

KIC 011662738

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})
011662738-01	OBS	No	687.940580	137.178471	1074.8	13.896	17.6	5.0	0.47	4605	1.74	0.06
011662738-02	OBS	No	327.134388	404.400597	1570.8	5.200	13.0	6.2	0.47	4605	2.35	0.16
011662738-03	OBS	No	482.405381	492.305383	1223.8	4.811	11.7	6.9	0.47	4605	1.67	0.10
011662738-04	OBS	No	470.516196	510.666479	1419.0	7.015	11.1	7.8	0.47	4605	1.78	0.10
011662738-05	OBS	No	485.700053	147.555223	1677.6	8.863	10.4	8.0	0.47	4605	2.25	0.10
011662738-06	OBS	No	544.699823	152.448257	1335.6	7.300	9.8	6.6	0.47	4605	3.20	0.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011662738-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV
011662738-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_MEAS
011662738-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

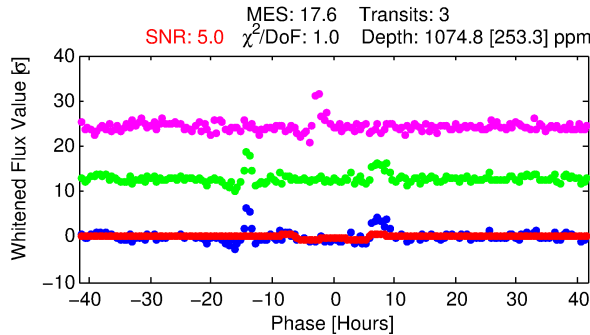
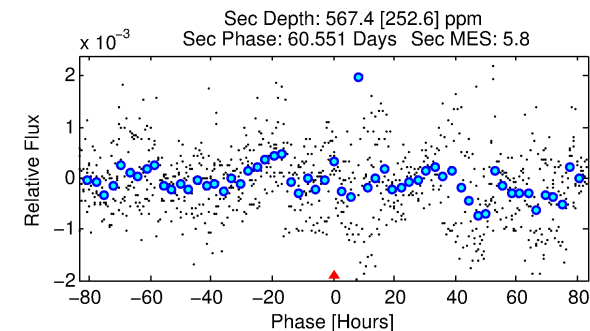
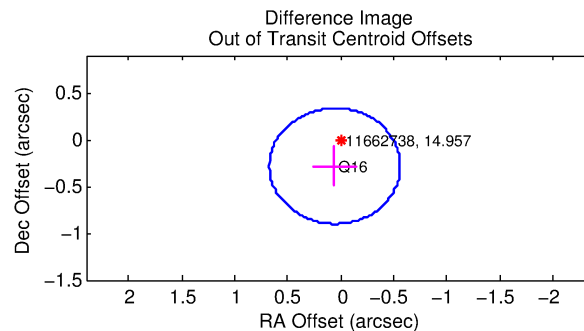
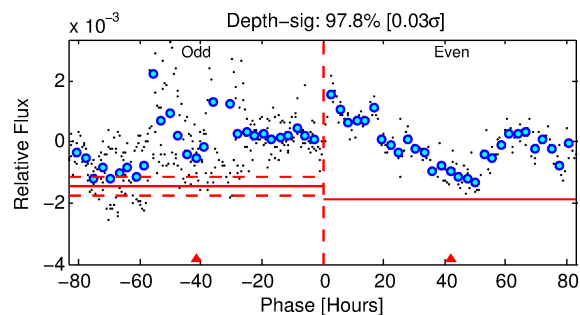
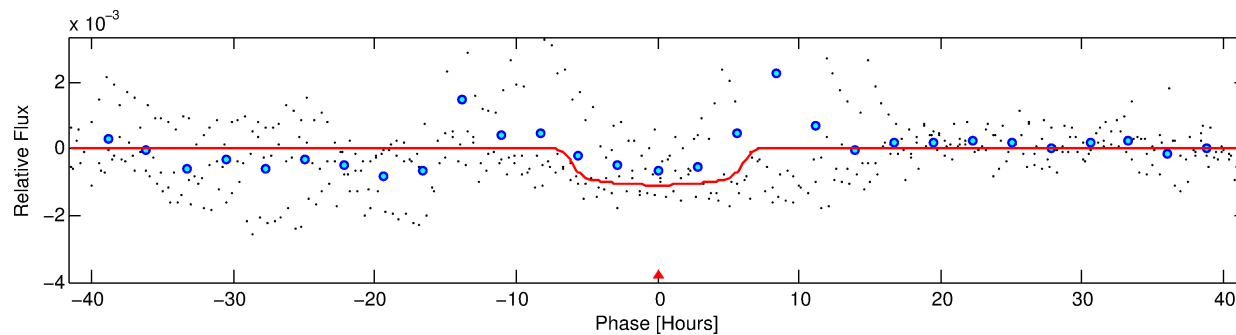
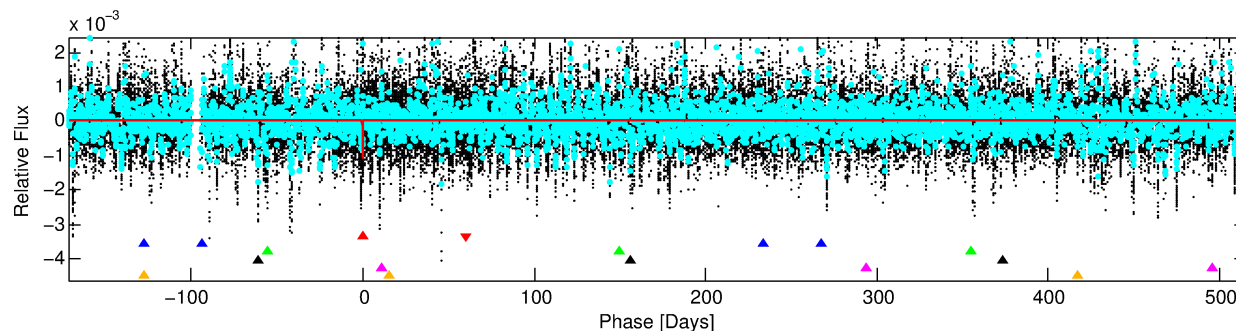
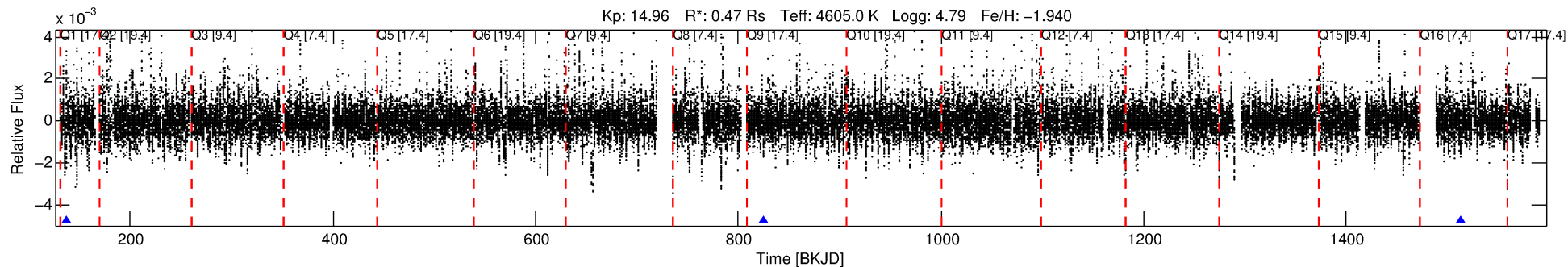
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011662738-01

No Significant Match Found

DV One-Page Summary

KIC: 11662738 Candidate: 1 of 6 Period: 687.941 d



DV Fit Results:

Period = 687.94058 [0.01495] d
Epoch = 137.1785 [0.0201] BKJD
Rp/R* = 0.0341 [0.0050]
a/R* = 218.30 [74.35]
b = 0.86 [0.11]
Seff = 0.06 [0.01]
Teq = 127 [5] K
Rp = 1.74 [0.28] Re
a = 1.2057 [0.0610] AU
Ag = 149189.27 [79993.95] [1.86σ]
Teffp = 3846 [530] K [7.02σ]

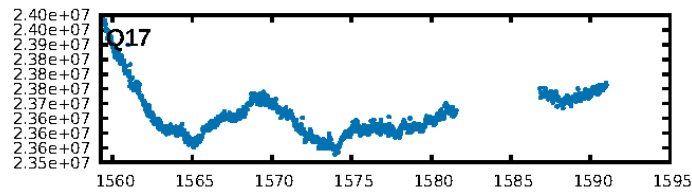
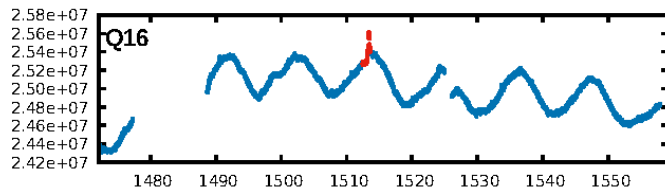
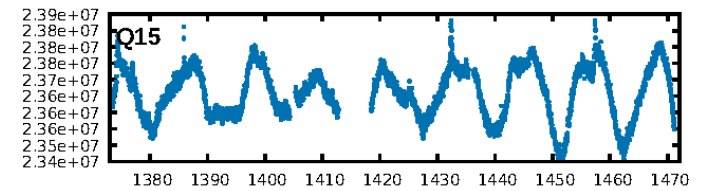
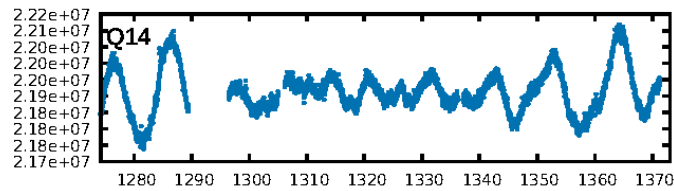
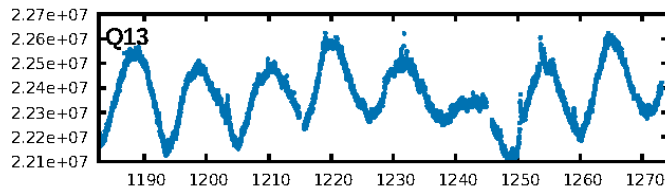
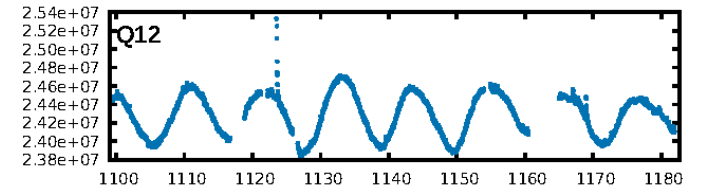
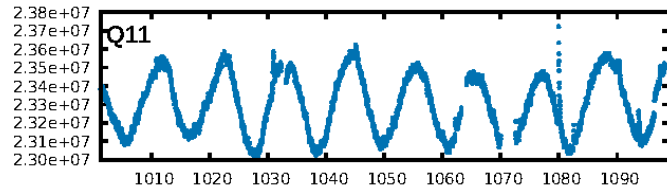
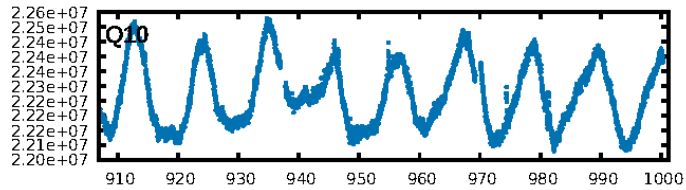
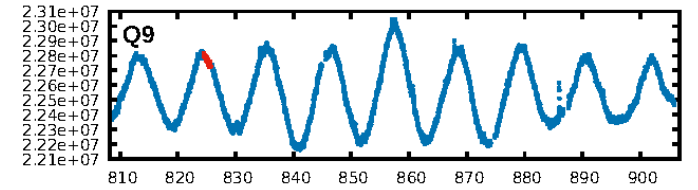
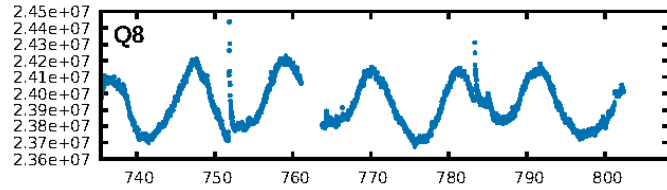
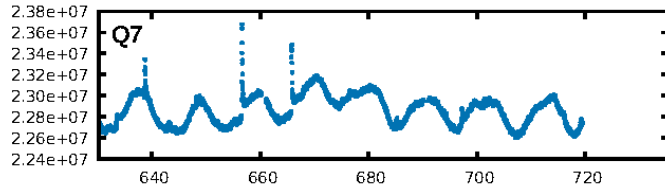
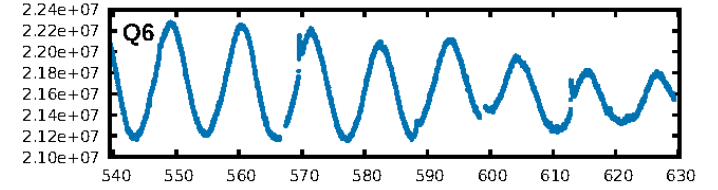
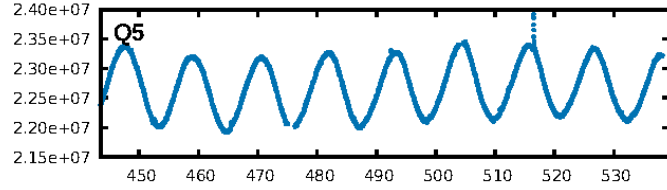
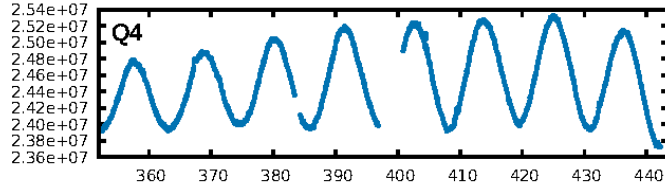
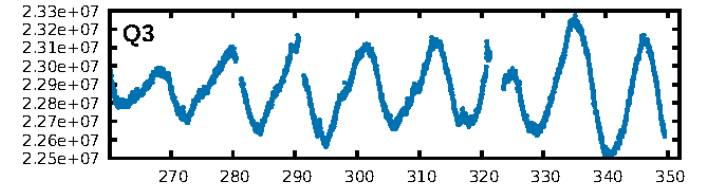
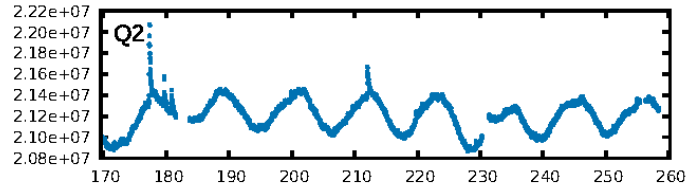
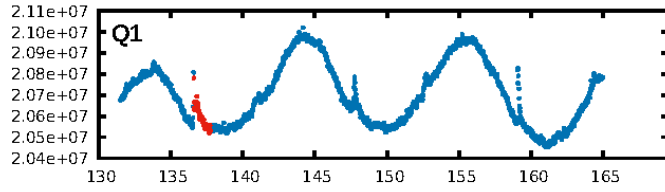
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [219.02σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.2%
ModelChiSquareGof-sig: 98.4%
Bootstrap-pfa: 7.54e-23
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.5758
Centroid-sig: 0.1%
Centroid-so: 1.553 arcsec [2.27σ]
OotOffset-rm: 0.288 arcsec [1.40σ]
KicOffset-rm: 0.217 arcsec [1.06σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

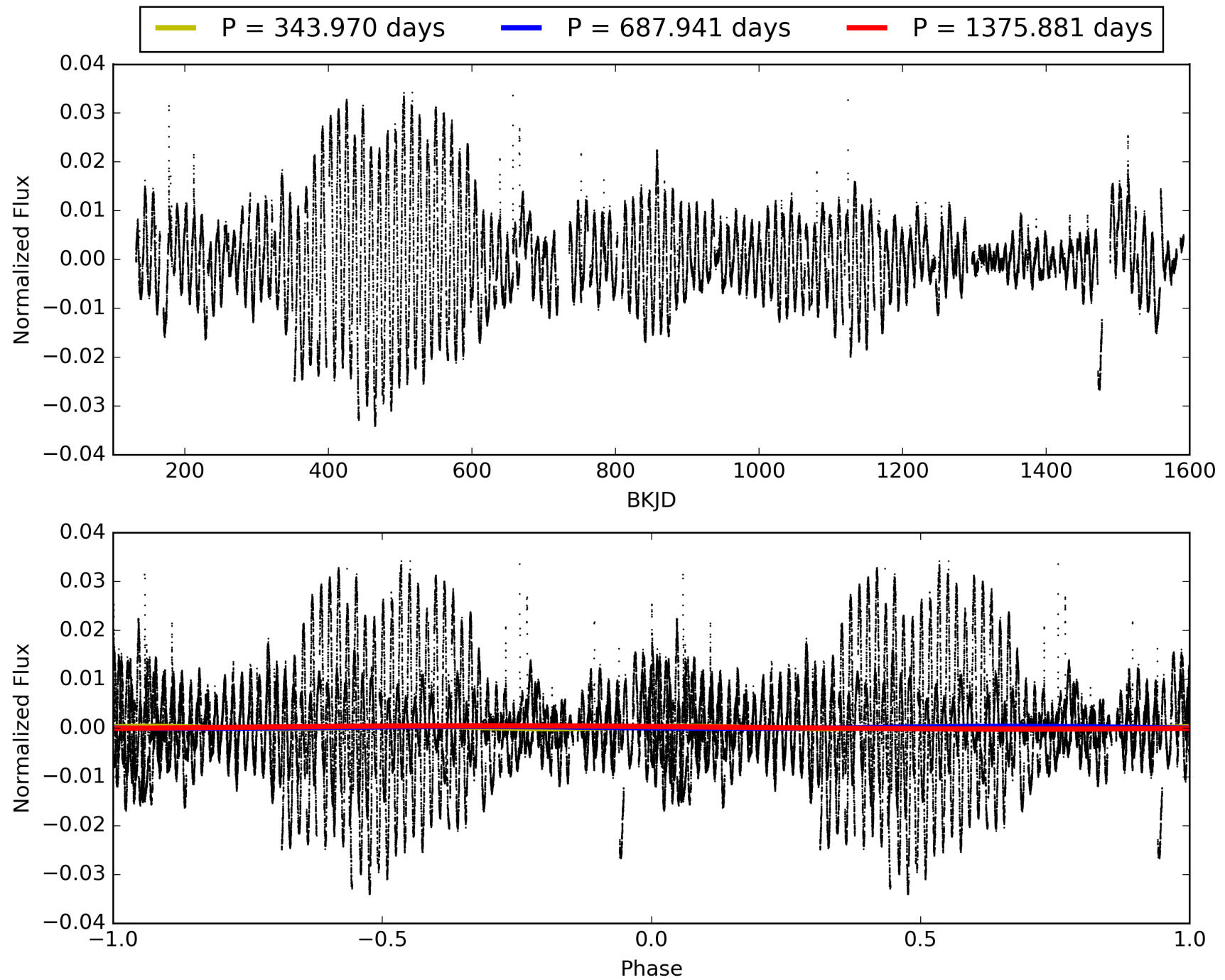
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011662738-01, PDC Light Curves

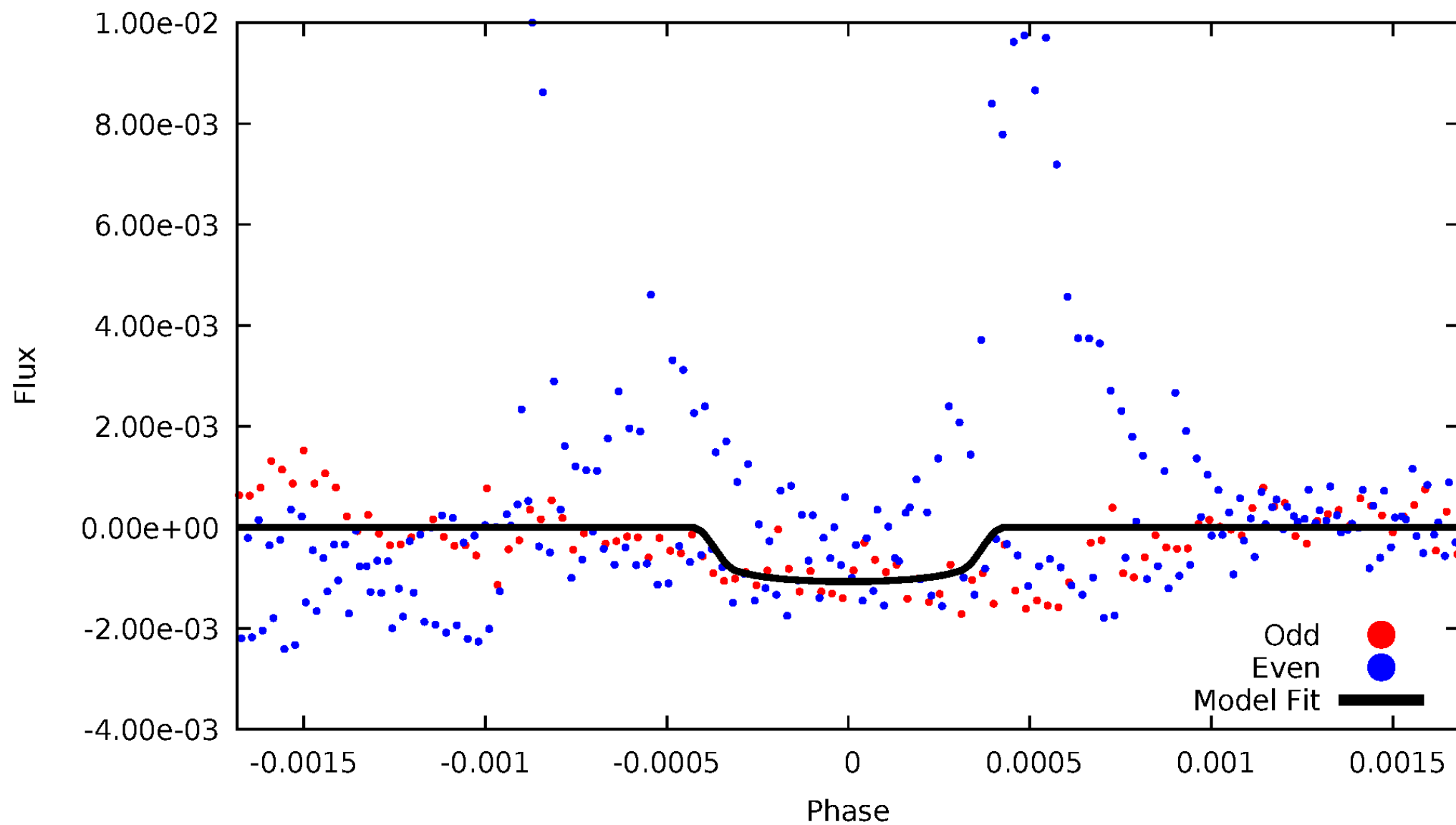


TCE 011662738-01



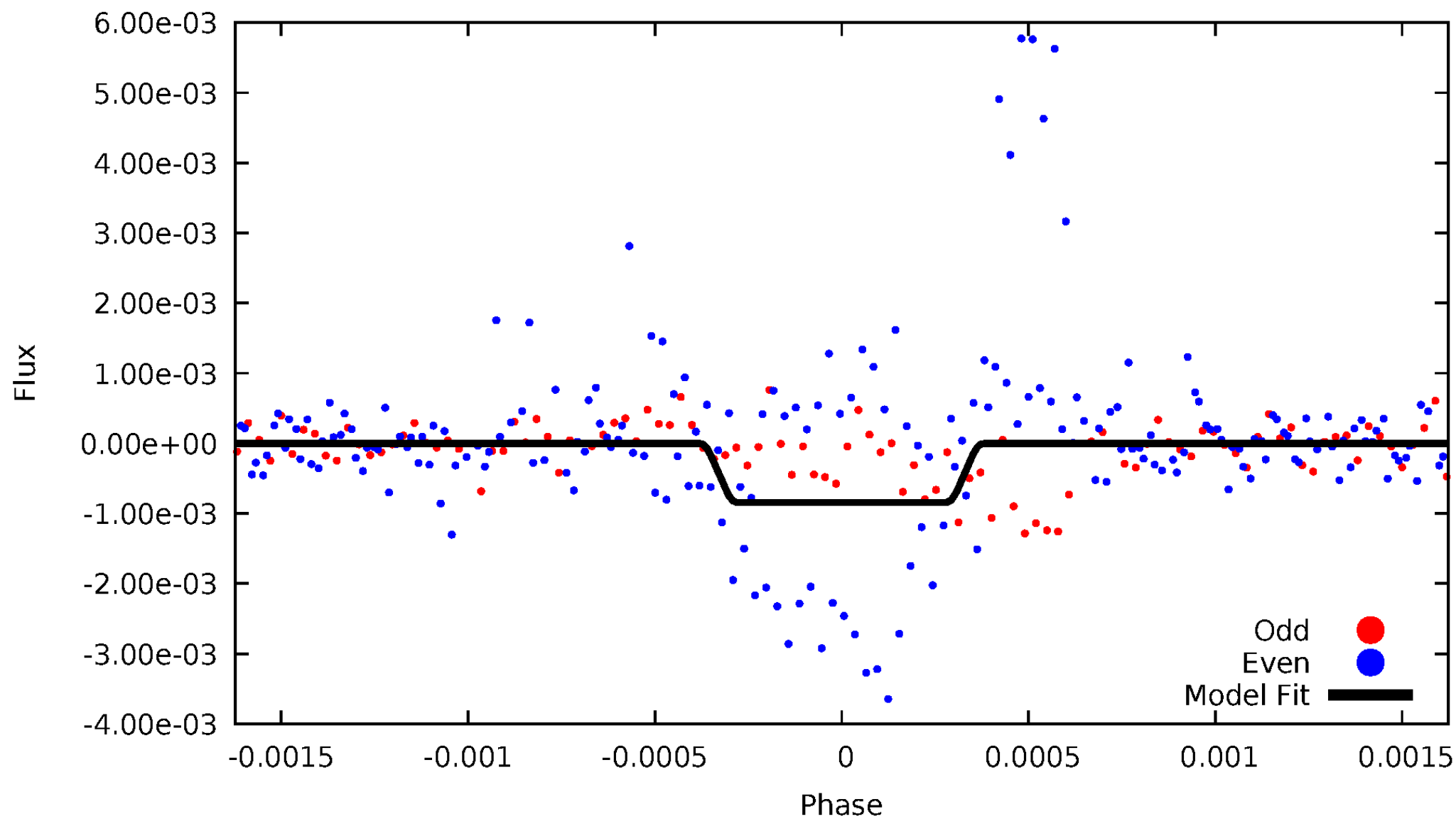
DV Odd/Even

TCE 011662738-01



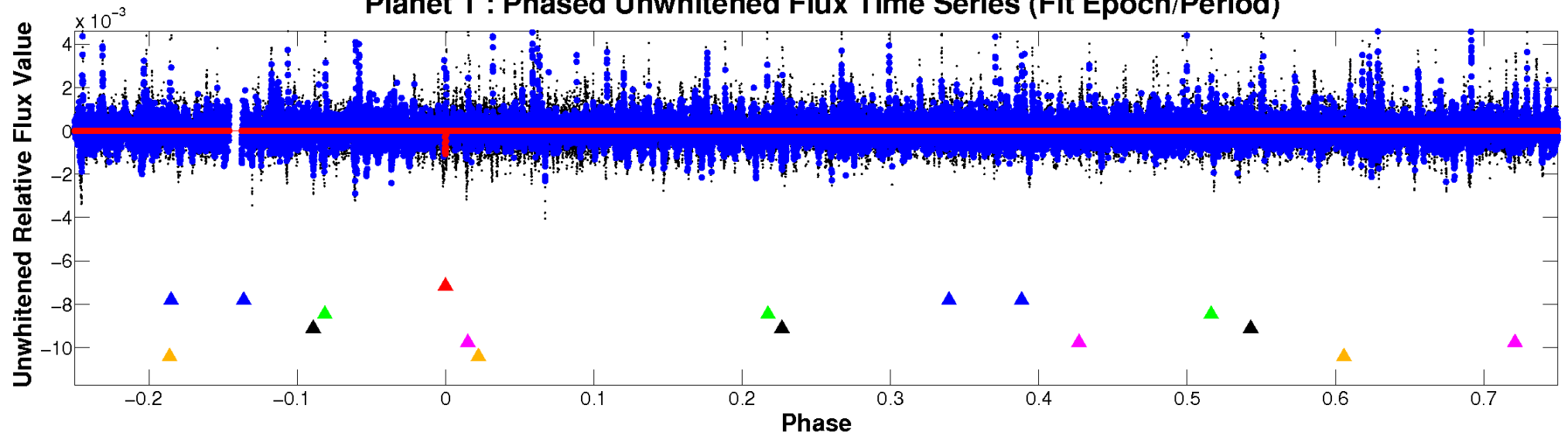
ALT Odd/Even

TCE 011662738-01

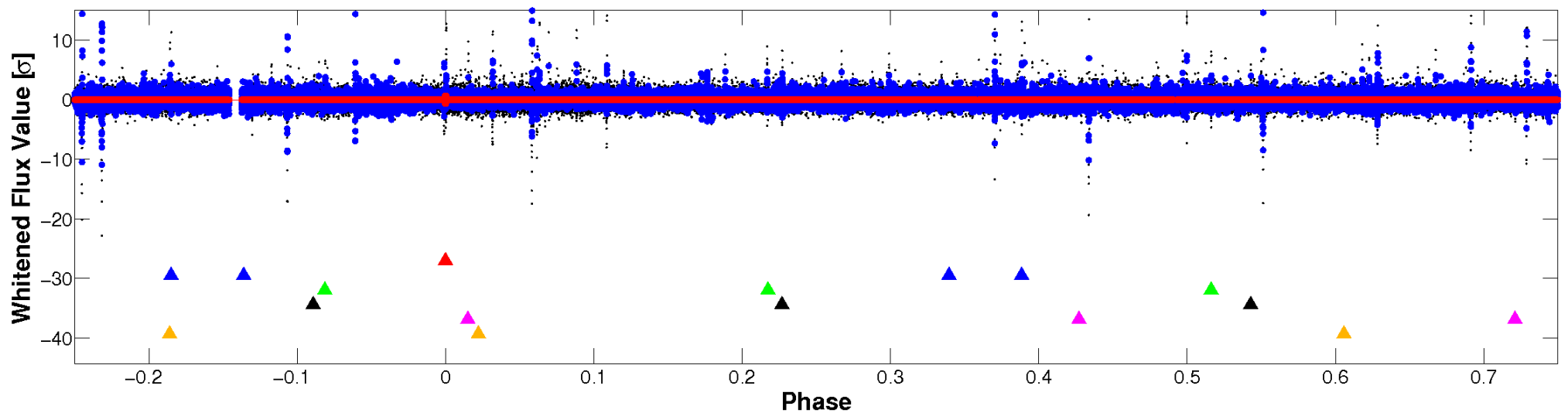


Non-Whitened Vs. Whitened Light Curve

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

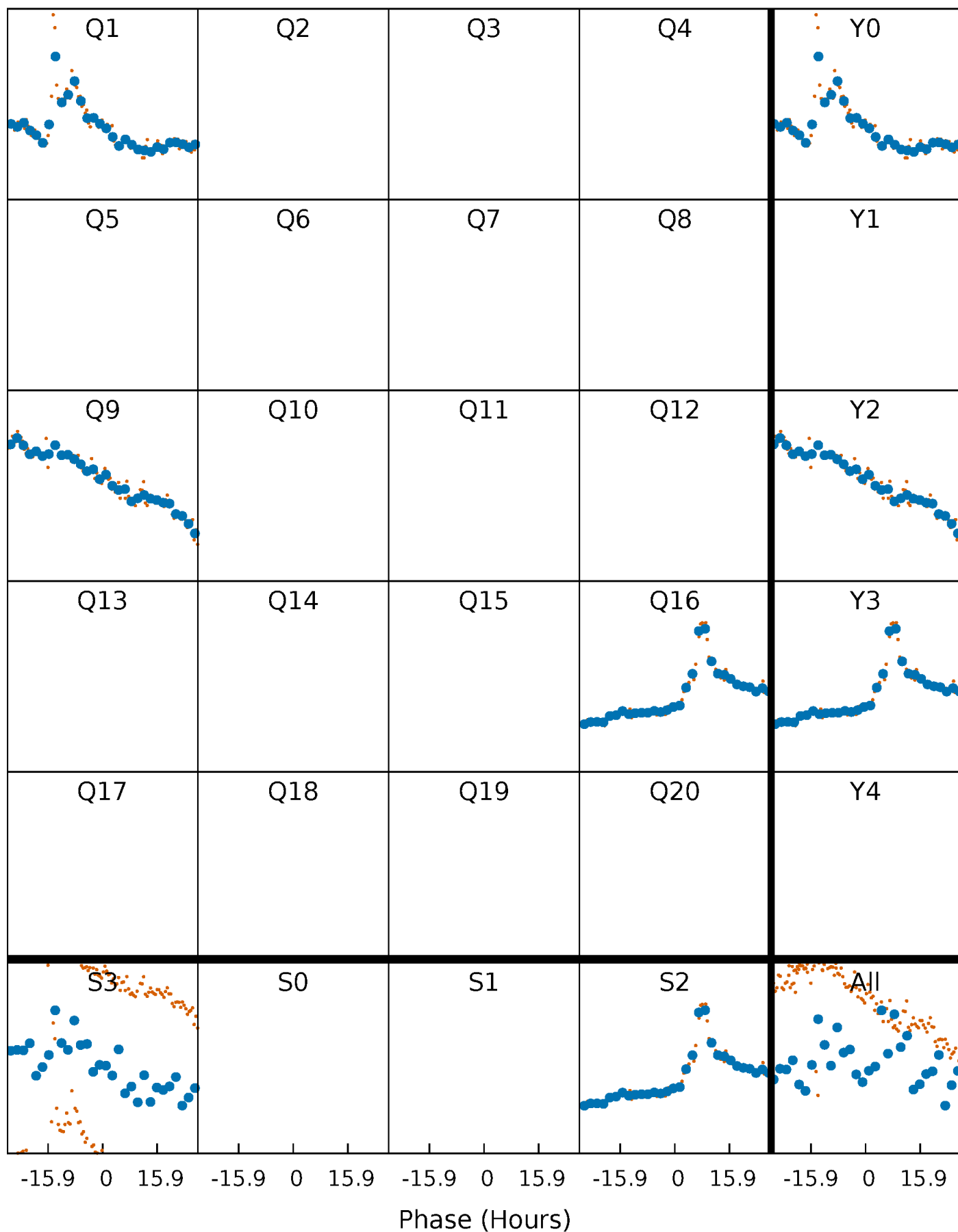


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



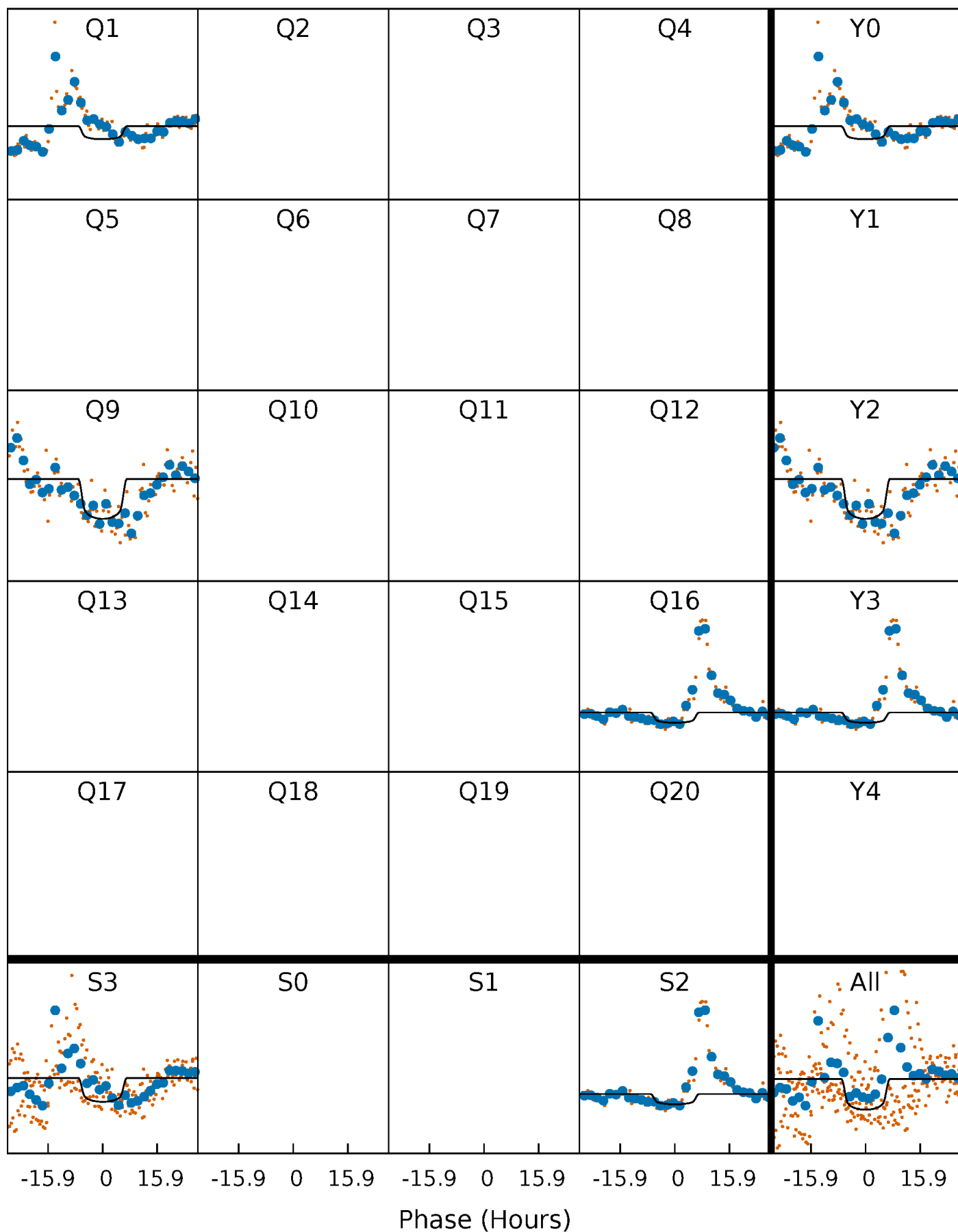
PDC Quarter-Phased Transit Curves

TCE 011662738-01 P=687.940581 Days $T_0=137.178472$ (BKJD)



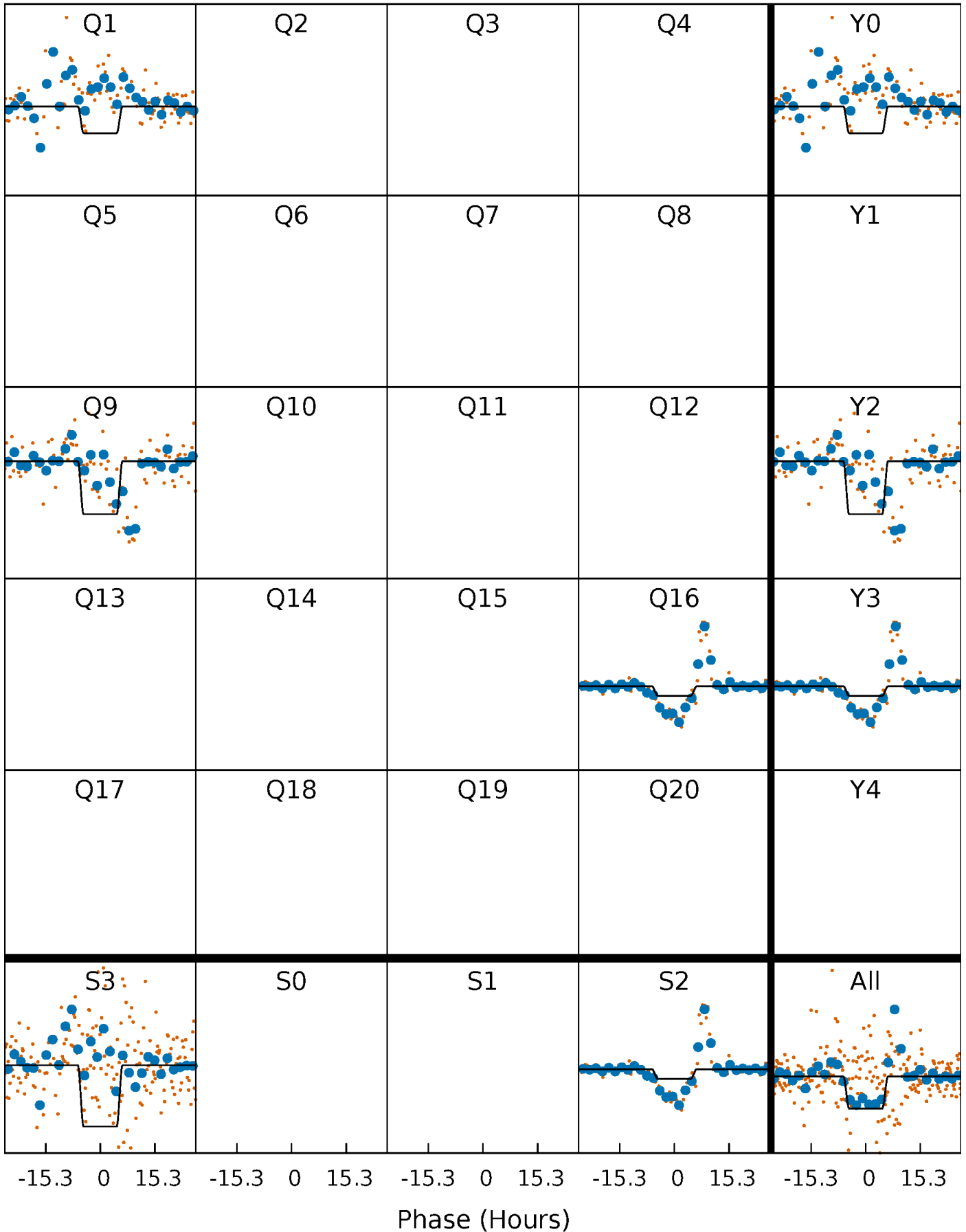
DV Quarter-Phased Transit Curves

TCE 011662738-01 P=687.940581 Days $T_0=137.178472$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

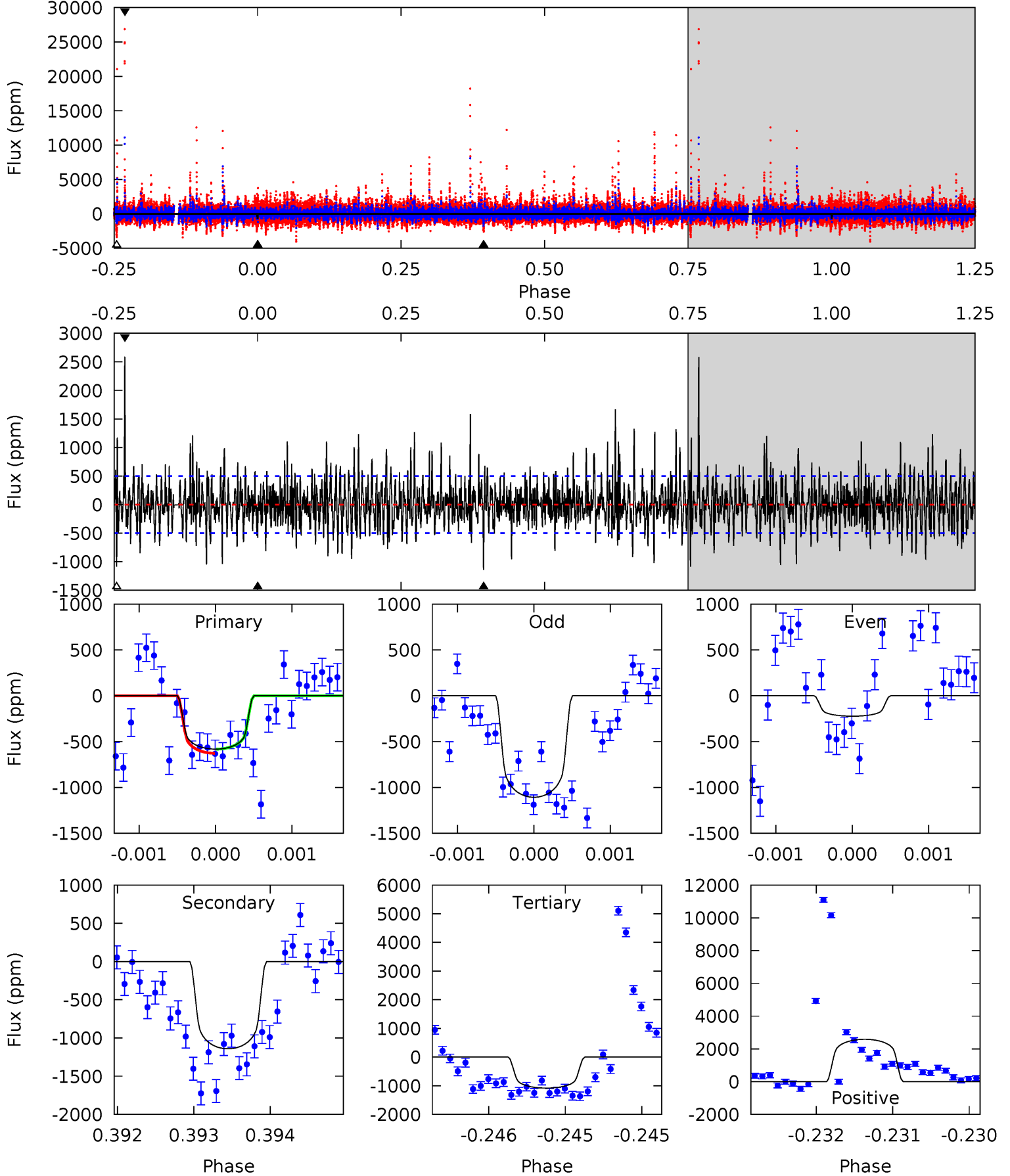
TCE 011662738-01 P=687.923042 Days $T_0=137.195636$ (BKJD)



DV Model-Shift Uniqueness Test

011662738-01, P = 687.940581 Days, E = 137.178472 Days

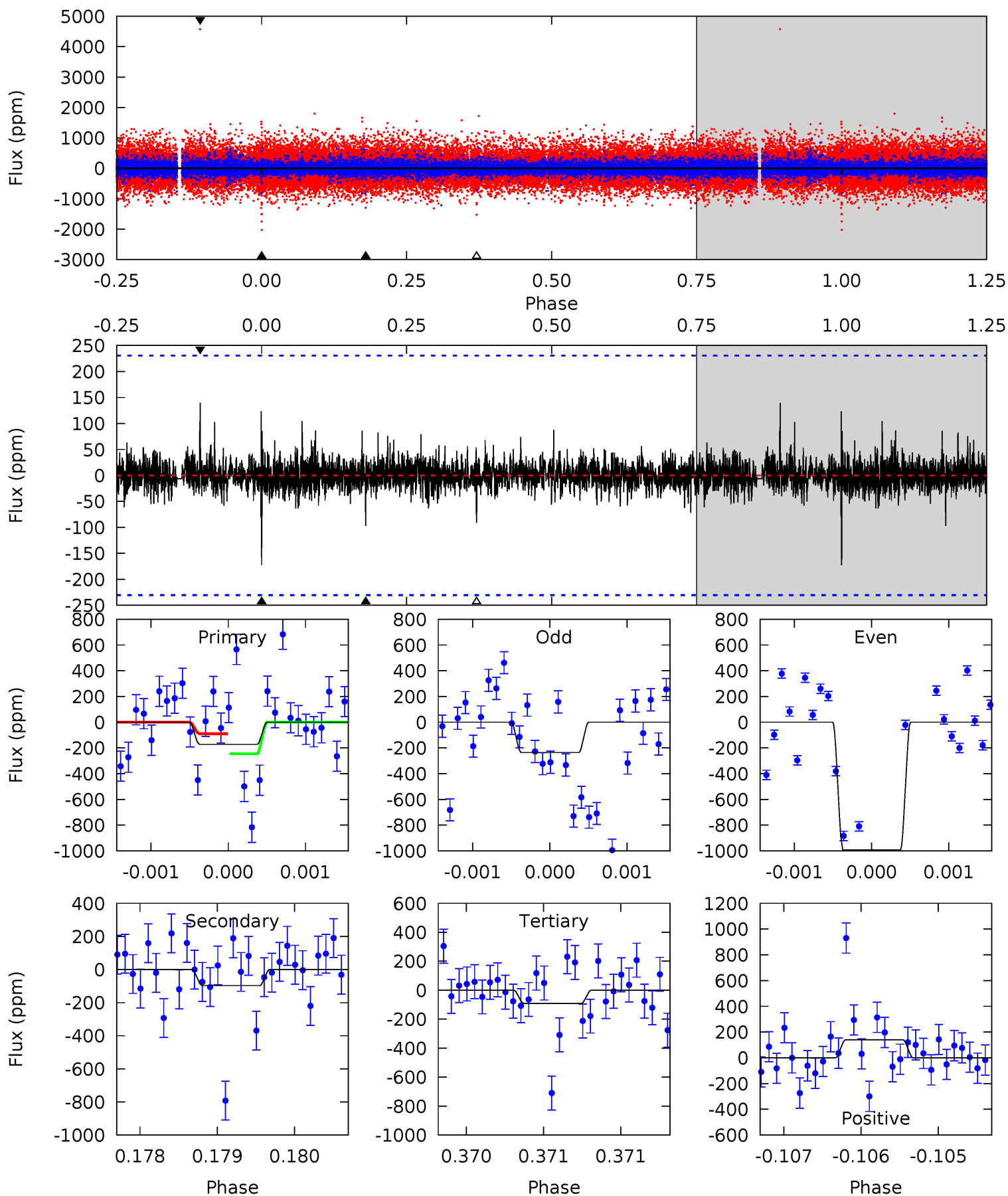
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.39	12.5	11.9	28.4	5.48	3.33	3.66	-5.49	-22.0	0.64	-15.8	3.77	1.27	0.69	0.25



Alt Model-Shift Uniqueness Test

011662738-01, P = 687.923042 Days, E = 137.195636 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.12	2.31	2.18	3.33	5.50	3.37	0.44	1.94	0.78	0.14	-1.02	9.46	2.88	0.45	1.85



Stellar Parameters For KIC 011662738

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4605^{+139}_{-167}	$4.791^{+0.038}_{-0.028}$	$-1.940^{+0.300}_{-0.050}$	$0.468^{+0.029}_{-0.029}$	$0.494^{+0.034}_{-0.025}$	$6.787^{+1.113}_{-0.807}$
	+3%/-4%	+1%/-1%	+15%/-3%	+6%/-6%	+7%/-5%	+16%/-12%
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 011662738-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1141 ± 91	$1.74^{+0.25}_{-0.25}$	177^{+5}_{-7}	4586^{+349}_{-289}	$303083^{+114189}_{-75162}$
Alt.	-97 ± 42	$1.48^{+0.26}_{-0.25}$	176^{+6}_{-7}	3193^{+265}_{-293}	35634^{+25443}_{-16483}

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 $A_{obs} \gg 1.0$

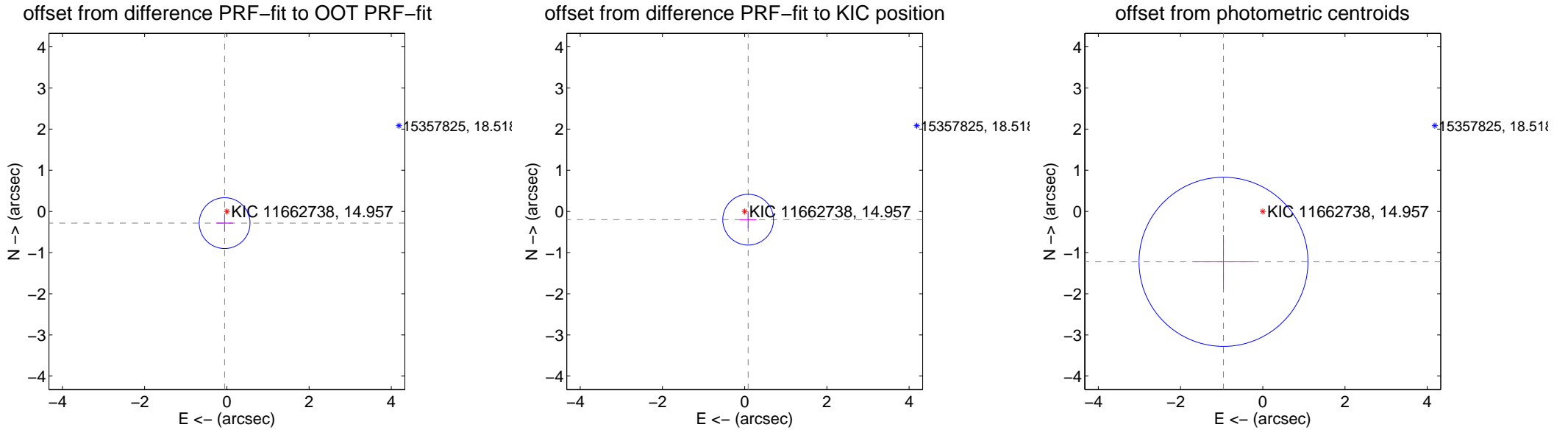
DV Centroid Data

Supplemental centroid analysis for 011662738-01. Kepler magnitude: 14.96. Transit SNR 4.99

There are 1 quarters with good PRF difference image offsets

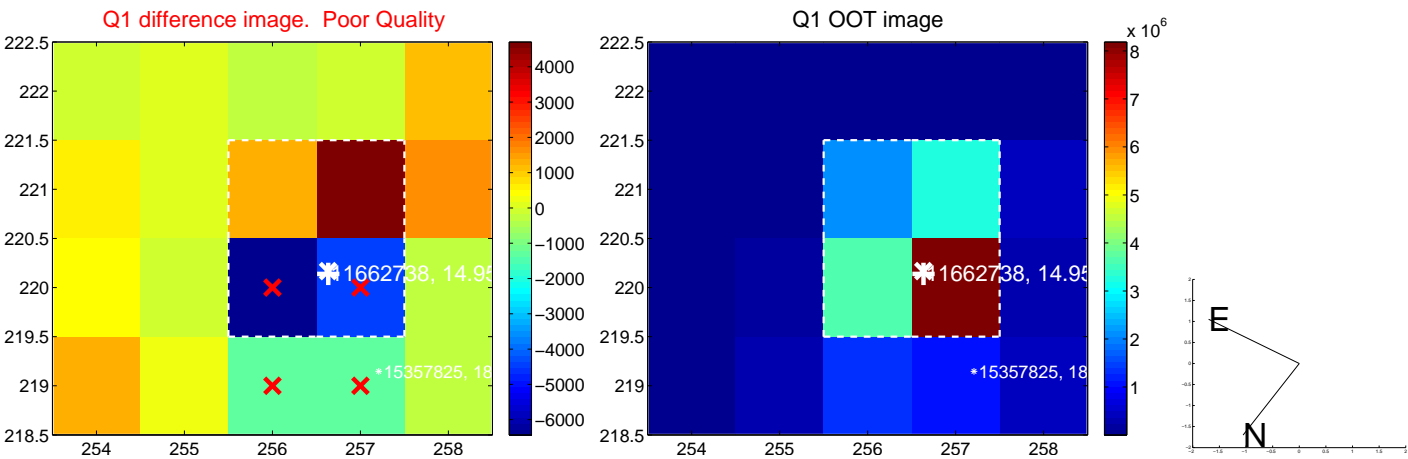
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.288 ± 0.206	1.40	0.054 ± 0.205	-0.283 ± 0.206
PRF-fit source offset from KIC position	0.217 ± 0.206	1.06	-0.085 ± 0.205	-0.200 ± 0.206
photometric centroid source offset	1.55 ± 0.68	2.27	0.95 ± 0.73	-1.22 ± 0.66



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

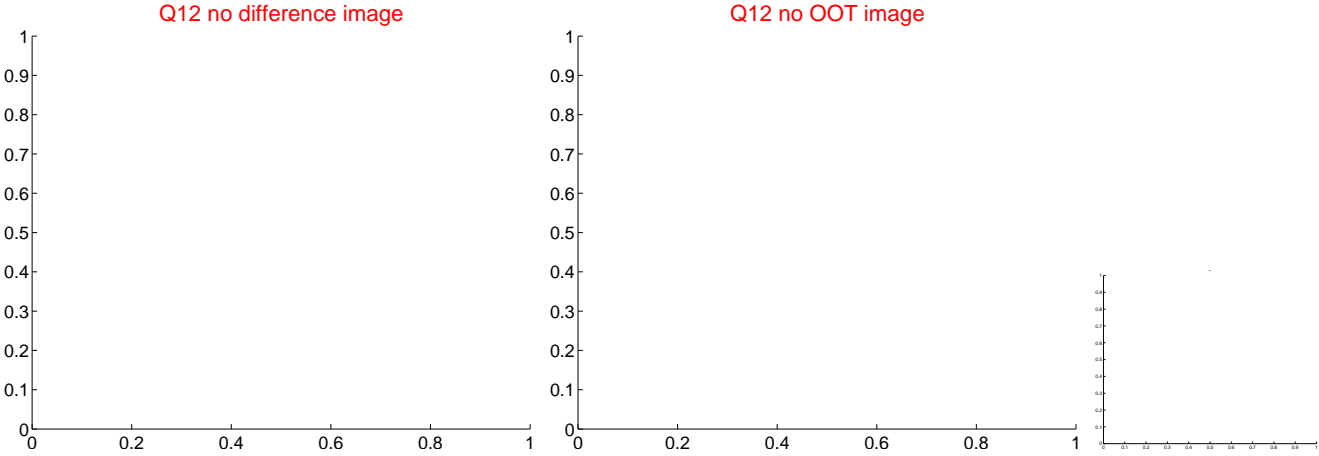
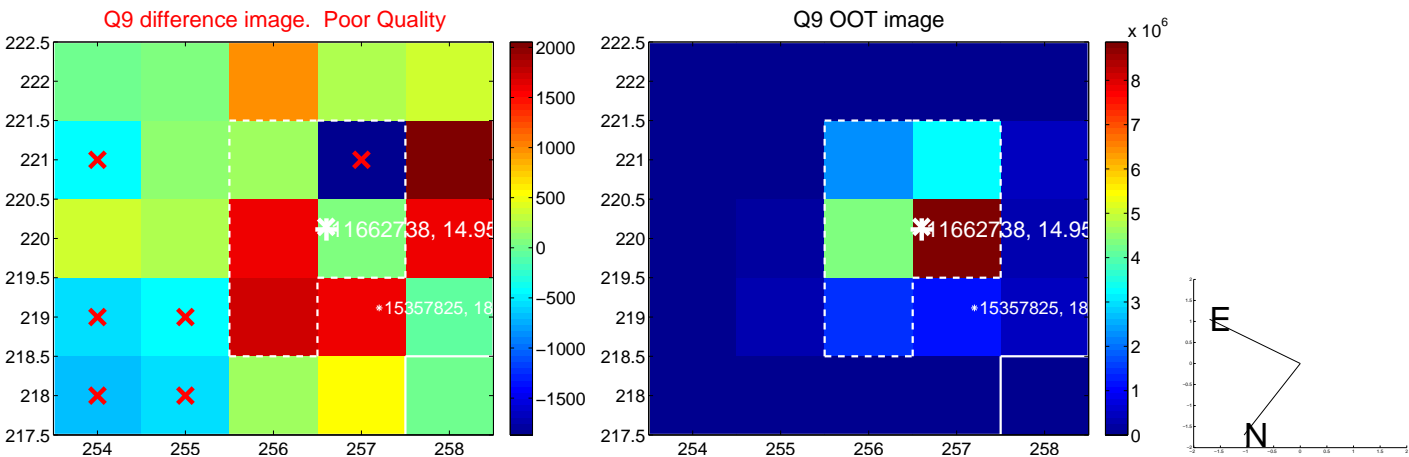
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



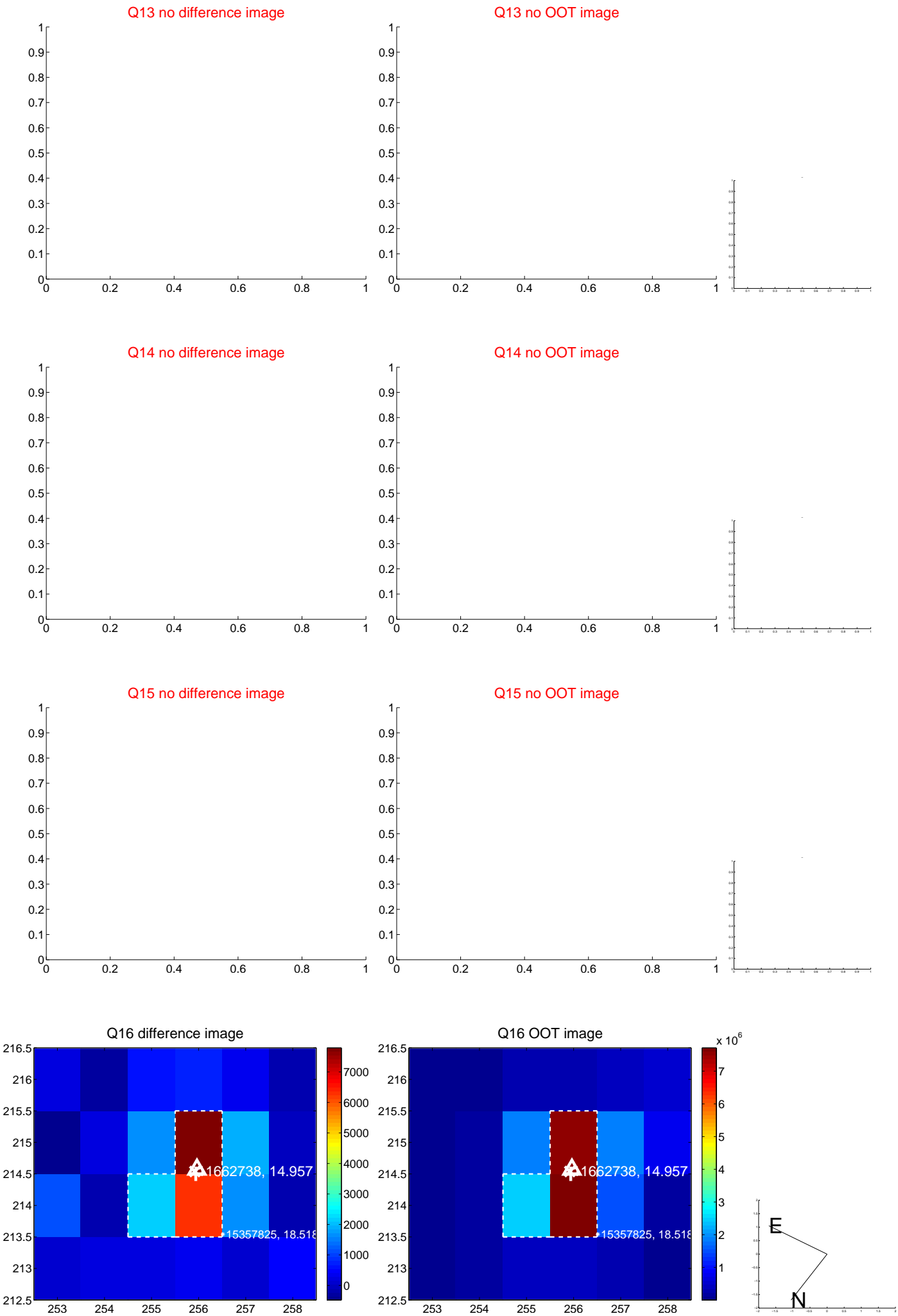
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



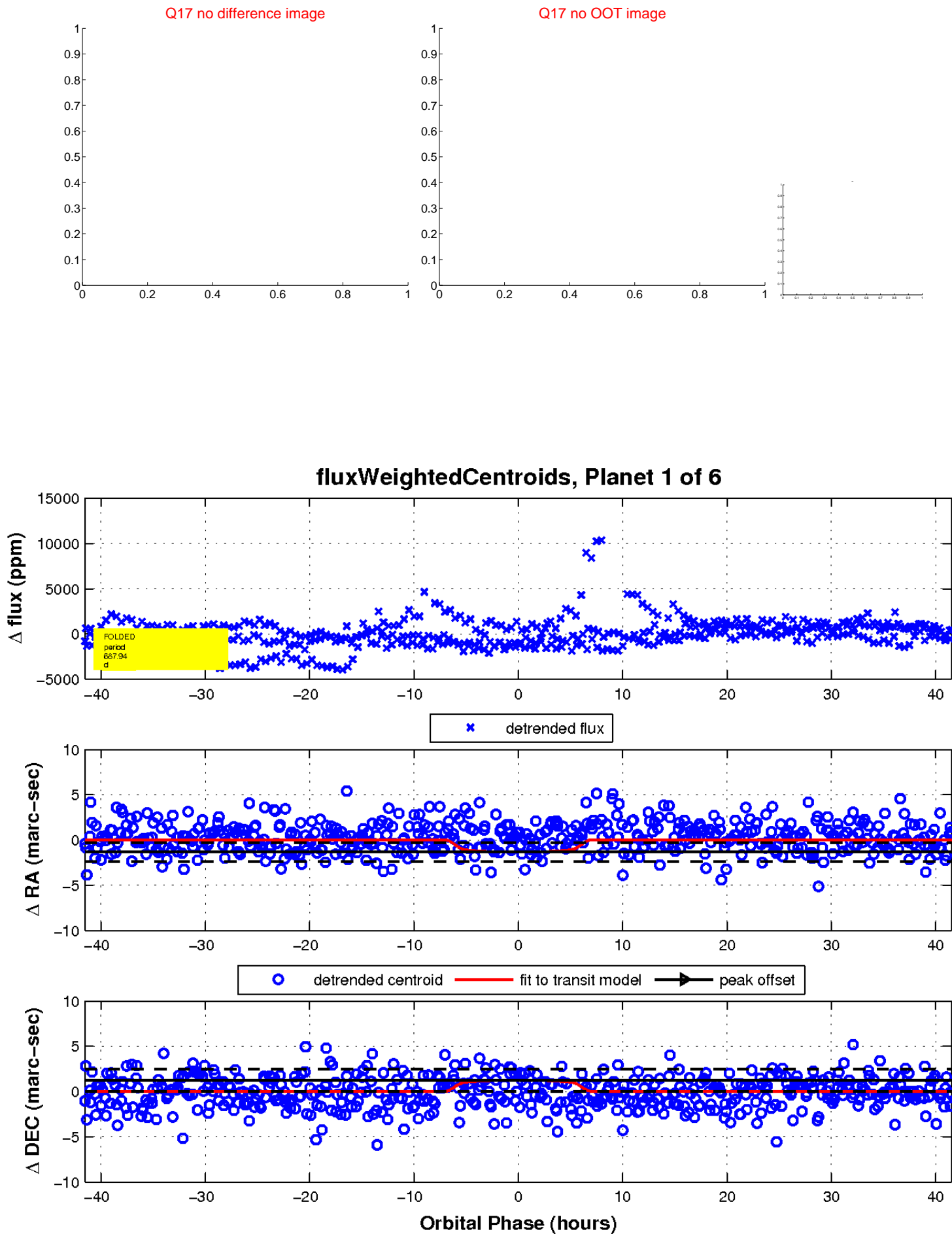
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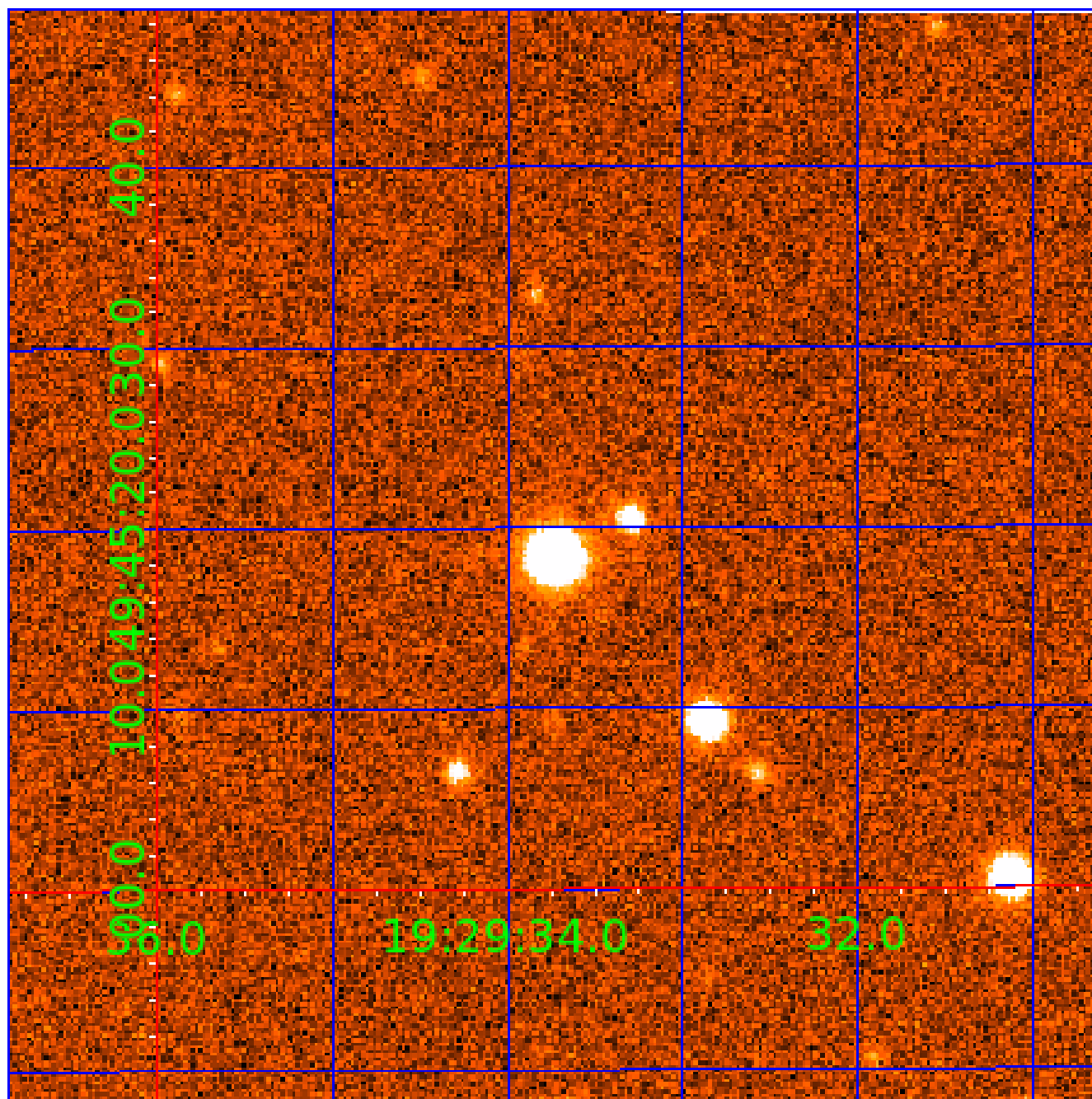


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011662738

Q1-17 DR25 TCE Parameters

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011662738-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV
011662738-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_MEAS
011662738-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

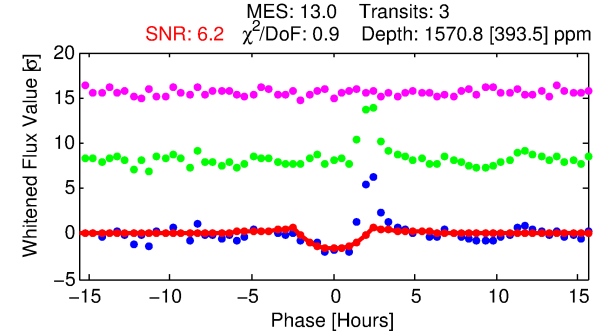
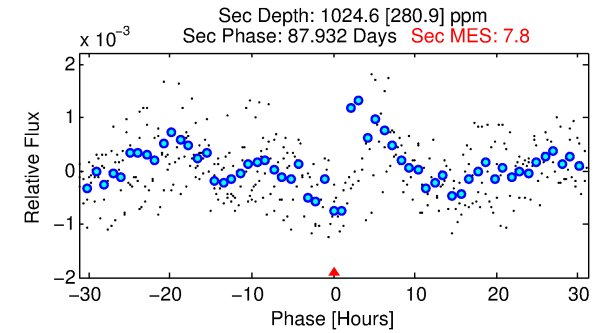
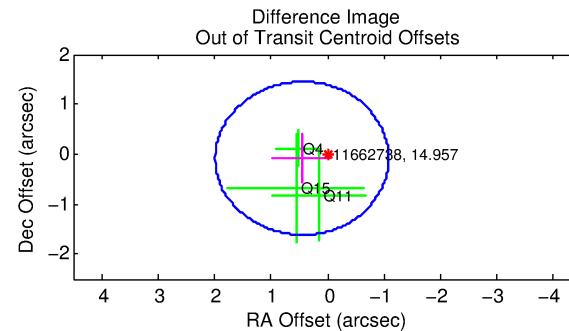
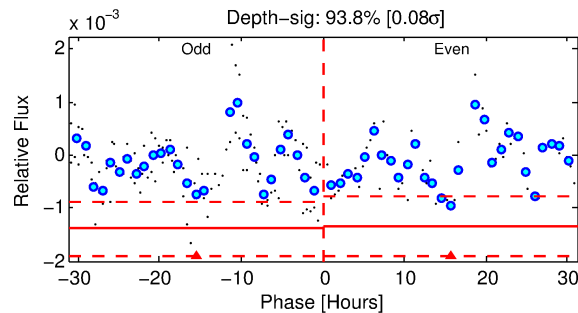
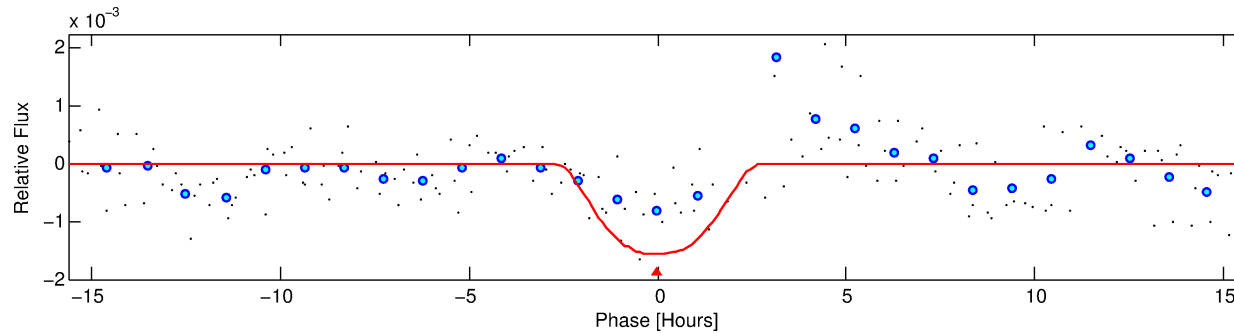
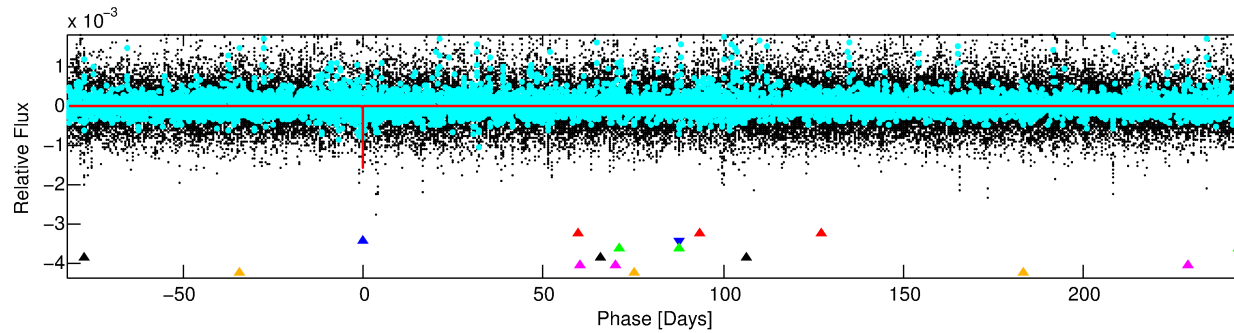
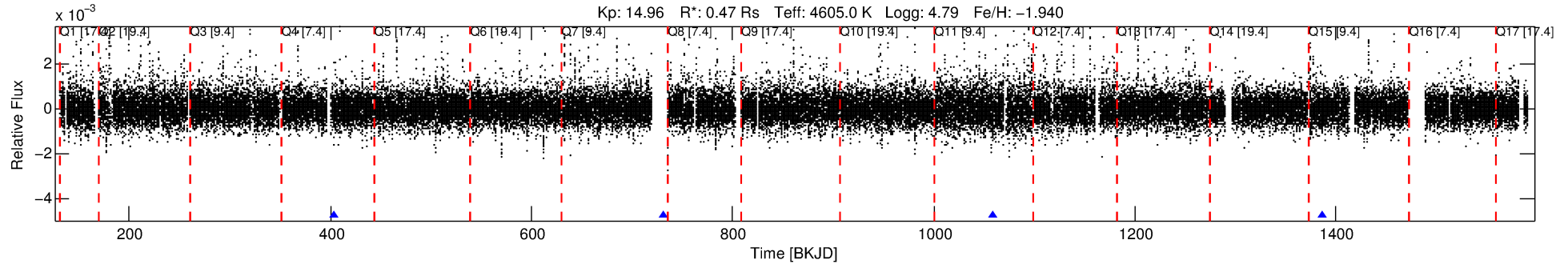
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011662738-02

No Significant Match Found

DV One-Page Summary

KIC: 11662738 Candidate: 2 of 6 Period: 327.134 d



DV Fit Results:

Period = 327.13439 [0.00643] d
Epoch = 404.4006 [0.0129] BKJD
Rp/R* = 0.0460 [0.0079]
a/R* = 207.37 [44.26]
b = 0.95 [0.03]
Seff = 0.16 [0.03]
Teq = 162 [7] K
Rp = 2.35 [0.43] Re
a = 0.7345 [0.0371] AU
Ag = 55214.48 [24613.26] [2.24 σ]
Teffp = 3843 [445] K [8.27 σ]

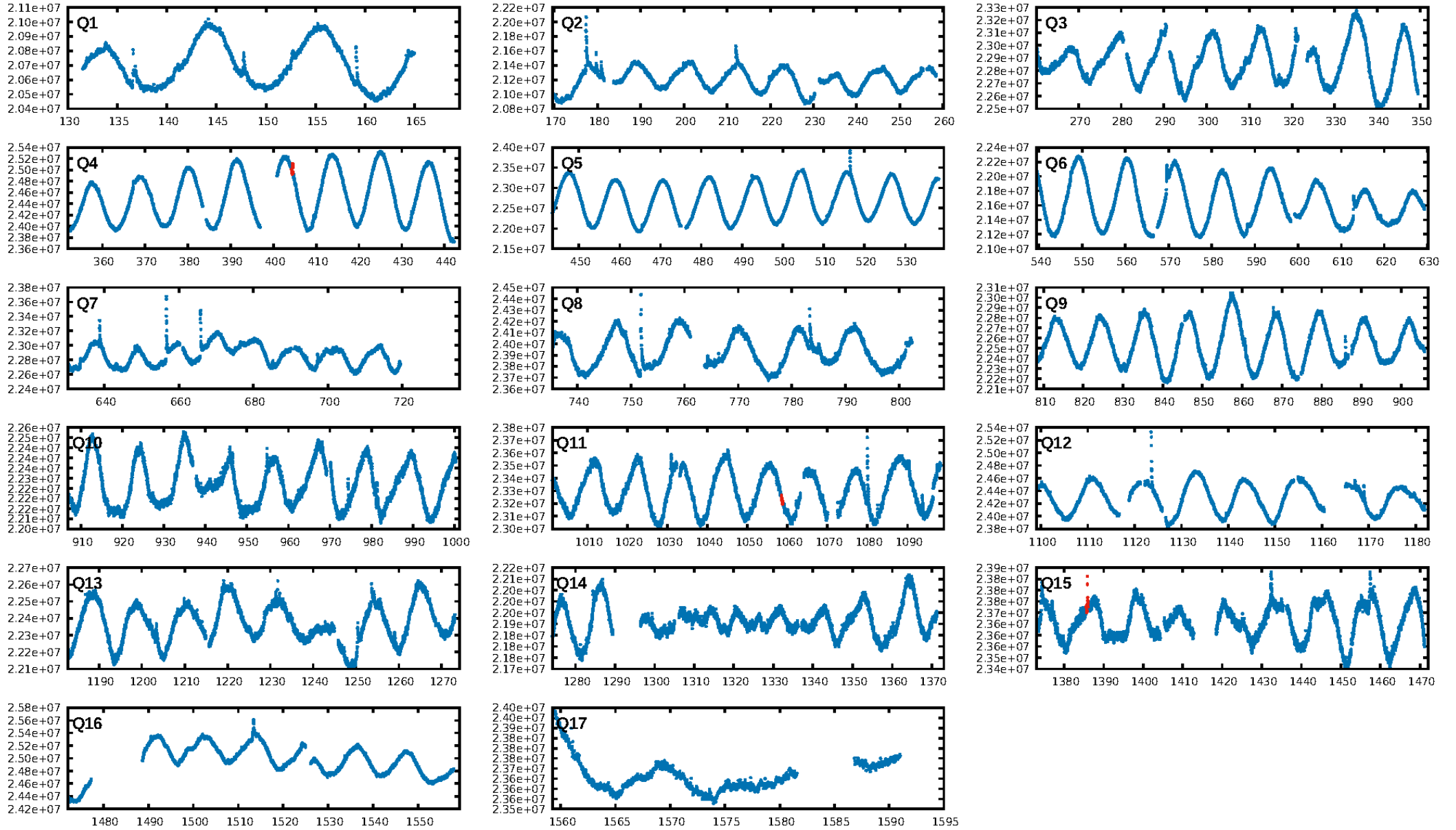
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [394.06 σ]
ModelChiSquare2-sig: 1.1%
ModelChiSquareGof-sig: 98.5%
Bootstrap-pfa: 4.97e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -5.156
Centroid-sig: 66.7%
Centroid-so: 0.430 arcsec [0.48 σ]
OotOffset-rm: 0.460 arcsec [0.90 σ]
OotOffset-st: 0/2/1/0 [3]
KicOffset-rm: 0.336 arcsec [0.66 σ]
KicOffset-st: 0/2/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

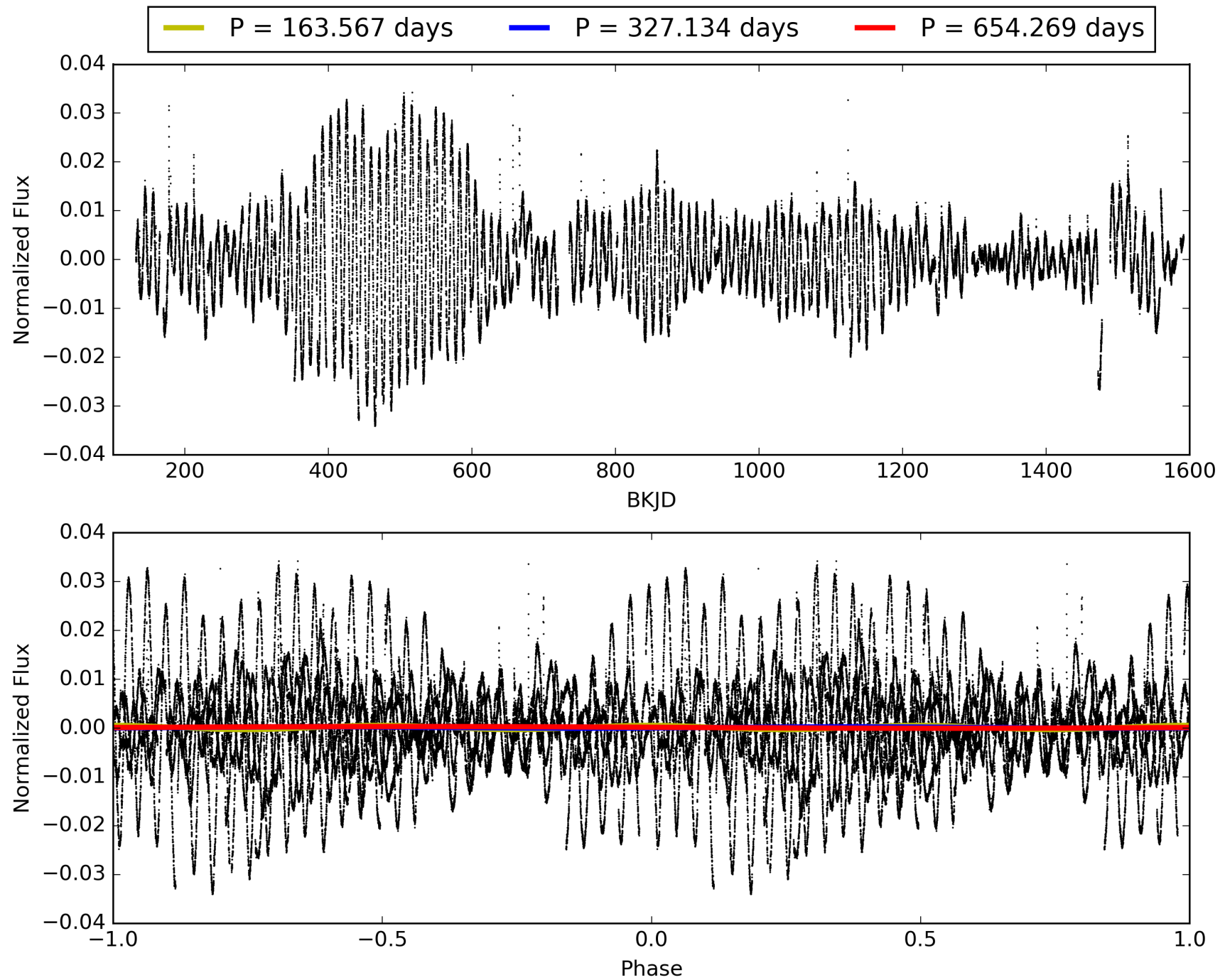
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:54:25 Z

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

TCE 011662738-02, PDC Light Curves

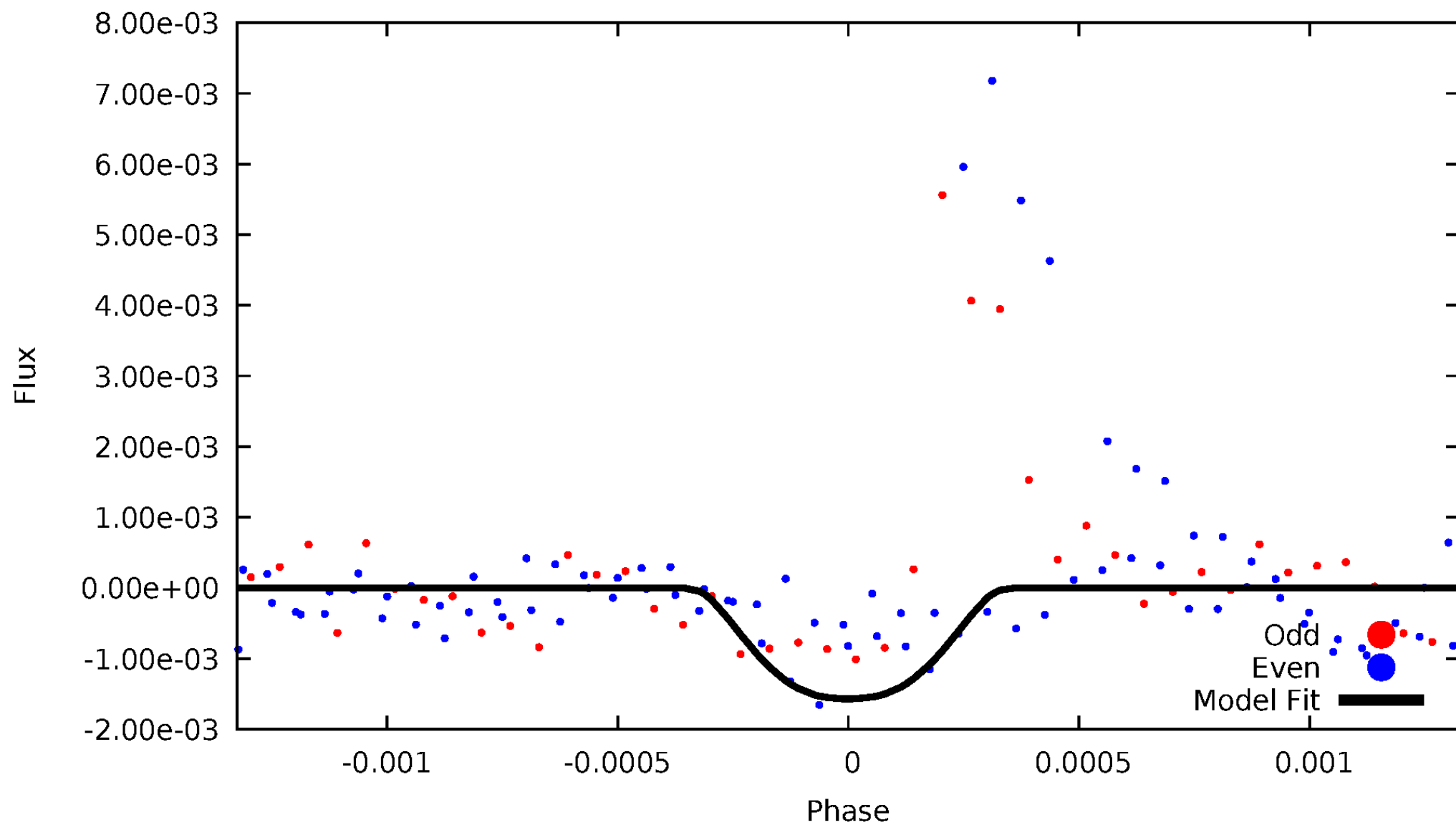


TCE 011662738-02



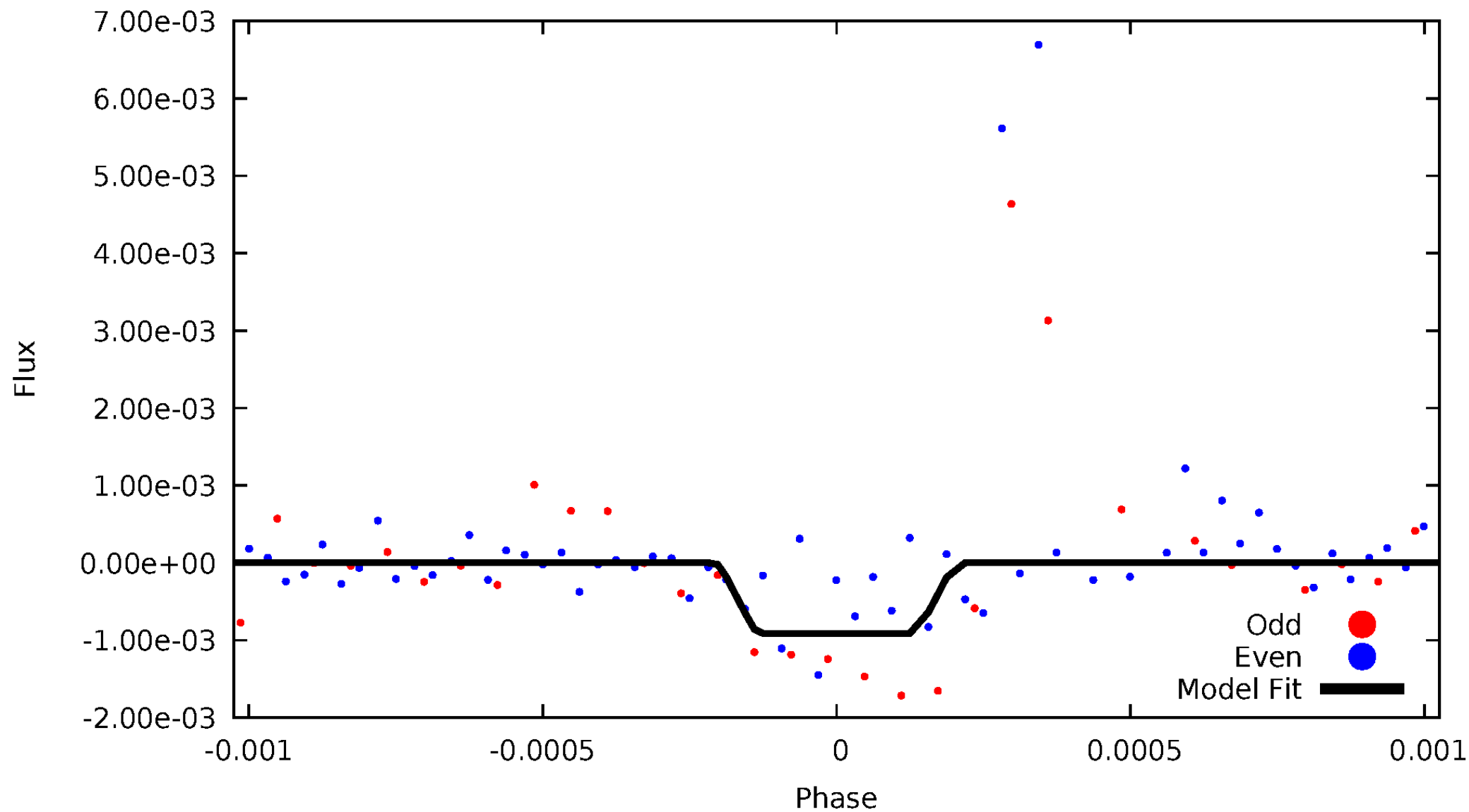
DV Odd/Even

TCE 011662738-02



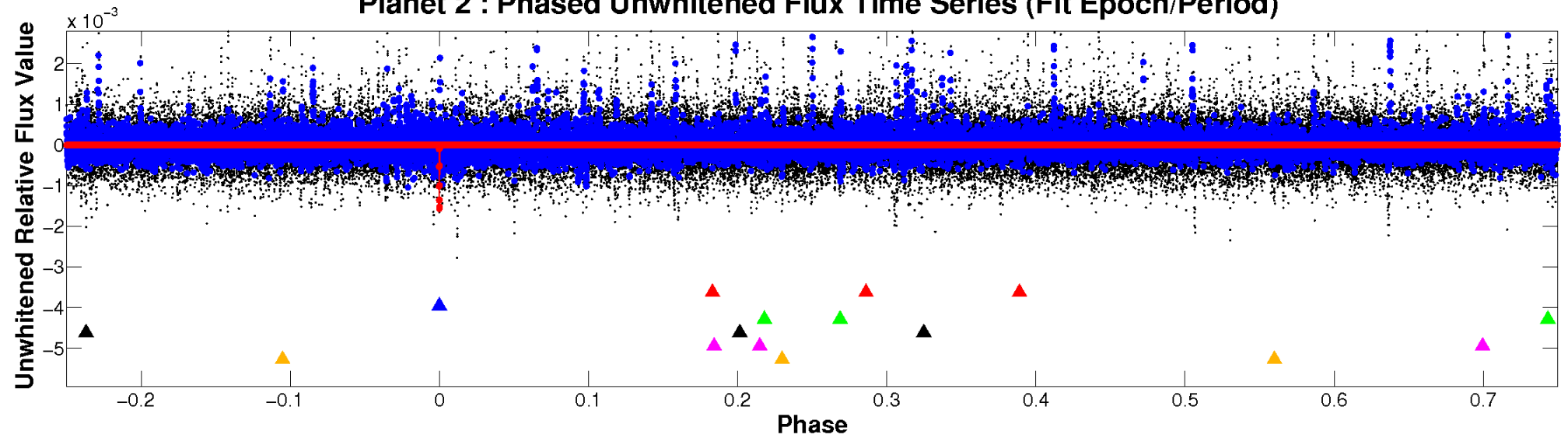
ALT Odd/Even

TCE 011662738-02

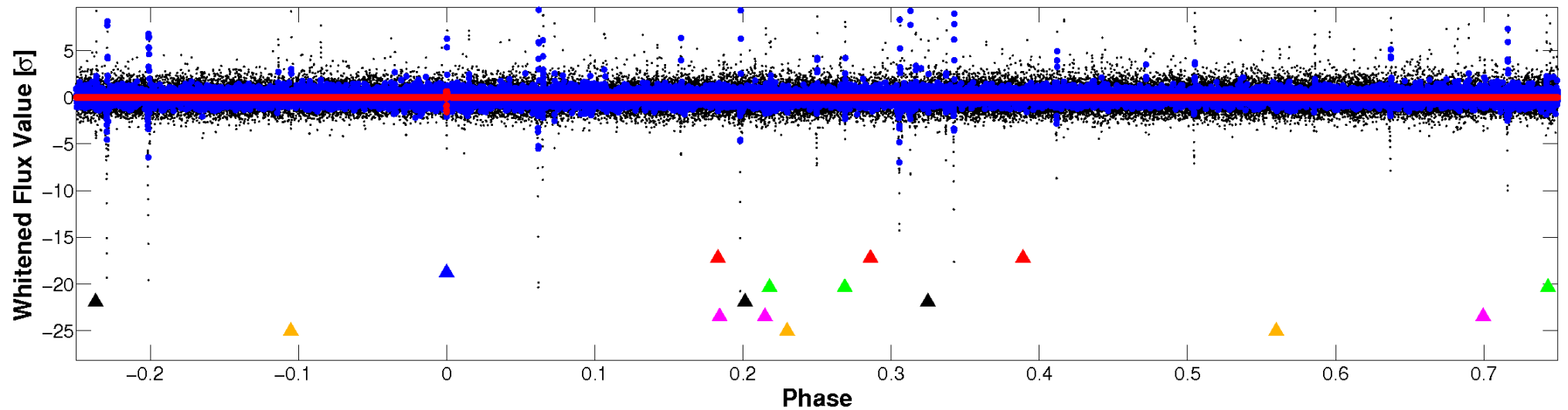


Non-Whitened Vs. Whitened Light Curve

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

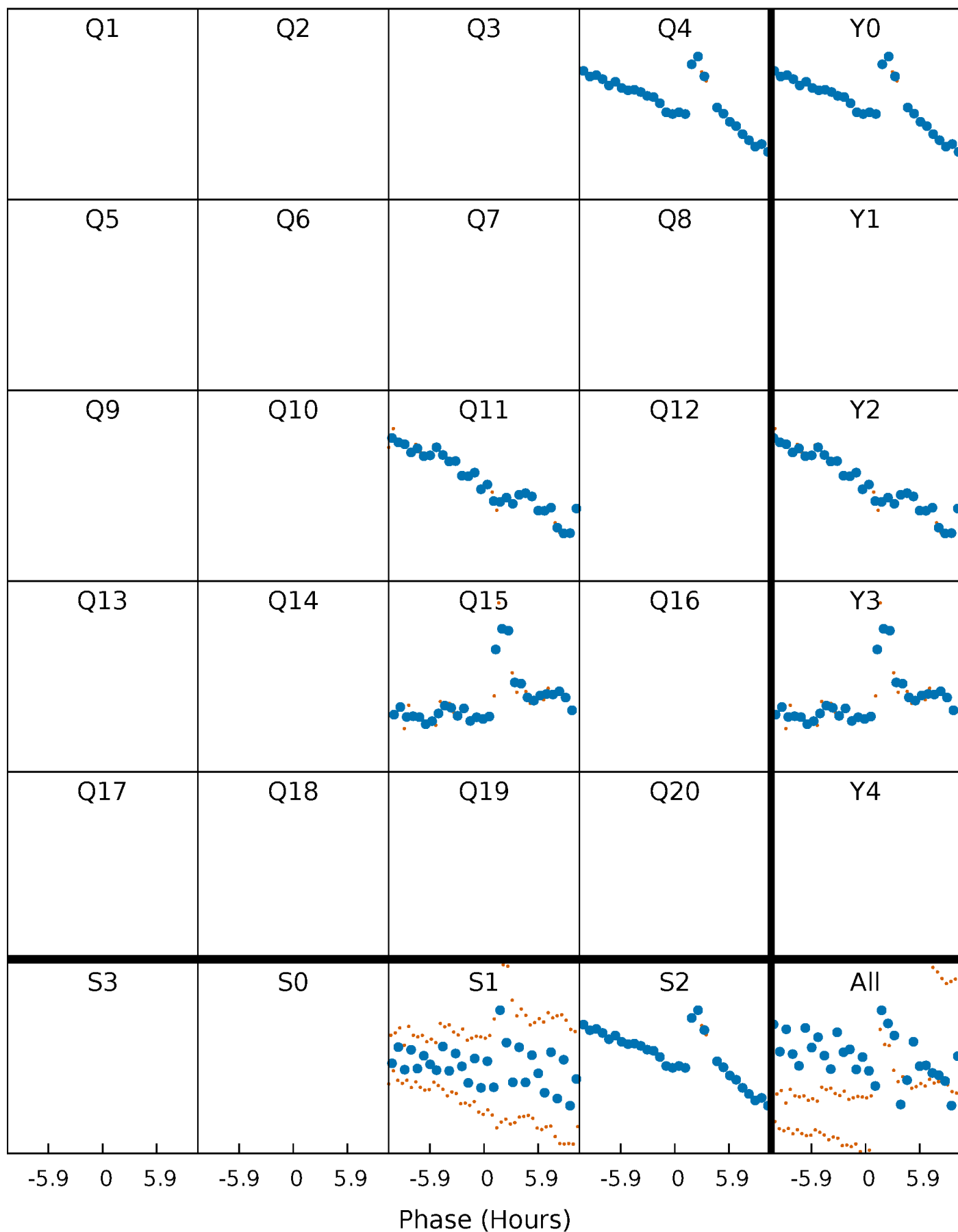


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



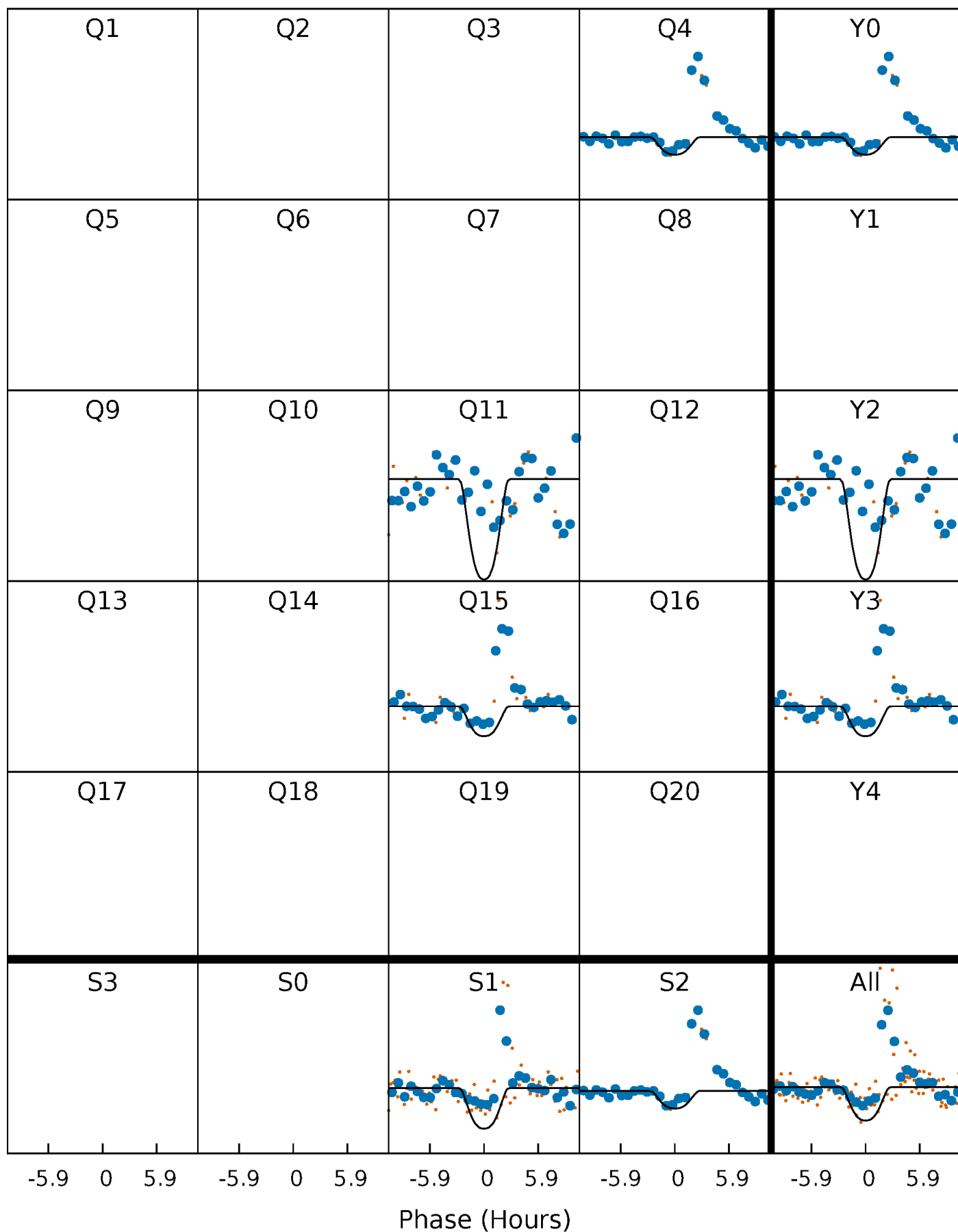
PDC Quarter-Phased Transit Curves

TCE 011662738-02 $P=327.134388$ Days $T_0=404.400598$ (BKJD)



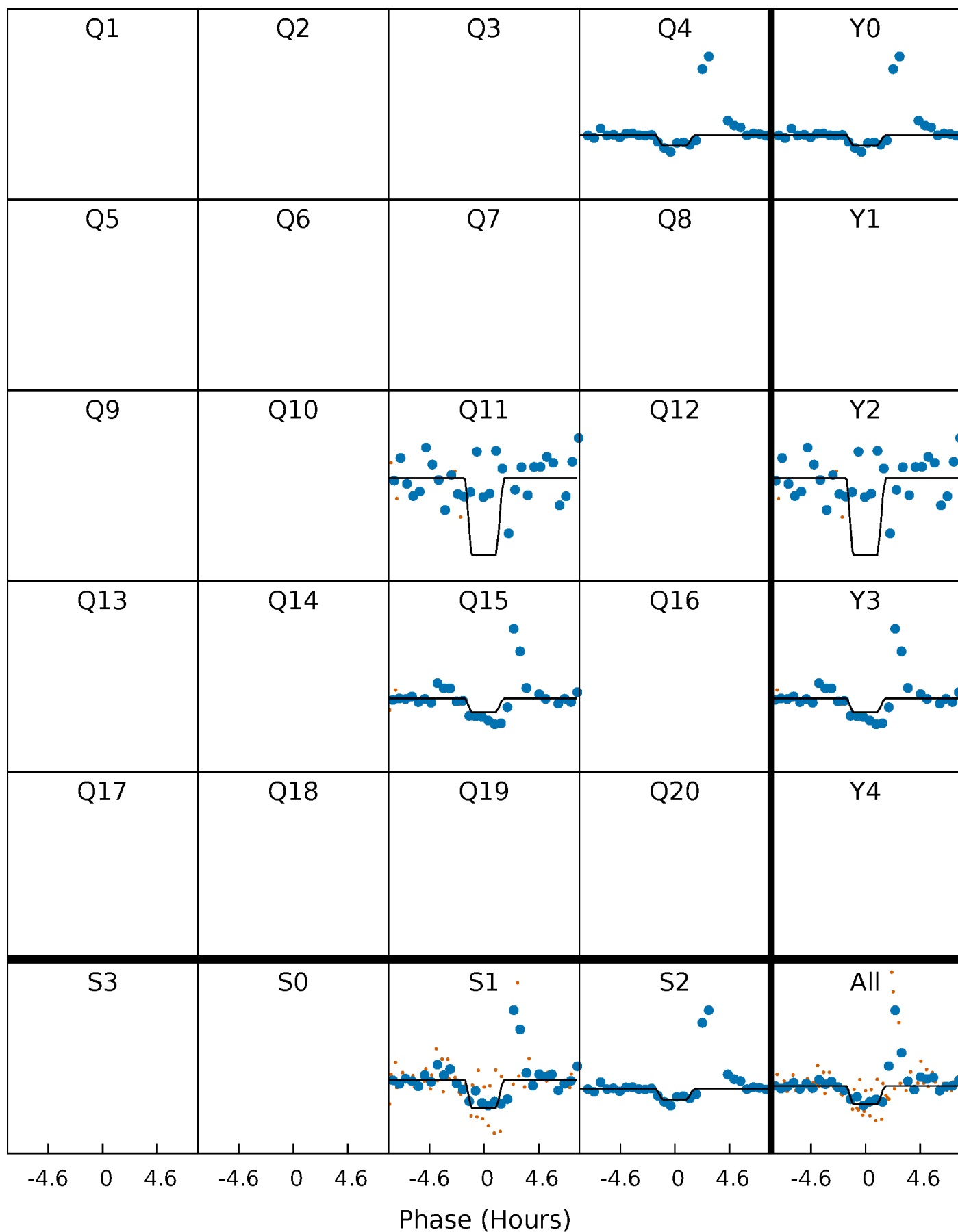
DV Quarter-Phased Transit Curves

TCE 011662738-02 $P=327.134388$ Days $T_0=404.400598$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

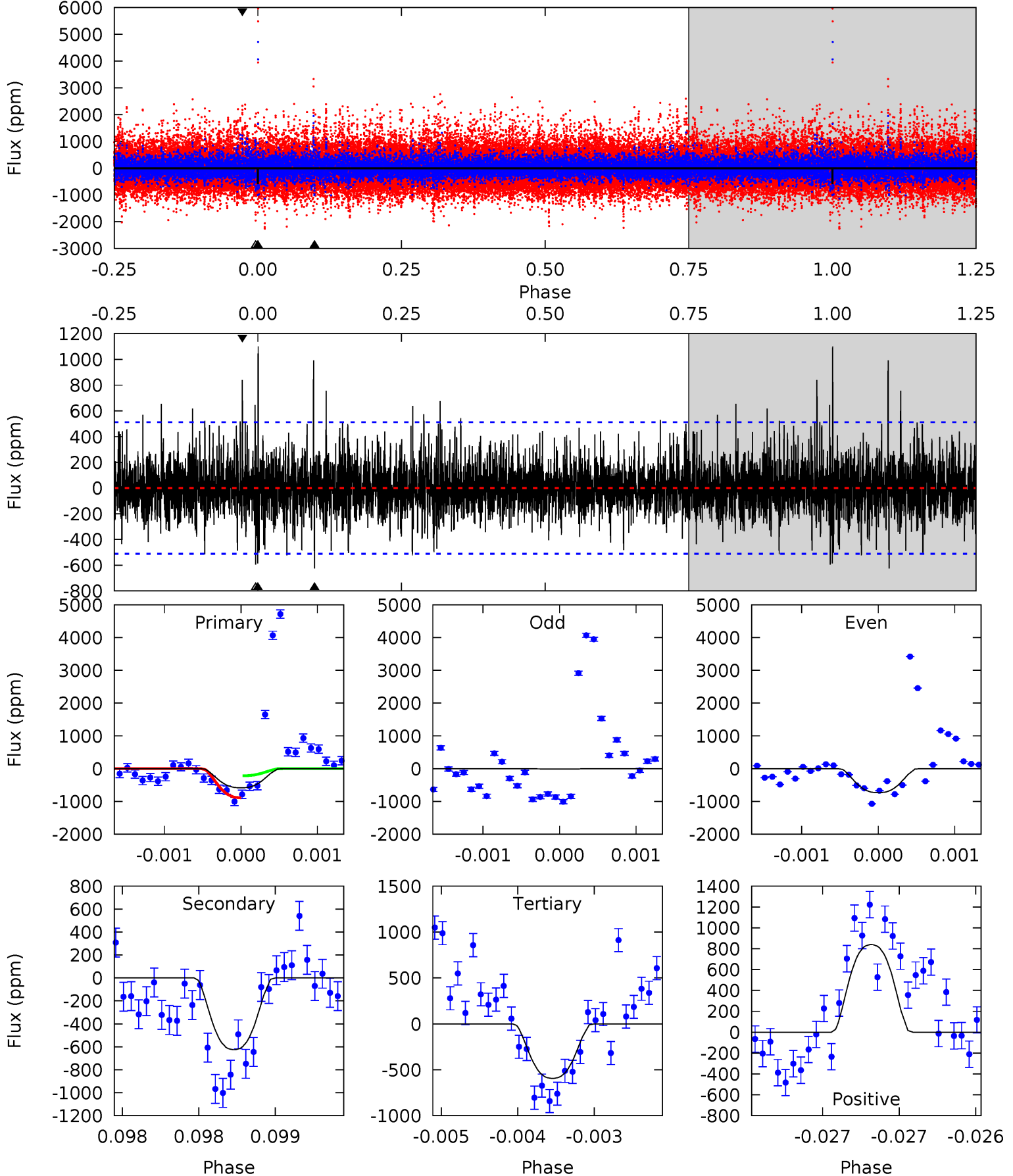
TCE 011662738-02 P=327.127673 Days $T_0=404.390149$ (BKJD)



DV Model-Shift Uniqueness Test

011662738-02, P = 327.134388 Days, E = 77.266210 Days

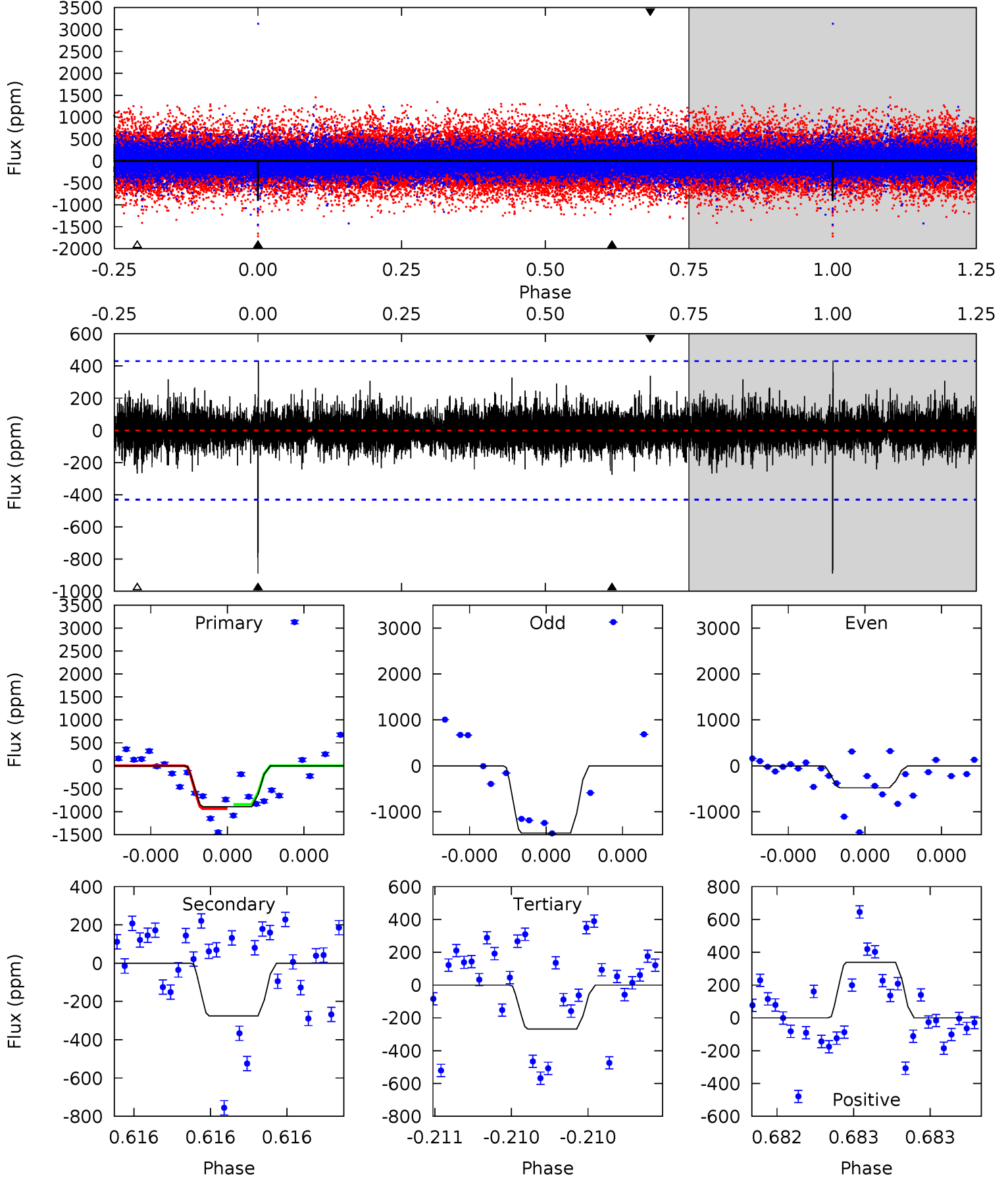
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.32	6.74	6.41	9.05	5.52	3.39	1.65	-0.09	-2.74	0.33	-2.31	3.11	0.76	0.64	3.57



Alt Model-Shift Uniqueness Test

011662738-02, P = 327.127673 Days, E = 77.262476 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	3.59	3.48	4.42	5.62	3.55	0.88	8.11	7.17	0.11	-0.83	6.17	0.83	0.33	0.61



Stellar Parameters For KIC 011662738

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4605^{+139}_{-167}	$4.791^{+0.038}_{-0.028}$	$-1.940^{+0.300}_{-0.050}$	$0.468^{+0.029}_{-0.029}$	$0.494^{+0.034}_{-0.025}$	$6.787^{+1.113}_{-0.807}$
	+3%/-4%	+1%/-1%	+15%/-3%	+6%/-6%	+7%/-5%	+16%/-12%
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 011662738-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-625 ± 93	$2.37^{+0.39}_{-0.41}$	226^{+8}_{-9}	3677^{+249}_{-236}	33578^{+16248}_{-10692}
Alt.	-275 ± 77	$1.56^{+0.41}_{-0.42}$	226^{+8}_{-8}	3690^{+450}_{-338}	34362^{+29410}_{-15027}

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

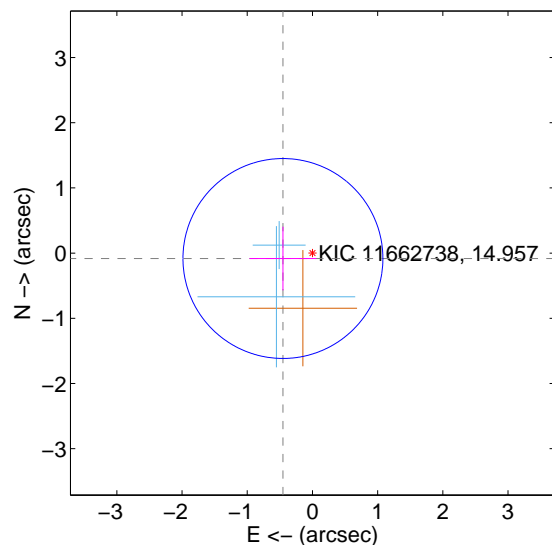
Supplemental centroid analysis for 011662738-02. Kepler magnitude: 14.96. Transit SNR 6.18

There are 2 quarters with good PRF difference image offsets

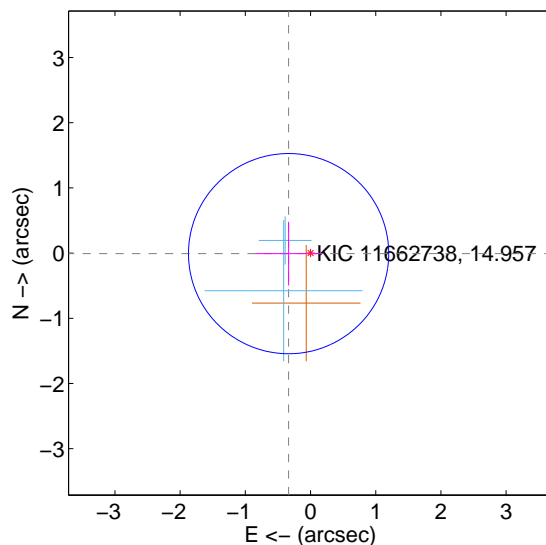
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.460 ± 0.511	0.90	0.453 ± 0.512	-0.083 ± 0.488
PRF-fit source offset from KIC position	0.336 ± 0.512	0.66	0.336 ± 0.512	-0.008 ± 0.488
photometric centroid source offset	0.43 ± 0.89	0.48	-0.32 ± 0.95	0.29 ± 0.81

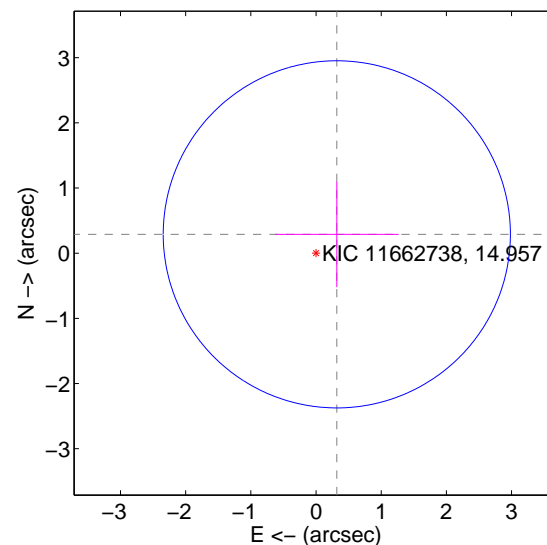
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

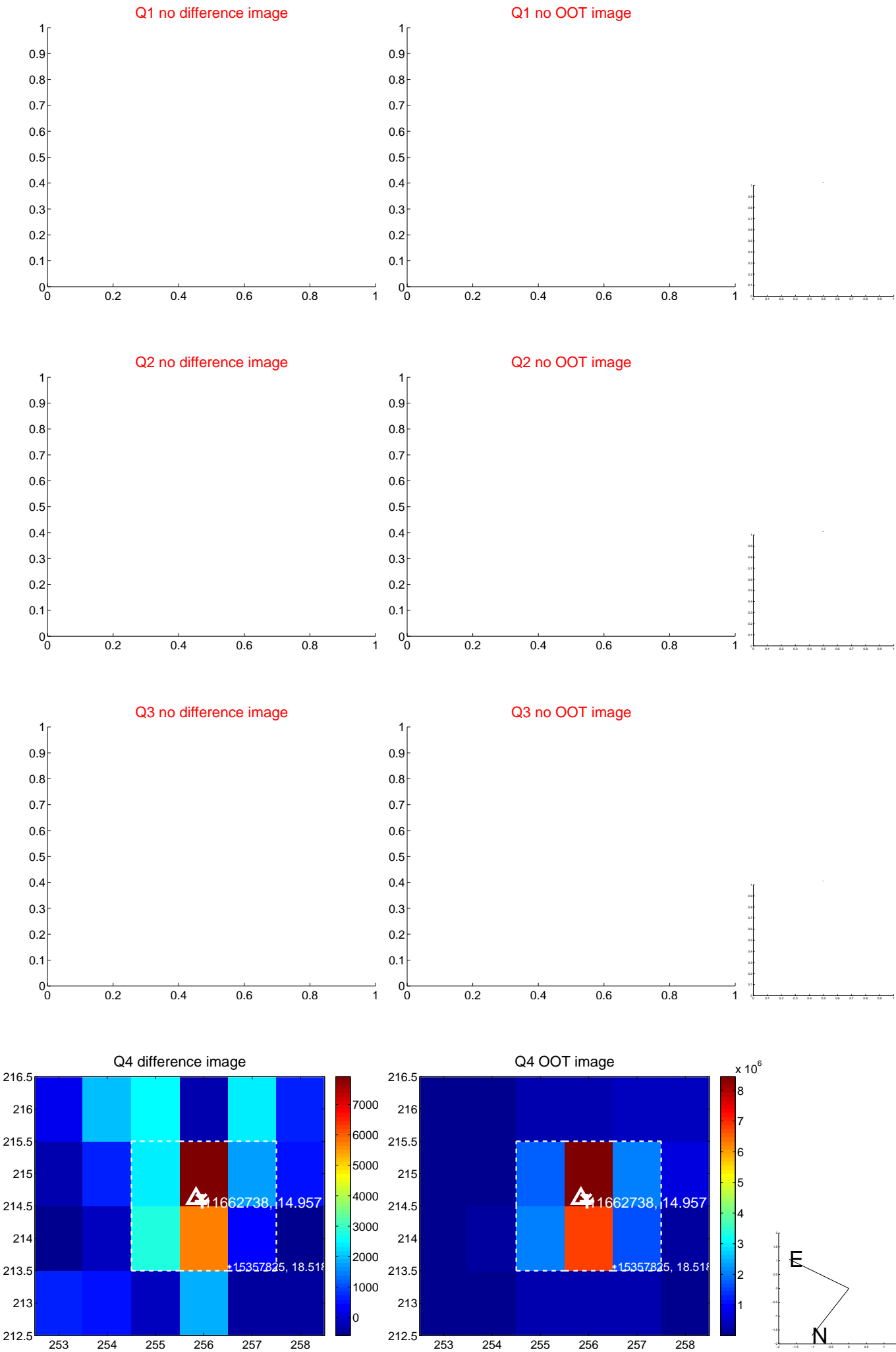


offset from photometric centroids



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

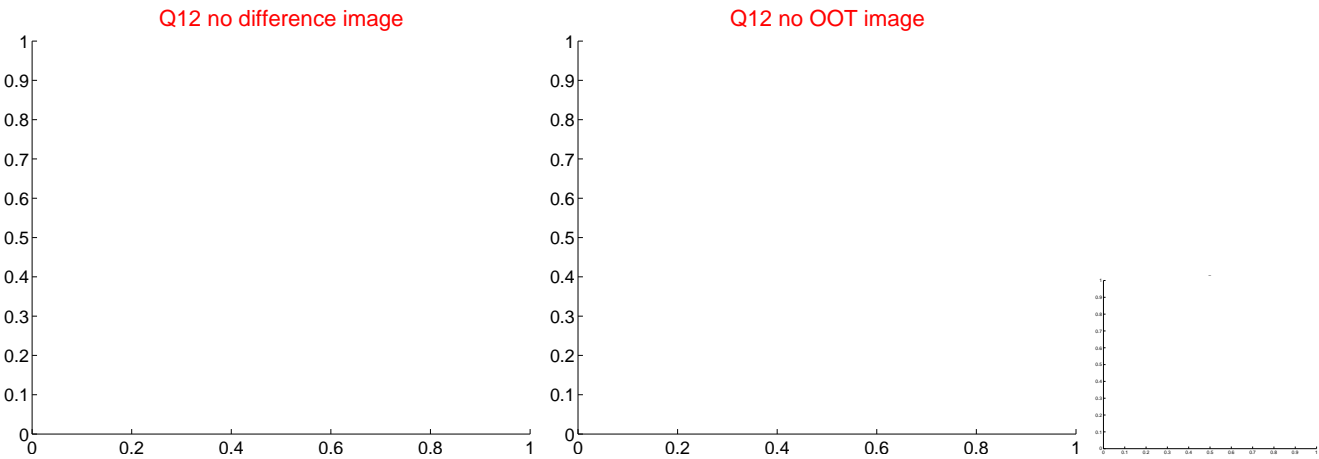
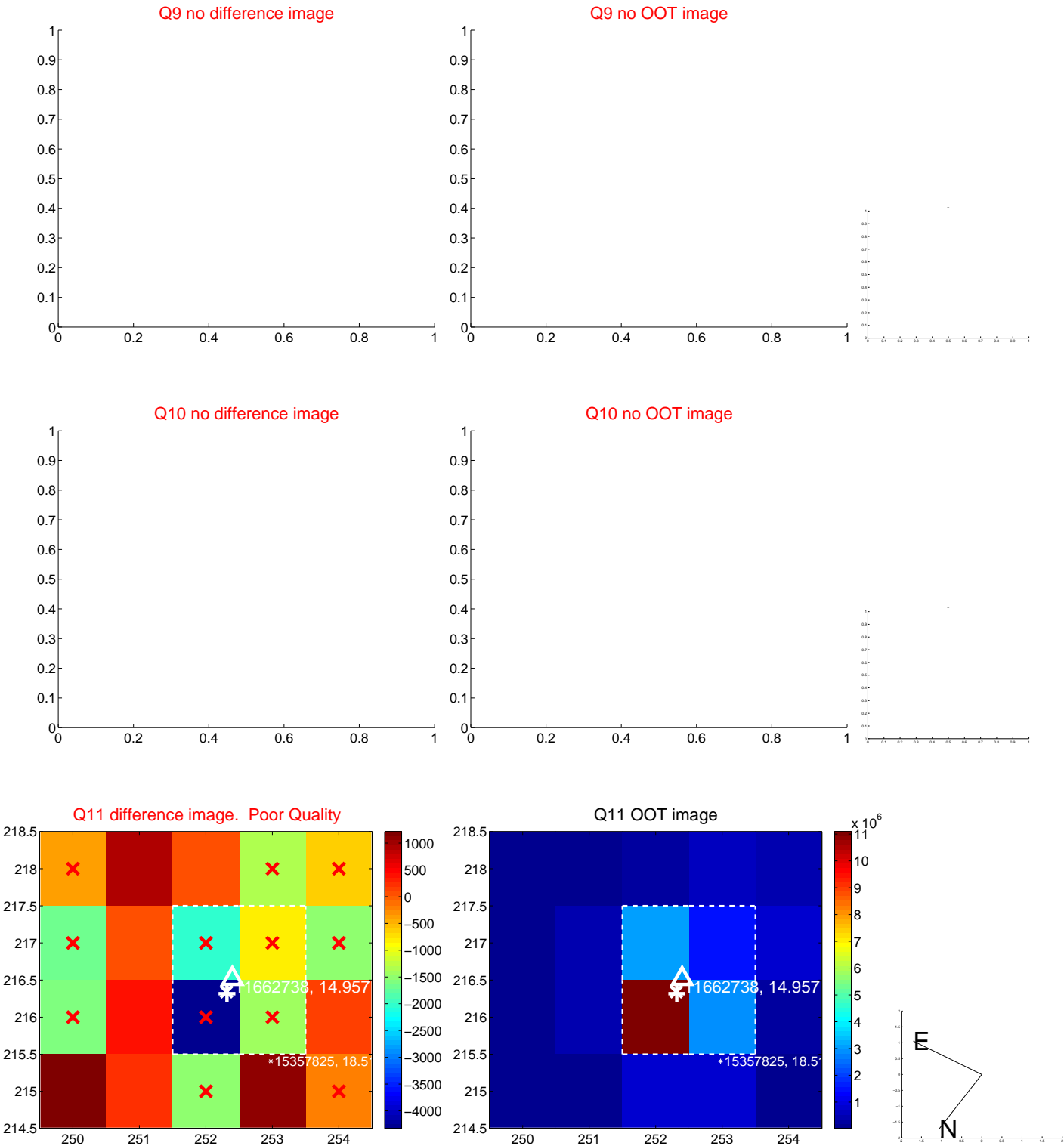
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



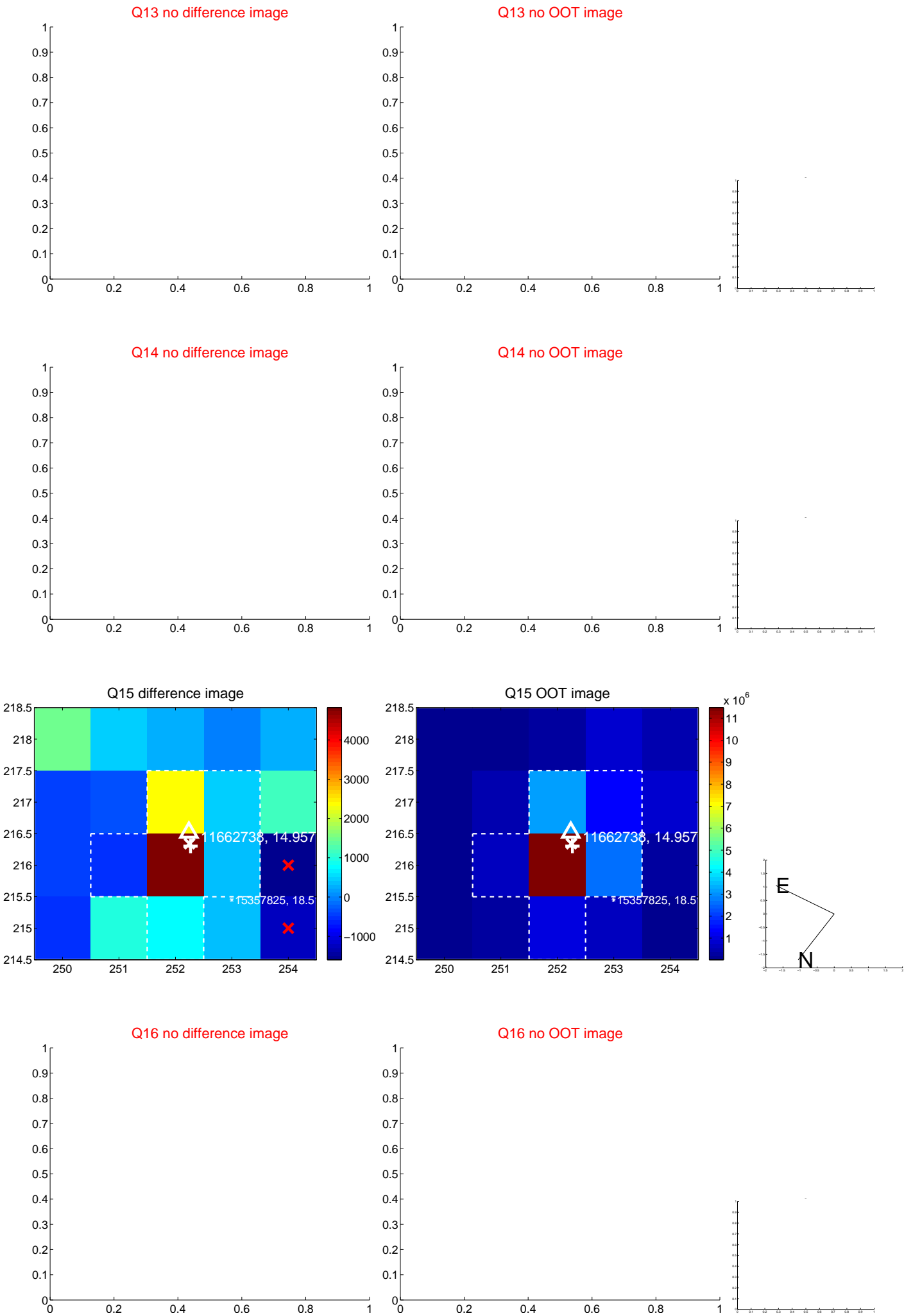
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



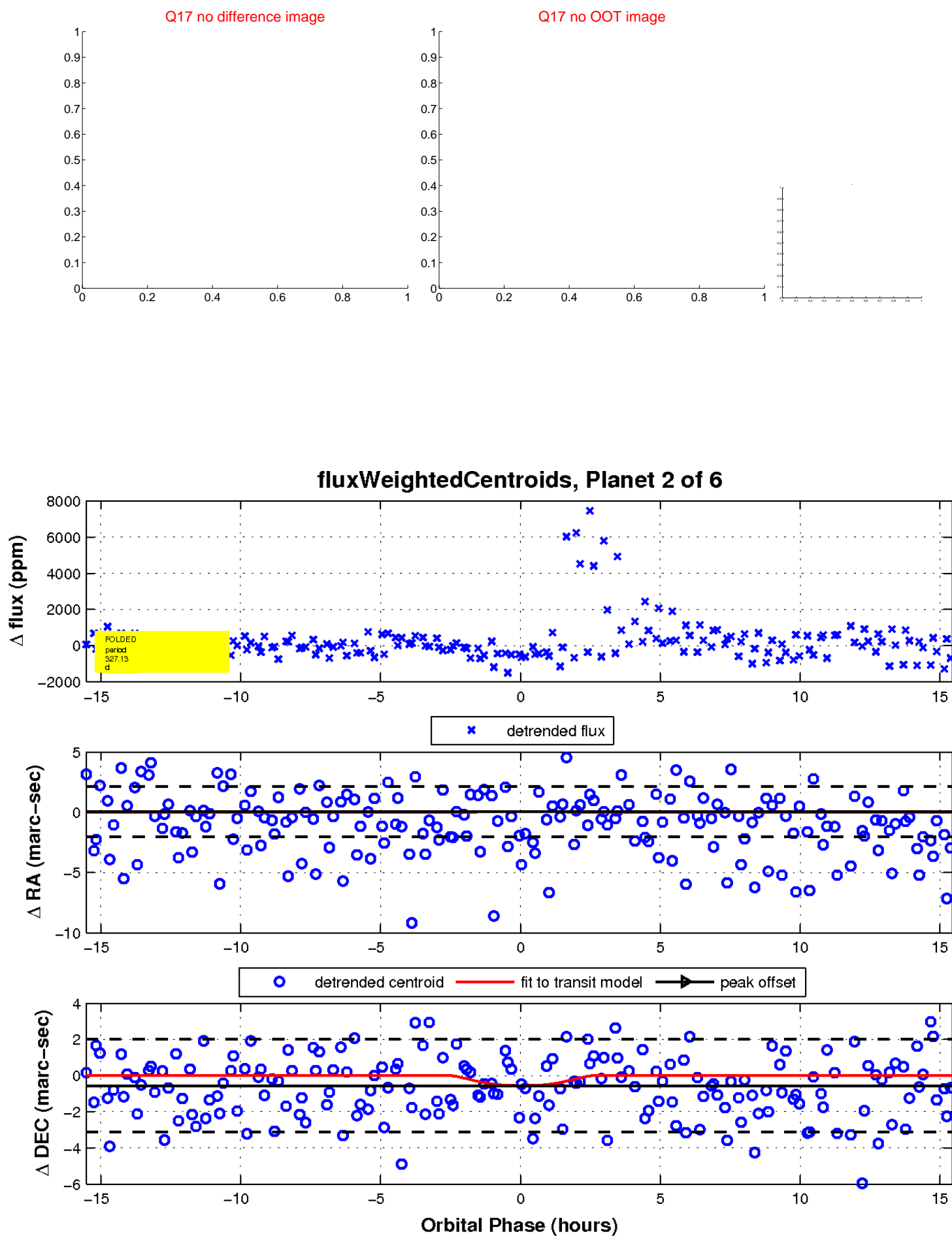
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

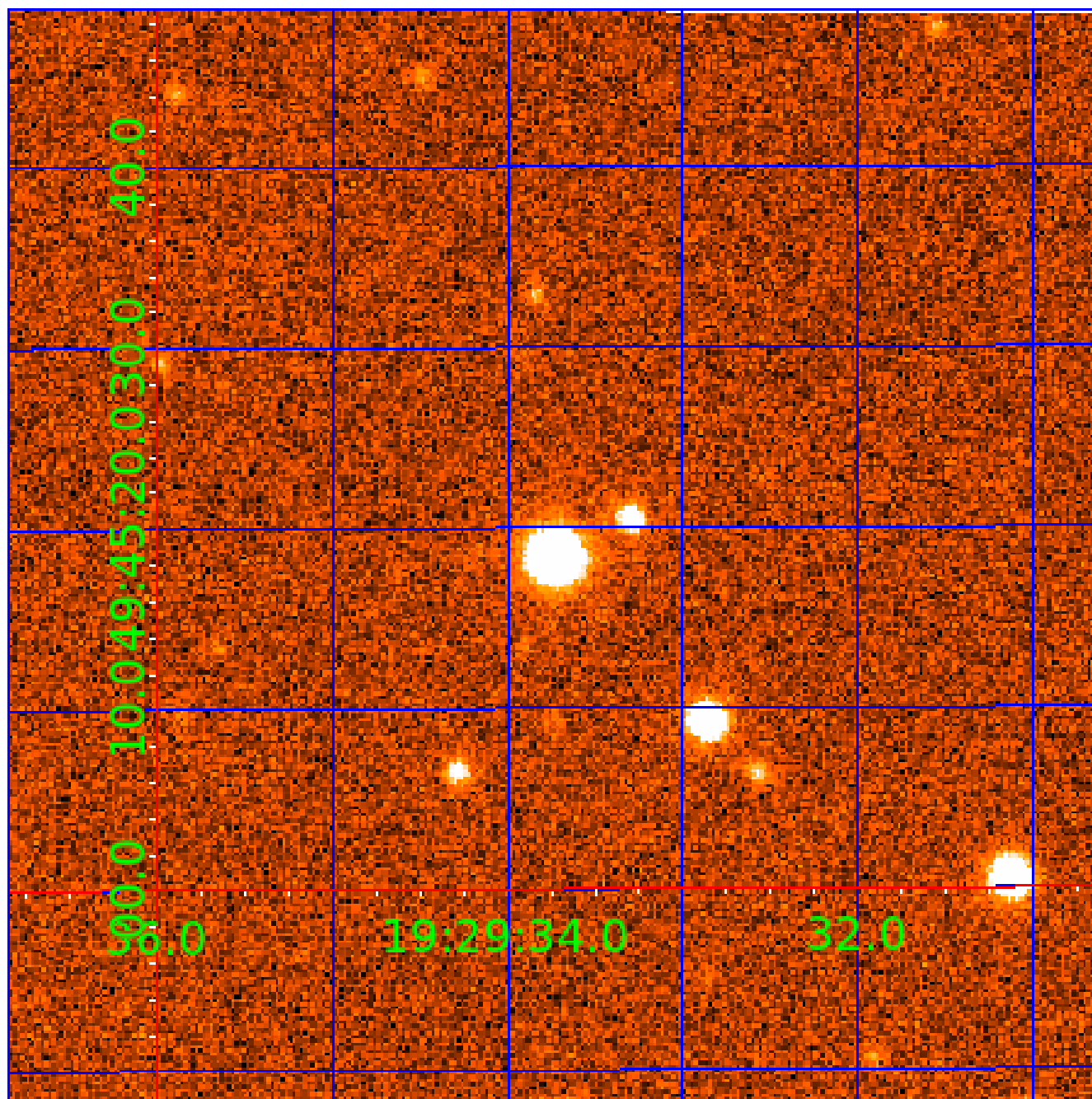


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011662738

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})
011662738-01	OBS	No	687.940580	137.178471	1074.8	13.896	17.6	5.0	0.47	4605	1.74	0.06
011662738-02	OBS	No	327.134388	404.400597	1570.8	5.200	13.0	6.2	0.47	4605	2.35	0.16
011662738-03	OBS	No	482.405381	492.305383	1223.8	4.811	11.7	6.9	0.47	4605	1.67	0.10
011662738-04	OBS	No	470.516196	510.666479	1419.0	7.015	11.1	7.8	0.47	4605	1.78	0.10
011662738-05	OBS	No	485.700053	147.555223	1677.6	8.863	10.4	8.0	0.47	4605	2.25	0.10
011662738-06	OBS	No	544.699823	152.448257	1335.6	7.300	9.8	6.6	0.47	4605	3.20	0.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011662738-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV
011662738-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_MEAS
011662738-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

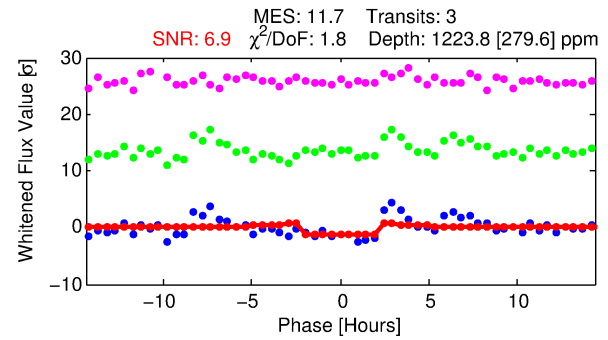
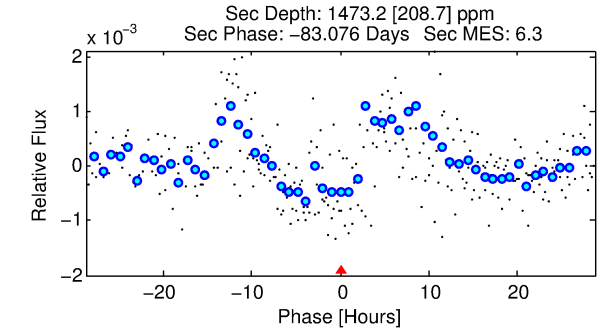
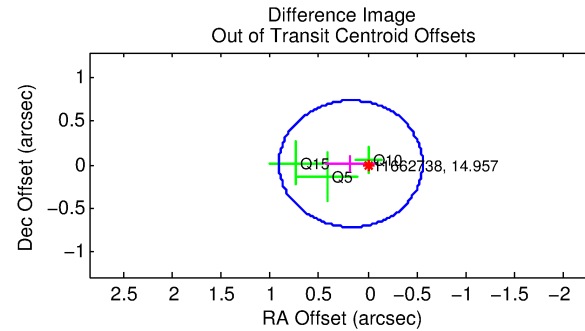
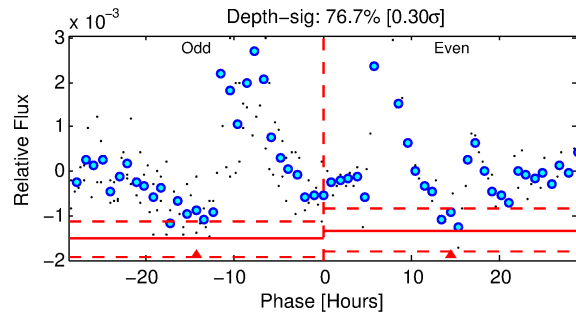
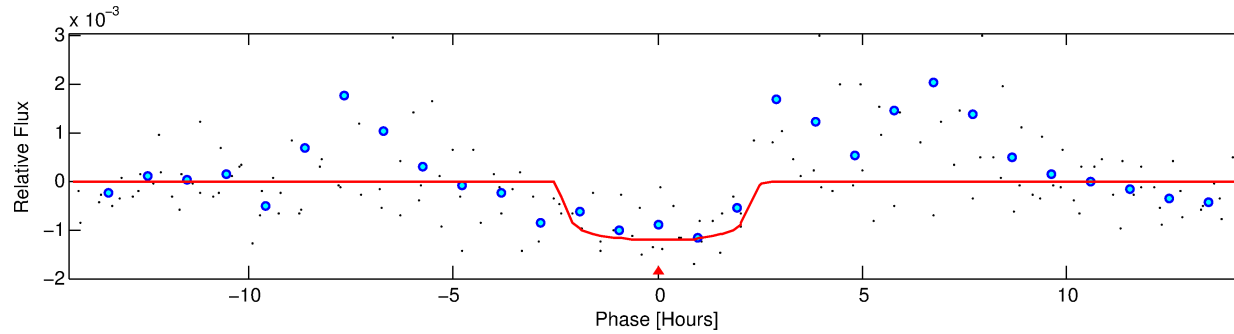
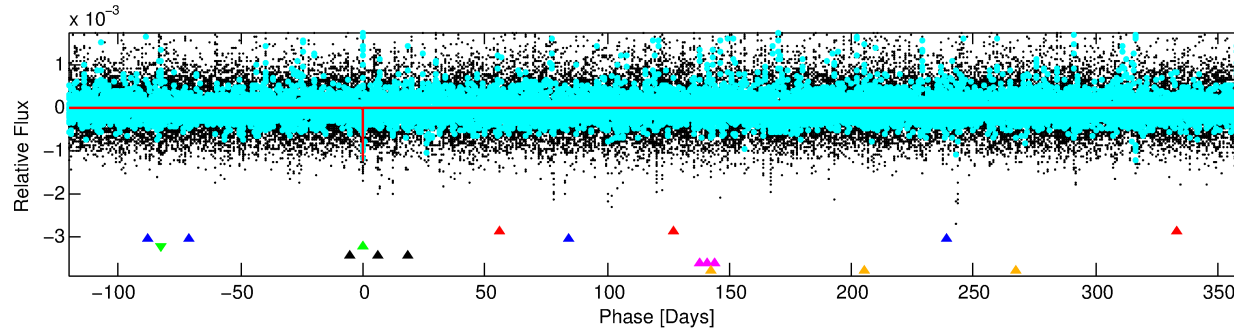
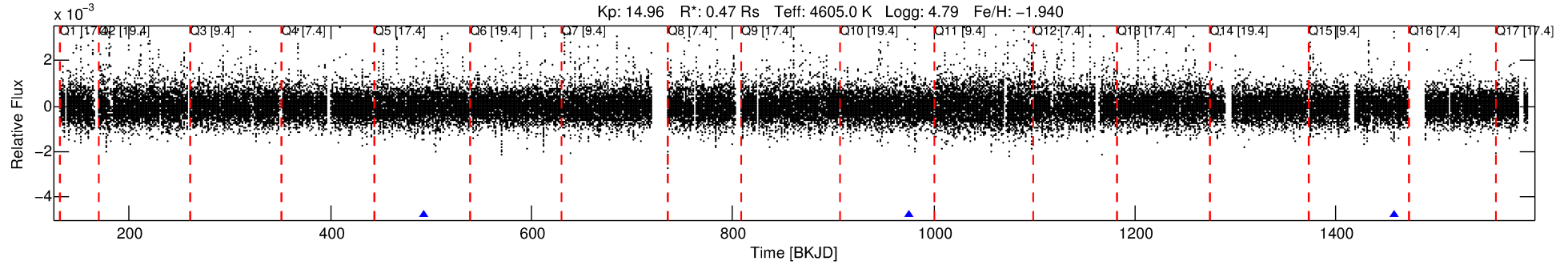
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011662738-03

No Significant Match Found

DV One-Page Summary

KIC: 11662738 Candidate: 3 of 6 Period: 482.405 d



DV Fit Results:

Period = 482.40538 [0.00854] d
Epoch = 492.3054 [0.0112] BKJD
Rp/R* = 0.0327 [0.0305]
a/R* = 723.13 [3393.22]
b = 0.42 [9.26]
Seff = 0.10 [0.02]
Teq = 142 [6] K
Rp = 1.67 [1.56] Re
a = 0.9516 [0.0481] AU
Ag = 262770.21 [491773.45] [0.53 σ]
Teffp = 4987 [2339] K [2.07 σ]

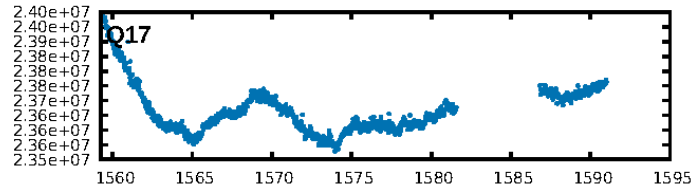
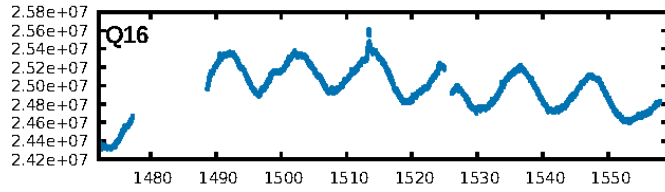
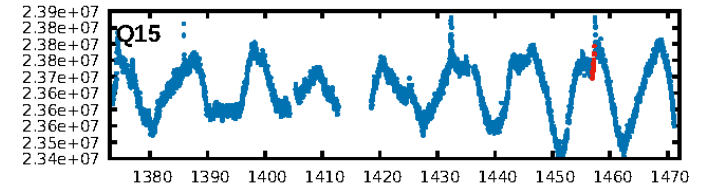
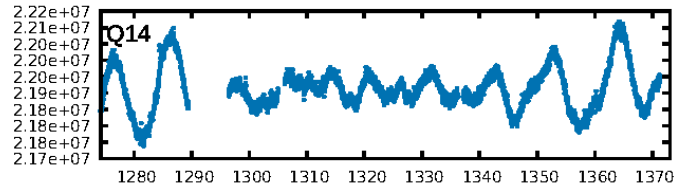
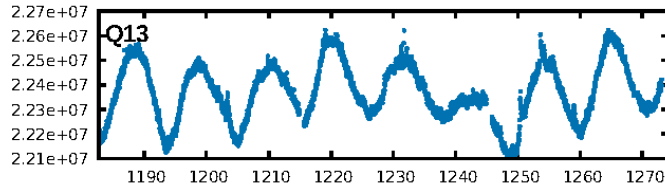
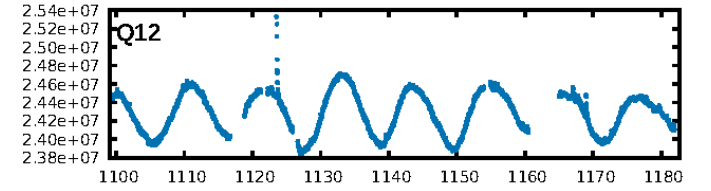
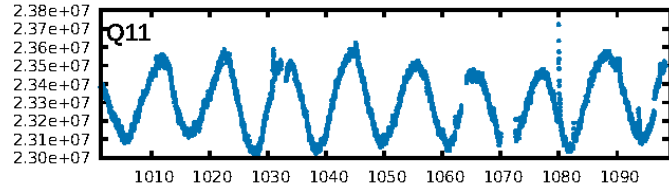
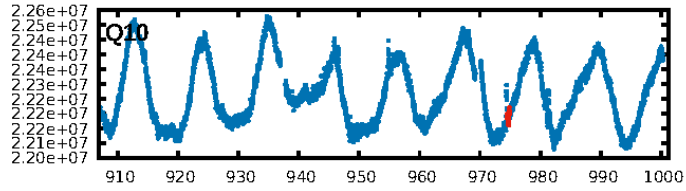
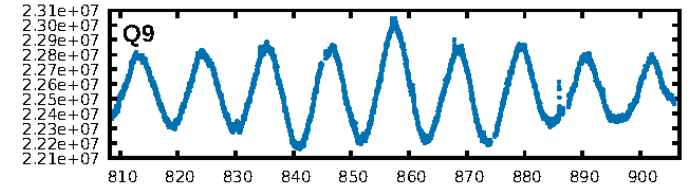
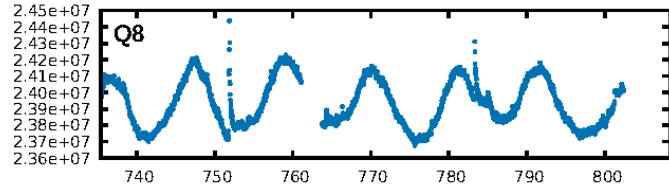
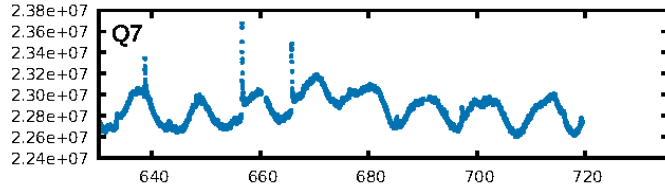
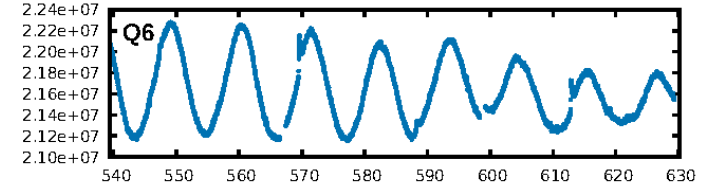
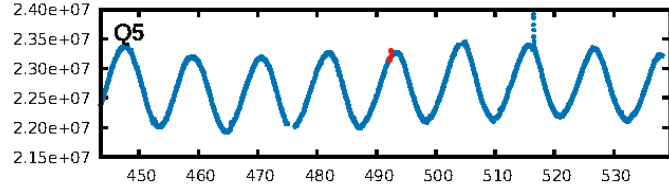
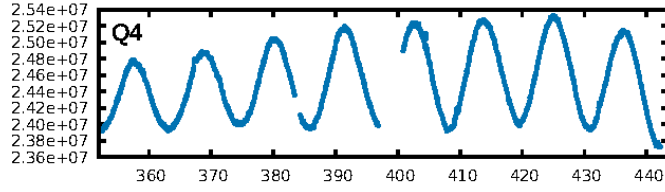
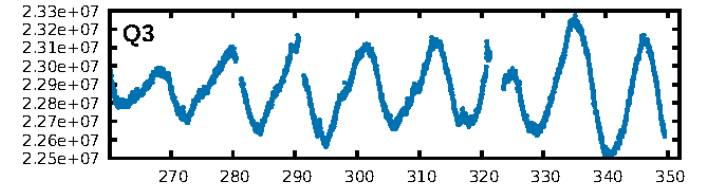
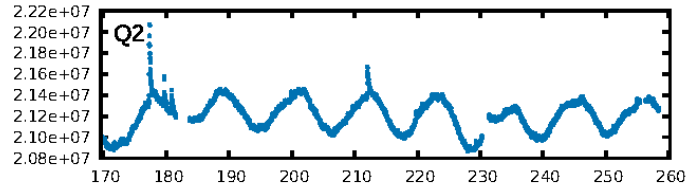
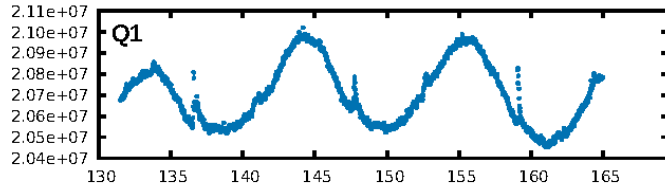
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [33.54 σ]
LongPeriod-sig: 100.0% [7.84 σ]
ModelChiSquare2-sig: 25.7%
ModelChiSquareGof-sig: 25.2%
Bootstrap-pfa: 5.00e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.933
Centroid-sig: 34.2%
Centroid-so: 0.916 arcsec [0.88 σ]
OotOffset-rm: 0.176 arcsec [0.72 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.175 arcsec [1.13 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

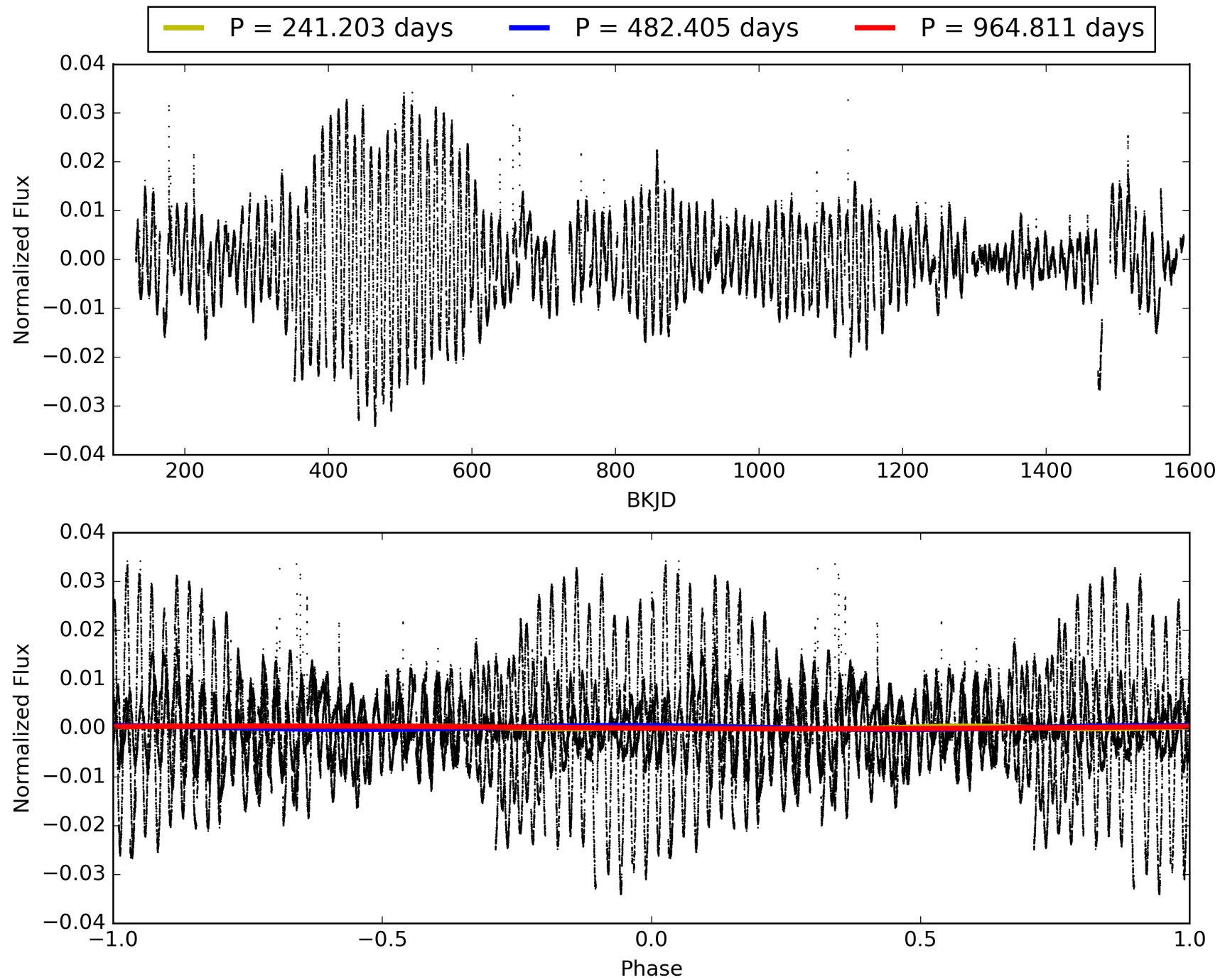
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:54:41 Z

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

TCE 011662738-03, PDC Light Curves

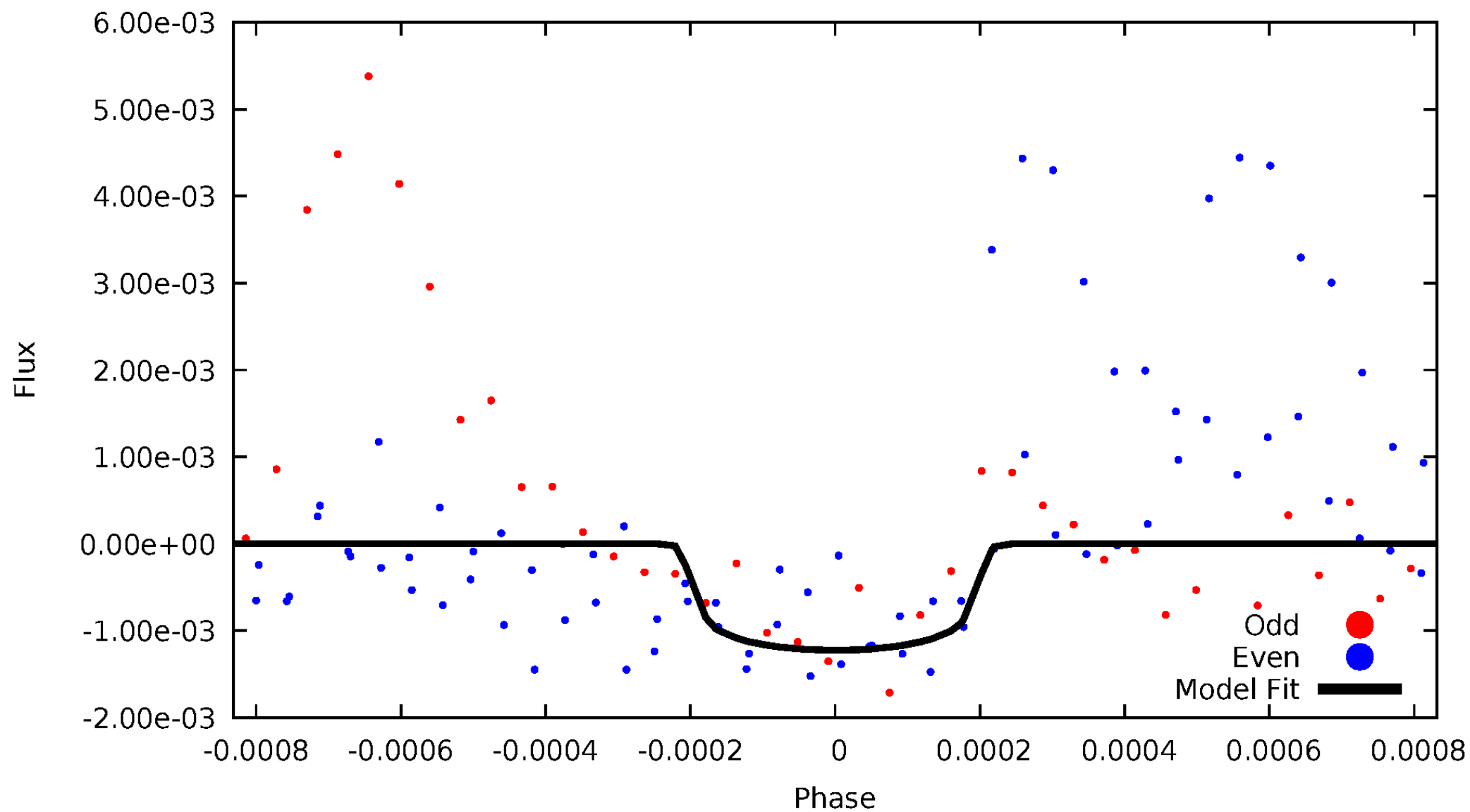


TCE 011662738-03



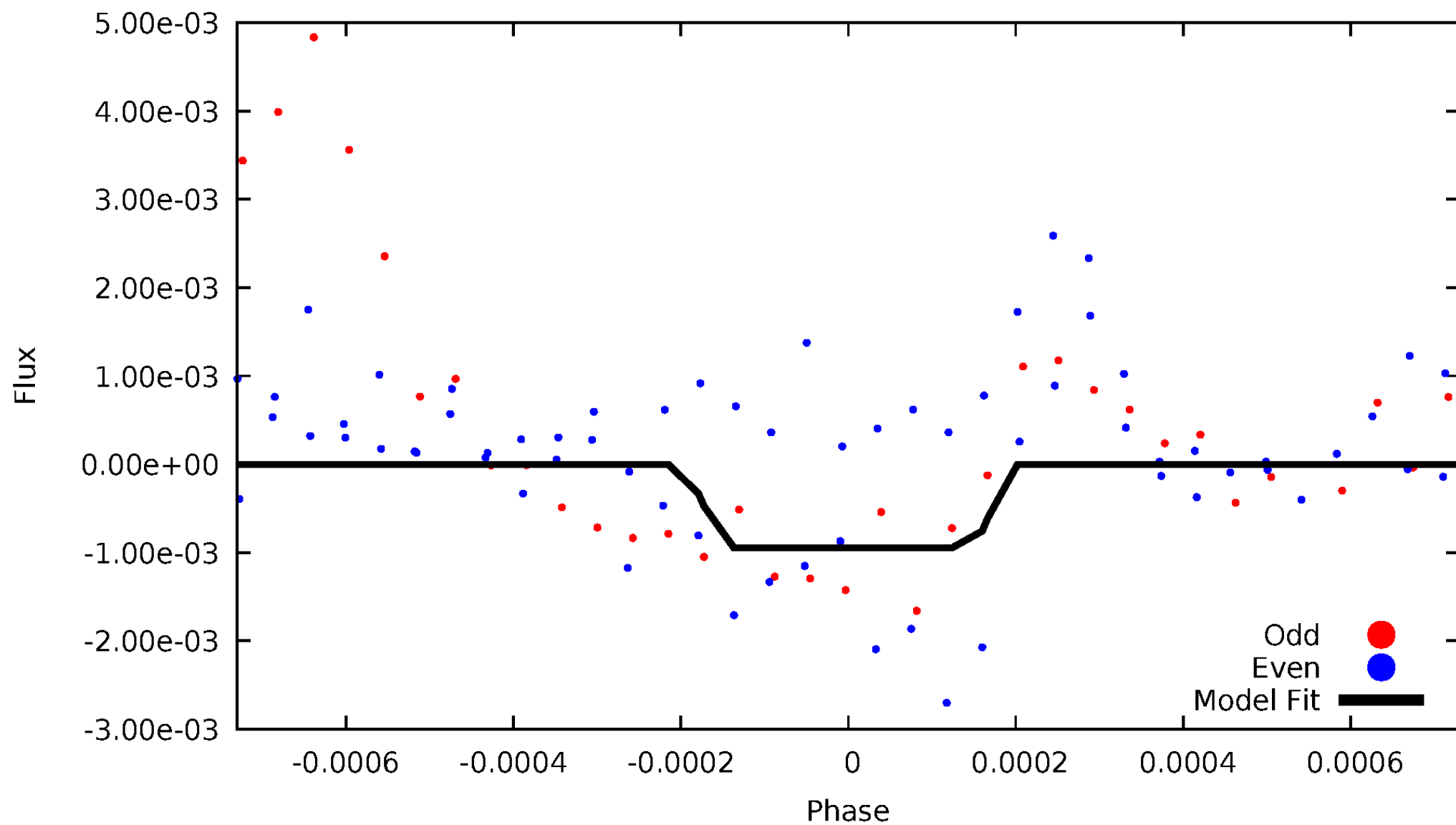
DV Odd/Even

TCE 011662738-03



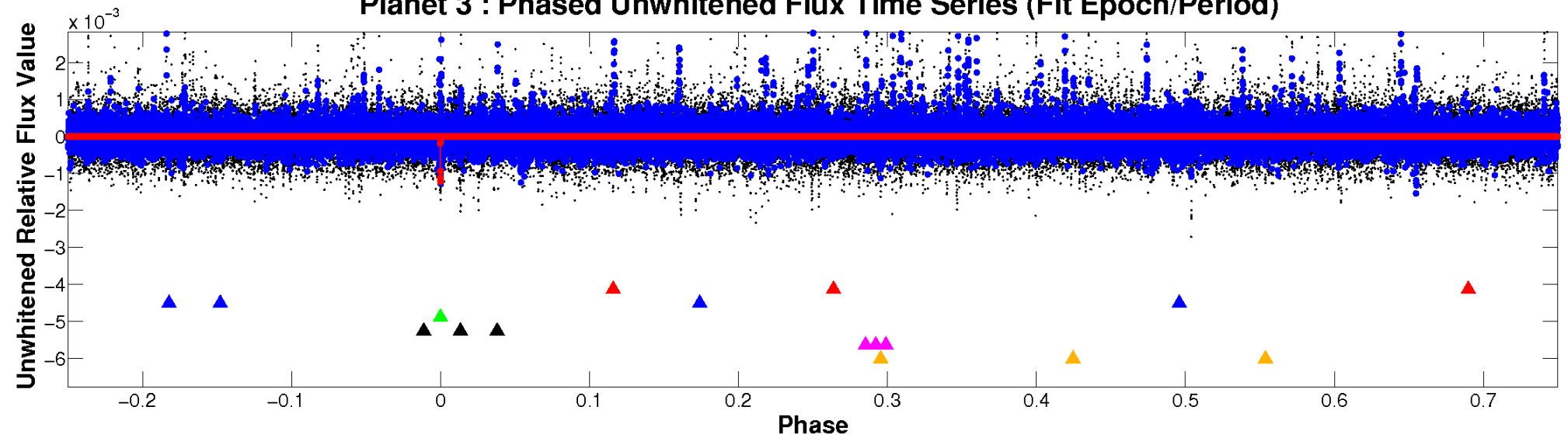
ALT Odd/Even

TCE 011662738-03

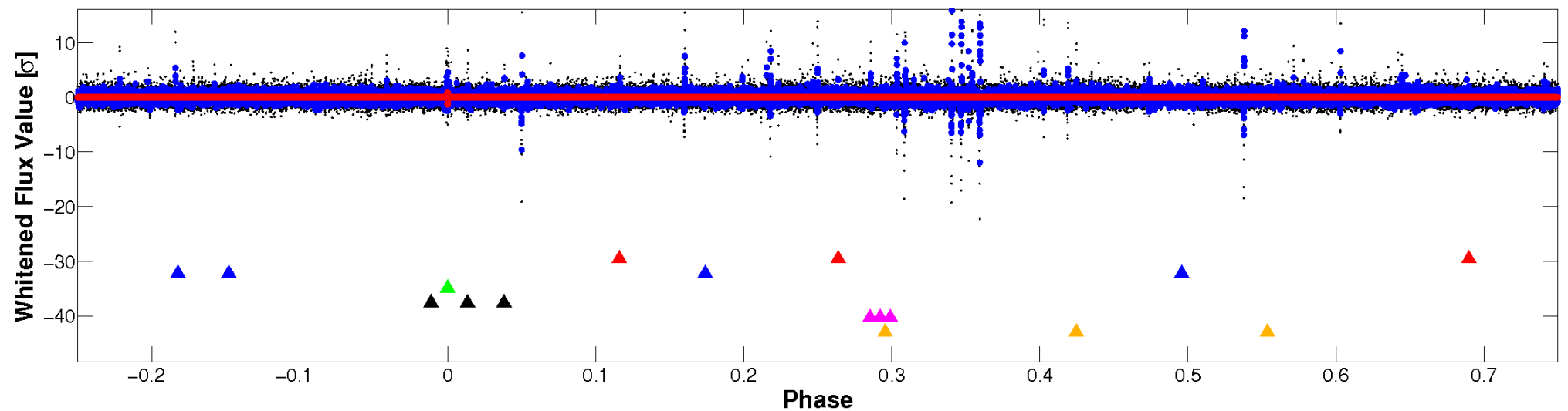


Non-Whitened Vs. Whitened Light Curve

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

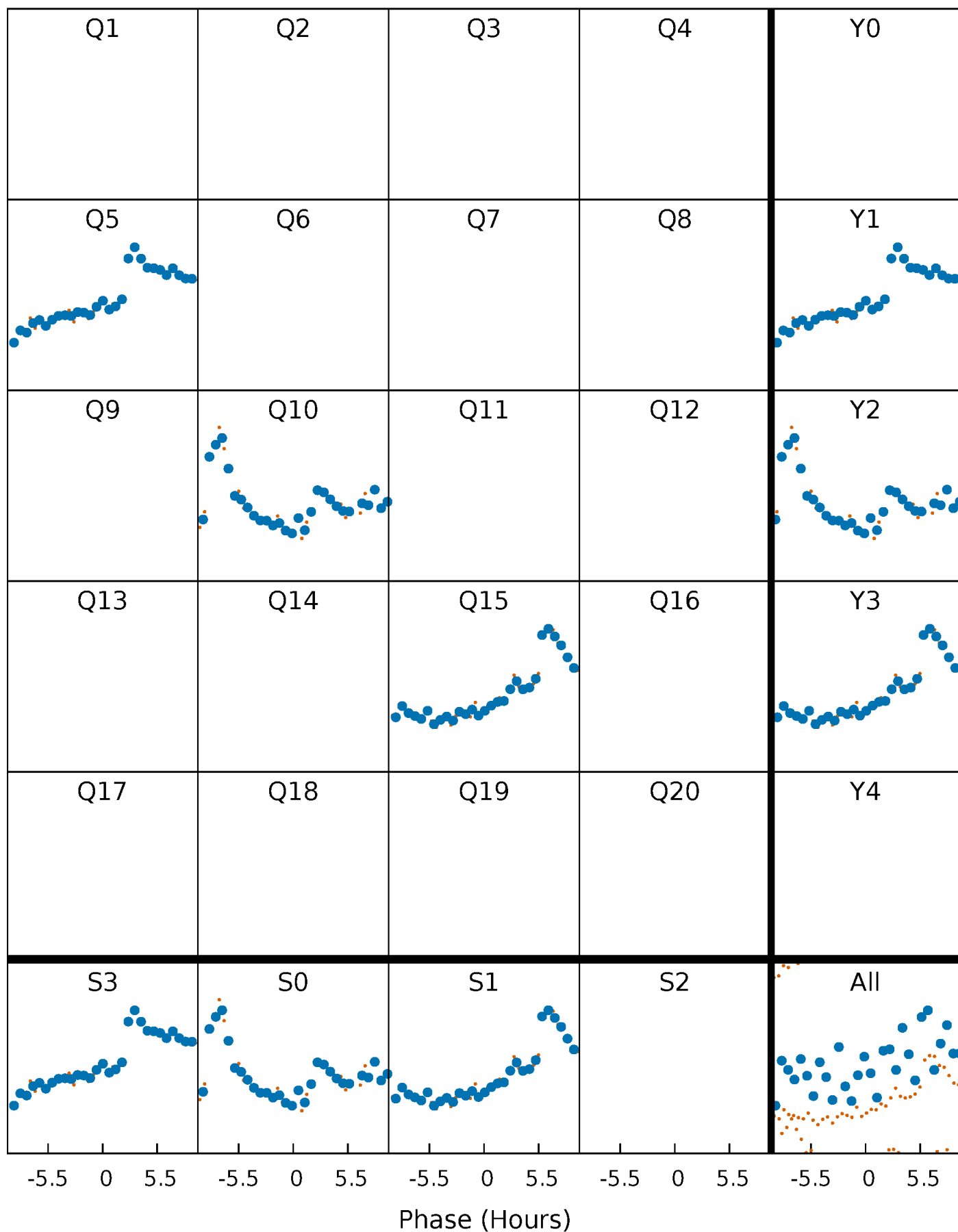


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



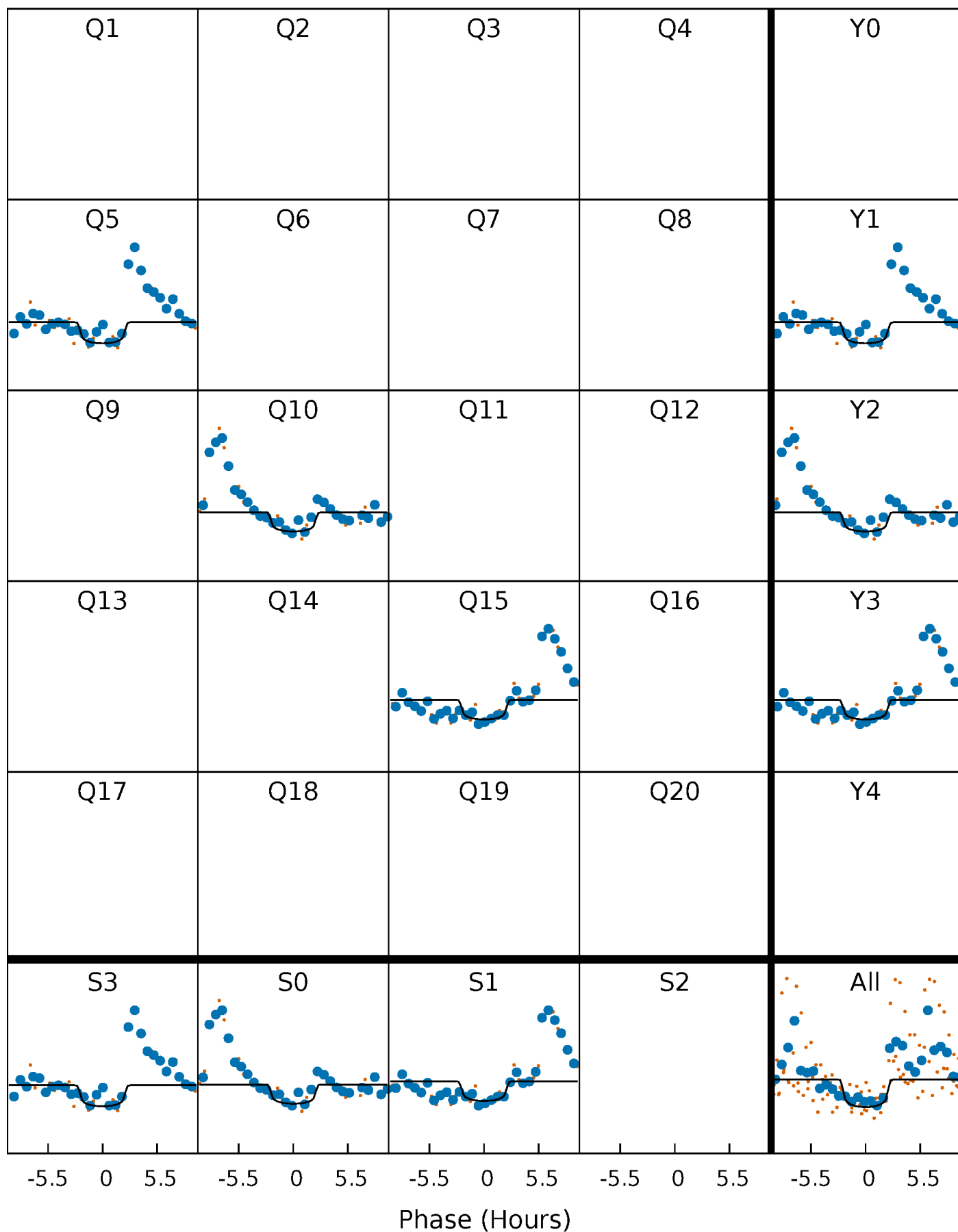
PDC Quarter-Phased Transit Curves

TCE 011662738-03 P=482.405381 Days $T_0=492.305383$ (BKJD)



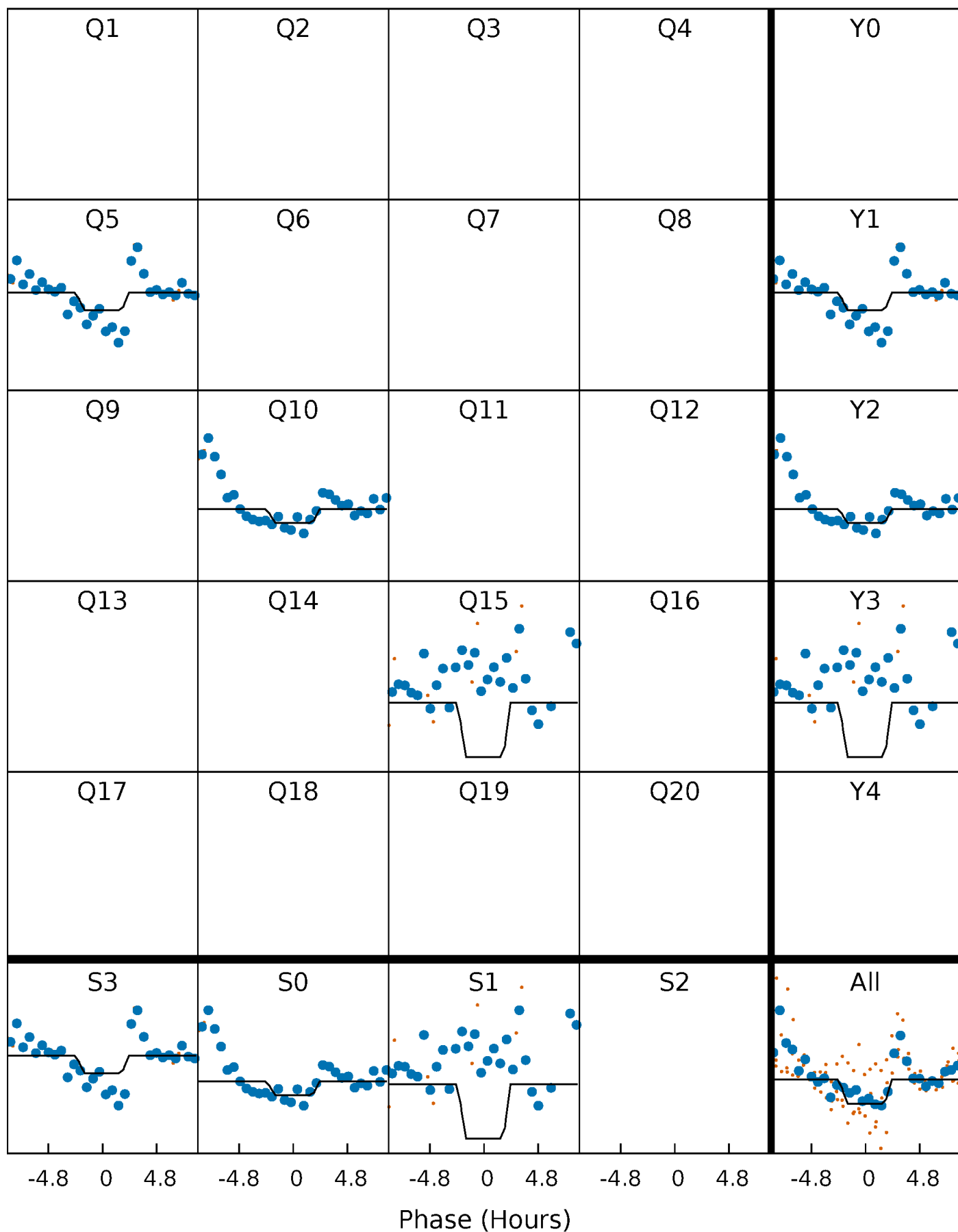
DV Quarter-Phased Transit Curves

TCE 011662738-03 $P=482.405381$ Days $T_0=492.305383$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

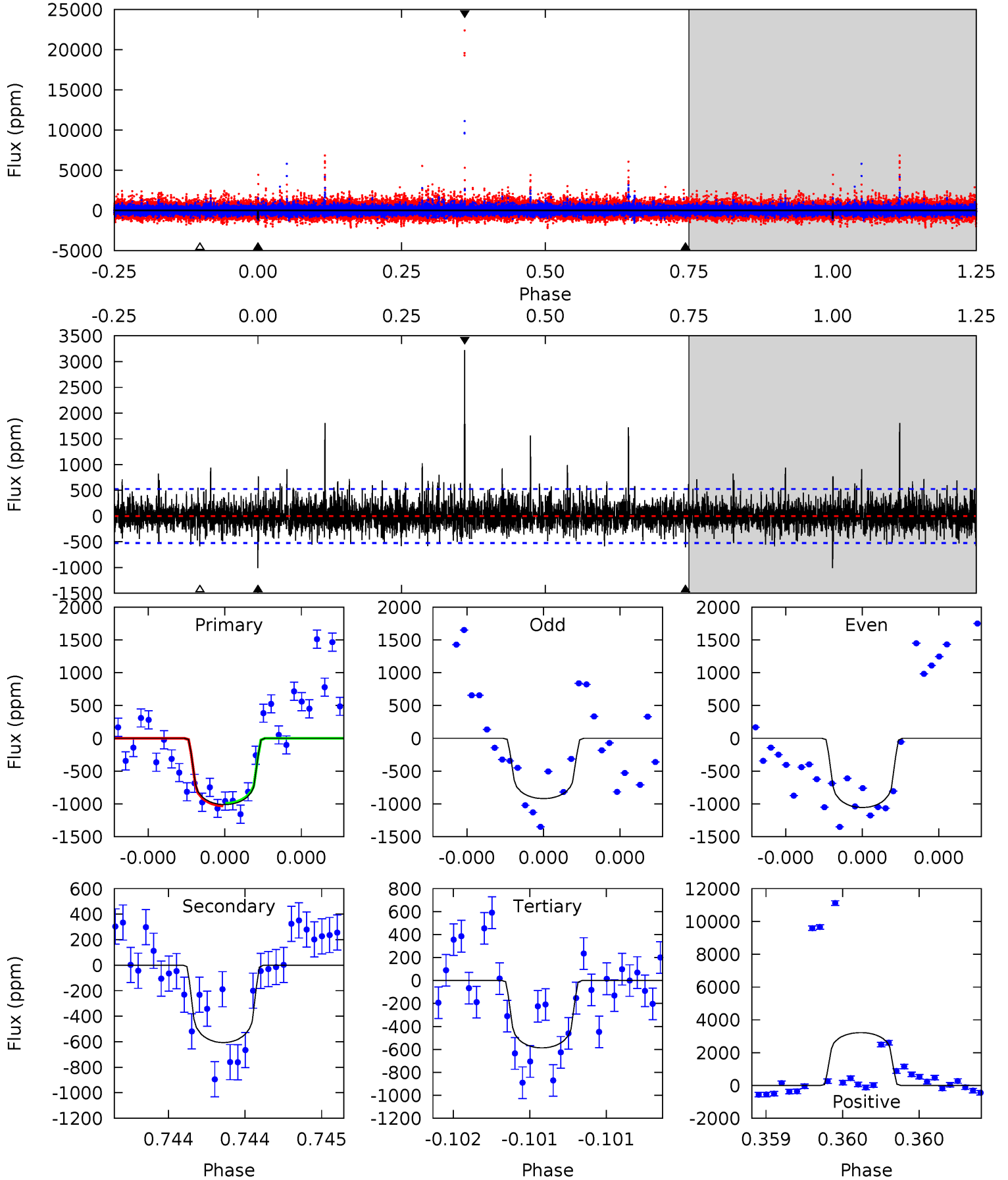
TCE 011662738-03 P=482.395485 Days $T_0=492.312280$ (BKJD)



DV Model-Shift Uniqueness Test

011662738-03, P = 482.405381 Days, E = 9.900002 Days

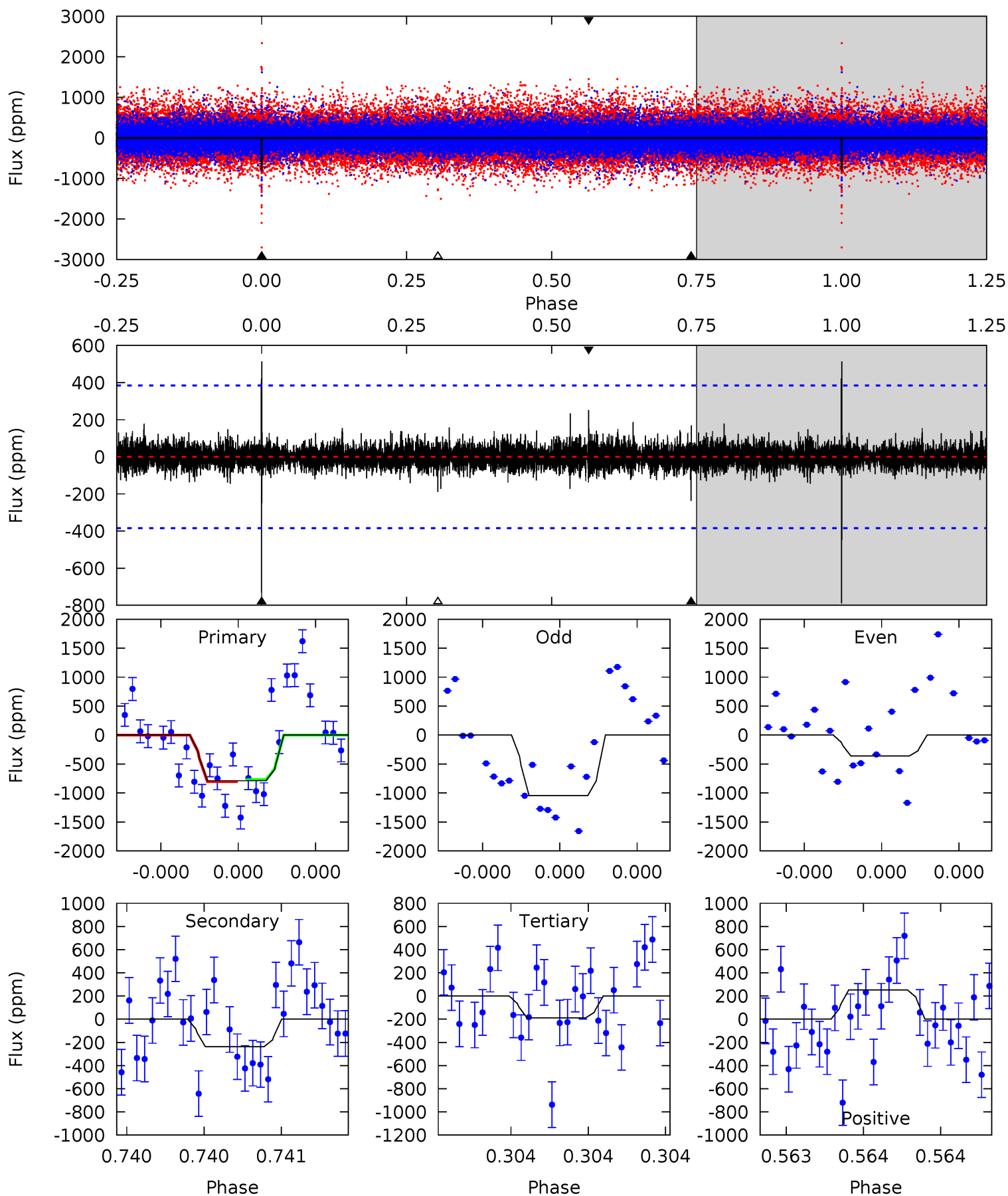
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	6.44	6.23	34.2	5.59	3.50	2.13	4.50	-23.5	0.21	-27.8	0.47	1.08	0.76	0.20



Alt Model-Shift Uniqueness Test

011662738-03, P = 482.395485 Days, E = 9.916795 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	3.48	2.77	3.70	5.64	3.58	0.56	8.80	7.87	0.72	-0.22	4.68	0.69	0.39	0.25



Stellar Parameters For KIC 011662738

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4605^{+139}_{-167}	$4.791^{+0.038}_{-0.028}$	$-1.940^{+0.300}_{-0.050}$	$0.468^{+0.029}_{-0.029}$	$0.494^{+0.034}_{-0.025}$	$6.787^{+1.113}_{-0.807}$
	+3%/-4%	+1%/-1%	+15%/-3%	+6%/-6%	+7%/-5%	+16%/-12%
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 011662738-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-607 ± 94	$1.95^{+1.39}_{-1.22}$	199^{+7}_{-8}	3926^{+1857}_{-661}	$82192^{+465775}_{-55611}$
Alt.	-237 ± 68	$1.82^{+1.54}_{-1.20}$	199^{+7}_{-7}	3422^{+1666}_{-569}	$34922^{+274470}_{-24752}$

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 $A_{obs} \gg 1.0$

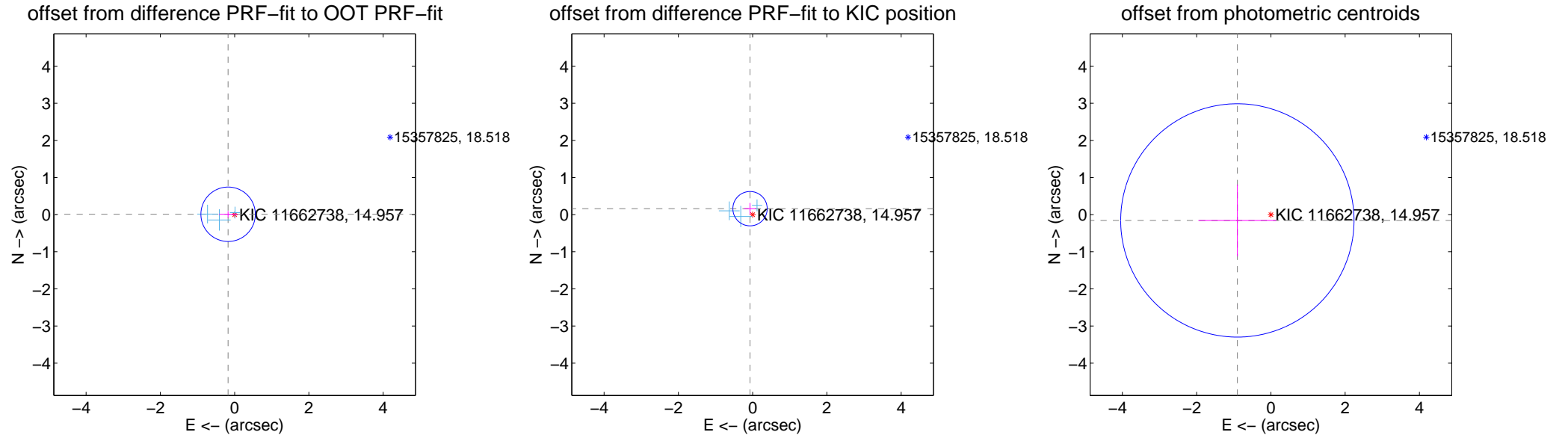
DV Centroid Data

Supplemental centroid analysis for 011662738-03. Kepler magnitude: 14.96. Transit SNR 6.87

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.176 ± 0.244	0.72	0.176 ± 0.247	0.010 ± 0.086
PRF-fit source offset from KIC position	0.175 ± 0.154	1.13	0.070 ± 0.160	0.160 ± 0.153
photometric centroid source offset	0.92 ± 1.05	0.88	0.90 ± 1.05	-0.16 ± 0.97

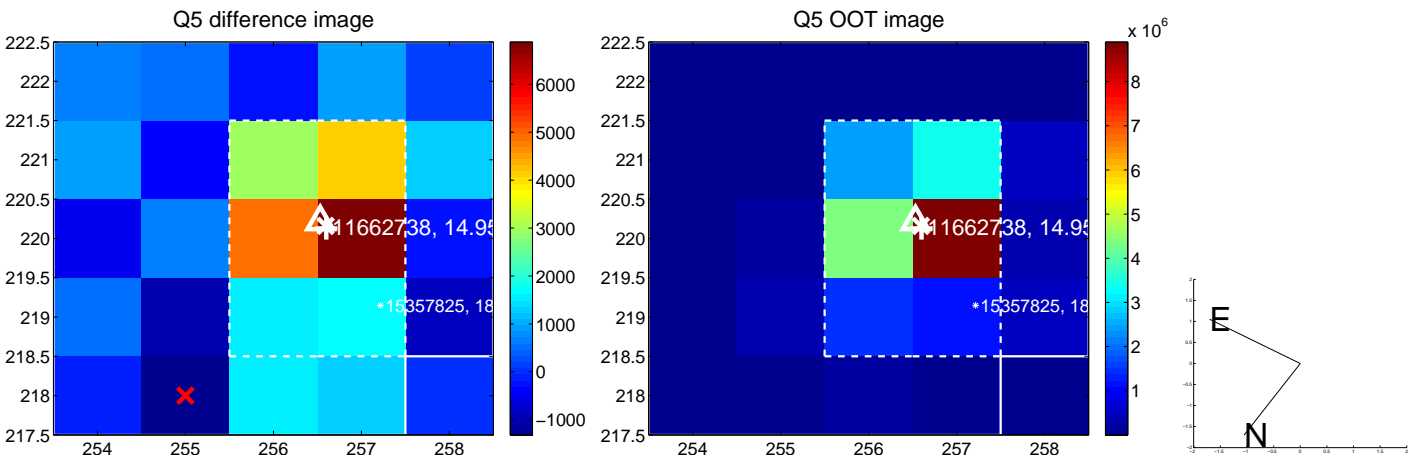


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

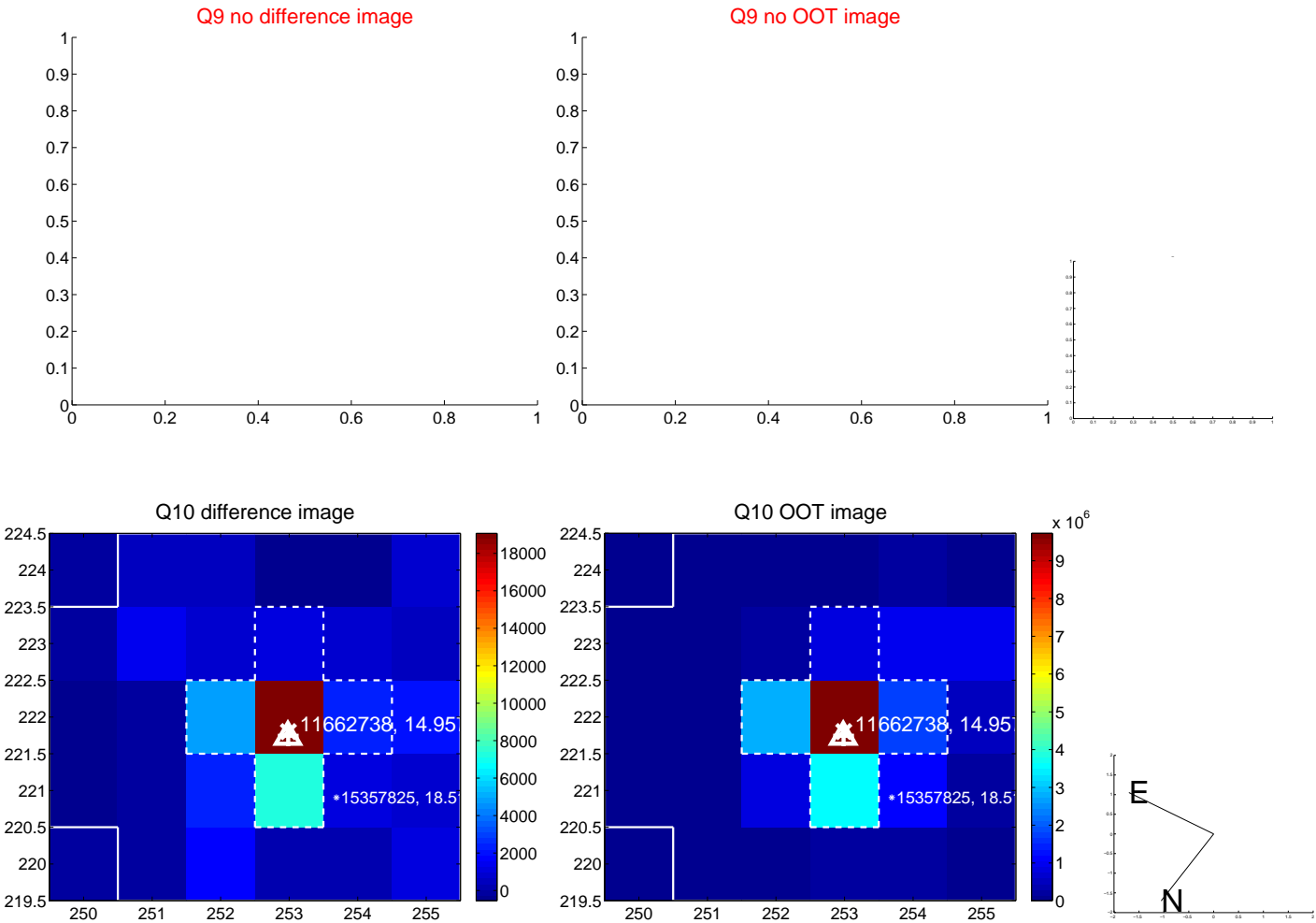
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



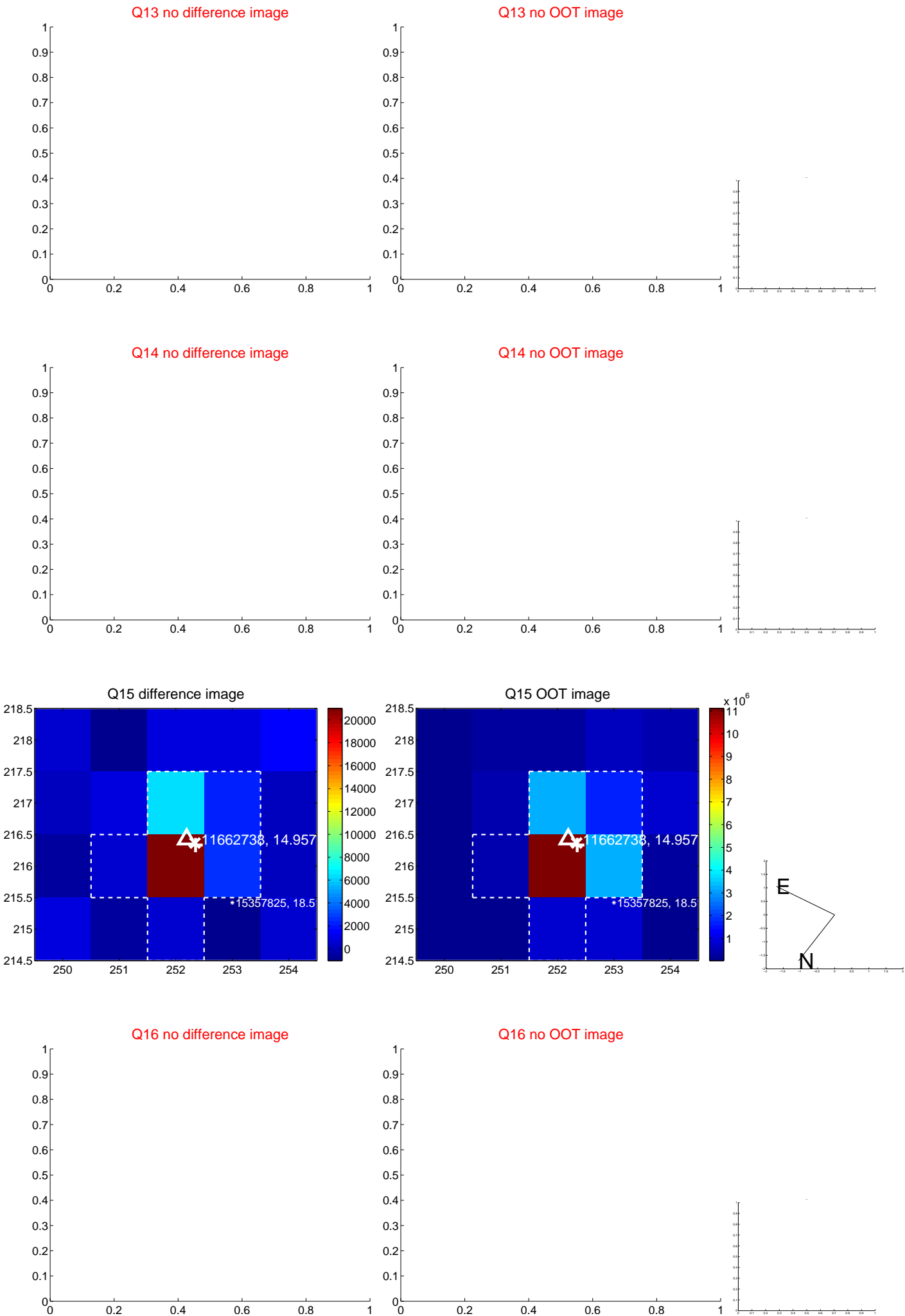
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



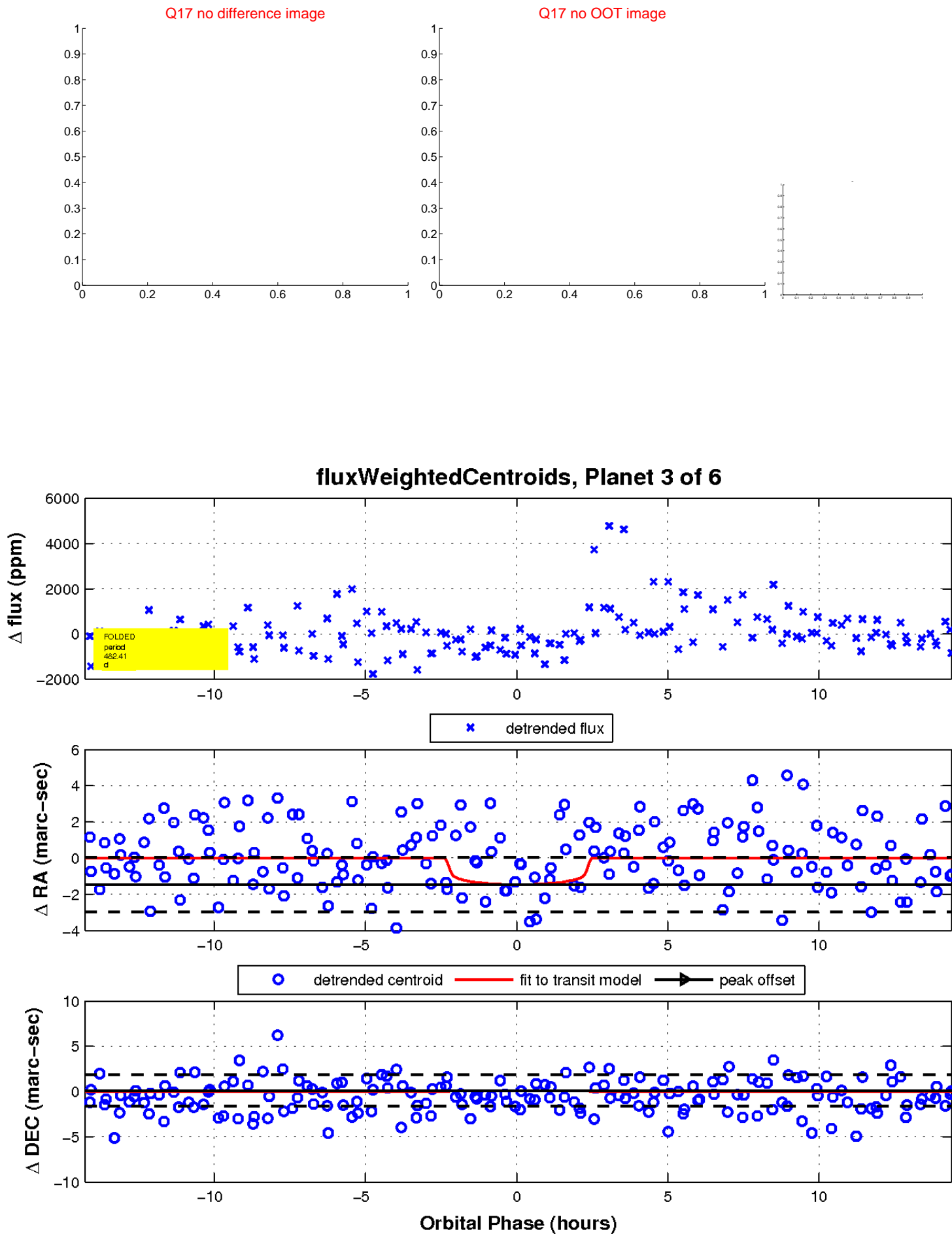
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

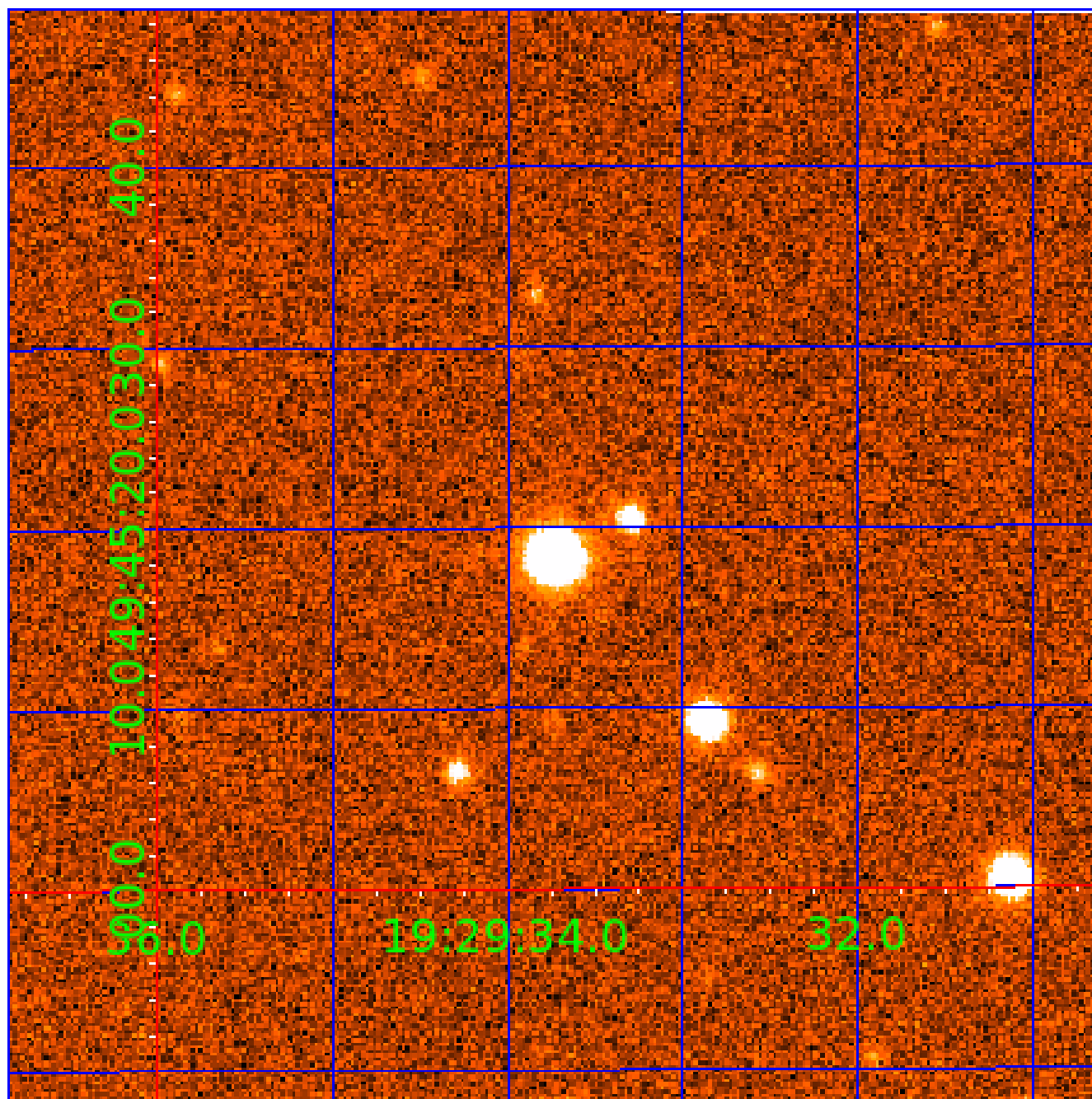


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011662738

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})
011662738-01	OBS	No	687.940580	137.178471	1074.8	13.896	17.6	5.0	0.47	4605	1.74	0.06
011662738-02	OBS	No	327.134388	404.400597	1570.8	5.200	13.0	6.2	0.47	4605	2.35	0.16
011662738-03	OBS	No	482.405381	492.305383	1223.8	4.811	11.7	6.9	0.47	4605	1.67	0.10
011662738-04	OBS	No	470.516196	510.666479	1419.0	7.015	11.1	7.8	0.47	4605	1.78	0.10
011662738-05	OBS	No	485.700053	147.555223	1677.6	8.863	10.4	8.0	0.47	4605	2.25	0.10
011662738-06	OBS	No	544.699823	152.448257	1335.6	7.300	9.8	6.6	0.47	4605	3.20	0.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011662738-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV
011662738-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_MEAS
011662738-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

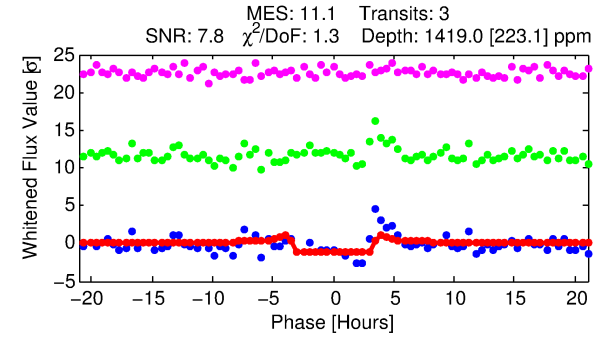
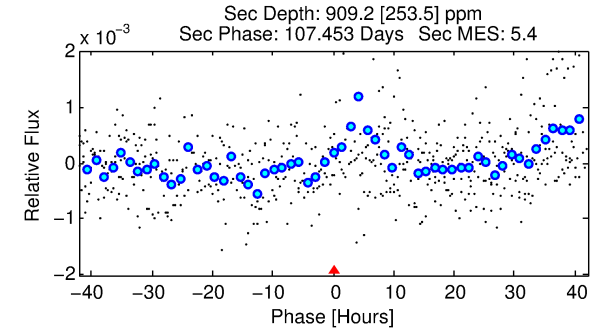
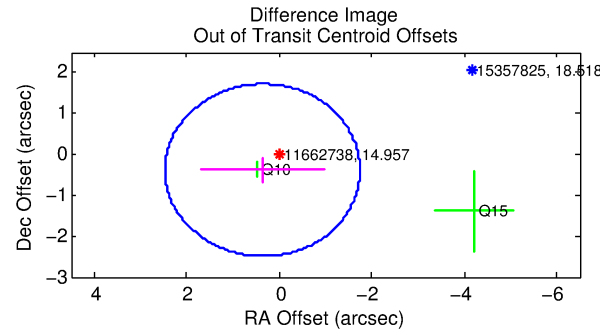
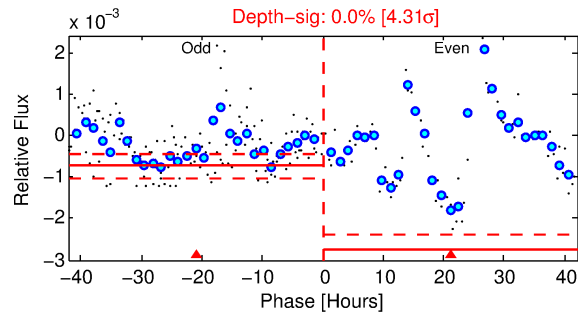
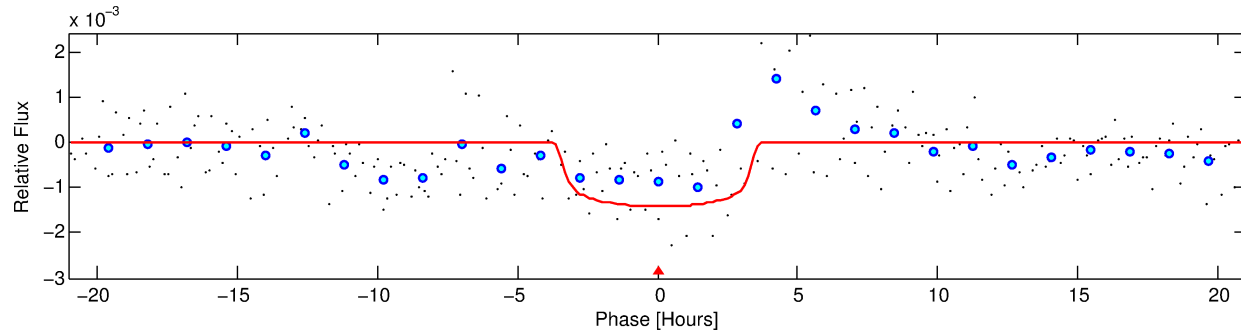
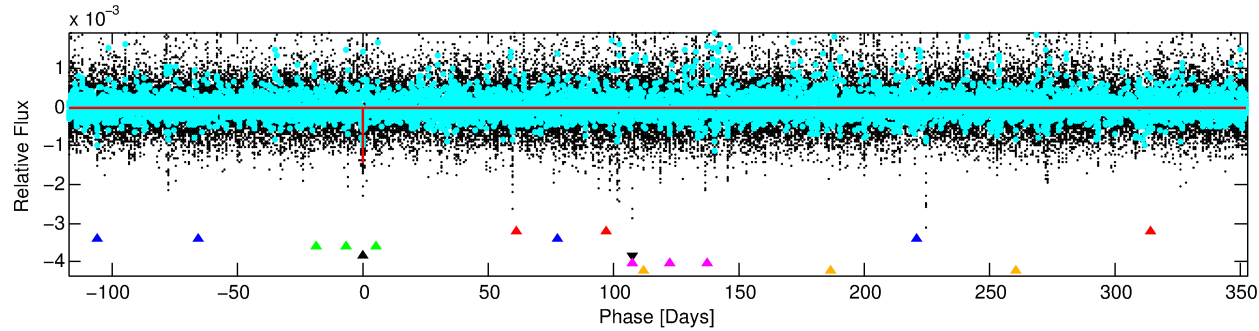
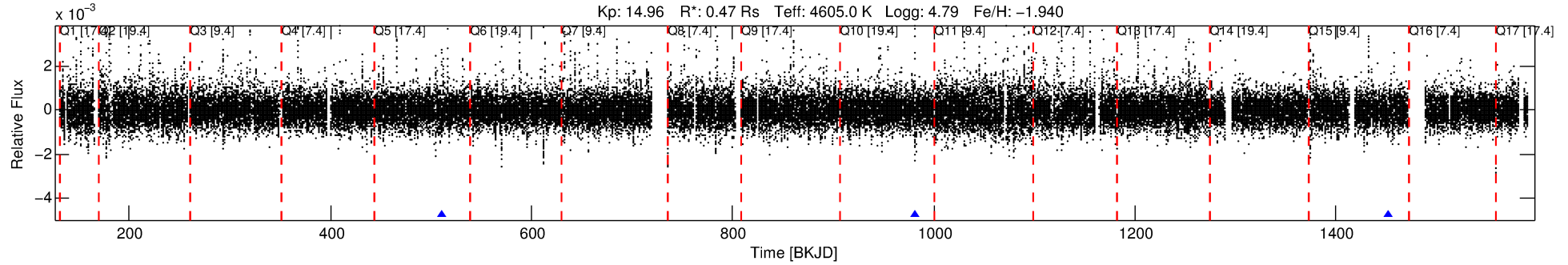
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011662738-04

No Significant Match Found

DV One-Page Summary

KIC: 11662738 Candidate: 4 of 6 Period: 470.516 d



DV Fit Results:

Period = 470.51620 [0.00613] d
Epoch = 510.6665 [0.0080] BKJD
Rp/R* = 0.0348 [0.0193]
a/R* = 515.71 [1433.08]
b = 0.24 [10.89]
Seff = 0.10 [0.02]
Teq = 144 [6] K
Rp = 1.78 [0.99] Re
a = 0.9359 [0.0473] AU
Ag = 138861.80 [159434.47] [0.87 σ]
Teffp = 4288 [1238] K [3.35 σ]

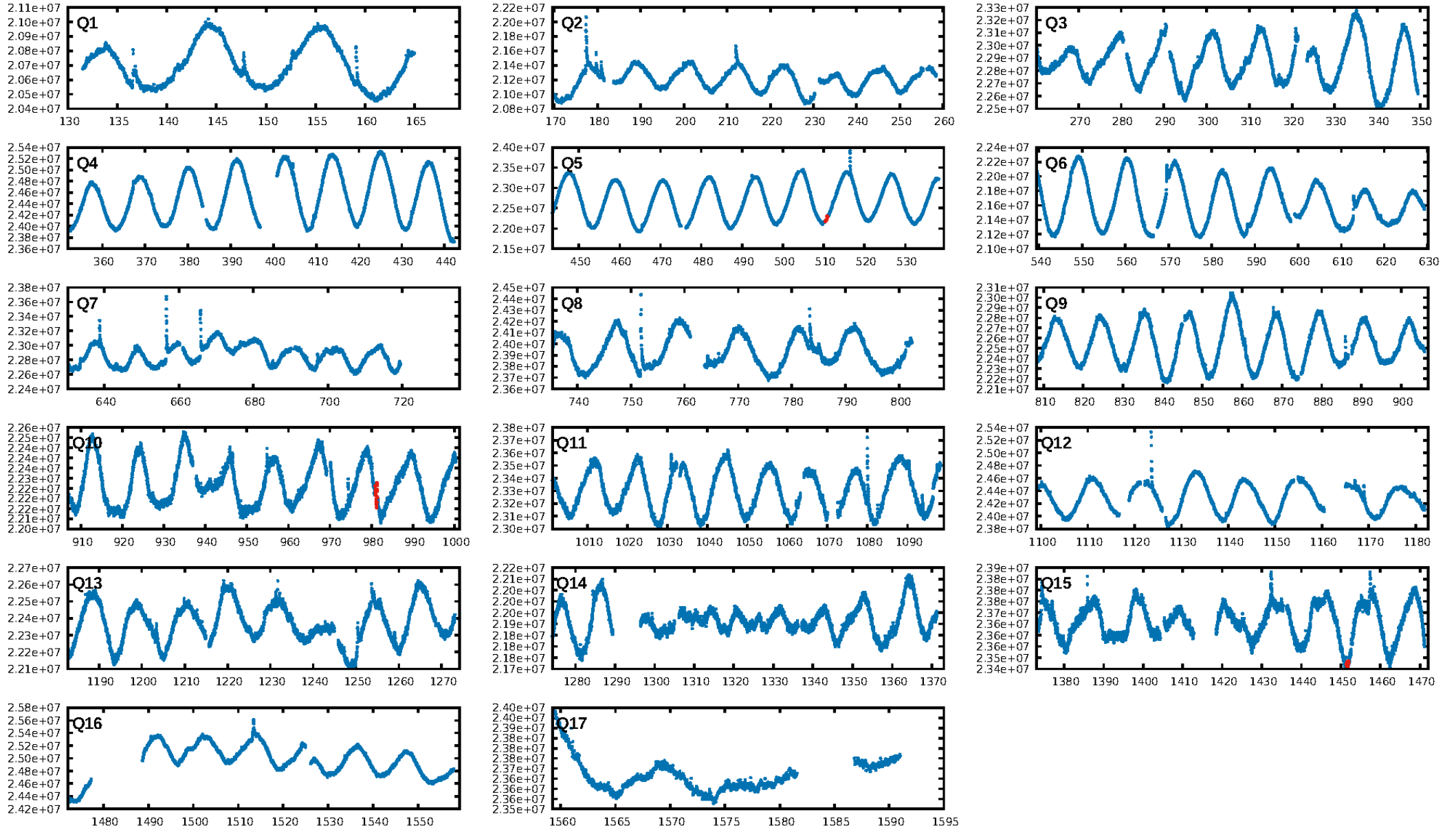
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [394.06 σ]
LongPeriod-sig: 100.0% [33.54 σ]
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 87.2%
Bootstrap-pfa: 4.35e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.358
Centroid-sig: 86.9%
Centroid-so: 0.213 arcsec [0.30 σ]
OotOffset-rm: 0.526 arcsec [0.75 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.305 arcsec [0.39 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

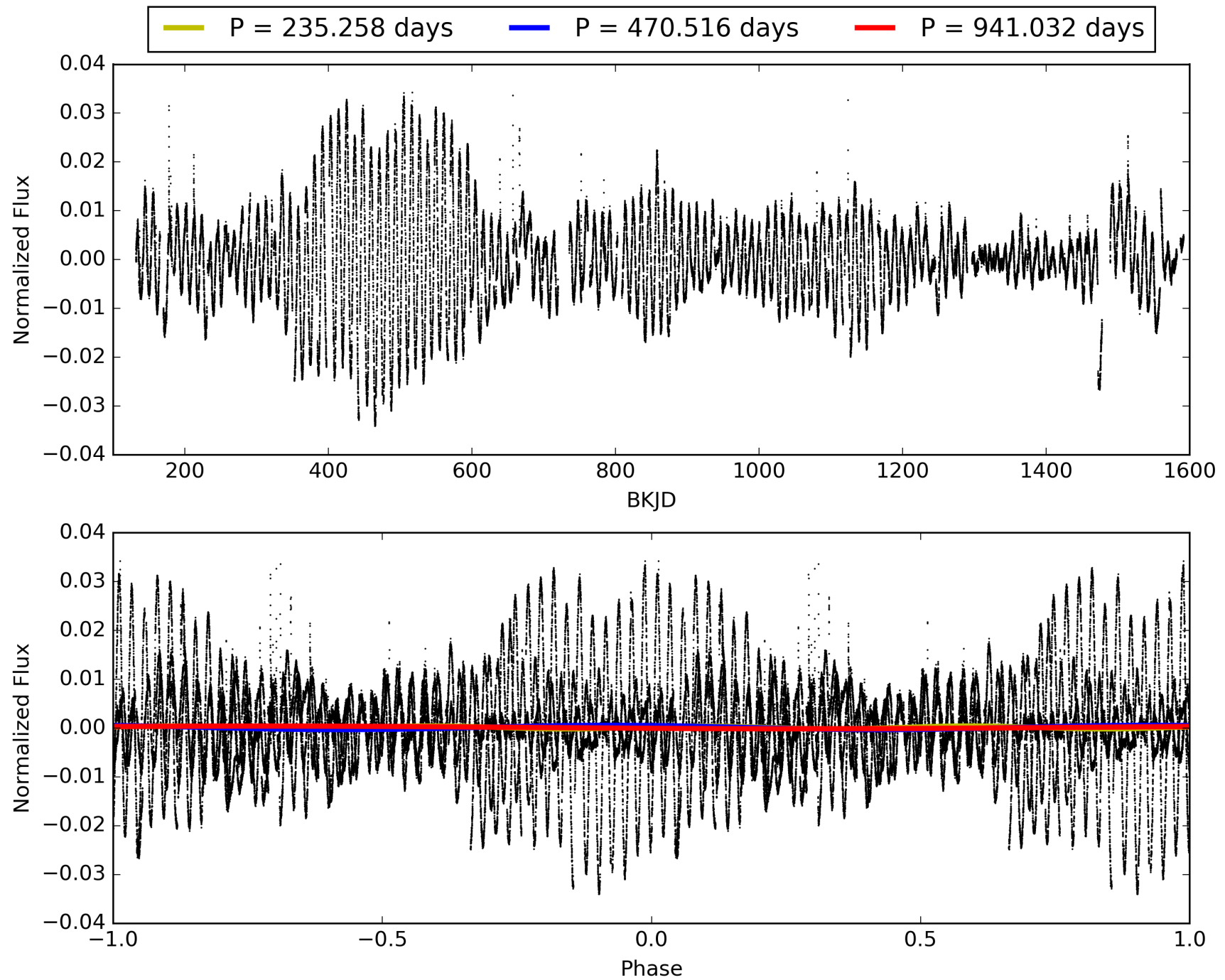
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:54:54 Z

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

TCE 011662738-04, PDC Light Curves

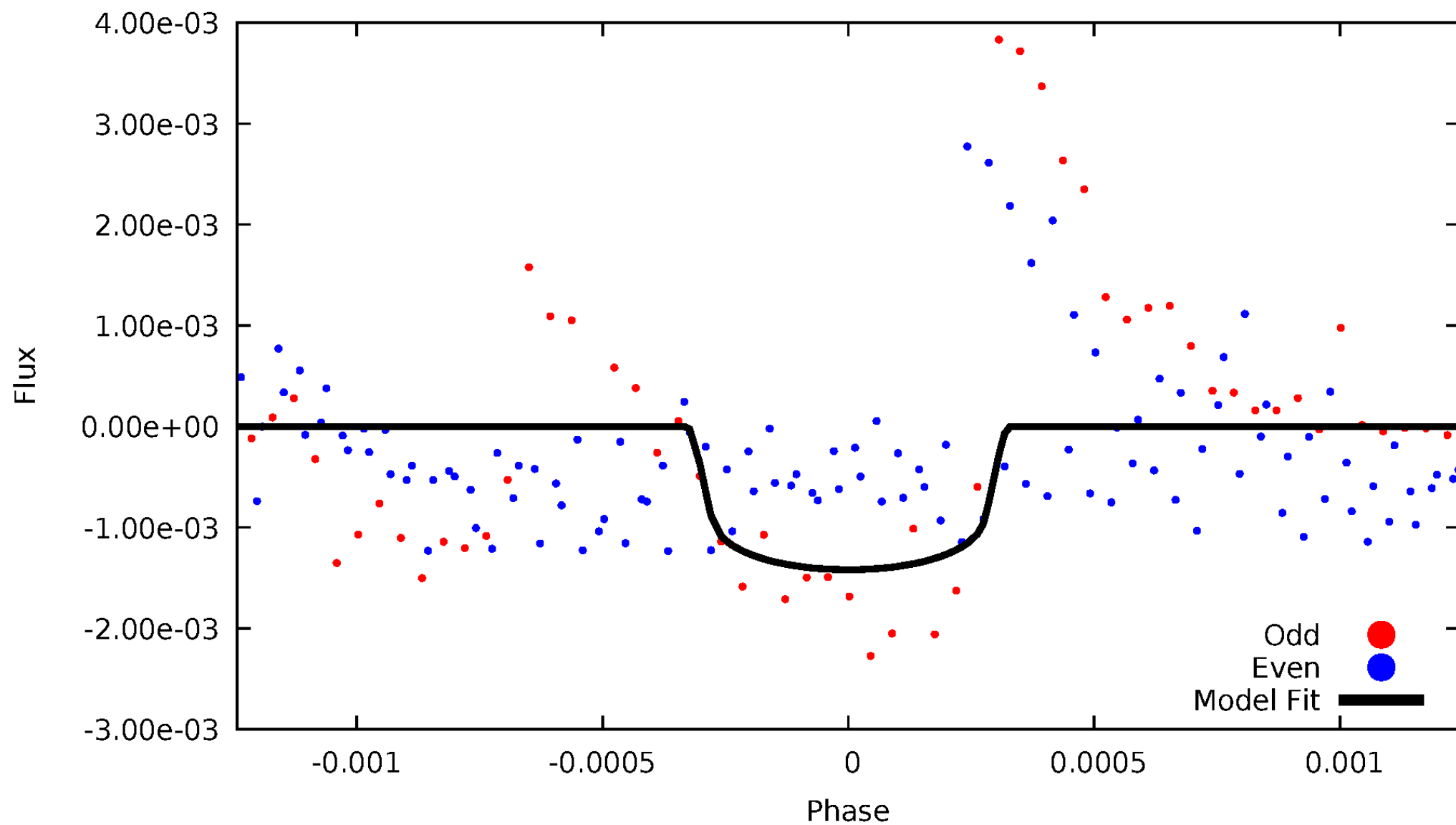


TCE 011662738-04



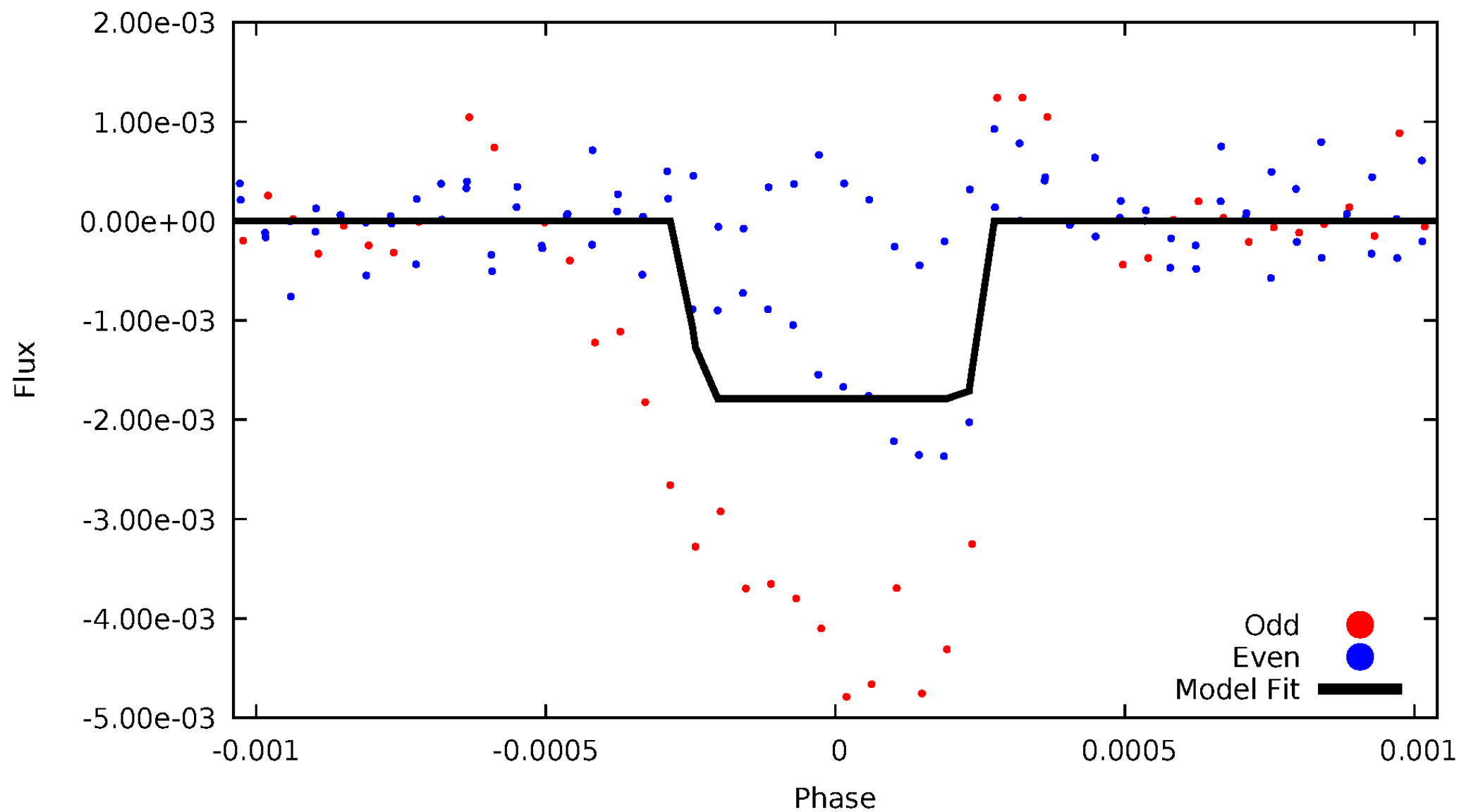
DV Odd/Even

TCE 011662738-04



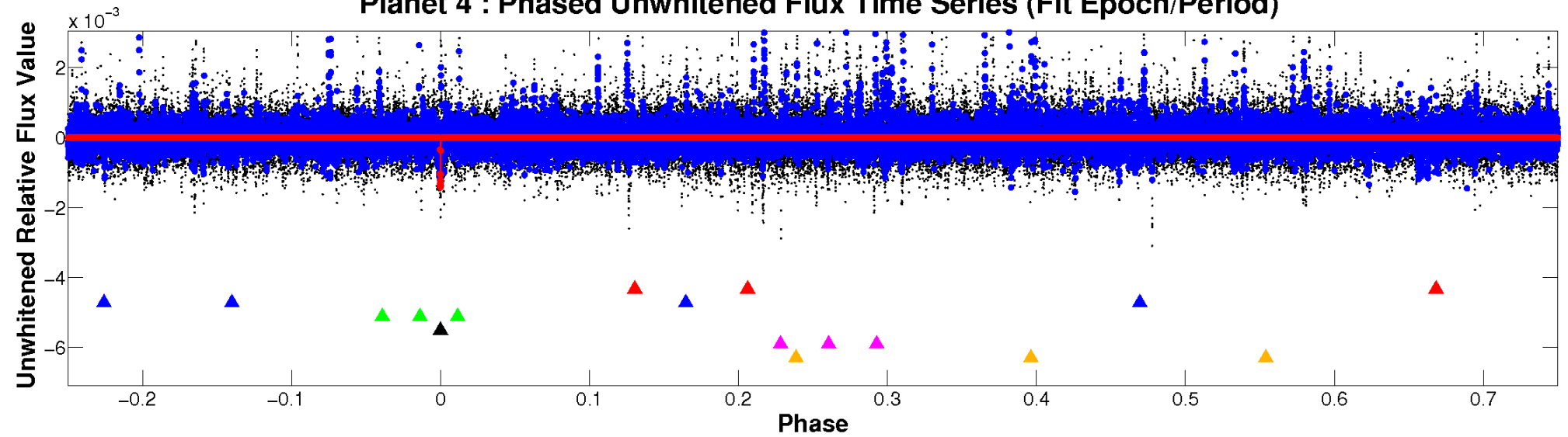
ALT Odd/Even

TCE 011662738-04

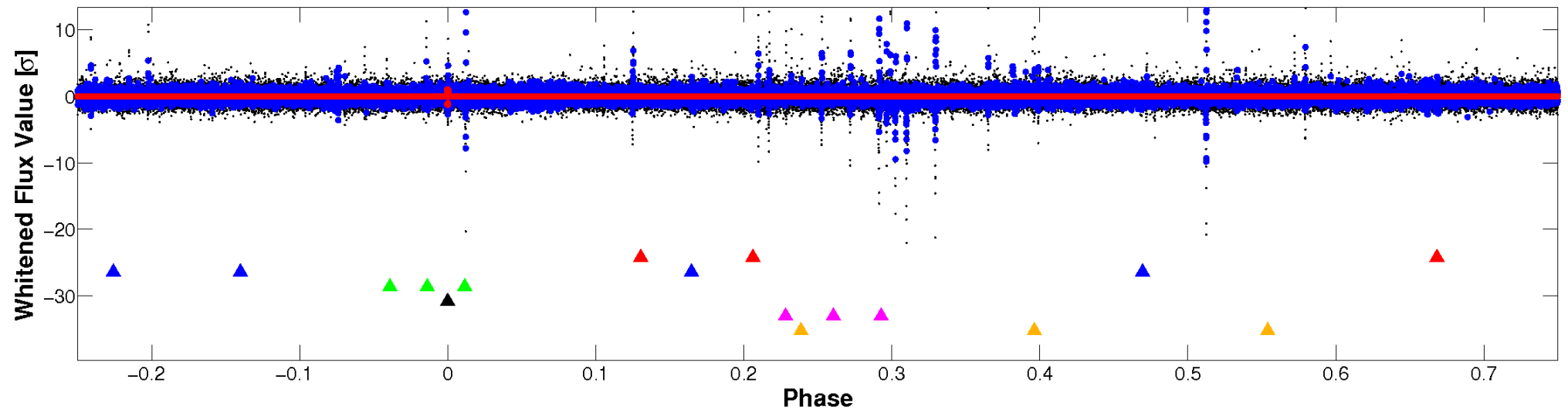


Non-Whitened Vs. Whitened Light Curve

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

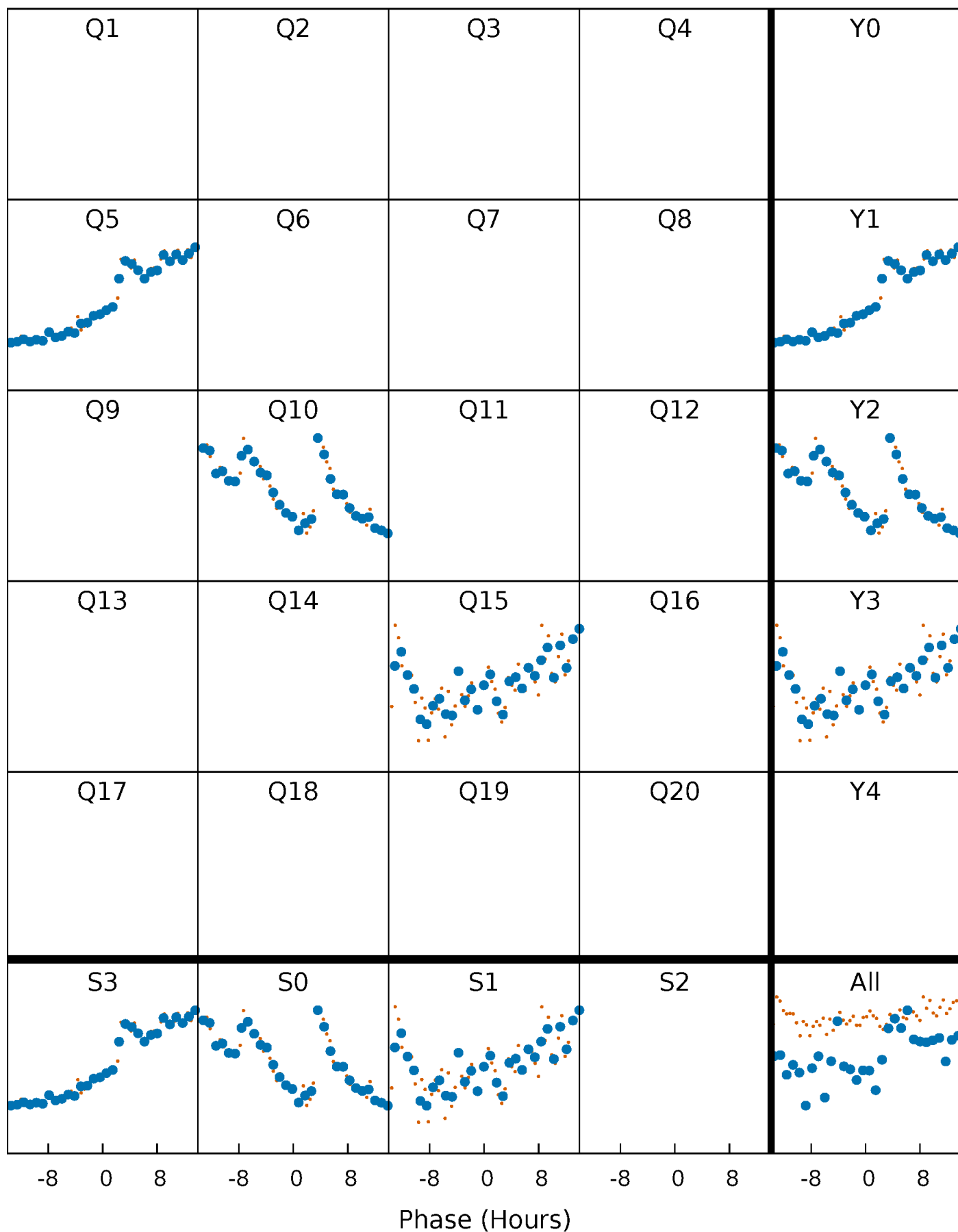


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



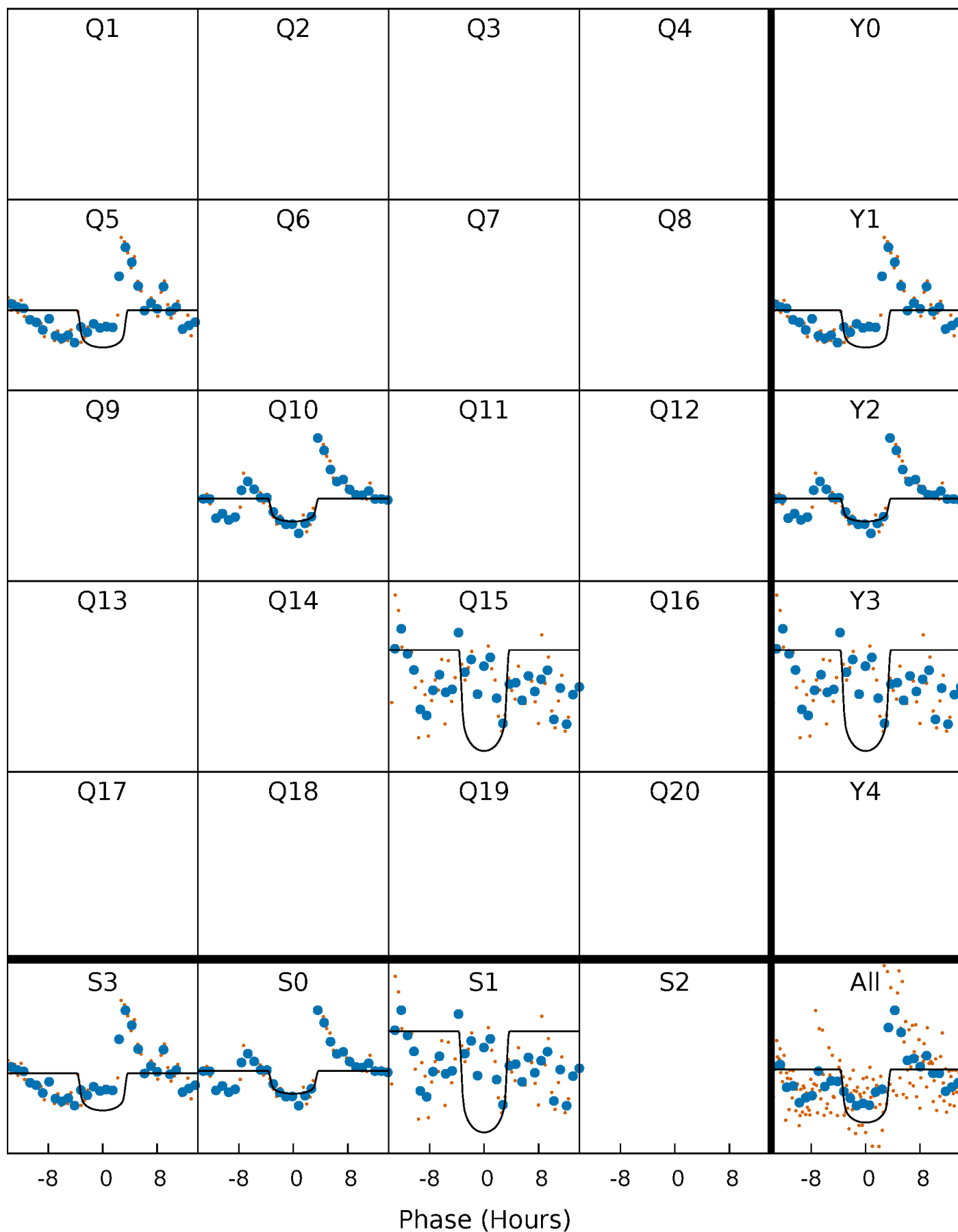
PDC Quarter-Phased Transit Curves

TCE 011662738-04 P=470.516196 Days $T_0=510.666479$ (BKJD)



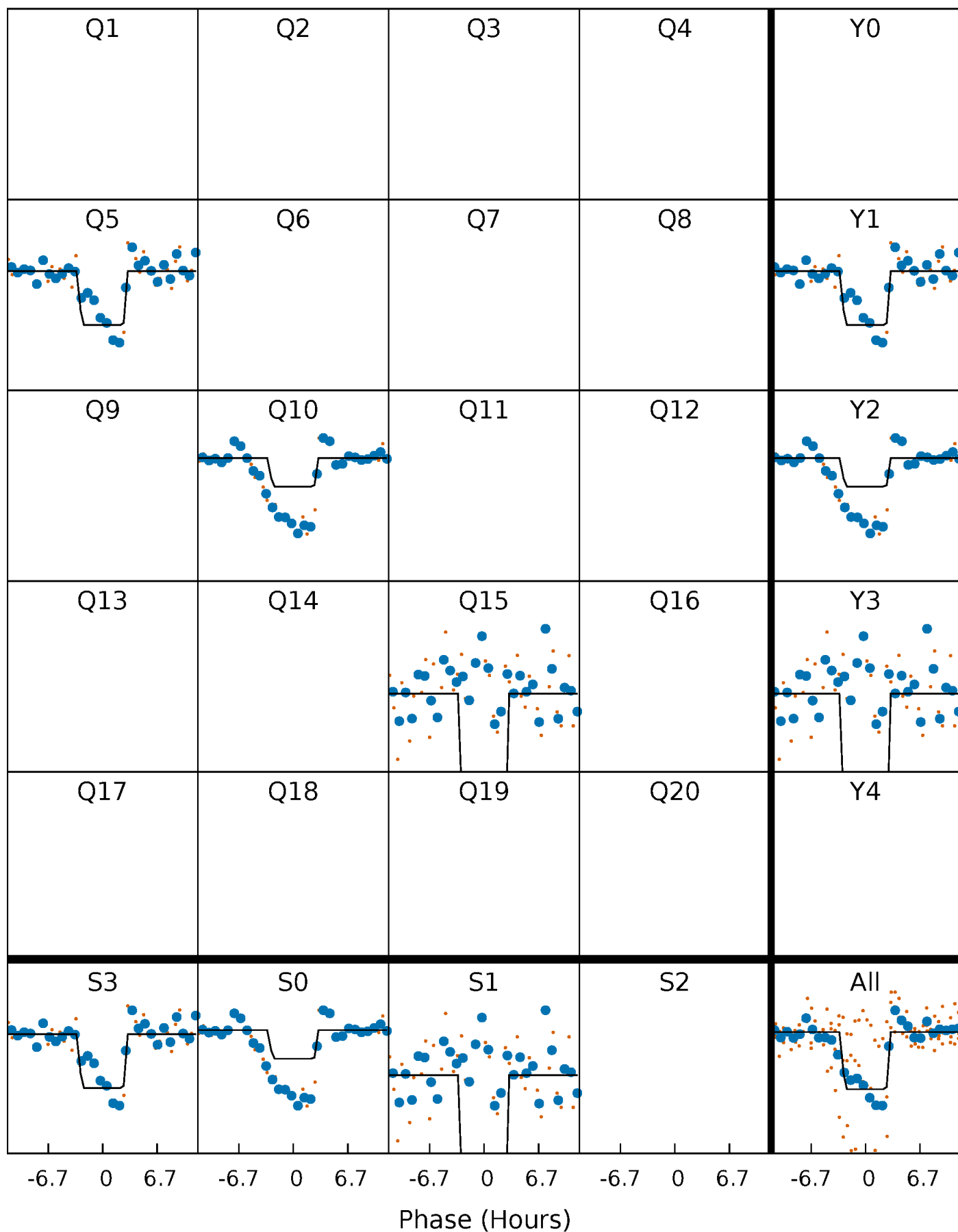
DV Quarter-Phased Transit Curves

TCE 011662738-04 $P=470.516196$ Days $T_0=510.666479$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

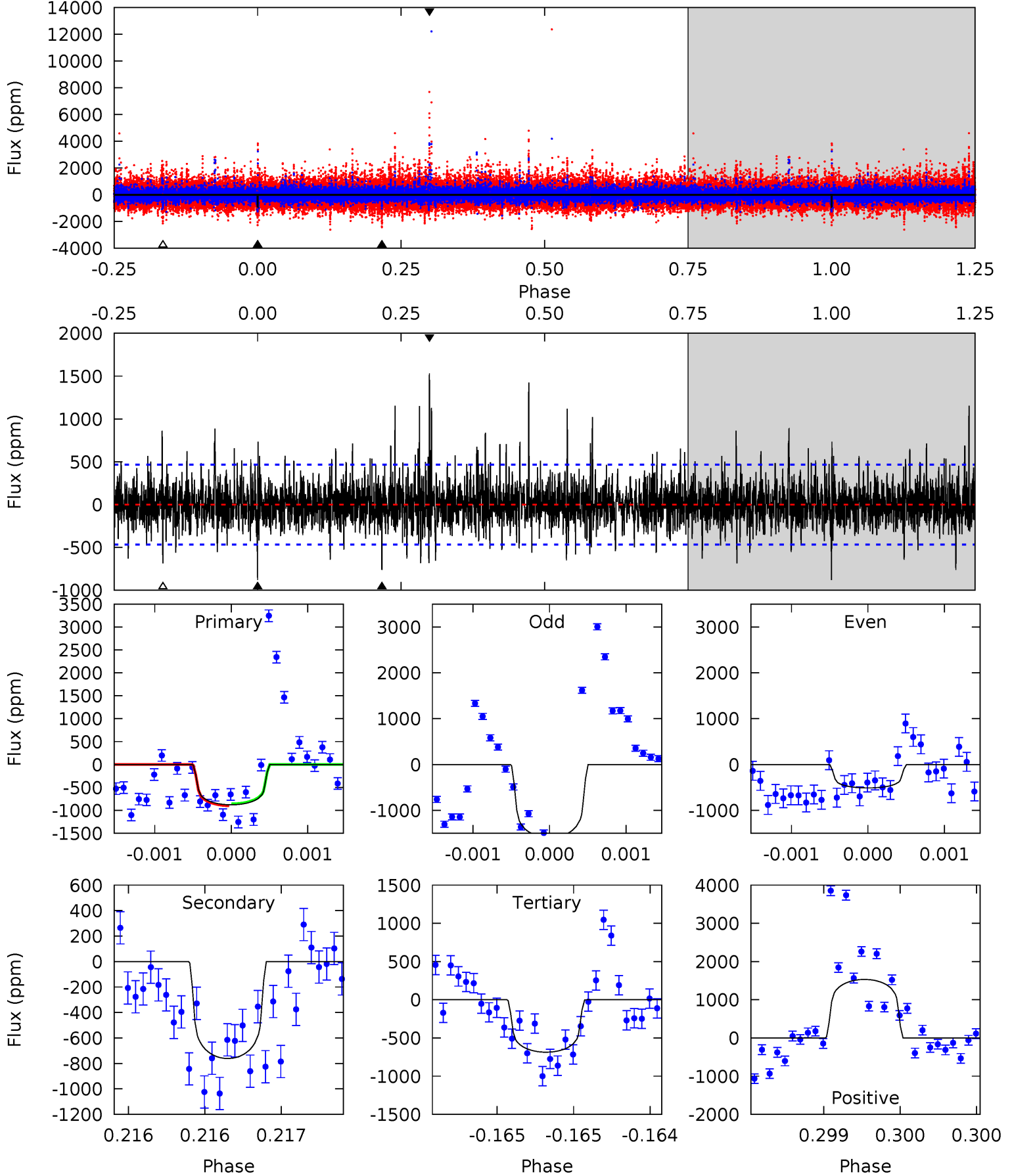
TCE 011662738-04 P=470.544020 Days $T_0=510.651033$ (BKJD)



DV Model-Shift Uniqueness Test

011662738-04, P = 470.516196 Days, E = 40.150283 Days

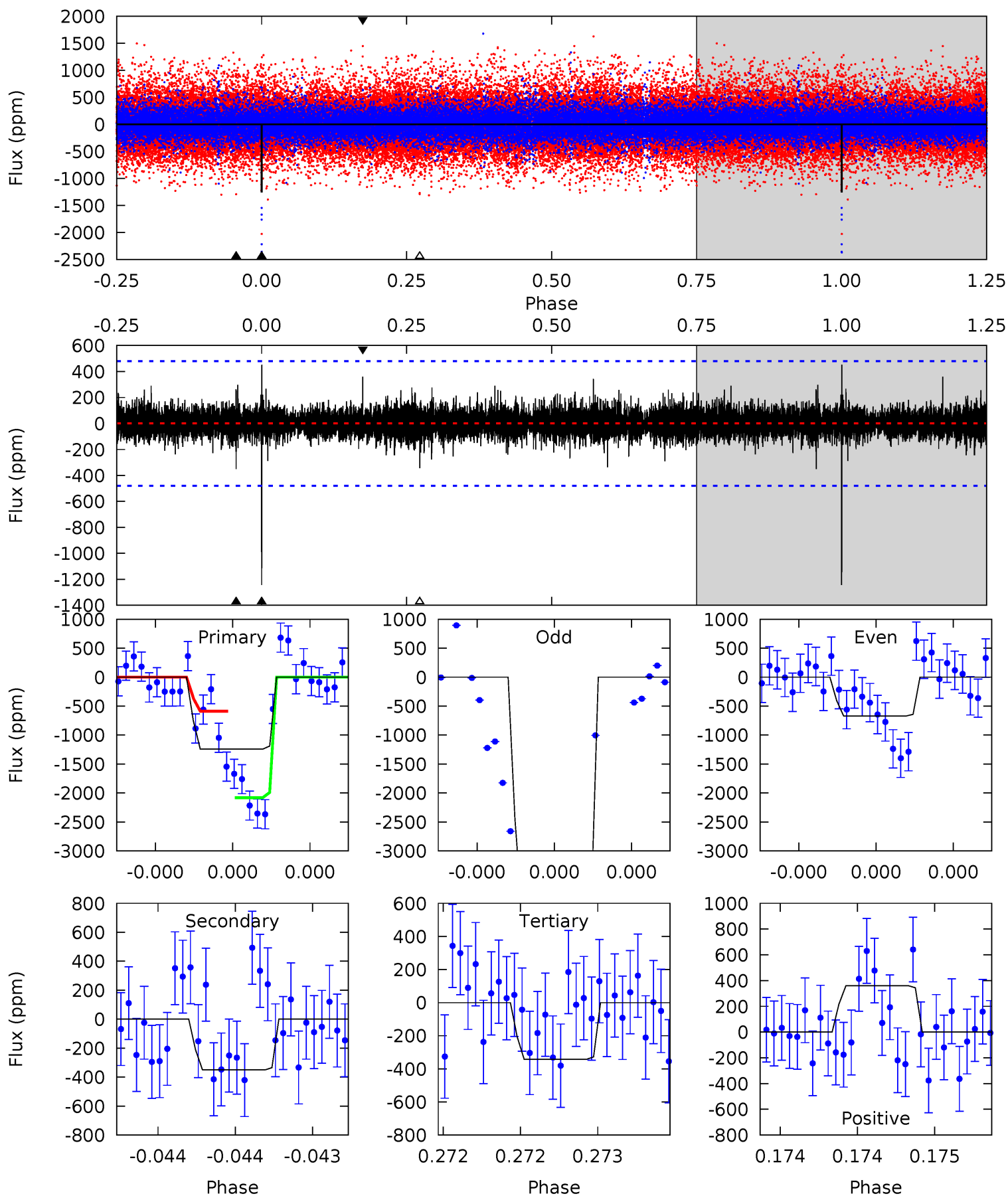
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	9.00	8.11	18.1	5.53	3.41	2.40	2.28	-7.72	0.89	-9.11	4.06	1.66	0.64	0.24



Alt Model-Shift Uniqueness Test

011662738-04, P = 470.544020 Days, E = 40.107013 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	4.07	3.98	4.18	5.58	3.49	0.73	10.5	10.3	0.08	-0.11	27.5	1.15	0.27	0



Stellar Parameters For KIC 011662738

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4605^{+139}_{-167}	$4.791^{+0.038}_{-0.028}$	$-1.940^{+0.300}_{-0.050}$	$0.468^{+0.029}_{-0.029}$	$0.494^{+0.034}_{-0.025}$	$6.787^{+1.113}_{-0.807}$
	+3%/-4%	+1%/-1%	+15%/-3%	+6%/-6%	+7%/-5%	+16%/-12%
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 011662738-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-761 ± 85	$1.76^{+1.00}_{-0.91}$	200^{+7}_{-7}	4205^{+1554}_{-605}	$120215^{+388351}_{-71604}$
Alt.	-350 ± 86	$2.15^{+1.00}_{-0.93}$	201^{+6}_{-7}	3447^{+786}_{-410}	36542^{+78479}_{-20854}

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

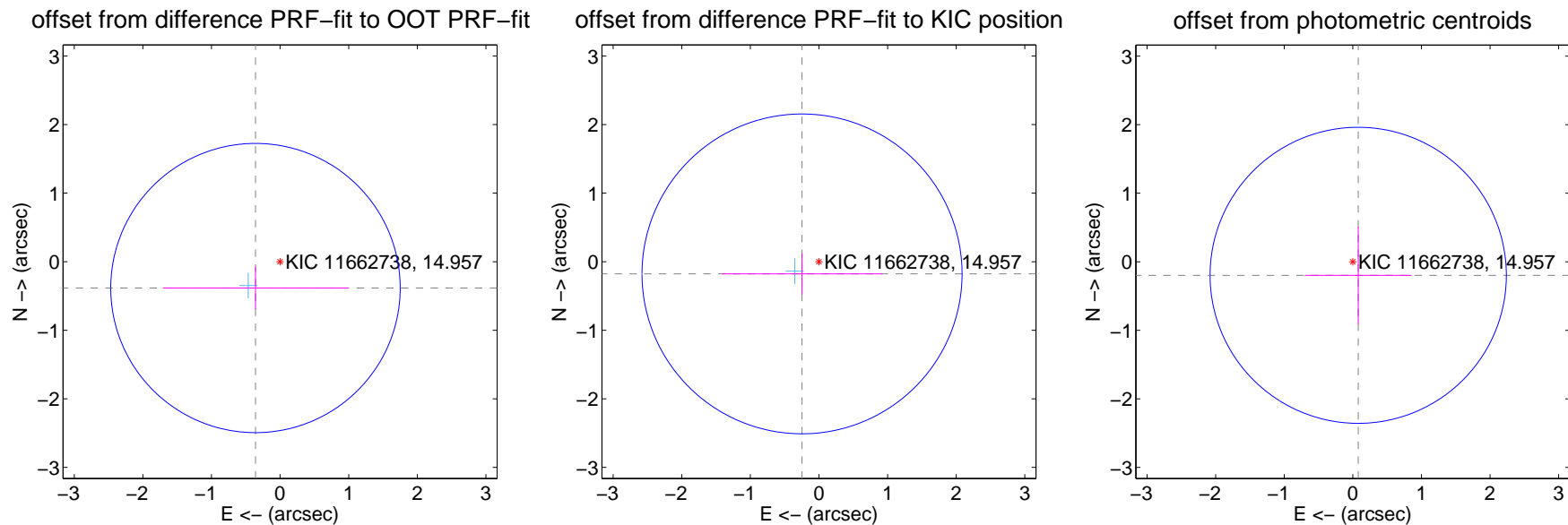
DV Centroid Data

Supplemental centroid analysis for 011662738-04. Kepler magnitude: 14.96. Transit SNR 7.77

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.526 ± 0.703	0.75	0.359 ± 1.350	-0.384 ± 0.309
PRF-fit source offset from KIC position	0.305 ± 0.778	0.39	0.247 ± 1.167	-0.178 ± 0.300
photometric centroid source offset	0.21 ± 0.72	0.30	-0.08 ± 0.78	-0.20 ± 0.71

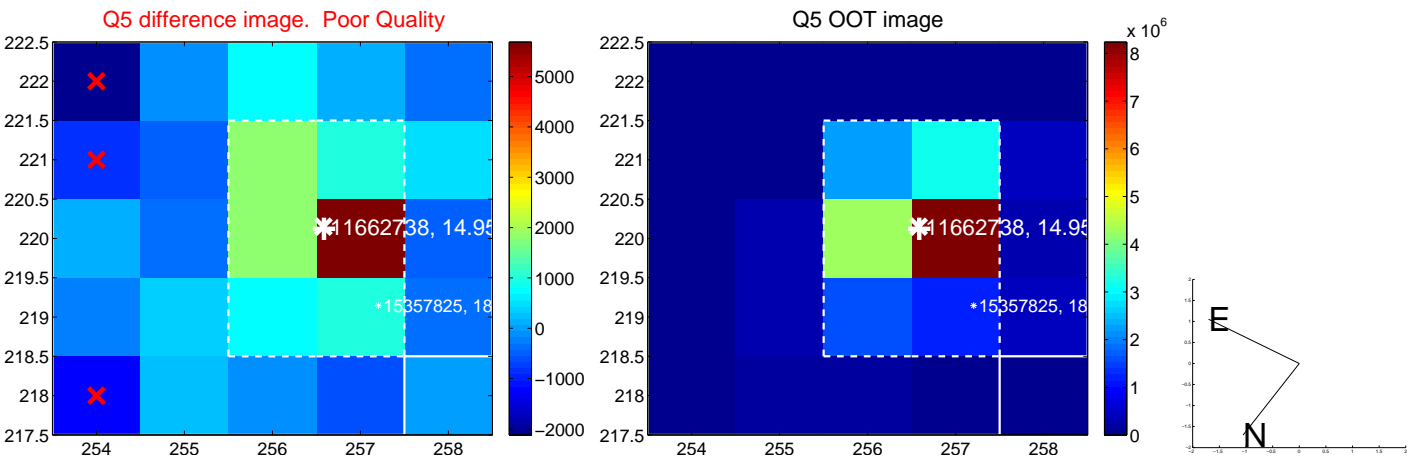


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

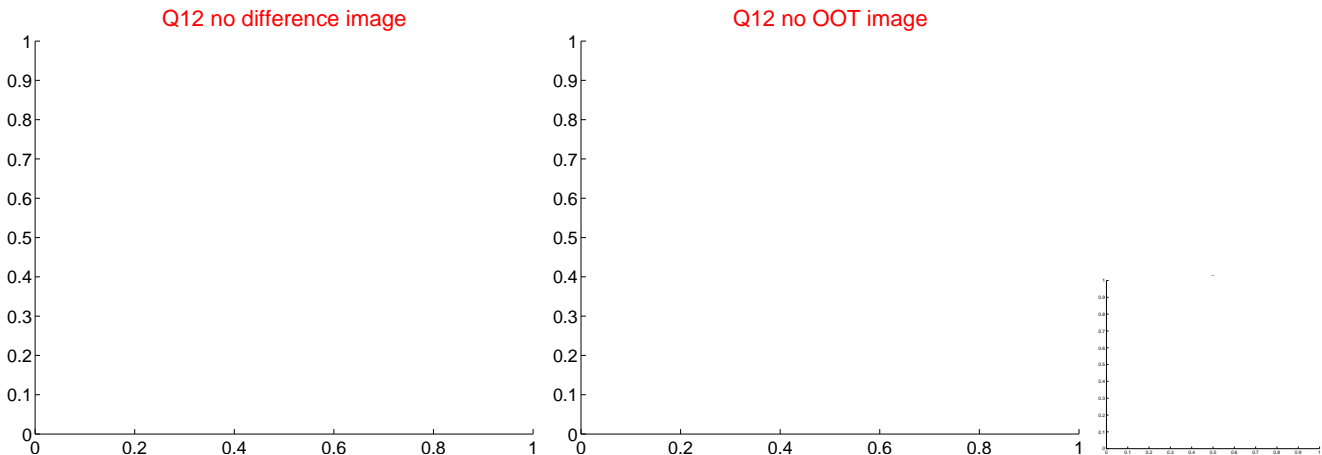
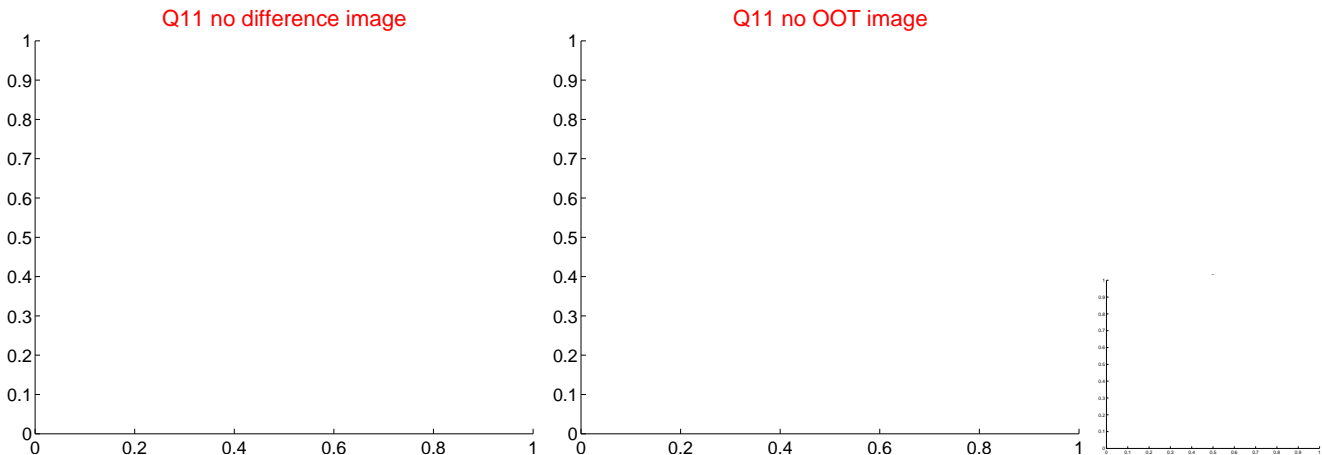
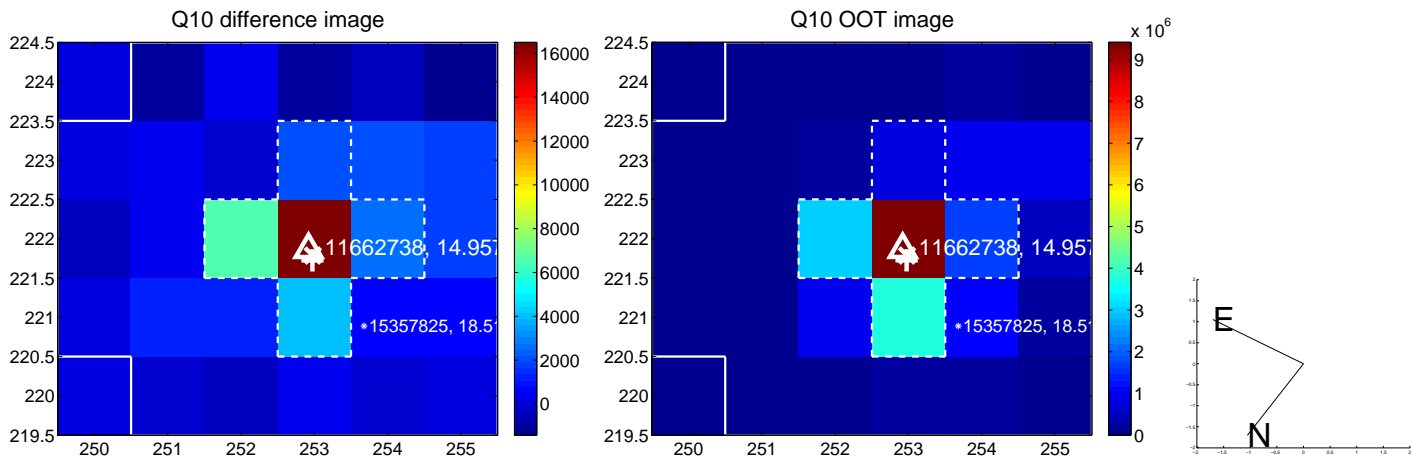
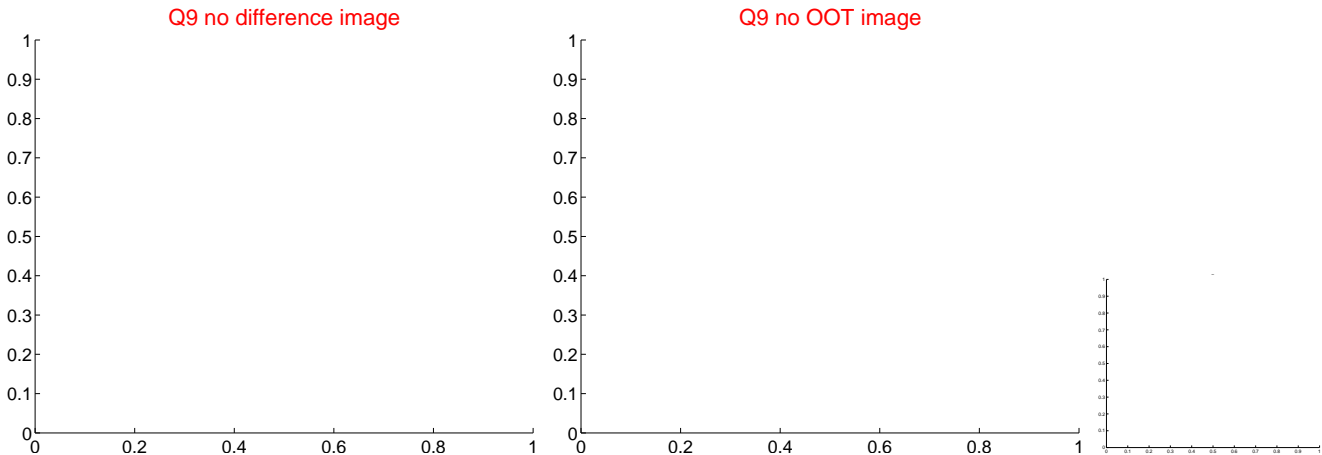
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



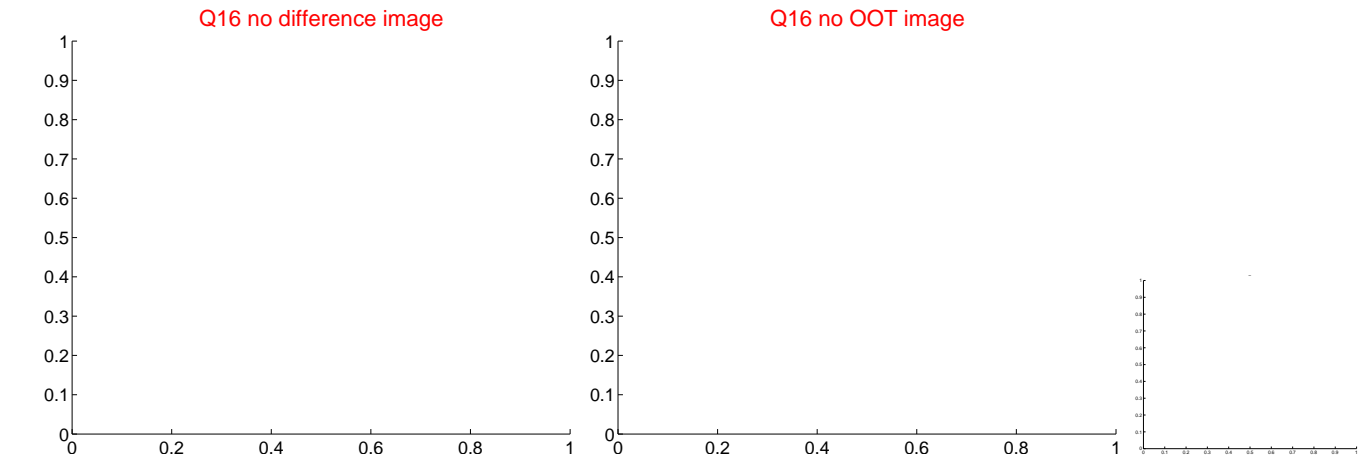
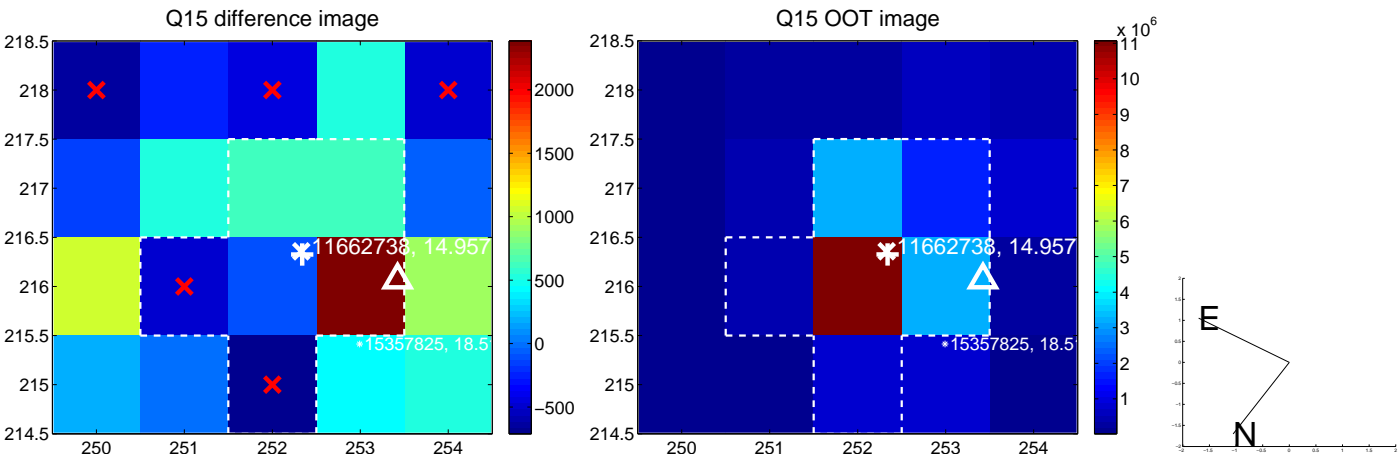
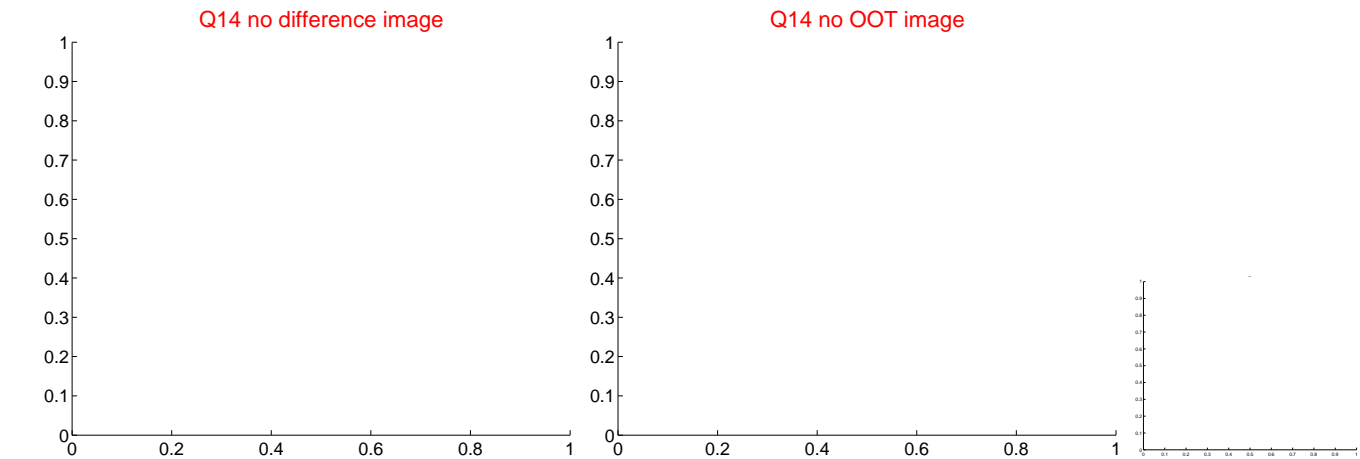
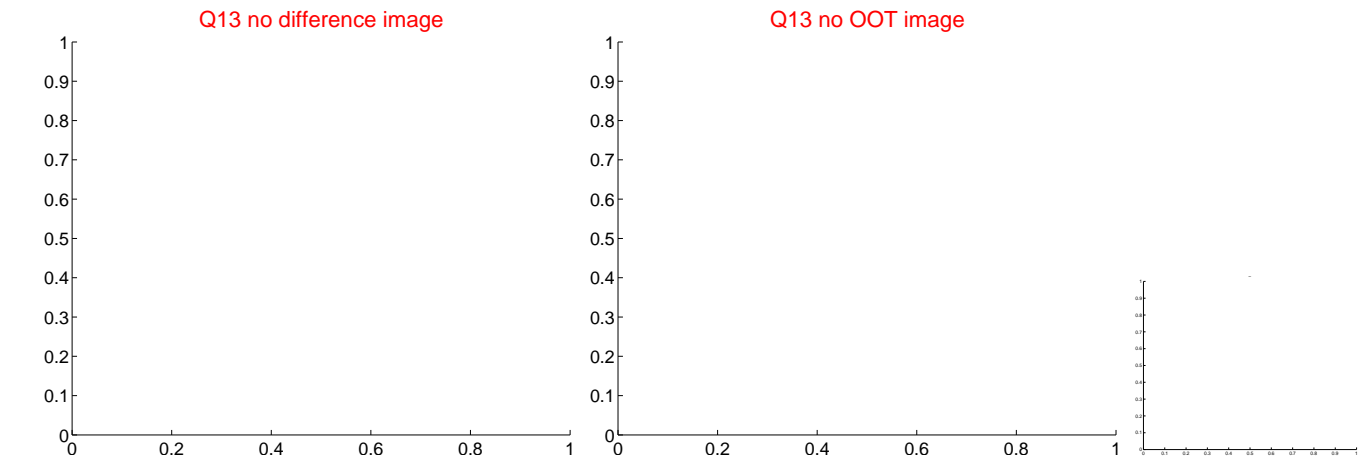
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



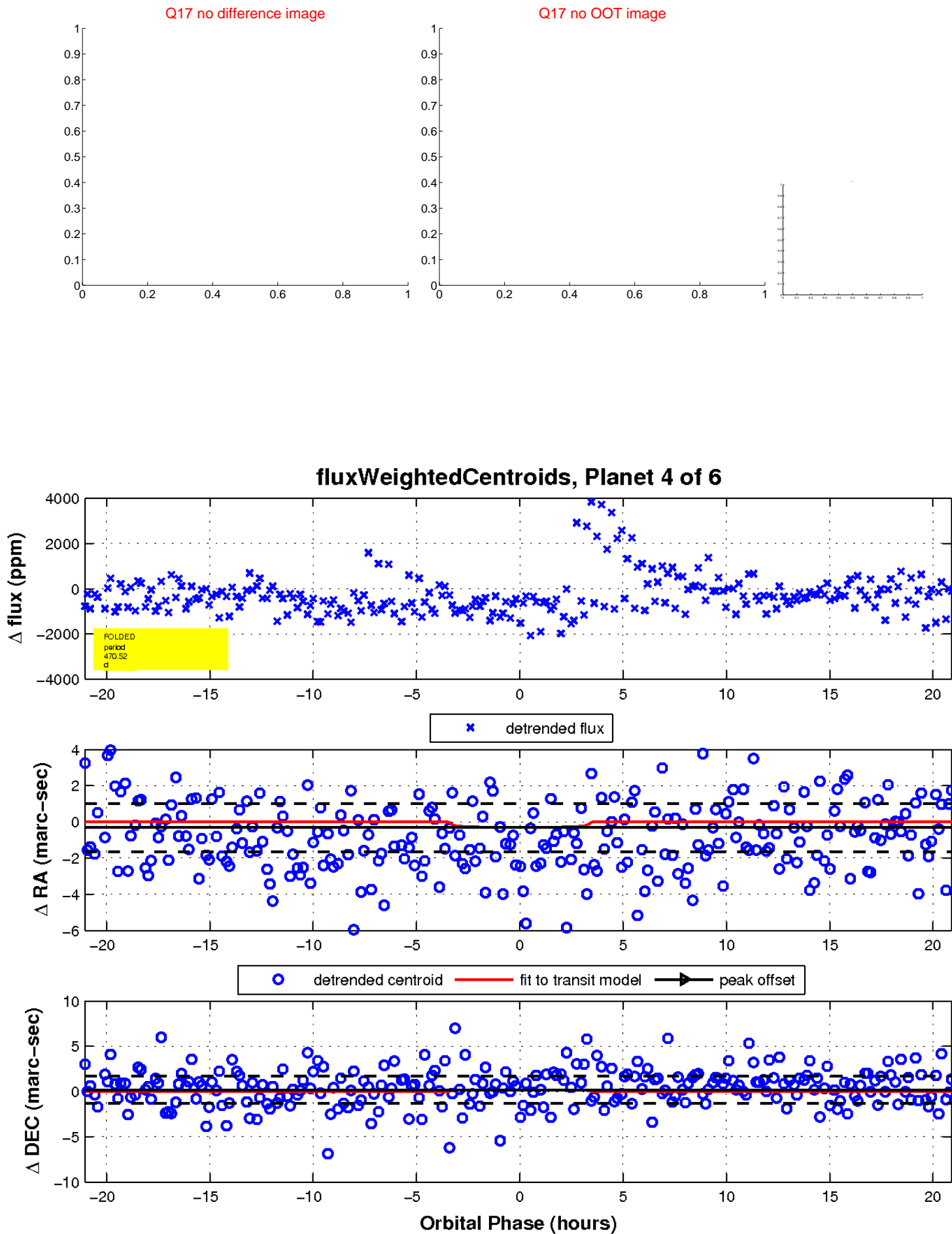
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

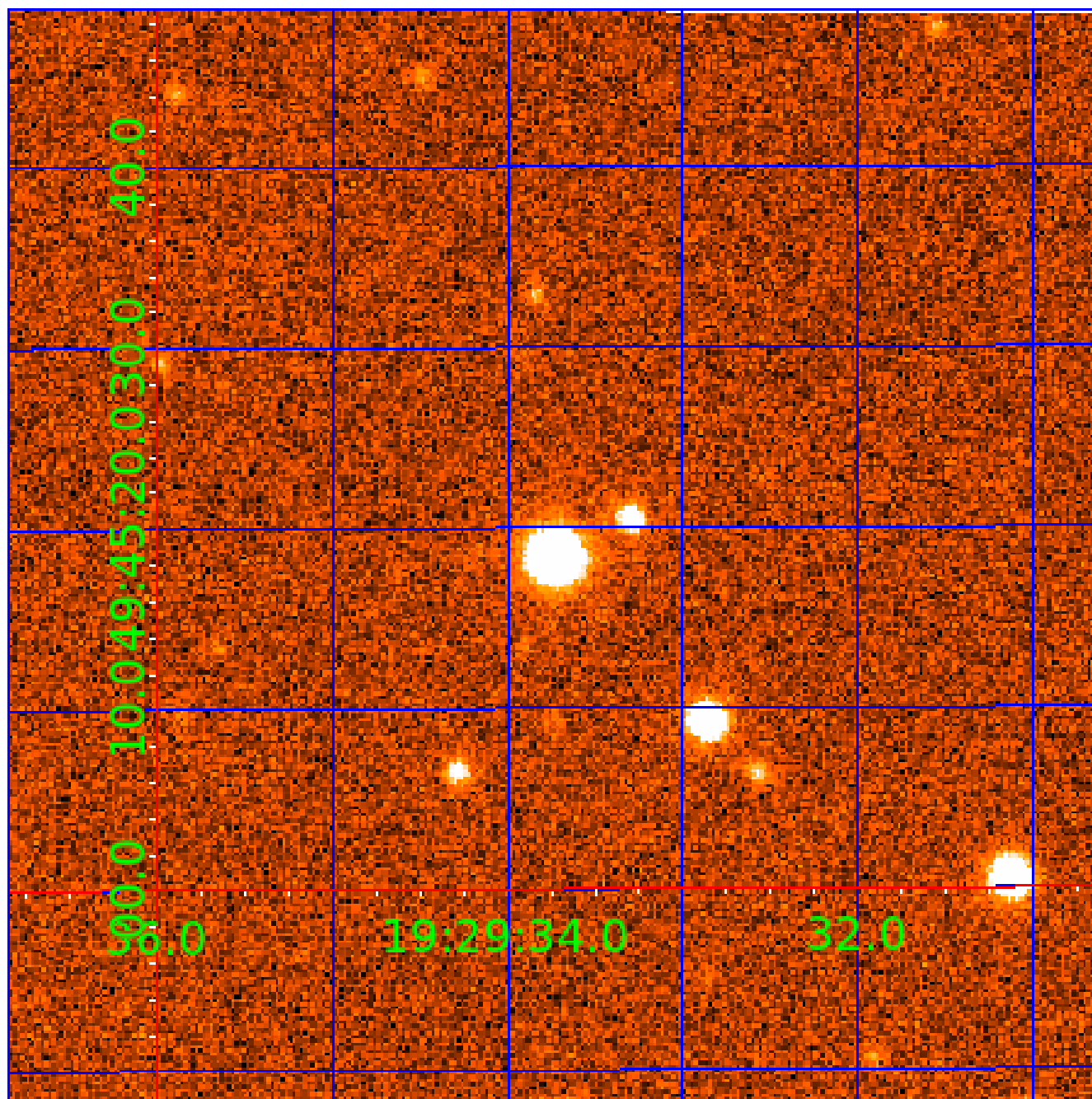


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011662738

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})
011662738-01	OBS	No	687.940580	137.178471	1074.8	13.896	17.6	5.0	0.47	4605	1.74	0.06
011662738-02	OBS	No	327.134388	404.400597	1570.8	5.200	13.0	6.2	0.47	4605	2.35	0.16
011662738-03	OBS	No	482.405381	492.305383	1223.8	4.811	11.7	6.9	0.47	4605	1.67	0.10
011662738-04	OBS	No	470.516196	510.666479	1419.0	7.015	11.1	7.8	0.47	4605	1.78	0.10
011662738-05	OBS	No	485.700053	147.555223	1677.6	8.863	10.4	8.0	0.47	4605	2.25	0.10
011662738-06	OBS	No	544.699823	152.448257	1335.6	7.300	9.8	6.6	0.47	4605	3.20	0.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011662738-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV
011662738-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_MEAS
011662738-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

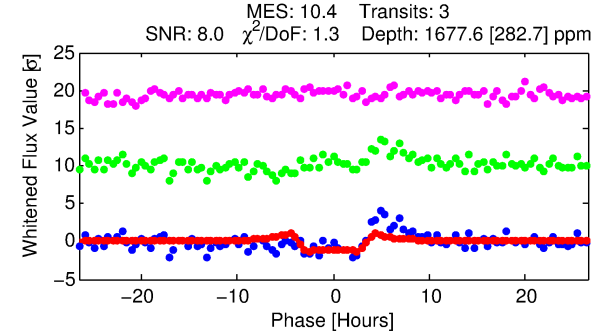
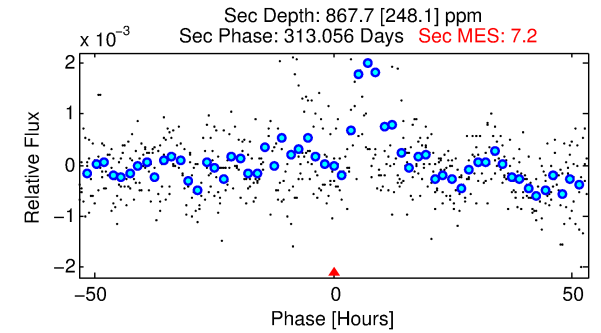
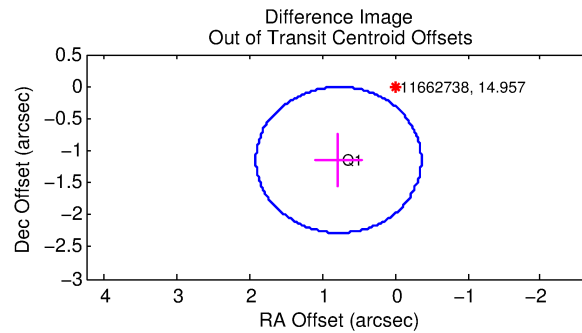
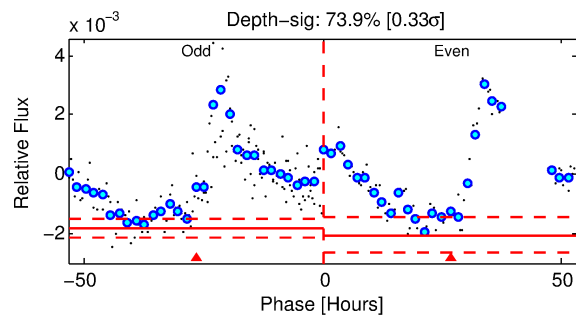
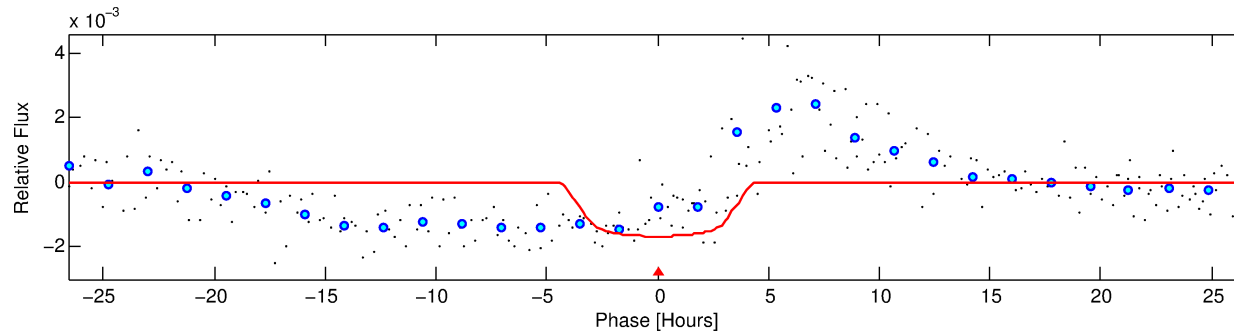
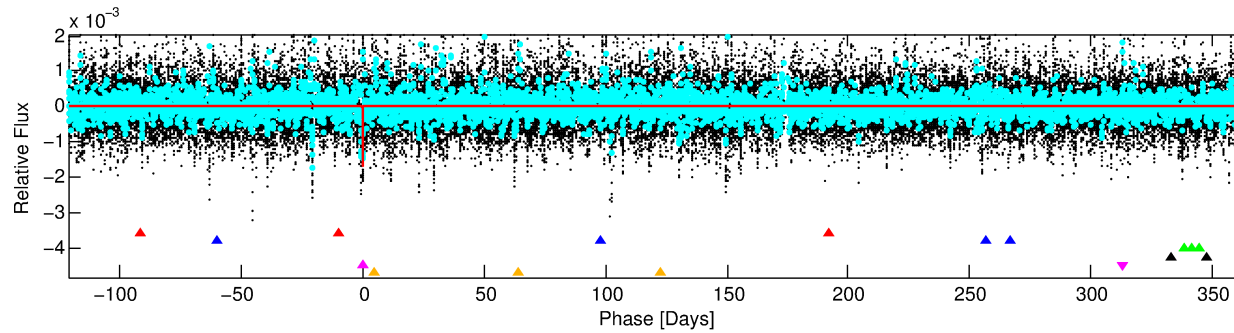
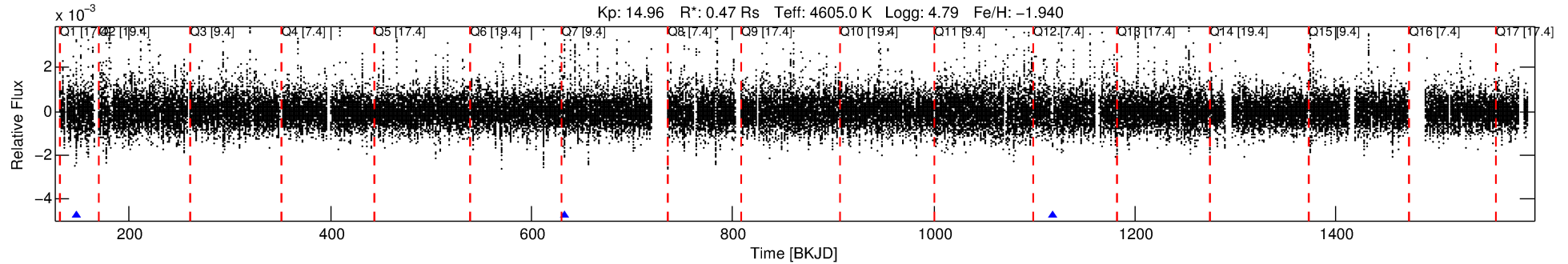
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011662738-05

No Significant Match Found

DV One-Page Summary

KIC: 11662738 Candidate: 5 of 6 Period: 485.700 d



DV Fit Results:

Period = 485.70005 [0.01271] d
Epoch = 147.5552 [0.0132] BKJD
Rp/R* = 0.0440 [0.0046]
a/R* = 222.80 [54.22]
b = 0.90 [0.05]
Seff = 0.10 [0.02]
Teq = 142 [6] K
Rp = 2.25 [0.27] Re
a = 0.9560 [0.0483] AU
Ag = 86510.27 [31301.16] [2.76 σ]
Teffp = 3769 [361] K [10.04 σ]

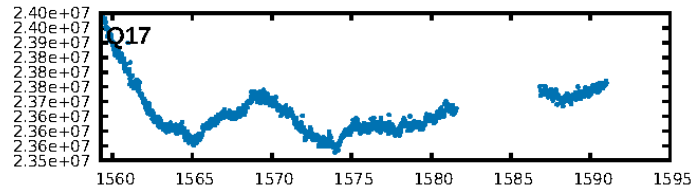
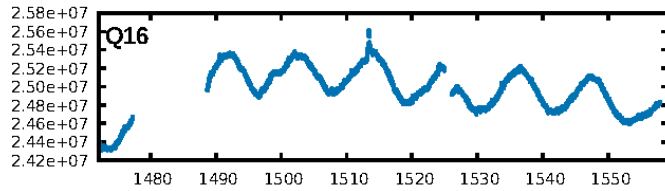
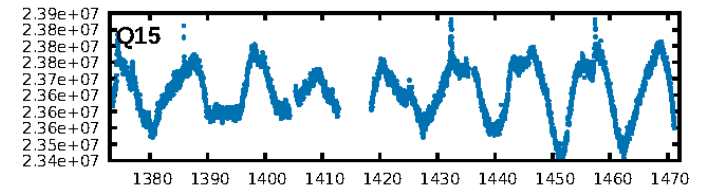
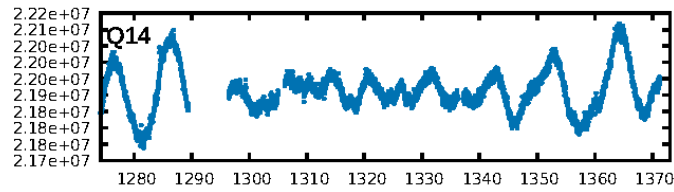
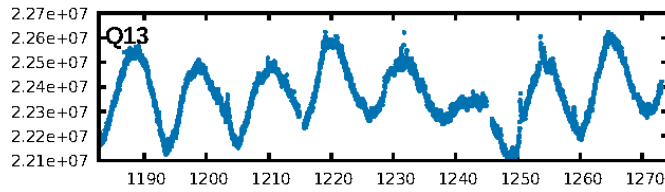
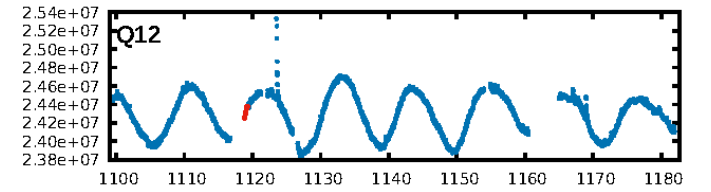
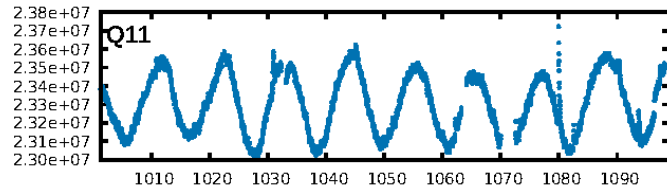
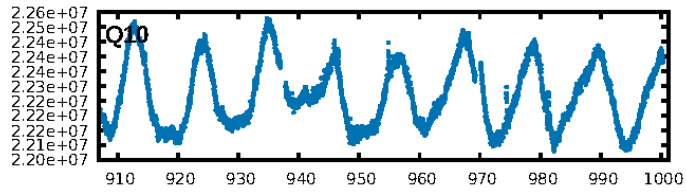
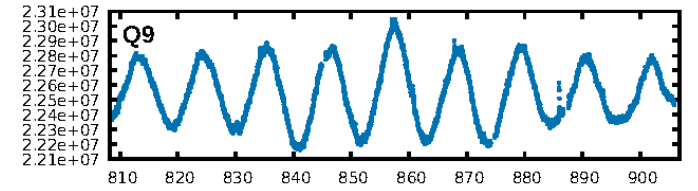
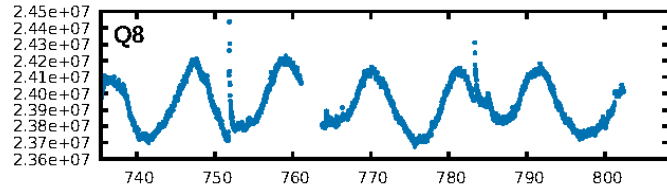
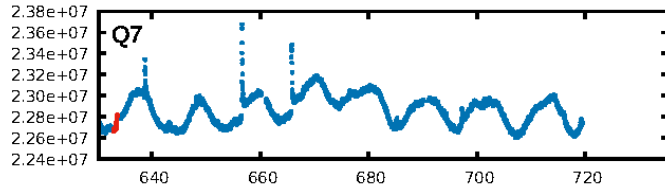
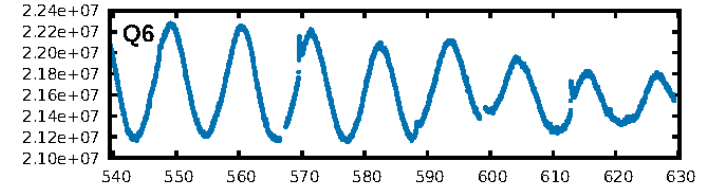
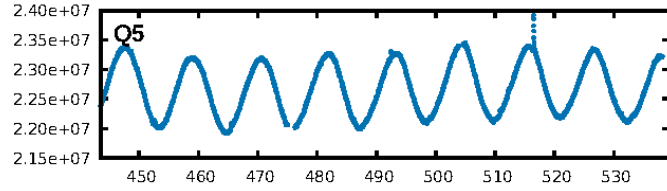
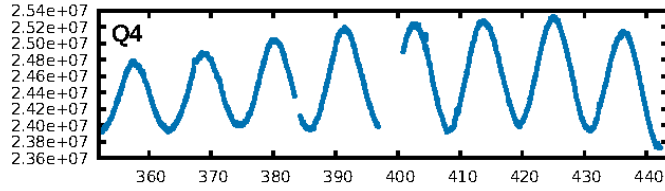
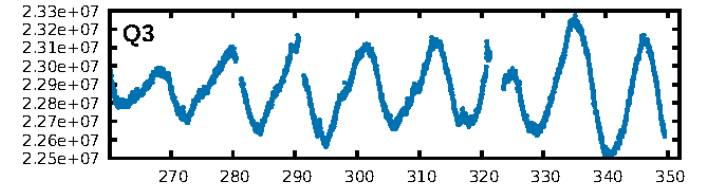
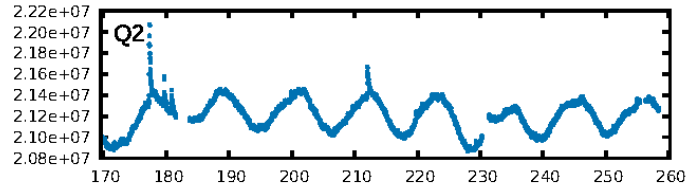
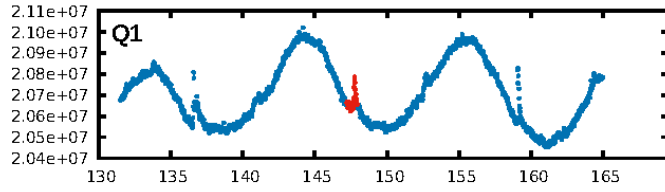
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.84 σ]
LongPeriod-sig: 100.0% [123.32 σ]
ModelChiSquare2-sig: 49.5%
ModelChiSquareGof-sig: 97.0%
Bootstrap-pfa: 1.43e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.3927
Centroid-sig: 6.6%
Centroid-so: 1.002 arcsec [1.60 σ]
OotOffset-rm: 1.383 arcsec [3.65 σ]
KicOffset-rm: 1.289 arcsec [3.40 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [1/1]

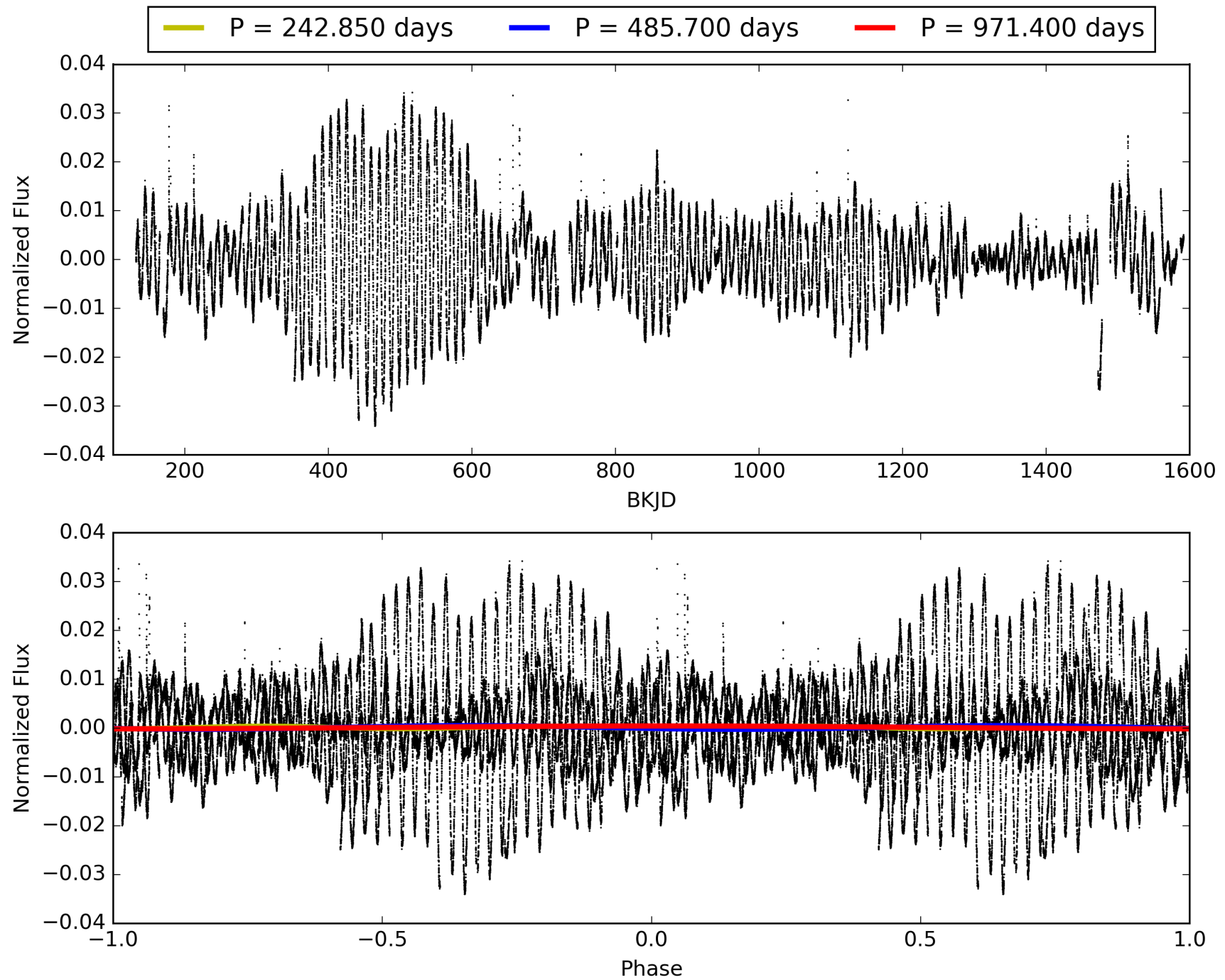
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:55:06 Z

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

TCE 011662738-05, PDC Light Curves

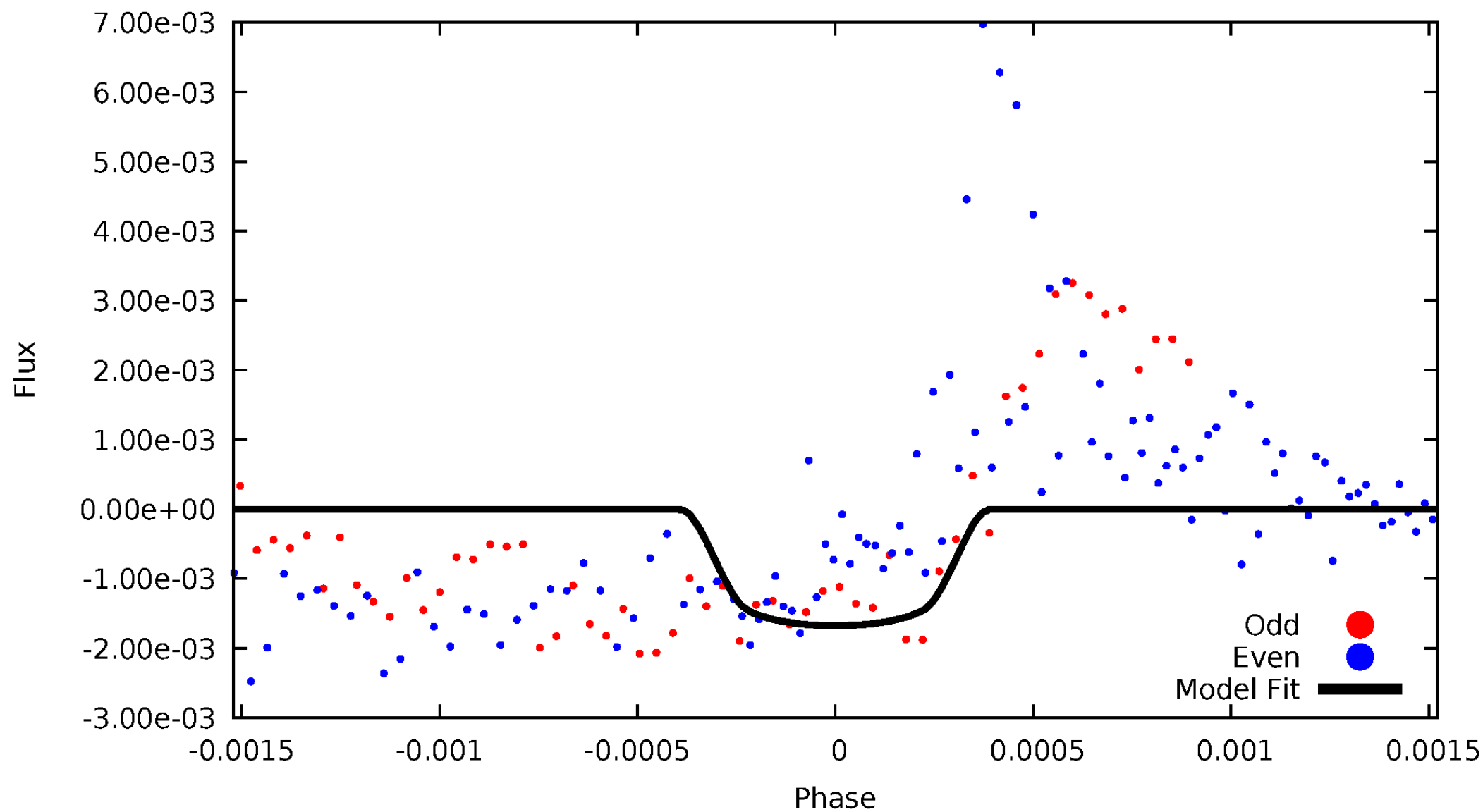


TCE 011662738-05



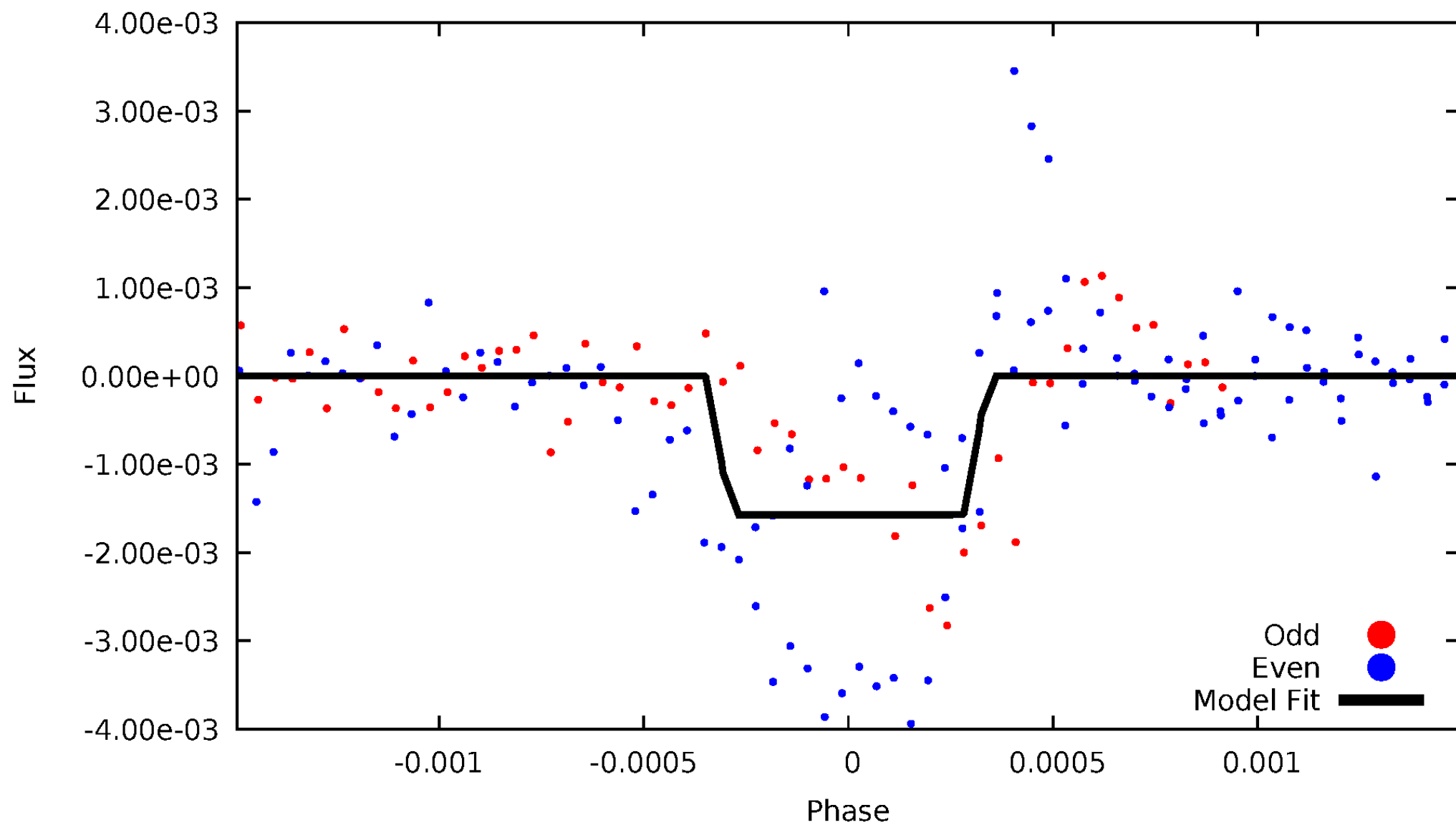
DV Odd/Even

TCE 011662738-05



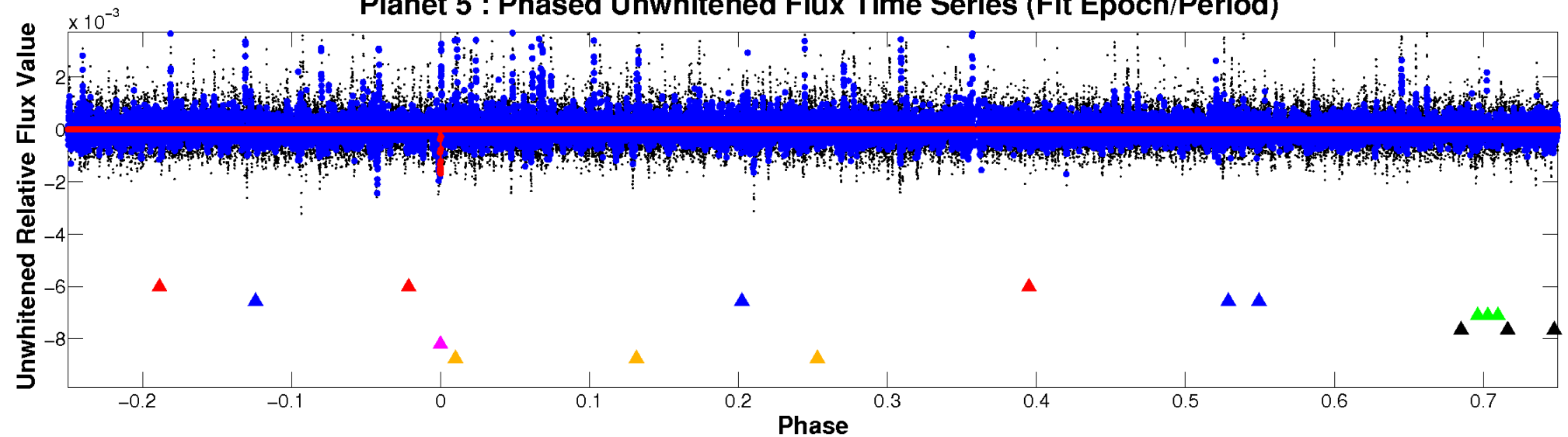
ALT Odd/Even

TCE 011662738-05

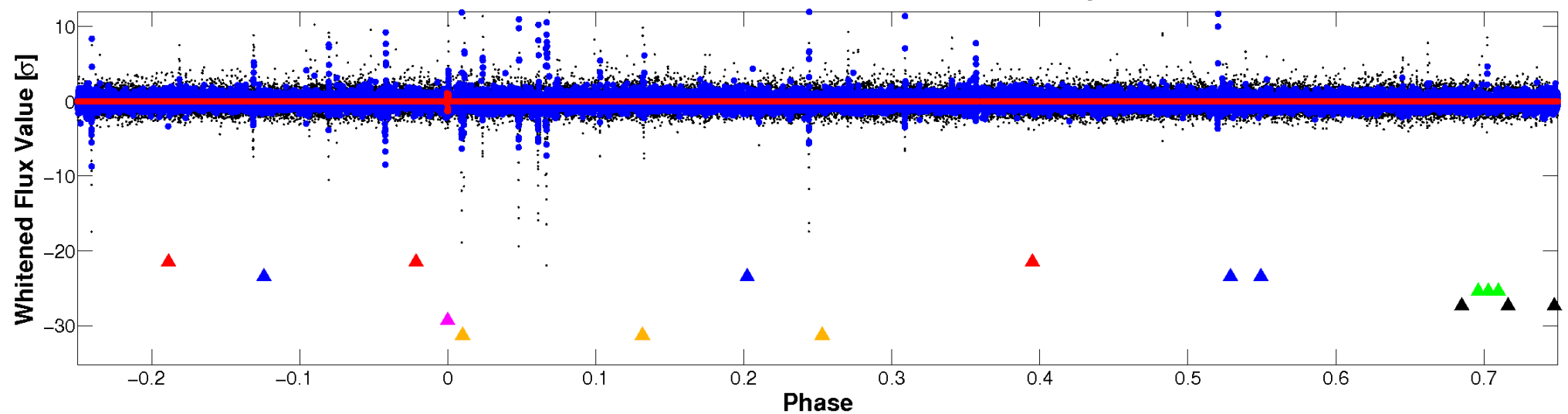


Non-Whitened Vs. Whitened Light Curve

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

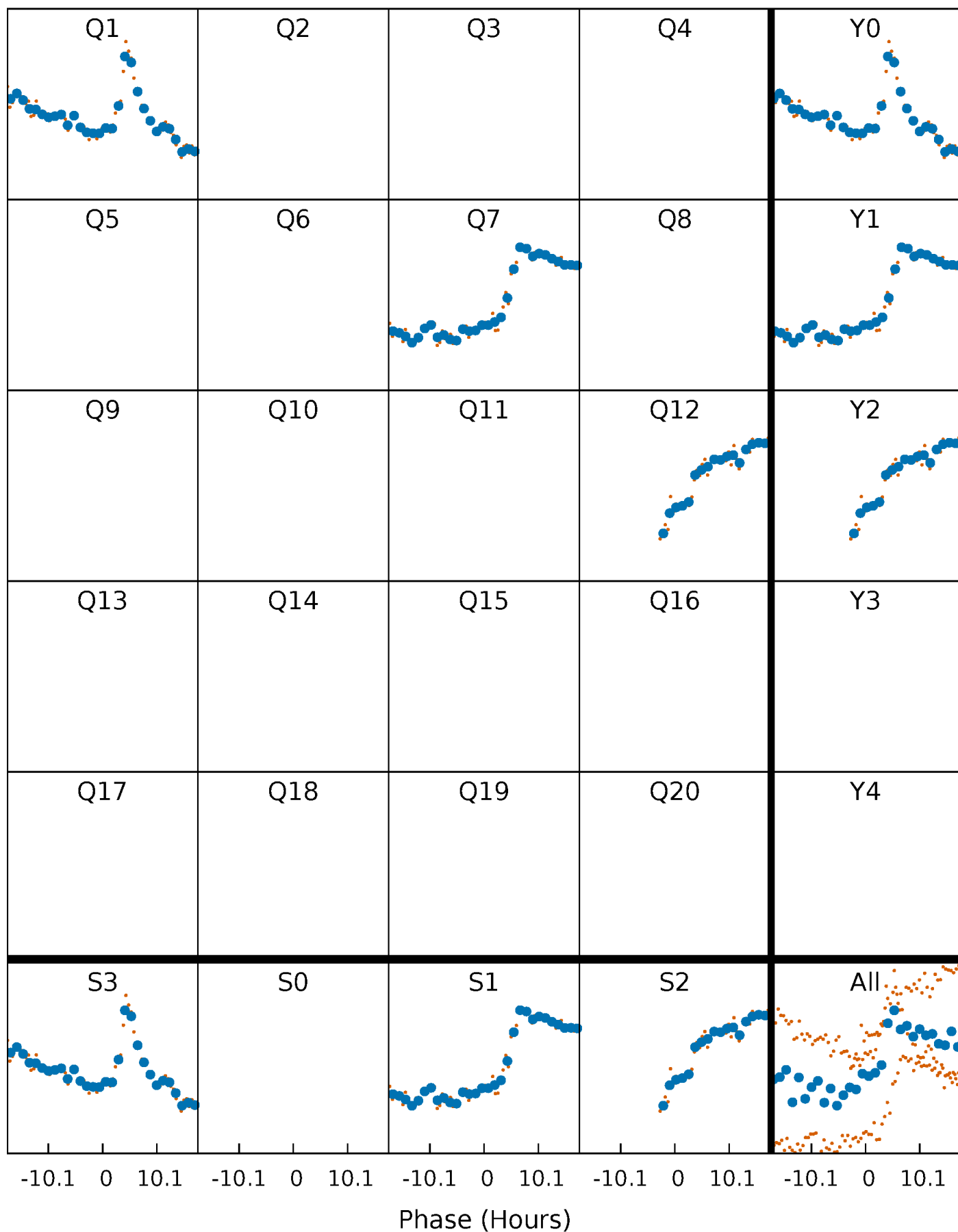


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



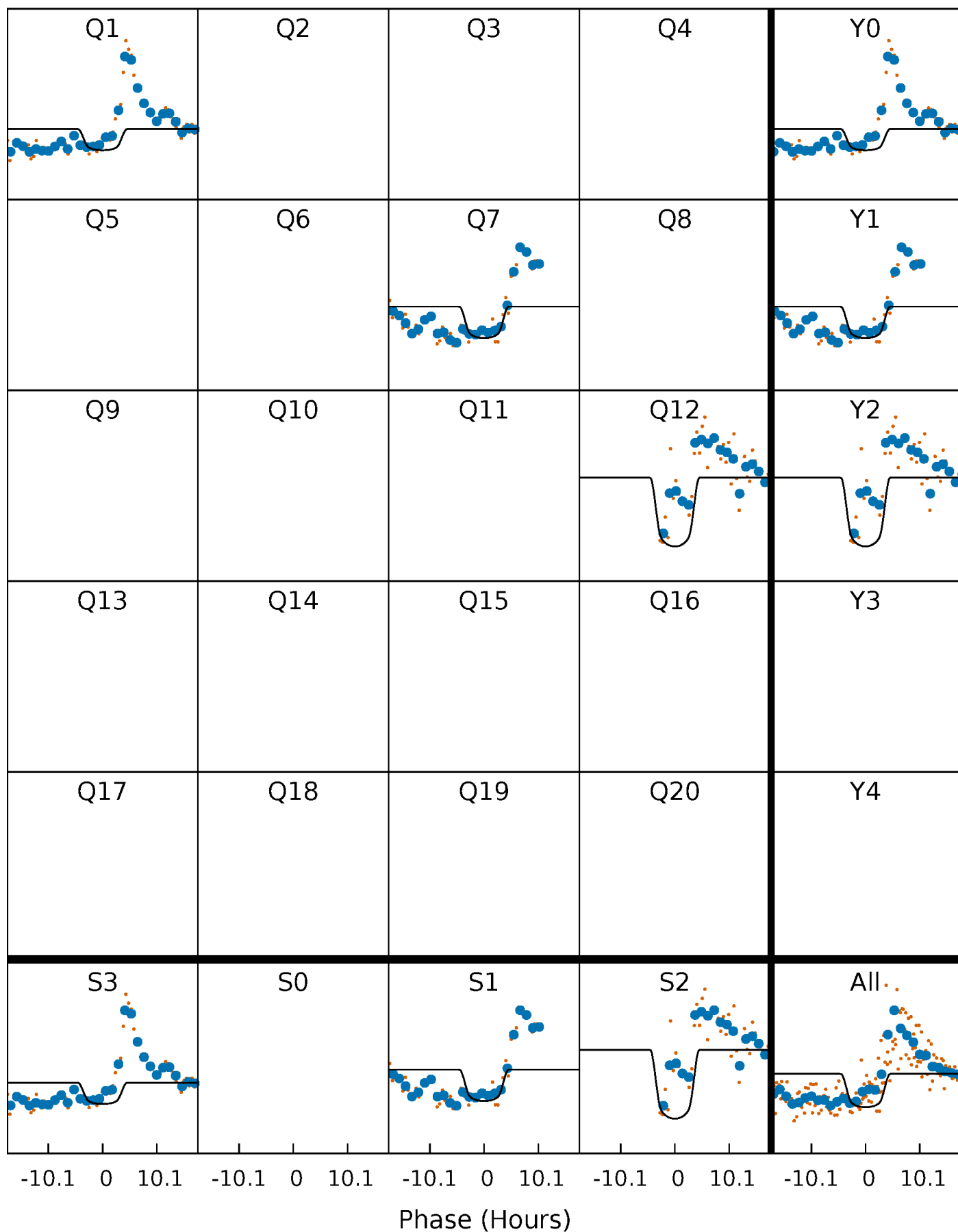
PDC Quarter-Phased Transit Curves

TCE 011662738-05 $P=485.700053$ Days $T_0=147.555223$ (BKJD)



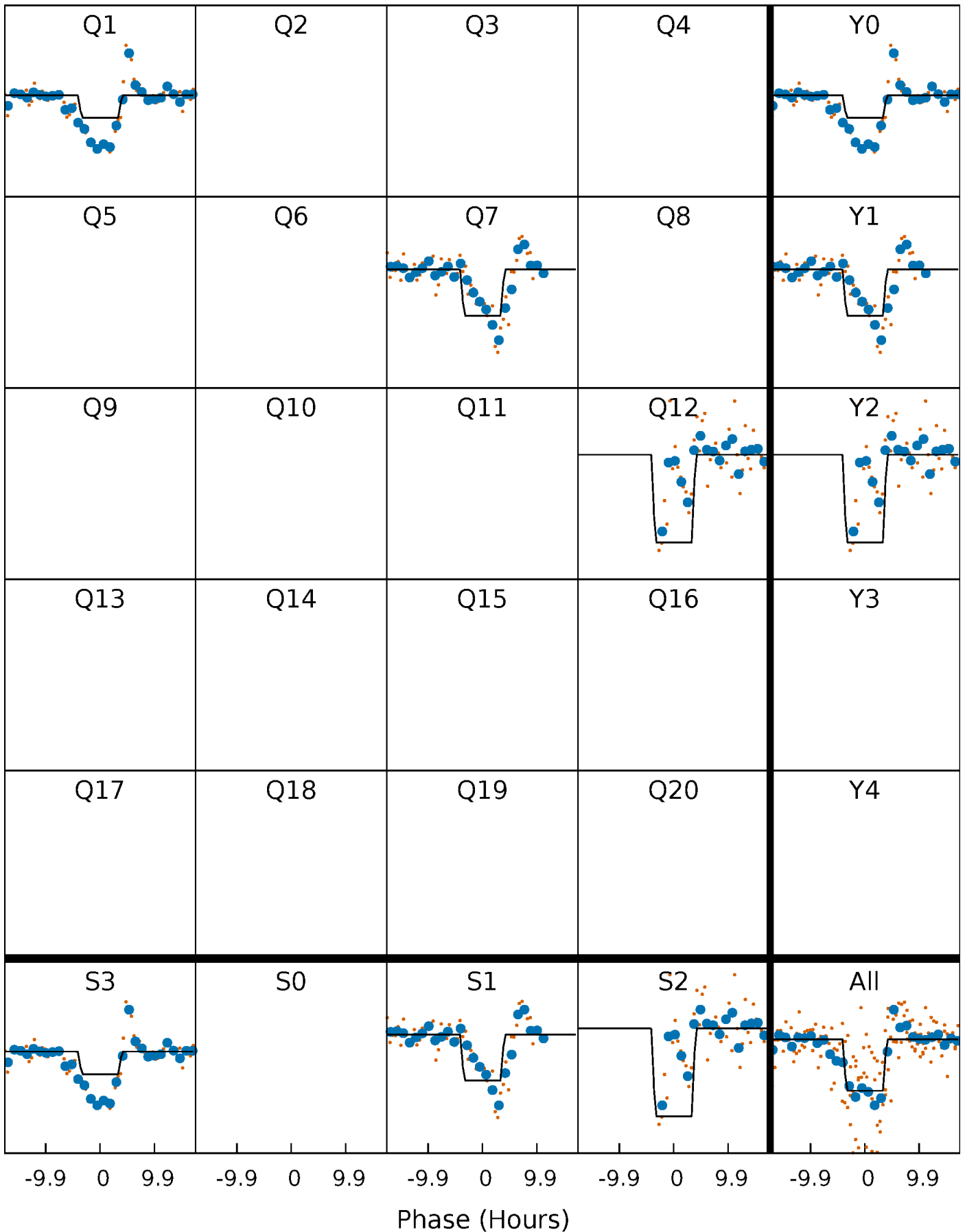
DV Quarter-Phased Transit Curves

TCE 011662738-05 $P=485.700053$ Days $T_0=147.555223$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

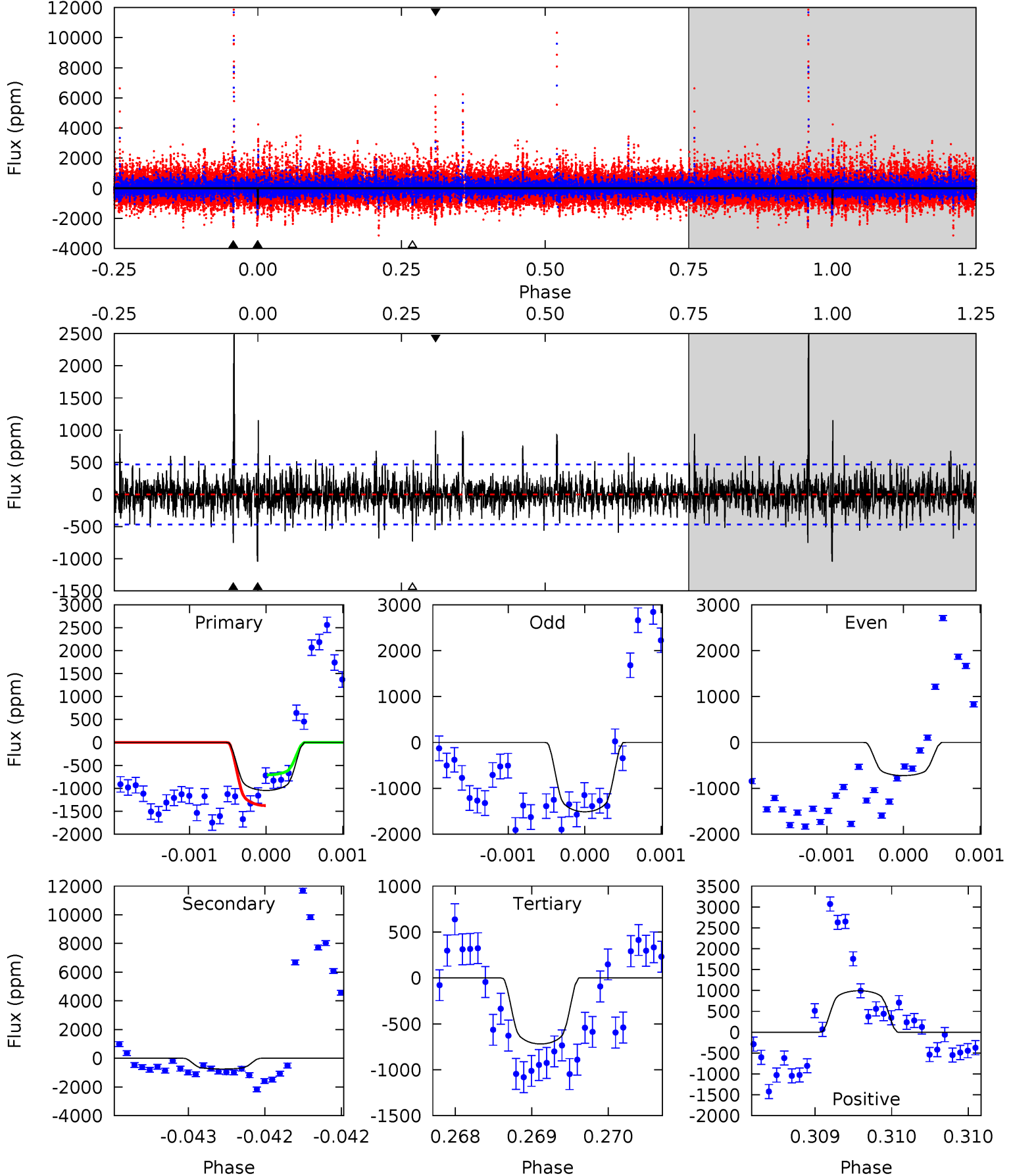
TCE 011662738-05 $P=485.705721$ Days $T_0=147.539907$ (BKJD)



DV Model-Shift Uniqueness Test

011662738-05, P = 485.700053 Days, E = 147.555223 Days

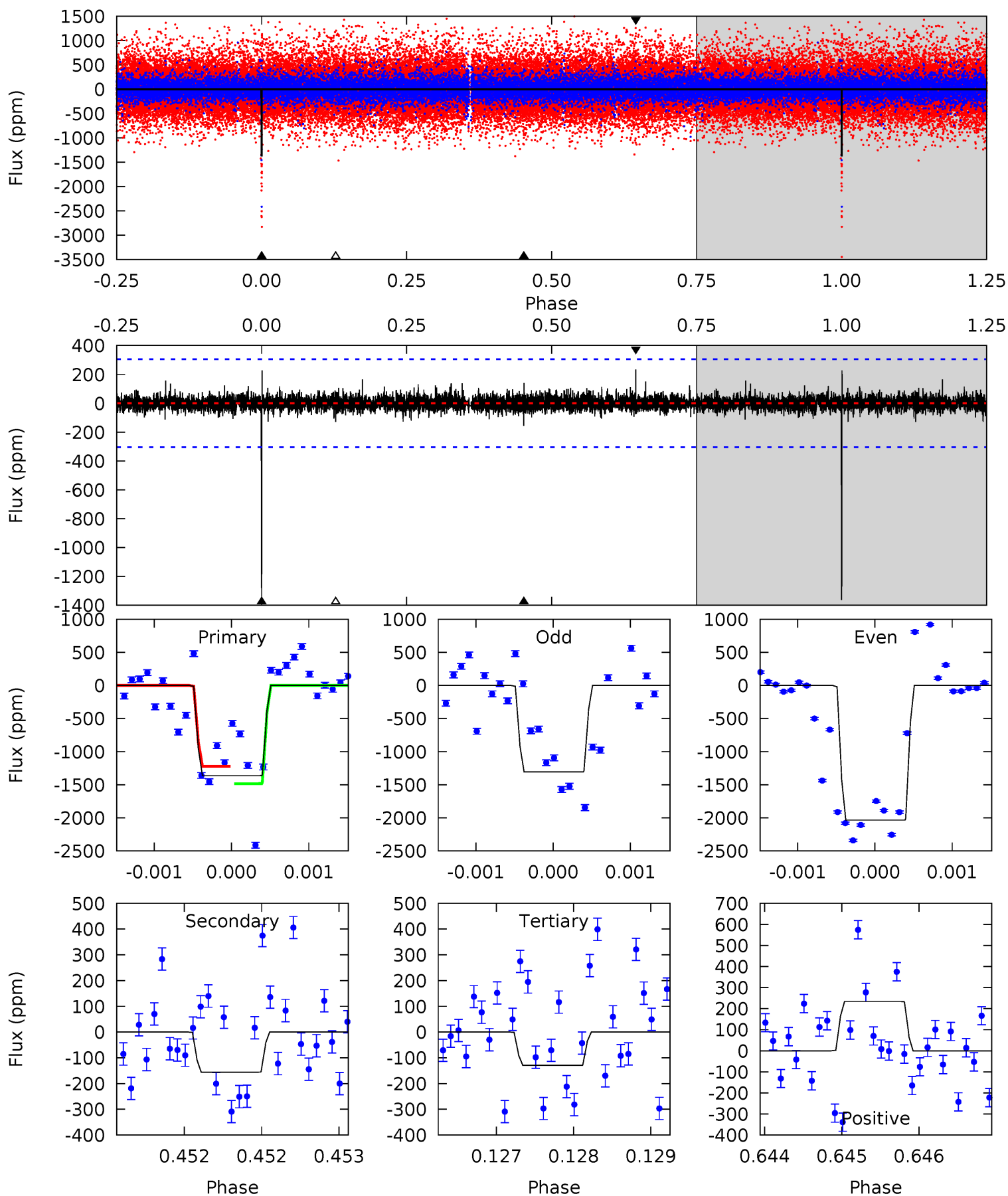
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	8.82	8.46	11.7	5.49	3.36	2.08	3.84	0.62	0.36	-2.86	3.03	1.39	0.70	4.01



Alt Model-Shift Uniqueness Test

011662738-05, P = 485.705721 Days, E = 147.539907 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.7	2.82	2.35	4.23	5.51	3.39	0.54	22.3	20.4	0.47	-1.42	7.30	1.29	0.15	2.37



Stellar Parameters For KIC 011662738

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4605^{+139}_{-167}	$4.791^{+0.038}_{-0.028}$	$-1.940^{+0.300}_{-0.050}$	$0.468^{+0.029}_{-0.029}$	$0.494^{+0.034}_{-0.025}$	$6.787^{+1.113}_{-0.807}$
	+3%/-4%	+1%/-1%	+15%/-3%	+6%/-6%	+7%/-5%	+16%/-12%
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 011662738-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-750 ± 85	$2.26^{+0.24}_{-0.26}$	198^{+7}_{-7}	3864^{+193}_{-199}	74624^{+21221}_{-15950}
Alt.	-156 ± 55	$2.03^{+0.24}_{-0.25}$	198^{+7}_{-7}	3098^{+213}_{-232}	18993^{+9732}_{-7711}

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

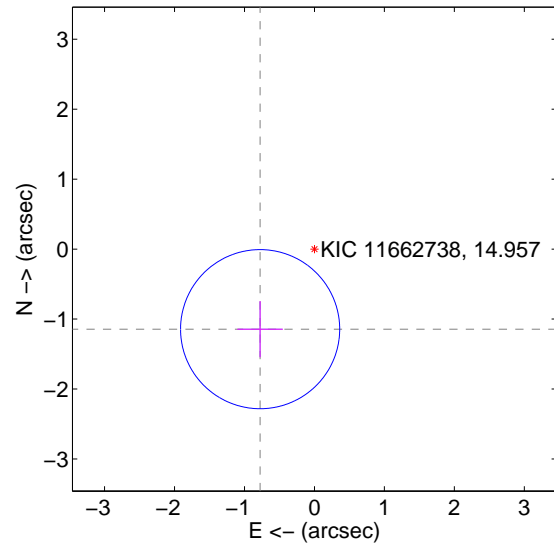
Supplemental centroid analysis for 011662738-05. Kepler magnitude: 14.96. Transit SNR 7.99

There are 1 quarters with good PRF difference image offsets

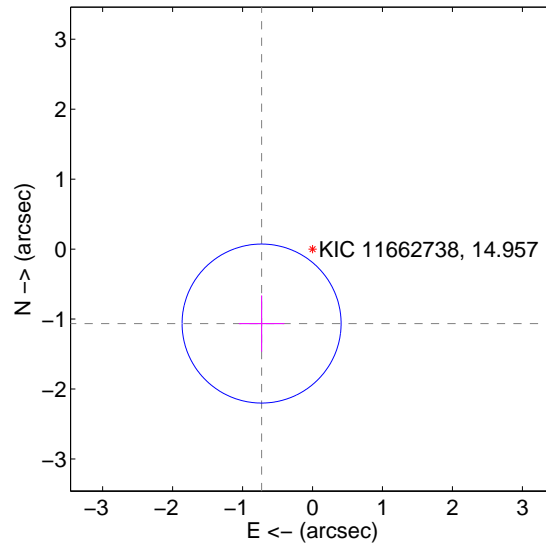
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.383 ± 0.379	3.65	0.776 ± 0.326	-1.144 ± 0.401
PRF-fit source offset from KIC position	1.289 ± 0.379	3.40	0.728 ± 0.326	-1.064 ± 0.401
photometric centroid source offset	1.00 ± 0.63	1.60	-0.68 ± 0.68	0.74 ± 0.57

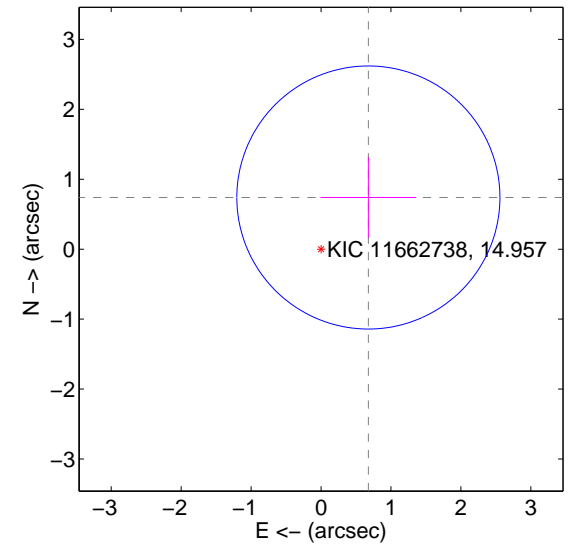
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

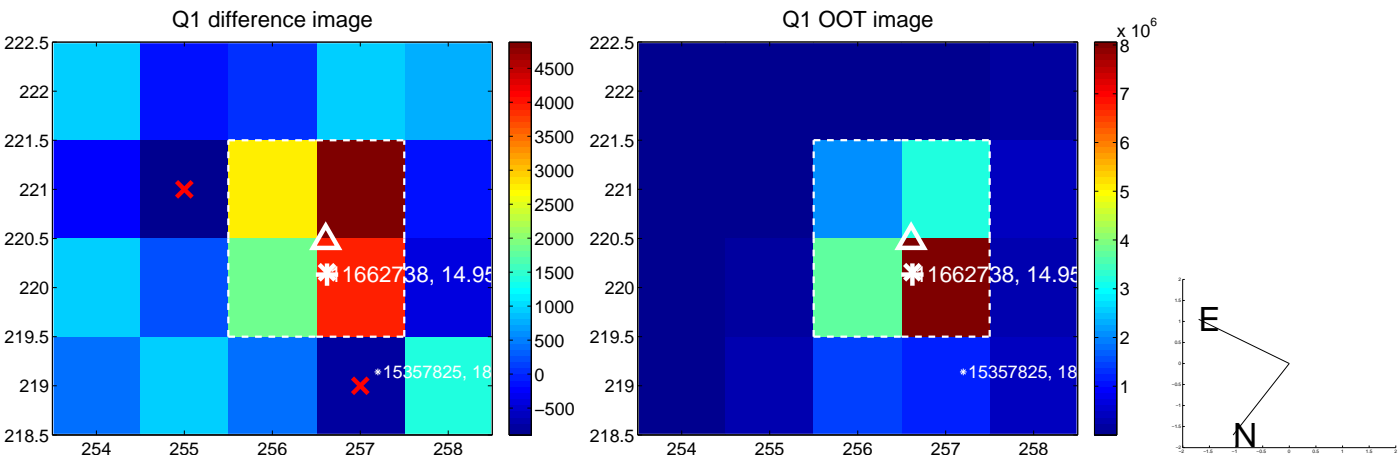


offset from photometric centroids



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



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



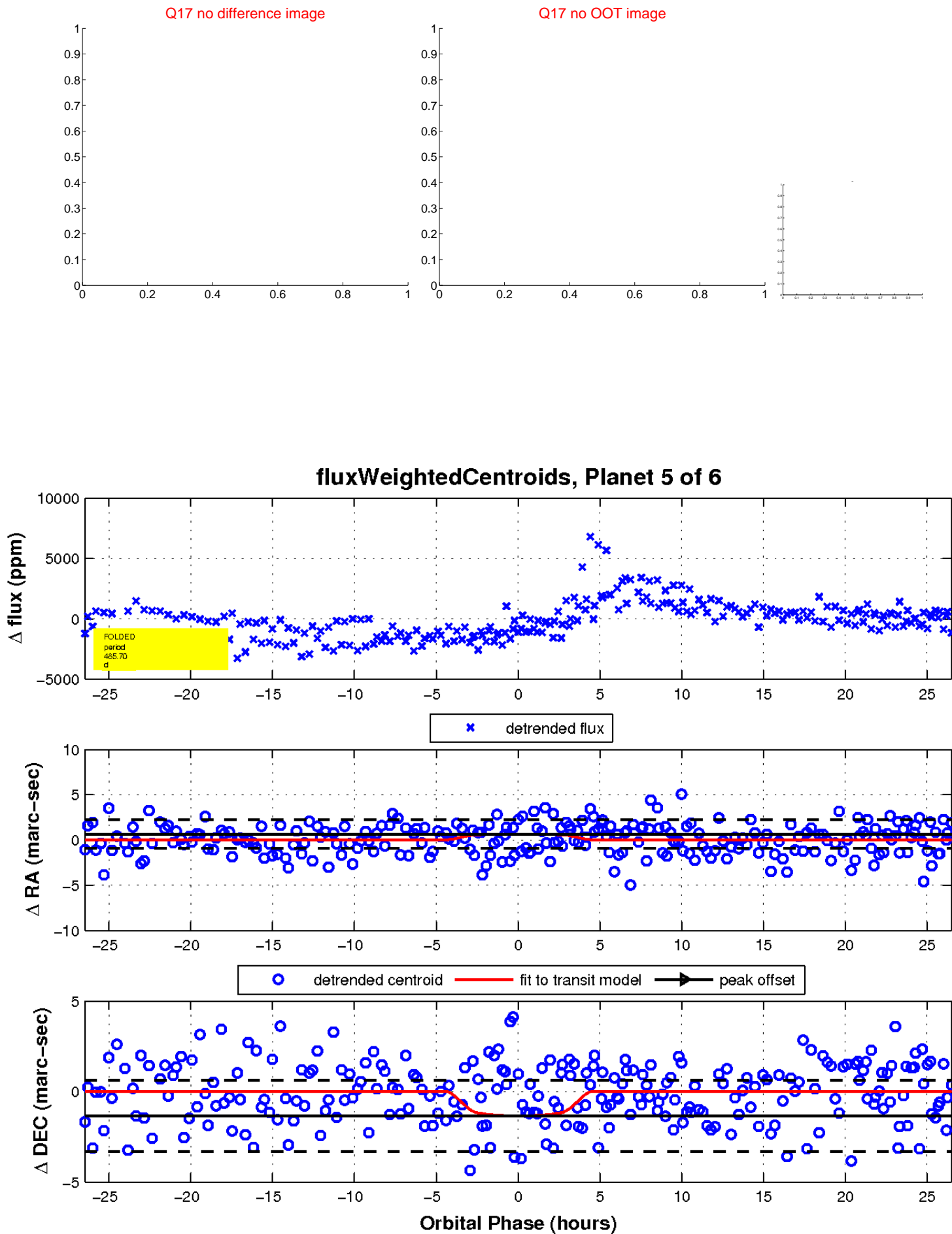
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

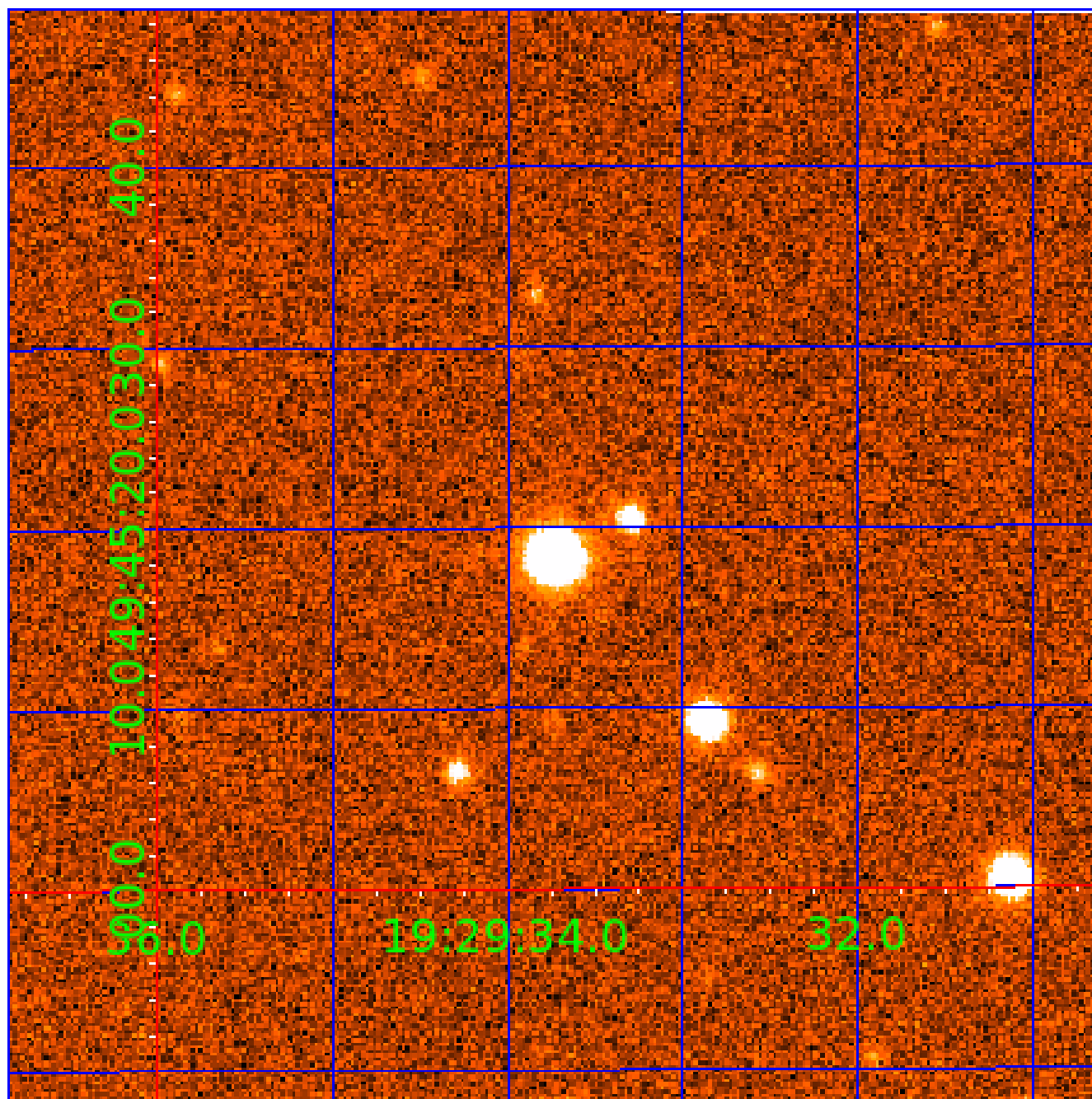


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011662738

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})
011662738-01	OBS	No	687.940580	137.178471	1074.8	13.896	17.6	5.0	0.47	4605	1.74	0.06
011662738-02	OBS	No	327.134388	404.400597	1570.8	5.200	13.0	6.2	0.47	4605	2.35	0.16
011662738-03	OBS	No	482.405381	492.305383	1223.8	4.811	11.7	6.9	0.47	4605	1.67	0.10
011662738-04	OBS	No	470.516196	510.666479	1419.0	7.015	11.1	7.8	0.47	4605	1.78	0.10
011662738-05	OBS	No	485.700053	147.555223	1677.6	8.863	10.4	8.0	0.47	4605	2.25	0.10
011662738-06	OBS	No	544.699823	152.448257	1335.6	7.300	9.8	6.6	0.47	4605	3.20	0.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011662738-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV
011662738-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_MEAS
011662738-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011662738-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

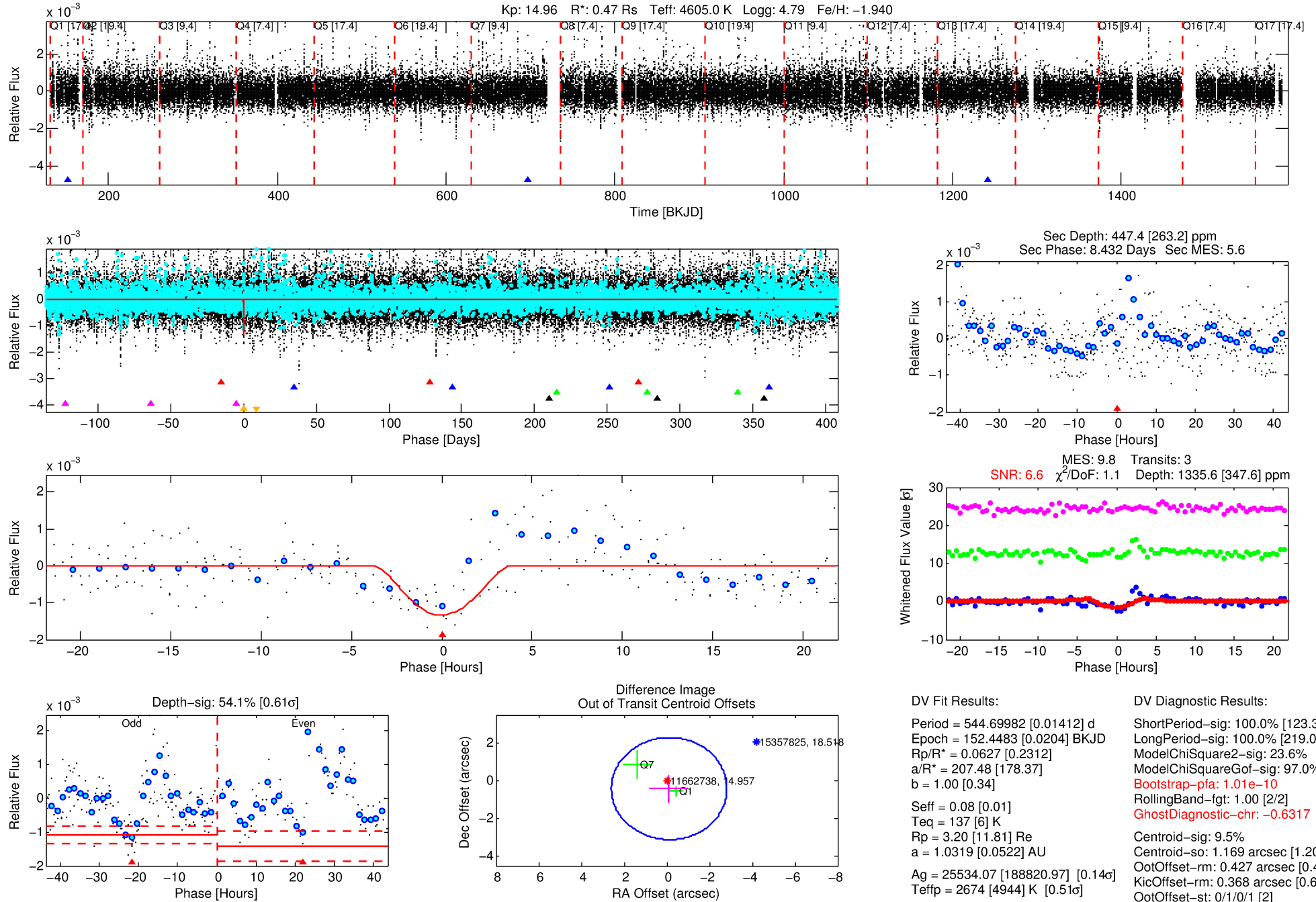
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011662738-06

No Significant Match Found

DV One-Page Summary

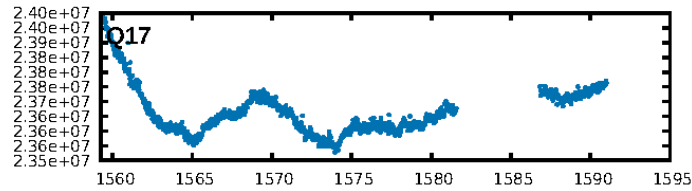
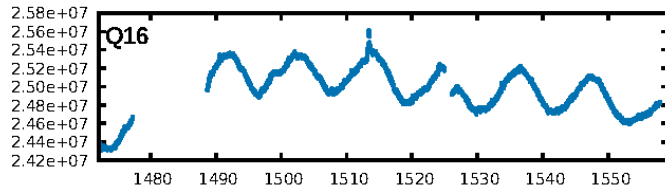
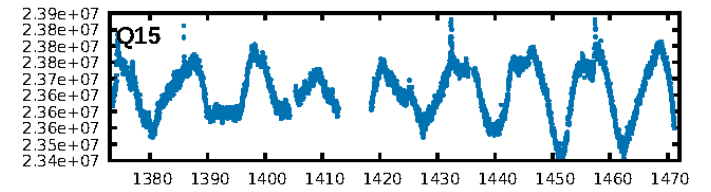
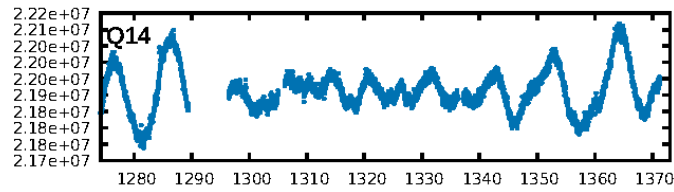
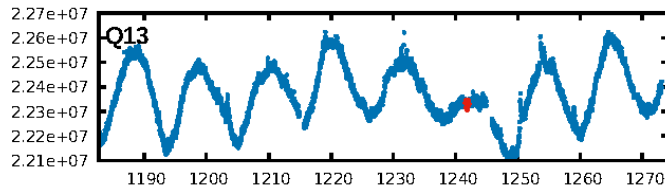
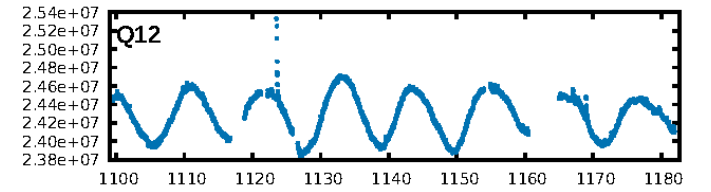
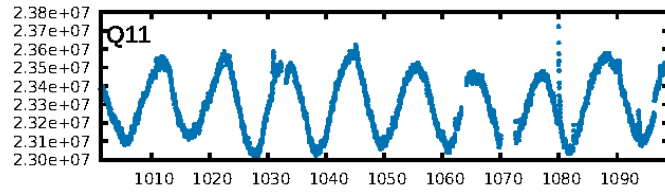
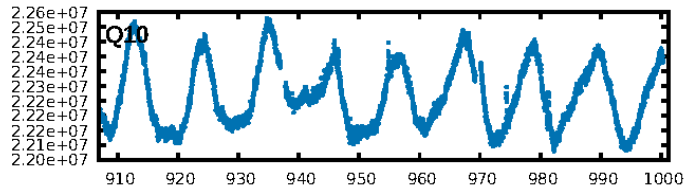
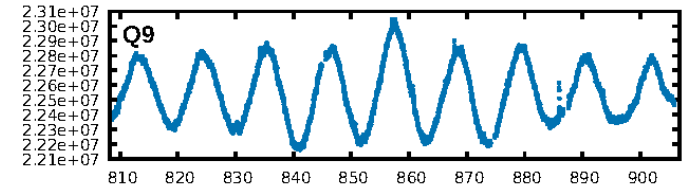
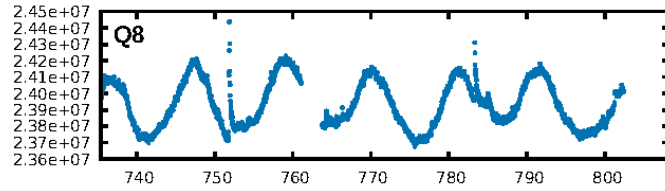
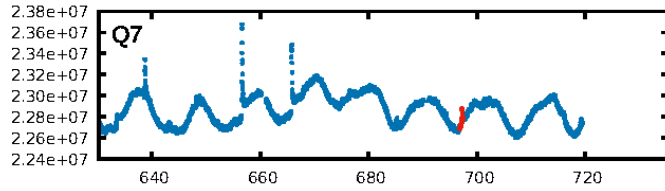
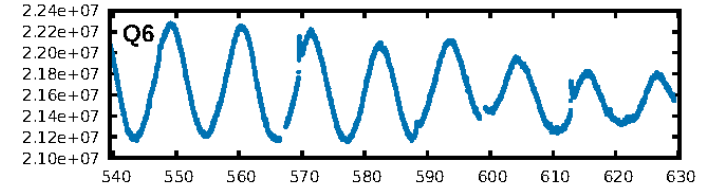
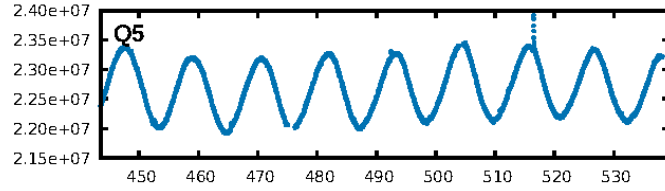
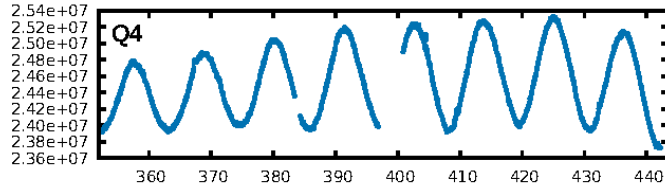
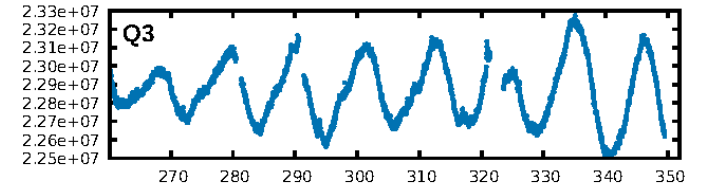
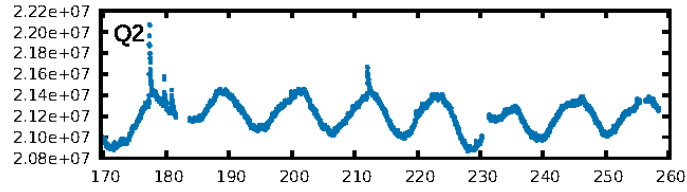
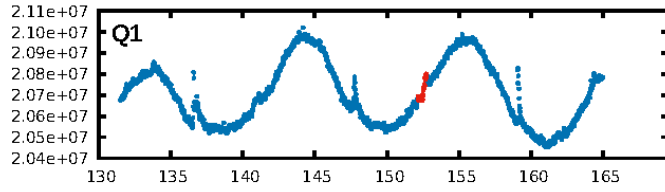
KIC: 11662738 Candidate: 6 of 6 Period: 544.700 d



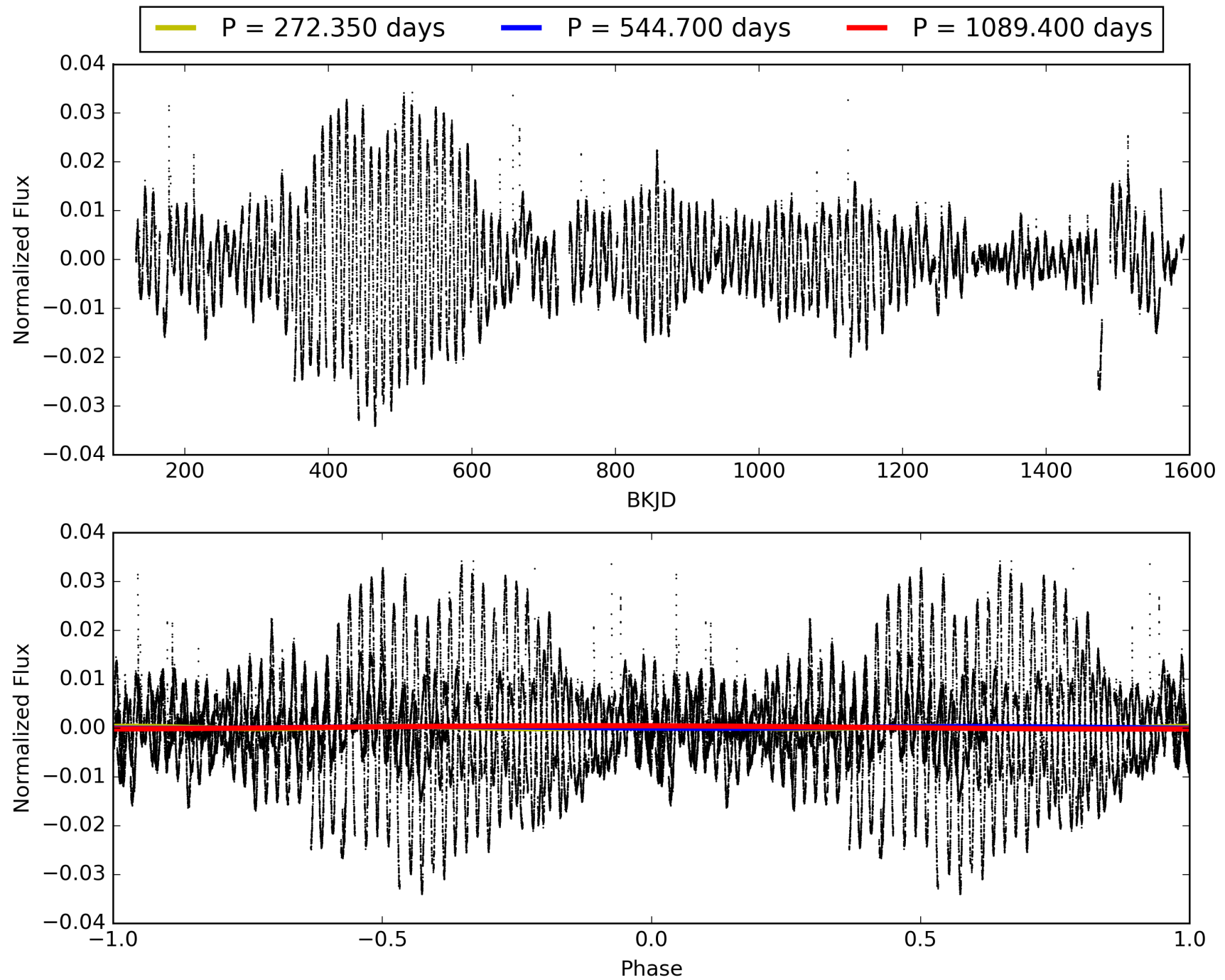
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011662738-06, PDC Light Curves

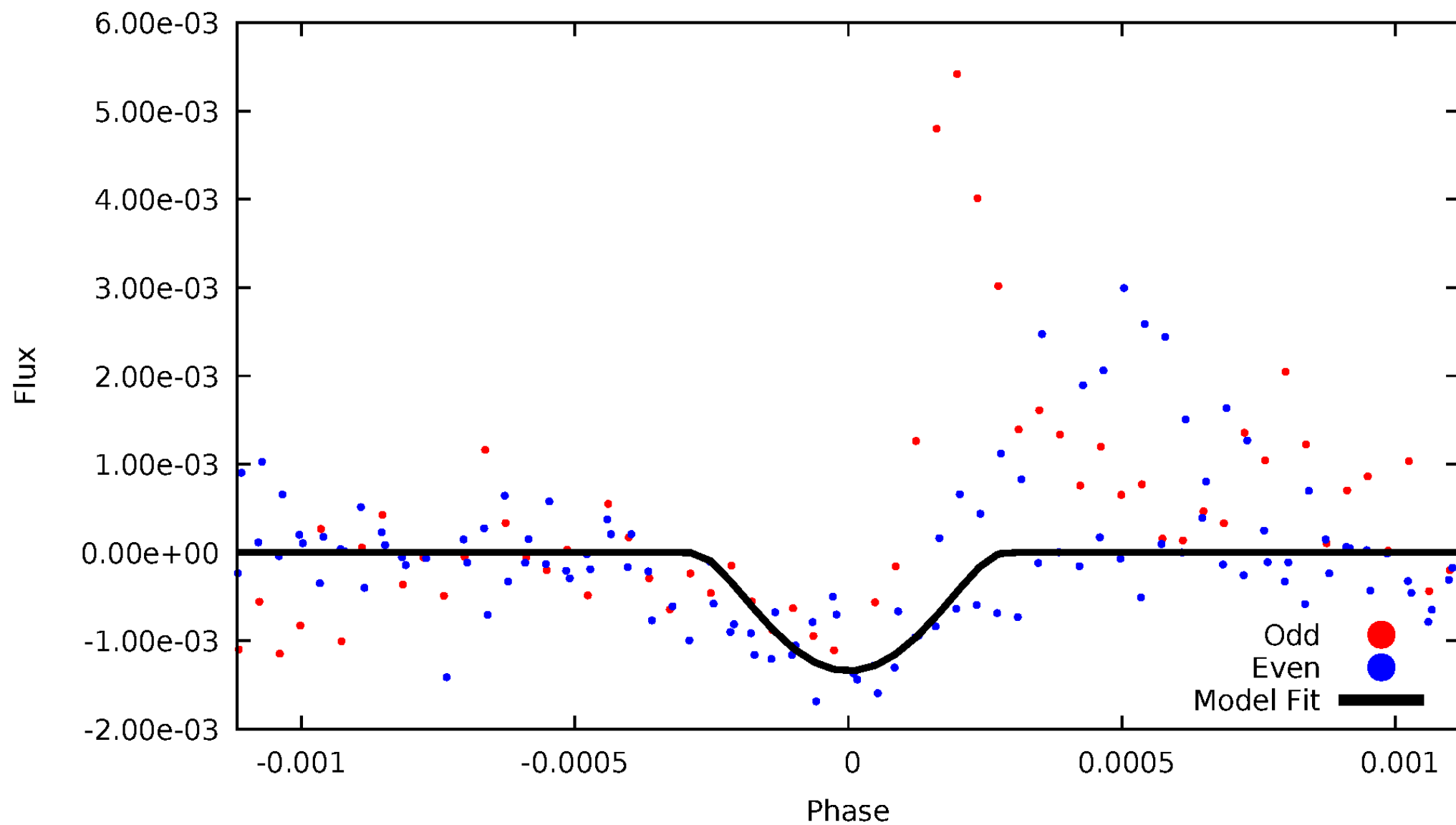


TCE 011662738-06



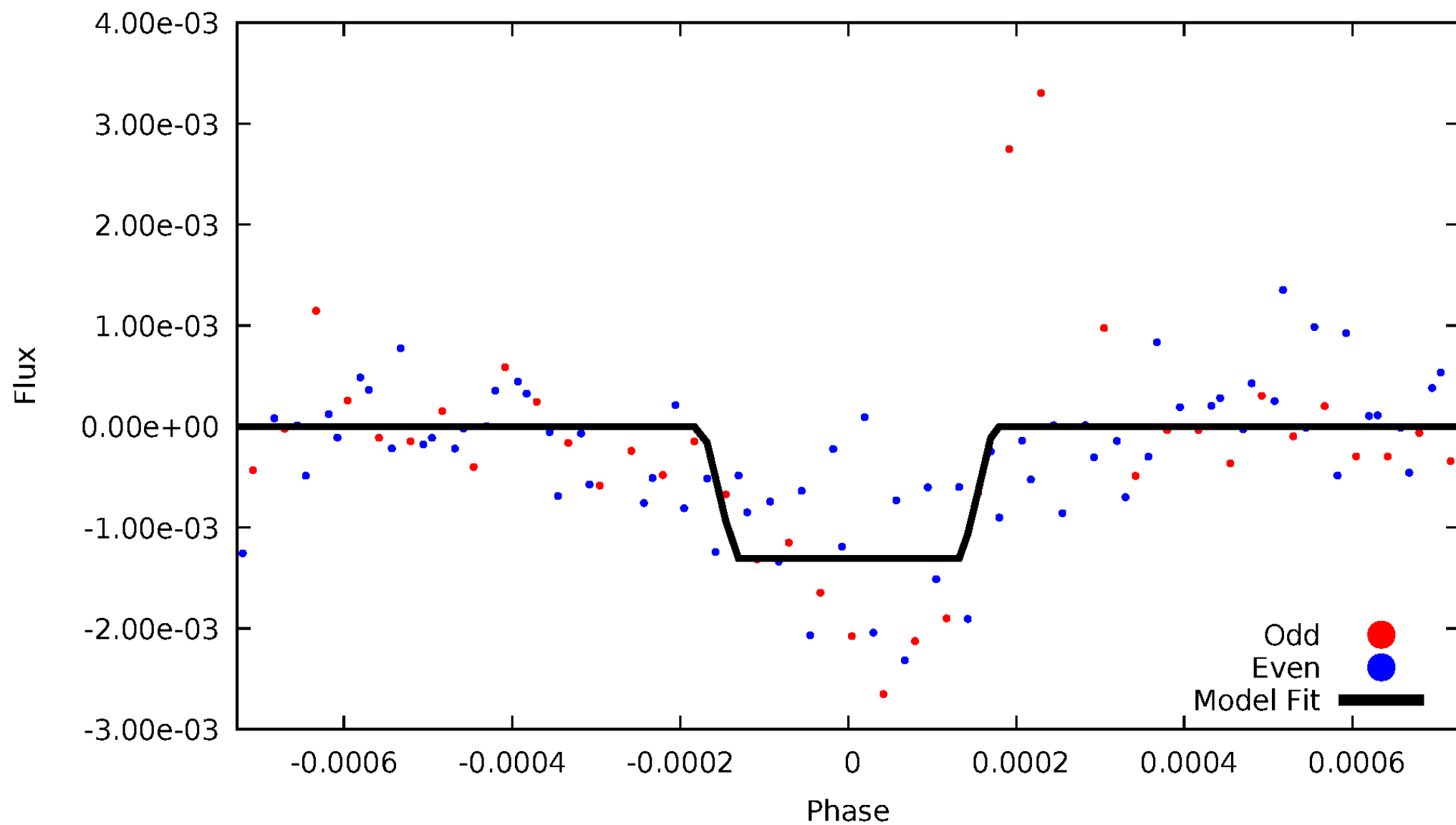
DV Odd/Even

TCE 011662738-06



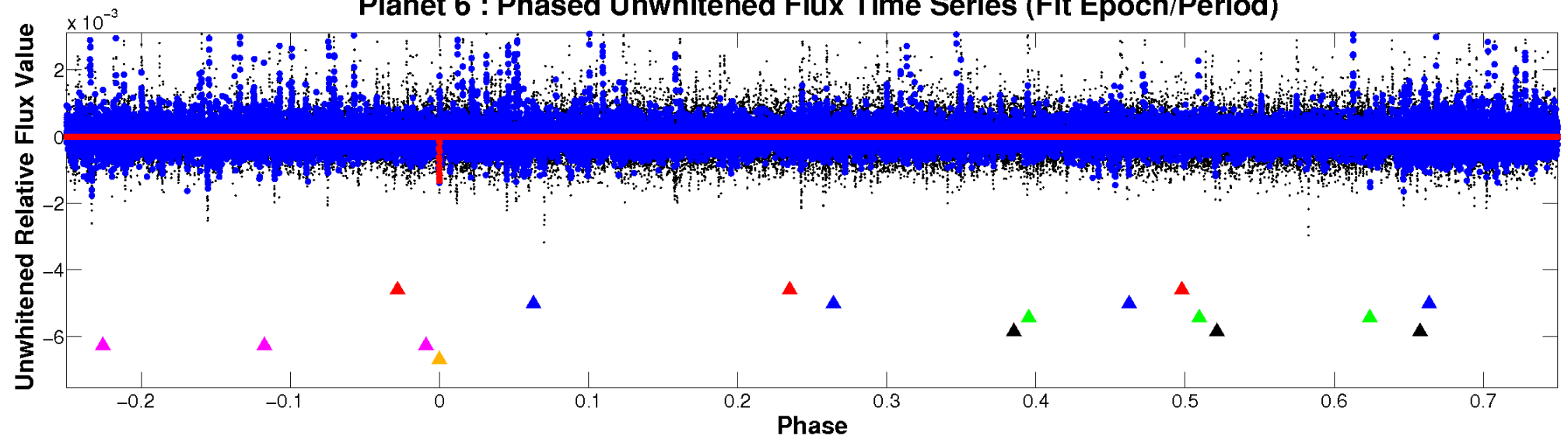
ALT Odd/Even

TCE 011662738-06

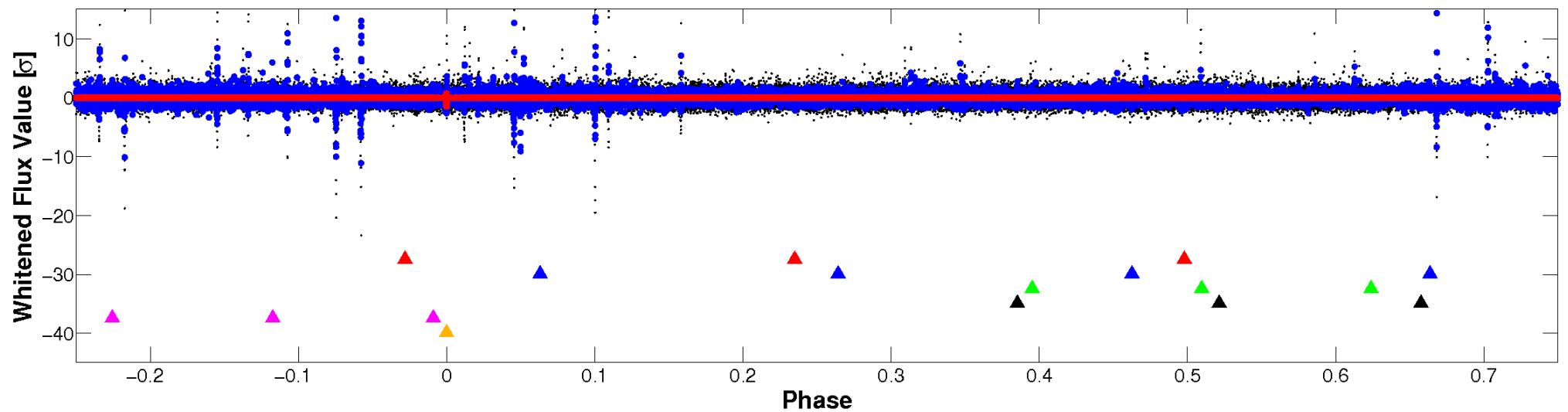


Non-Whitened Vs. Whitened Light Curve

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

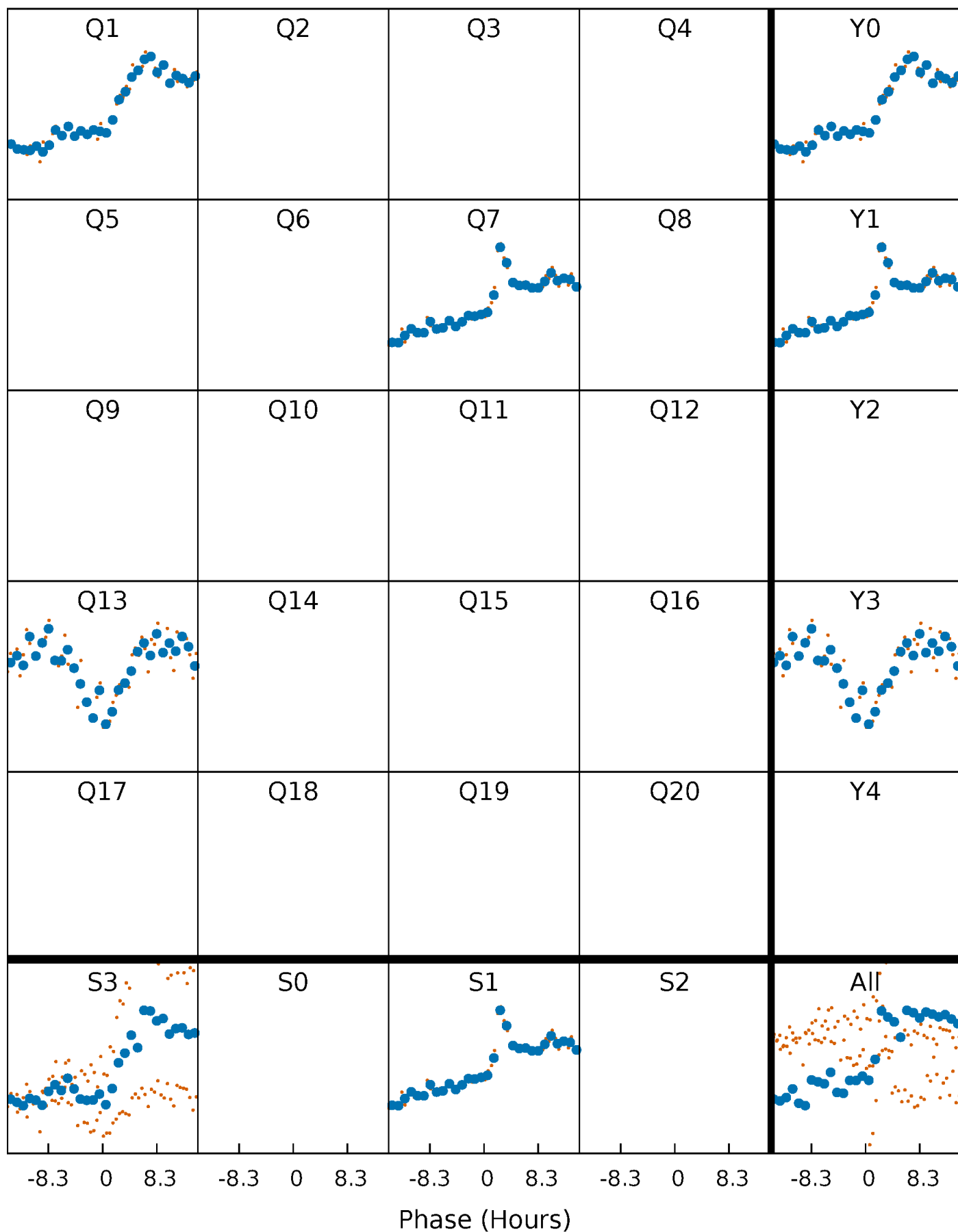


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



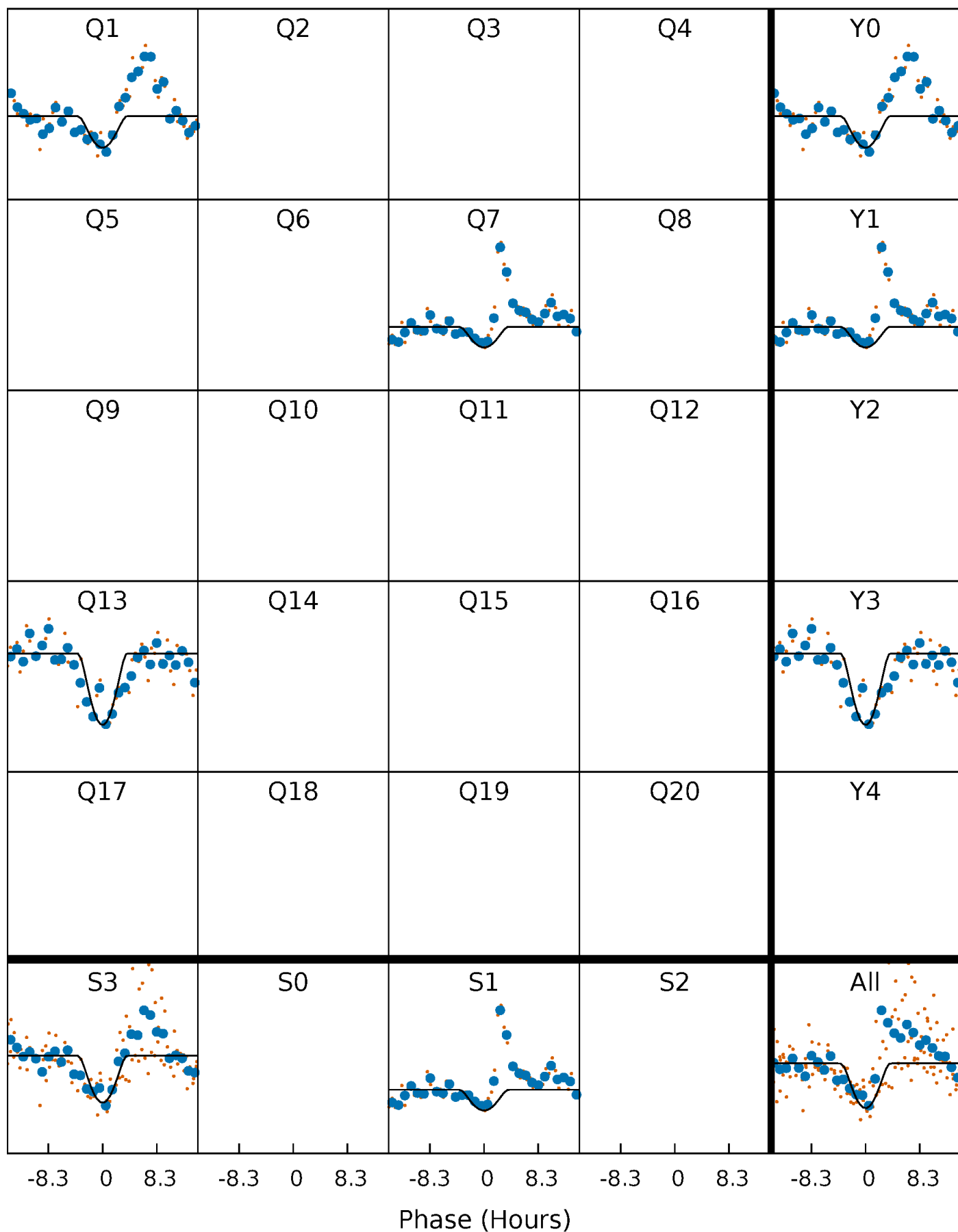
PDC Quarter-Phased Transit Curves

TCE 011662738-06 $P=544.699823$ Days $T_0=152.448257$ (BKJD)



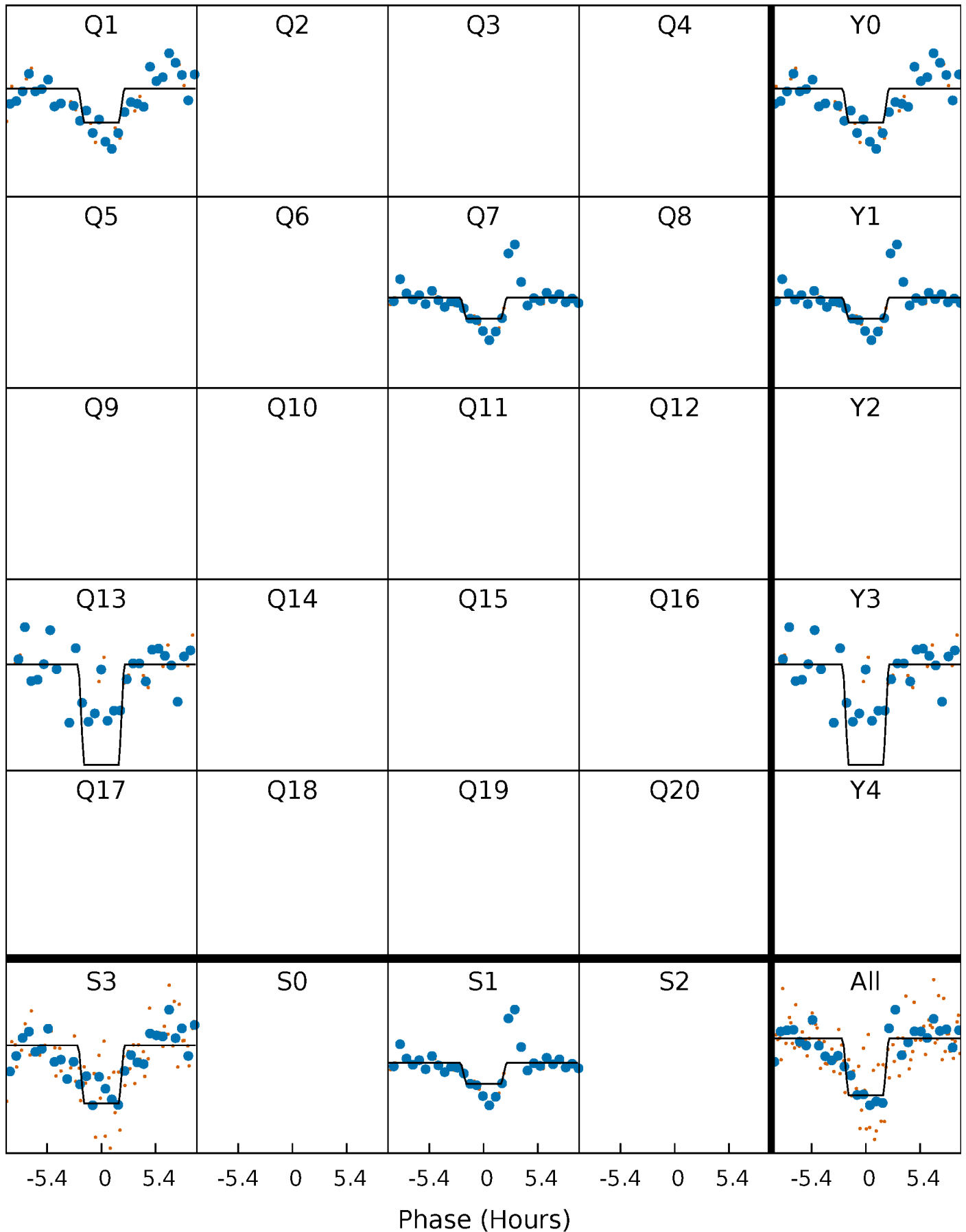
DV Quarter-Phased Transit Curves

TCE 011662738-06 $P=544.699823$ Days $T_0=152.448257$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

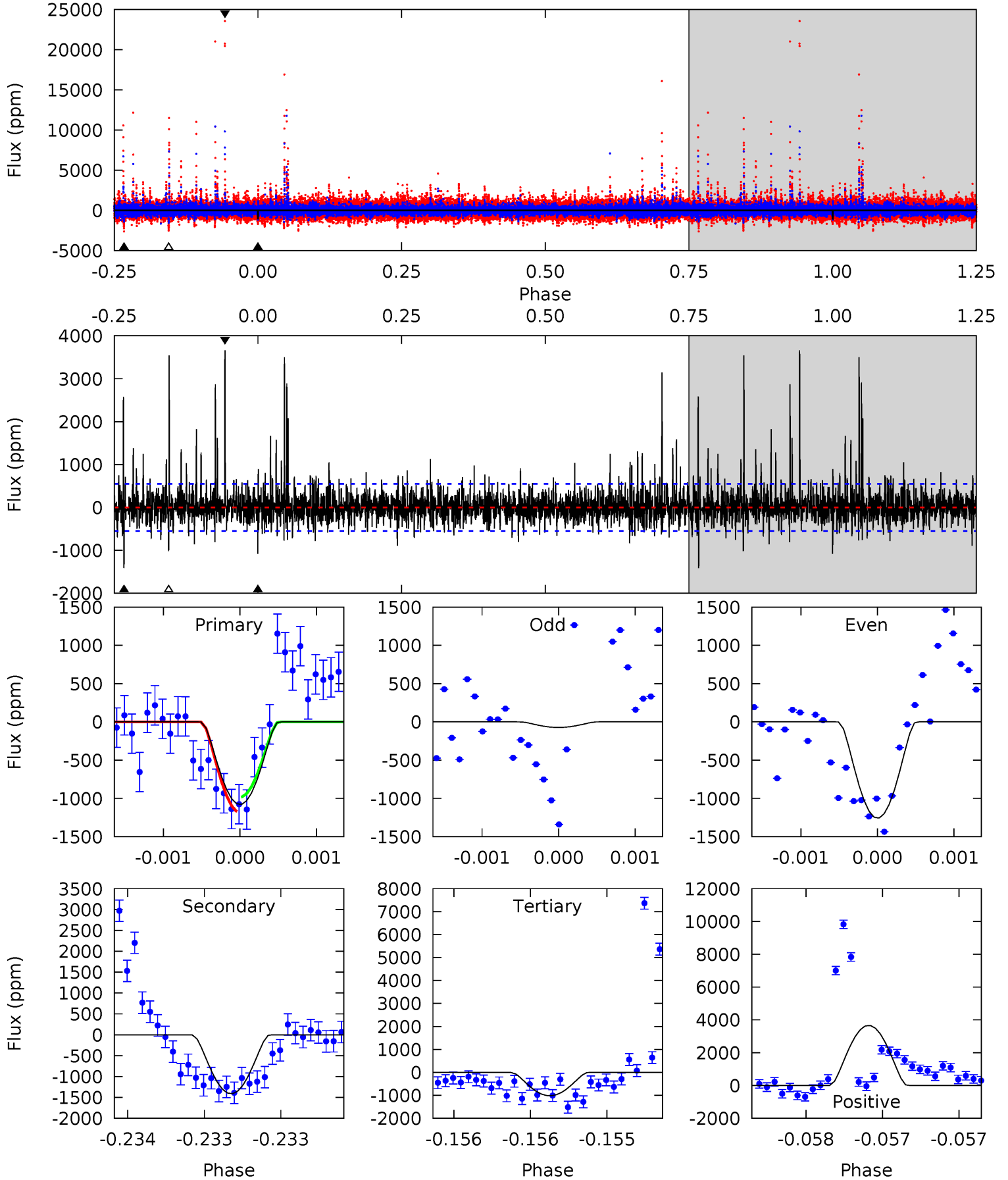
TCE 011662738-06 P=544.690598 Days $T_0=152.440901$ (BKJD)



DV Model-Shift Uniqueness Test

011662738-06, P = 544.699823 Days, E = 152.448257 Days

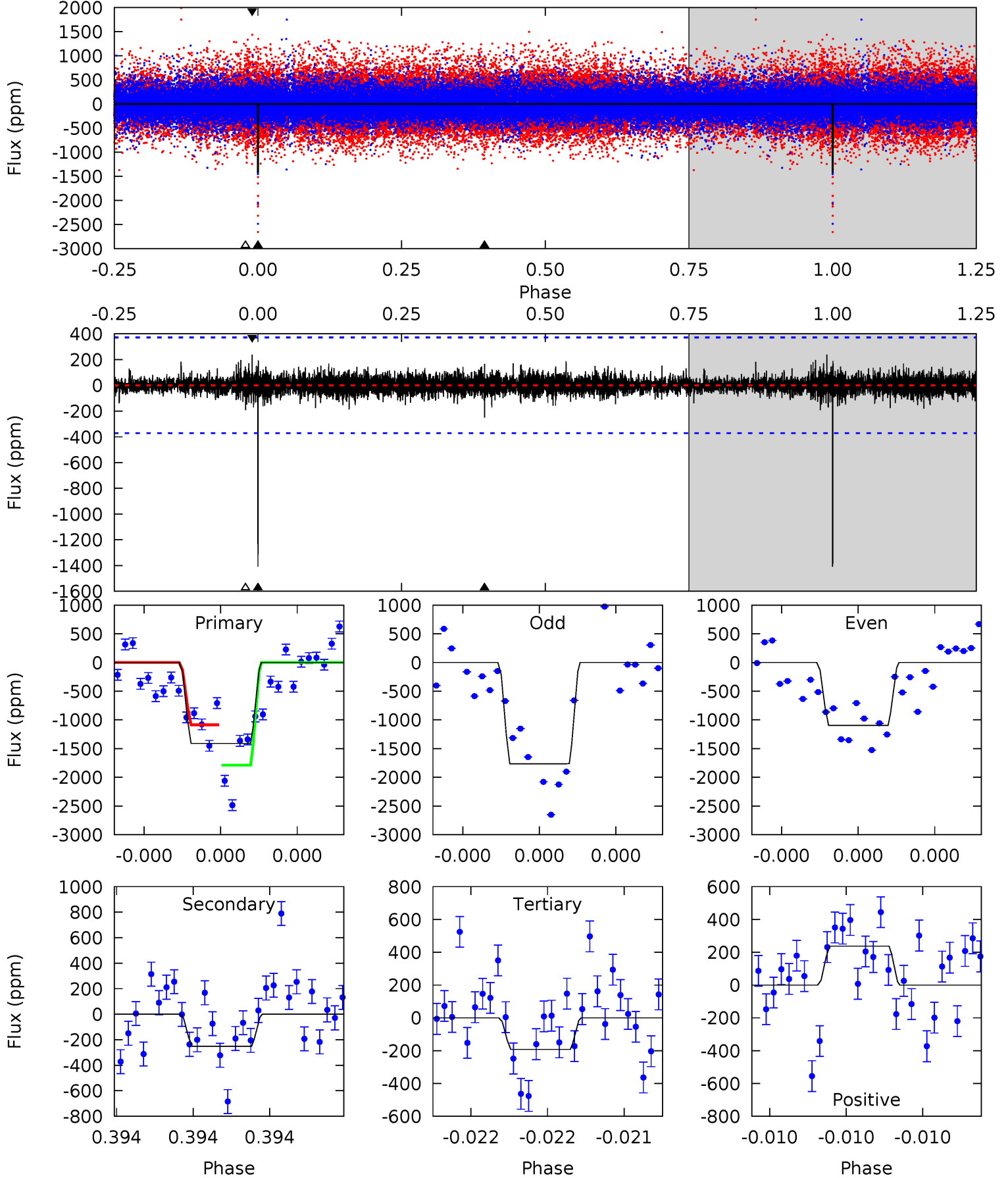
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	14.3	10.3	37.0	5.55	3.45	3.17	0.62	-26.1	3.98	-22.8	4.49	0.67	0.72	0.96



Alt Model-Shift Uniqueness Test

011662738-06, P = 544.690598 Days, E = 152.440901 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	3.81	2.92	3.61	5.64	3.58	0.61	18.5	17.8	0.89	0.20	5.07	0.77	0.14	5.37



Stellar Parameters For KIC 011662738

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4605^{+139}_{-167}	$4.791^{+0.038}_{-0.028}$	$-1.940^{+0.300}_{-0.050}$	$0.468^{+0.029}_{-0.029}$	$0.494^{+0.034}_{-0.025}$	$6.787^{+1.113}_{-0.807}$
	+3%/-4%	+1%/-1%	+15%/-3%	+6%/-6%	+7%/-5%	+16%/-12%
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 011662738-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1409 ± 99	$8.78^{+9.53}_{-6.19}$	190^{+7}_{-7}	2822^{+1298}_{-487}	$10608^{+117599}_{-8187}$
Alt.	-251 ± 66	$9.20^{+8.95}_{-6.69}$	191^{+6}_{-8}	2246^{+869}_{-313}	1698^{+23579}_{-1280}

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 $A_{obs} \gg 1.0$

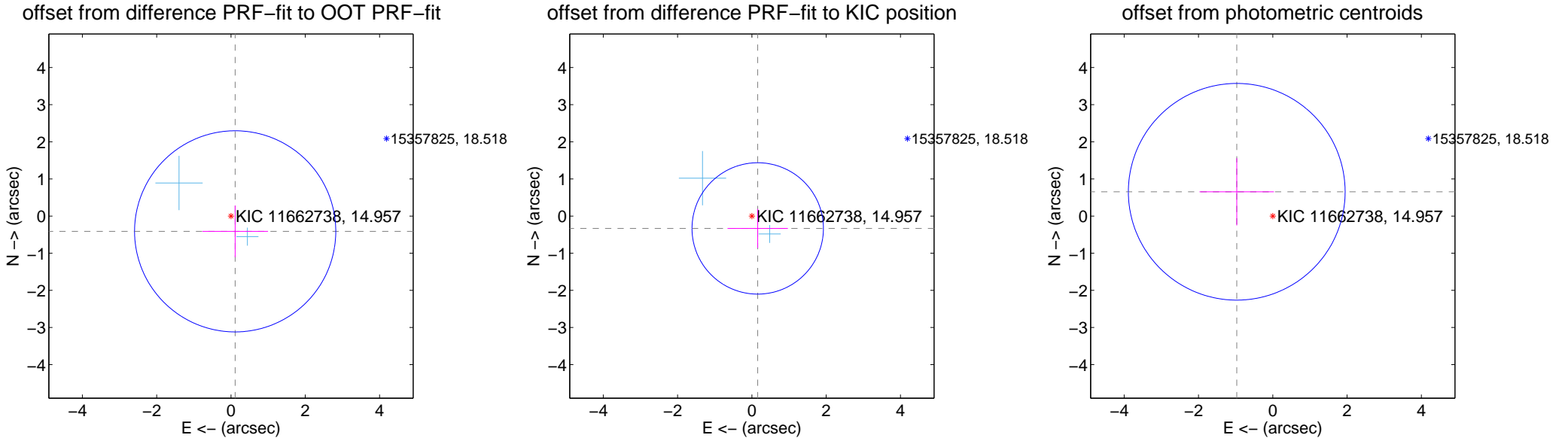
DV Centroid Data

Supplemental centroid analysis for 011662738-06. Kepler magnitude: 14.96. Transit SNR 6.56

There are 2 quarters with good PRF difference image offsets

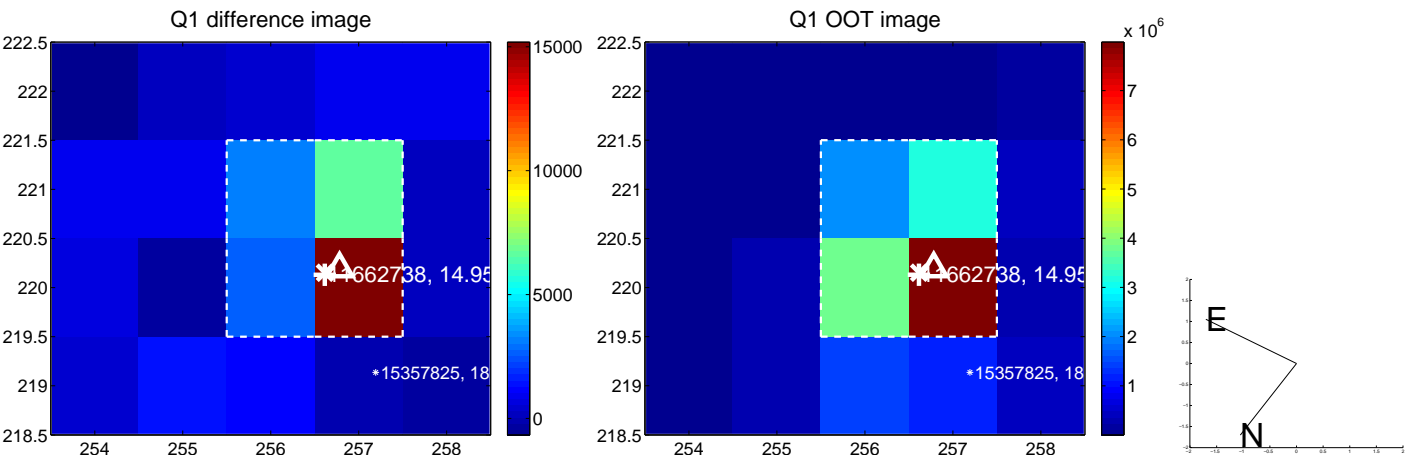
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.427 ± 0.903	0.47	-0.113 ± 0.883	-0.411 ± 0.695
PRF-fit source offset from KIC position	0.368 ± 0.589	0.62	-0.157 ± 0.812	-0.333 ± 0.527
photometric centroid source offset	1.17 ± 0.97	1.20	0.97 ± 1.00	0.65 ± 0.91

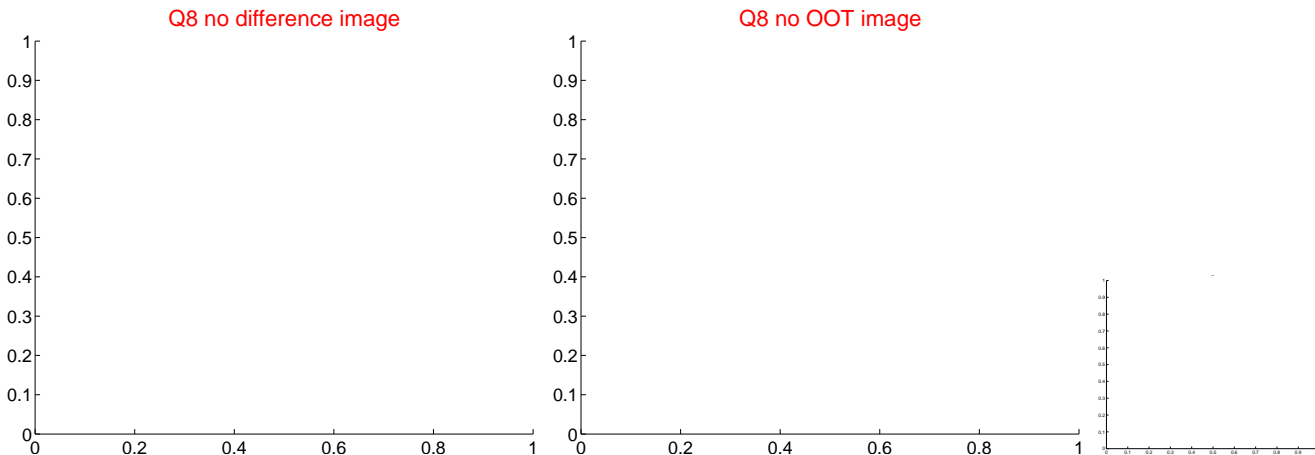
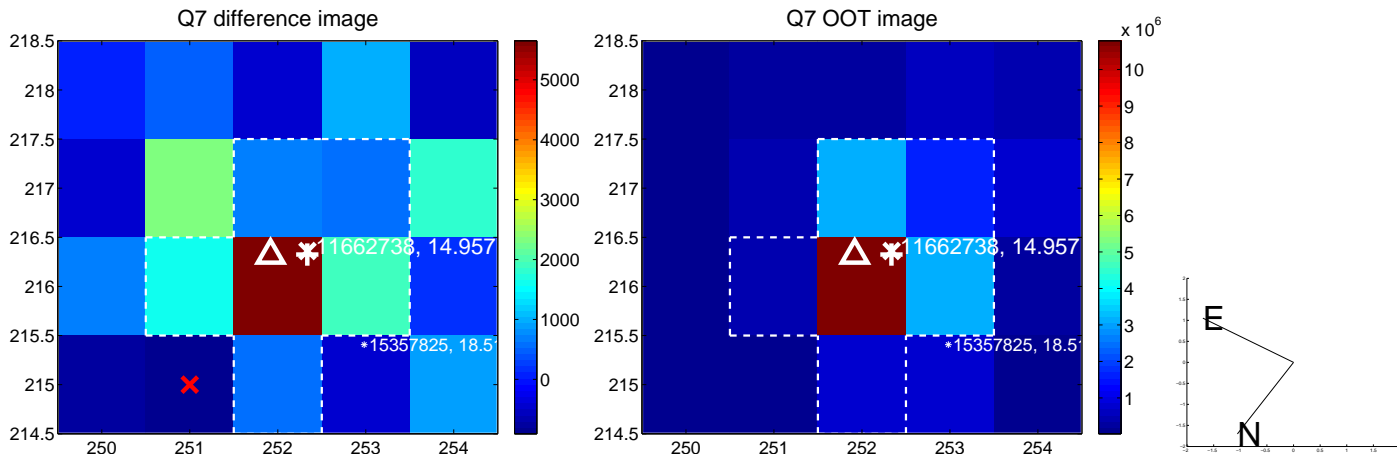
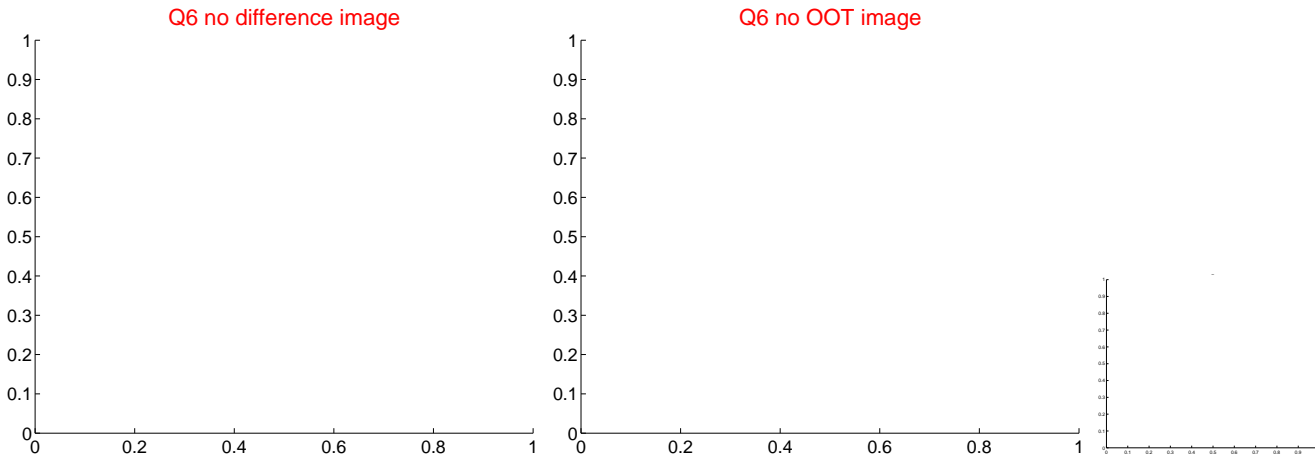
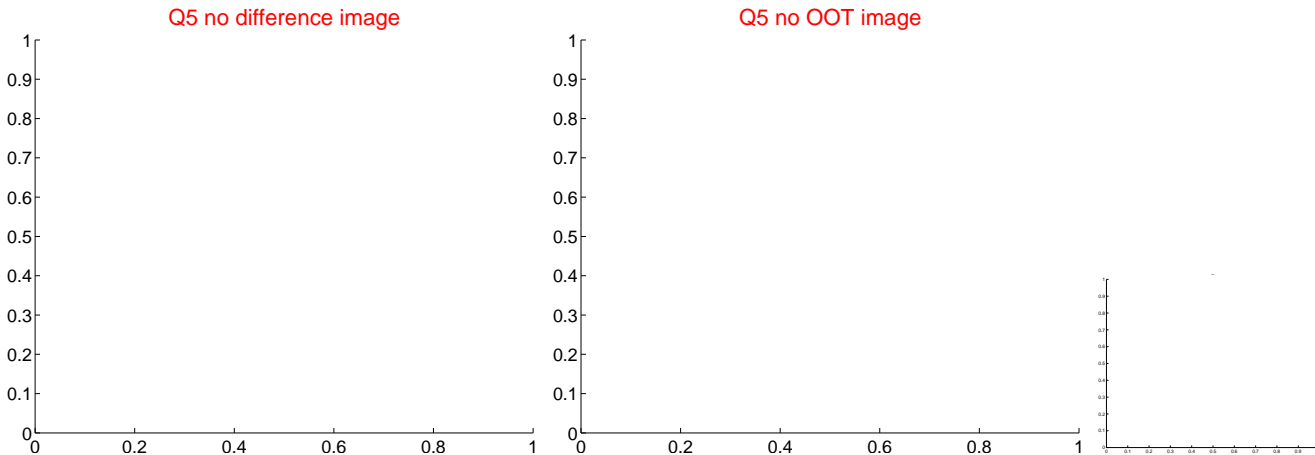


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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



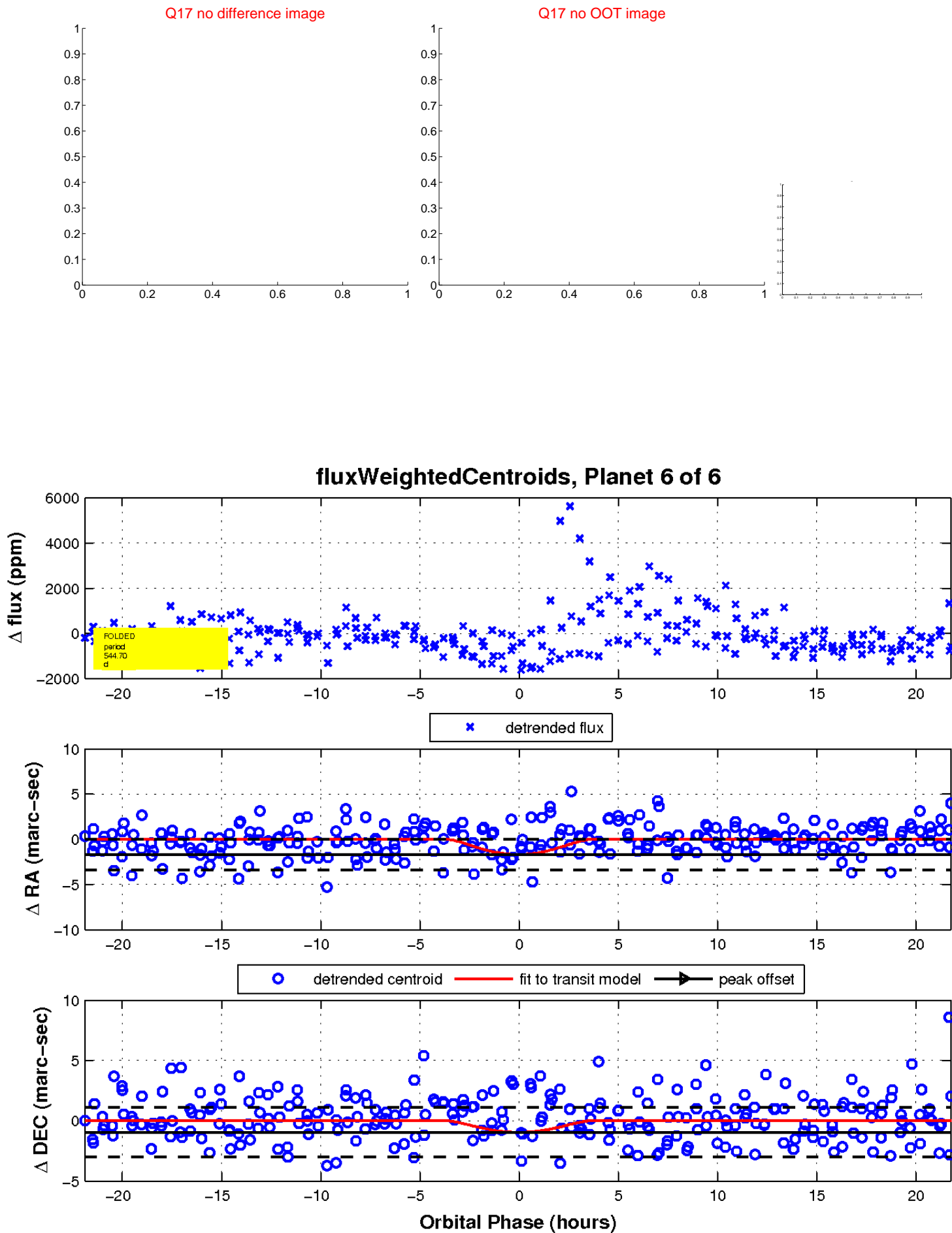
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

