

KIC 010275766

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})
010275766-01	OBS	2810.01	0.661731	131.870603	78.9	2.789	17.6	14.9	1.20	6363	1.25	8120.91
010275766-02	OBS	No	145.330445	236.549076	518.0	4.961	8.0	5.0	1.20	6363	3.04	6.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010275766-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—PLANET_OCCULT_DV—MOD_SEC_ALT—CENT_RESOLVED_OFFSET—EPHEM_MATCH
010275766-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET—HALO_GHOST

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.

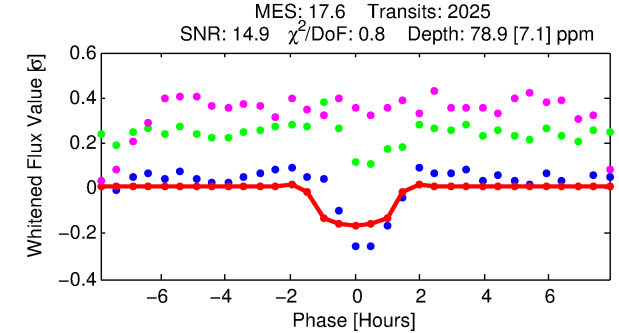
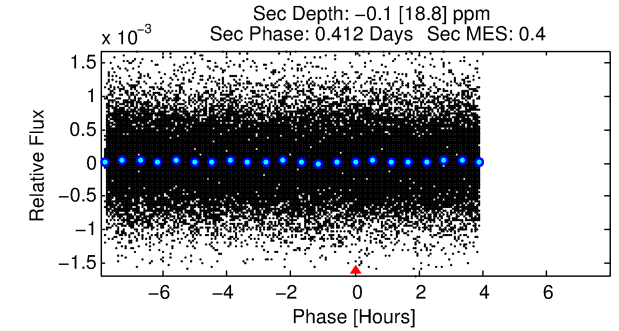
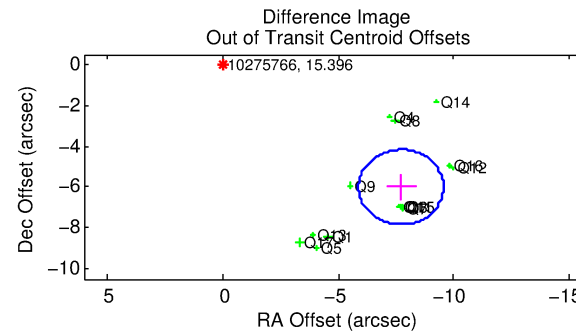
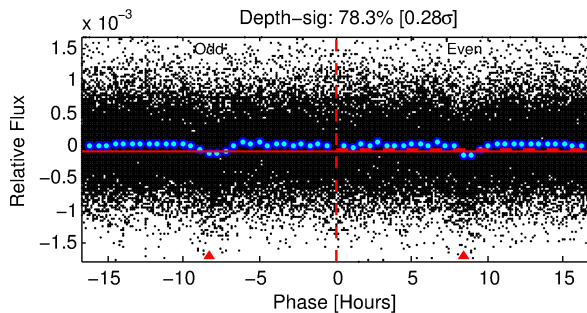
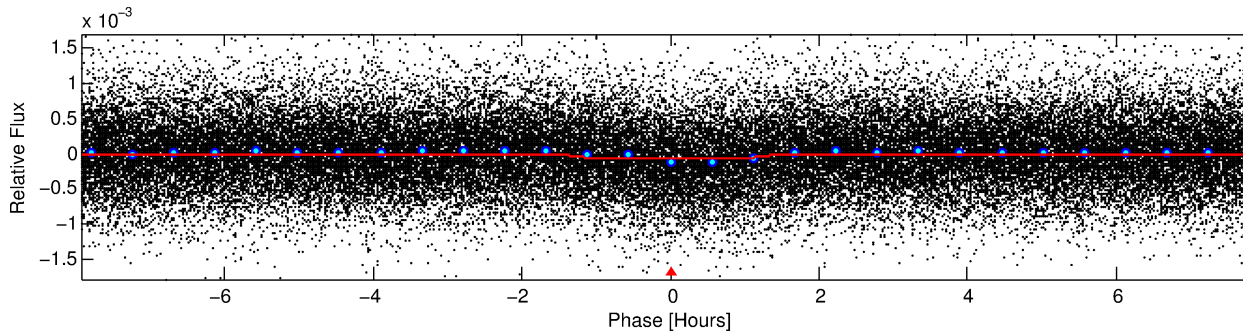
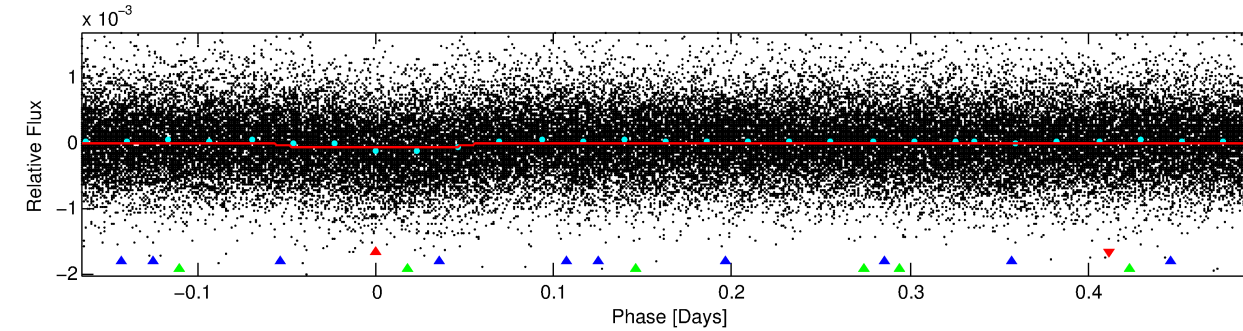
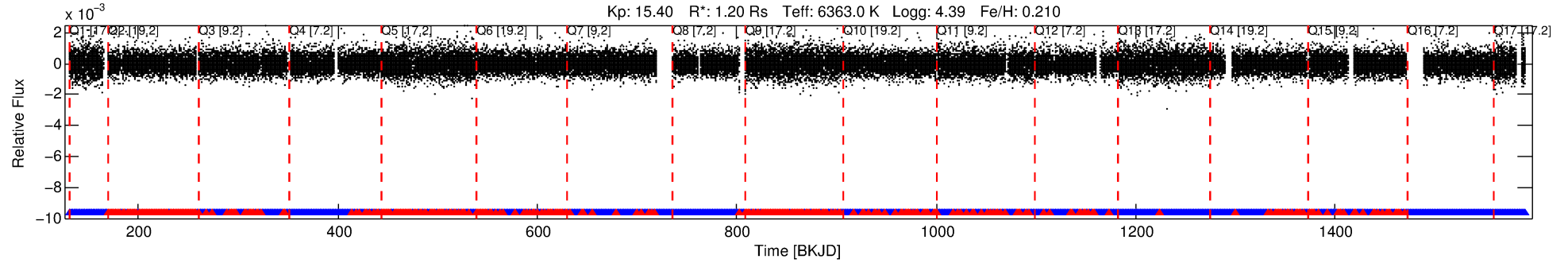
Ephemeris Match Information For 010275766-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010275766-01	10275766	010275747-pri	10275747	1:1	31.0	4	6	12.80	15.40	6820.30	Direct-PRF	0	2.85	0.69

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10275766 Candidate: 1 of 3 Period: 0.662 d
KOI: K02810.01 Corr: 0.827



DV Fit Results:

Period = 0.66173 [0.00001] d
Epoch = 131.8706 [0.0023] BKJD
Rp/R* = 0.0096 [0.0043]
a/R* = 1.25 [1.10]
b = 0.90 [0.51]
Seff = 8120.91 [3165.98]
Teq = 2421 [236] K
Rp = 1.25 [0.69] Re
a = 0.0161 [0.0041] AU
Ag = N/A
Teffp = N/A

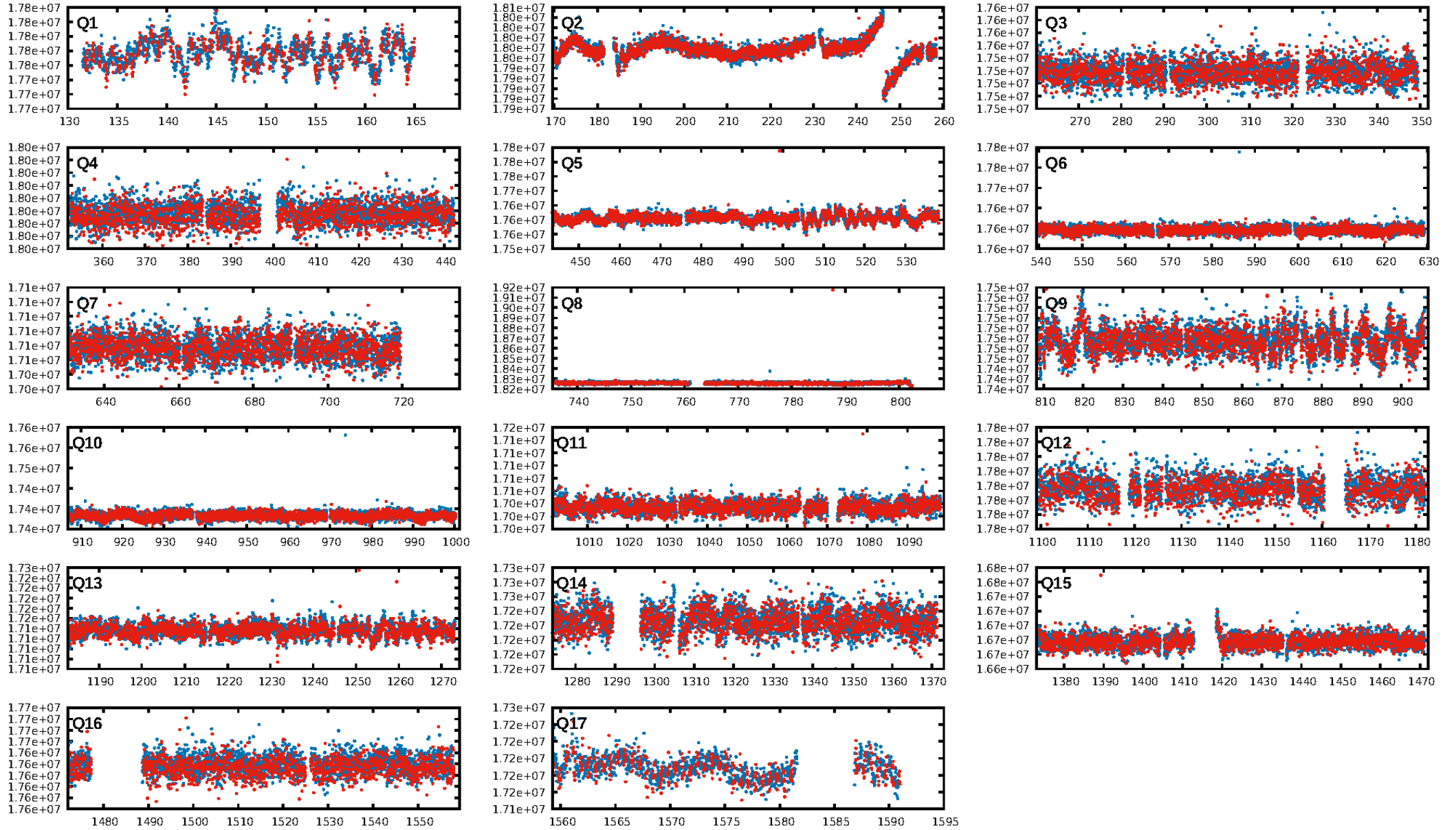
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [610.07 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.27e-59
RollingBand-fgt: 0.76 [1475/1933]
GhostDiagnostic-chr: 0.6882
Centroid-sig: 0.0%
Centroid-so: 4.934 arcsec [4.89 σ]
OotOffset-rm: 9.773 arcsec [15.96 σ]
KicOffset-rm: 9.730 arcsec [15.83 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 1.00 [17/17]

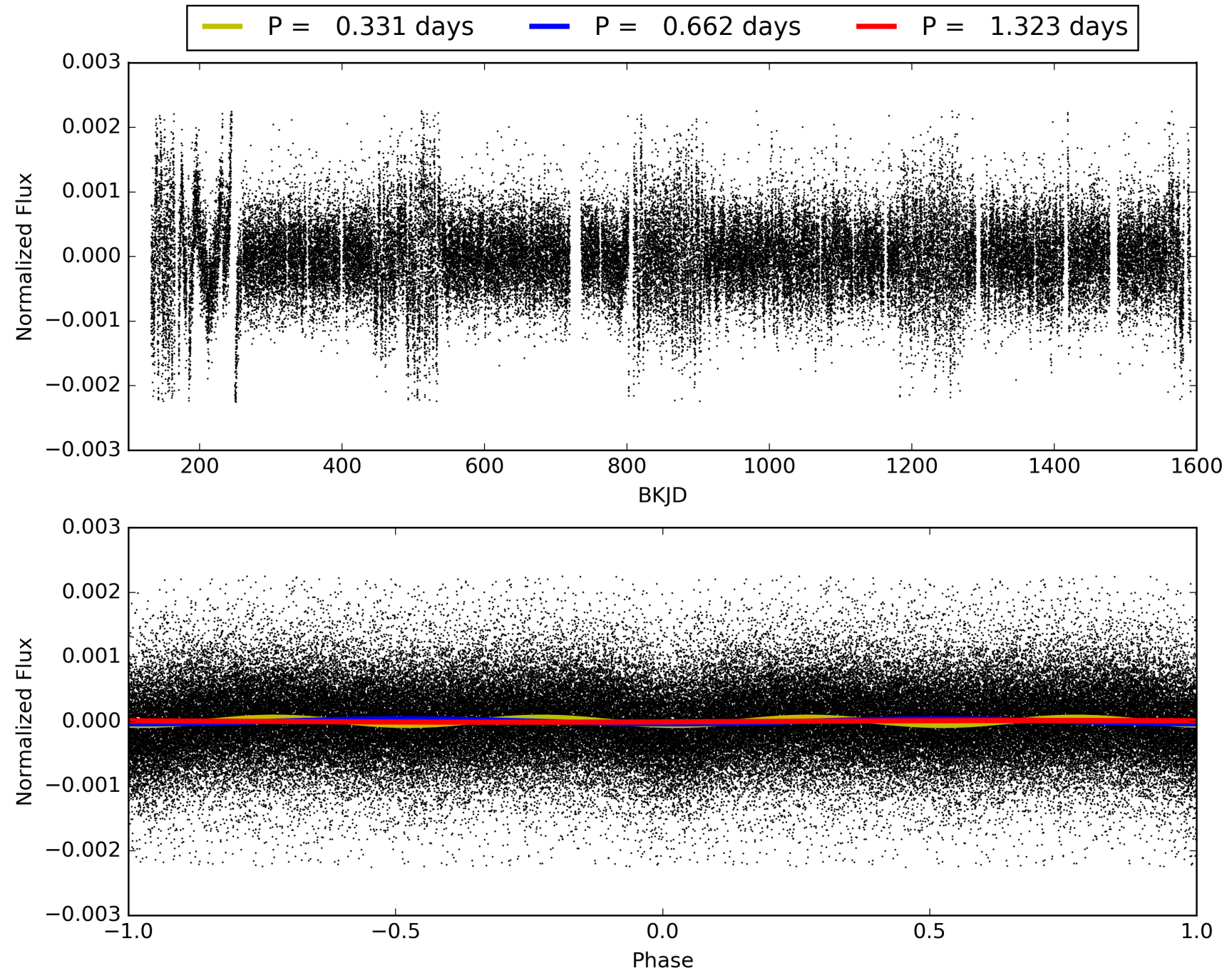
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:07:50 Z

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

TCE 010275766-01, PDC Light Curves

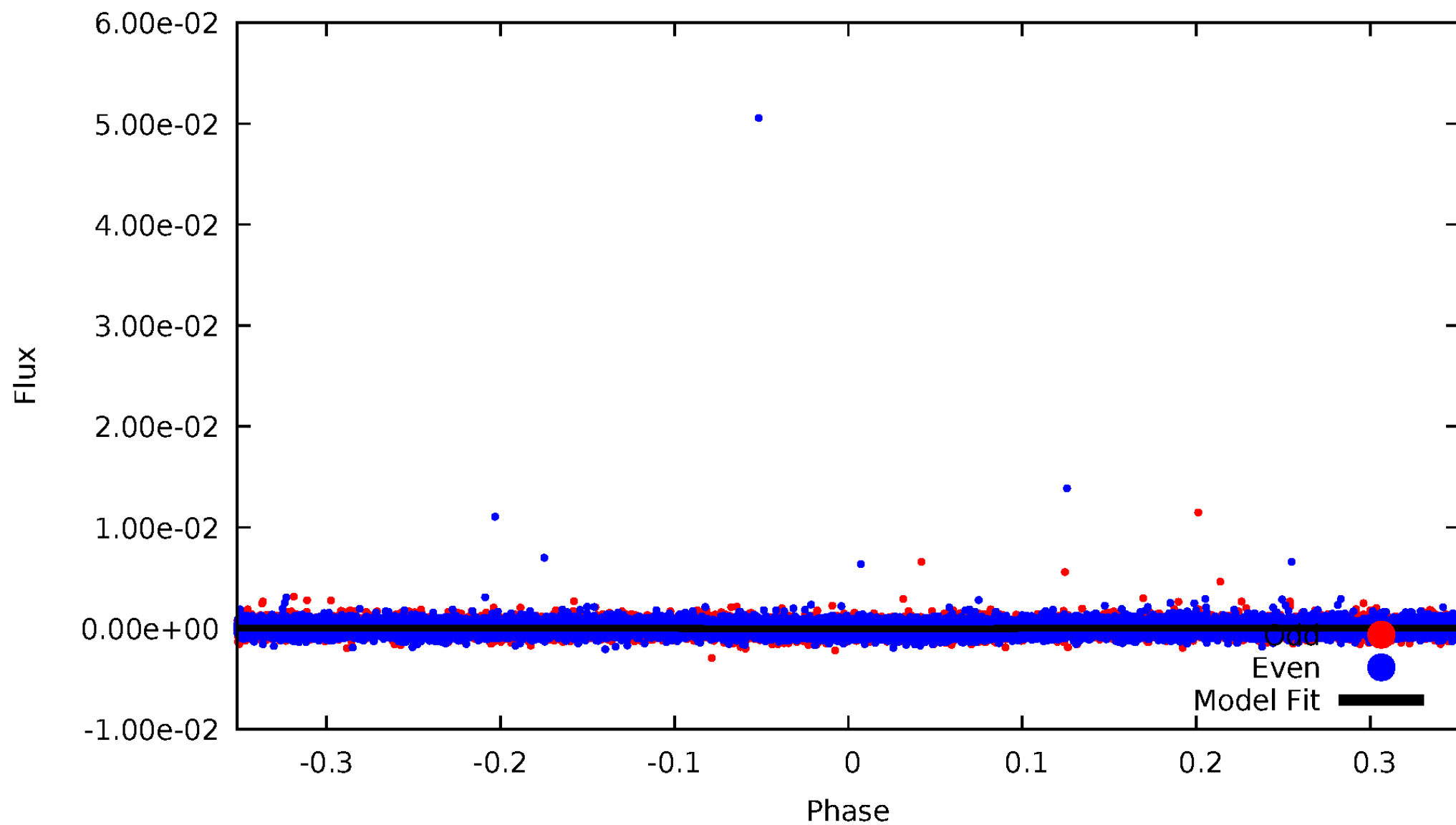


TCE 010275766-01



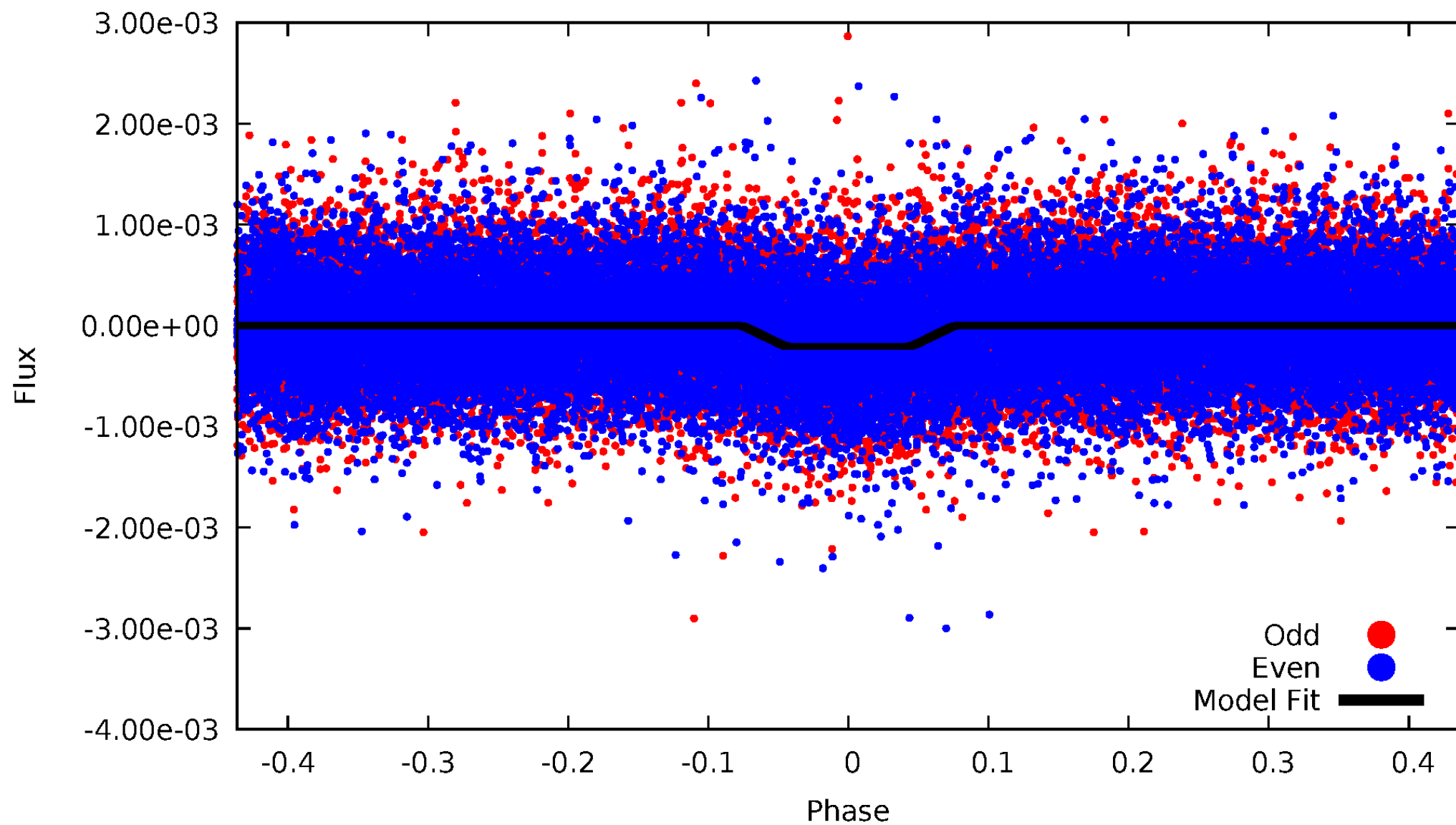
DV Odd/Even

TCE 010275766-01

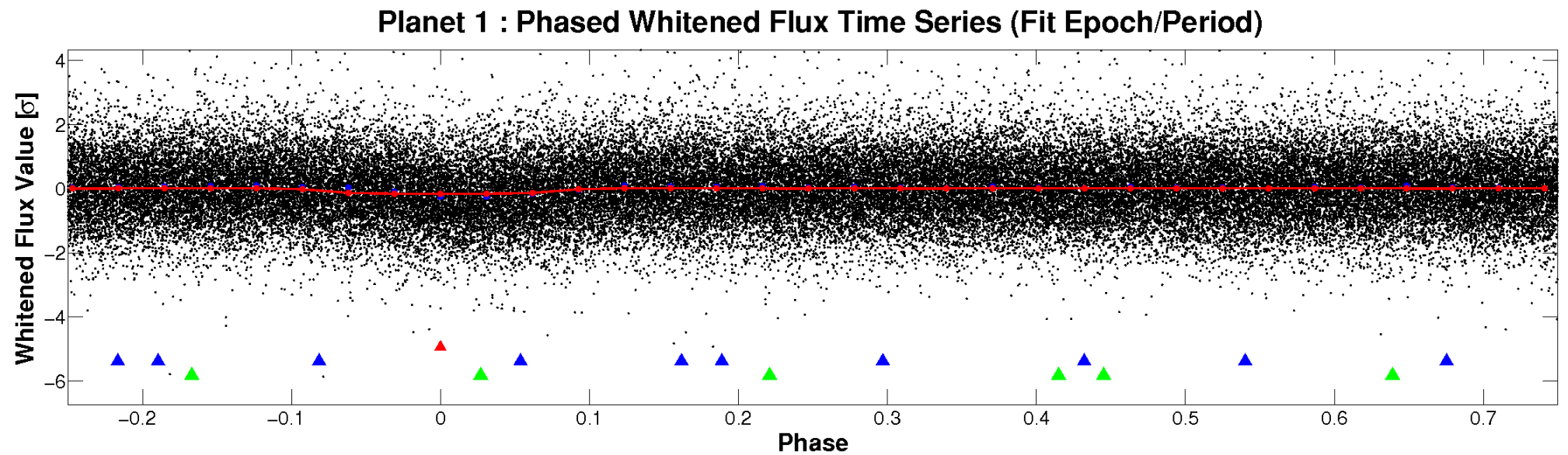
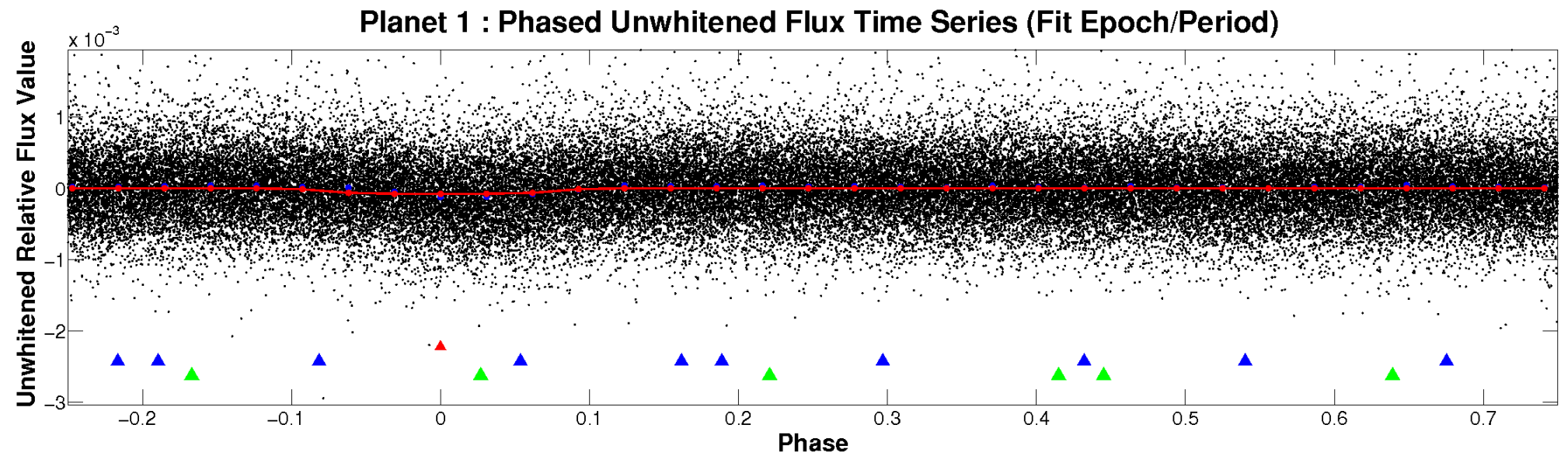


ALT Odd/Even

TCE 010275766-01

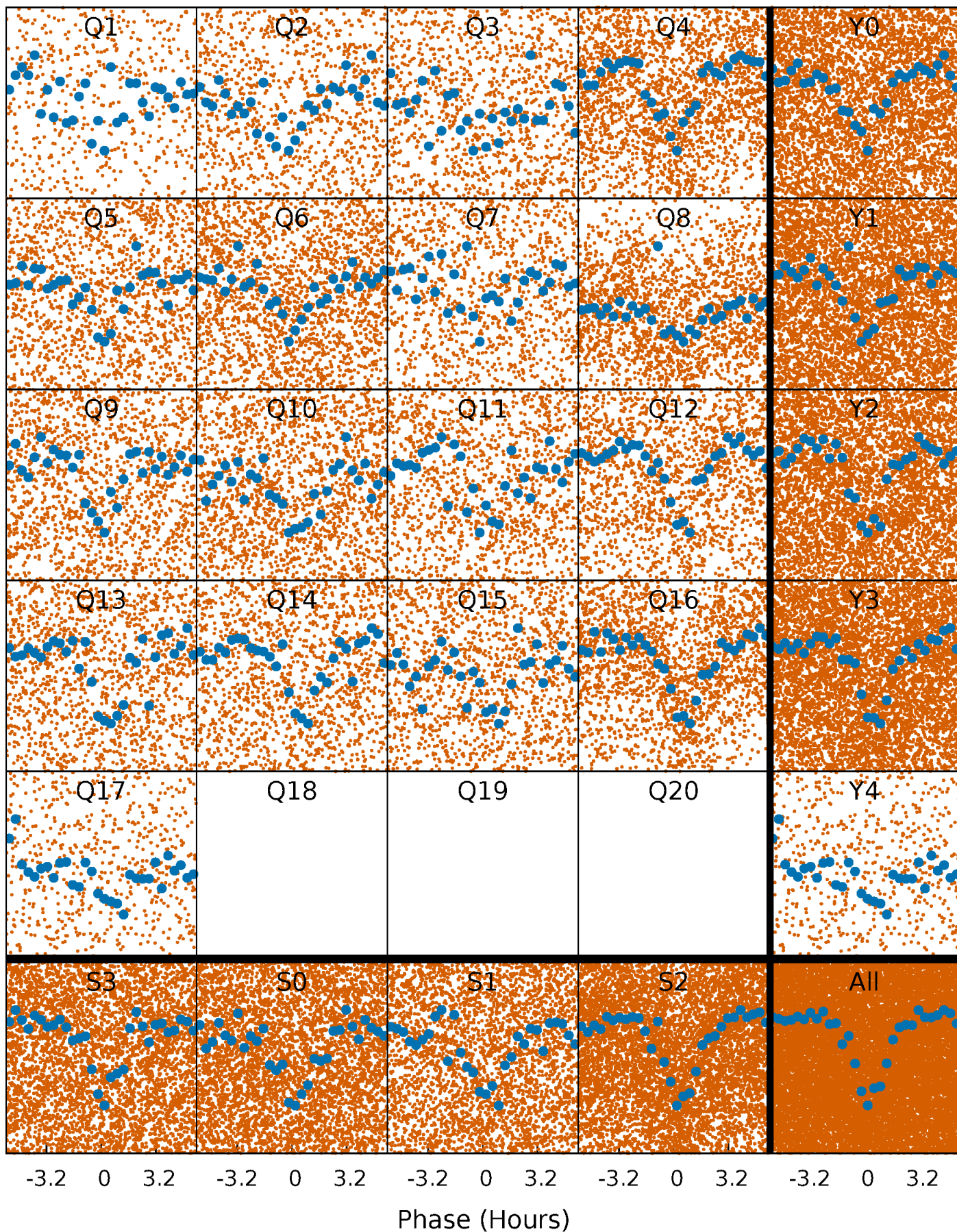


Non-Whitened Vs. Whitened Light Curve



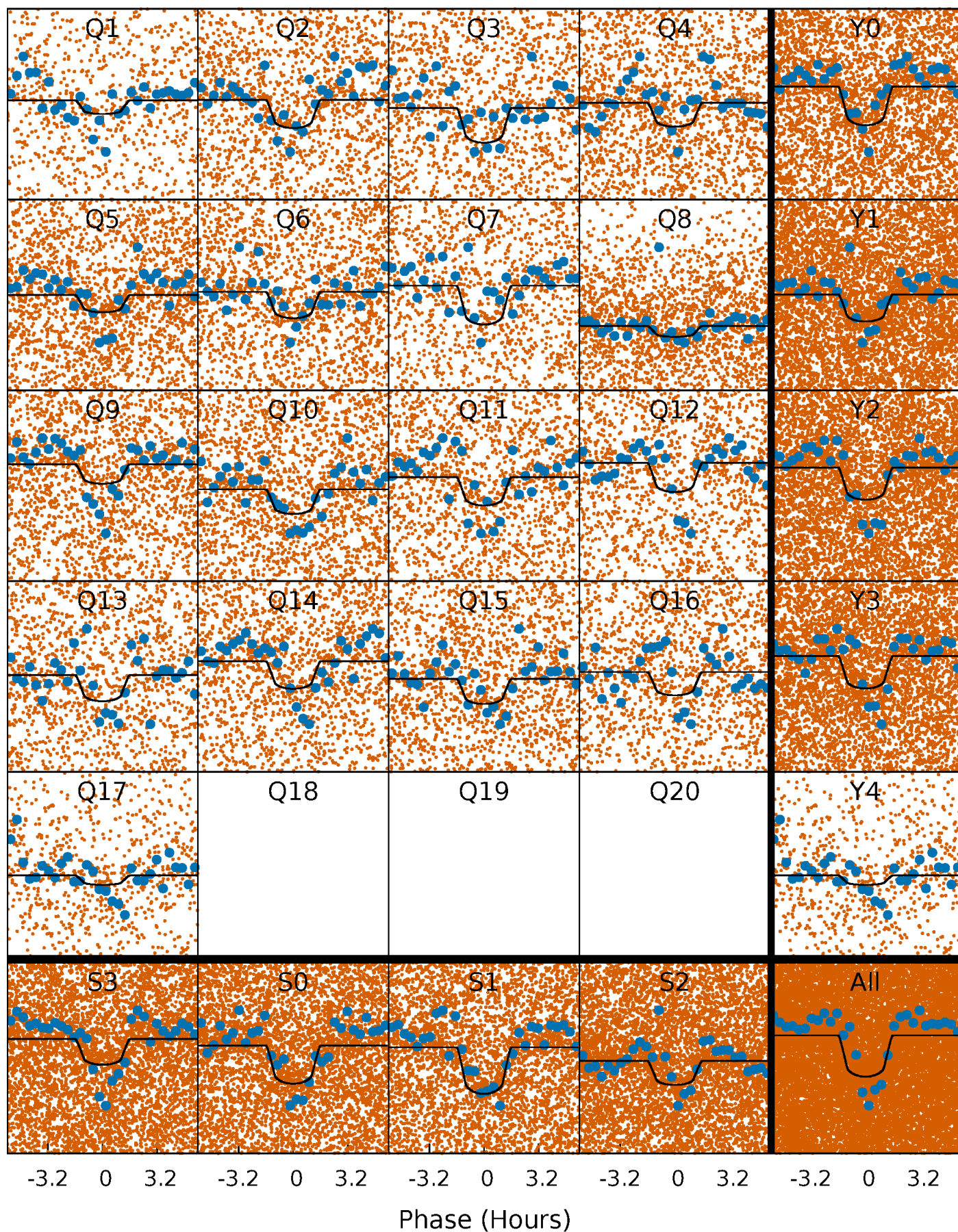
PDC Quarter-Phased Transit Curves

TCE 010275766-01 P= 0.661731 Days $T_0=131.870603$ (BKJD)



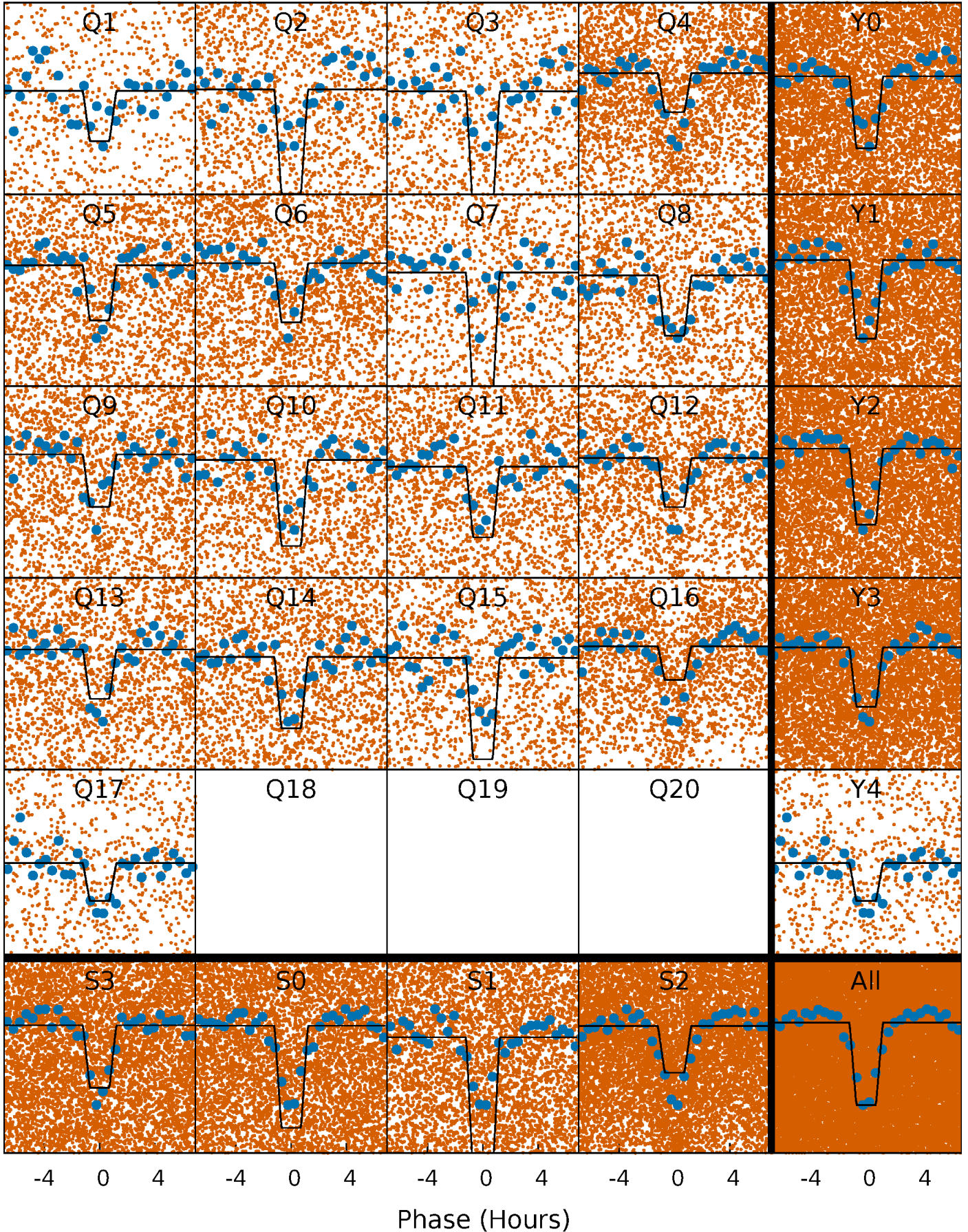
DV Quarter-Phased Transit Curves

TCE 010275766-01 P= 0.661731 Days $T_0=131.870603$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

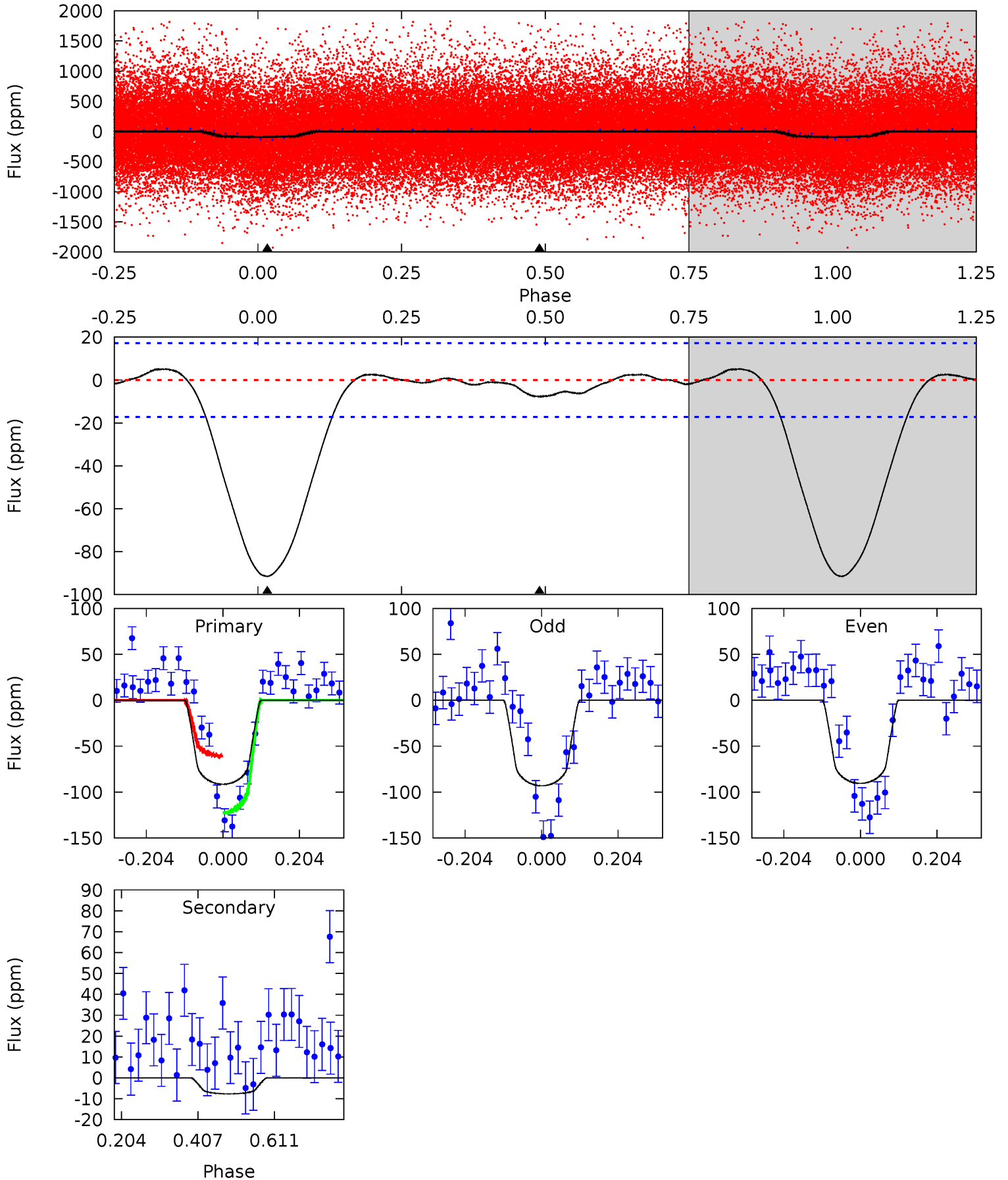
TCE 010275766-01 P= 0.661748 Days $T_0=131.862769$ (BKJD)



DV Model-Shift Uniqueness Test

010275766-01, P = 0.661731 Days, E = 131.208872 Days

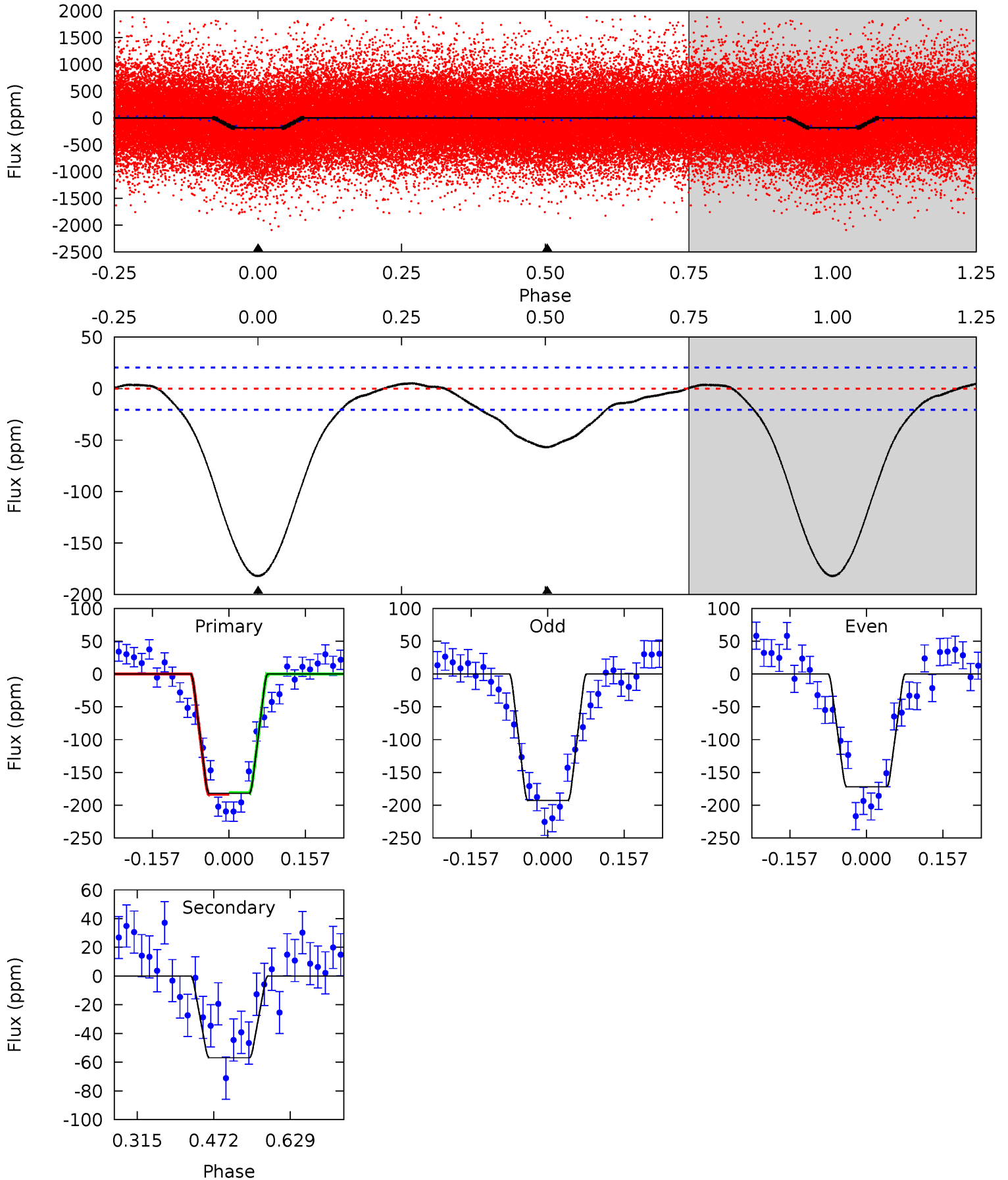
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	1.97	0	0	4.41	1.27	0.32	23.5	23.5	1.97	1.97	0.34	0.99	0.05	7.93



Alt Model-Shift Uniqueness Test

010275766-01, P = 0.661748 Days, E = 131.201021 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.7	12.4	0	0	4.47	1.41	1.03	39.7	39.7	12.4	12.4	2.28	0.99	0.03	0.31



Stellar Parameters For KIC 010275766

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6363^{+177}_{-221}	$4.386^{+0.052}_{-0.195}$	$0.210^{+0.200}_{-0.350}$	$1.198^{+0.373}_{-0.133}$	$1.273^{+0.151}_{-0.184}$	$1.044^{+0.284}_{-0.536}$
	+3%/-3%	+1%/-4%	+95%/-167%	+31%/-11%	+12%/-14%	+27%/-51%
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 010275766-01 / KOI 2810.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 4	$1.27^{+0.65}_{-0.55}$	3443^{+240}_{-179}	3364^{+1222}_{-6136}	$0.605^{+1.470}_{-0.385}$
Alt.	-57 ± 5	$1.96^{+0.66}_{-0.66}$	3454^{+247}_{-173}	4571^{+975}_{-545}	$2.075^{+2.622}_{-0.907}$

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

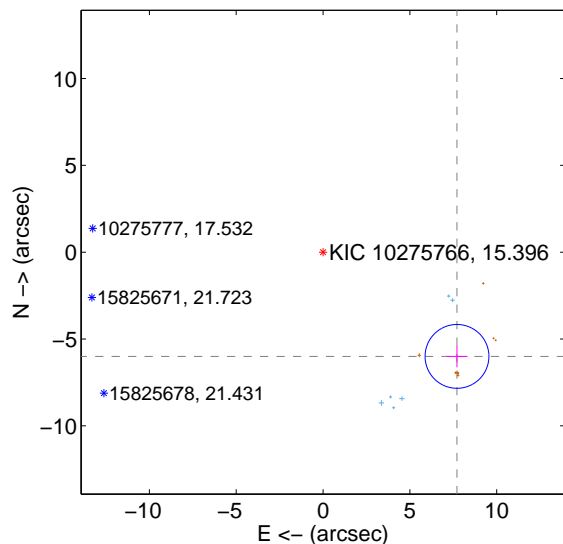
Supplemental centroid analysis for 010275766-01. Kepler magnitude: 15.40. Transit SNR 14.86

There are 6 quarters with good PRF difference image offsets

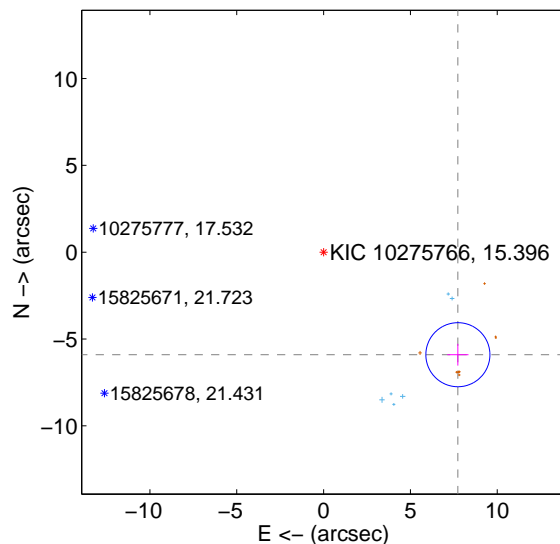
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.773 ± 0.612	15.96	-7.714 ± 0.603	-6.001 ± 0.627
PRF-fit source offset from KIC position	9.730 ± 0.615	15.83	-7.733 ± 0.608	-5.905 ± 0.626
photometric centroid source offset	4.93 ± 1.01	4.89	-3.78 ± 1.02	-3.17 ± 1.00

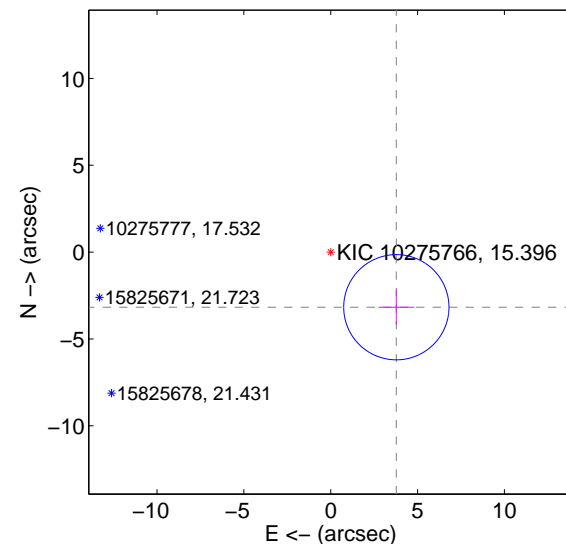
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

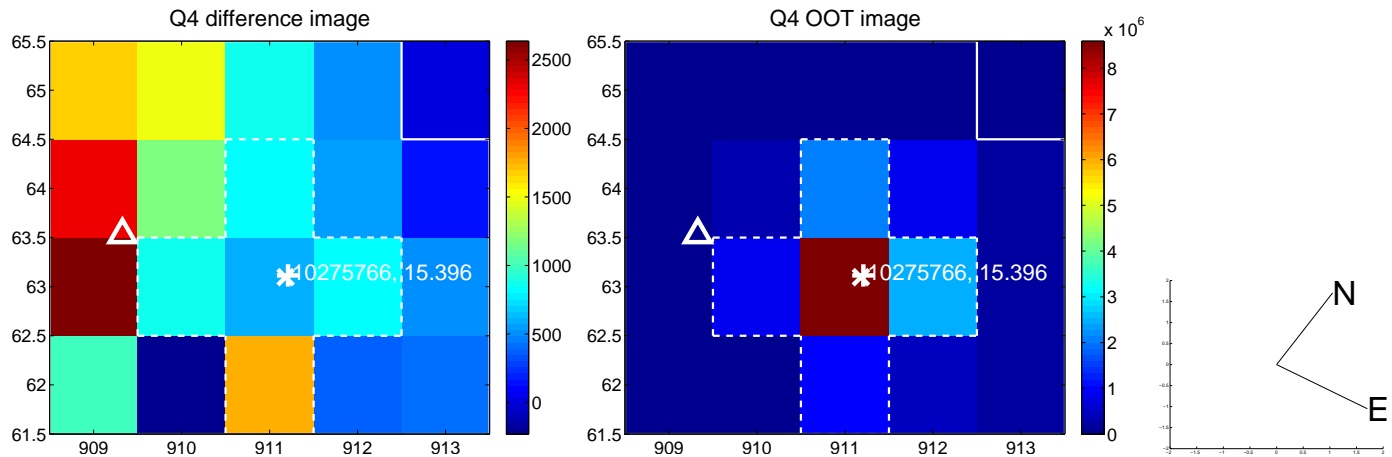
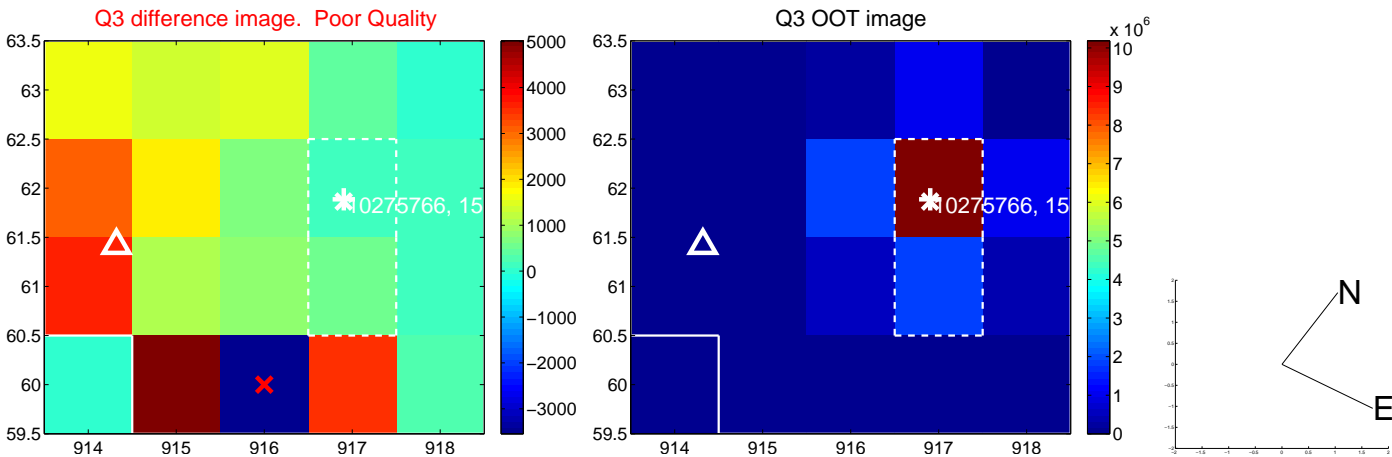
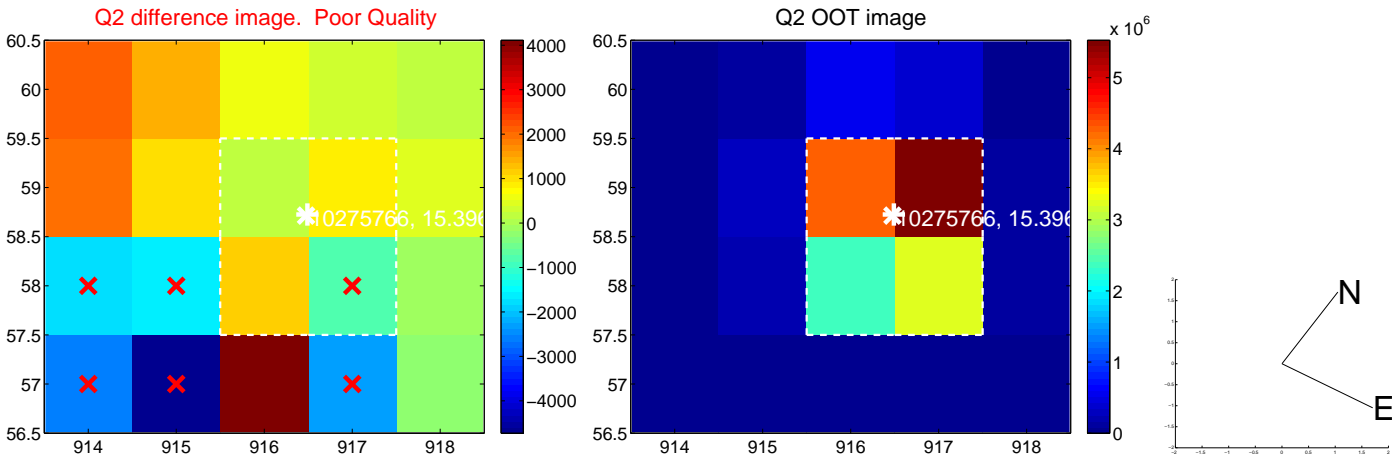
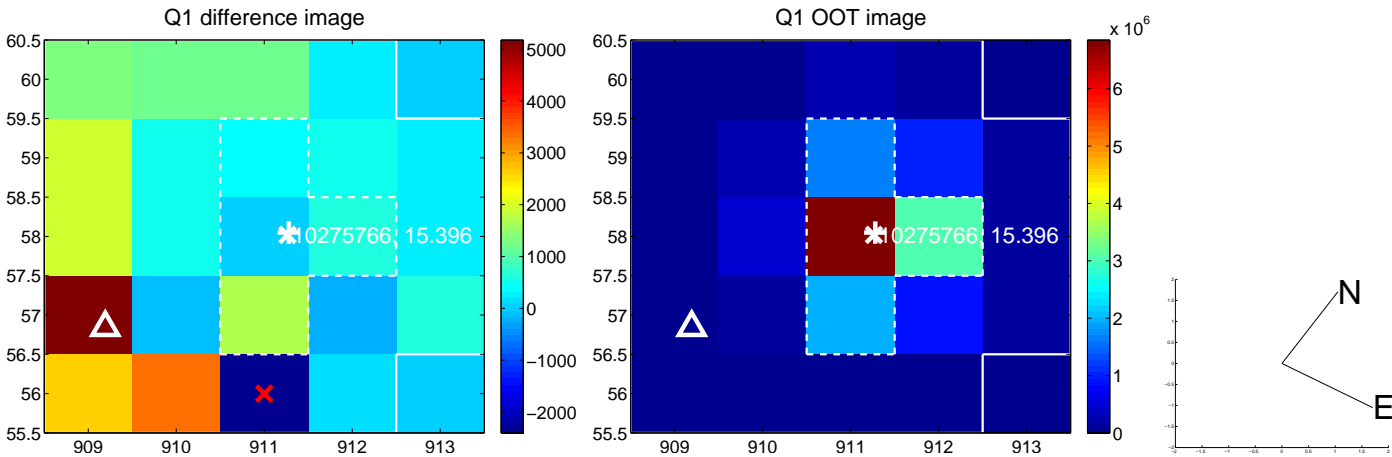


offset from photometric centroids

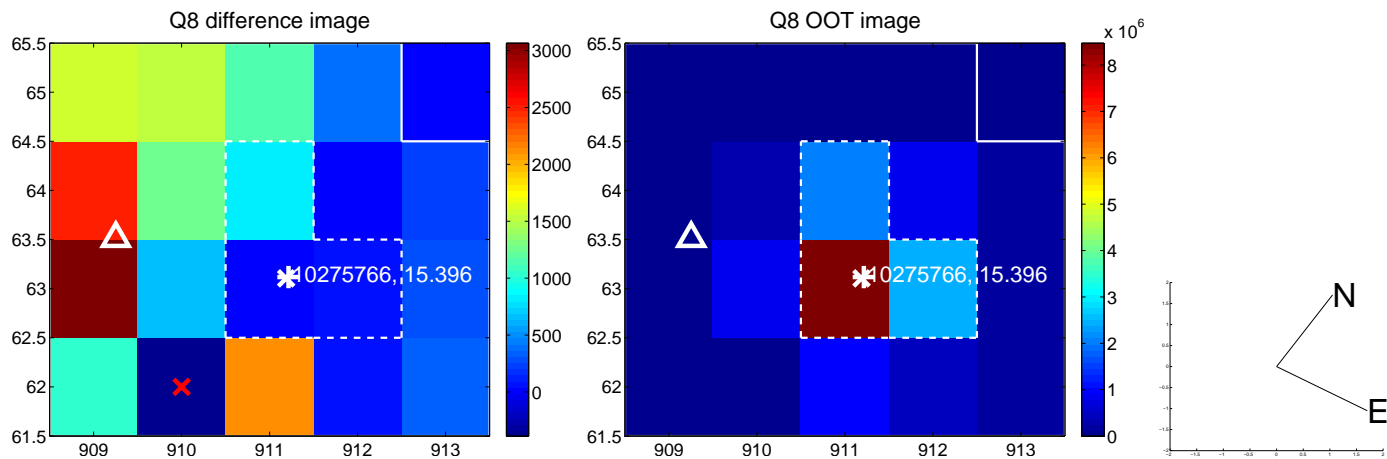
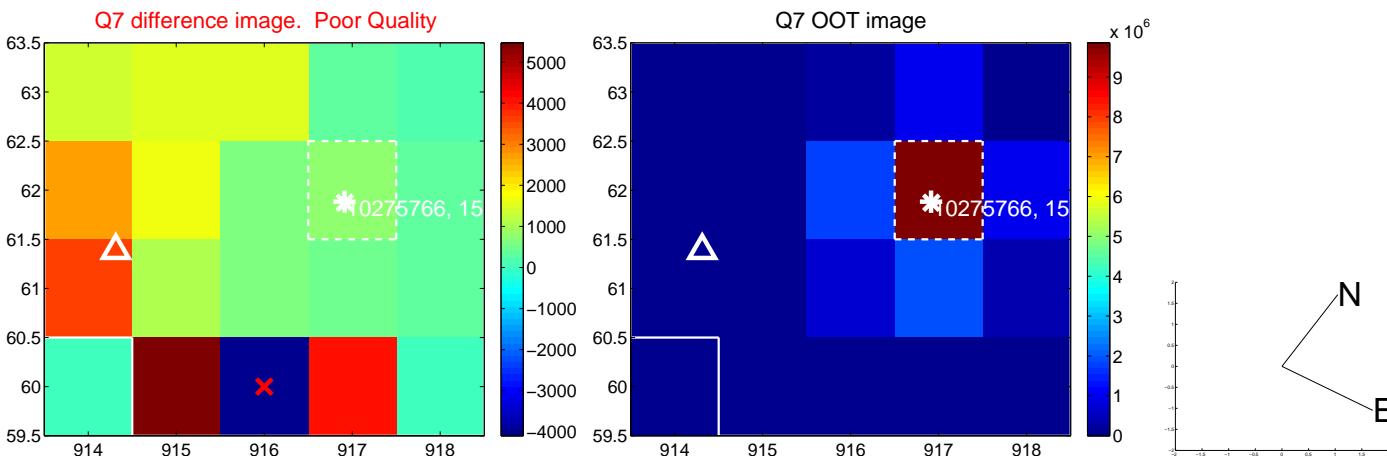
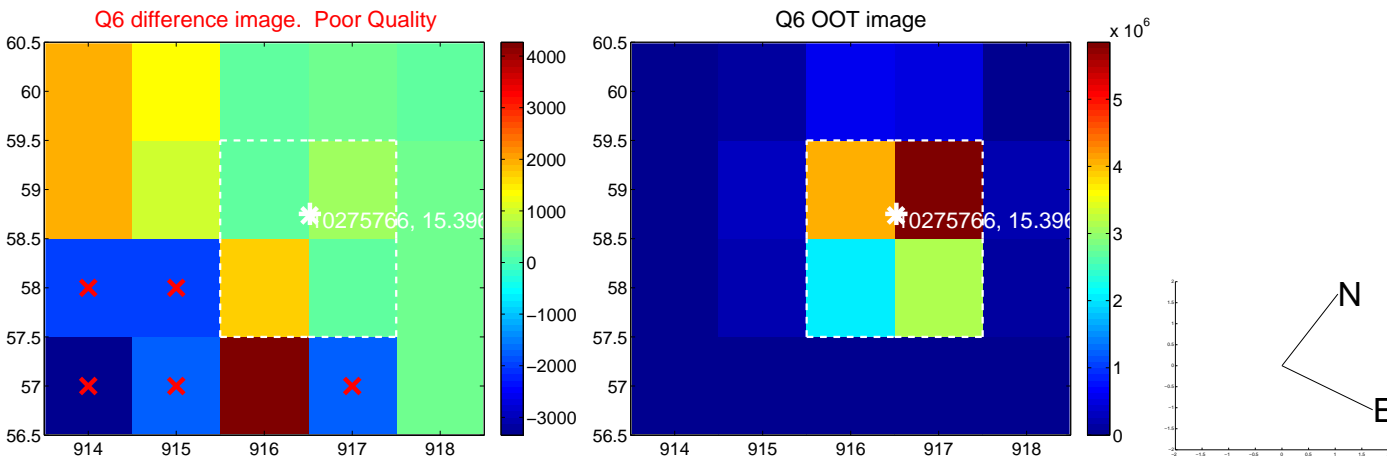
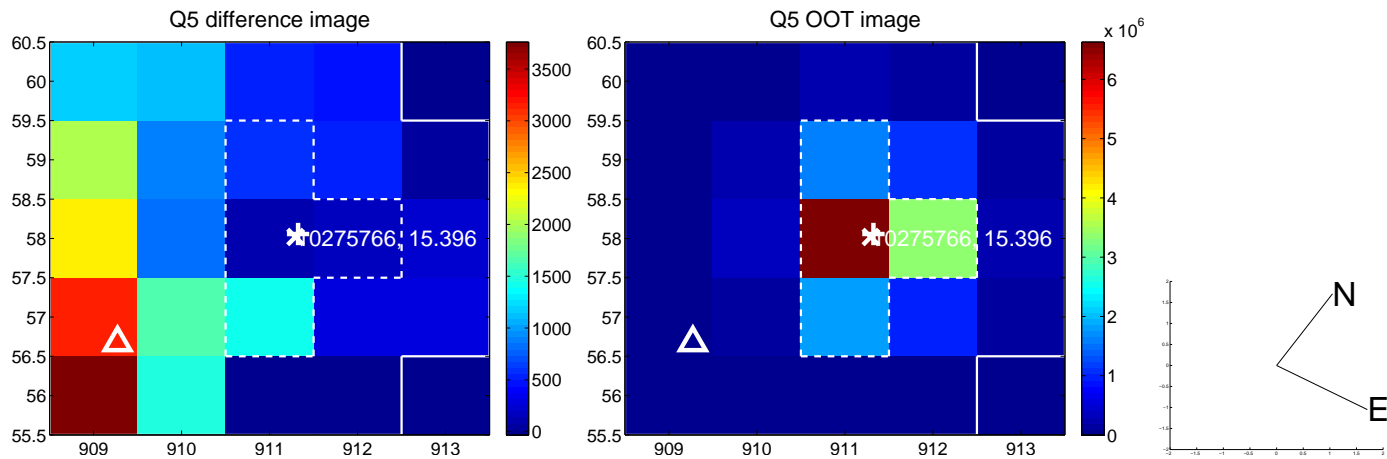


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

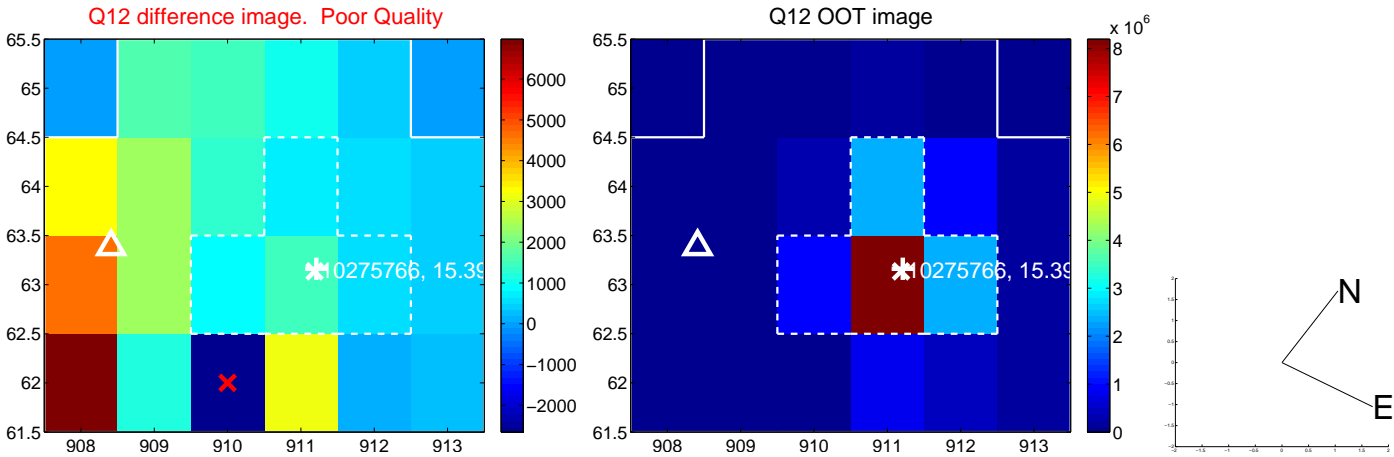
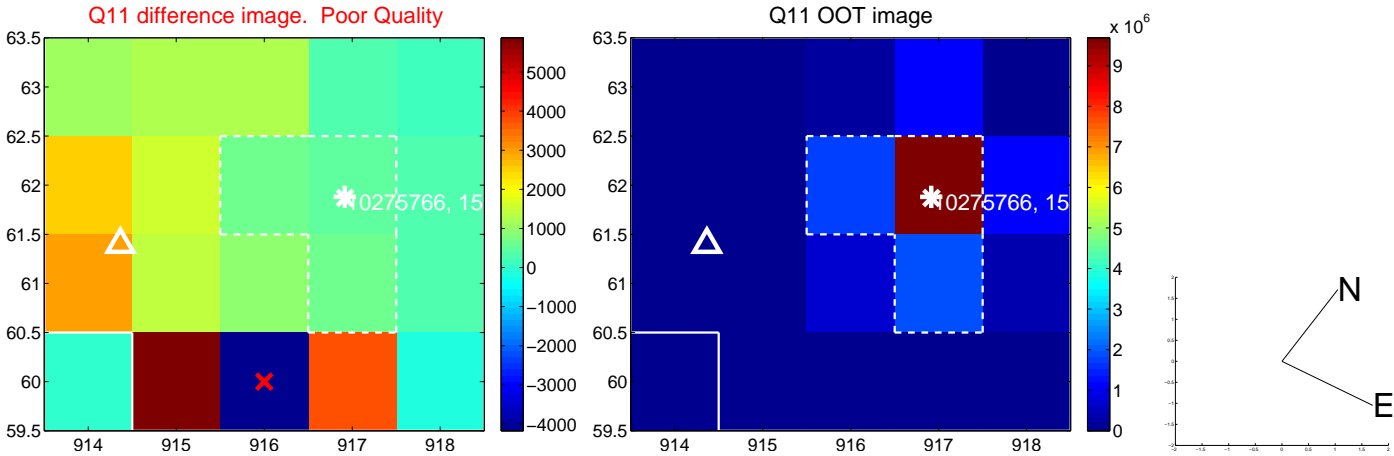
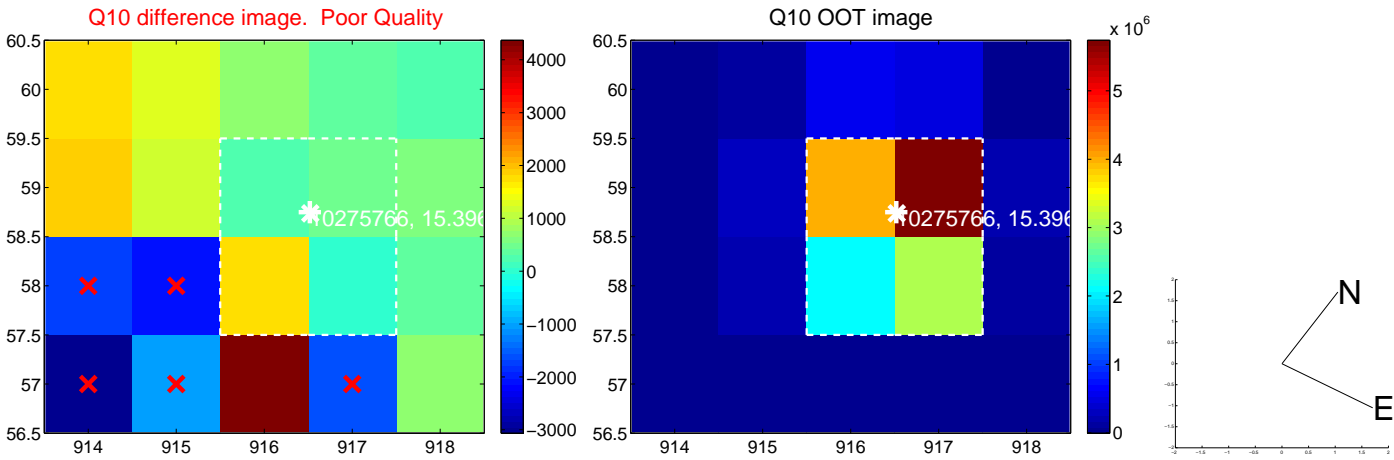
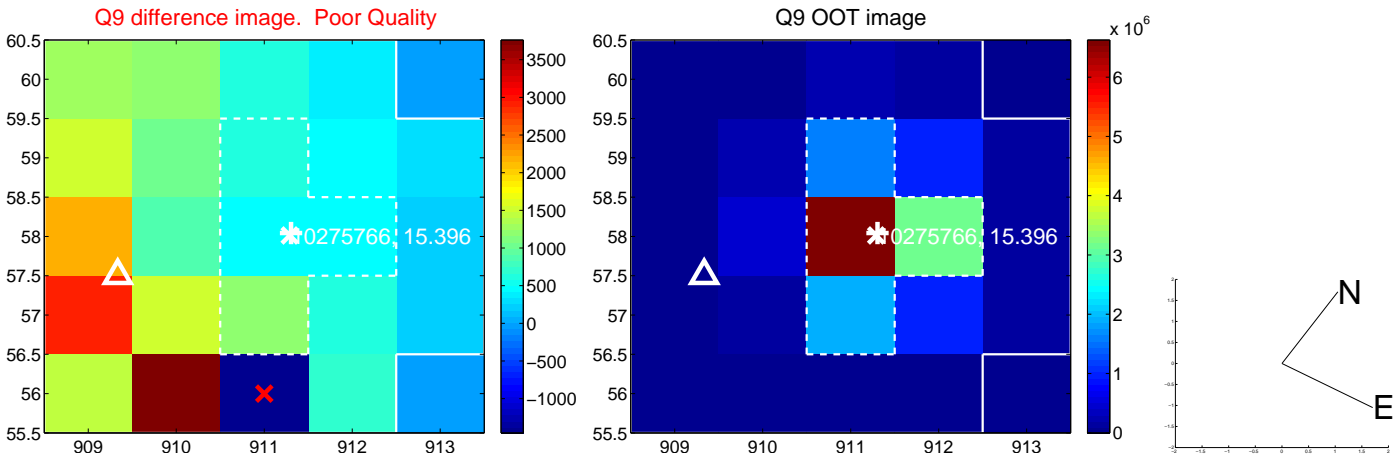
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



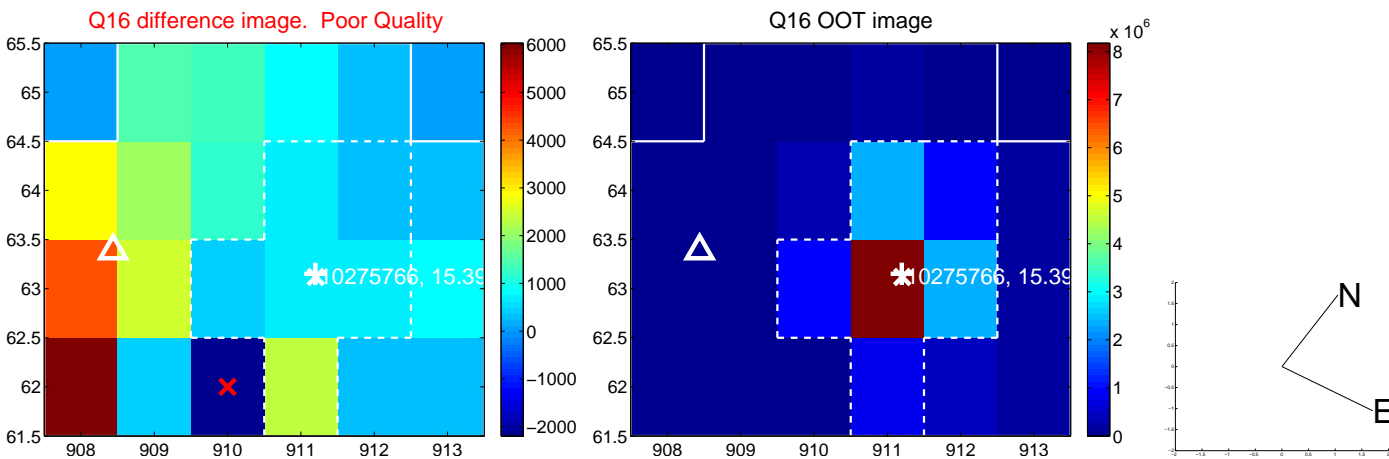
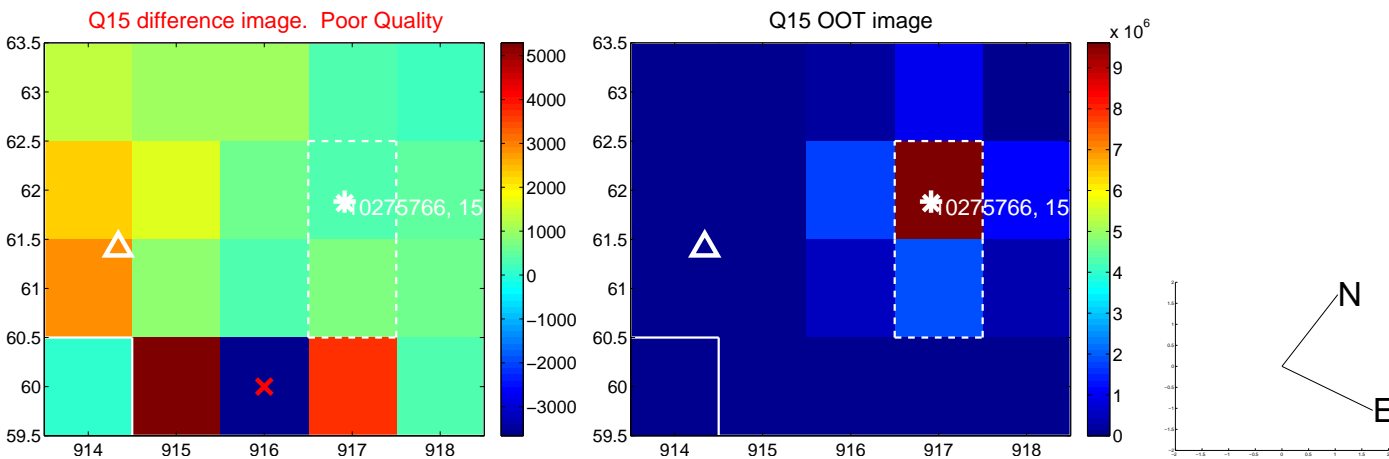
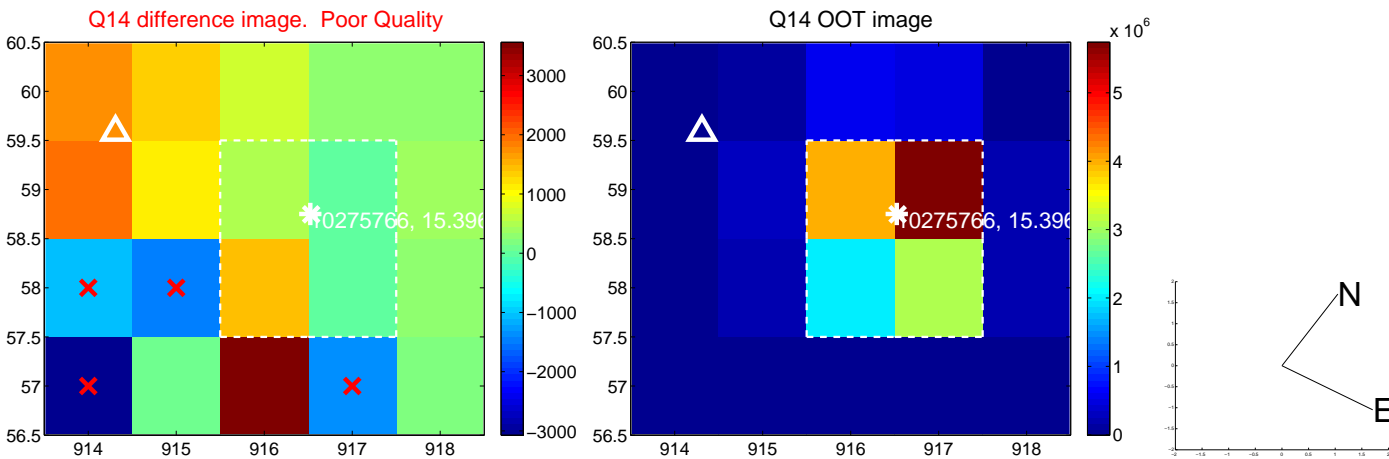
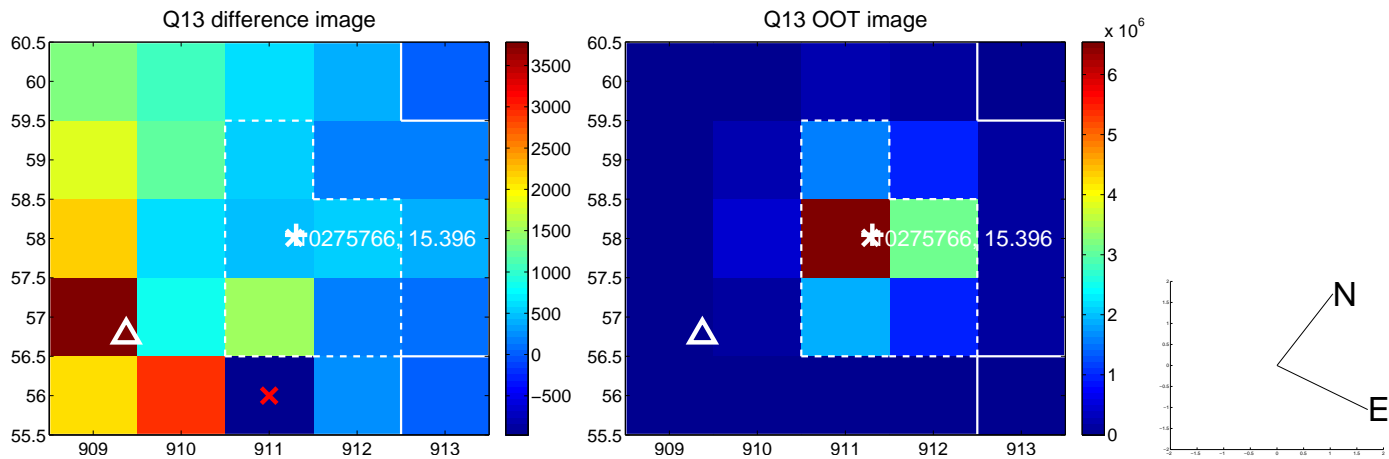
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

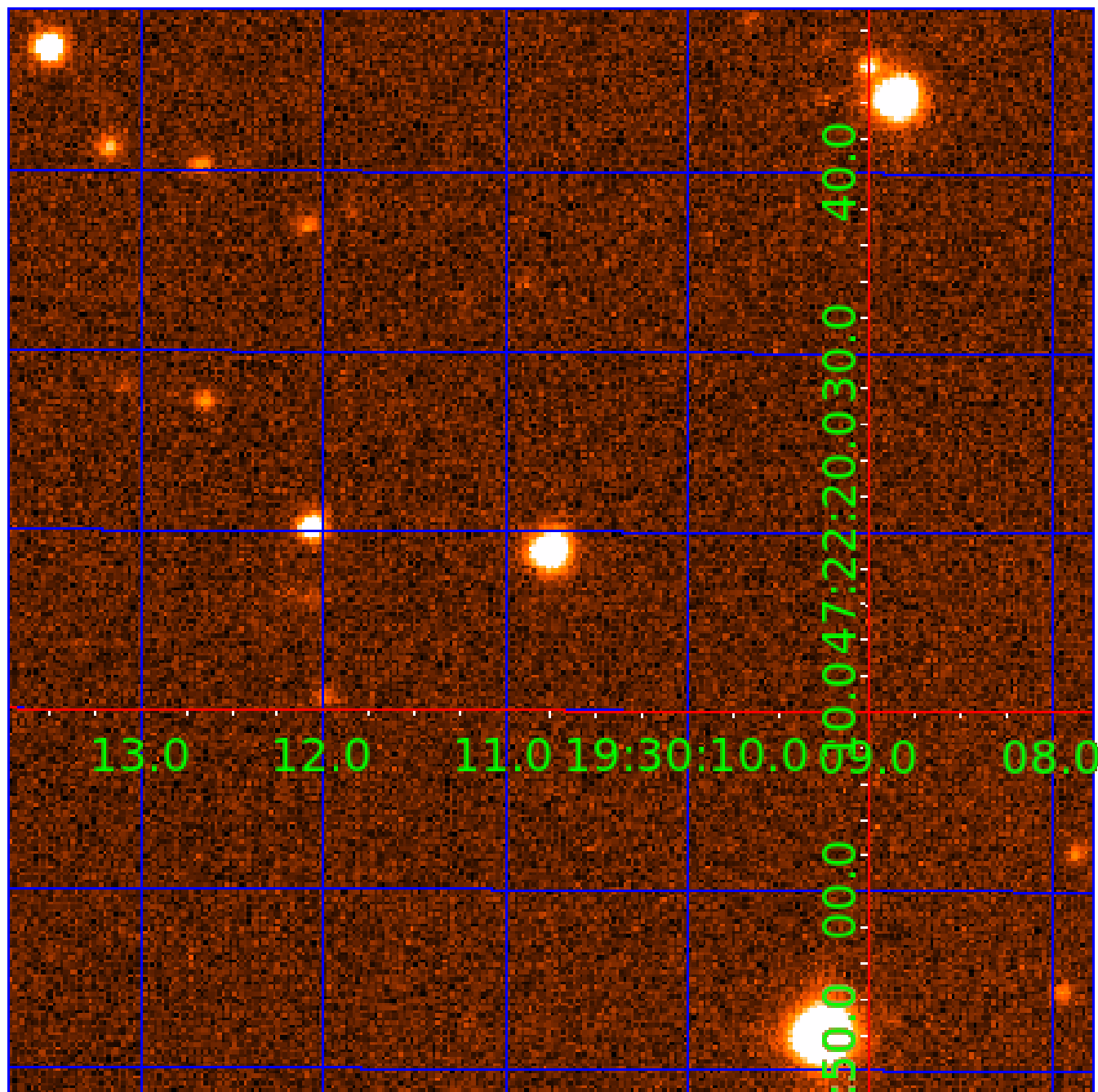


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010275766

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})
010275766-01	OBS	2810.01	0.661731	131.870603	78.9	2.789	17.6	14.9	1.20	6363	1.25	8120.91
010275766-02	OBS	No	145.330445	236.549076	518.0	4.961	8.0	5.0	1.20	6363	3.04	6.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010275766-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—PLANET_OCCULT_DV—MOD_SEC_ALT—CENT_RESOLVED_OFFSET—EPHEM_MATCH
010275766-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET—HALO_GHOST

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.

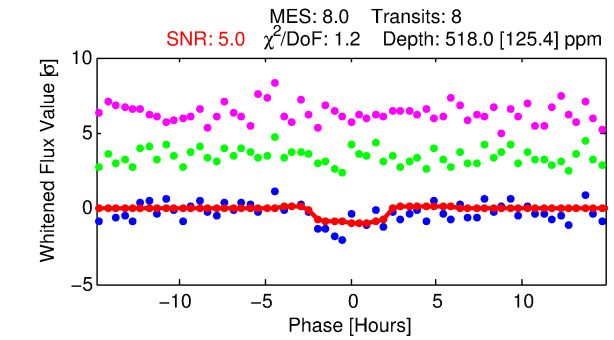
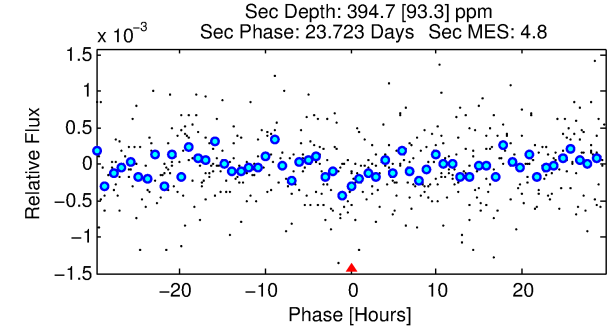
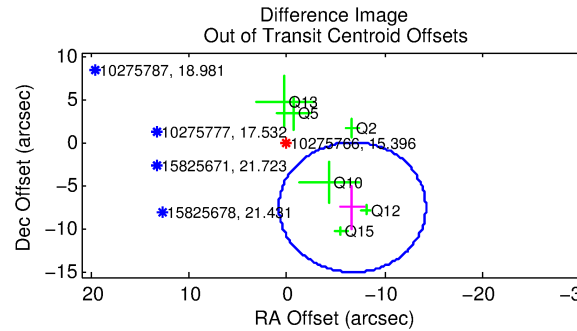
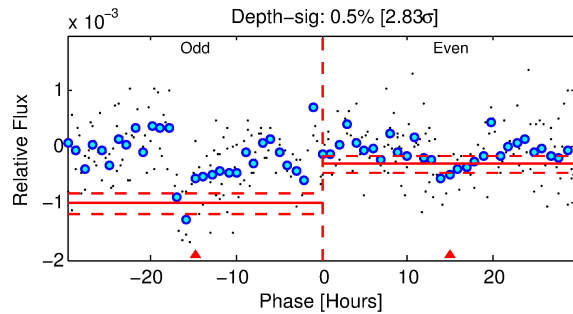
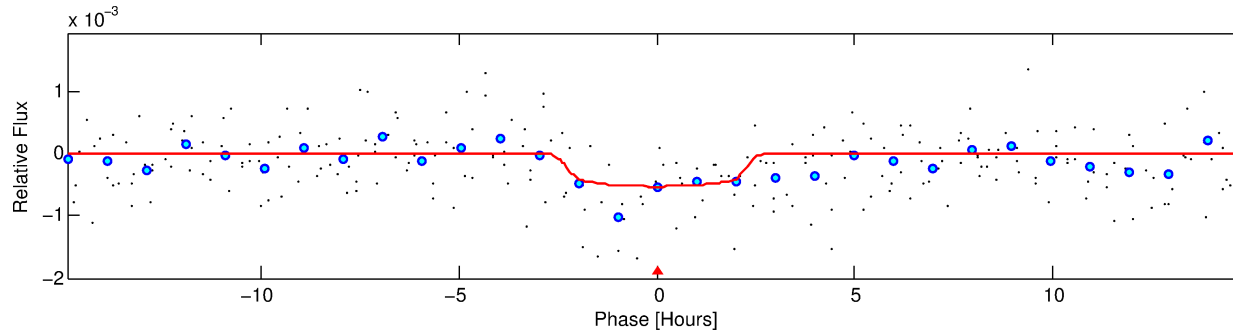
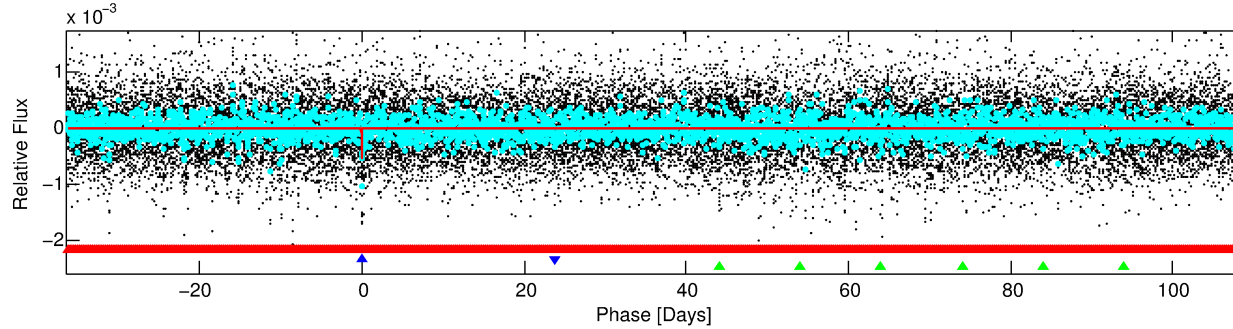
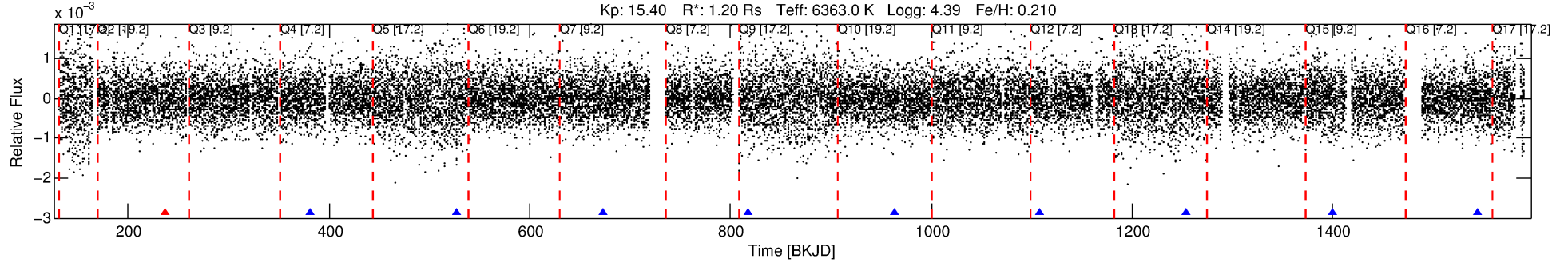
Ephemeris Match Information For 010275766-02

No Significant Match Found

DV One-Page Summary

KIC: 10275766 Candidate: 2 of 3 Period: 145.330 d
KOI: K02810 Corr: No Ephemeris Match

Kp: 15.40 R*: 1.20 Rs Teff: 6363.0 K Logg: 4.39 Fe/H: 0.210



DV Fit Results:

Period = 145.33045 [0.00310] d
Epoch = 236.5491 [0.0182] BKJD
Rp/R* = 0.0232 [0.0220]
a/R* = 137.95 [658.14]
b = 0.82 [1.97]
Seff = 6.13 [2.39]
Teq = 401 [39] K
Rp = 3.04 [3.03] Re
a = 0.5865 [0.1501] AU
Ag = 8084.69 [15712.37] [0.51σ]
Teff = 5882 [2815] K [1.95σ]

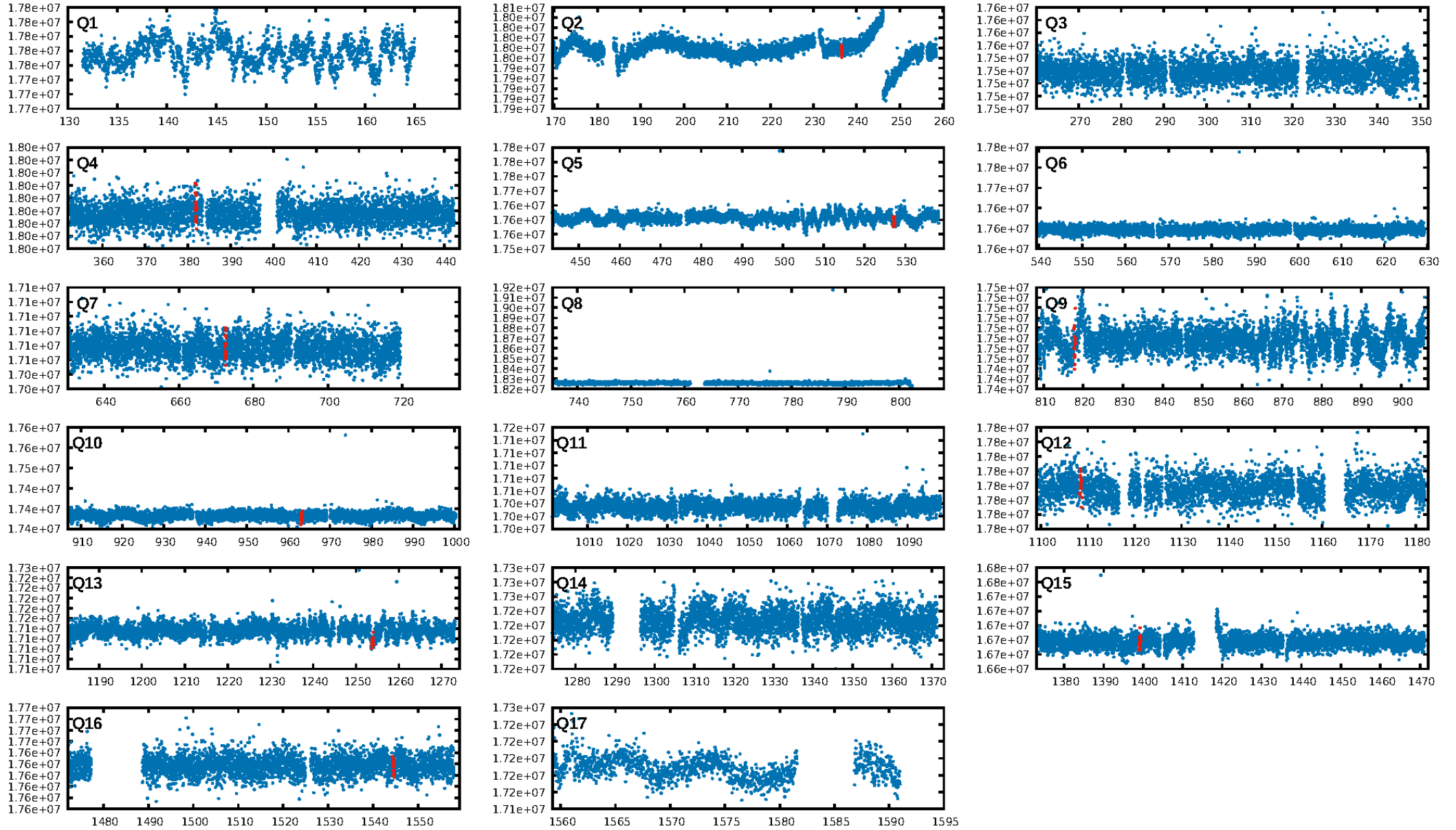
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [610.07σ]
LongPeriod-sig: 100.0% [436.88σ]
ModelChiSquare2-sig: 2.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.00e-12
RollingBand-fgt: 0.88 [7/8]
GhostDiagnostic-chr: -0.1488
Centroid-sig: 48.0%
Centroid-so: 1.539 arcsec [0.86σ]
OotOffset-rm: 10.011 arcsec [4.00σ]
KicOffset-rm: 9.951 arcsec [3.41σ]
OotOffset-st: 2/1/1/2 [6]
KicOffset-st: 2/1/1/2 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 0.00 [0/10]

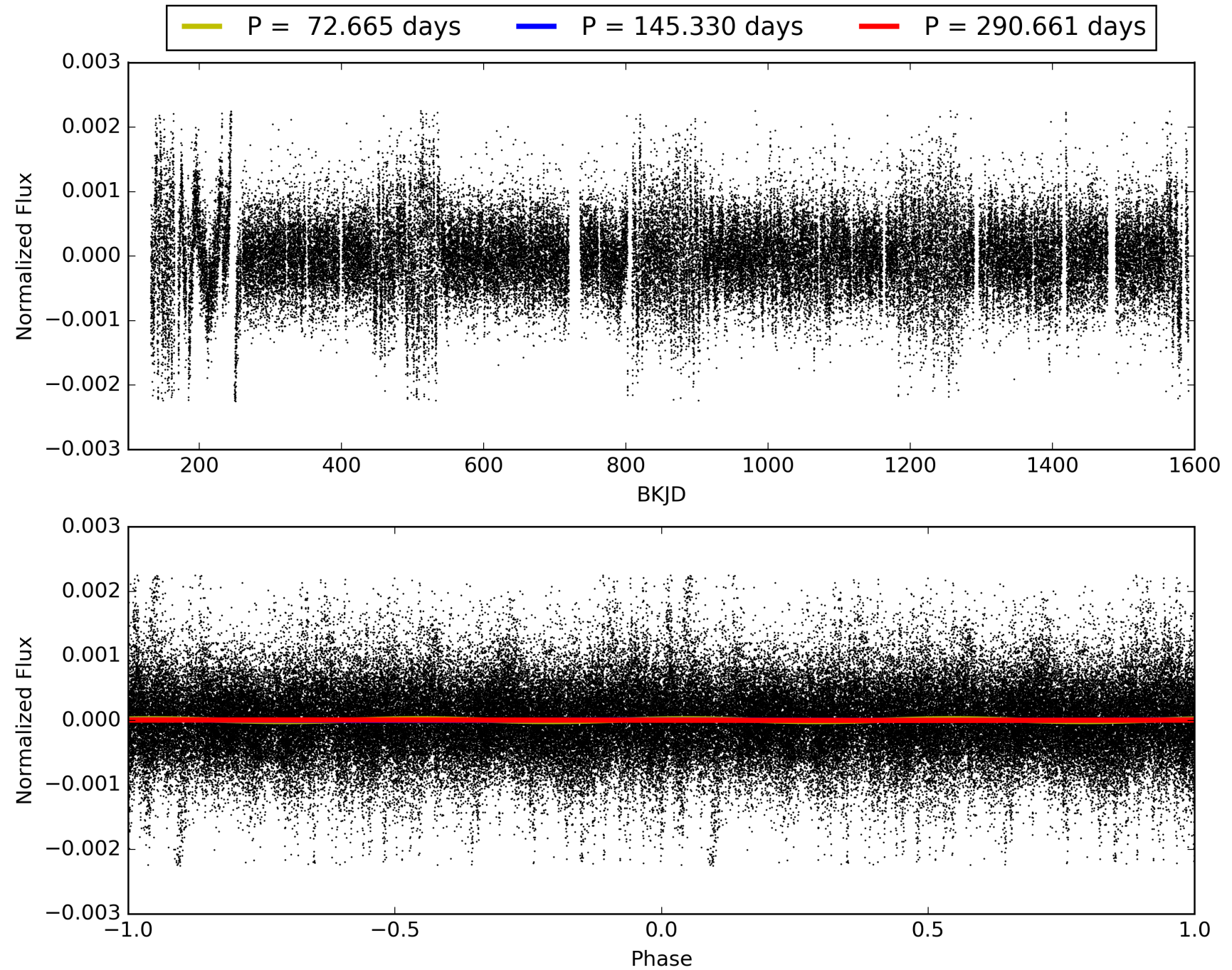
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010275766-02, PDC Light Curves

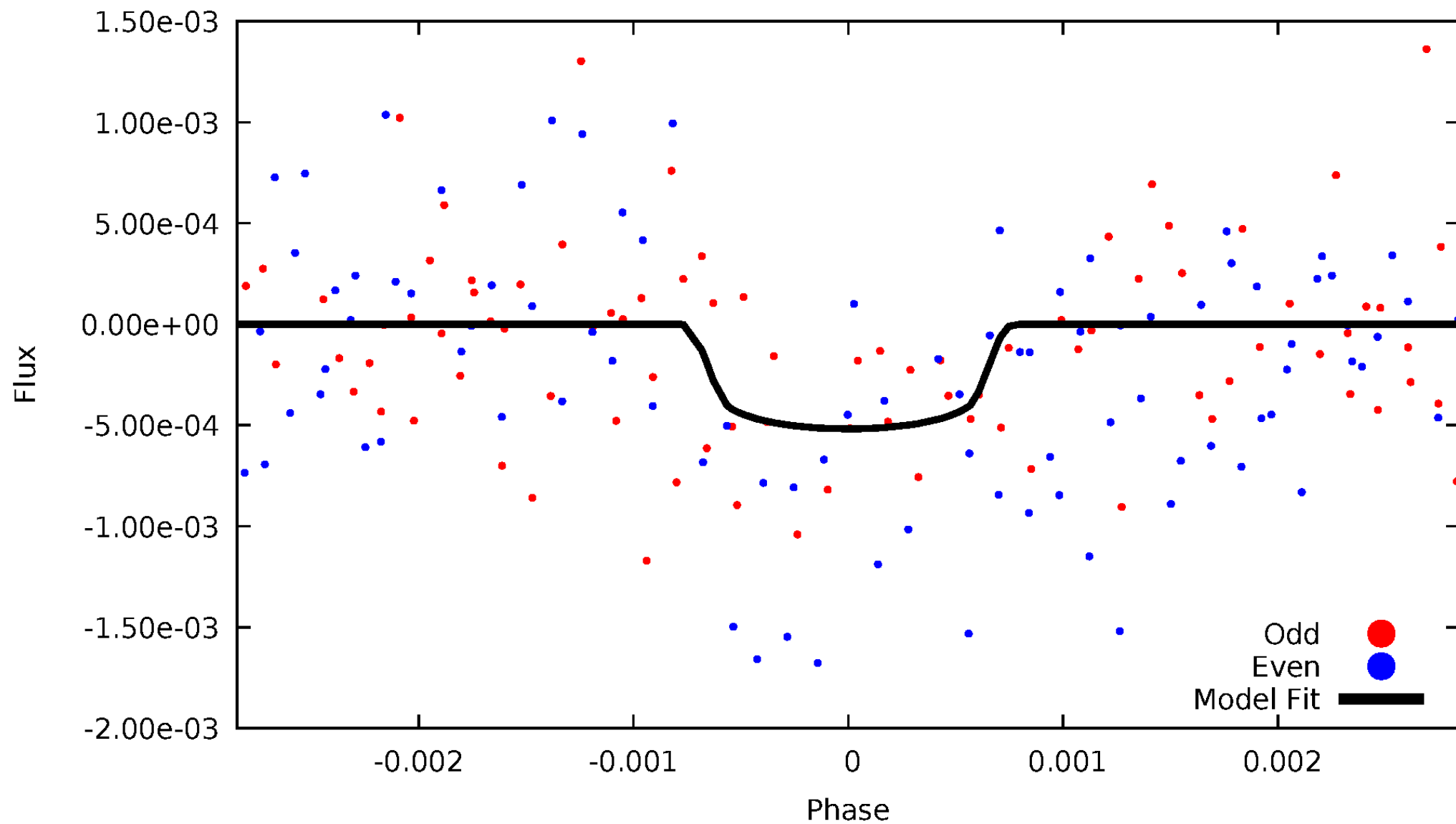


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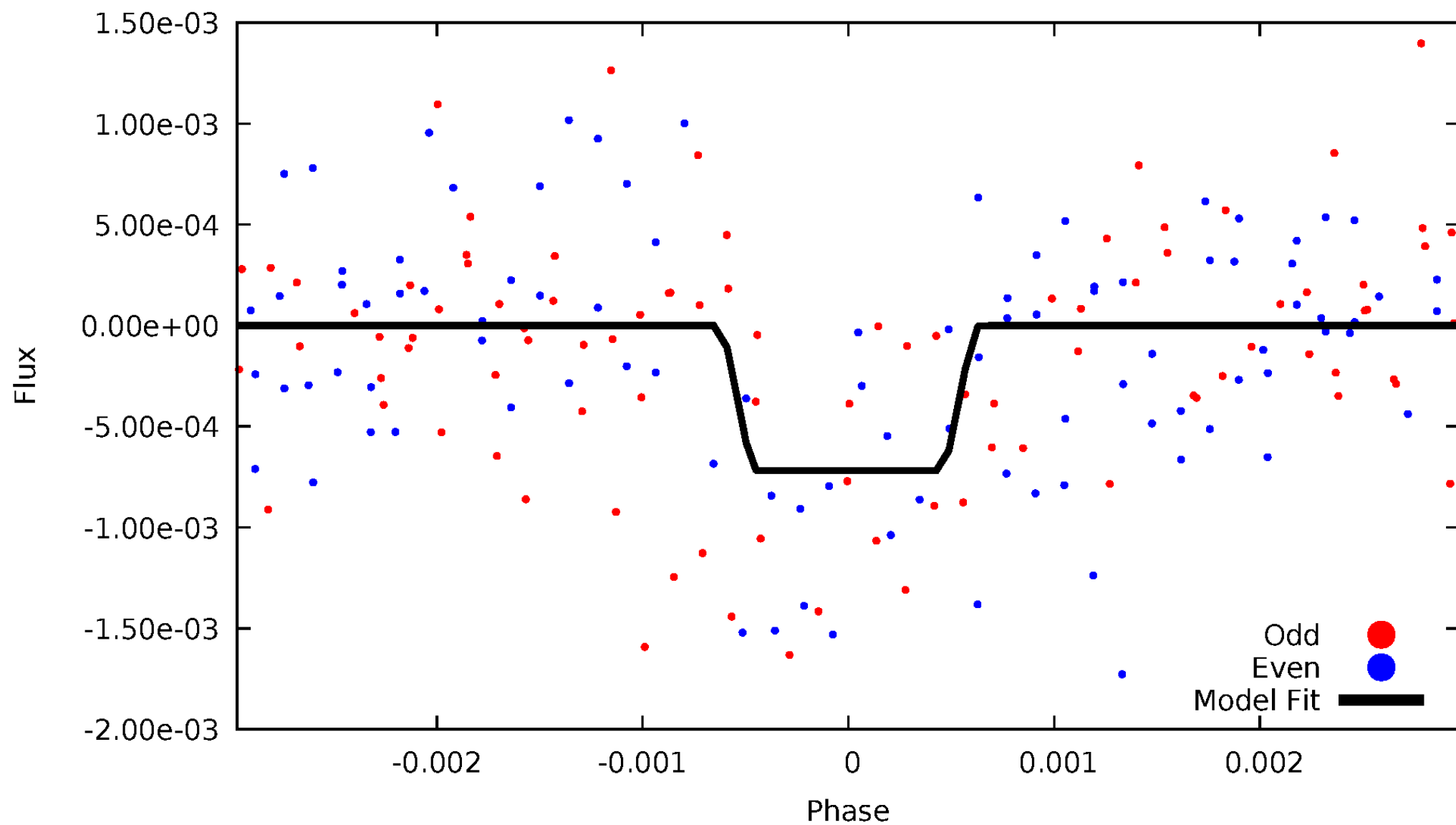
DV Odd/Even

TCE 010275766-02



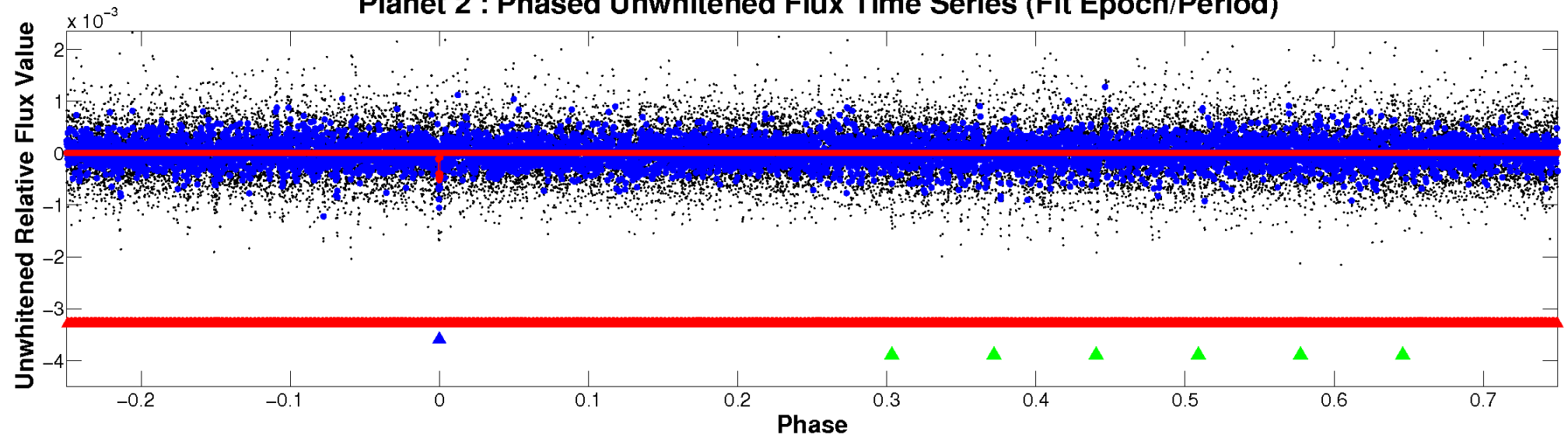
ALT Odd/Even

TCE 010275766-02

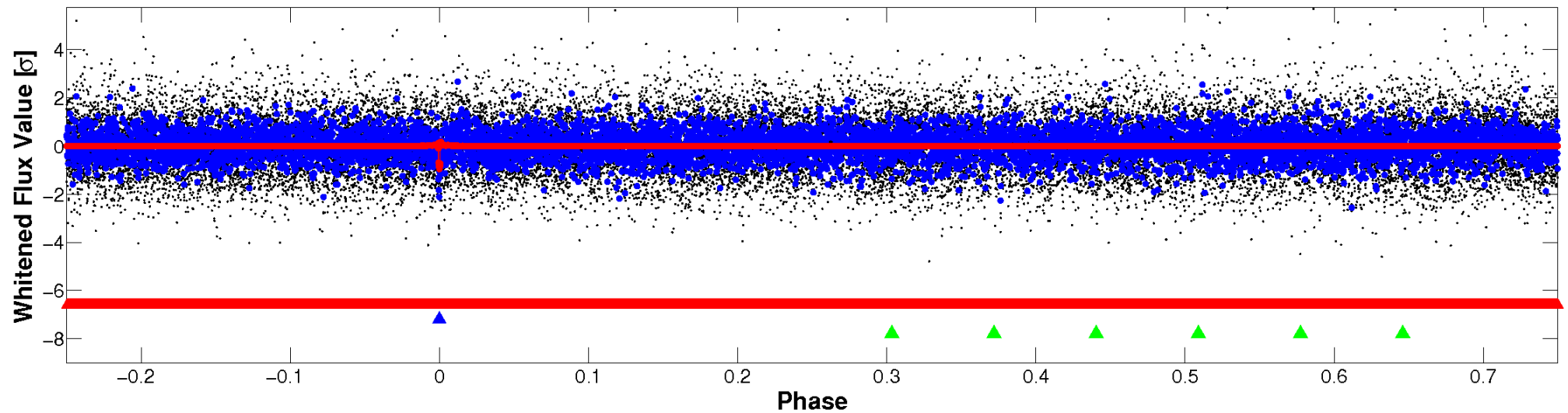


Non-Whitened Vs. Whitened Light Curve

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

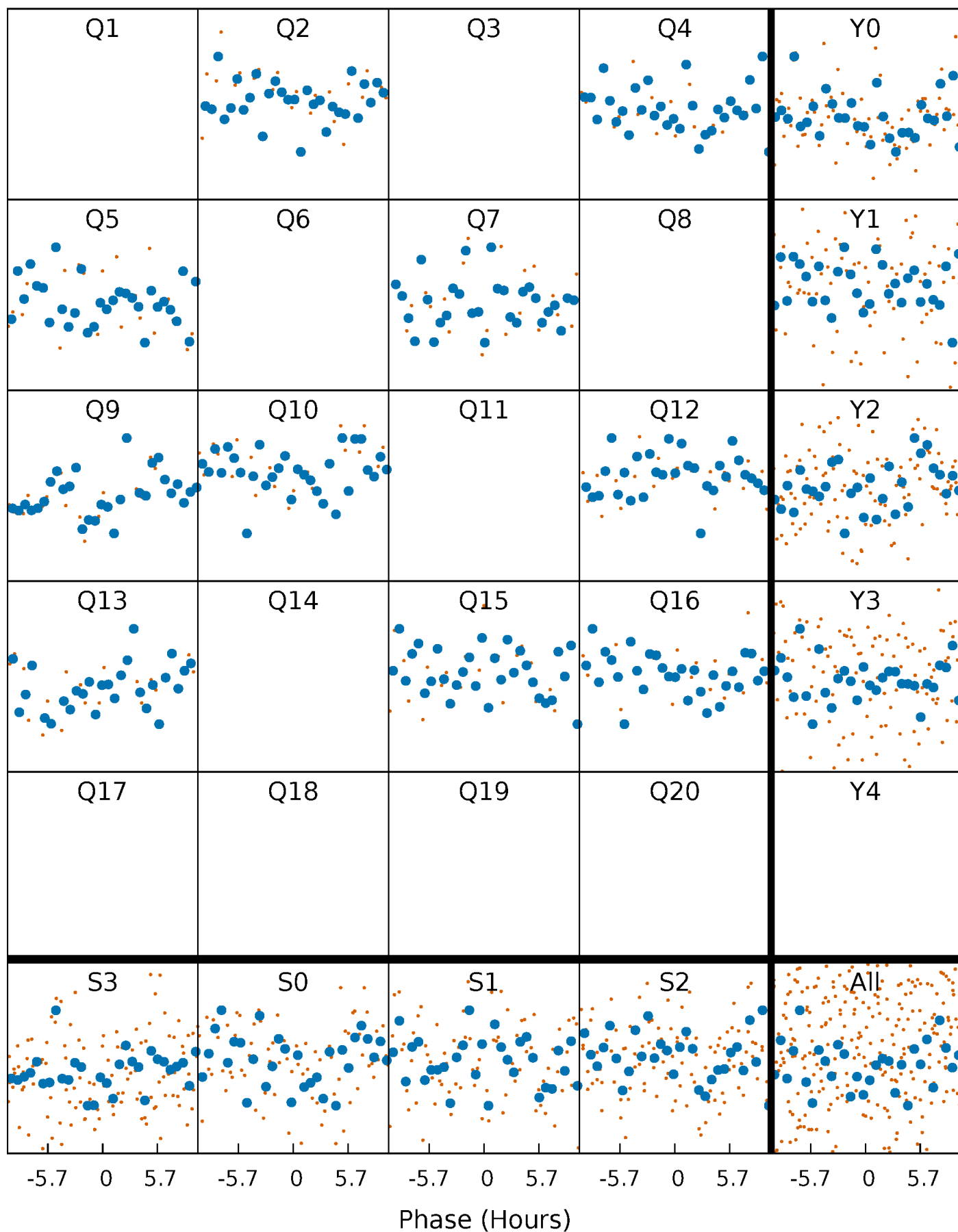


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



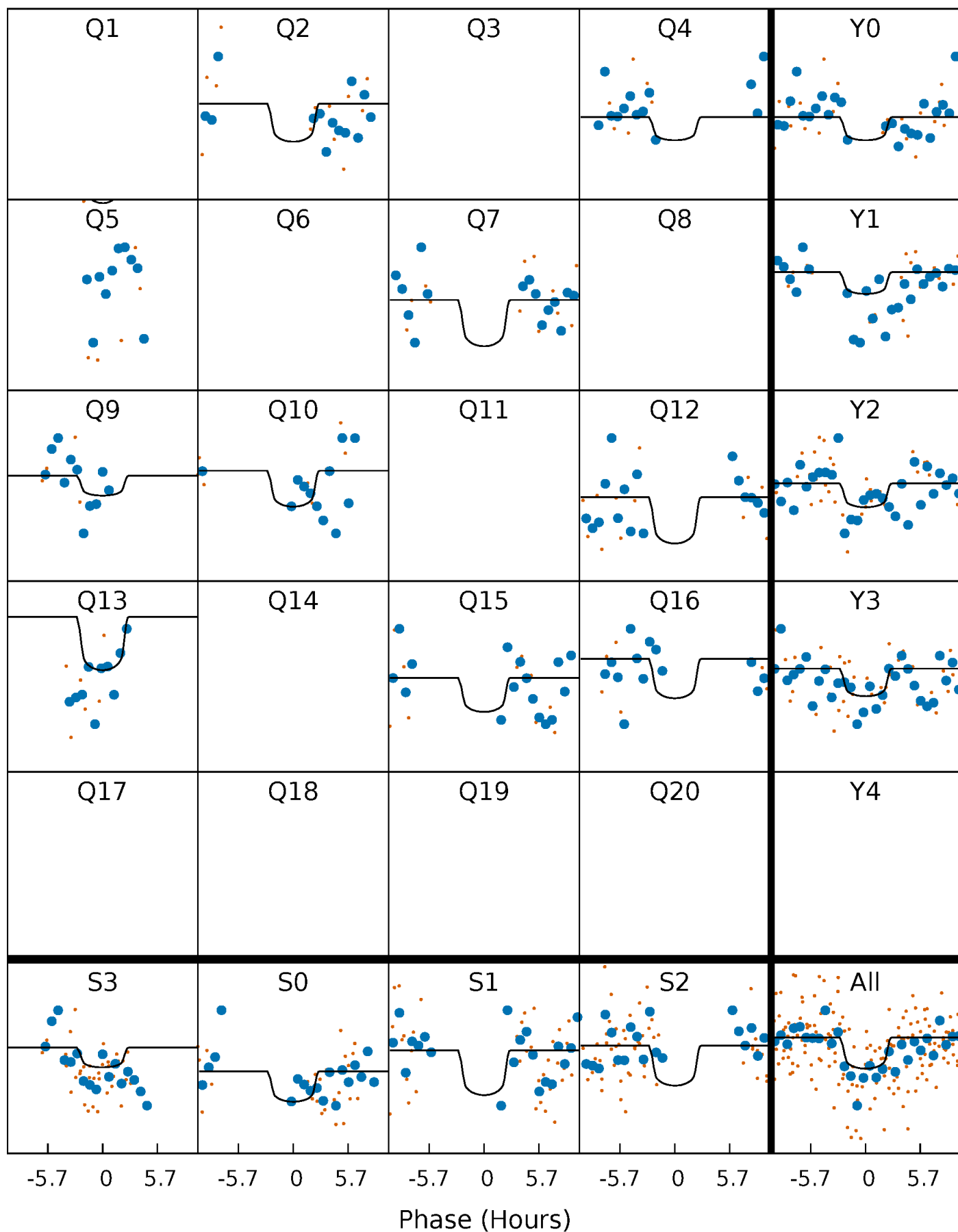
PDC Quarter-Phased Transit Curves

TCE 010275766-02 P=145.330445 Days $T_0=236.549076$ (BKJD)



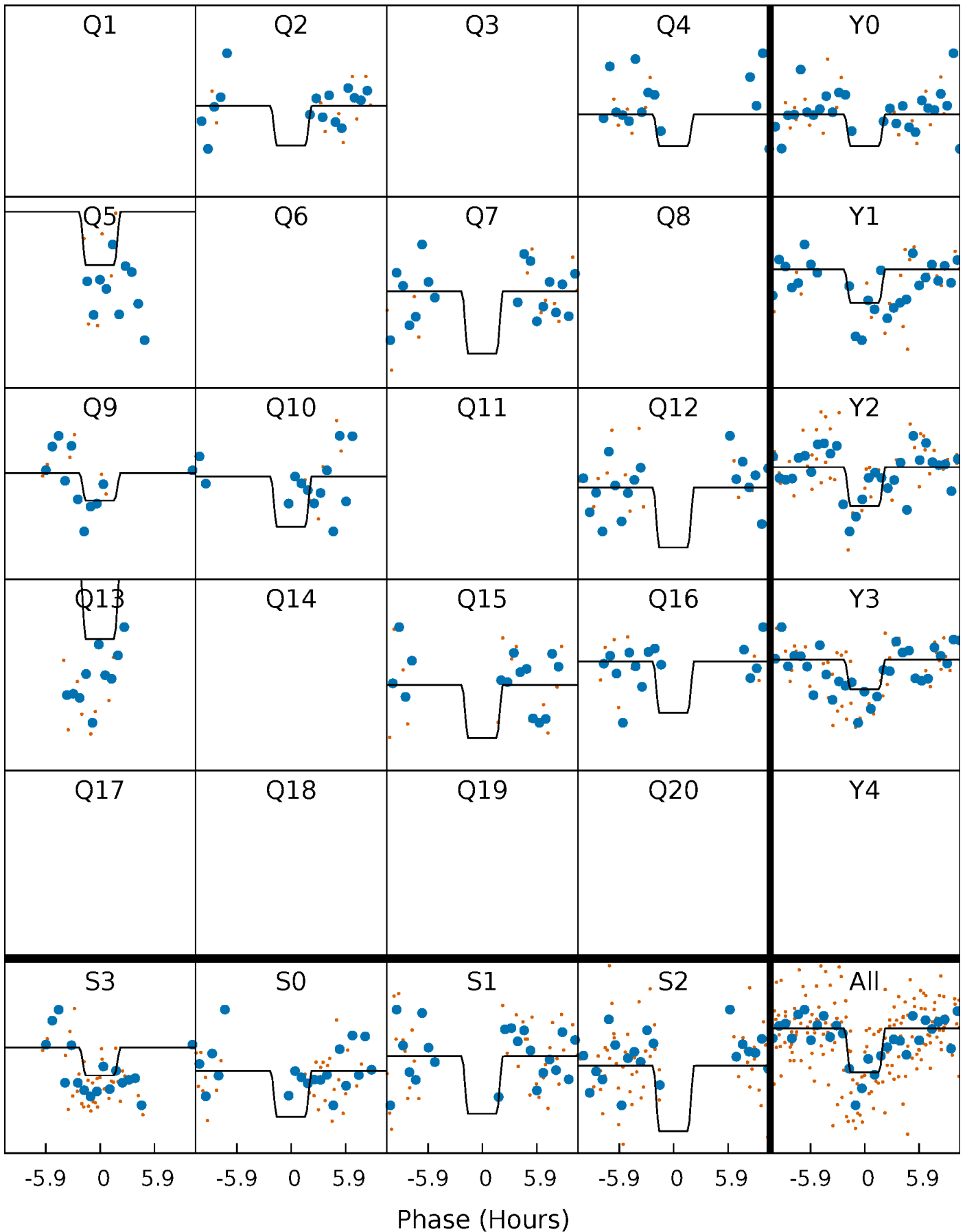
DV Quarter-Phased Transit Curves

TCE 010275766-02 $P=145.330445$ Days $T_0=236.549076$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

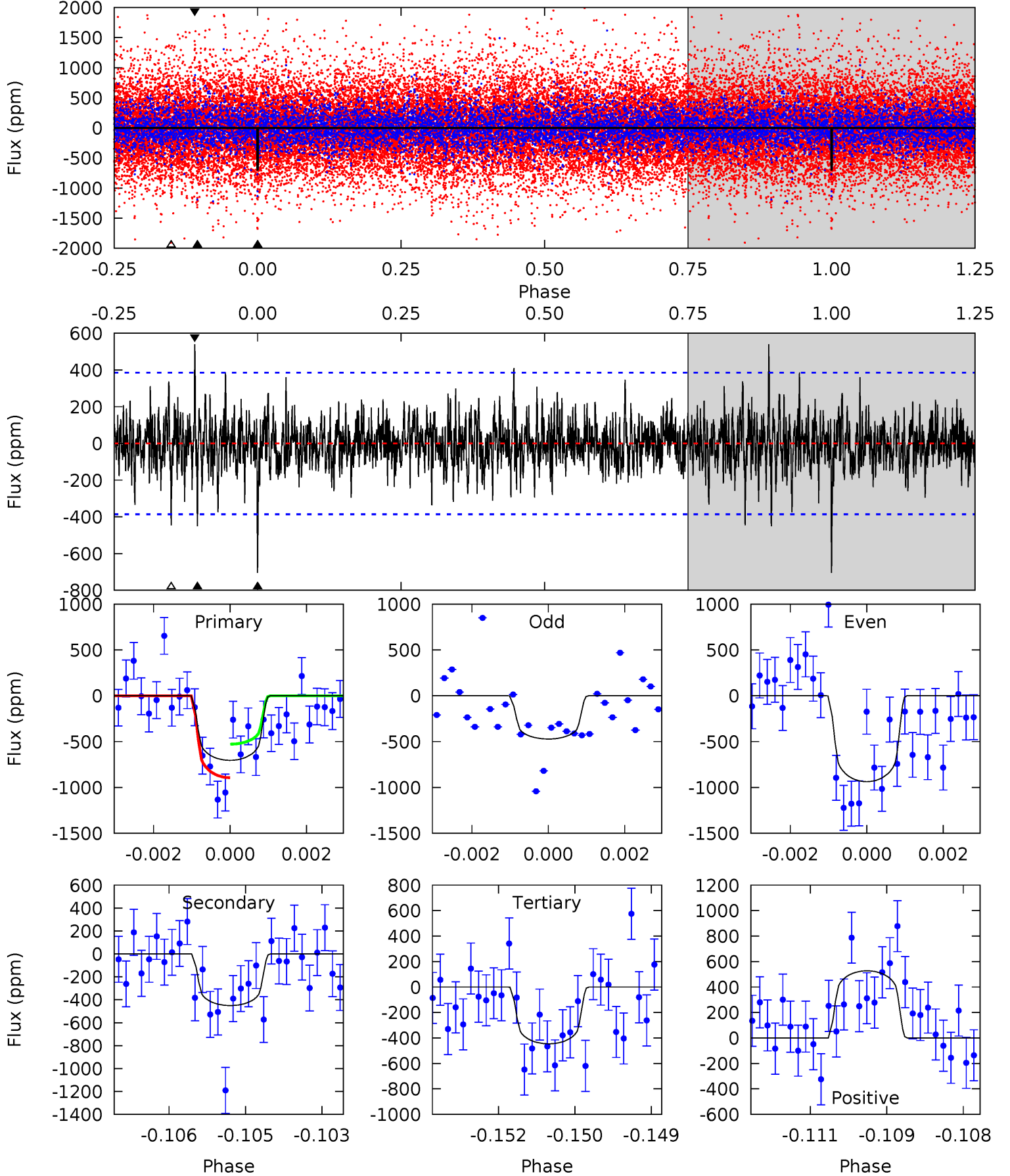
TCE 010275766-02 P=145.333856 Days $T_0=236.532323$ (BKJD)



DV Model-Shift Uniqueness Test

010275766-02, $P = 145.330445$ Days, $E = 91.218631$ Days

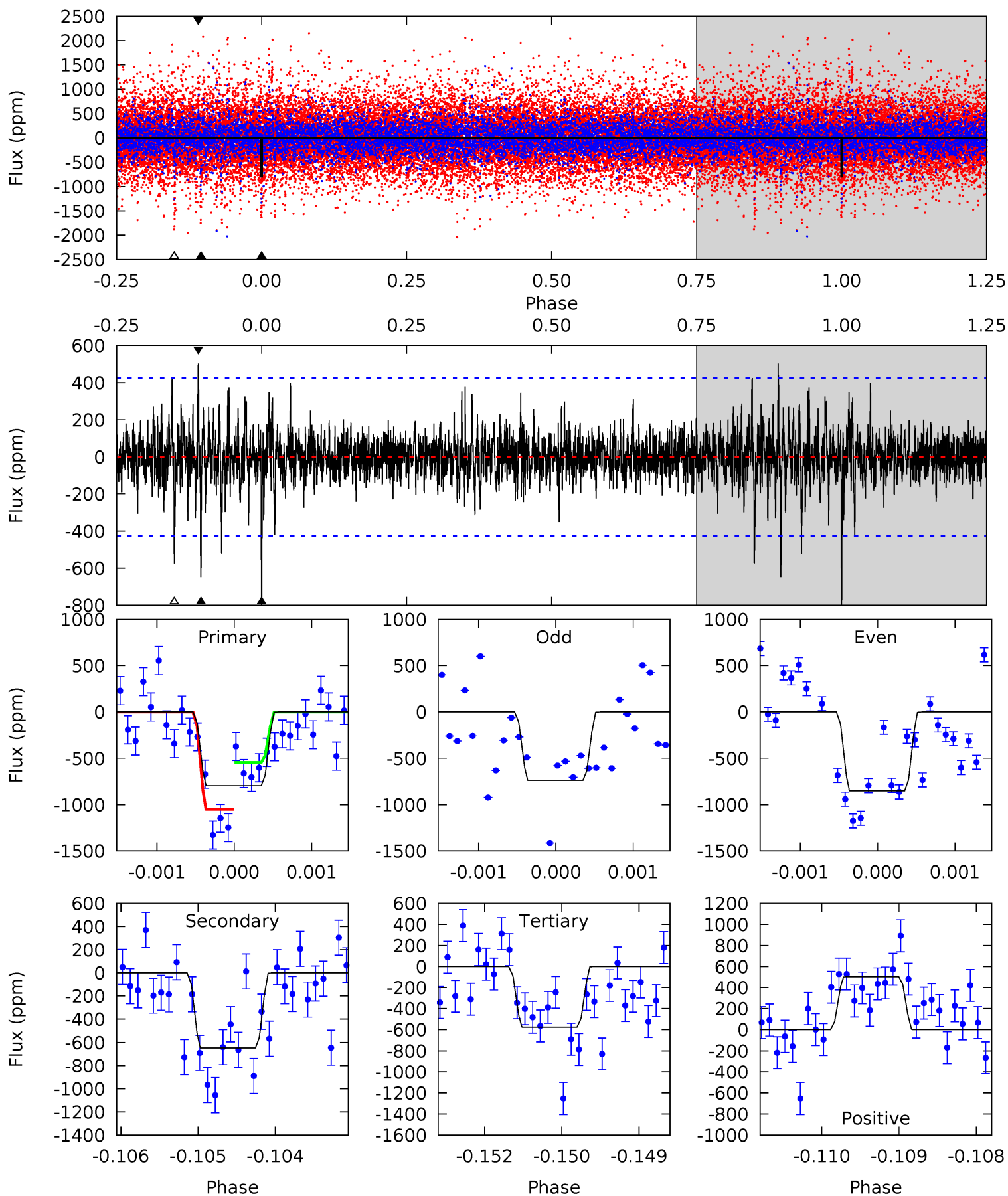
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.83	6.29	6.22	7.36	5.38	3.17	1.46	3.61	2.47	0.07	-1.07	3.24	0.98	0.43	2.56



Alt Model-Shift Uniqueness Test

010275766-02, P = 145.333856 Days, E = 91.198467 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	8.25	7.32	6.39	5.42	3.23	1.27	2.80	3.73	0.93	1.86	0.71	0.95	0.39	3.21



Stellar Parameters For KIC 010275766

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6363^{+177}_{-221}	$4.386^{+0.052}_{-0.195}$	$0.210^{+0.200}_{-0.350}$	$1.198^{+0.373}_{-0.133}$	$1.273^{+0.151}_{-0.184}$	$1.044^{+0.284}_{-0.536}$
	+3%/-3%	+1%/-4%	+95%/-167%	+31%/-11%	+12%/-14%	+27%/-51%
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 010275766-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-451 ± 72	$3.61^{+2.84}_{-2.08}$	572^{+38}_{-27}	5674^{+3671}_{-1272}	6371^{+31376}_{-4450}
Alt.	-648 ± 79	$4.22^{+3.16}_{-2.49}$	573^{+37}_{-30}	5767^{+3928}_{-1208}	6523^{+35410}_{-4327}

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

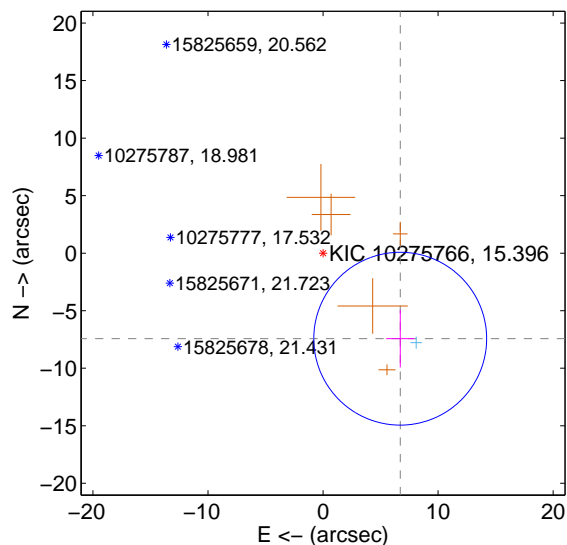
Supplemental centroid analysis for 010275766-02. Kepler magnitude: 15.40. Transit SNR 5.02

There are 1 quarters with good PRF difference image offsets

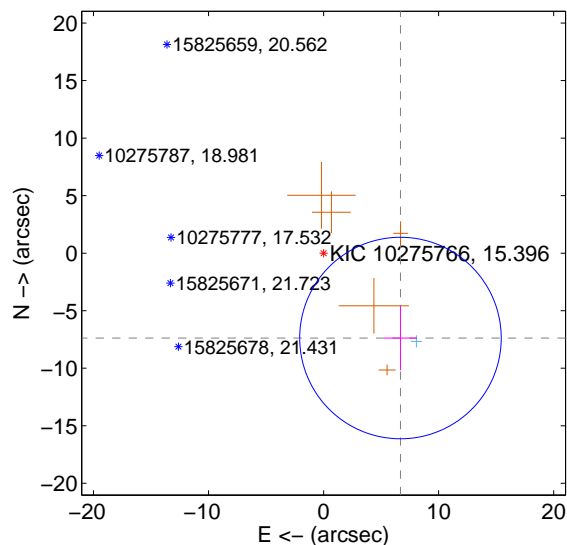
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.011 ± 2.504	4.00	-6.707 ± 1.223	-7.433 ± 2.497
PRF-fit source offset from KIC position	9.951 ± 2.919	3.41	-6.681 ± 1.427	-7.374 ± 2.801
photometric centroid source offset	1.54 ± 1.79	0.86	1.40 ± 1.80	-0.64 ± 1.75

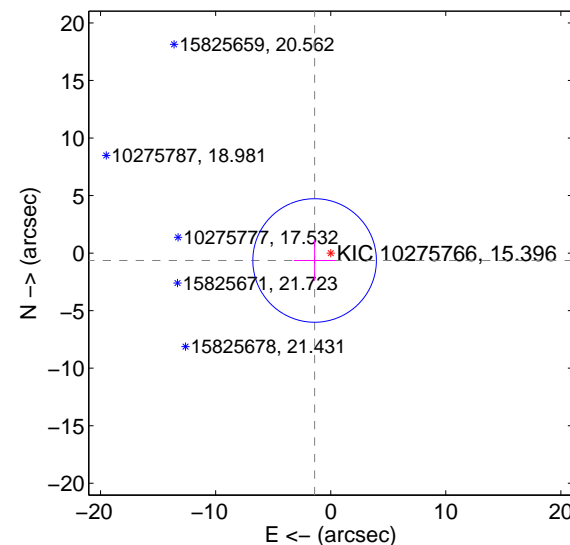
offset from difference PRF-fit to OOT PRF-fit



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.

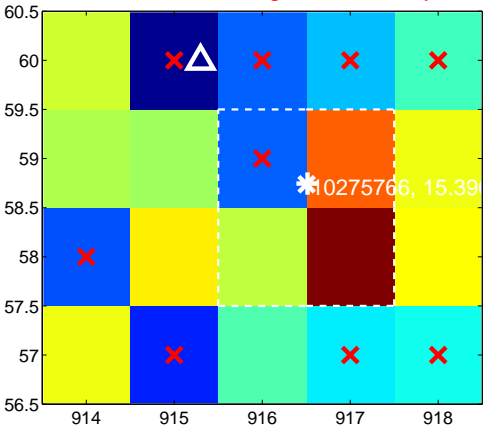
Q1 no difference image



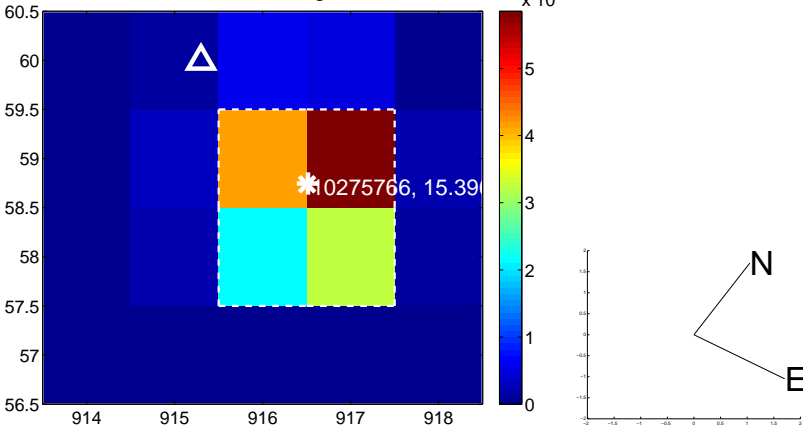
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



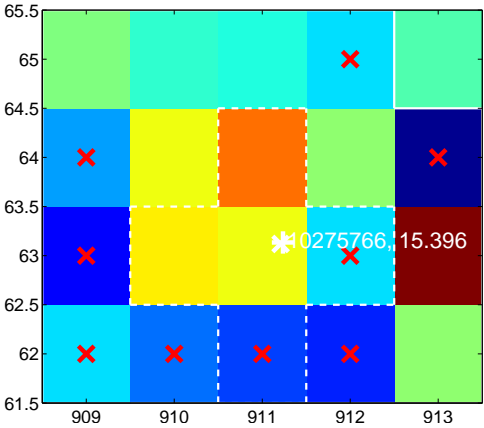
Q3 no difference image



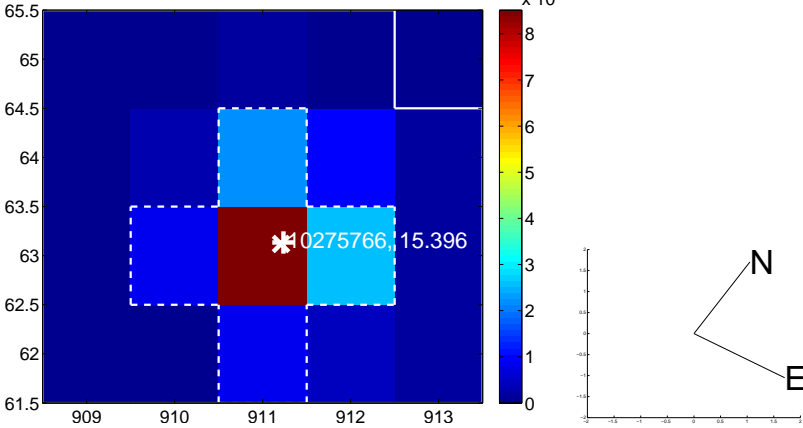
Q3 no OOT image



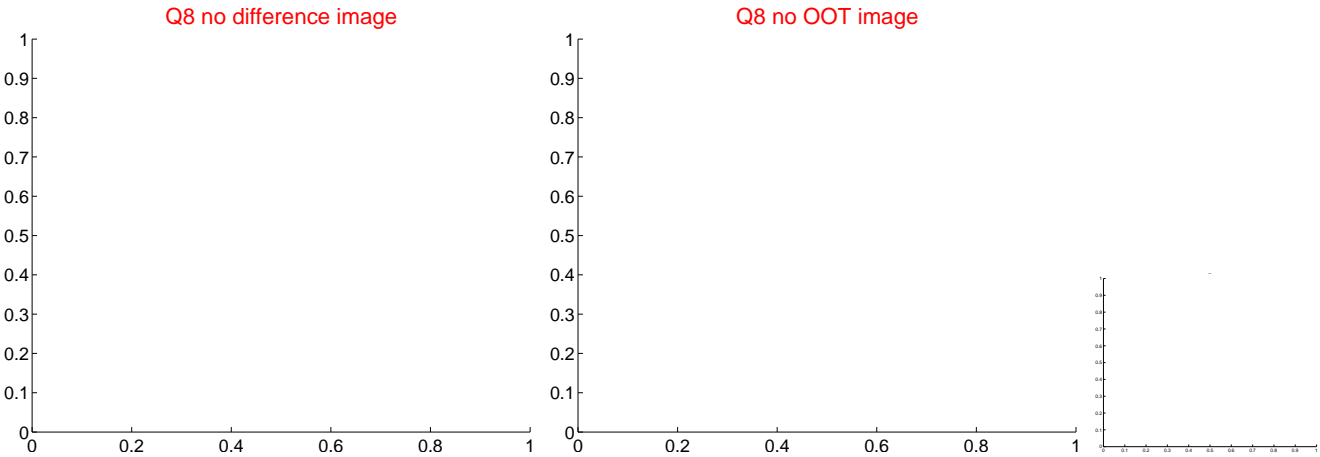
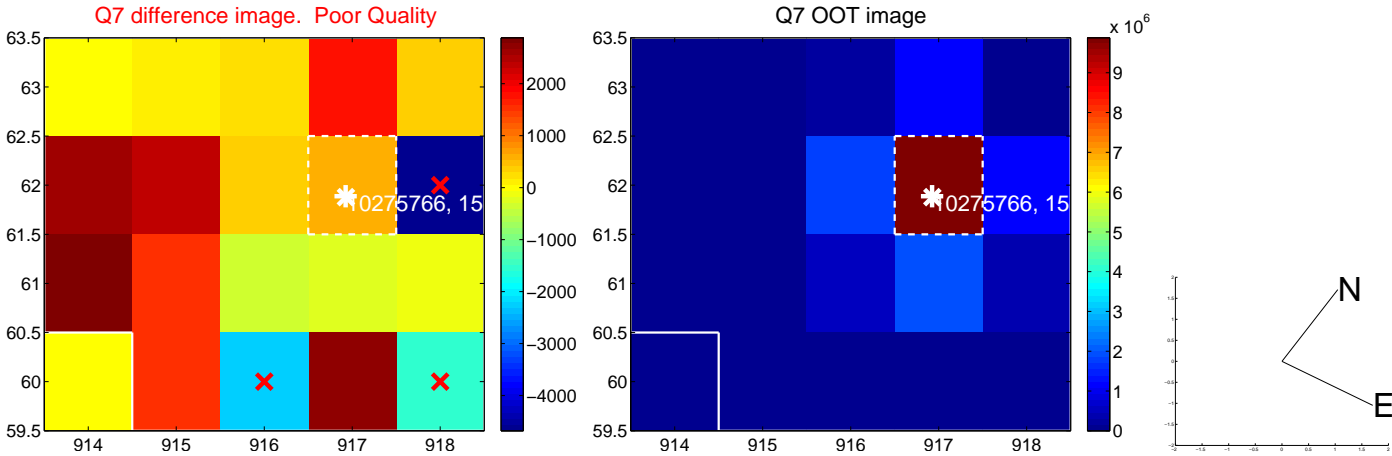
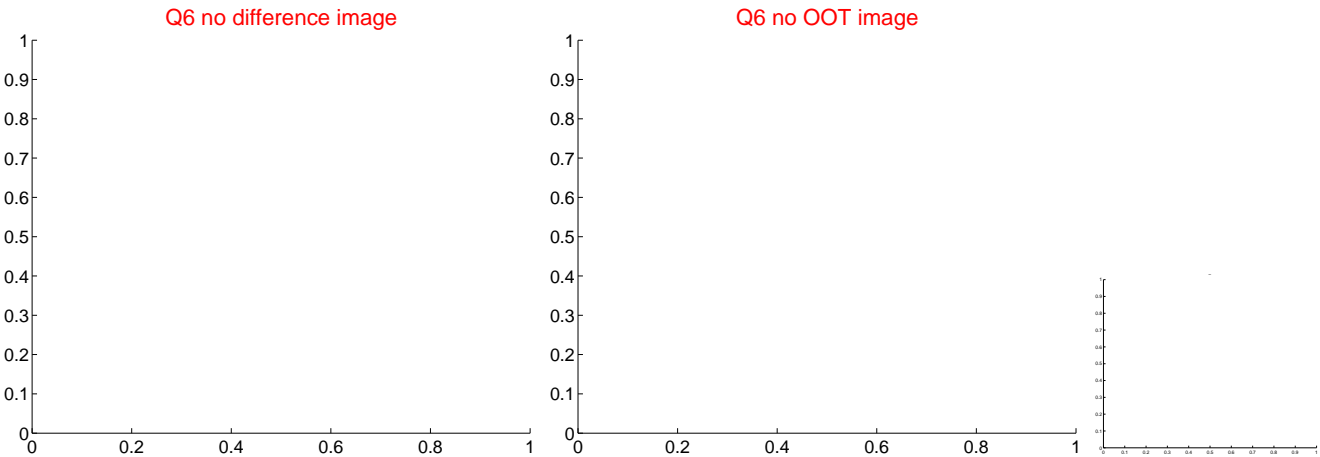
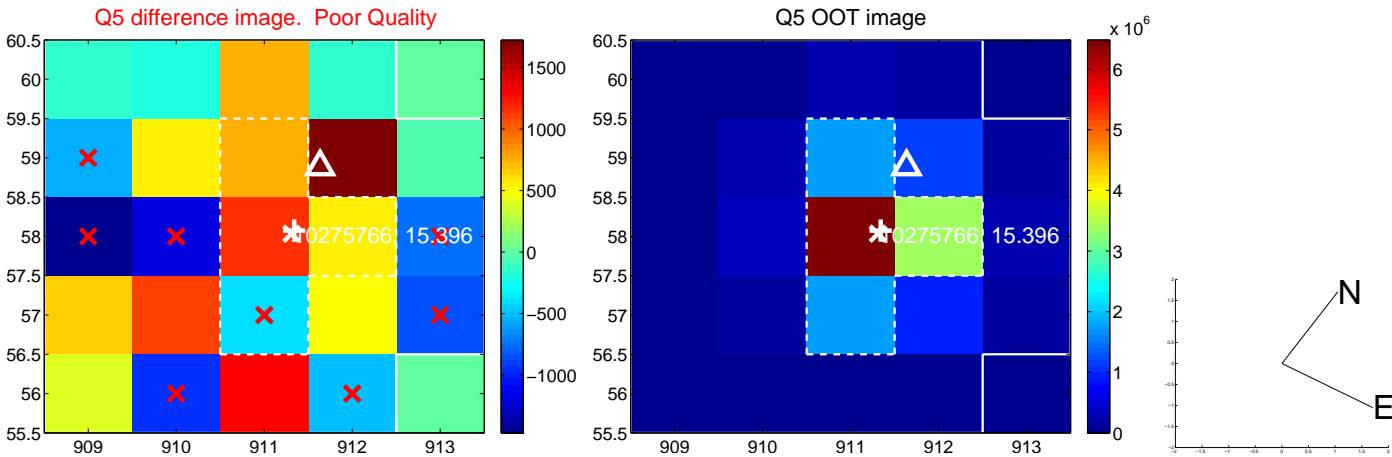
Q4 difference image. Poor Quality



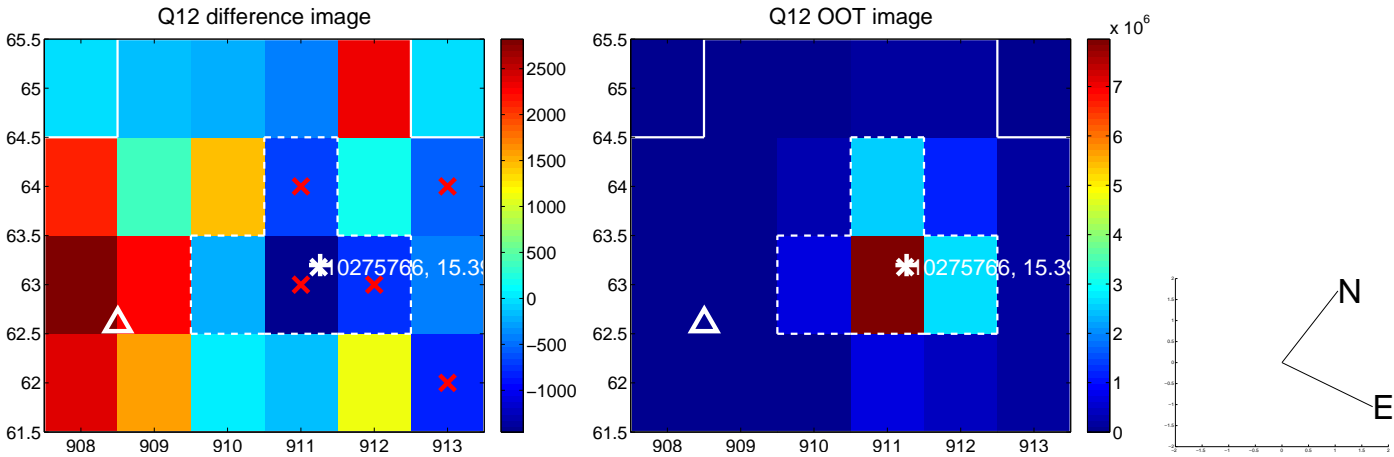
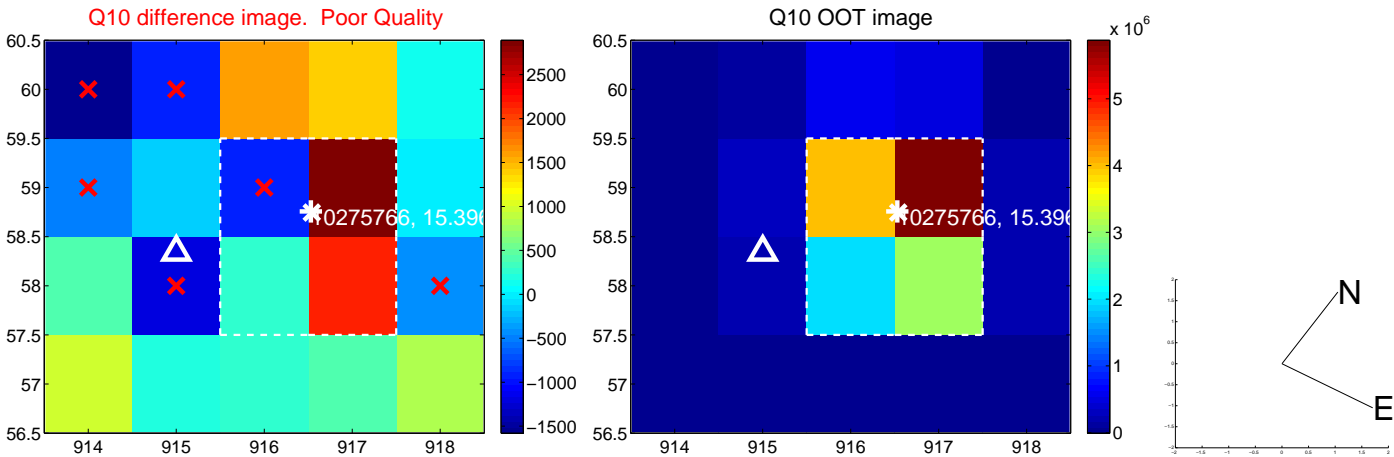
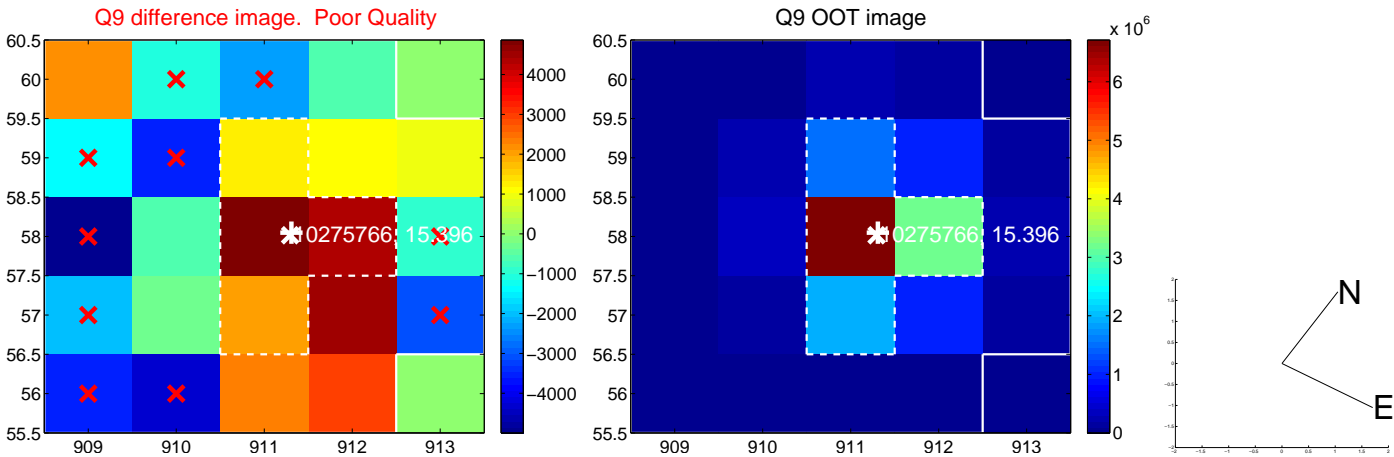
Q4 OOT image



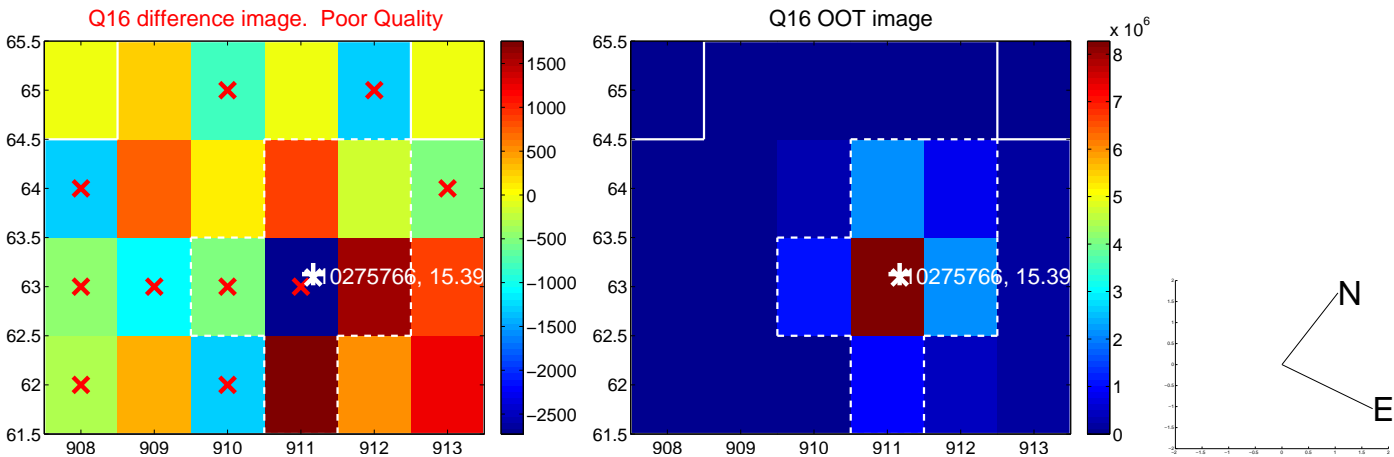
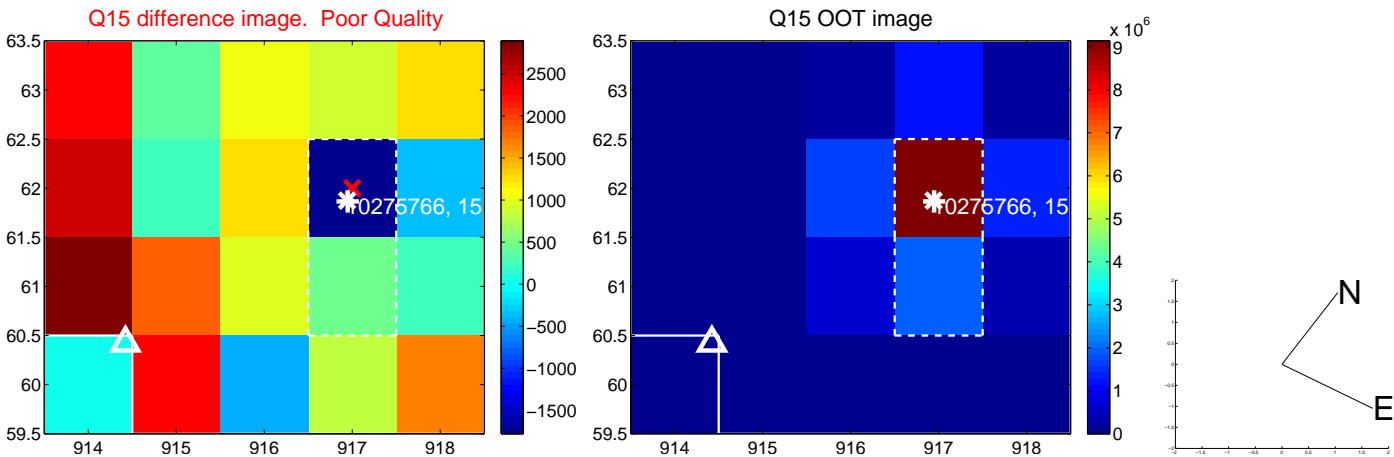
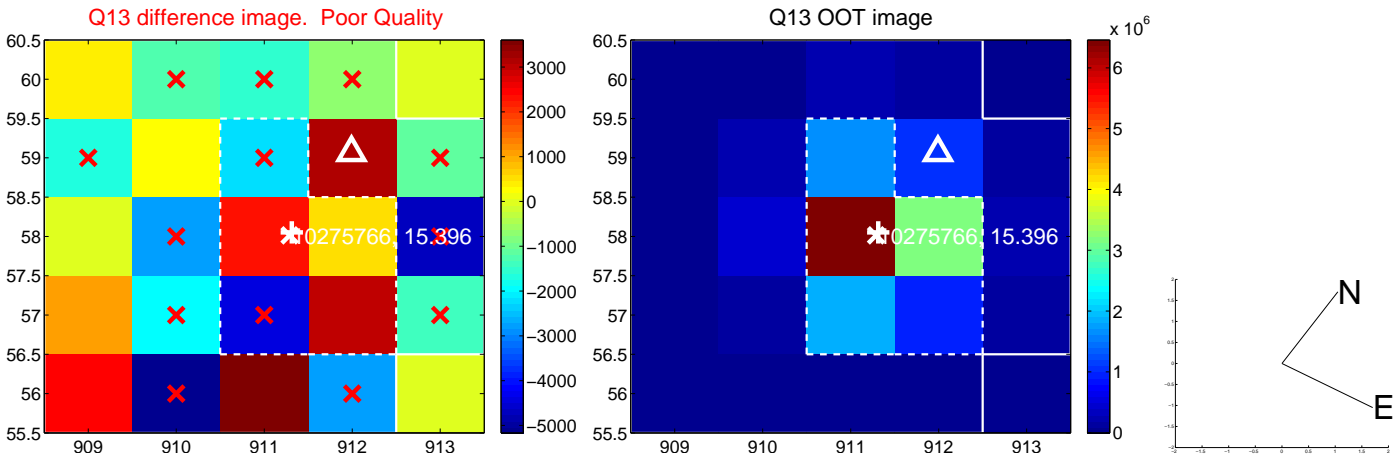
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



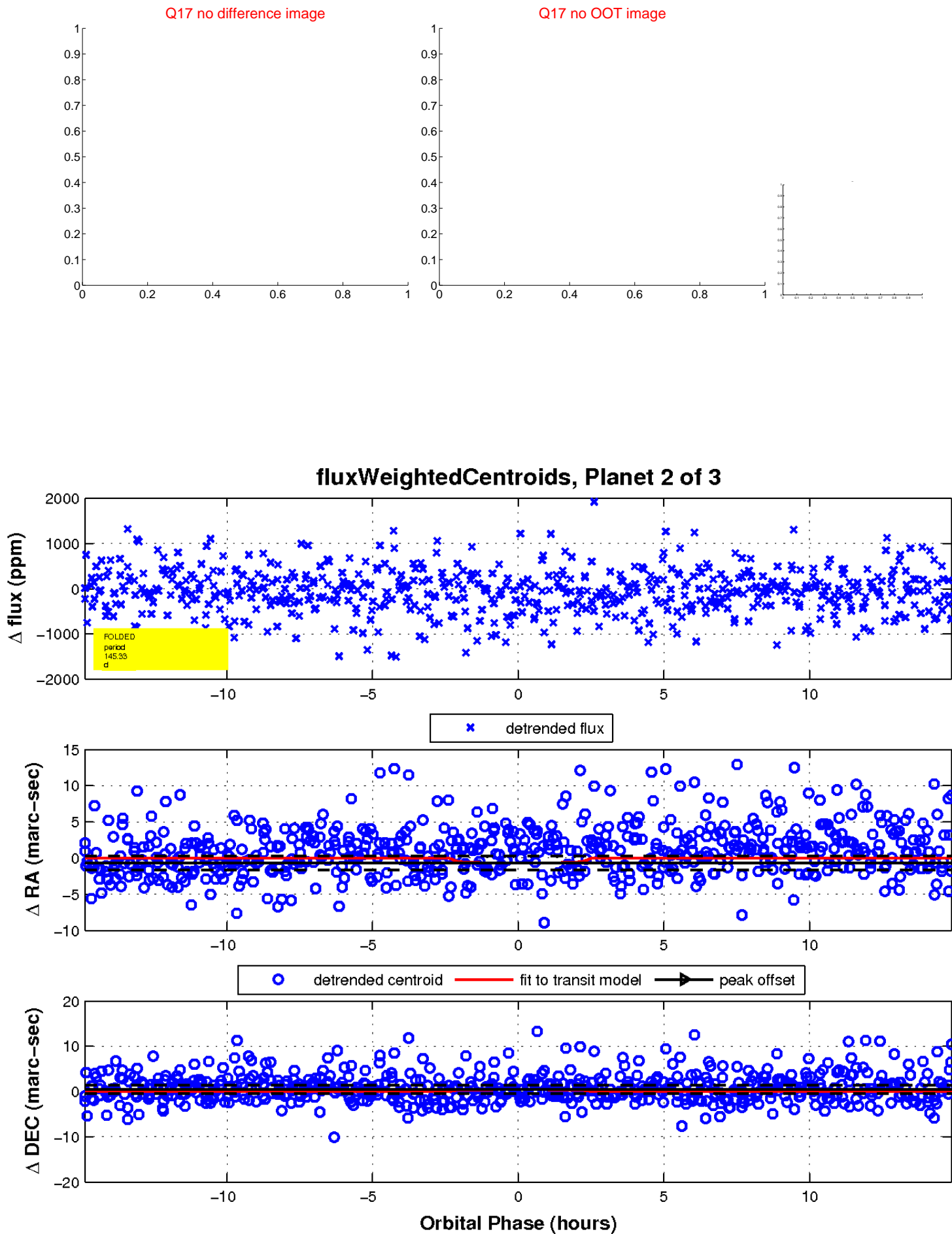
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

