

KIC 010453475

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})
010453475-01	OBS	No	393.378268	438.677130	798.2	5.765	31.5	5.1	0.76	5403	2.58	0.51
010453475-02	OBS	No	660.132863	233.500041	2804.8	15.043	24.7	12.9	0.76	5403	7.63	0.25
010453475-03	OBS	No	540.142084	483.482529	856.9	11.546	26.8	5.4	0.76	5403	2.33	0.33
010453475-04	OBS	No	356.036989	254.673963	662.6	13.469	19.3	4.6	0.76	5403	2.19	0.58
010453475-05	OBS	No	342.444485	364.224299	1856.1	49.504	13.7	9.1	0.76	5403	3.47	0.61
010453475-06	OBS	No	581.610076	332.422502	1220.2	14.767	20.1	8.1	0.76	5403	2.70	0.30
010453475-08	OBS	No	374.553966	277.965130	1298.4	4.500	14.6	-1.0	0.76	5403	2.71	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010453475-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-02	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
010453475-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
010453475-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

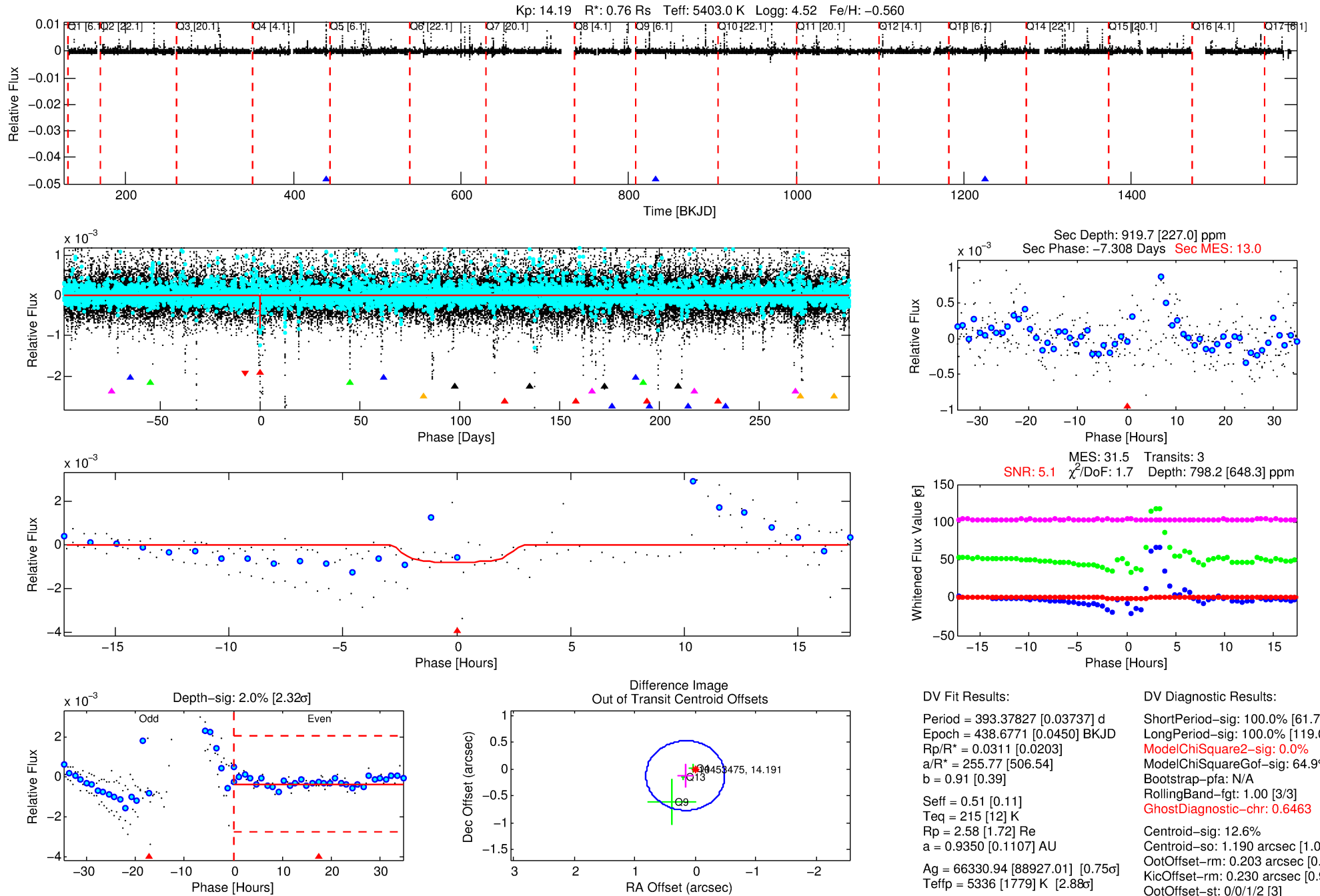
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010453475-01

No Significant Match Found

DV One-Page Summary

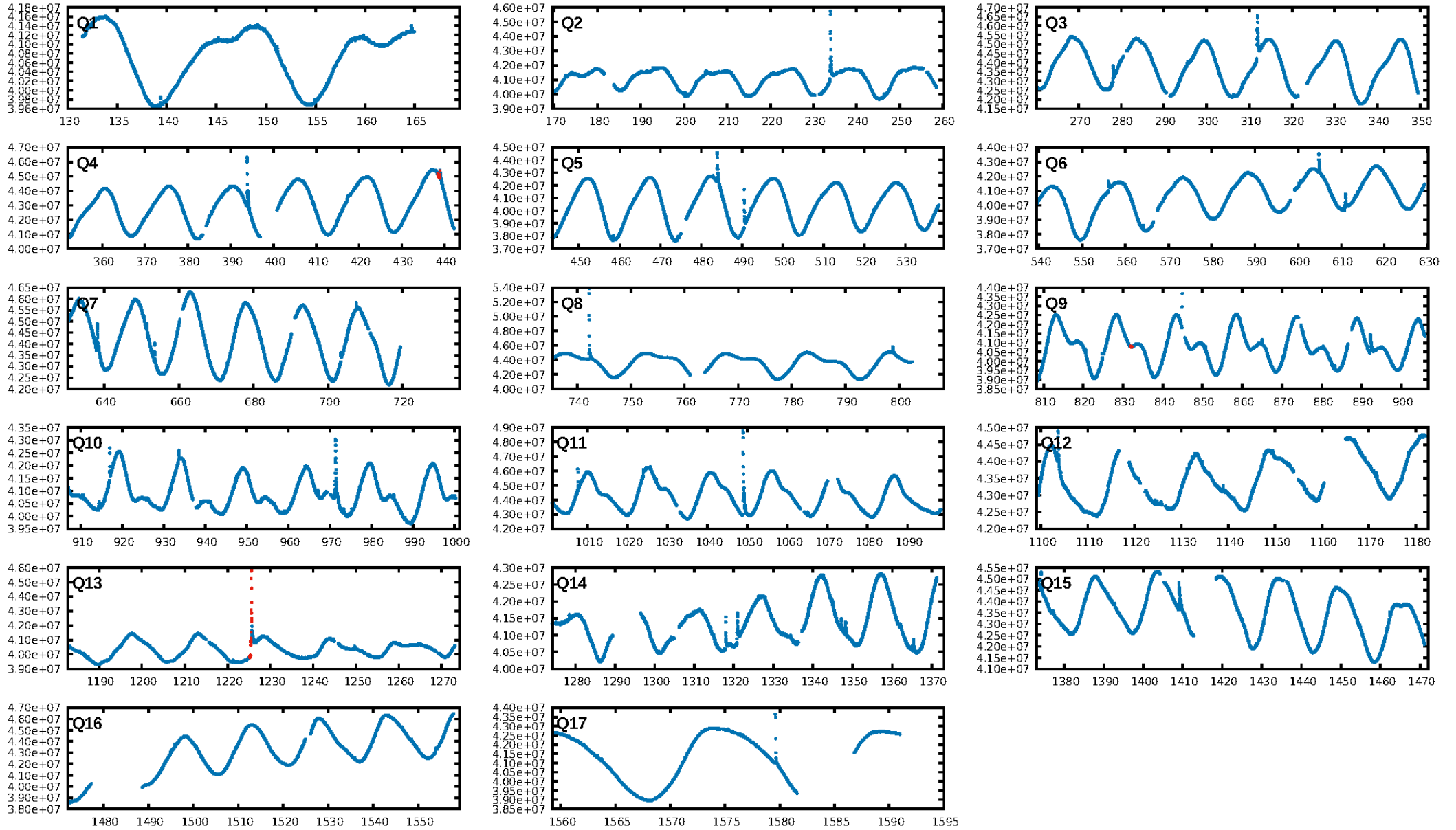
KIC: 10453475 Candidate: 1 of 8 Period: 393.378 d



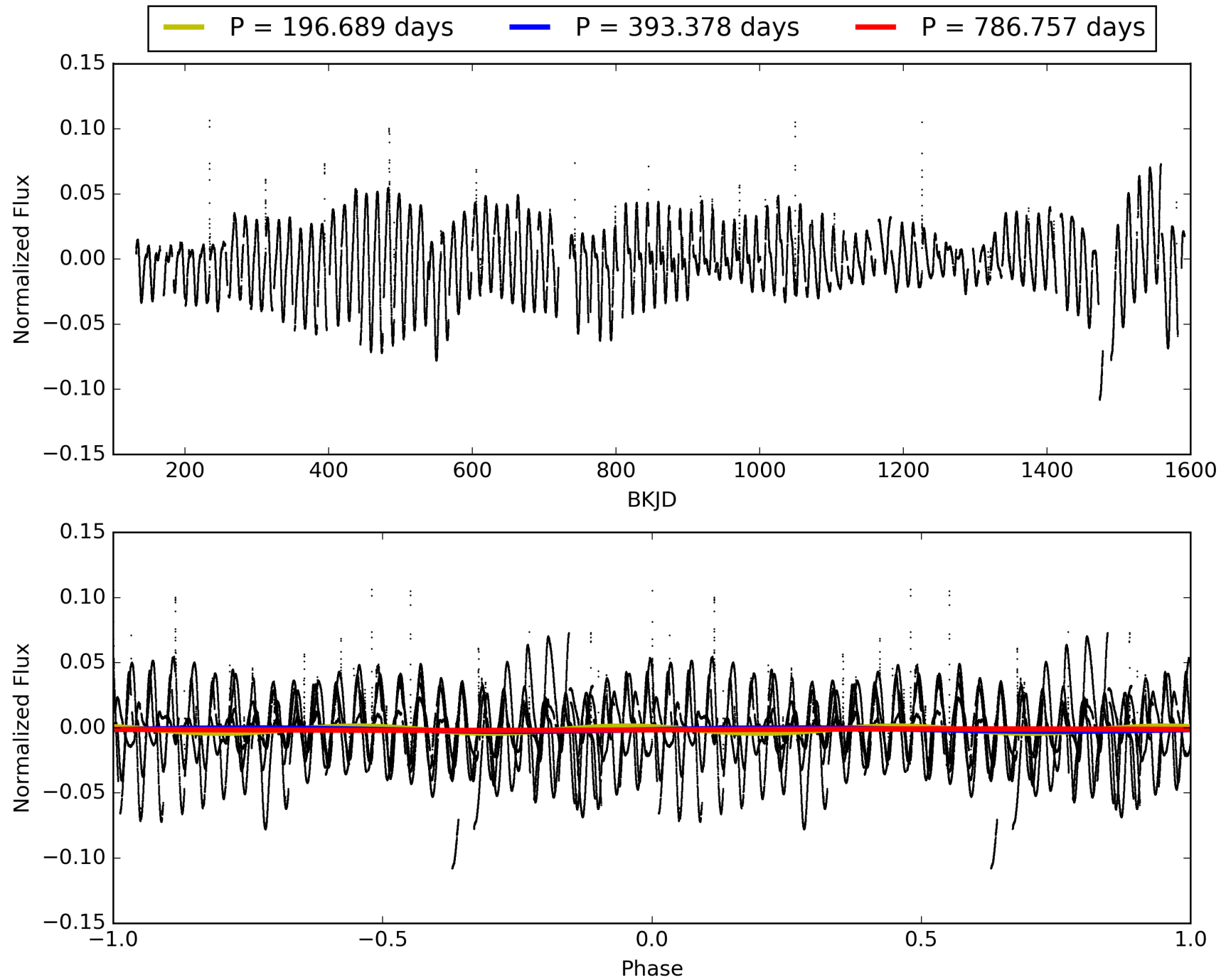
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:08:09 Z

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

TCE 010453475-01, PDC Light Curves

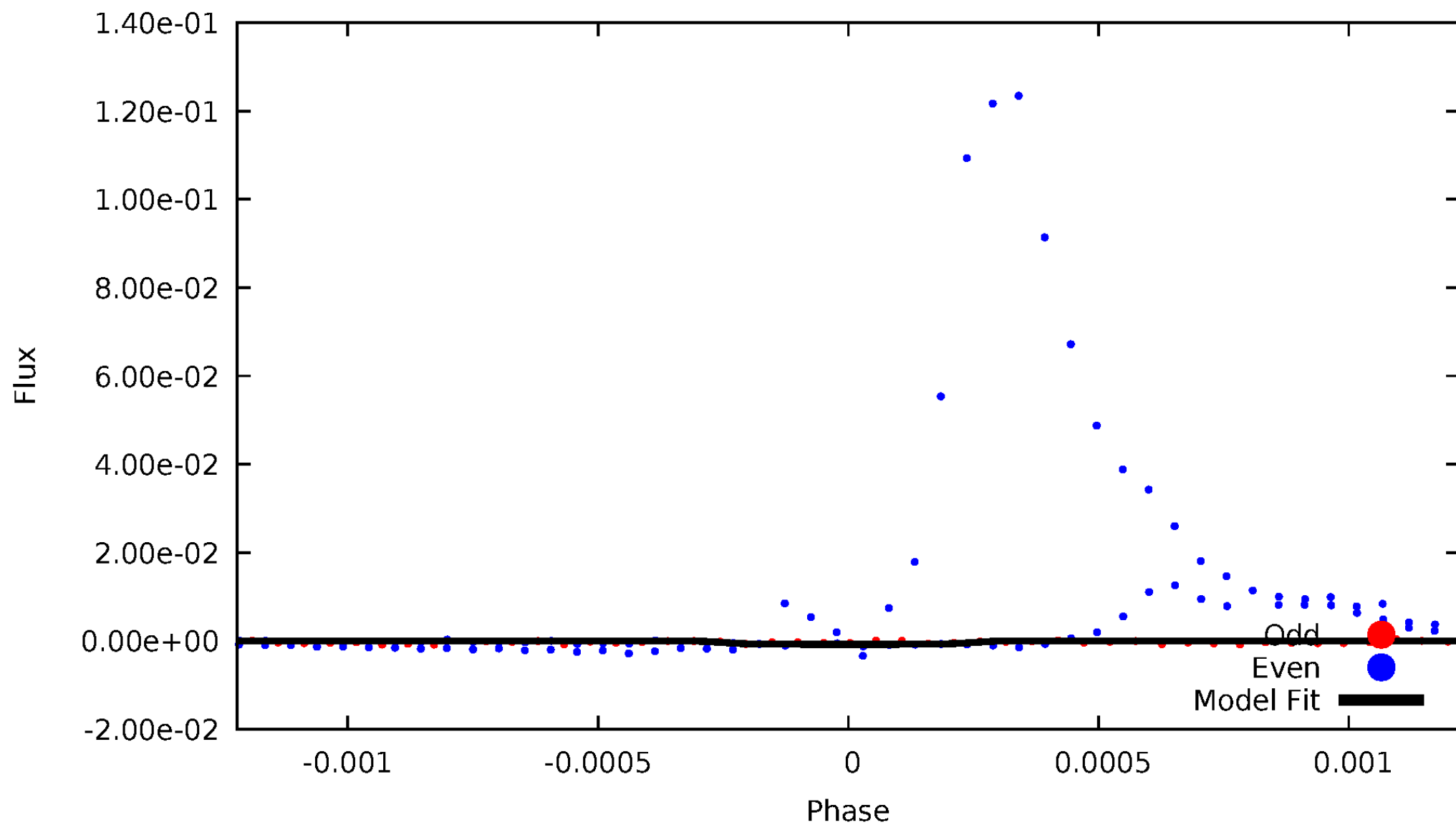


TCE 010453475-01



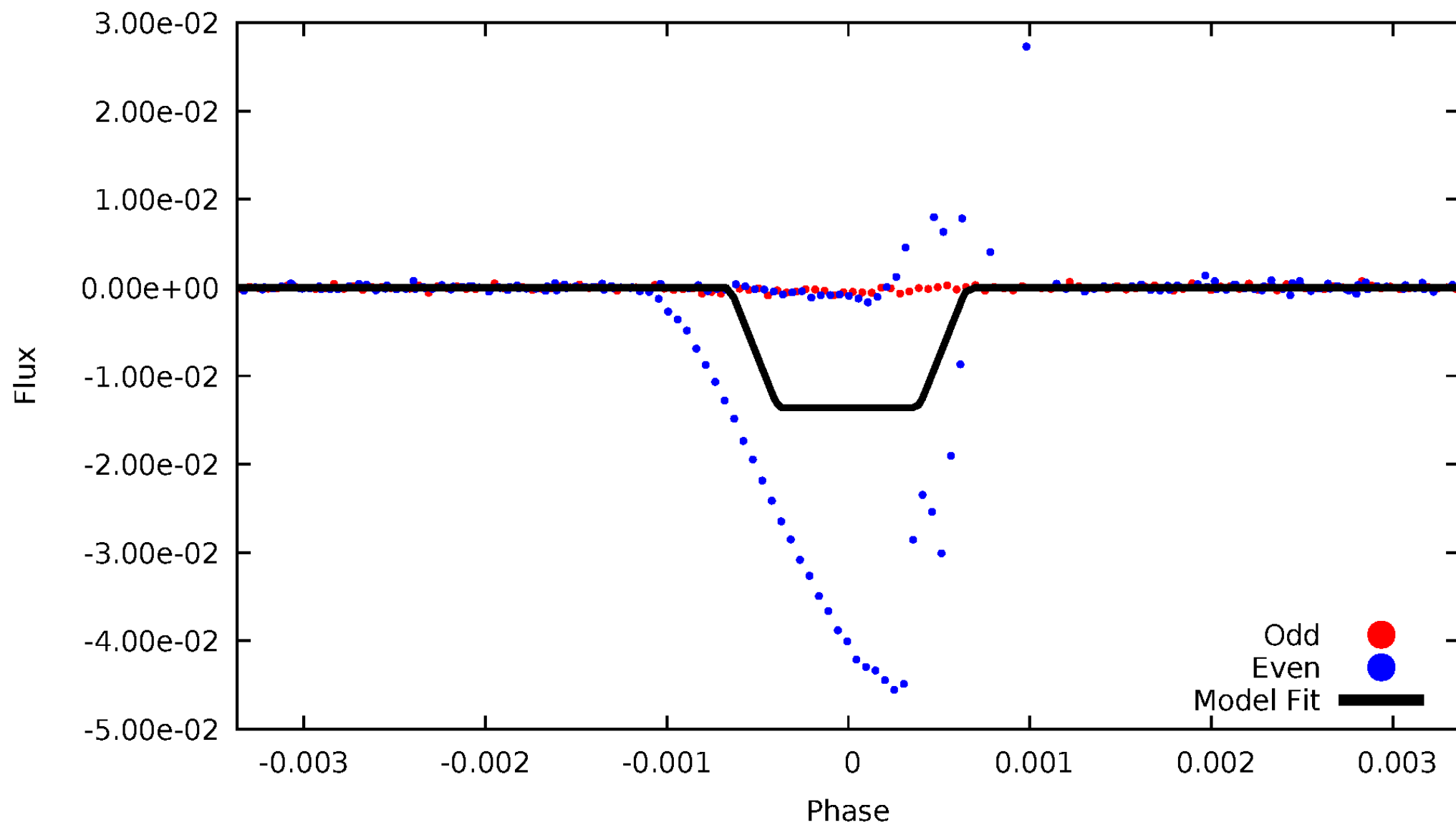
DV Odd/Even

TCE 010453475-01



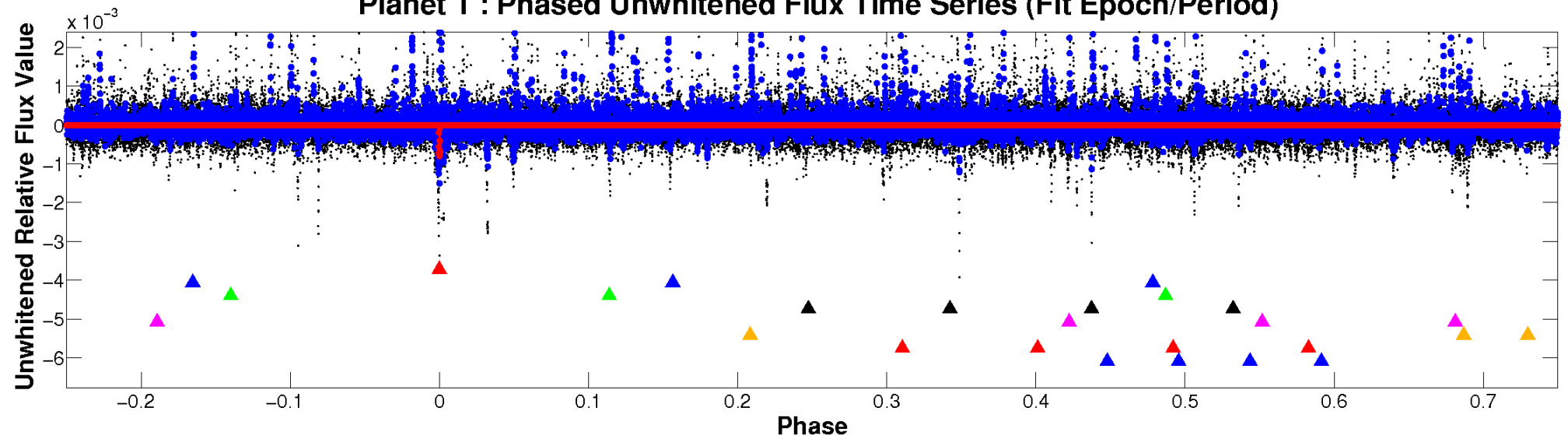
ALT Odd/Even

TCE 010453475-01

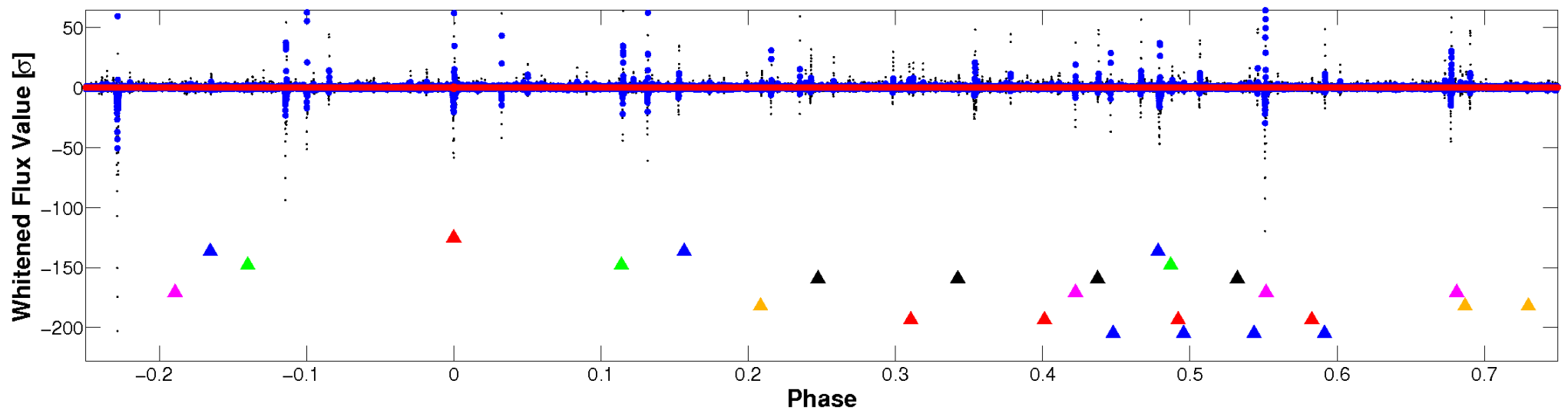


Non-Whitened Vs. Whitened Light Curve

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

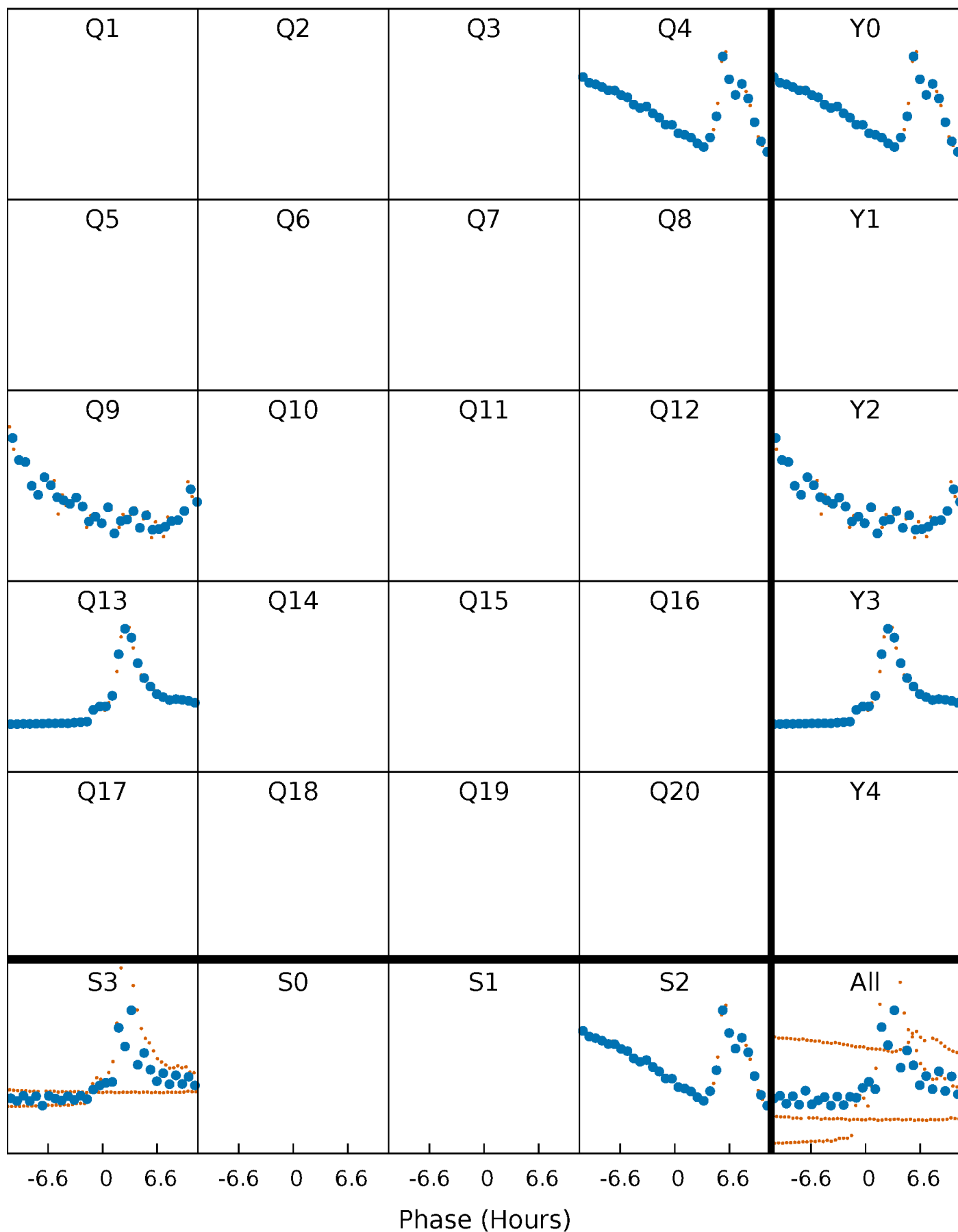


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



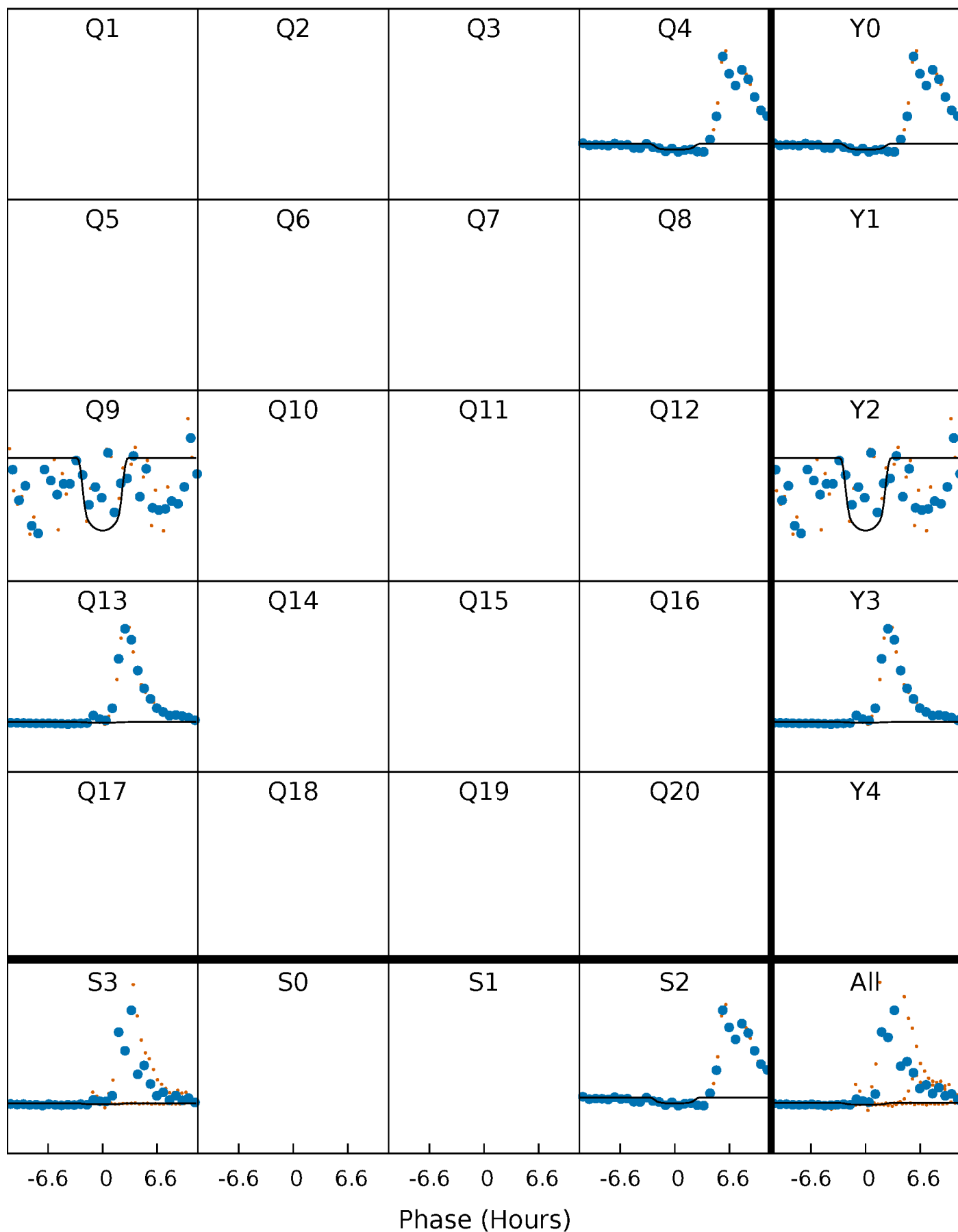
PDC Quarter-Phased Transit Curves

TCE 010453475-01 P=393.378268 Days $T_0=438.677130$ (BKJD)



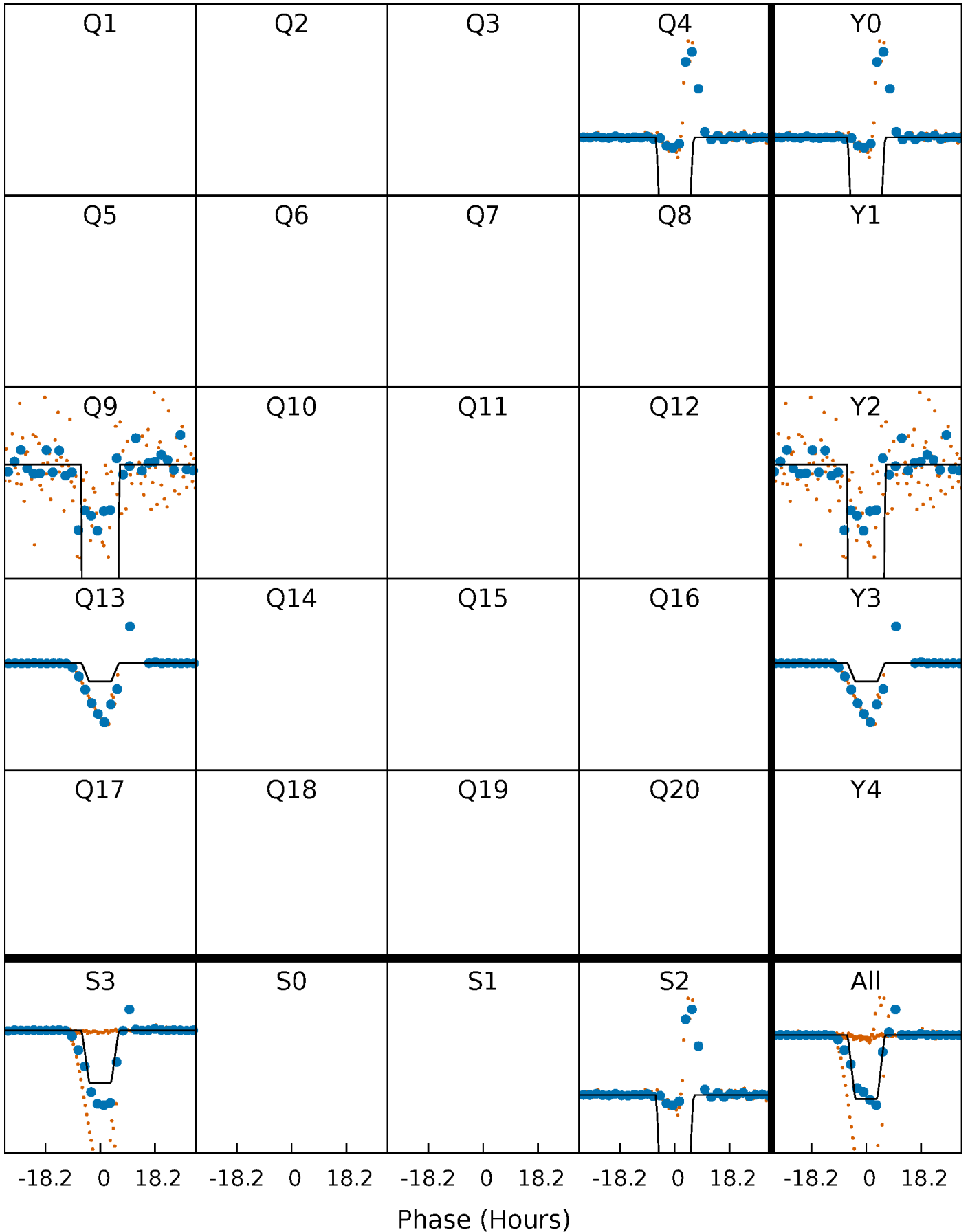
DV Quarter-Phased Transit Curves

TCE 010453475-01 P=393.378268 Days $T_0=438.677130$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

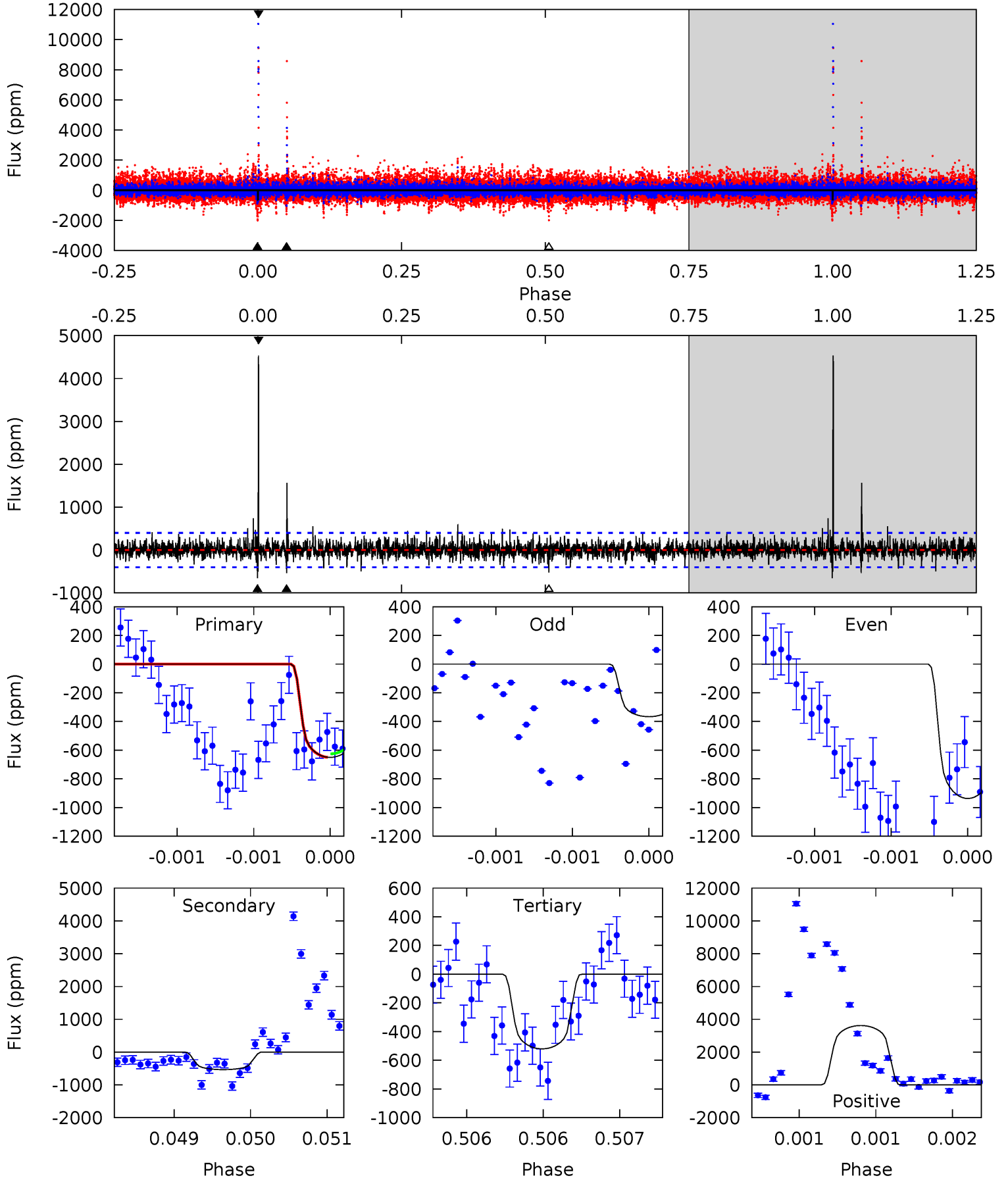
TCE 010453475-01 P=393.237051 Days $T_0=438.769025$ (BKJD)



DV Model-Shift Uniqueness Test

010453475-01, P = 393.378268 Days, E = 45.298862 Days

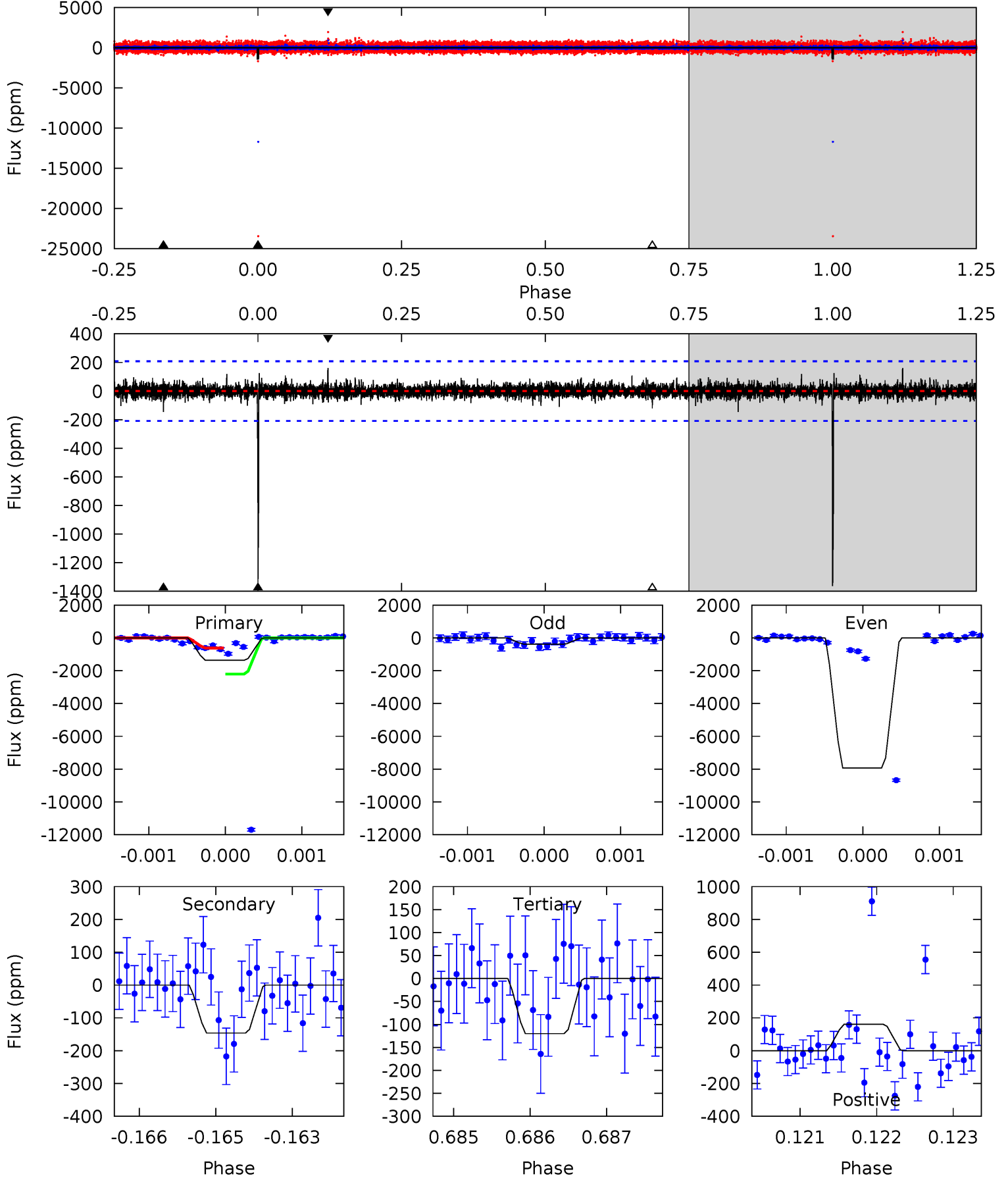
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.96	7.38	7.17	49.9	5.53	3.41	1.84	1.79	-40.9	0.21	-42.5	1.77	-17.1	0.87	0.16



Alt Model-Shift Uniqueness Test

010453475-01, P = 393.237051 Days, E = 45.531974 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.2	3.78	3.10	4.17	5.39	3.20	0.61	32.1	31.1	0.68	-0.39	101.0	32.1	0.11	0



Stellar Parameters For KIC 010453475

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5403^{+162}_{-146}	$4.523^{+0.105}_{-0.086}$	$-0.560^{+0.350}_{-0.300}$	$0.761^{+0.099}_{-0.090}$	$0.704^{+0.094}_{-0.040}$	$2.253^{+0.987}_{-0.577}$
	+3%/-3%	+2%/-2%	+62%/-54%	+13%/-12%	+13%/-6%	+44%/-26%
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 010453475-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-536 ± 73	$2.73^{+1.64}_{-1.52}$	301^{+14}_{-13}	4689^{+2082}_{-769}	$35637^{+137646}_{-22299}$
Alt.	-146 ± 39	$9.77^{+1.85}_{-1.75}$	300^{+14}_{-12}	2565^{+148}_{-149}	755^{+404}_{-293}

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 $A_{obs} \gg 1.0$

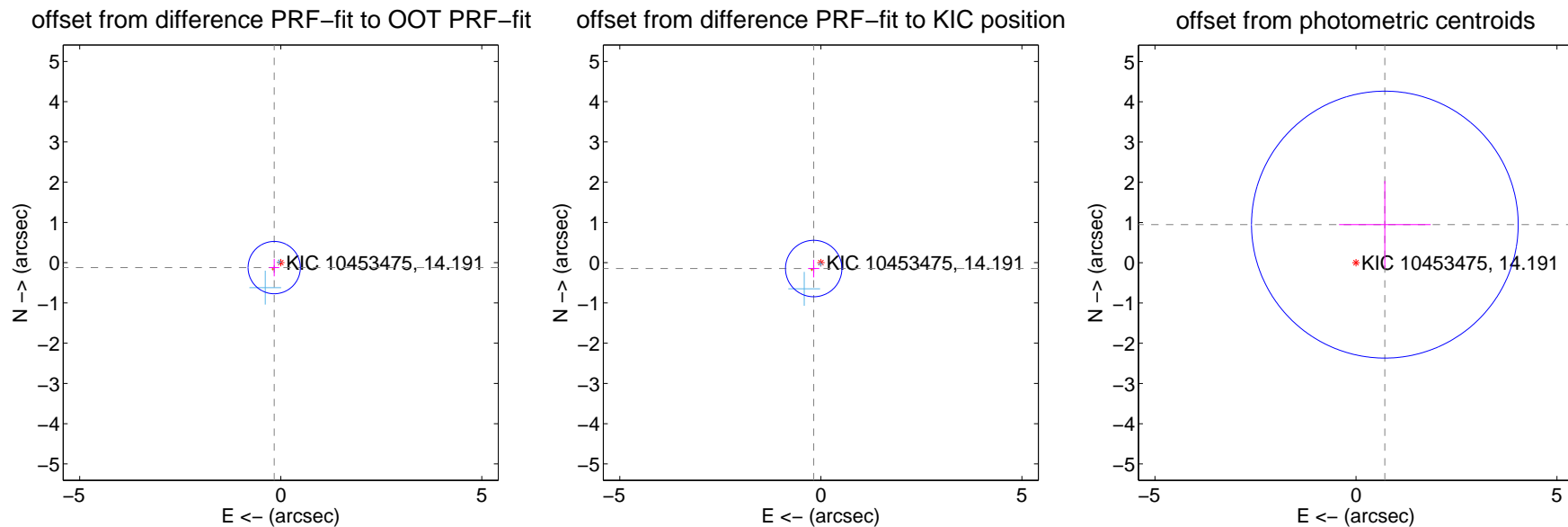
DV Centroid Data

Supplemental centroid analysis for 010453475-01. Kepler magnitude: 14.19. Transit SNR 5.14

There are 2 quarters with good PRF difference image offsets

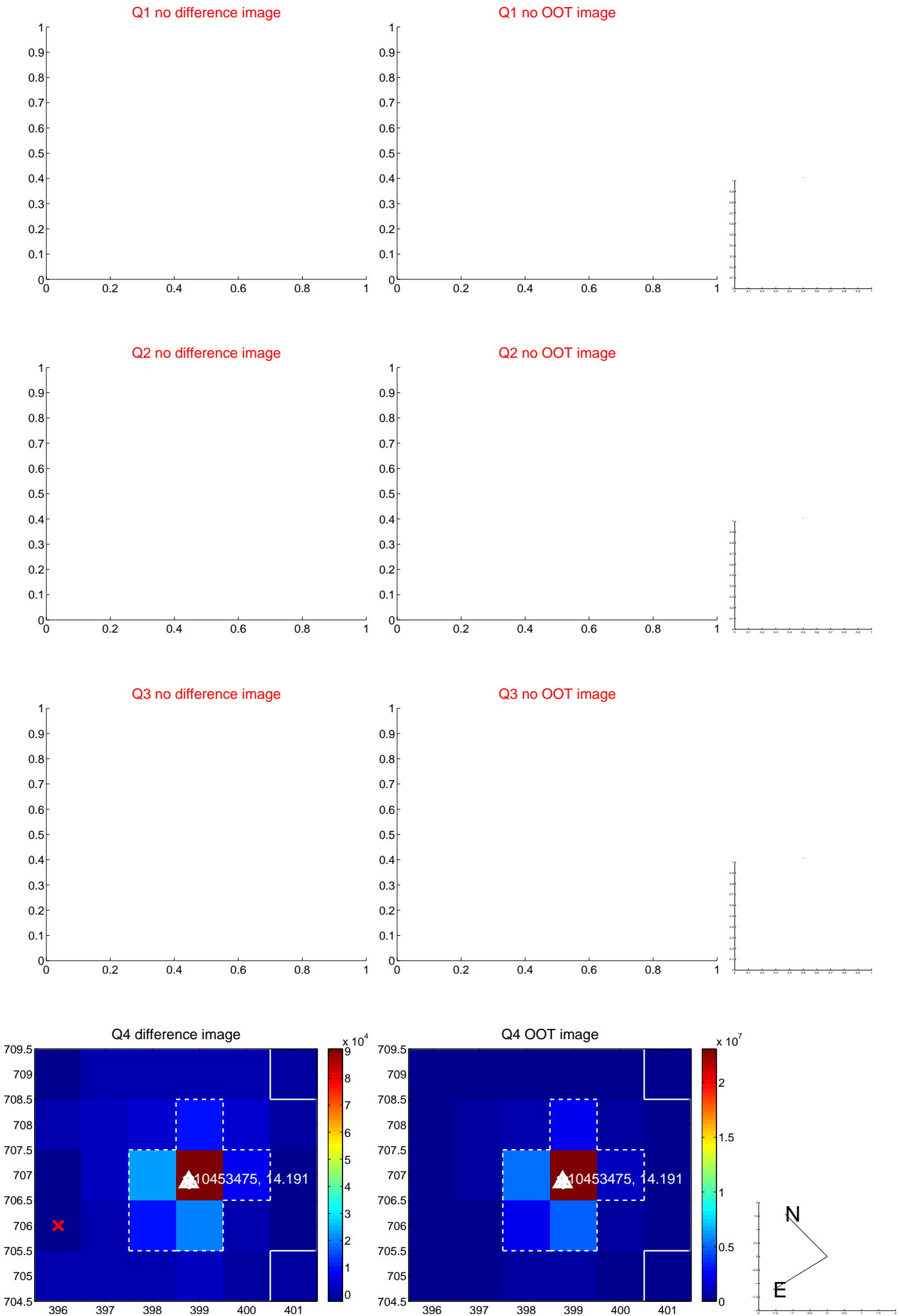
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.203 ± 0.217	0.94	0.163 ± 0.124	-0.122 ± 0.216
PRF-fit source offset from KIC position	0.230 ± 0.234	0.98	0.178 ± 0.138	-0.145 ± 0.219
photometric centroid source offset	1.19 ± 1.11	1.08	-0.72 ± 1.14	0.95 ± 1.09

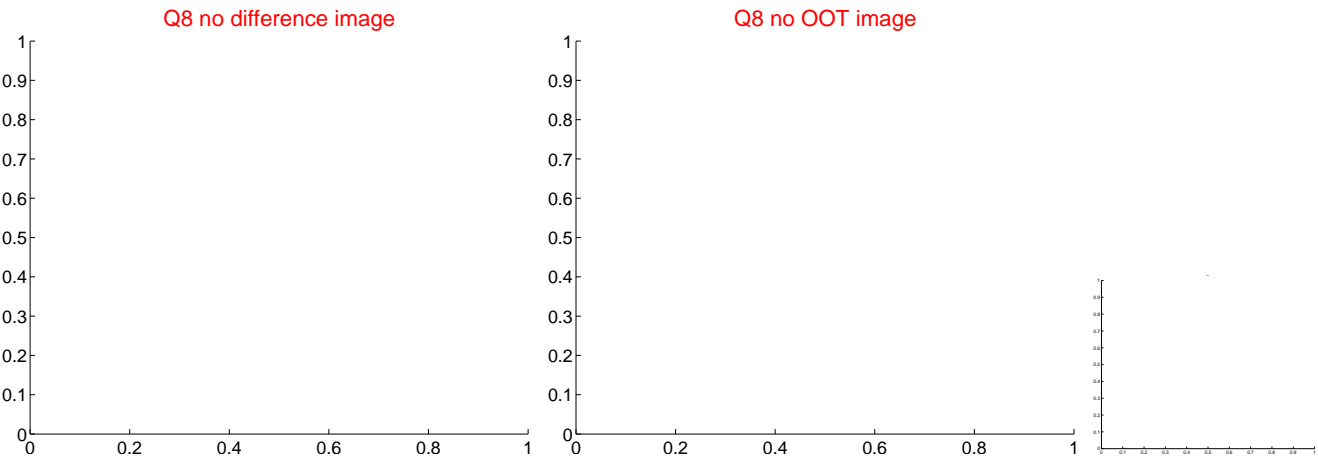
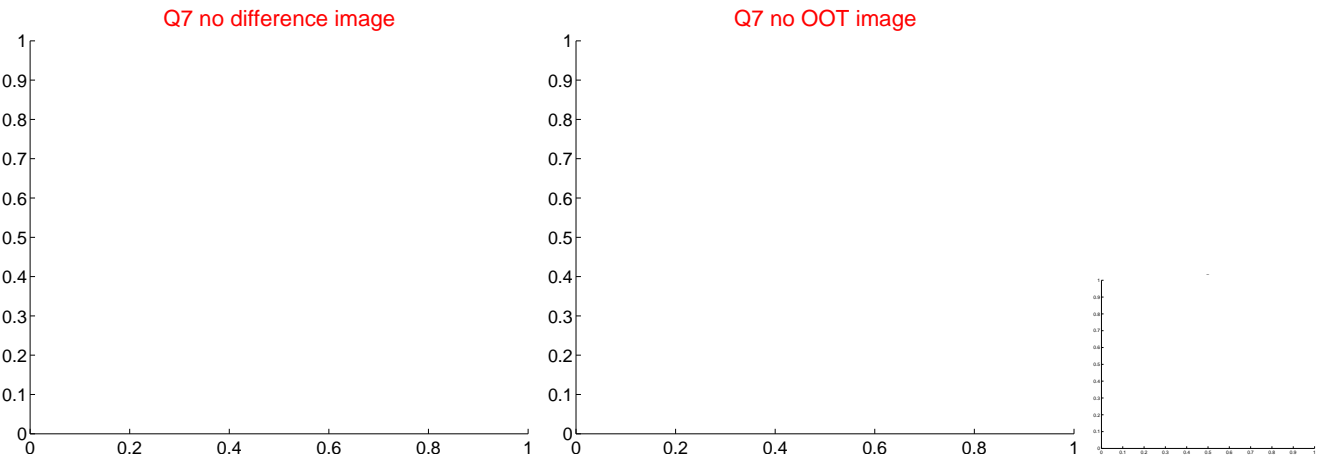
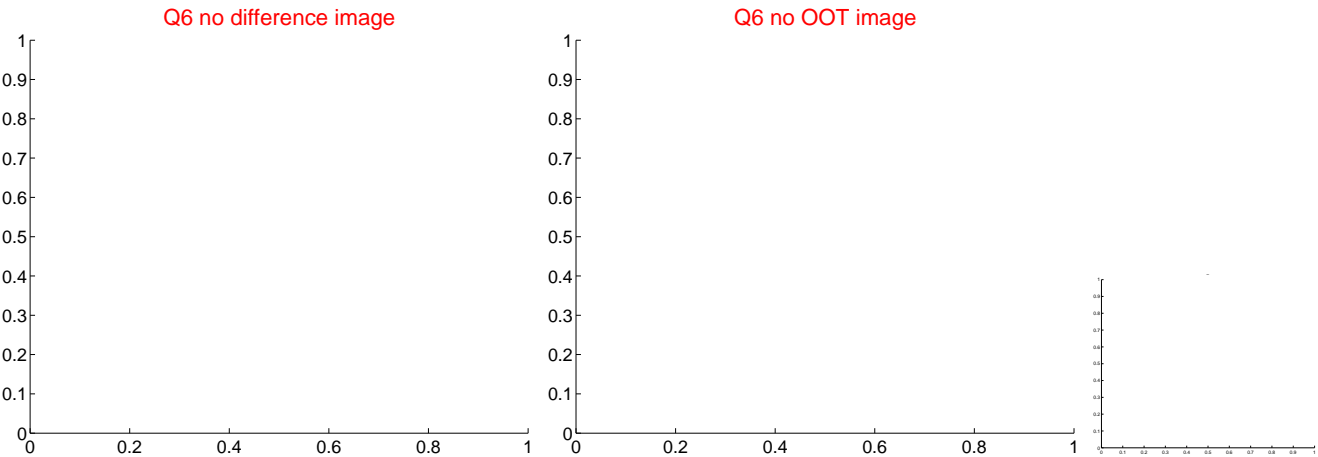
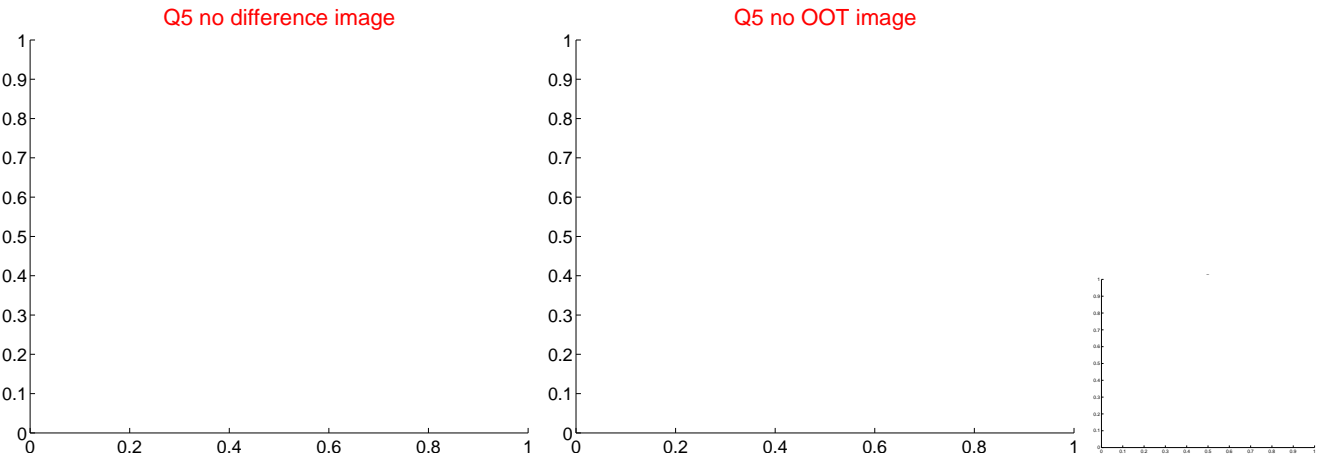


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

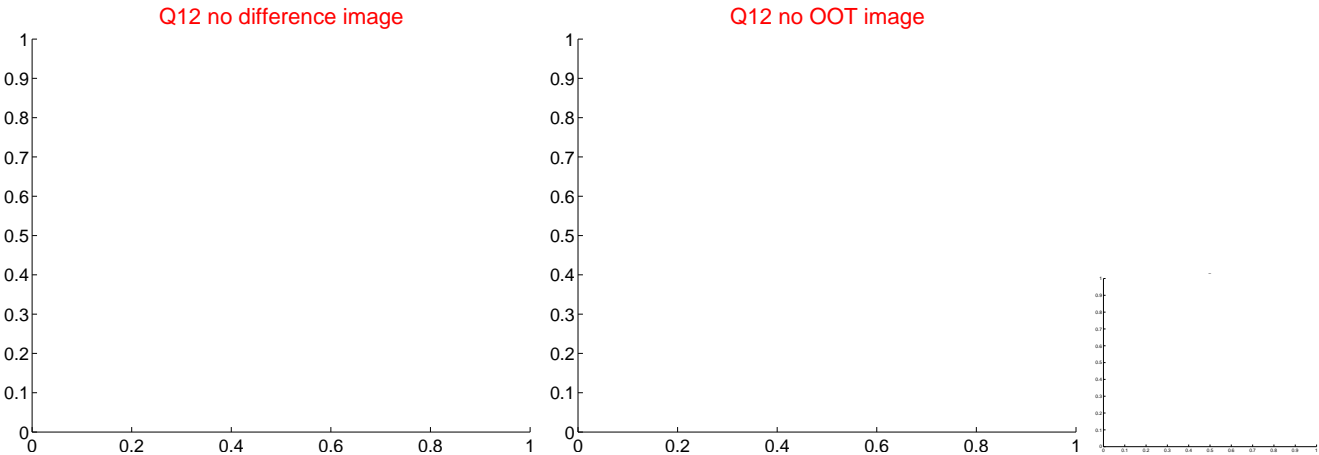
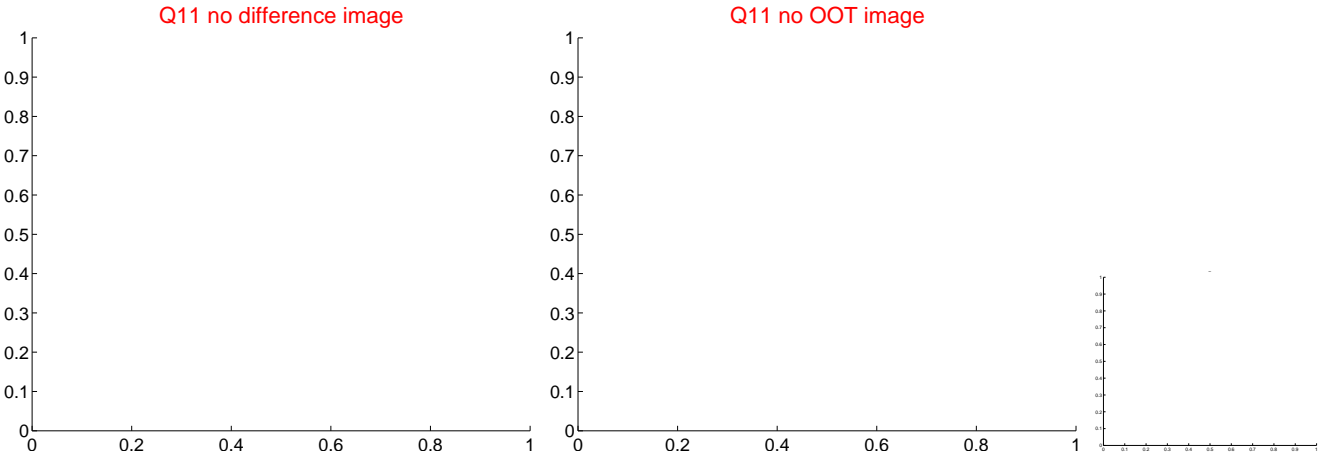
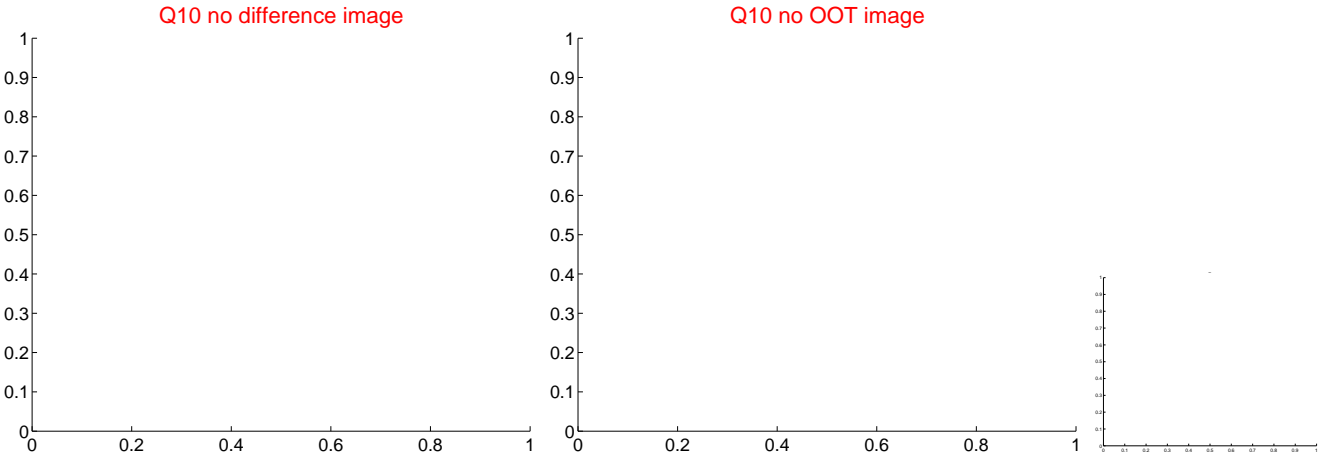
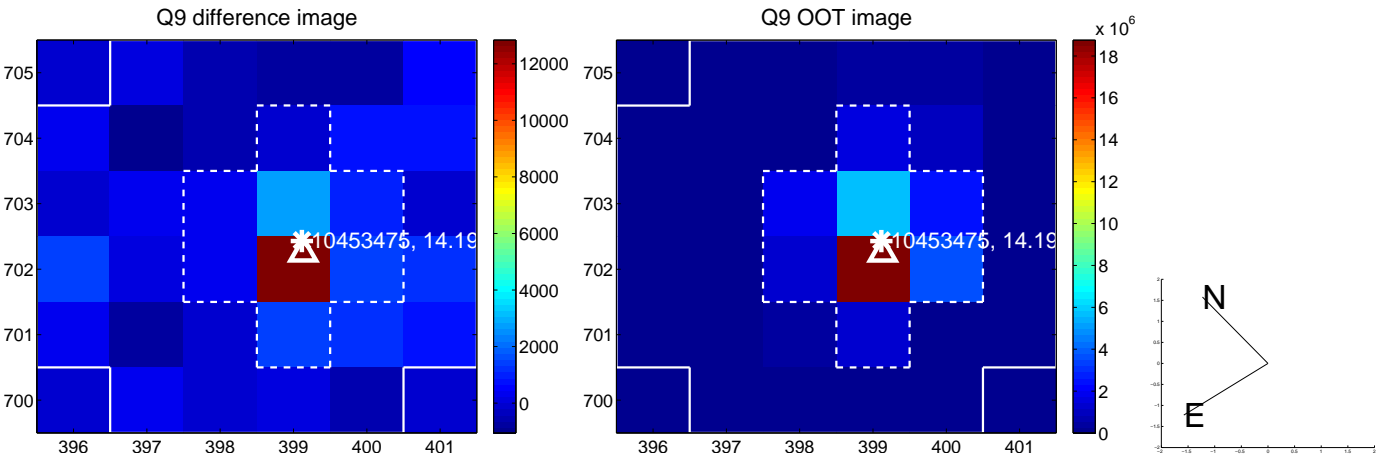
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



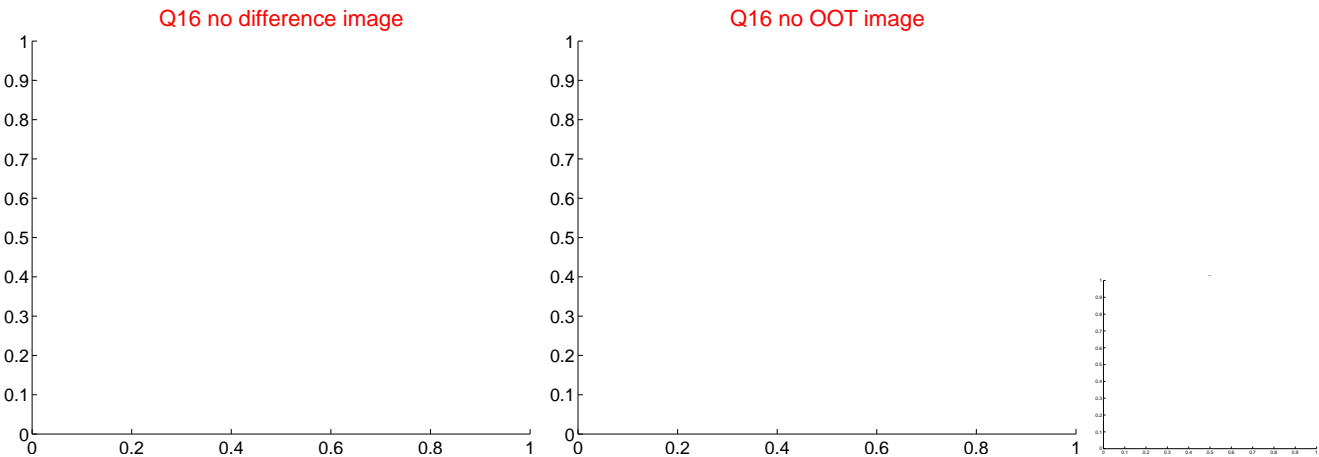
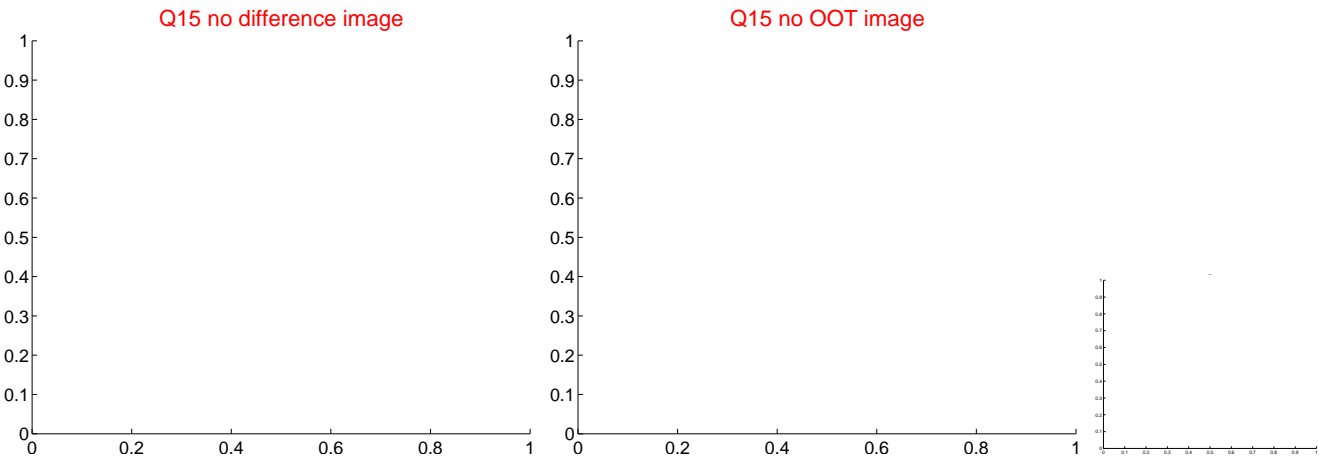
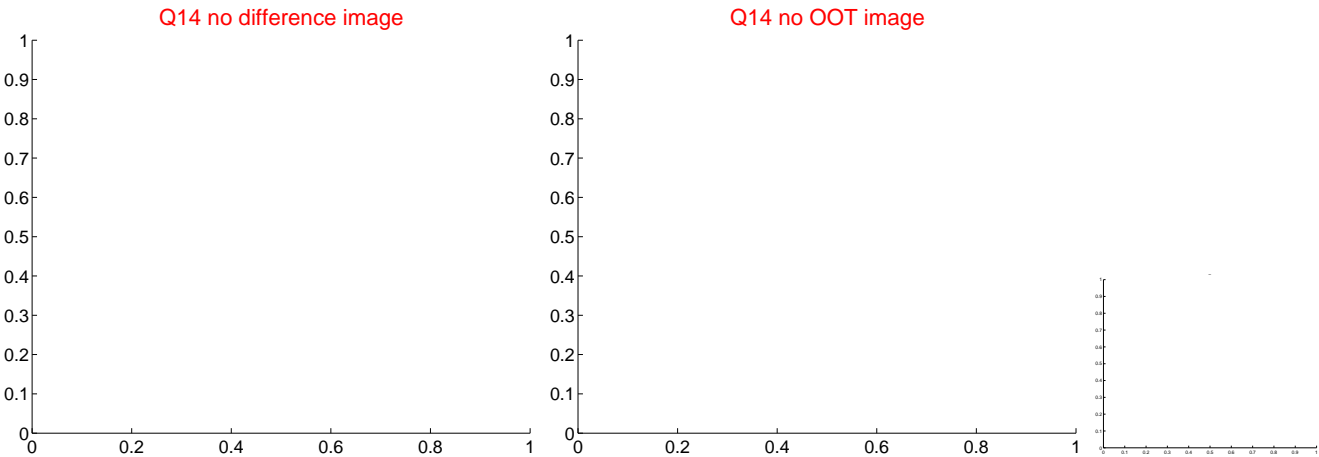
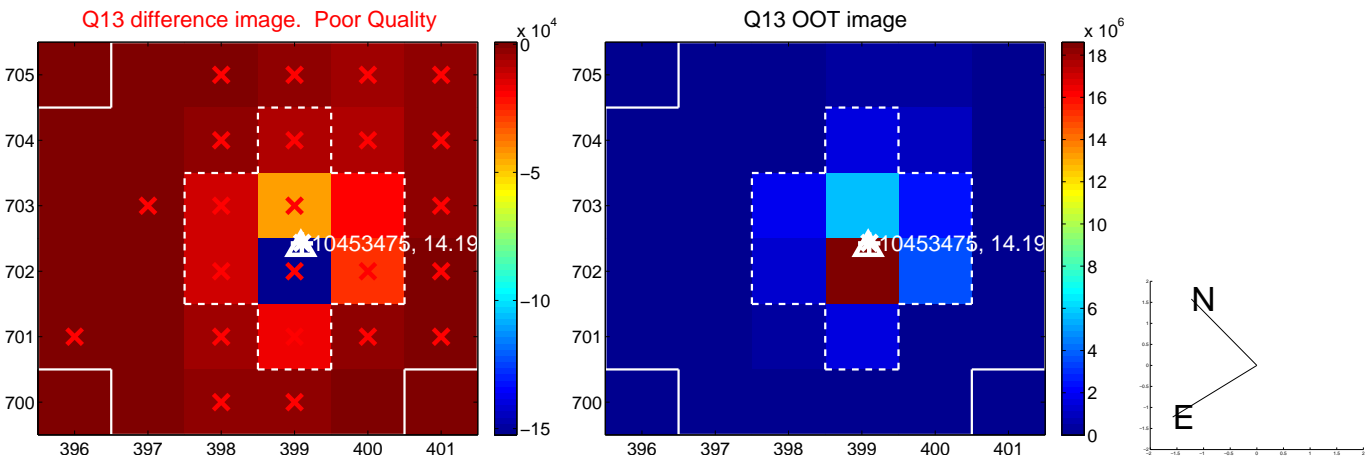
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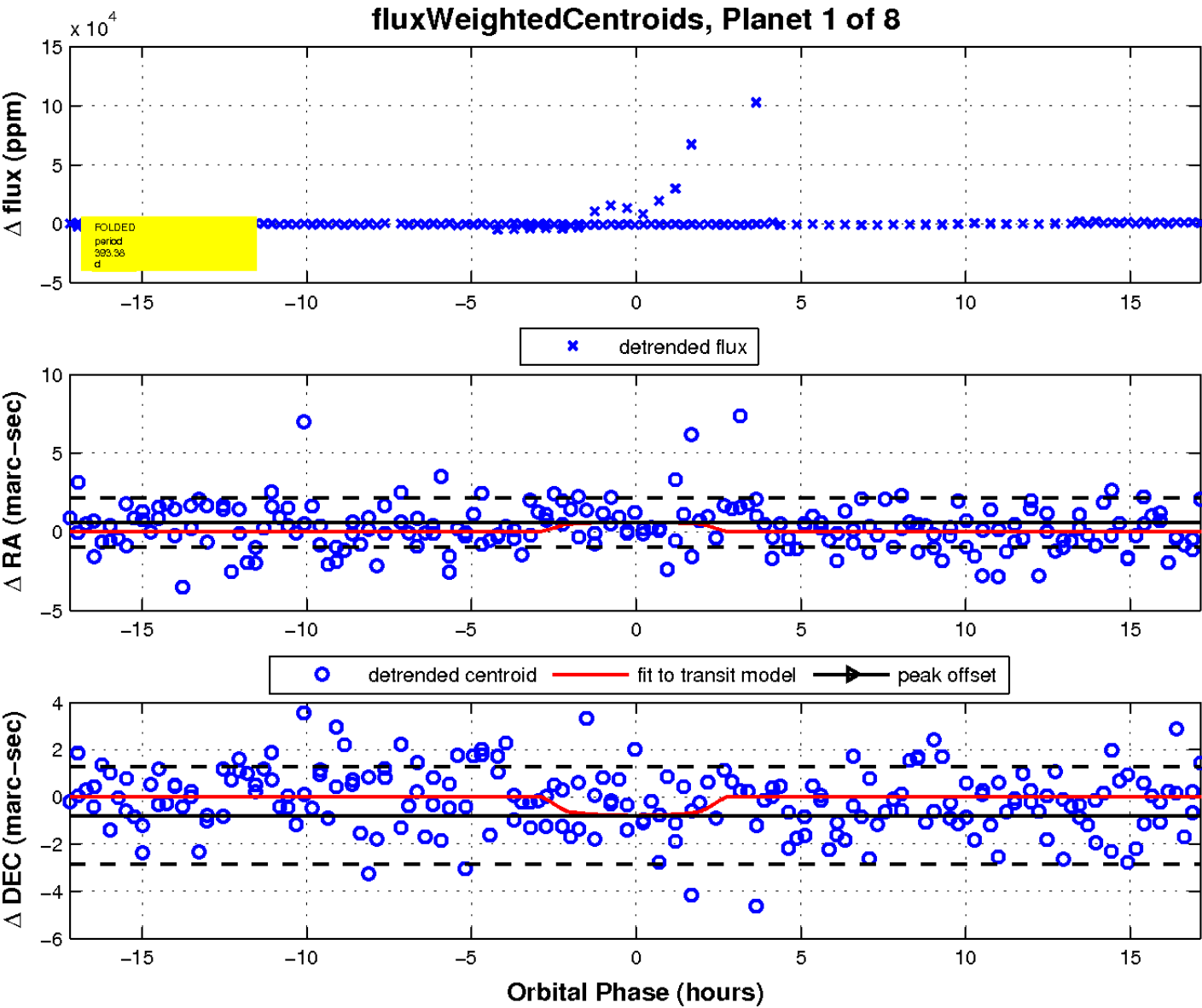
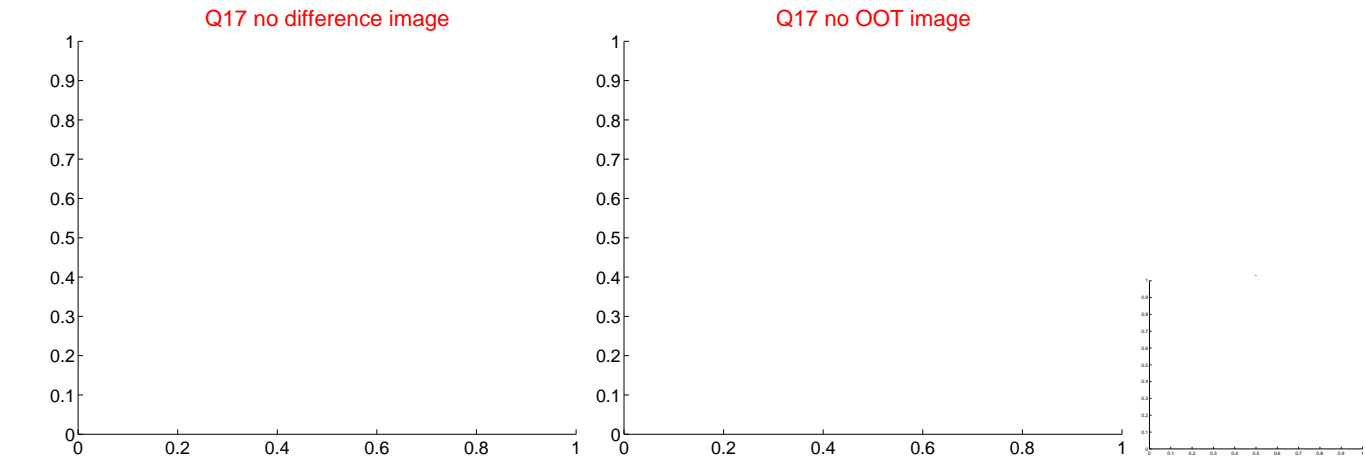
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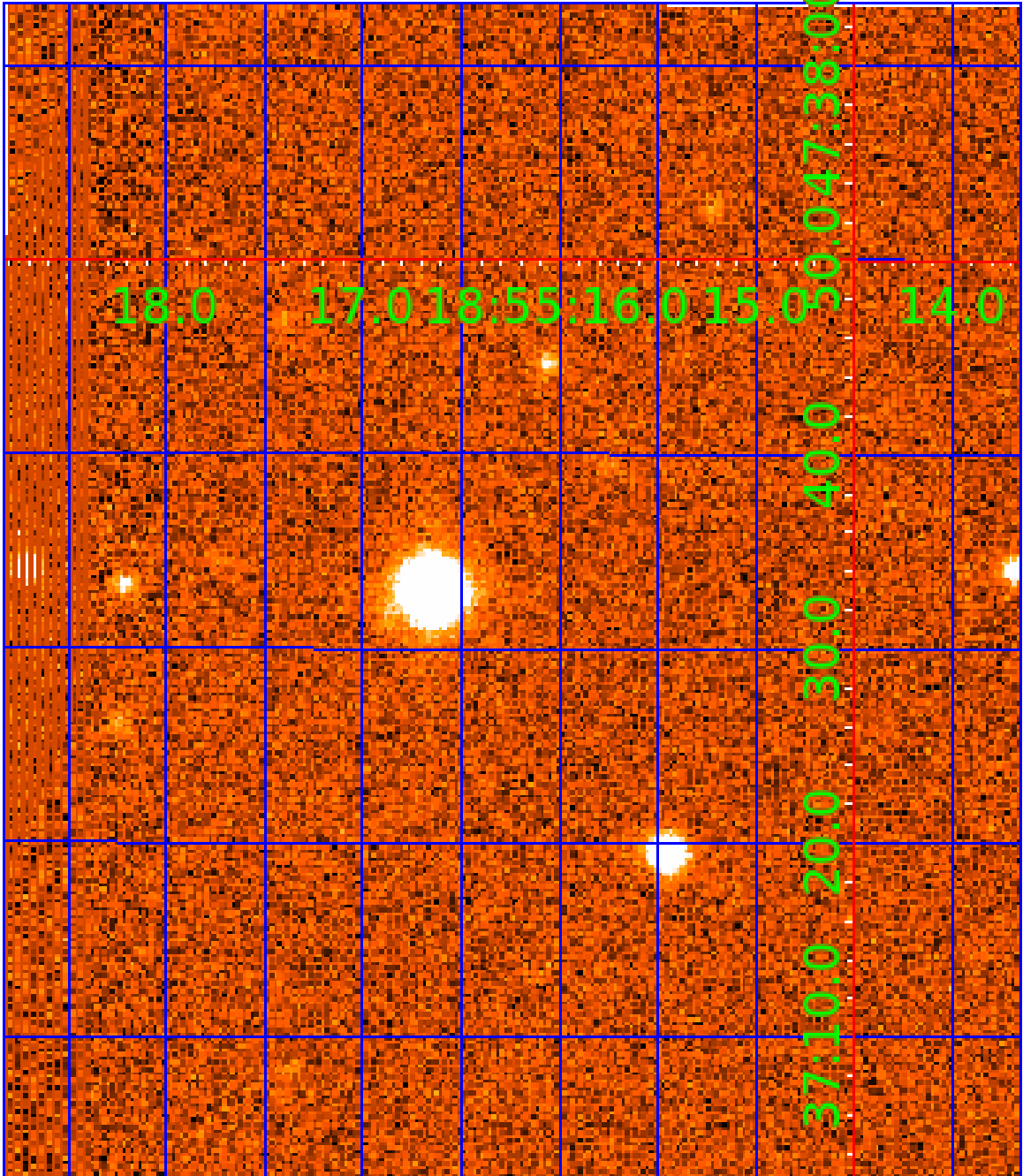


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UKIRT Image

Declination



KIC 010453475

Q1-17 DR25 TCE Parameters

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Robovetter Results

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010453475-02	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
010453475-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
010453475-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

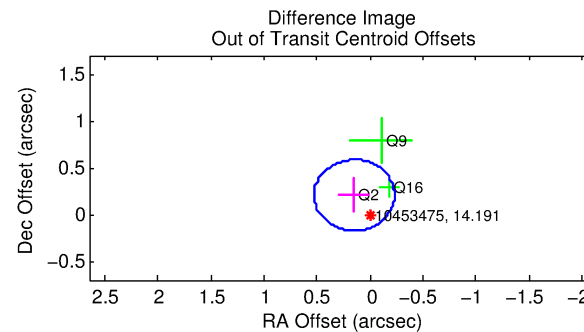
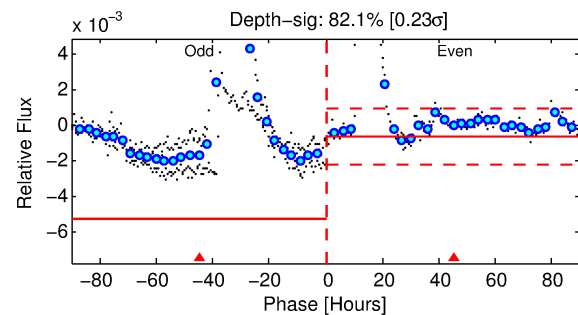
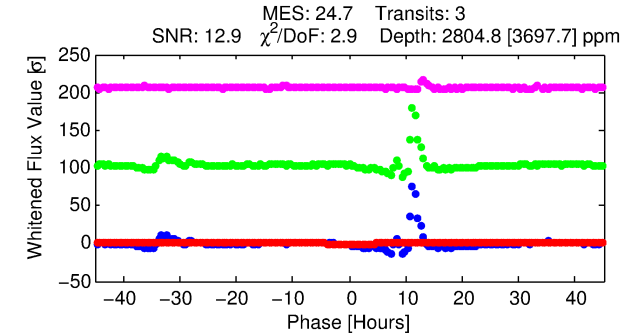
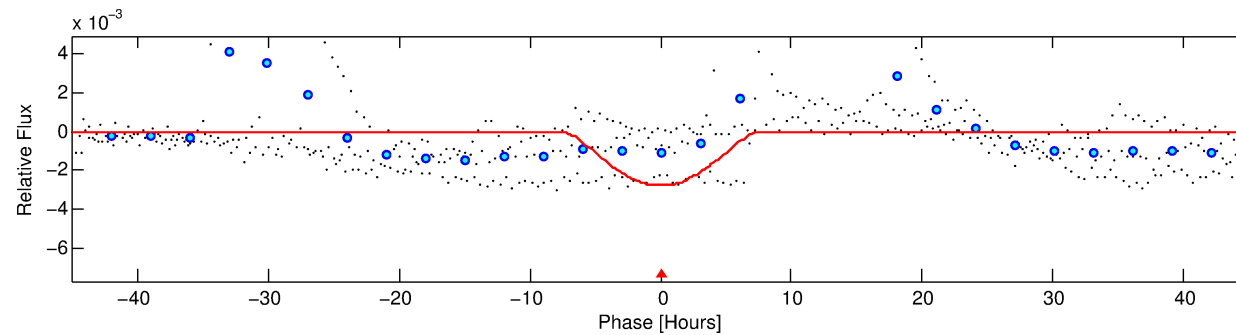
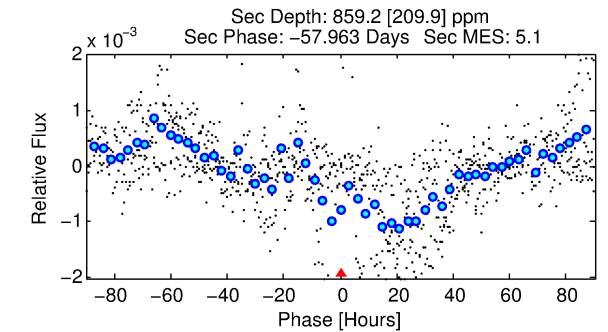
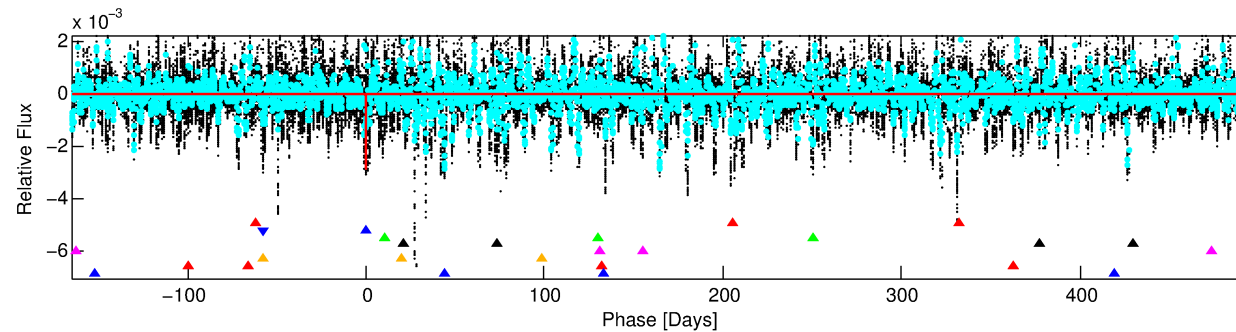
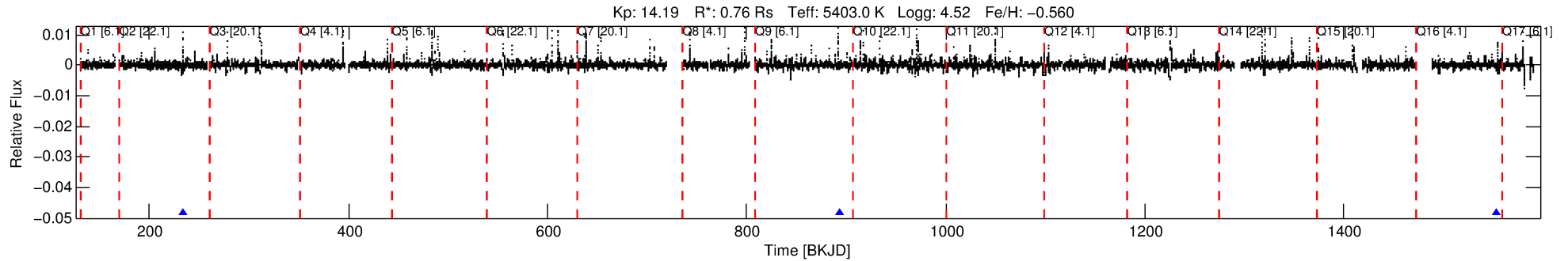
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010453475-02

No Significant Match Found

DV One-Page Summary

KIC: 10453475 Candidate: 2 of 8 Period: 660.133 d



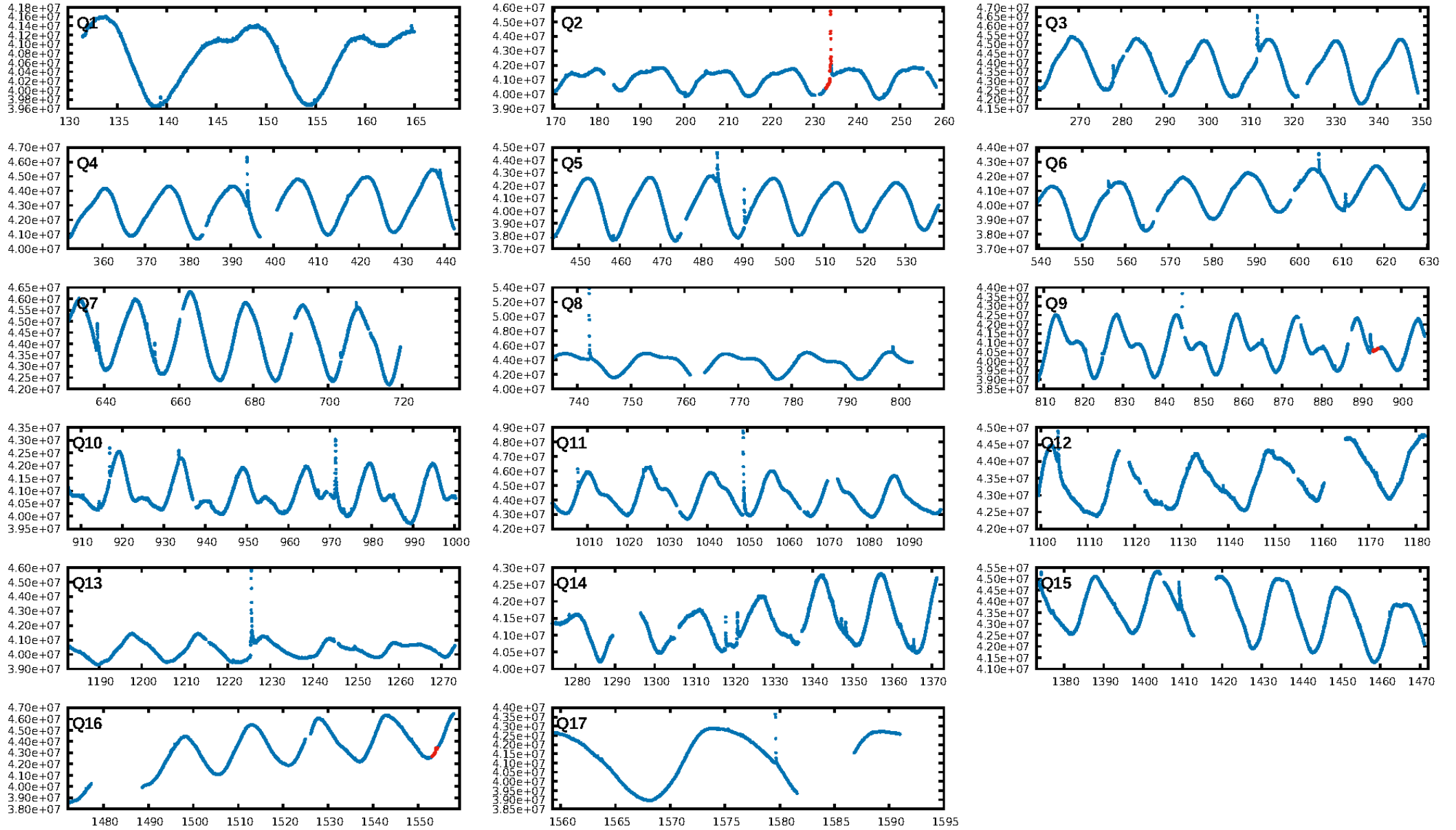
DV Fit Results:

Period = 660.13286 [0.04052] d
Epoch = 233.5000 [0.0490] BKJD
Rp/R* = 0.0919 [0.4215]
a/R* = 147.01 [133.60]
b = 1.00 [0.52]
Seff = 0.25 [0.06]
Teff = 181 [10] K
Rp = 7.63 [35.02] Re
a = 1.3204 [0.1563] AU
Ag = 14145.14 [129807.84] [0.11σ]
Teffp = 3051 [6999] K [0.41σ]

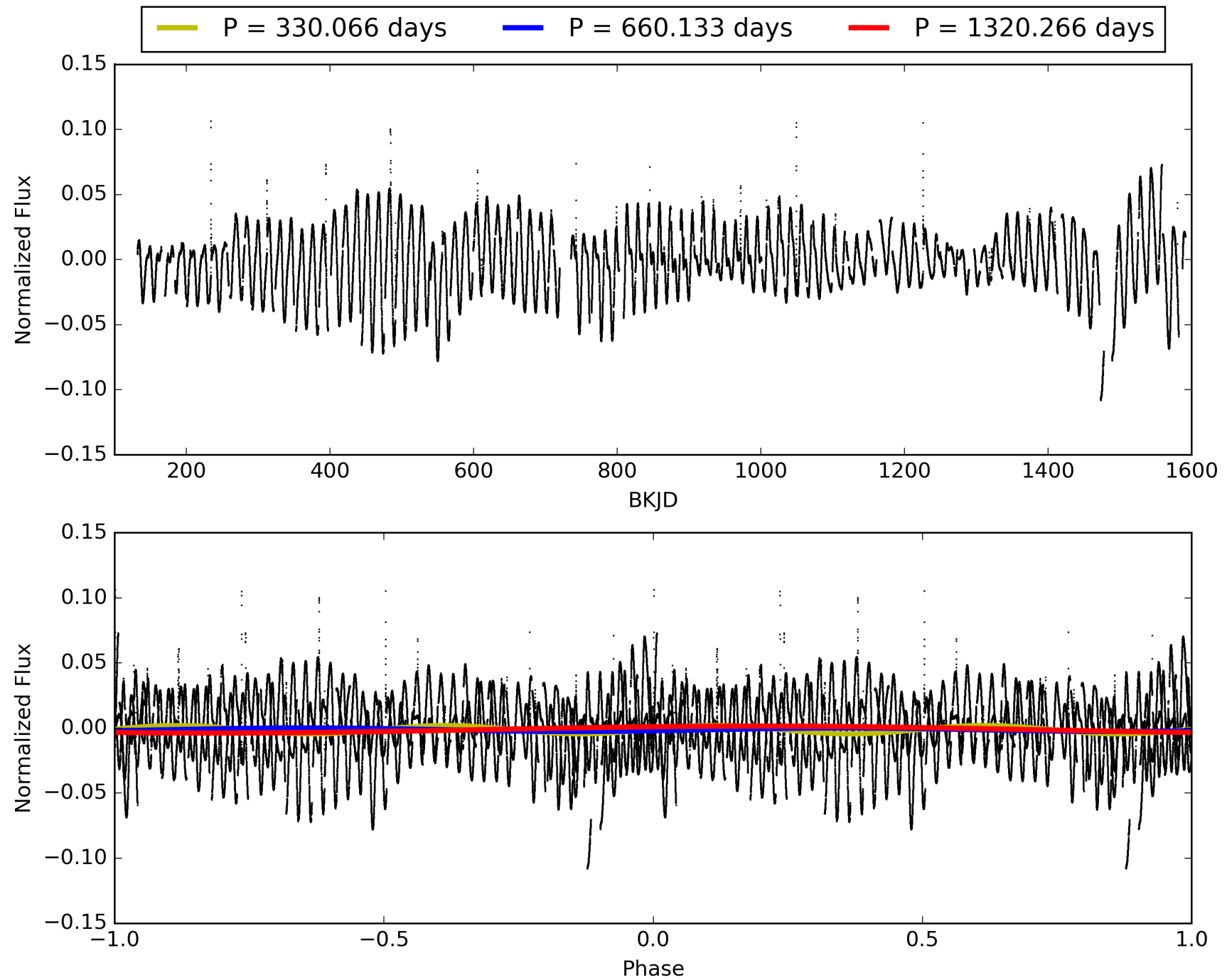
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [89.40σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.508
Centroid-sig: 17.3%
Centroid-so: 0.351 arcsec [1.78σ]
OotOffset-rm: 0.254 arcsec [2.01σ]
KicOffset-rm: 0.200 arcsec [1.55σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 010453475-02, PDC Light Curves

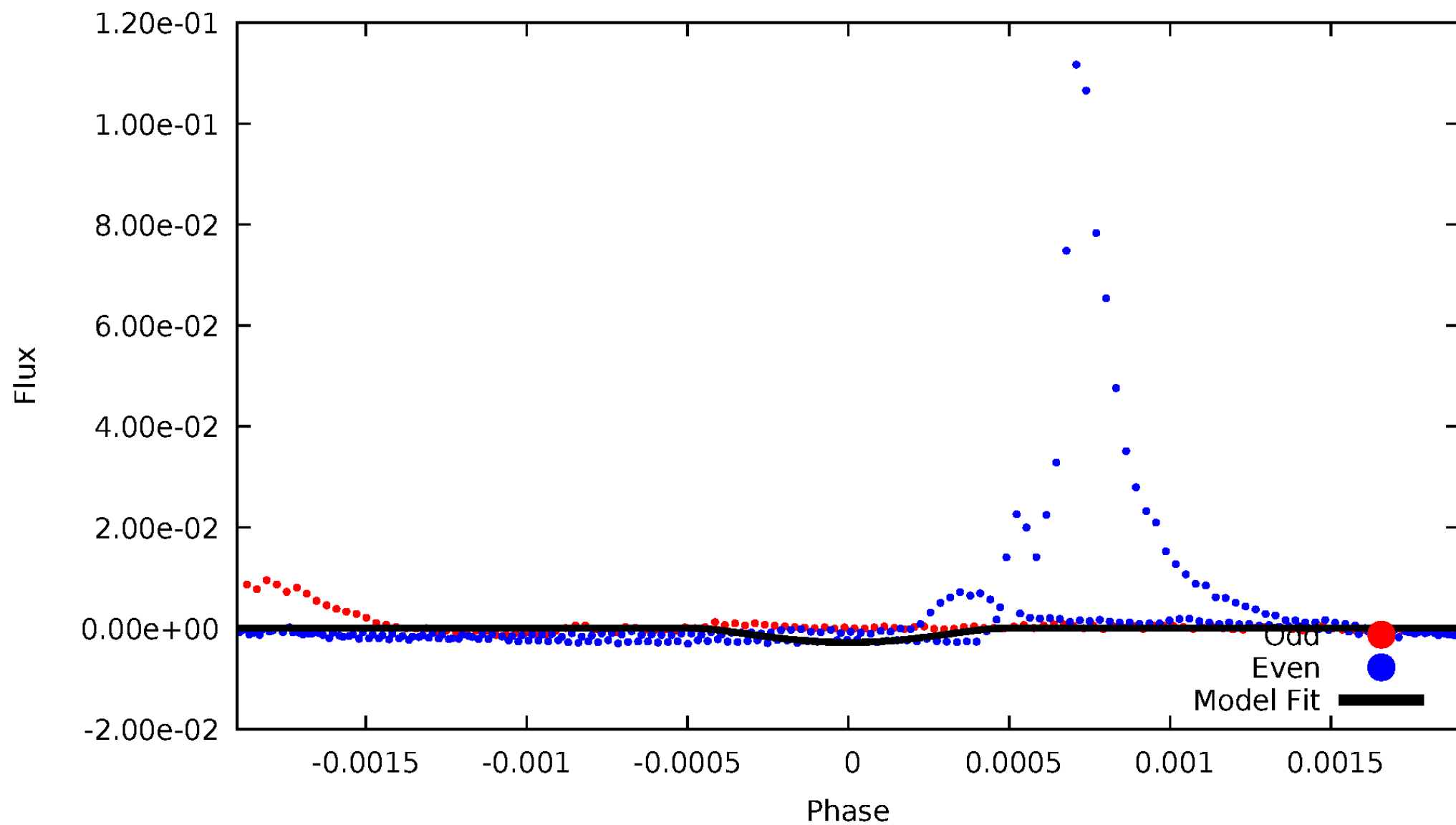


TCE 010453475-02



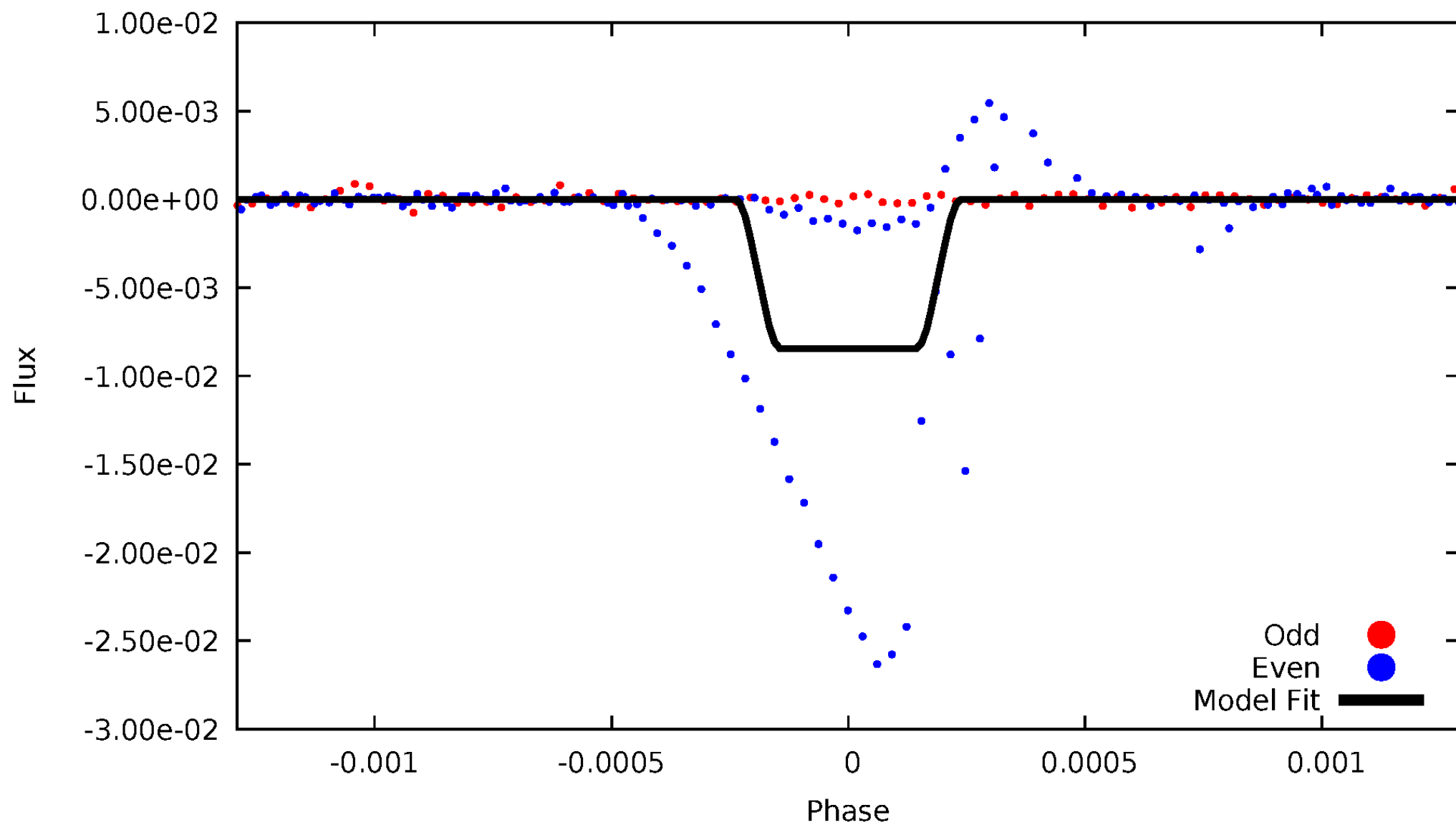
DV Odd/Even

TCE 010453475-02



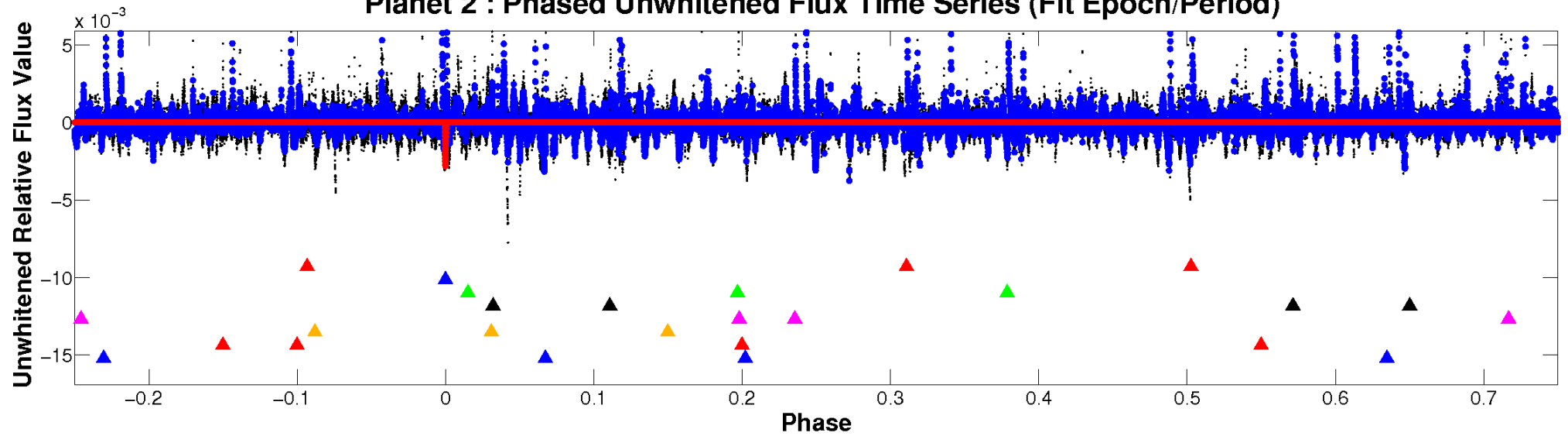
ALT Odd/Even

TCE 010453475-02

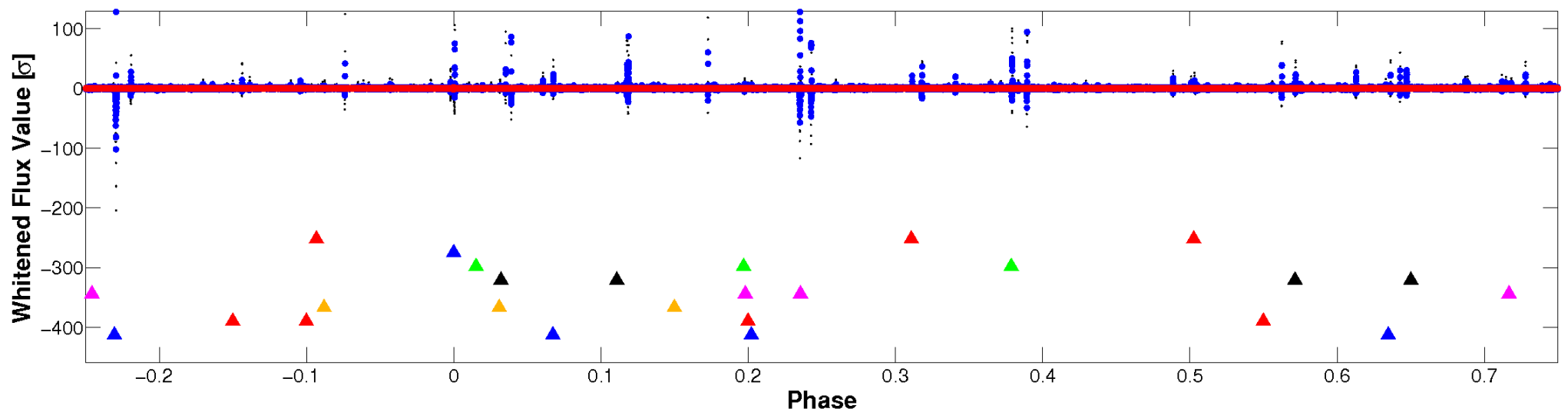


Non-Whitened Vs. Whitened Light Curve

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

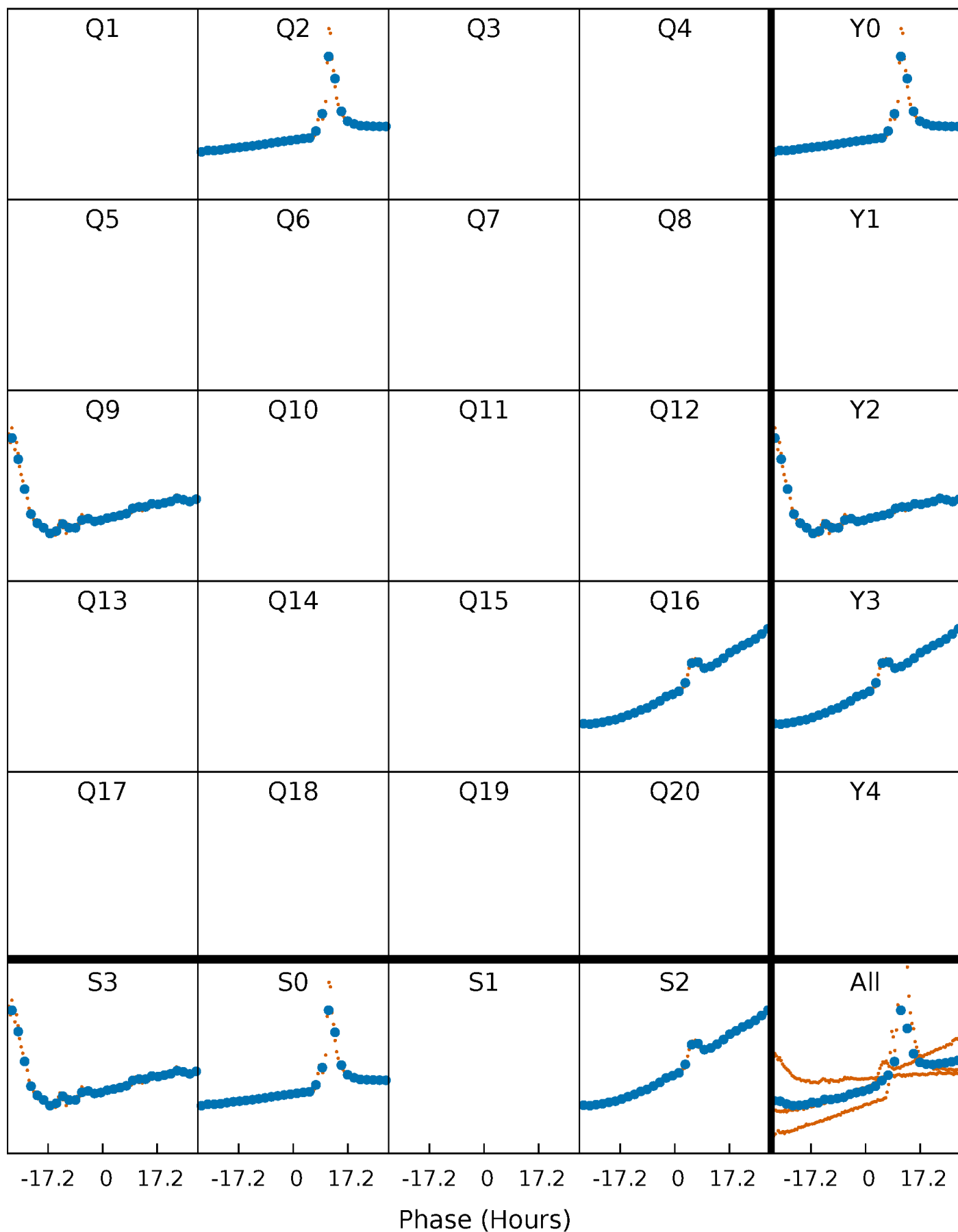


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



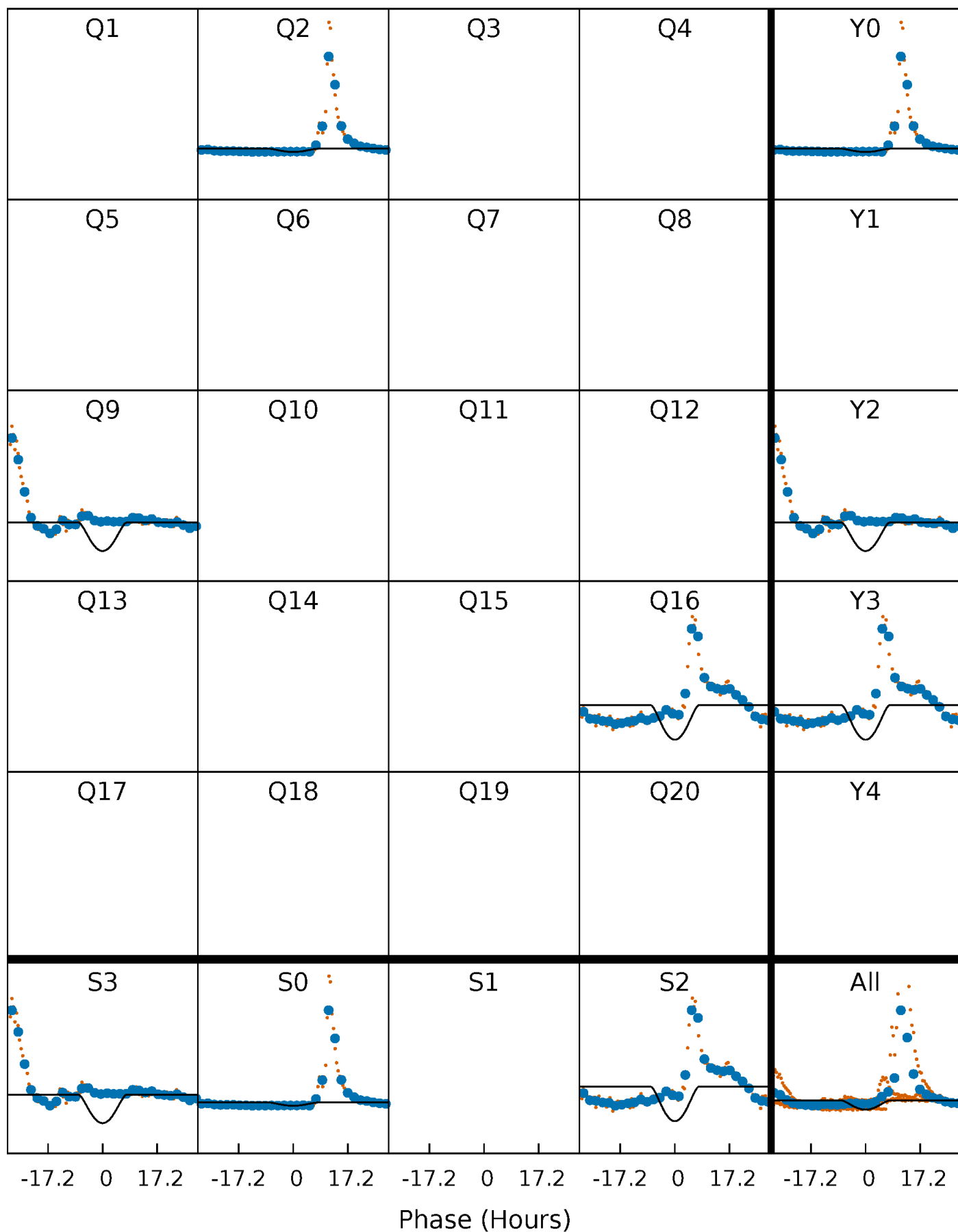
PDC Quarter-Phased Transit Curves

TCE 010453475-02 P=660.132862 Days $T_0=233.500041$ (BKJD)



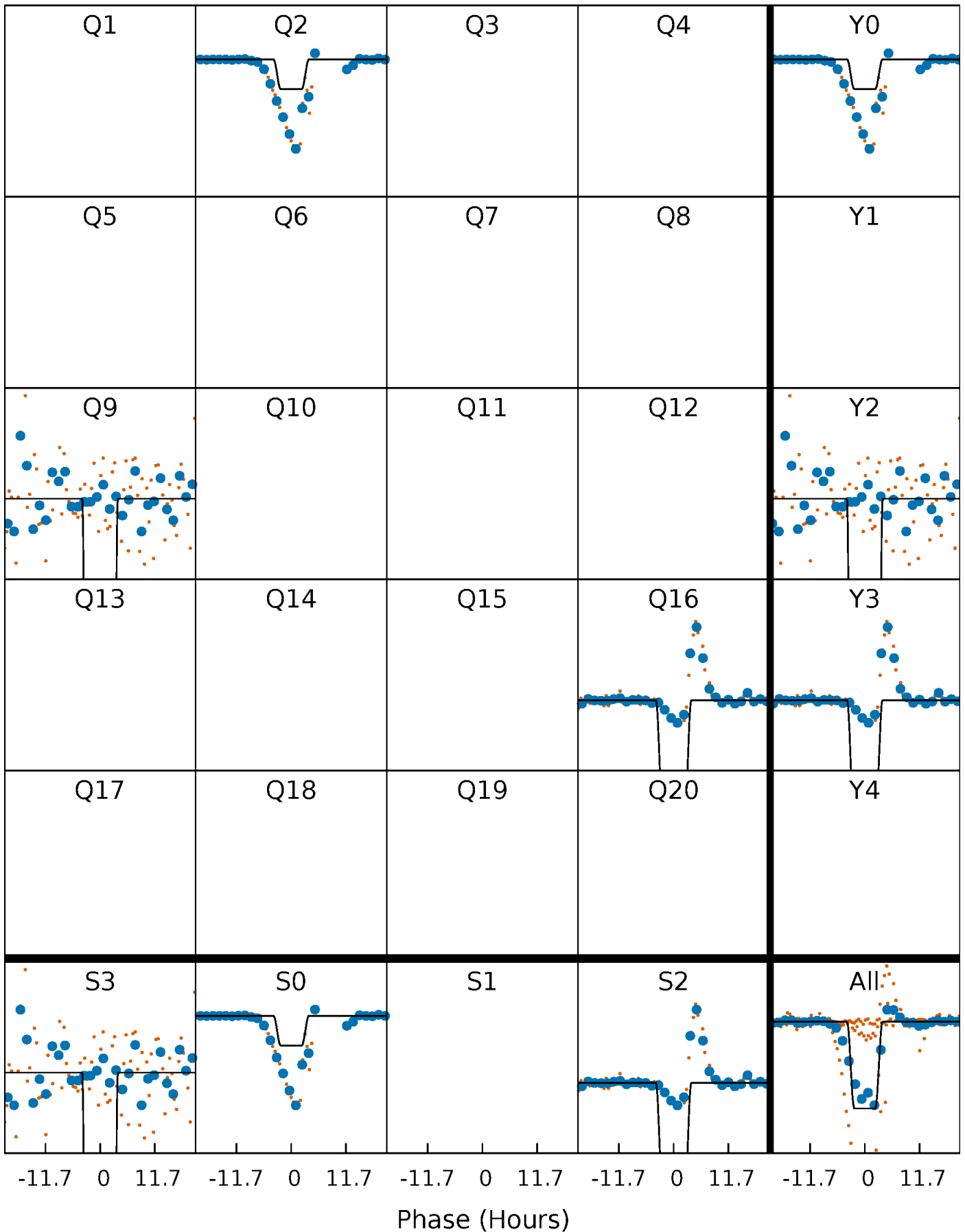
DV Quarter-Phased Transit Curves

TCE 010453475-02 P=660.132862 Days $T_0=233.500041$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

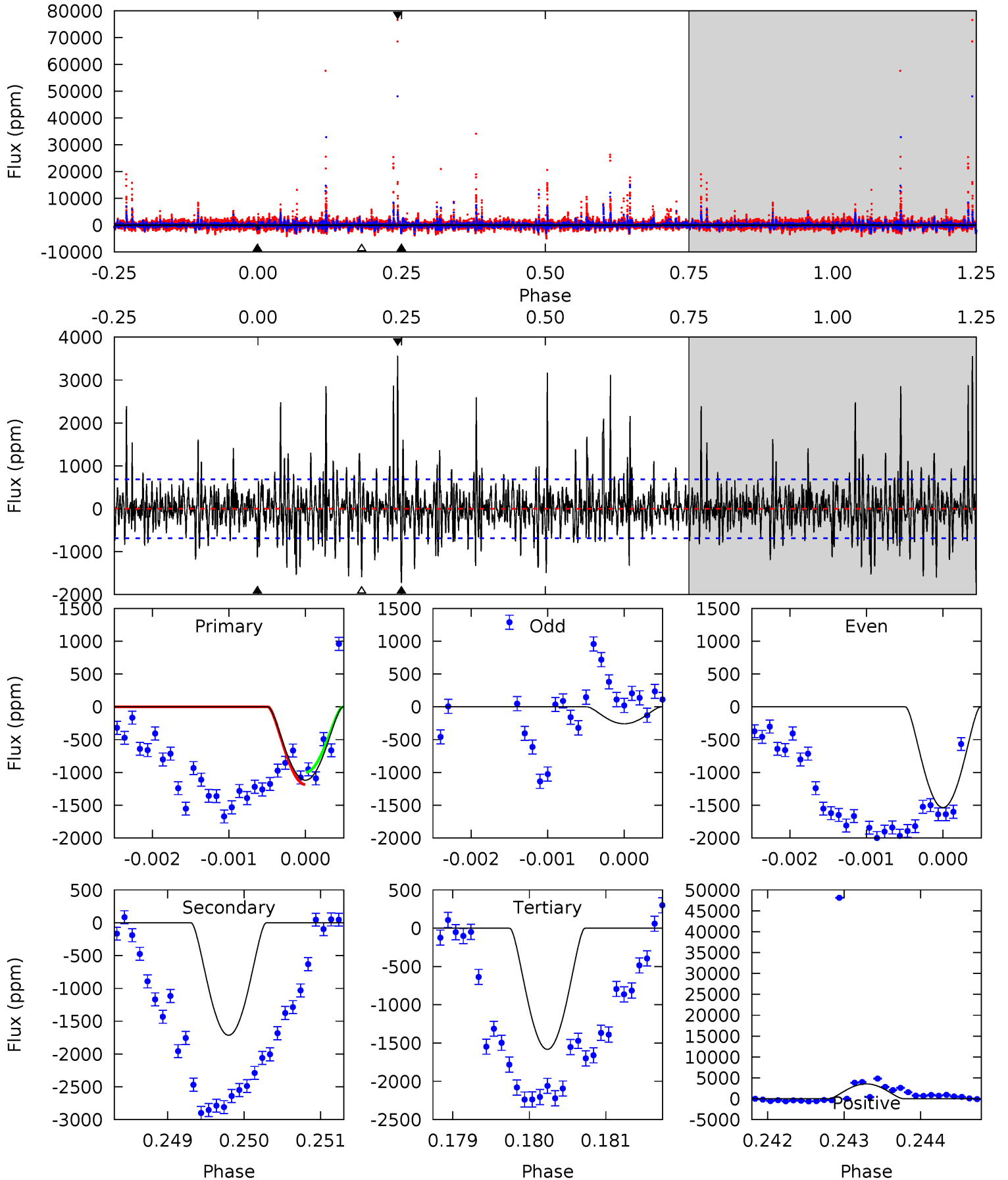
TCE 010453475-02 P=660.038044 Days $T_0=233.723035$ (BKJD)



DV Model-Shift Uniqueness Test

010453475-02, P = 660.132862 Days, E = 233.500041 Days

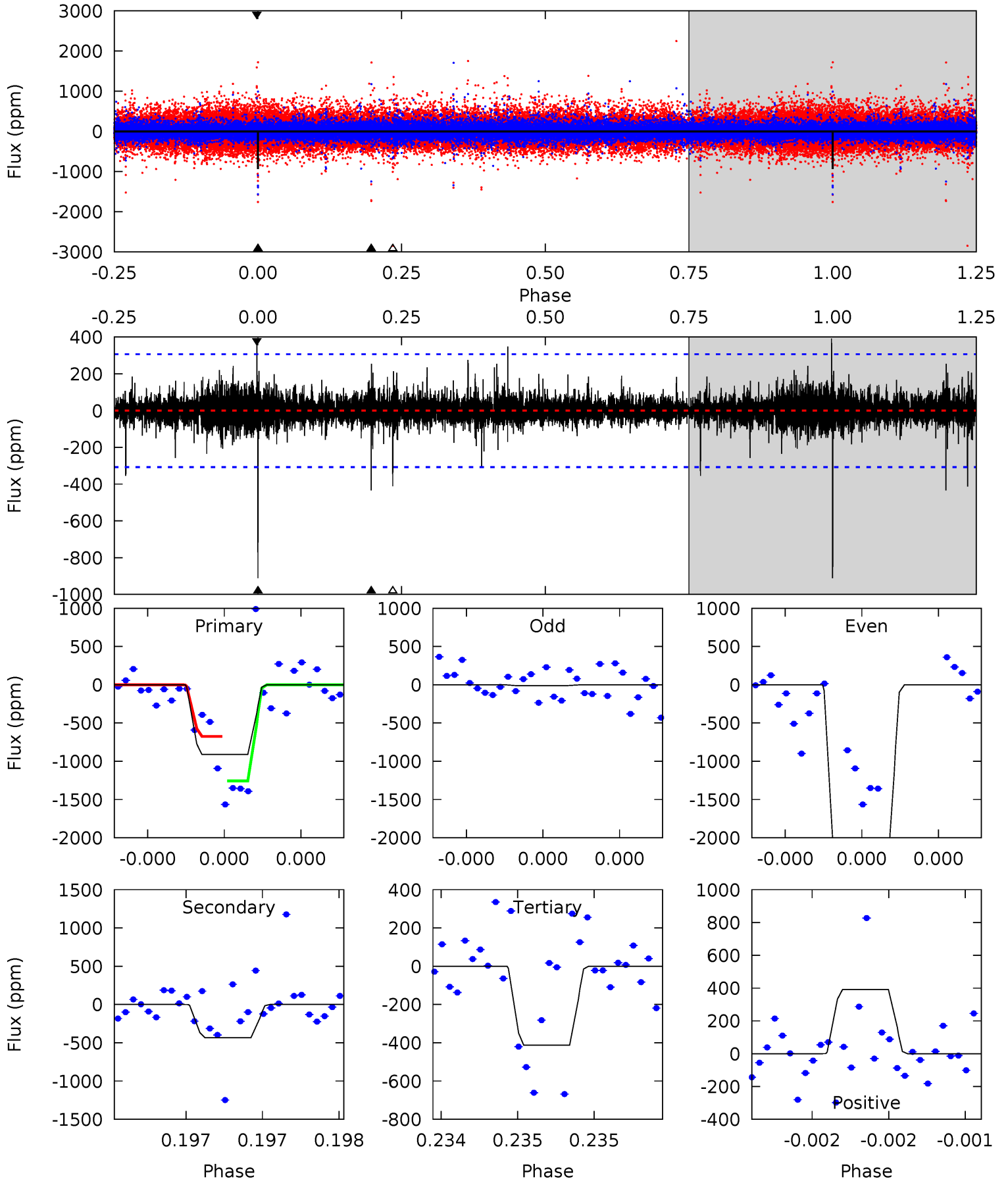
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.90	13.6	12.6	28.2	5.45	3.30	3.62	-3.68	-19.3	1.05	-14.6	2.70	-5.57	0.67	0.72



Alt Model-Shift Uniqueness Test

010453475-02, P = 660.038044 Days, E = 233.723035 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	7.91	7.50	7.11	5.59	3.50	0.77	9.07	9.46	0.41	0.80	23.2	6.58	0.30	0



Stellar Parameters For KIC 010453475

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5403^{+162}_{-146}	$4.523^{+0.105}_{-0.086}$	$-0.560^{+0.350}_{-0.300}$	$0.761^{+0.099}_{-0.090}$	$0.704^{+0.094}_{-0.040}$	$2.253^{+0.987}_{-0.577}$
	+3%/-3%	+2%/-2%	+62%/-54%	+13%/-12%	+13%/-6%	+44%/-26%
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 010453475-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1714 ± 126	$26.63^{+27.93}_{-18.79}$	253^{+11}_{-11}	2716^{+1163}_{-420}	2408^{+24092}_{-1839}
Alt.	-435 ± 55	$27.40^{+27.25}_{-18.05}$	253^{+11}_{-11}	2278^{+750}_{-308}	581^{+4297}_{-438}

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 $A_{obs} \gg 1.0$

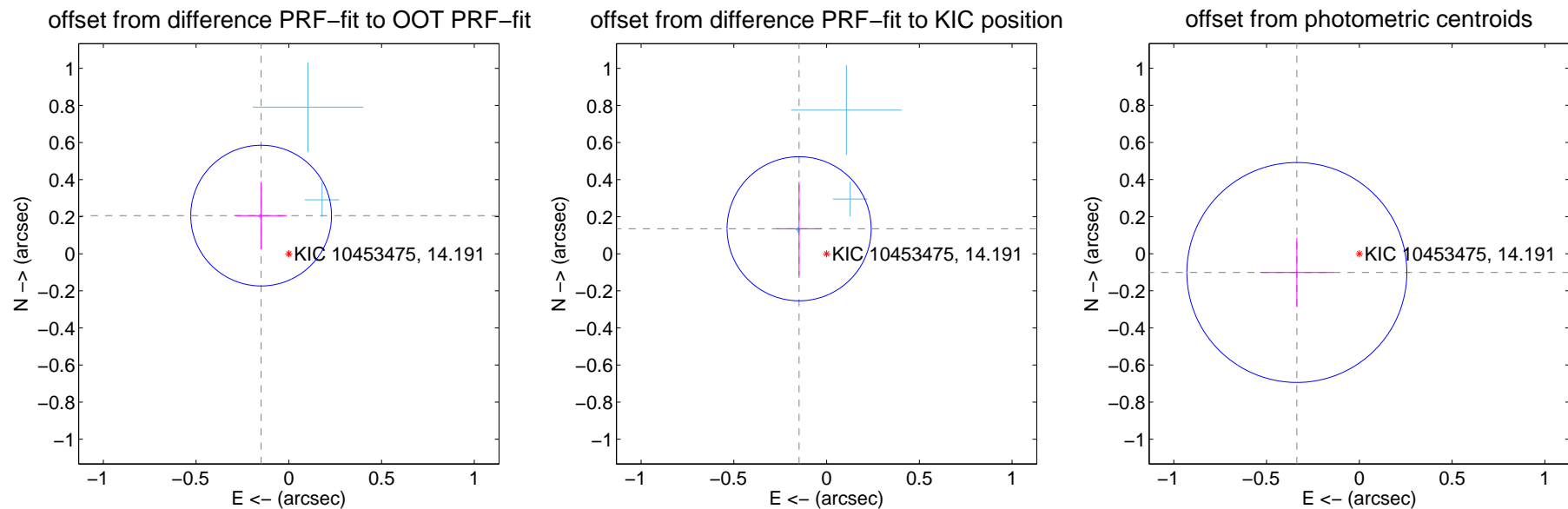
DV Centroid Data

Supplemental centroid analysis for 010453475-02. Kepler magnitude: 14.19. Transit SNR 12.88

There are 3 quarters with good PRF difference image offsets

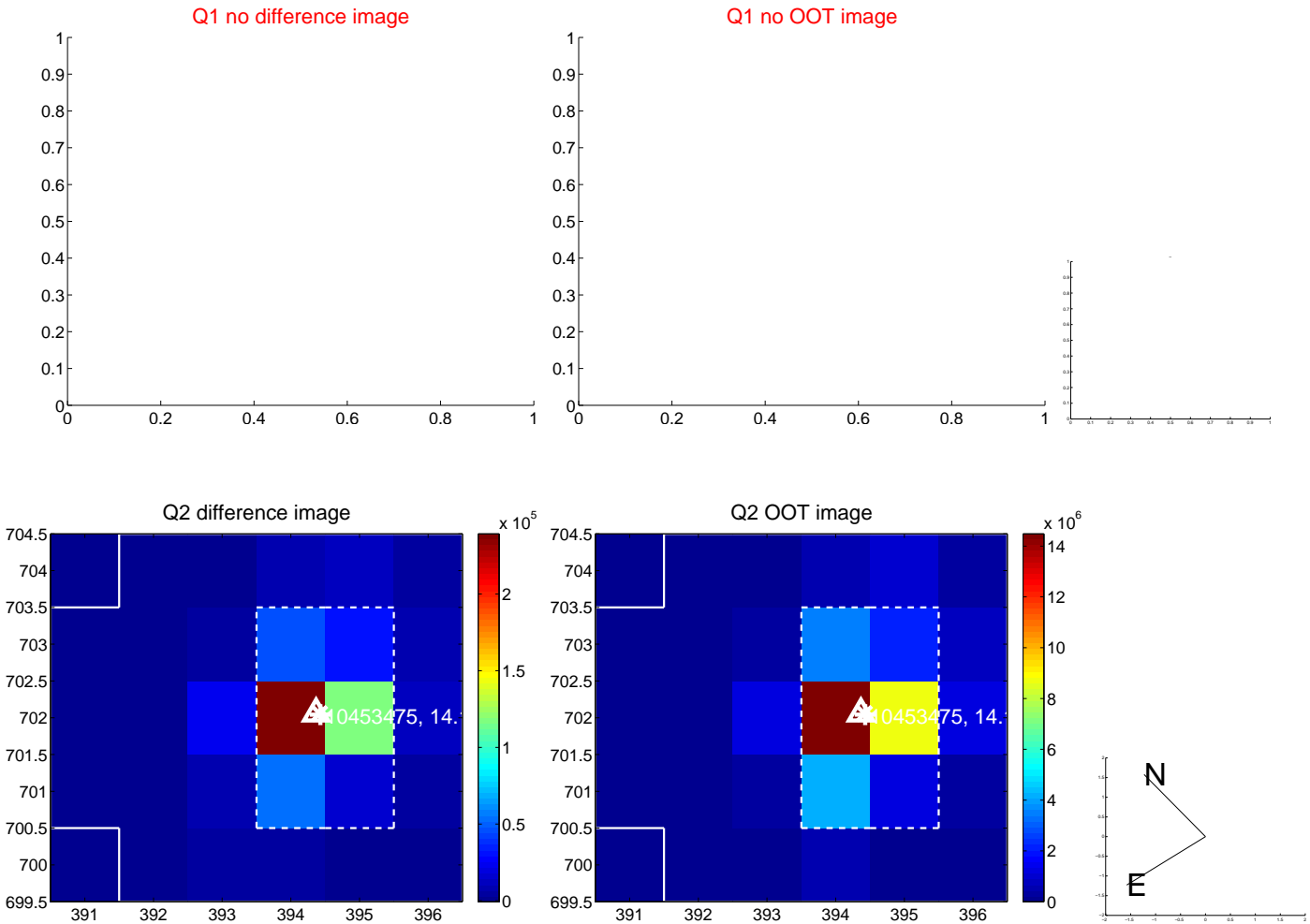
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.254 ± 0.126	2.01	0.149 ± 0.139	0.206 ± 0.181
PRF-fit source offset from KIC position	0.200 ± 0.129	1.55	0.148 ± 0.123	0.135 ± 0.252
photometric centroid source offset	0.35 ± 0.20	1.78	0.34 ± 0.20	-0.10 ± 0.19



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.

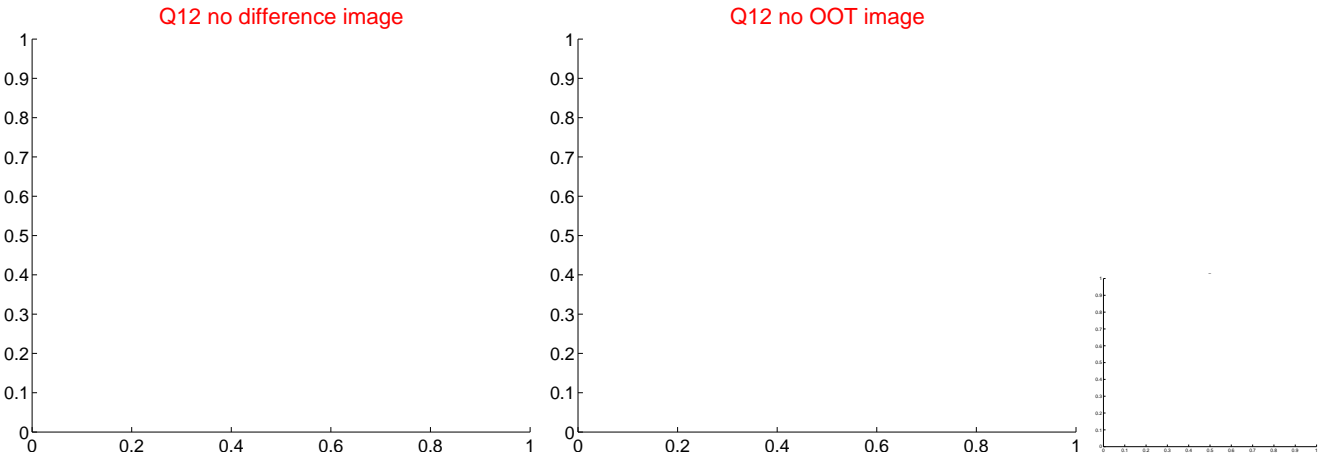
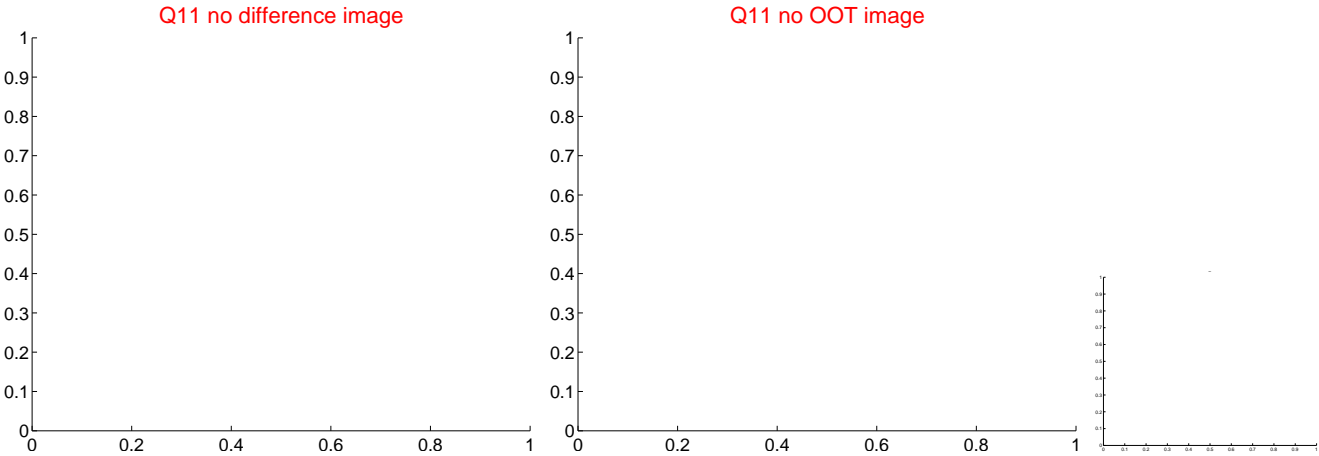
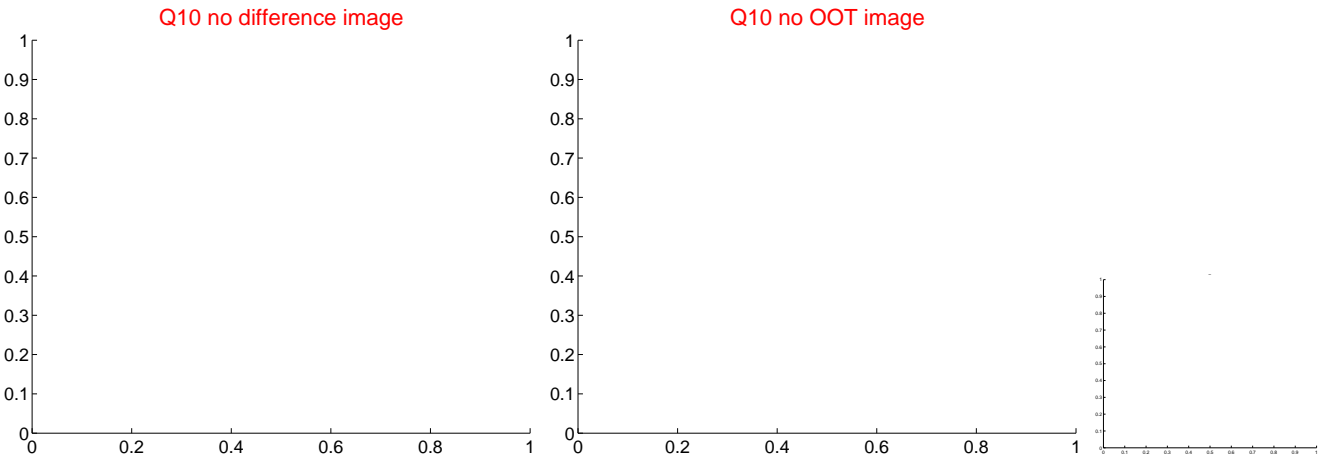
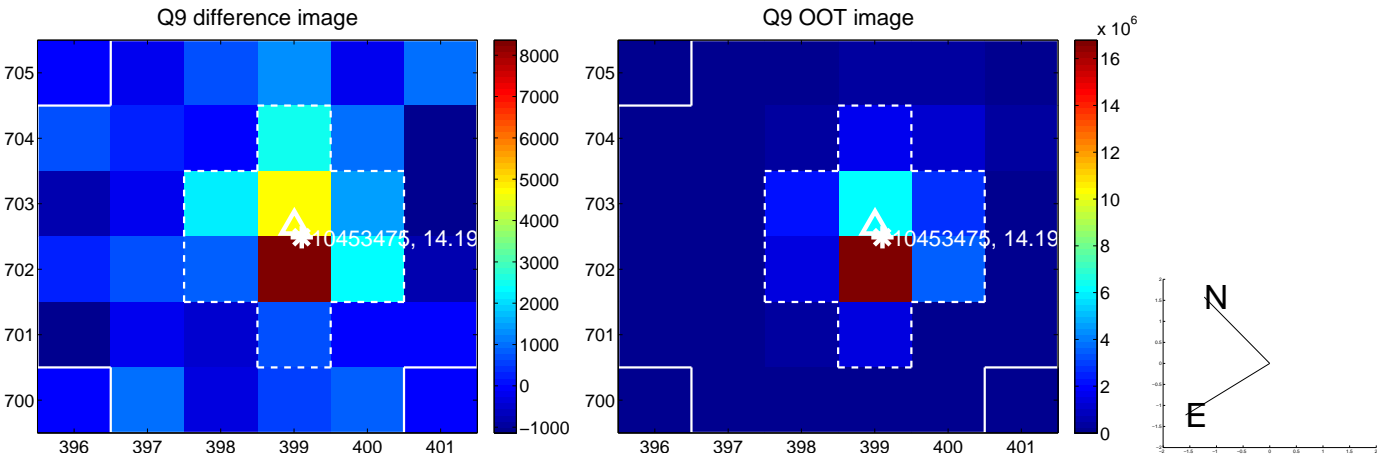
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



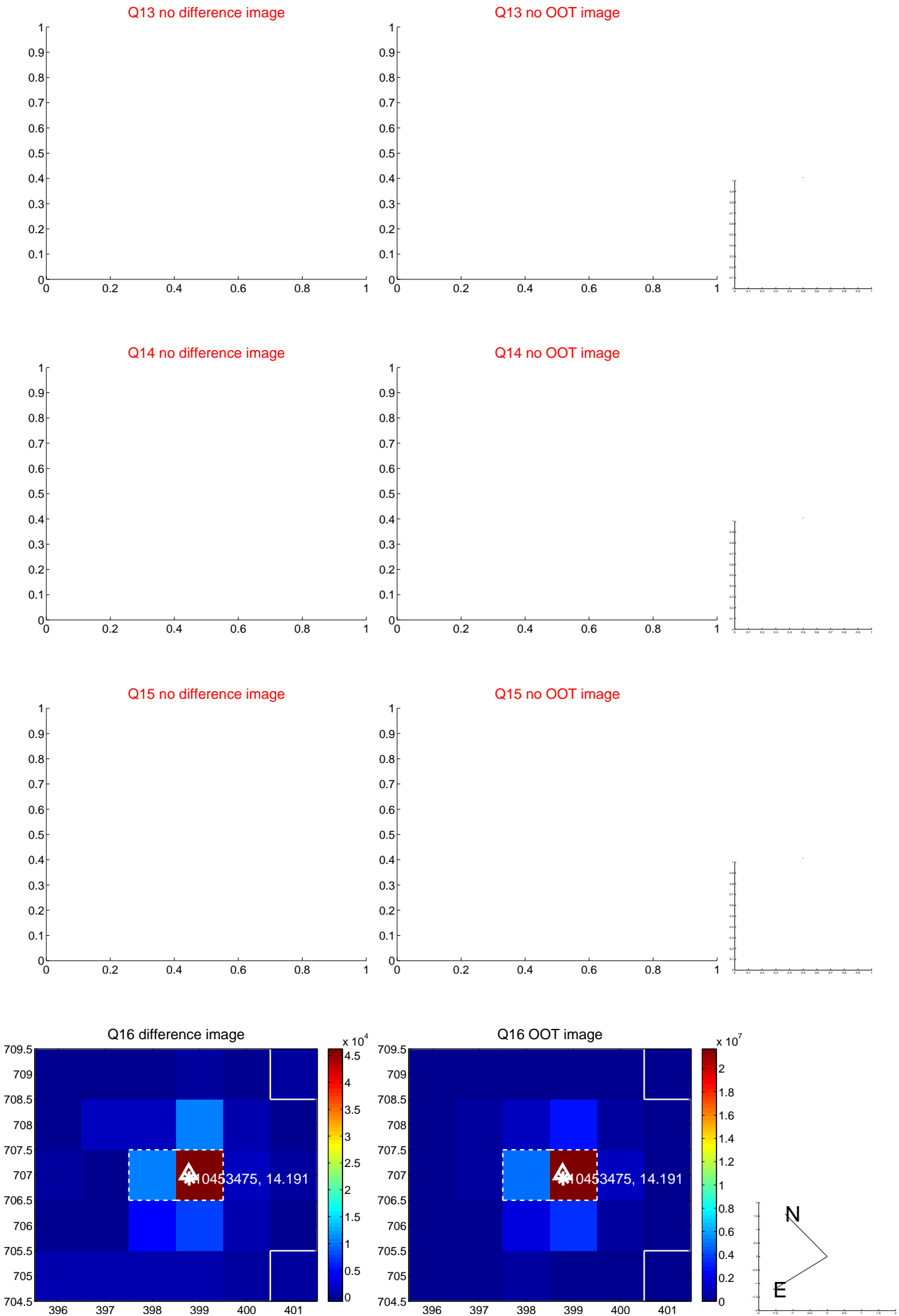
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



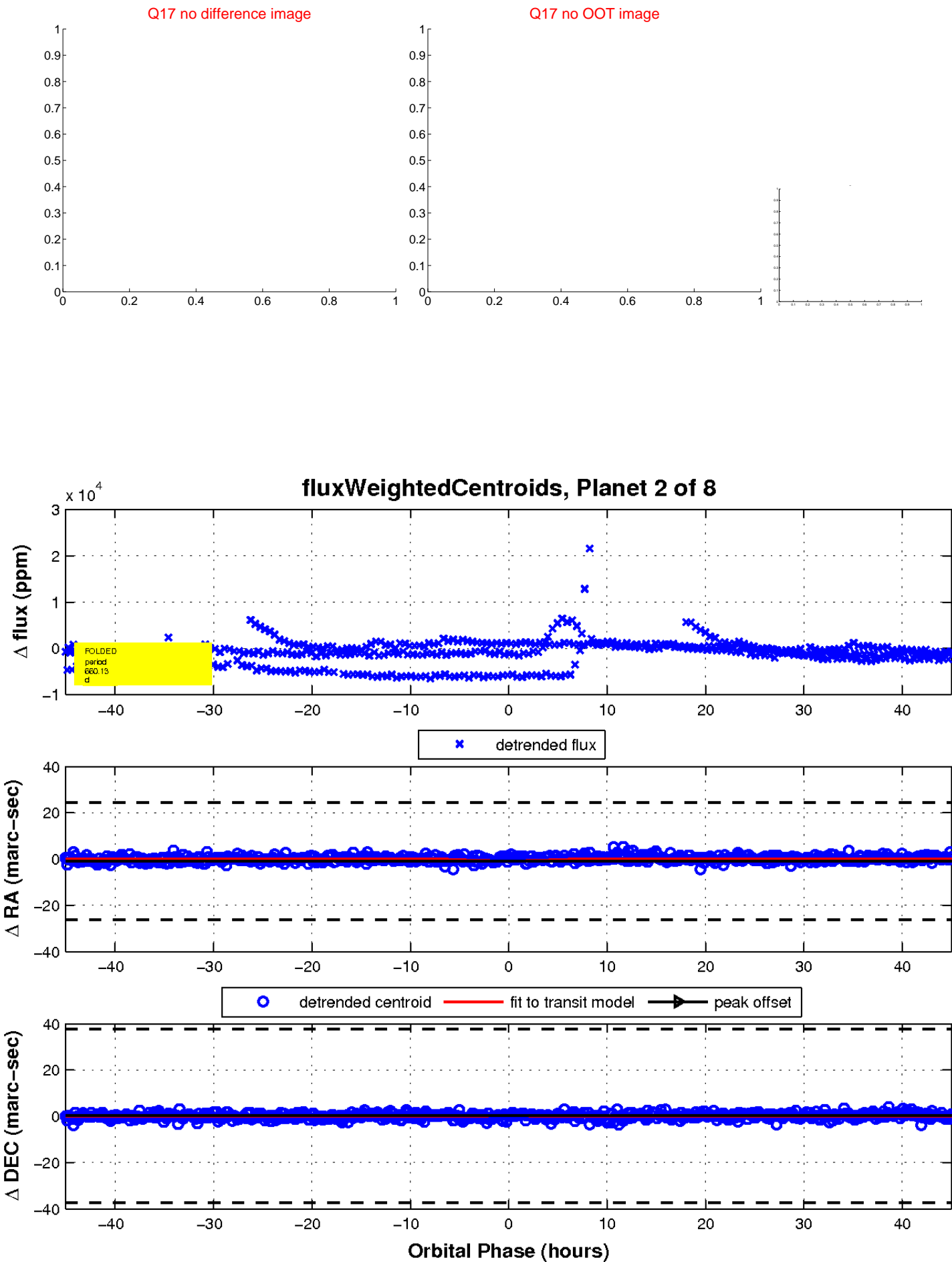
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

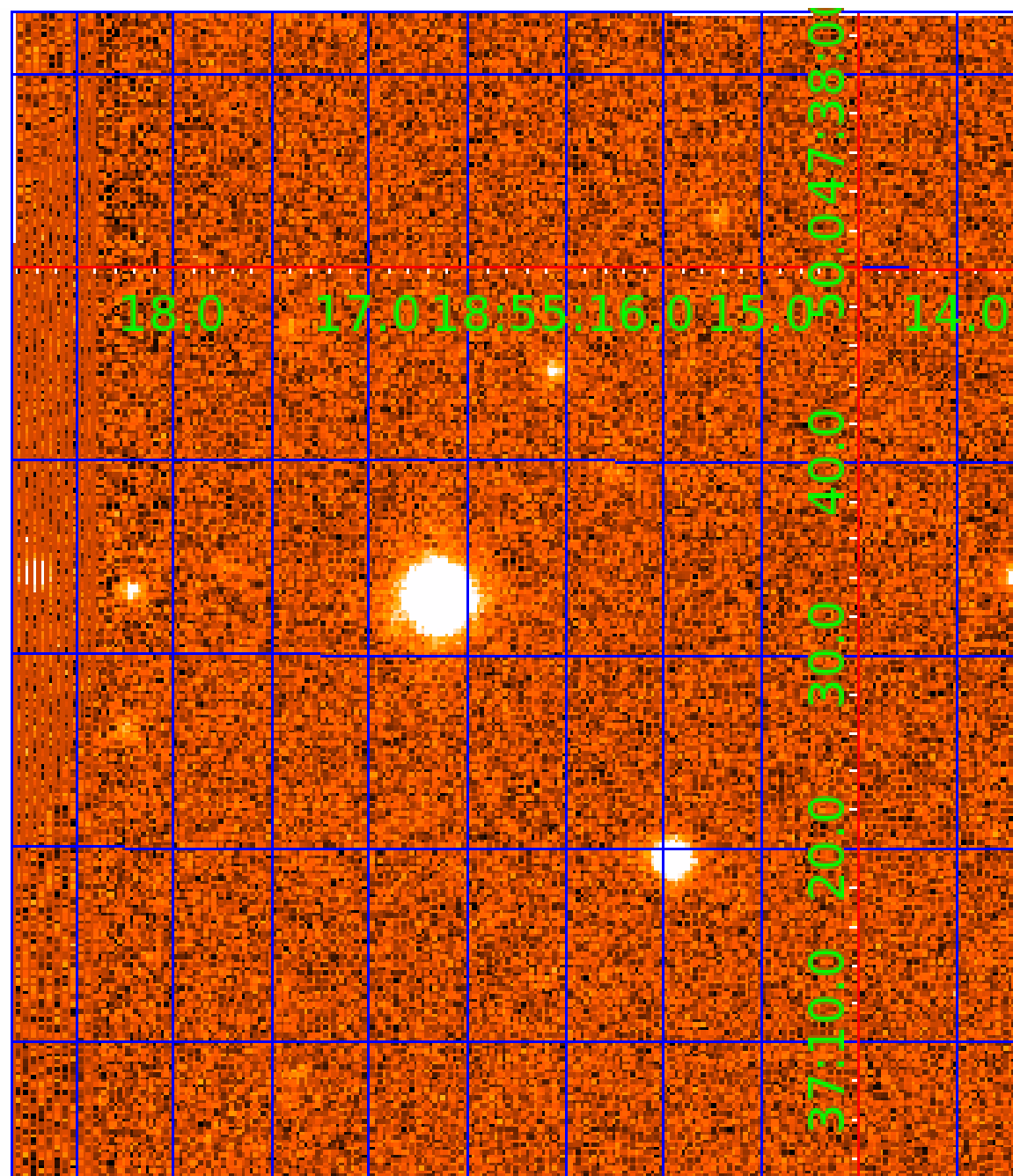


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010453475

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})
010453475-01	OBS	No	393.378268	438.677130	798.2	5.765	31.5	5.1	0.76	5403	2.58	0.51
010453475-02	OBS	No	660.132863	233.500041	2804.8	15.043	24.7	12.9	0.76	5403	7.63	0.25
010453475-03	OBS	No	540.142084	483.482529	856.9	11.546	26.8	5.4	0.76	5403	2.33	0.33
010453475-04	OBS	No	356.036989	254.673963	662.6	13.469	19.3	4.6	0.76	5403	2.19	0.58
010453475-05	OBS	No	342.444485	364.224299	1856.1	49.504	13.7	9.1	0.76	5403	3.47	0.61
010453475-06	OBS	No	581.610076	332.422502	1220.2	14.767	20.1	8.1	0.76	5403	2.70	0.30
010453475-08	OBS	No	374.553966	277.965130	1298.4	4.500	14.6	-1.0	0.76	5403	2.71	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010453475-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-02	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
010453475-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
010453475-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

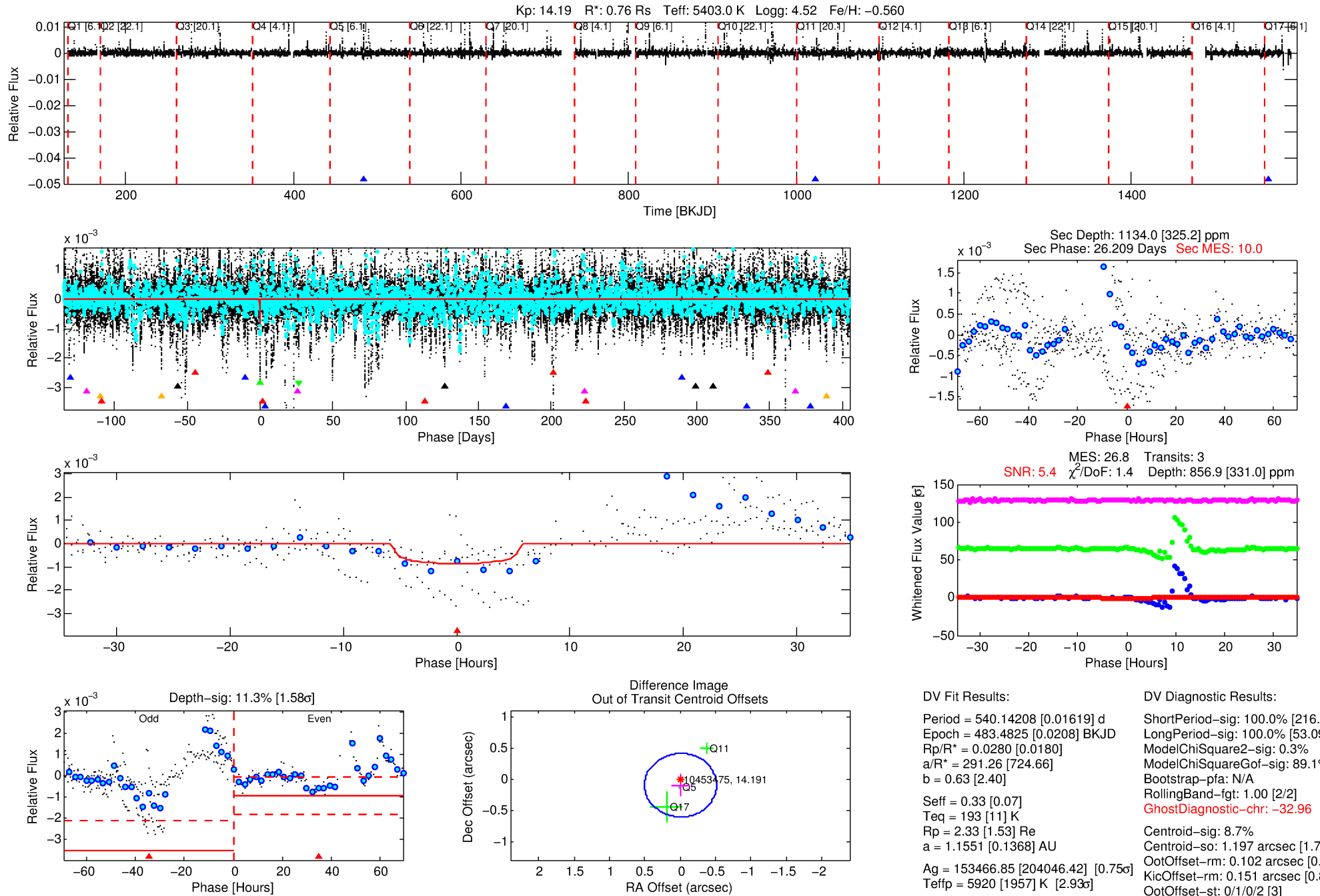
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010453475-03

No Significant Match Found

DV One-Page Summary

KIC: 10453475 Candidate: 3 of 8 Period: 540.142 d



DV Fit Results:

Period = 540.14208 [0.01619] d
Epoch = 483.4825 [0.0208] BKJD
Rp/R* = 0.0280 [0.0180]
a/R* = 291.26 [724.66]
b = 0.63 [2.40]
Seff = 0.33 [0.07]
Teq = 193 [11] K
Rp = 2.33 [1.53] Re
a = 1.1551 [0.1368] AU
Ag = 153466.85 [204046.42] [0.75σ]
Teffp = 5920 [1957] K [2.93σ]

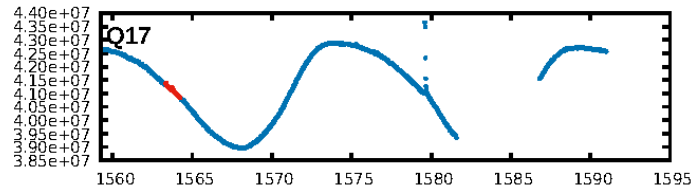
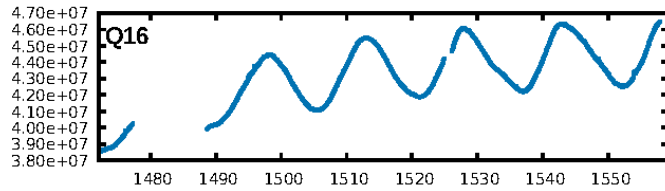
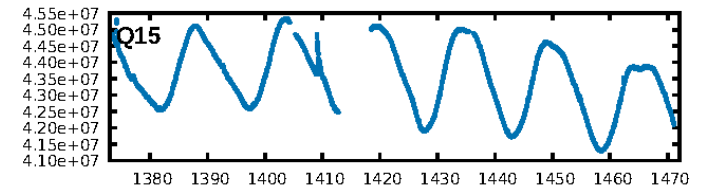
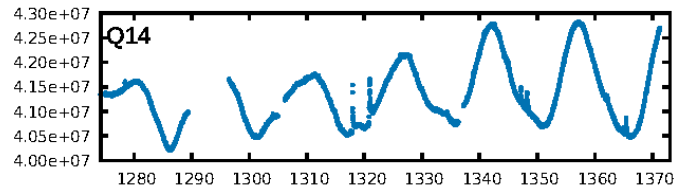
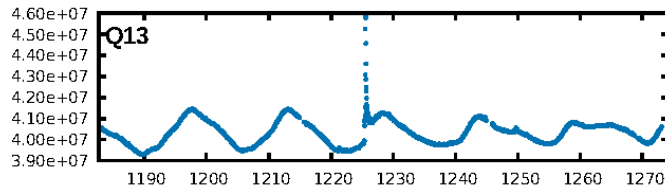
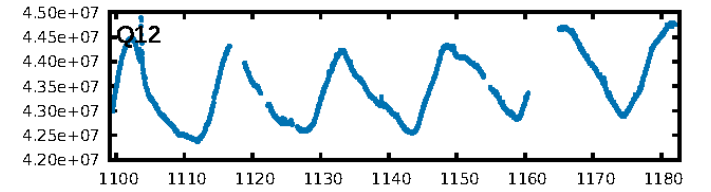
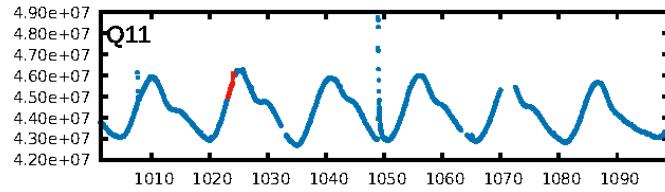
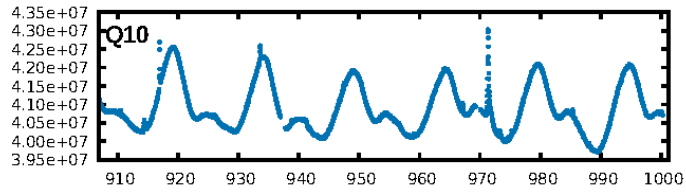
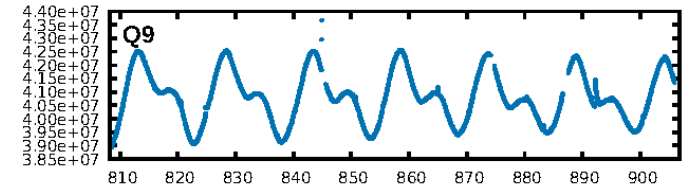
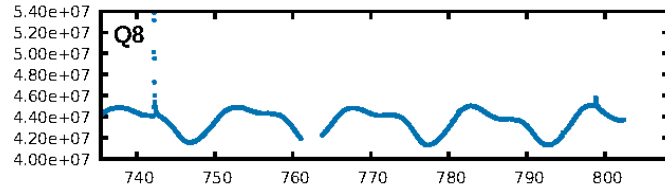
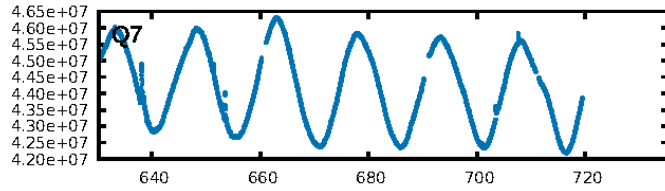
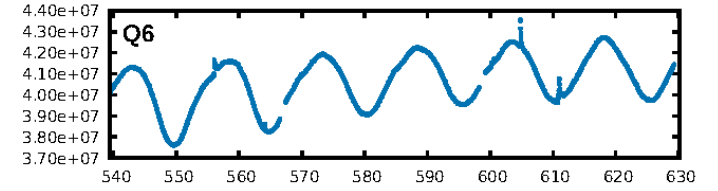
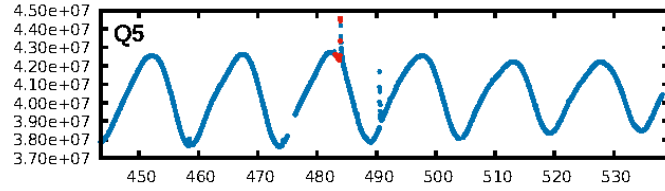
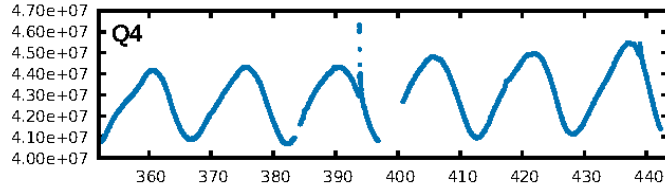
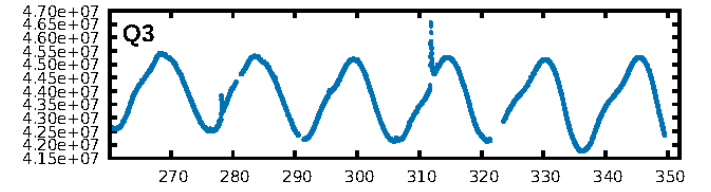
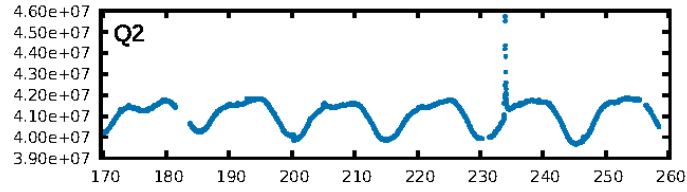
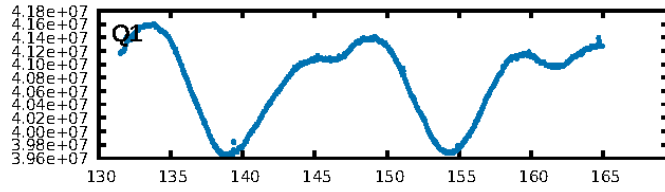
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [216.23σ]
LongPeriod-sig: 100.0% [53.09σ]
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 89.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -32.96
Centroid-sig: 8.7%
Centroid-so: 1.197 arcsec [1.78σ]
OotOffset-rm: 0.102 arcsec [0.60σ]
KicOffset-rm: 0.151 arcsec [0.81σ]
OotOffset-st: 0/1/0/2 [3]
KicOffset-st: 0/1/0/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

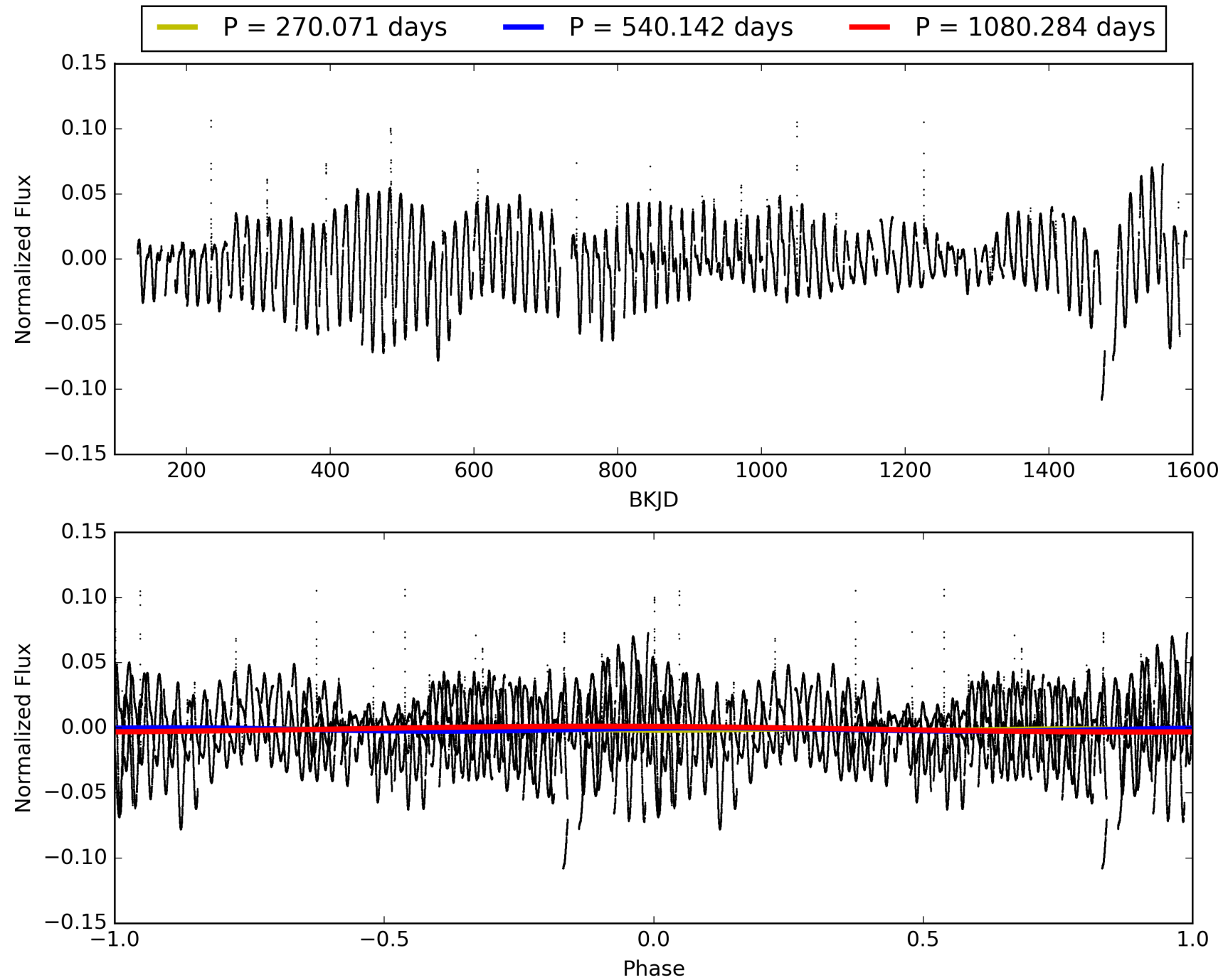
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:08:28 Z

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

TCE 010453475-03, PDC Light Curves

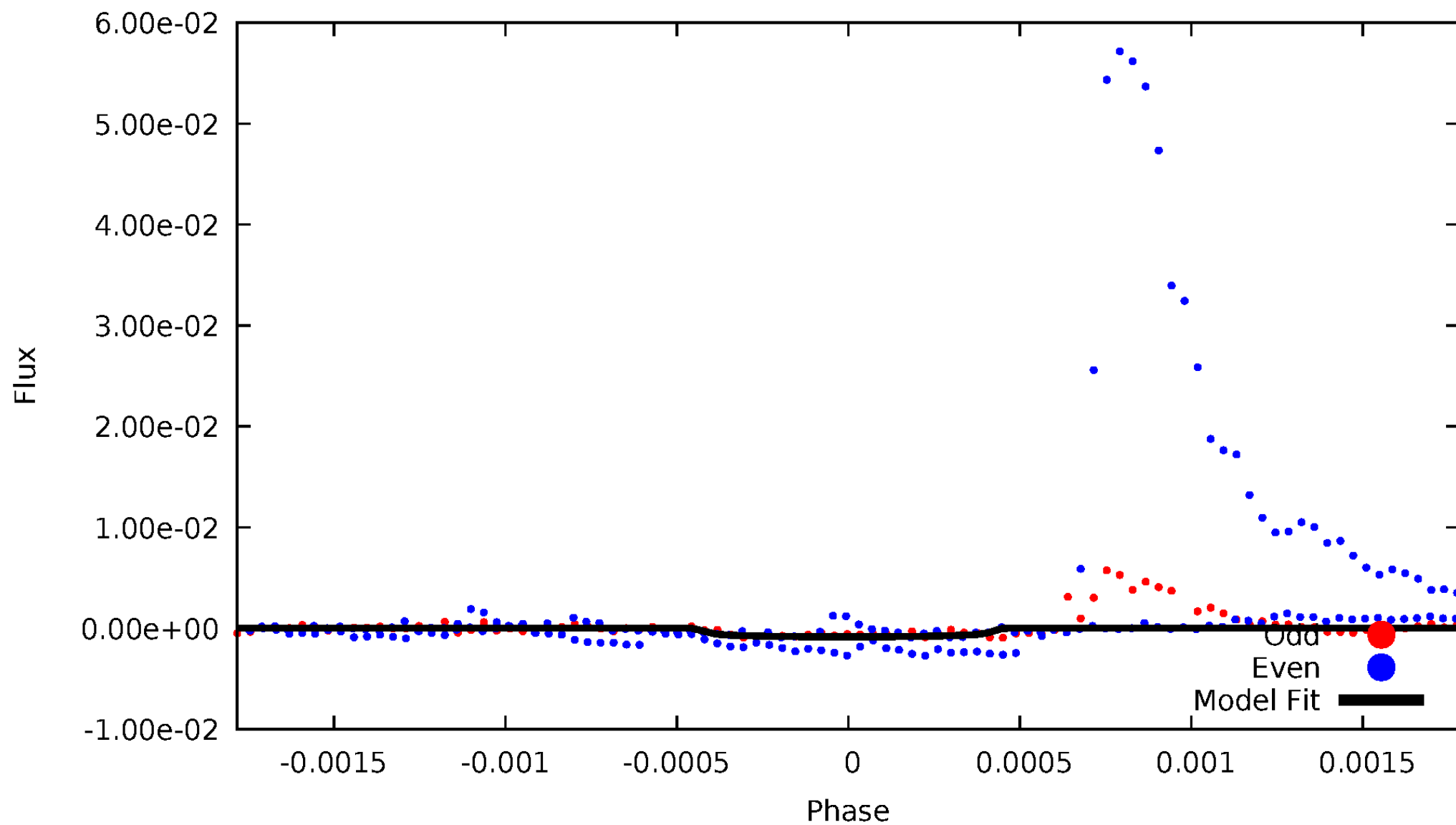


TCE 010453475-03



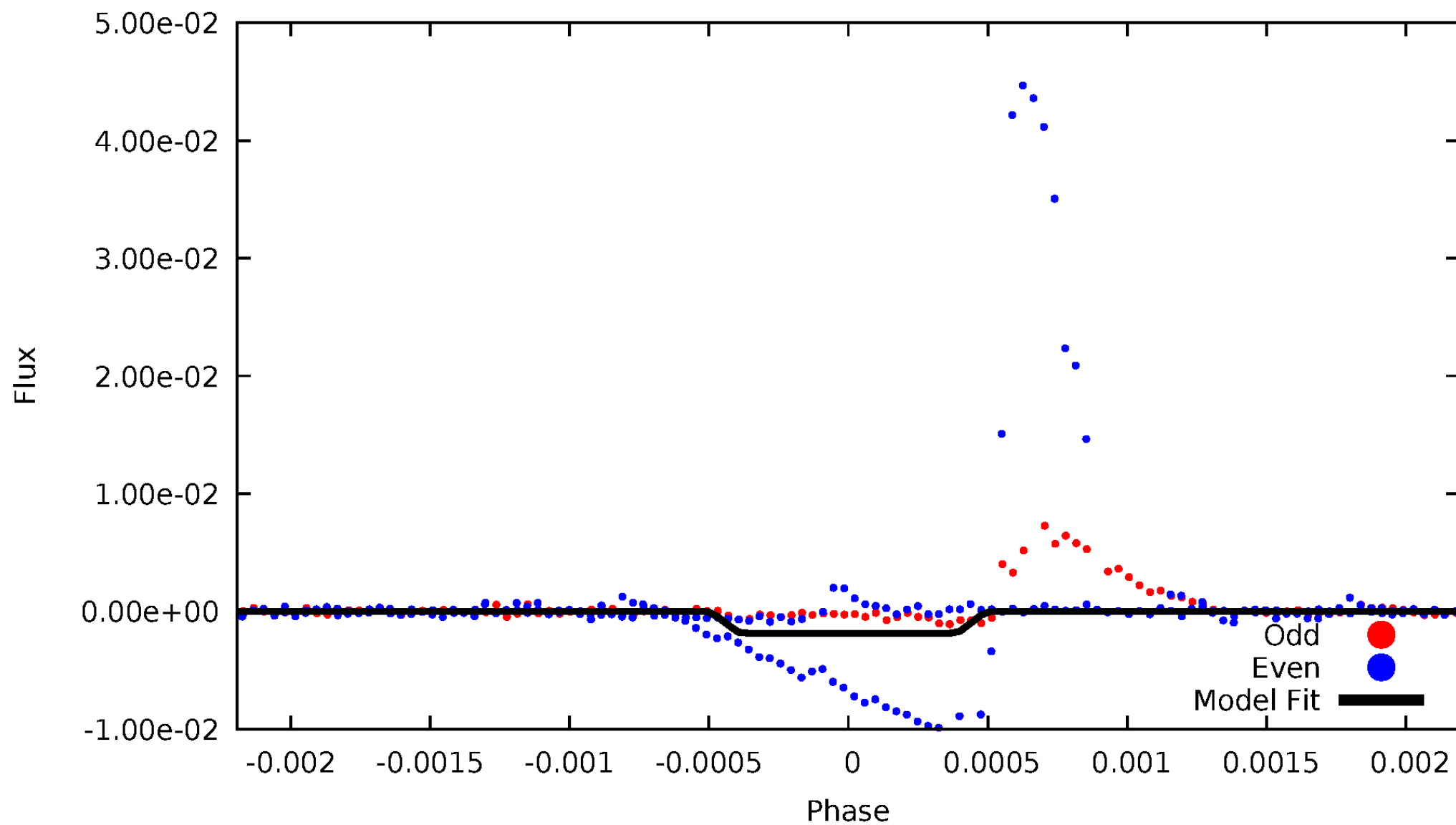
DV Odd/Even

TCE 010453475-03



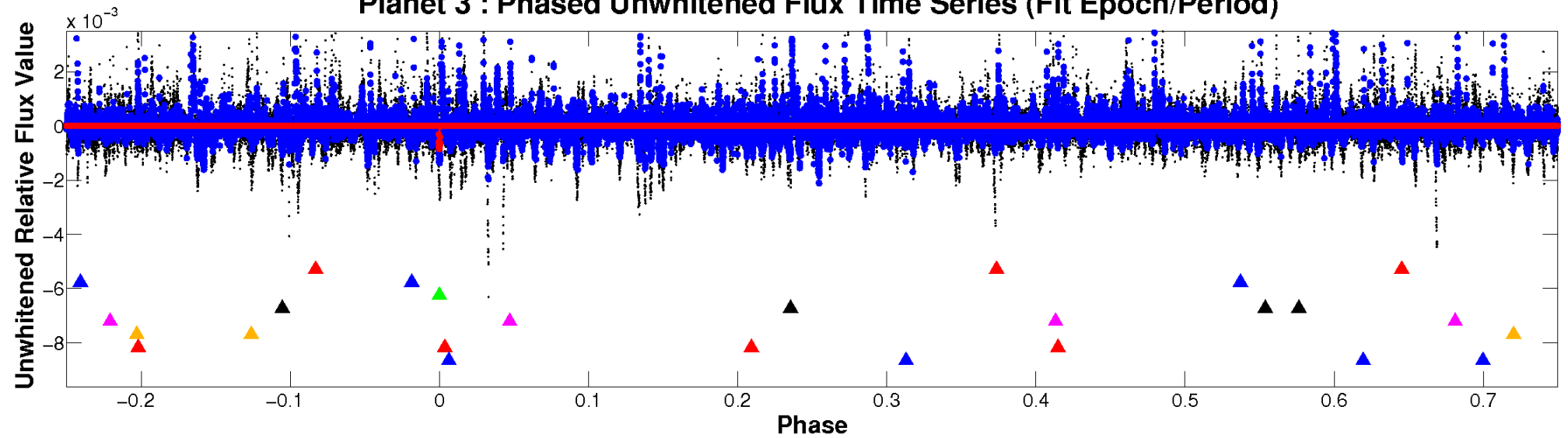
ALT Odd/Even

TCE 010453475-03

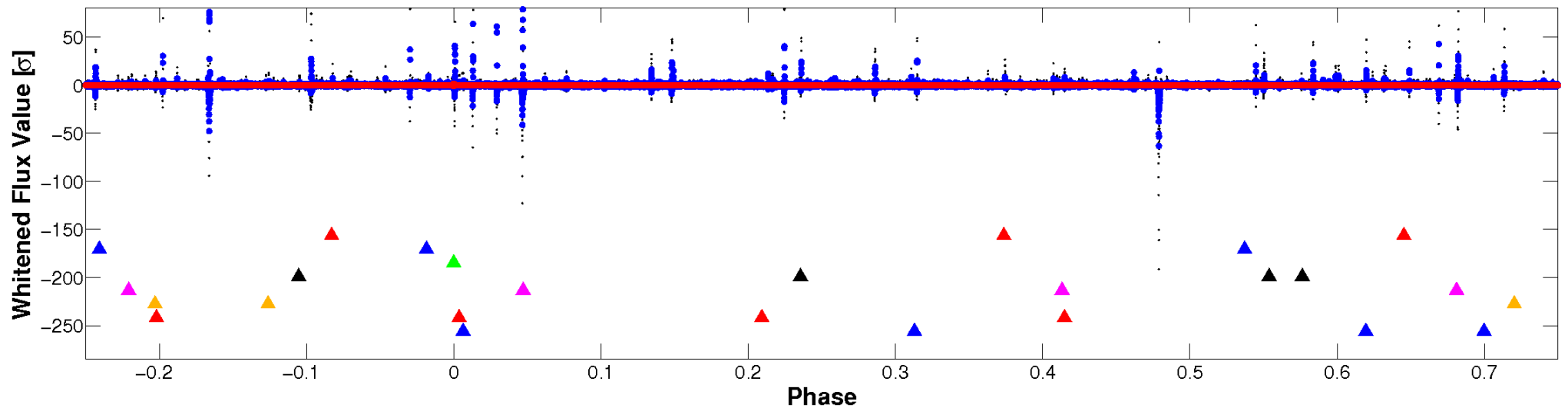


Non-Whitened Vs. Whitened Light Curve

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

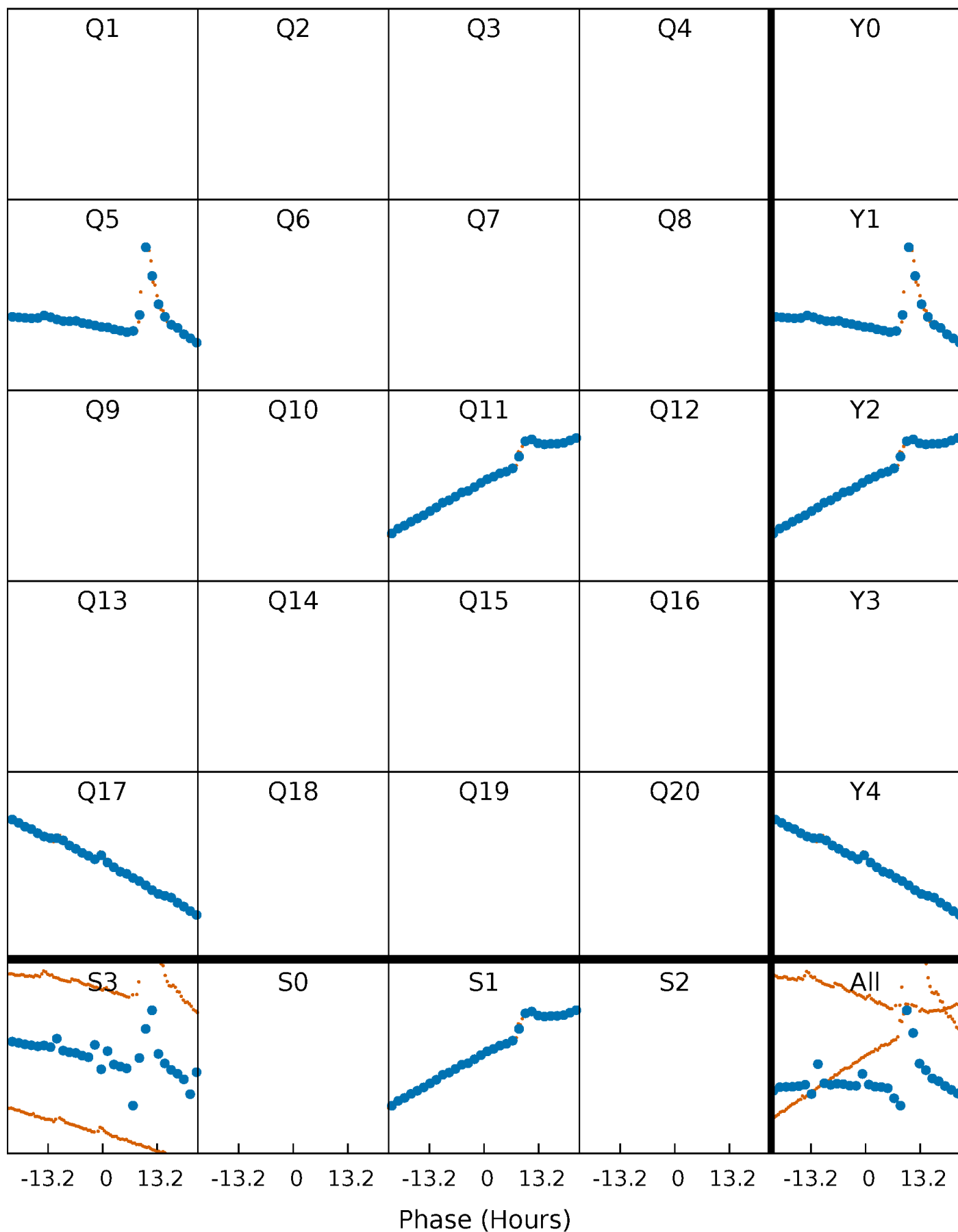


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



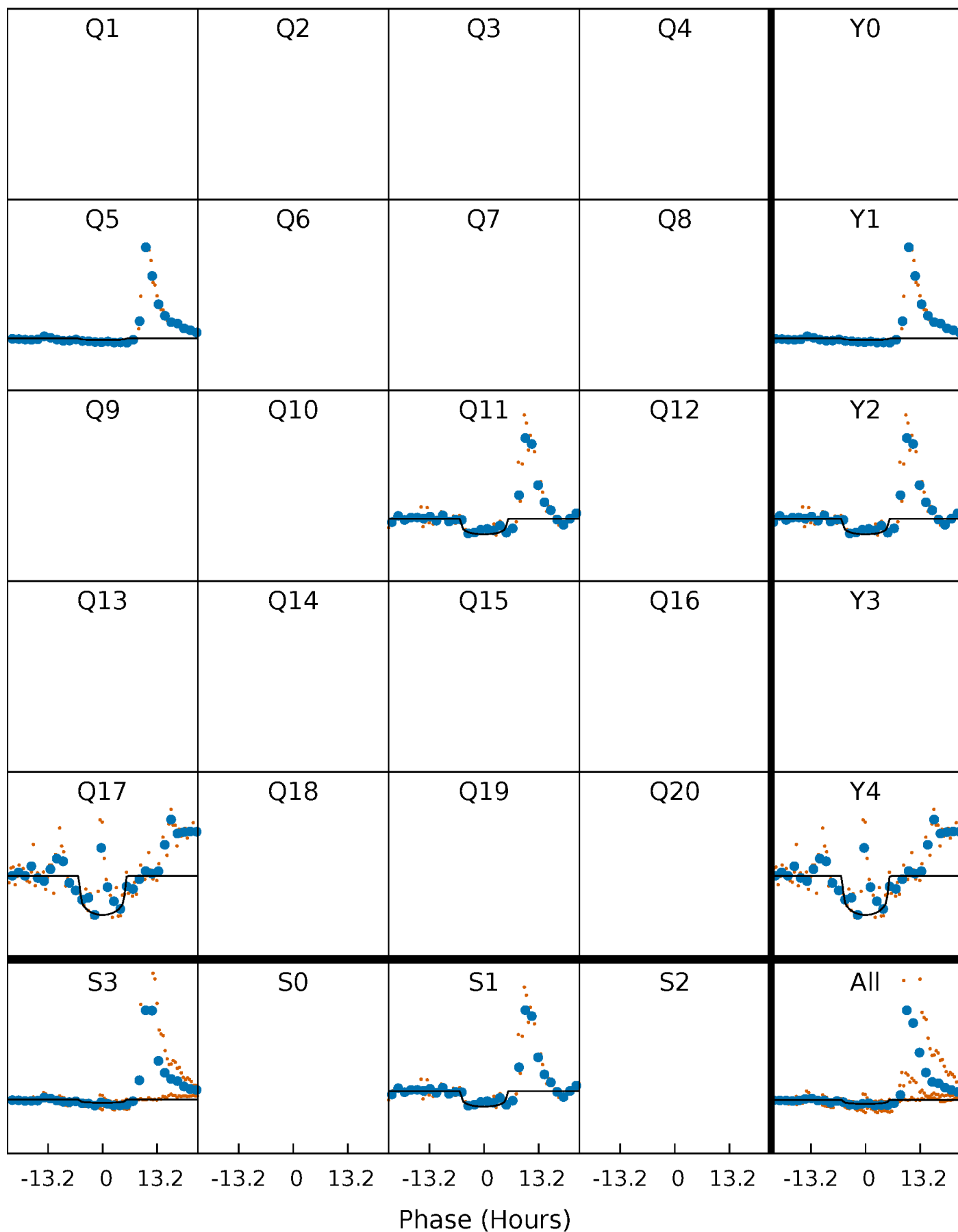
PDC Quarter-Phased Transit Curves

TCE 010453475-03 $P=540.142084$ Days $T_0=483.482529$ (BKJD)



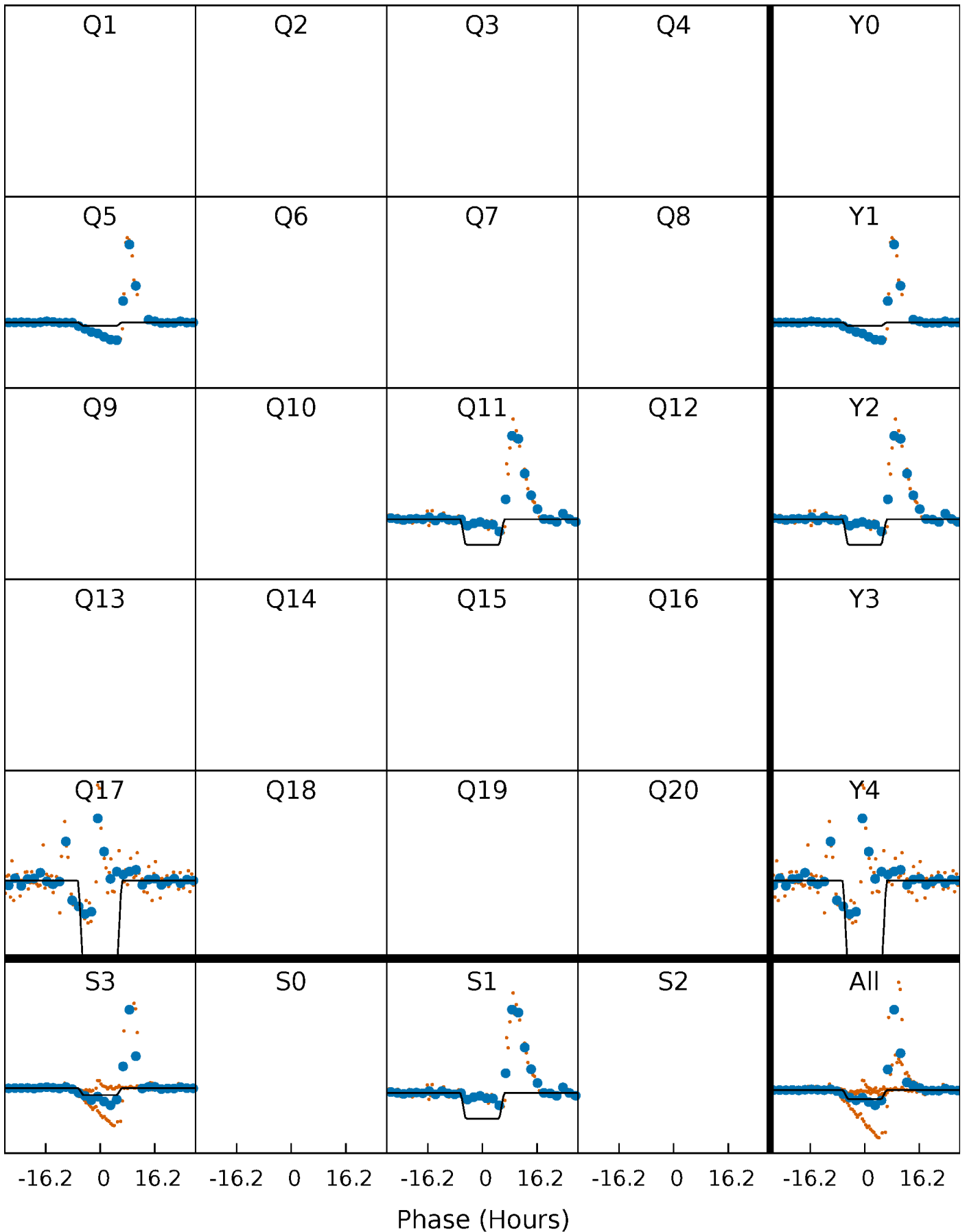
DV Quarter-Phased Transit Curves

TCE 010453475-03 $P=540.142084$ Days $T_0=483.482529$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

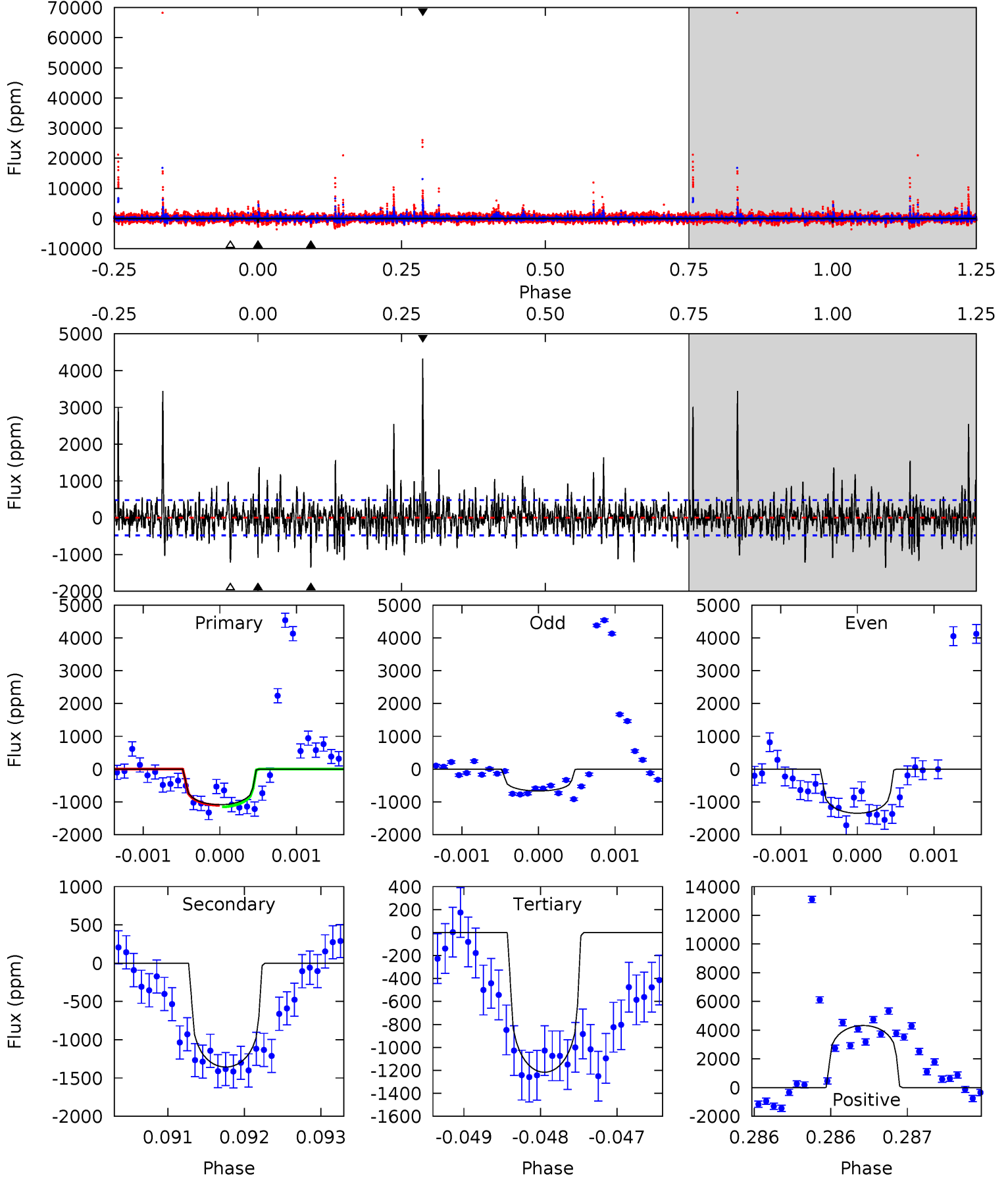
TCE 010453475-03 $P=540.099858$ Days $T_0=483.571603$ (BKJD)



DV Model-Shift Uniqueness Test

010453475-03, P = 540.142084 Days, E = 483.482529 Days

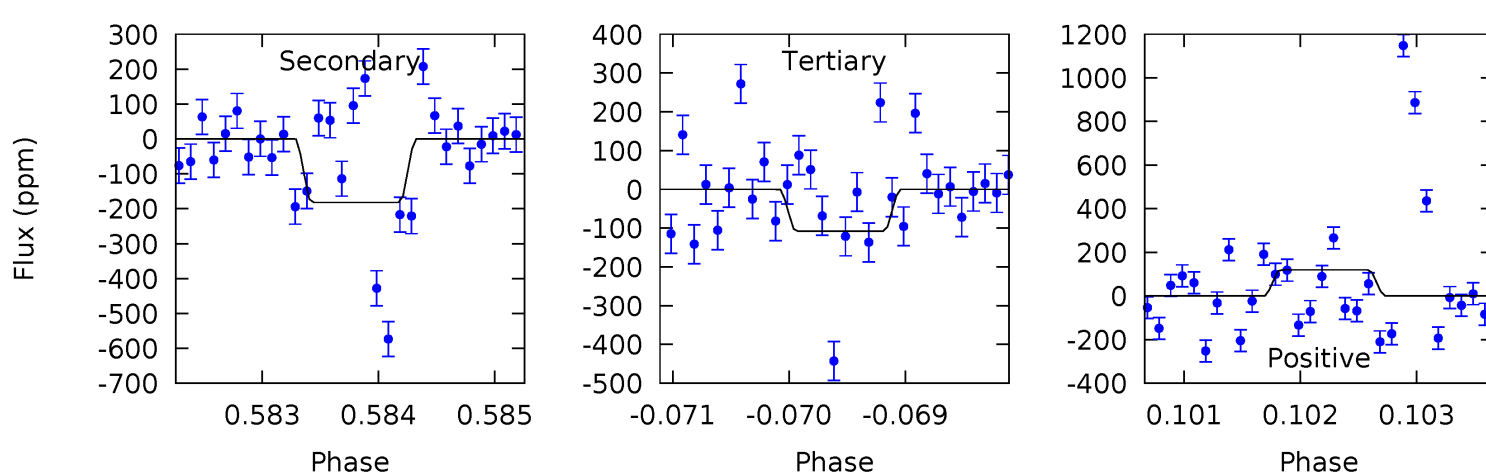
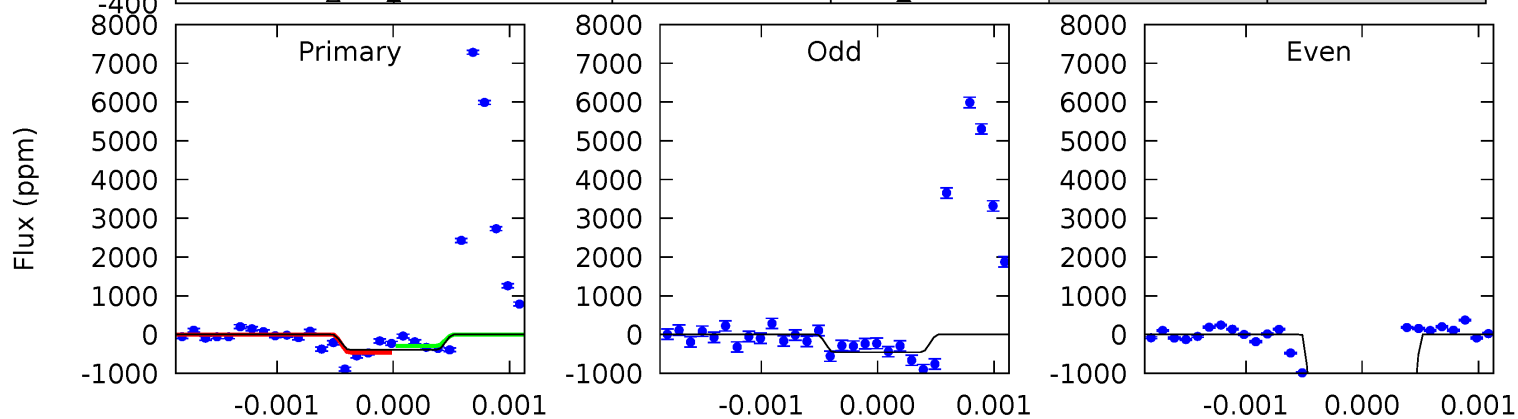
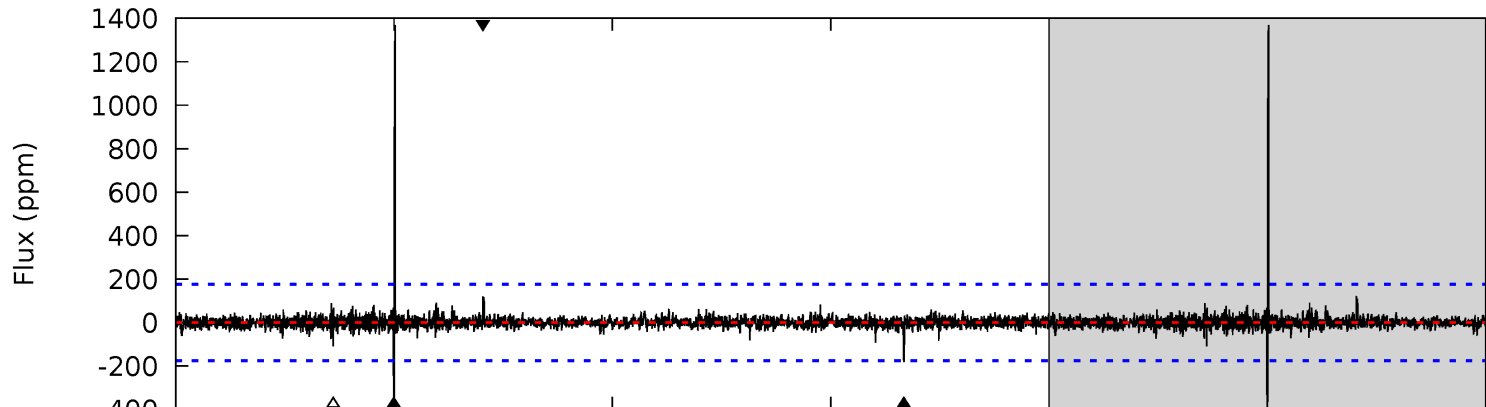
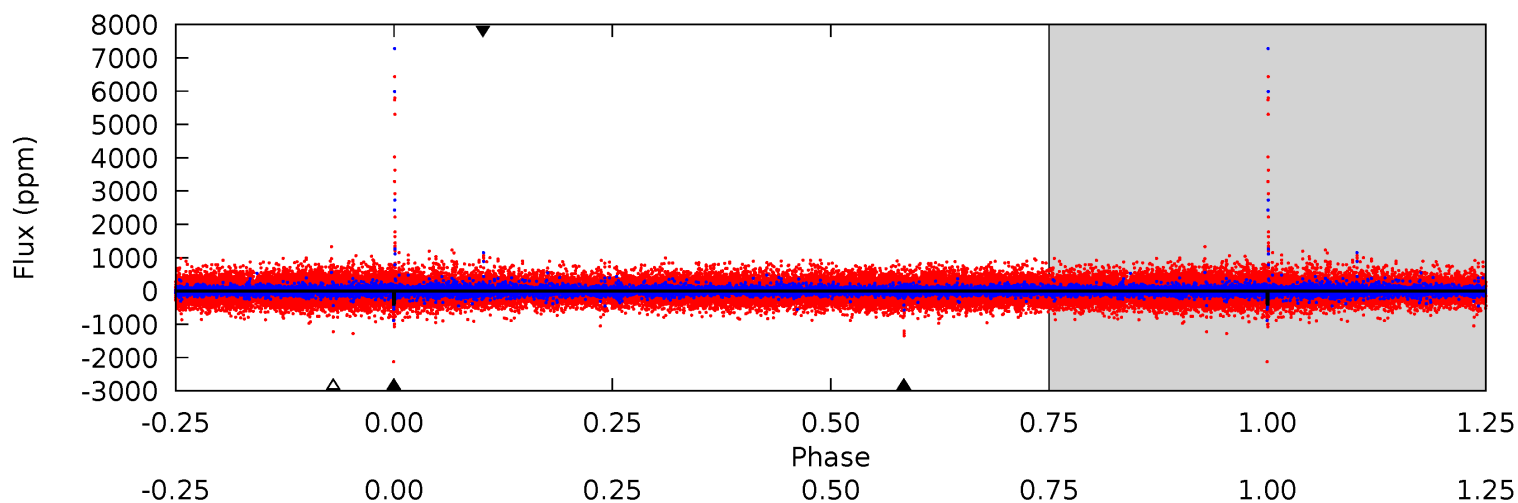
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	15.5	13.9	49.3	5.46	3.31	4.08	-1.50	-36.9	1.60	-33.8	1.36	1.65	0.76	0.28



Alt Model-Shift Uniqueness Test

010453475-03, P = 540.099858 Days, E = 483.571603 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	5.65	3.35	3.73	5.45	3.29	0.93	8.86	8.48	2.30	1.92	45.5	5.07	0.78	2.70



Stellar Parameters For KIC 010453475

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5403^{+162}_{-146}	$4.523^{+0.105}_{-0.086}$	$-0.560^{+0.350}_{-0.300}$	$0.761^{+0.099}_{-0.090}$	$0.704^{+0.094}_{-0.040}$	$2.253^{+0.987}_{-0.577}$
	+3%/-3%	+2%/-2%	+62%/-54%	+13%/-12%	+13%/-6%	+44%/-26%
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 010453475-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1357 ± 88	$2.49^{+1.45}_{-1.37}$	270^{+12}_{-11}	5968^{+3361}_{-1091}	$162144^{+638400}_{-95470}$
Alt.	-182 ± 32	$3.55^{+1.54}_{-1.58}$	270^{+11}_{-12}	3505^{+812}_{-365}	10741^{+24278}_{-5476}

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

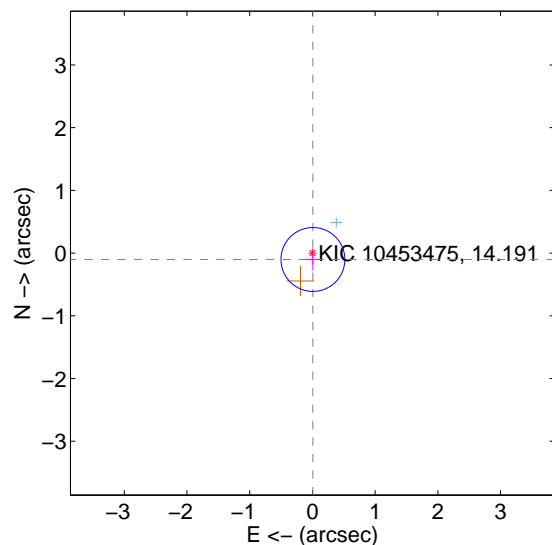
Supplemental centroid analysis for 010453475-03. Kepler magnitude: 14.19. Transit SNR 5.41

There are 2 quarters with good PRF difference image offsets

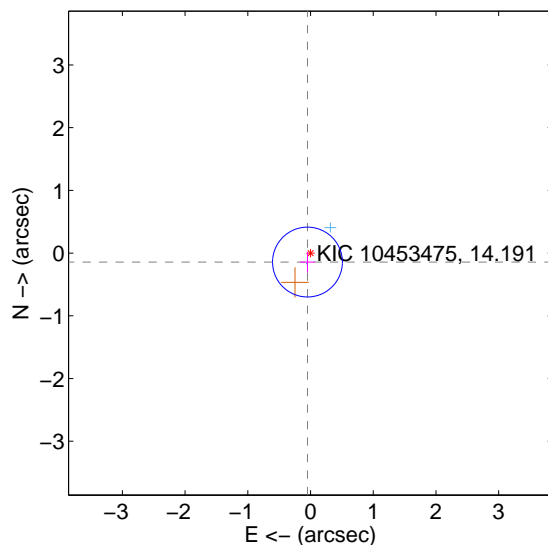
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.102 ± 0.170	0.60	-0.007 ± 0.121	-0.102 ± 0.177
PRF-fit source offset from KIC position	0.151 ± 0.186	0.81	0.049 ± 0.117	-0.143 ± 0.164
photometric centroid source offset	1.20 ± 0.67	1.78	1.19 ± 0.67	-0.16 ± 0.69

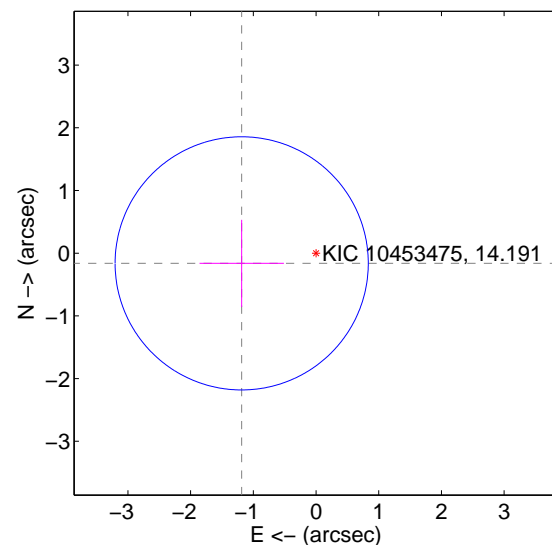
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

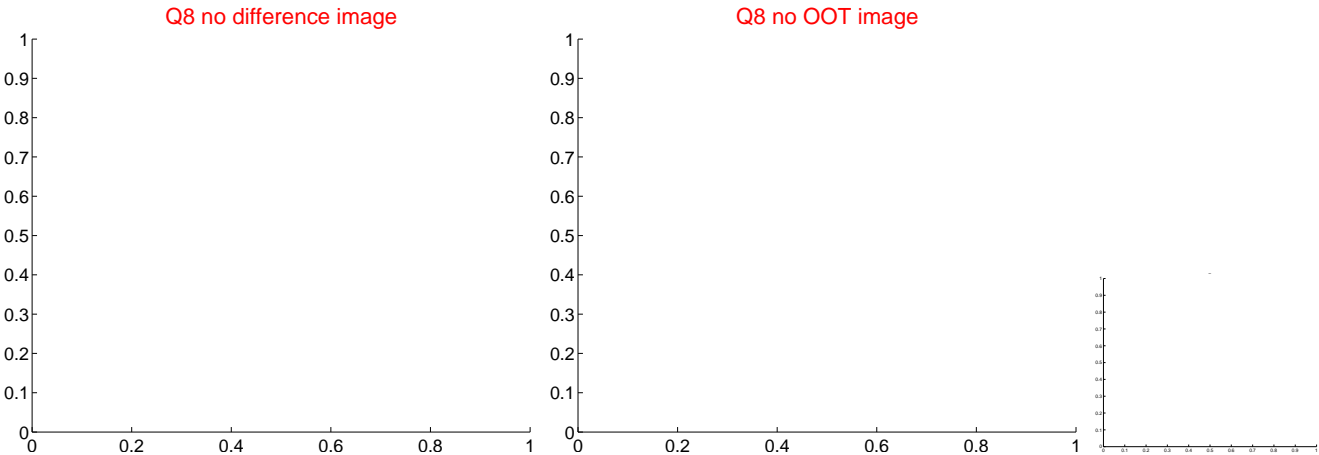
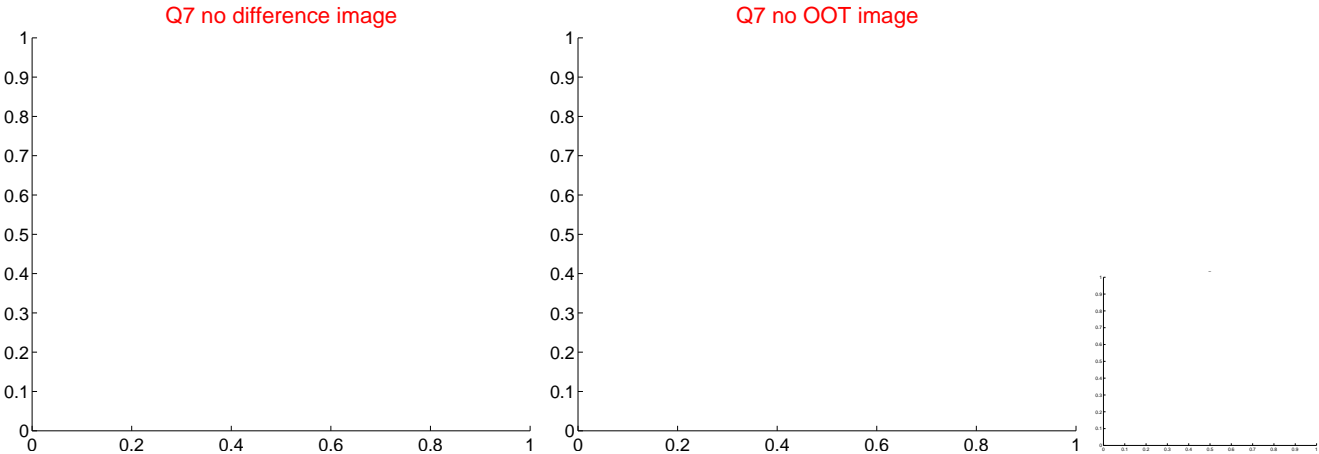
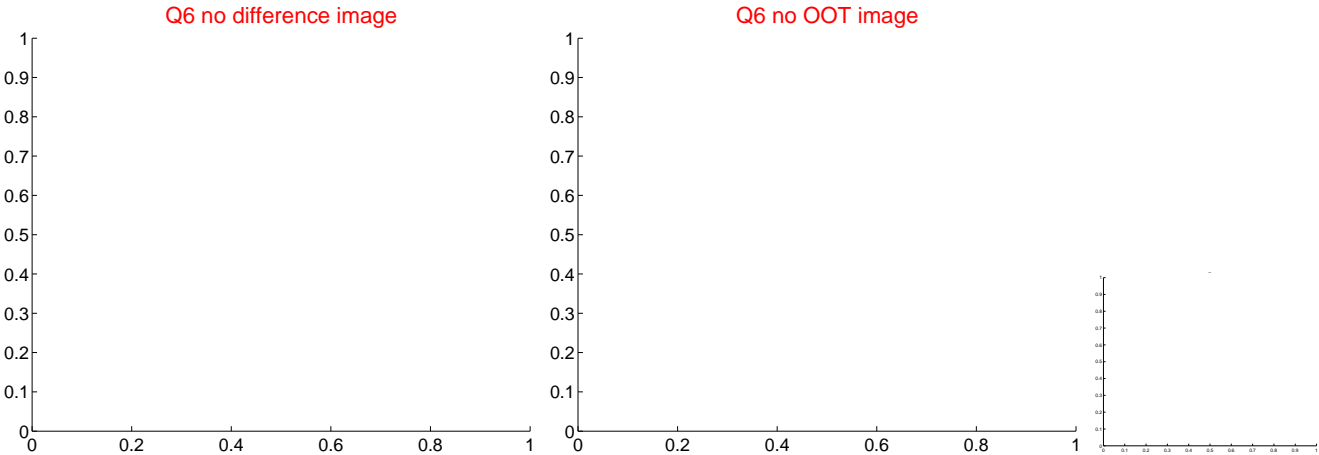
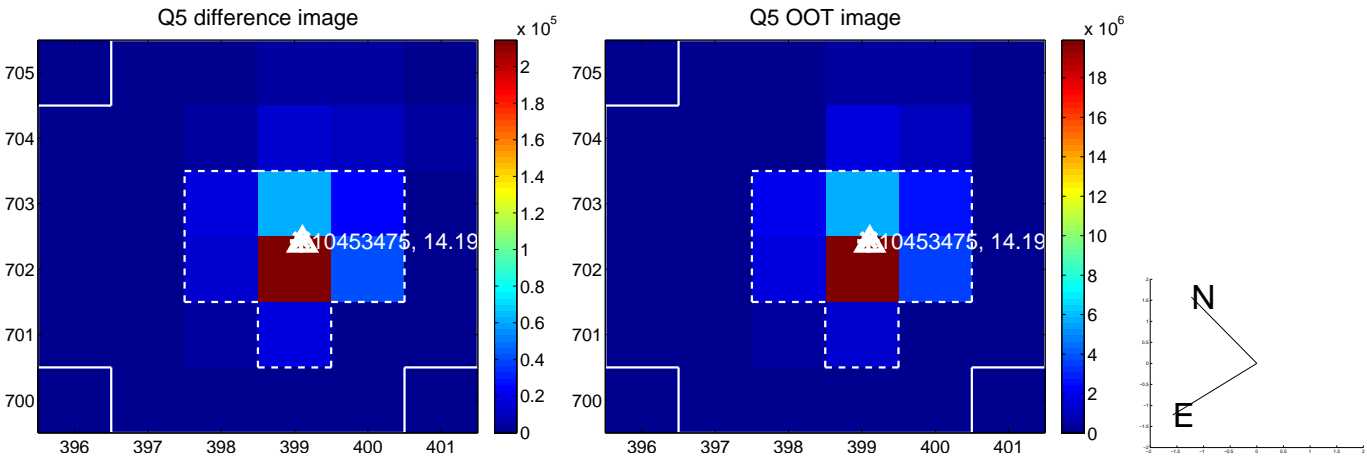


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

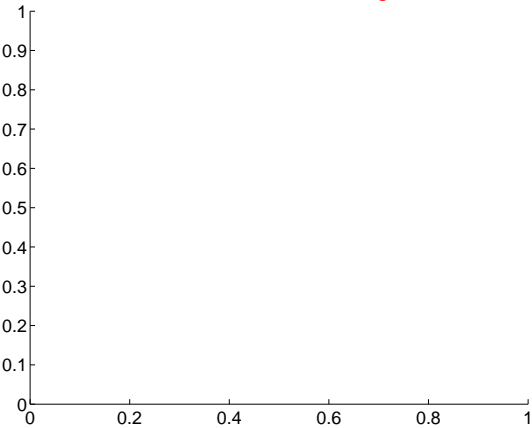
Q9 no difference image



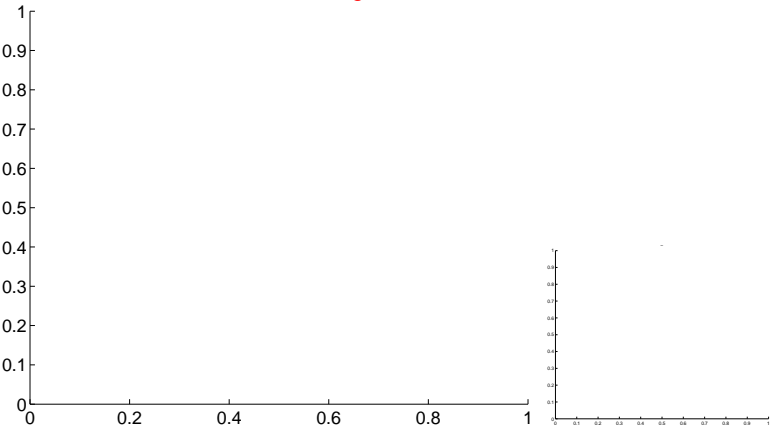
Q9 no OOT image



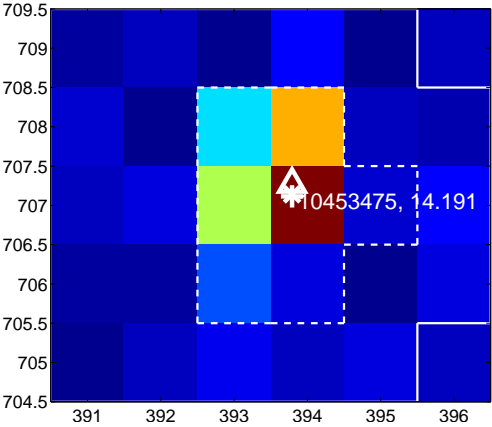
Q10 no difference image



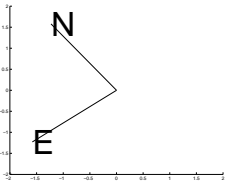
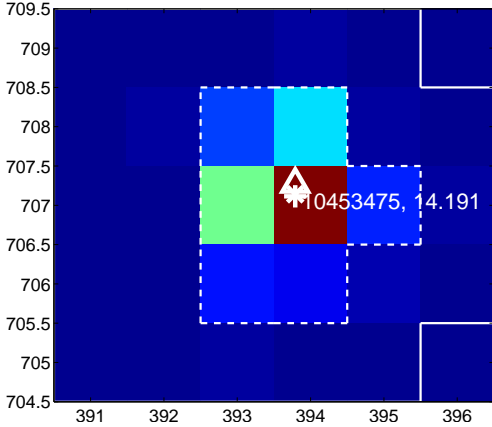
Q10 no OOT image



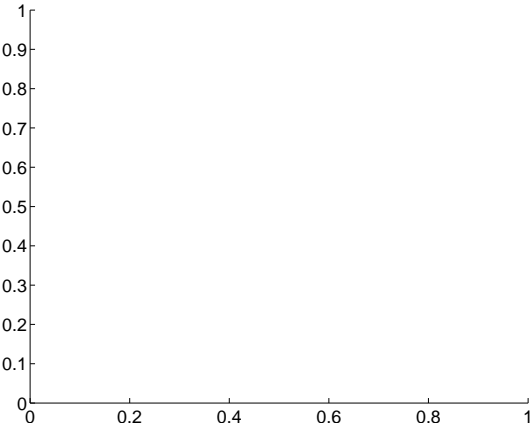
Q11 difference image



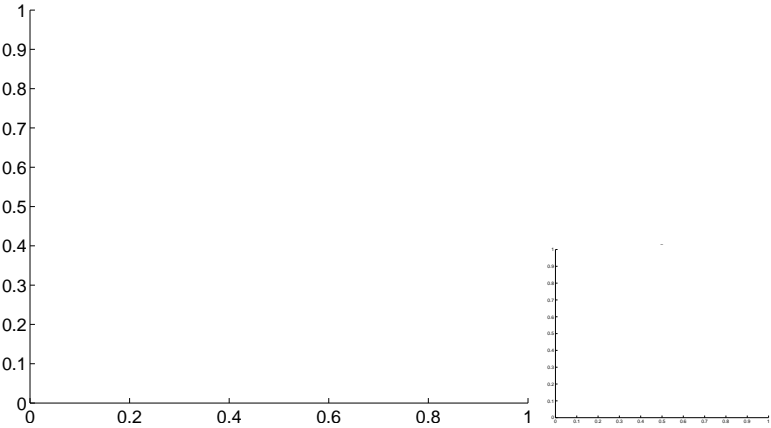
Q11 OOT image



Q12 no difference image



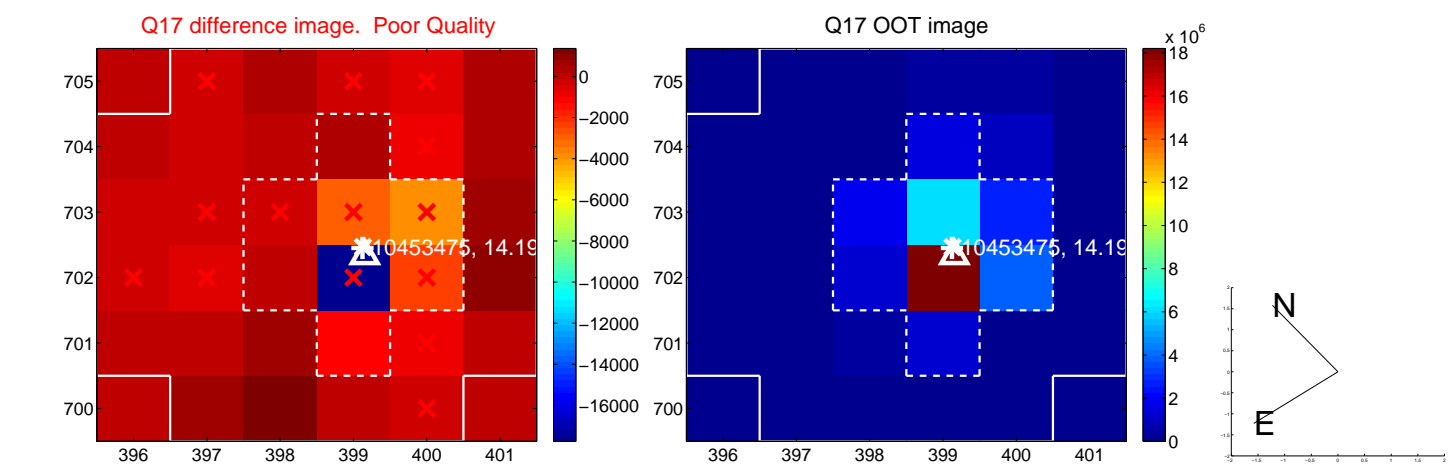
Q12 no OOT image



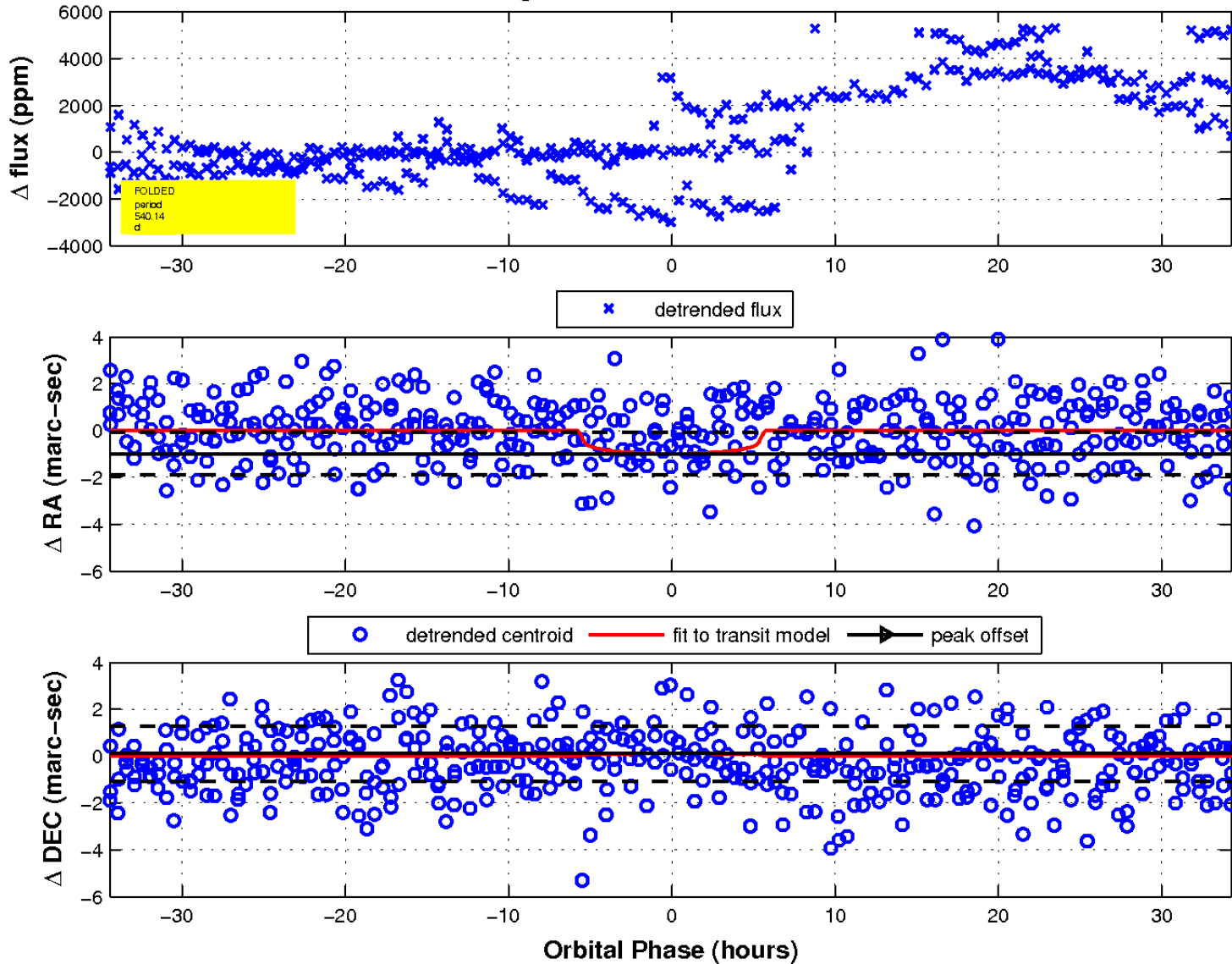
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

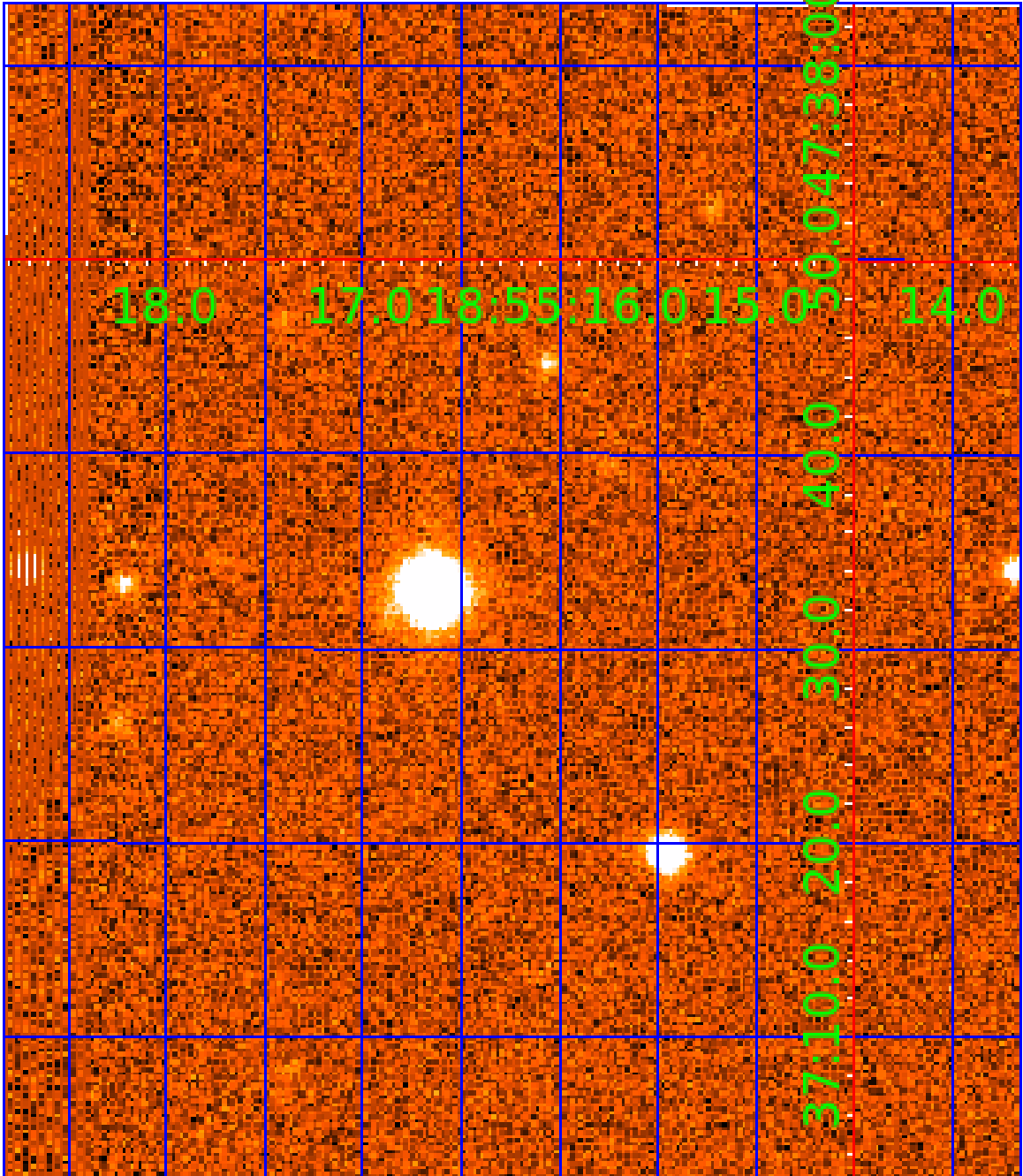


fluxWeightedCentroids, Planet 3 of 8



UKIRT Image

Declination



KIC 010453475

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})
010453475-01	OBS	No	393.378268	438.677130	798.2	5.765	31.5	5.1	0.76	5403	2.58	0.51
010453475-02	OBS	No	660.132863	233.500041	2804.8	15.043	24.7	12.9	0.76	5403	7.63	0.25
010453475-03	OBS	No	540.142084	483.482529	856.9	11.546	26.8	5.4	0.76	5403	2.33	0.33
010453475-04	OBS	No	356.036989	254.673963	662.6	13.469	19.3	4.6	0.76	5403	2.19	0.58
010453475-05	OBS	No	342.444485	364.224299	1856.1	49.504	13.7	9.1	0.76	5403	3.47	0.61
010453475-06	OBS	No	581.610076	332.422502	1220.2	14.767	20.1	8.1	0.76	5403	2.70	0.30
010453475-08	OBS	No	374.553966	277.965130	1298.4	4.500	14.6	-1.0	0.76	5403	2.71	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010453475-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-02	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
010453475-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
010453475-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

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

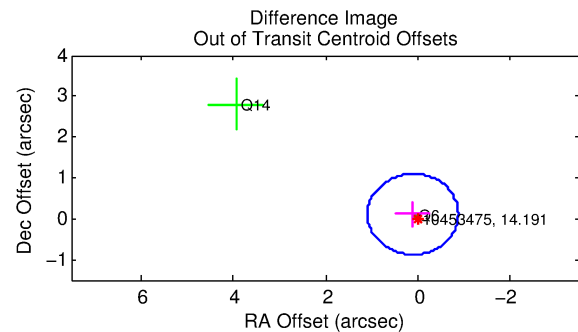
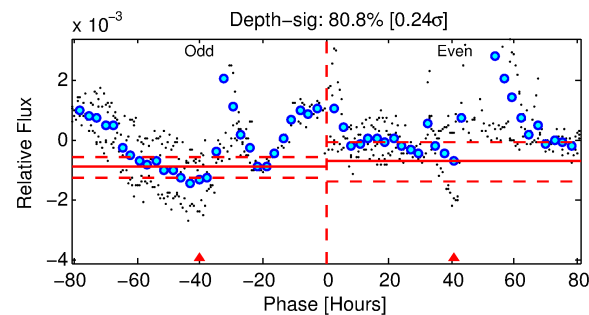
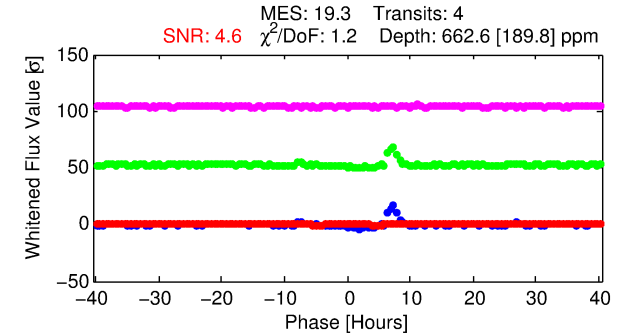
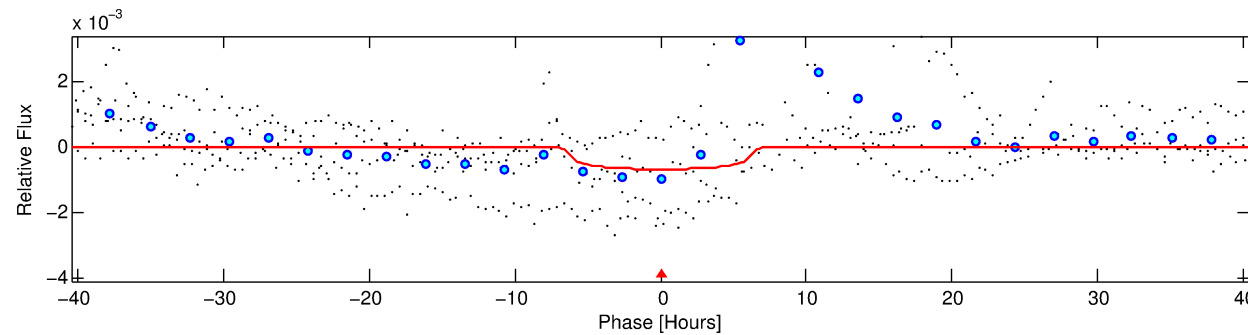
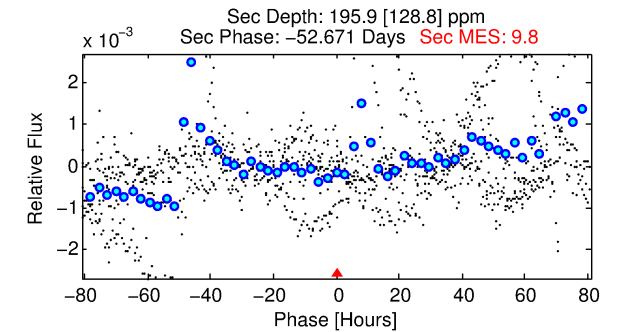
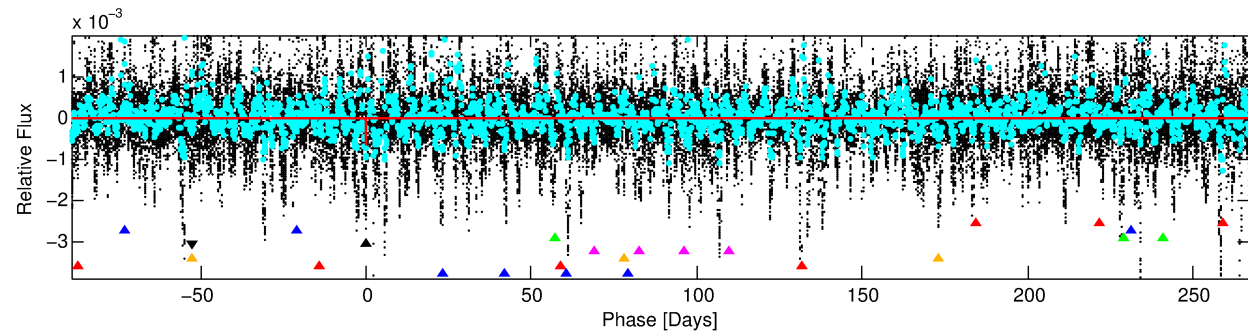
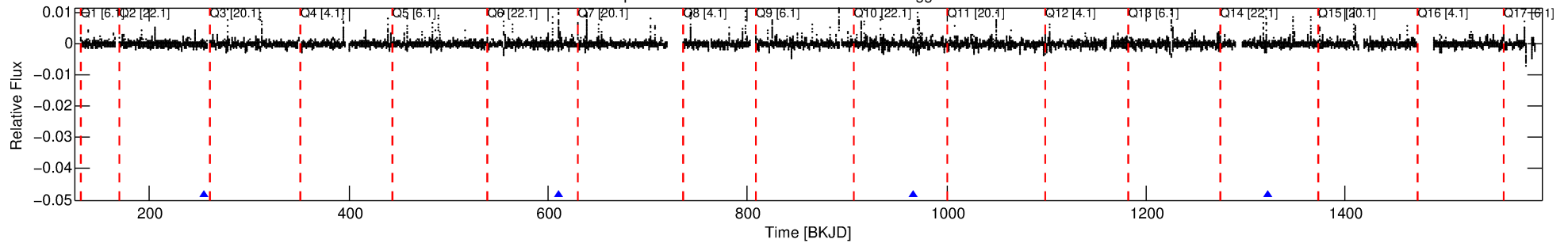
Ephemeris Match Information For 010453475-04

No Significant Match Found

DV One-Page Summary

KIC: 10453475 Candidate: 4 of 8 Period: 356.037 d

Kp: 14.19 R*: 0.76 Rs Teff: 5403.0 K Logg: 4.52 Fe/H: -0.560



DV Fit Results:

Period = 356.03699 [0.01124] d
Epoch = 254.6740 [0.0220] BKJD
Rp/R* = 0.0264 [0.0062]
a/R* = 125.91 [87.11]
b = 0.82 [0.29]
Seff = 0.58 [0.13]
Teq = 222 [12] K
Rp = 2.19 [0.59] Re
a = 0.8749 [0.1036] AU
Ag = 17151.57 [14181.75] [1.21σ]
Teffp = 3933 [802] K [4.63σ]

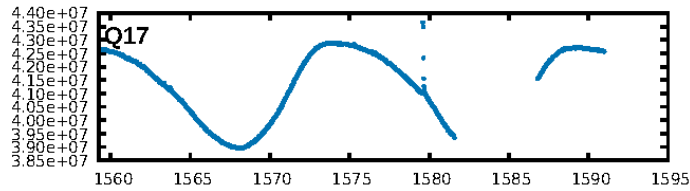
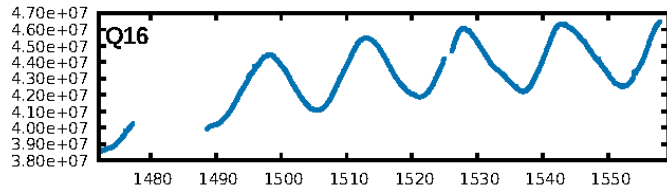
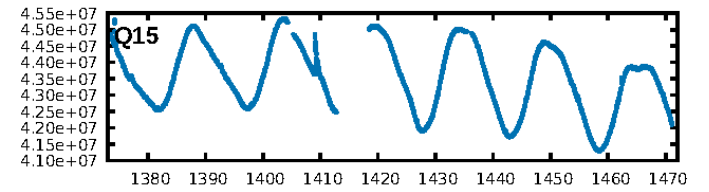
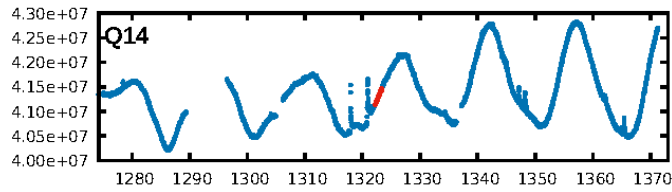
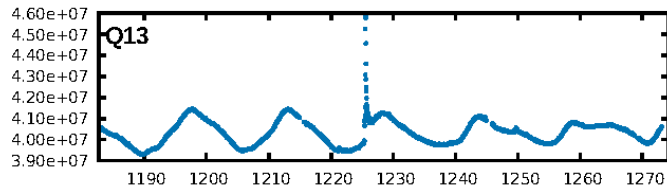
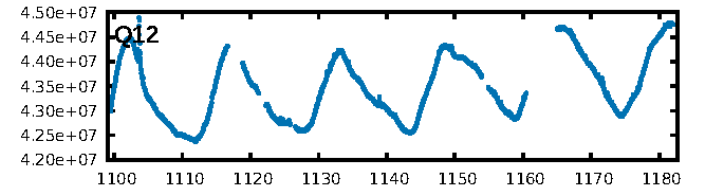
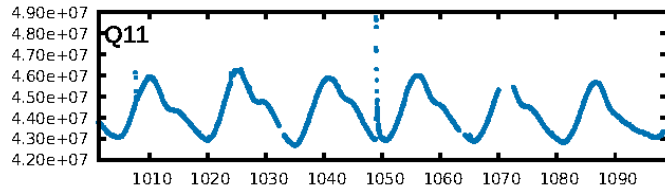
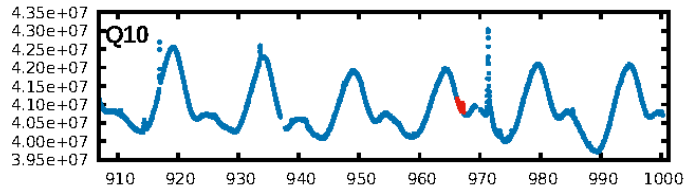
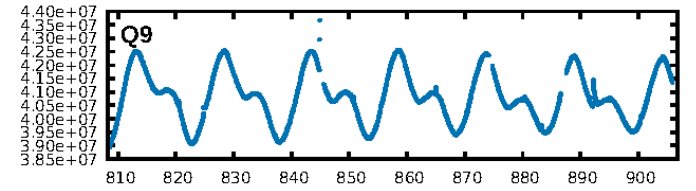
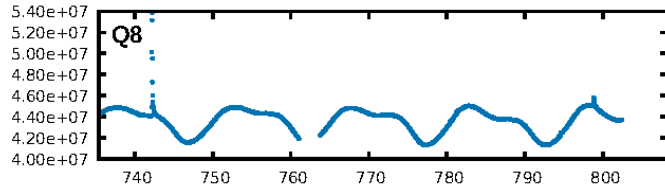
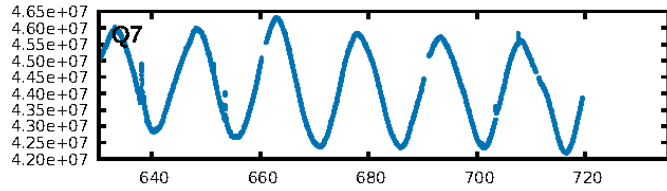
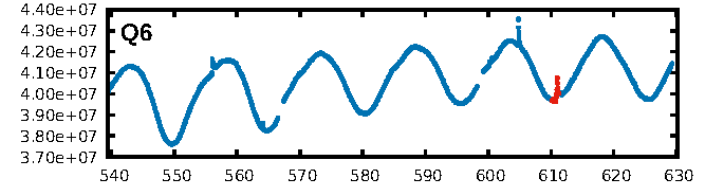
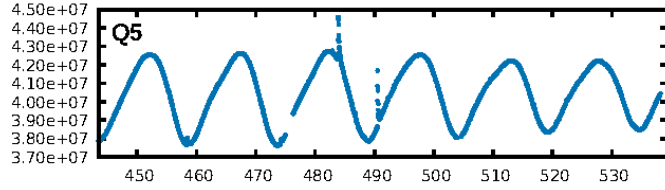
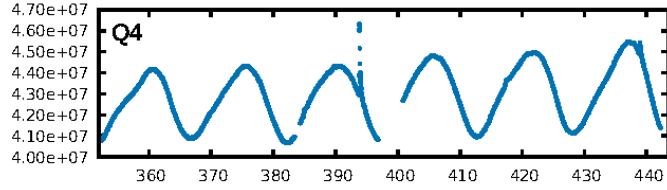
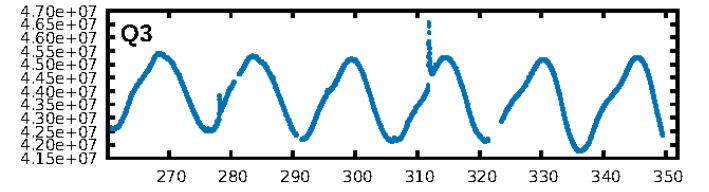
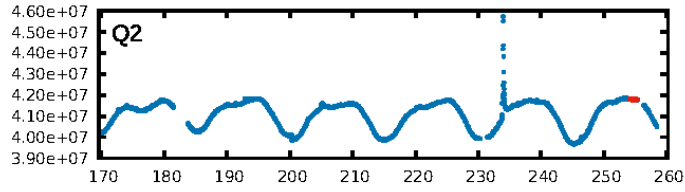
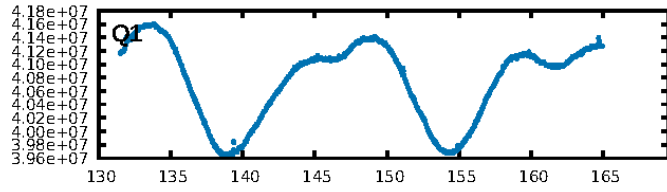
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.36σ]
LongPeriod-sig: 100.0% [31.30σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.1103
Centroid-sig: 33.9%
Centroid-so: 0.616 arcsec [0.83σ]
OotOffset-rm: 0.157 arcsec [0.48σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-rm: 0.115 arcsec [0.11σ]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

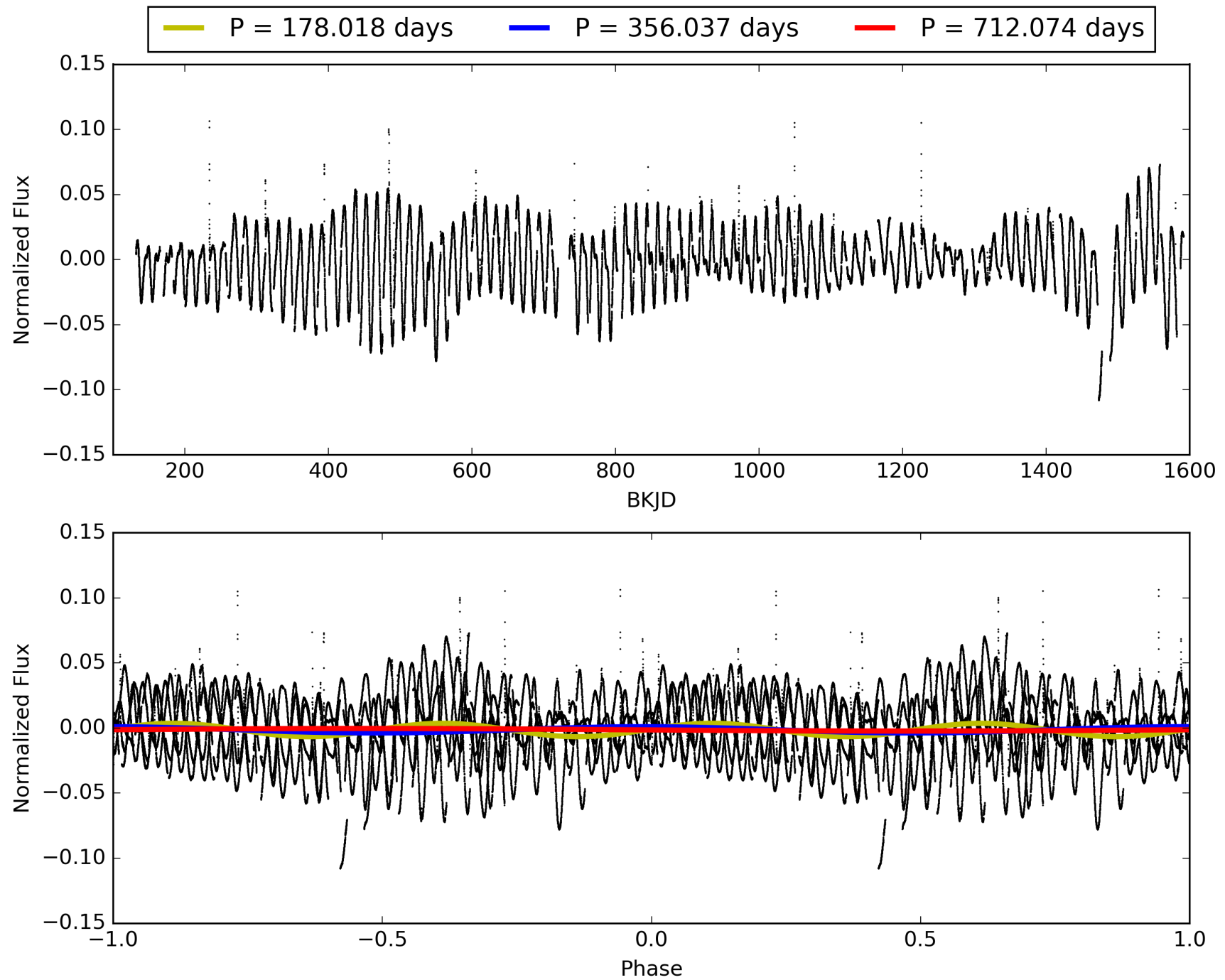
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:08:36 Z

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

TCE 010453475-04, PDC Light Curves

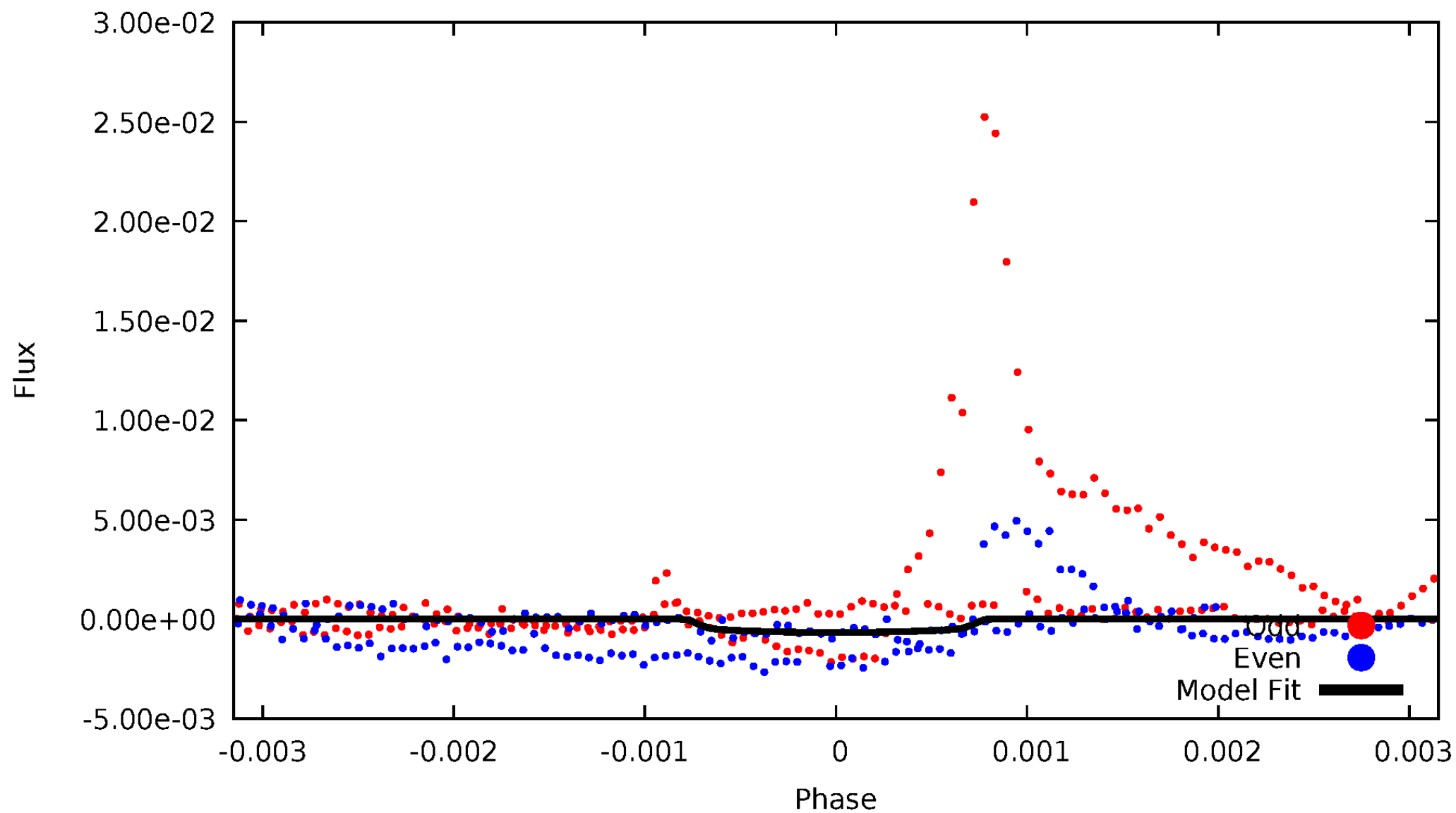


TCE 010453475-04



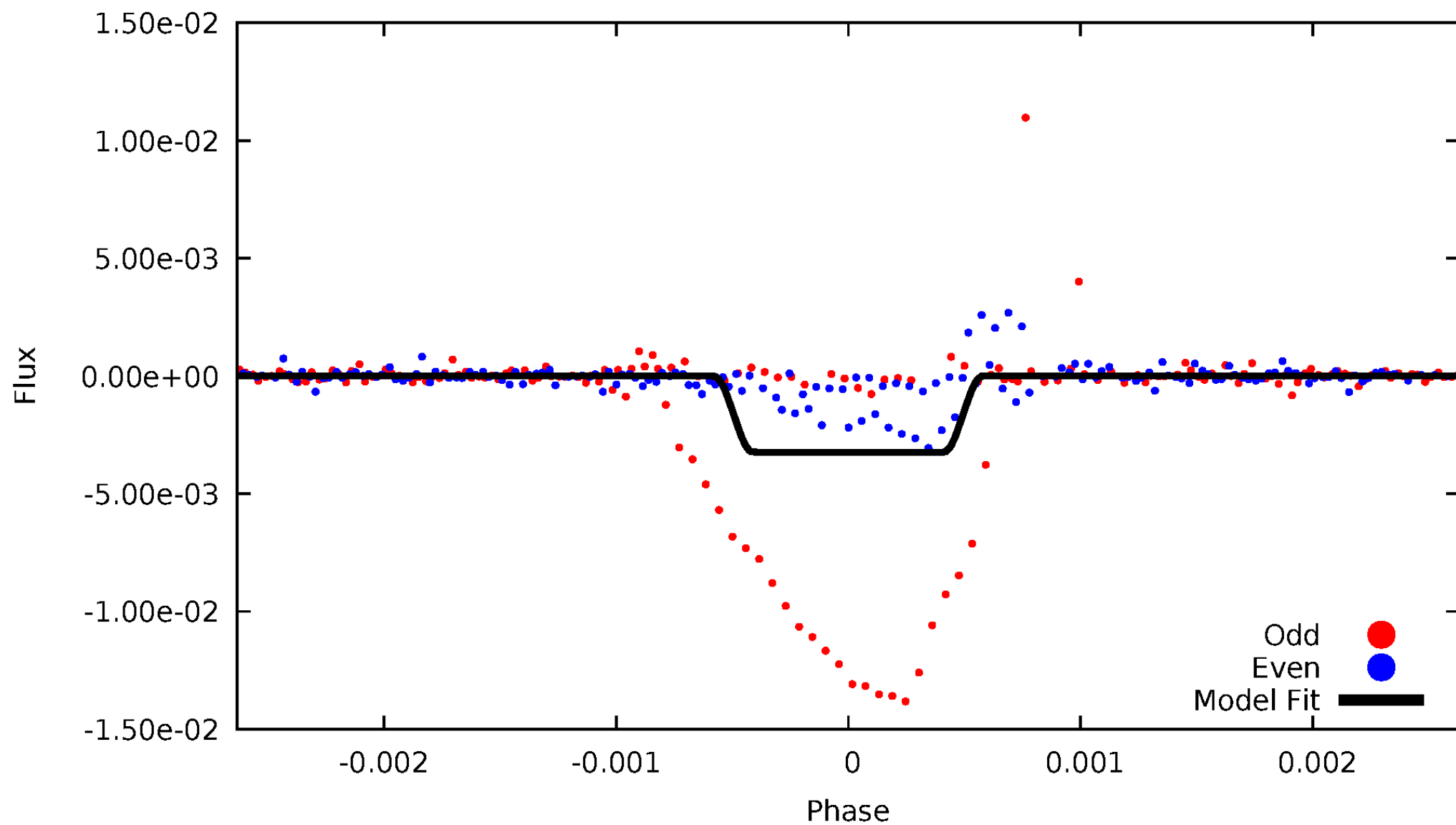
DV Odd/Even

TCE 010453475-04



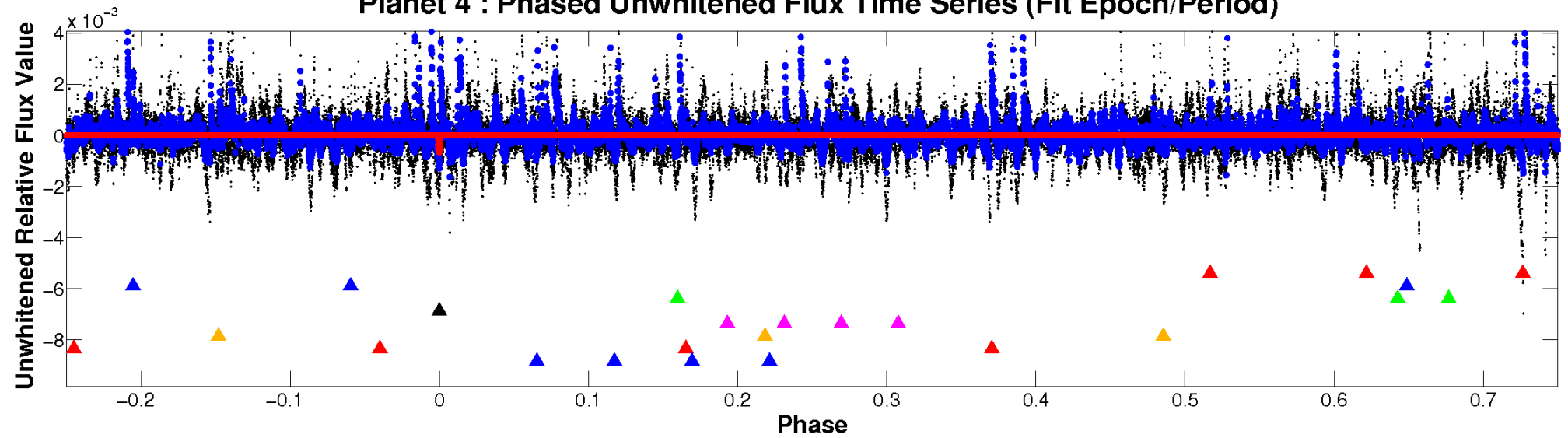
ALT Odd/Even

TCE 010453475-04

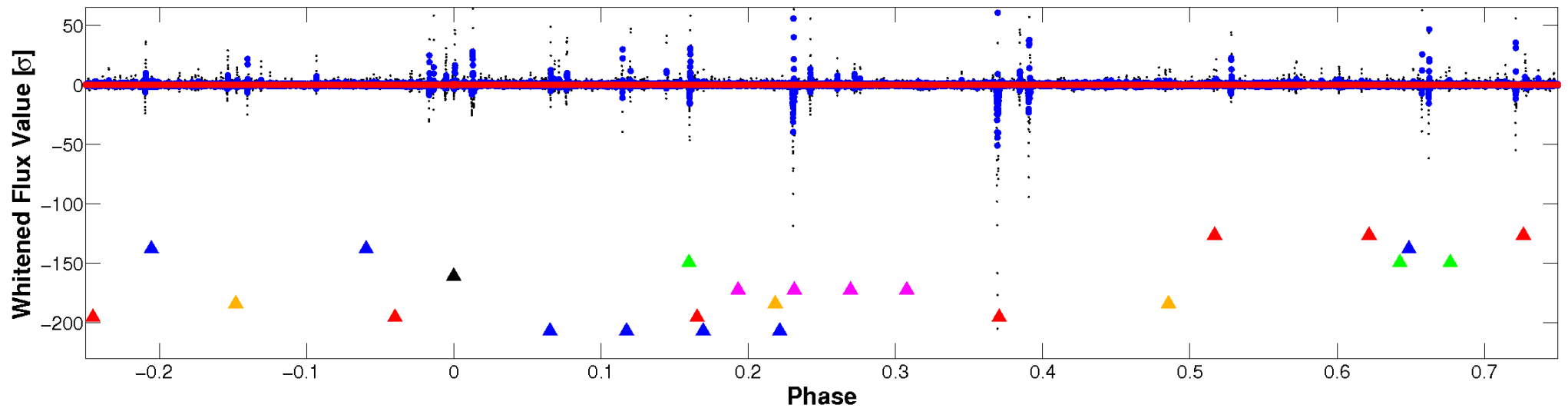


Non-Whitened Vs. Whitened Light Curve

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

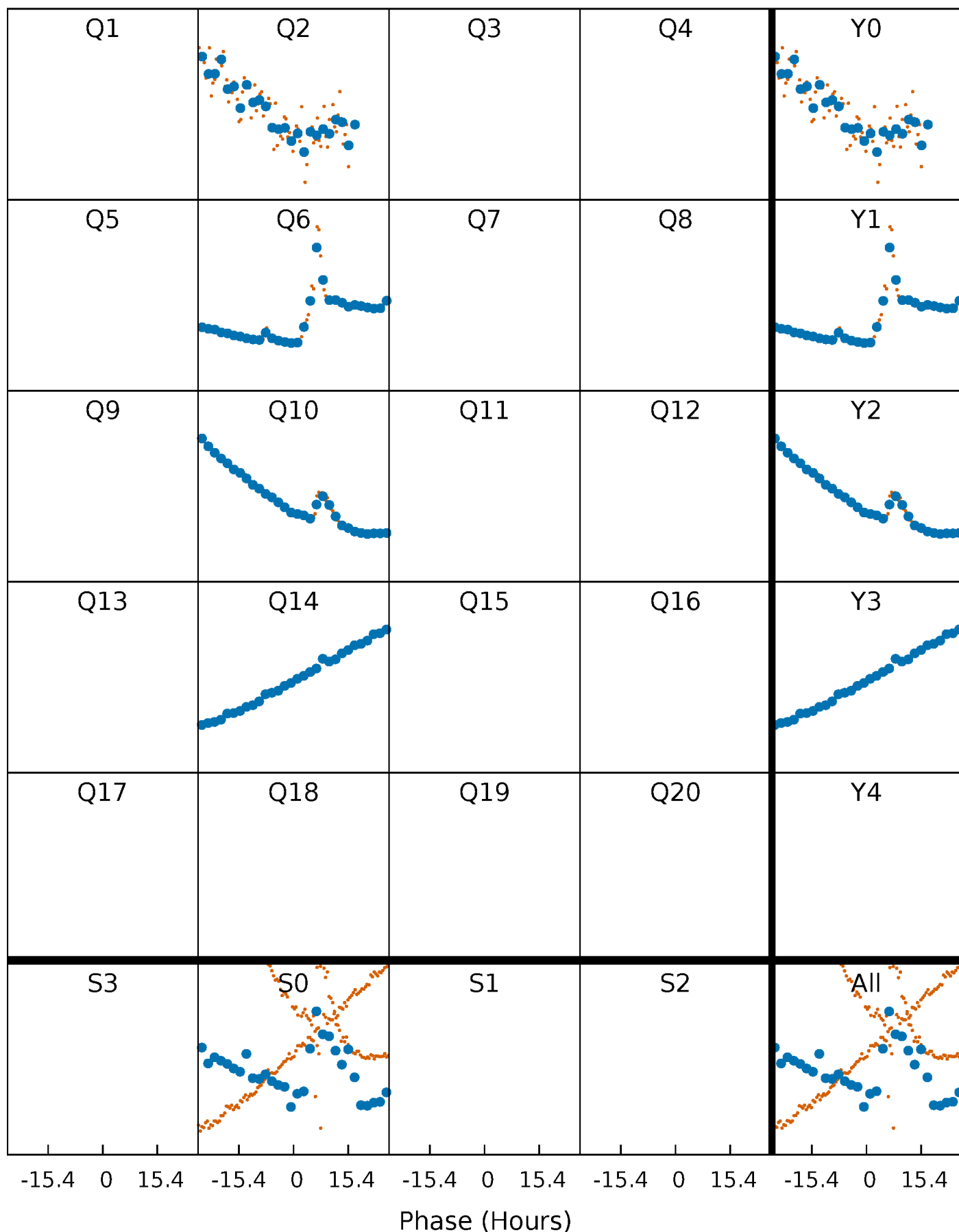


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



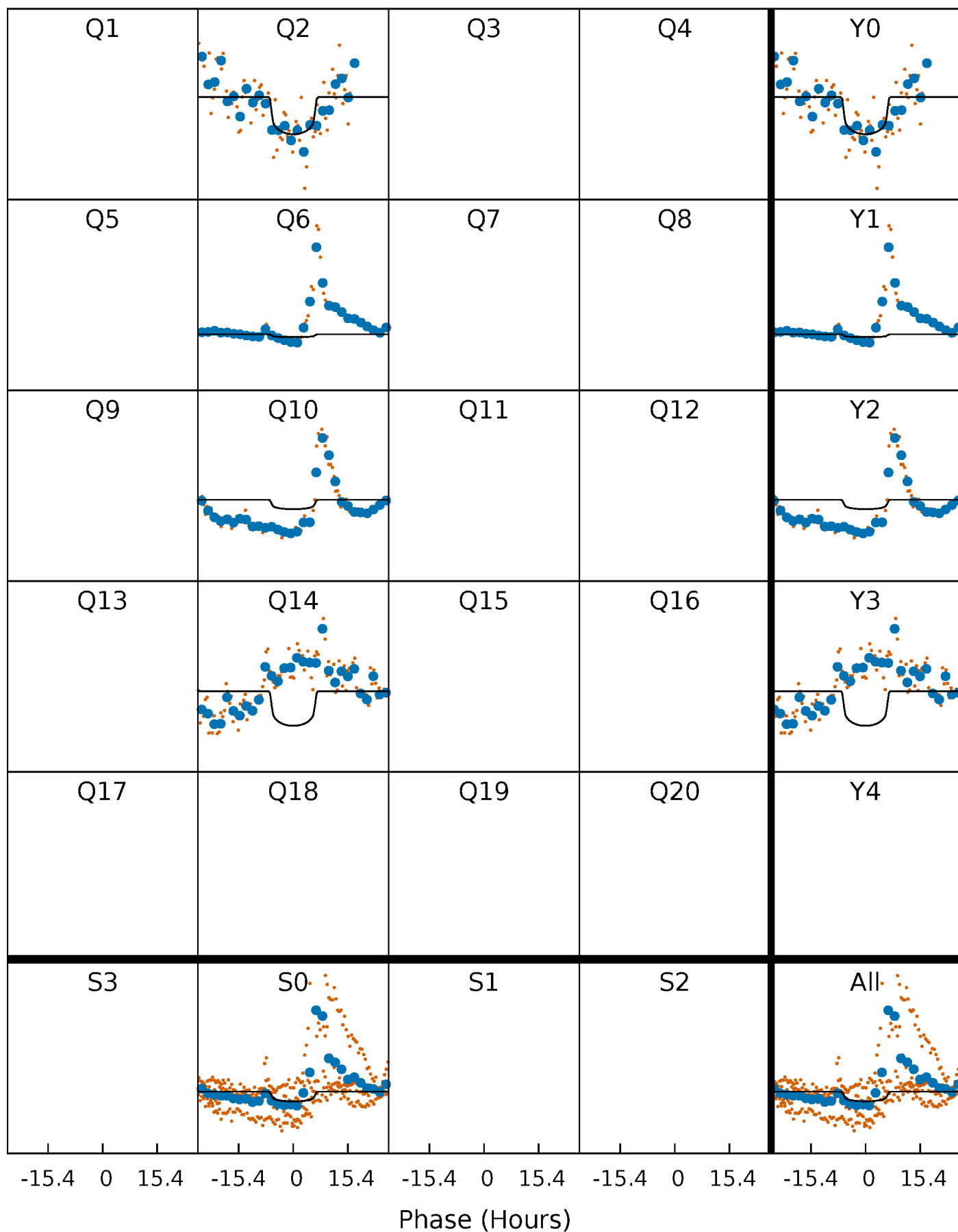
PDC Quarter-Phased Transit Curves

TCE 010453475-04 P=356.036989 Days $T_0=254.673963$ (BKJD)



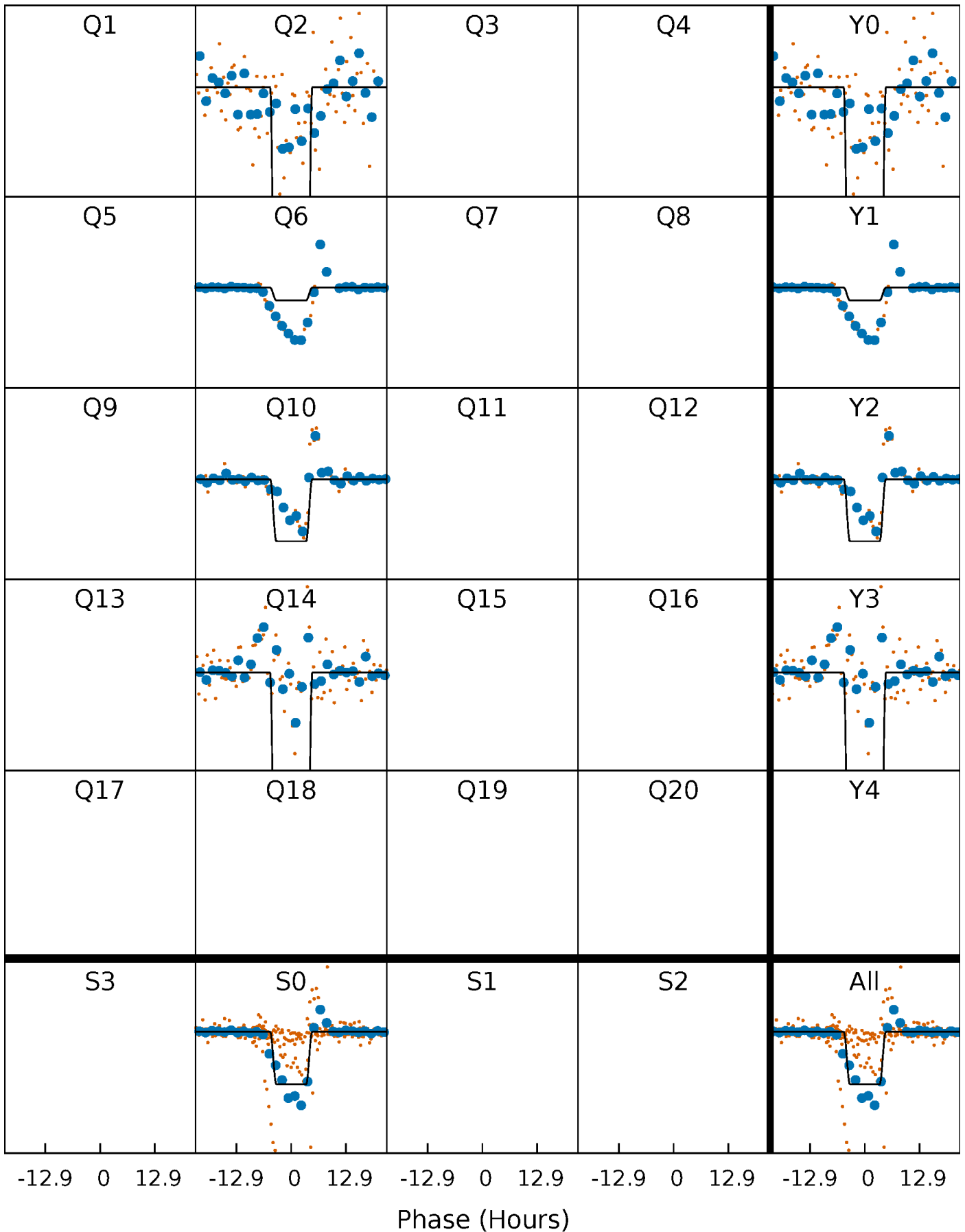
DV Quarter-Phased Transit Curves

TCE 010453475-04 P=356.036989 Days $T_0=254.673963$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

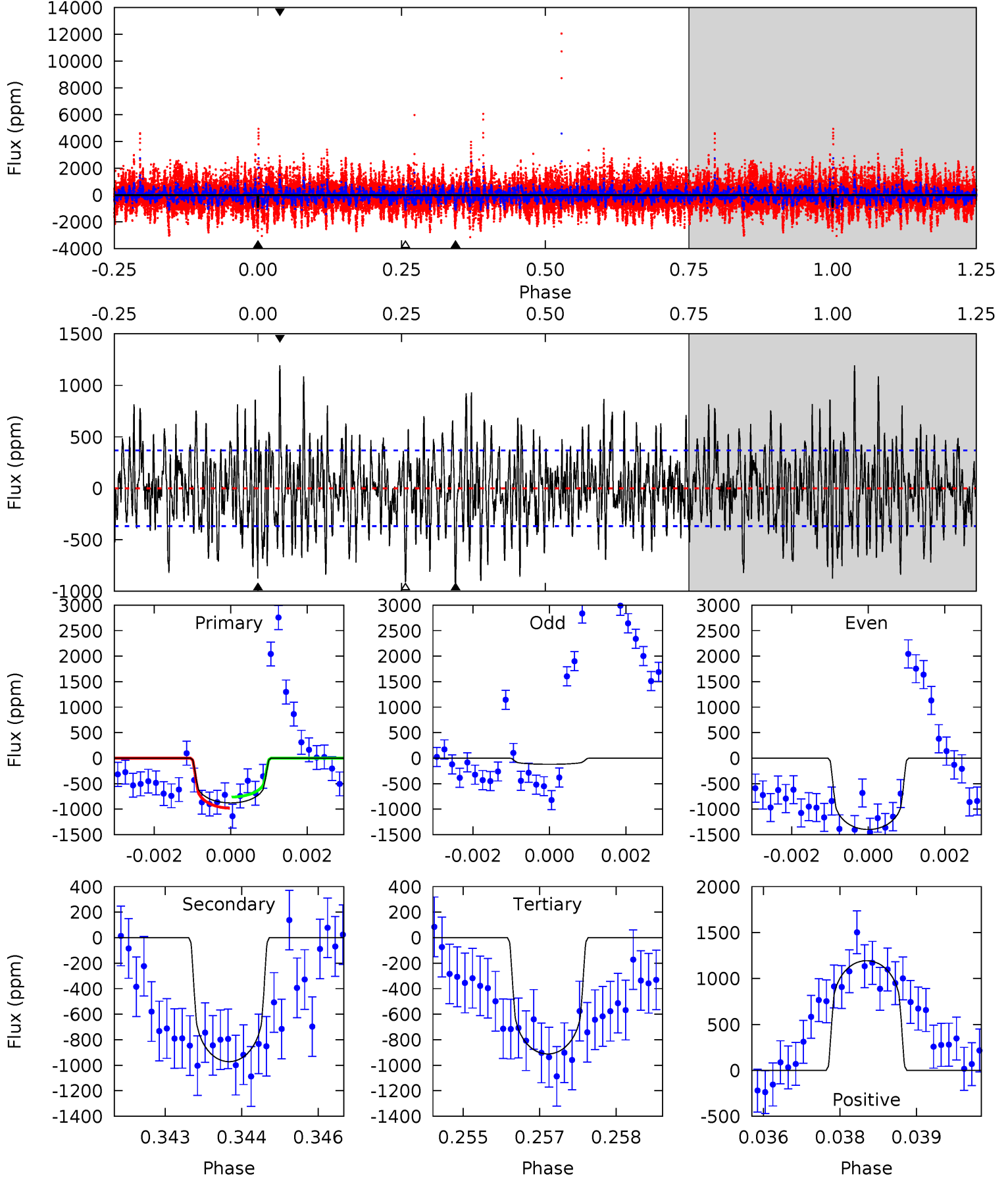
TCE 010453475-04 $P=356.143328$ Days $T_0=254.552307$ (BKJD)



DV Model-Shift Uniqueness Test

010453475-04, P = 356.036989 Days, E = 254.673963 Days

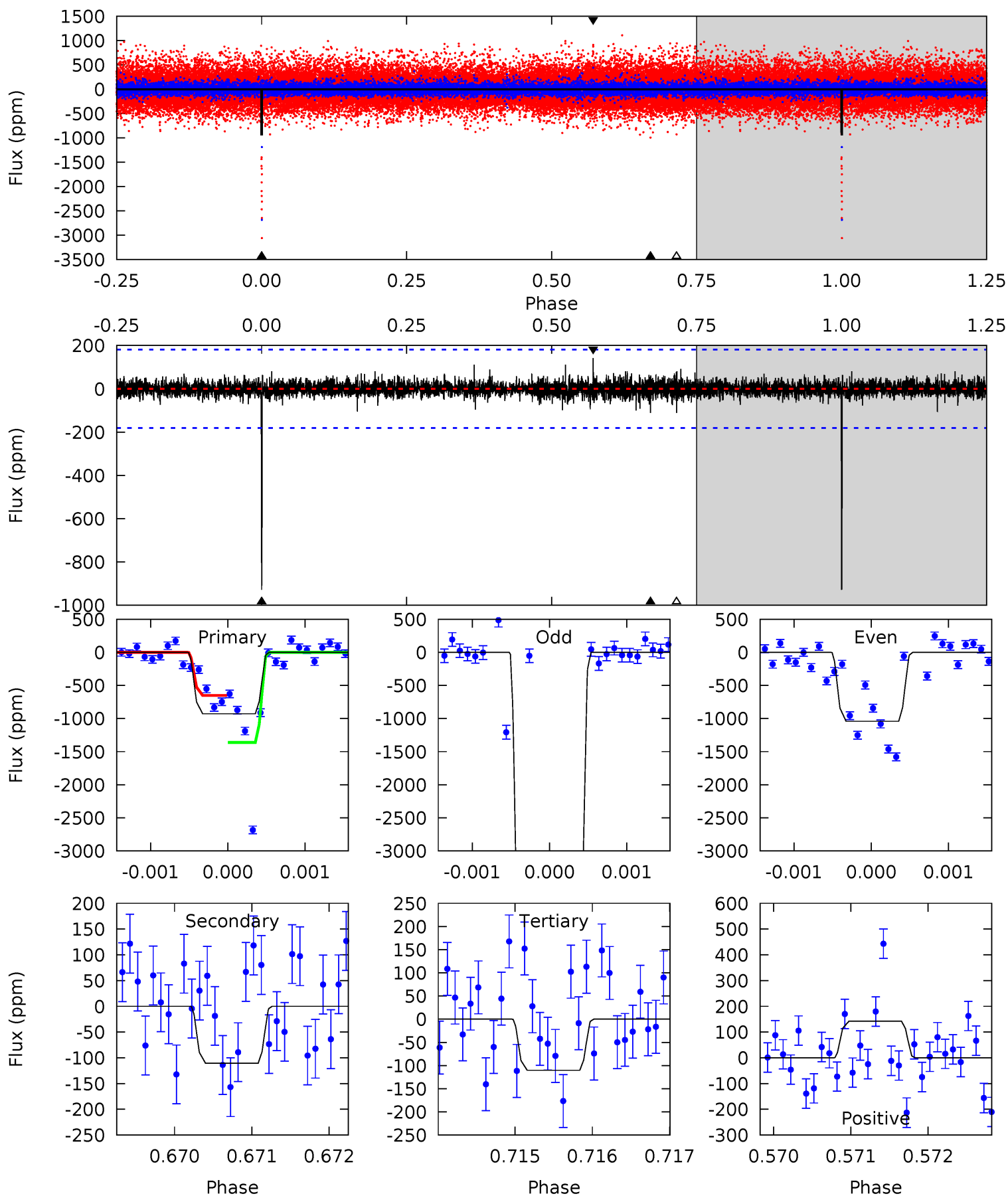
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	14.2	13.3	17.4	5.37	3.16	4.45	-0.50	-4.62	0.88	-3.24	5.44	2.99	0.55	1.60



Alt Model-Shift Uniqueness Test

010453475-04, P = 356.143328 Days, E = 254.552307 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	3.32	3.31	4.27	5.43	3.26	0.63	24.6	23.7	0.01	-0.94	82.3	2.97	0.13	10.8



Stellar Parameters For KIC 010453475

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5403^{+162}_{-146}	$4.523^{+0.105}_{-0.086}$	$-0.560^{+0.350}_{-0.300}$	$0.761^{+0.099}_{-0.090}$	$0.704^{+0.094}_{-0.040}$	$2.253^{+0.987}_{-0.577}$
	+3%/-3%	+2%/-2%	+62%/-54%	+13%/-12%	+13%/-6%	+44%/-26%
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 010453475-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-972 ± 68	$2.19^{+0.55}_{-0.55}$	310^{+14}_{-13}	5844^{+920}_{-548}	86986^{+69243}_{-31645}
Alt.	-110 ± 33	$4.74^{+0.65}_{-0.61}$	310^{+14}_{-13}	2977^{+172}_{-176}	2092^{+956}_{-711}

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

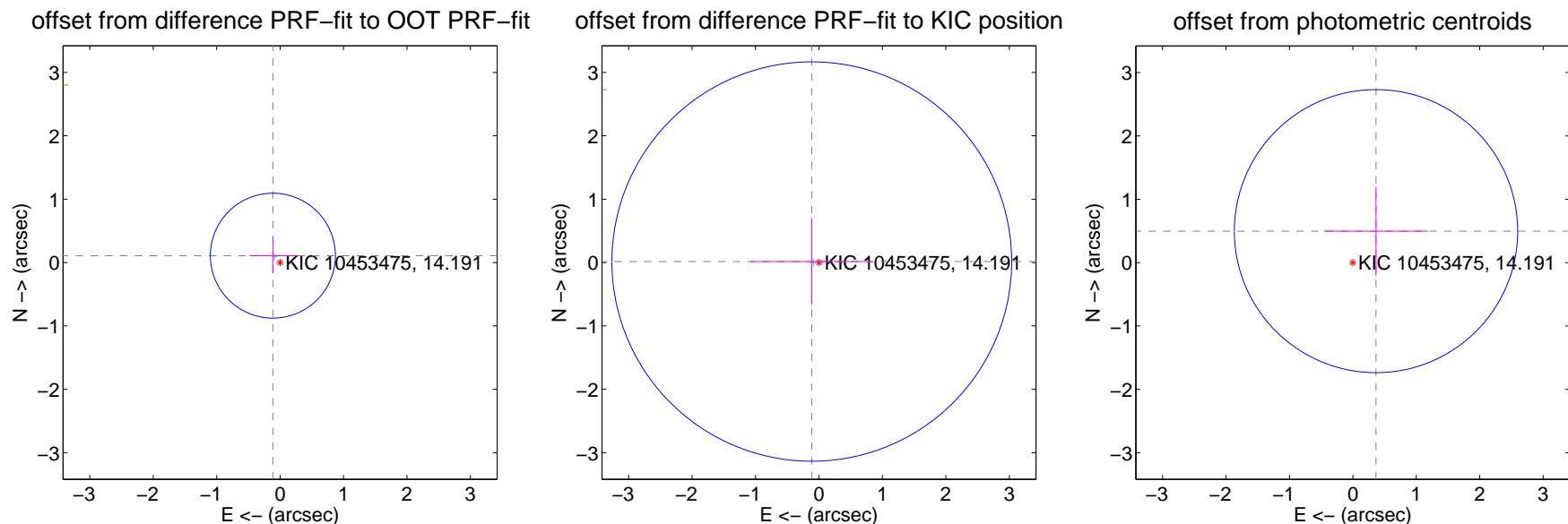
DV Centroid Data

Supplemental centroid analysis for 010453475-04. Kepler magnitude: 14.19. Transit SNR 4.62

There are 1 quarters with good PRF difference image offsets

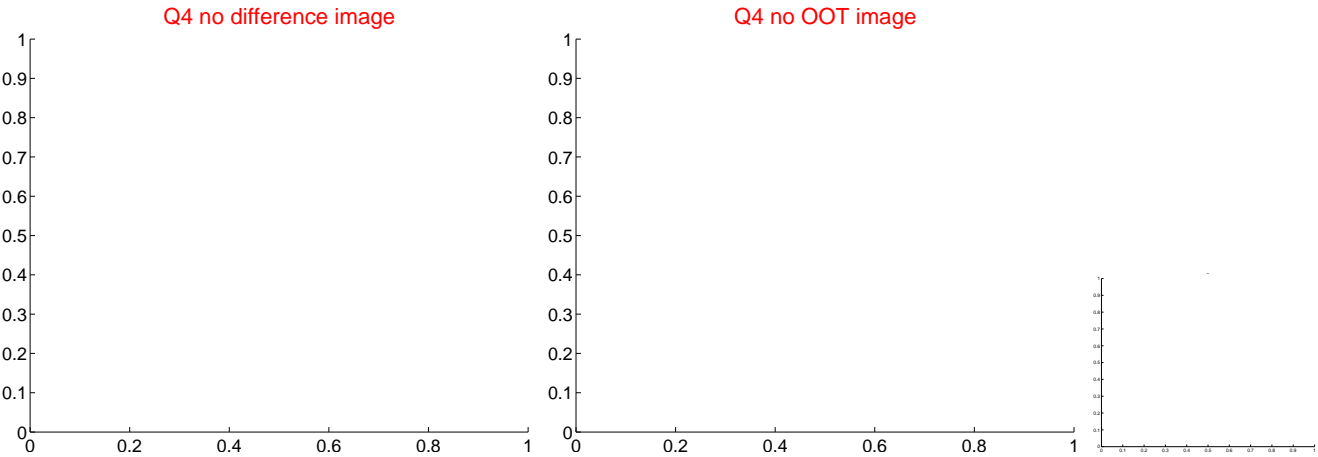
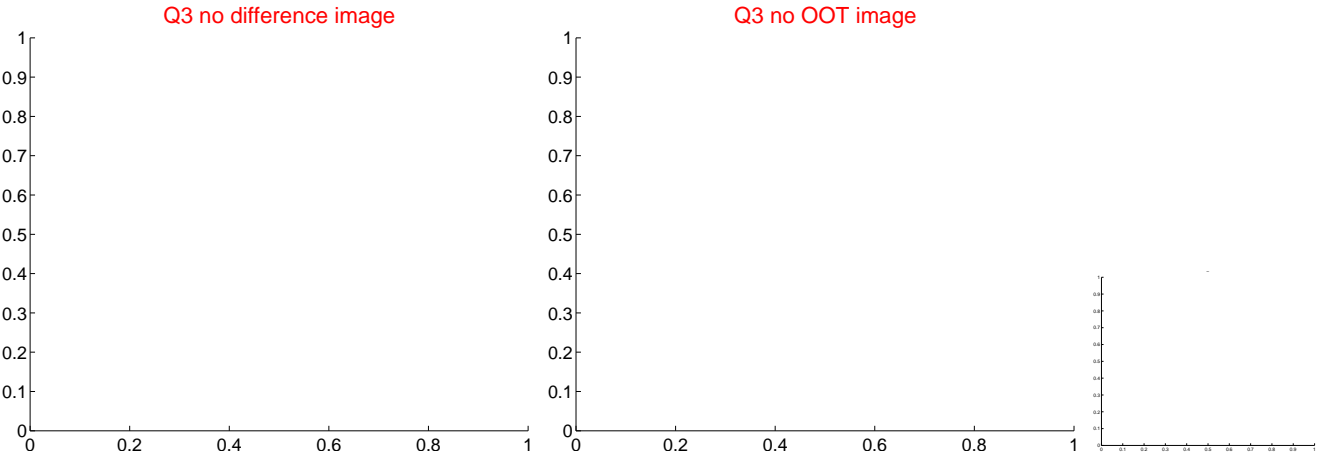
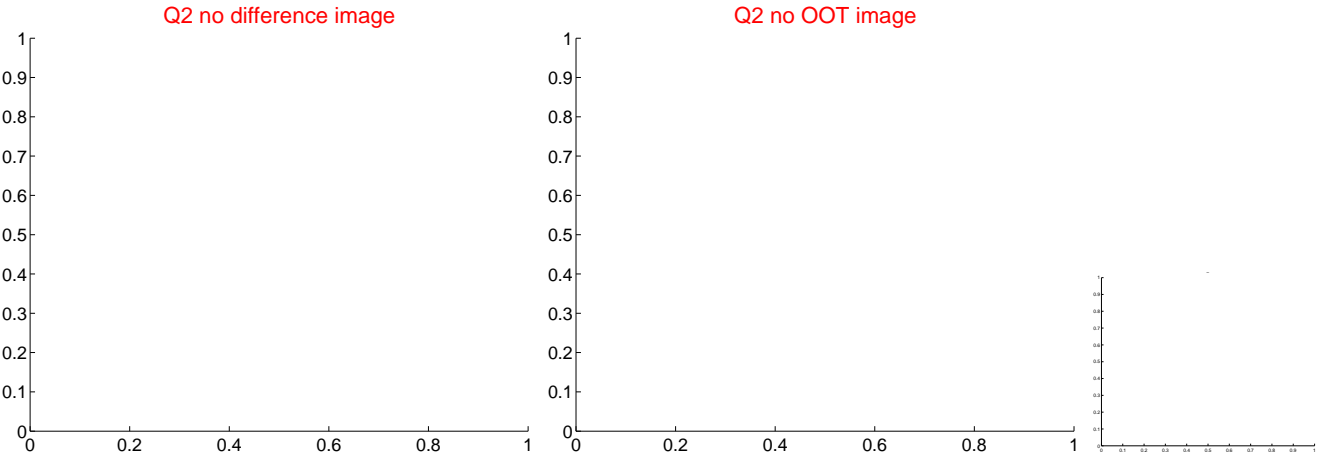
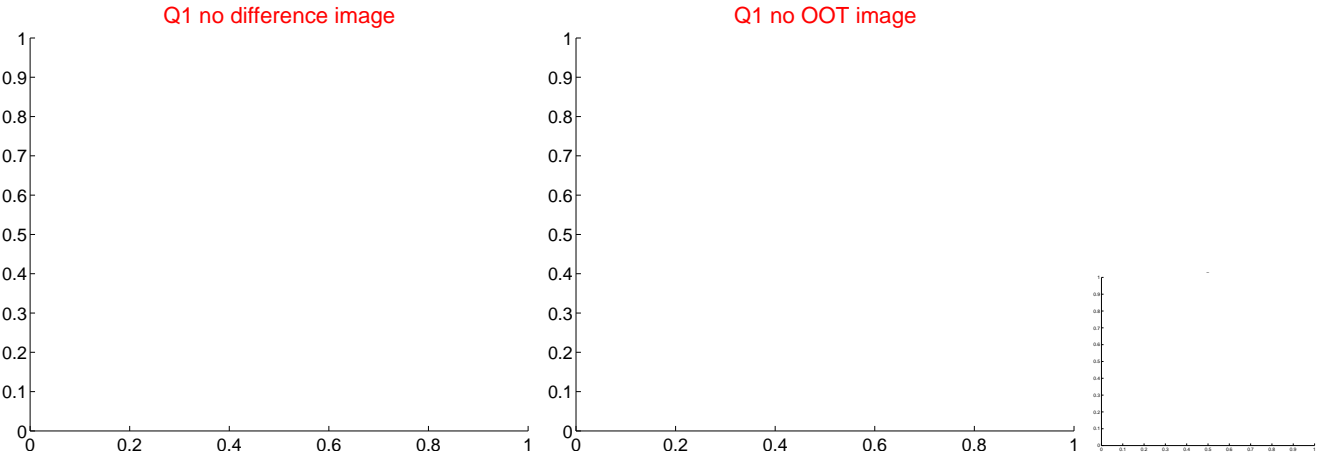
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.157 ± 0.328	0.48	0.114 ± 0.367	0.108 ± 0.279
PRF-fit source offset from KIC position	0.115 ± 1.050	0.11	0.113 ± 0.966	0.016 ± 0.686
photometric centroid source offset	0.62 ± 0.74	0.83	-0.37 ± 0.82	0.50 ± 0.70



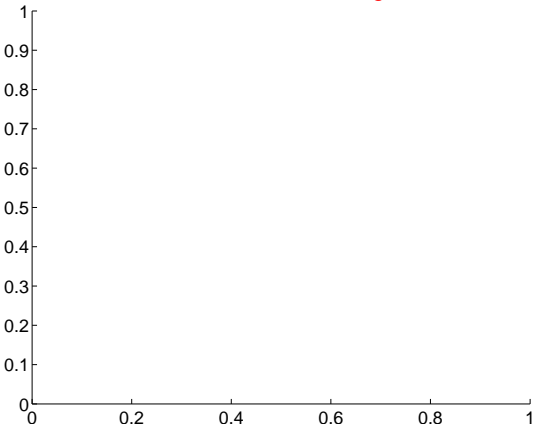
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

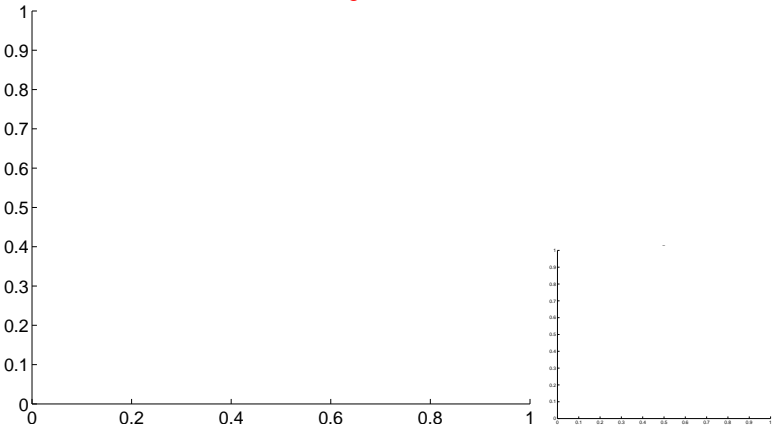


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

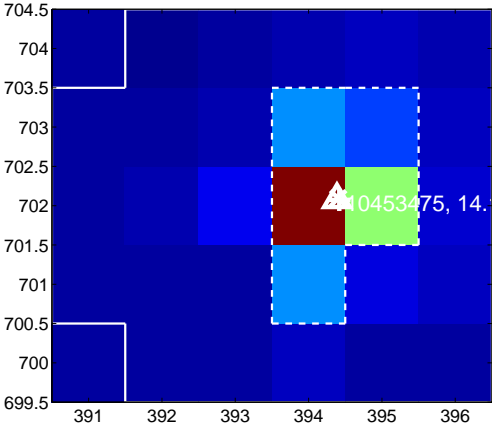
Q5 no difference image



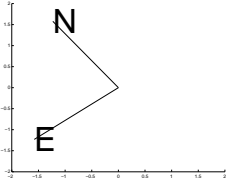
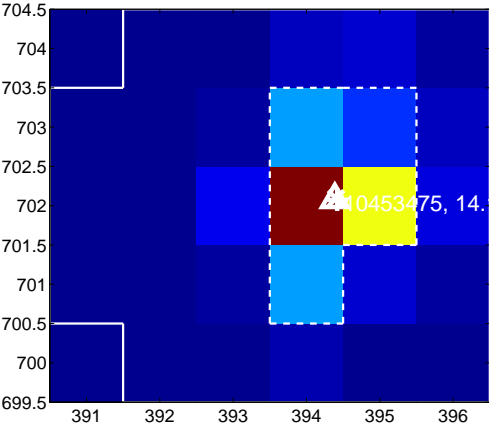
Q5 no OOT image



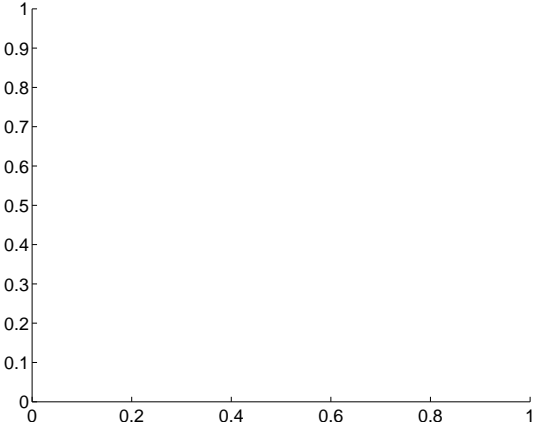
Q6 difference image



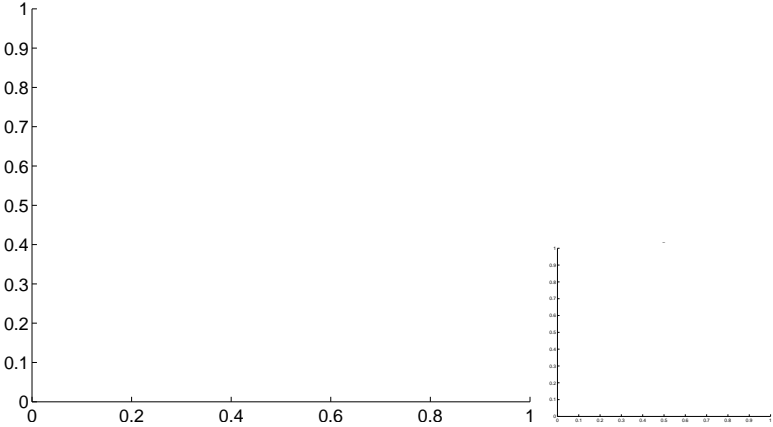
Q6 OOT image



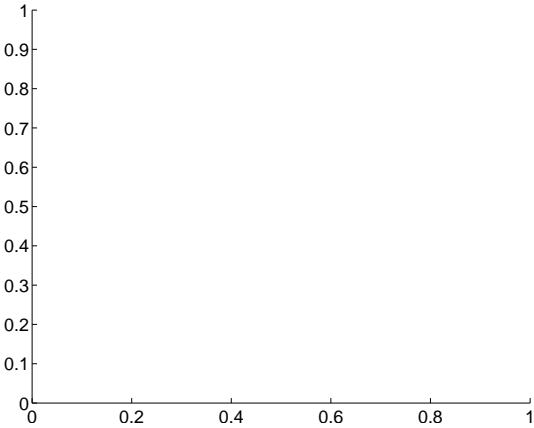
Q7 no difference image



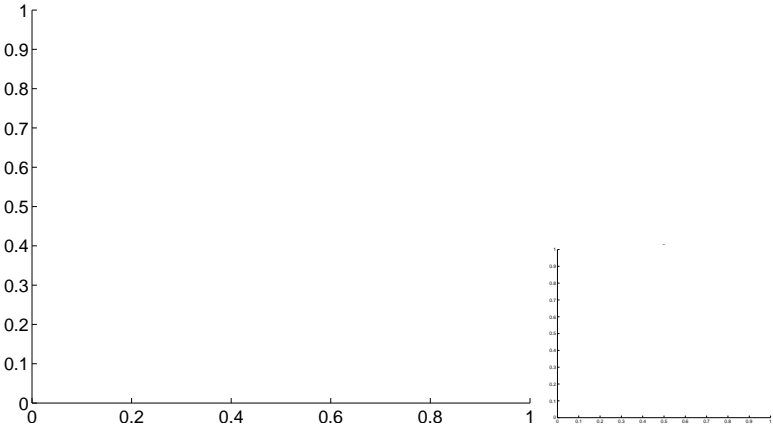
Q7 no OOT image



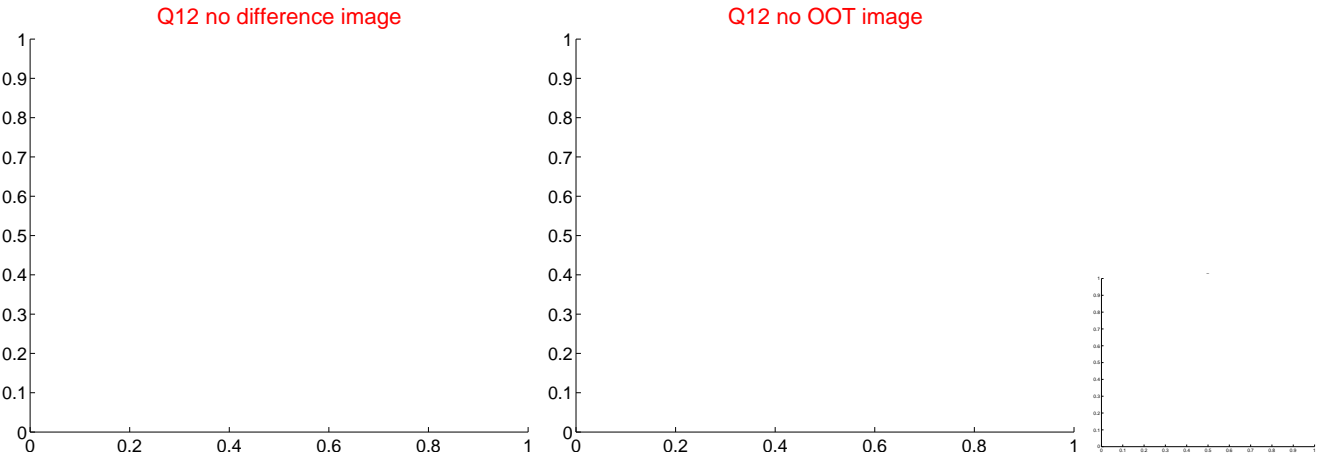
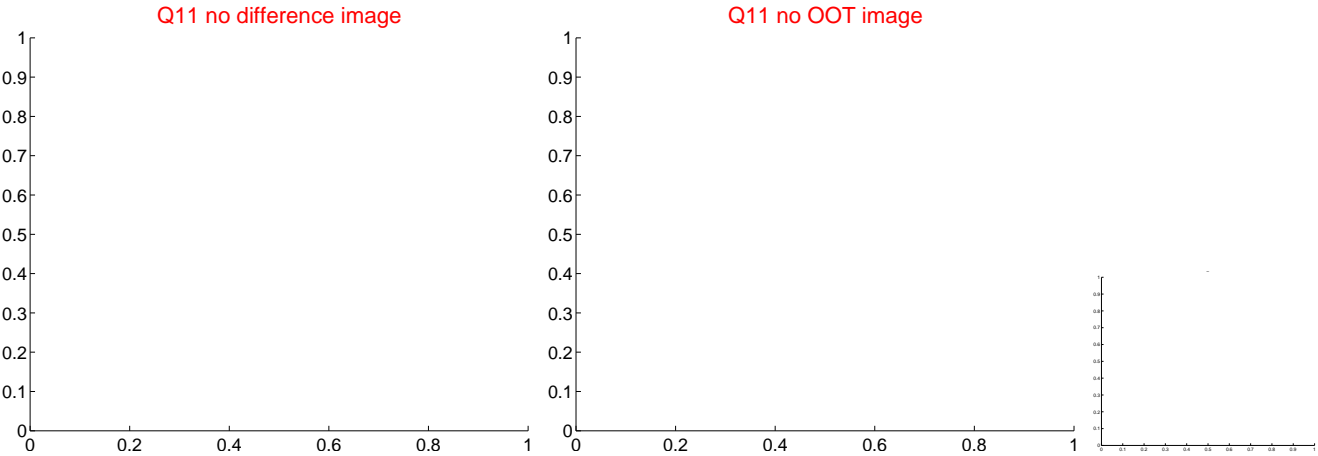
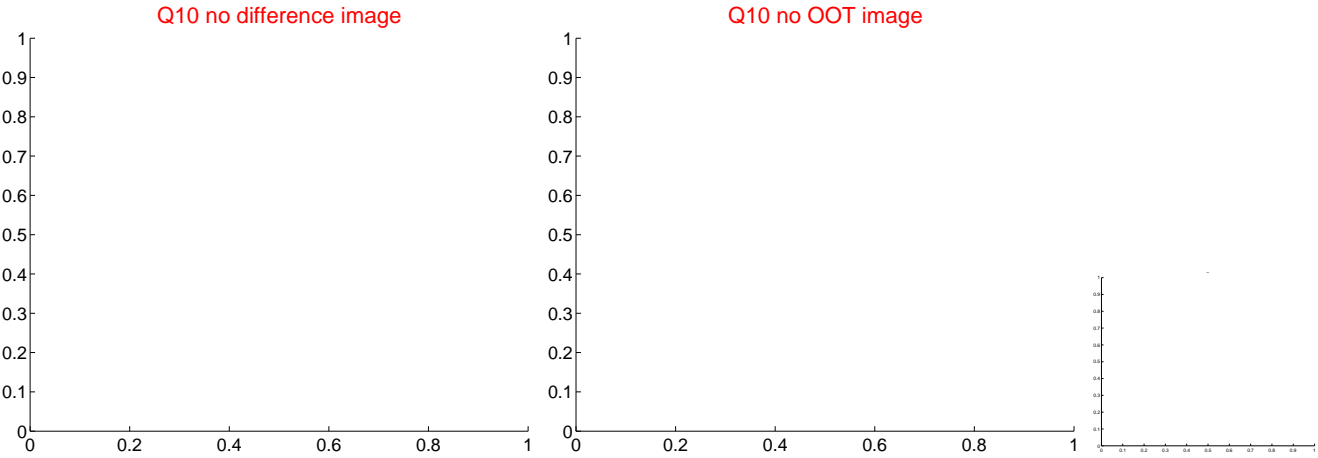
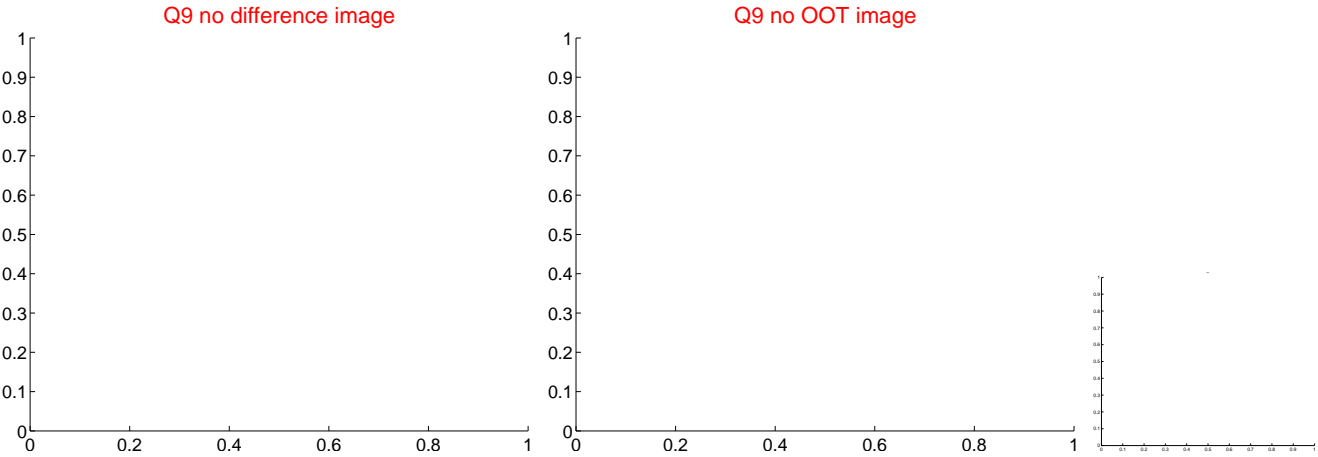
Q8 no difference image



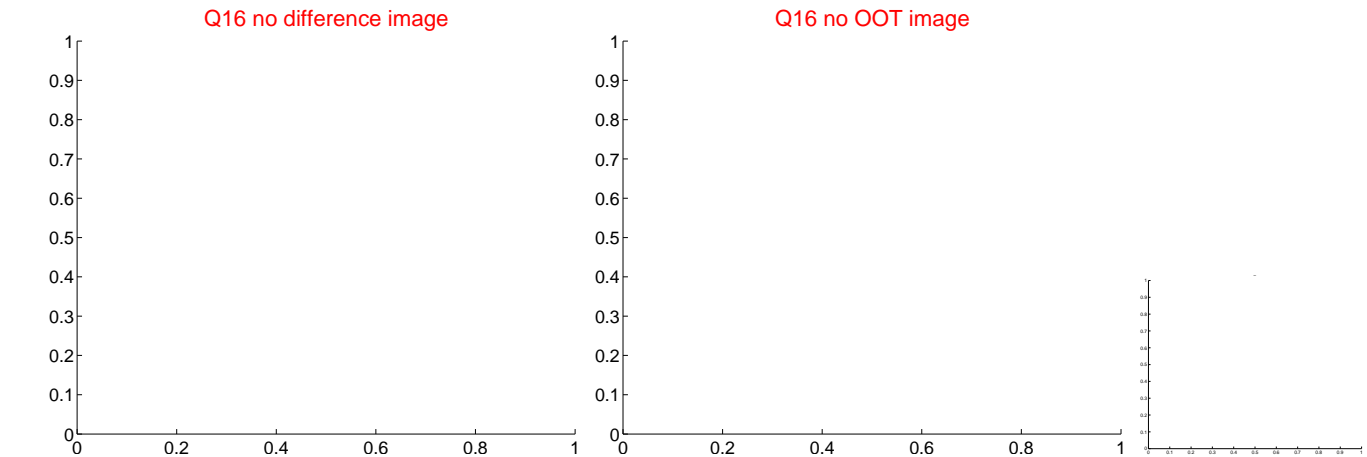
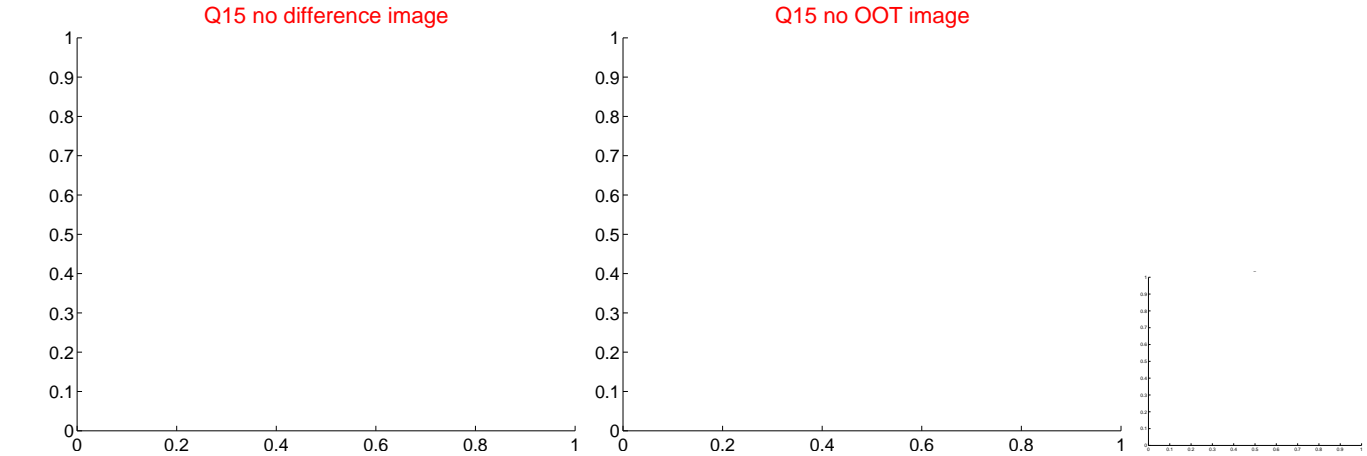
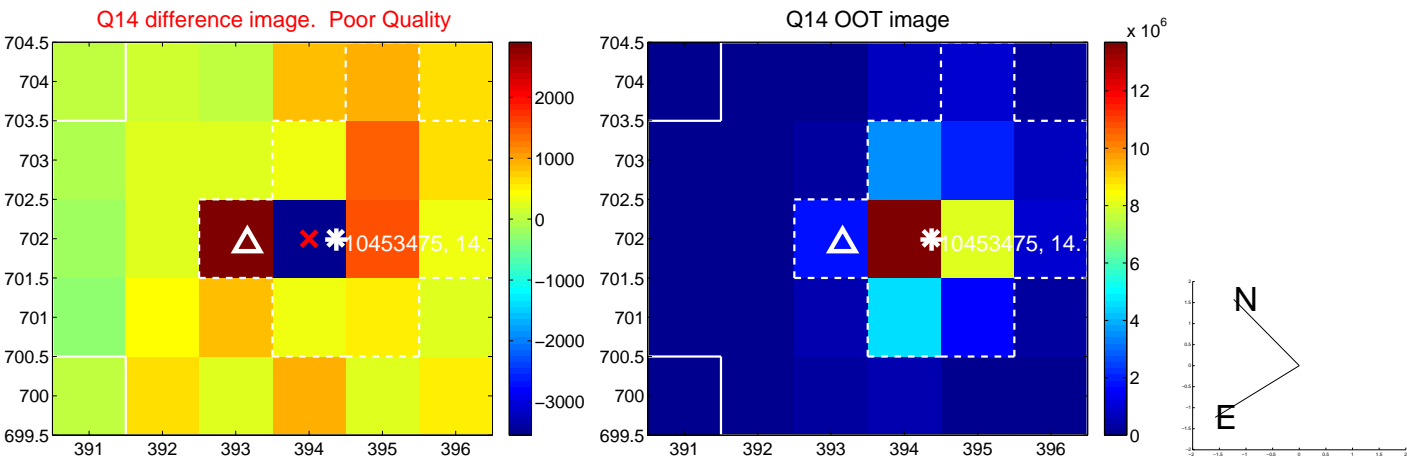
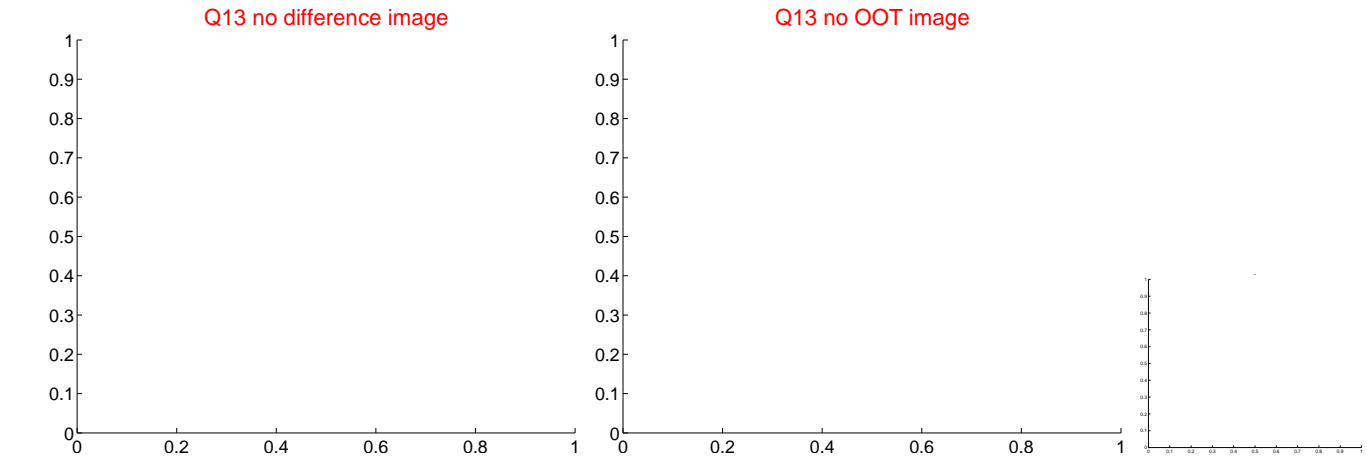
Q8 no OOT image



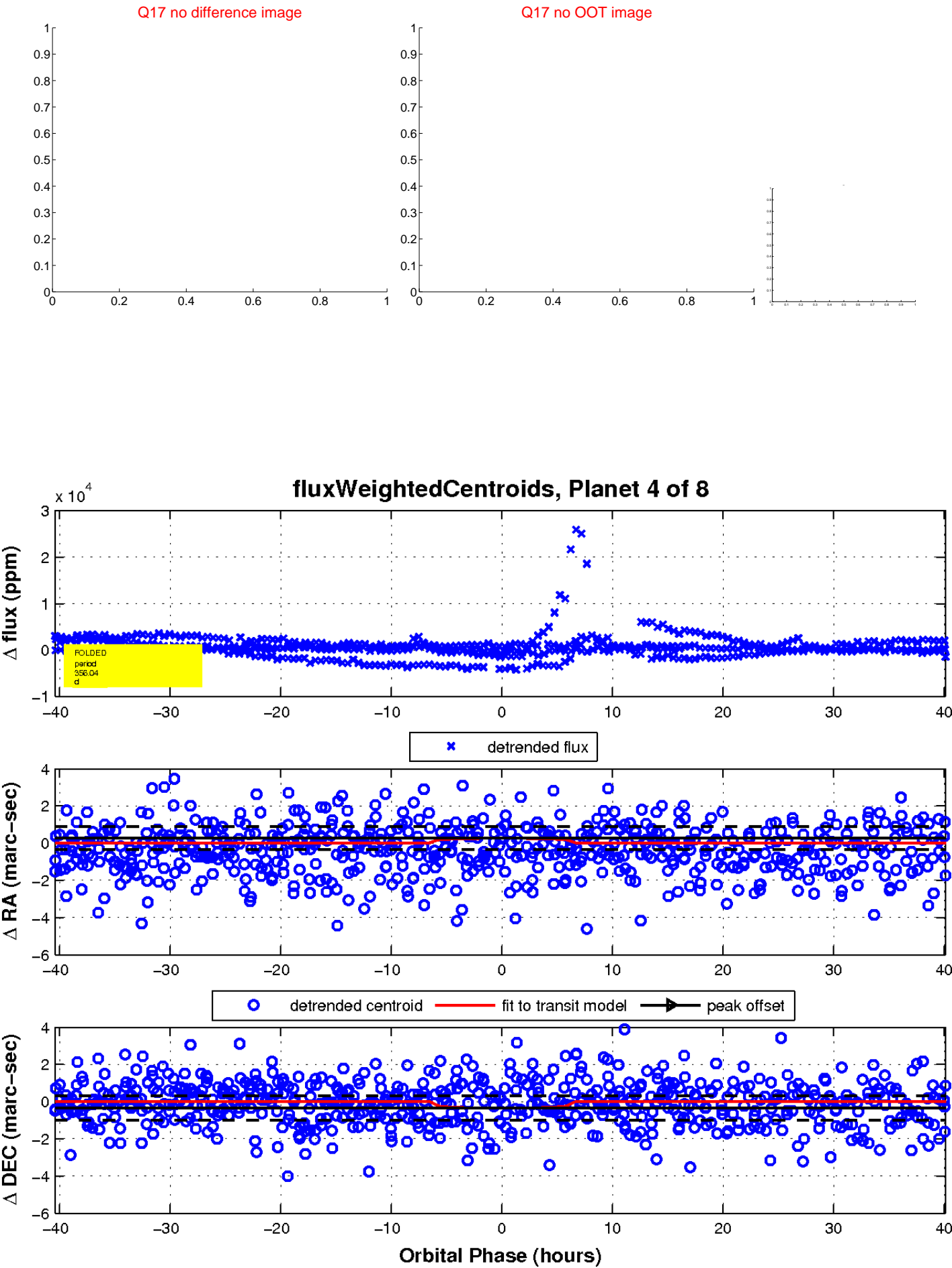
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

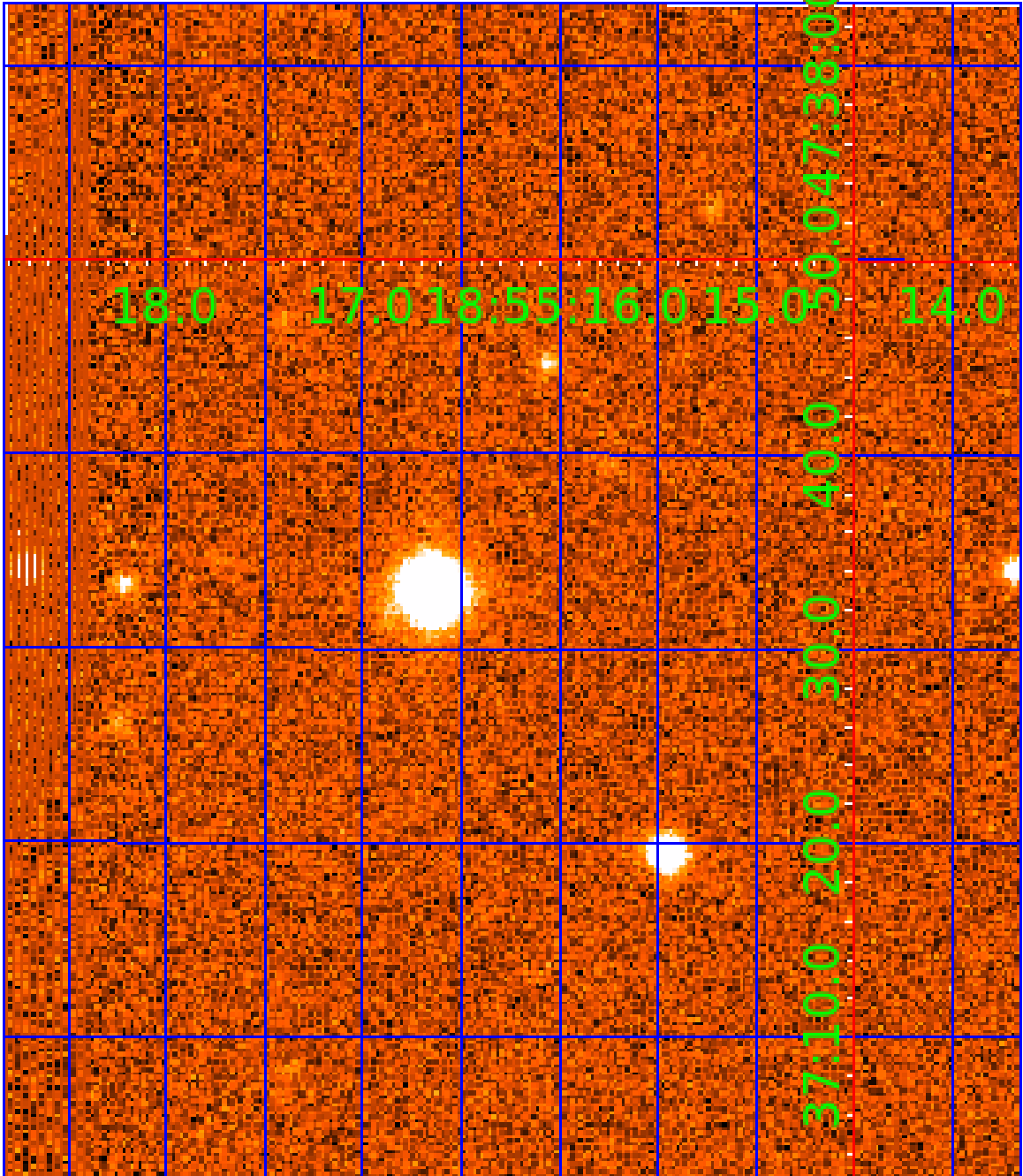


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010453475

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})
010453475-01	OBS	No	393.378268	438.677130	798.2	5.765	31.5	5.1	0.76	5403	2.58	0.51
010453475-02	OBS	No	660.132863	233.500041	2804.8	15.043	24.7	12.9	0.76	5403	7.63	0.25
010453475-03	OBS	No	540.142084	483.482529	856.9	11.546	26.8	5.4	0.76	5403	2.33	0.33
010453475-04	OBS	No	356.036989	254.673963	662.6	13.469	19.3	4.6	0.76	5403	2.19	0.58
010453475-05	OBS	No	342.444485	364.224299	1856.1	49.504	13.7	9.1	0.76	5403	3.47	0.61
010453475-06	OBS	No	581.610076	332.422502	1220.2	14.767	20.1	8.1	0.76	5403	2.70	0.30
010453475-08	OBS	No	374.553966	277.965130	1298.4	4.500	14.6	-1.0	0.76	5403	2.71	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010453475-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-02	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
010453475-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
010453475-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

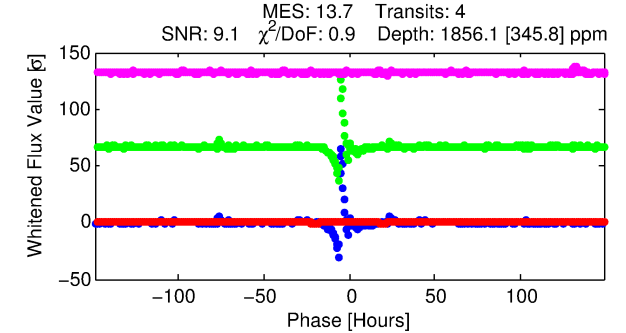
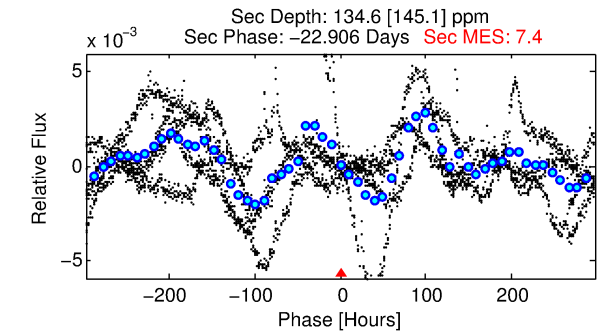
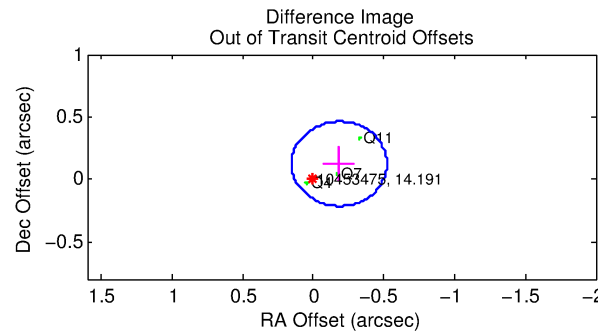
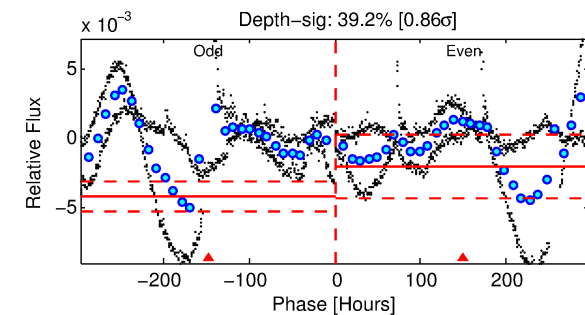
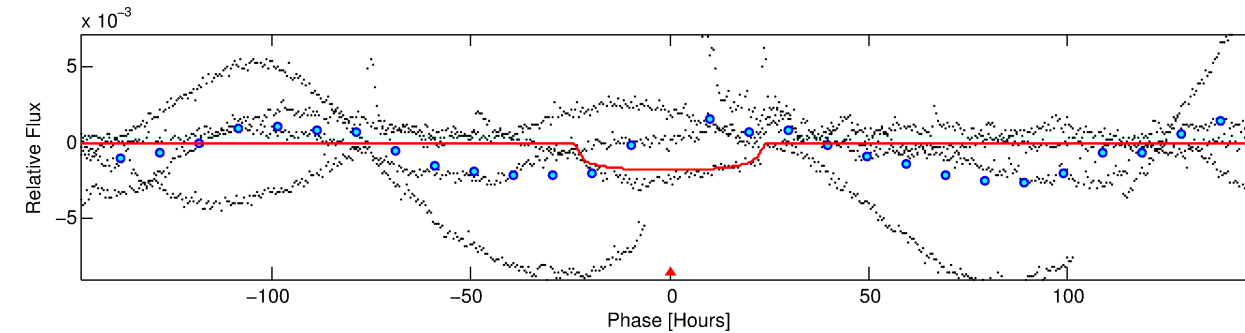
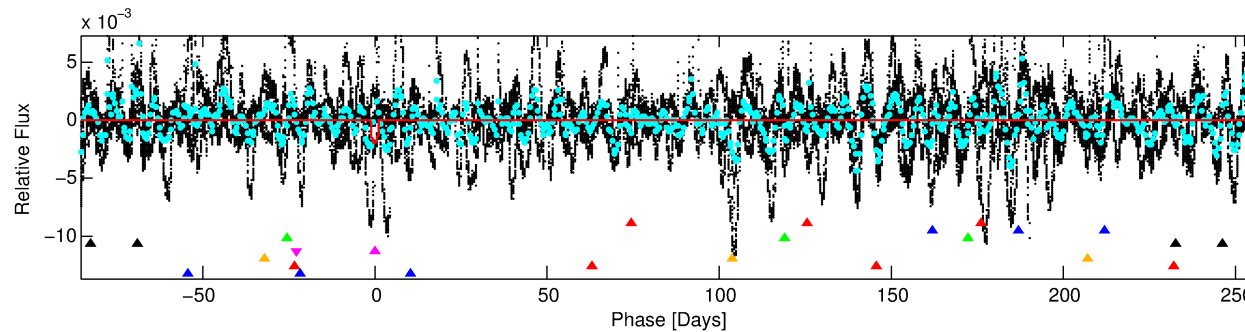
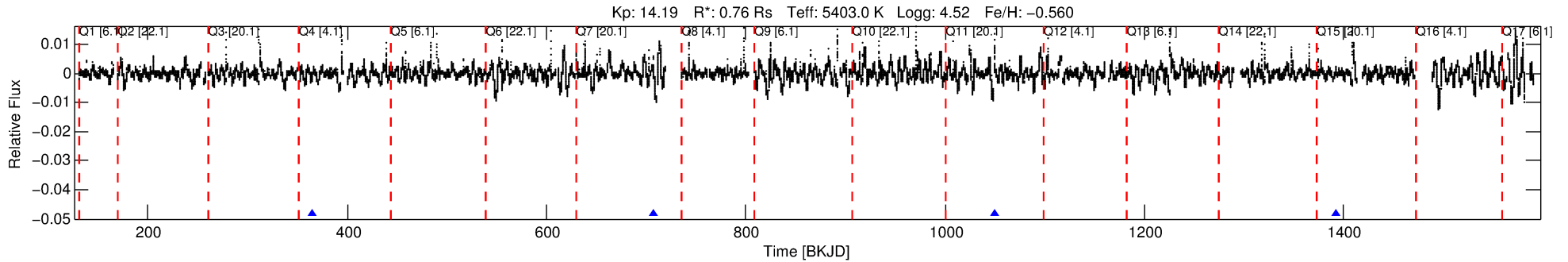
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010453475-05

No Significant Match Found

DV One-Page Summary

KIC: 10453475 Candidate: 5 of 8 Period: 342.444 d



DV Fit Results:

Period = 342.44448 [0.01104] d
Epoch = 364.2243 [0.0200] BKJD
Rp/R* = 0.0417 [0.0043]
a/R* = 42.19 [5.59]
b = 0.67 [0.11]
Seff = 0.61 [0.13]
Teff = 225 [12] K
Rp = 3.47 [0.58] Re
a = 0.8525 [0.1009] AU
Ag = 4478.31 [4983.16] [0.90σ]
Teffp = 2848 [786] K [3.34σ]

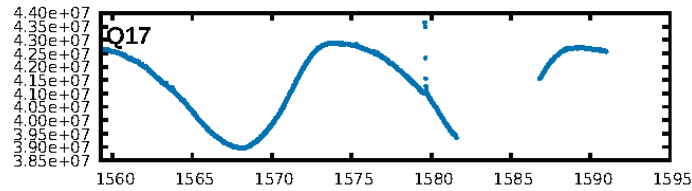
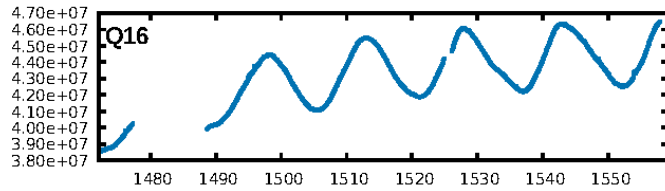
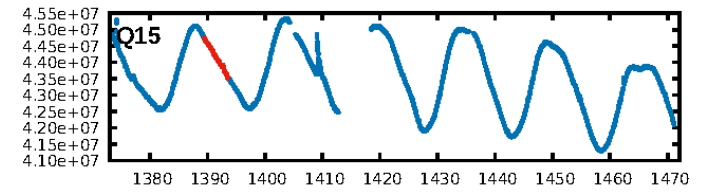
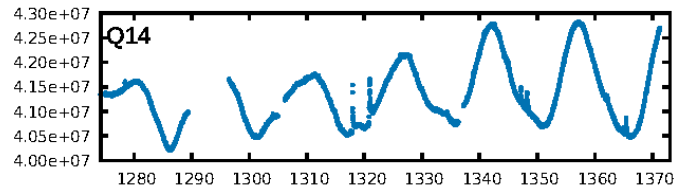
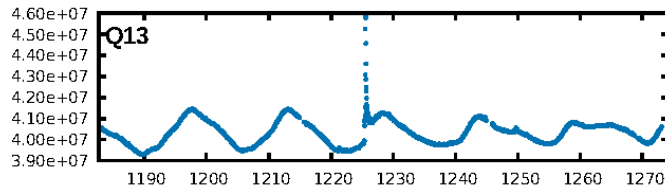
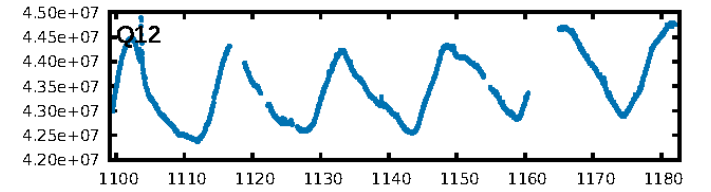
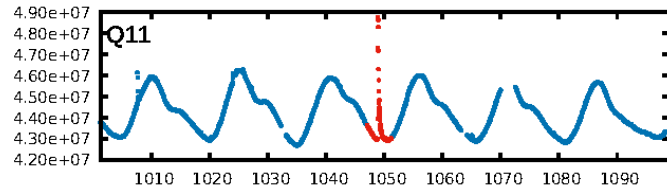
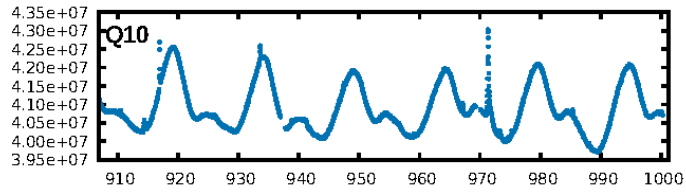
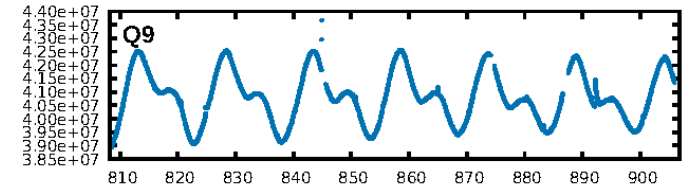
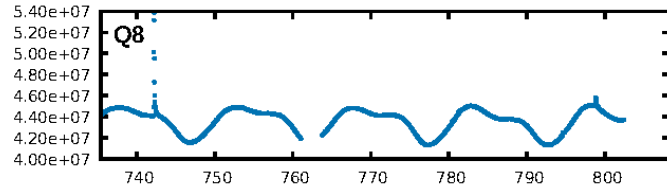
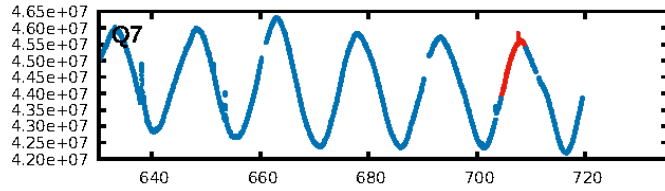
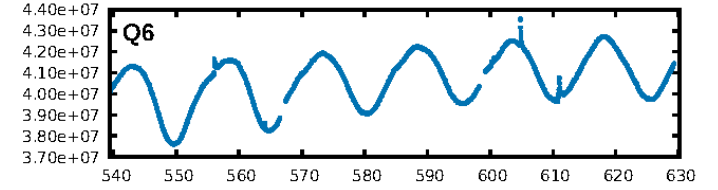
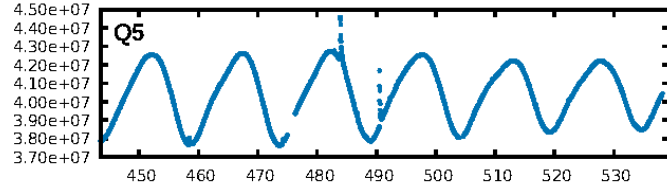
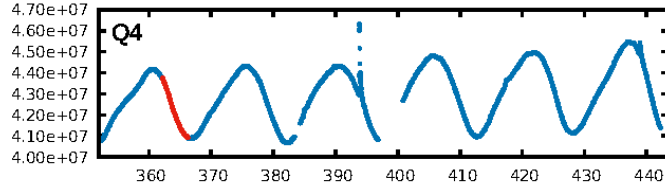
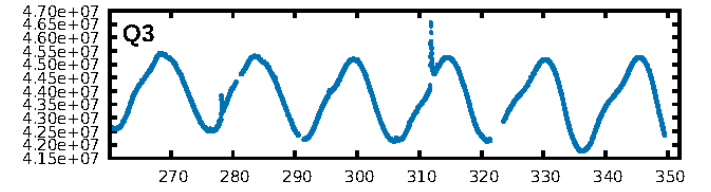
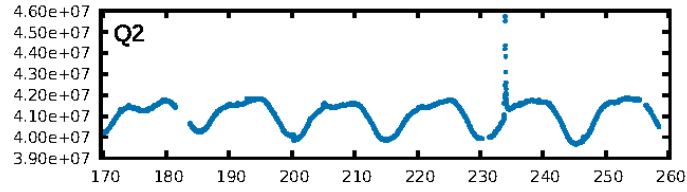
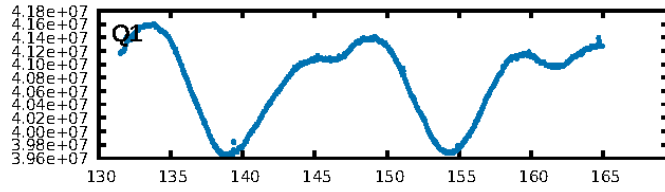
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [6.36σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.296
Centroid-sig: 9.5%
Centroid-so: 0.207 arcsec [1.32σ]
OotOffset-rm: 0.220 arcsec [1.95σ]
KicOffset-rm: 0.170 arcsec [1.38σ]
OotOffset-st: 0/2/1/0 [3]
KicOffset-st: 0/2/1/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

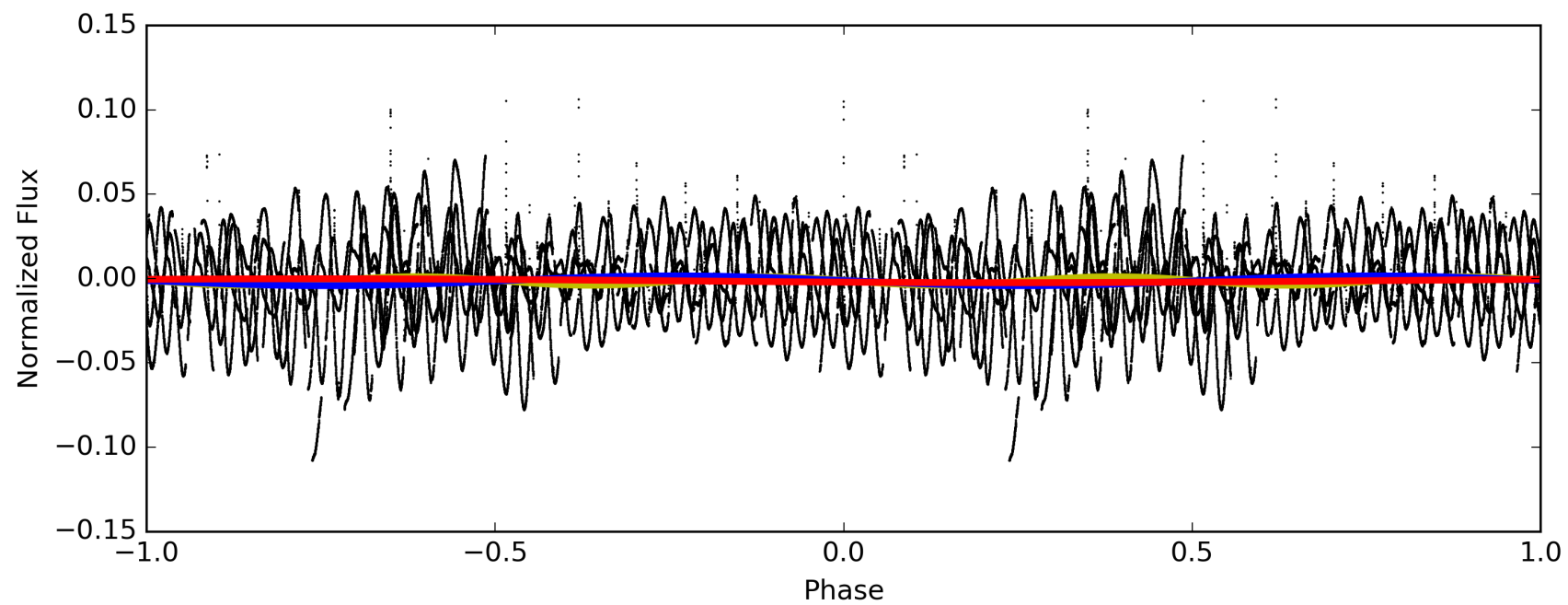
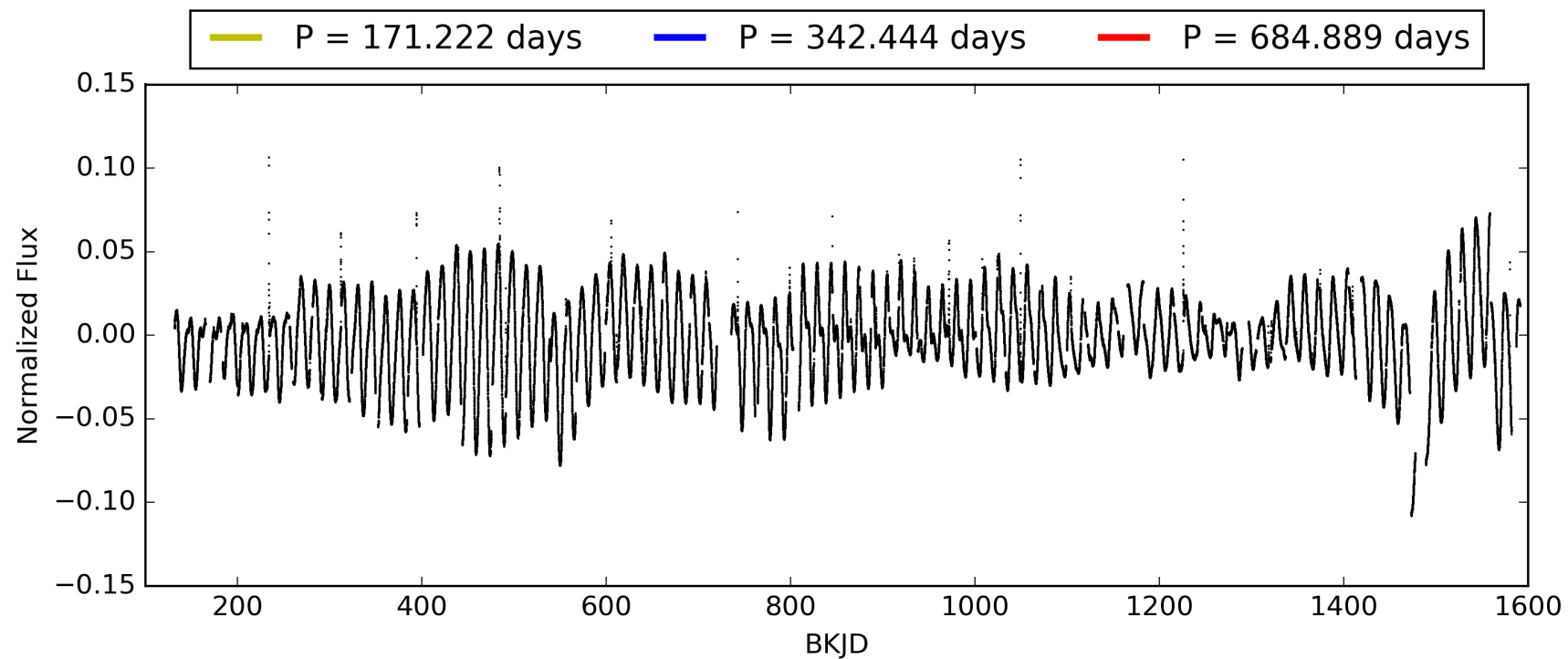
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:08:43 Z

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

TCE 010453475-05, PDC Light Curves

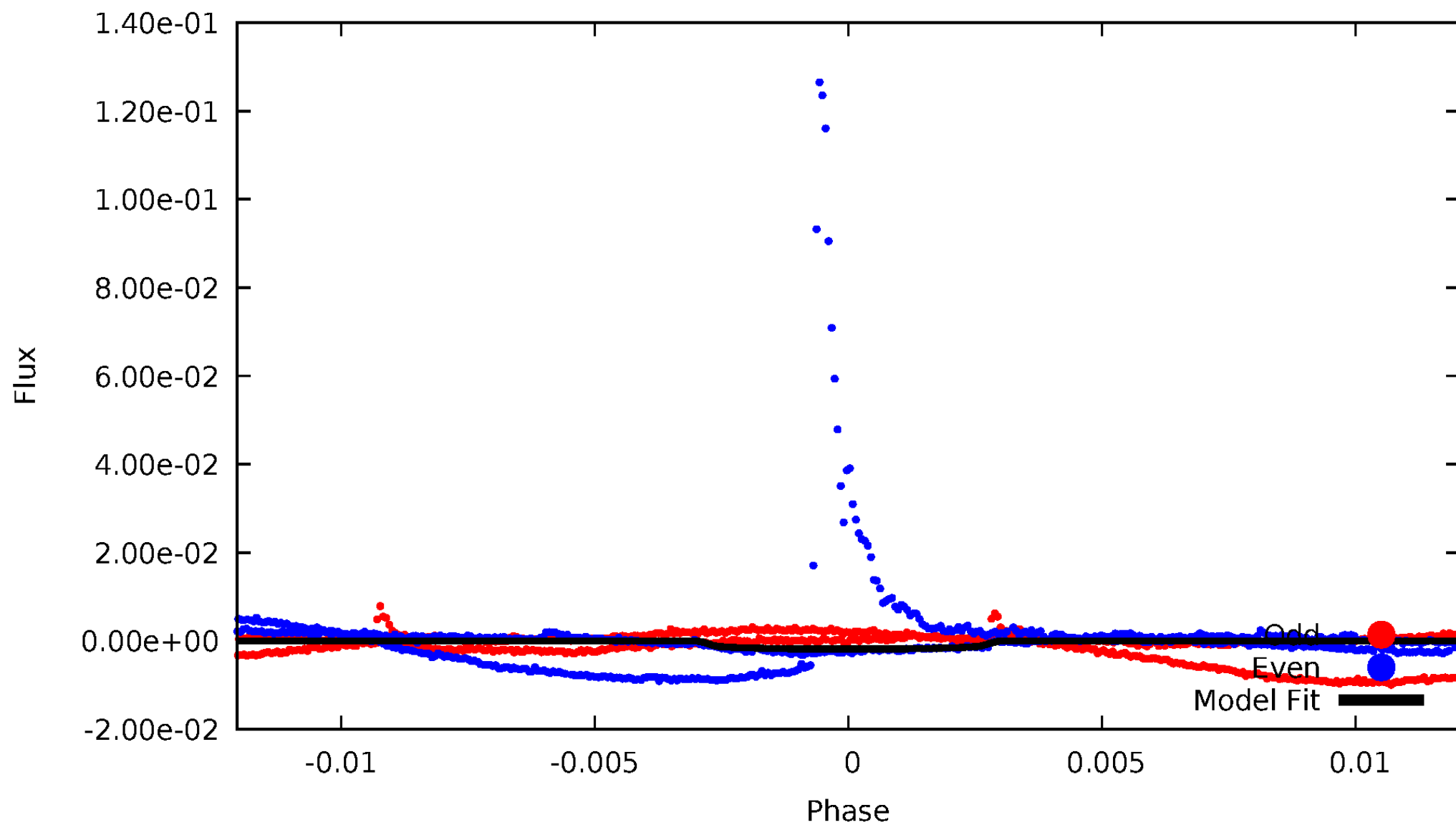


TCE 010453475-05



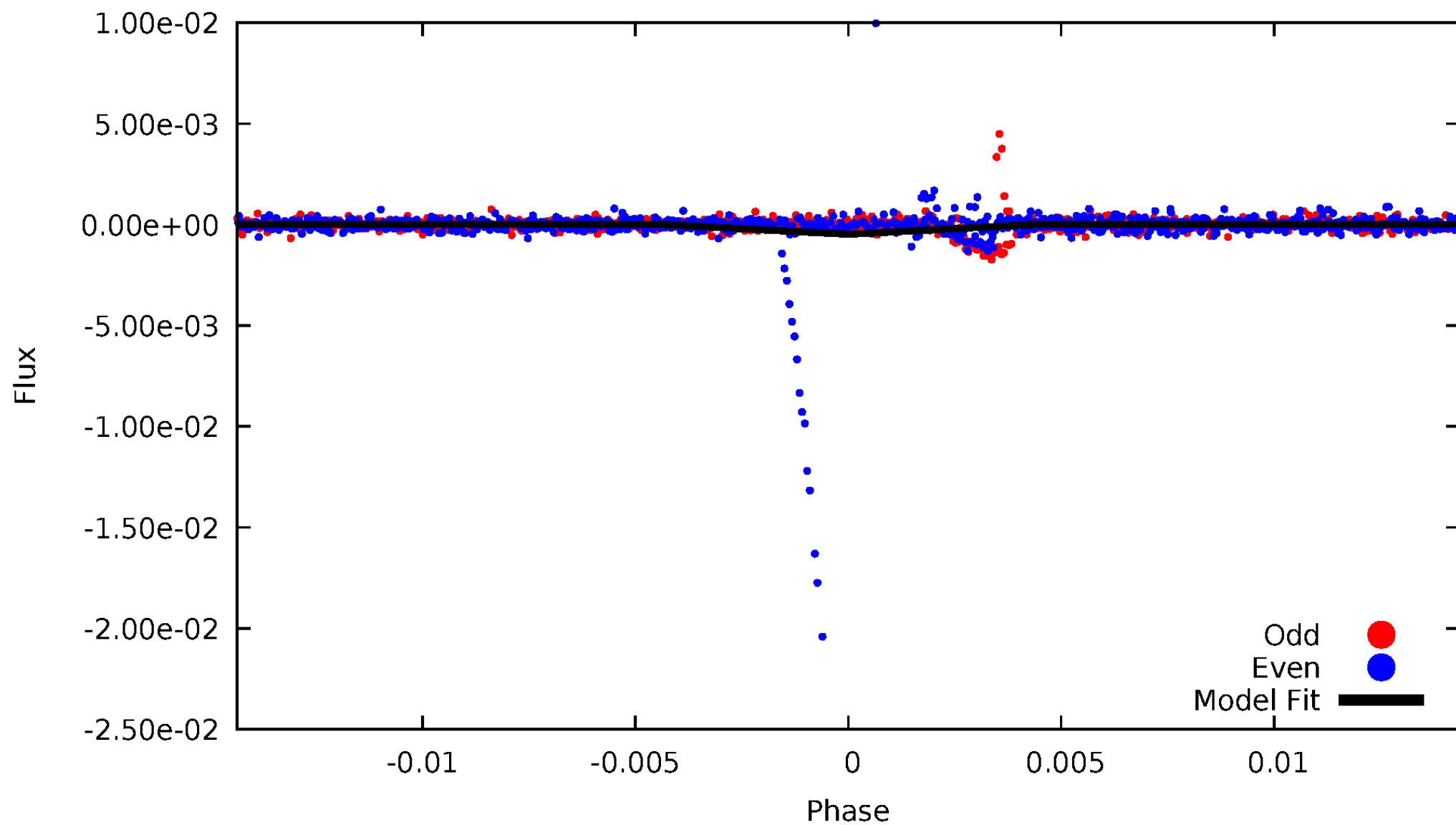
DV Odd/Even

TCE 010453475-05



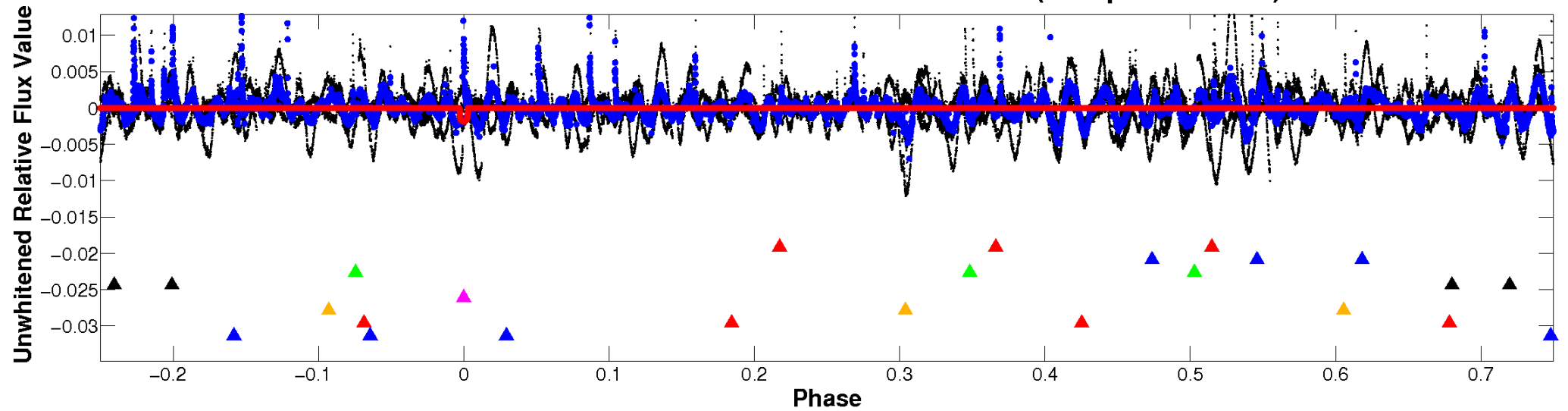
ALT Odd/Even

TCE 010453475-05

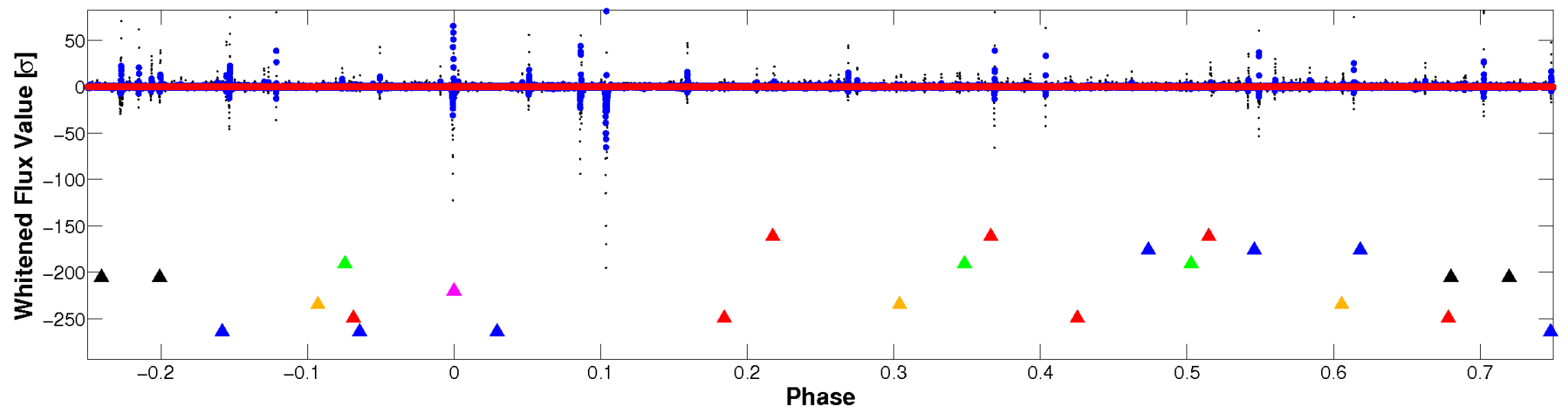


Non-Whitened Vs. Whitened Light Curve

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

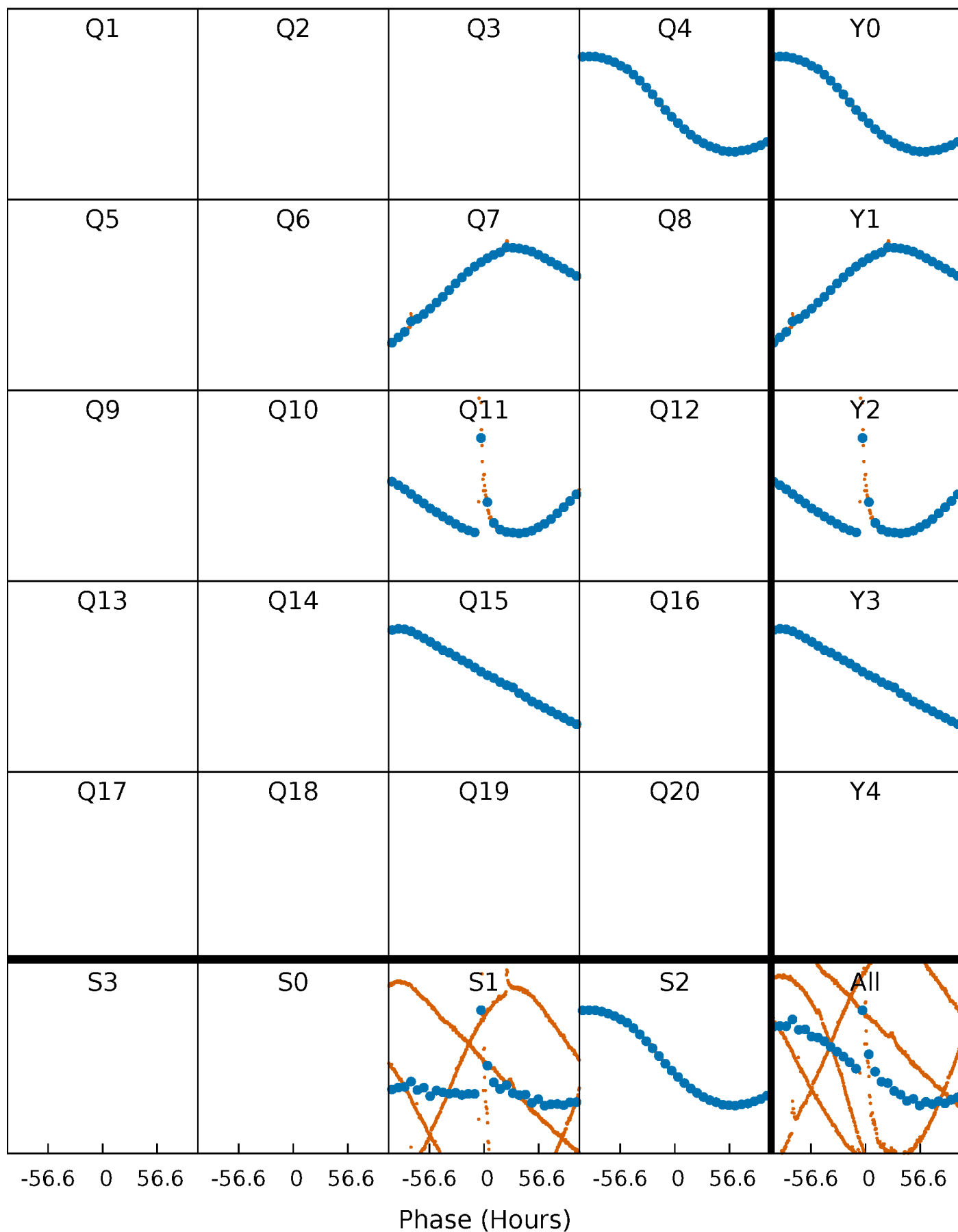


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



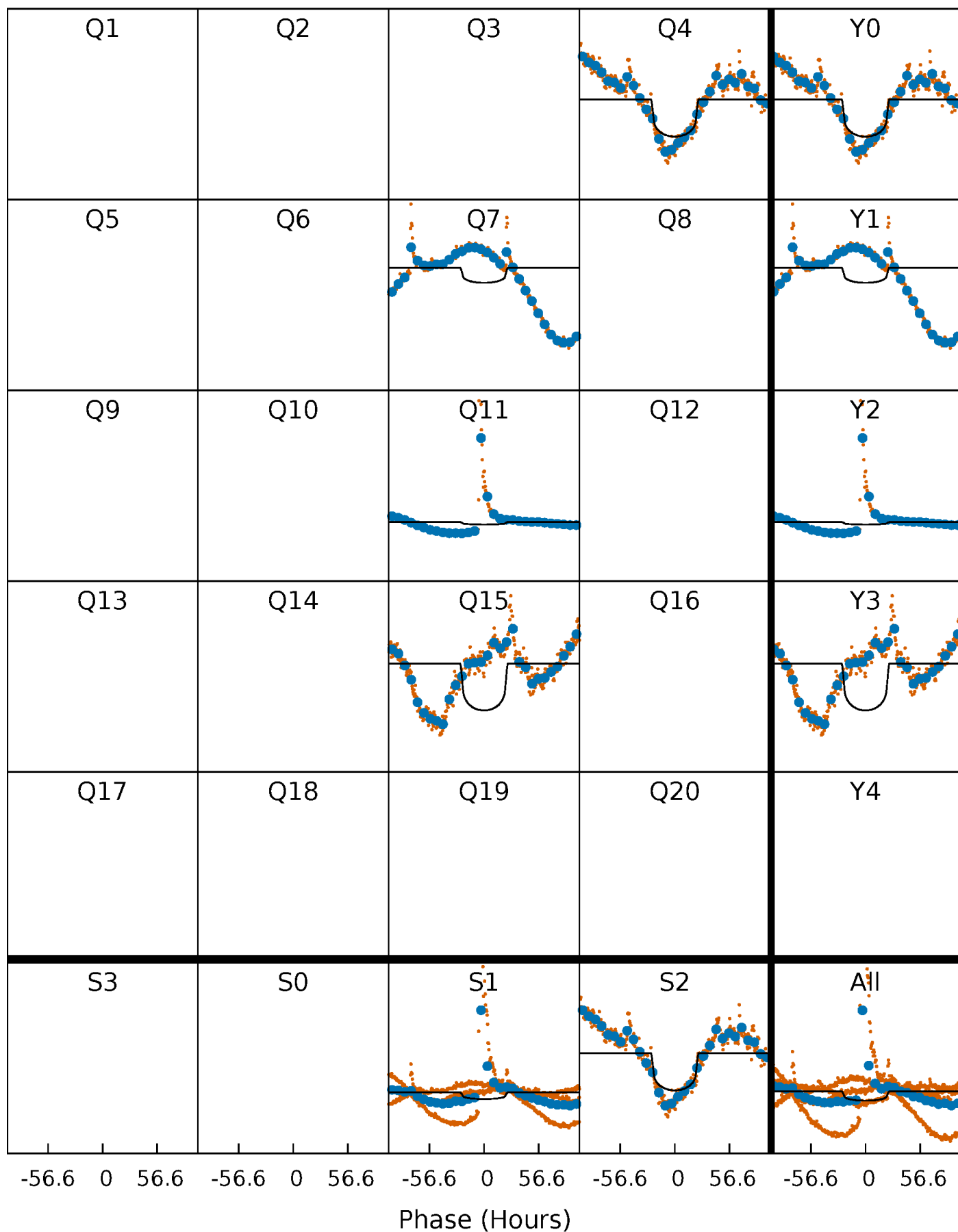
PDC Quarter-Phased Transit Curves

TCE 010453475-05 $P=342.444485$ Days $T_0=364.224299$ (BKJD)



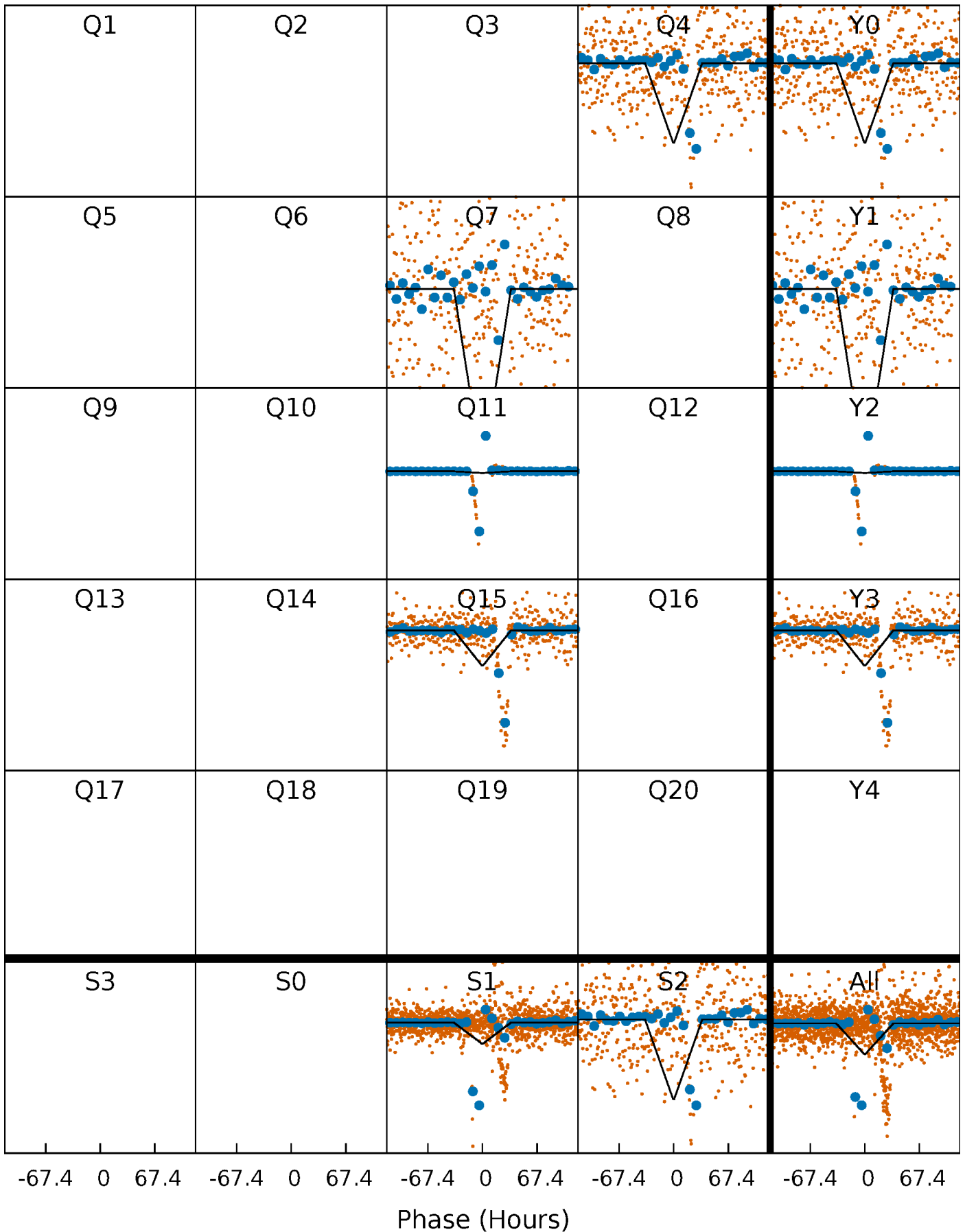
DV Quarter-Phased Transit Curves

TCE 010453475-05 $P=342.444485$ Days $T_0=364.224299$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

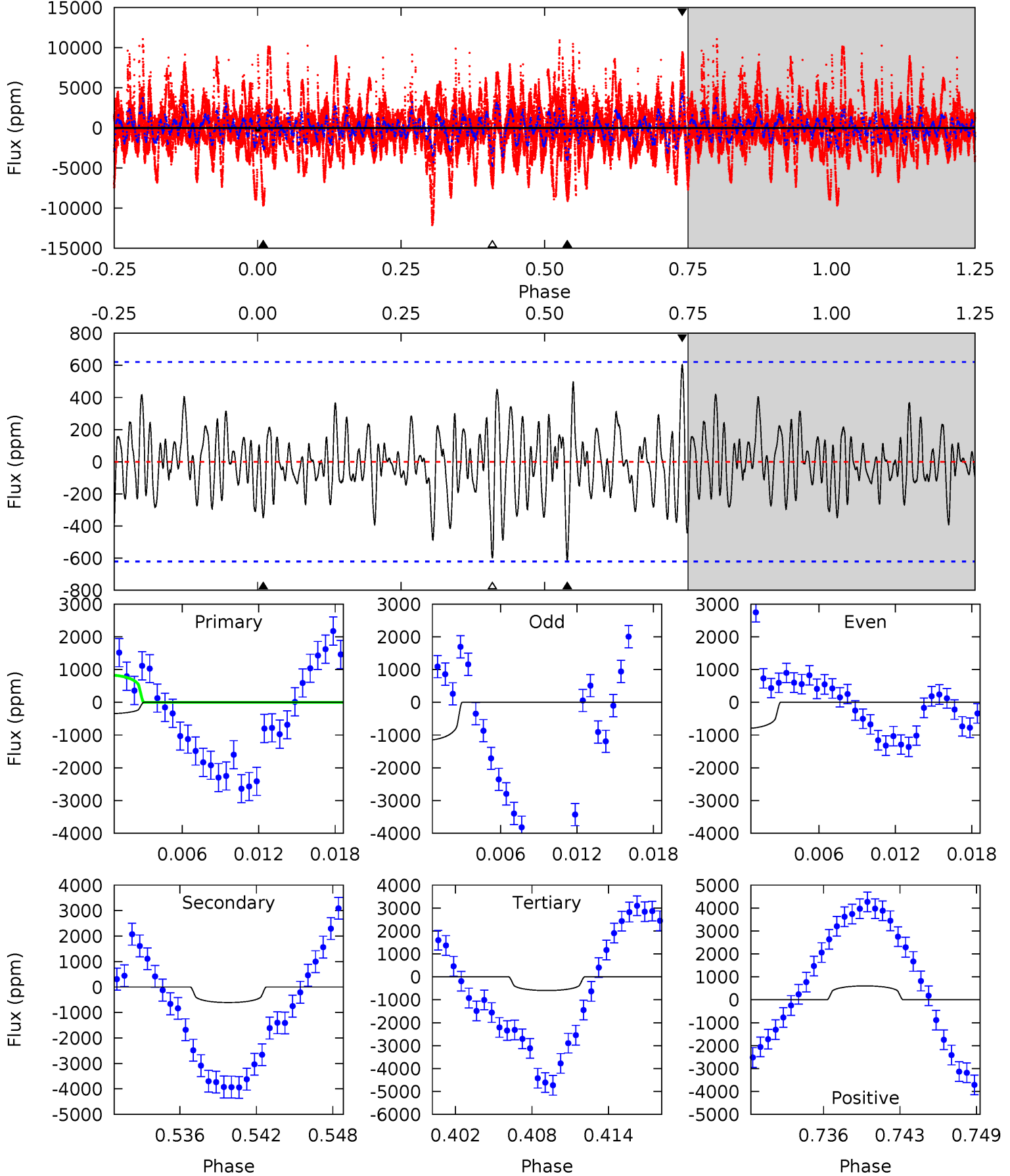
TCE 010453475-05 $P=342.439221$ Days $T_0=364.003056$ (BKJD)



DV Model-Shift Uniqueness Test

010453475-05, P = 342.444485 Days, E = 21.779814 Days

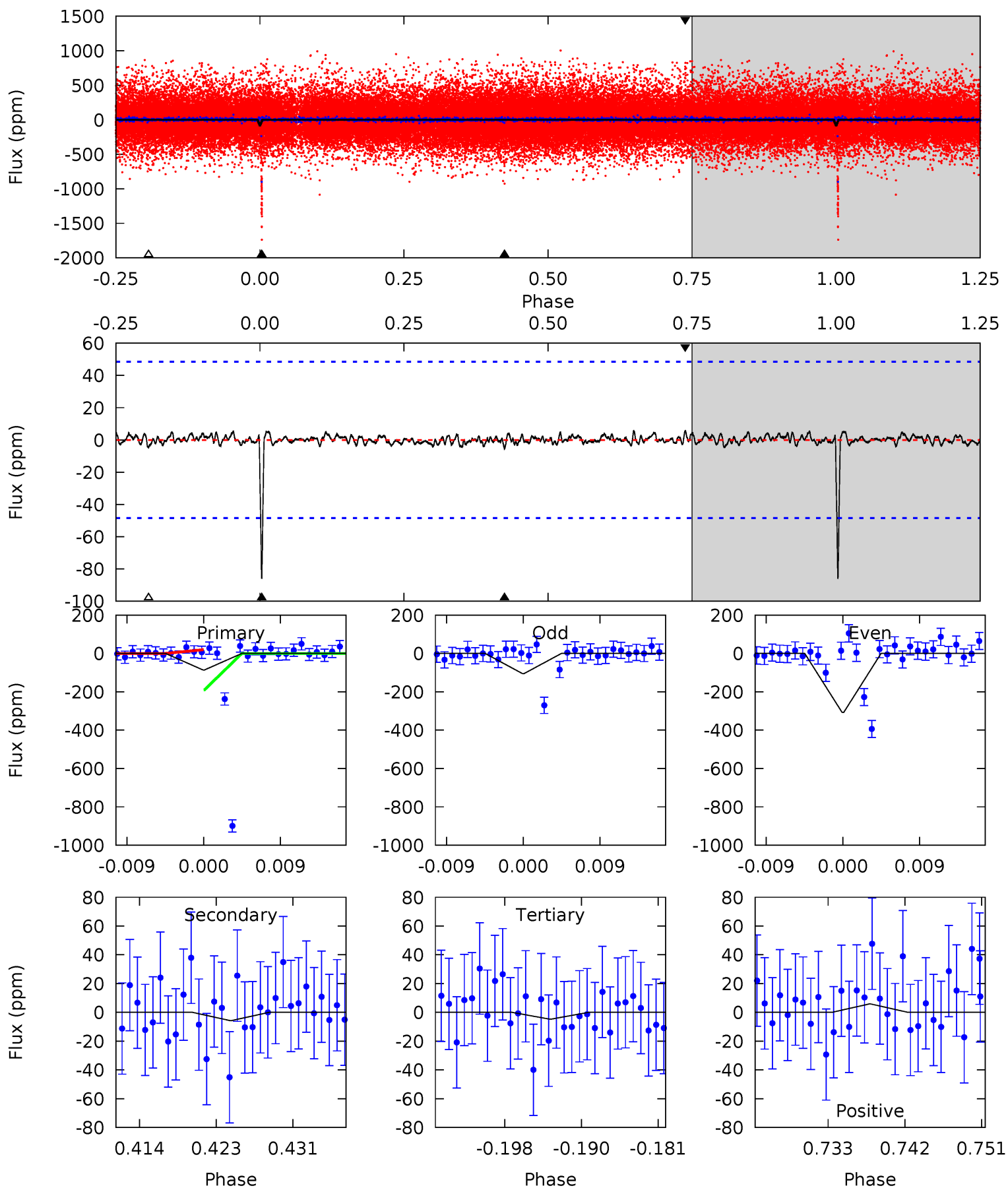
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.87	5.03	4.93	4.98	5.12	2.74	1.50	-2.06	-2.11	0.10	0.05	1.30	2.91	0.50	3.14



Alt Model-Shift Uniqueness Test

010453475-05, P = 342.439221 Days, E = 21.563835 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.96	0.59	0.49	0.61	5.05	2.63	0.20	8.47	8.35	0.10	-0.01	10.4	8.80	0.06	8.89



Stellar Parameters For KIC 010453475

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5403^{+162}_{-146}	$4.523^{+0.105}_{-0.086}$	$-0.560^{+0.350}_{-0.300}$	$0.761^{+0.099}_{-0.090}$	$0.704^{+0.094}_{-0.040}$	$2.253^{+0.987}_{-0.577}$
	+3%/-3%	+2%/-2%	+62%/-54%	+13%/-12%	+13%/-6%	+44%/-26%
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 010453475-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-610 ± 121	$3.48^{+0.47}_{-0.43}$	314^{+14}_{-13}	4355^{+256}_{-252}	20510^{+7258}_{-5669}
Alt.	-6 ± 10	$1.81^{+0.41}_{-0.36}$	315^{+13}_{-14}	2576^{+414}_{-5117}	635^{+1431}_{-1180}

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

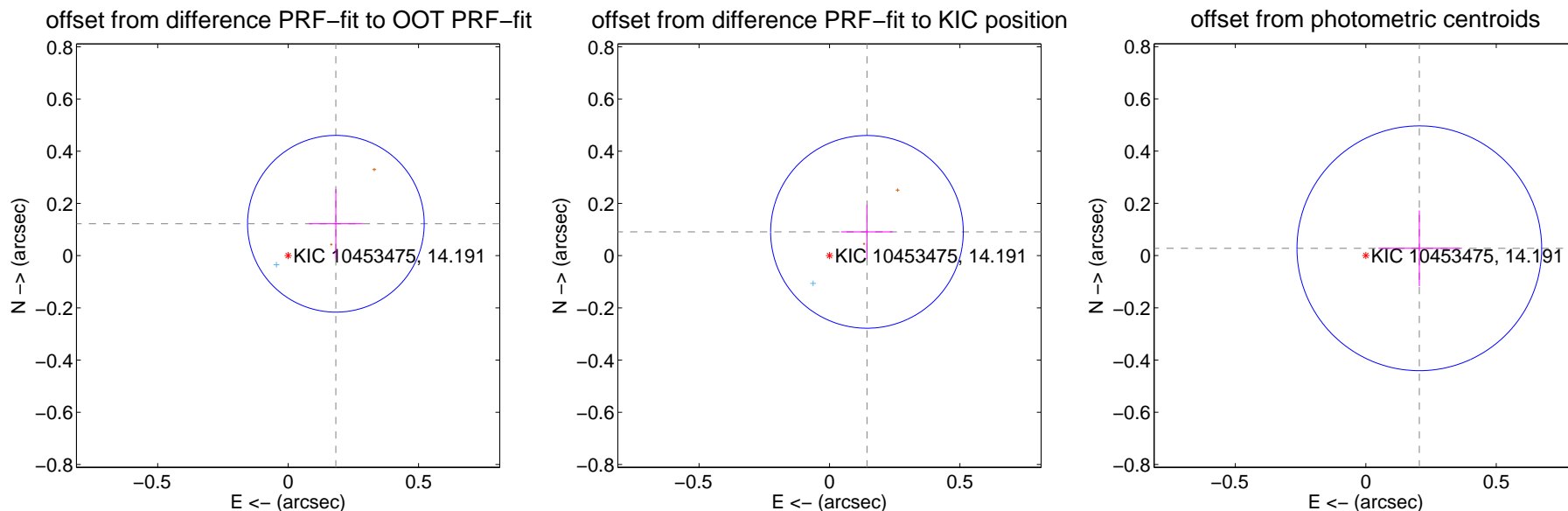
DV Centroid Data

Supplemental centroid analysis for 010453475-05. Kepler magnitude: 14.19. Transit SNR 9.13

There are 1 quarters with good PRF difference image offsets

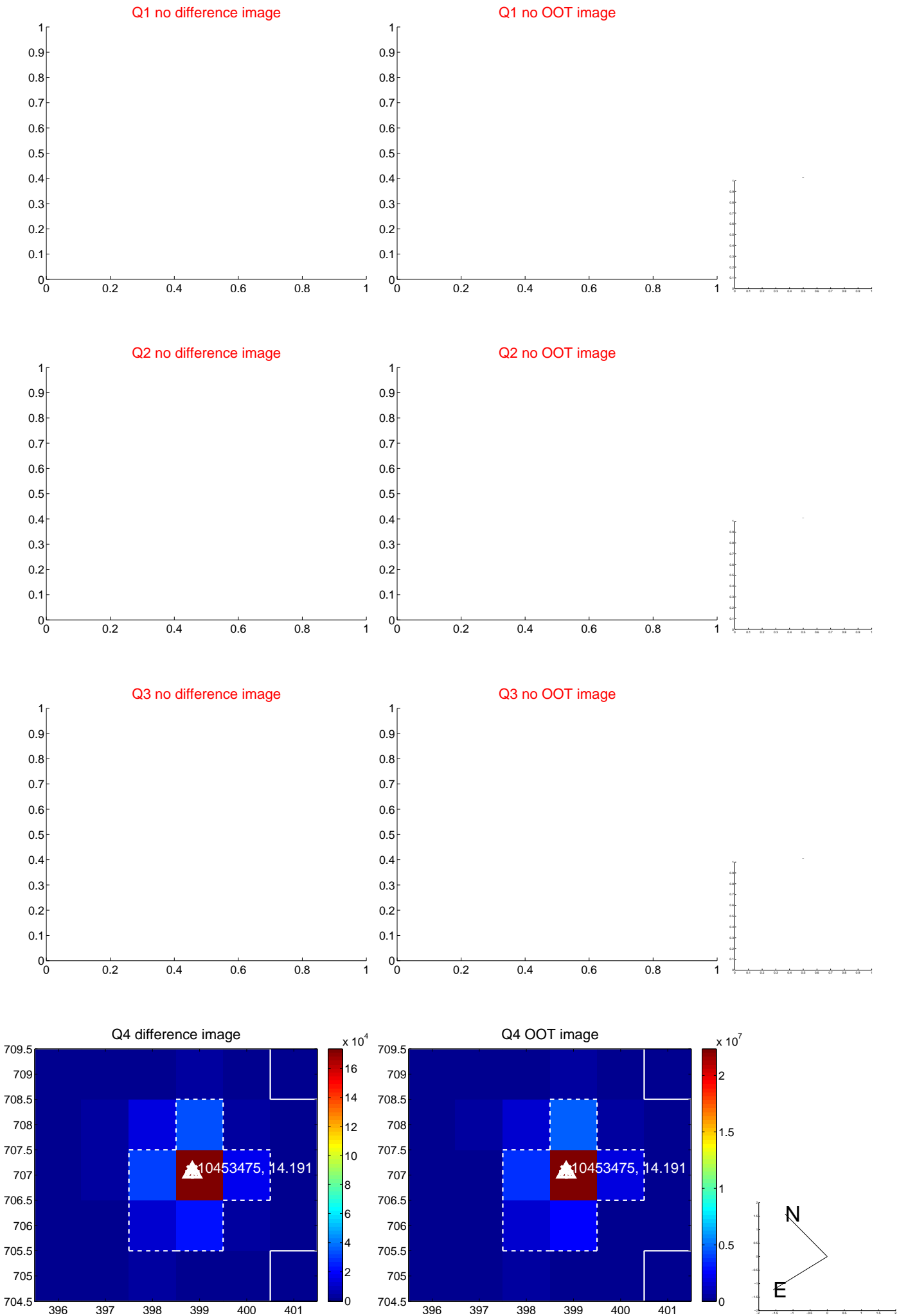
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.220 ± 0.113	1.95	-0.183 ± 0.103	0.122 ± 0.133
PRF-fit source offset from KIC position	0.170 ± 0.123	1.38	-0.144 ± 0.098	0.091 ± 0.104
photometric centroid source offset	0.21 ± 0.16	1.32	-0.21 ± 0.16	0.03 ± 0.14

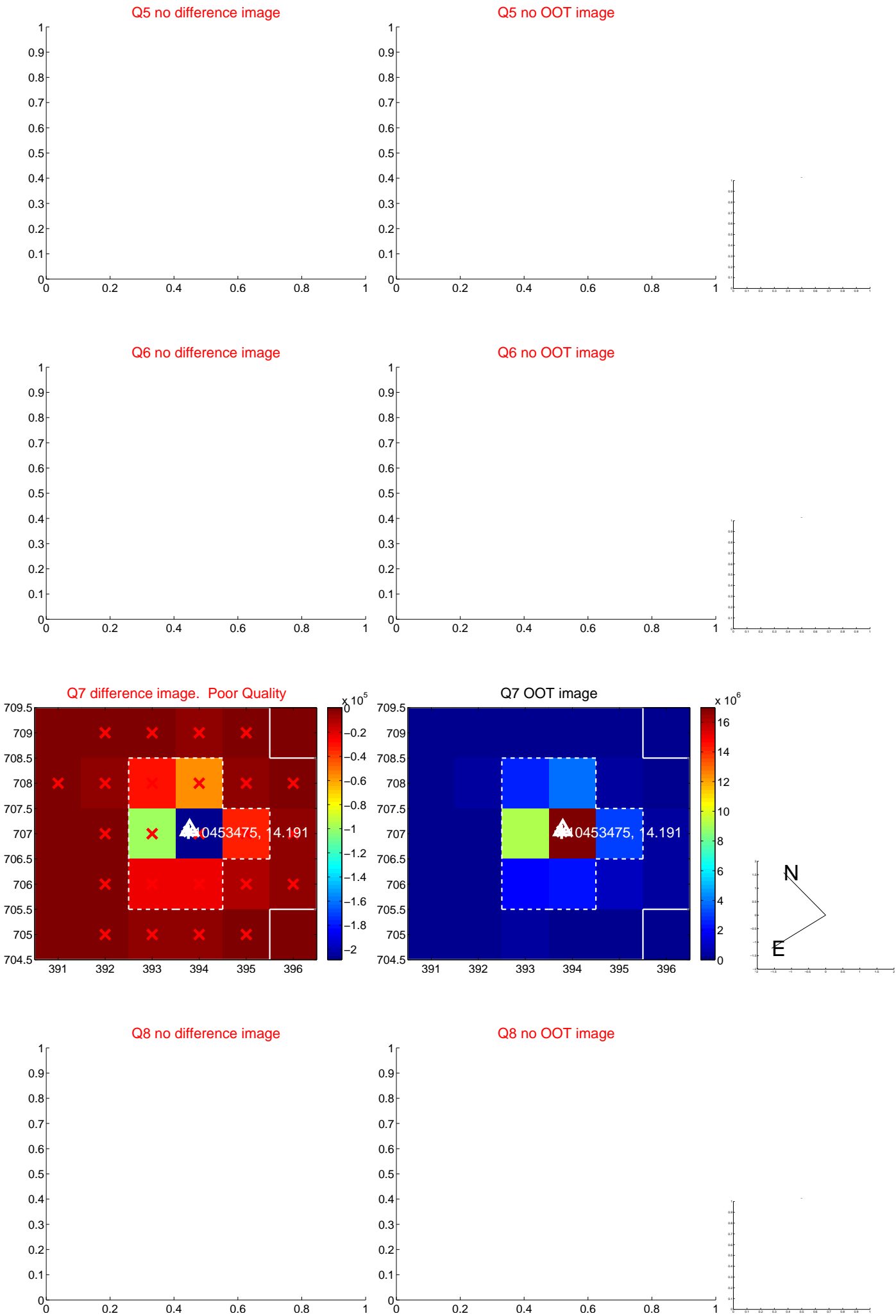


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

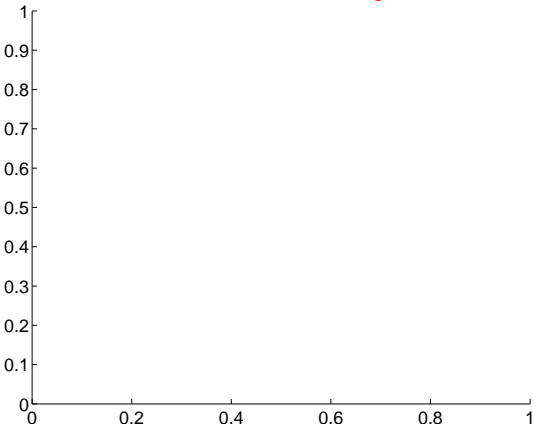


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

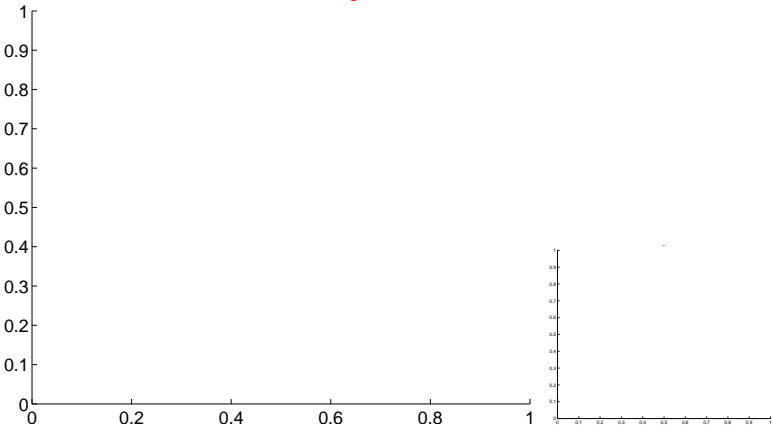


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

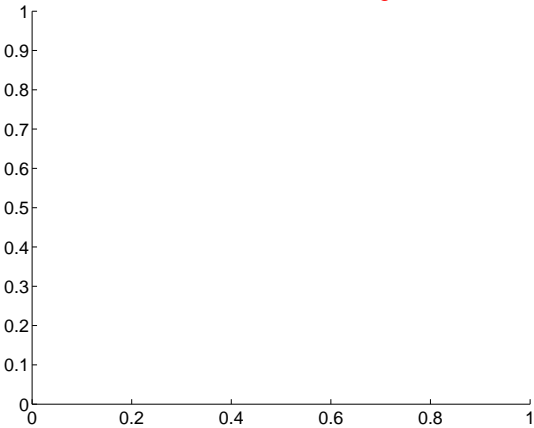
Q9 no difference image



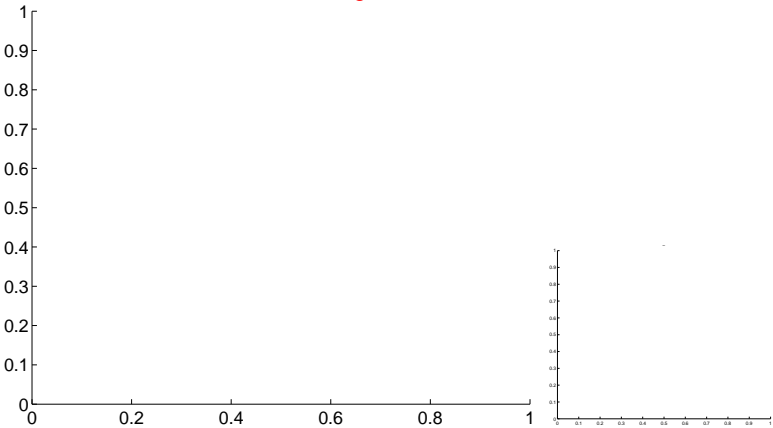
Q9 no OOT image



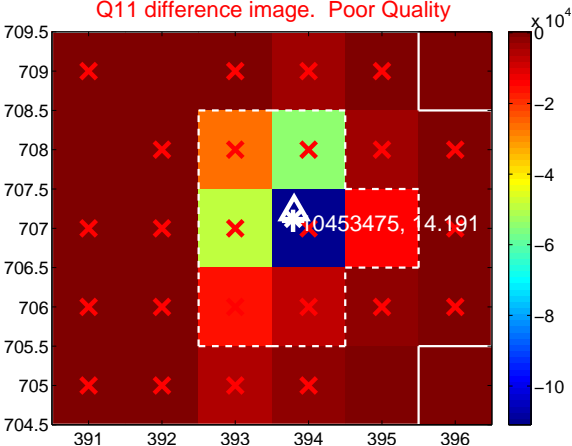
Q10 no difference image



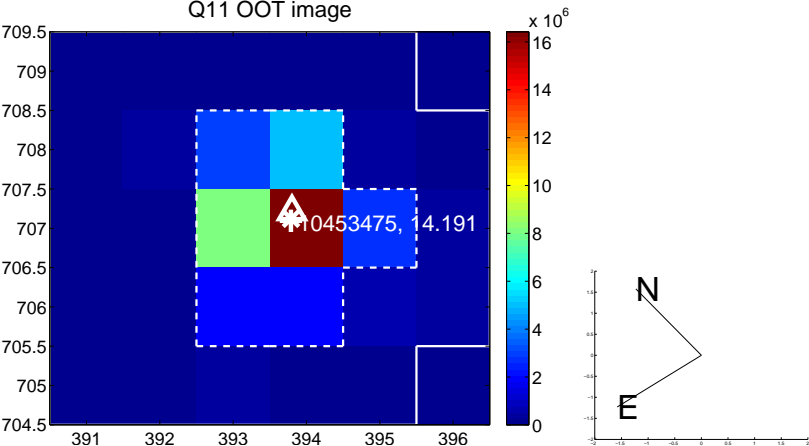
Q10 no OOT image



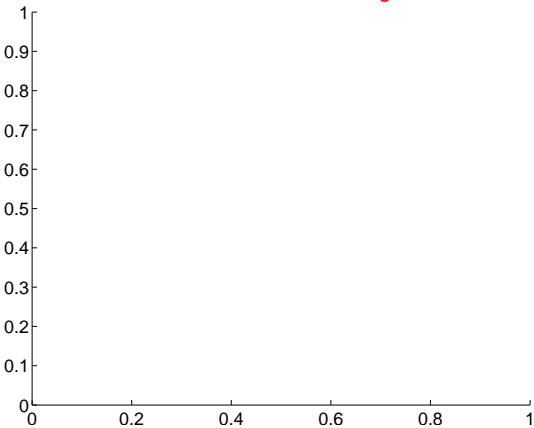
Q11 difference image. Poor Quality



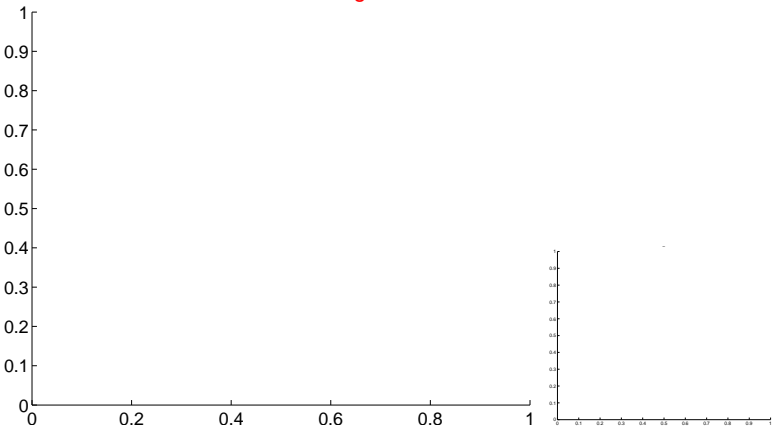
Q11 OOT image



Q12 no difference image



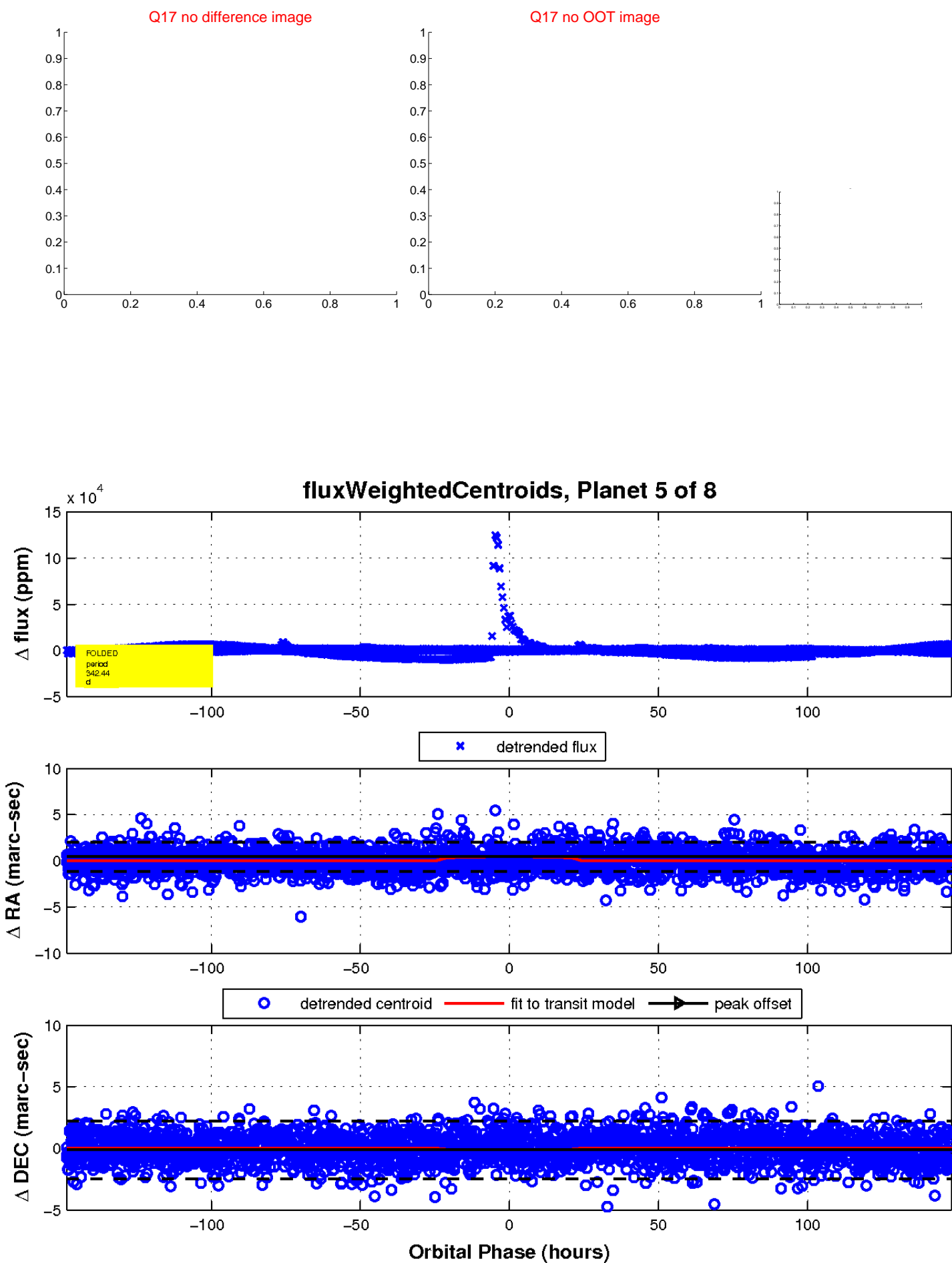
Q12 no OOT image



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

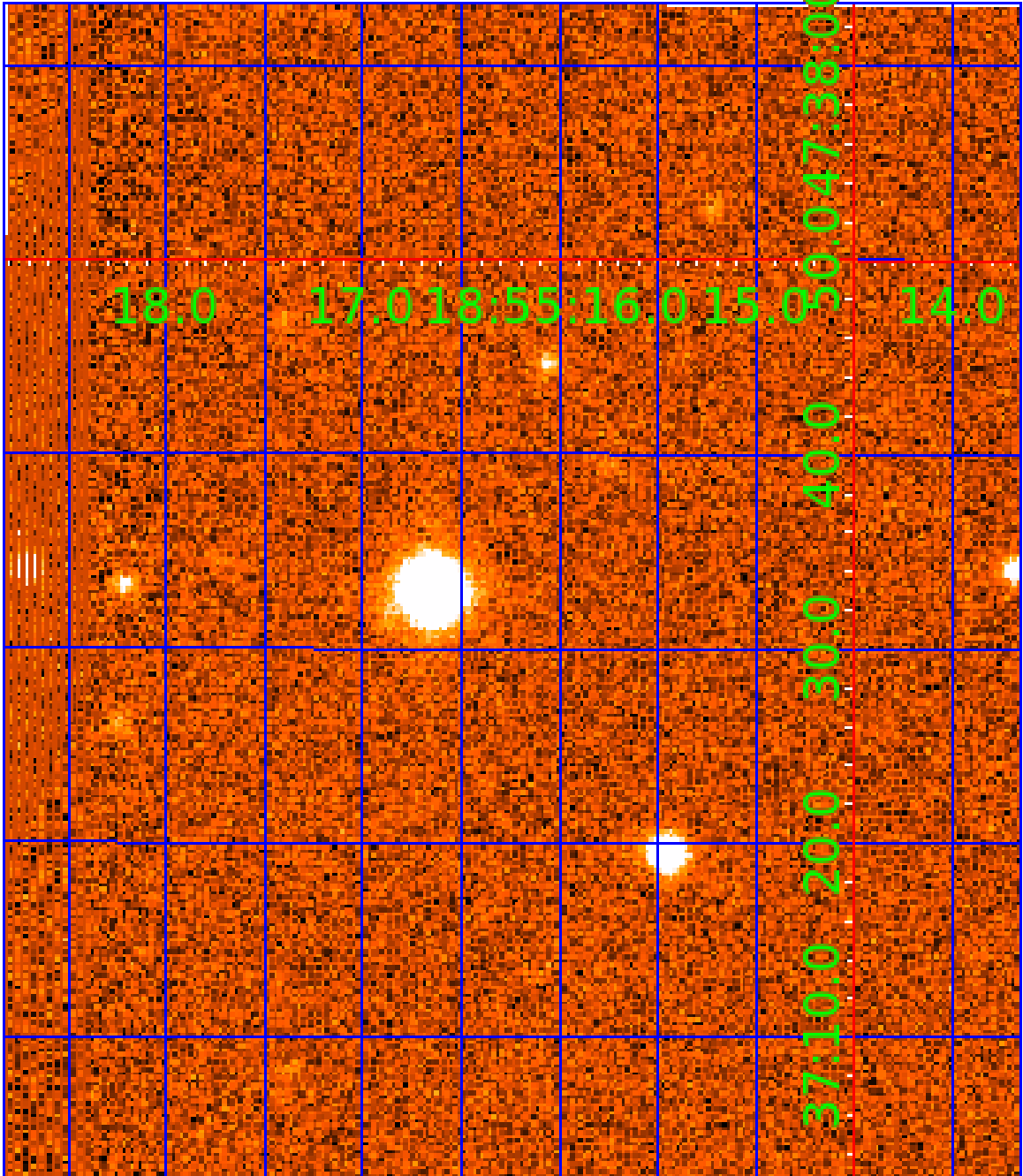


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010453475

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})
010453475-01	OBS	No	393.378268	438.677130	798.2	5.765	31.5	5.1	0.76	5403	2.58	0.51
010453475-02	OBS	No	660.132863	233.500041	2804.8	15.043	24.7	12.9	0.76	5403	7.63	0.25
010453475-03	OBS	No	540.142084	483.482529	856.9	11.546	26.8	5.4	0.76	5403	2.33	0.33
010453475-04	OBS	No	356.036989	254.673963	662.6	13.469	19.3	4.6	0.76	5403	2.19	0.58
010453475-05	OBS	No	342.444485	364.224299	1856.1	49.504	13.7	9.1	0.76	5403	3.47	0.61
010453475-06	OBS	No	581.610076	332.422502	1220.2	14.767	20.1	8.1	0.76	5403	2.70	0.30
010453475-08	OBS	No	374.553966	277.965130	1298.4	4.500	14.6	-1.0	0.76	5403	2.71	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010453475-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-02	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
010453475-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
010453475-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

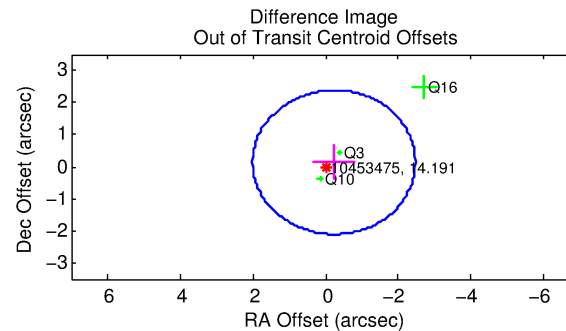
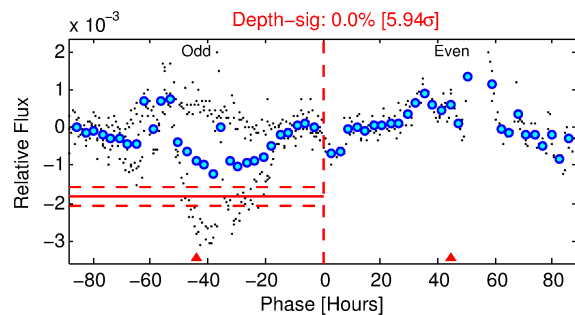
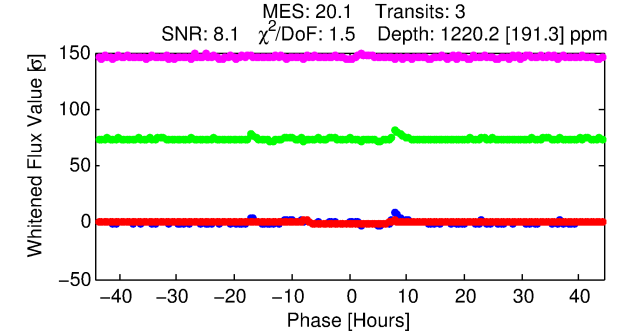
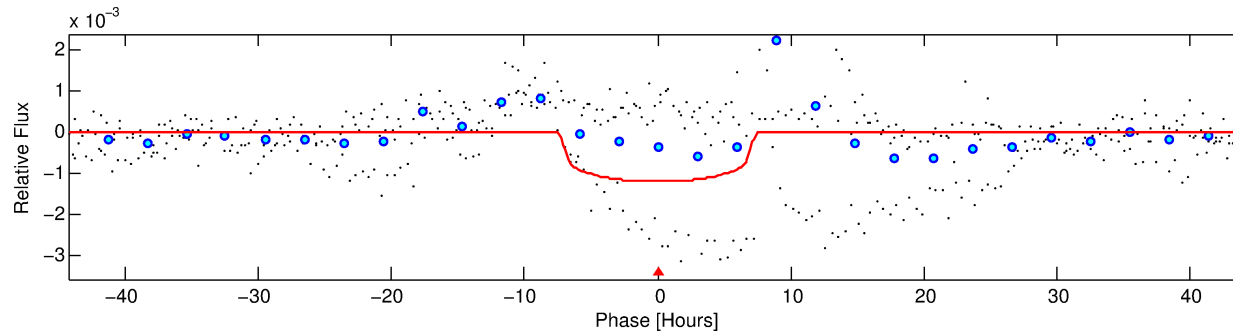
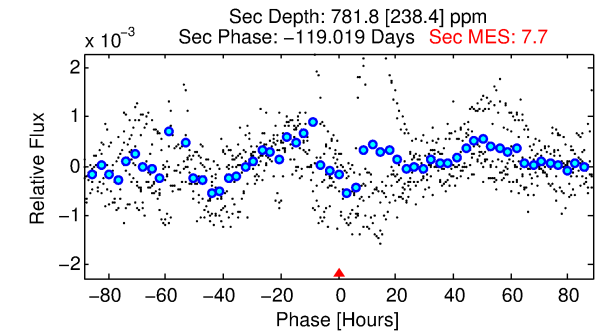
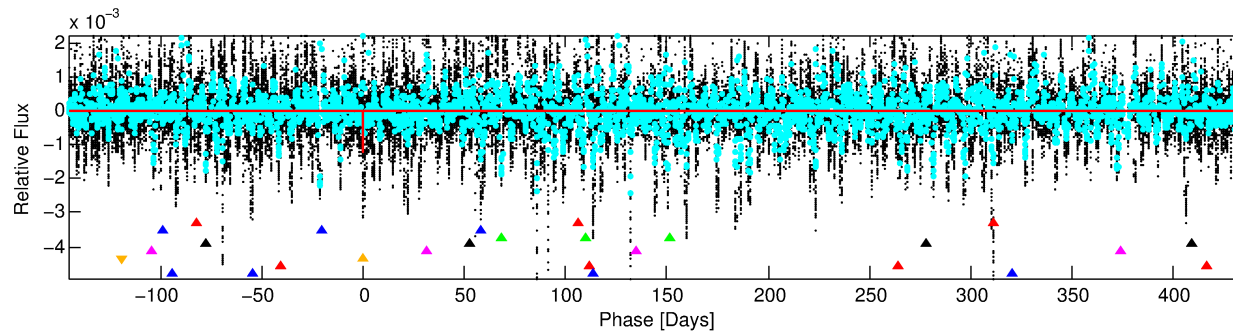
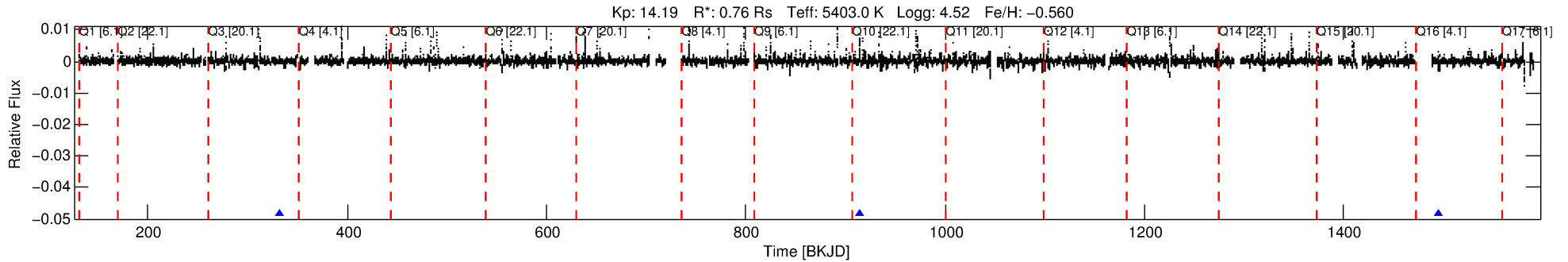
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010453475-06

No Significant Match Found

DV One-Page Summary

KIC: 10453475 Candidate: 6 of 8 Period: 581.610 d



DV Fit Results:

Period = 581.61008 [0.00679] d
Epoch = 332.4225 [0.0086] BKJD
Rp/R* = 0.0325 [0.0087]
a/R* = 277.58 [286.68]
b = 0.46 [1.77]
Seff = 0.30 [0.07]
Teq = 189 [10] K
Rp = 2.70 [0.80] Re
a = 1.2135 [0.1437] AU
Ag = 87026.76 [55997.76] [1.55σ]
Teffp = 5013 [788] K [6.12σ]

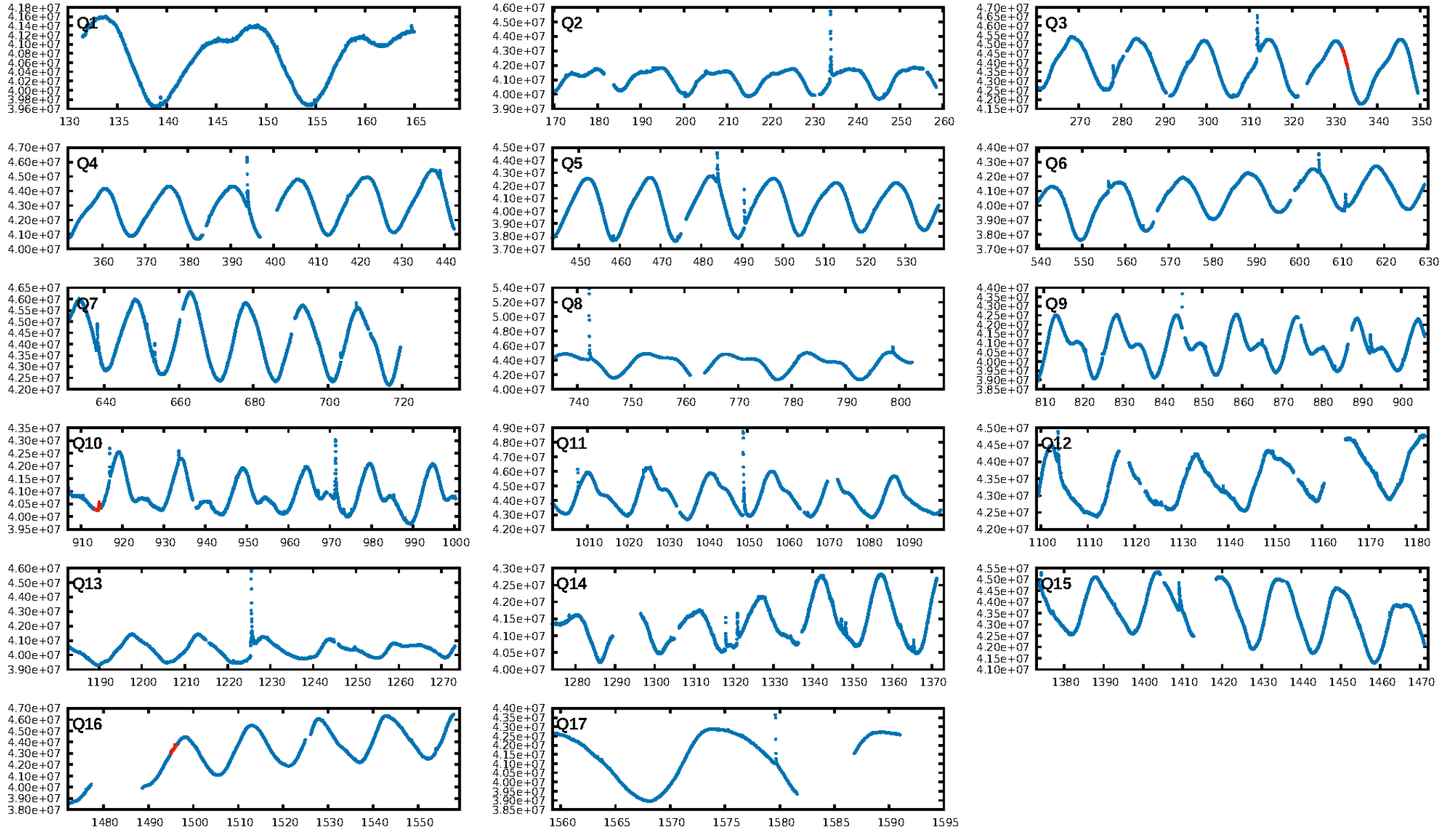
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [53.09σ]
LongPeriod-sig: 100.0% [89.40σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 27.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -52.4
Centroid-sig: 22.1%
Centroid-so: 0.458 arcsec [1.25σ]
OotOffset-rm: 0.267 arcsec [0.36σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 0.220 arcsec [0.21σ]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

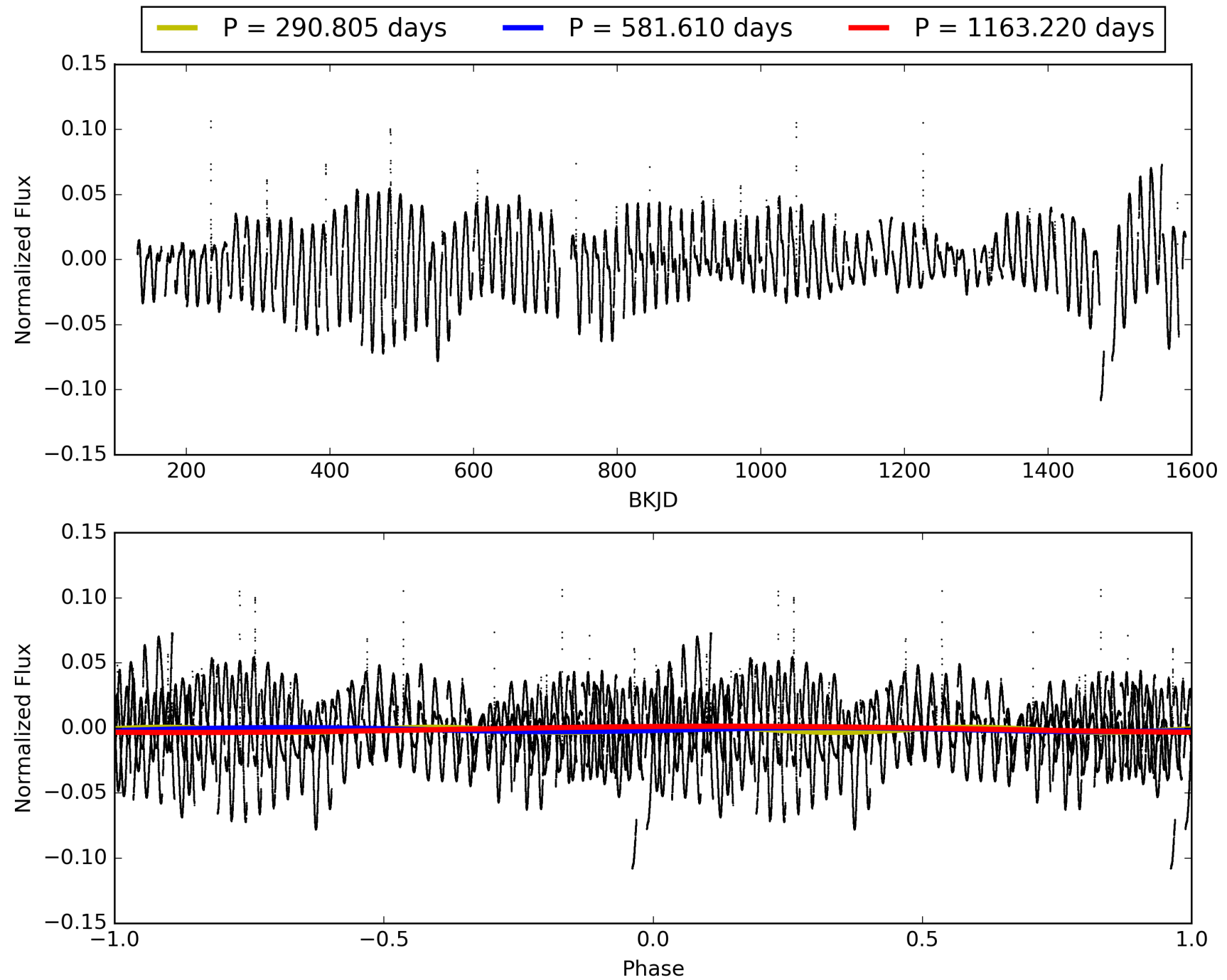
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:08:52 Z

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

TCE 010453475-06, PDC Light Curves

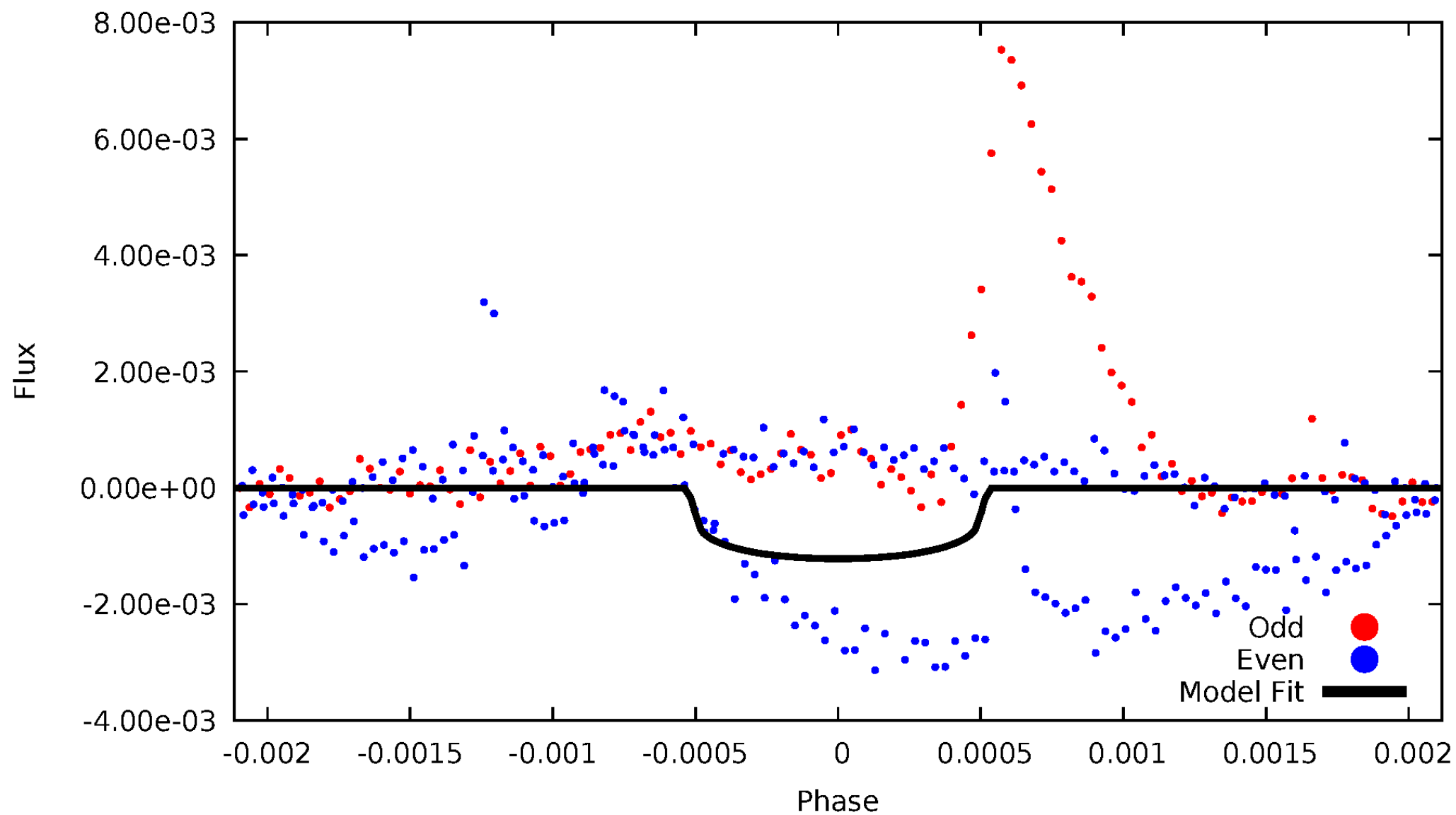


TCE 010453475-06



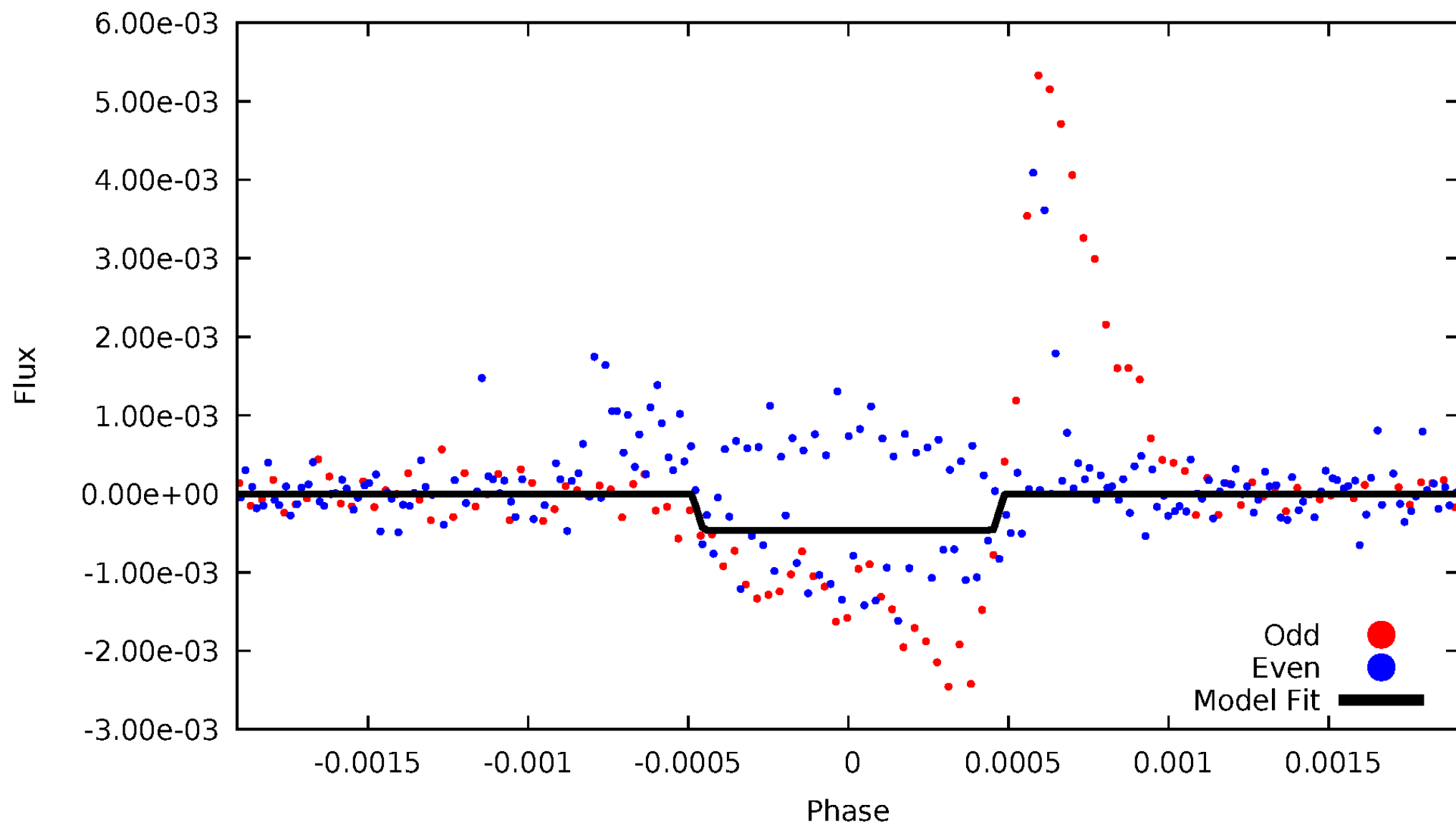
DV Odd/Even

TCE 010453475-06



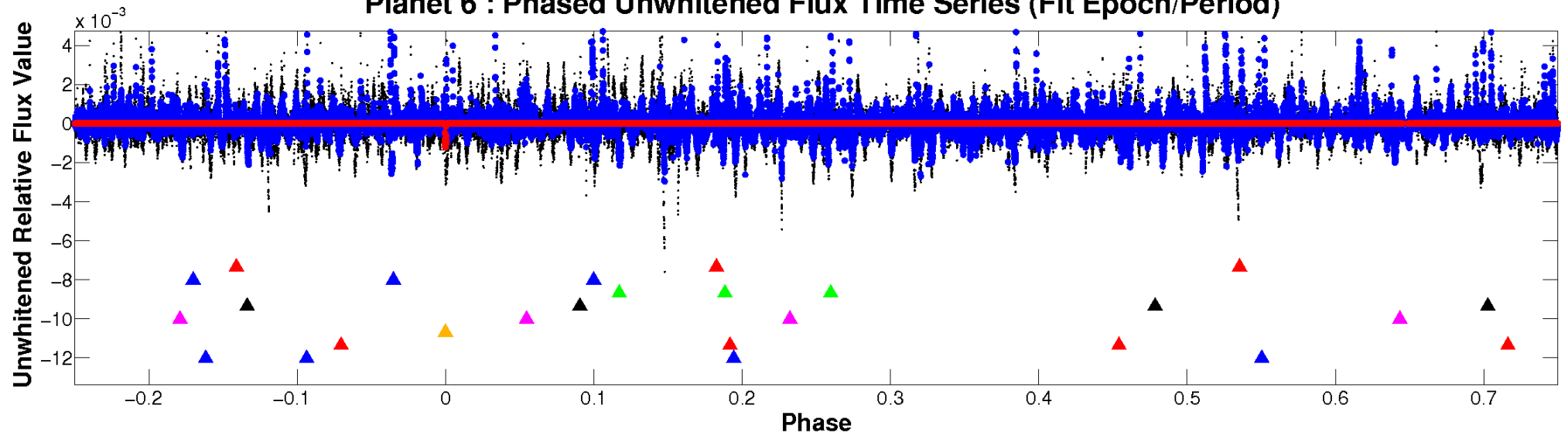
ALT Odd/Even

TCE 010453475-06

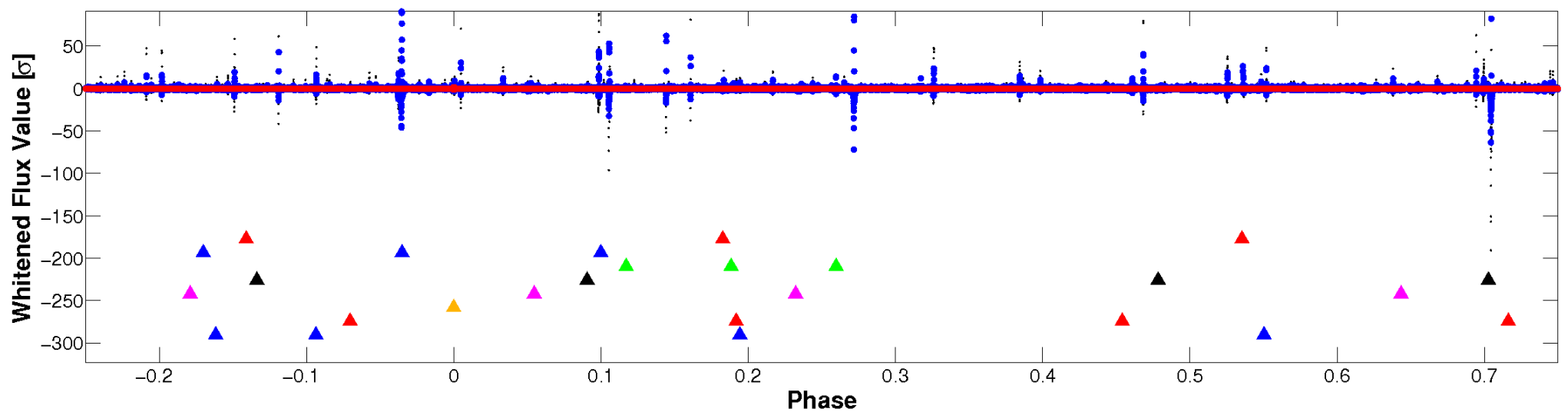


Non-Whitened Vs. Whitened Light Curve

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

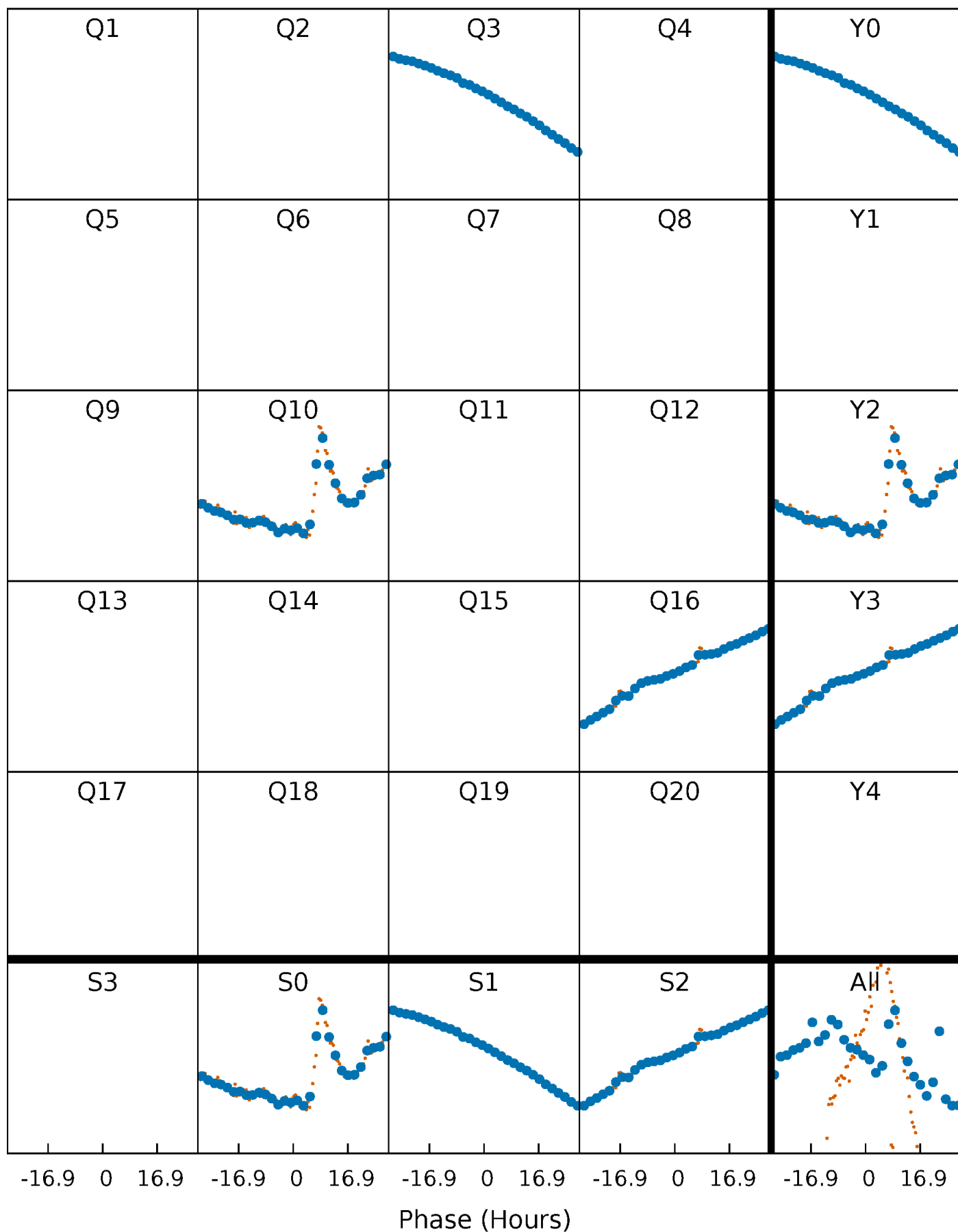


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



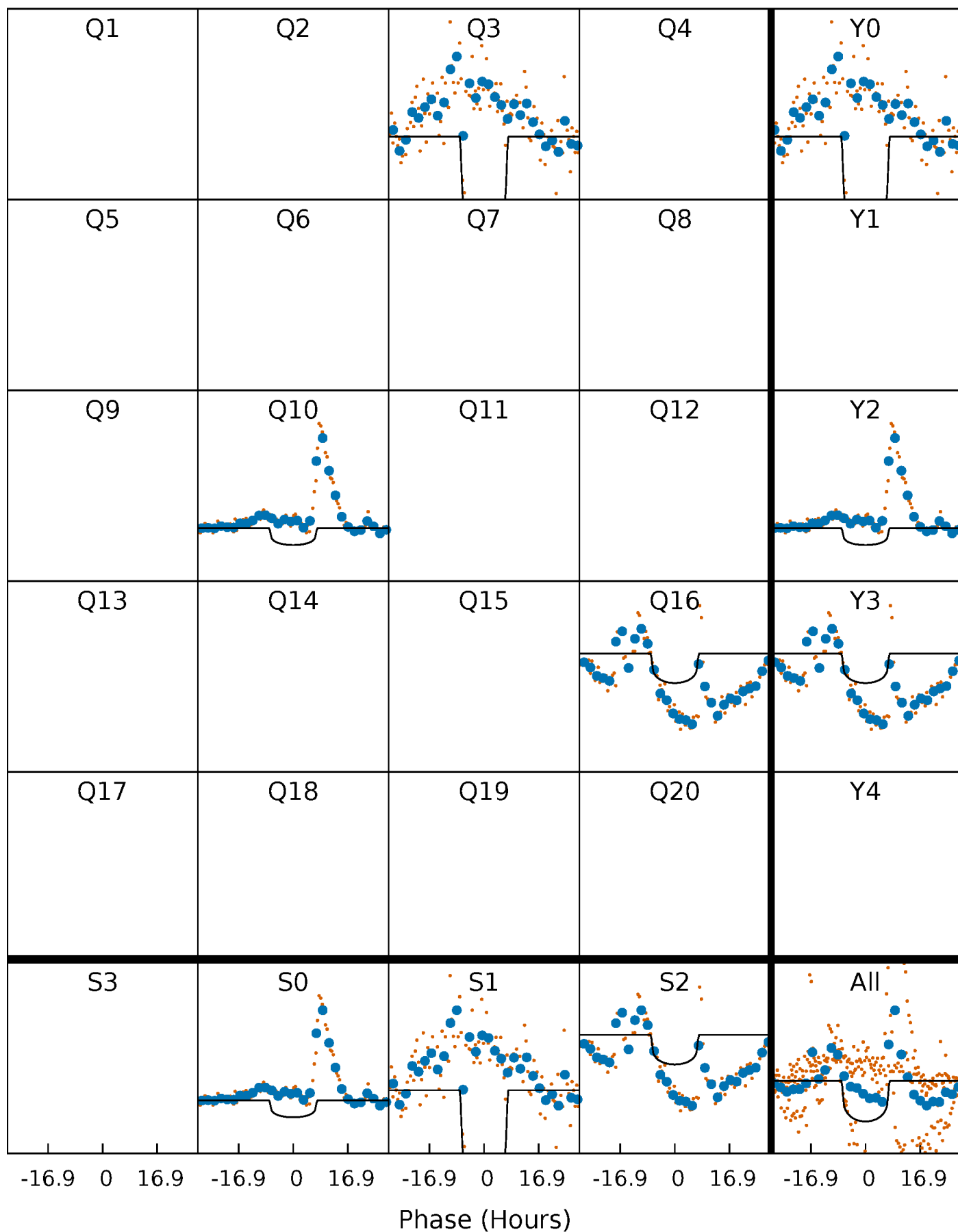
PDC Quarter-Phased Transit Curves

TCE 010453475-06 P=581.610076 Days $T_0=332.422502$ (BKJD)



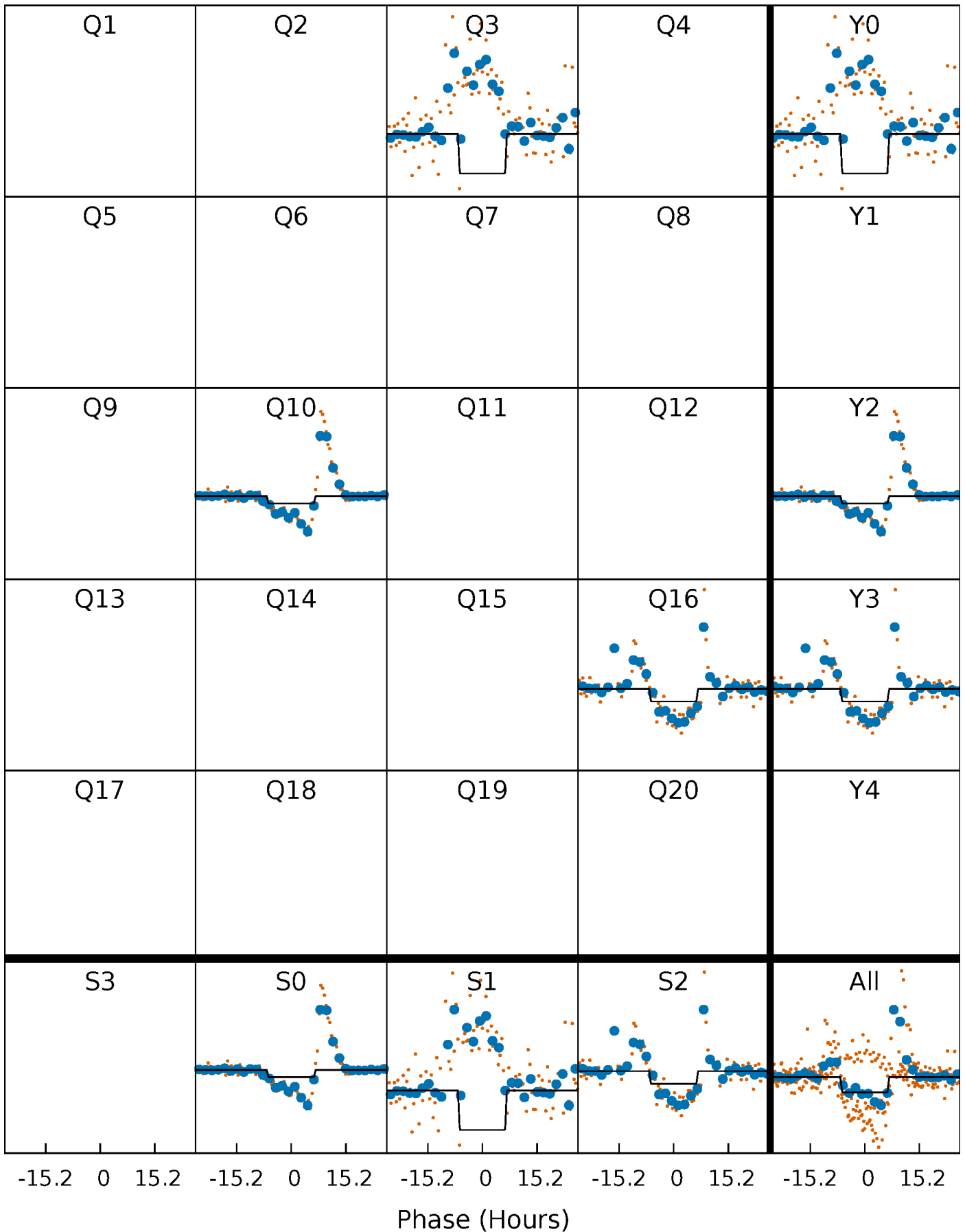
DV Quarter-Phased Transit Curves

TCE 010453475-06 P=581.610076 Days $T_0=332.422502$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

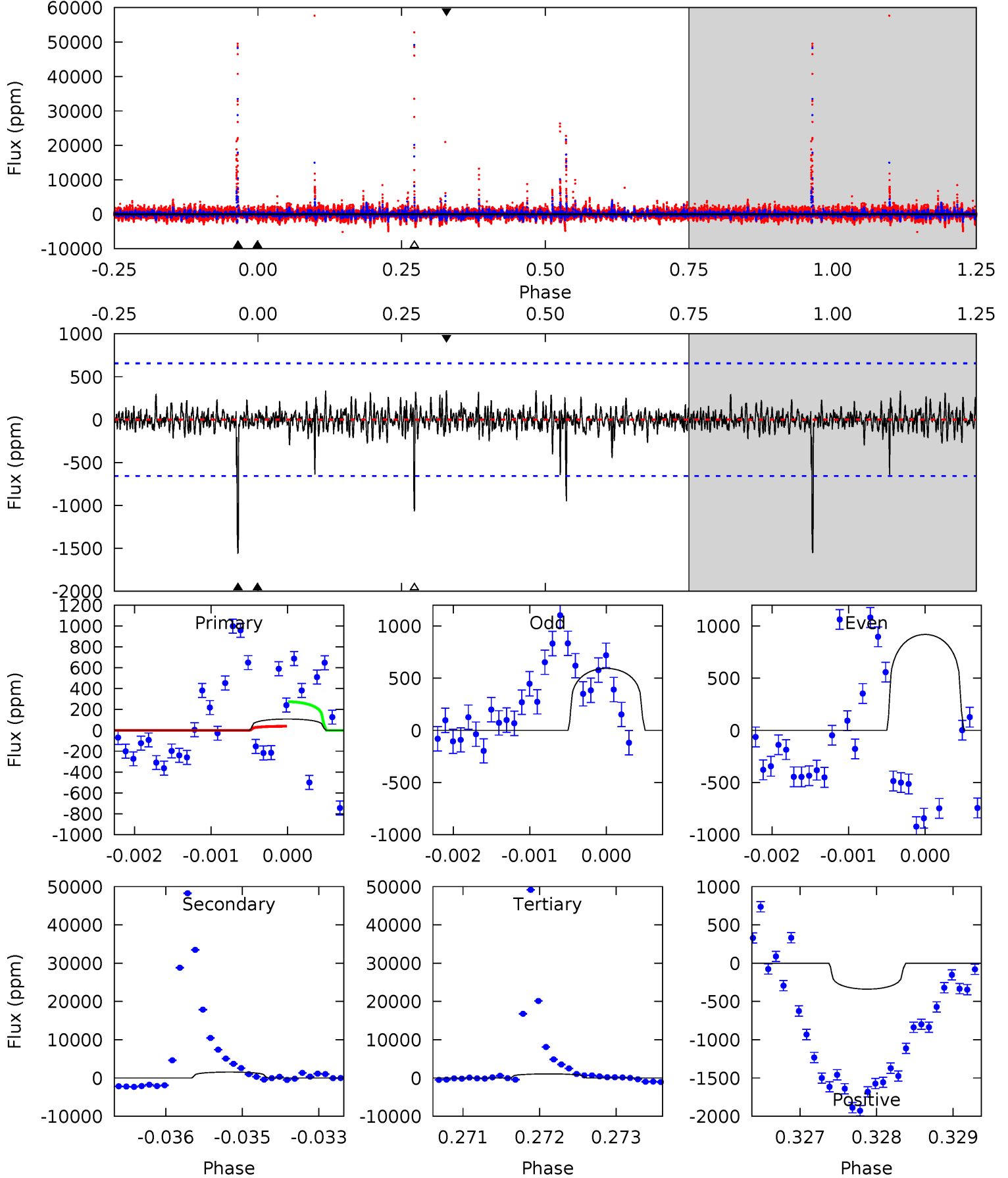
TCE 010453475-06 $P=581.607229$ Days $T_0=332.413214$ (BKJD)



DV Model-Shift Uniqueness Test

010453475-06, P = 581.610076 Days, E = 332.422502 Days

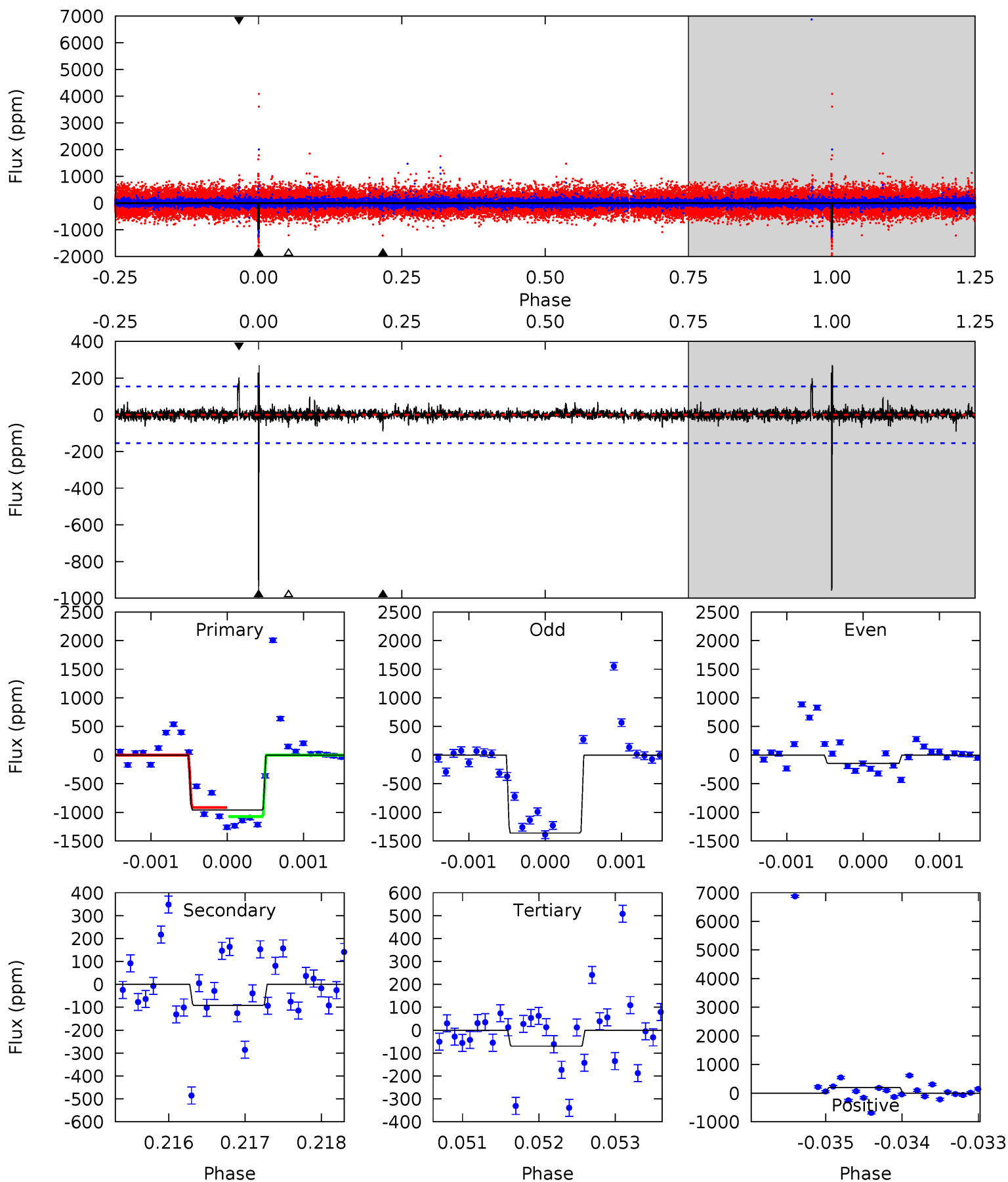
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.90	12.9	8.83	2.81	5.44	3.27	0.85	-7.93	-1.91	4.04	10.1	0.97	-0.78	0.18	1.04



Alt Model-Shift Uniqueness Test

010453475-06, P = 581.607229 Days, E = 332.413214 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.9	3.23	2.47	7.04	5.46	3.30	0.53	31.4	26.8	0.75	-3.81	21.3	0.64	0.22	2.77



Stellar Parameters For KIC 010453475

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5403^{+162}_{-146}	$4.523^{+0.105}_{-0.086}$	$-0.560^{+0.350}_{-0.300}$	$0.761^{+0.099}_{-0.090}$	$0.704^{+0.094}_{-0.040}$	$2.253^{+0.987}_{-0.577}$
	+3%/-3%	+2%/-2%	+62%/-54%	+13%/-12%	+13%/-6%	+44%/-26%
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 010453475-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1553 ± 121	$2.70^{+0.79}_{-0.76}$	263^{+11}_{-12}	5922^{+1058}_{-641}	$177502^{+155121}_{-74138}$
Alt.	-91 ± 28	$1.80^{+0.74}_{-0.70}$	264^{+12}_{-12}	3928^{+798}_{-474}	23621^{+40449}_{-12901}

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

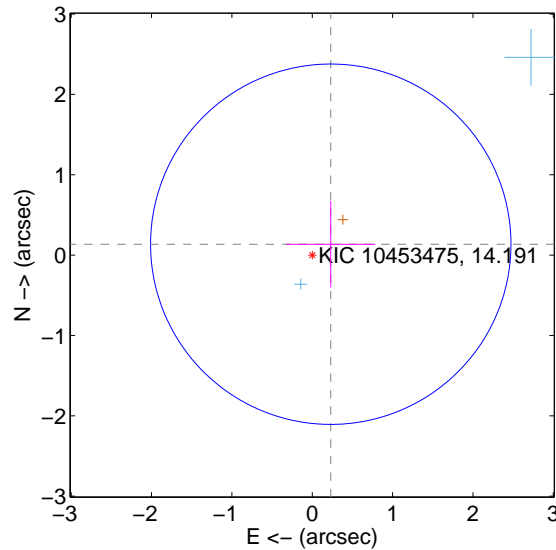
Supplemental centroid analysis for 010453475-06. Kepler magnitude: 14.19. Transit SNR 8.14

There are 2 quarters with good PRF difference image offsets

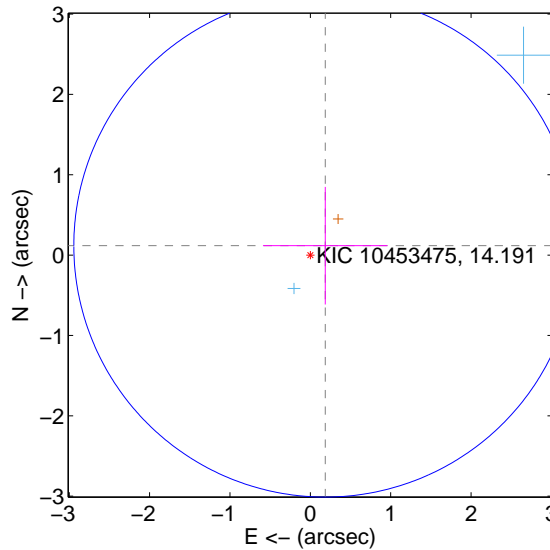
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.267 ± 0.747	0.36	-0.231 ± 0.555	0.135 ± 0.538
PRF-fit source offset from KIC position	0.220 ± 1.043	0.21	-0.186 ± 0.775	0.117 ± 0.732
photometric centroid source offset	0.46 ± 0.37	1.25	-0.44 ± 0.37	0.12 ± 0.33

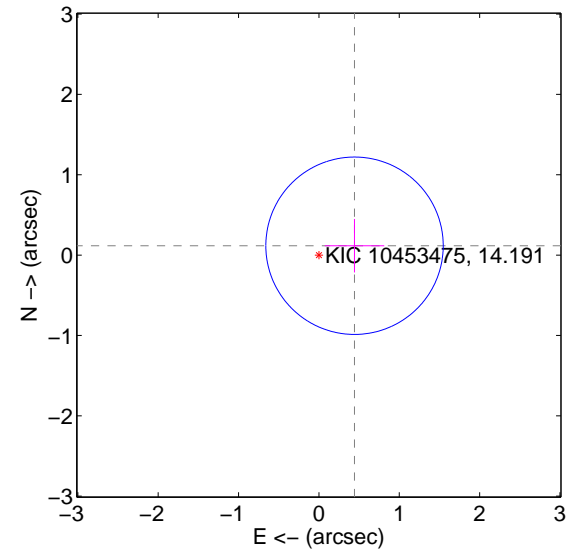
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

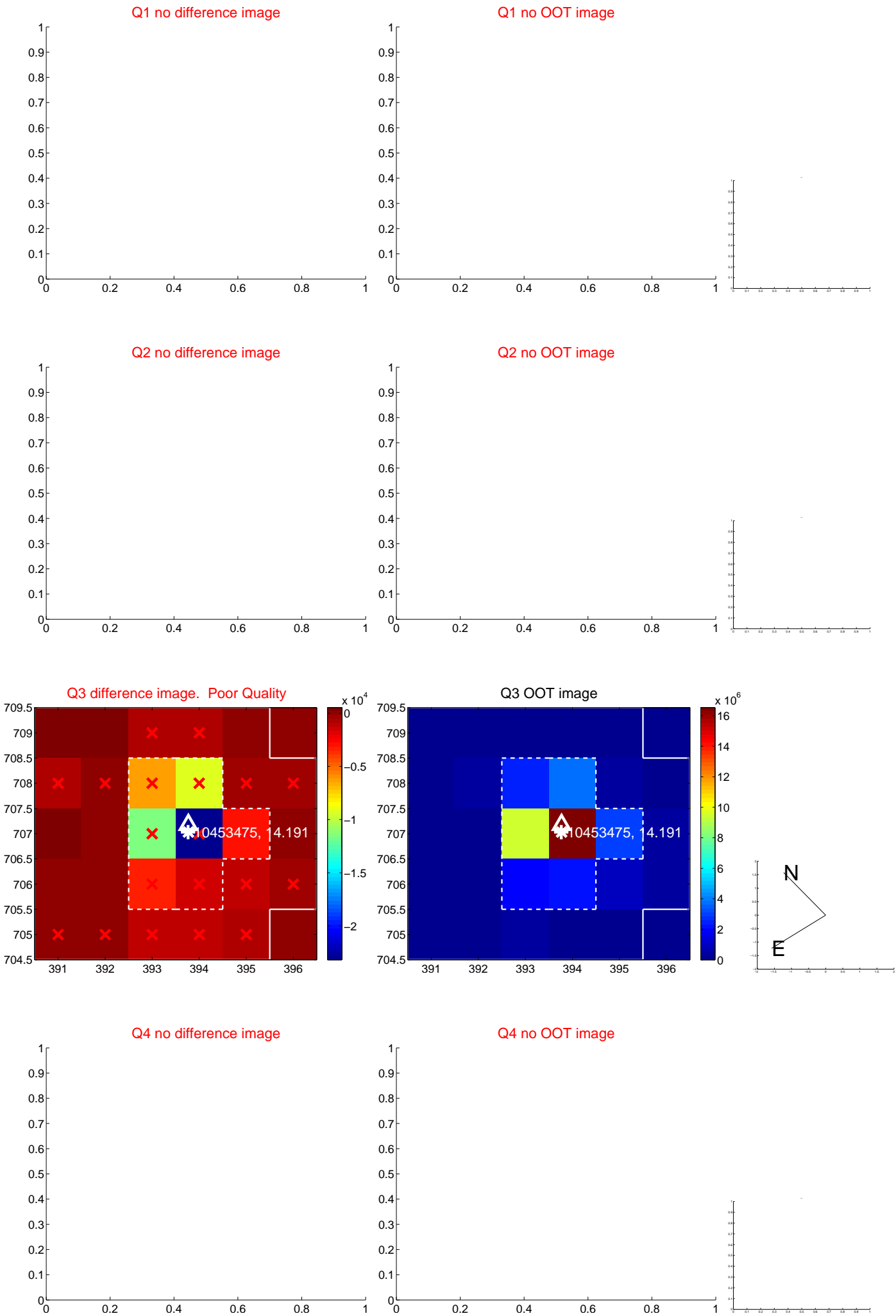


offset from photometric centroids



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.

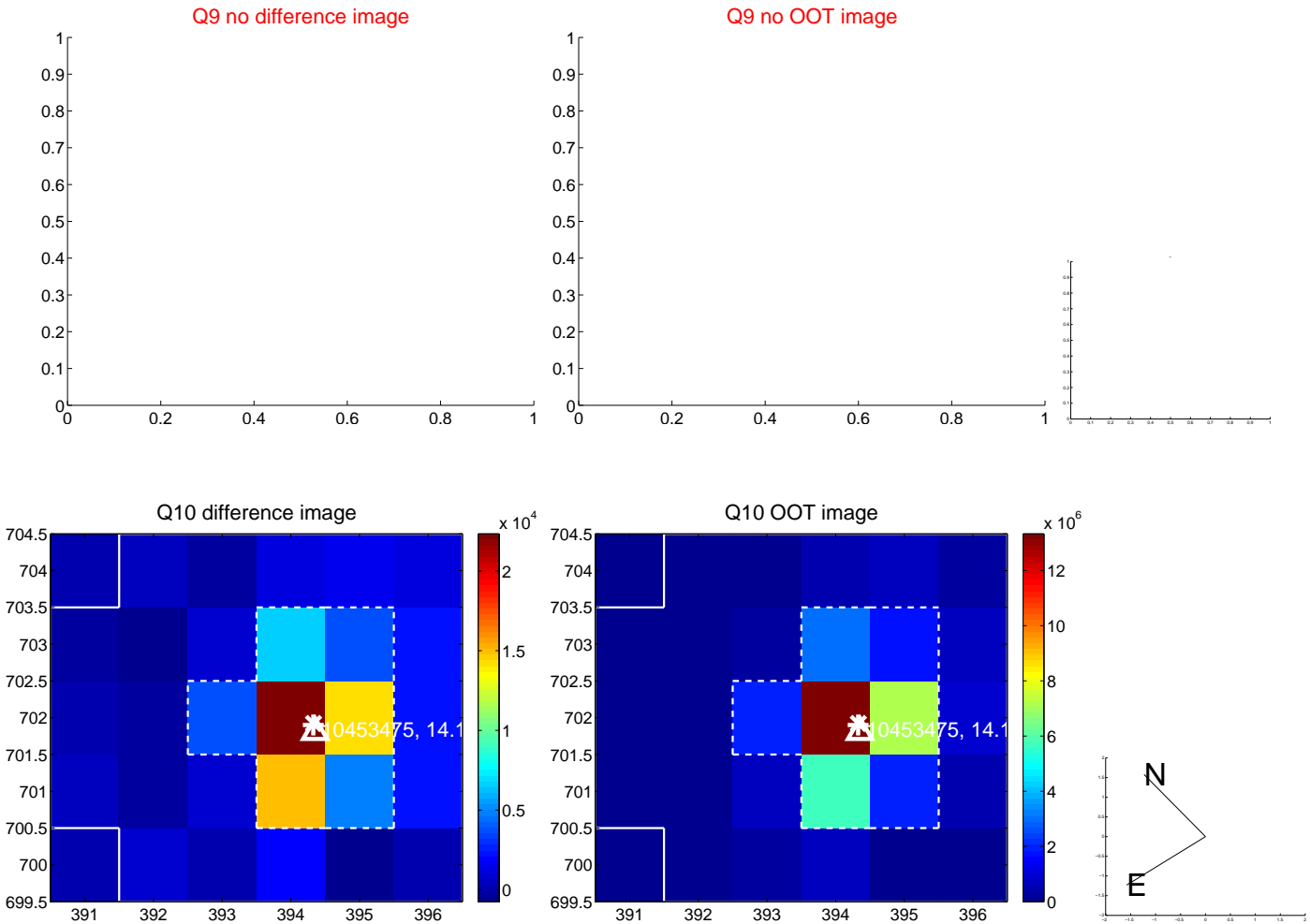
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



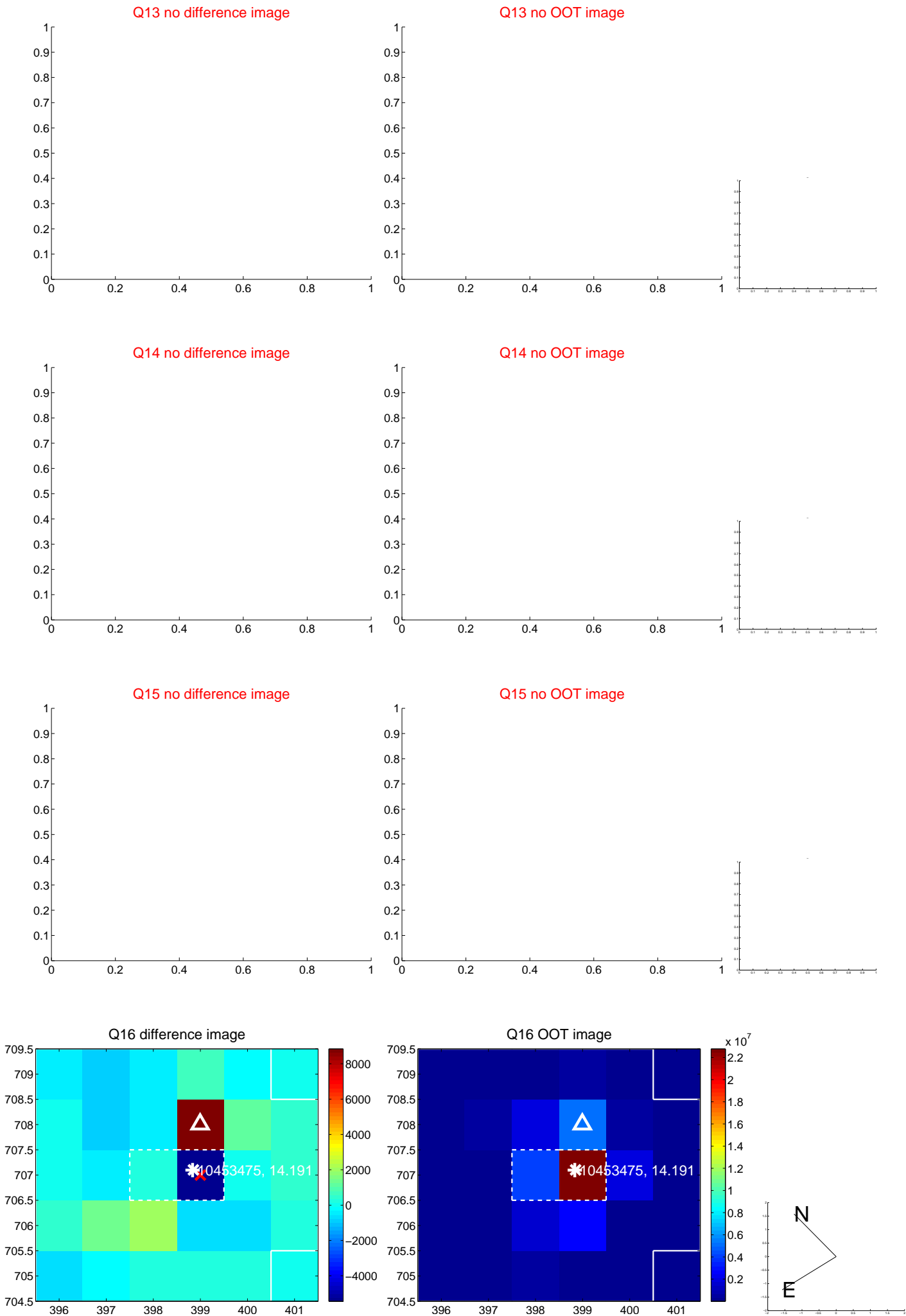
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



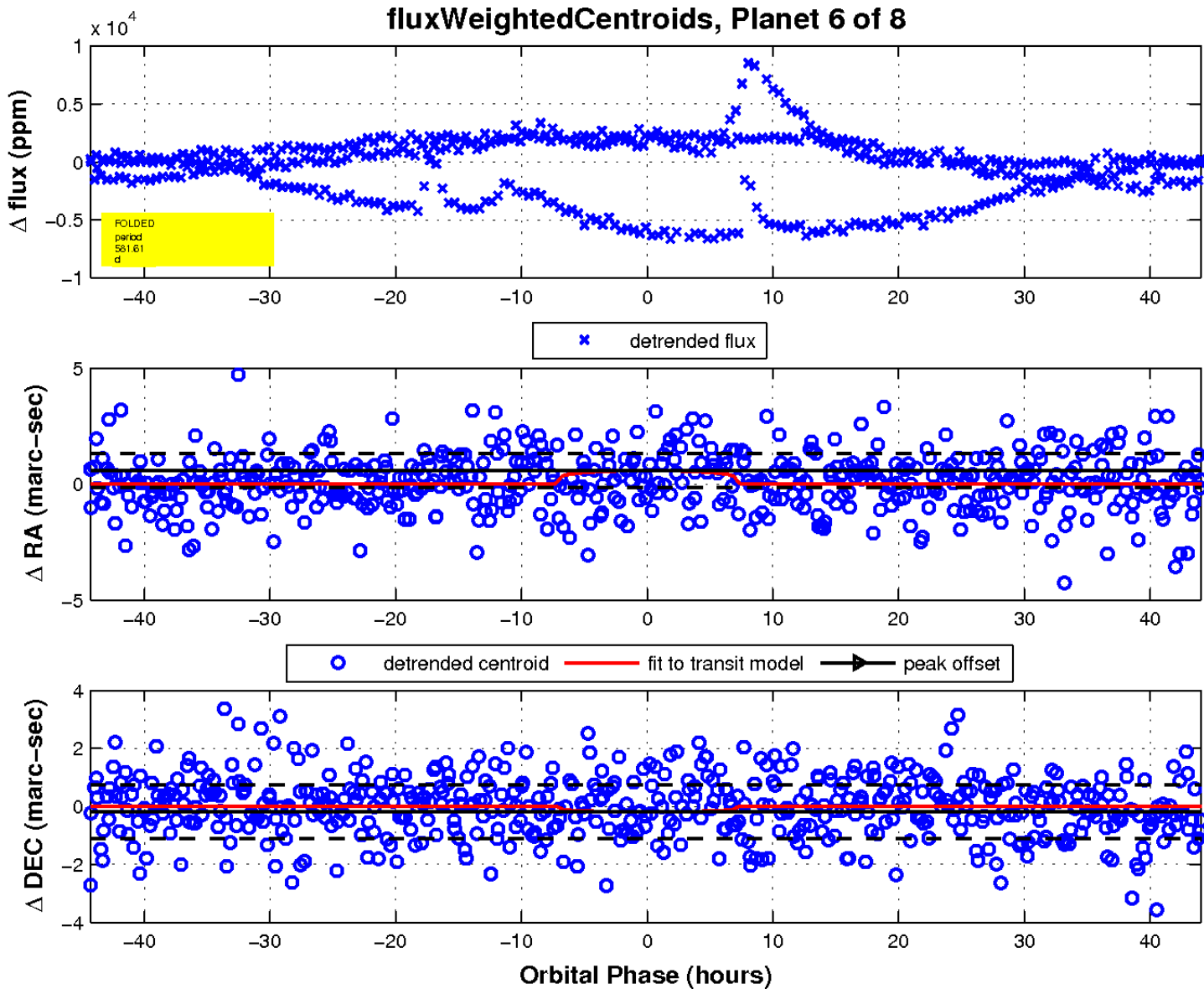
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

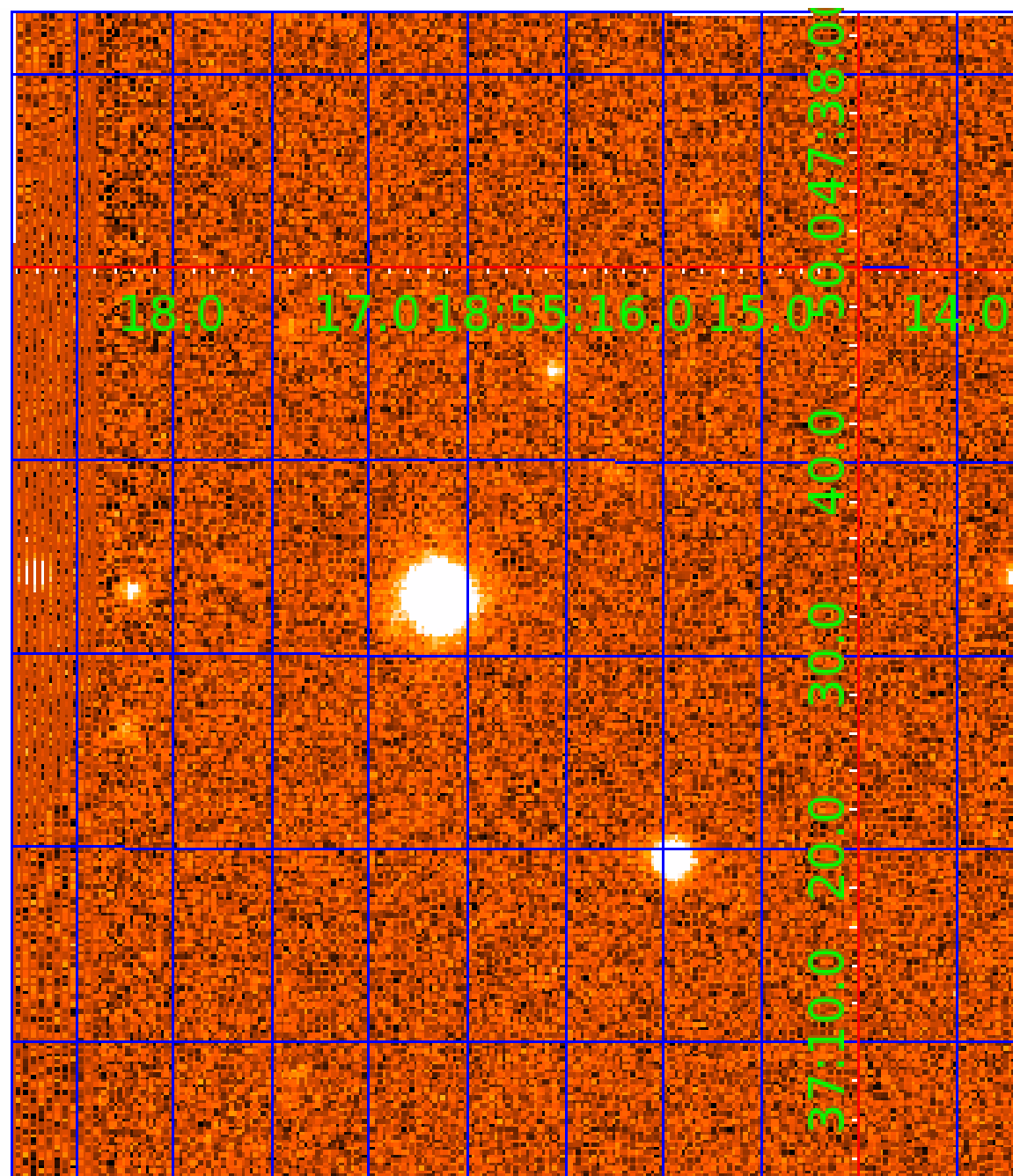
Q17 no difference image

Q17 no OOT image



UKIRT Image

Declination



KIC 010453475

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})
010453475-01	OBS	No	393.378268	438.677130	798.2	5.765	31.5	5.1	0.76	5403	2.58	0.51
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010453475-03	OBS	No	540.142084	483.482529	856.9	11.546	26.8	5.4	0.76	5403	2.33	0.33
010453475-04	OBS	No	356.036989	254.673963	662.6	13.469	19.3	4.6	0.76	5403	2.19	0.58
010453475-05	OBS	No	342.444485	364.224299	1856.1	49.504	13.7	9.1	0.76	5403	3.47	0.61
010453475-06	OBS	No	581.610076	332.422502	1220.2	14.767	20.1	8.1	0.76	5403	2.70	0.30
010453475-08	OBS	No	374.553966	277.965130	1298.4	4.500	14.6	-1.0	0.76	5403	2.71	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010453475-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-02	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
010453475-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
010453475-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010453475-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

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

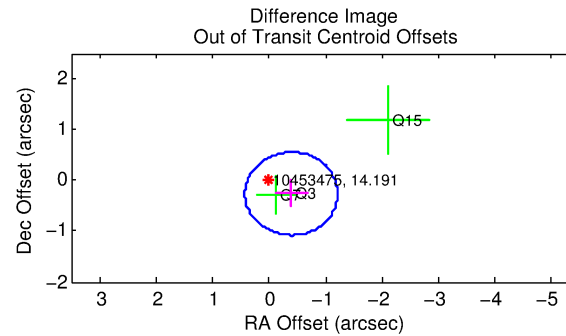
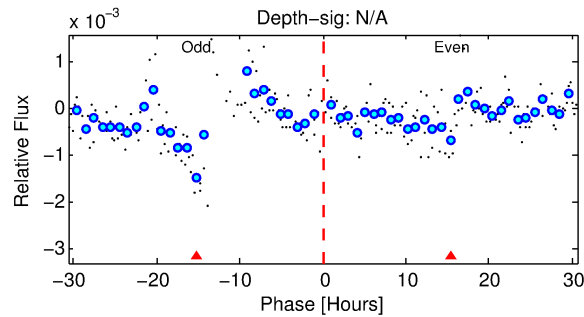
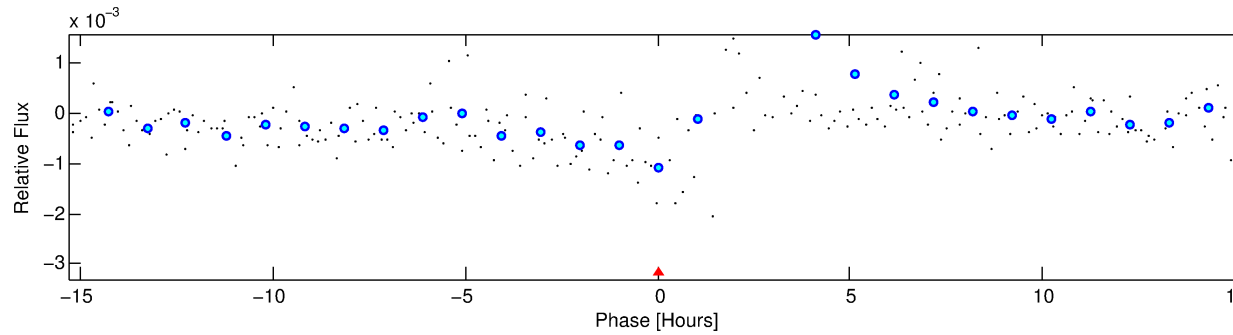
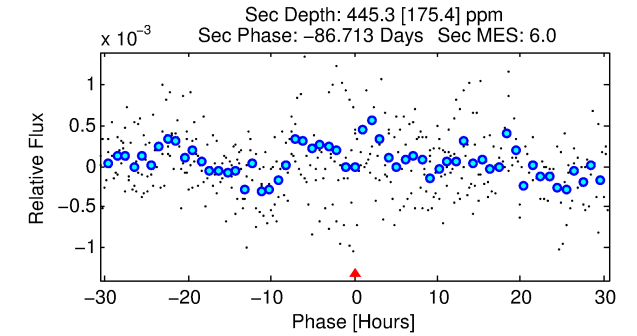
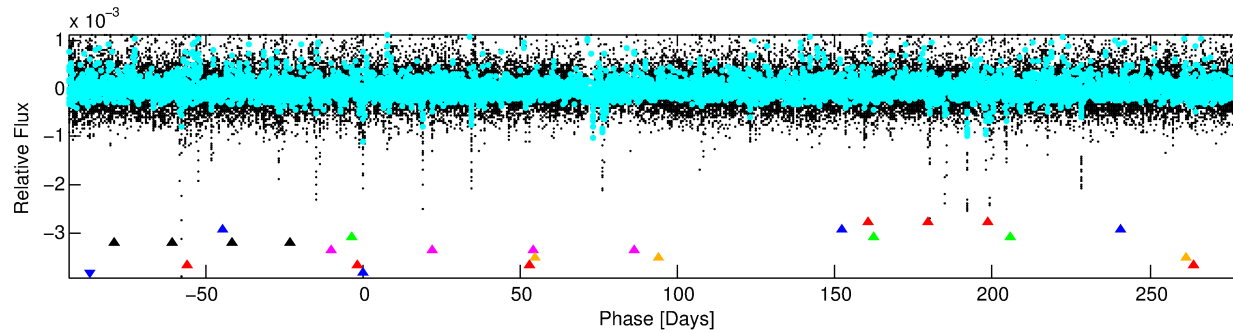
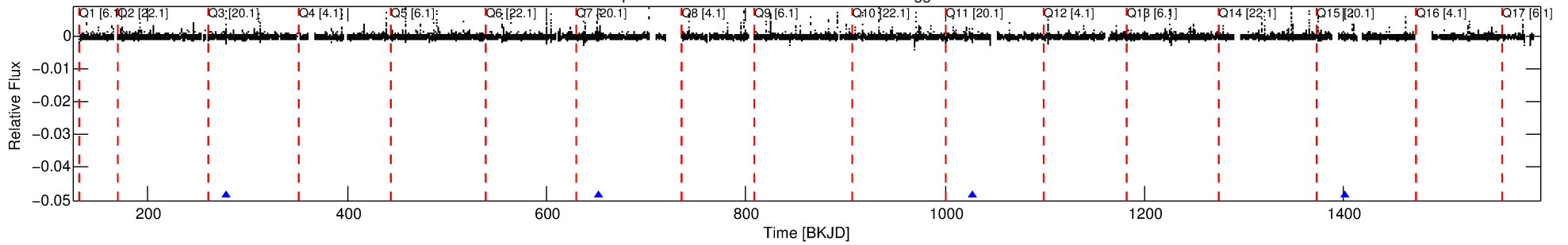
Ephemeris Match Information For 010453475-08

No Significant Match Found

DV One-Page Summary

KIC: 10453475 Candidate: 8 of 8 Period: 374.554 d

Kp: 14.19 R*: 0.76 Rs Teff: 5403.0 K Logg: 4.52 Fe/H: -0.560



TPS TCE Results:

Period = 374.55397 d
Epoch = 277.9651 BKJD

DV fit results are unavailable

DV Diagnostic Results:

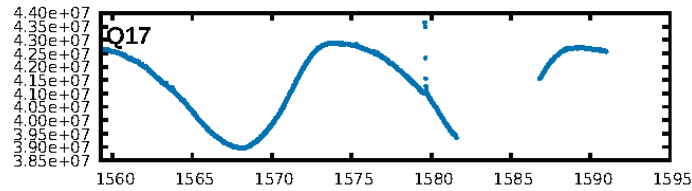
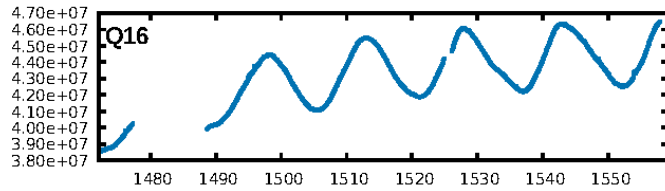
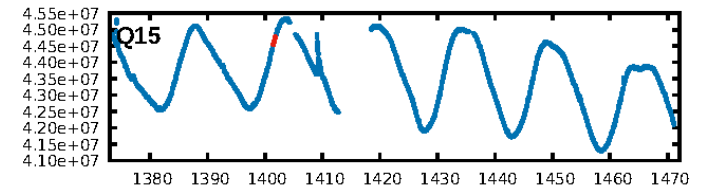
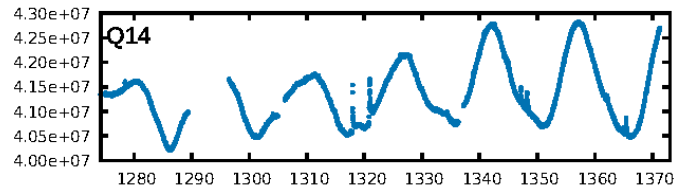
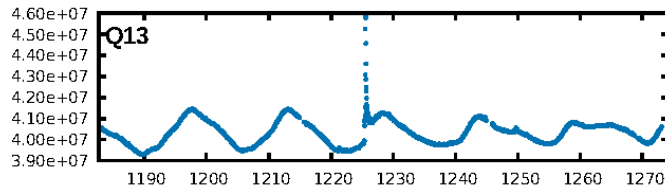
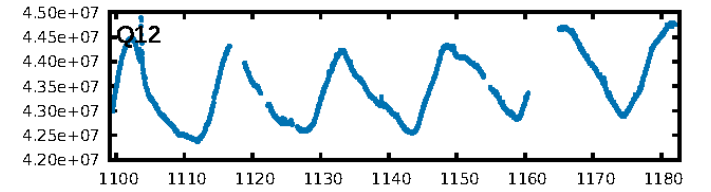
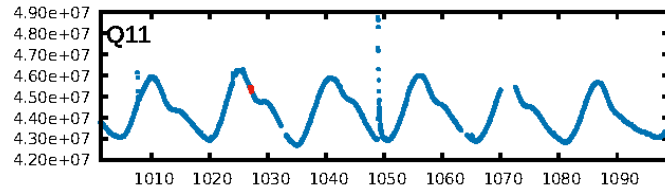
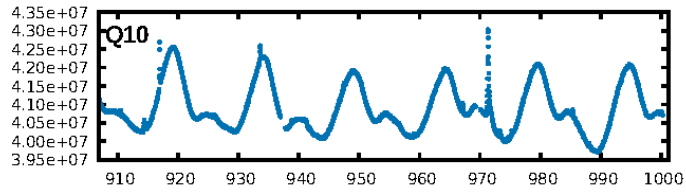
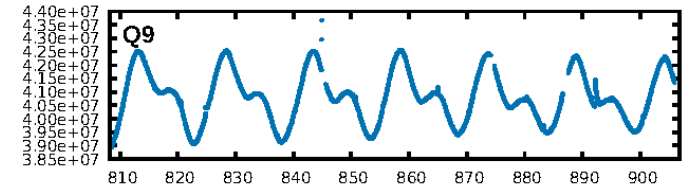
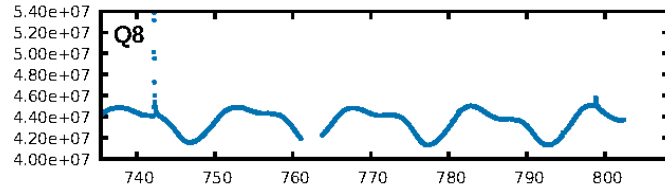
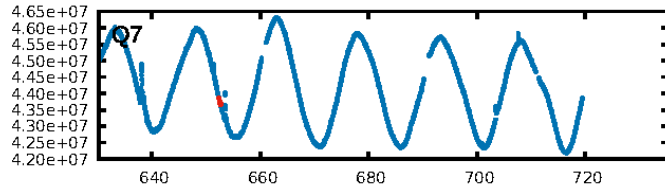
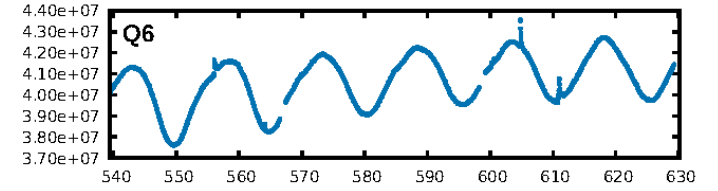
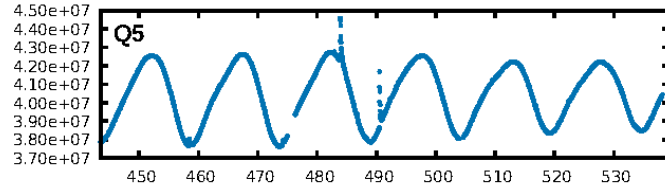
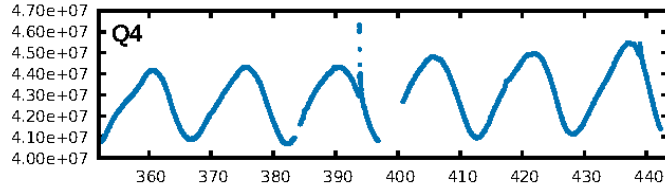
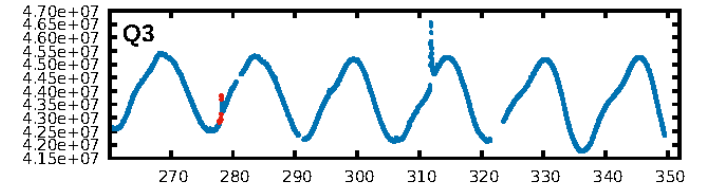
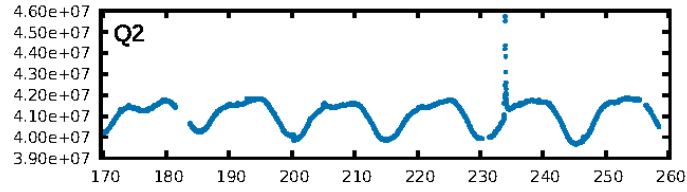
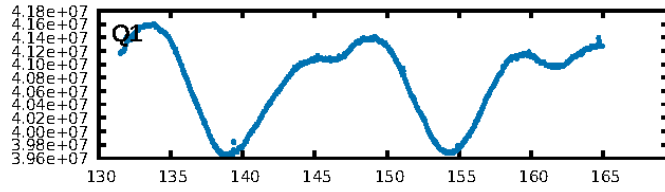
ShortPeriod-sig: 100.0% [31.30σ]
LongPeriod-sig: 100.0% [61.78σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.3634

Centroid-sig: 91.8%
Centroid-so: 0.095 arcsec [0.21σ]
OotOffset-rm: 0.472 arcsec [1.73σ]
KicOffset-rm: 0.468 arcsec [1.72σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

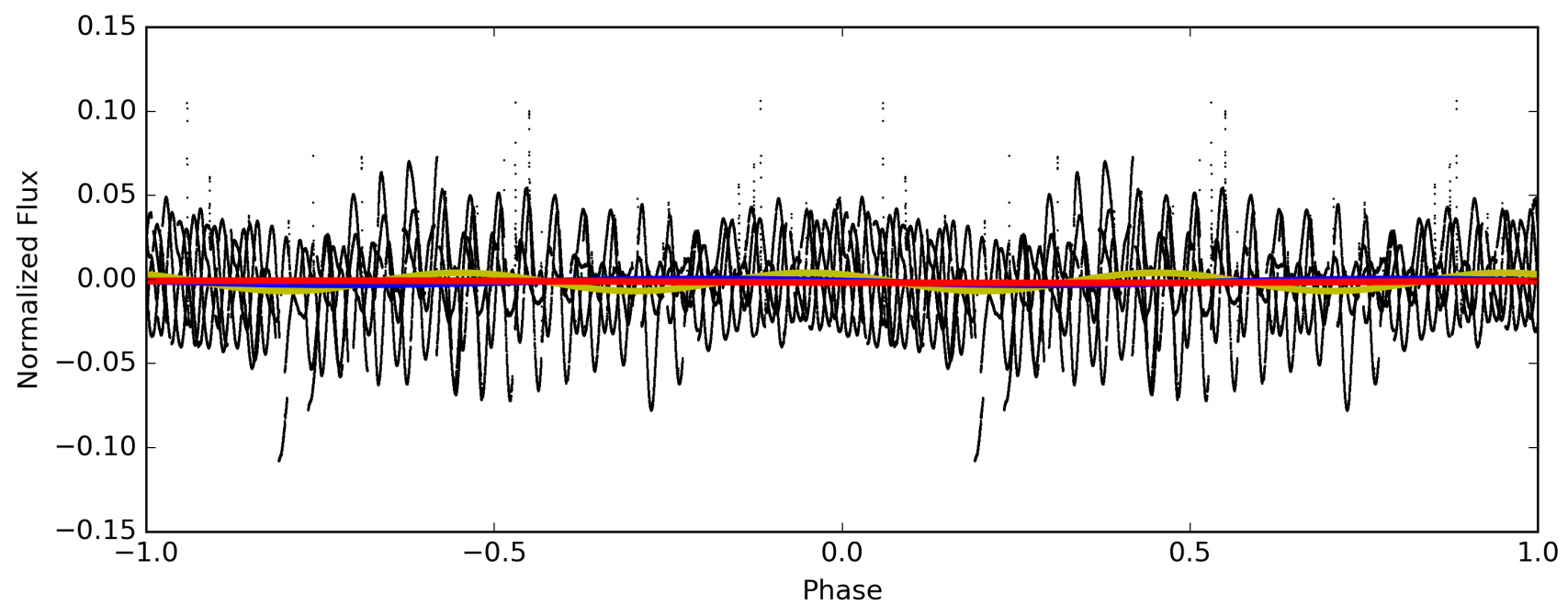
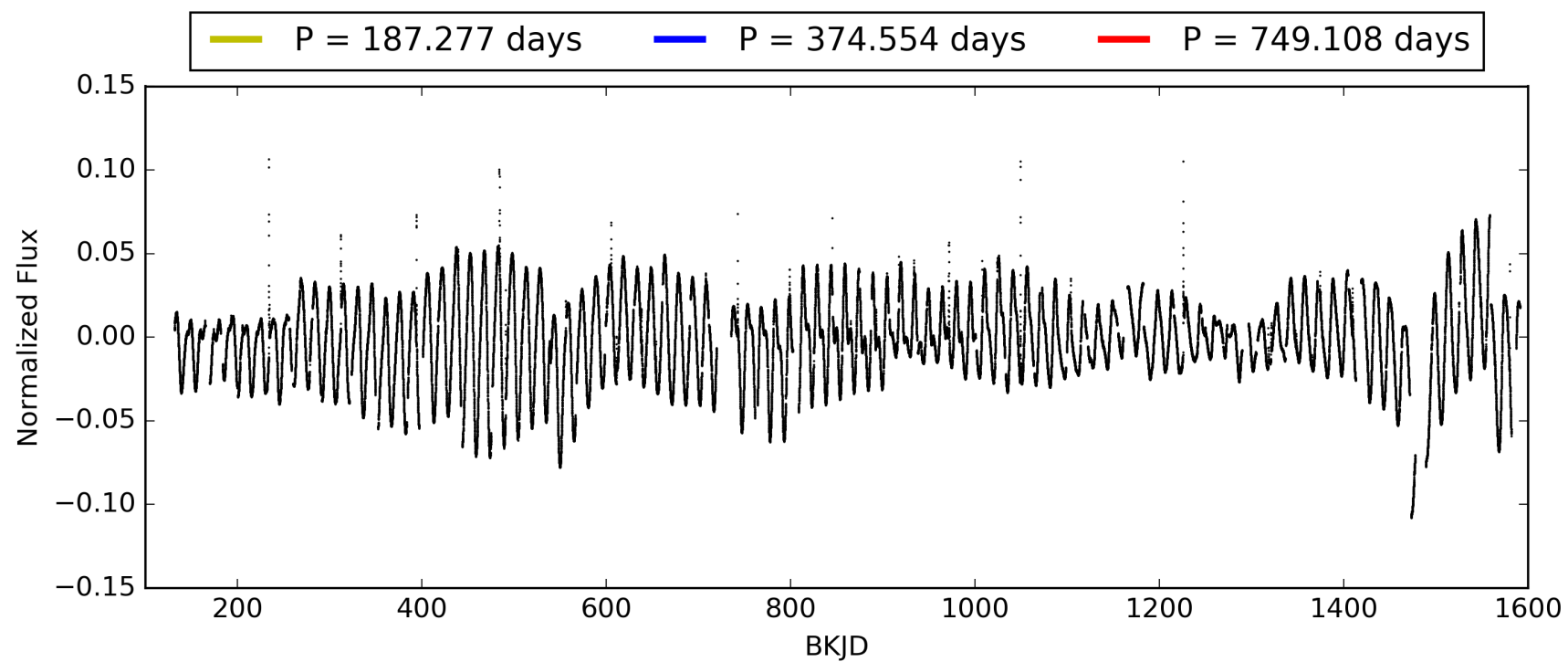
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:09:19 Z

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

TCE 010453475-08, PDC Light Curves

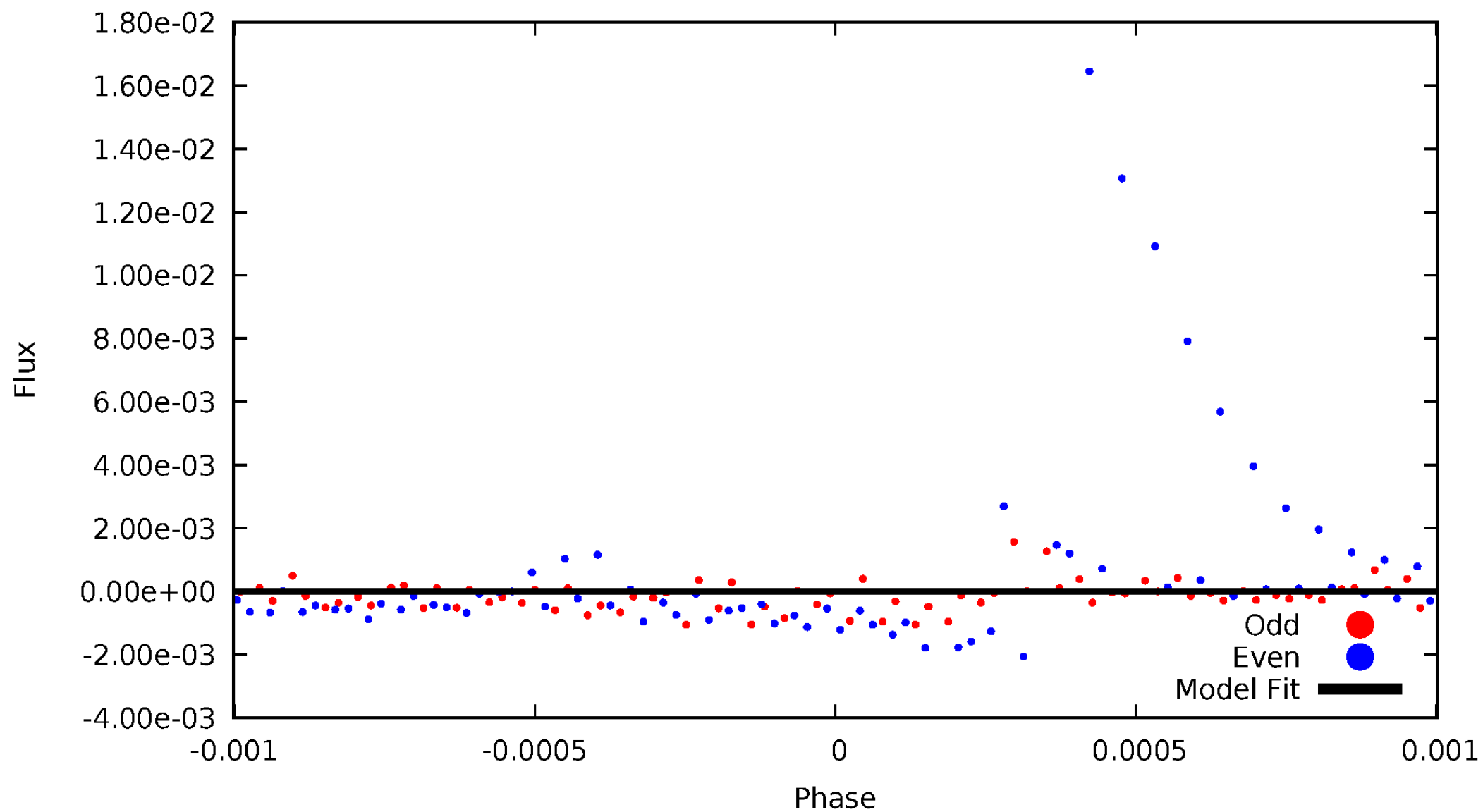


TCE 010453475-08



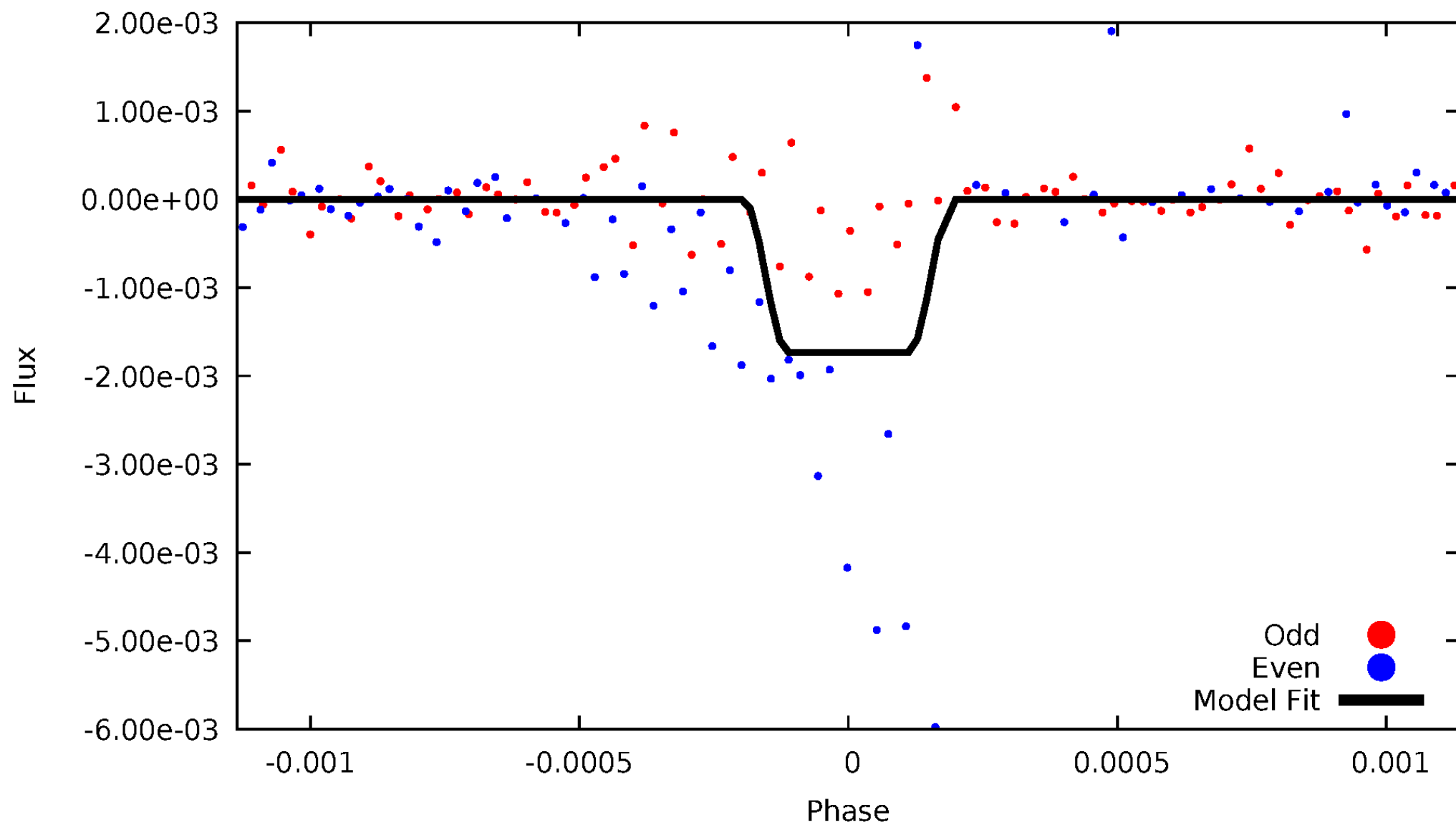
DV Odd/Even

TCE 010453475-08



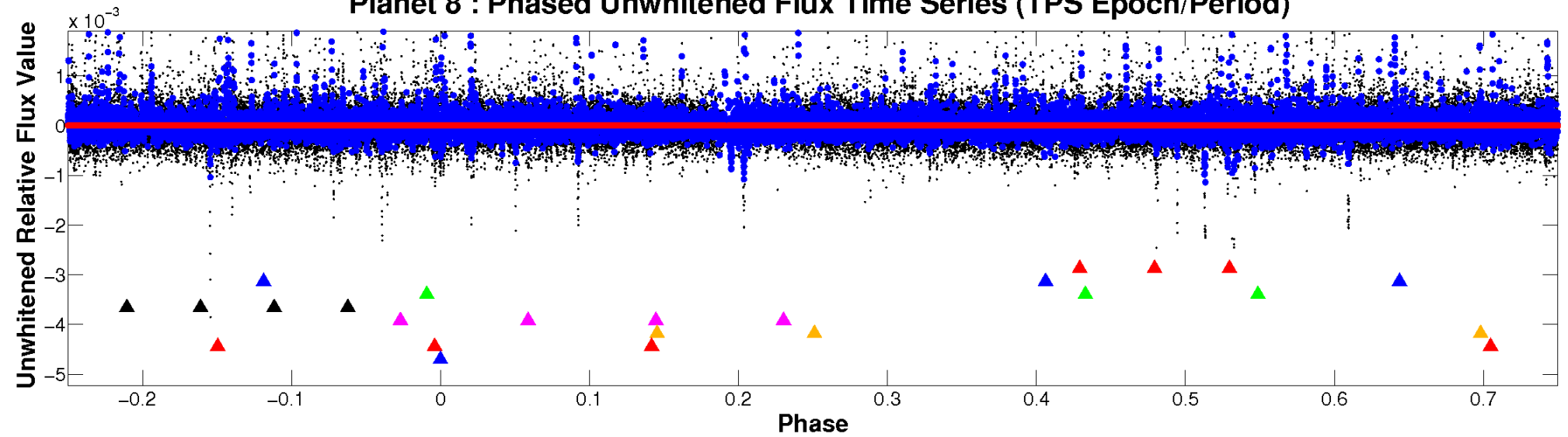
ALT Odd/Even

TCE 010453475-08

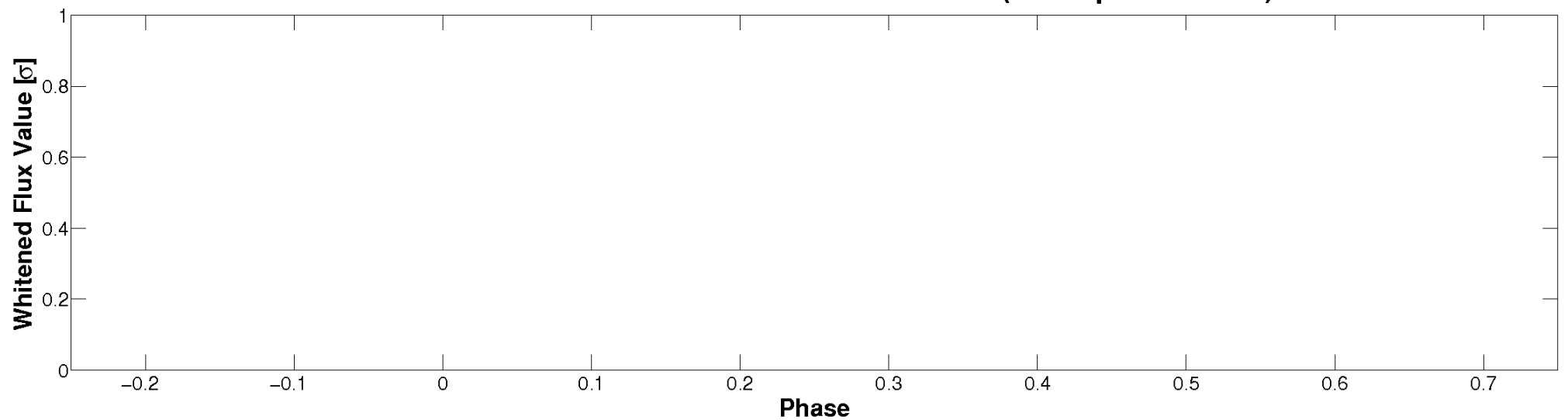


Non-Whitened Vs. Whitened Light Curve

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

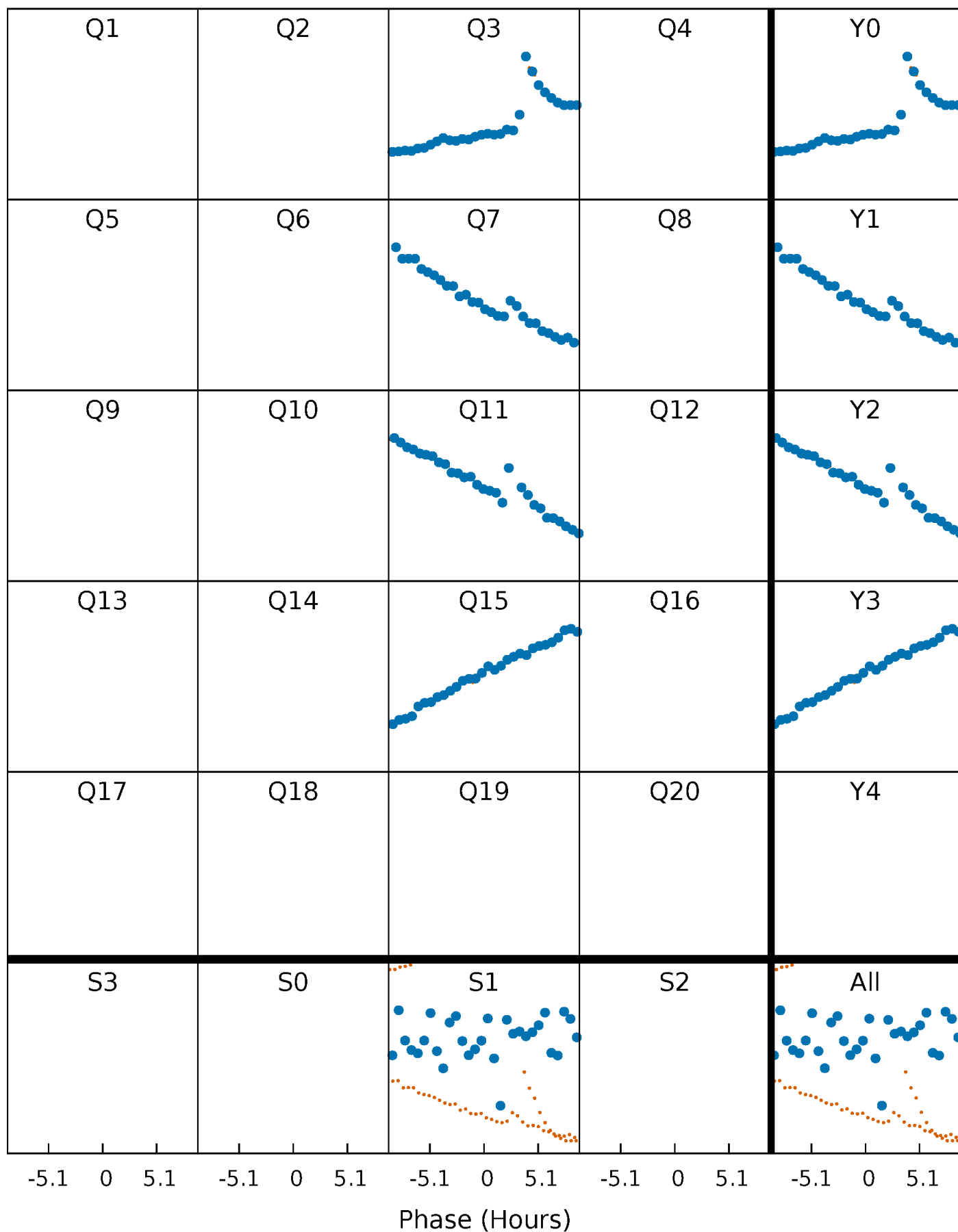


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



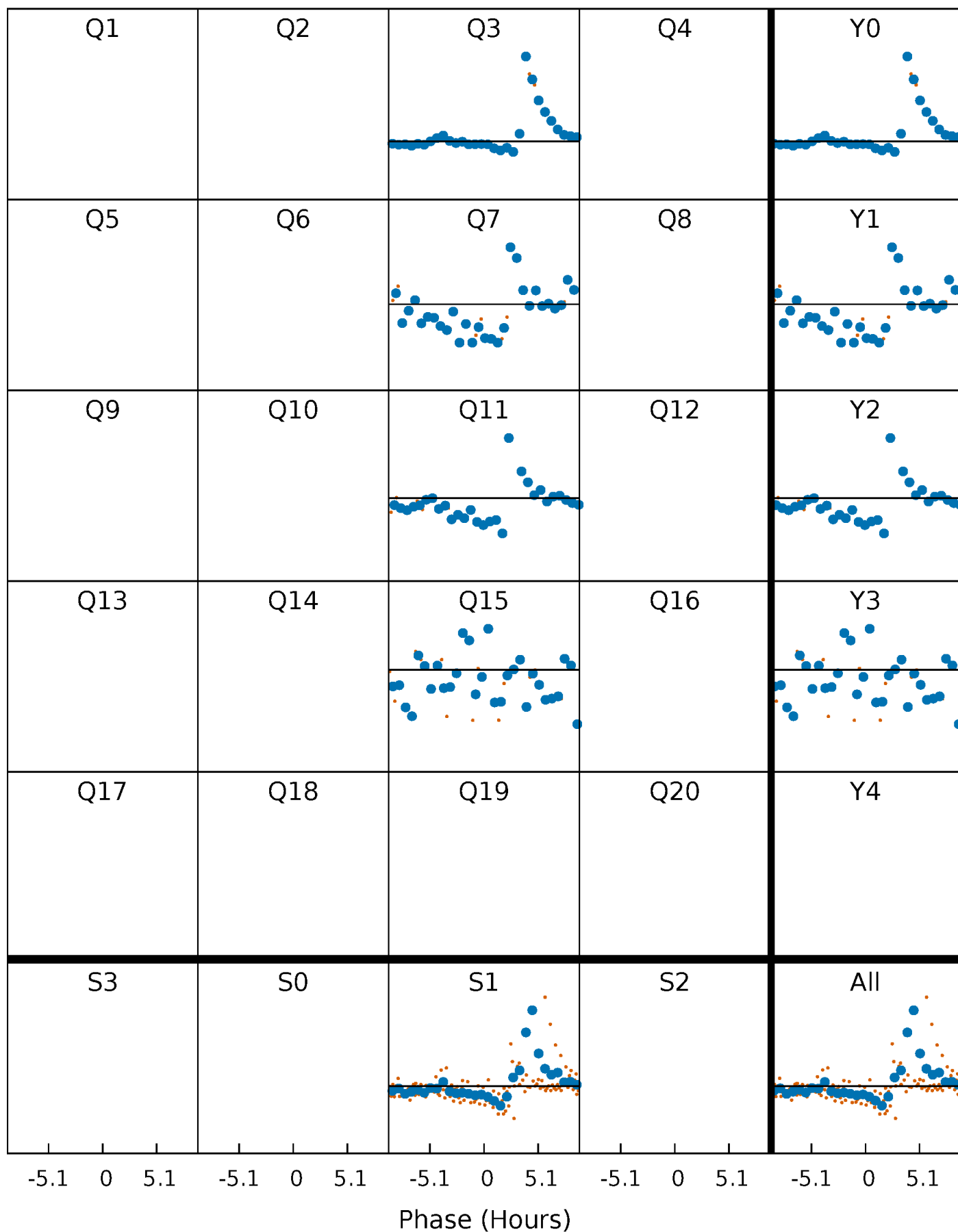
PDC Quarter-Phased Transit Curves

TCE 010453475-08 $P=374.553966$ Days $T_0=277.965129$ (BKJD)



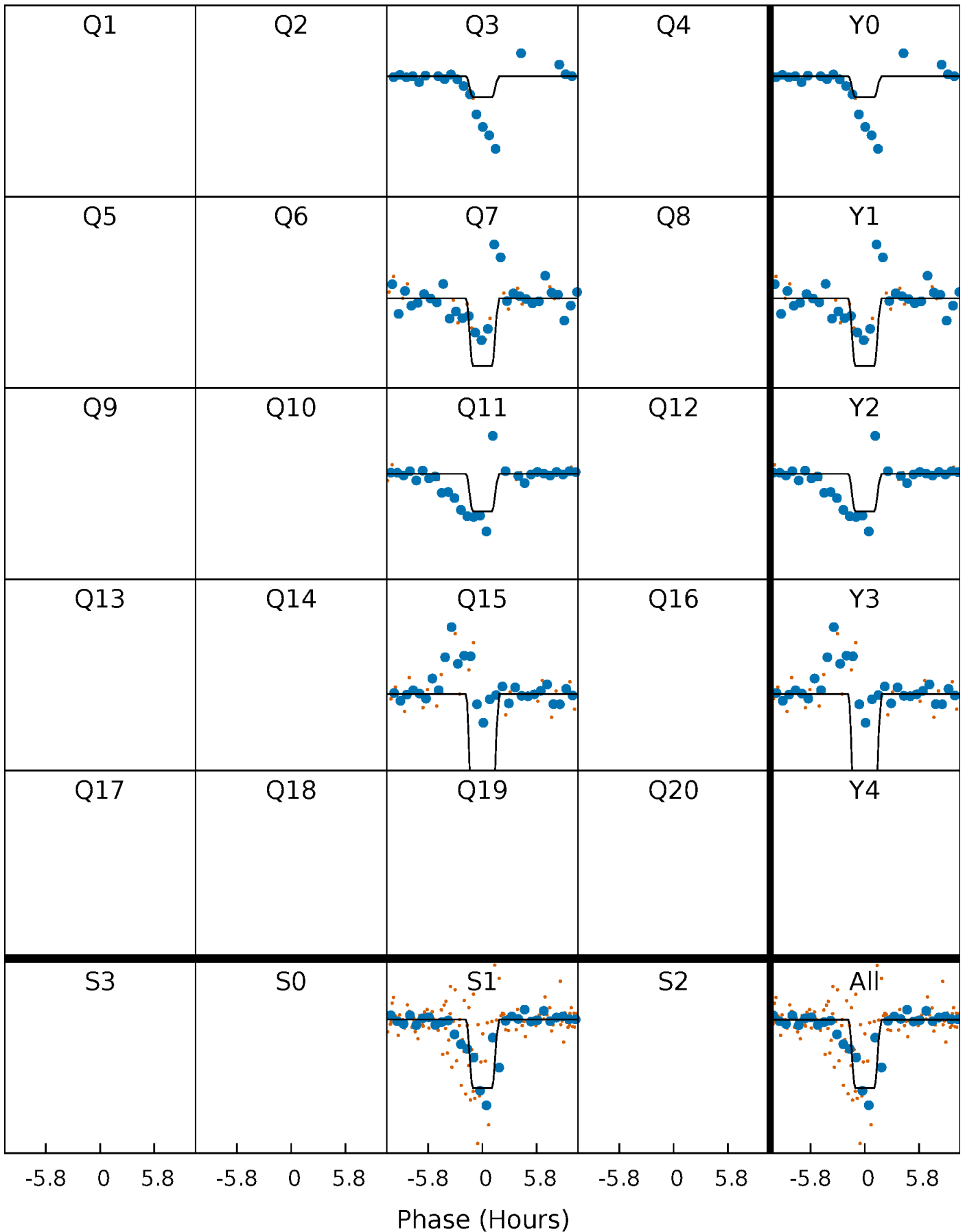
DV Quarter-Phased Transit Curves

TCE 010453475-08 $P=374.553966$ Days $T_0=277.965129$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

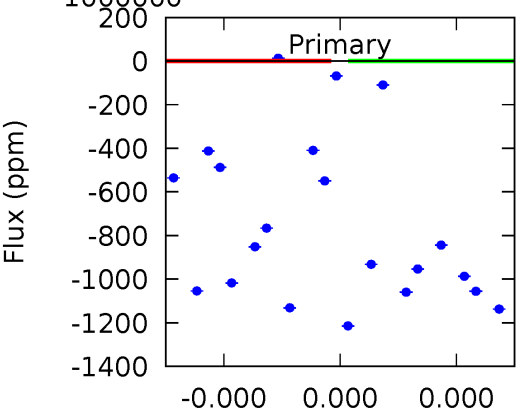
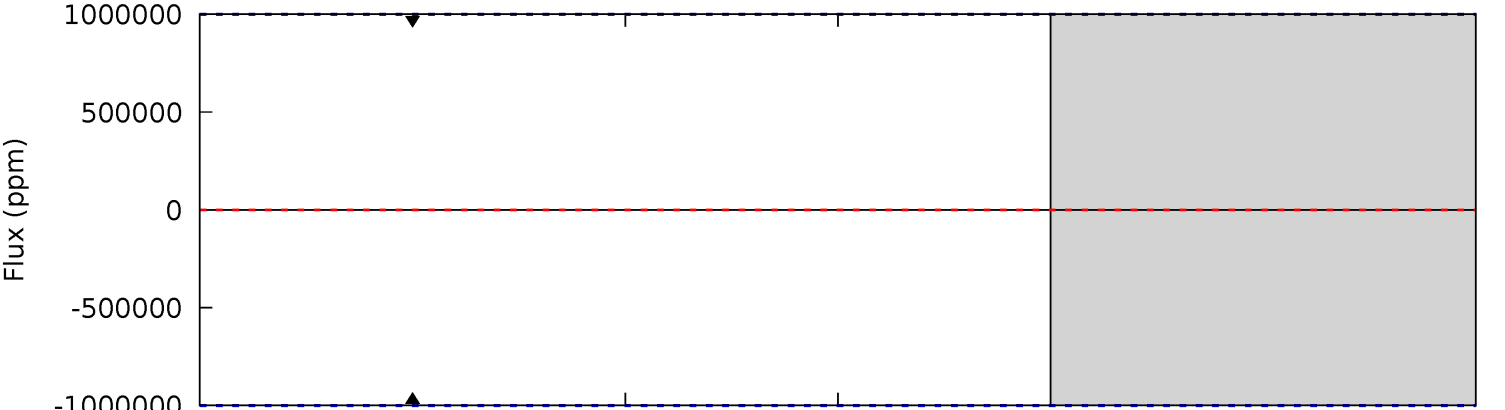
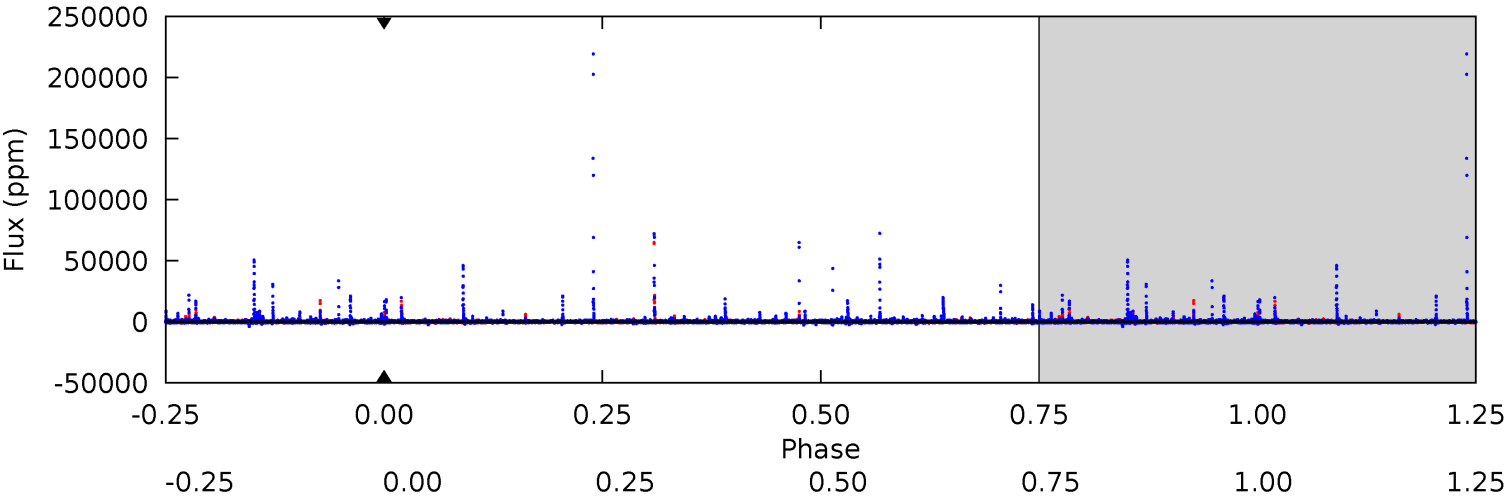
TCE 010453475-08 $P=374.553966$ Days $T_0=278.021991$ (BKJD)



DV Model-Shift Uniqueness Test

010453475-08, P = 374.553966 Days, E = 277.965129 Days

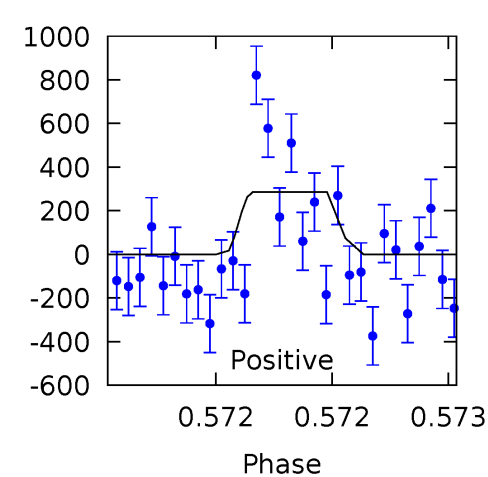
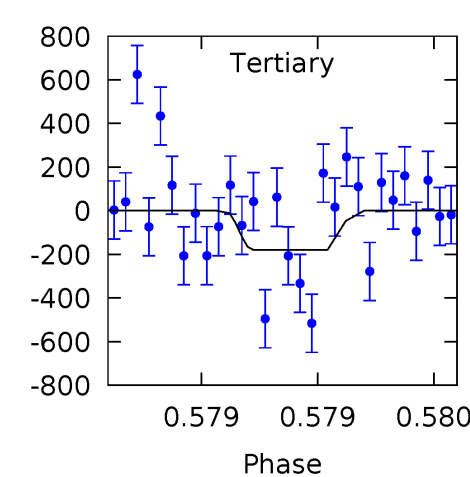
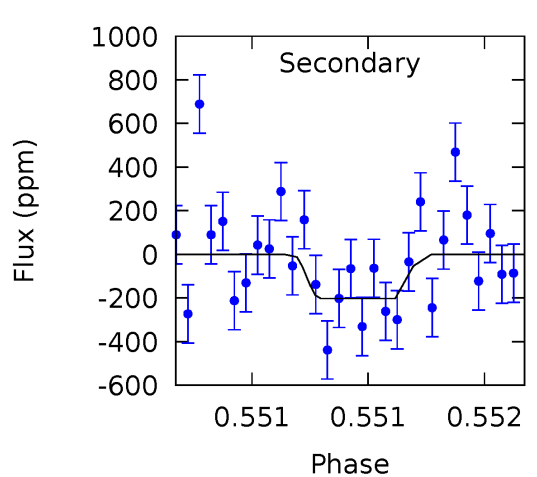
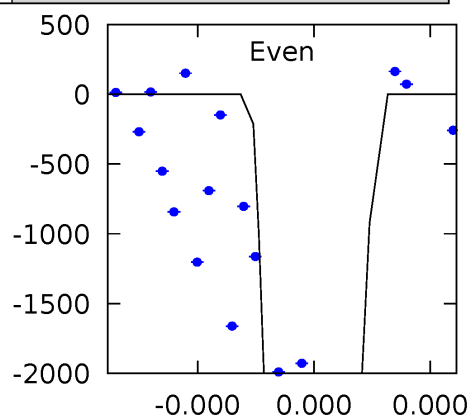
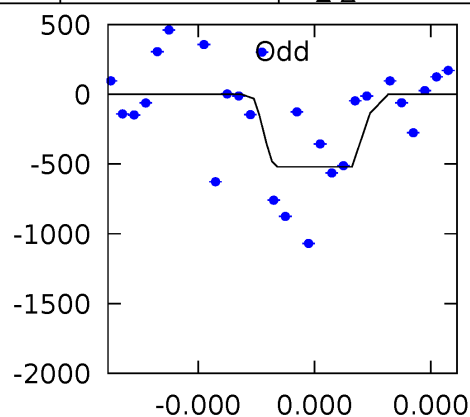
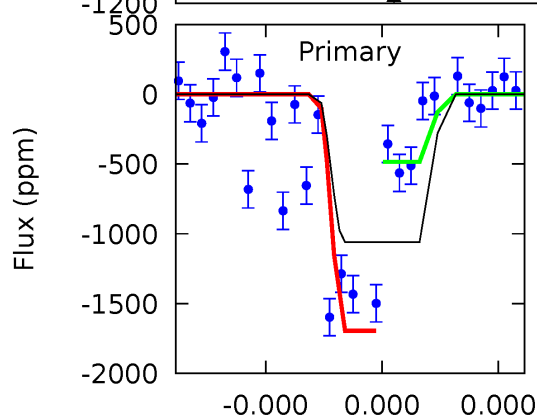
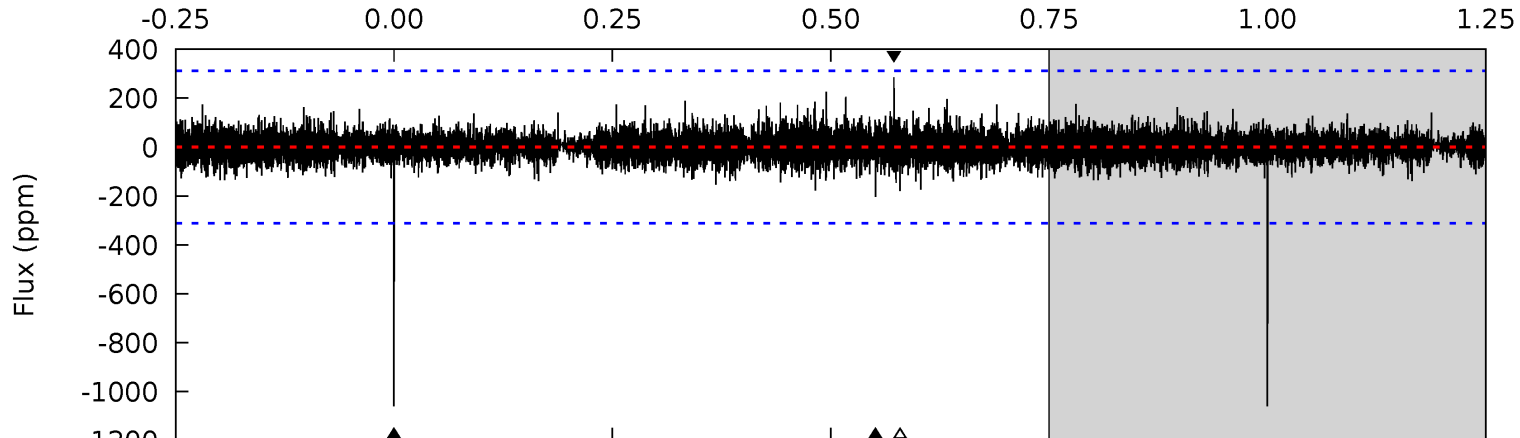
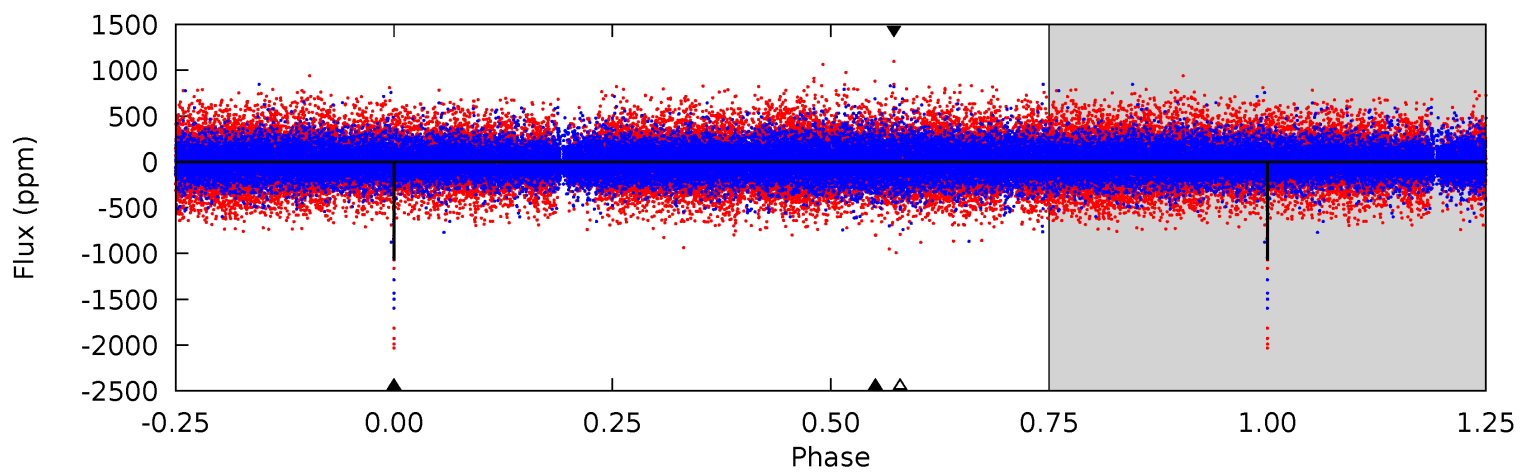
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010453475-08, P = 374.553966 Days, E = 278.021991 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.1	3.67	3.23	5.15	5.64	3.58	0.70	15.9	14.0	0.43	-1.48	30.6	1.46	0.21	0



Stellar Parameters For KIC 010453475

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5403^{+162}_{-146}	$4.523^{+0.105}_{-0.086}$	$-0.560^{+0.350}_{-0.300}$	$0.761^{+0.099}_{-0.090}$	$0.704^{+0.094}_{-0.040}$	$2.253^{+0.987}_{-0.577}$
	+3%/-3%	+2%/-2%	+62%/-54%	+13%/-12%	+13%/-6%	+44%/-26%
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 010453475-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$6.85^{+6.35}_{-4.71}$	306^{+12}_{-14}	3926^{+12907}_{-18429}	$11312^{+1815414}_{-1432834}$
Alt.	-203 ± 55	$7.32^{+6.88}_{-4.86}$	305^{+13}_{-14}	2871^{+1128}_{-440}	1665^{+14115}_{-1199}

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 $A_{obs} \gg 1.0$

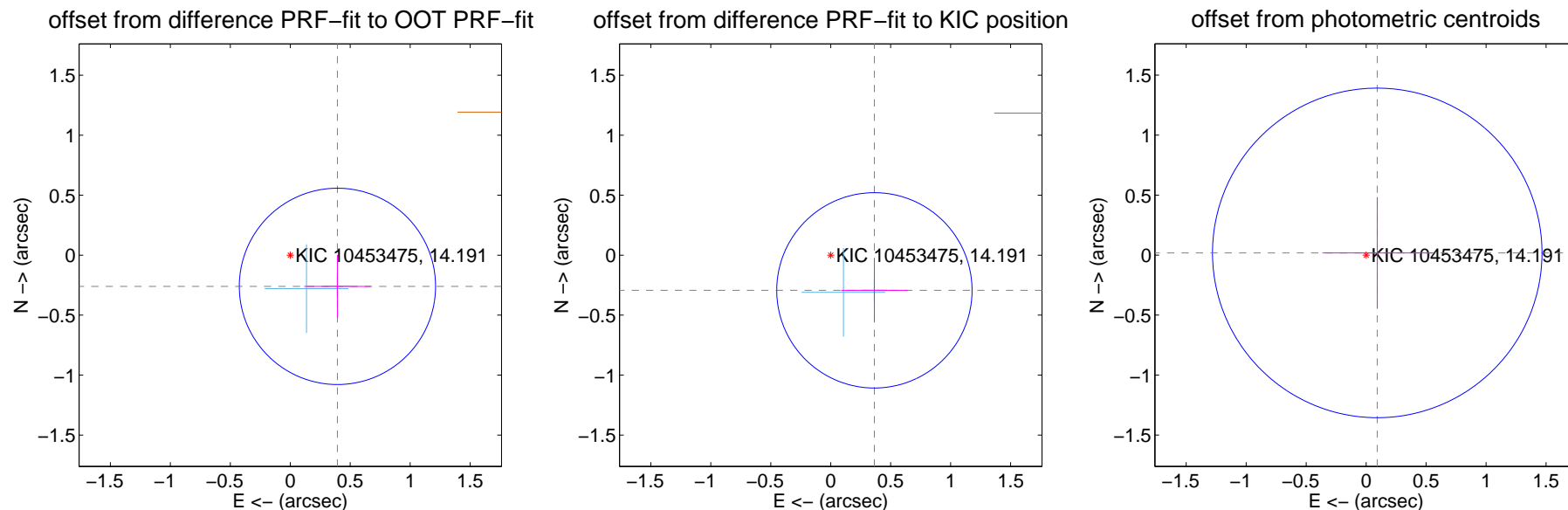
DV Centroid Data

Supplemental centroid analysis for 010453475-08. Kepler magnitude: 14.19. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

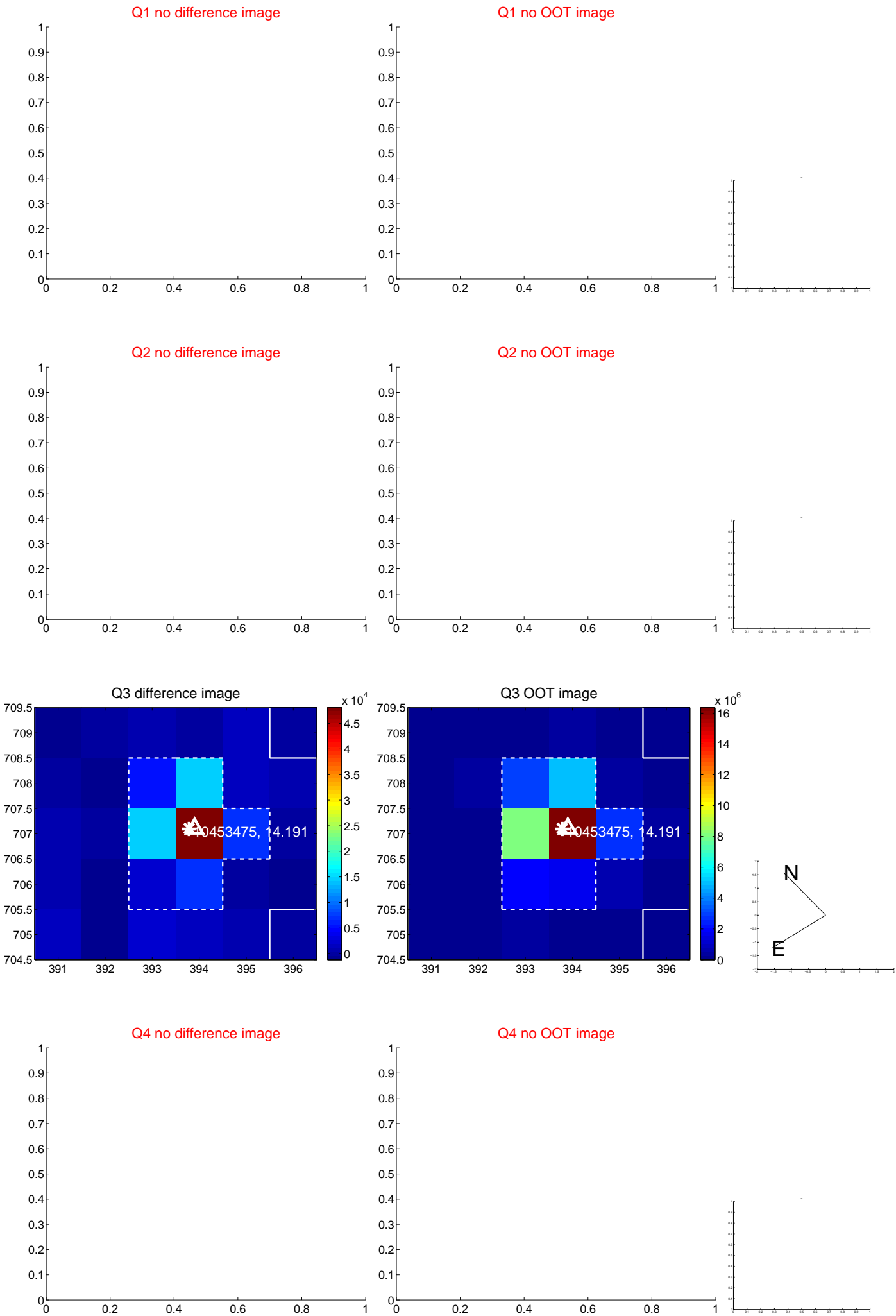
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.472 ± 0.273	1.73	-0.393 ± 0.277	-0.260 ± 0.262
PRF-fit source offset from KIC position	0.468 ± 0.271	1.72	-0.364 ± 0.277	-0.293 ± 0.262
photometric centroid source offset	0.09 ± 0.46	0.21	-0.09 ± 0.46	0.02 ± 0.47

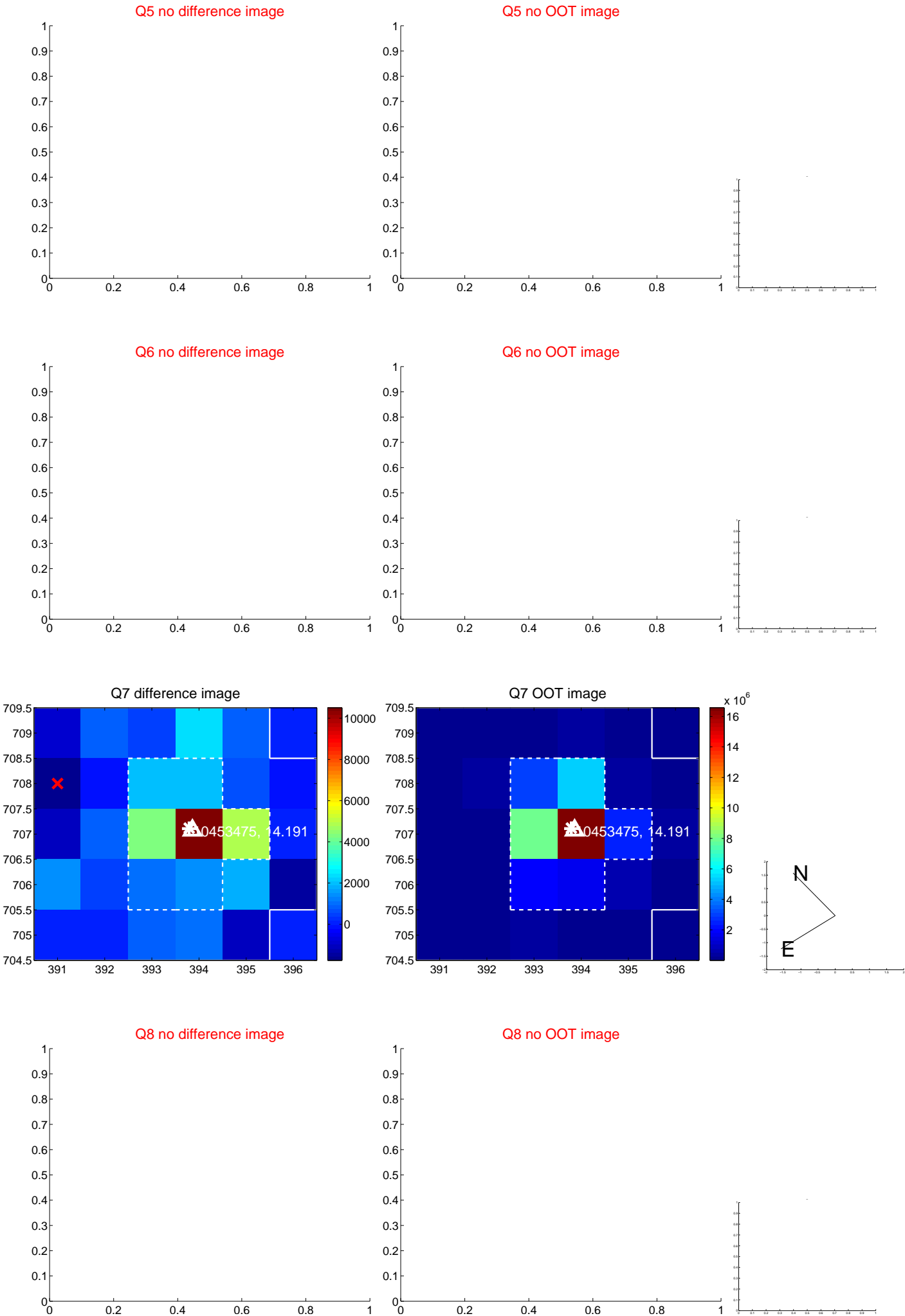


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



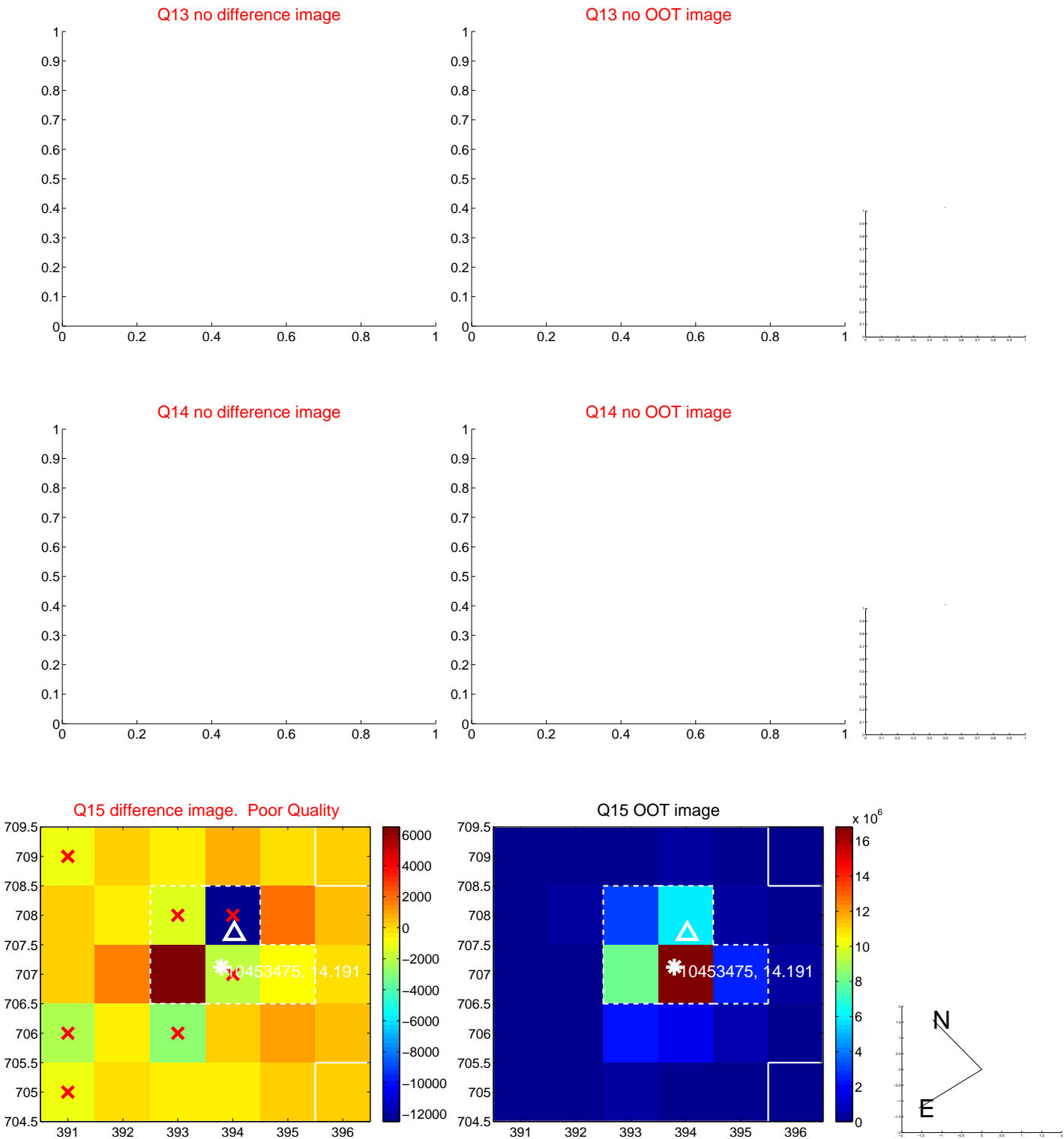
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



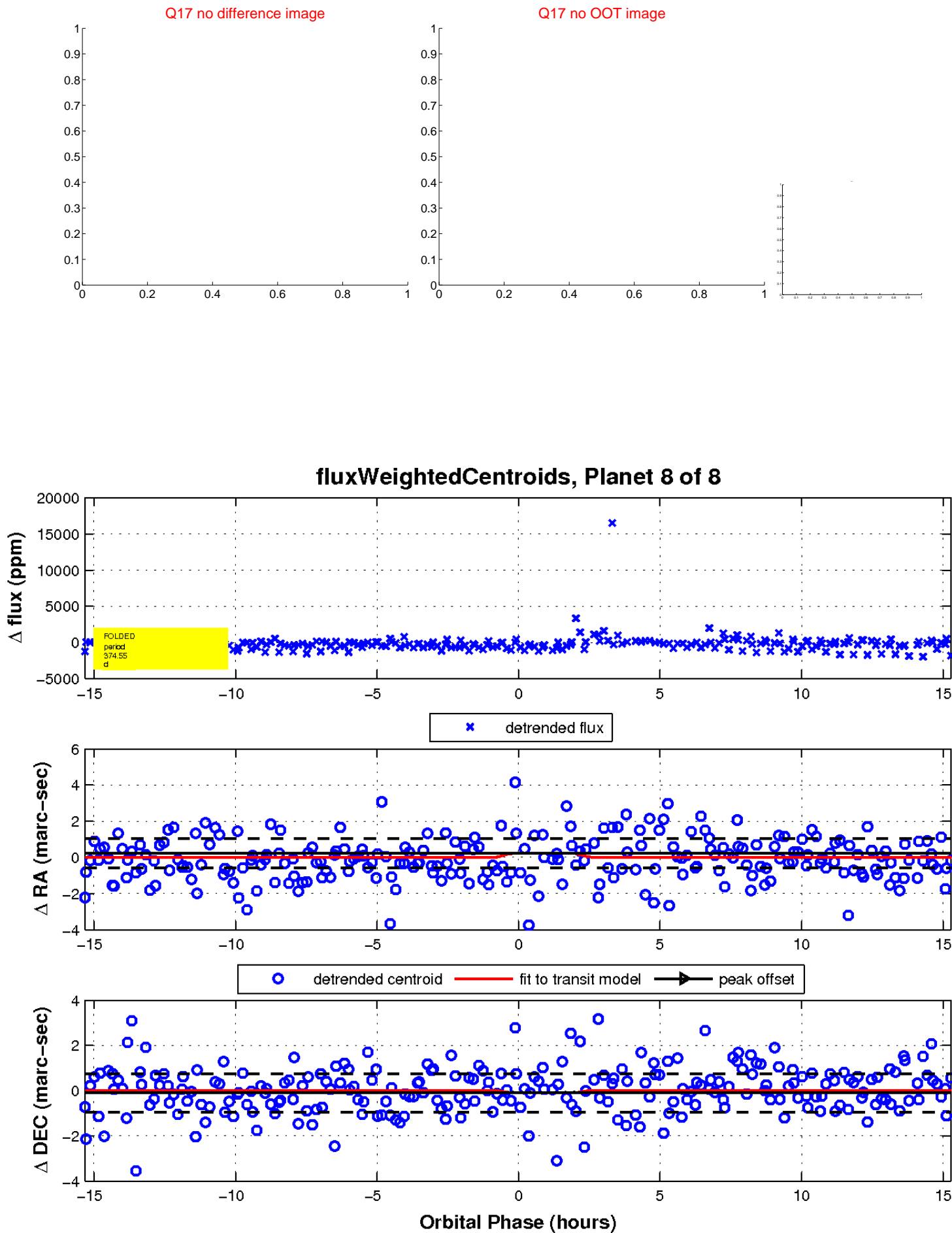
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

