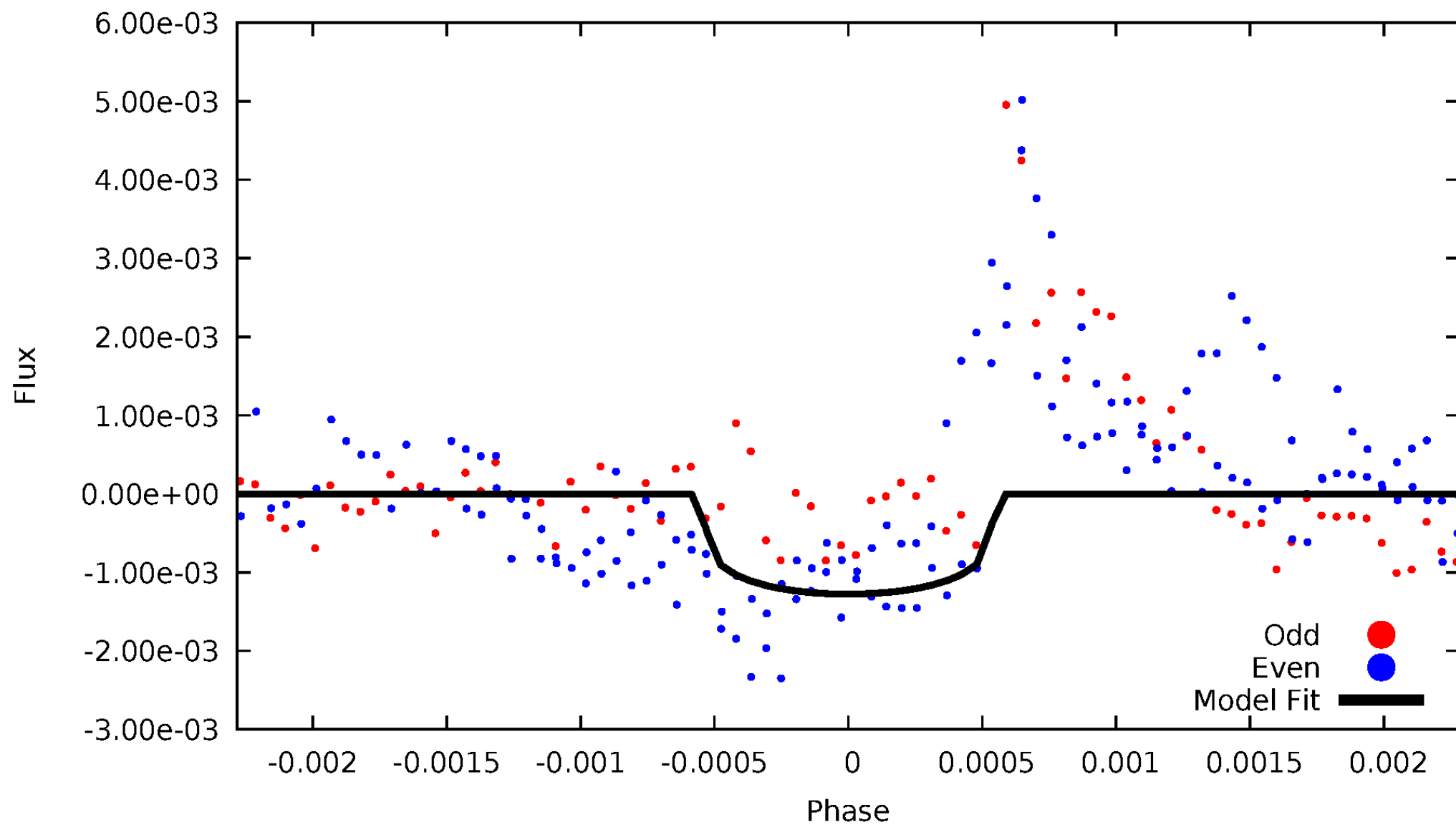


TCE 012168669-01



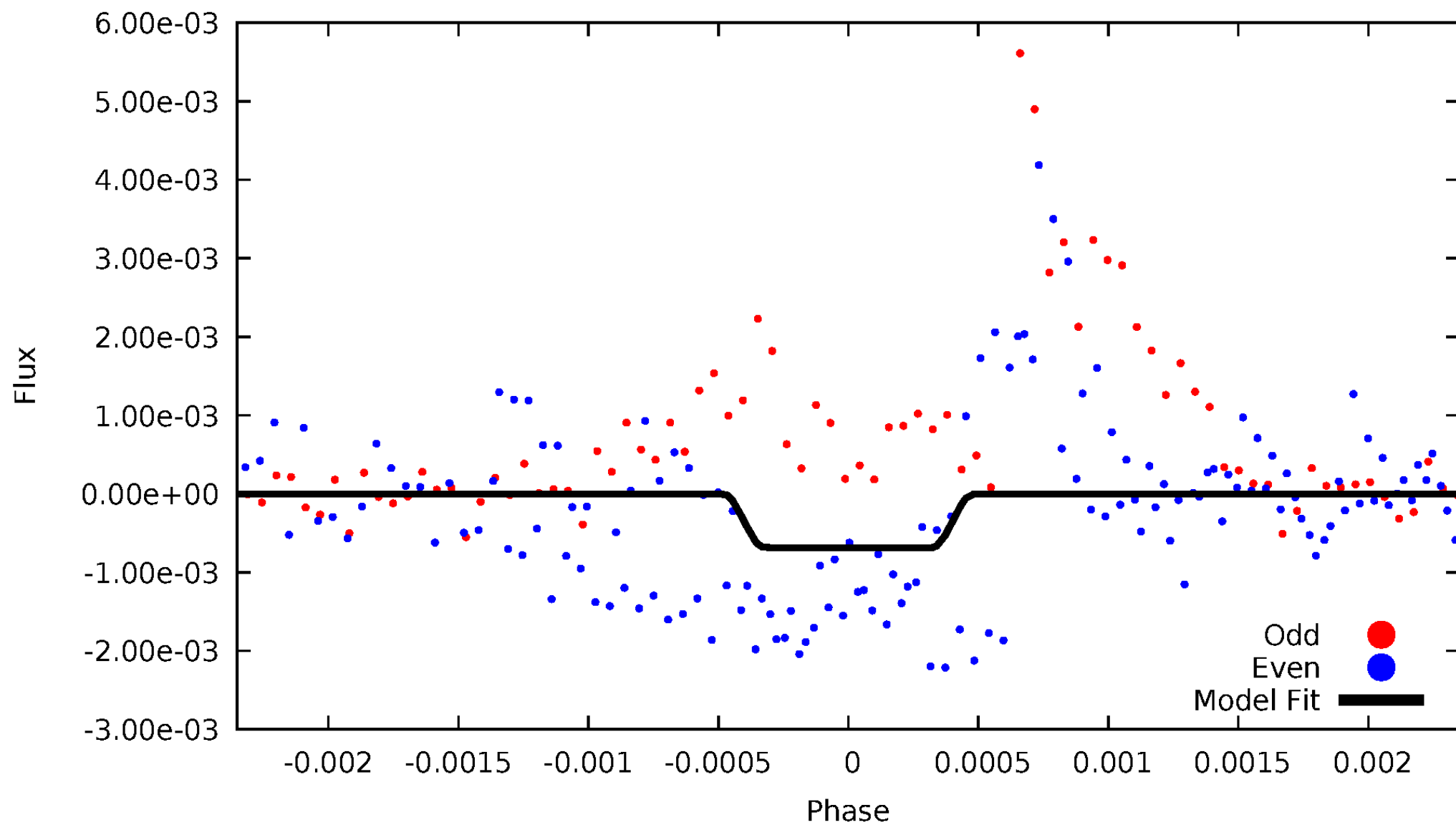
DV Odd/Even

TCE 012168669-01



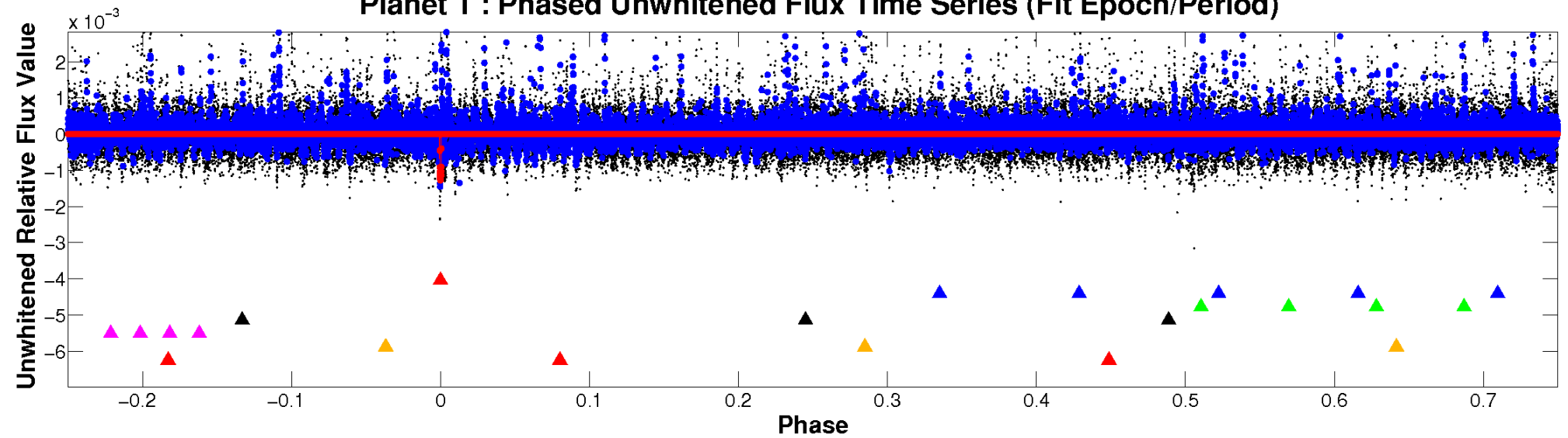
ALT Odd/Even

TCE 012168669-01

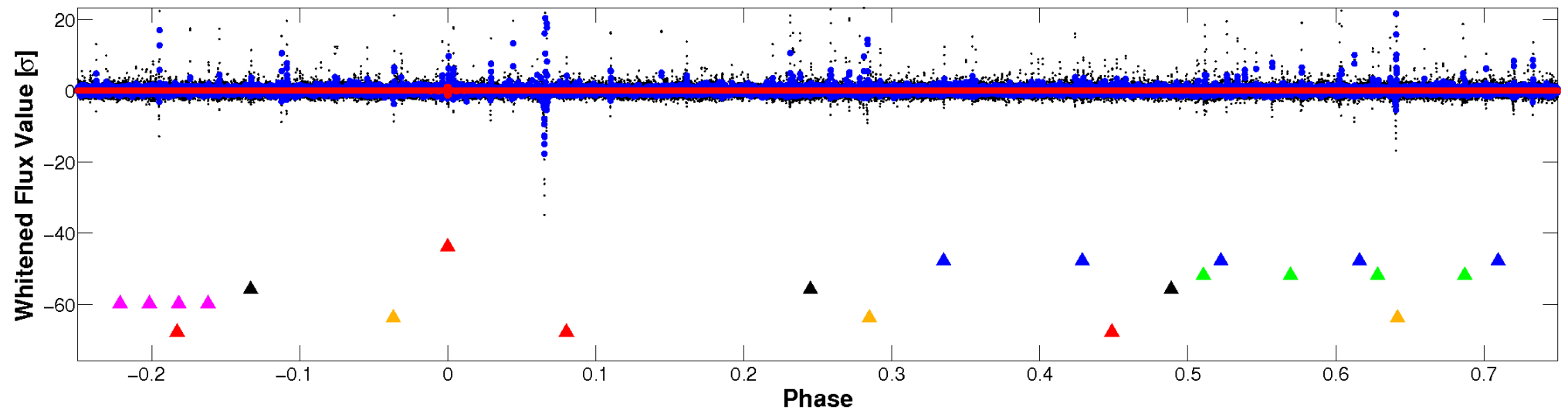


Non-Whitened Vs. Whitened Light Curve

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

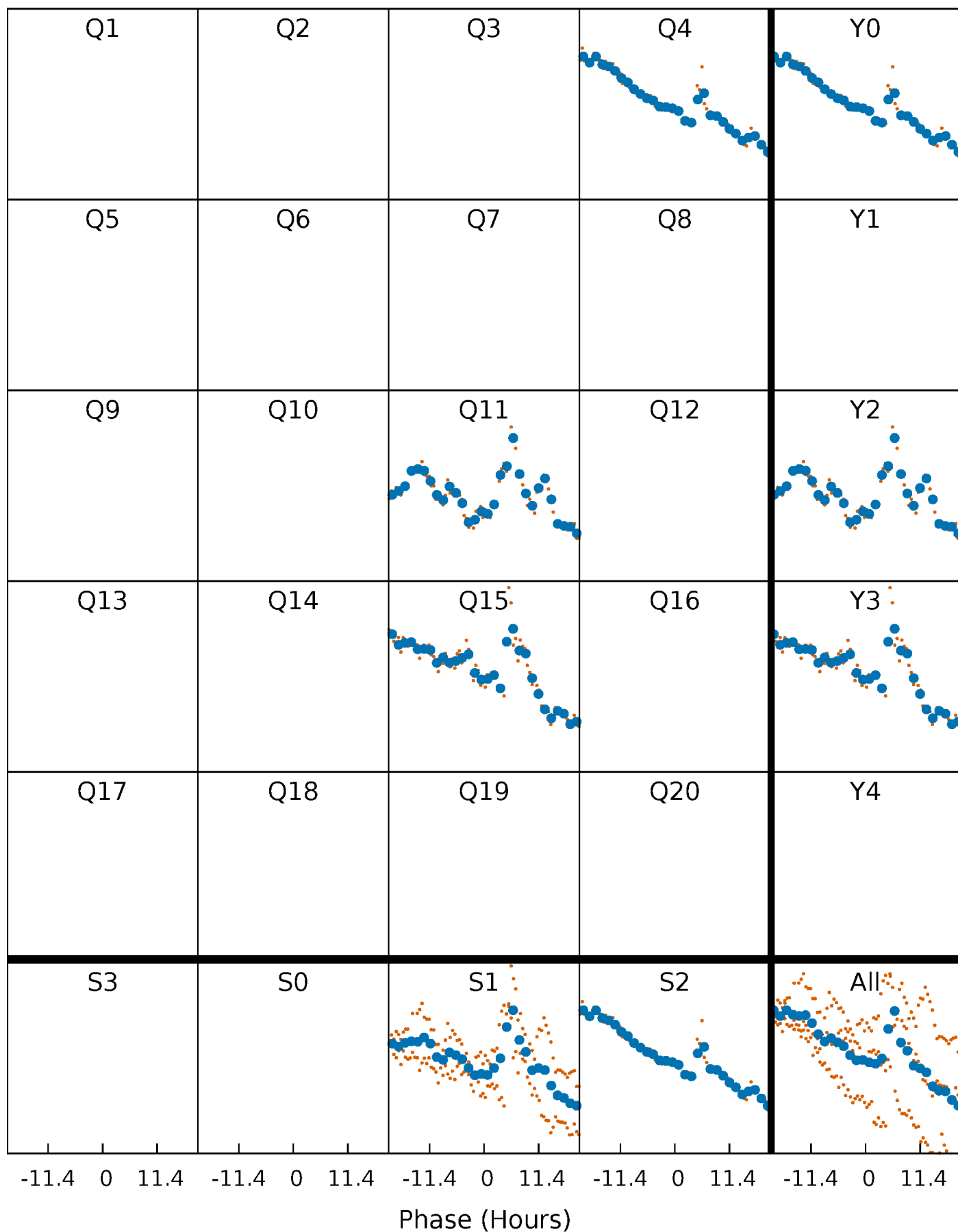


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



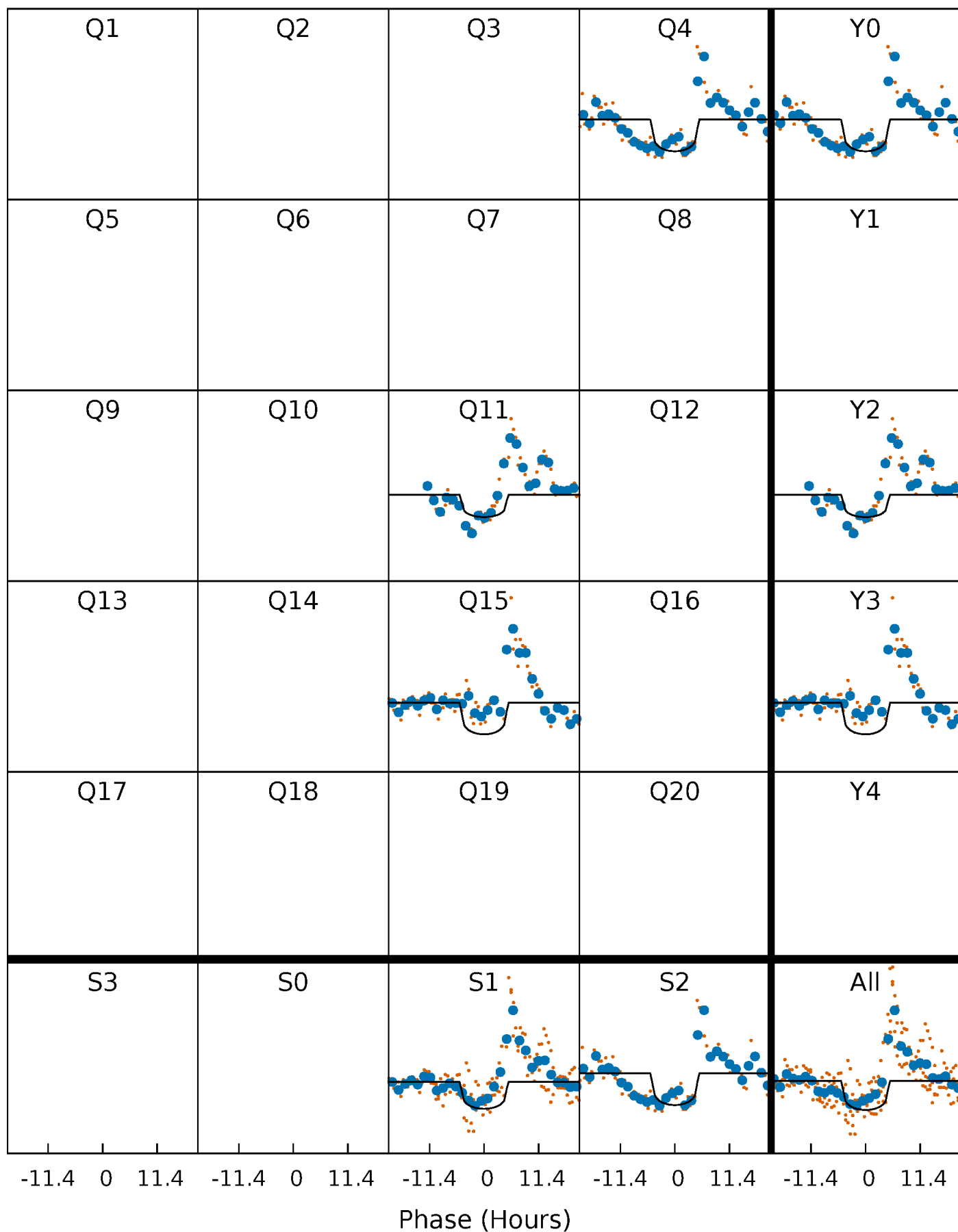
PDC Quarter-Phased Transit Curves

TCE 012168669-01 P=364.290849 Days $T_0=365.667745$ (BKJD)



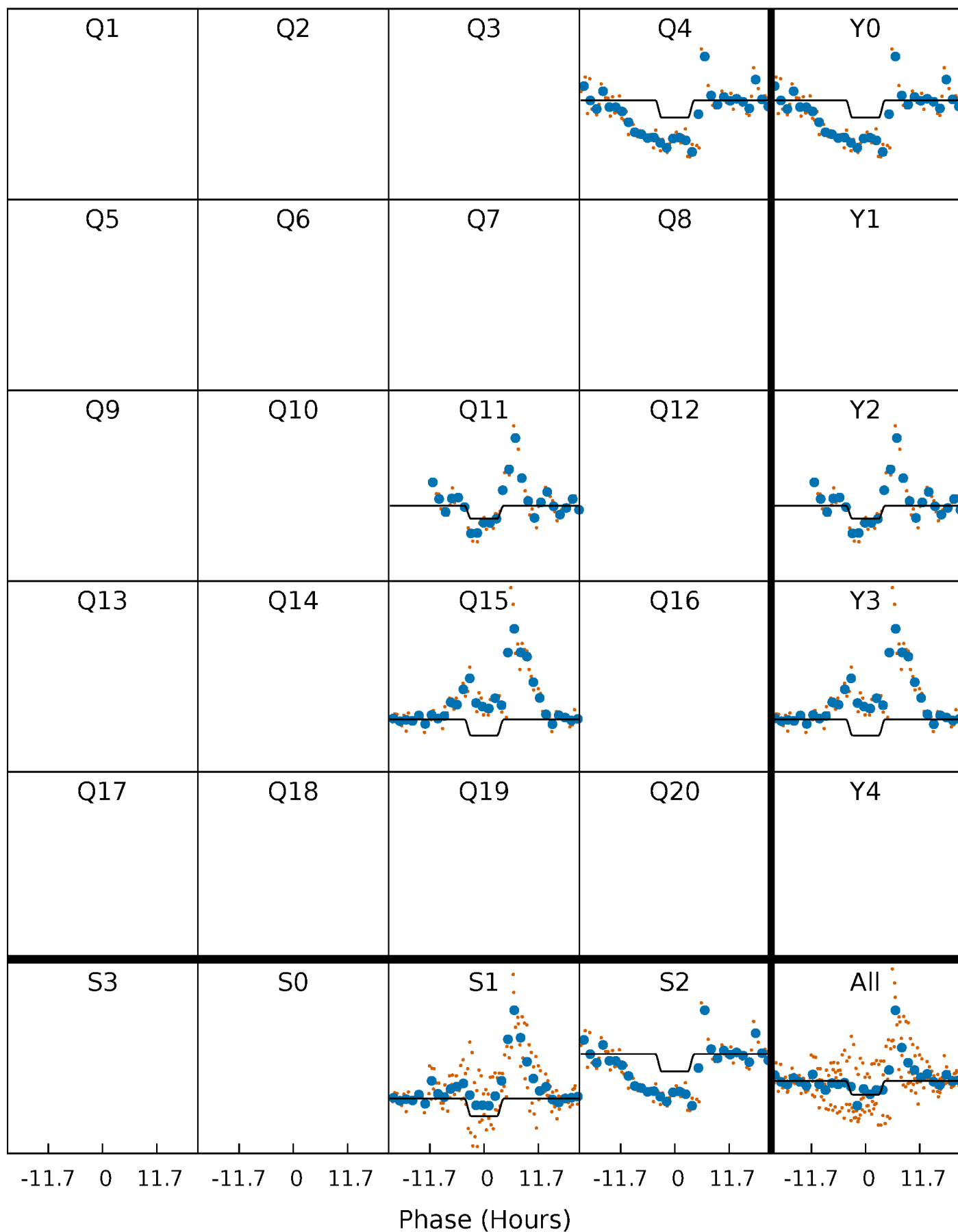
DV Quarter-Phased Transit Curves

TCE 012168669-01 P=364.290849 Days $T_0=365.667745$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

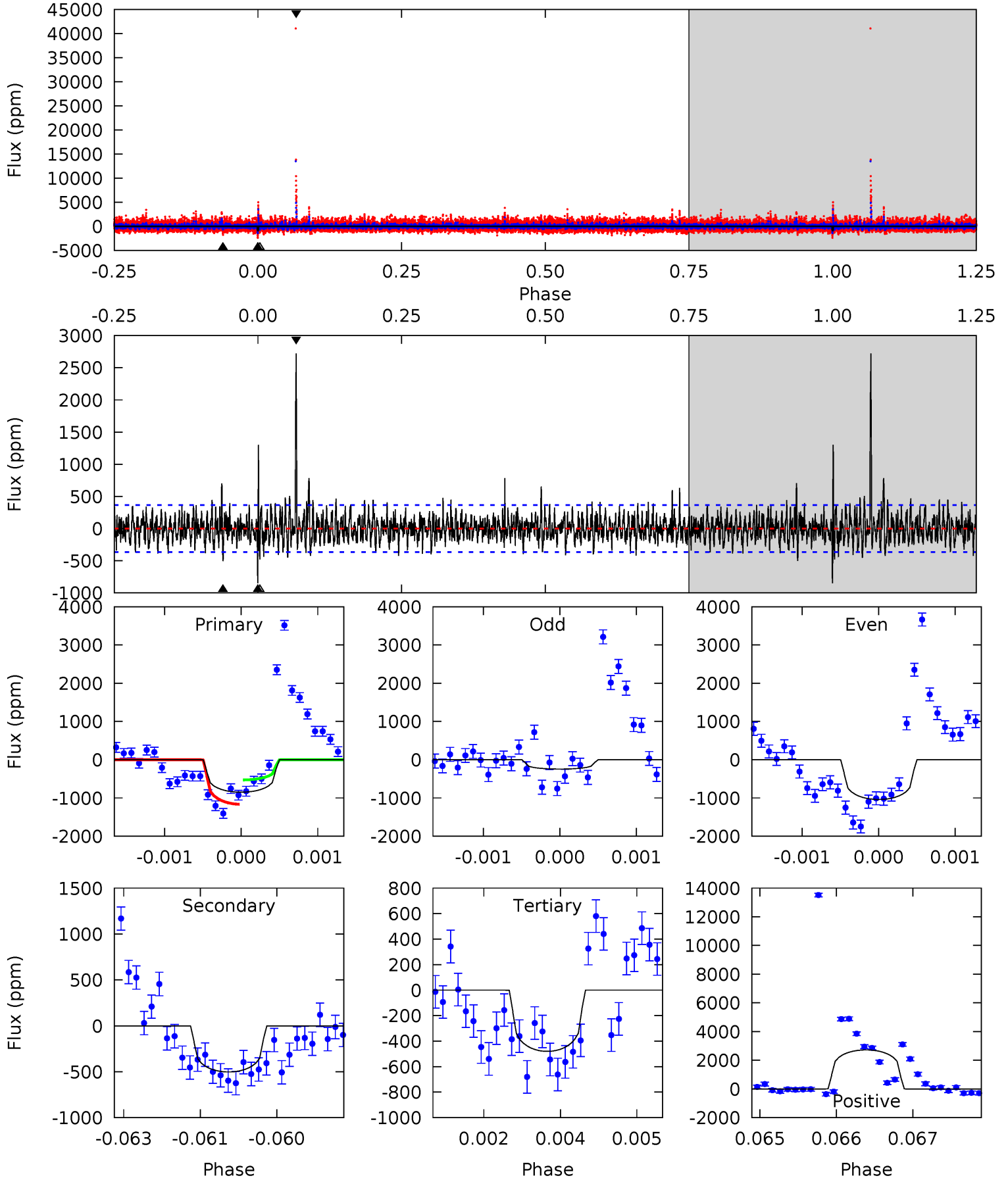
TCE 012168669-01 P=364.296319 Days $T_0=365.625312$ (BKJD)



DV Model-Shift Uniqueness Test

012168669-01, P = 364.290849 Days, E = 1.376896 Days

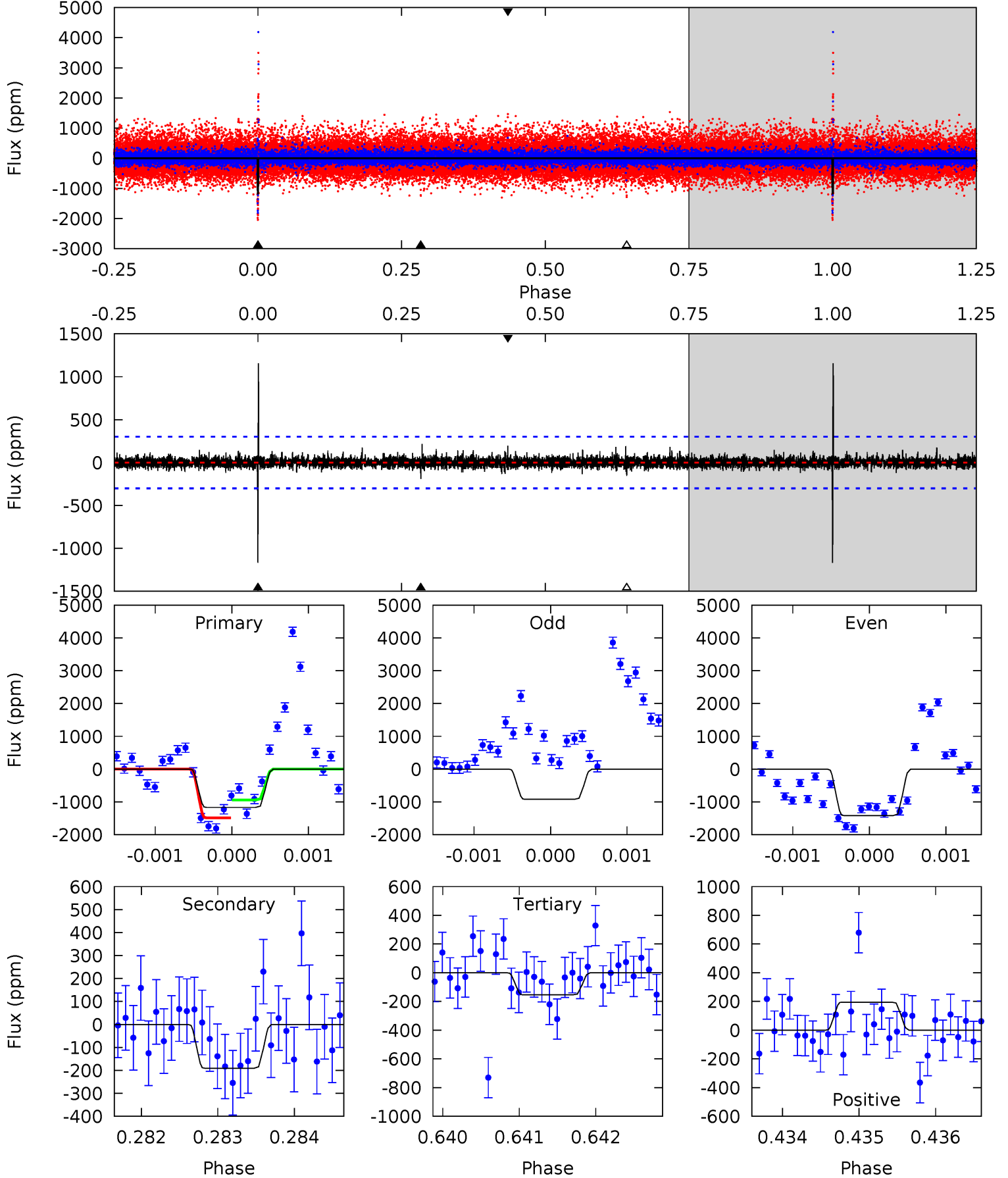
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	7.44	7.11	40.3	5.42	3.24	2.51	5.48	-27.7	0.33	-32.9	4.02	0.77	0.76	4.73



Alt Model-Shift Uniqueness Test

012168669-01, P = 364.296319 Days, E = 1.328993 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	3.48	2.81	3.56	5.47	3.32	0.68	18.5	17.7	0.67	-0.08	5.15	0.59	0.50	4.94



Stellar Parameters For KIC 012168669

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5462^{+162}_{-162}	$4.488^{+0.125}_{-0.137}$	$-0.480^{+0.350}_{-0.300}$	$0.806^{+0.141}_{-0.115}$	$0.728^{+0.112}_{-0.045}$	$1.961^{+1.029}_{-0.672}$
	+3%/-3%	+3%/-3%	+73%/-62%	+17%/-14%	+15%/-6%	+52%/-34%
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 012168669-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-502 ± 67	$3.13^{+2.14}_{-1.70}$	320^{+18}_{-17}	4526^{+1912}_{-768}	23453^{+84662}_{-15037}
Alt.	-191 ± 55	$2.61^{+1.95}_{-1.53}$	320^{+19}_{-16}	4025^{+1792}_{-717}	12314^{+61116}_{-8525}

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

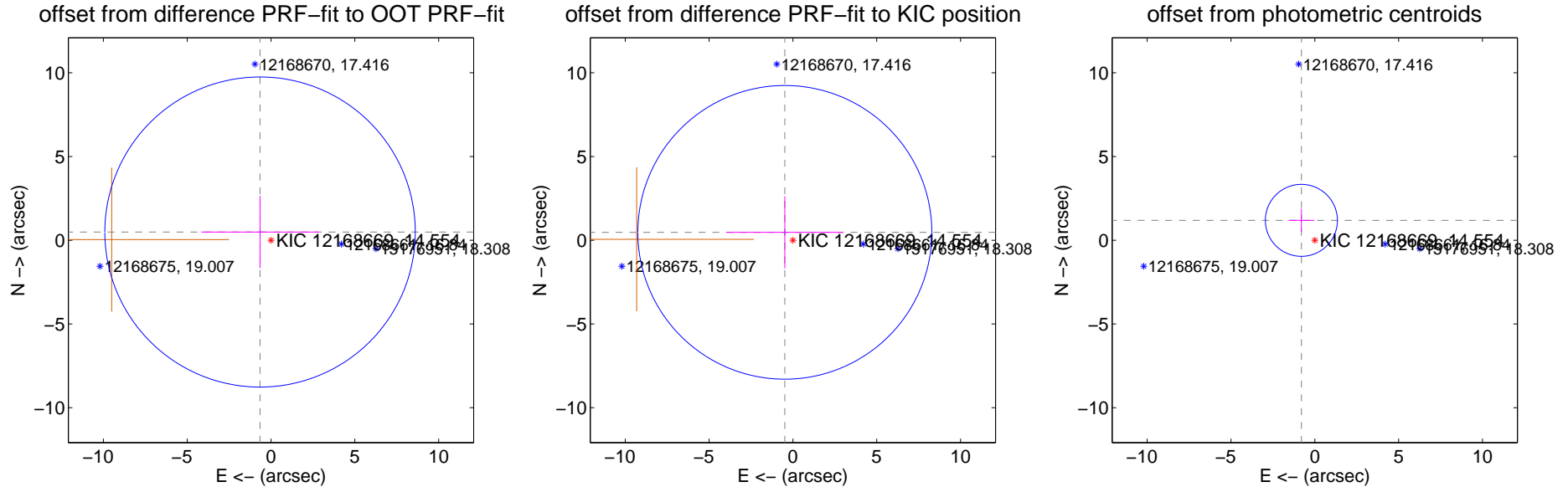
DV Centroid Data

Supplemental centroid analysis for 012168669-01. Kepler magnitude: 14.55. Transit SNR 9.31

There are 1 quarters with good PRF difference image offsets

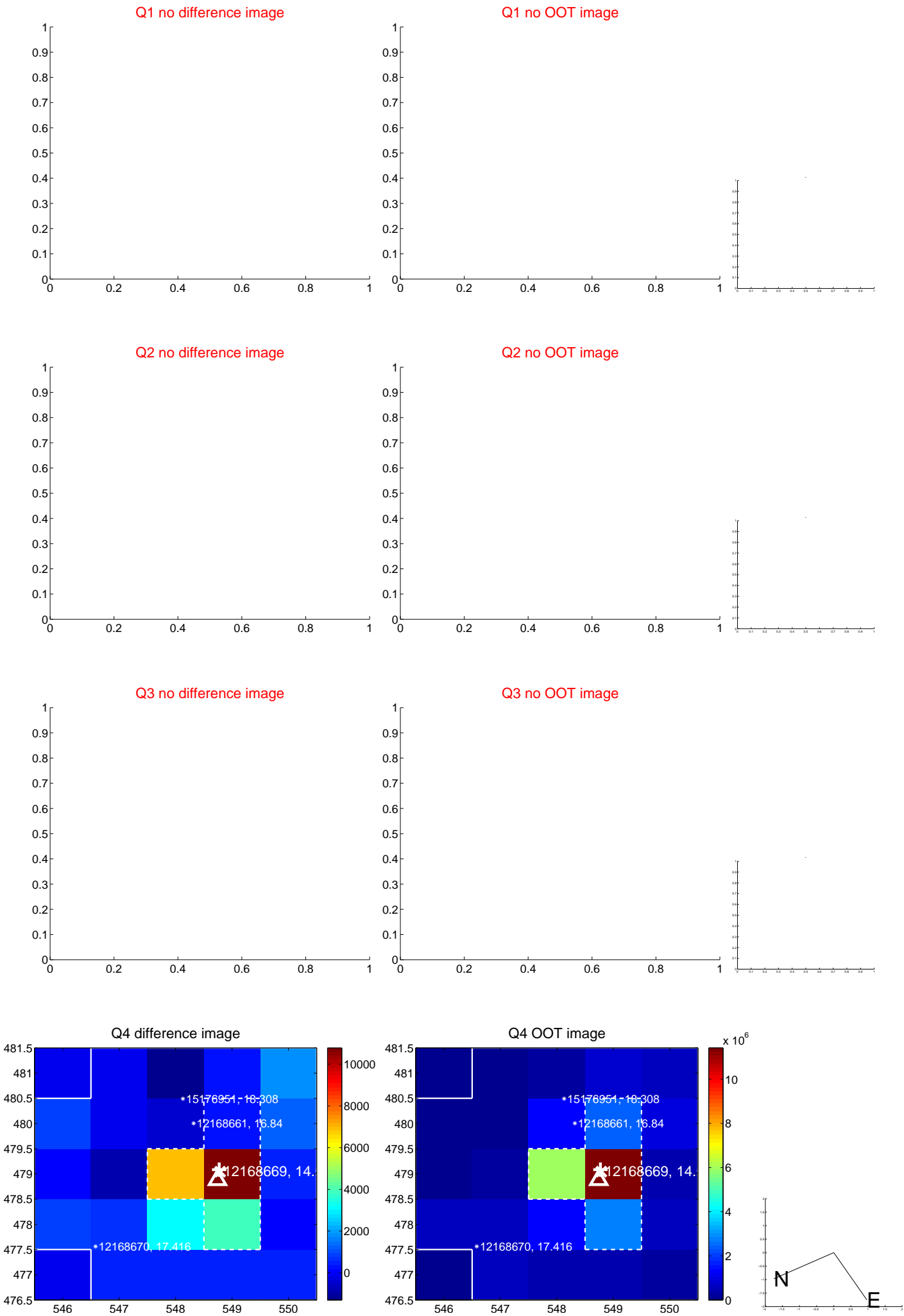
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.818 ± 3.086	0.26	0.654 ± 3.503	0.491 ± 2.152
PRF-fit source offset from KIC position	0.674 ± 2.923	0.23	0.482 ± 3.503	0.471 ± 2.152
photometric centroid source offset	1.43 ± 0.72	2.00	0.80 ± 0.77	1.19 ± 0.69



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

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



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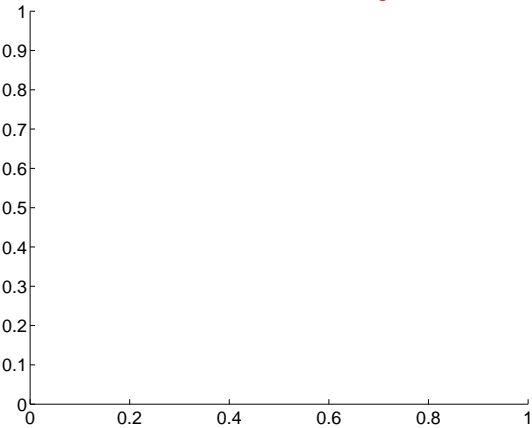
Q13 no difference image



Q13 no OOT image



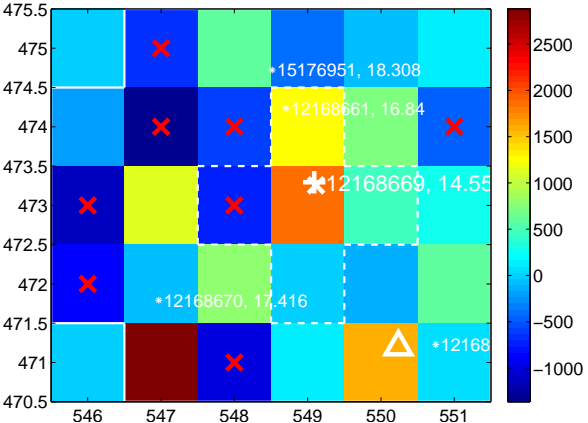
Q14 no difference image



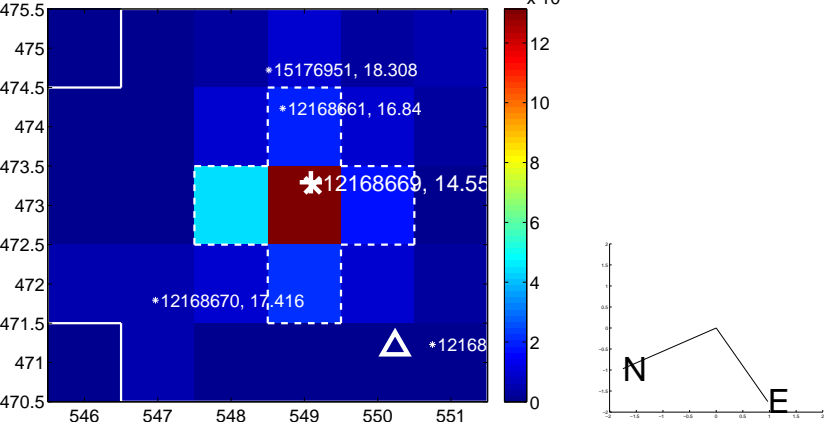
Q14 no OOT image



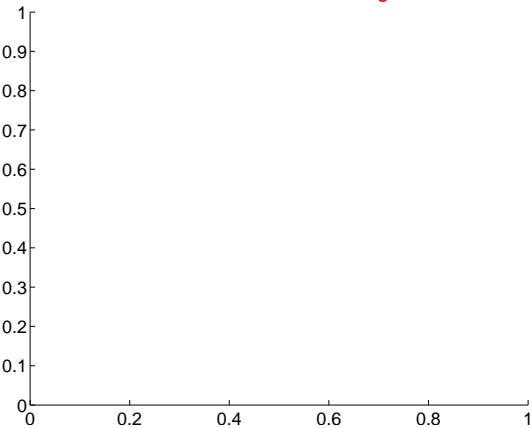
Q15 difference image. Poor Quality



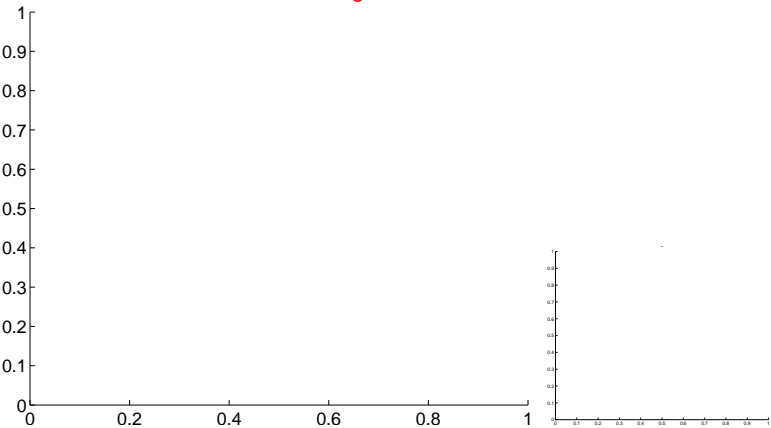
Q15 OOT image



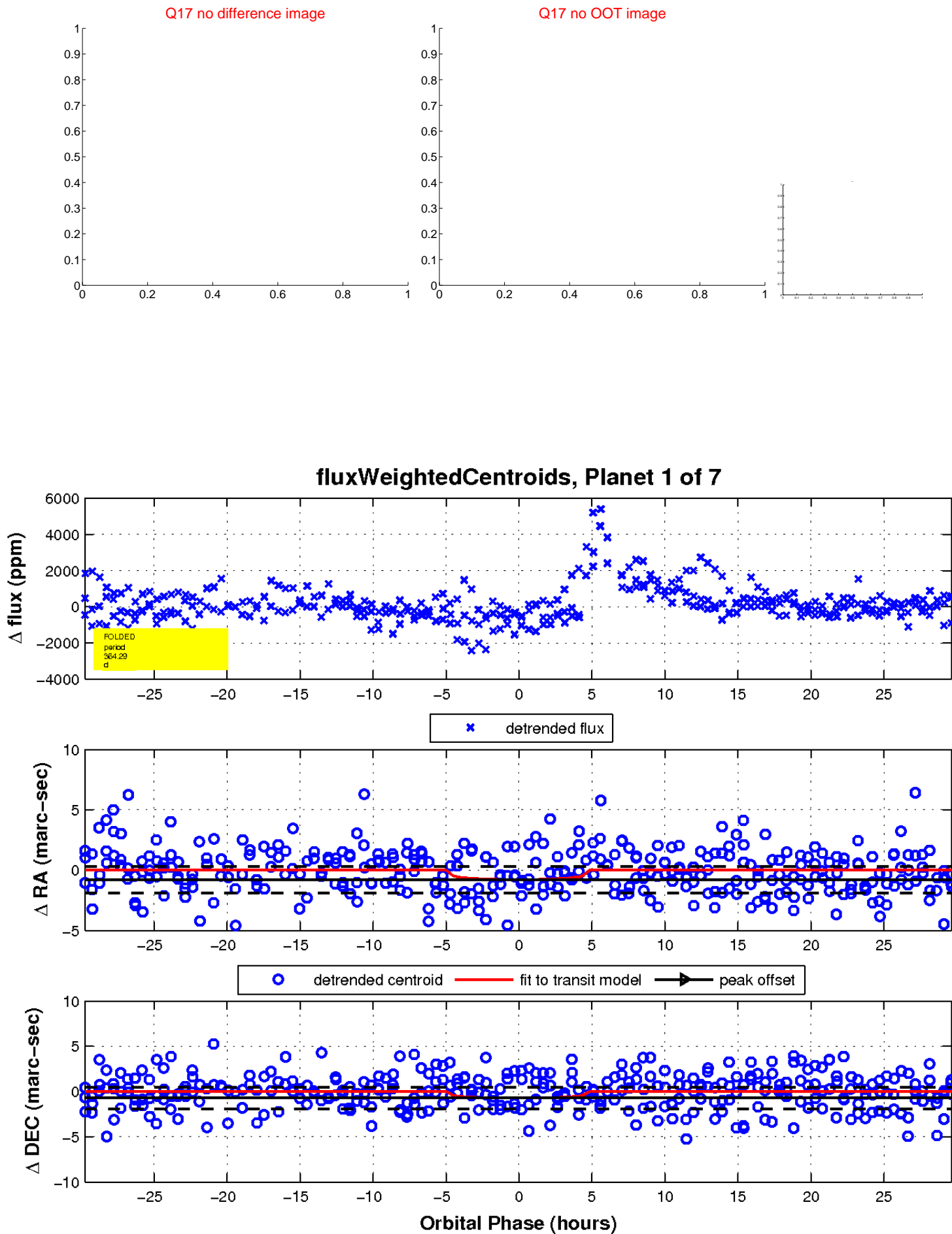
Q16 no difference image



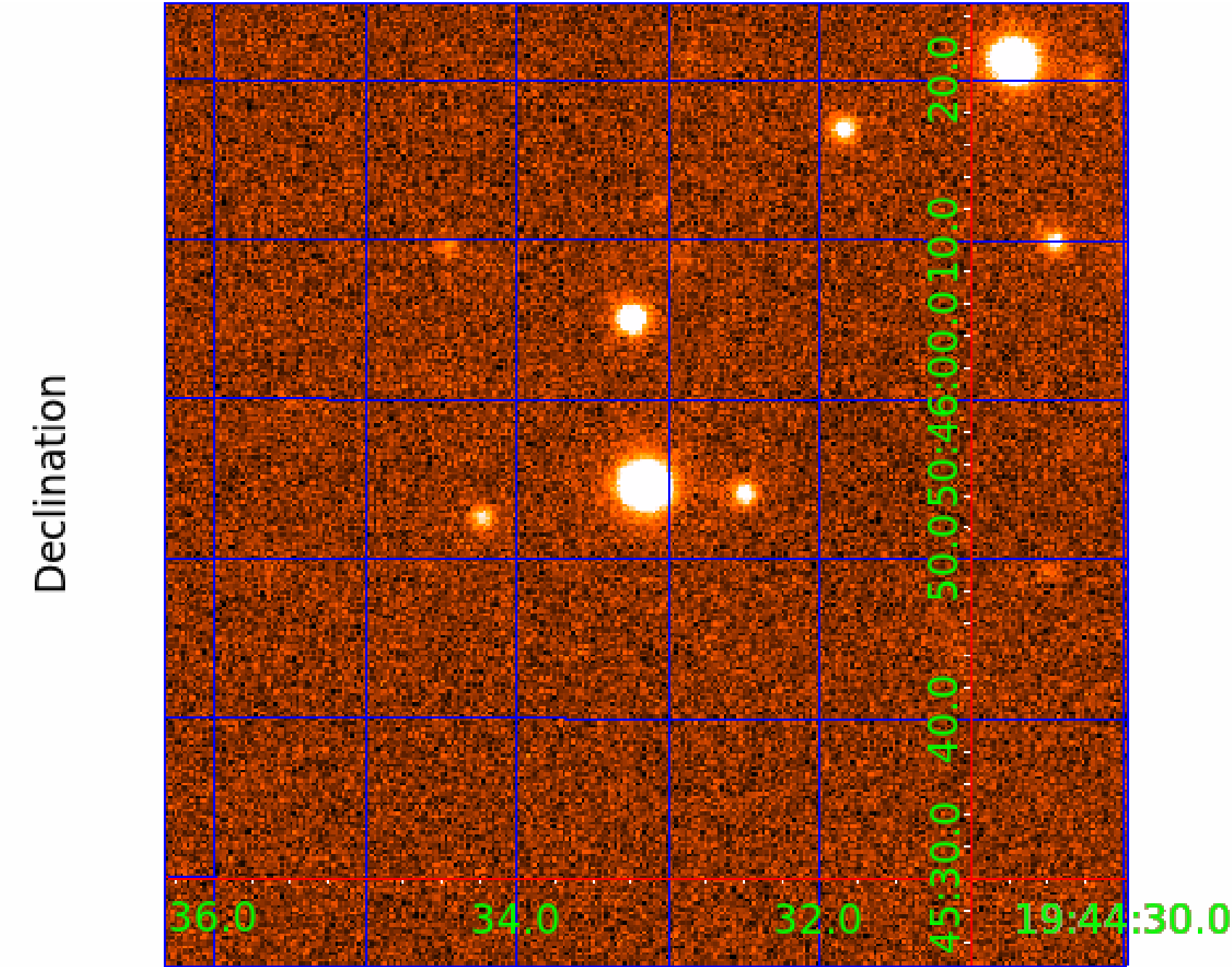
Q16 no OOT image



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



UKIRT Image



KIC 012168669

Q1-17 DR25 TCE Parameters

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012168669-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
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012168669-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

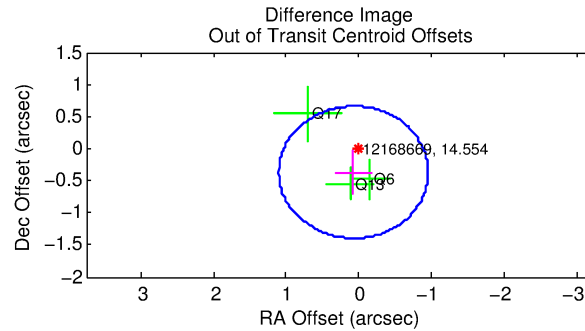
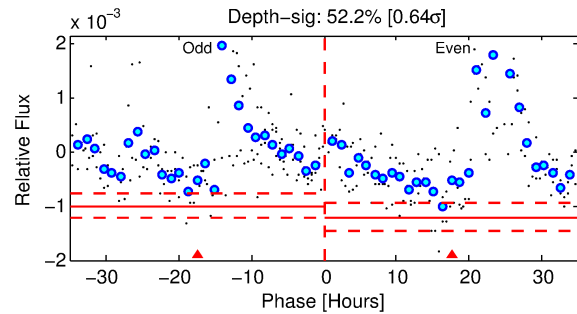
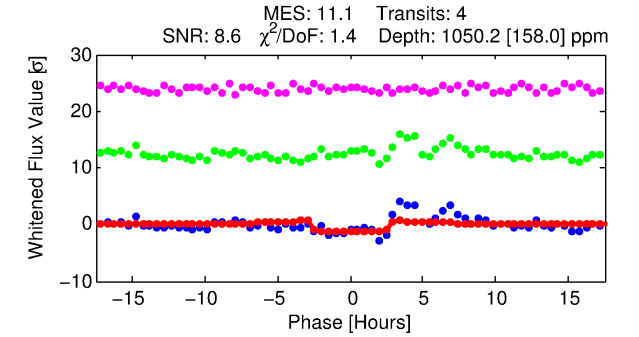
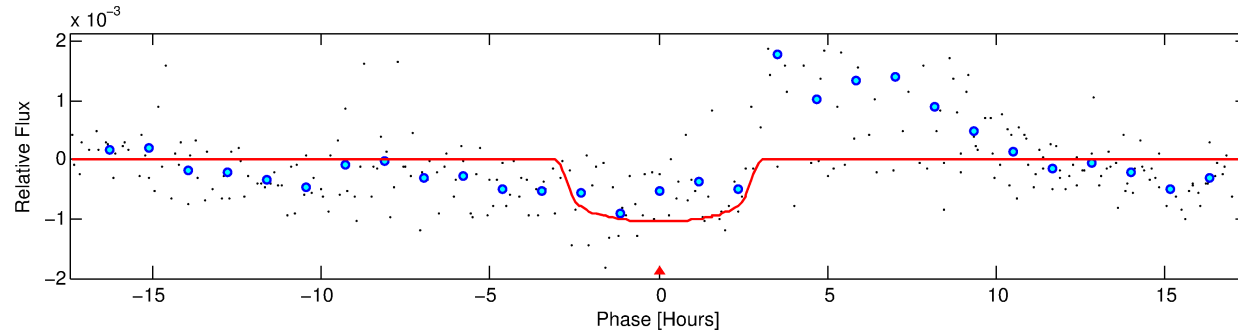
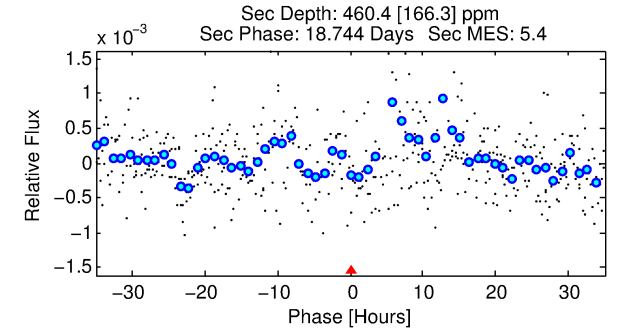
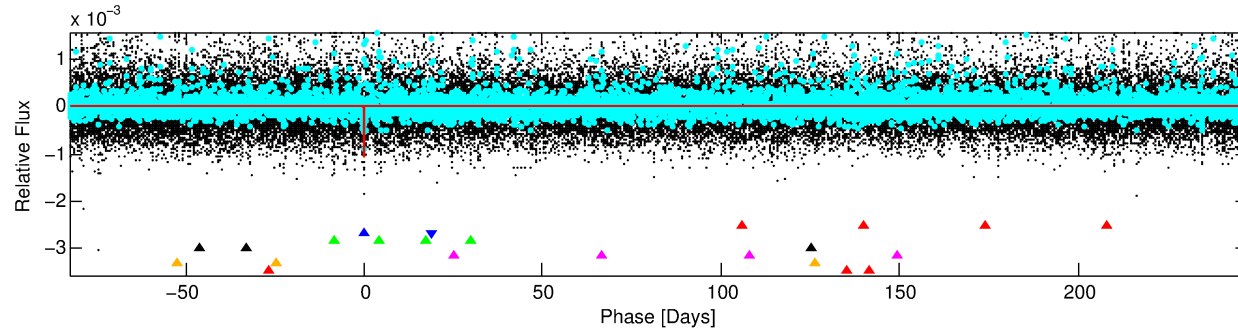
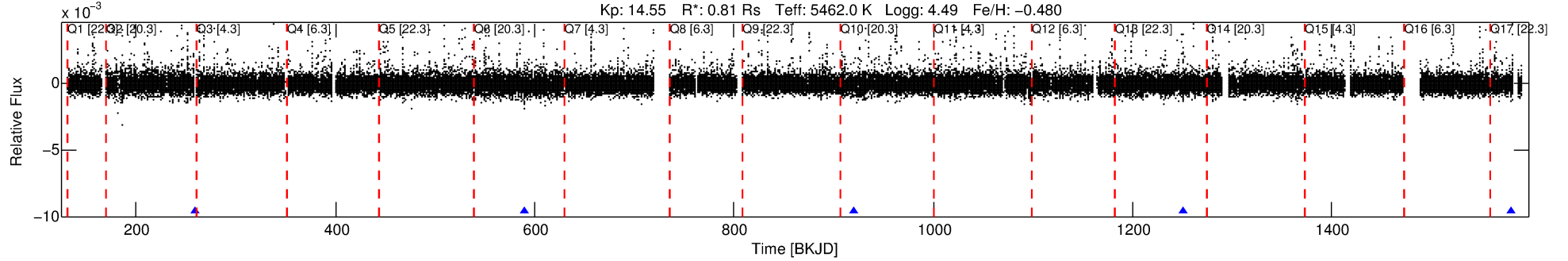
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012168669-02

No Significant Match Found

DV One-Page Summary

KIC: 12168669 Candidate: 2 of 7 Period: 330.177 d



DV Fit Results:

Period = 330.17670 [0.00523] d
Epoch = 259.8926 [0.0141] BKJD
Rp/R* = 0.0311 [0.0207]
a/R* = 351.38 [989.26]
b = 0.64 [2.64]
Seff = 0.73 [0.20]
Teq = 236 [16] K
Rp = 2.74 [1.89] Re
a = 0.8416 [0.1321] AU
Ag = 23899.94 [33488.34] [0.71 σ]
Teffp = 4533 [1570] K [2.74 σ]

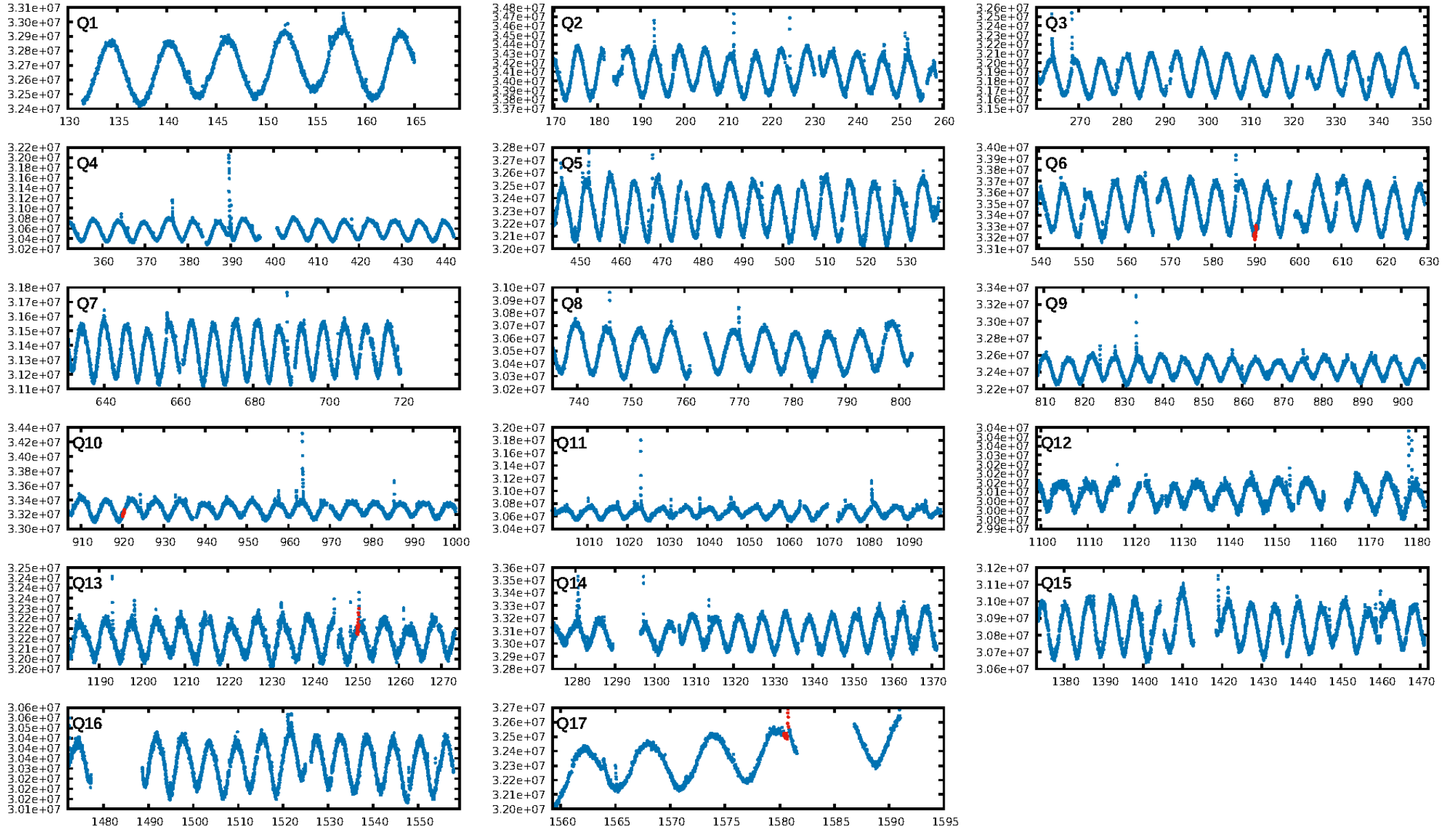
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [36.88 σ]
ModelChiSquare2-sig: 6.5%
ModelChiSquareGof-sig: 24.0%
Bootstrap-pfa: 5.72e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.135
Centroid-sig: 93.5%
Centroid-so: 0.785 arcsec [0.75 σ]
OotOffset-rm: 0.375 arcsec [1.09 σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-rm: 0.280 arcsec [0.83 σ]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [4/4]

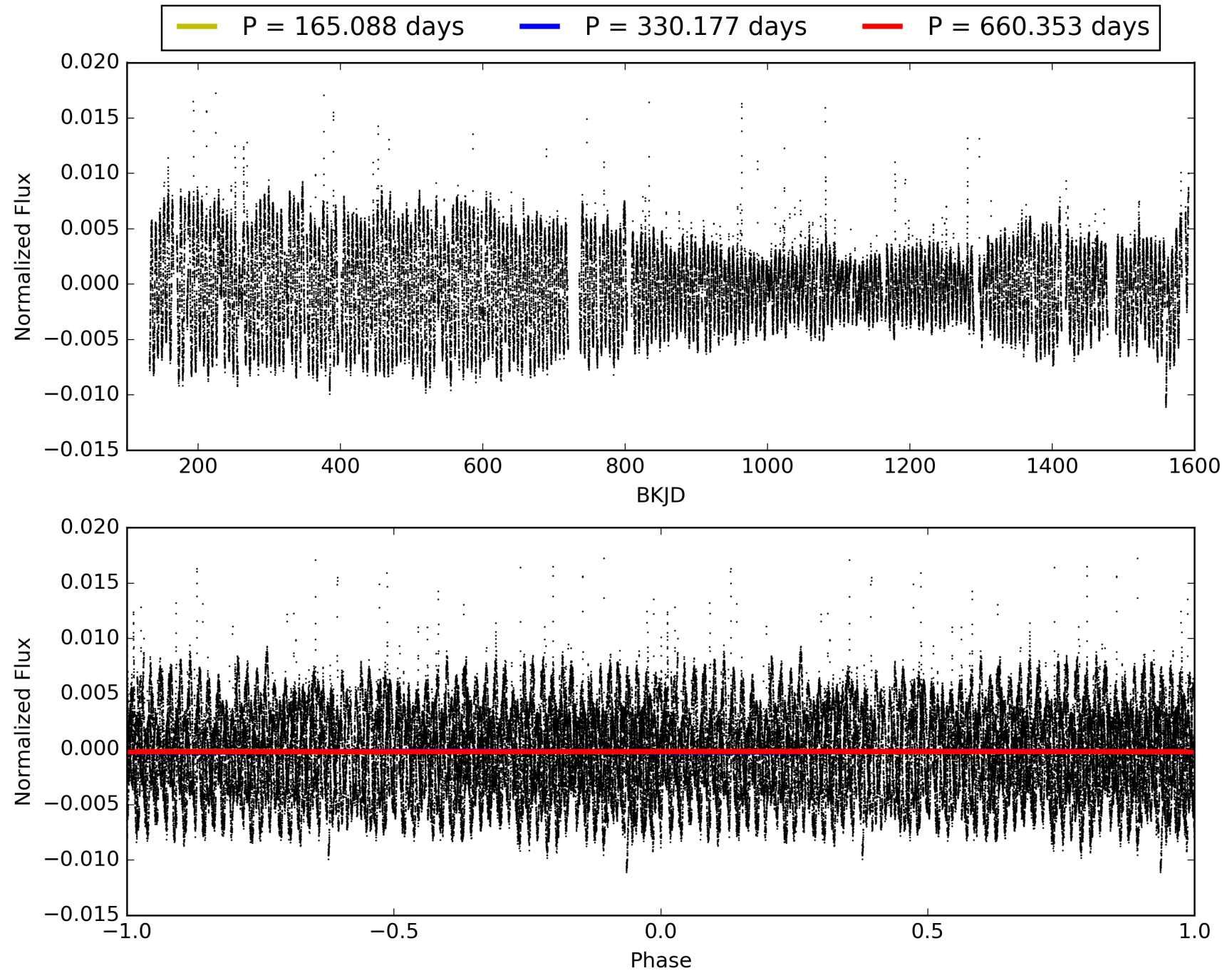
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:51:36 Z

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

TCE 012168669-02, PDC Light Curves

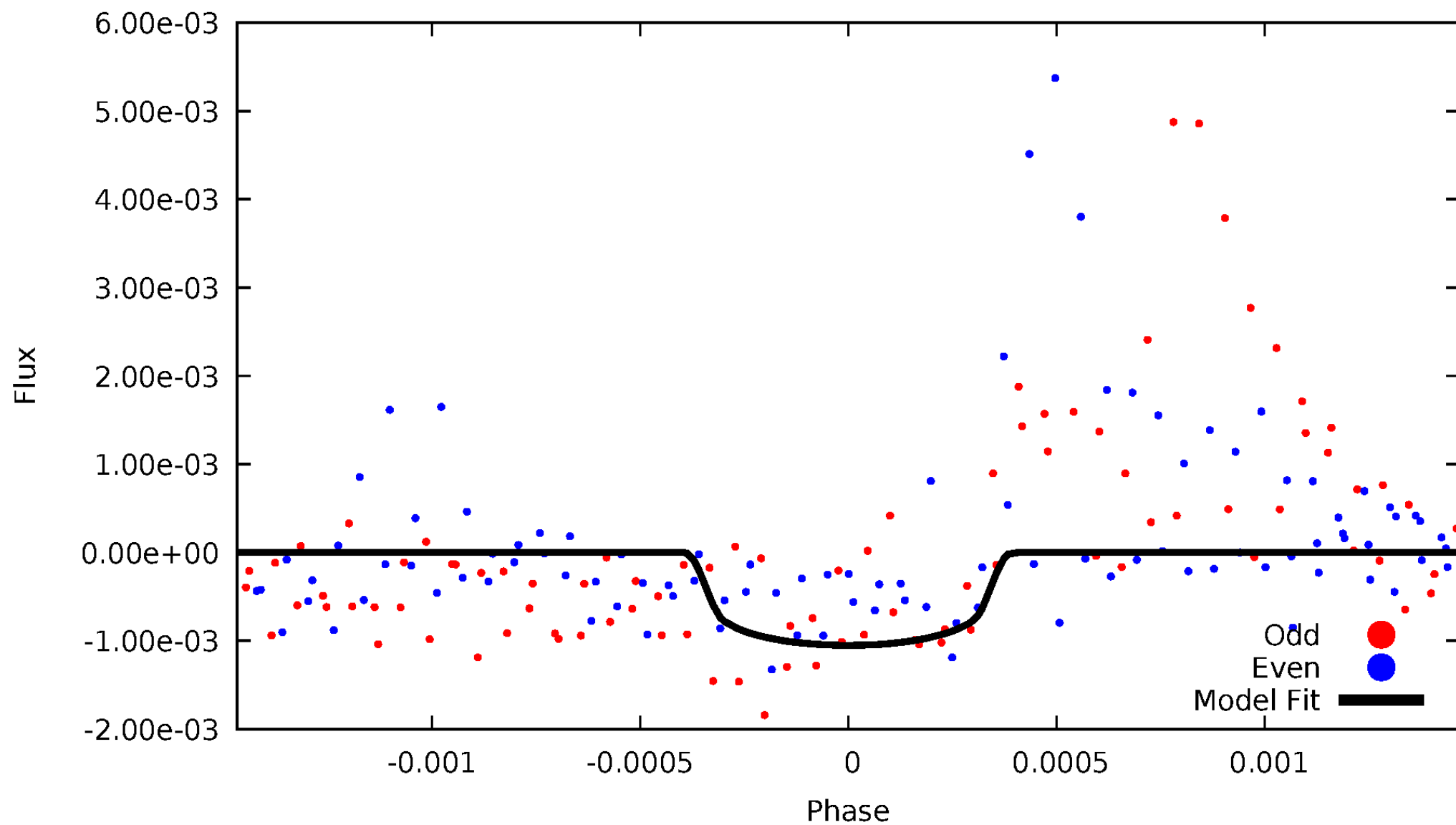


TCE 012168669-02



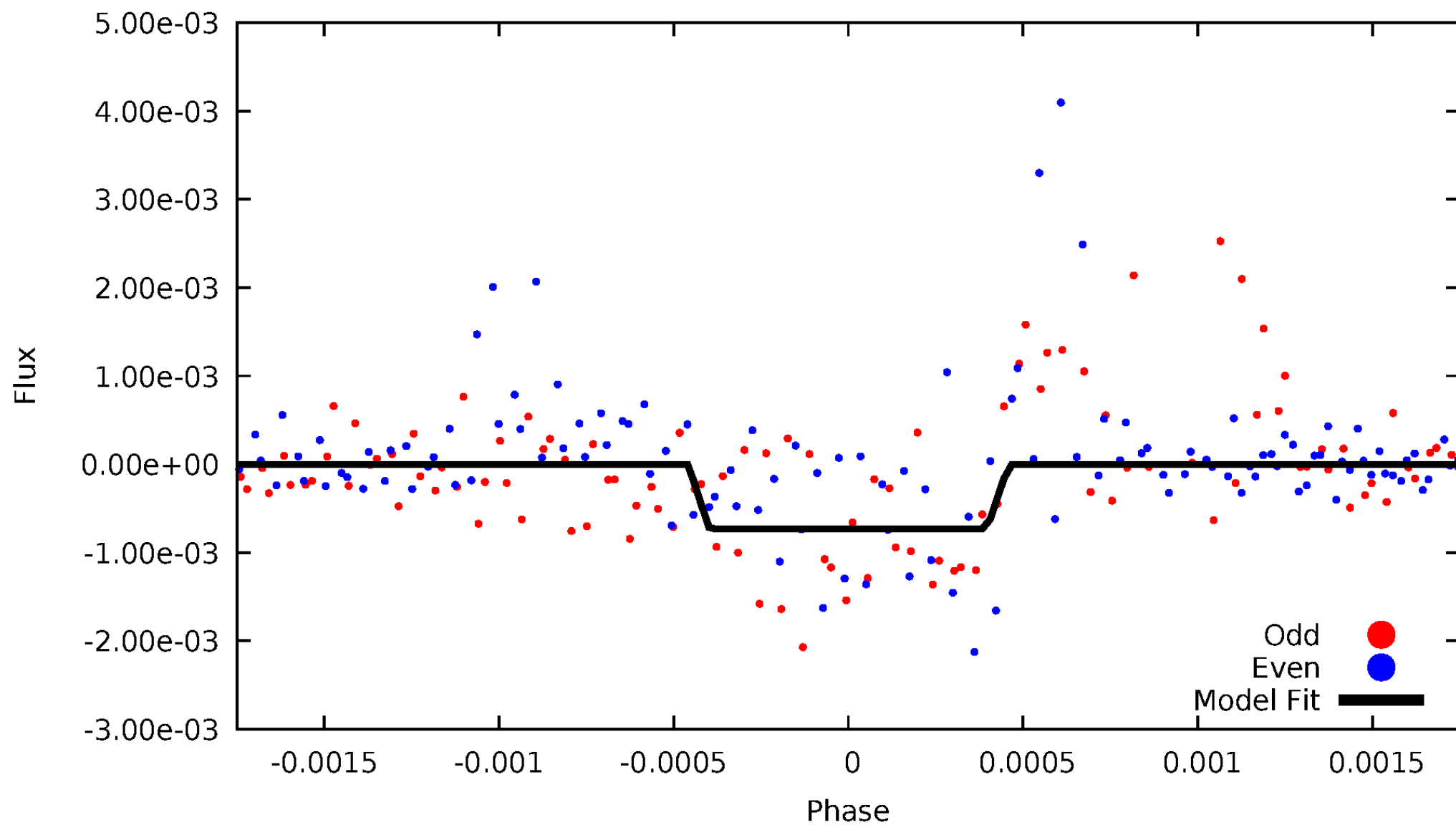
DV Odd/Even

TCE 012168669-02



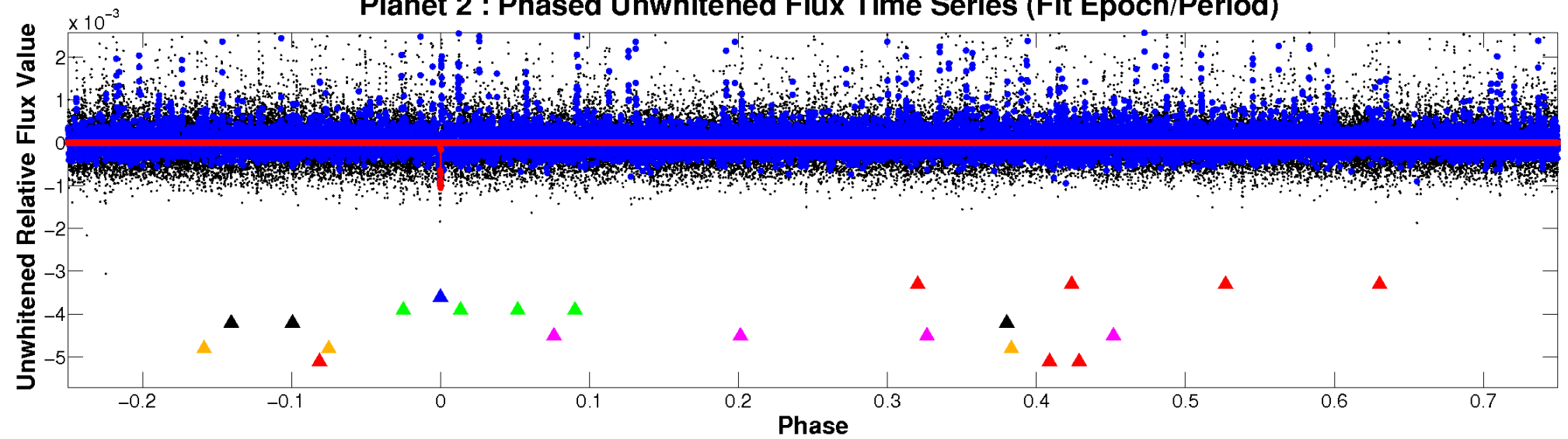
ALT Odd/Even

TCE 012168669-02

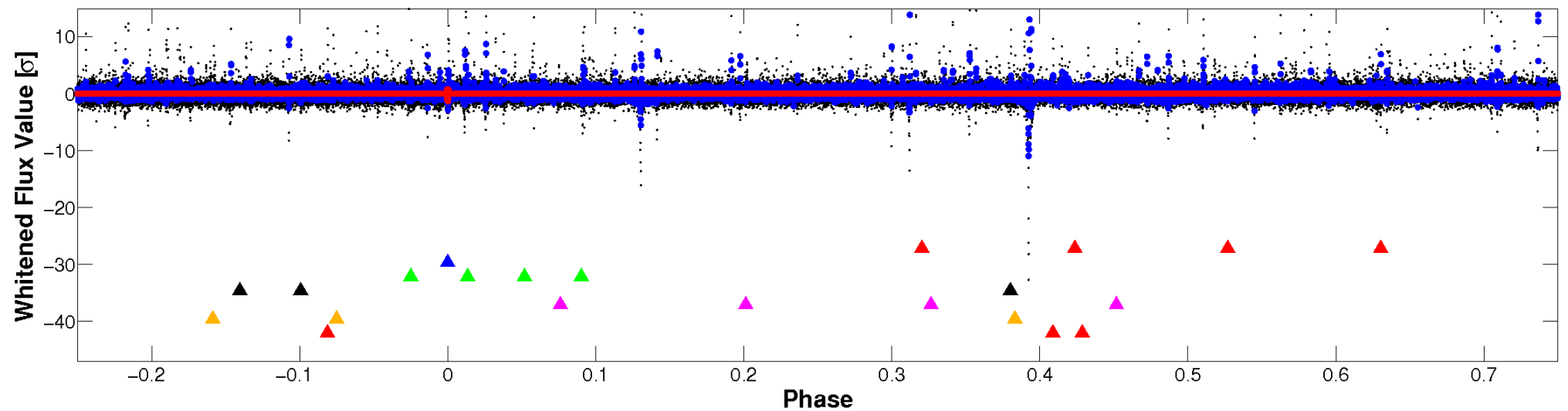


Non-Whitened Vs. Whitened Light Curve

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

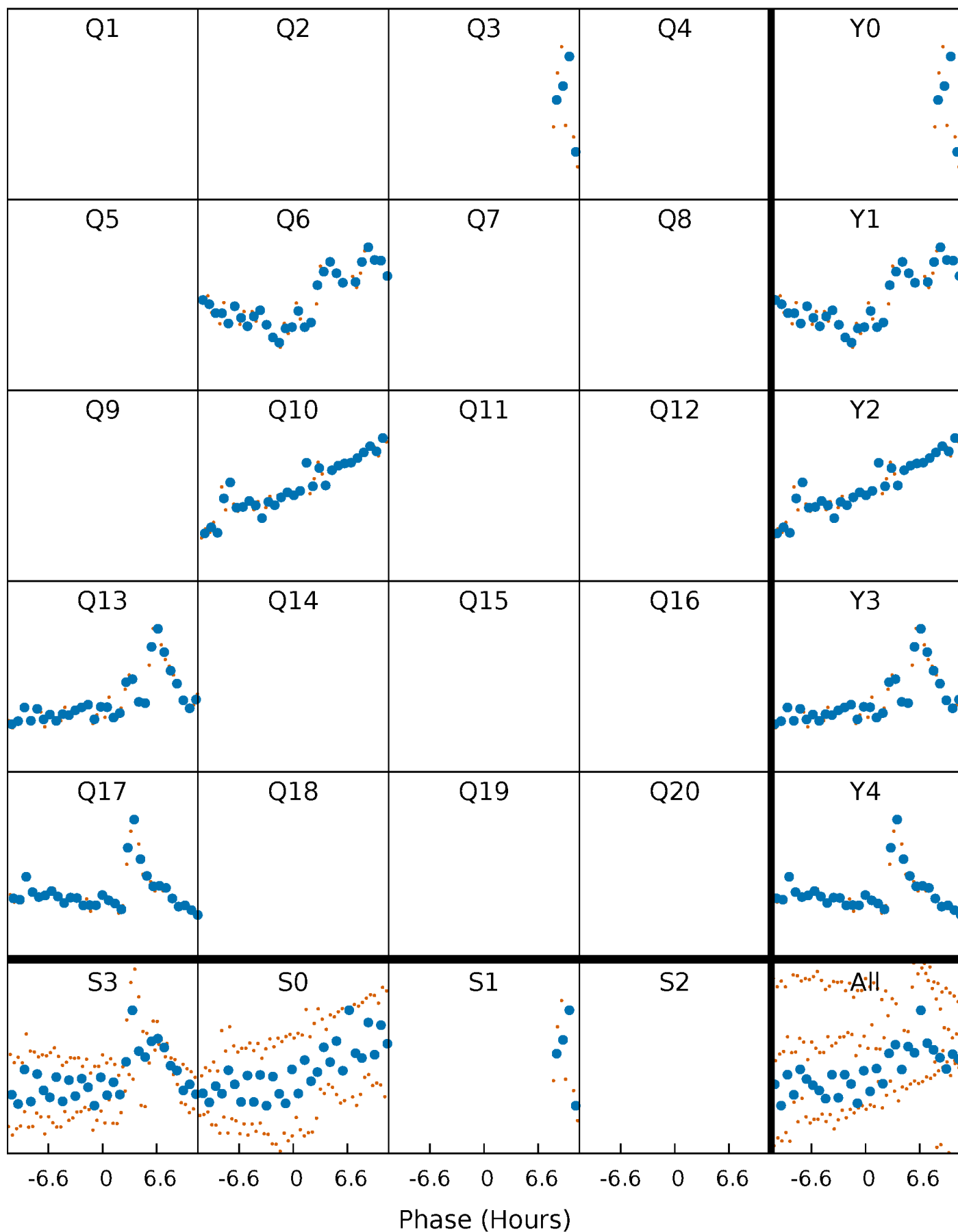


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



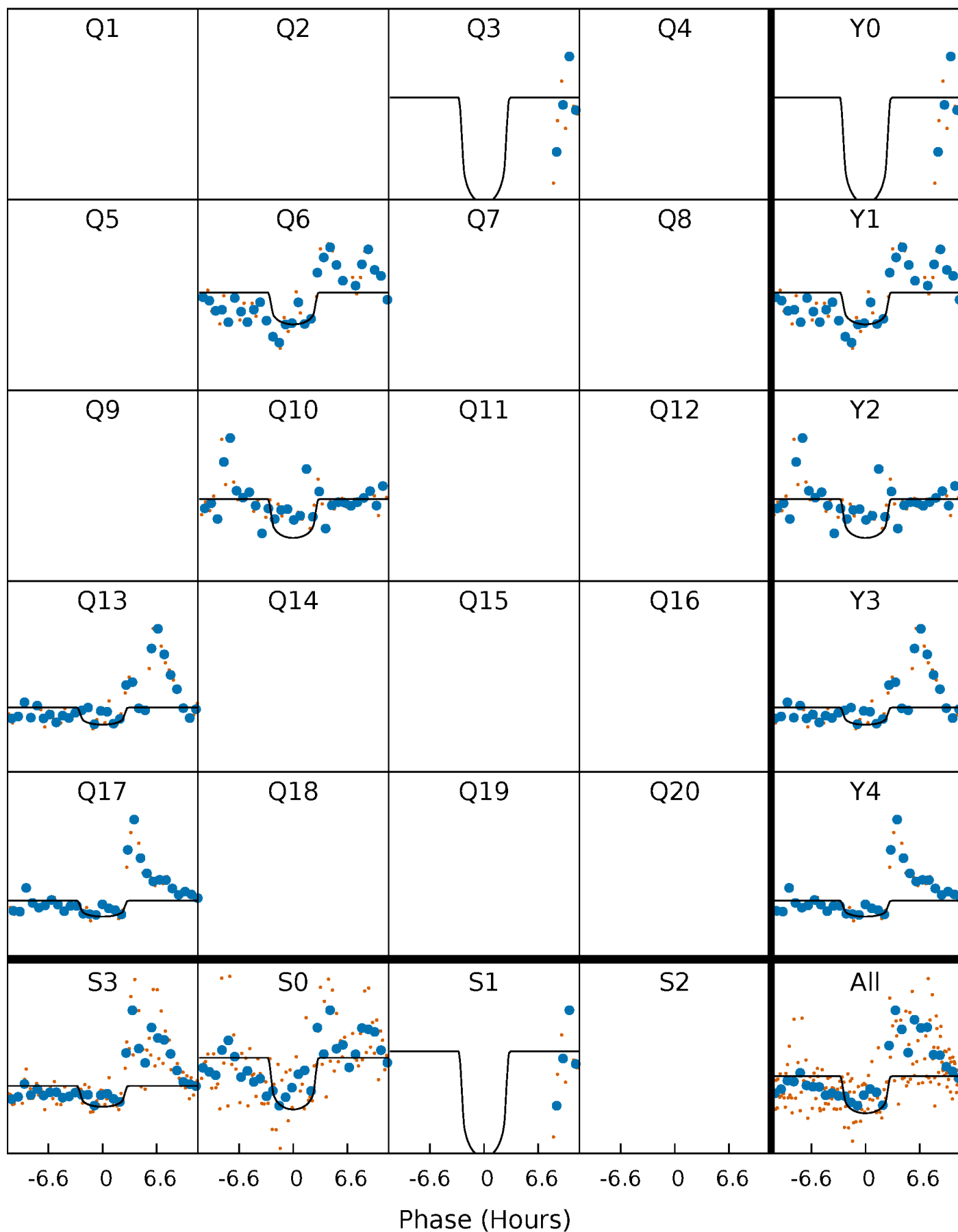
PDC Quarter-Phased Transit Curves

TCE 012168669-02 $P=330.176704$ Days $T_0=259.892595$ (BKJD)



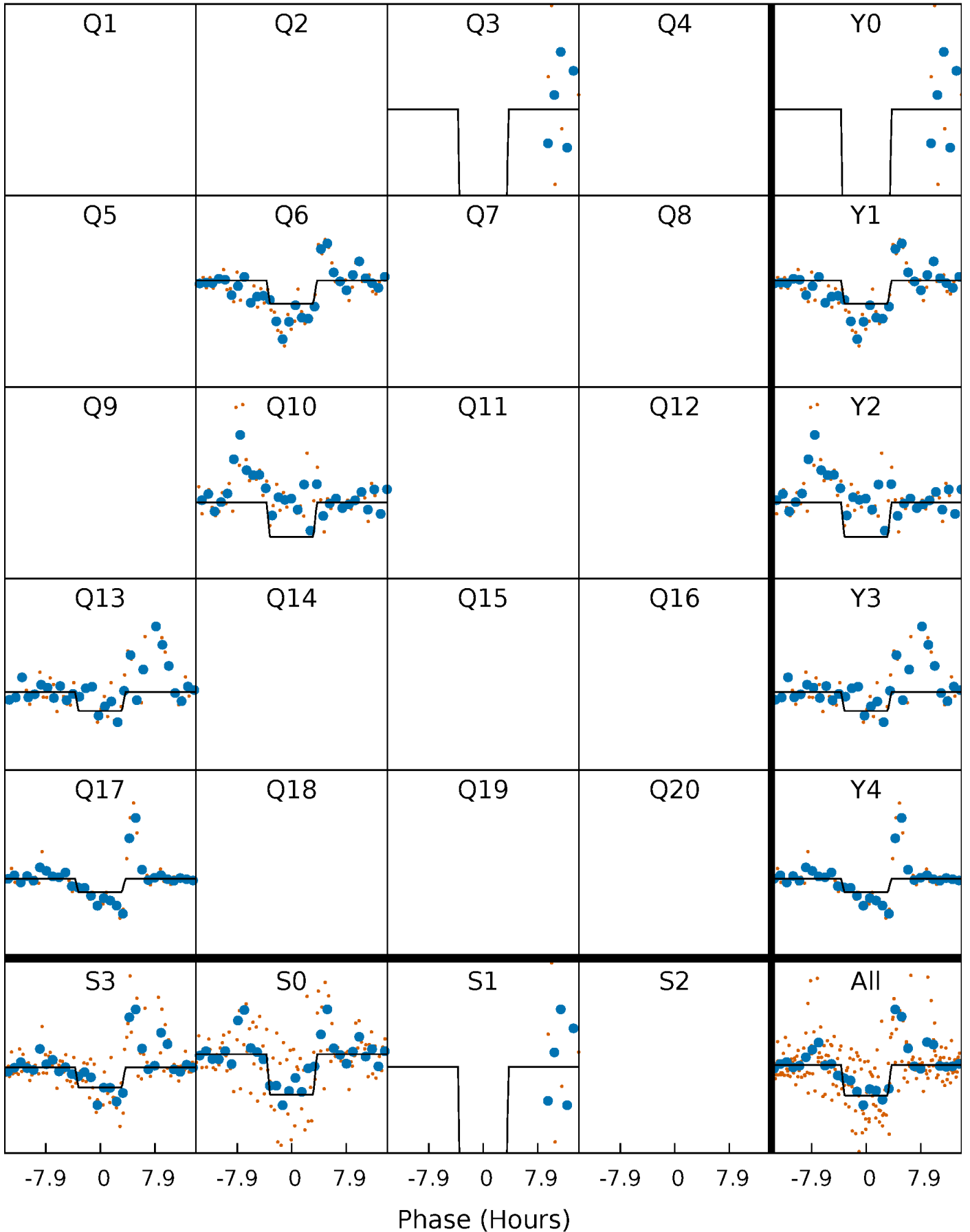
DV Quarter-Phased Transit Curves

TCE 012168669-02 P=330.176704 Days $T_0=259.892595$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

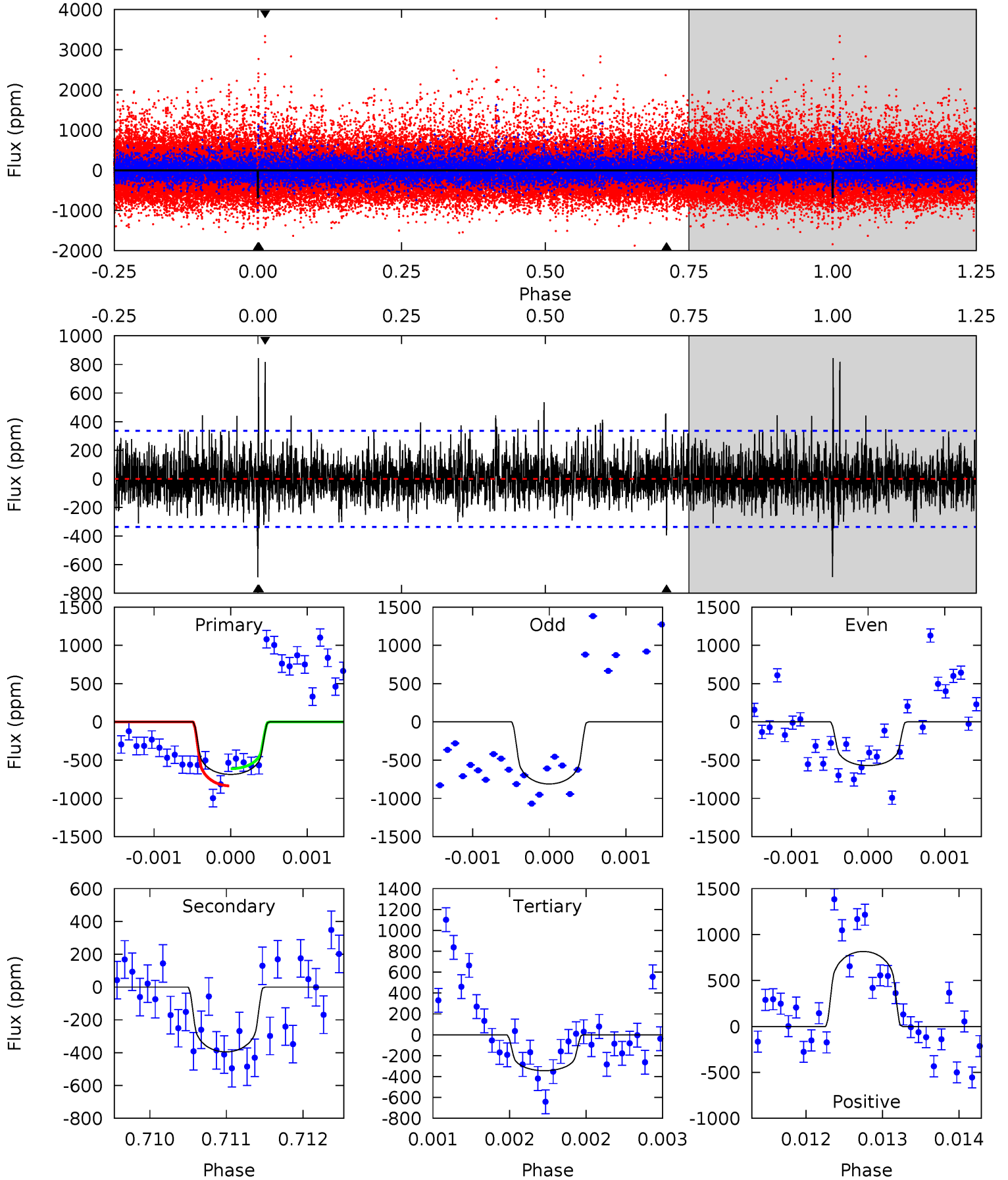
TCE 012168669-02 P=330.172274 Days $T_0=259.873530$ (BKJD)



DV Model-Shift Uniqueness Test

012168669-02, P = 330.176704 Days, E = 259.892595 Days

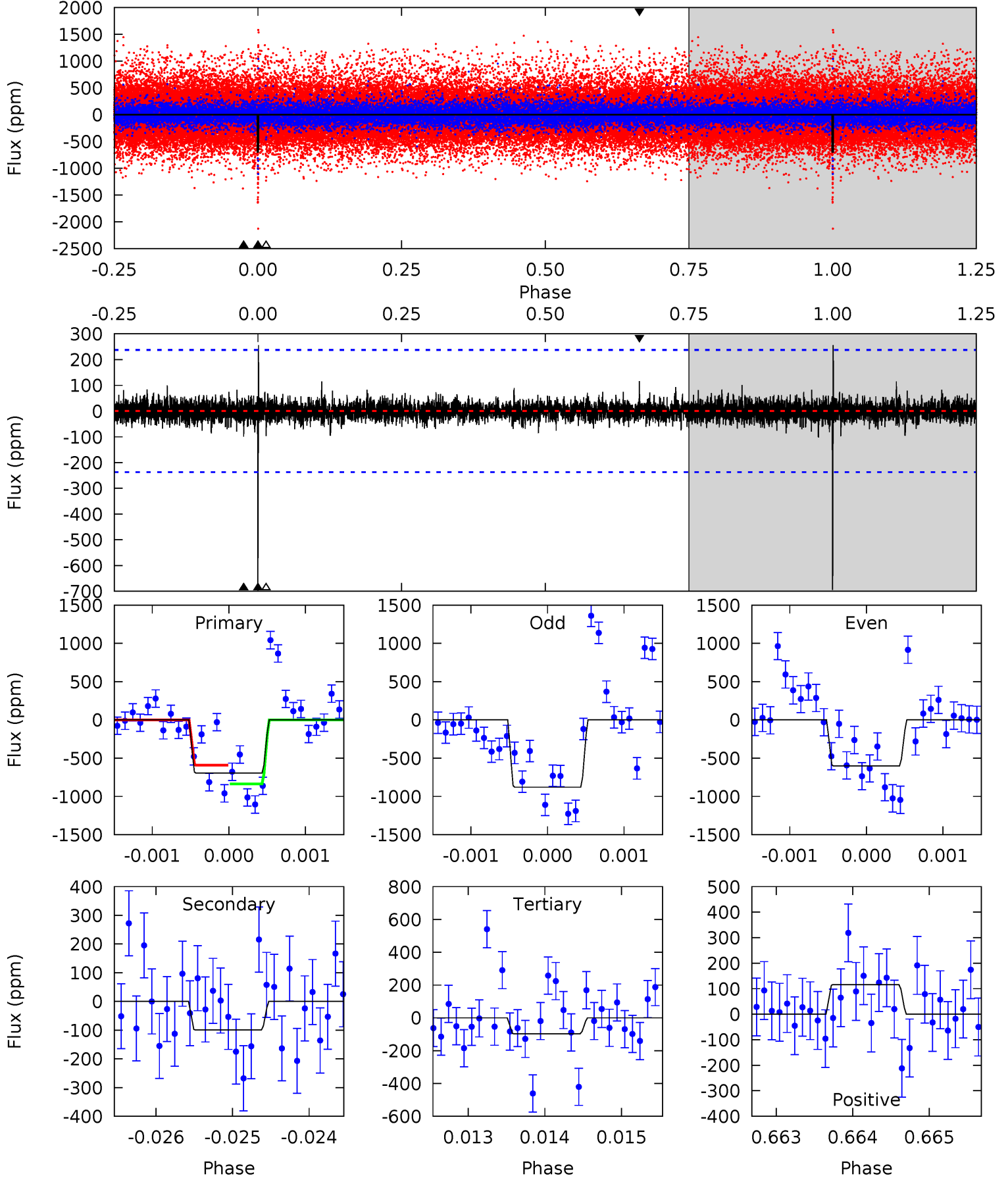
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	6.47	5.62	13.4	5.49	3.35	1.85	5.61	-2.12	0.84	-6.88	1.64	1.04	0.55	1.82



Alt Model-Shift Uniqueness Test

012168669-02, P = 330.172274 Days, E = 259.873530 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	2.30	2.24	2.67	5.47	3.32	0.51	13.8	13.3	0.06	-0.37	3.18	0.91	0.27	2.80



Stellar Parameters For KIC 012168669

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5462^{+162}_{-162}	$4.488^{+0.125}_{-0.137}$	$-0.480^{+0.350}_{-0.300}$	$0.806^{+0.141}_{-0.115}$	$0.728^{+0.112}_{-0.045}$	$1.961^{+1.029}_{-0.672}$
	+3%/-3%	+3%/-3%	+73%/-62%	+17%/-14%	+15%/-6%	+52%/-34%
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 012168669-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-395 ± 61	$2.82^{+2.01}_{-1.47}$	330^{+20}_{-18}	4466^{+1830}_{-784}	19499^{+70007}_{-13010}
Alt.	-99 ± 43	$2.61^{+1.72}_{-1.55}$	330^{+18}_{-16}	3590^{+1373}_{-602}	5378^{+28556}_{-3807}

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

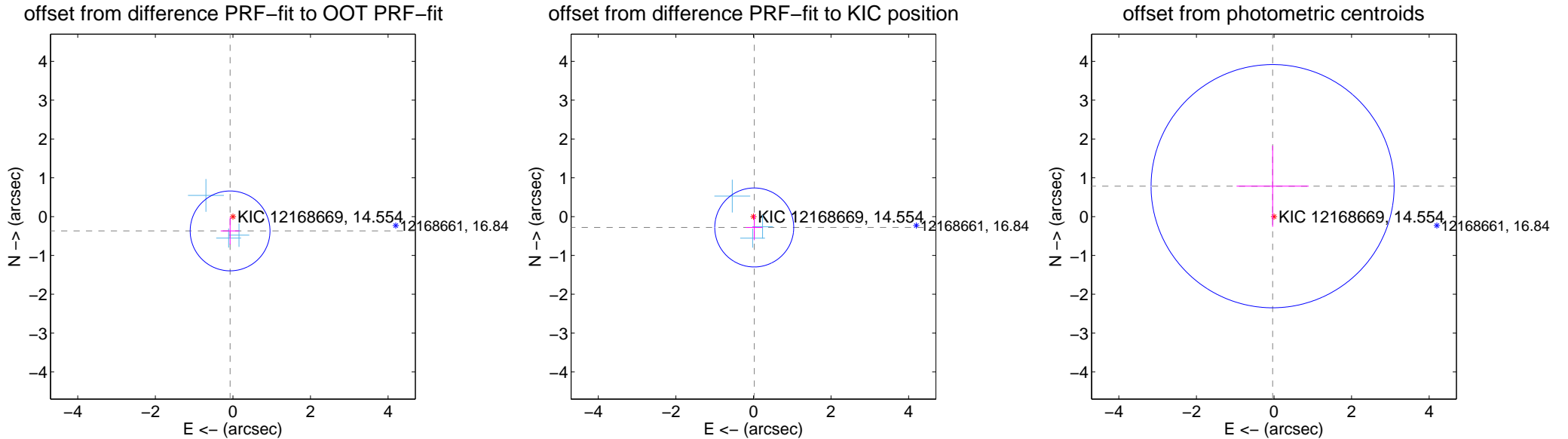
DV Centroid Data

Supplemental centroid analysis for 012168669-02. Kepler magnitude: 14.55. Transit SNR 8.57

There are 3 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.375 ± 0.343	1.09	0.073 ± 0.241	-0.368 ± 0.346
PRF-fit source offset from KIC position	0.280 ± 0.339	0.83	-0.020 ± 0.215	-0.280 ± 0.326
photometric centroid source offset	0.78 ± 1.04	0.75	0.04 ± 0.93	0.78 ± 1.04



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

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

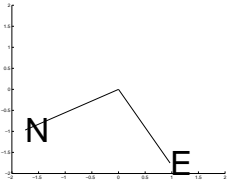
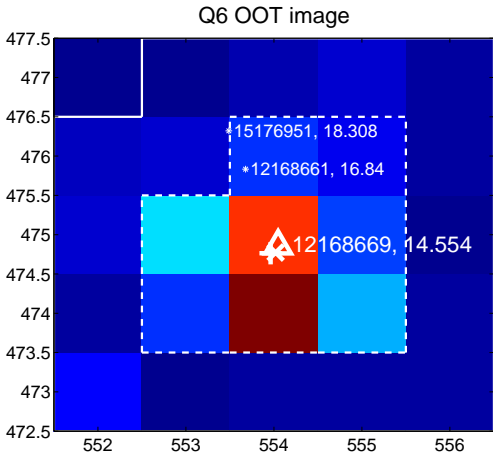
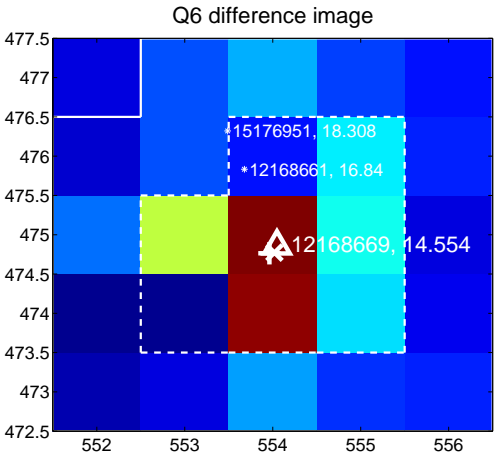


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

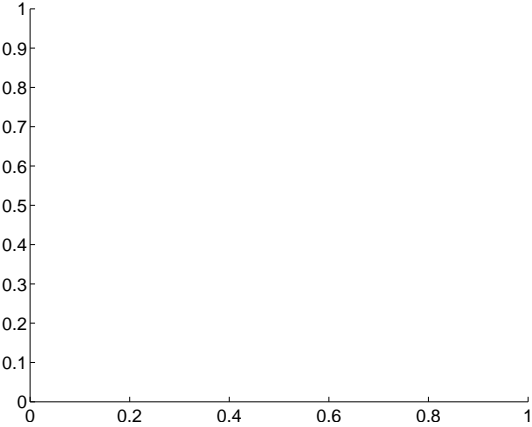
Q5 no difference image



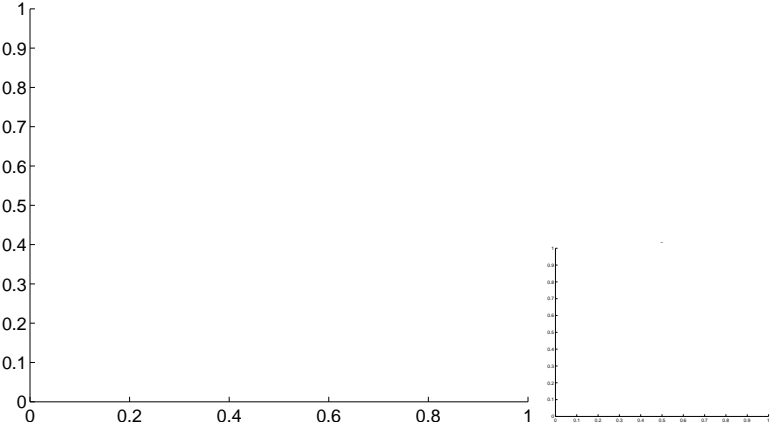
Q5 no OOT image



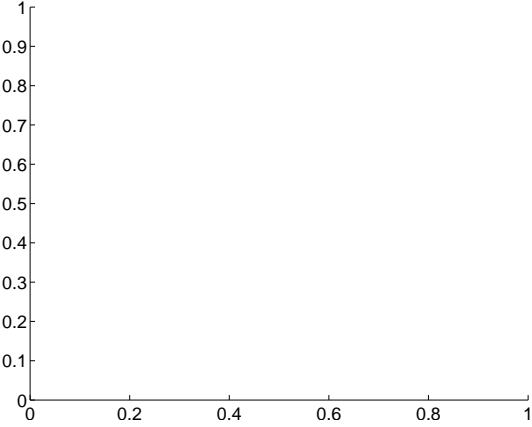
Q7 no difference image



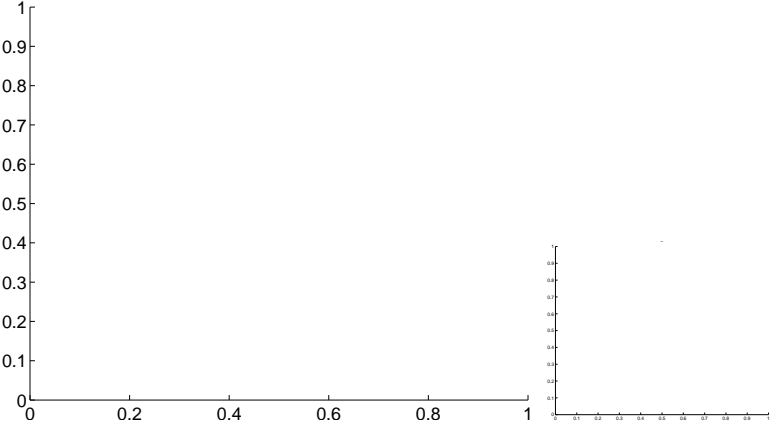
Q7 no OOT image



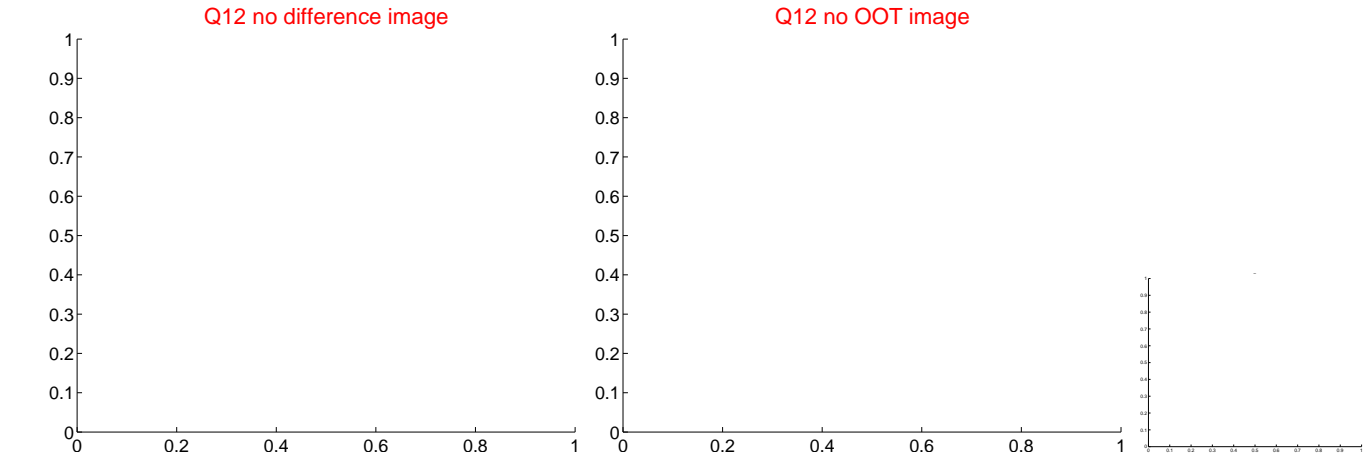
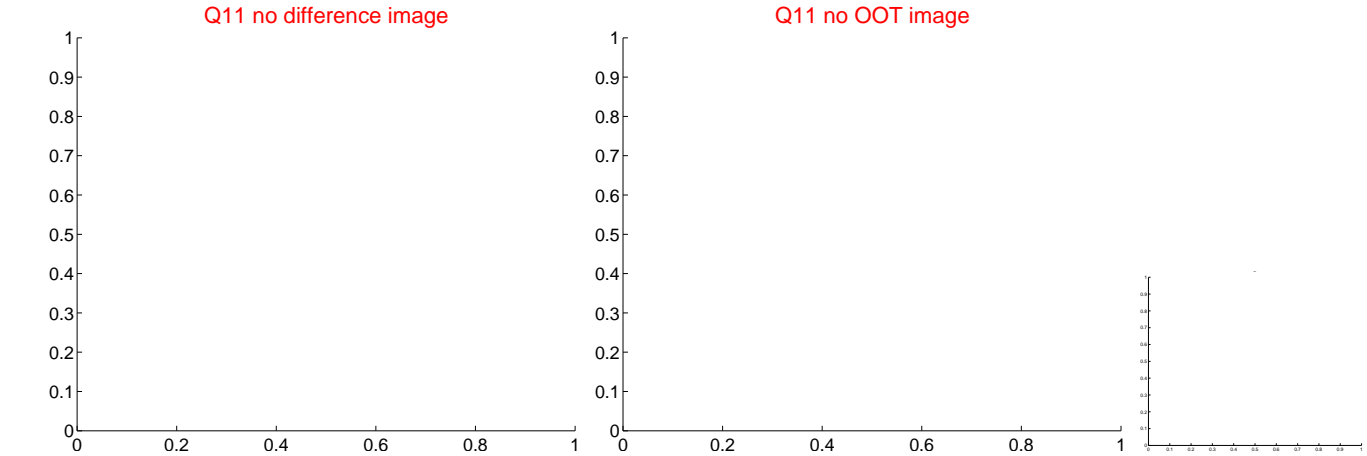
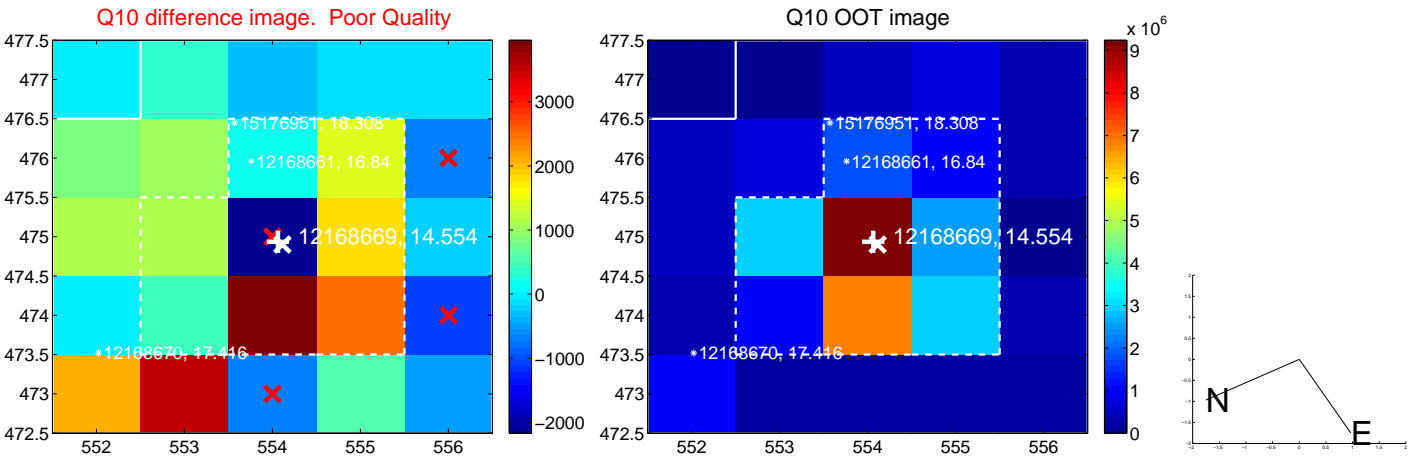
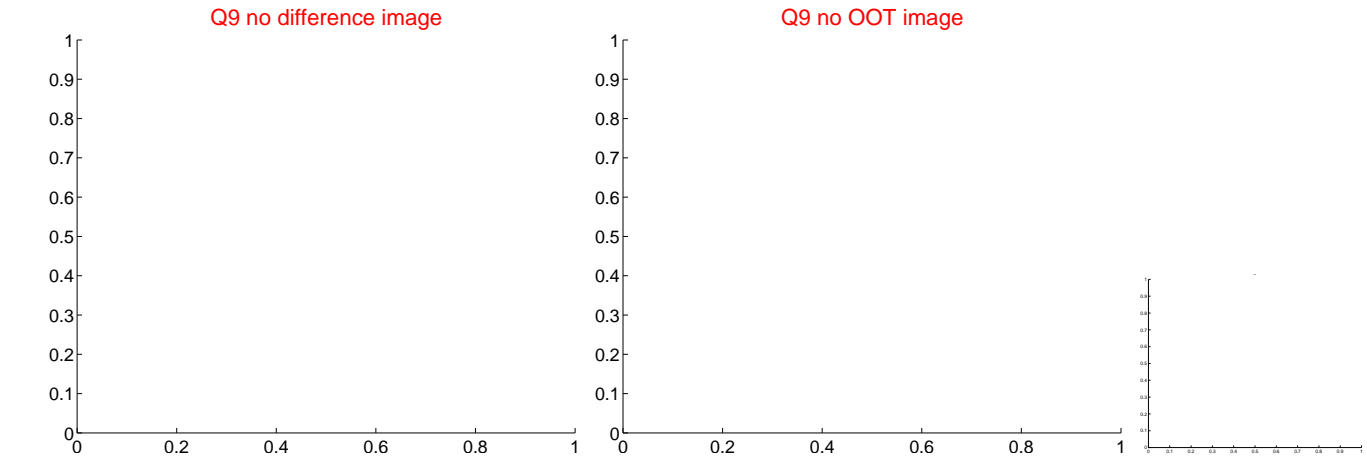
Q8 no difference image



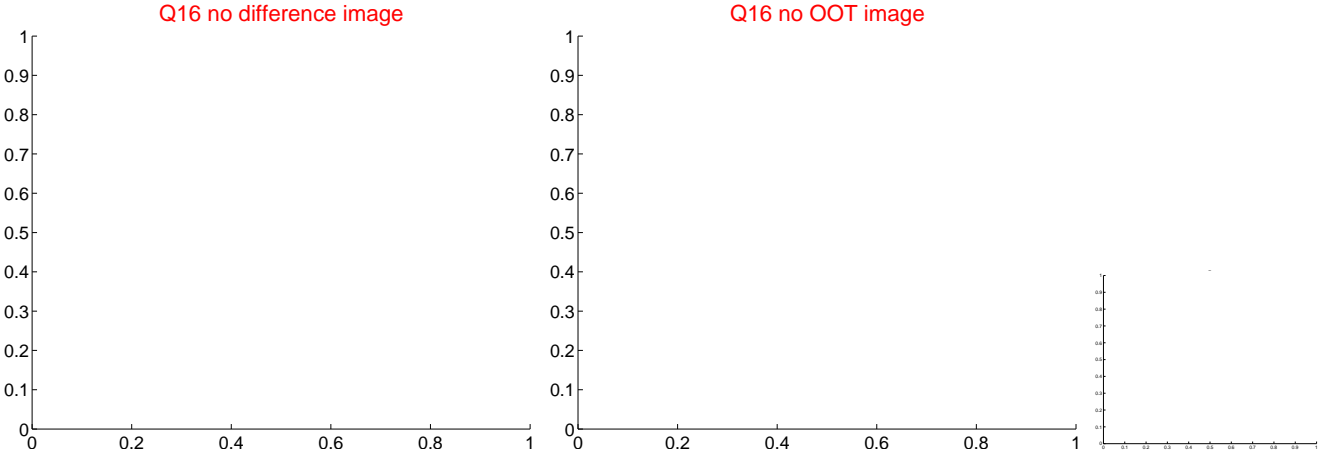
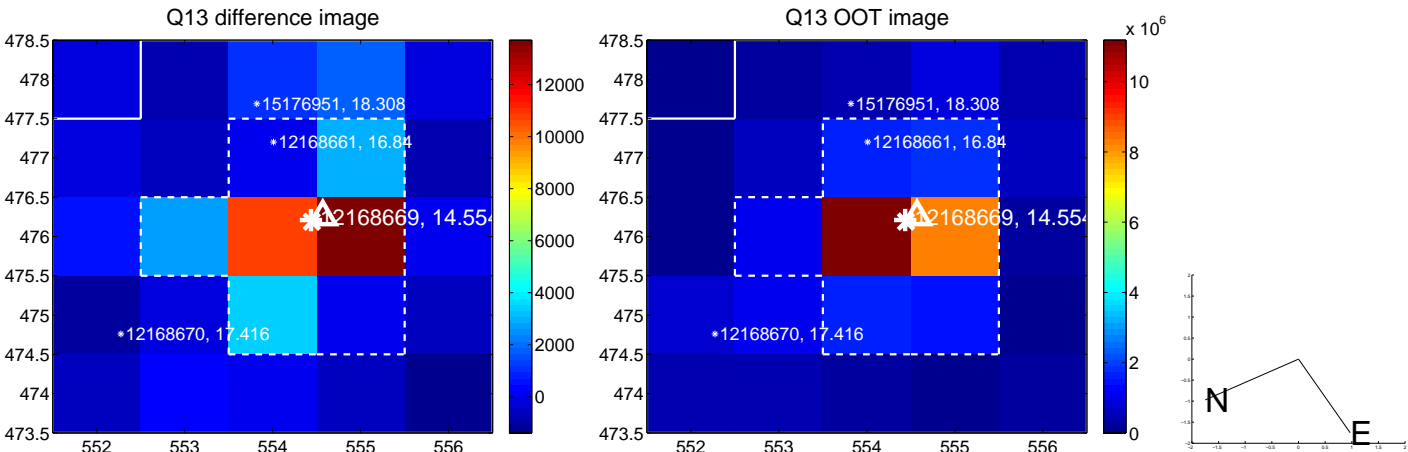
Q8 no OOT image



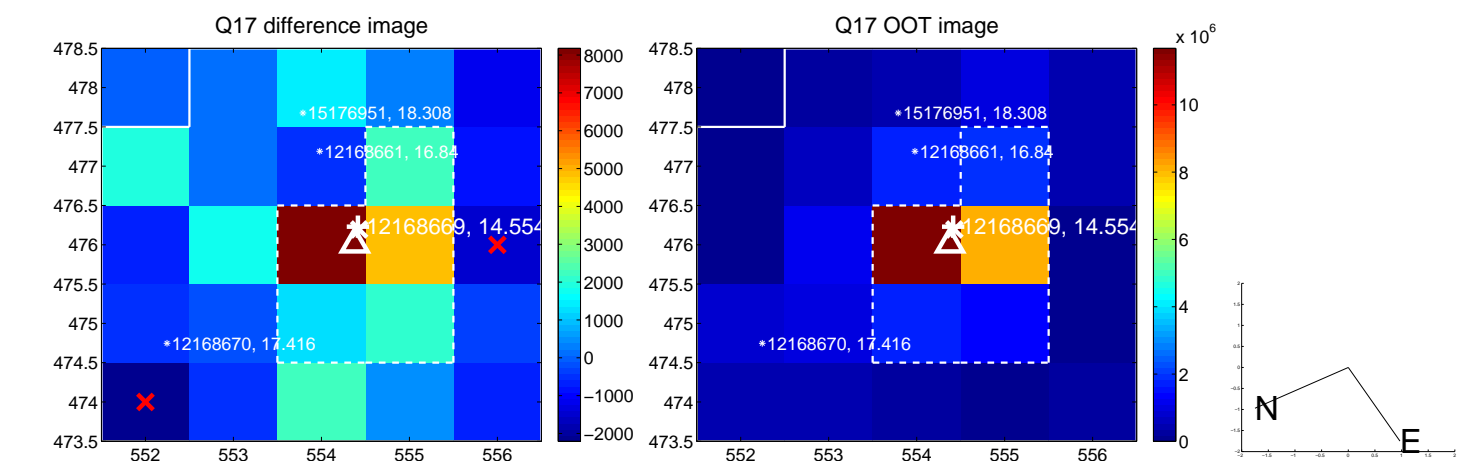
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



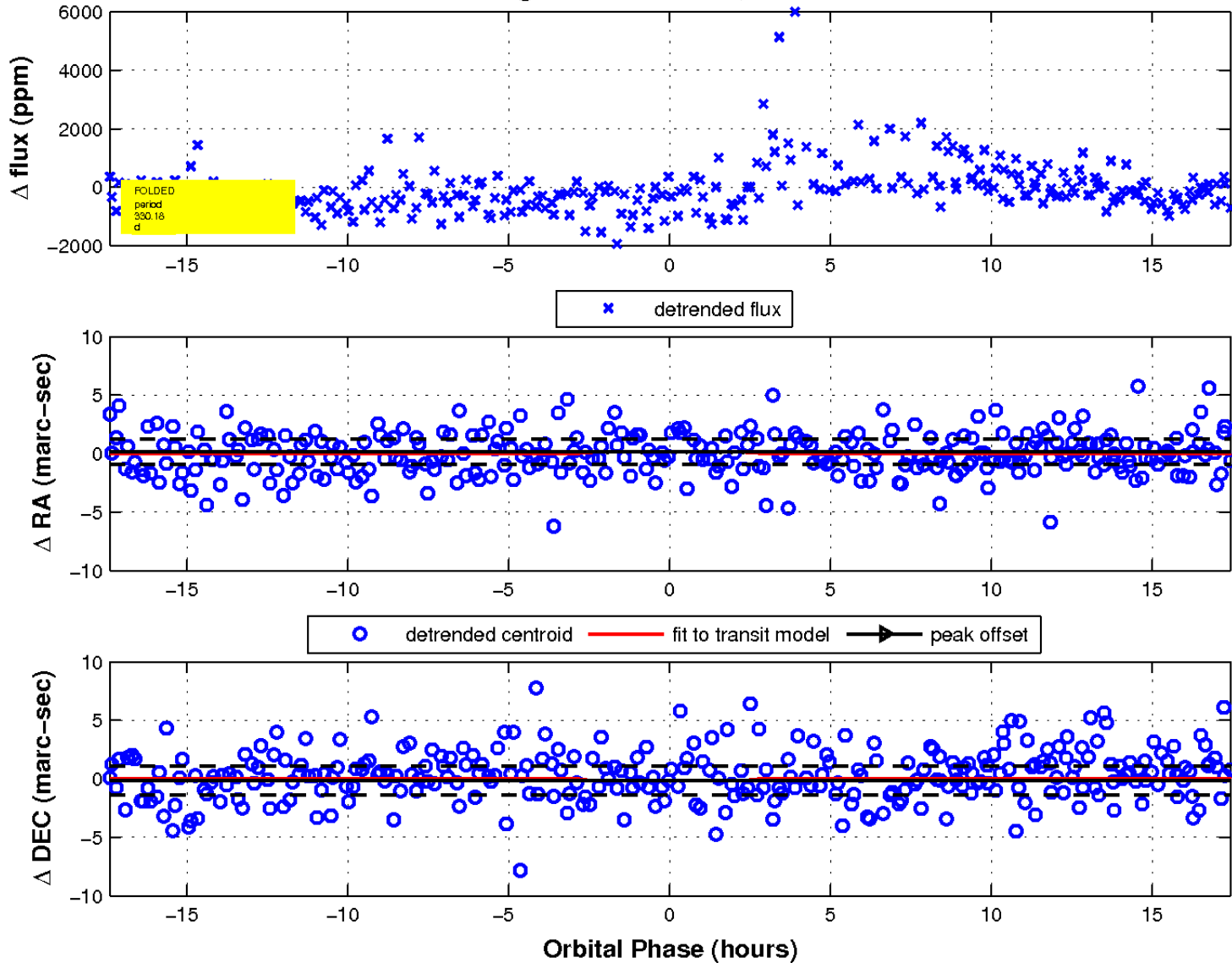
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



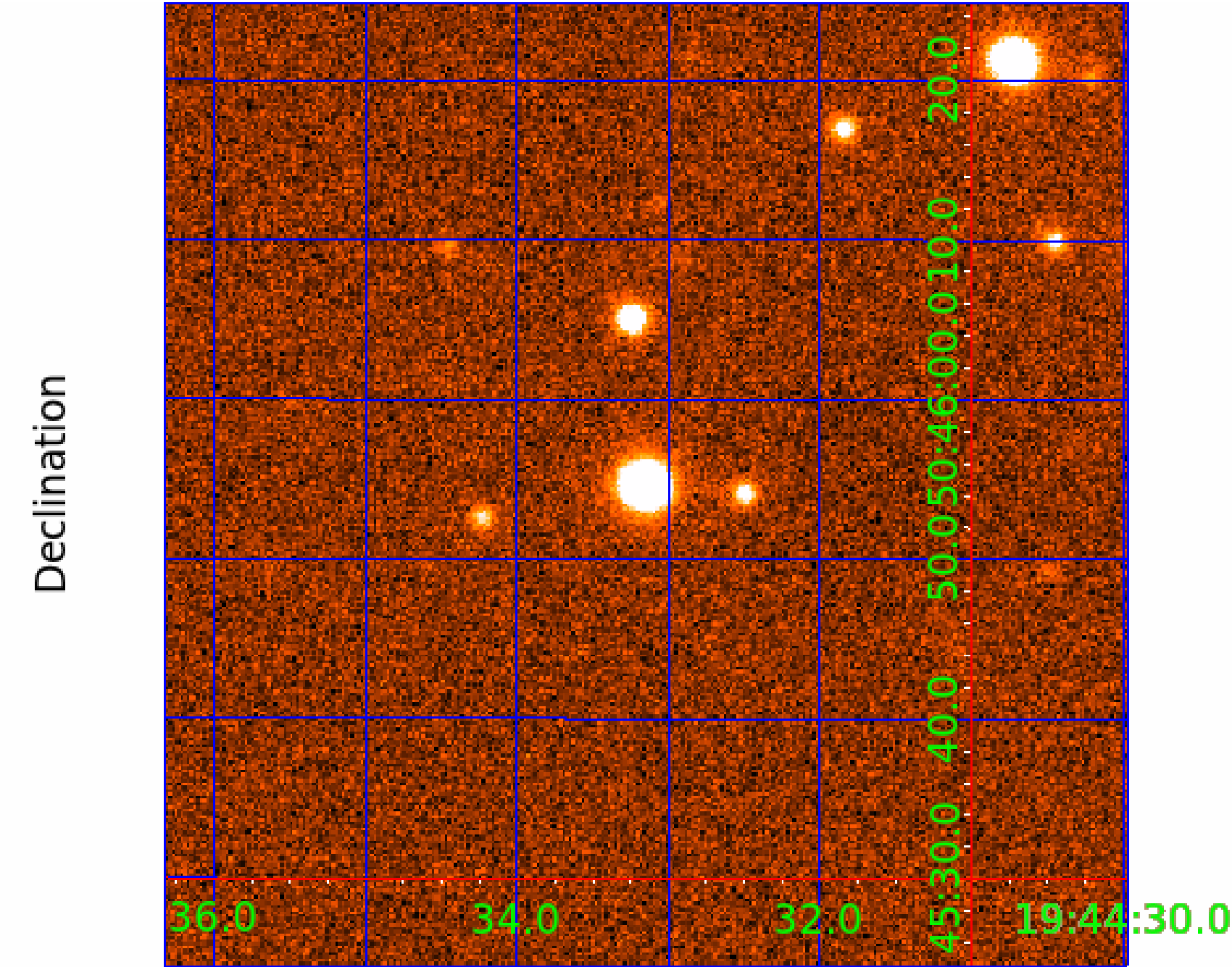
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 7



UKIRT Image



KIC 012168669

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})
012168669-01	OBS	No	364.290849	365.667745	1279.2	9.977	14.8	9.3	0.81	5462	3.04	0.64
012168669-02	OBS	No	330.176704	259.892595	1050.2	5.816	11.1	8.6	0.81	5462	2.74	0.73
012168669-03	OBS	No	342.856615	251.663781	1366.6	5.853	11.4	8.7	0.81	5462	2.99	0.70
012168669-04	OBS	No	502.045471	543.711844	1082.5	4.609	11.3	7.0	0.81	5462	2.71	0.42
012168669-05	OBS	No	371.511881	285.035971	885.9	4.373	9.2	6.9	0.81	5462	2.54	0.62
012168669-06	OBS	No	481.447688	235.131862	1061.7	11.882	9.3	7.2	0.81	5462	2.67	0.44
012168669-07	OBS	No	498.540131	394.882681	1130.2	4.013	11.9	8.1	0.81	5462	2.88	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012168669-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
012168669-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV
012168669-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
012168669-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQU_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012168669-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQU_DV—MOD_TER_DV—MOD_POS_DV—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.

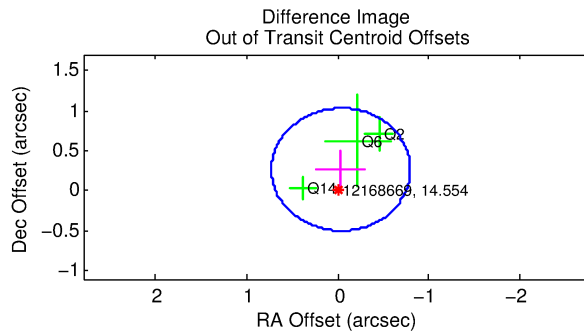
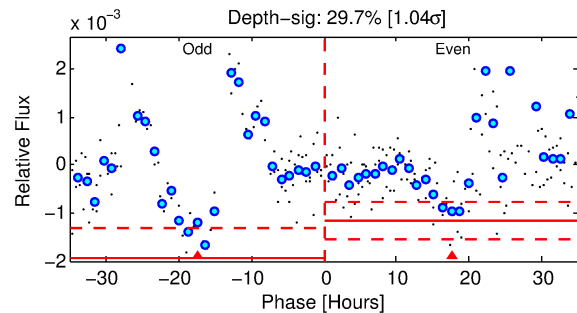
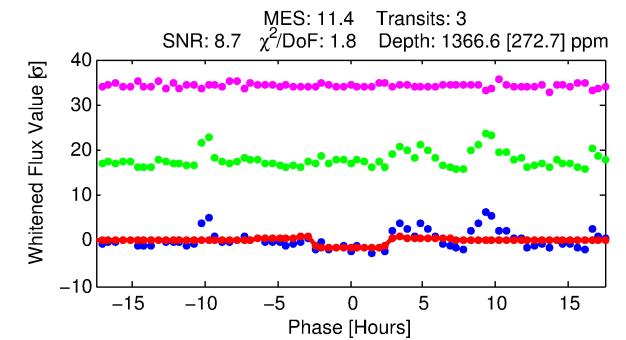
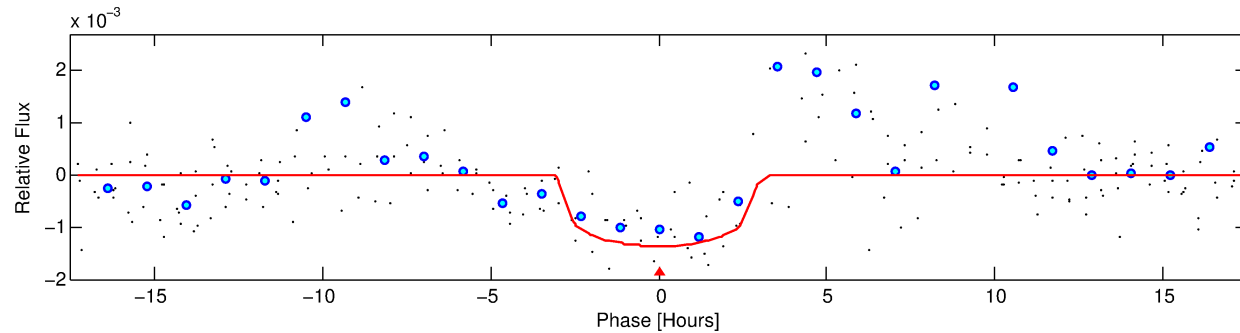
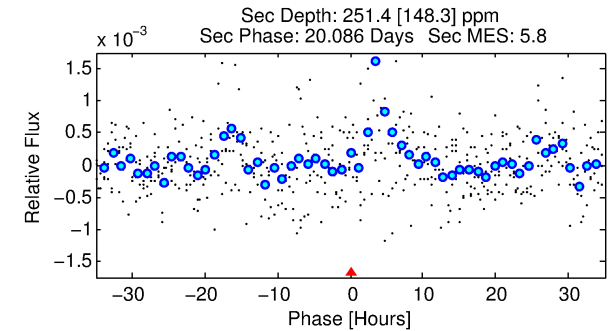
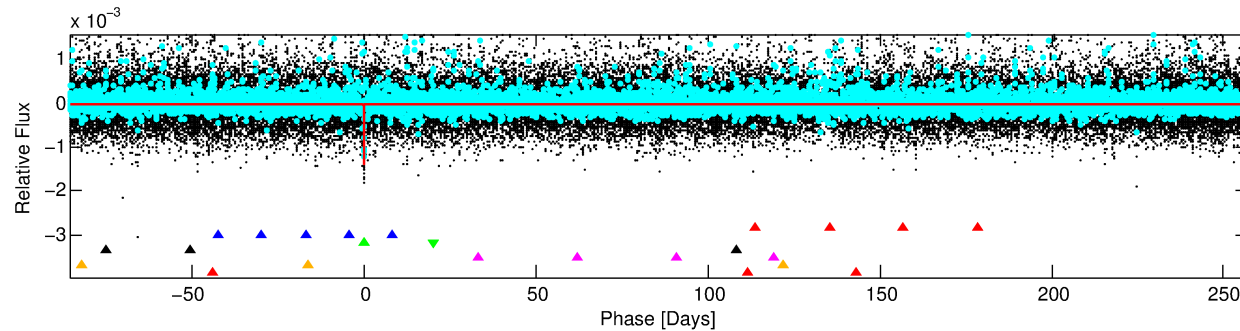
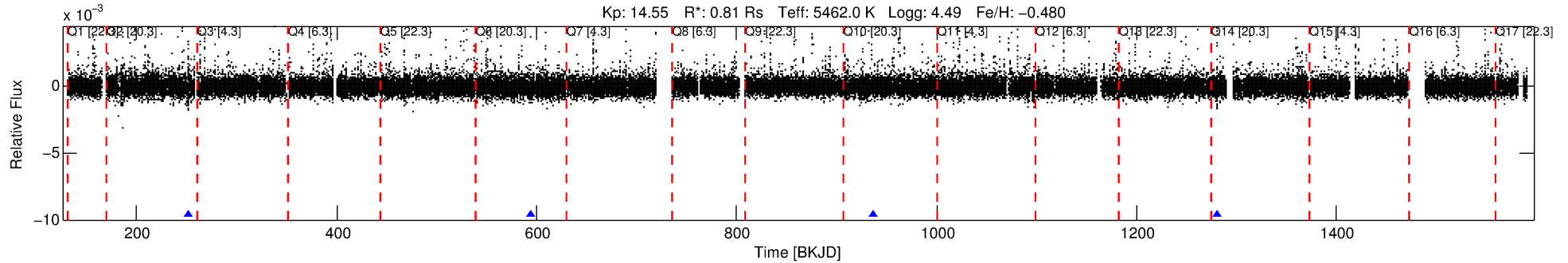
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012168669-03

No Significant Match Found

DV One-Page Summary

KIC: 12168669 Candidate: 3 of 7 Period: 342.857 d



DV Fit Results:

Period = 342.85662 [0.00618] d
Epoch = 251.6638 [0.0123] BKJD
Rp/R* = 0.0340 [0.0532]
a/R* = 435.12 [2896.21]
b = 0.35 [16.70]
Seff = 0.70 [0.19]
Teq = 233 [16] K
Rp = 2.99 [4.71] Re
a = 0.8630 [0.1355] AU
Ag = 11541.30 [36869.92] [0.31 σ]
Teffp = 3732 [2974] K [1.18 σ]

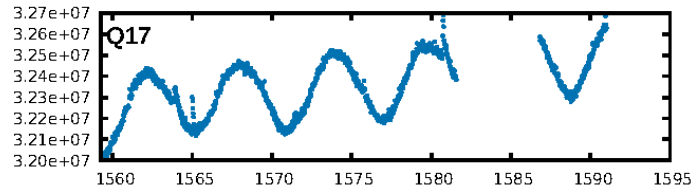
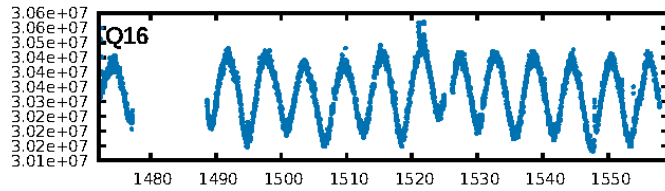
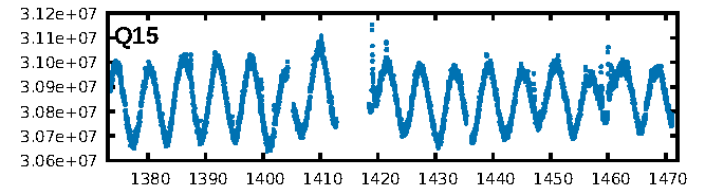
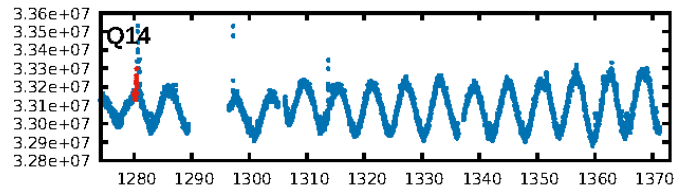
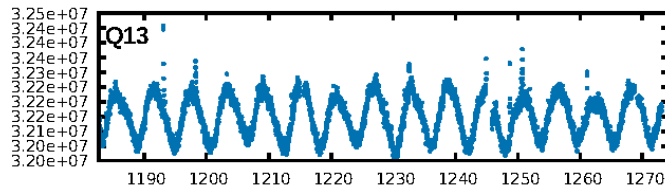
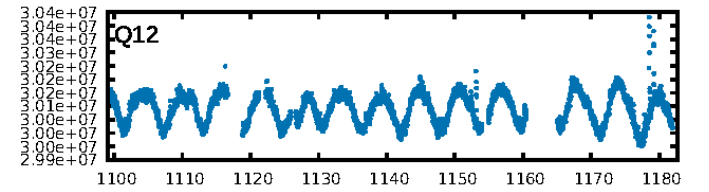
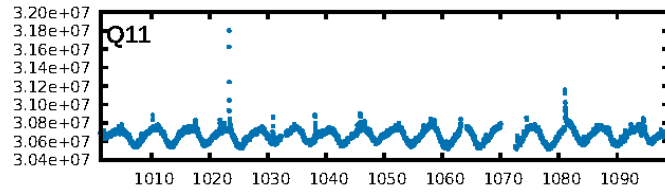
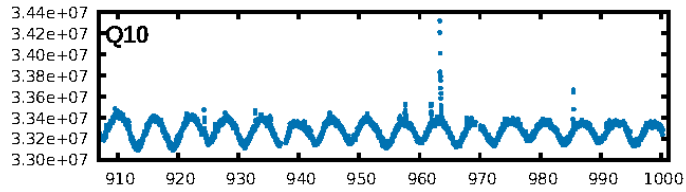
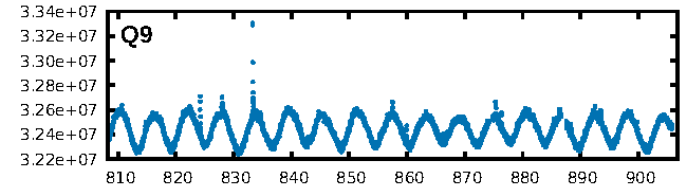
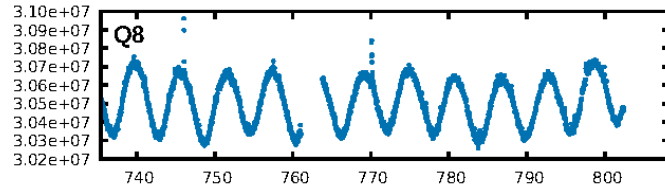
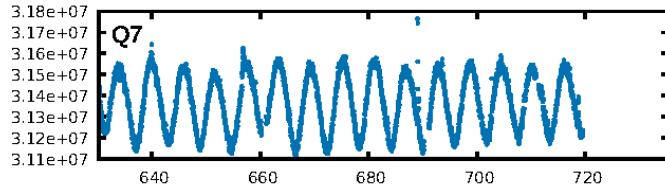
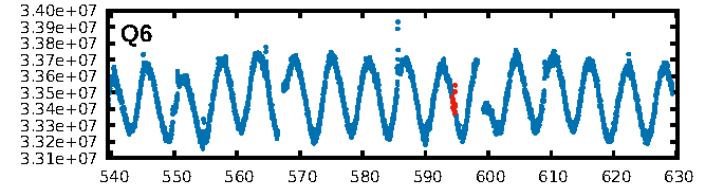
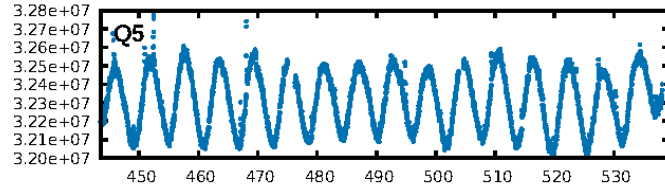
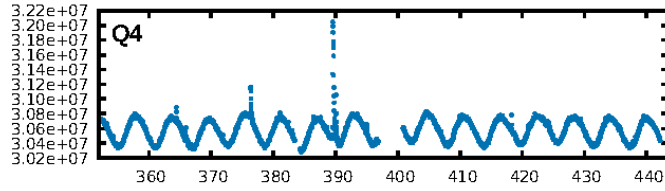
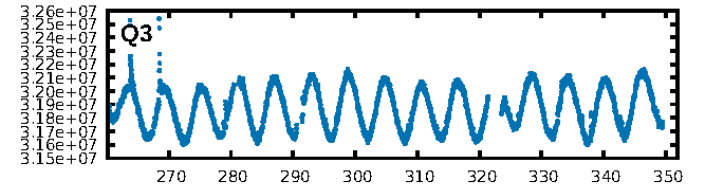
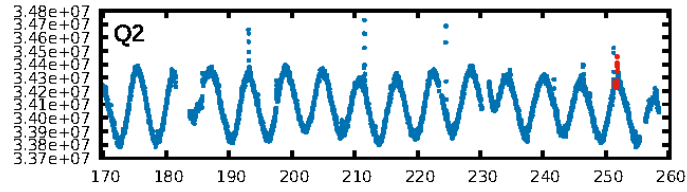
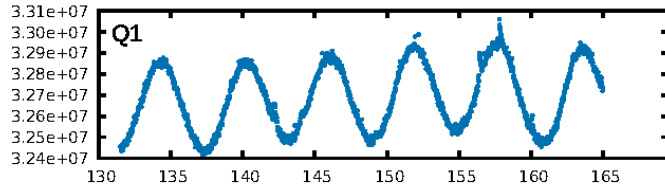
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [36.88 σ]
LongPeriod-sig: 100.0% [44.47 σ]
ModelChiSquare2-sig: 6.4%
ModelChiSquareGof-sig: 67.0%
Bootstrap-pfa: 2.60e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.303
Centroid-sig: 66.3%
Centroid-so: 1.024 arcsec [0.98 σ]
OotOffset-rm: 0.267 arcsec [1.05 σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-rm: 0.416 arcsec [1.31 σ]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

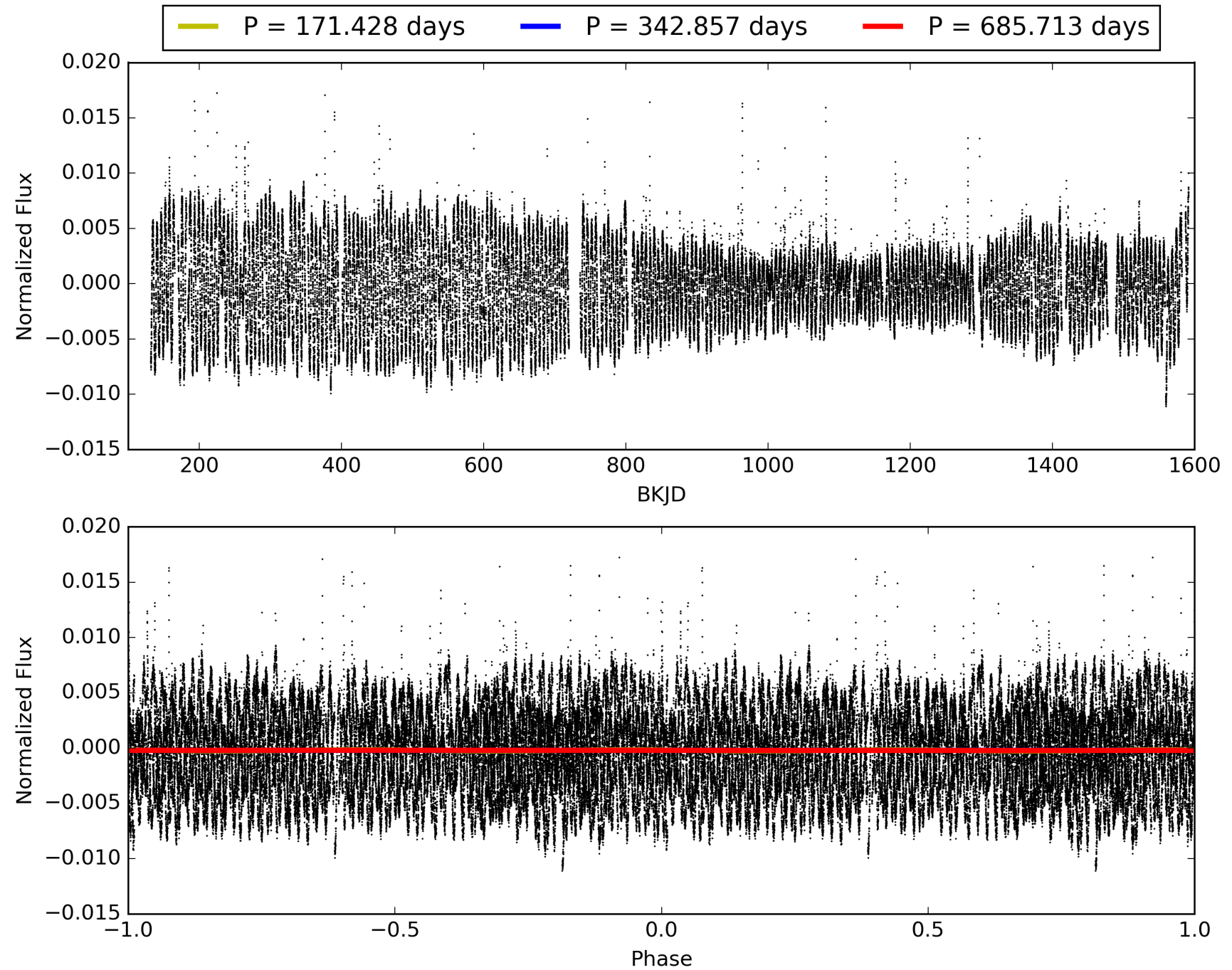
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:51:47 Z

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

TCE 012168669-03, PDC Light Curves

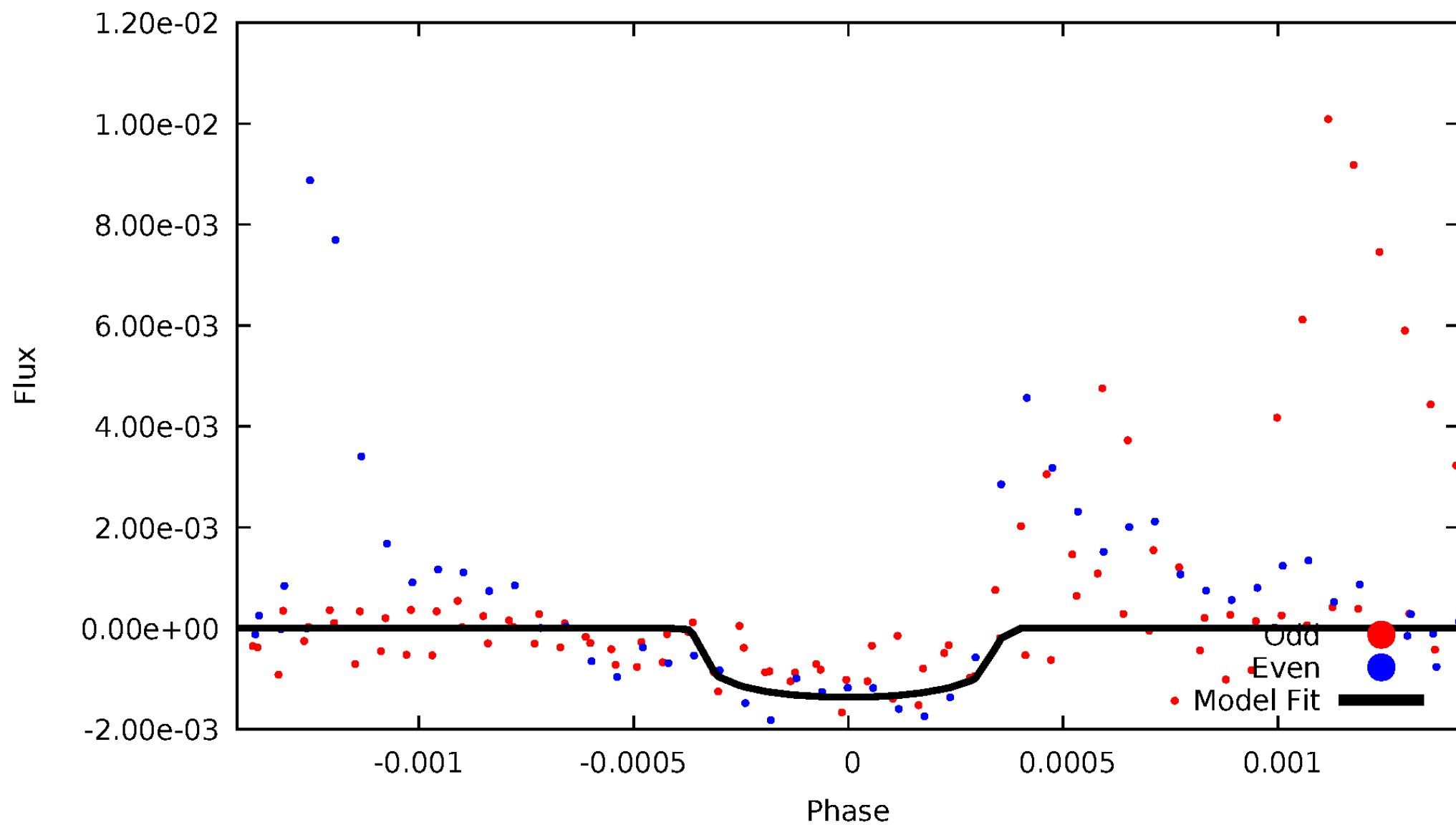


TCE 012168669-03



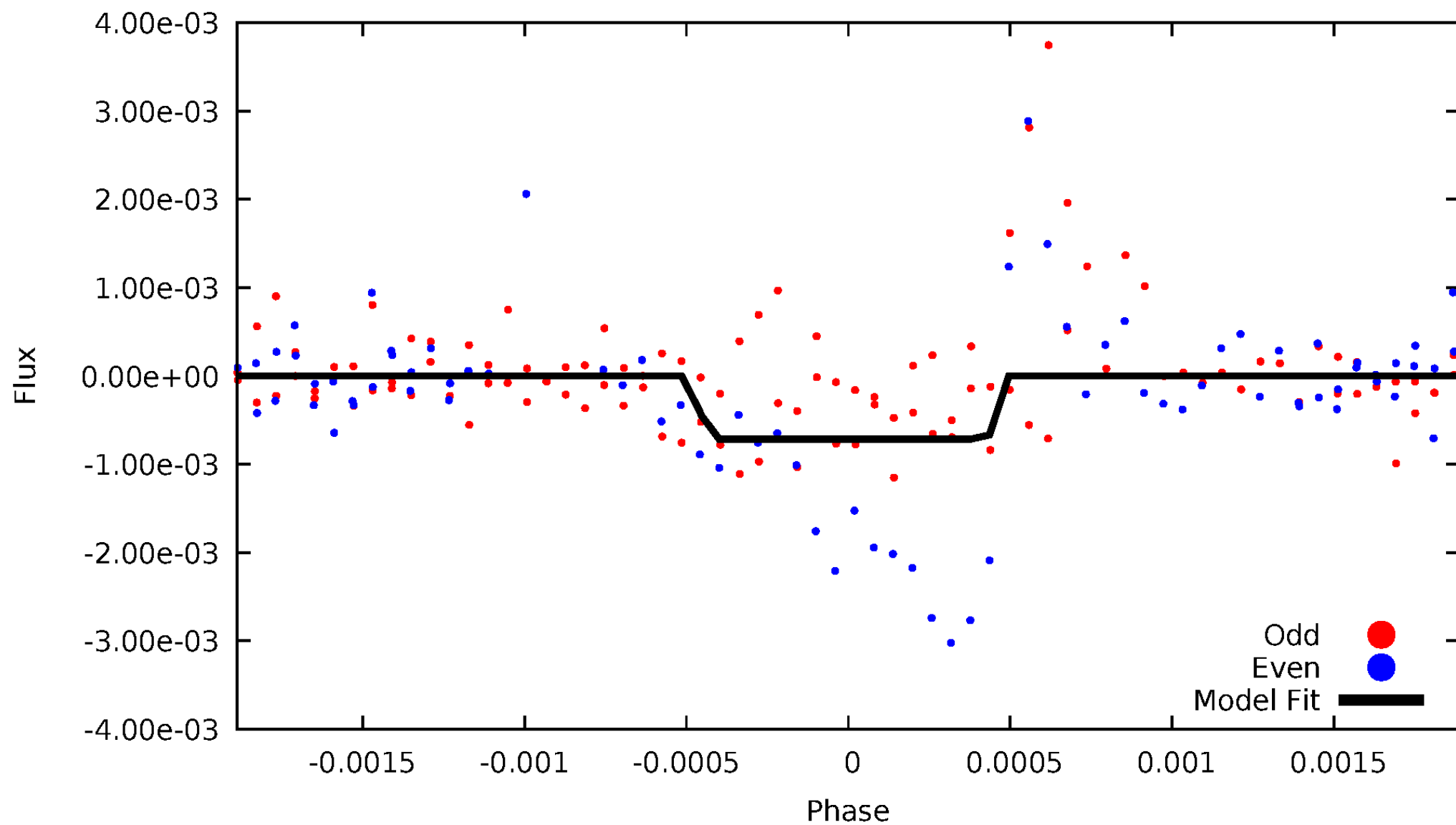
DV Odd/Even

TCE 012168669-03



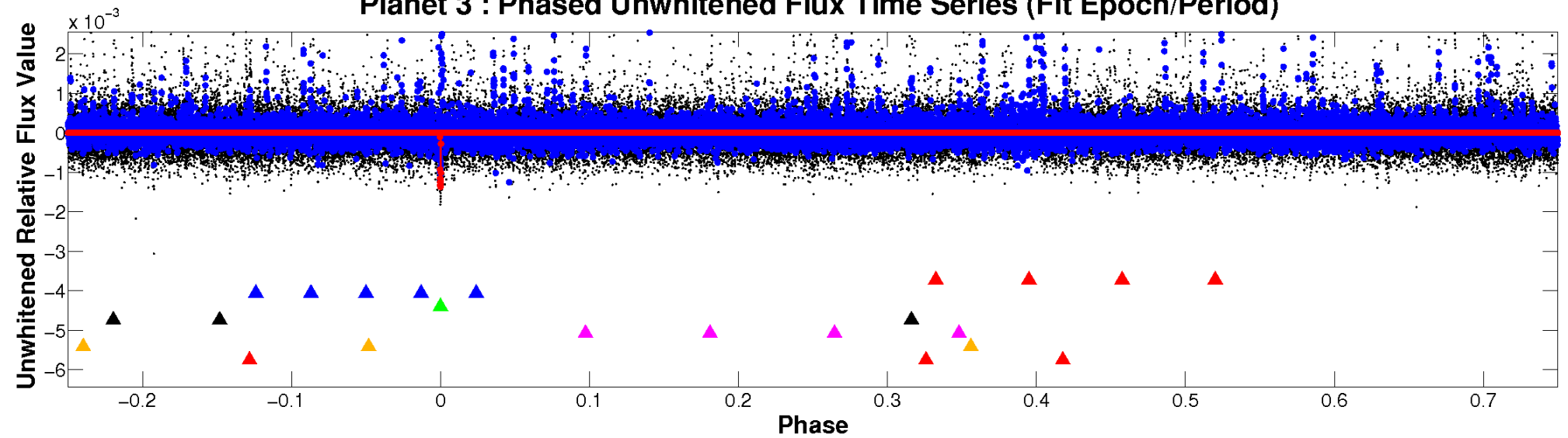
ALT Odd/Even

TCE 012168669-03

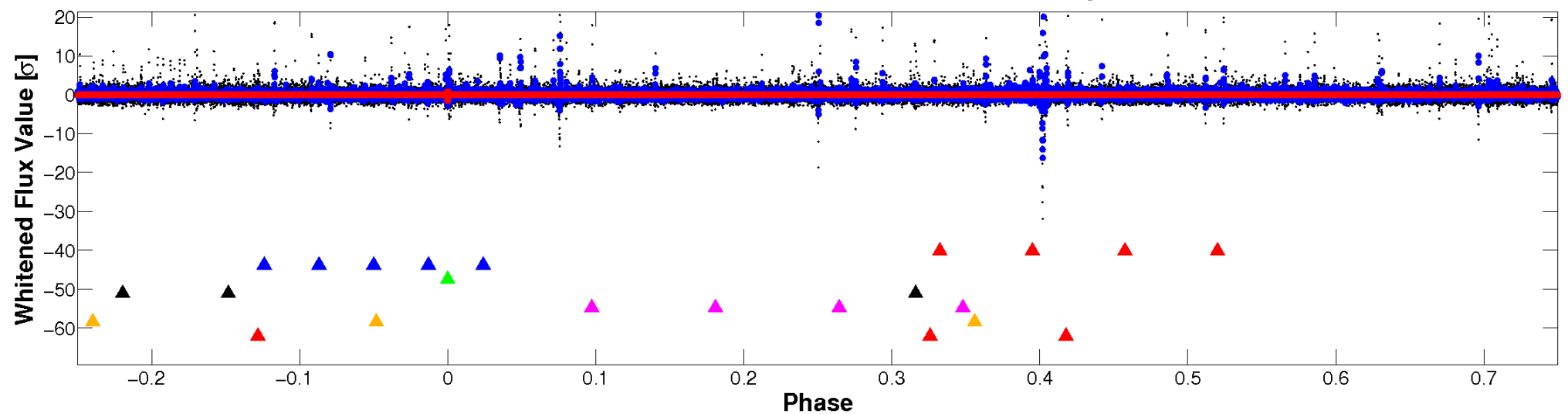


Non-Whitened Vs. Whitened Light Curve

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

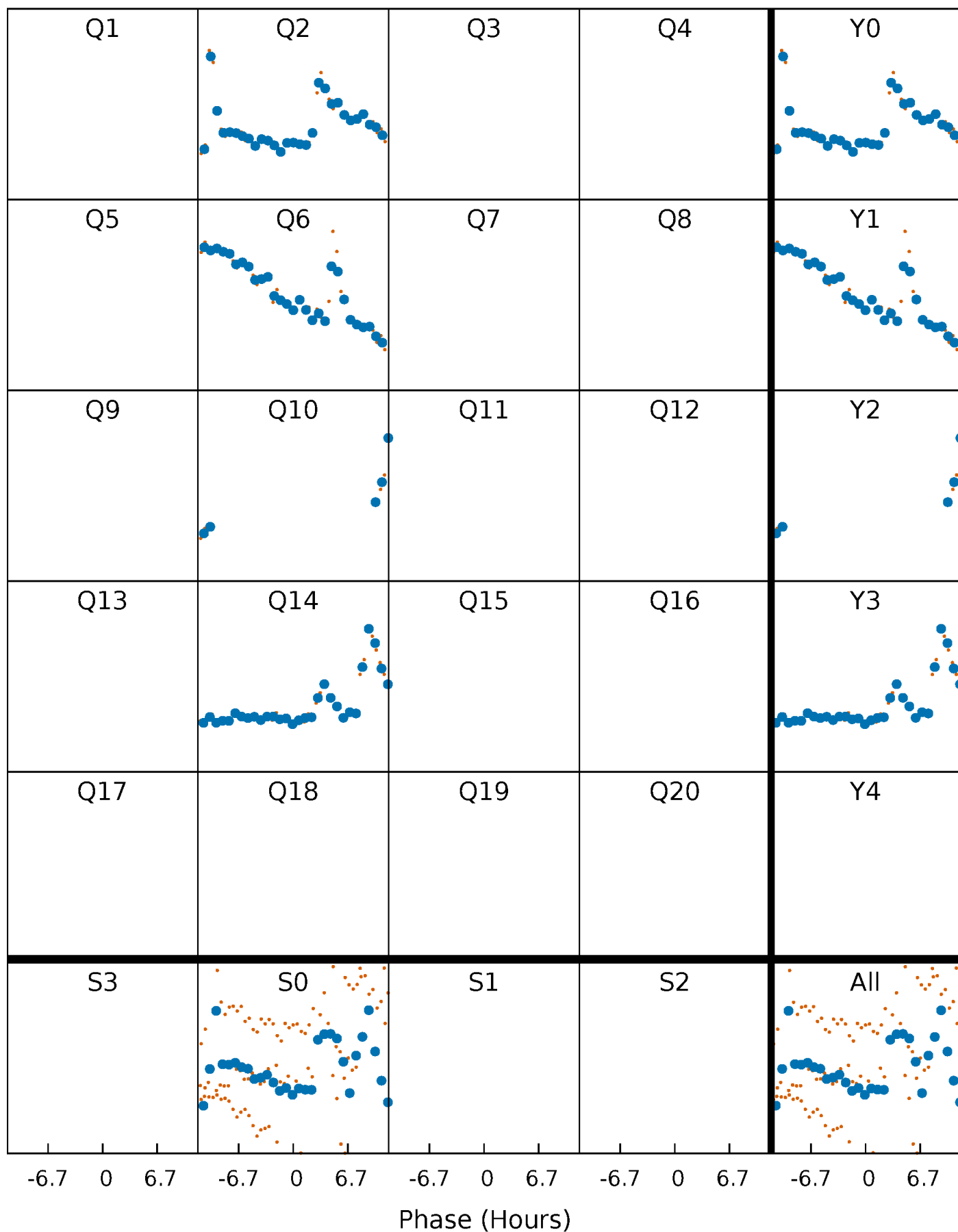


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



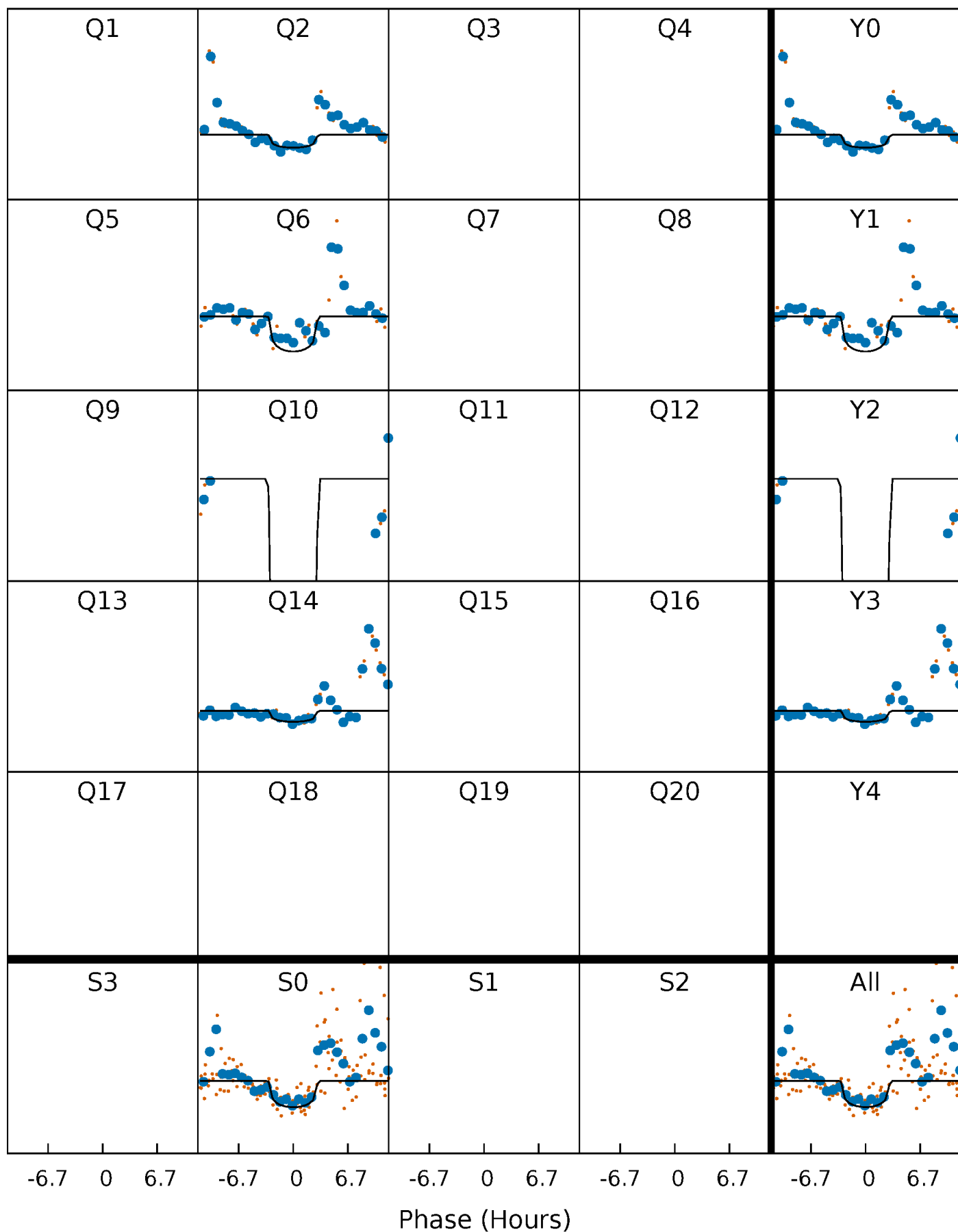
PDC Quarter-Phased Transit Curves

TCE 012168669-03 P=342.856615 Days $T_0=251.663781$ (BKJD)



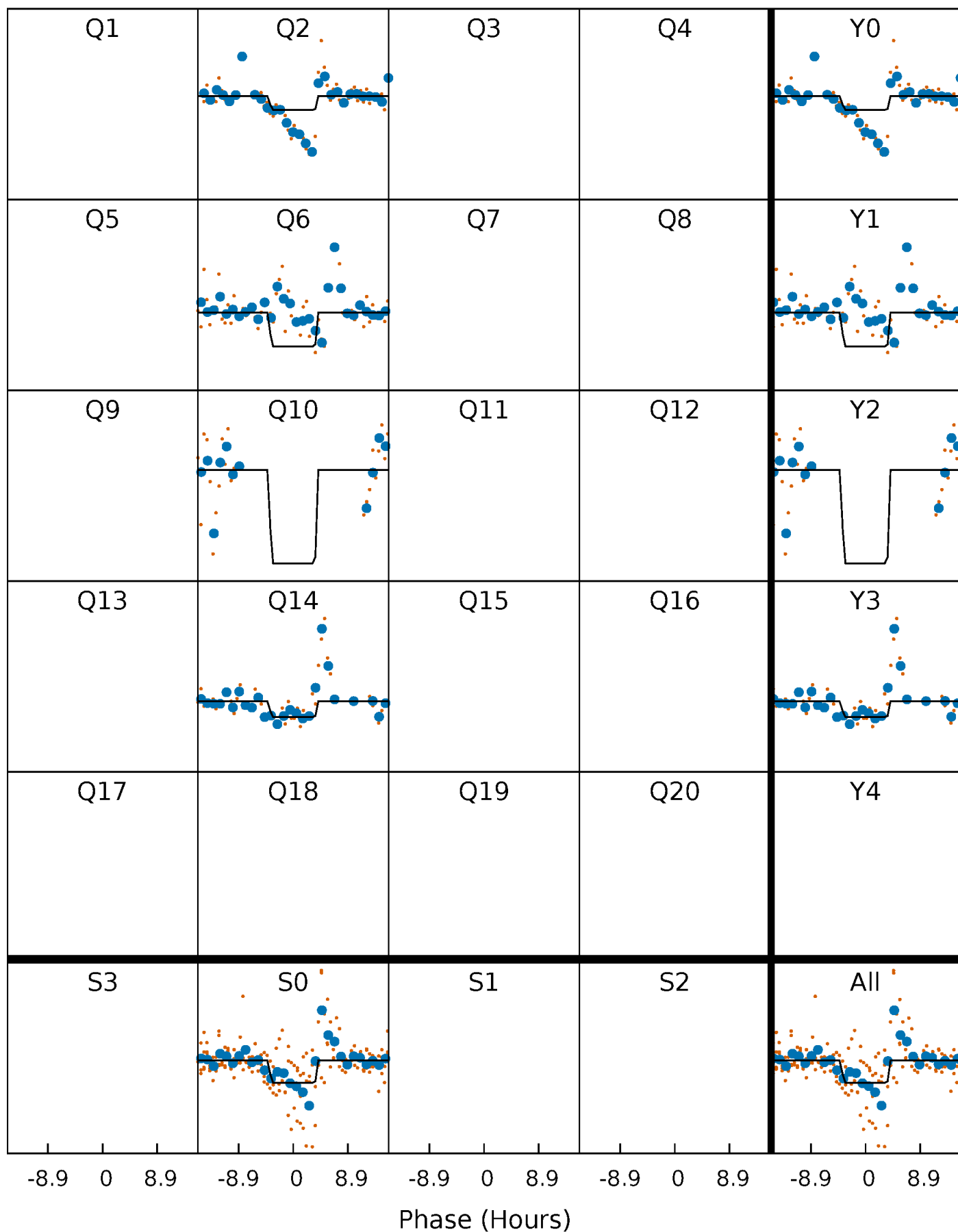
DV Quarter-Phased Transit Curves

TCE 012168669-03 P=342.856615 Days $T_0=251.663781$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

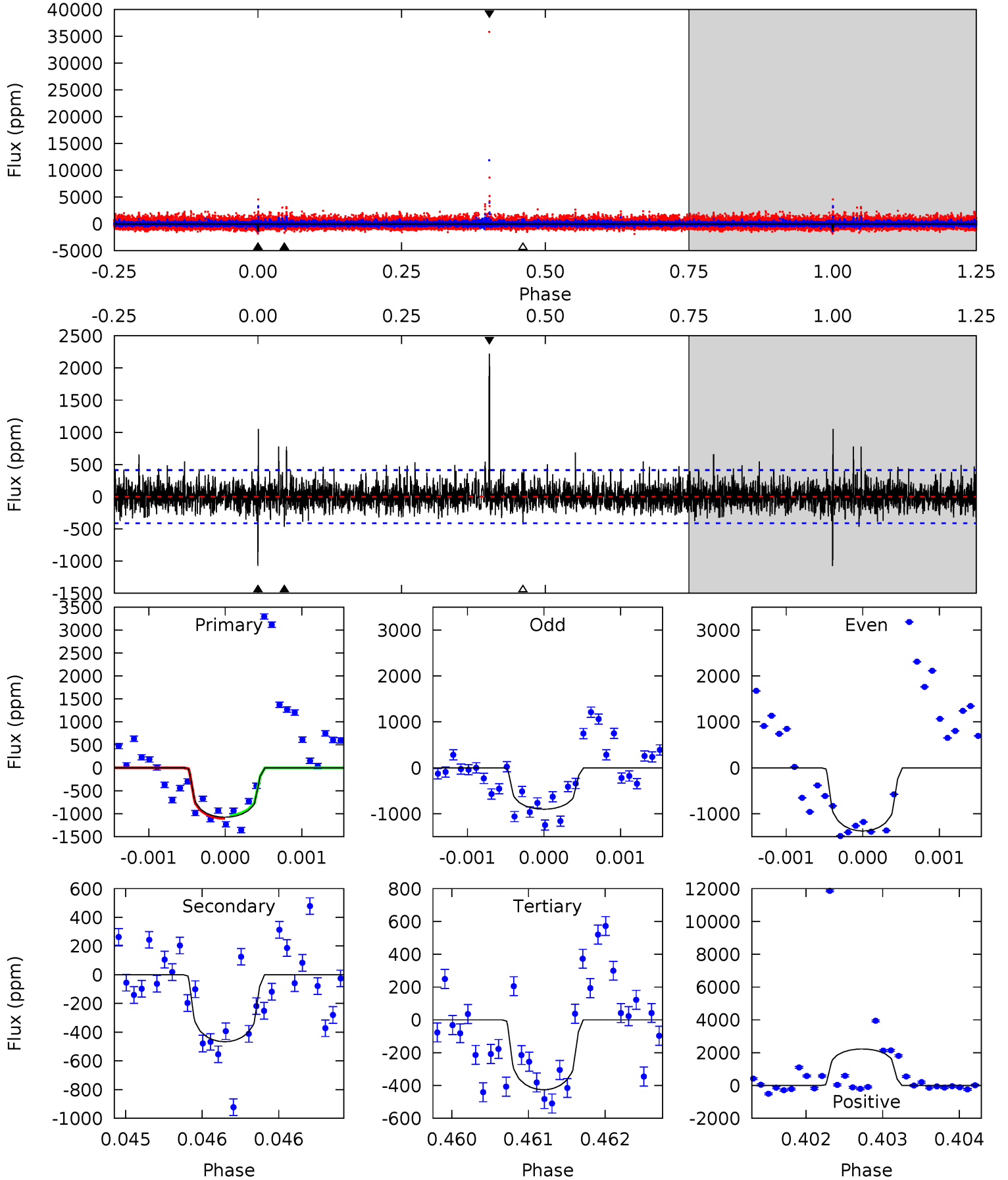
TCE 012168669-03 P=342.854703 Days $T_0=251.615942$ (BKJD)



DV Model-Shift Uniqueness Test

012168669-03, P = 342.856615 Days, E = 251.663781 Days

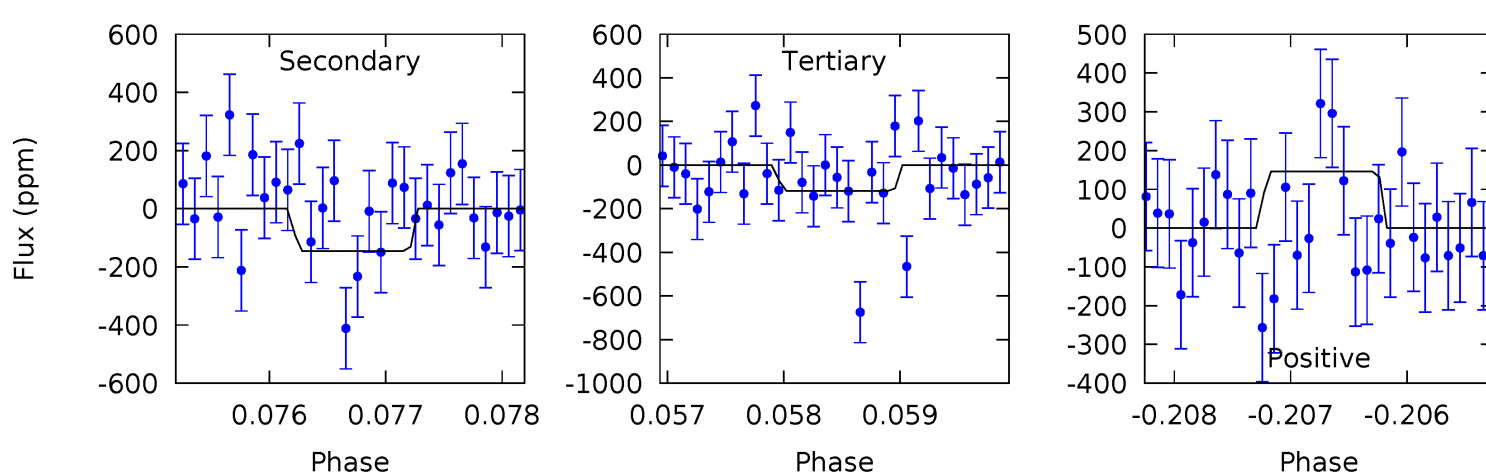
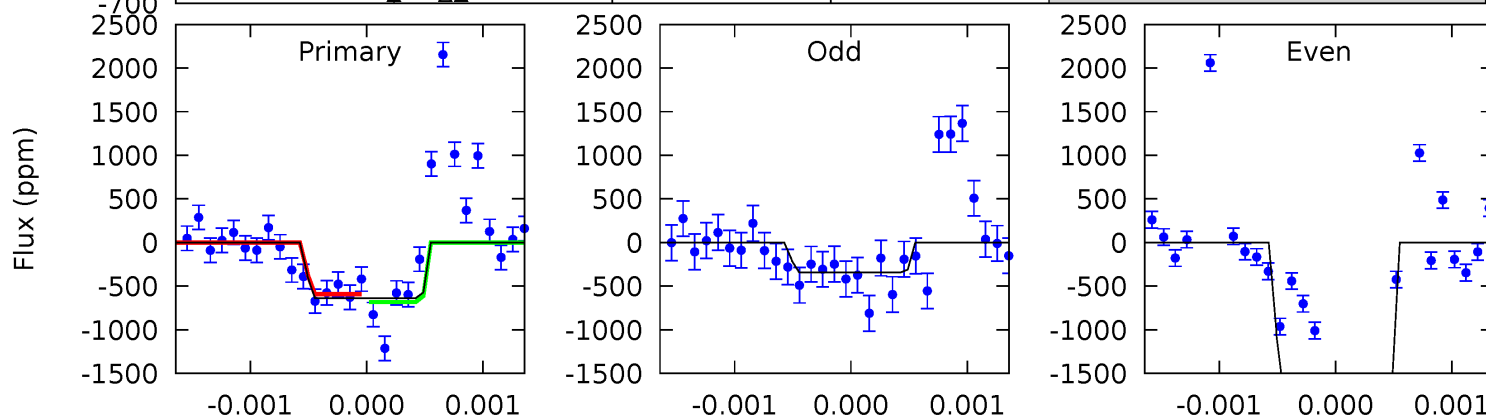
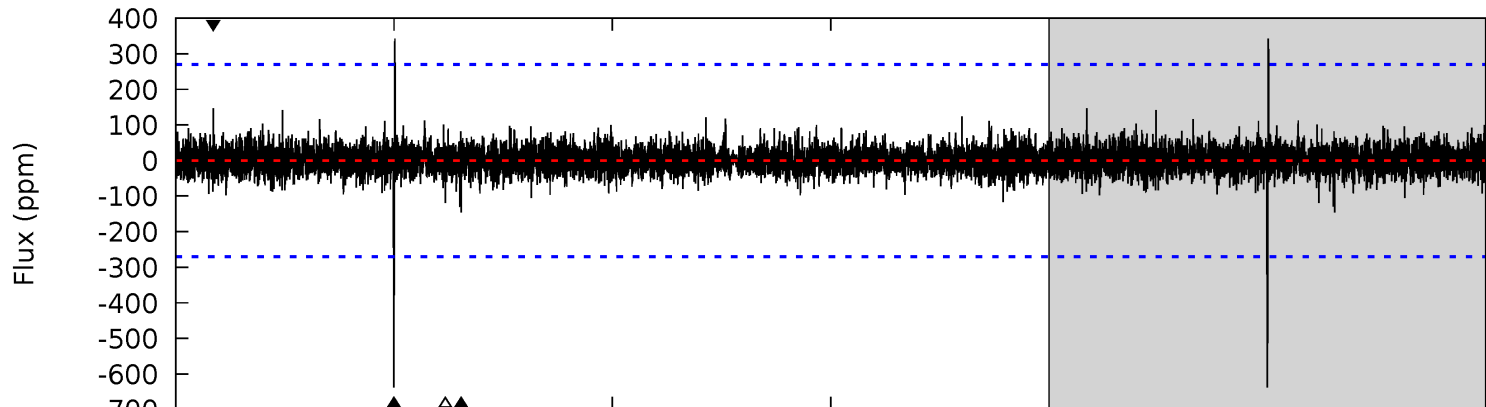
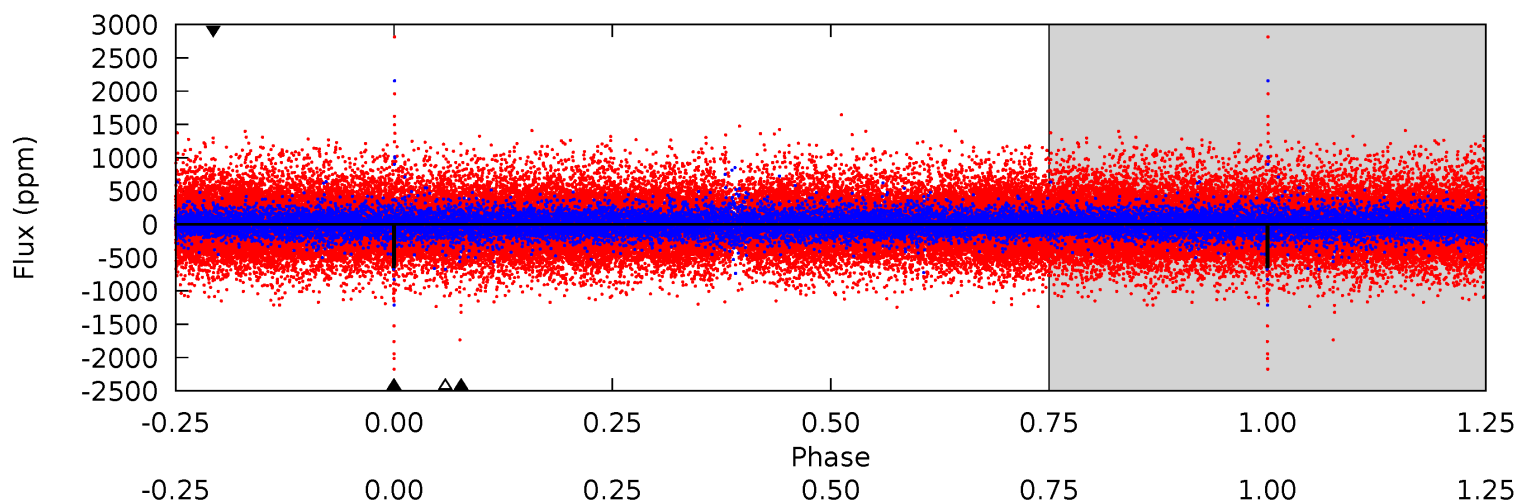
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	6.22	5.68	29.7	5.50	3.36	1.85	8.67	-15.3	0.54	-23.4	2.61	1.01	0.67	0.40



Alt Model-Shift Uniqueness Test

012168669-03, P = 342.854703 Days, E = 251.615942 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	2.95	2.41	2.96	5.47	3.32	0.55	10.5	9.93	0.54	-0.01	14.2	1.31	0.35	0.90



Stellar Parameters For KIC 012168669

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5462^{+162}_{-162}	$4.488^{+0.125}_{-0.137}$	$-0.480^{+0.350}_{-0.300}$	$0.806^{+0.141}_{-0.115}$	$0.728^{+0.112}_{-0.045}$	$1.961^{+1.029}_{-0.672}$
	+3%/-3%	+3%/-3%	+73%/-62%	+17%/-14%	+15%/-6%	+52%/-34%
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 012168669-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-466 ± 75	$4.57^{+3.99}_{-3.19}$	326^{+18}_{-18}	3877^{+2506}_{-737}	9126^{+87377}_{-6663}
Alt.	-146 ± 49	$4.29^{+4.10}_{-2.89}$	325^{+19}_{-17}	3257^{+1524}_{-589}	3084^{+26731}_{-2318}

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

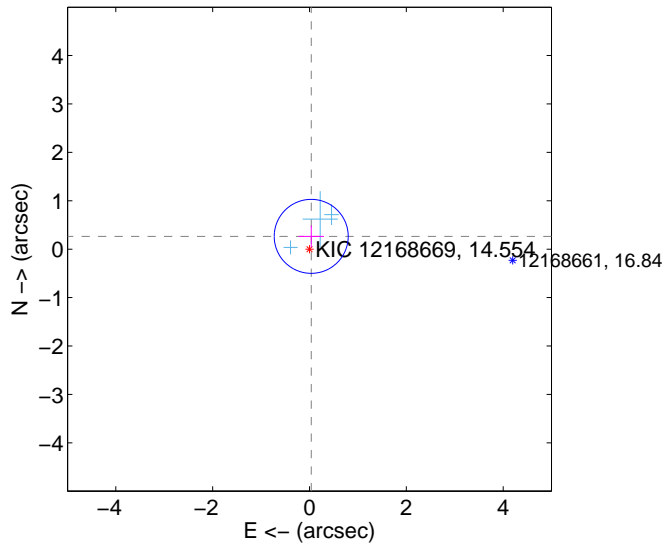
Supplemental centroid analysis for 012168669-03. Kepler magnitude: 14.55. Transit SNR 8.75

There are 3 quarters with good PRF difference image offsets

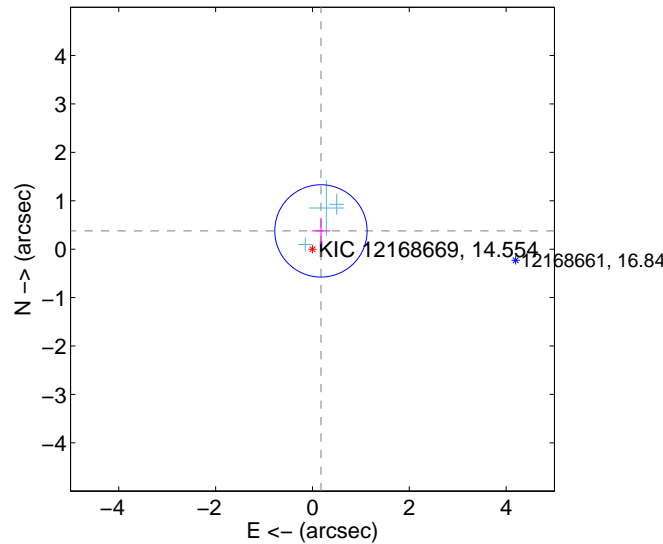
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.267 ± 0.255	1.05	-0.036 ± 0.262	0.265 ± 0.224
PRF-fit source offset from KIC position	0.416 ± 0.318	1.31	-0.175 ± 0.188	0.377 ± 0.270
photometric centroid source offset	1.02 ± 1.05	0.98	-0.15 ± 0.99	1.01 ± 1.05

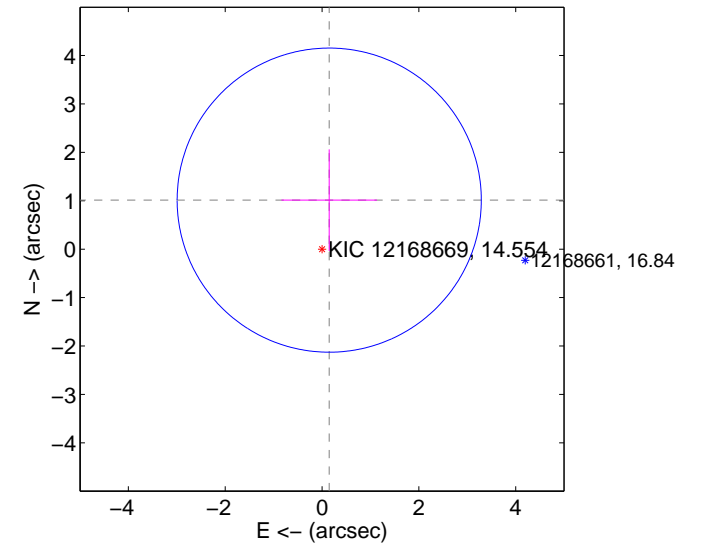
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

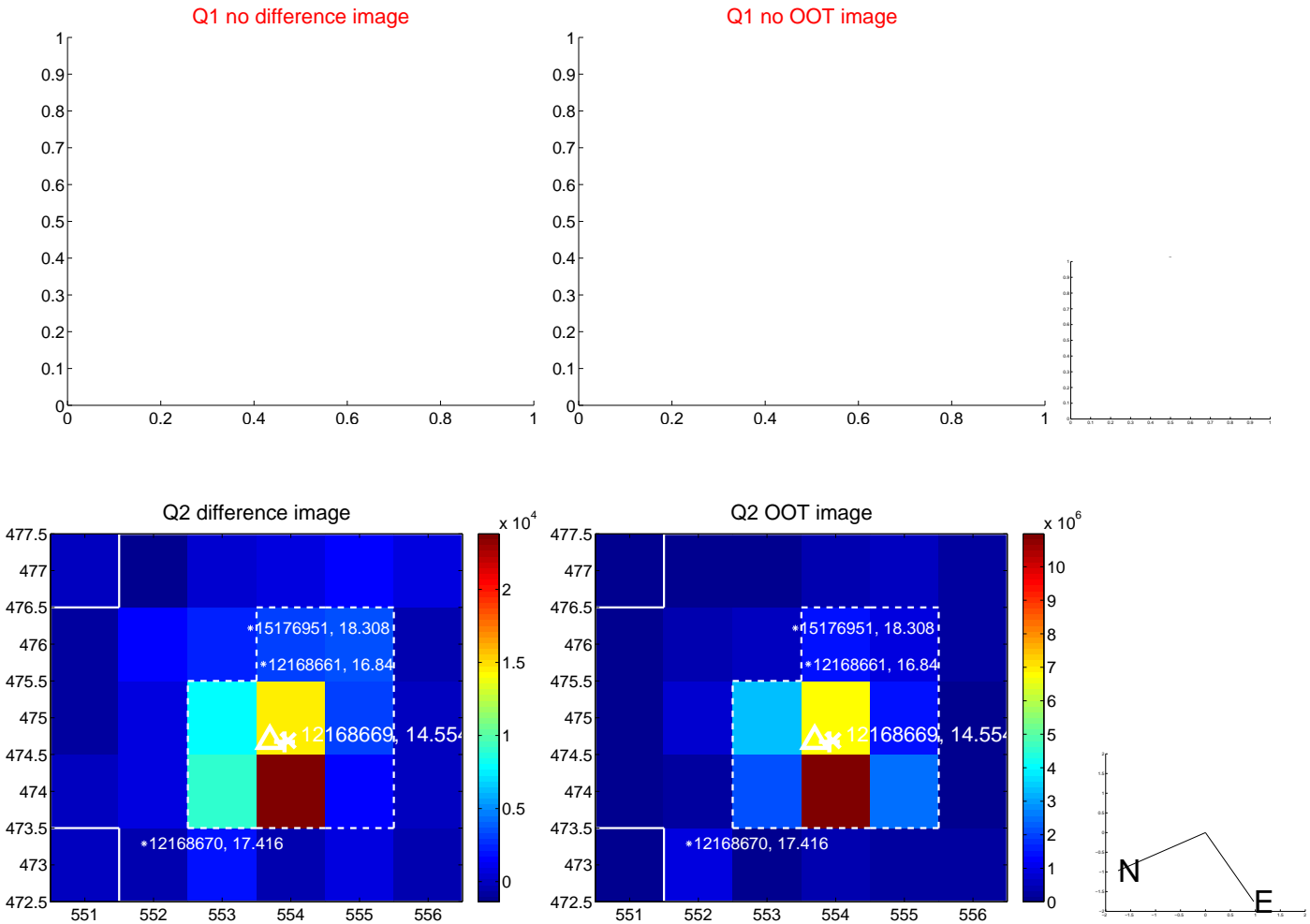


offset from photometric centroids

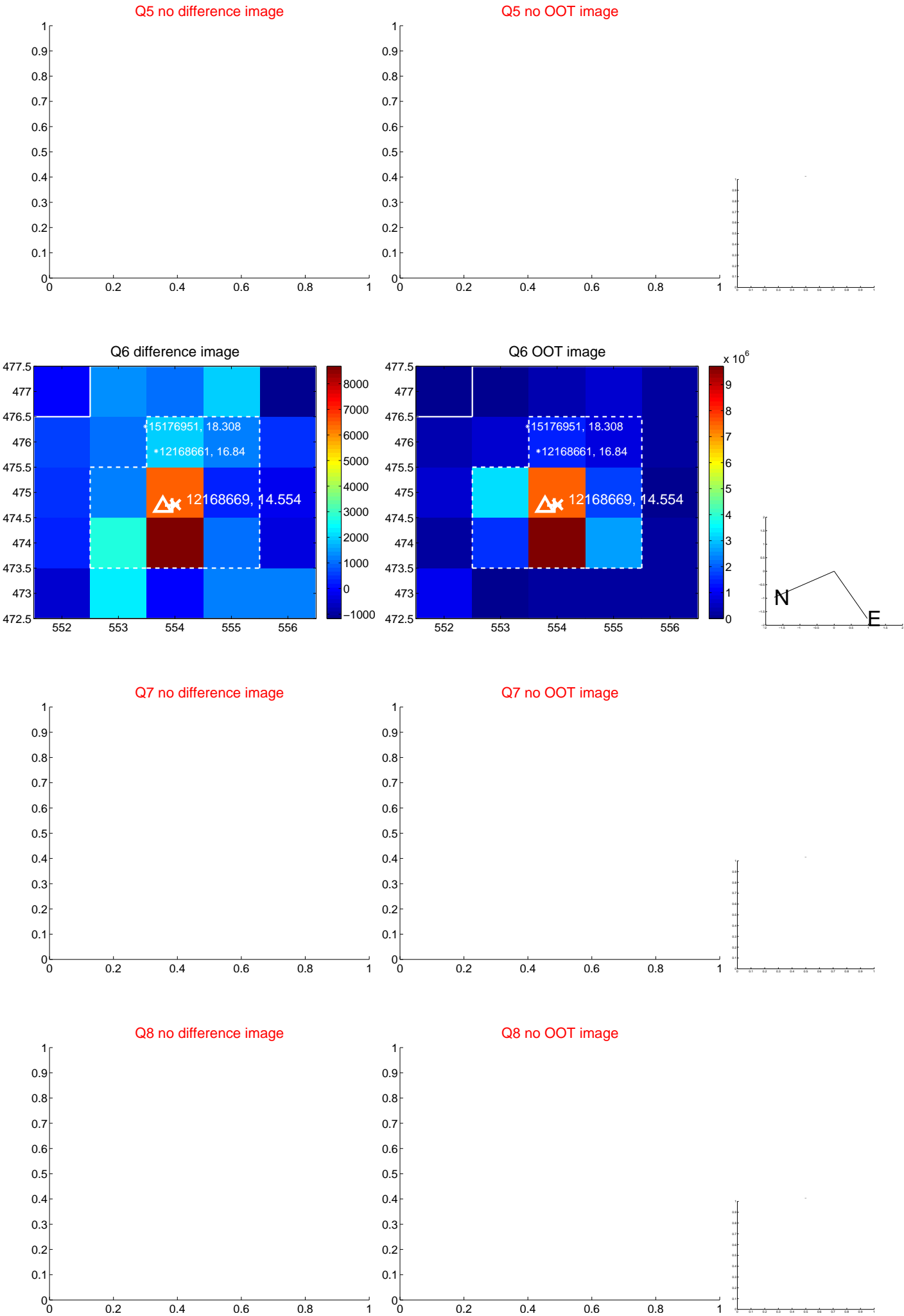


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



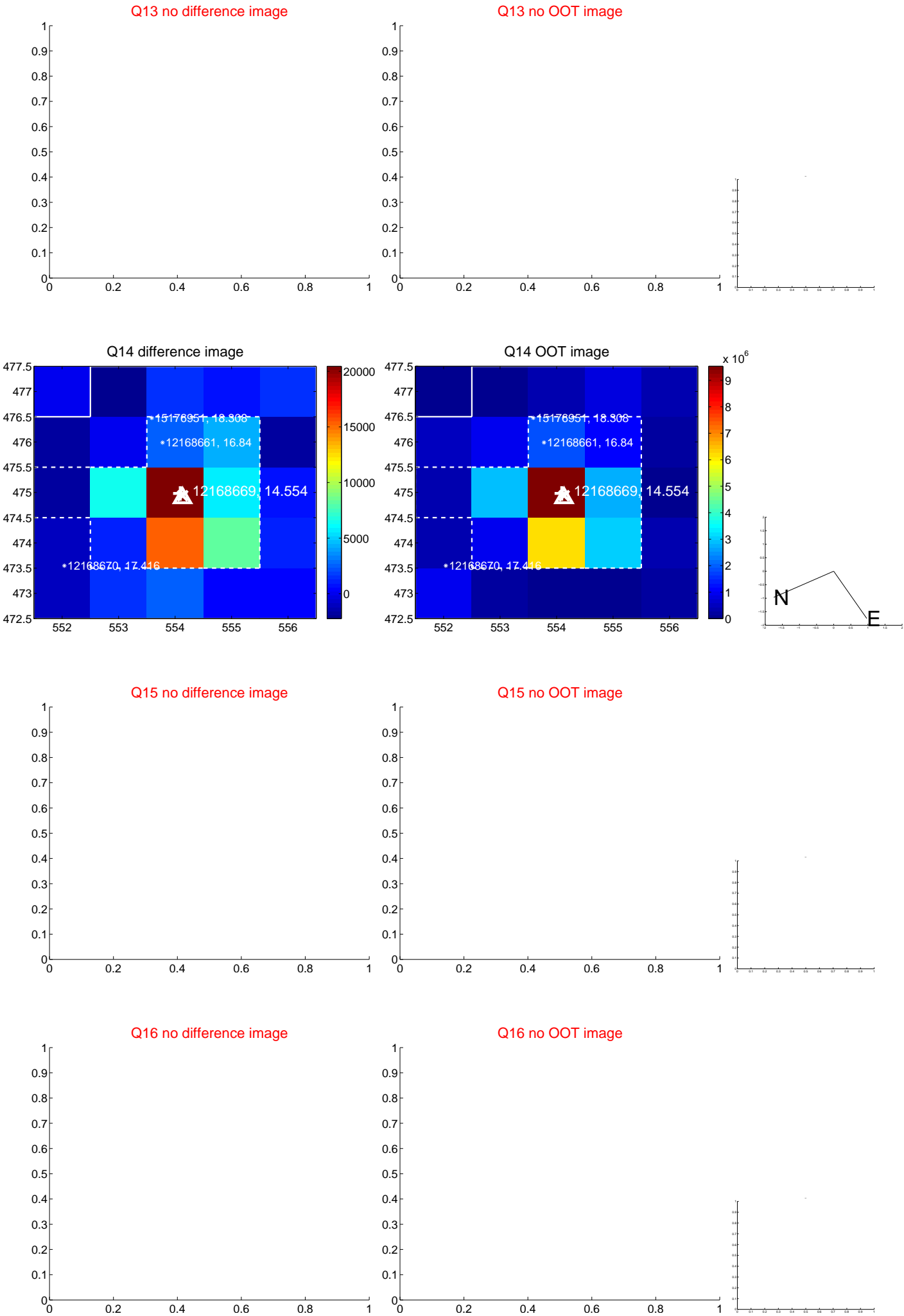
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



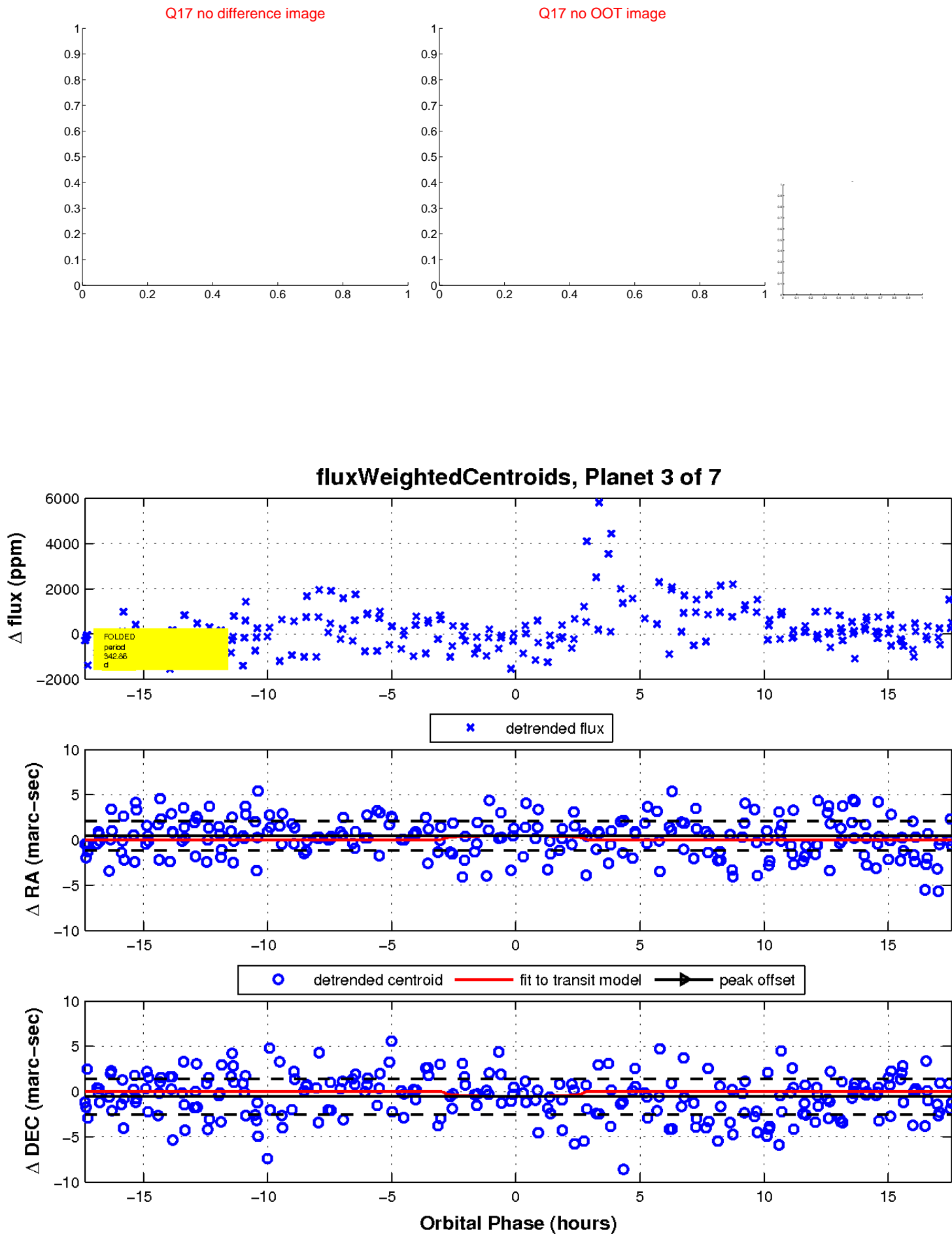
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



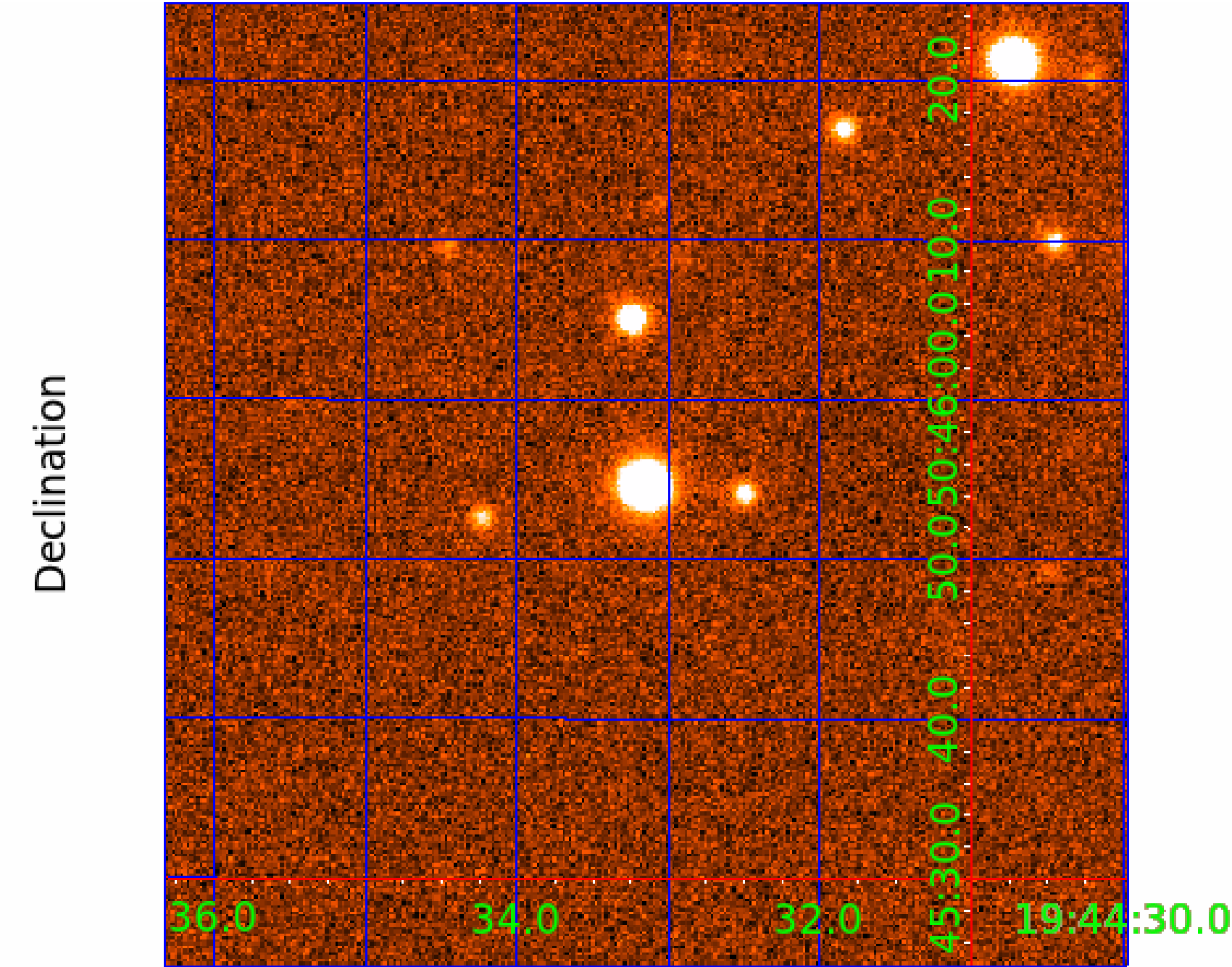
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 012168669

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})
012168669-01	OBS	No	364.290849	365.667745	1279.2	9.977	14.8	9.3	0.81	5462	3.04	0.64
012168669-02	OBS	No	330.176704	259.892595	1050.2	5.816	11.1	8.6	0.81	5462	2.74	0.73
012168669-03	OBS	No	342.856615	251.663781	1366.6	5.853	11.4	8.7	0.81	5462	2.99	0.70
012168669-04	OBS	No	502.045471	543.711844	1082.5	4.609	11.3	7.0	0.81	5462	2.71	0.42
012168669-05	OBS	No	371.511881	285.035971	885.9	4.373	9.2	6.9	0.81	5462	2.54	0.62
012168669-06	OBS	No	481.447688	235.131862	1061.7	11.882	9.3	7.2	0.81	5462	2.67	0.44
012168669-07	OBS	No	498.540131	394.882681	1130.2	4.013	11.9	8.1	0.81	5462	2.88	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012168669-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
012168669-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV
012168669-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
012168669-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012168669-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

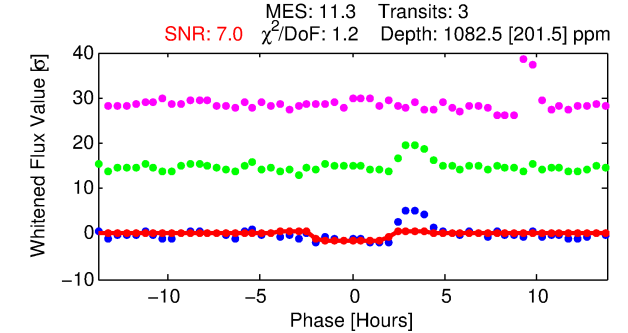
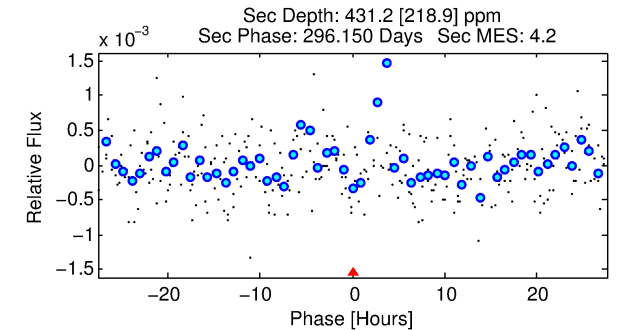
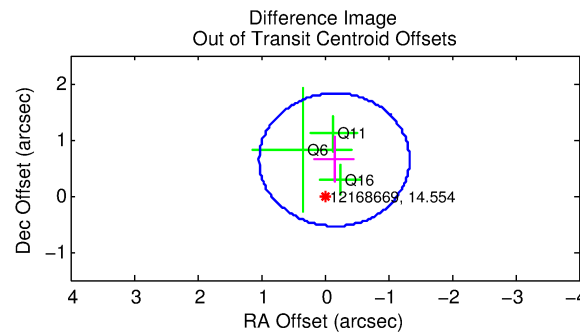
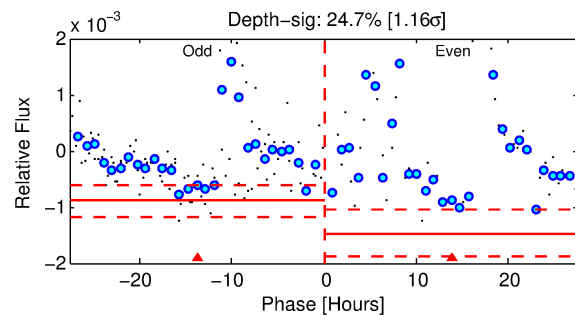
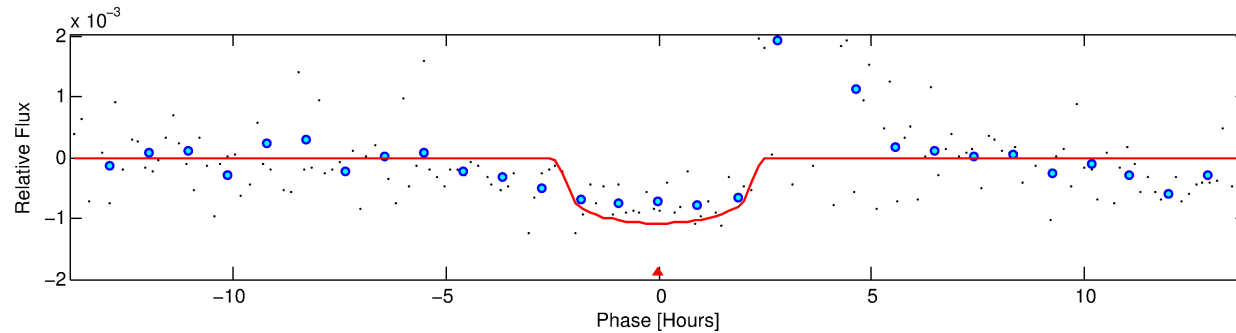
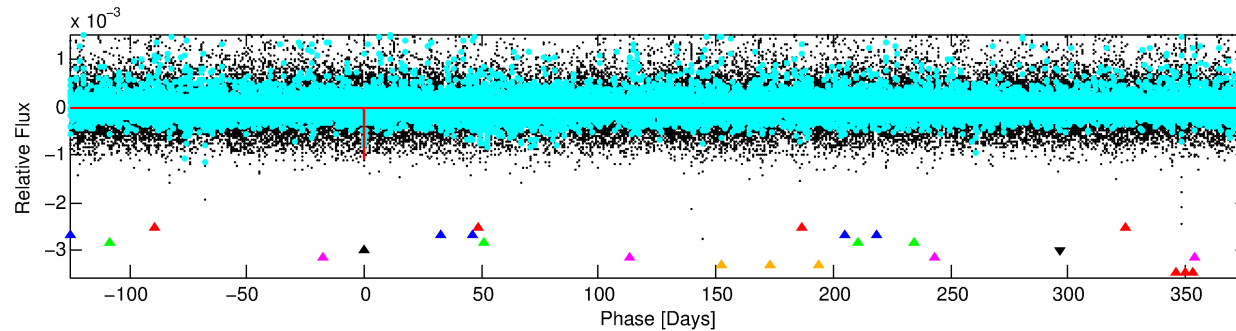
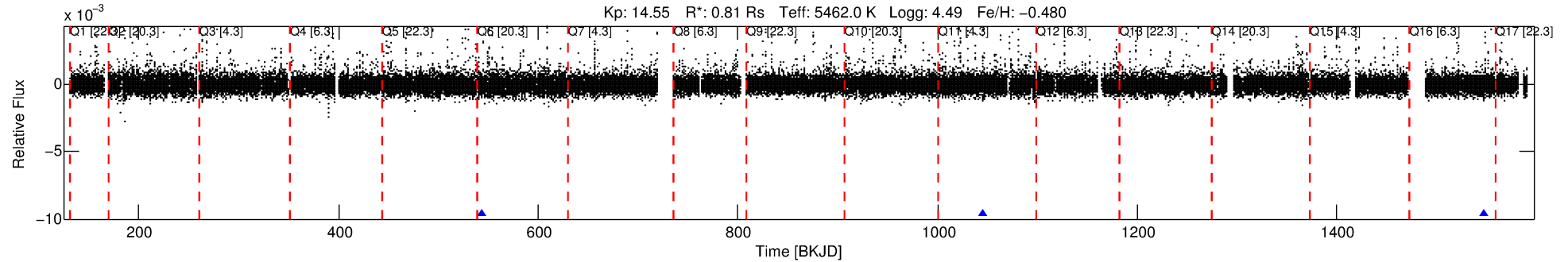
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012168669-04

No Significant Match Found

DV One-Page Summary

KIC: 12168669 Candidate: 4 of 7 Period: 502.045 d



DV Fit Results:

Period = 502.04547 [0.00798] d
Epoch = 543.7118 [0.0093] BKJD
Rp/R* = 0.0308 [0.0395]
a/R* = 748.44 [4047.57]
b = 0.50 [8.11]
Seff = 0.42 [0.11]
Teq = 205 [14] K
Rp = 2.71 [3.50] Re
a = 1.1128 [0.1747] AU
Ag = 40031.27 [105035.46] [0.38 σ]
Teffp = 4485 [2933] K [1.46 σ]

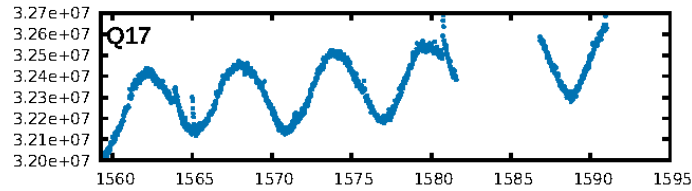
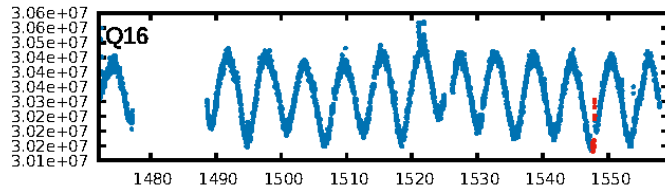
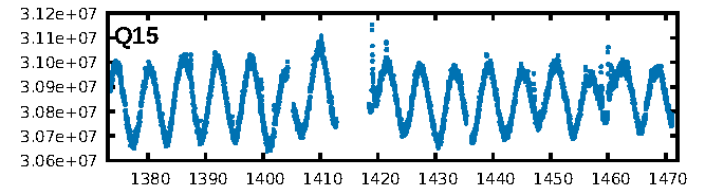
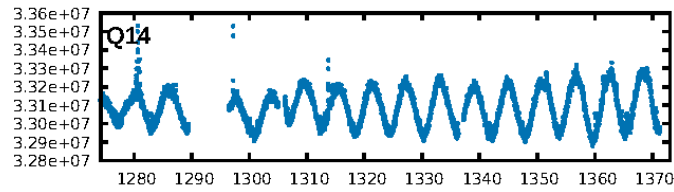
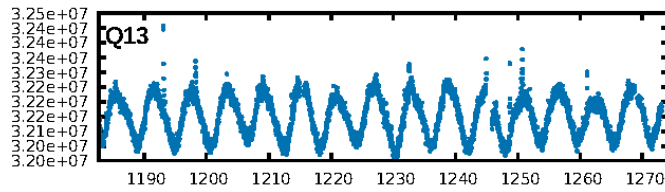
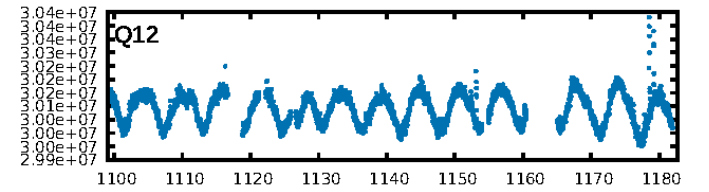
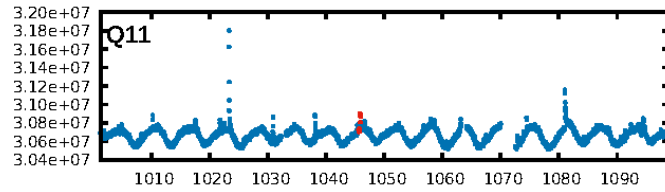
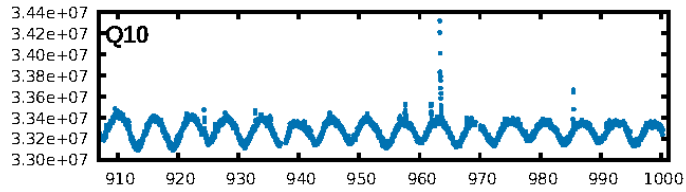
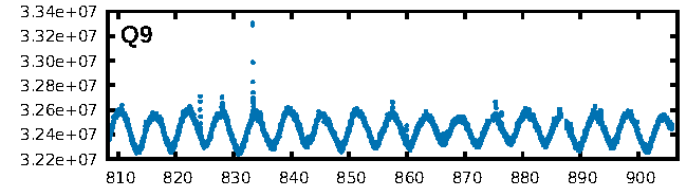
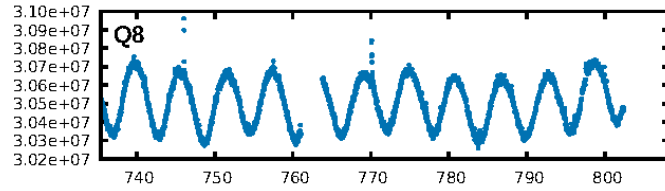
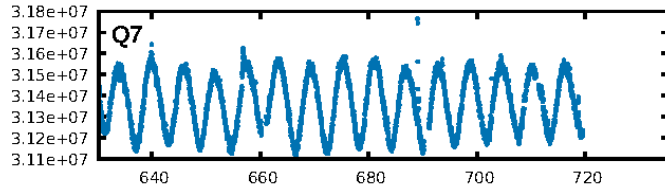
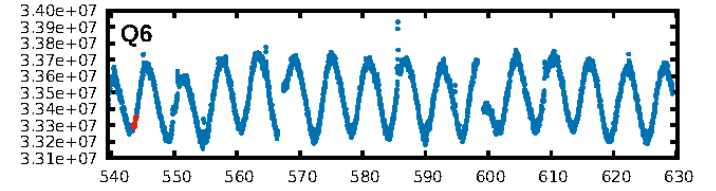
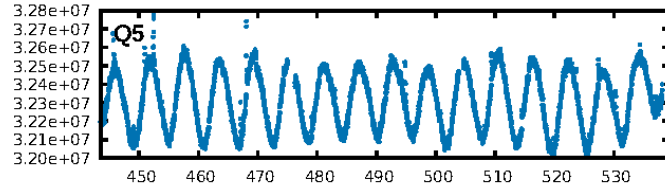
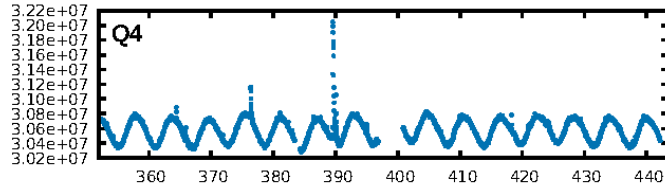
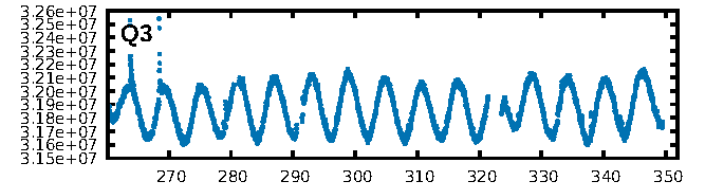
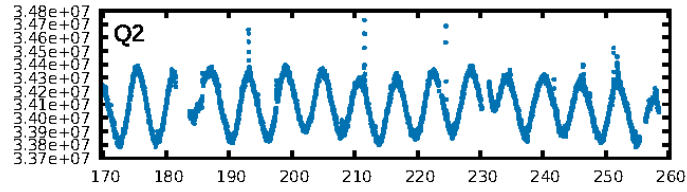
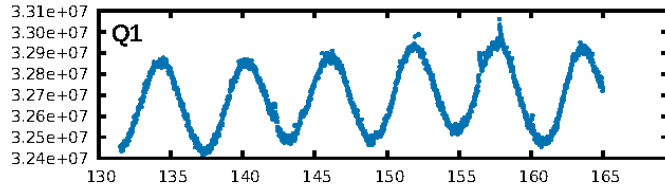
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.77 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 5.7%
ModelChiSquareGof-sig: 91.5%
Bootstrap-pfa: 3.75e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.029
Centroid-sig: 31.2%
Centroid-so: 0.754 arcsec [0.63 σ]
OotOffset-rm: 0.658 arcsec [1.67 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 0.765 arcsec [2.00 σ]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

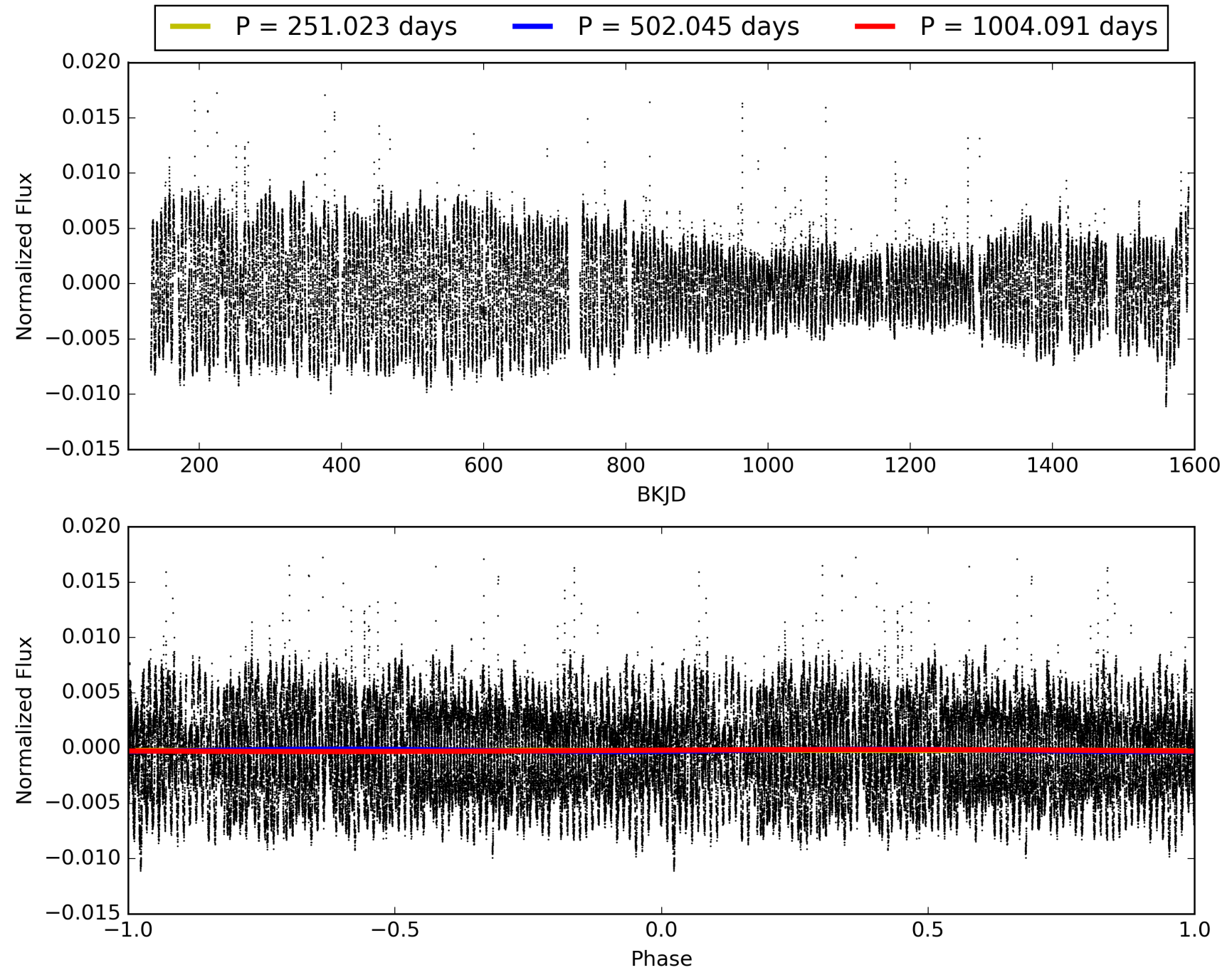
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:04 Z

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

TCE 012168669-04, PDC Light Curves

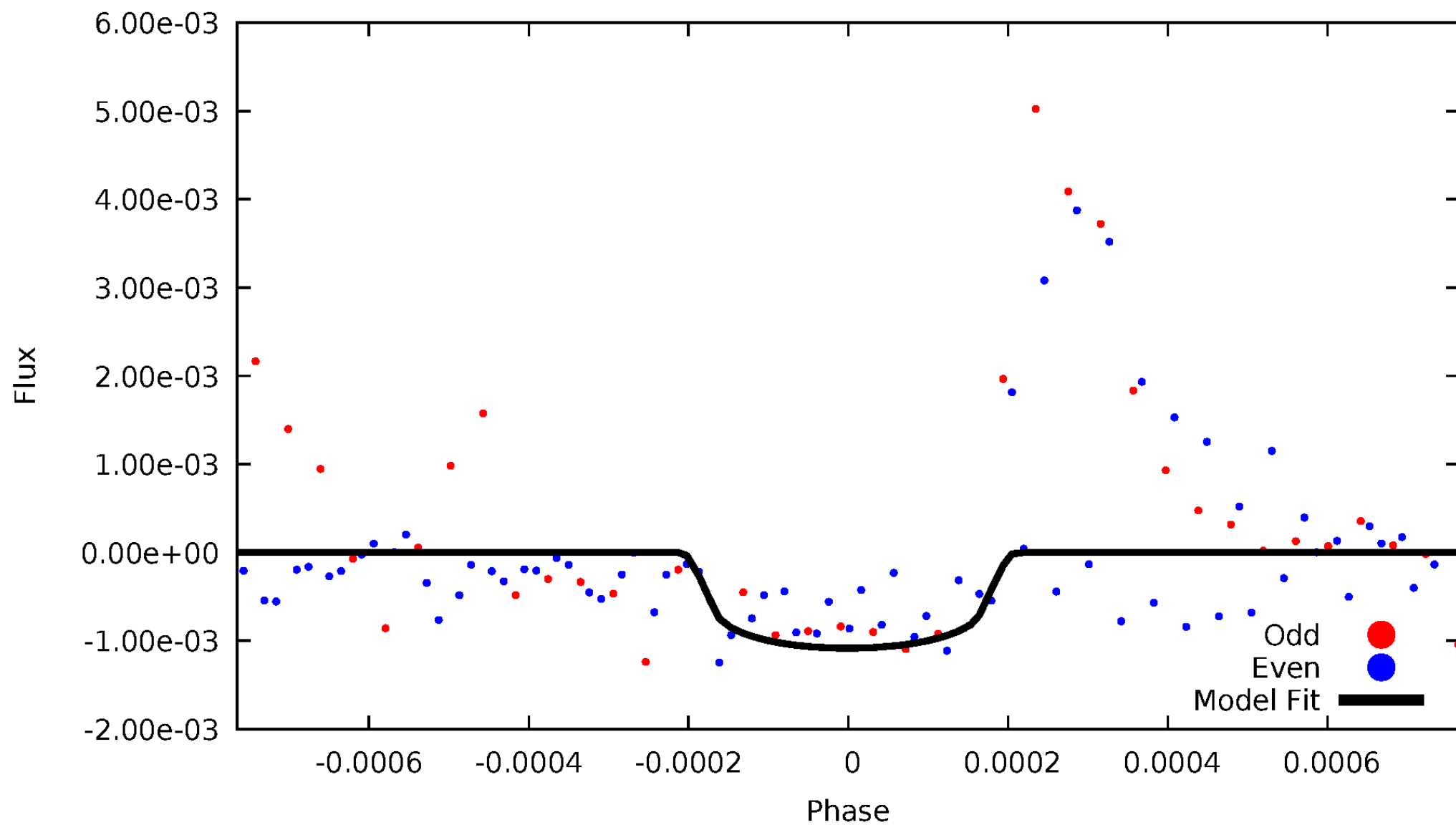


TCE 012168669-04



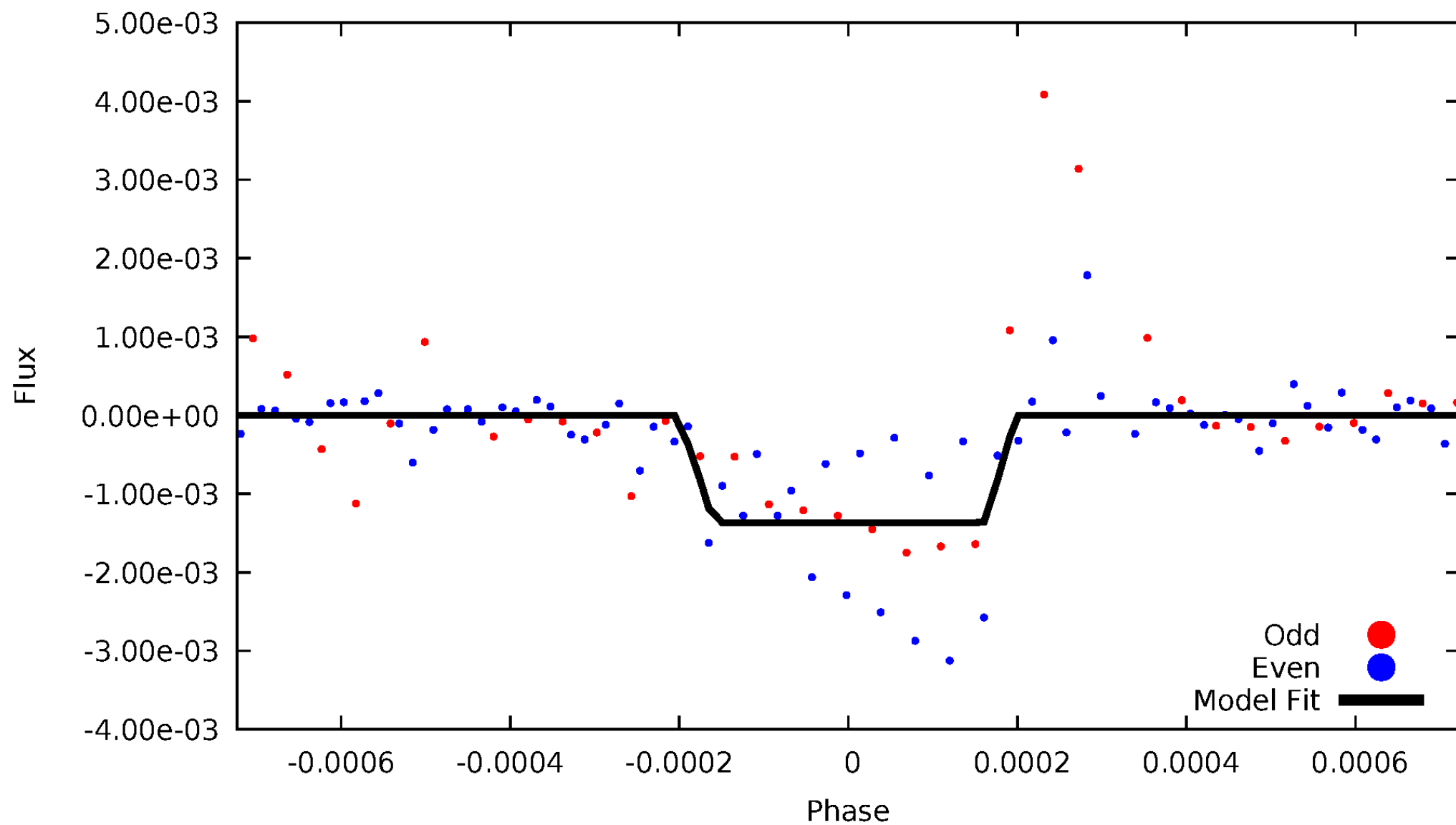
DV Odd/Even

TCE 012168669-04



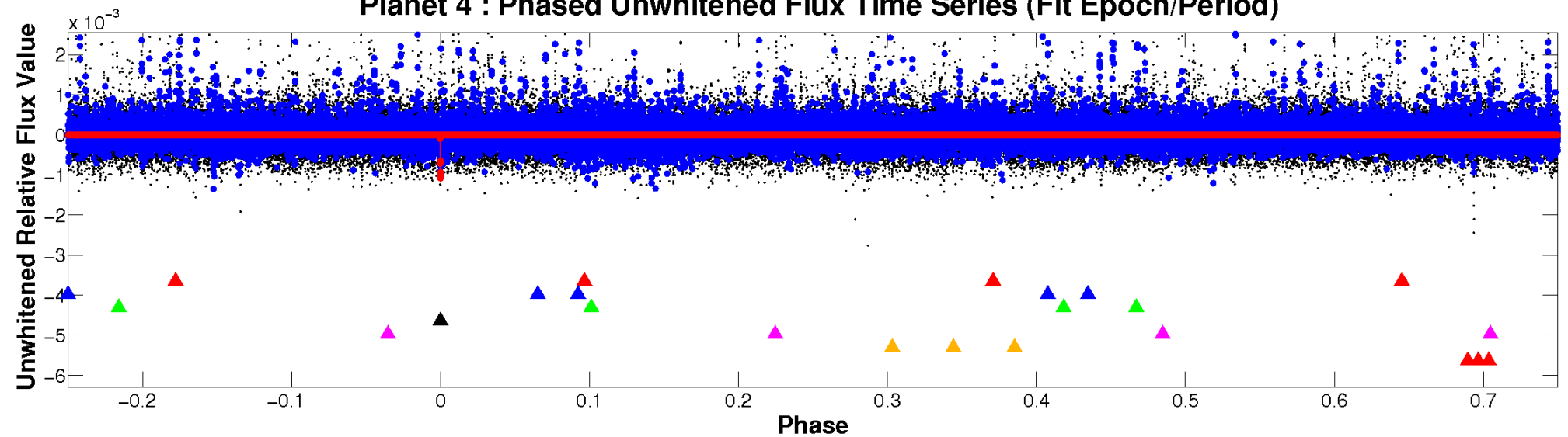
ALT Odd/Even

TCE 012168669-04

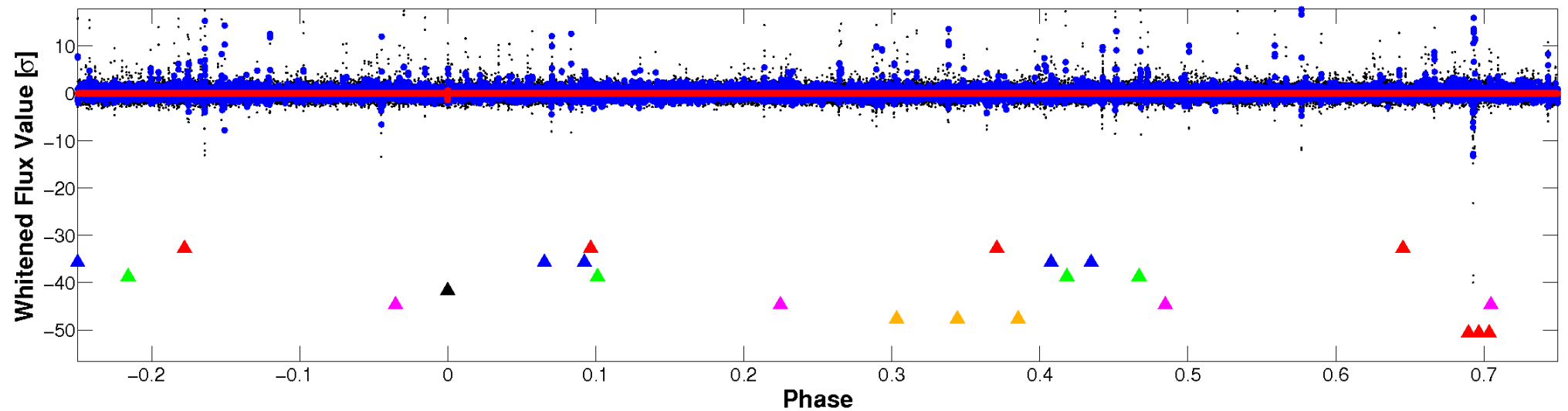


Non-Whitened Vs. Whitened Light Curve

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

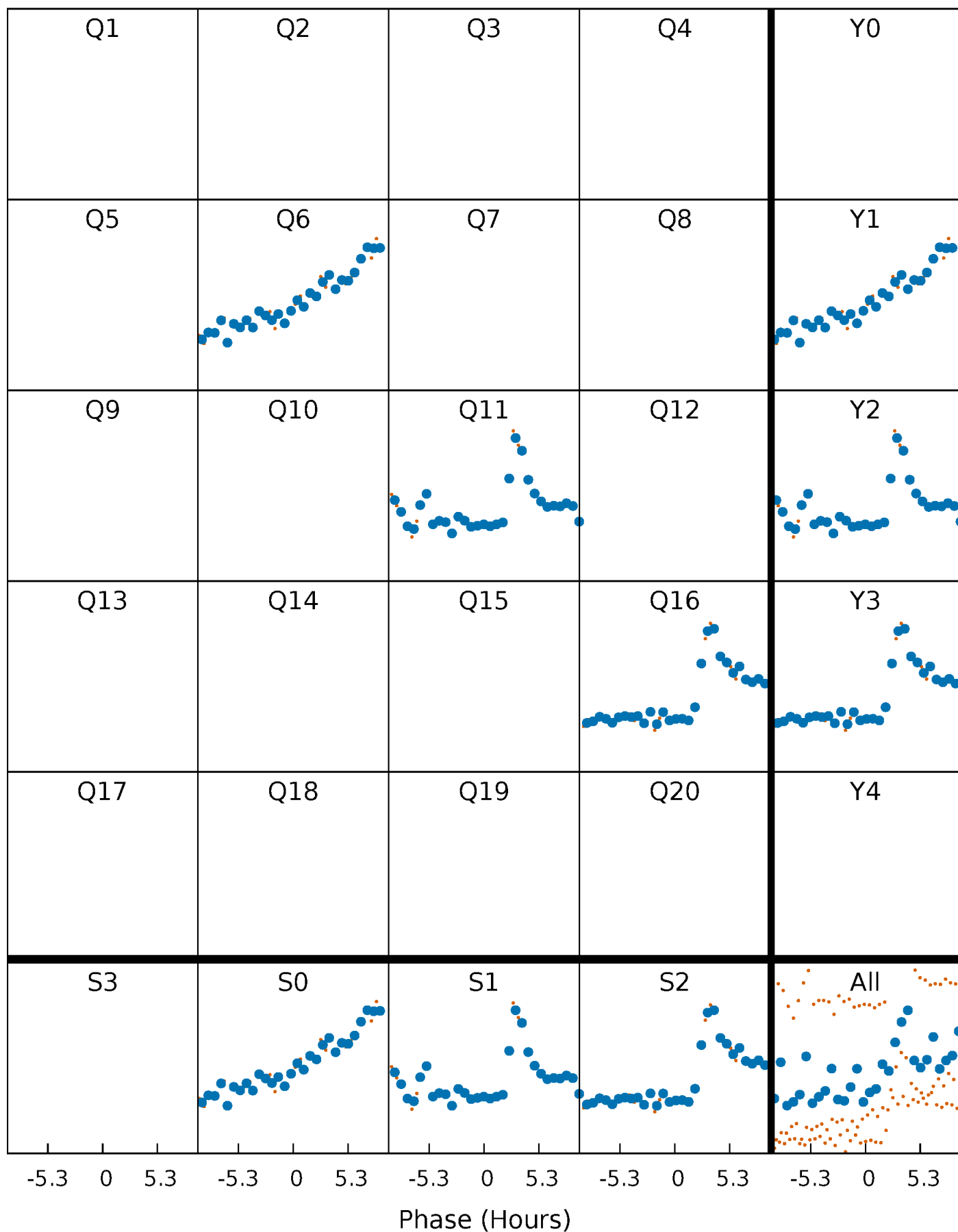


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



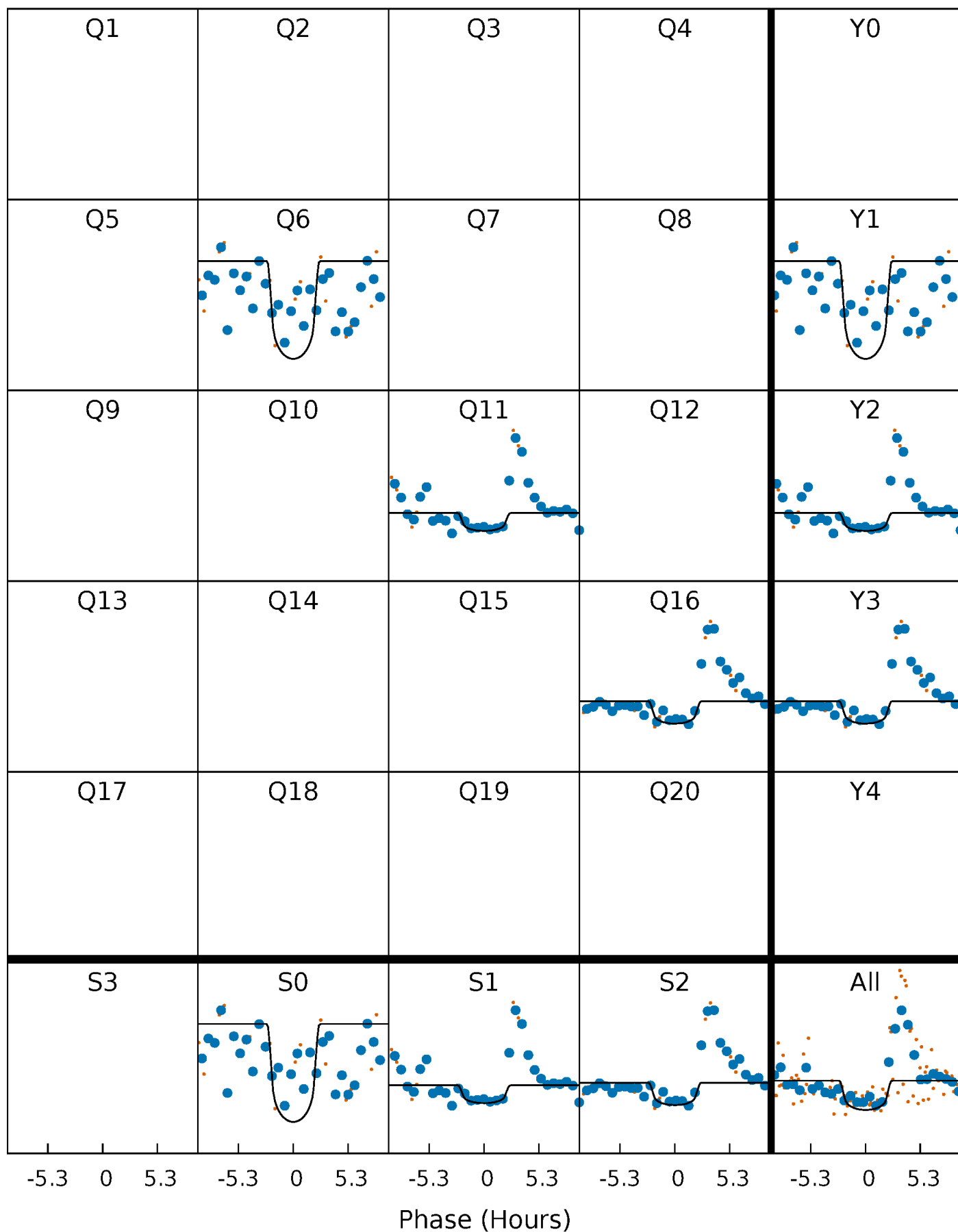
PDC Quarter-Phased Transit Curves

TCE 012168669-04 P=502.045471 Days $T_0=543.711844$ (BKJD)



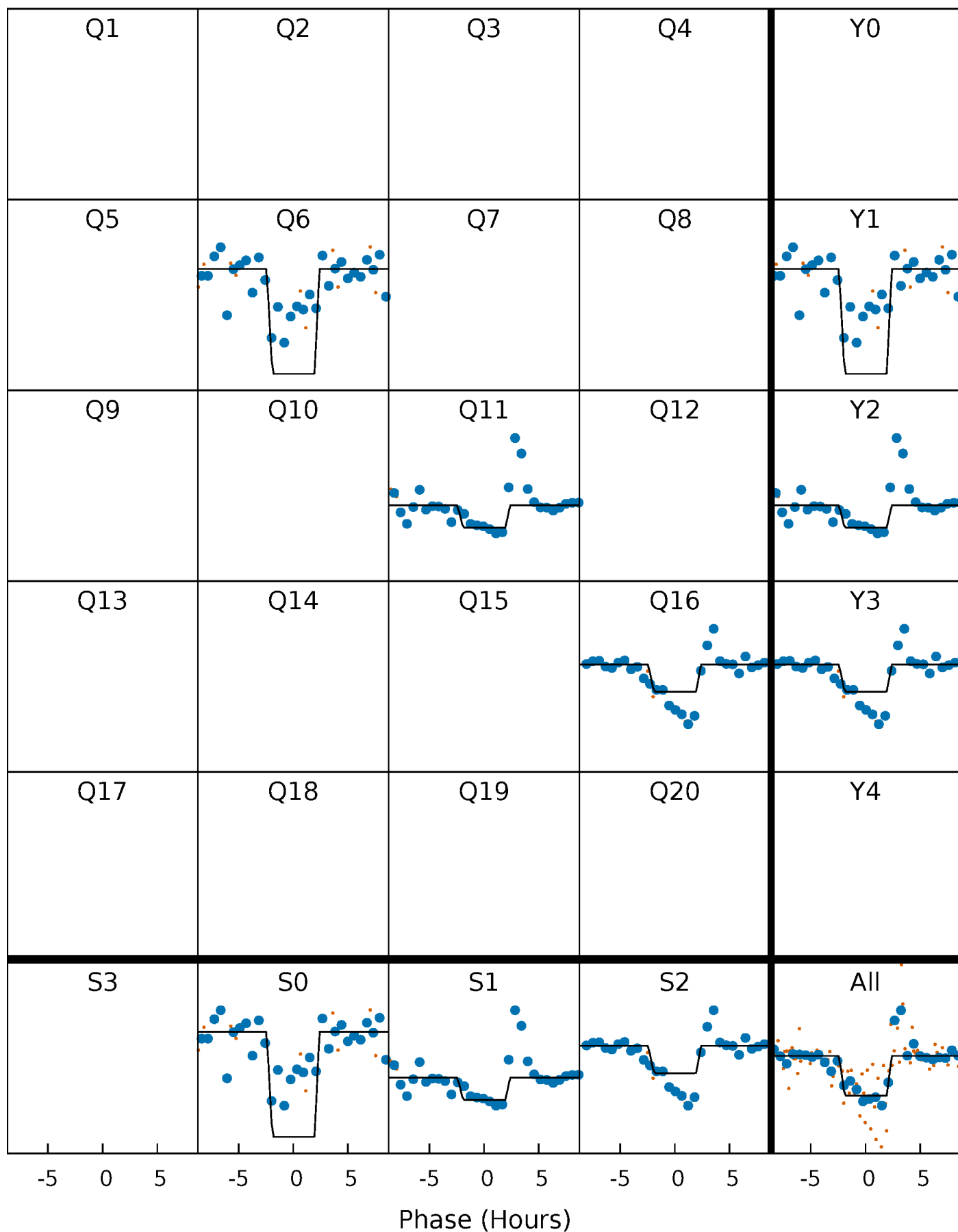
DV Quarter-Phased Transit Curves

TCE 012168669-04 $P=502.045471$ Days $T_0=543.711844$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

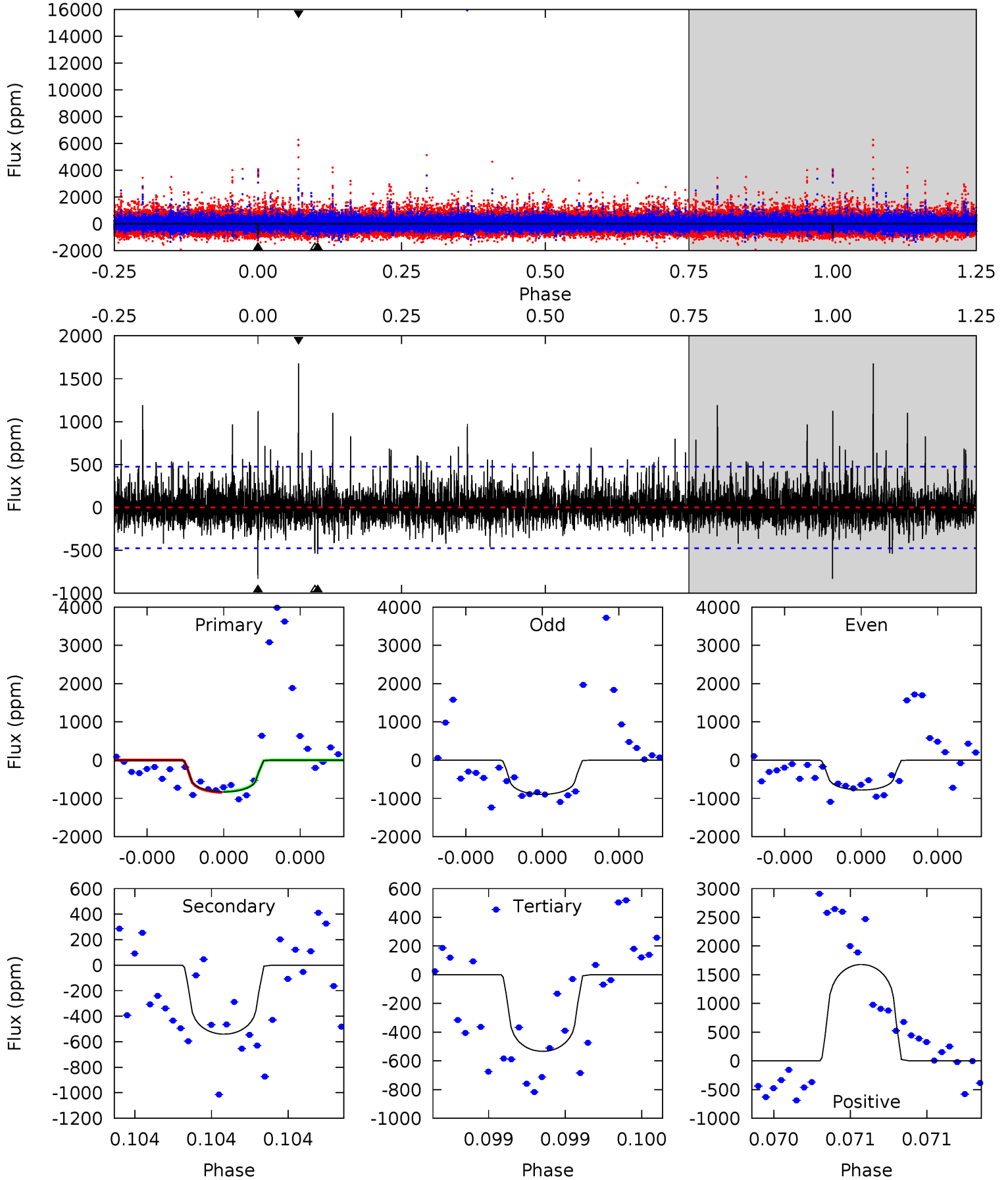
TCE 012168669-04 P=502.045758 Days $T_0=543.713042$ (BKJD)



DV Model-Shift Uniqueness Test

012168669-04, P = 502.045471 Days, E = 41.666373 Days

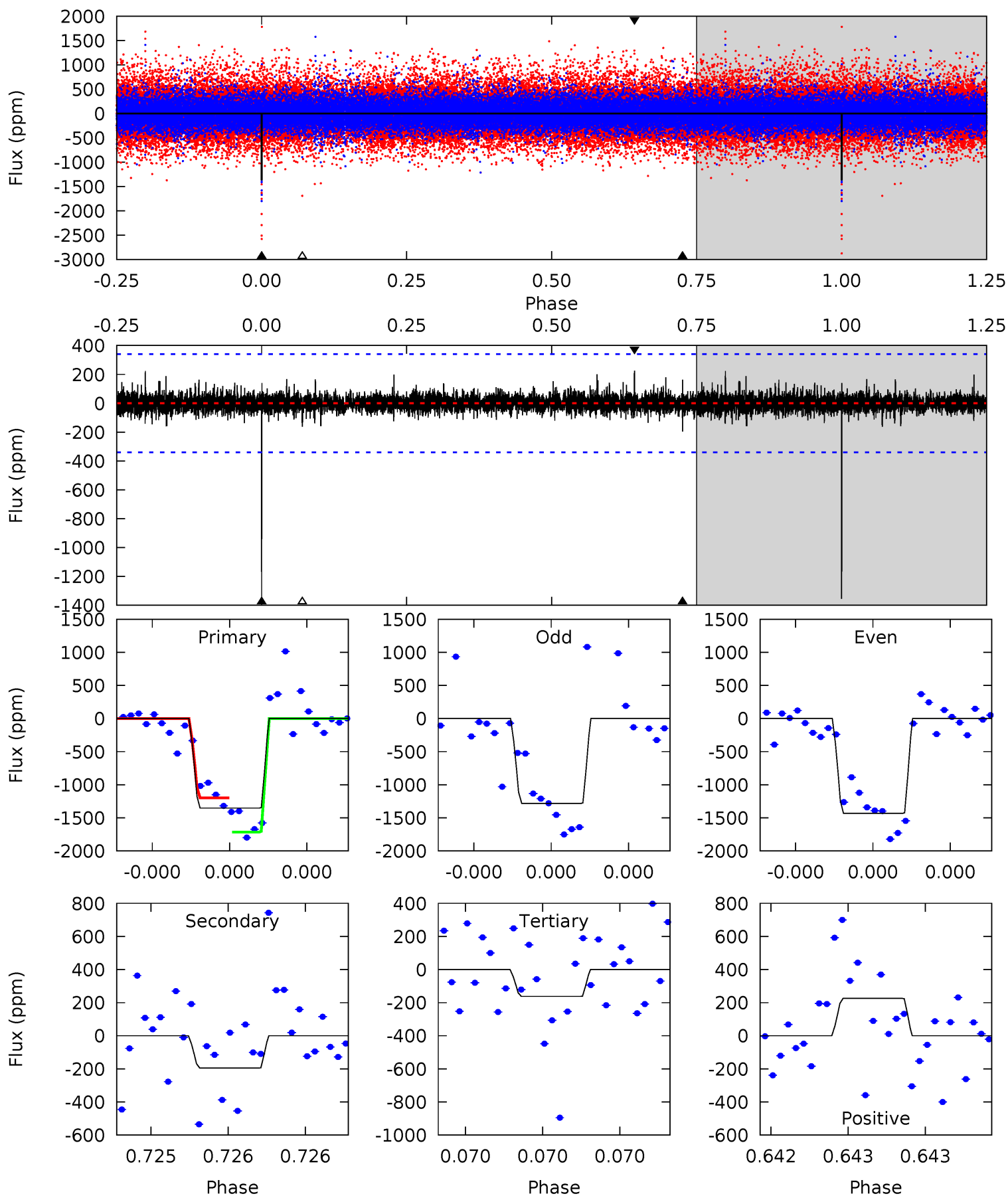
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.82	6.39	6.31	19.8	5.62	3.55	1.79	3.51	-10.0	0.08	-13.5	0.45	0.91	0.67	0.14



Alt Model-Shift Uniqueness Test

012168669-04, P = 502.045758 Days, E = 41.667284 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.3	3.21	2.68	3.72	5.62	3.55	0.58	19.7	18.6	0.53	-0.50	1.20	1.07	0.14	4.05



Stellar Parameters For KIC 012168669

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5462^{+162}_{-162}	$4.488^{+0.125}_{-0.137}$	$-0.480^{+0.350}_{-0.300}$	$0.806^{+0.141}_{-0.115}$	$0.728^{+0.112}_{-0.045}$	$1.961^{+1.029}_{-0.672}$
	+3%/-3%	+3%/-3%	+73%/-62%	+17%/-14%	+15%/-6%	+52%/-34%
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 012168669-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-541 ± 85	$3.87^{+2.76}_{-2.46}$	287^{+15}_{-15}	4198^{+2500}_{-682}	$25340^{+164461}_{-17167}$
Alt.	-195 ± 61	$4.23^{+3.27}_{-2.72}$	288^{+15}_{-15}	3431^{+1607}_{-548}	7300^{+56142}_{-5157}

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 $A_{obs} \gg 1.0$

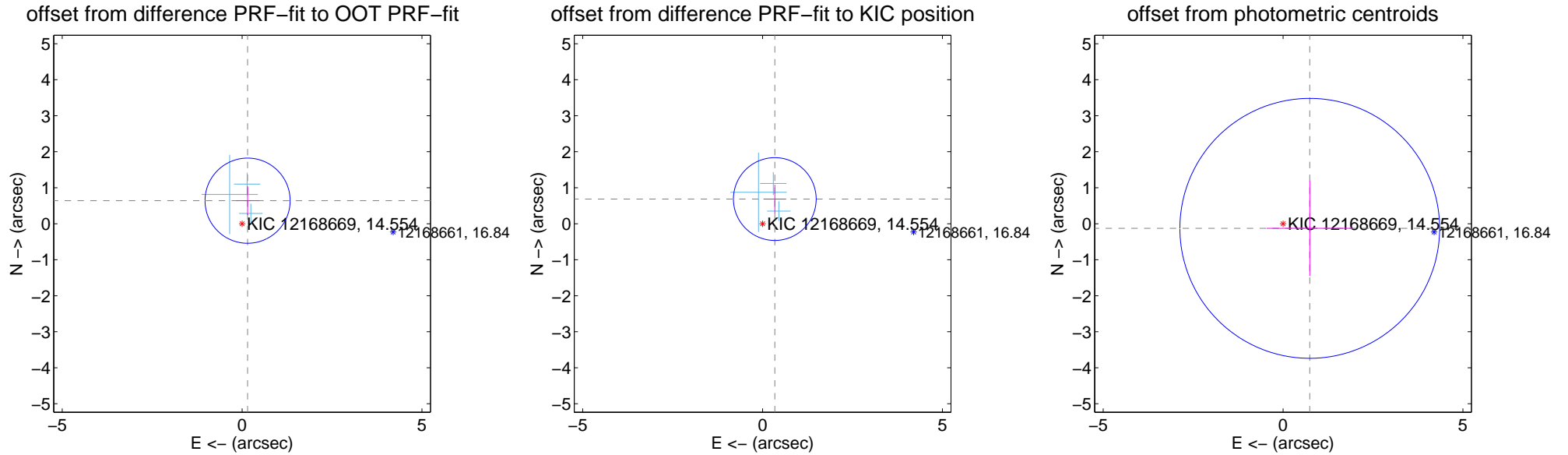
DV Centroid Data

Supplemental centroid analysis for 012168669-04. Kepler magnitude: 14.55. Transit SNR 6.98

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.658 ± 0.394	1.67	-0.152 ± 0.315	0.640 ± 0.398
PRF-fit source offset from KIC position	0.765 ± 0.383	2.00	-0.340 ± 0.315	0.686 ± 0.398
photometric centroid source offset	0.75 ± 1.20	0.63	-0.74 ± 1.20	-0.13 ± 1.32

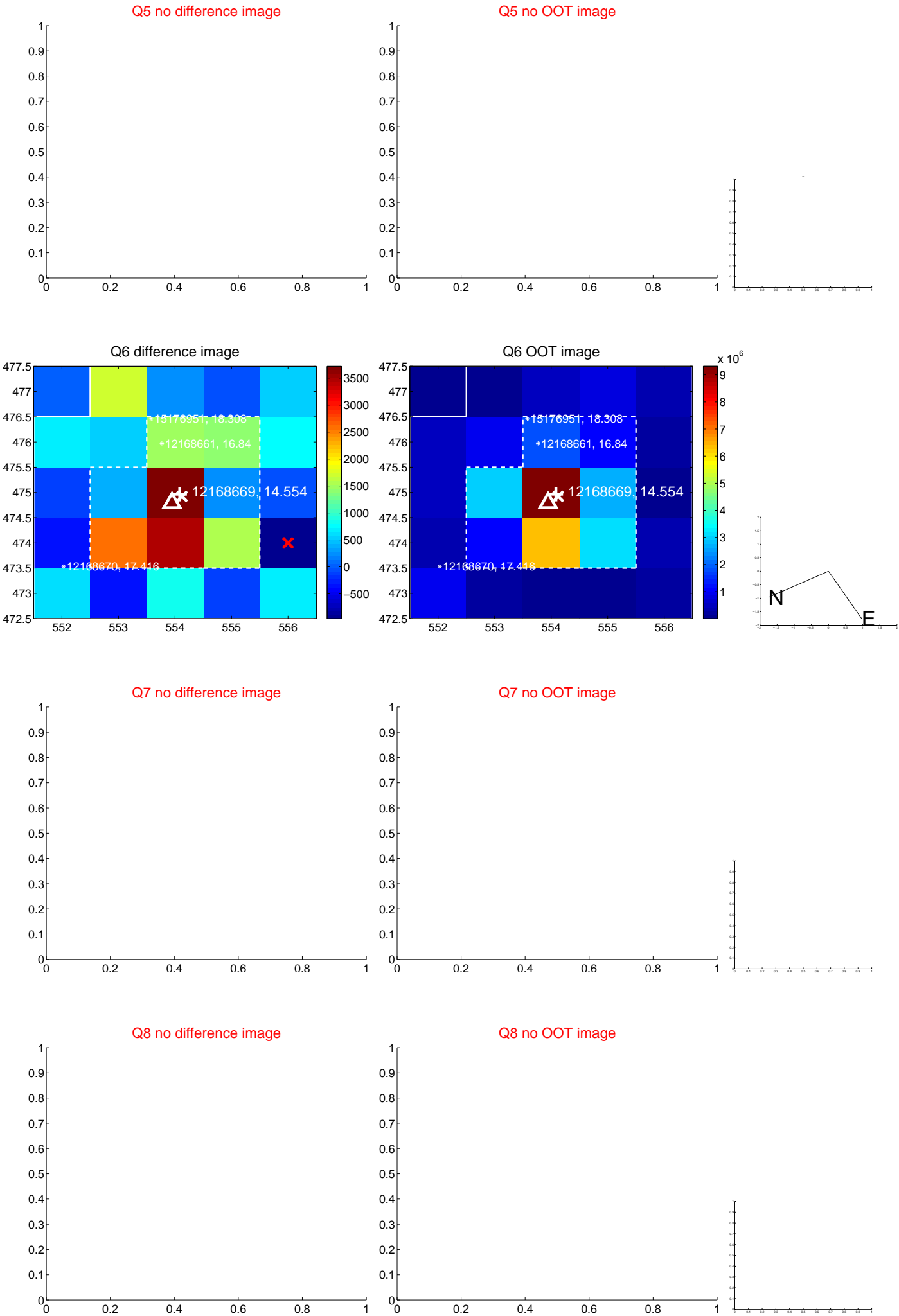


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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.

Q9 no difference image



Q9 no OOT image



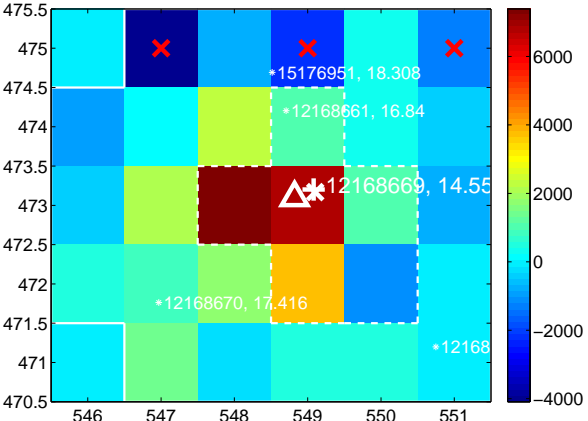
Q10 no difference image



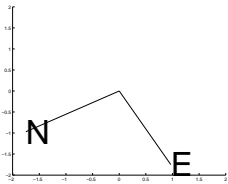
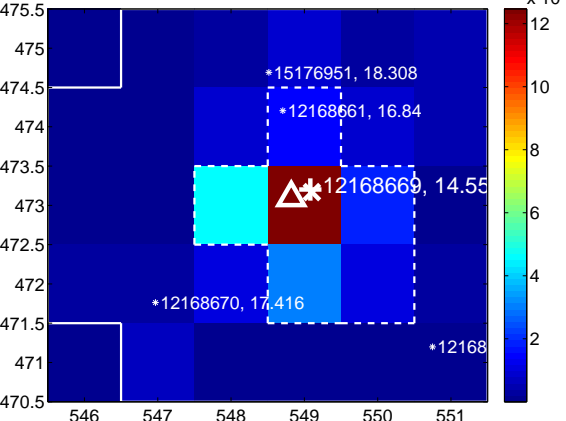
Q10 no OOT image



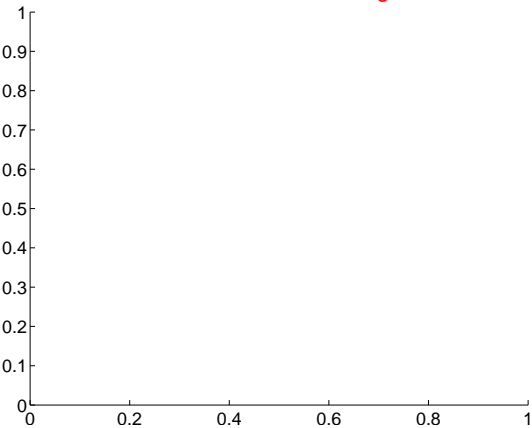
Q11 difference image



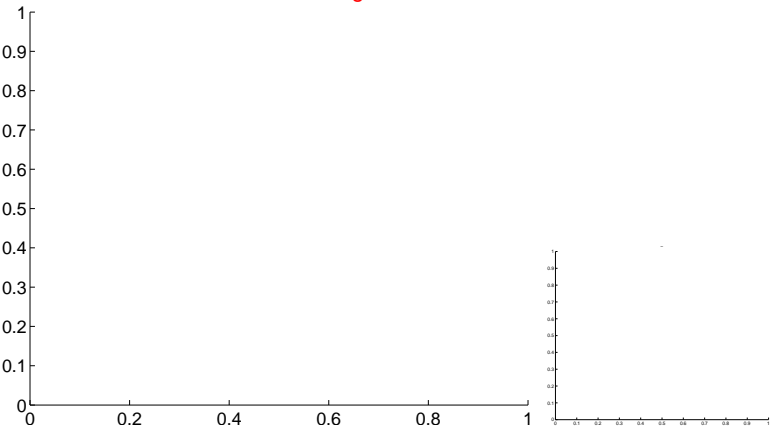
Q11 OOT image



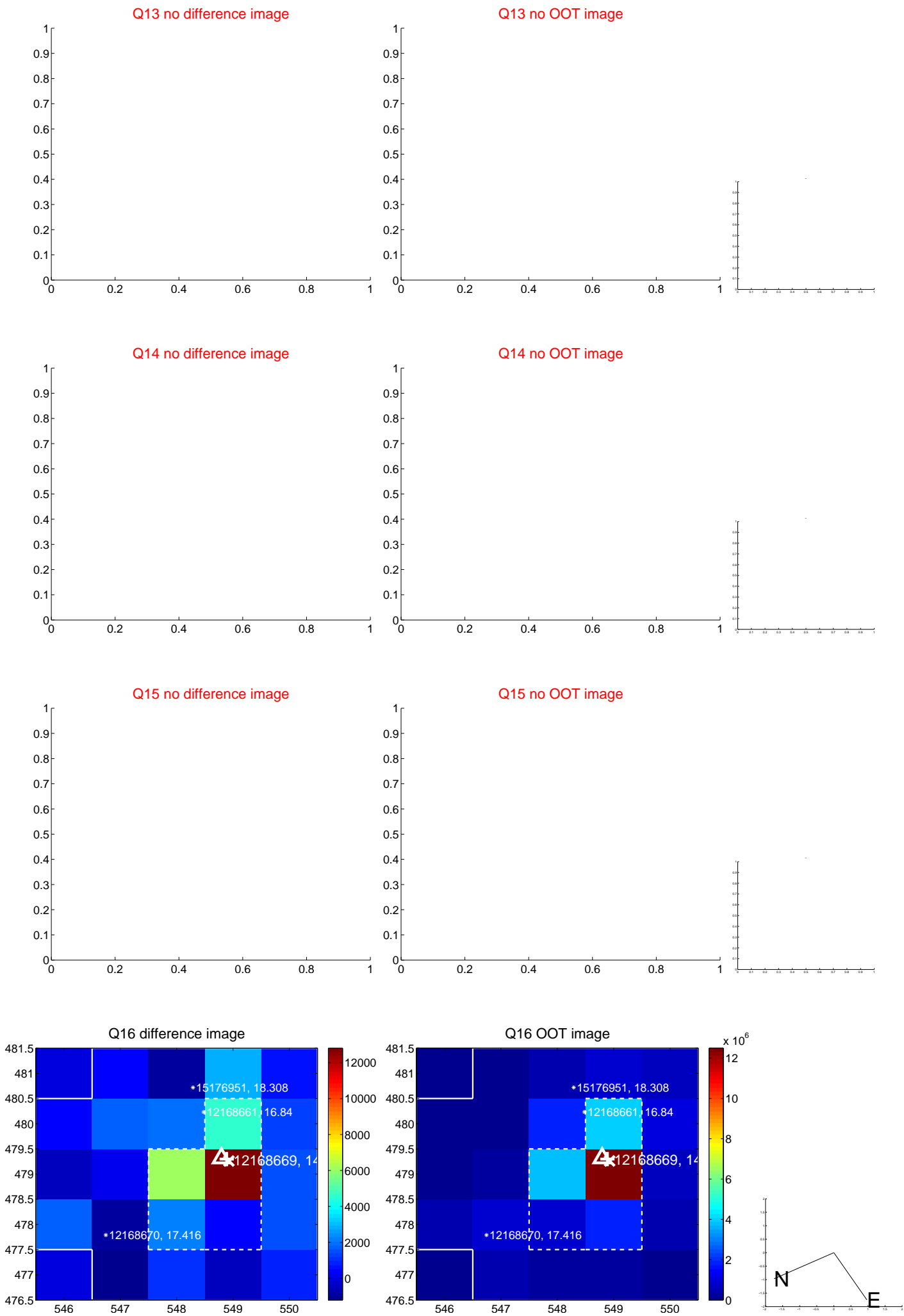
Q12 no difference image



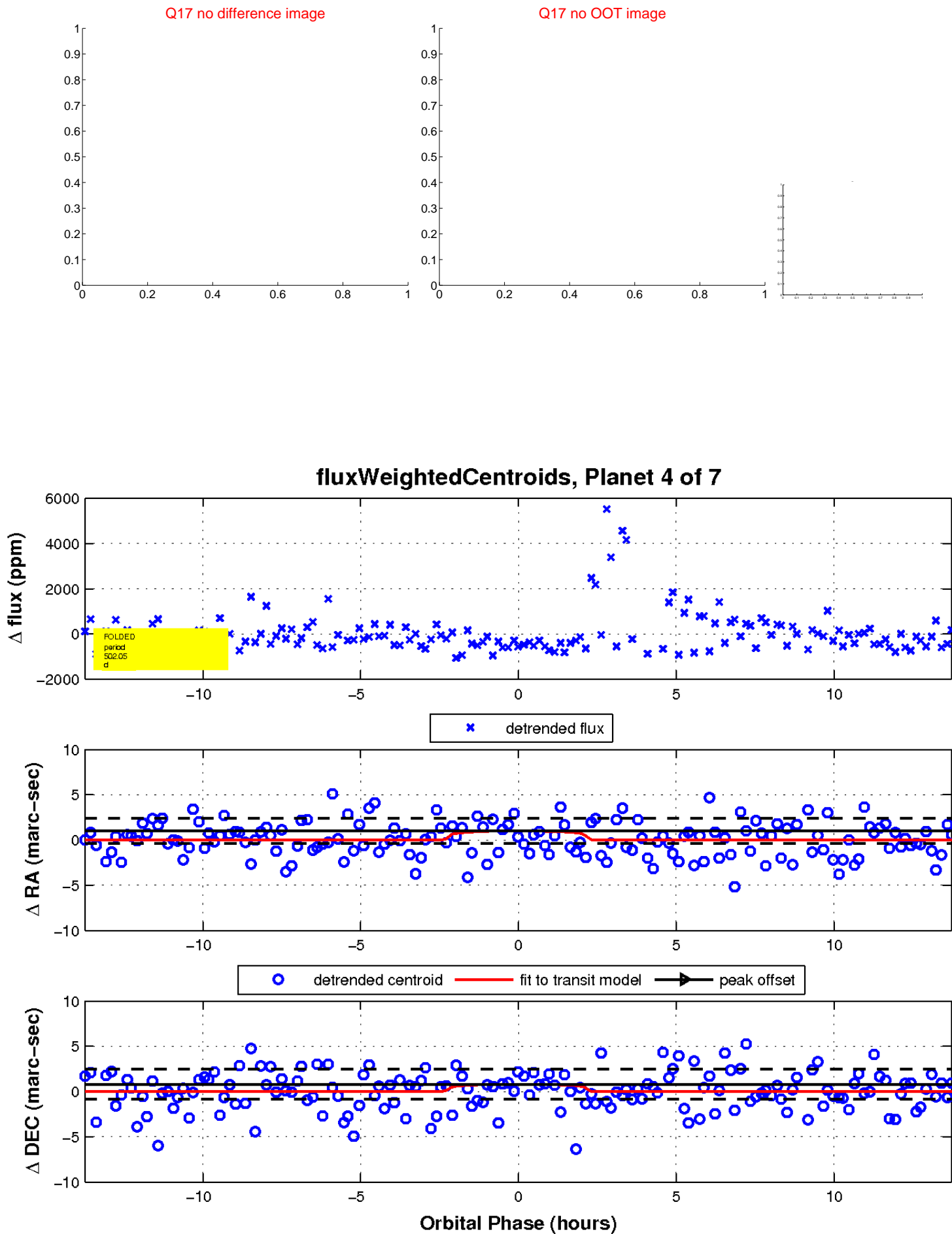
Q12 no OOT image



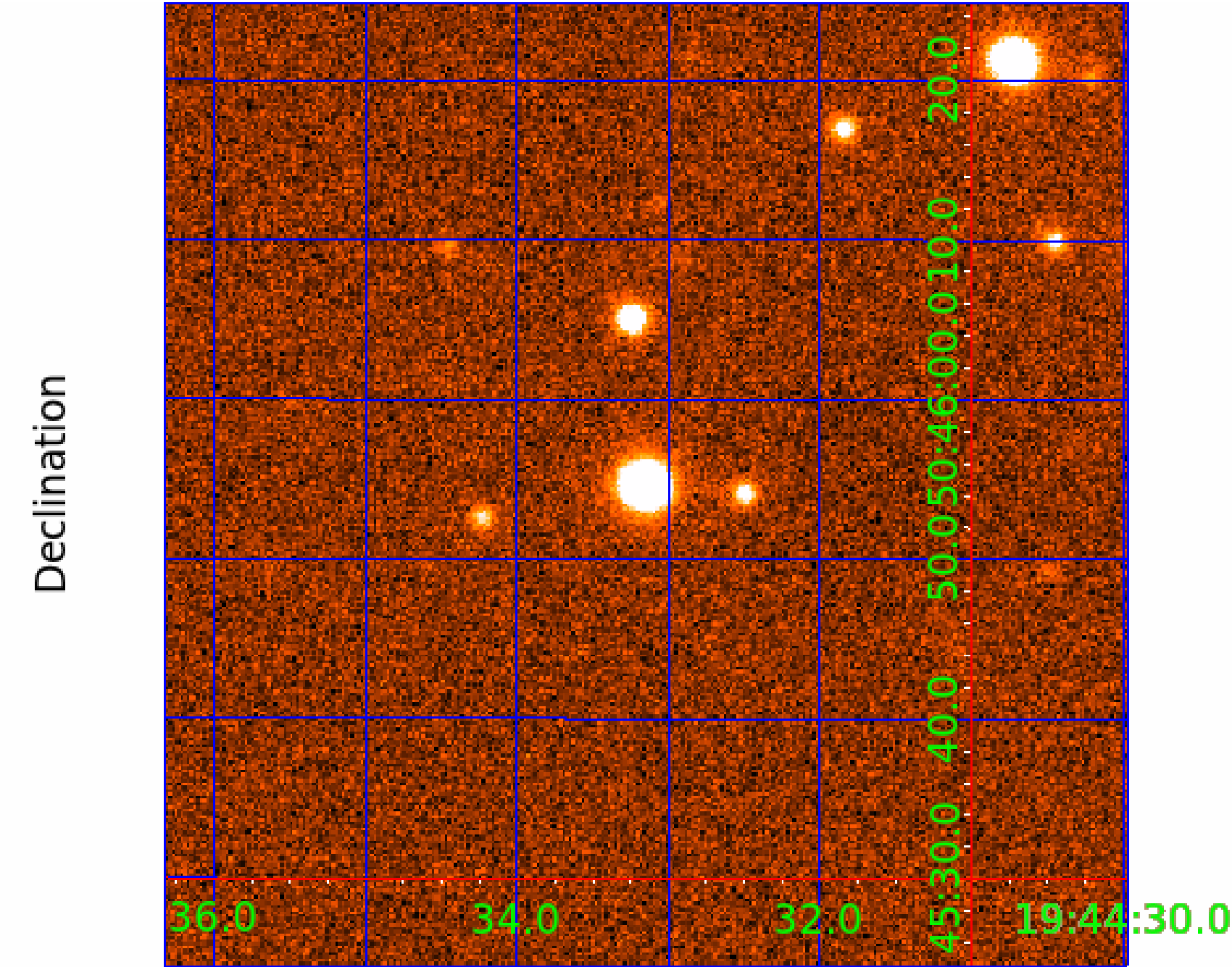
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image



KIC 012168669

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})
012168669-01	OBS	No	364.290849	365.667745	1279.2	9.977	14.8	9.3	0.81	5462	3.04	0.64
012168669-02	OBS	No	330.176704	259.892595	1050.2	5.816	11.1	8.6	0.81	5462	2.74	0.73
012168669-03	OBS	No	342.856615	251.663781	1366.6	5.853	11.4	8.7	0.81	5462	2.99	0.70
012168669-04	OBS	No	502.045471	543.711844	1082.5	4.609	11.3	7.0	0.81	5462	2.71	0.42
012168669-05	OBS	No	371.511881	285.035971	885.9	4.373	9.2	6.9	0.81	5462	2.54	0.62
012168669-06	OBS	No	481.447688	235.131862	1061.7	11.882	9.3	7.2	0.81	5462	2.67	0.44
012168669-07	OBS	No	498.540131	394.882681	1130.2	4.013	11.9	8.1	0.81	5462	2.88	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012168669-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
012168669-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV
012168669-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
012168669-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012168669-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

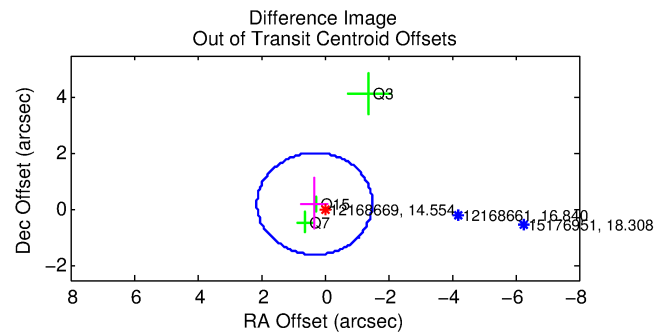
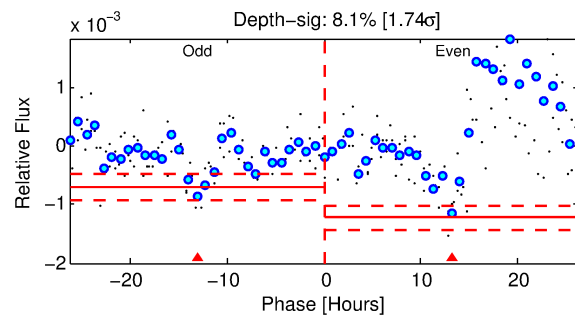
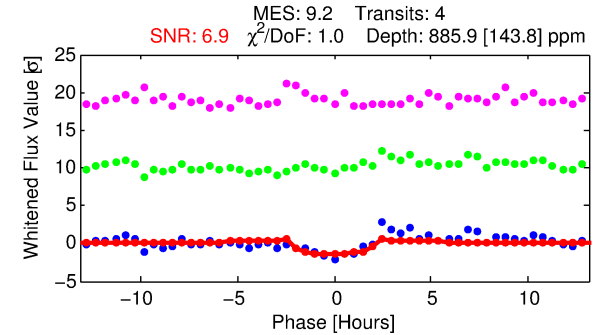
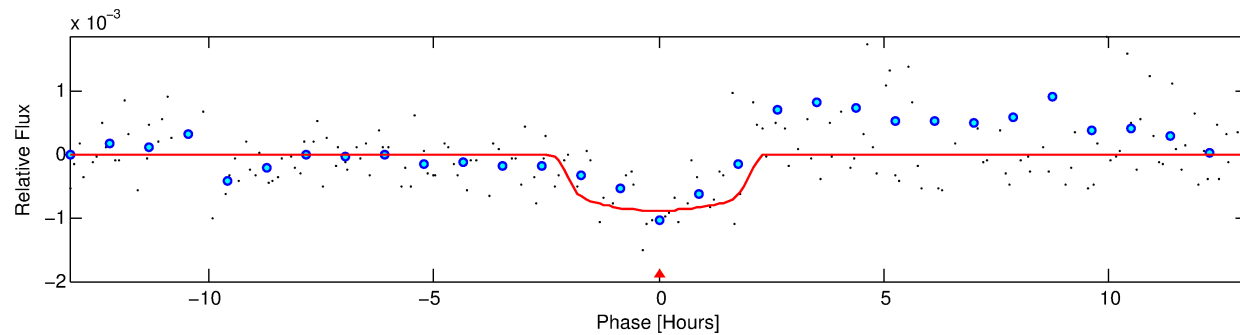
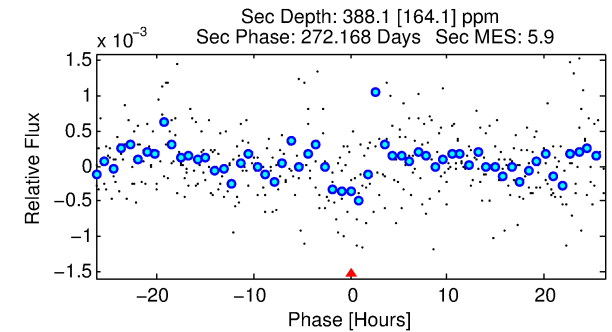
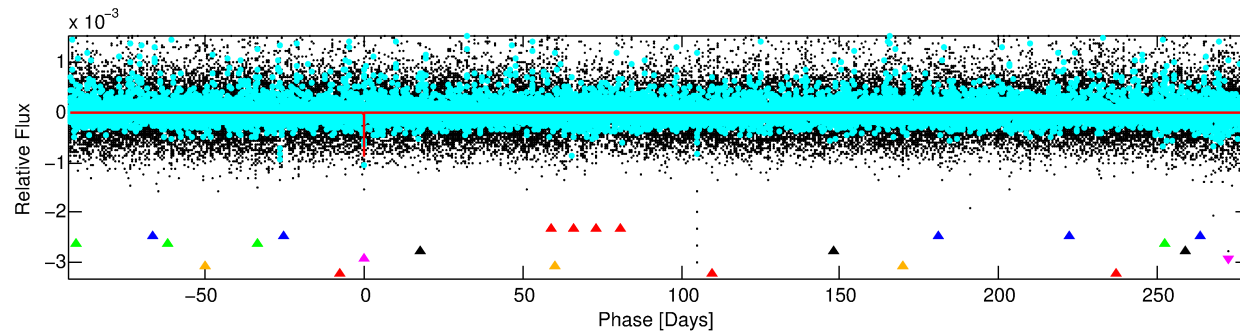
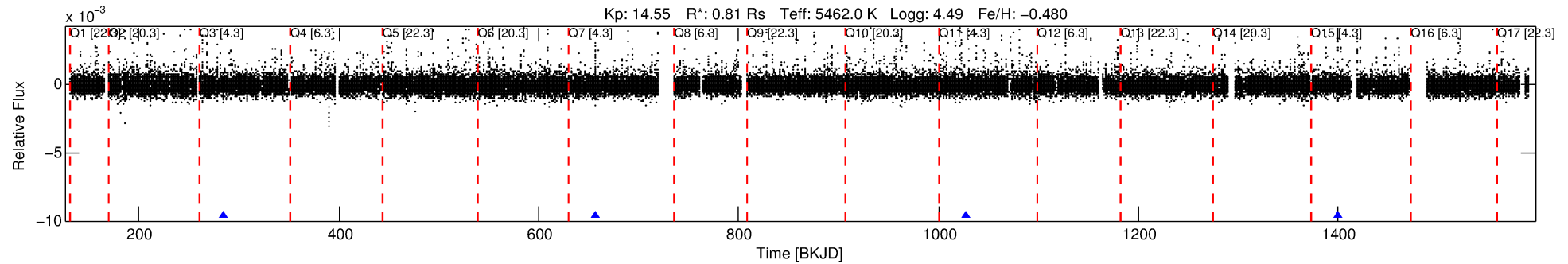
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012168669-05

No Significant Match Found

DV One-Page Summary

KIC: 12168669 Candidate: 5 of 7 Period: 371.512 d



DV Fit Results:

Period = 371.51188 [0.00480] d
Epoch = 285.0360 [0.0093] BKJD
Rp/R* = 0.0289 [0.0263]
a/R* = 502.75 [1945.86]
b = 0.68 [3.13]
Seff = 0.63 [0.17]
Teq = 227 [15] K
Rp = 2.54 [2.36] Re
a = 0.9104 [0.1430] AU
Ag = 27357.66 [51522.21] [0.53σ]
Teffp = 4508 [2109] K [2.03σ]

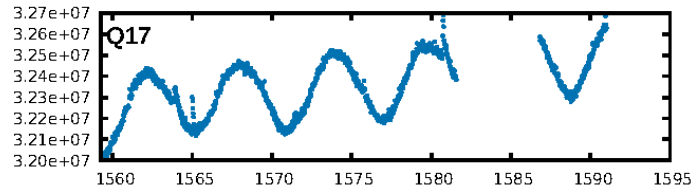
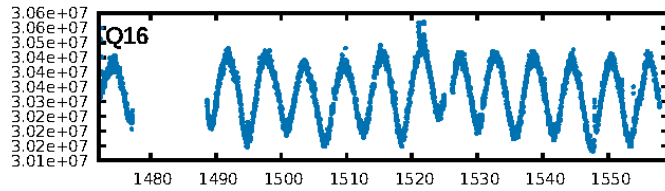
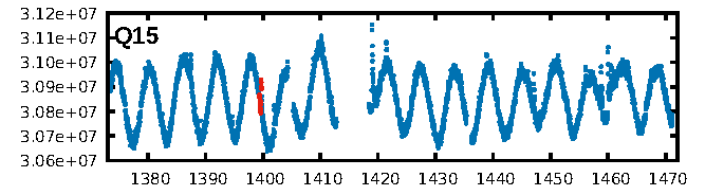
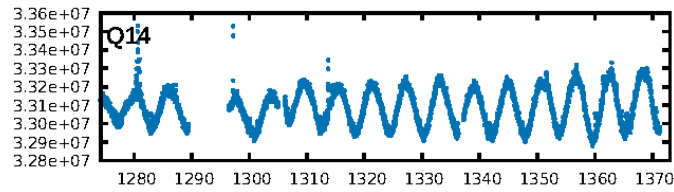
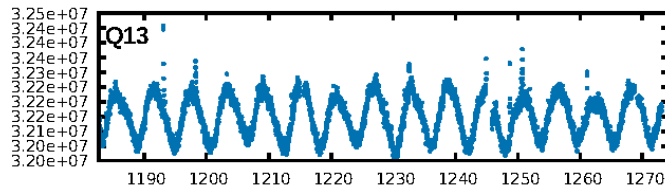
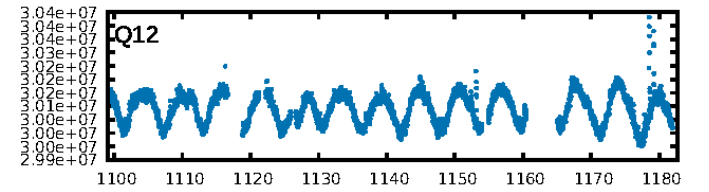
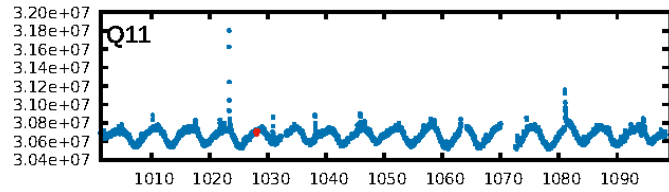
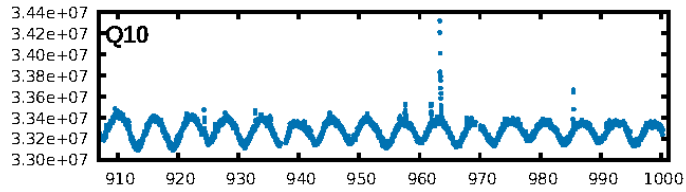
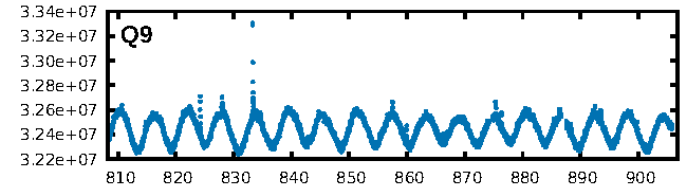
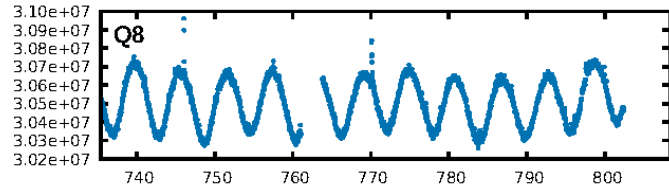
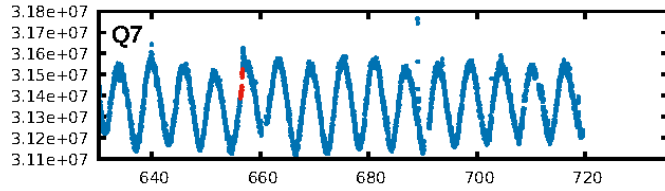
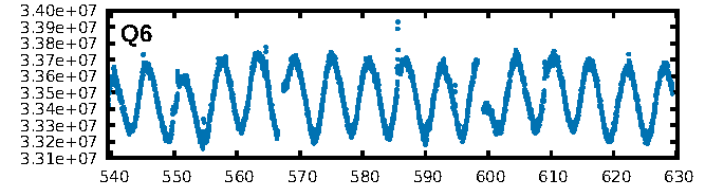
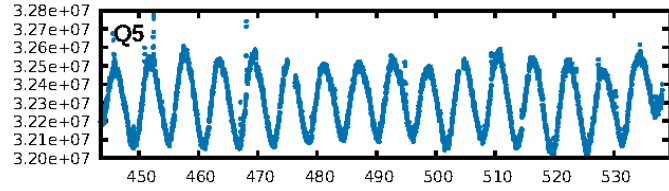
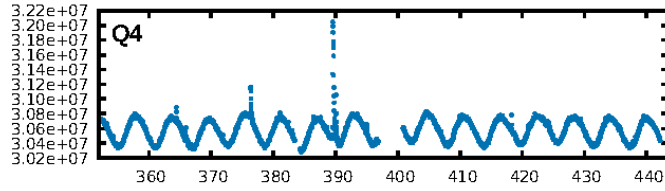
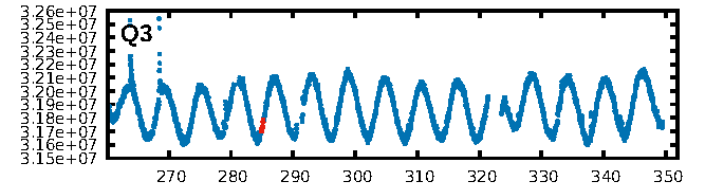
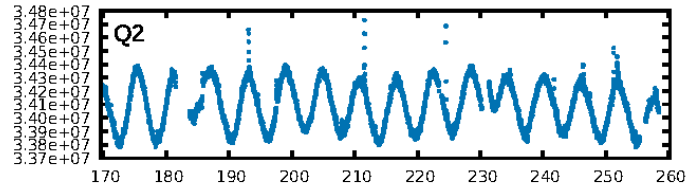
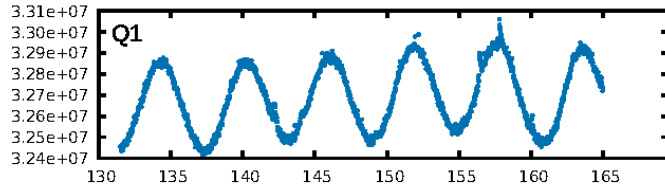
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.91σ]
LongPeriod-sig: 100.0% [208.39σ]
ModelChiSquare2-sig: 32.3%
ModelChiSquareGof-sig: 93.1%
Bootstrap-pfa: 3.96e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.2237
Centroid-sig: 30.5%
Centroid-so: 1.907 arcsec [1.38σ]
OotOffset-rm: 0.379 arcsec [0.63σ]
KicOffset-rm: 0.303 arcsec [0.38σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [4/4]

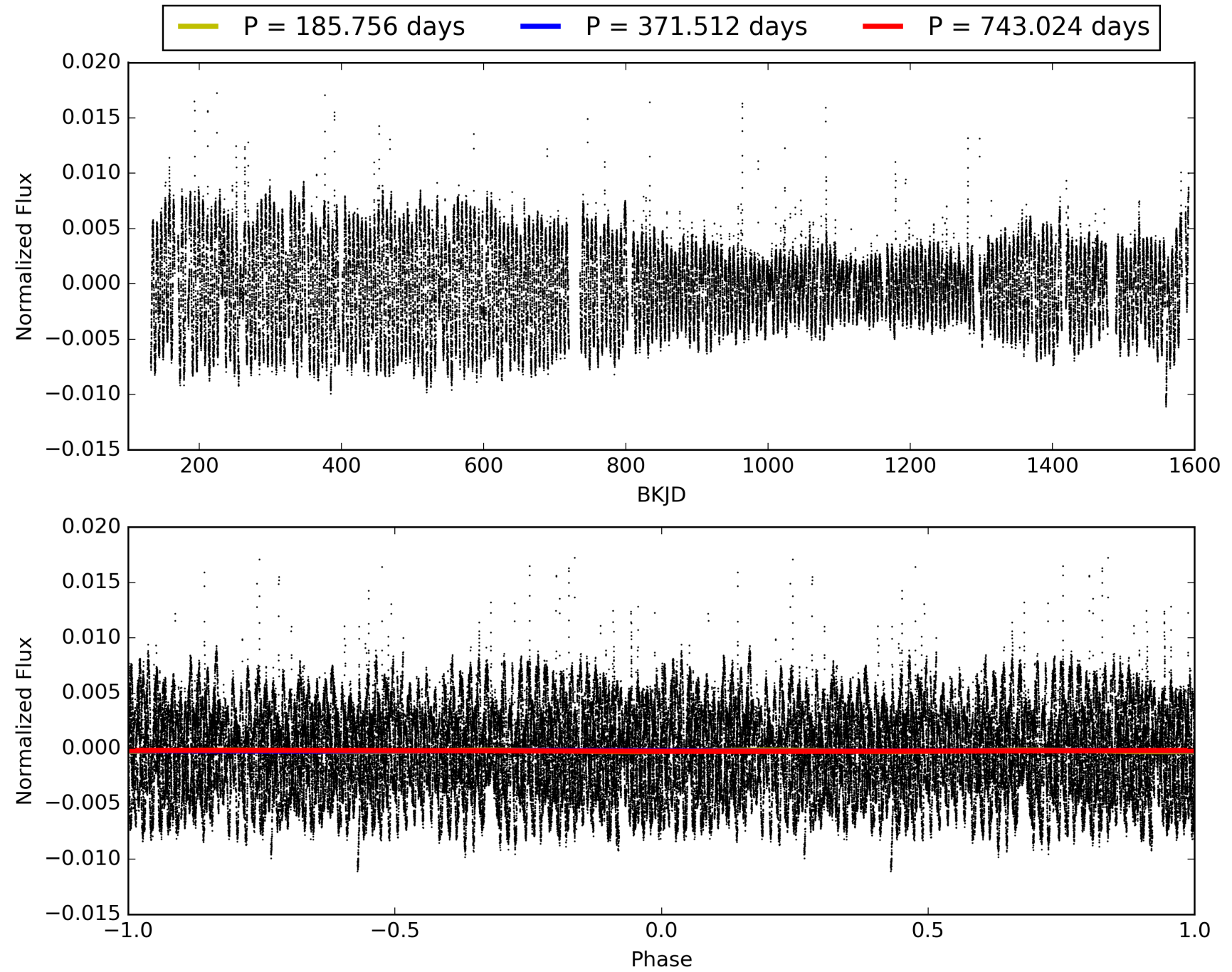
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:18 Z

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

TCE 012168669-05, PDC Light Curves

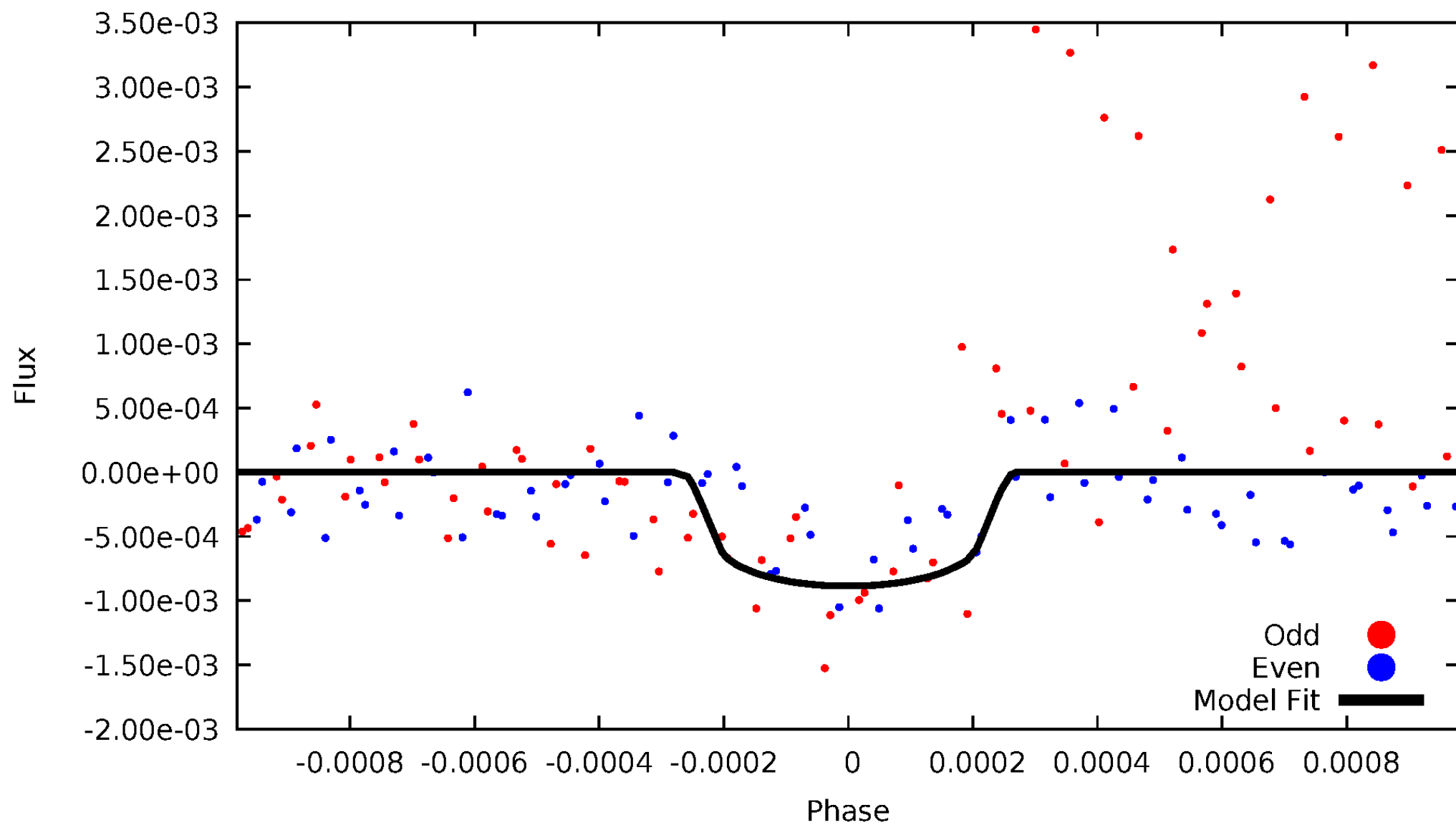


TCE 012168669-05



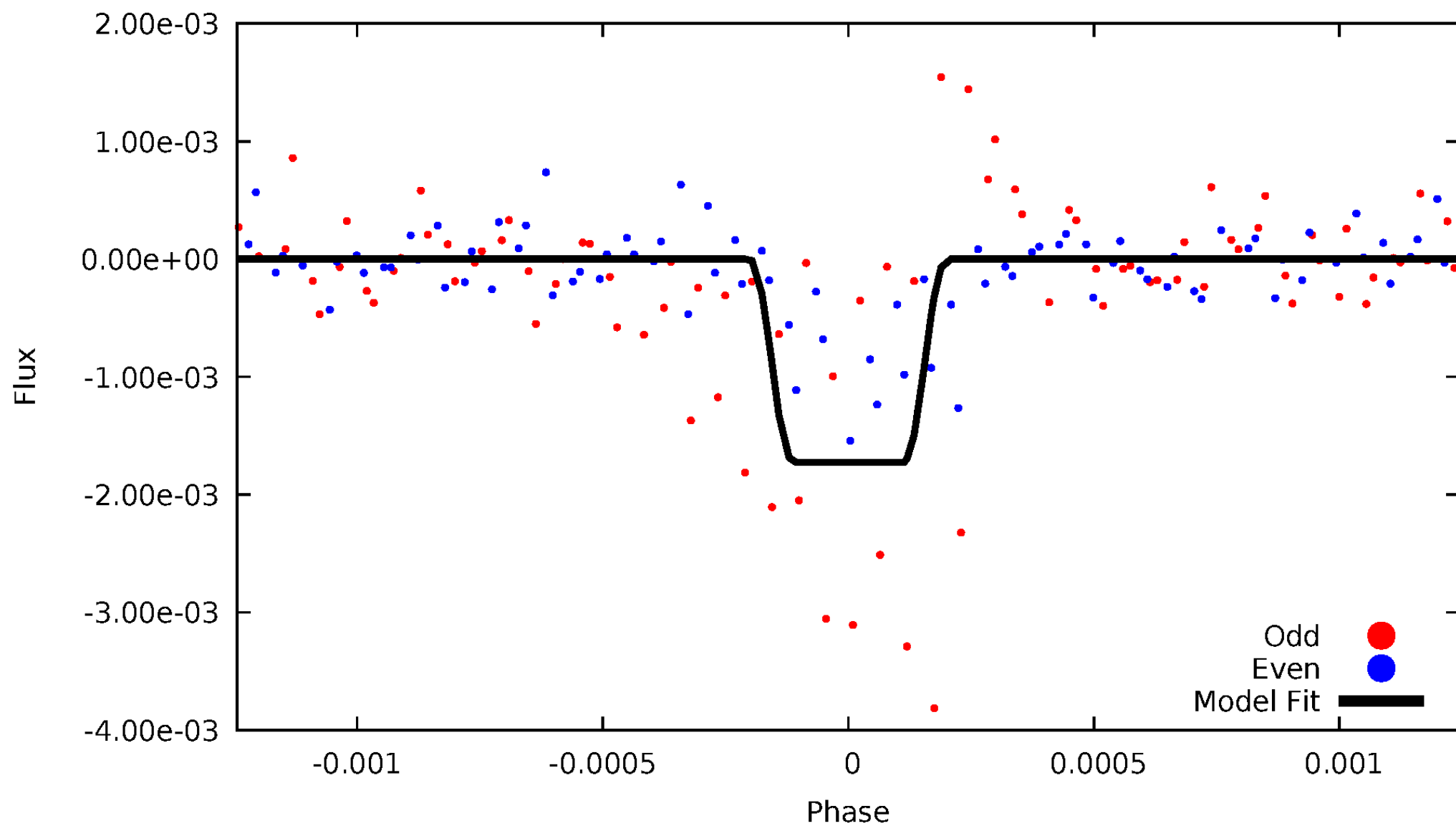
DV Odd/Even

TCE 012168669-05



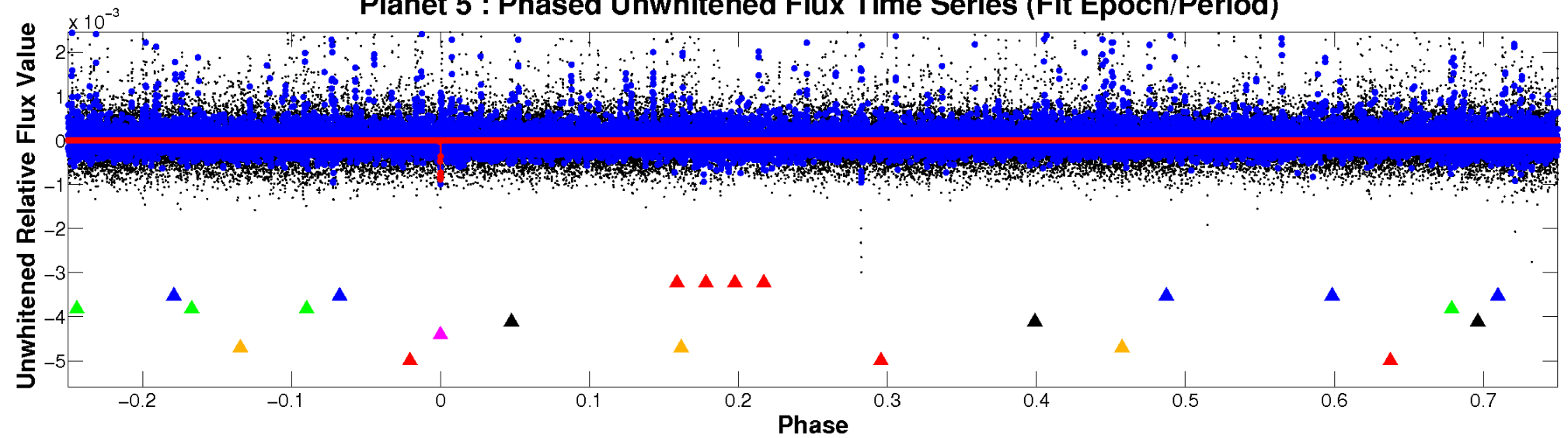
ALT Odd/Even

TCE 012168669-05

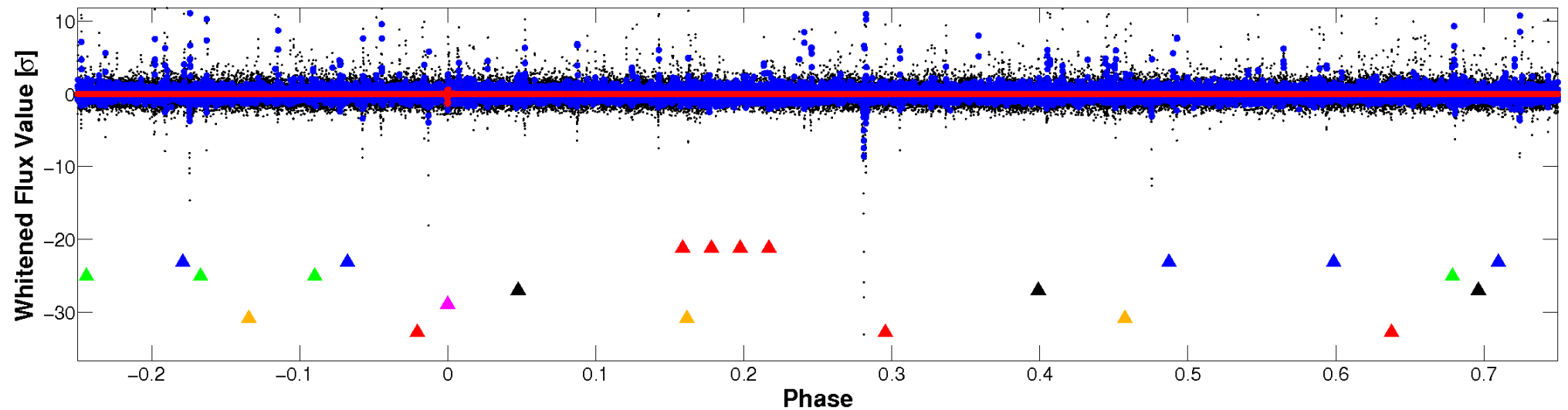


Non-Whitened Vs. Whitened Light Curve

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

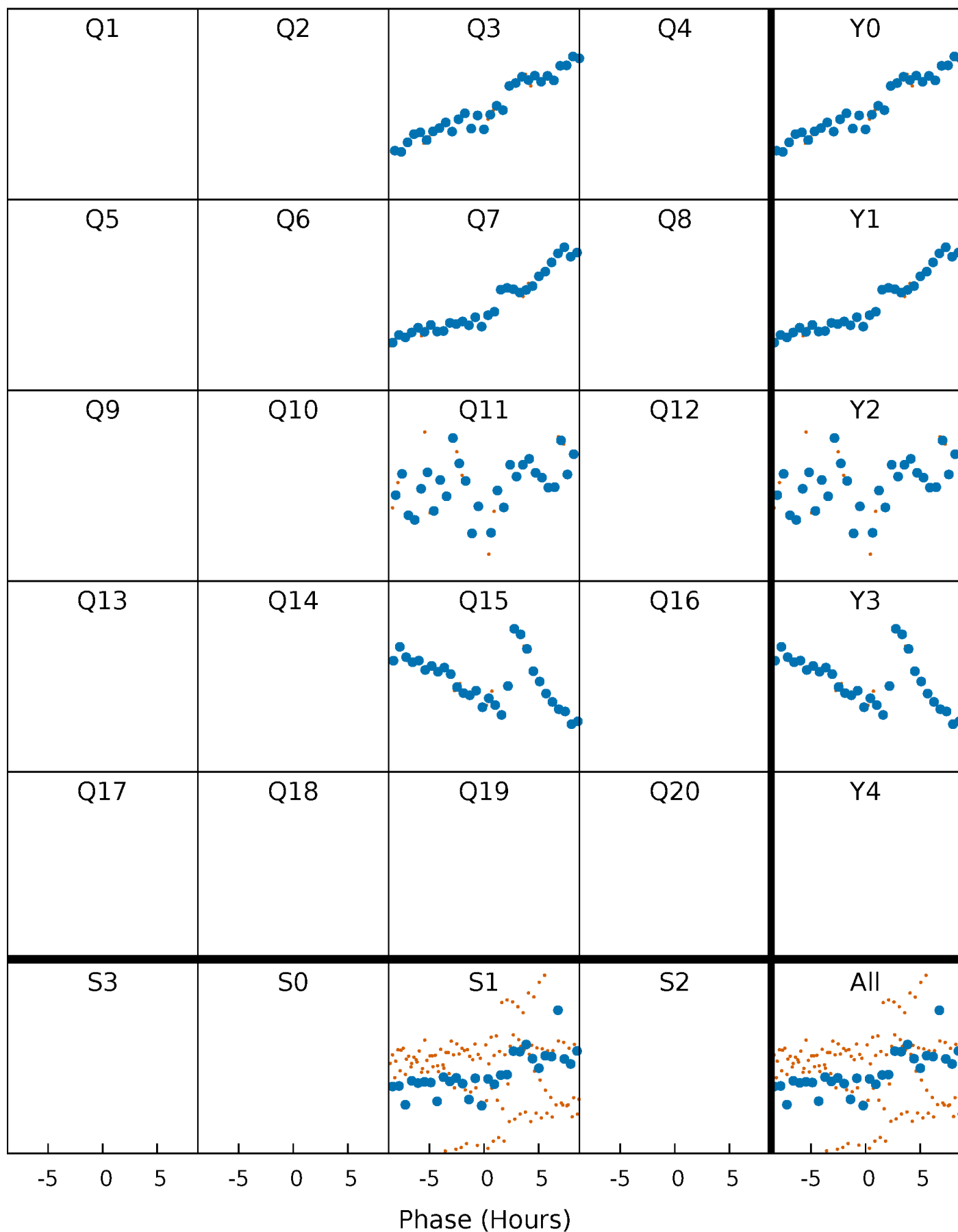


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



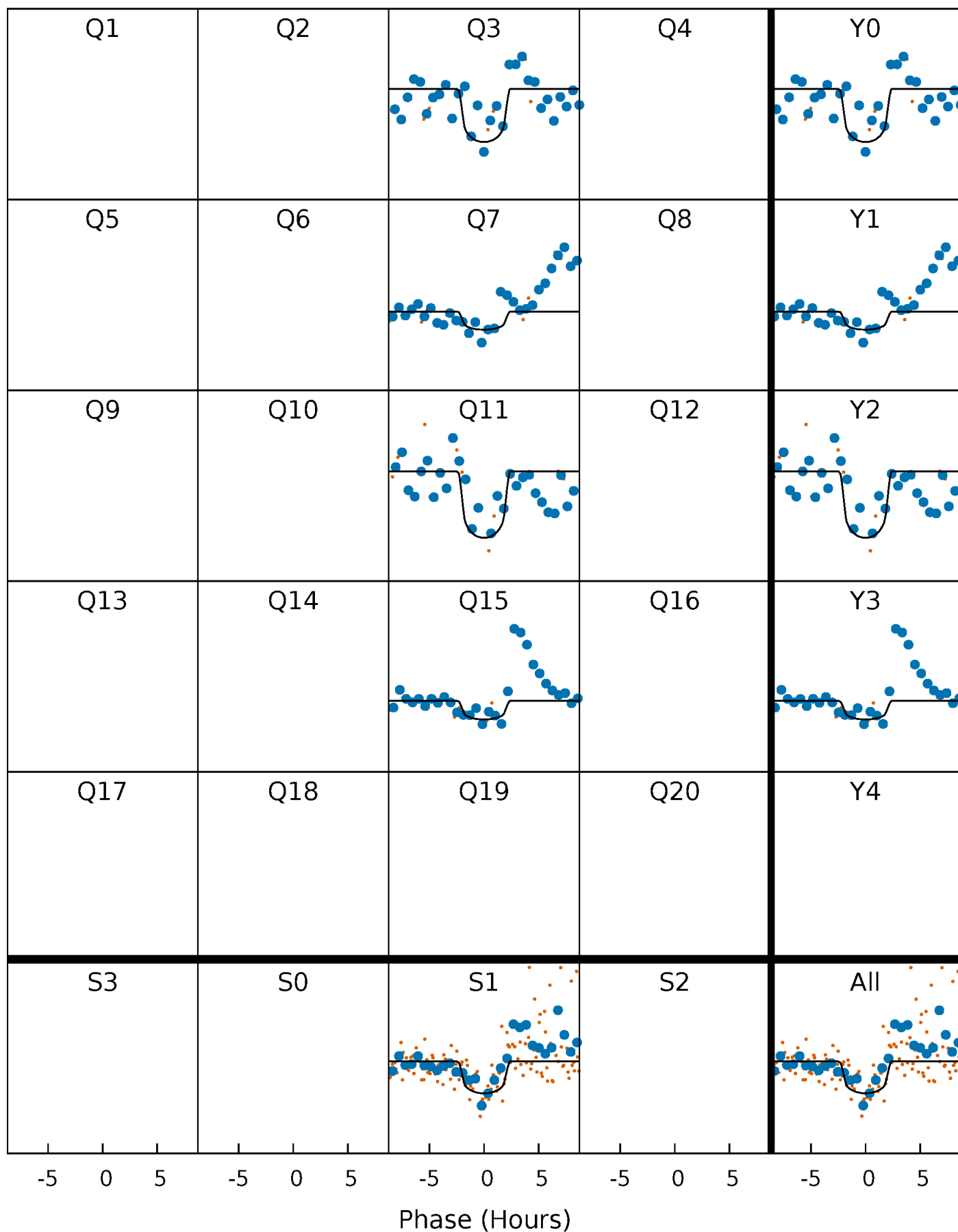
PDC Quarter-Phased Transit Curves

TCE 012168669-05 $P=371.511881$ Days $T_0=285.035971$ (BKJD)



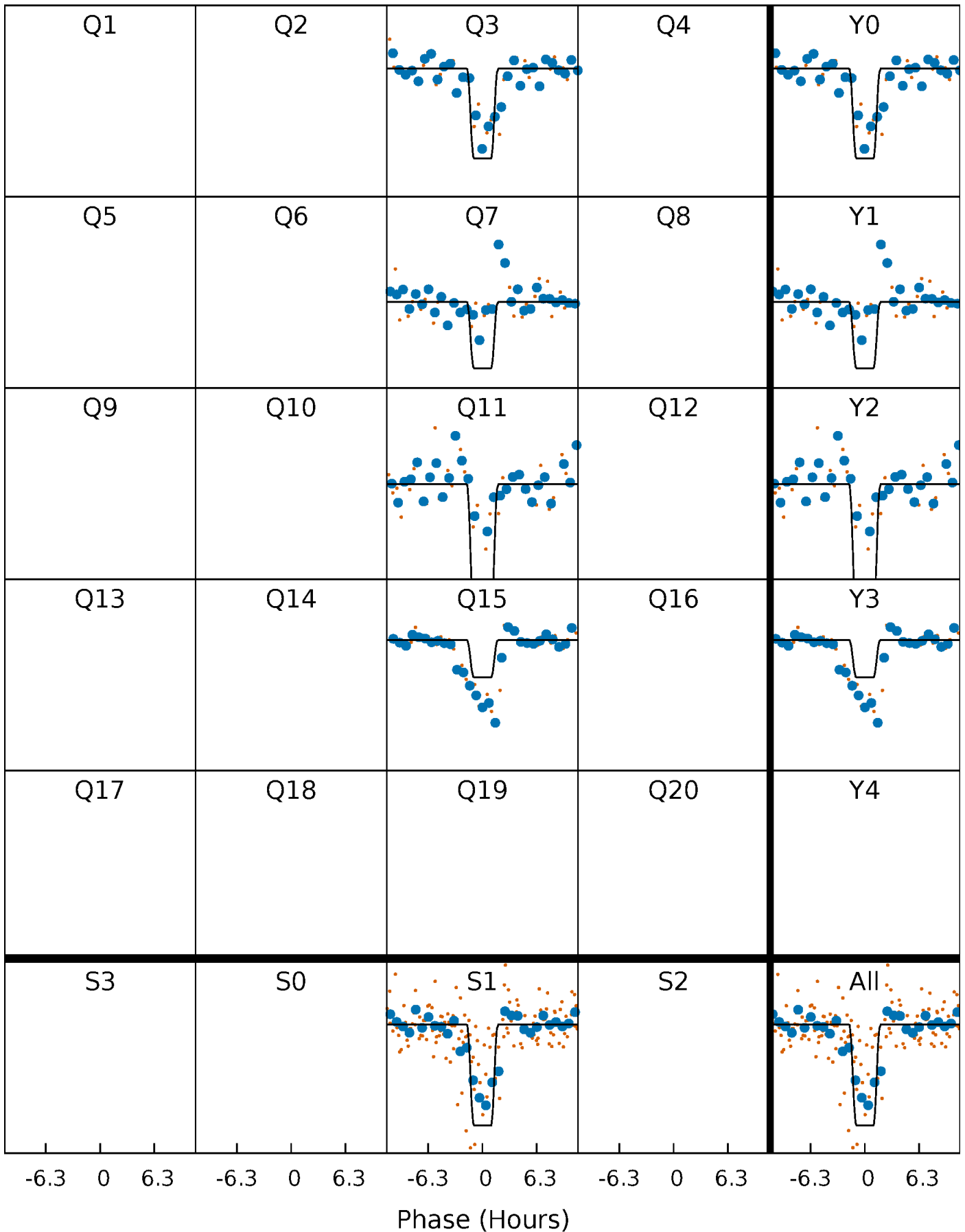
DV Quarter-Phased Transit Curves

TCE 012168669-05 $P=371.511881$ Days $T_0=285.035971$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

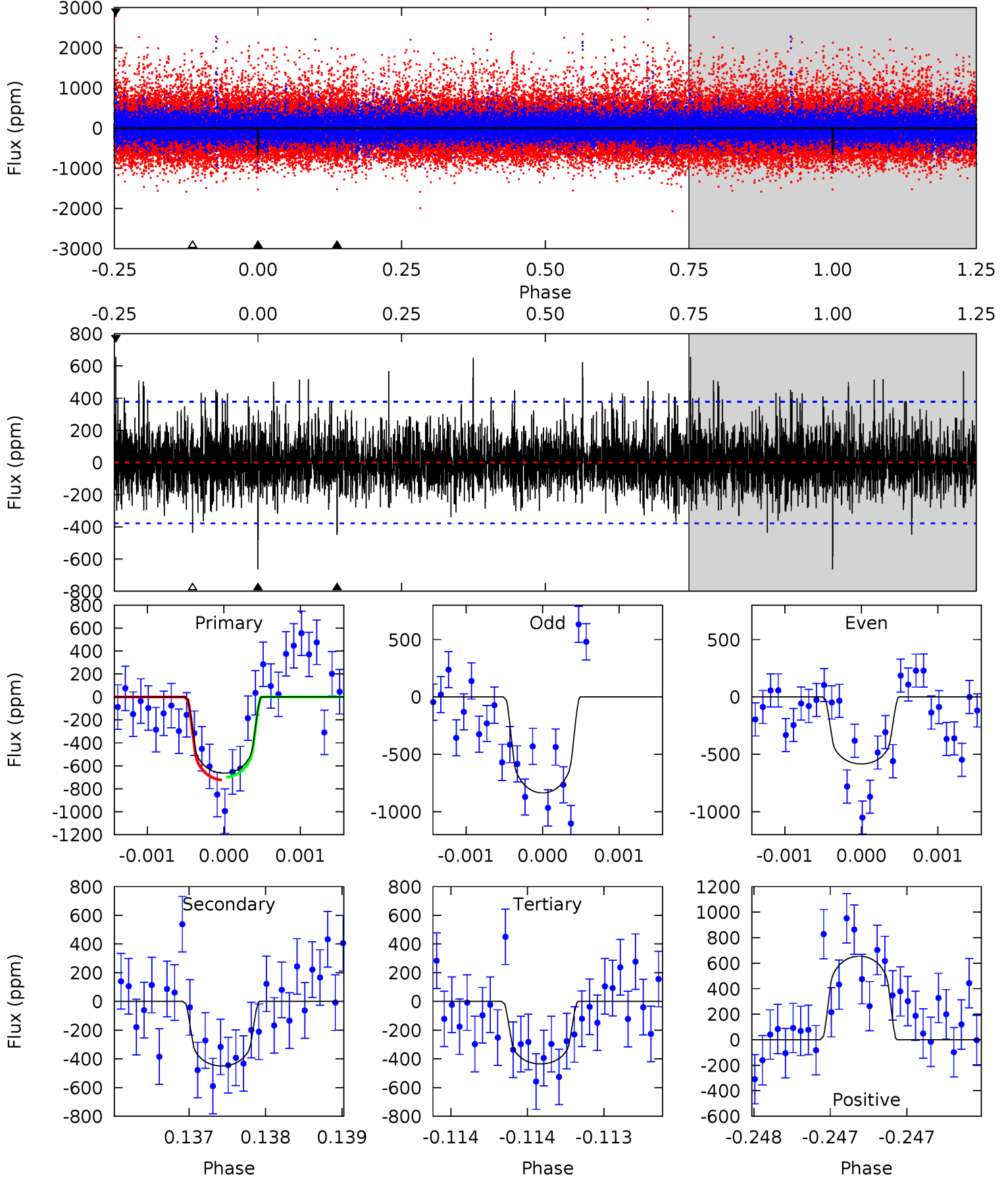
TCE 012168669-05 $P=371.516177$ Days $T_0=285.029206$ (BKJD)



DV Model-Shift Uniqueness Test

012168669-05, P = 371.511881 Days, E = 285.035971 Days

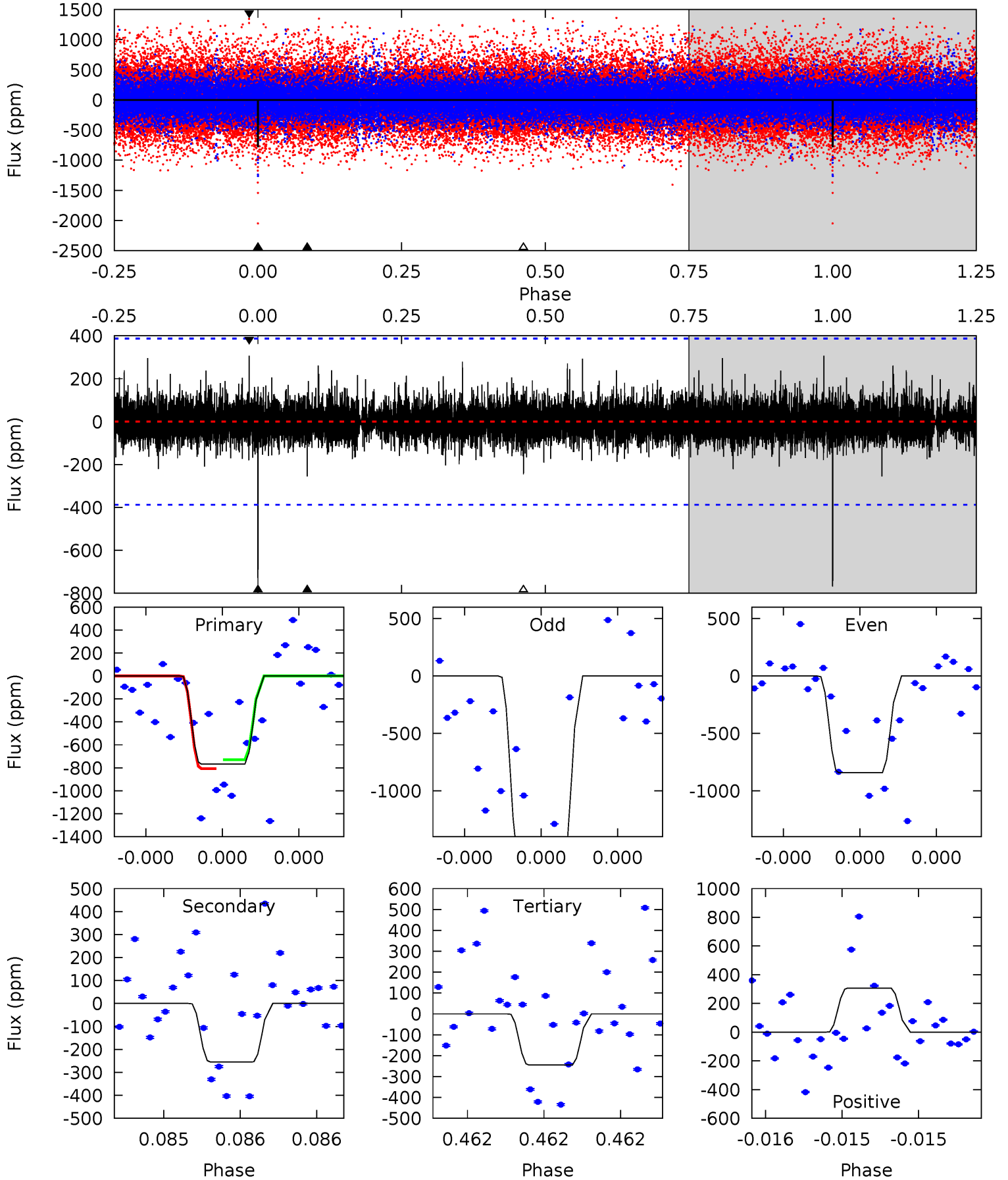
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.76	6.61	6.40	9.63	5.56	3.46	1.79	3.36	0.14	0.20	-3.02	1.54	0.99	0.50	0.18



Alt Model-Shift Uniqueness Test

012168669-05, P = 371.516177 Days, E = 285.029206 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	3.69	3.55	4.45	5.62	3.55	0.80	7.58	6.68	0.14	-0.76	6.24	1.54	0.29	0.56



Stellar Parameters For KIC 012168669

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5462^{+162}_{-162}	$4.488^{+0.125}_{-0.137}$	$-0.480^{+0.350}_{-0.300}$	$0.806^{+0.141}_{-0.115}$	$0.728^{+0.112}_{-0.045}$	$1.961^{+1.029}_{-0.672}$
	+3%/-3%	+3%/-3%	+73%/-62%	+17%/-14%	+15%/-6%	+52%/-34%
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 012168669-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-449 ± 68	$3.04^{+2.10}_{-1.83}$	317^{+18}_{-16}	4472^{+2318}_{-761}	$22253^{+126293}_{-14535}$
Alt.	-255 ± 69	$3.86^{+2.15}_{-2.14}$	317^{+17}_{-19}	3724^{+1351}_{-554}	8096^{+30500}_{-5068}

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 $A_{obs} \gg 1.0$

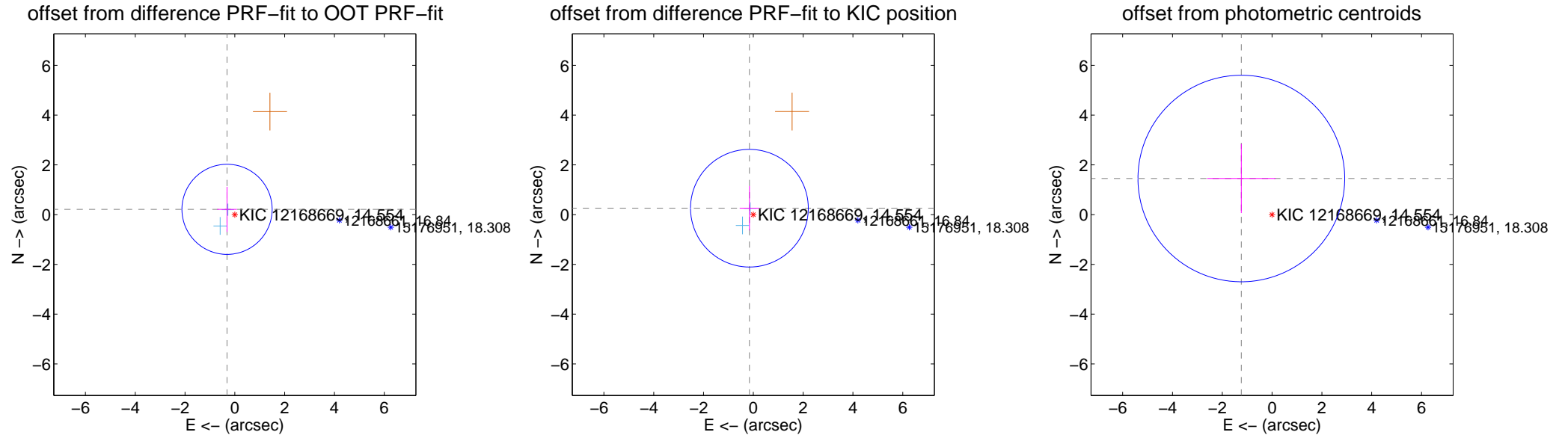
DV Centroid Data

Supplemental centroid analysis for 012168669-05. Kepler magnitude: 14.55. Transit SNR 6.89

There are 2 quarters with good PRF difference image offsets

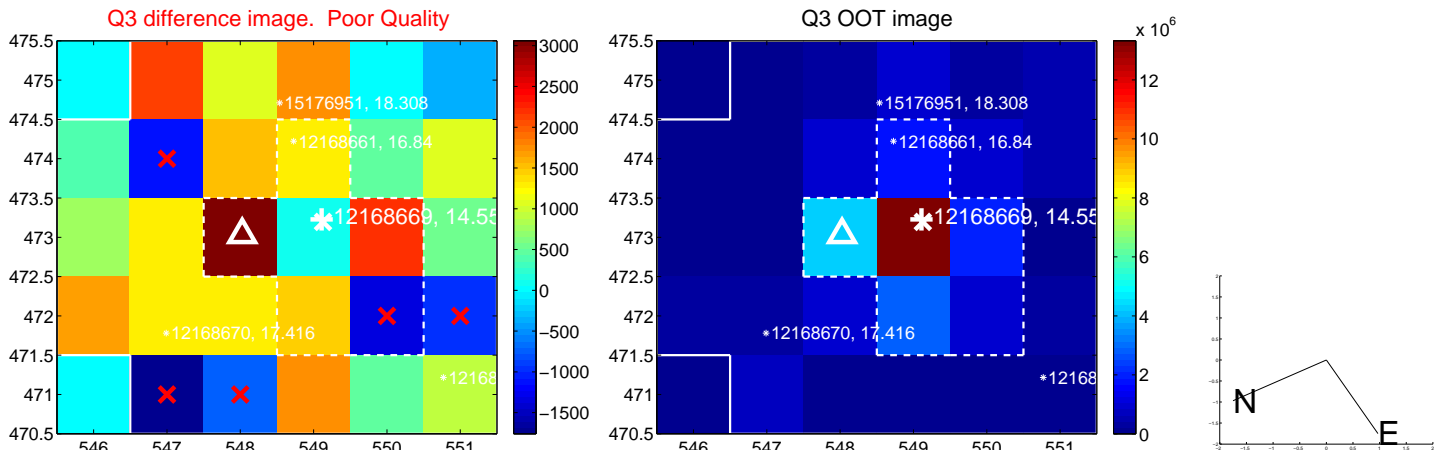
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.379 ± 0.604	0.63	0.314 ± 0.393	0.213 ± 0.906
PRF-fit source offset from KIC position	0.303 ± 0.788	0.38	0.158 ± 0.391	0.259 ± 0.892
photometric centroid source offset	1.91 ± 1.38	1.38	1.24 ± 1.38	1.45 ± 1.39



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

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



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

Q5 no difference image



Q5 no OOT image



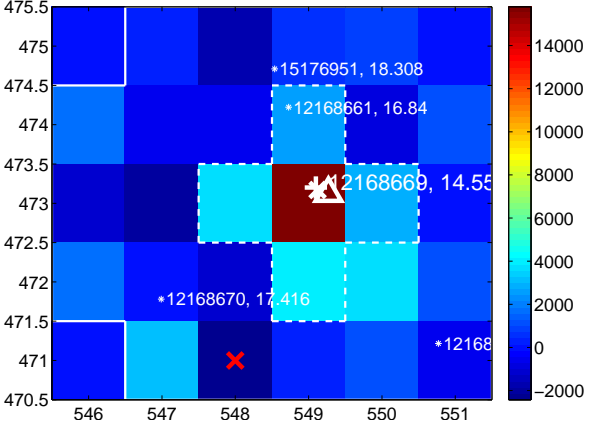
Q6 no difference image



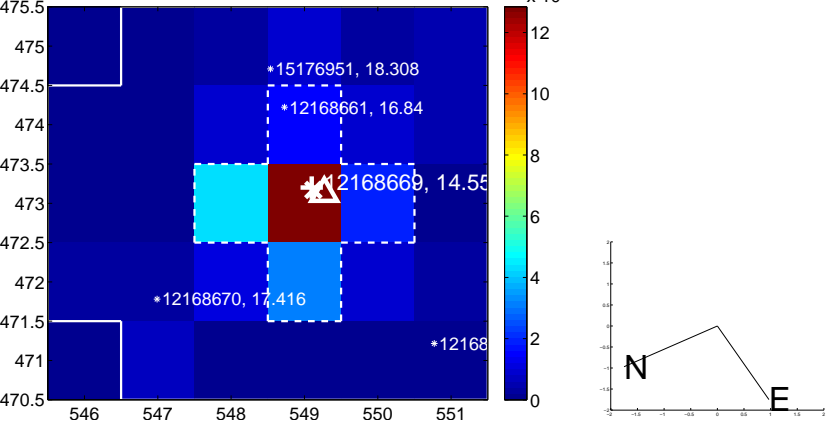
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



Q9 no OOT image



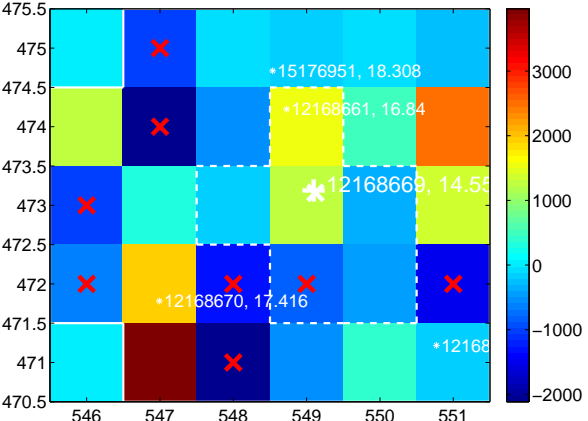
Q10 no difference image



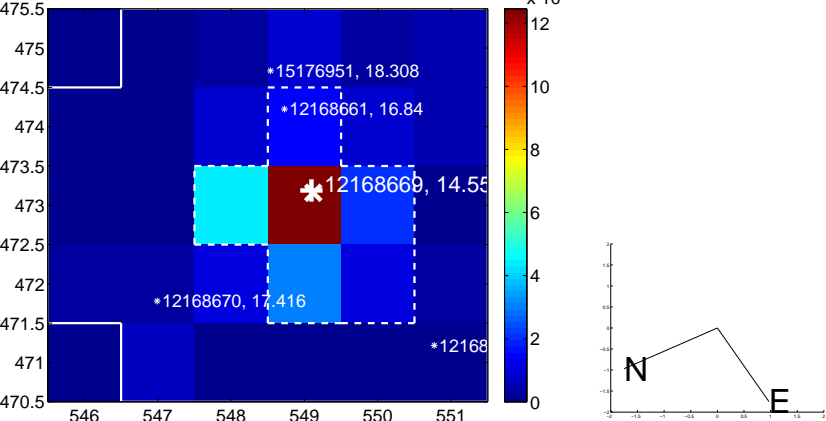
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

Q13 no difference image



Q13 no OOT image



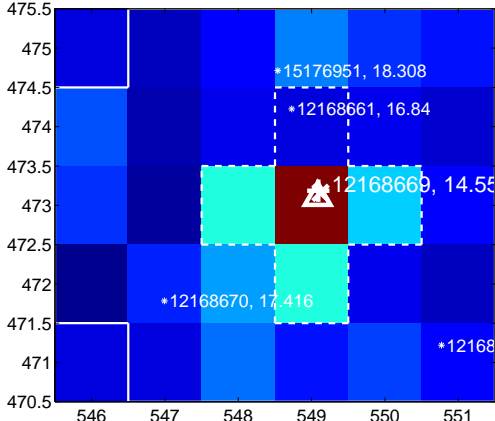
Q14 no difference image



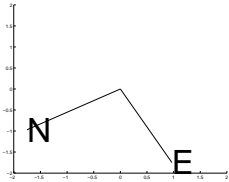
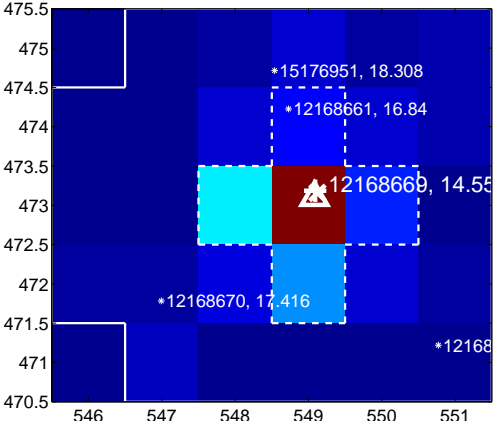
Q14 no OOT image



Q15 difference image



Q15 OOT image



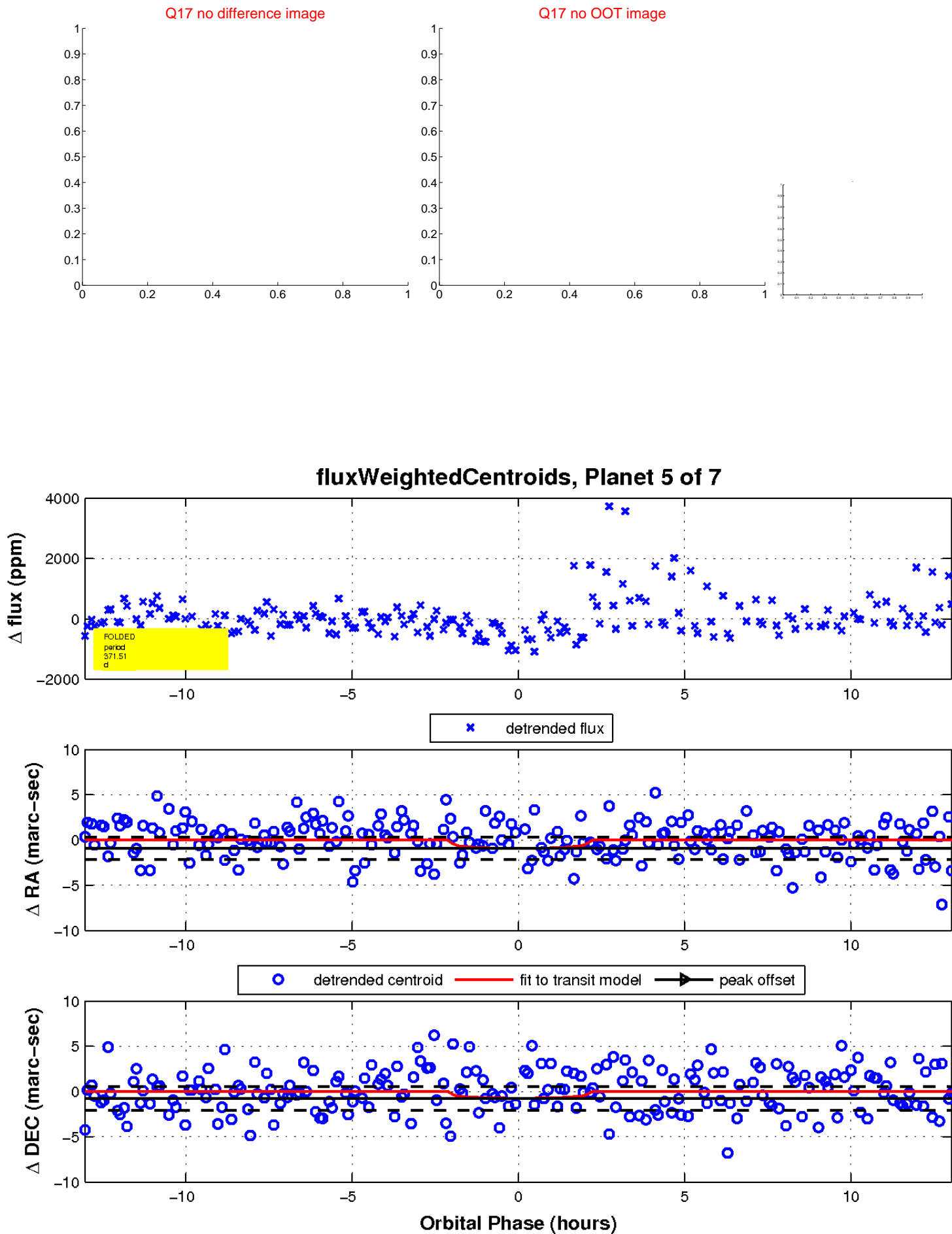
Q16 no difference image



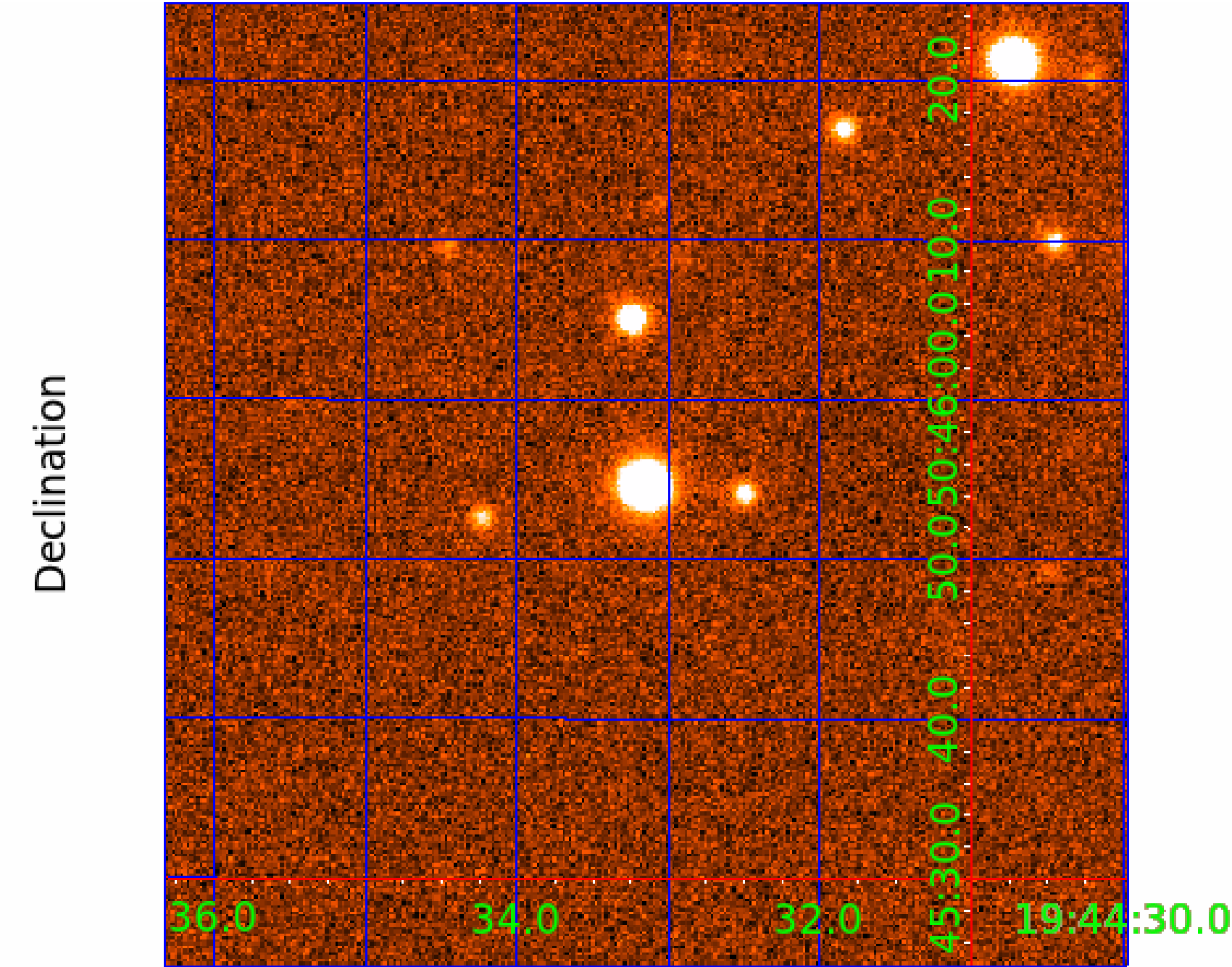
Q16 no OOT image



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



UKIRT Image



KIC 012168669

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})
012168669-01	OBS	No	364.290849	365.667745	1279.2	9.977	14.8	9.3	0.81	5462	3.04	0.64
012168669-02	OBS	No	330.176704	259.892595	1050.2	5.816	11.1	8.6	0.81	5462	2.74	0.73
012168669-03	OBS	No	342.856615	251.663781	1366.6	5.853	11.4	8.7	0.81	5462	2.99	0.70
012168669-04	OBS	No	502.045471	543.711844	1082.5	4.609	11.3	7.0	0.81	5462	2.71	0.42
012168669-05	OBS	No	371.511881	285.035971	885.9	4.373	9.2	6.9	0.81	5462	2.54	0.62
012168669-06	OBS	No	481.447688	235.131862	1061.7	11.882	9.3	7.2	0.81	5462	2.67	0.44
012168669-07	OBS	No	498.540131	394.882681	1130.2	4.013	11.9	8.1	0.81	5462	2.88	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012168669-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
012168669-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV
012168669-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
012168669-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012168669-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

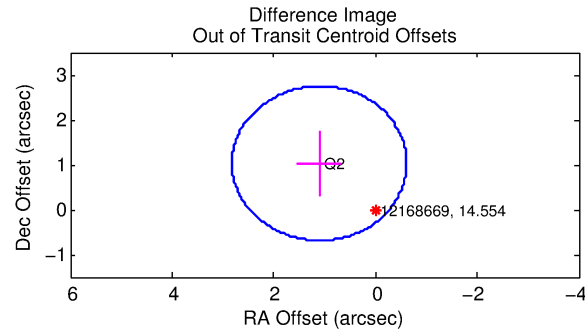
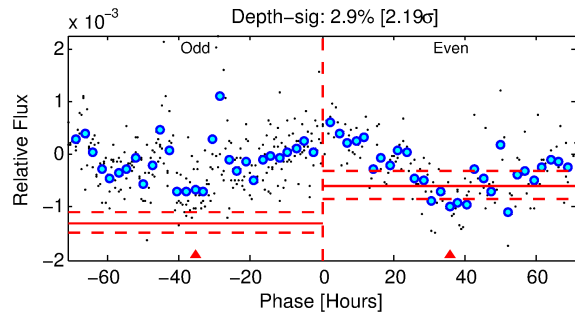
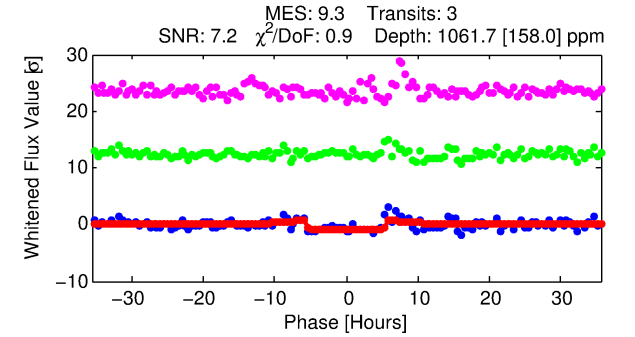
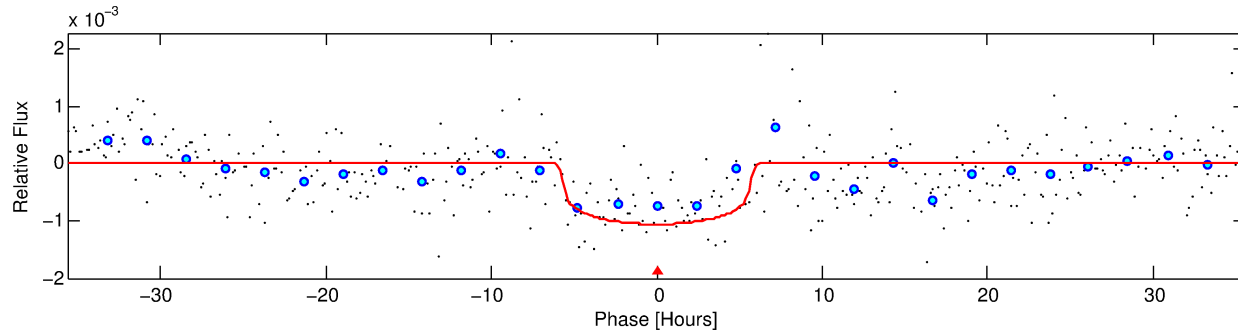
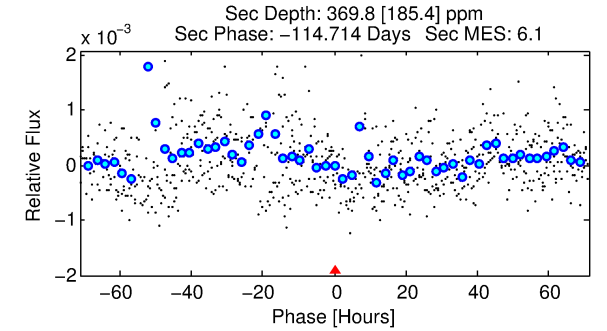
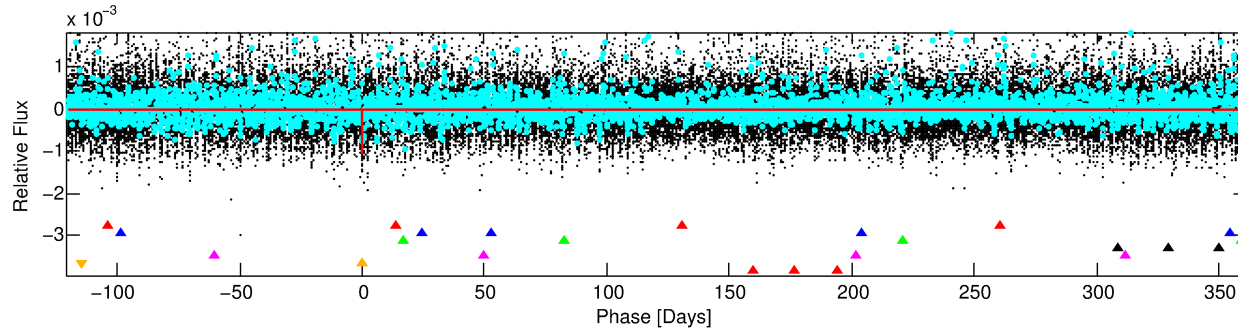
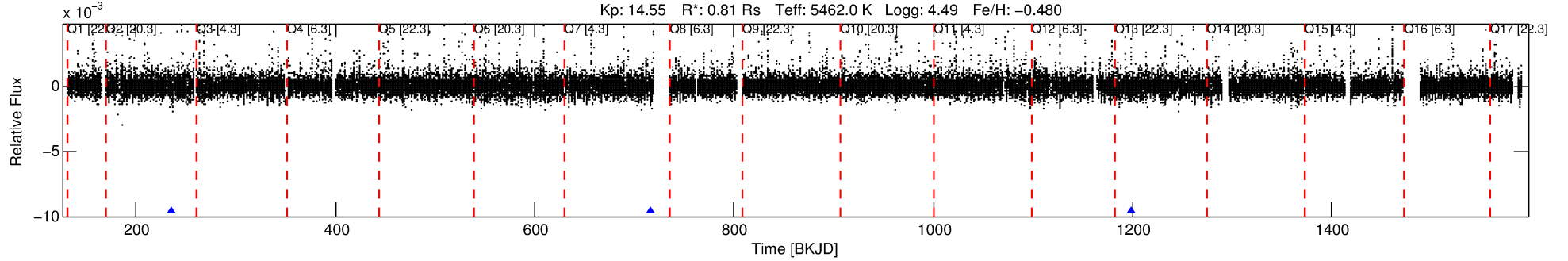
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012168669-06

No Significant Match Found

DV One-Page Summary

KIC: 12168669 Candidate: 6 of 7 Period: 481.448 d



DV Fit Results:

Period = 481.44769 [0.00872] d
Epoch = 235.1319 [0.0127] BKJD
Rp/R* = 0.0303 [0.0113]
a/R* = 285.00 [433.32]
b = 0.46 [2.60]
Seff = 0.44 [0.12]
Teq = 208 [14] K
Rp = 2.67 [1.09] Re
a = 1.0821 [0.1699] AU
Ag = 33523.36 [31121.03] [1.08] σ
Teffp = 4351 [984] K [4.21] σ

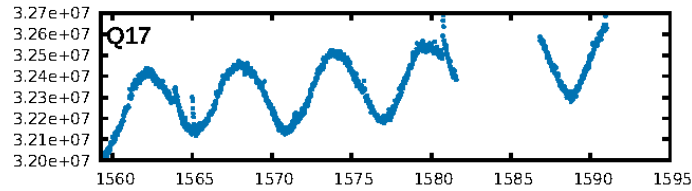
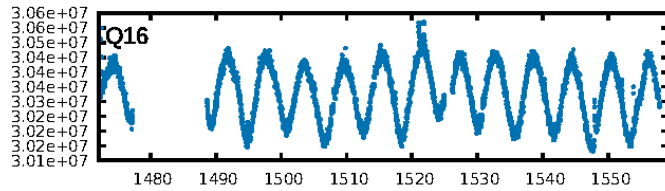
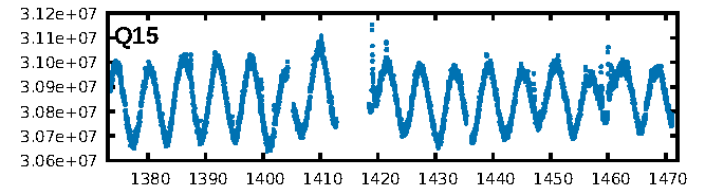
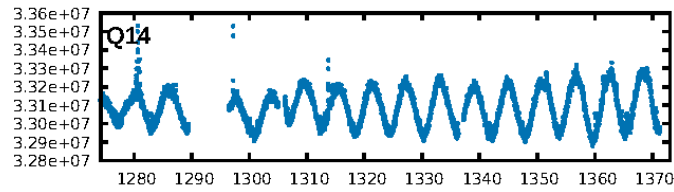
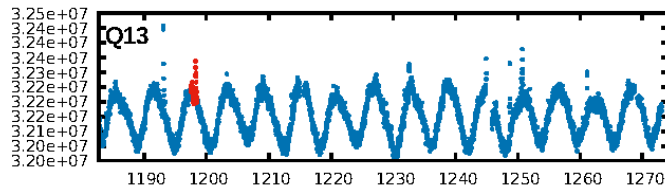
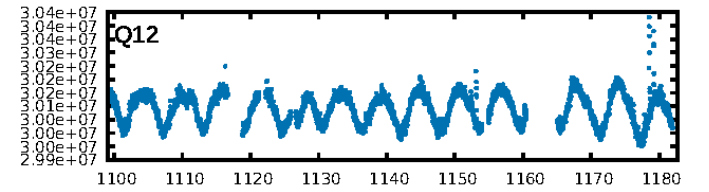
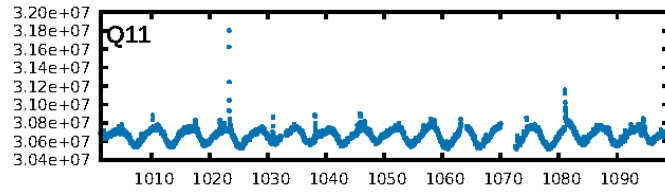
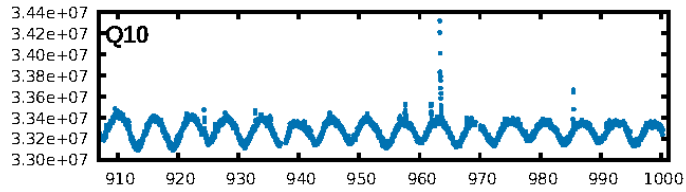
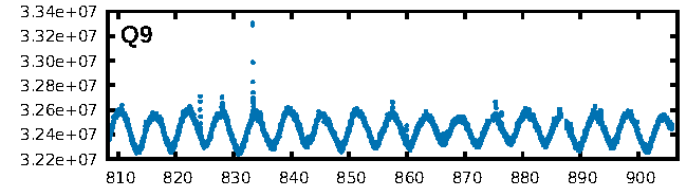
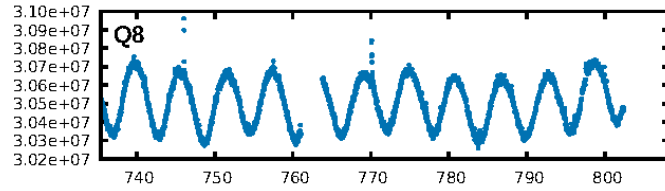
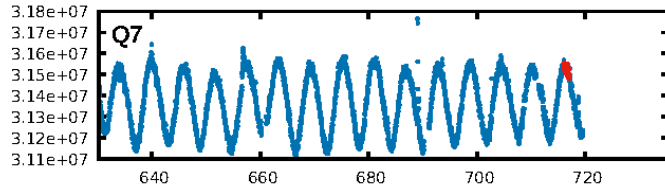
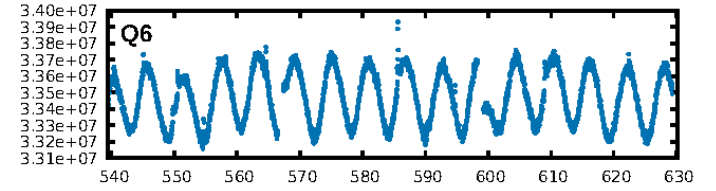
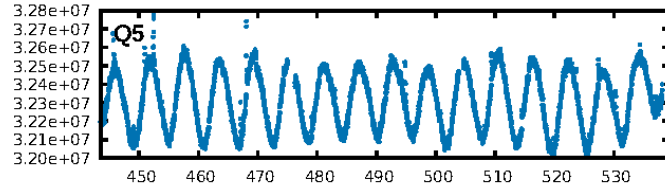
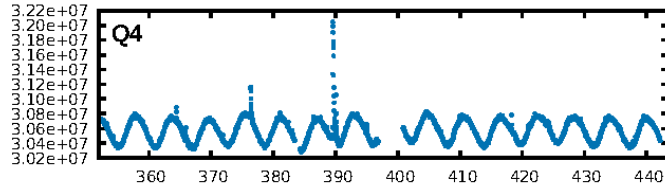
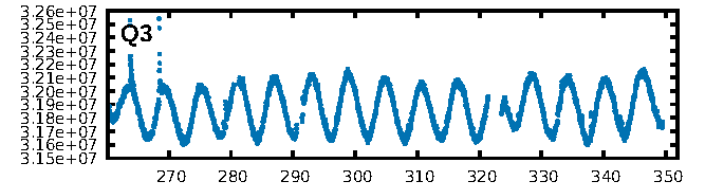
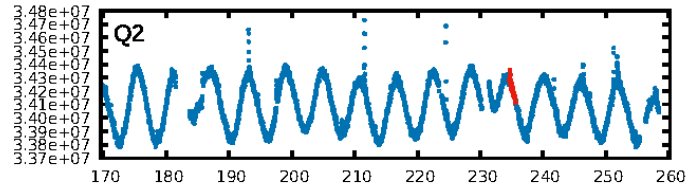
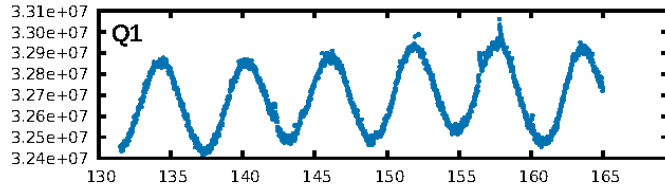
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [208.39 σ]
LongPeriod-sig: 100.0% [32.71 σ]
ModelChiSquare2-sig: 6.9%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 4.96e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -10.32
Centroid-sig: 63.5%
Centroid-so: 0.393 arcsec [0.45 σ]
OotOffset-rm: 1.510 arcsec [2.64 σ]
KicOffset-rm: 1.596 arcsec [2.65 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

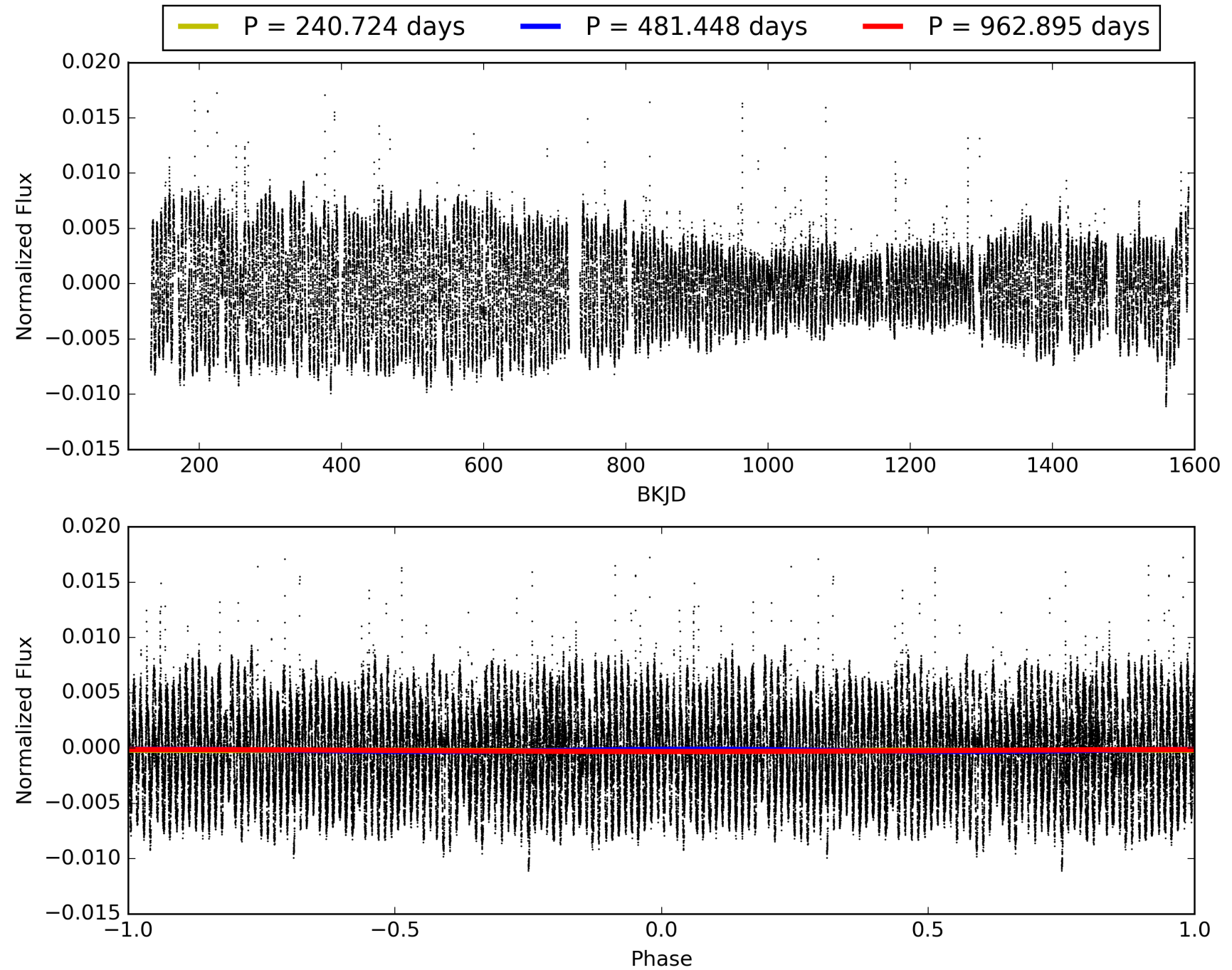
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:28 Z

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

TCE 012168669-06, PDC Light Curves

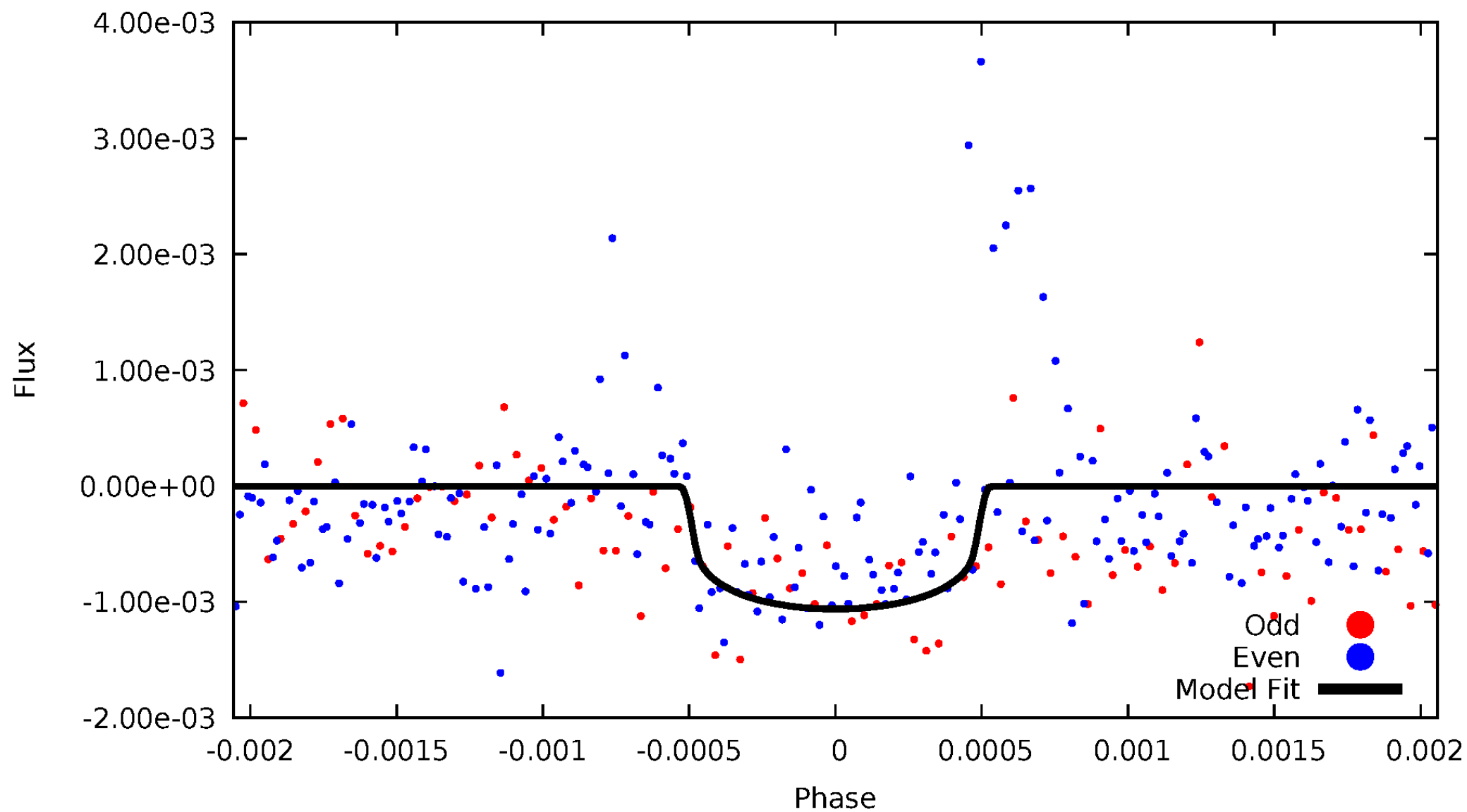


TCE 012168669-06



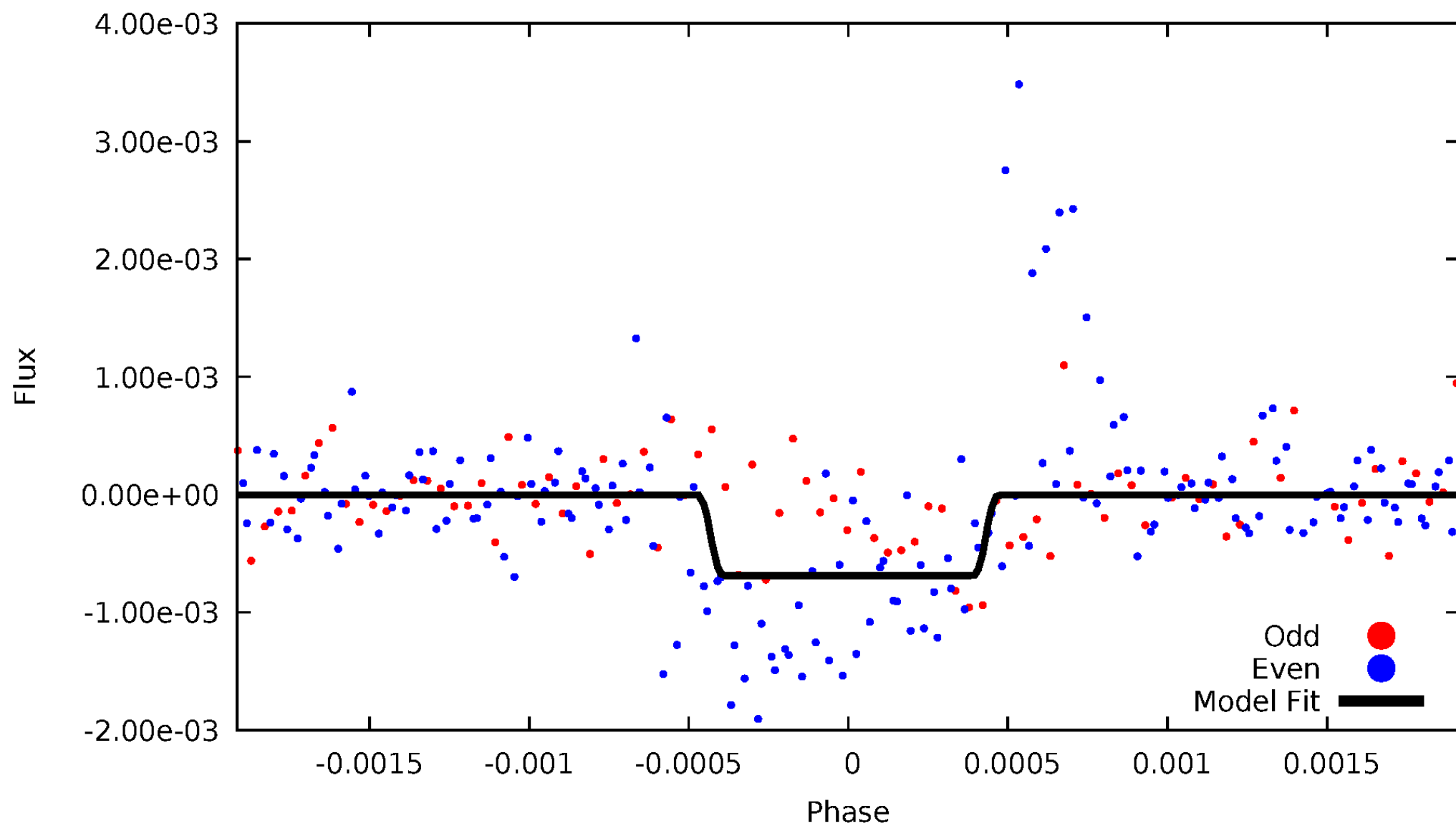
DV Odd/Even

TCE 012168669-06



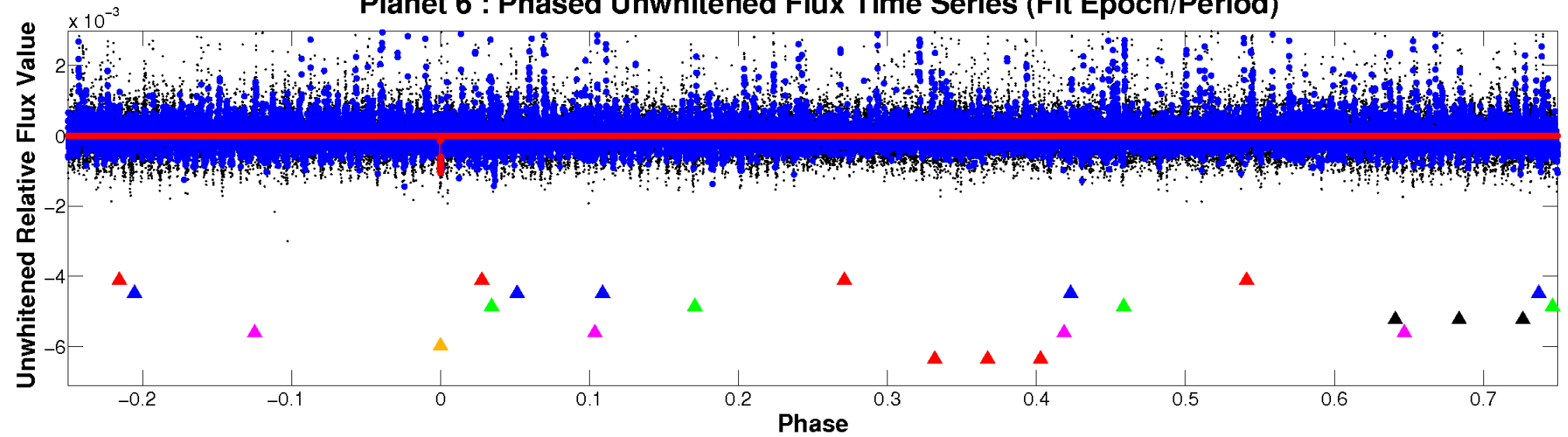
ALT Odd/Even

TCE 012168669-06

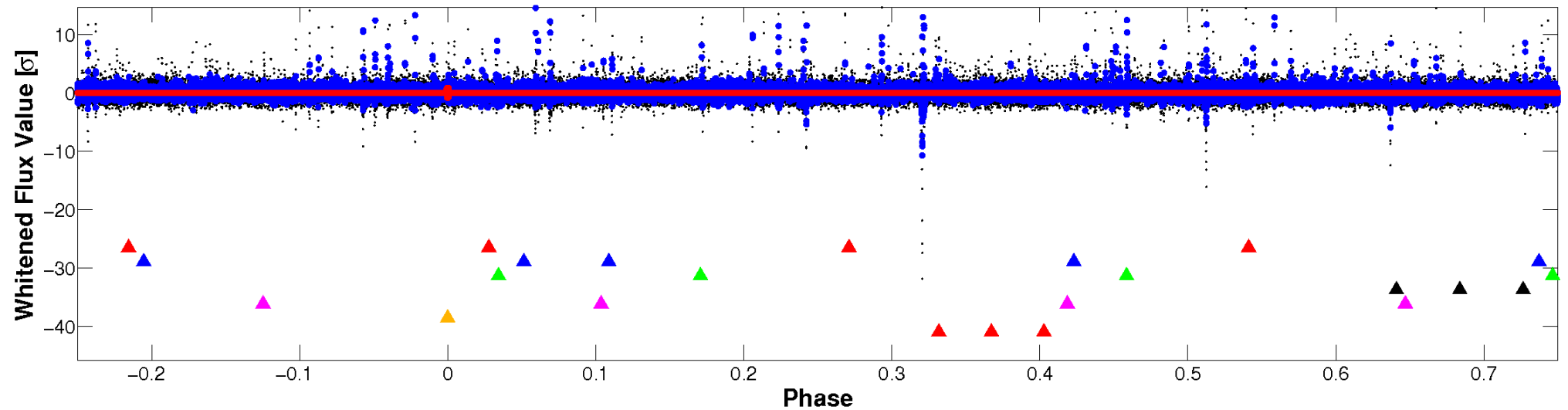


Non-Whitened Vs. Whitened Light Curve

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

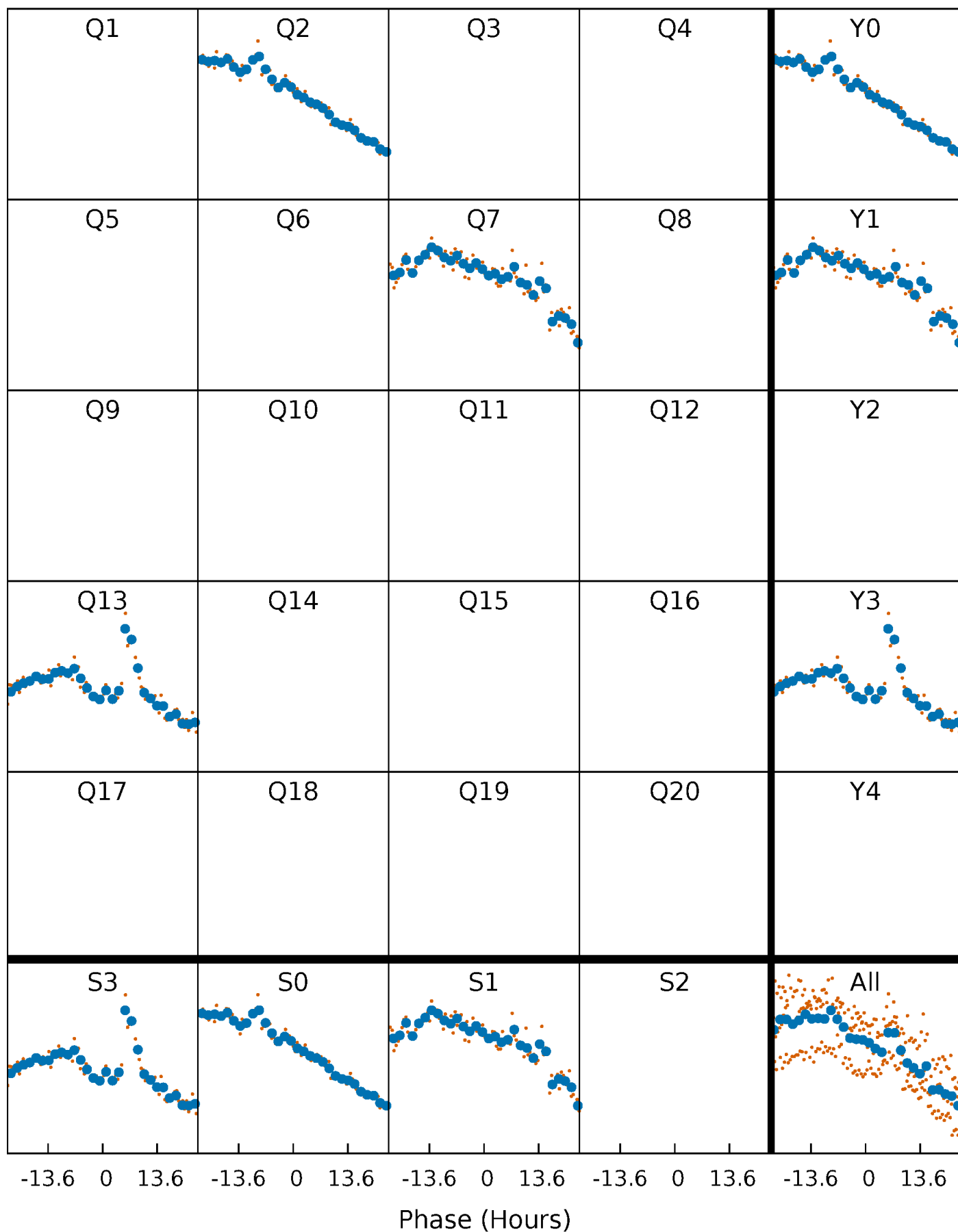


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



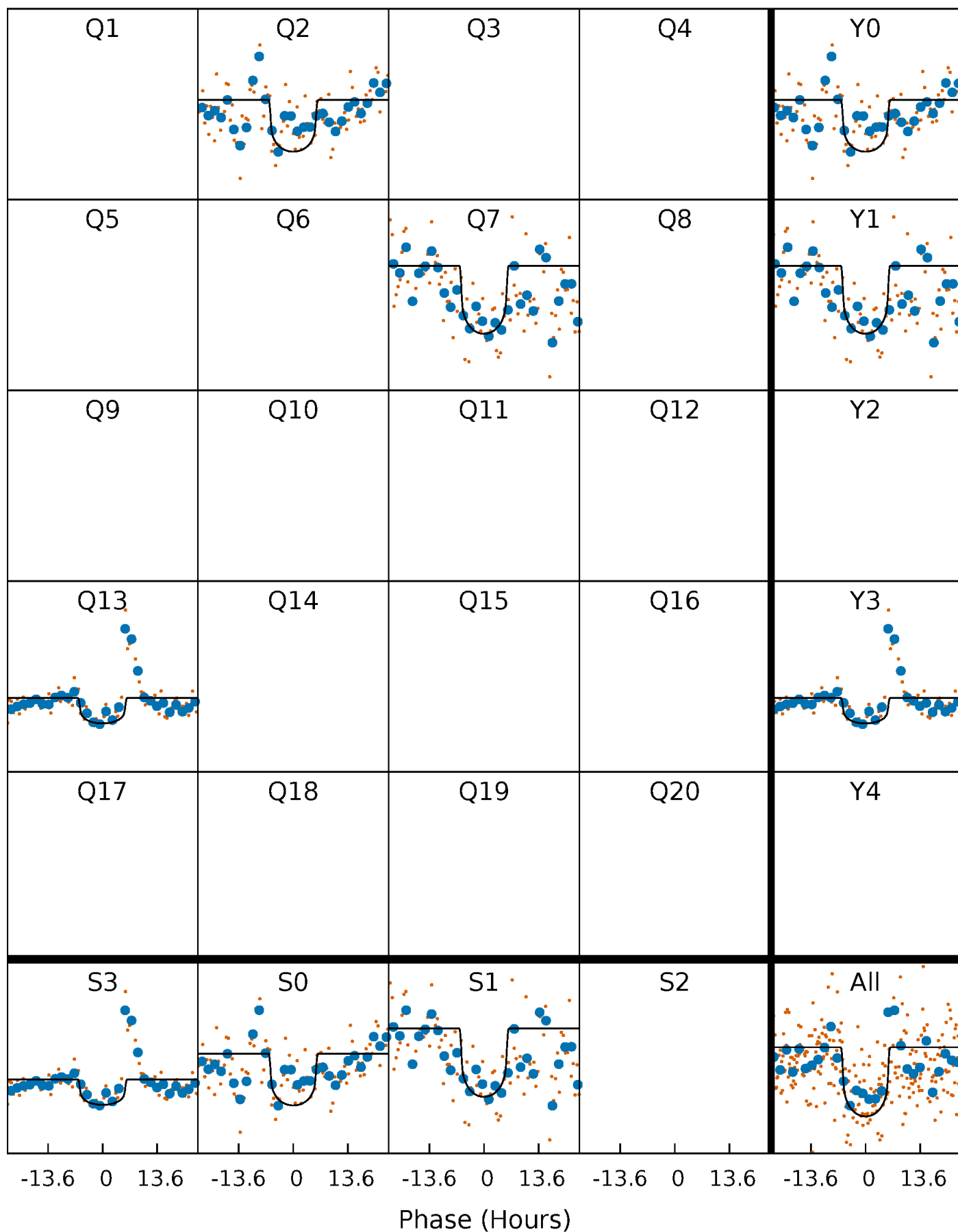
PDC Quarter-Phased Transit Curves

TCE 012168669-06 P=481.447688 Days $T_0=235.131862$ (BKJD)



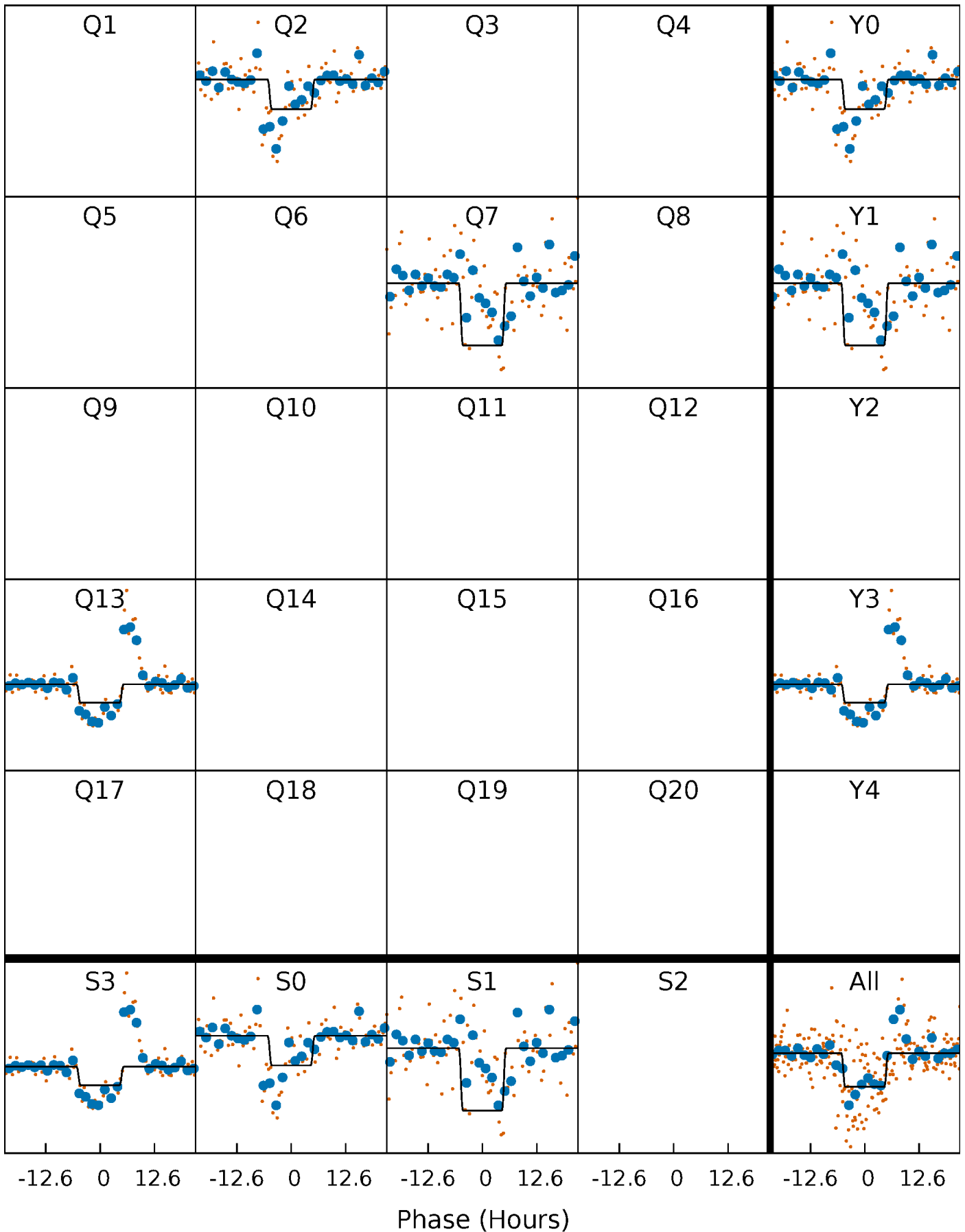
DV Quarter-Phased Transit Curves

TCE 012168669-06 P=481.447688 Days $T_0=235.131862$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

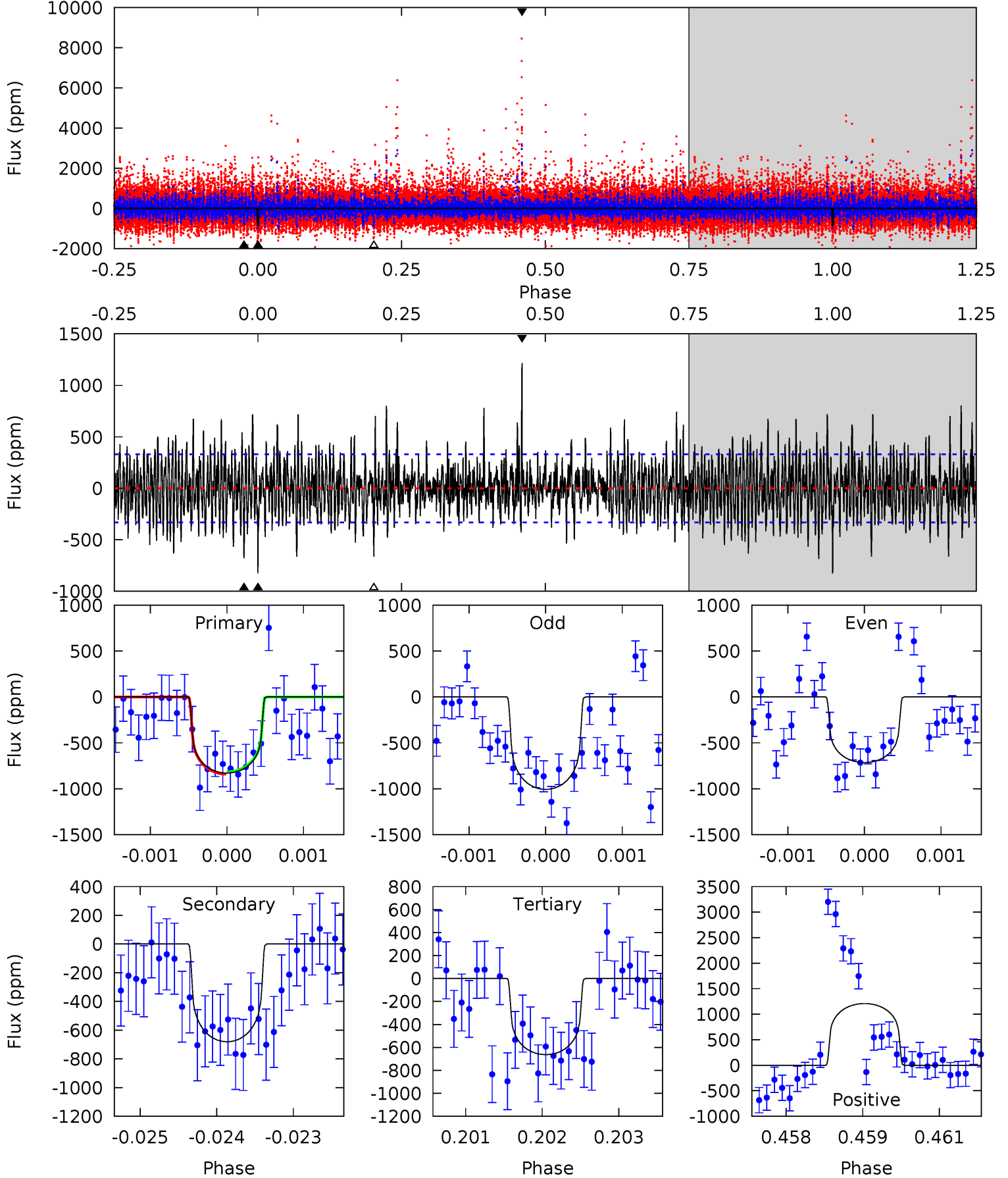
TCE 012168669-06 P=481.462352 Days $T_0=235.084733$ (BKJD)



DV Model-Shift Uniqueness Test

012168669-06, P = 481.447688 Days, E = 235.131862 Days

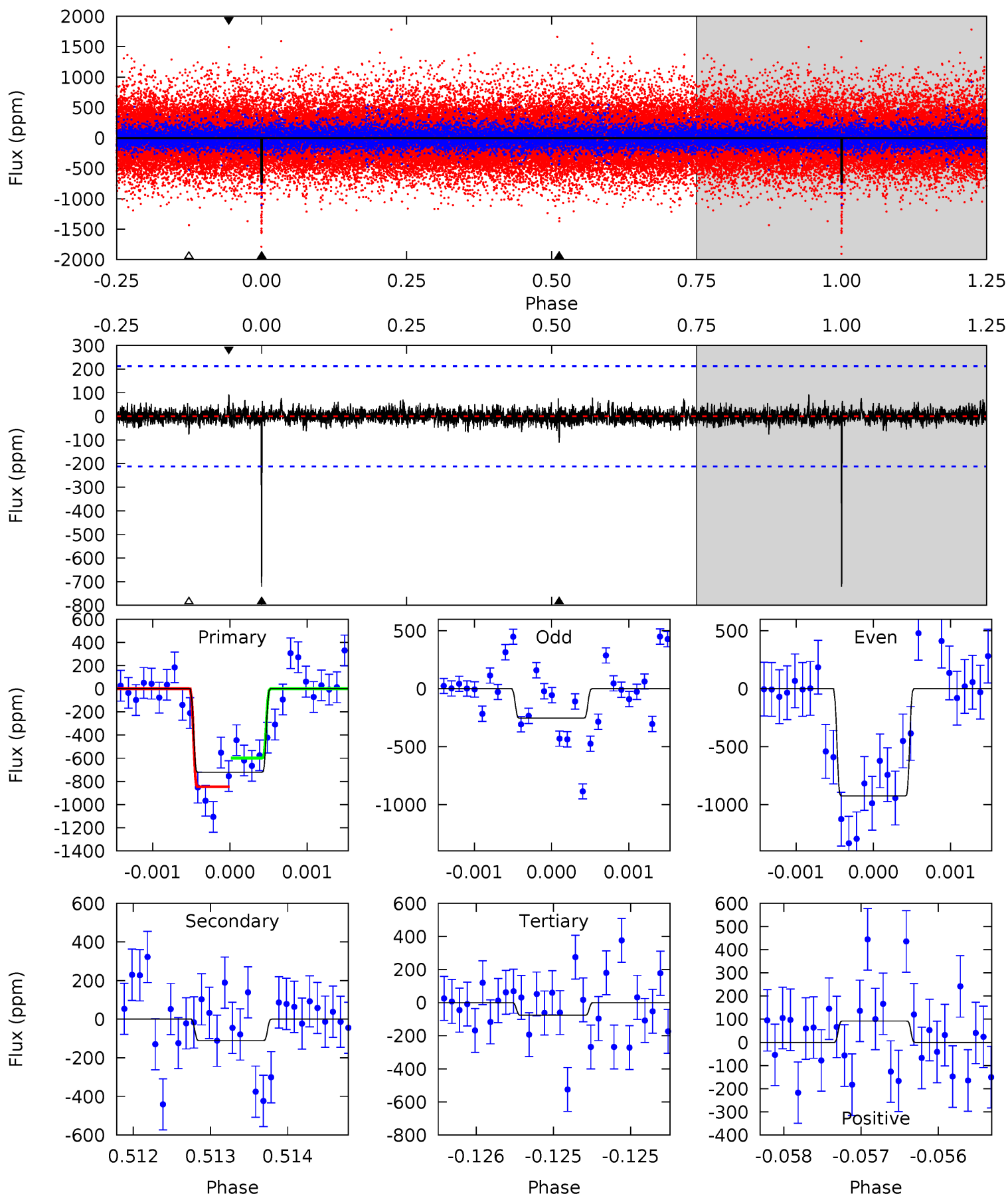
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	11.2	10.9	19.8	5.44	3.27	3.45	2.72	-6.24	0.29	-8.67	1.77	1.17	0.59	0.21



Alt Model-Shift Uniqueness Test

012168669-06, P = 481.462352 Days, E = 235.084733 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	2.86	1.96	2.37	5.47	3.32	0.45	16.6	16.2	0.89	0.48	8.17	0.96	0.11	3.21



Stellar Parameters For KIC 012168669

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5462^{+162}_{-162}	$4.488^{+0.125}_{-0.137}$	$-0.480^{+0.350}_{-0.300}$	$0.806^{+0.141}_{-0.115}$	$0.728^{+0.112}_{-0.045}$	$1.961^{+1.029}_{-0.672}$
	+3%/-3%	+3%/-3%	+73%/-62%	+17%/-14%	+15%/-6%	+52%/-34%
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 012168669-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-681 ± 61	$2.63^{+1.04}_{-1.01}$	291^{+15}_{-15}	5161^{+1287}_{-635}	$64854^{+104379}_{-31674}$
Alt.	-111 ± 39	$2.34^{+1.11}_{-0.93}$	291^{+17}_{-16}	3780^{+800}_{-485}	12735^{+25109}_{-7661}

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 $A_{obs} \gg 1.0$

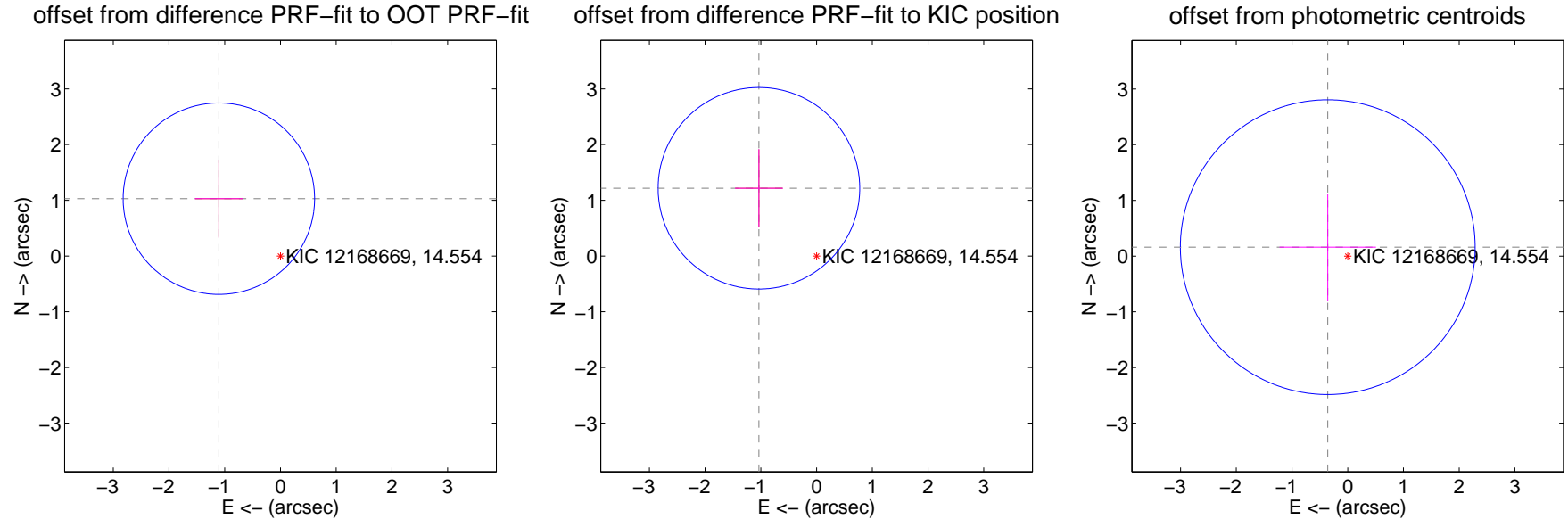
DV Centroid Data

Supplemental centroid analysis for 012168669-06. Kepler magnitude: 14.55. Transit SNR 7.19

There are 0 quarters with good PRF difference image offsets

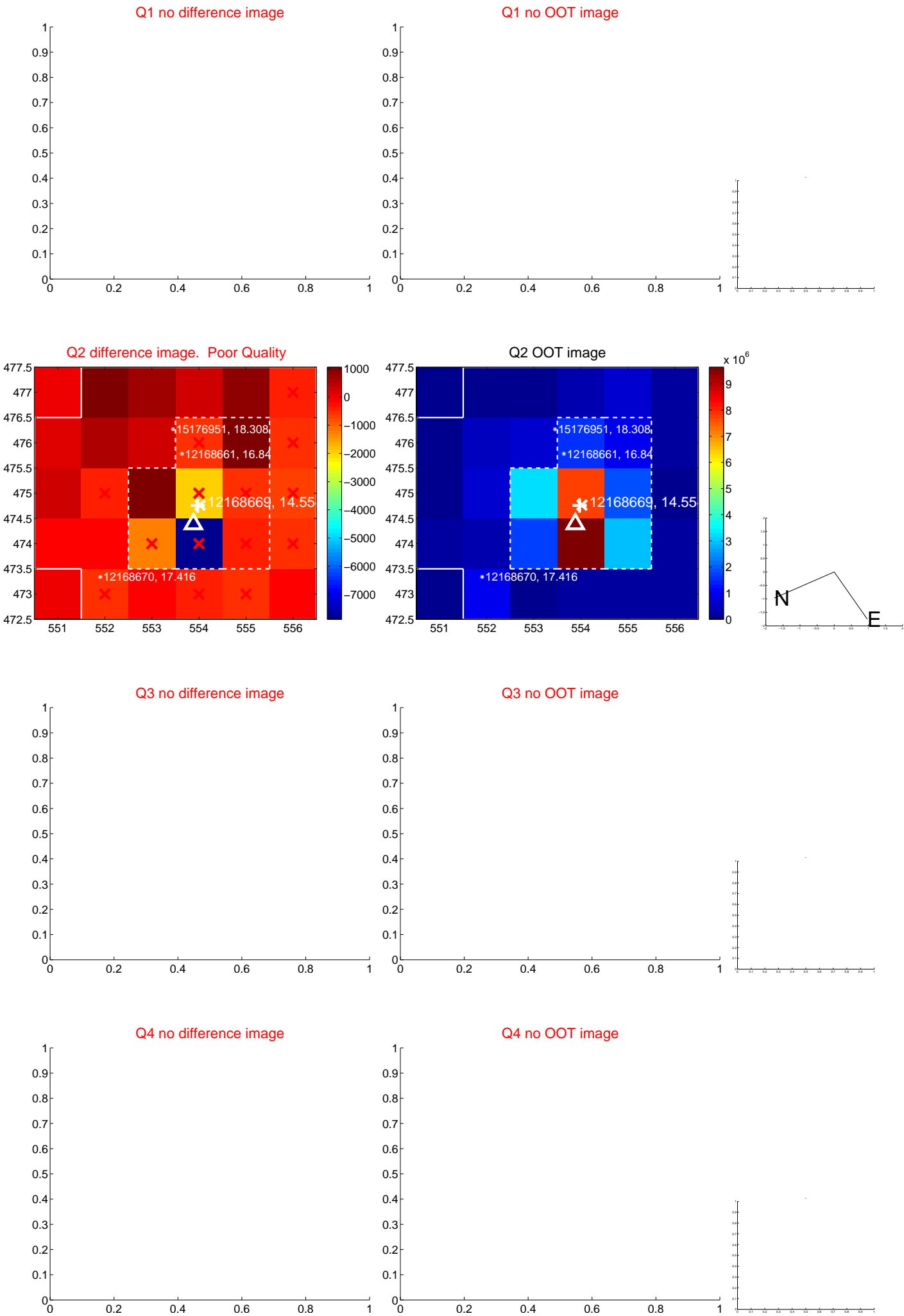
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.510 ± 0.573	2.64	1.105 ± 0.430	1.029 ± 0.702
PRF-fit source offset from KIC position	1.596 ± 0.603	2.65	1.034 ± 0.430	1.216 ± 0.702
photometric centroid source offset	0.39 ± 0.88	0.45	0.36 ± 0.87	0.16 ± 0.96

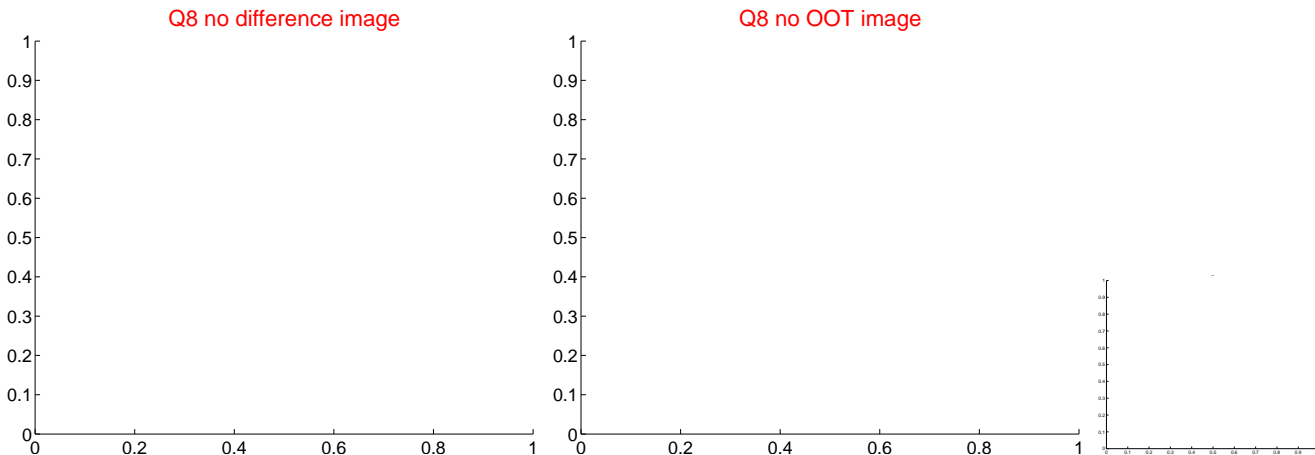
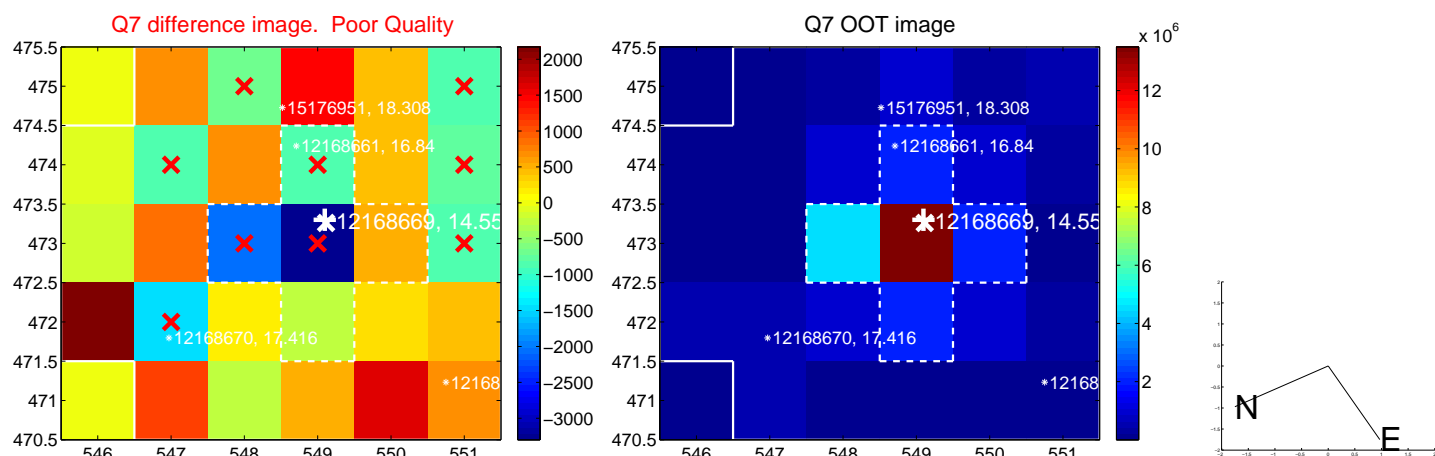
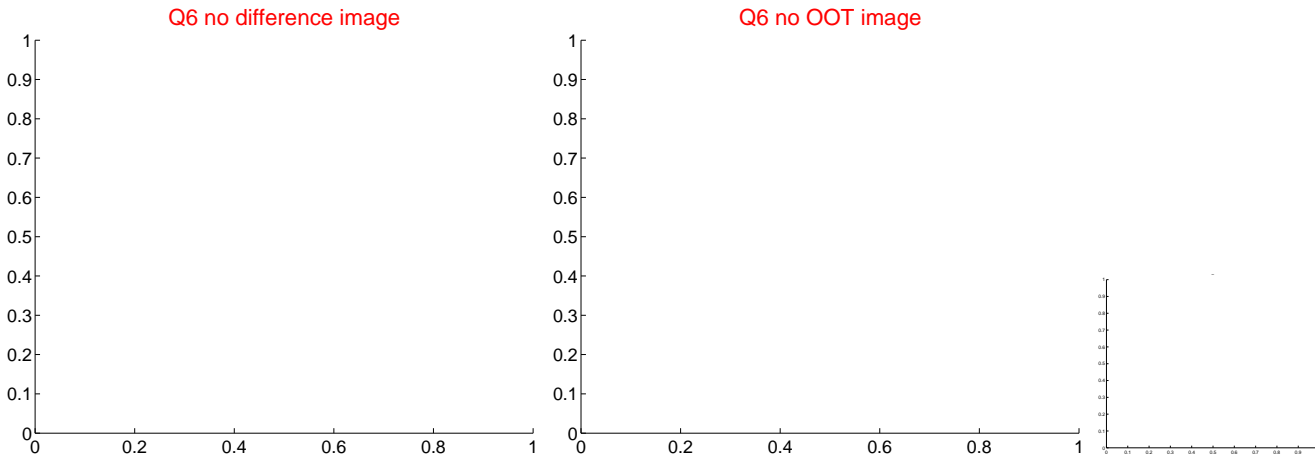
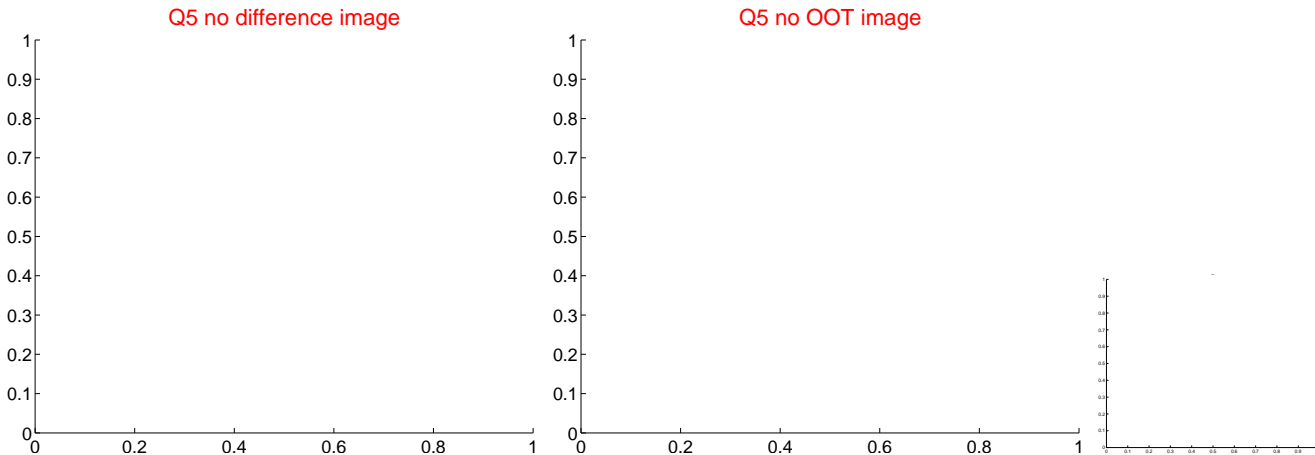


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



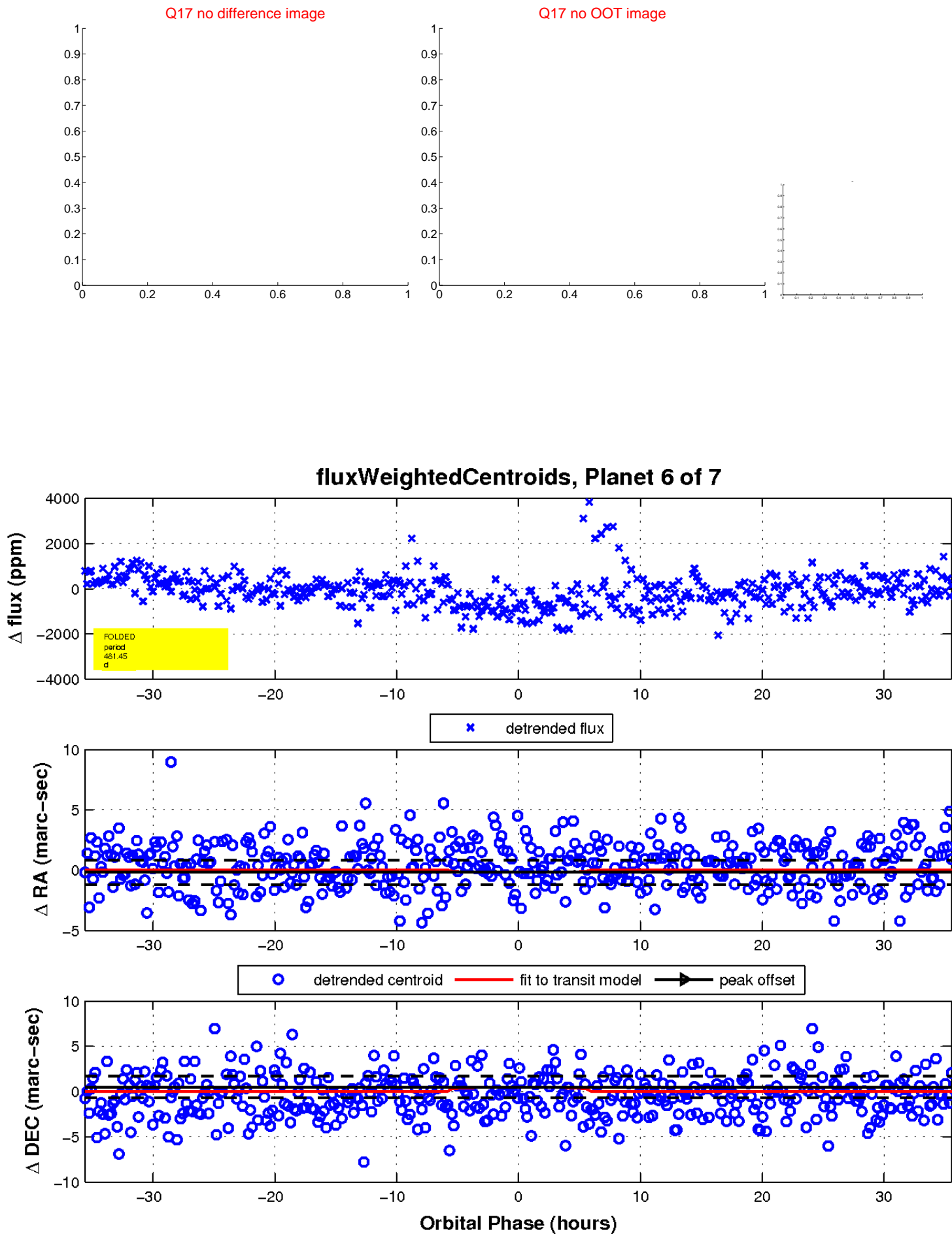
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



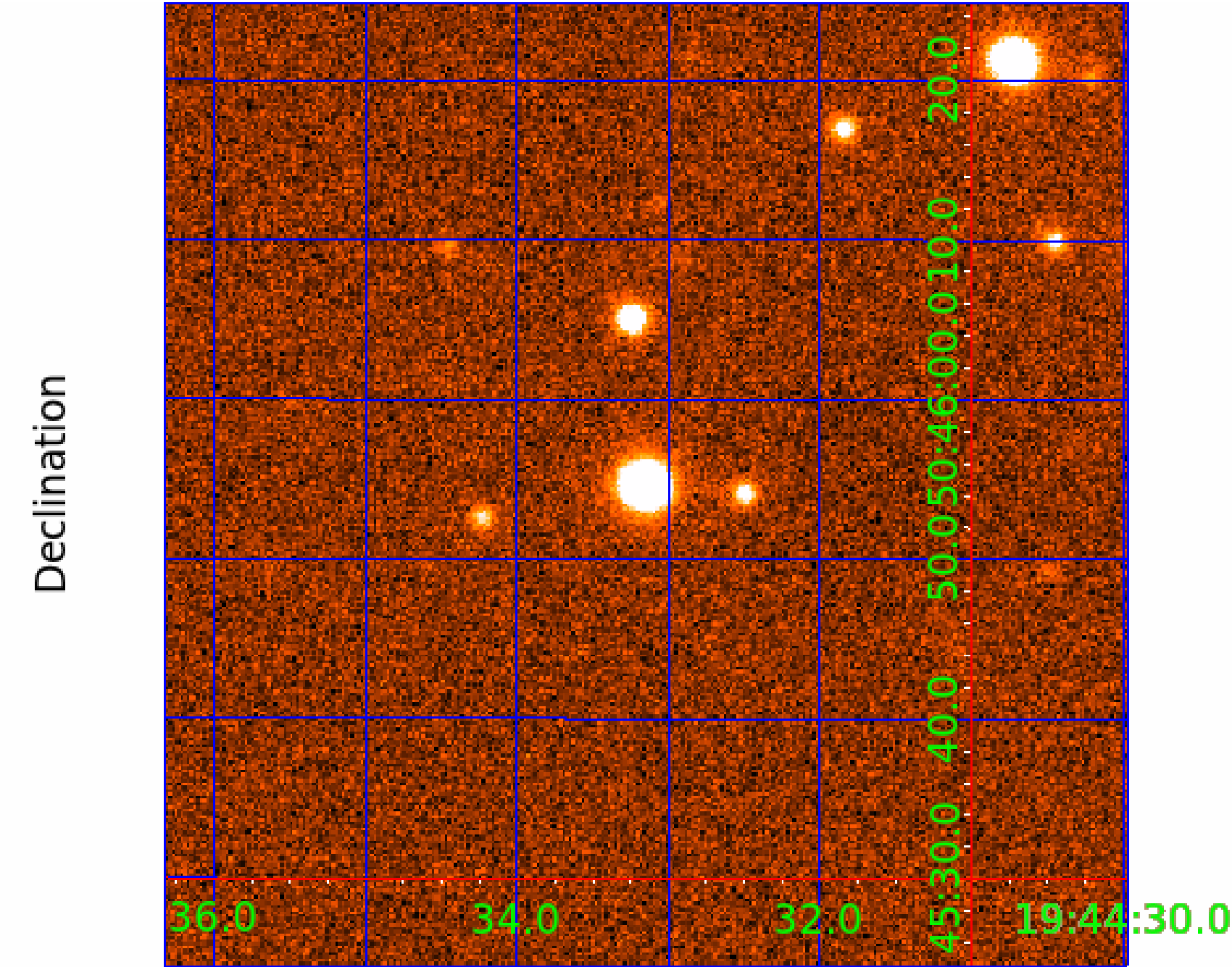
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 012168669

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})
012168669-01	OBS	No	364.290849	365.667745	1279.2	9.977	14.8	9.3	0.81	5462	3.04	0.64
012168669-02	OBS	No	330.176704	259.892595	1050.2	5.816	11.1	8.6	0.81	5462	2.74	0.73
012168669-03	OBS	No	342.856615	251.663781	1366.6	5.853	11.4	8.7	0.81	5462	2.99	0.70
012168669-04	OBS	No	502.045471	543.711844	1082.5	4.609	11.3	7.0	0.81	5462	2.71	0.42
012168669-05	OBS	No	371.511881	285.035971	885.9	4.373	9.2	6.9	0.81	5462	2.54	0.62
012168669-06	OBS	No	481.447688	235.131862	1061.7	11.882	9.3	7.2	0.81	5462	2.67	0.44
012168669-07	OBS	No	498.540131	394.882681	1130.2	4.013	11.9	8.1	0.81	5462	2.88	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012168669-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
012168669-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV
012168669-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS
012168669-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
012168669-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
012168669-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

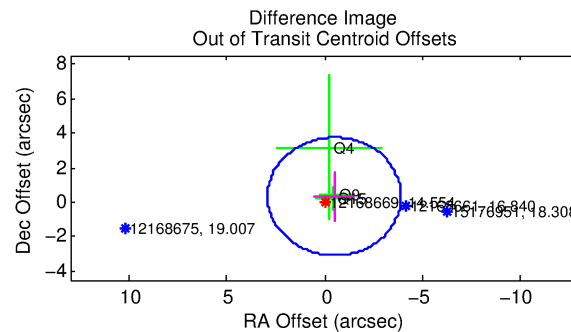
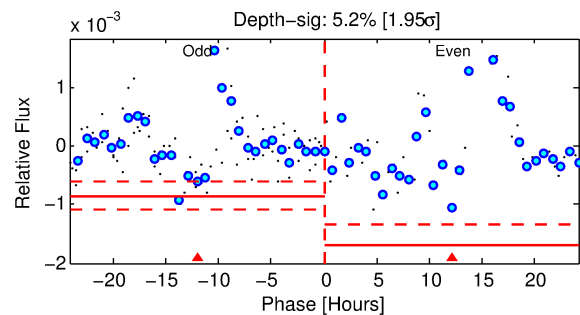
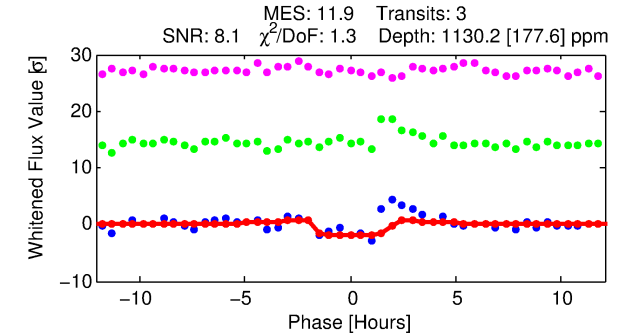
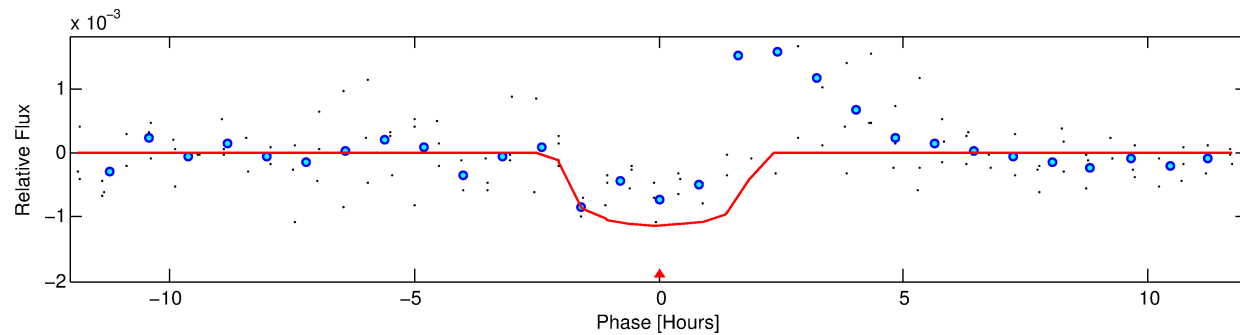
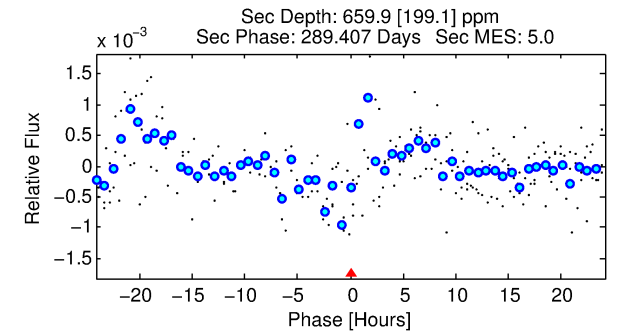
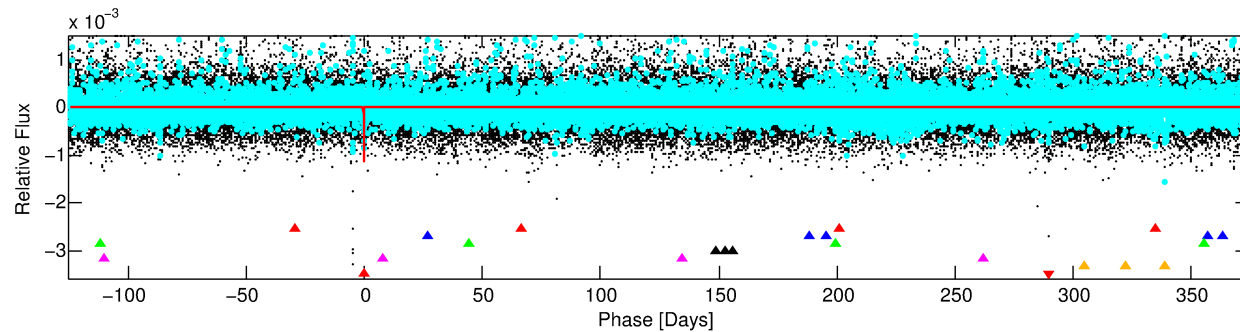
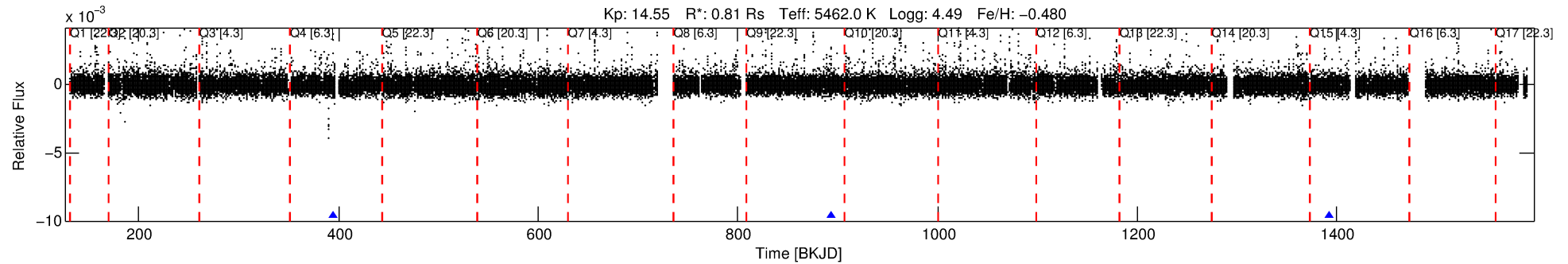
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012168669-07

No Significant Match Found

DV One-Page Summary

KIC: 12168669 Candidate: 7 of 7 Period: 498.540 d



DV Fit Results:

Period = 498.54013 [0.00610] d
Epoch = 394.8827 [0.0083] BKJD
Rp/R* = 0.0327 [0.0541]
a/R* = 735.88 [5172.36]
b = 0.68 [5.62]
Seff = 0.42 [0.11]
Teq = 206 [14] K
Rp = 2.88 [4.79] Re
a = 1.1076 [0.1739] AU
Ag = 53782.31 [179157.44] [0.30 σ]
Teffp = 4840 [4023] K [1.15 σ]

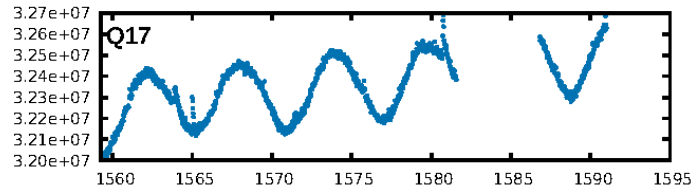
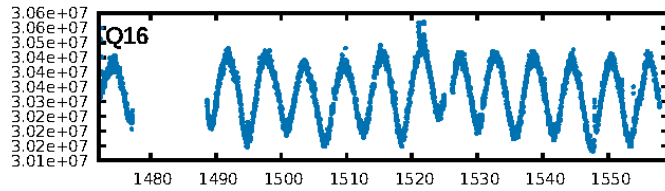
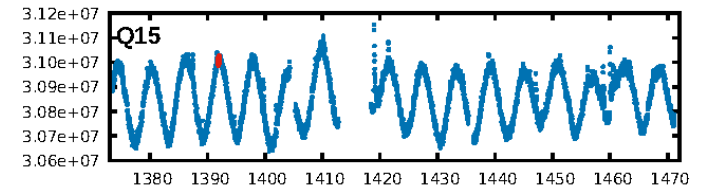
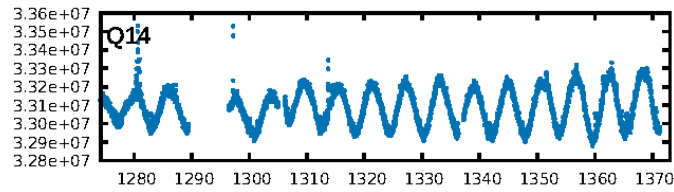
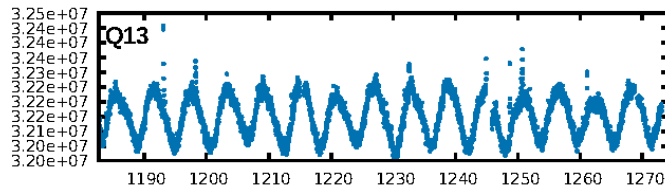
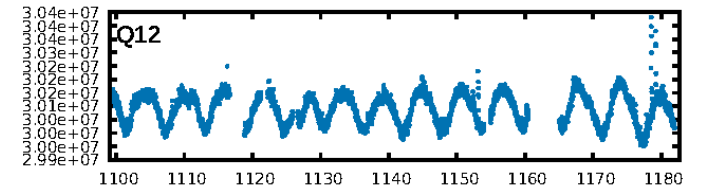
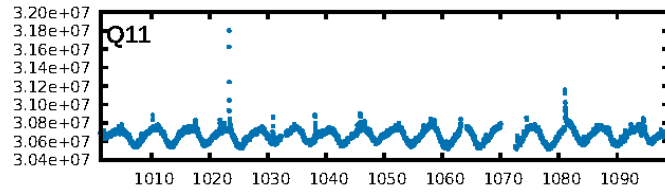
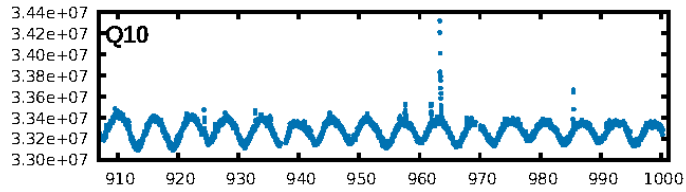
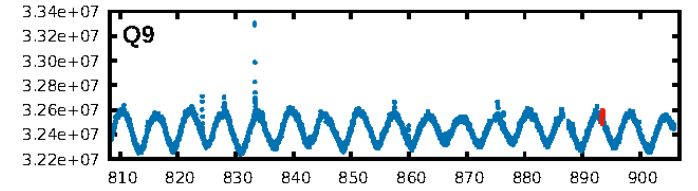
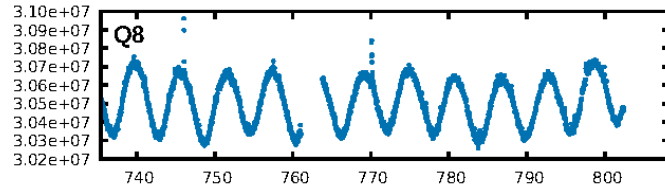
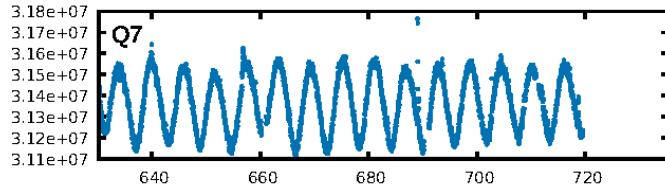
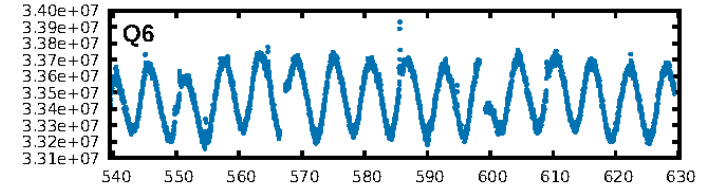
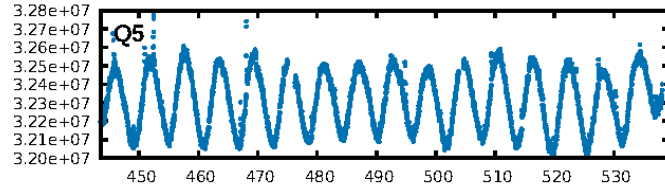
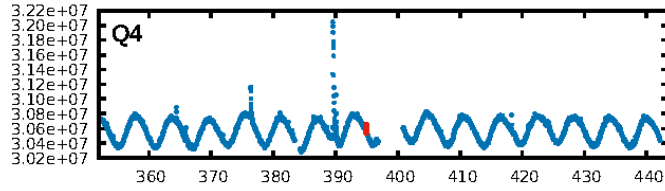
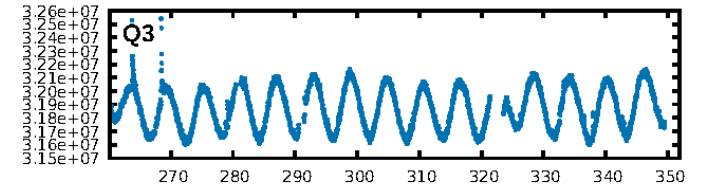
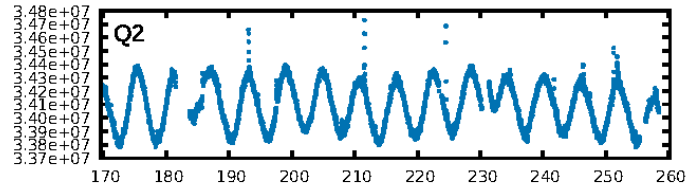
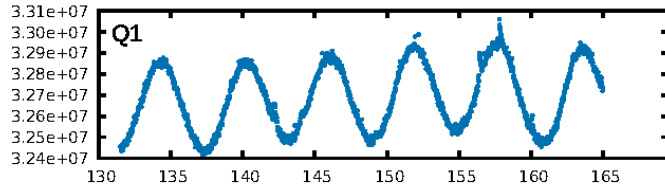
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [32.71 σ]
LongPeriod-sig: 100.0% [13.77 σ]
ModelChiSquare2-sig: 1.1%
ModelChiSquareGof-sig: 82.9%
Bootstrap-pfa: 1.85e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -14.52
Centroid-sig: 54.5%
Centroid-so: 1.380 arcsec [1.13 σ]
OotOffset-rm: 0.594 arcsec [0.52 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.697 arcsec [0.62 σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

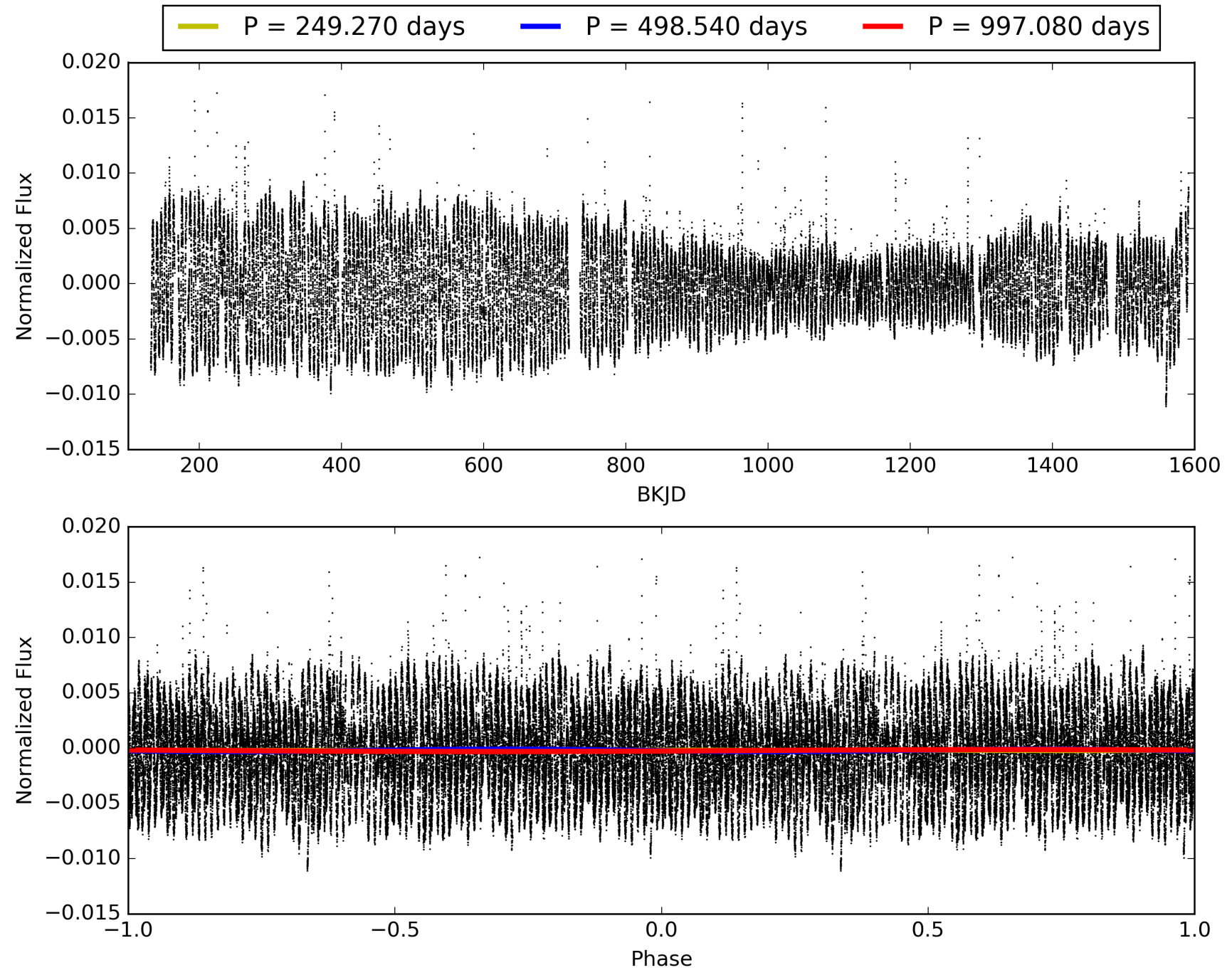
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:52:46 Z

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

TCE 012168669-07, PDC Light Curves

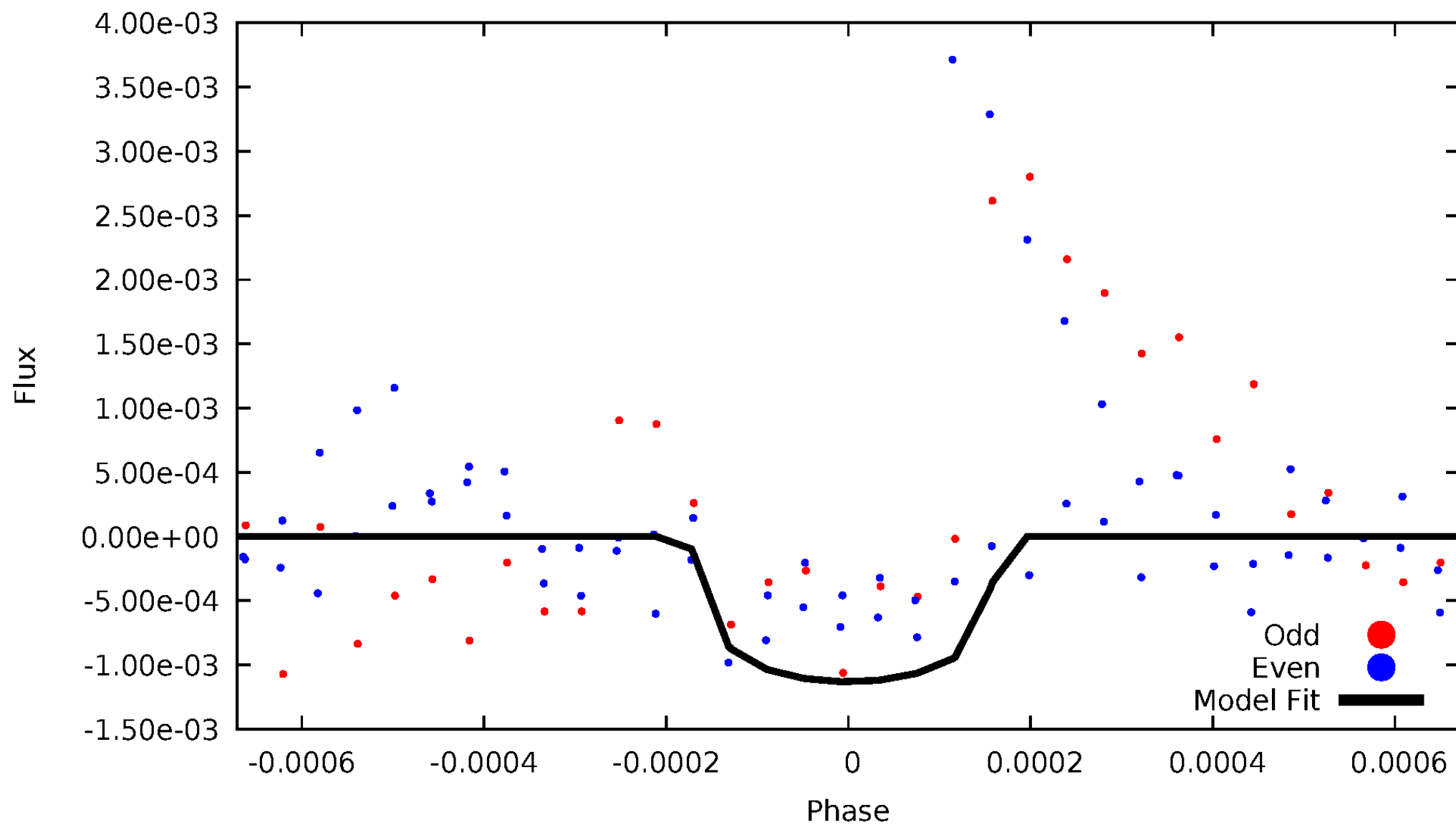


TCE 012168669-07



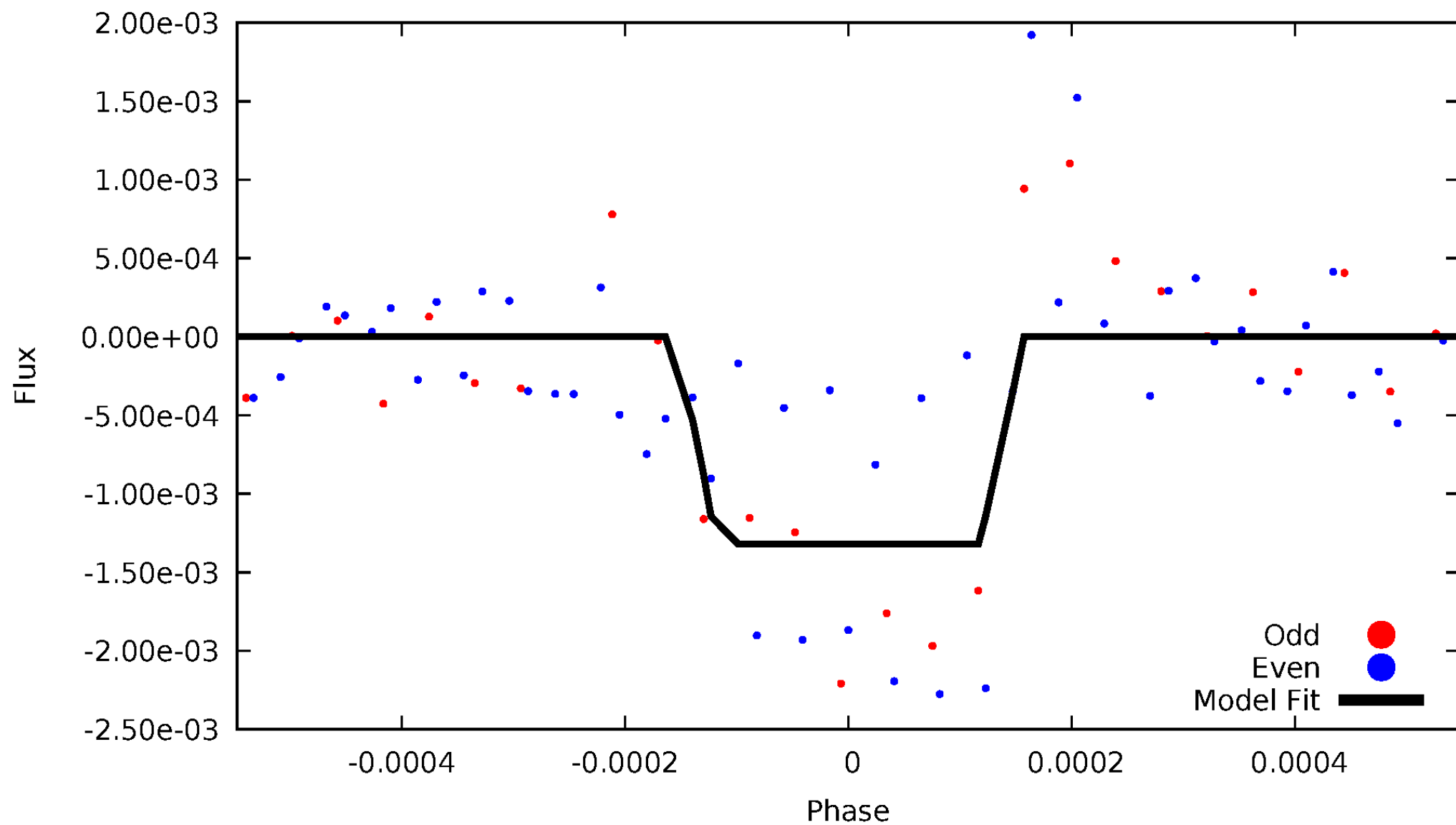
DV Odd/Even

TCE 012168669-07



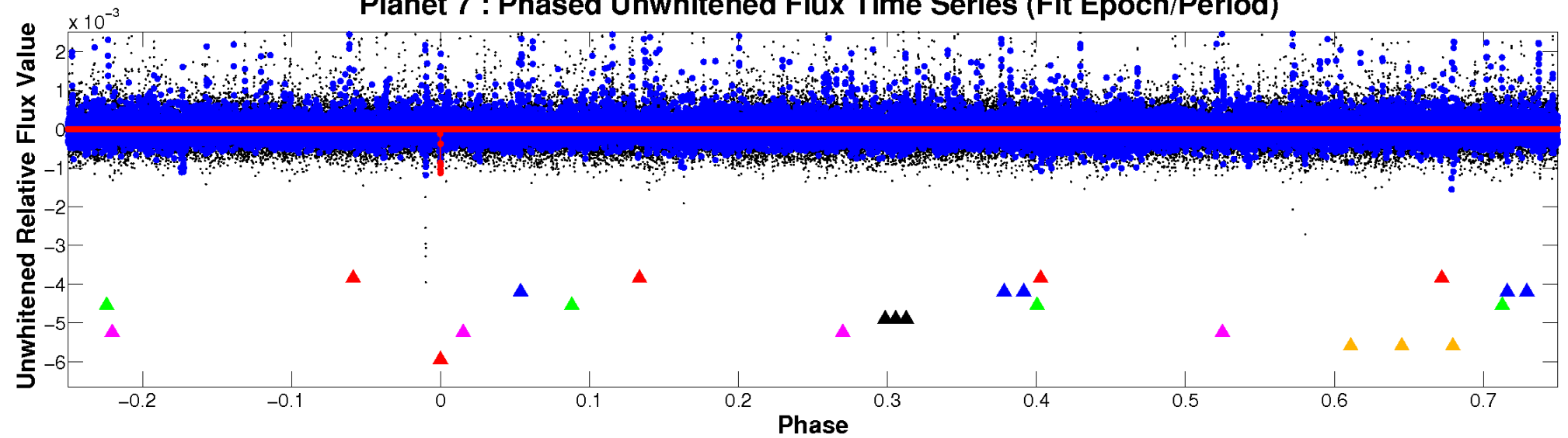
ALT Odd/Even

TCE 012168669-07

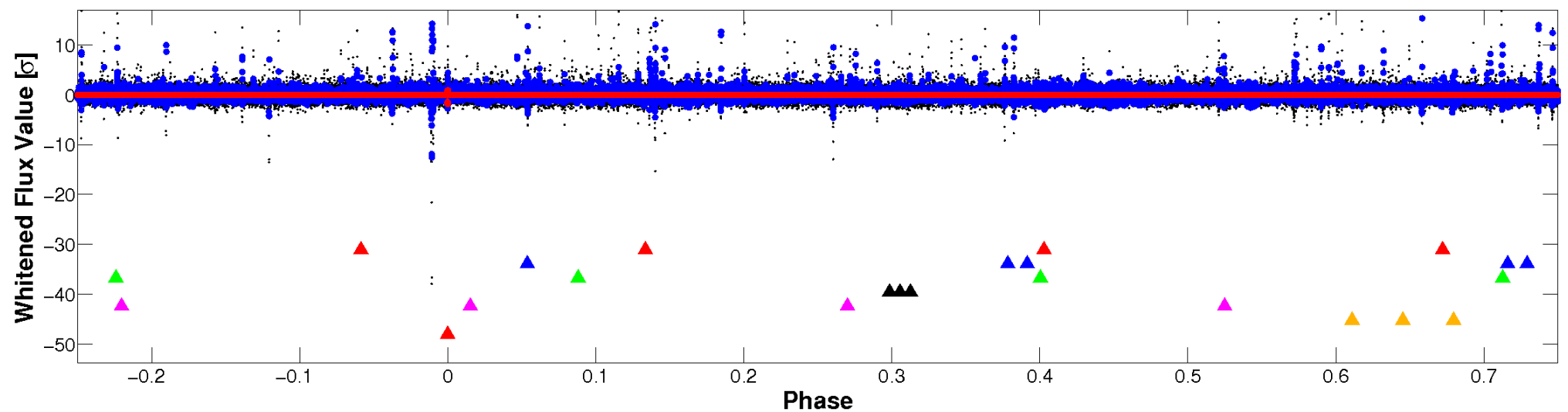


Non-Whitened Vs. Whitened Light Curve

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

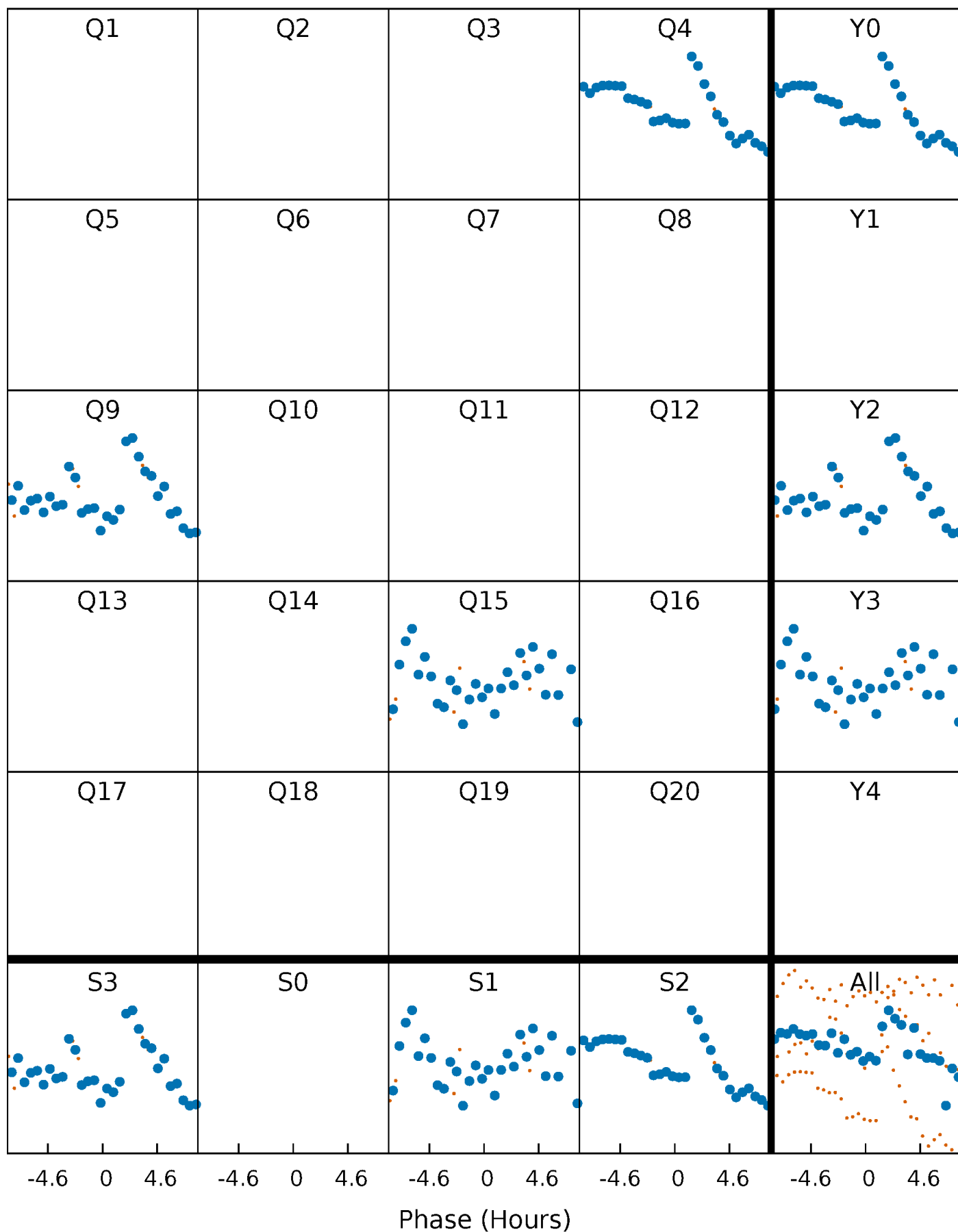


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



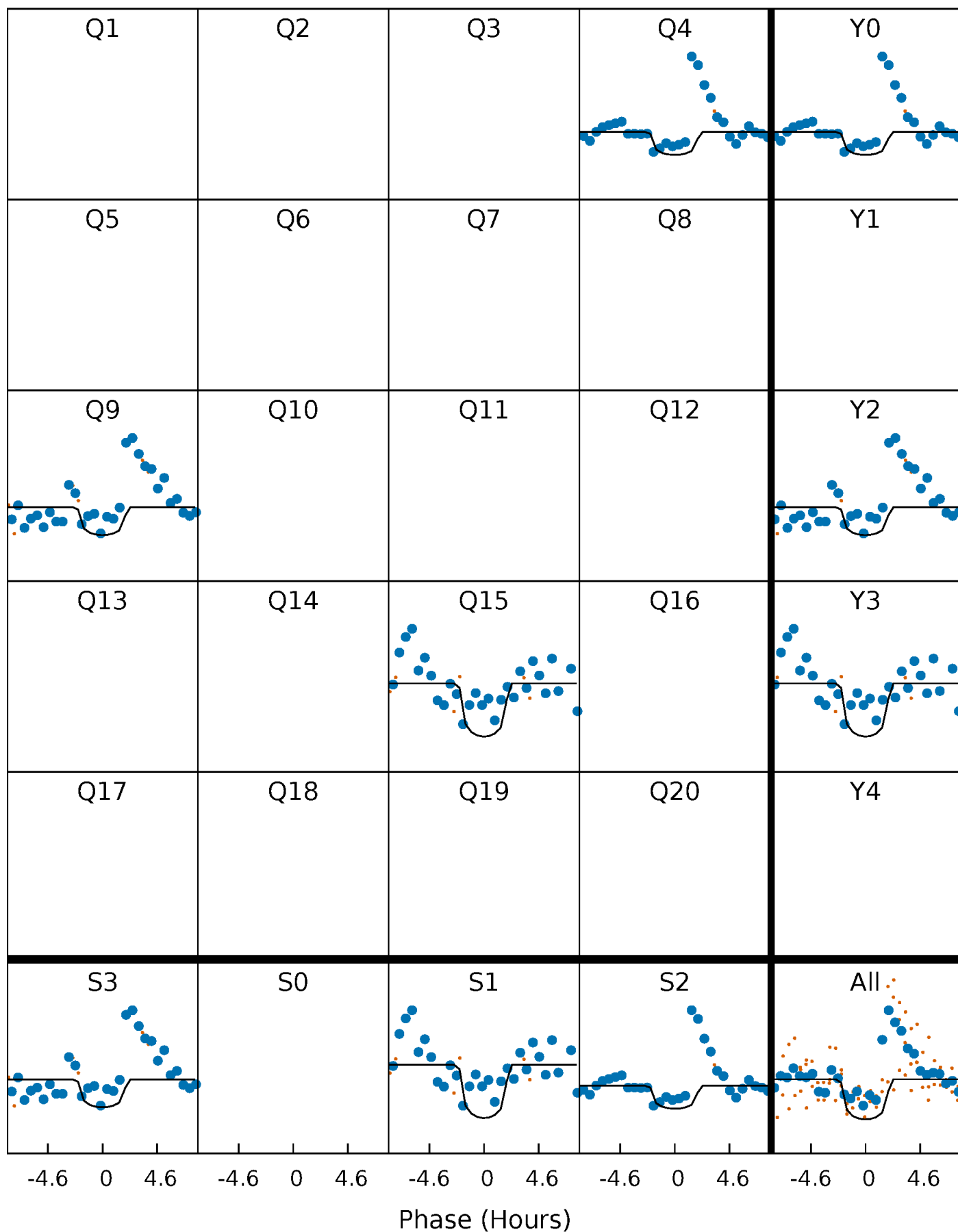
PDC Quarter-Phased Transit Curves

TCE 012168669-07 P=498.540131 Days $T_0=394.882681$ (BKJD)



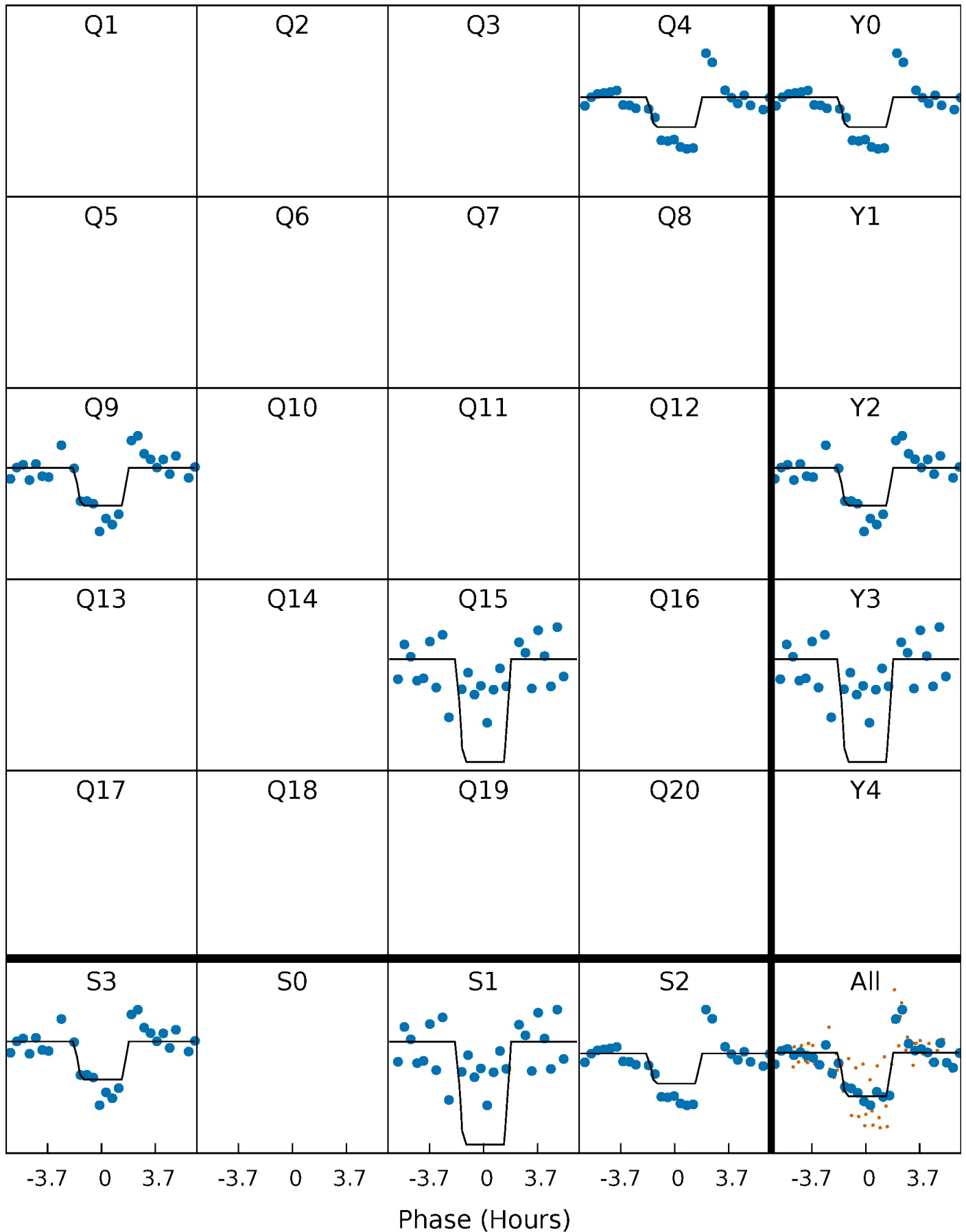
DV Quarter-Phased Transit Curves

TCE 012168669-07 P=498.540131 Days $T_0=394.882681$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

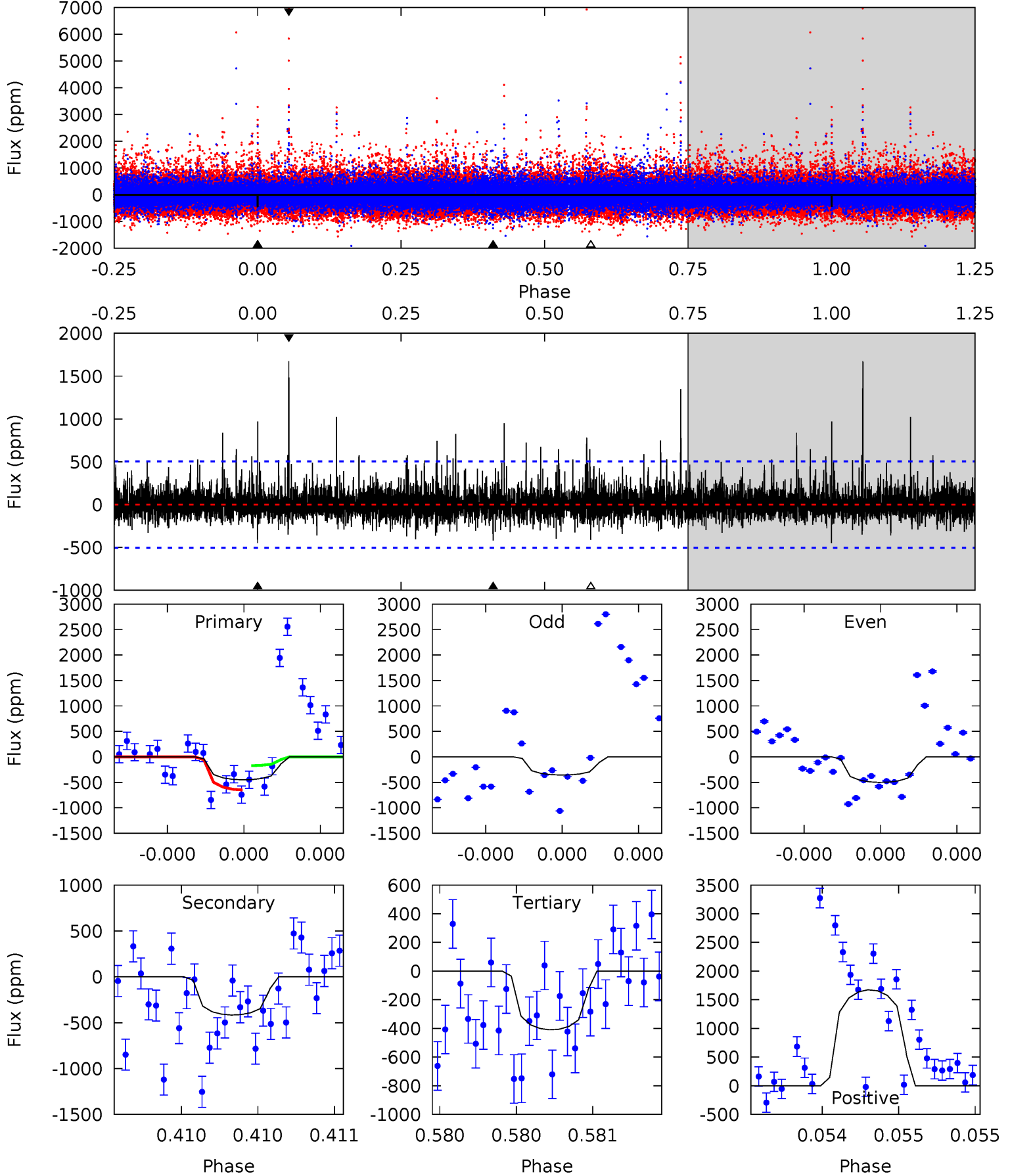
TCE 012168669-07 P=498.565242 Days $T_0=394.857986$ (BKJD)



DV Model-Shift Uniqueness Test

012168669-07, P = 498.540131 Days, E = 394.882681 Days

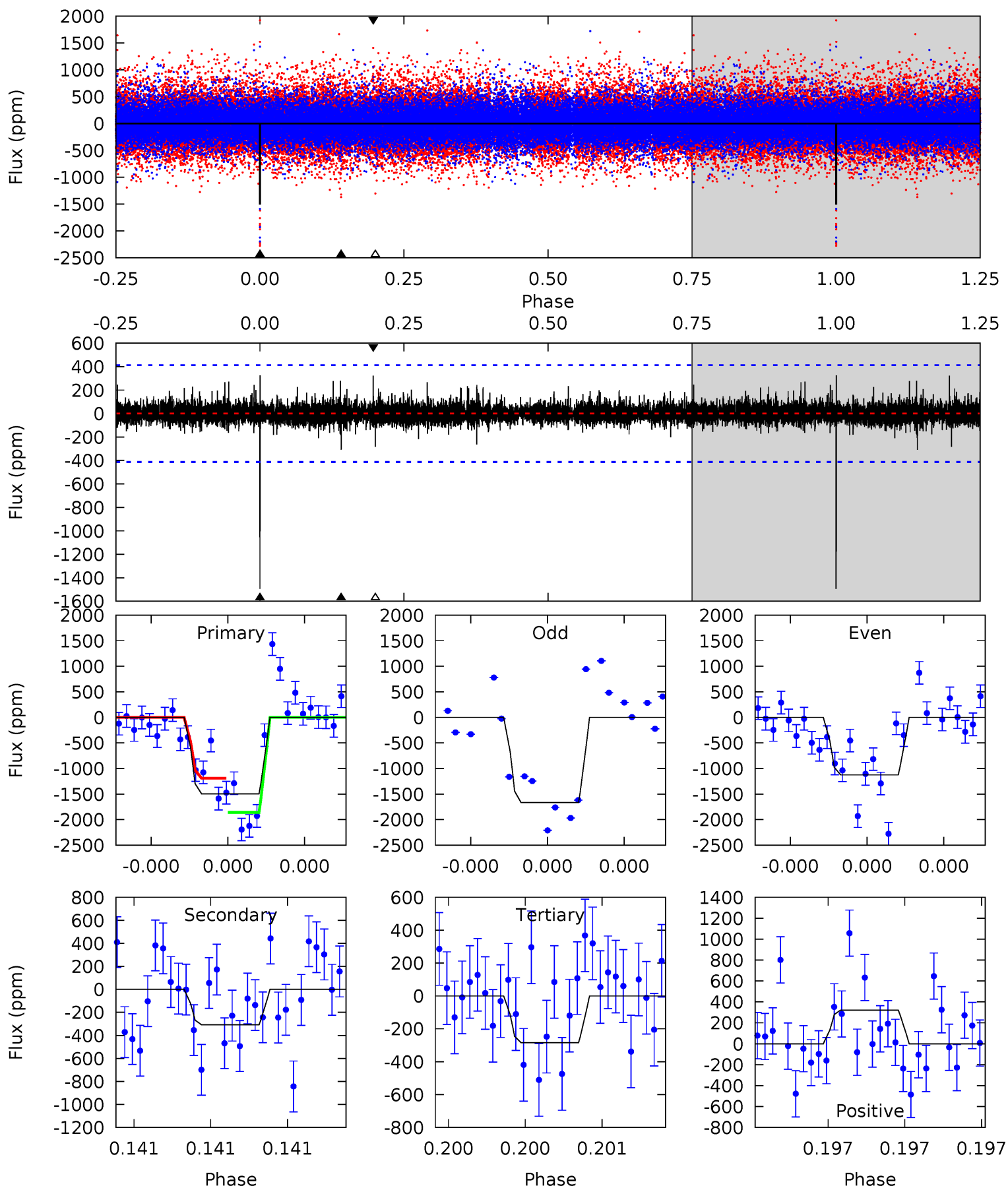
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.04	4.65	4.58	18.7	5.65	3.59	1.46	0.46	-13.7	0.07	-14.0	0.51	0.73	0.79	2.65



Alt Model-Shift Uniqueness Test

012168669-07, P = 498.565242 Days, E = 394.857986 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	4.23	3.90	4.43	5.67	3.63	0.66	16.6	16.1	0.33	-0.20	3.52	0.81	0.18	4.58



Stellar Parameters For KIC 012168669

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5462^{+162}_{-162}	$4.488^{+0.125}_{-0.137}$	$-0.480^{+0.350}_{-0.300}$	$0.806^{+0.141}_{-0.115}$	$0.728^{+0.112}_{-0.045}$	$1.961^{+1.029}_{-0.672}$
	+3%/-3%	+3%/-3%	+73%/-62%	+17%/-14%	+15%/-6%	+52%/-34%
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 012168669-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-416 ± 89	$4.42^{+3.75}_{-2.90}$	287^{+16}_{-15}	3828^{+2120}_{-682}	$14703^{+112031}_{-10649}$
Alt.	-308 ± 73	$4.85^{+4.29}_{-3.27}$	287^{+16}_{-14}	3543^{+1835}_{-605}	8571^{+80697}_{-6081}

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 $A_{obs} \gg 1.0$

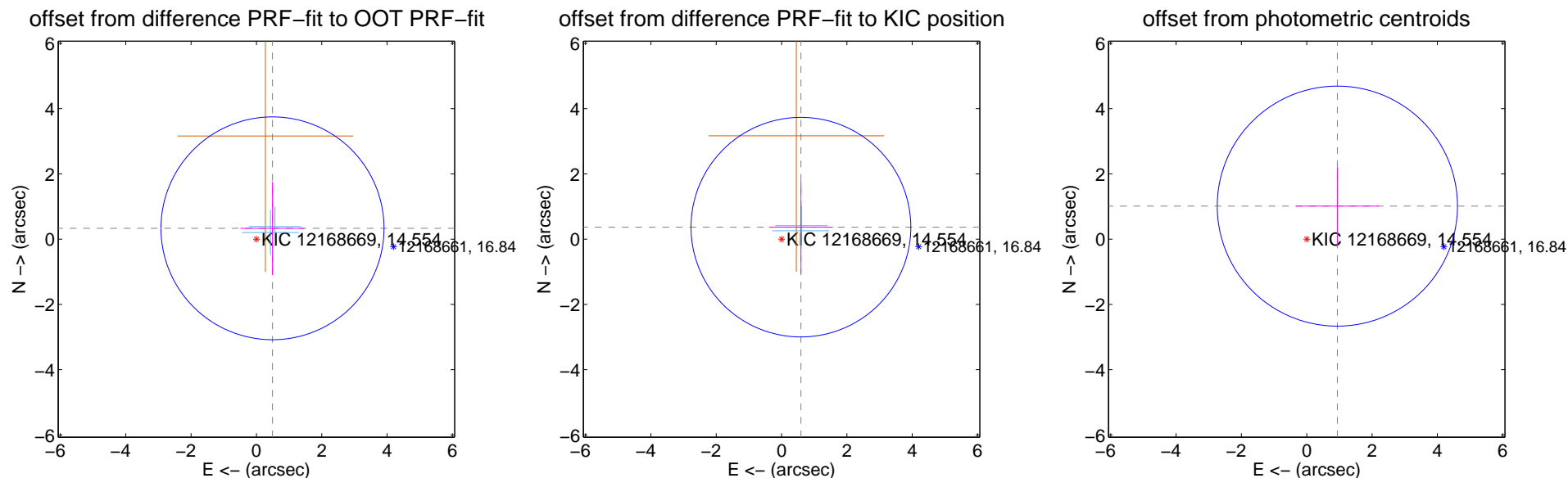
DV Centroid Data

Supplemental centroid analysis for 012168669-07. Kepler magnitude: 14.55. Transit SNR 8.11

There are 2 quarters with good PRF difference image offsets

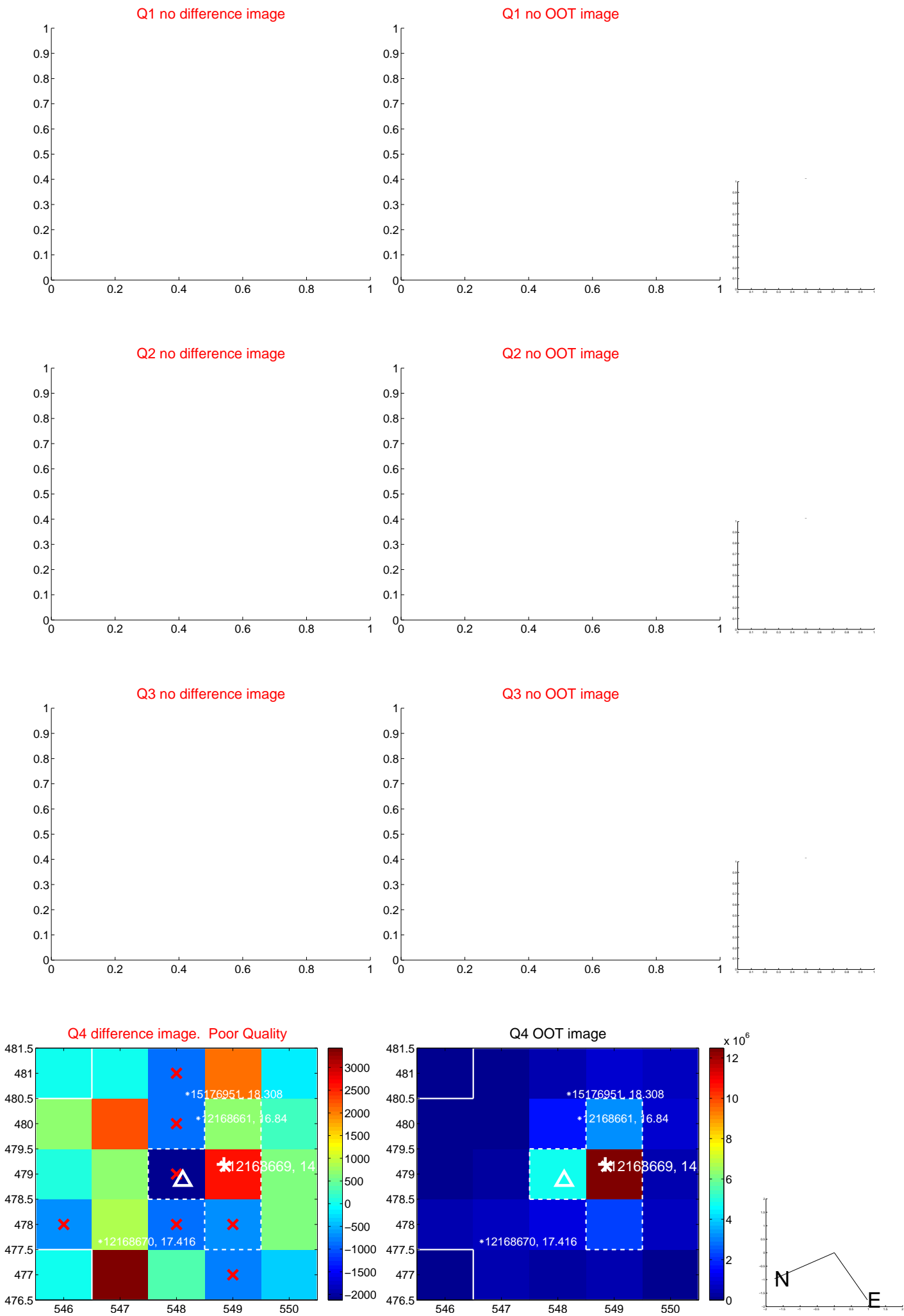
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.594 ± 1.138	0.52	-0.492 ± 0.981	0.332 ± 1.424
PRF-fit source offset from KIC position	0.697 ± 1.121	0.62	-0.592 ± 0.981	0.367 ± 1.424
photometric centroid source offset	1.38 ± 1.23	1.13	-0.94 ± 1.27	1.01 ± 1.19



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.

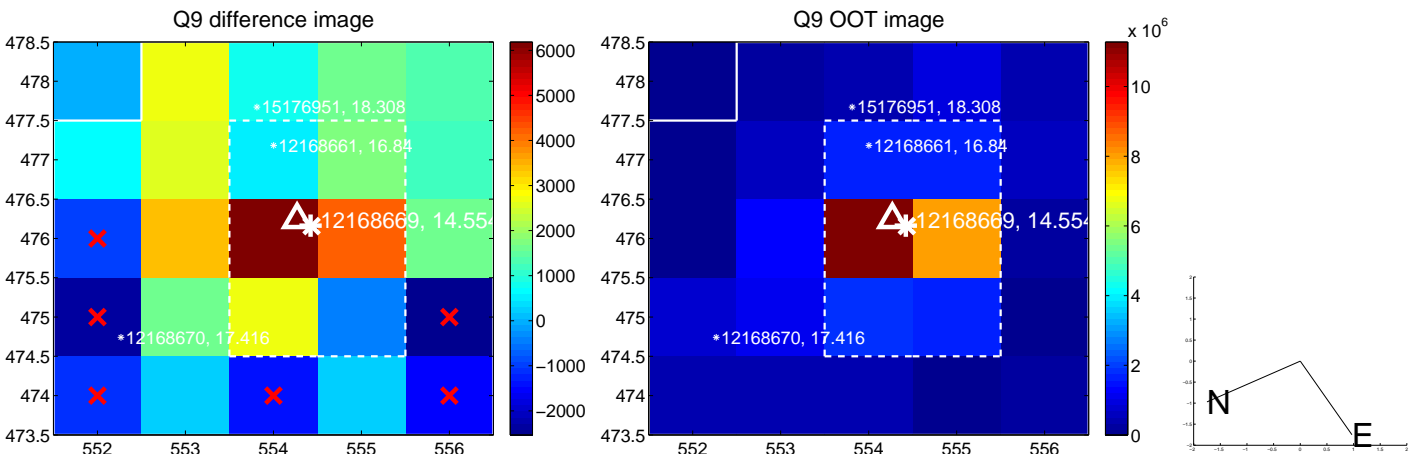
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Q13 no difference image



Q13 no OOT image



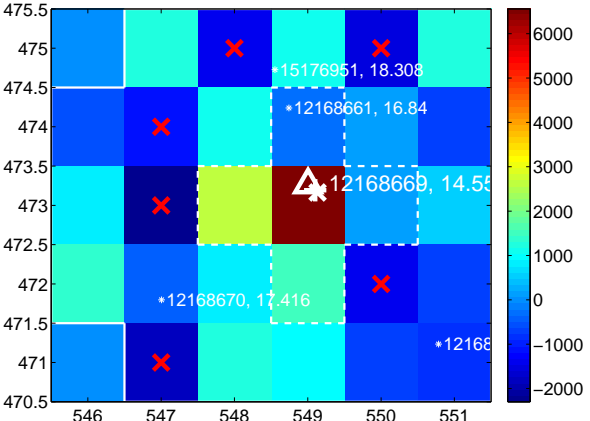
Q14 no difference image



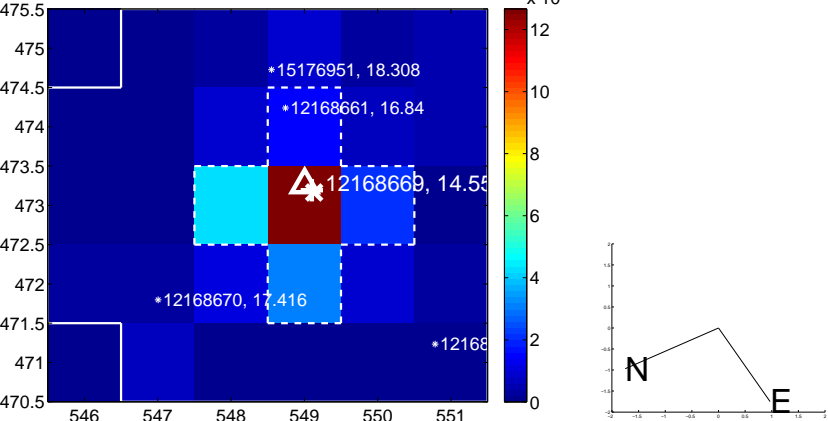
Q14 no OOT image



Q15 difference image



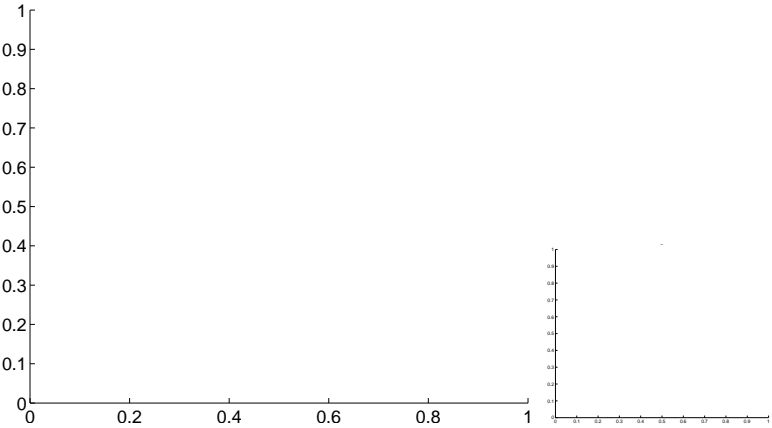
Q15 OOT image



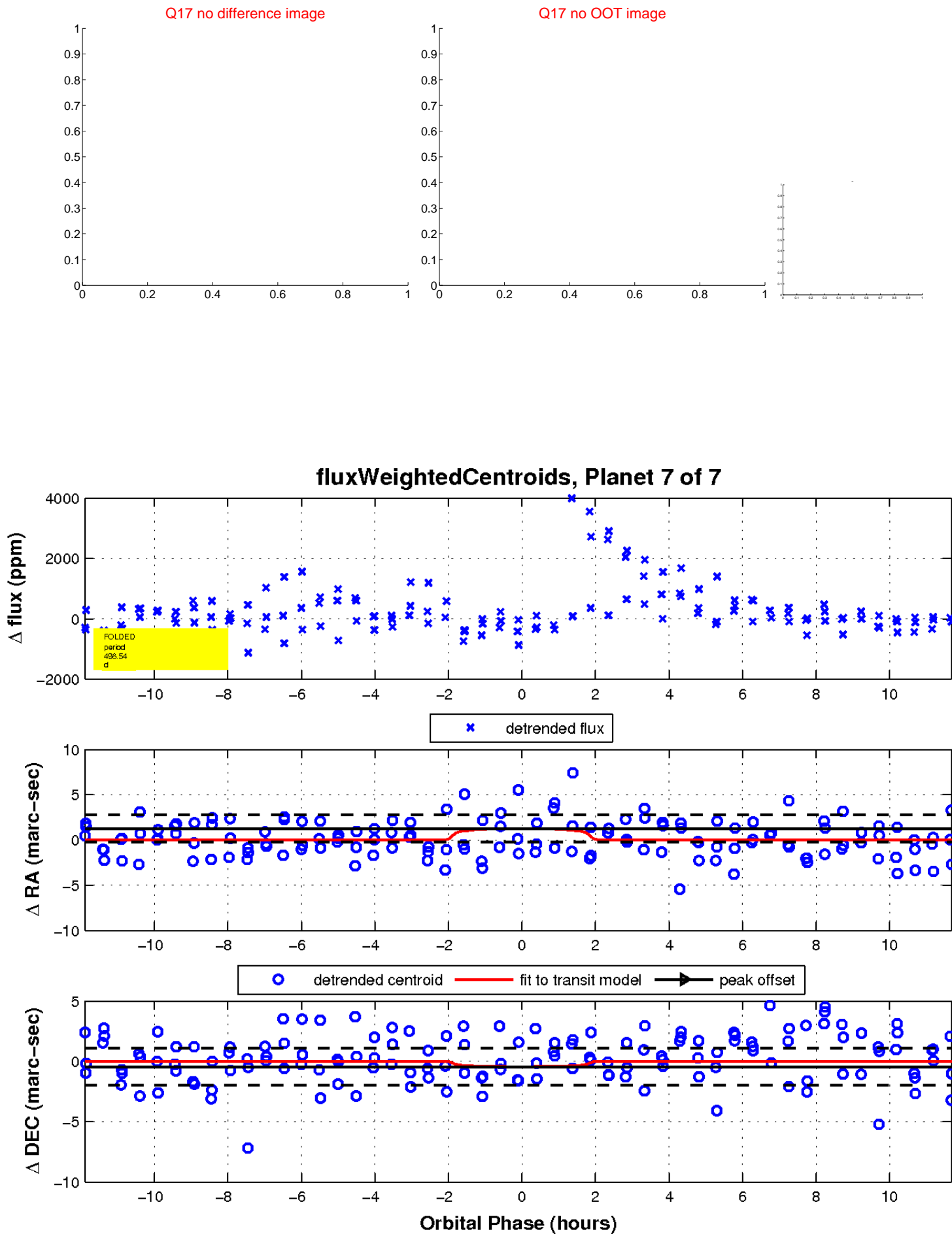
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

