

KIC 006609270

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})
006609270-01	OBS	3090.01	3.822220	132.152915	369.3	1.938	14.1	16.2	0.51	3729	0.99	30.87
006609270-02	OBS	3090.02	15.036957	133.646668	412.7	2.397	8.3	9.1	0.51	3729	1.25	4.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006609270-01	OBS	PC	0.61	0	0	0	0	CENT_FEW_DIFFS
006609270-02	OBS	FP	0.02	0	0	1	0	CENT_RESOLVED_OFFSET

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

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

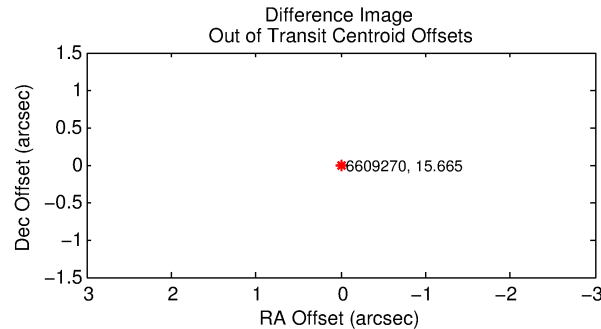
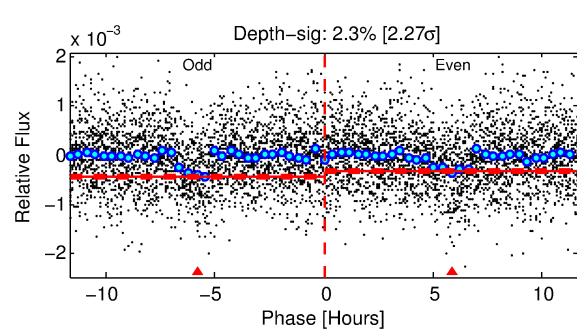
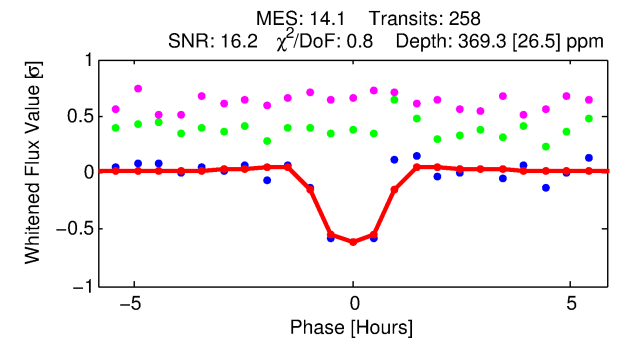
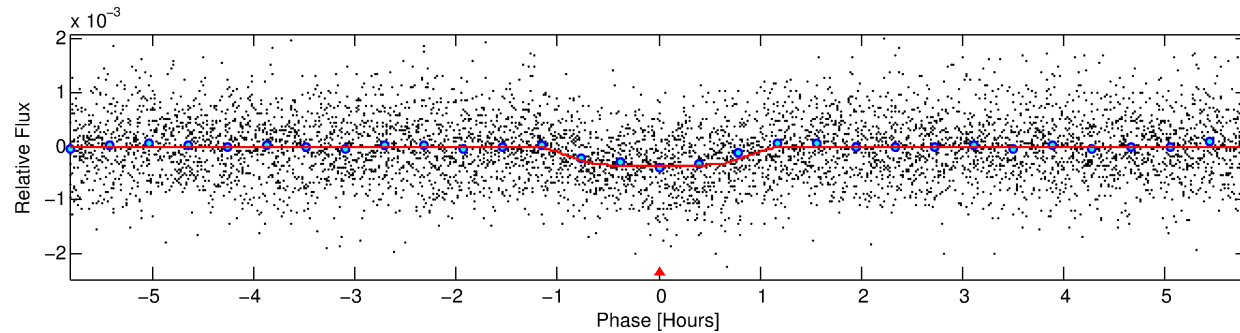
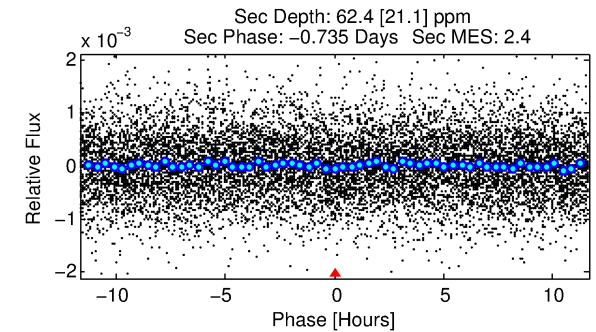
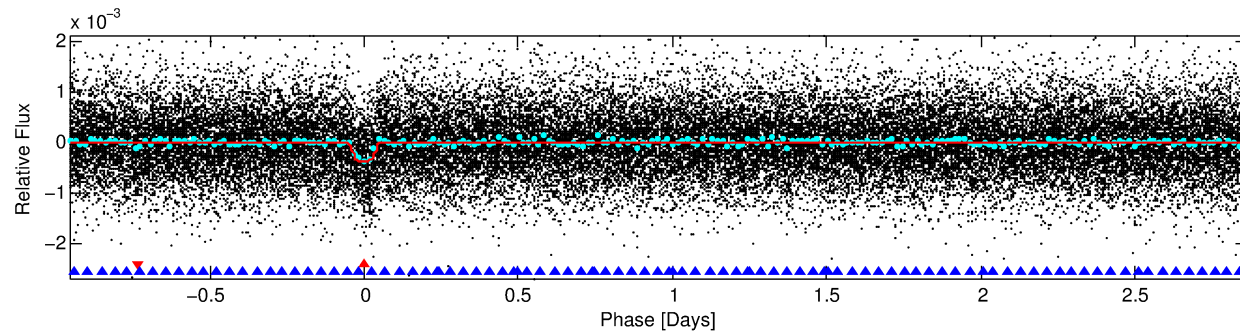
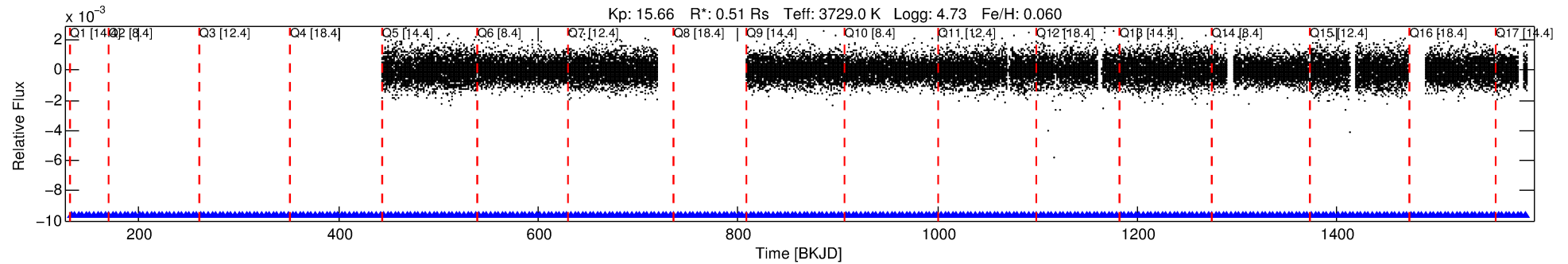
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006609270-01

No Significant Match Found

DV One-Page Summary

KIC: 6609270 Candidate: 1 of 2 Period: 3.822 d
KOI: K03090.01 Corr: 0.979



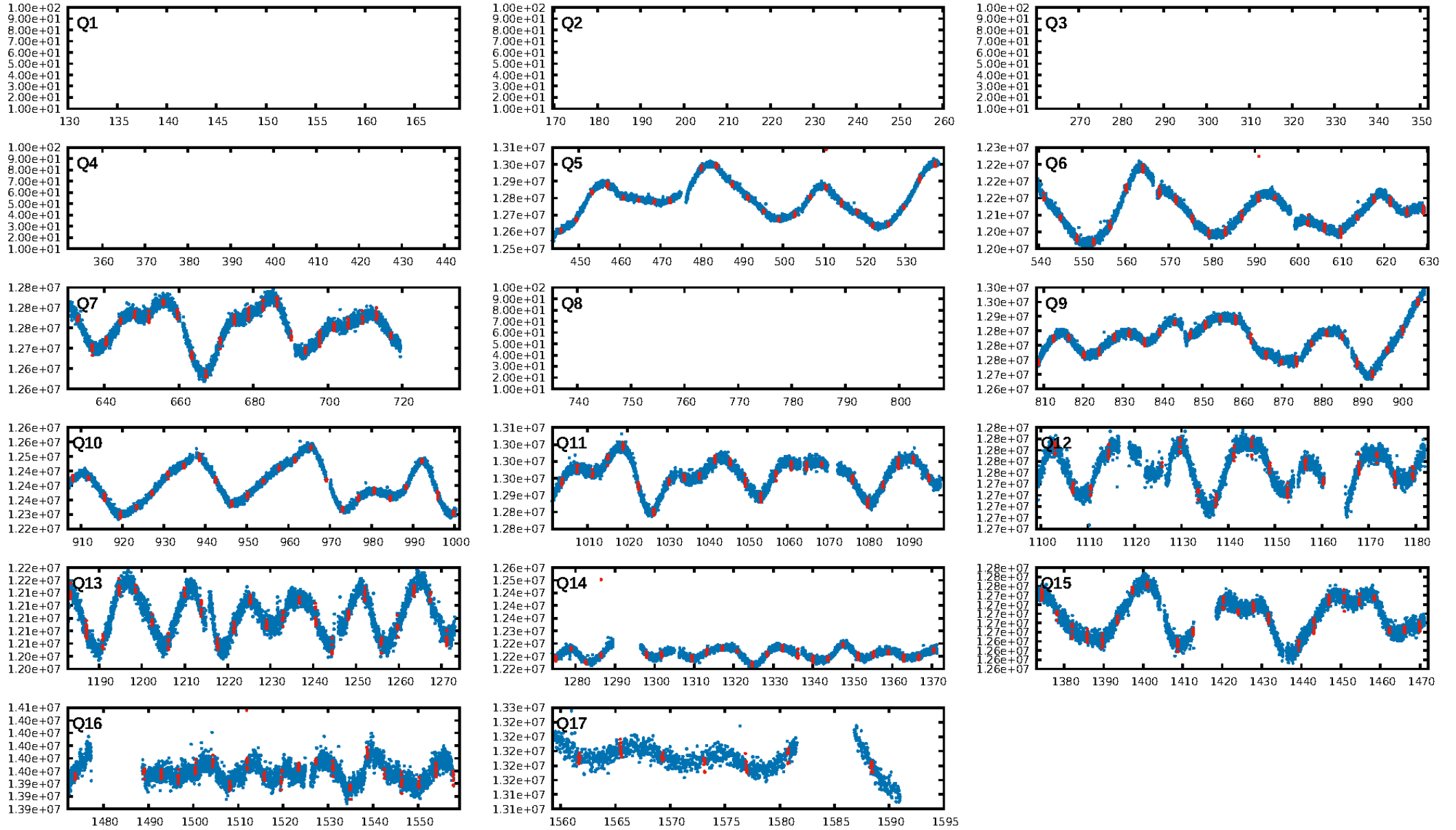
DV Fit Results:

Period = 3.82222 [0.00001] d
Epoch = 132.1529 [0.0023] BKJD
Rp/R* = 0.0177 [0.0132]
a/R* = 14.13 [43.33]
b = 0.40 [6.57]
Seff = 30.87 [3.43]
Teq = 601 [17] K
Rp = 0.99 [0.74] Re
a = 0.0385 [0.0022] AU
Ag = 51.55 [78.97] [0.64σ]
Teffp = 2490 [954] K [1.98σ]

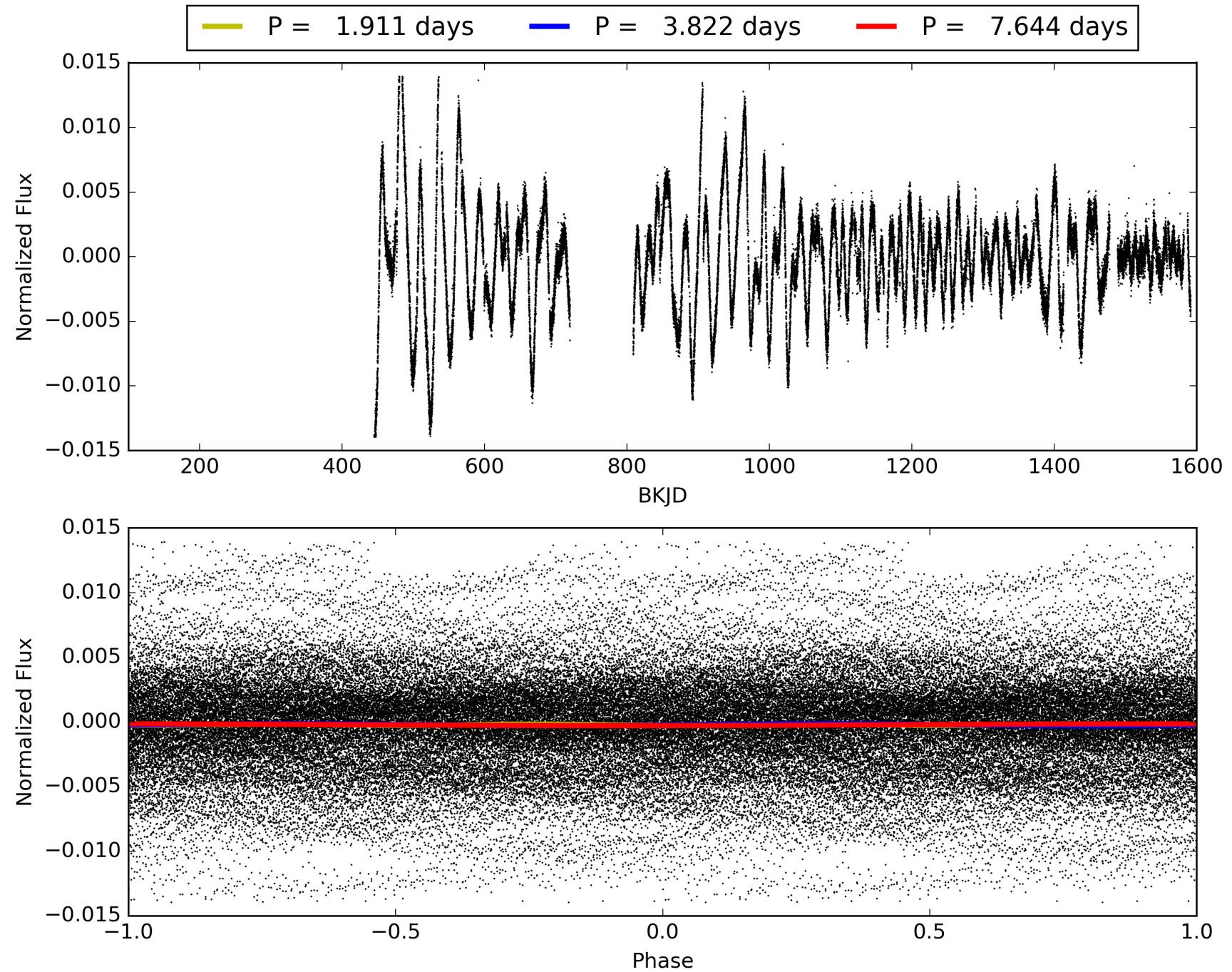
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [87.31σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.46e-44
RollingBand-fgt: 1.00 [251/251]
GhostDiagnostic-chr: -2.069
Centroid-sig: 0.0%
Centroid-so: 4.063 arcsec [9.57σ]
OotOffset-rm: N/A
KicOffset-rm: 0.113 arcsec [0.32σ]
OotOffset-st: 0/0/0 [0]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [12/12]

TCE 006609270-01, PDC Light Curves

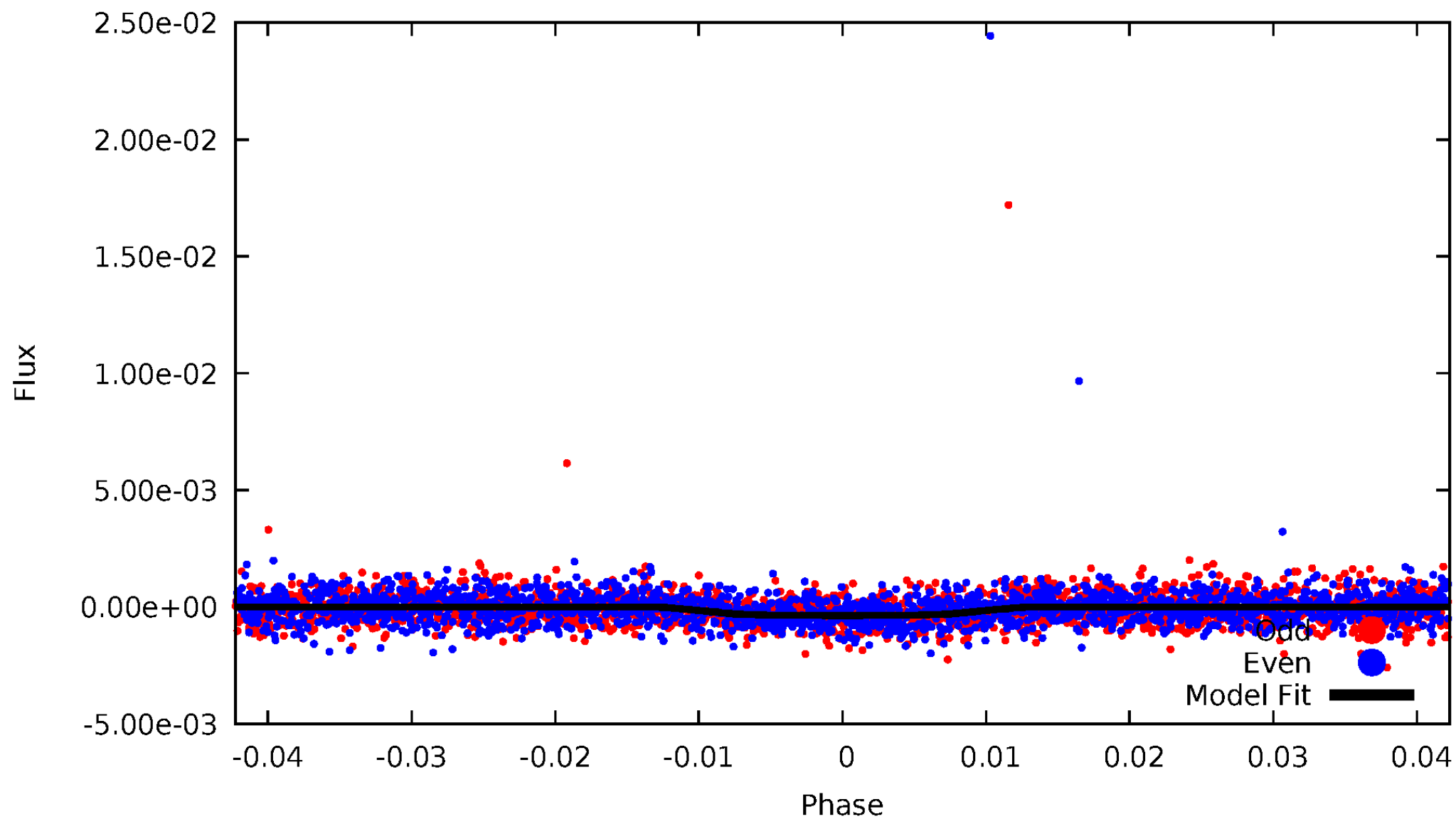


TCE 006609270-01



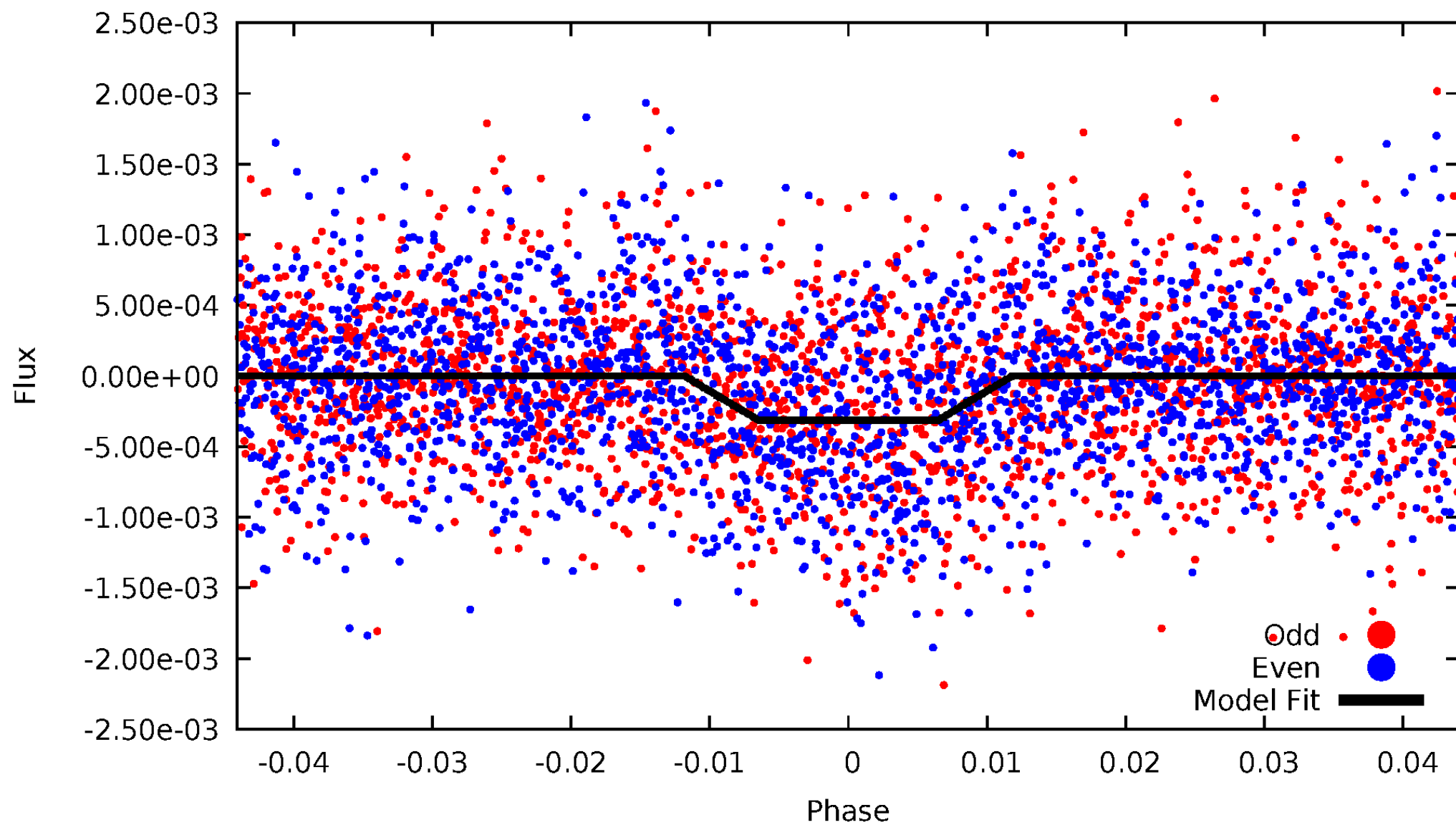
DV Odd/Even

TCE 006609270-01

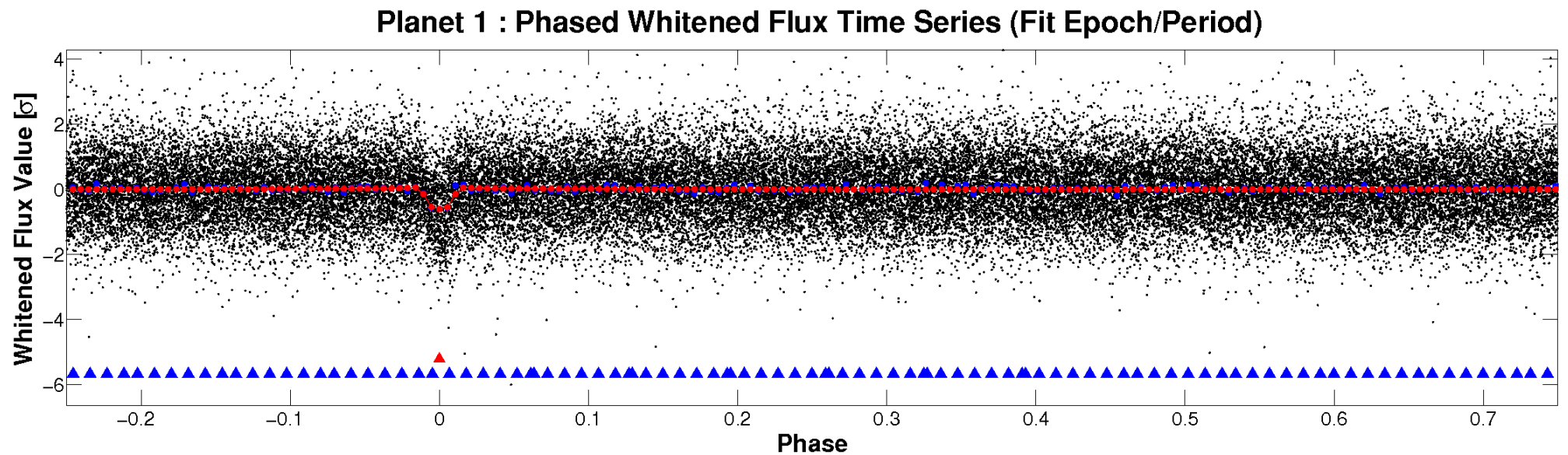
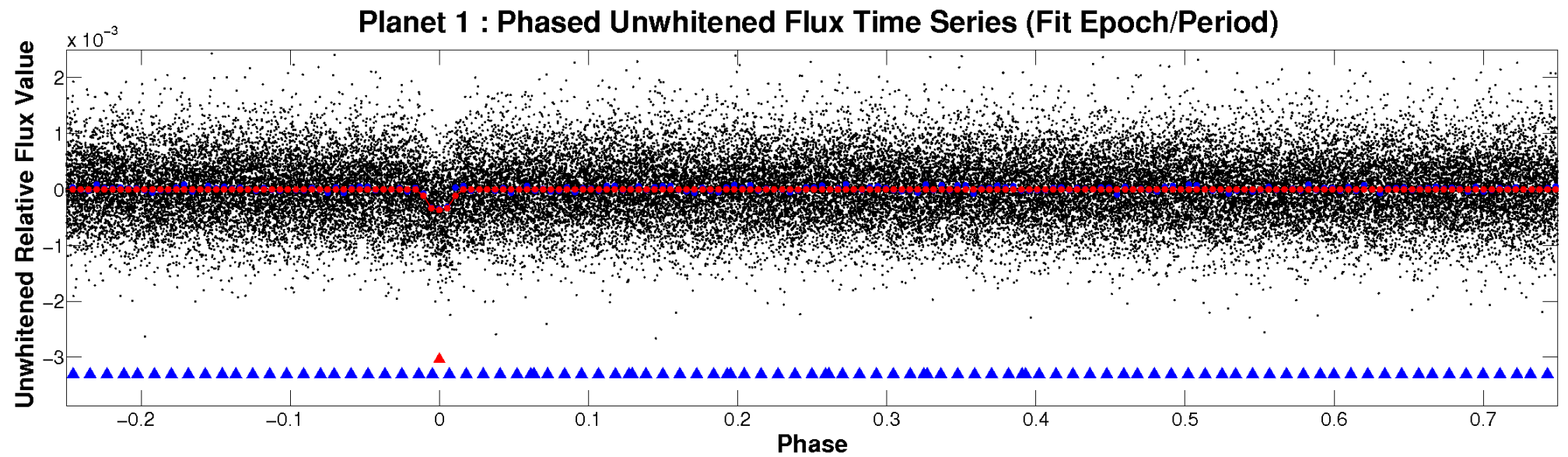


ALT Odd/Even

TCE 006609270-01

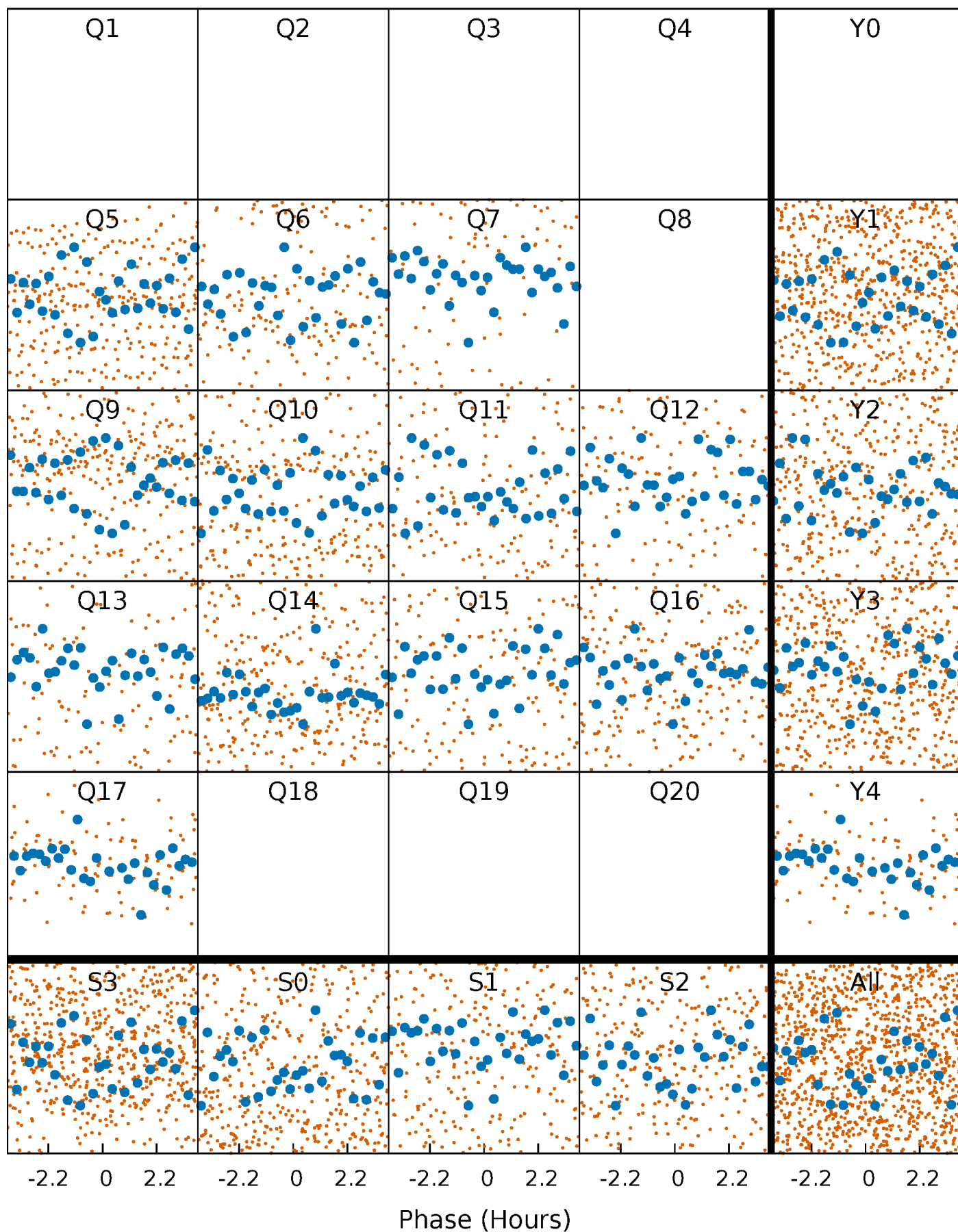


Non-Whitened Vs. Whitened Light Curve



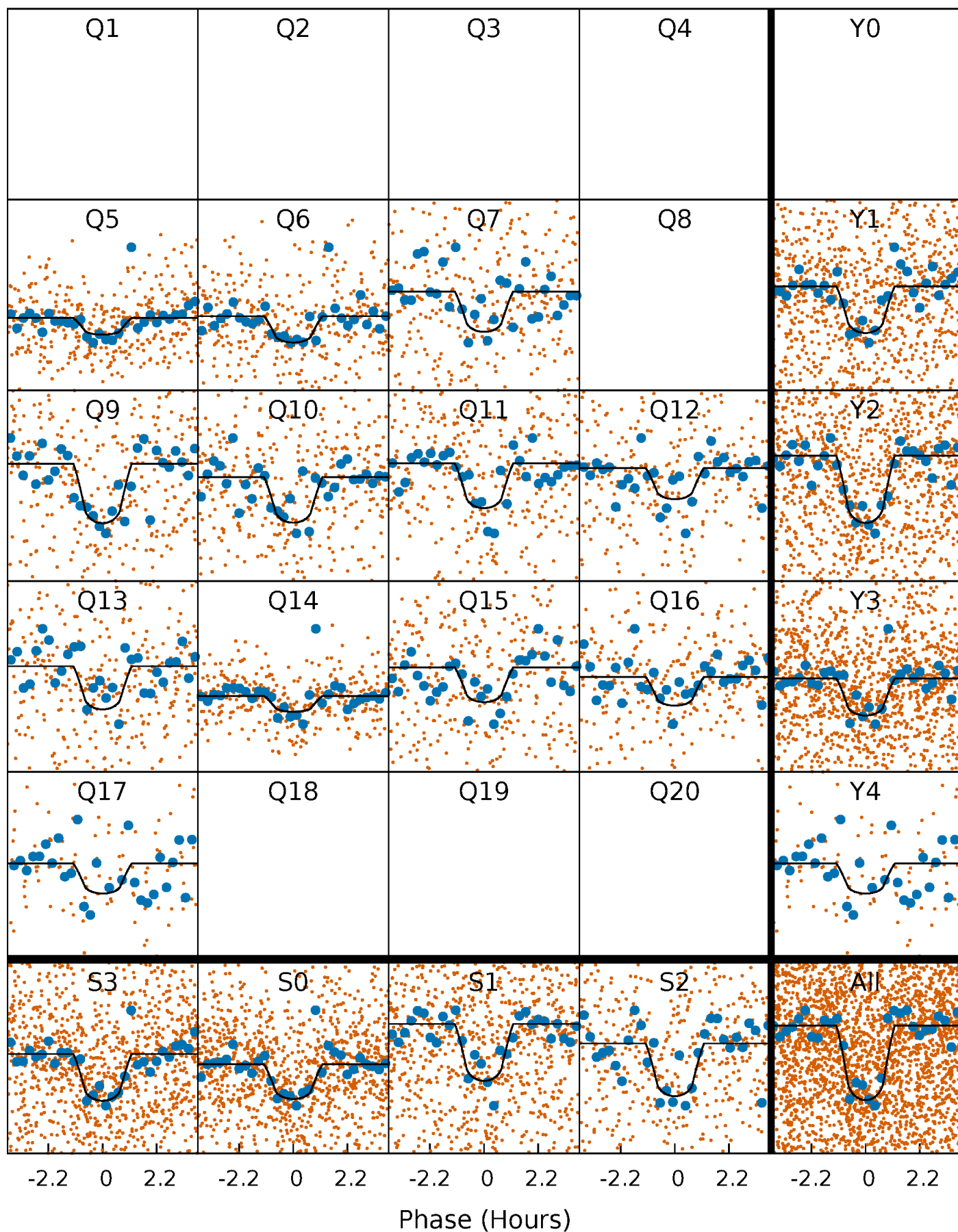
PDC Quarter-Phased Transit Curves

TCE 006609270-01 P= 3.822220 Days $T_0=132.152915$ (BKJD)



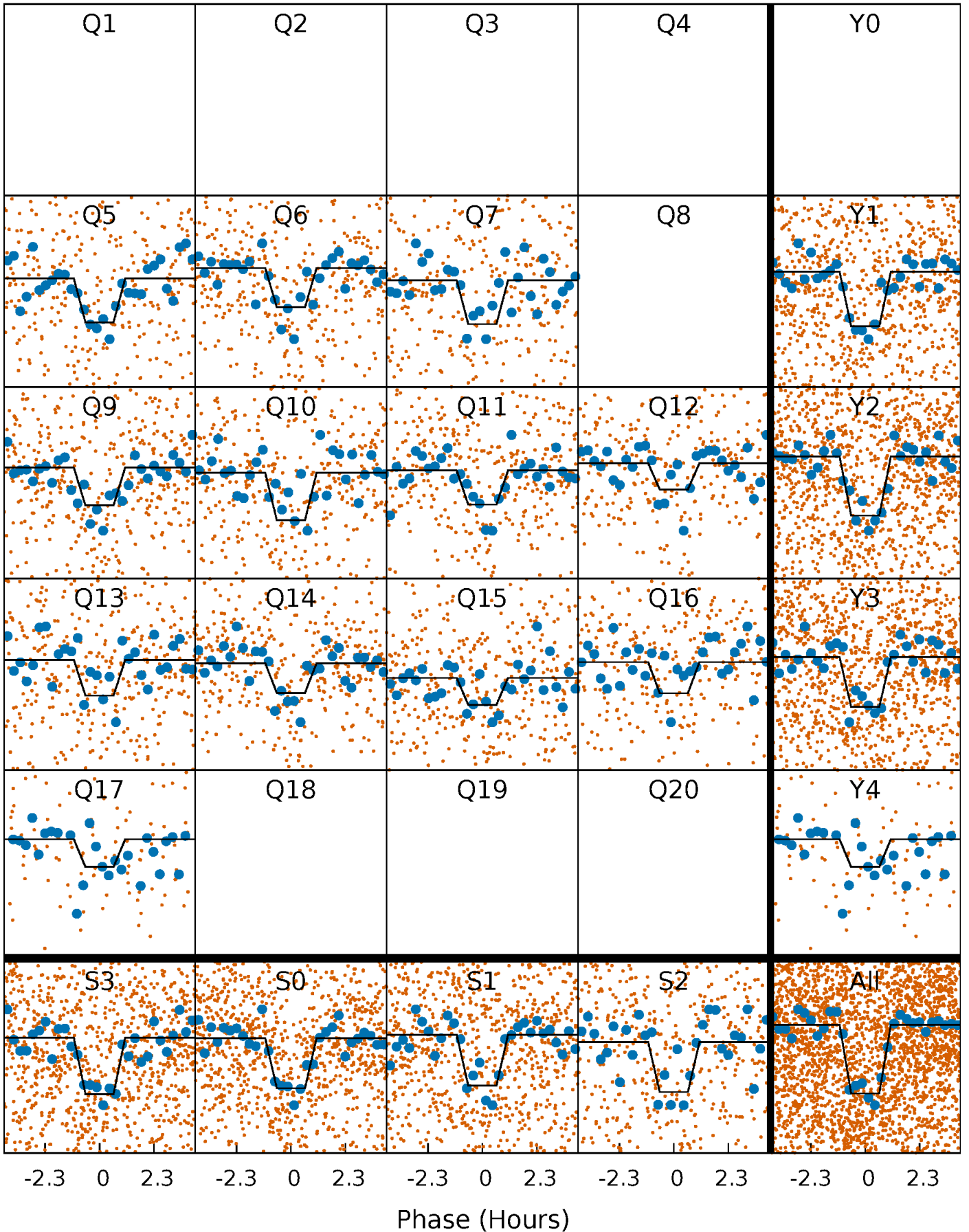
DV Quarter-Phased Transit Curves

TCE 006609270-01 P= 3.822220 Days $T_0=132.152915$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

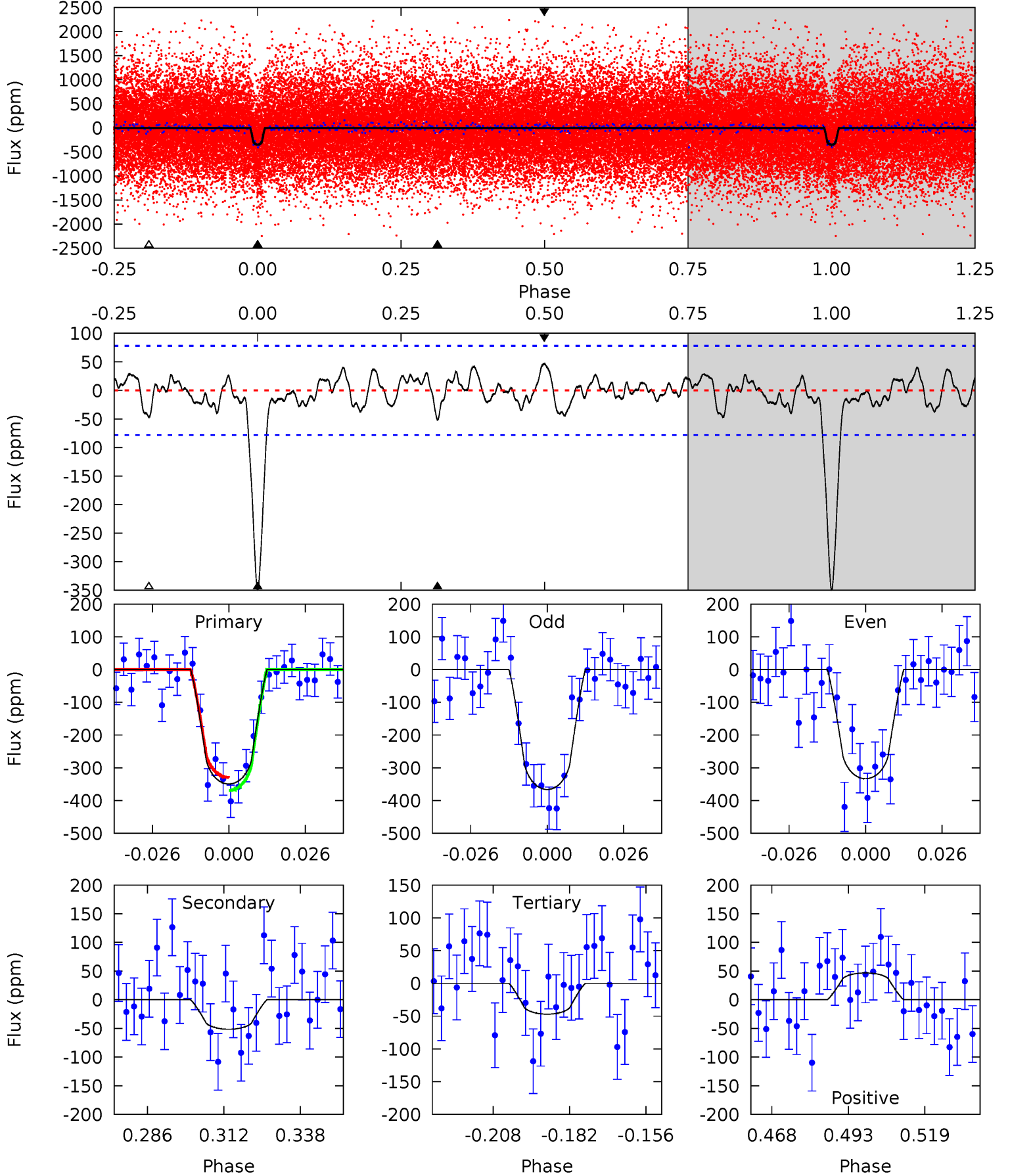
TCE 006609270-01 P= 3.822235 Days $T_0=132.149315$ (BKJD)



DV Model-Shift Uniqueness Test

006609270-01, P = 3.822220 Days, E = 132.152915 Days

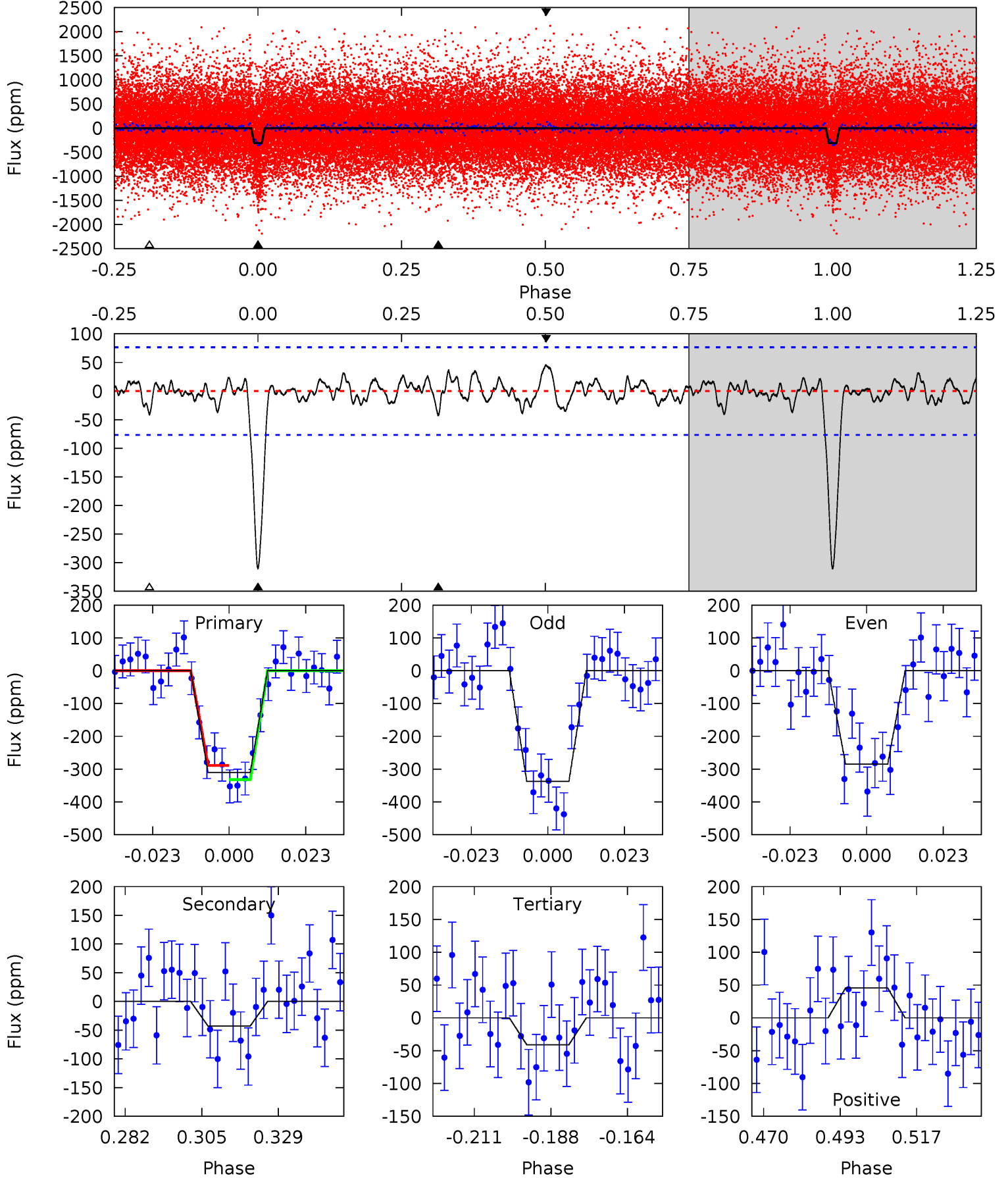
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.6	3.19	2.91	2.90	4.84	2.23	1.20	18.7	18.7	0.28	0.29	1.02	0.92	0.12	1.24



Alt Model-Shift Uniqueness Test

006609270-01, P = 3.822235 Days, E = 132.149315 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	2.72	2.60	2.89	4.86	2.27	0.96	17.1	16.8	0.12	-0.17	1.68	1.02	0.13	1.38



Stellar Parameters For KIC 006609270

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3729^{+75}_{-67}	$4.733^{+0.039}_{-0.021}$	$0.060^{+0.150}_{-0.150}$	$0.514^{+0.029}_{-0.037}$	$0.520^{+0.037}_{-0.030}$	$5.410^{+0.894}_{-0.570}$
	+2%/-2%	+1%/-0%	+250%/-250%	+6%/-7%	+7%/-6%	+17%/-11%
Source	SPE70	PHO2	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 006609270-01 / KOI 3090.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-51 ± 16	$1.11^{+0.70}_{-0.71}$	837^{+19}_{-20}	2764^{+937}_{-361}	35^{+221}_{-23}
Alt.	-43 ± 16	$1.05^{+0.70}_{-0.58}$	838^{+18}_{-20}	2710^{+737}_{-334}	31^{+136}_{-20}

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 $A_{obs} \gg 1.0$

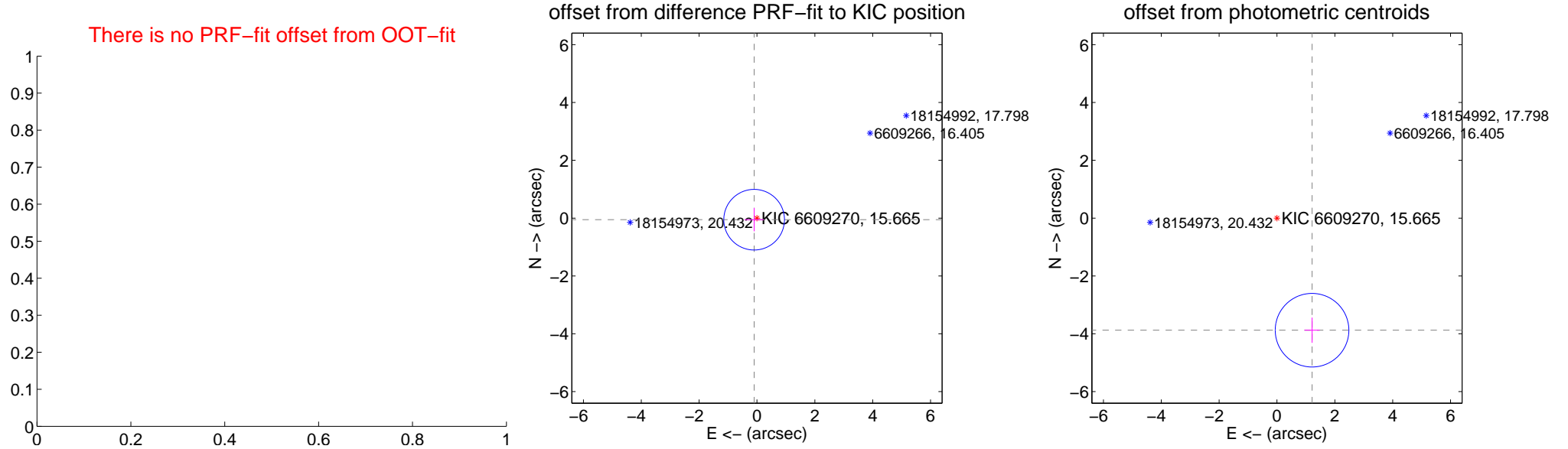
DV Centroid Data

Supplemental centroid analysis for 006609270-01. Kepler magnitude: 15.66. Transit SNR 16.22

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	0.113 ± 0.350	0.32	0.099 ± 0.332	-0.054 ± 0.403
photometric centroid source offset	4.06 ± 0.42	9.57	-1.21 ± 0.26	-3.88 ± 0.44

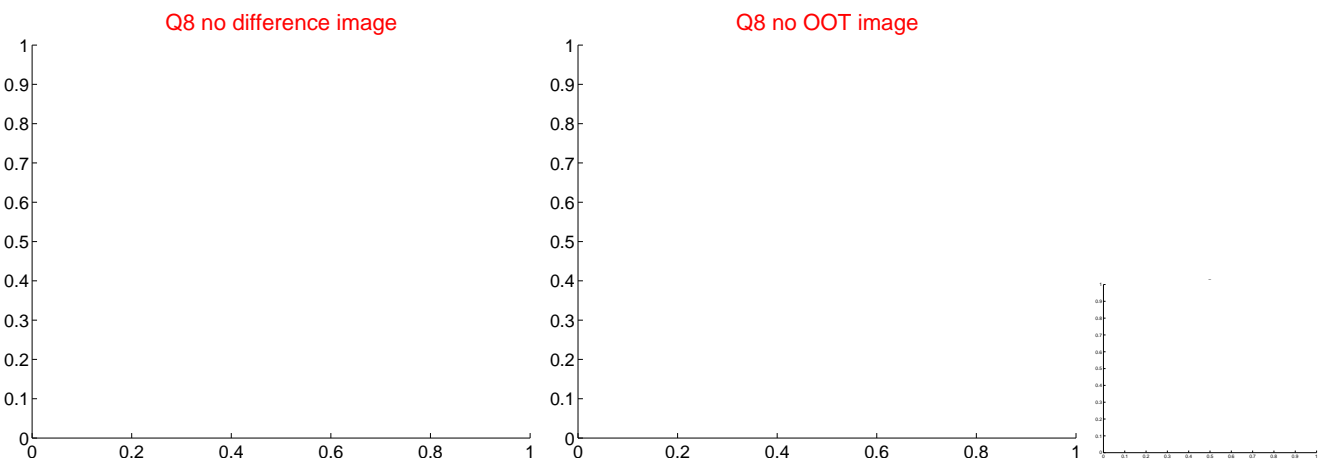
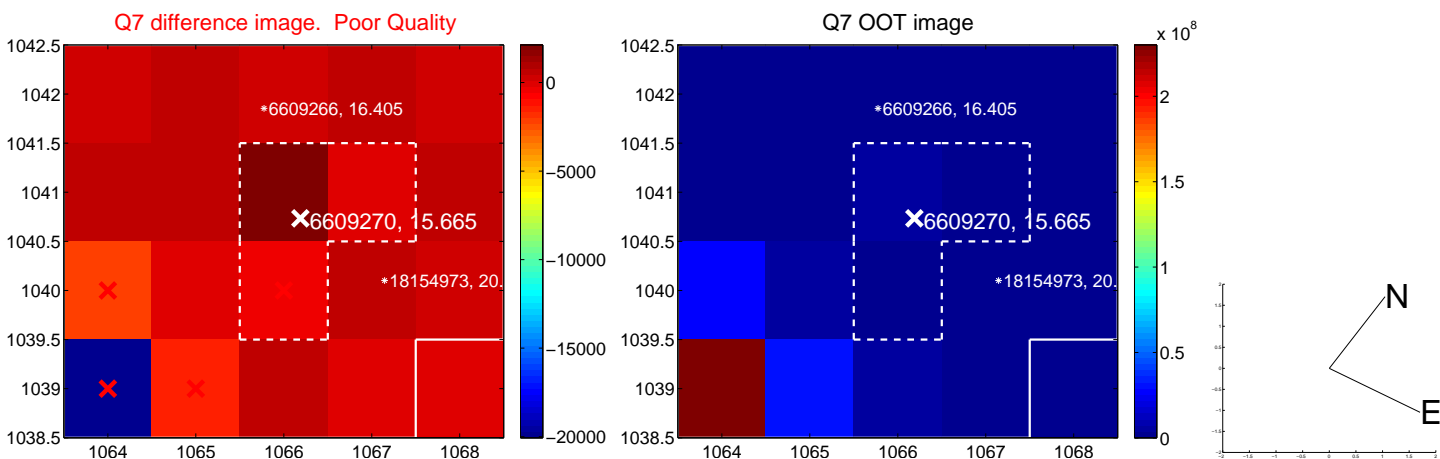
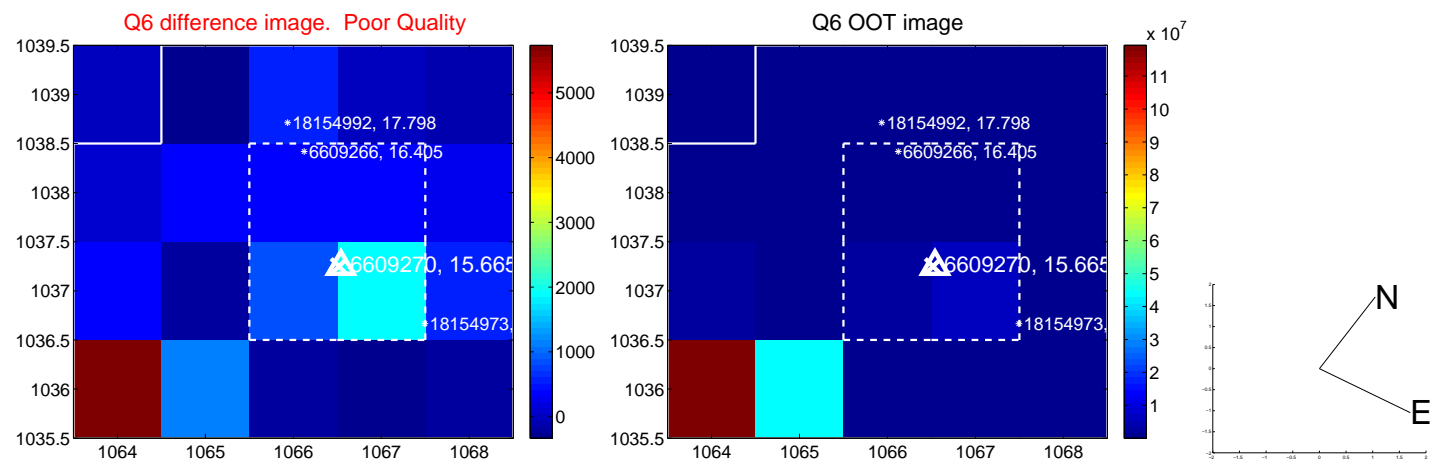
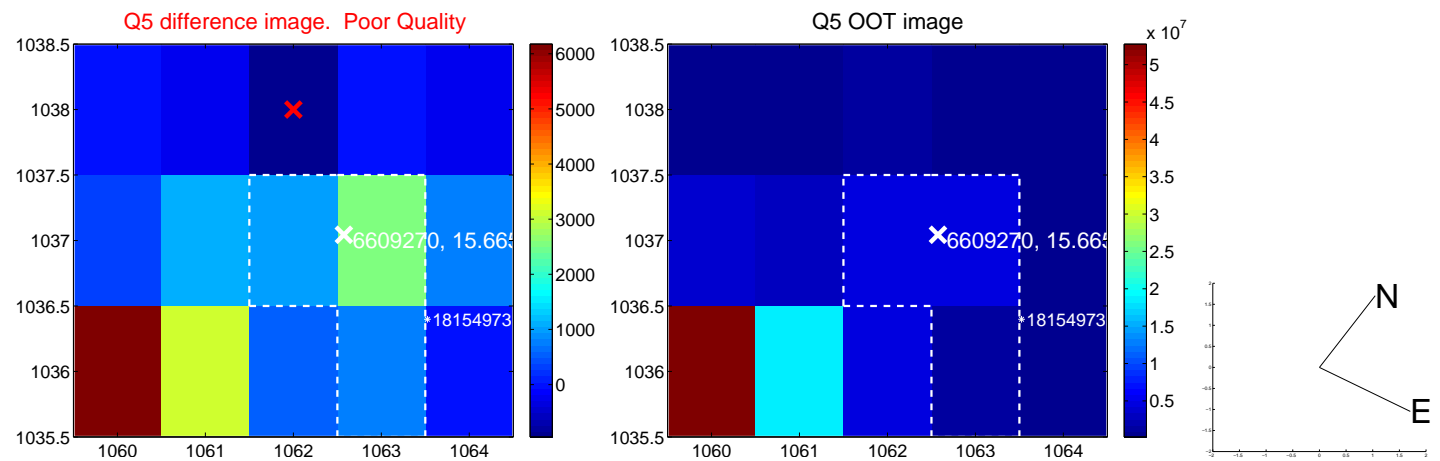


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

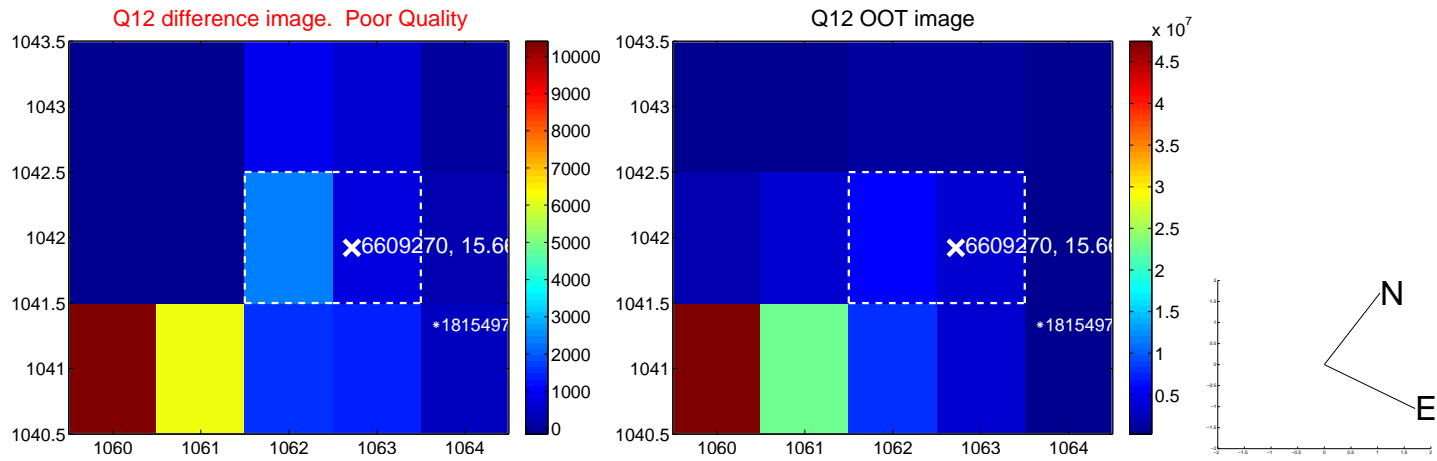
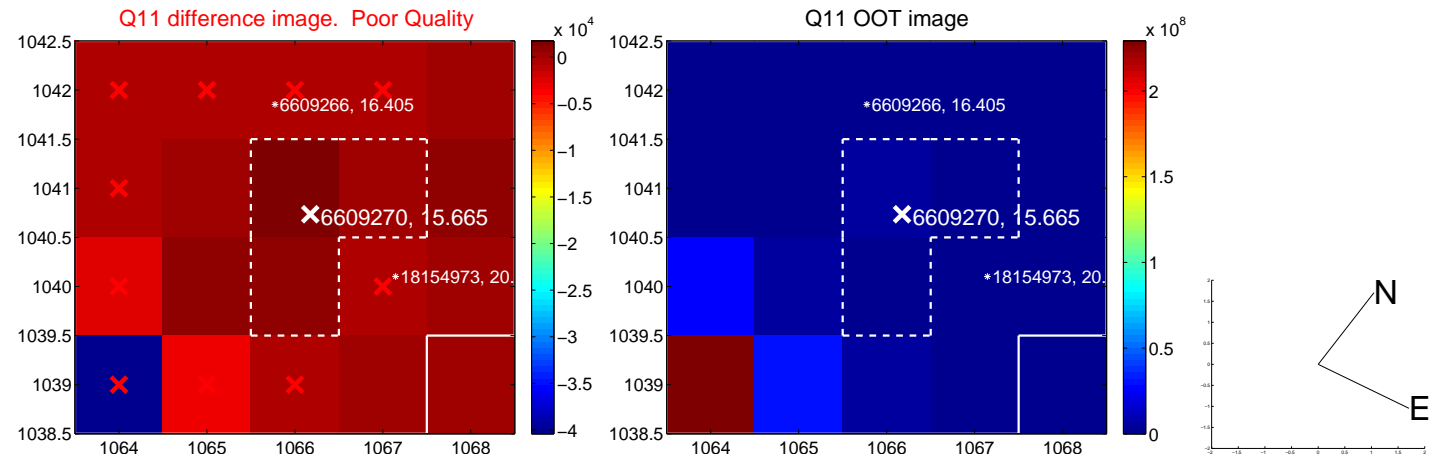
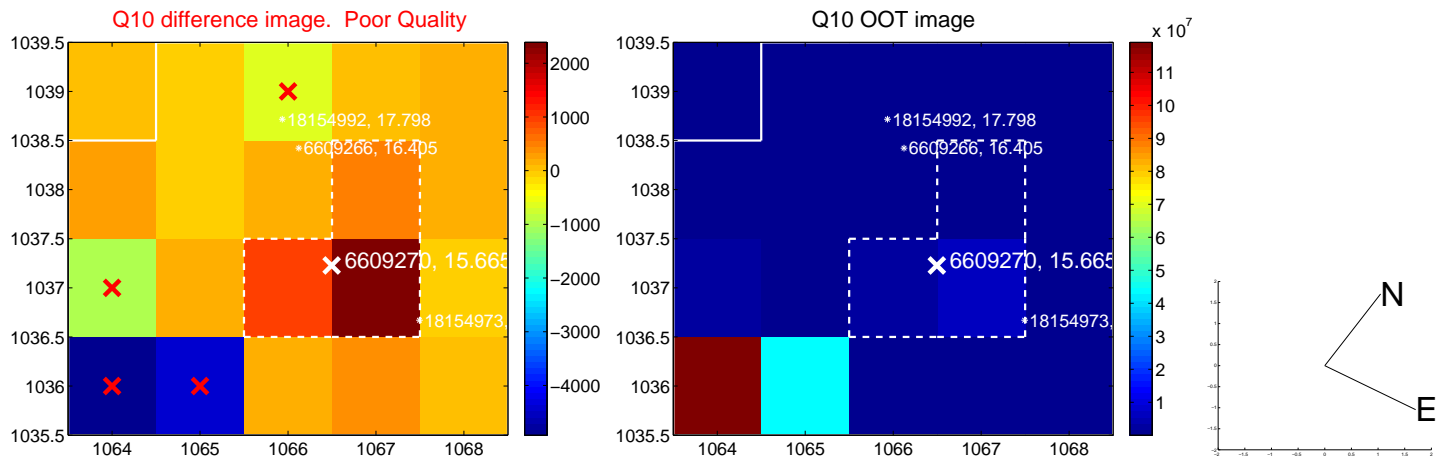
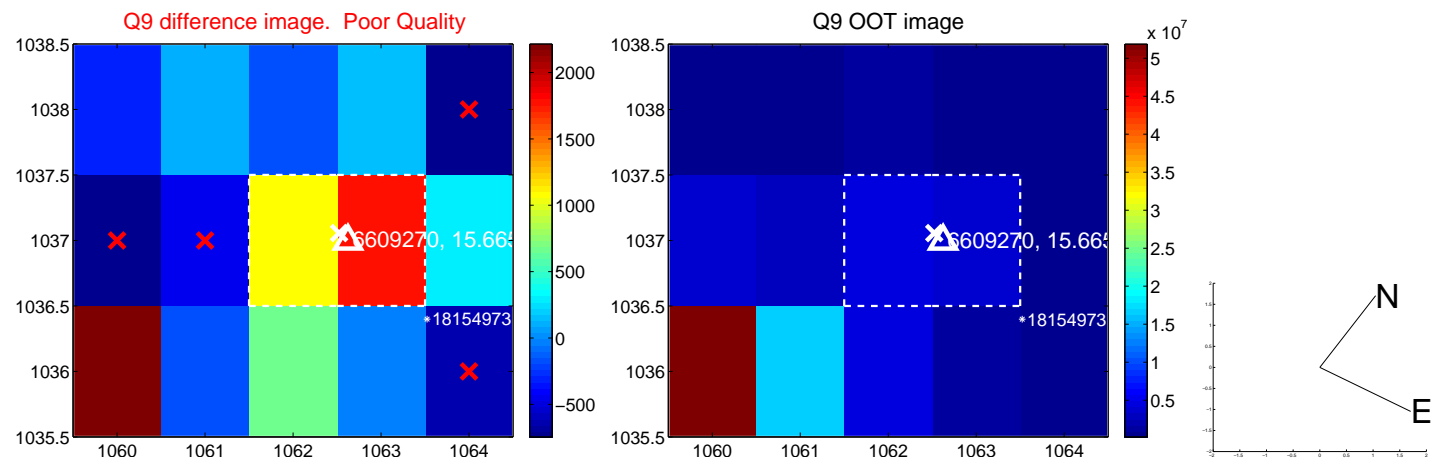
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



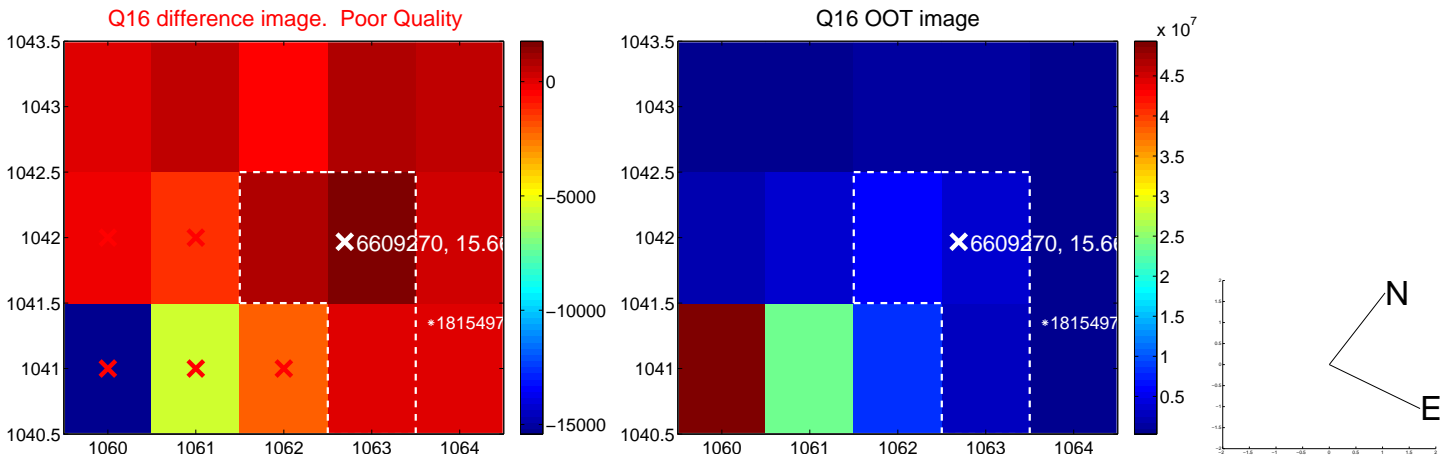
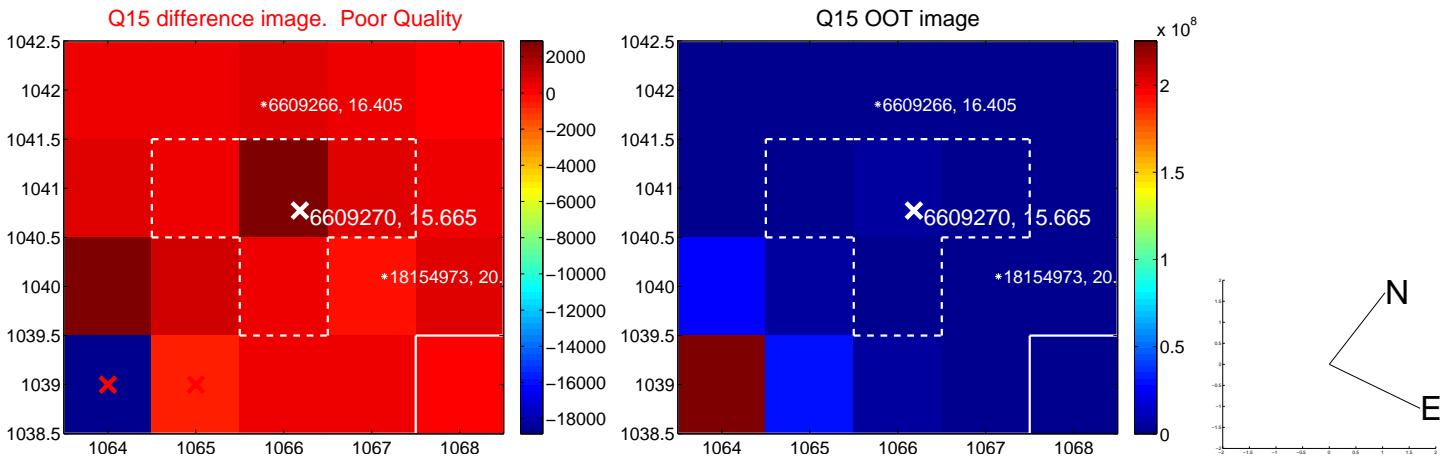
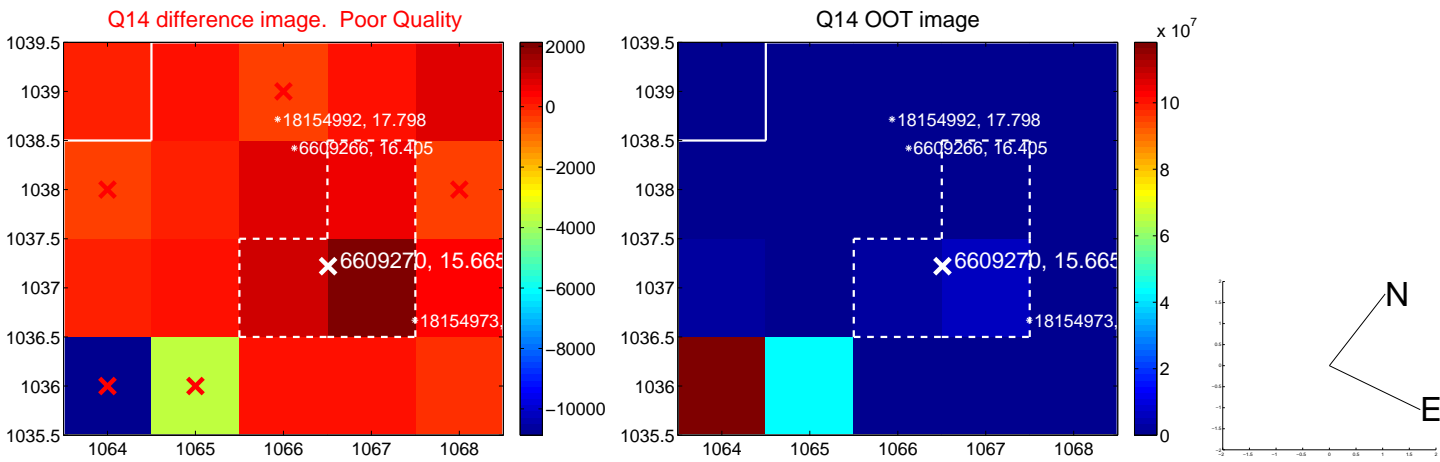
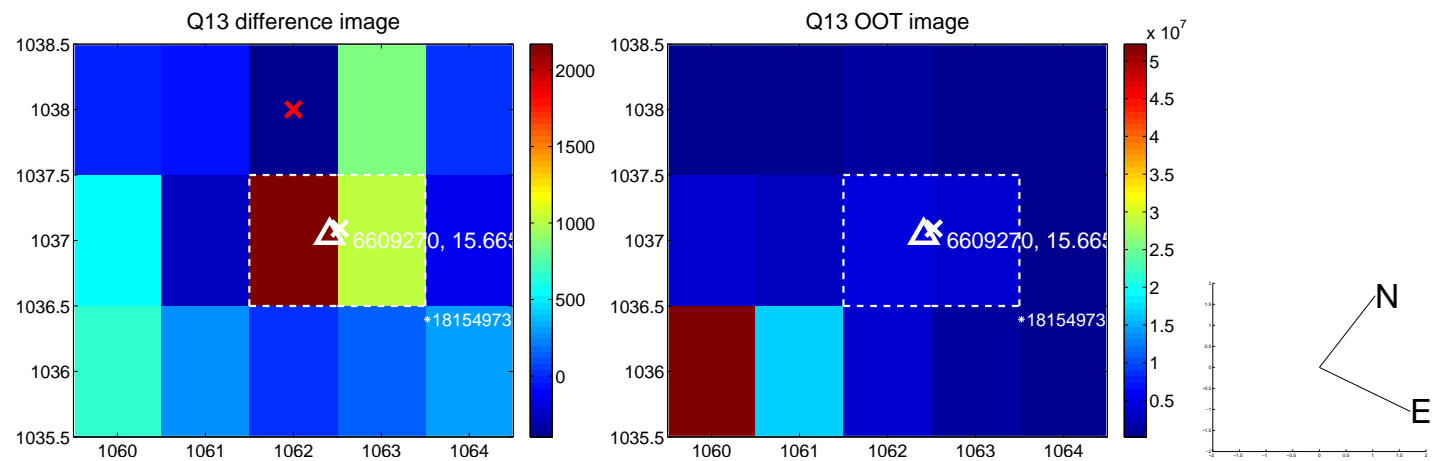
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



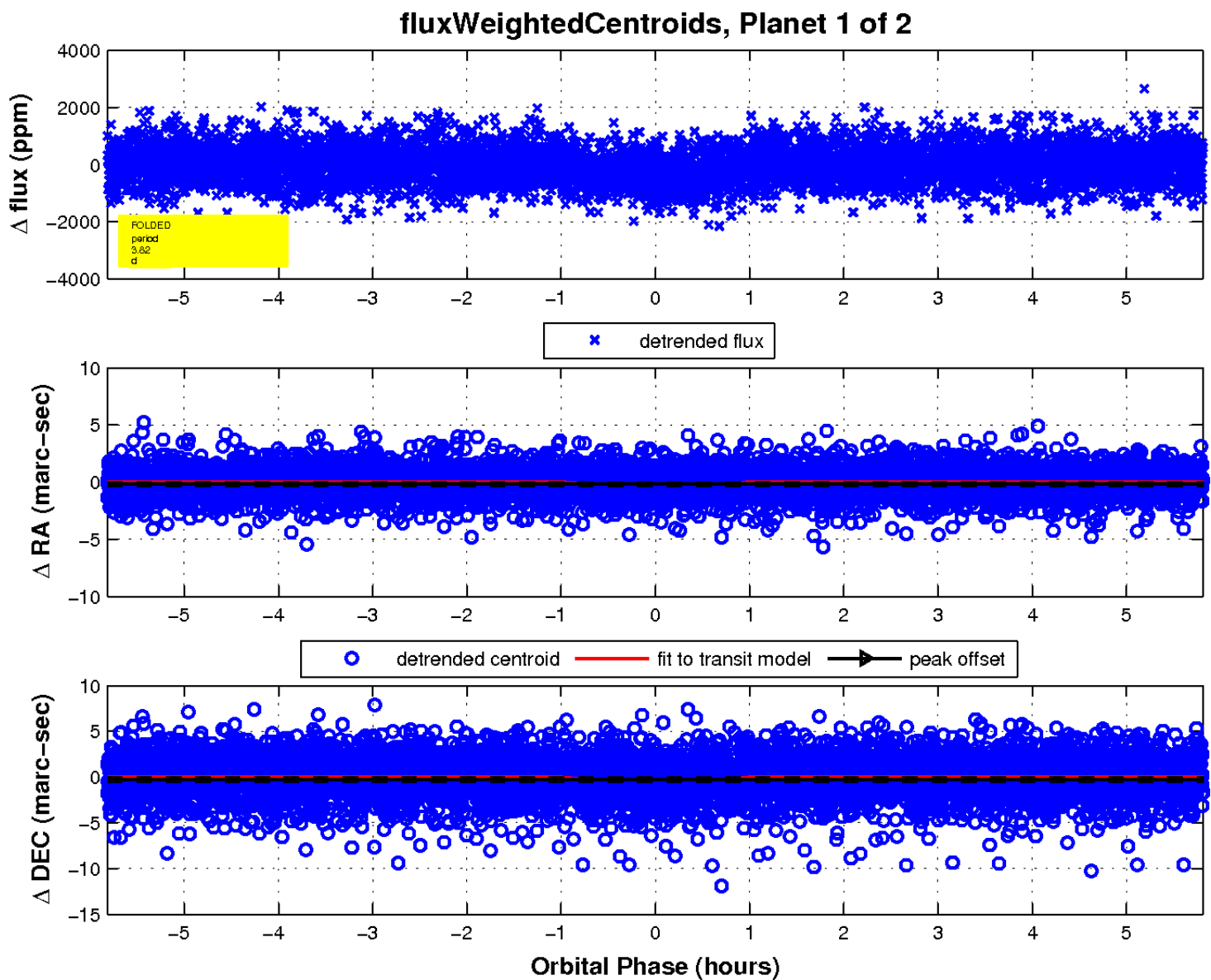
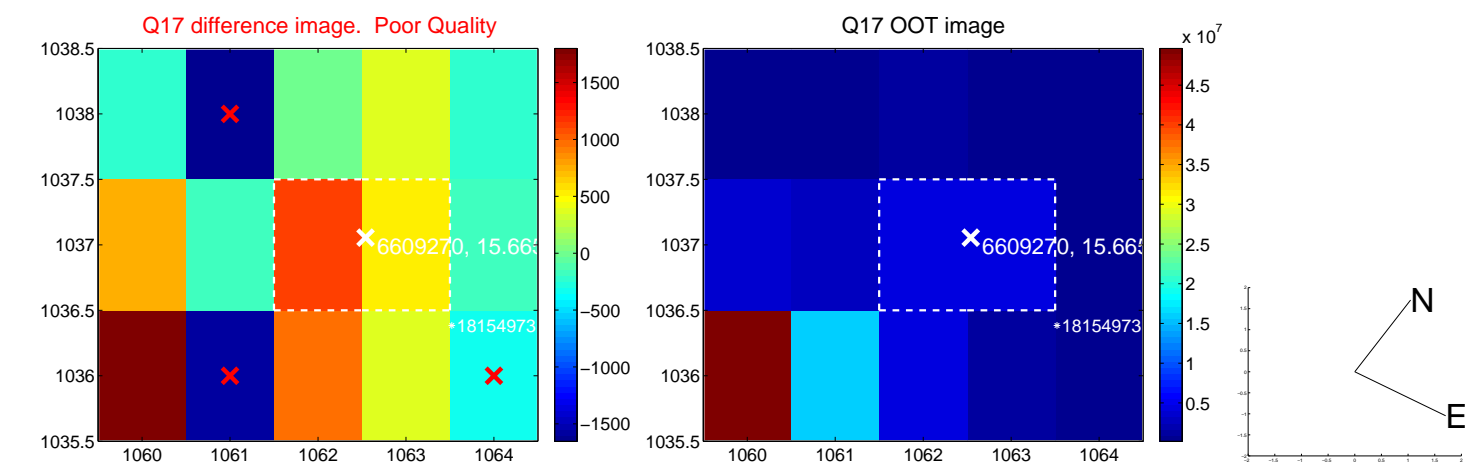
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

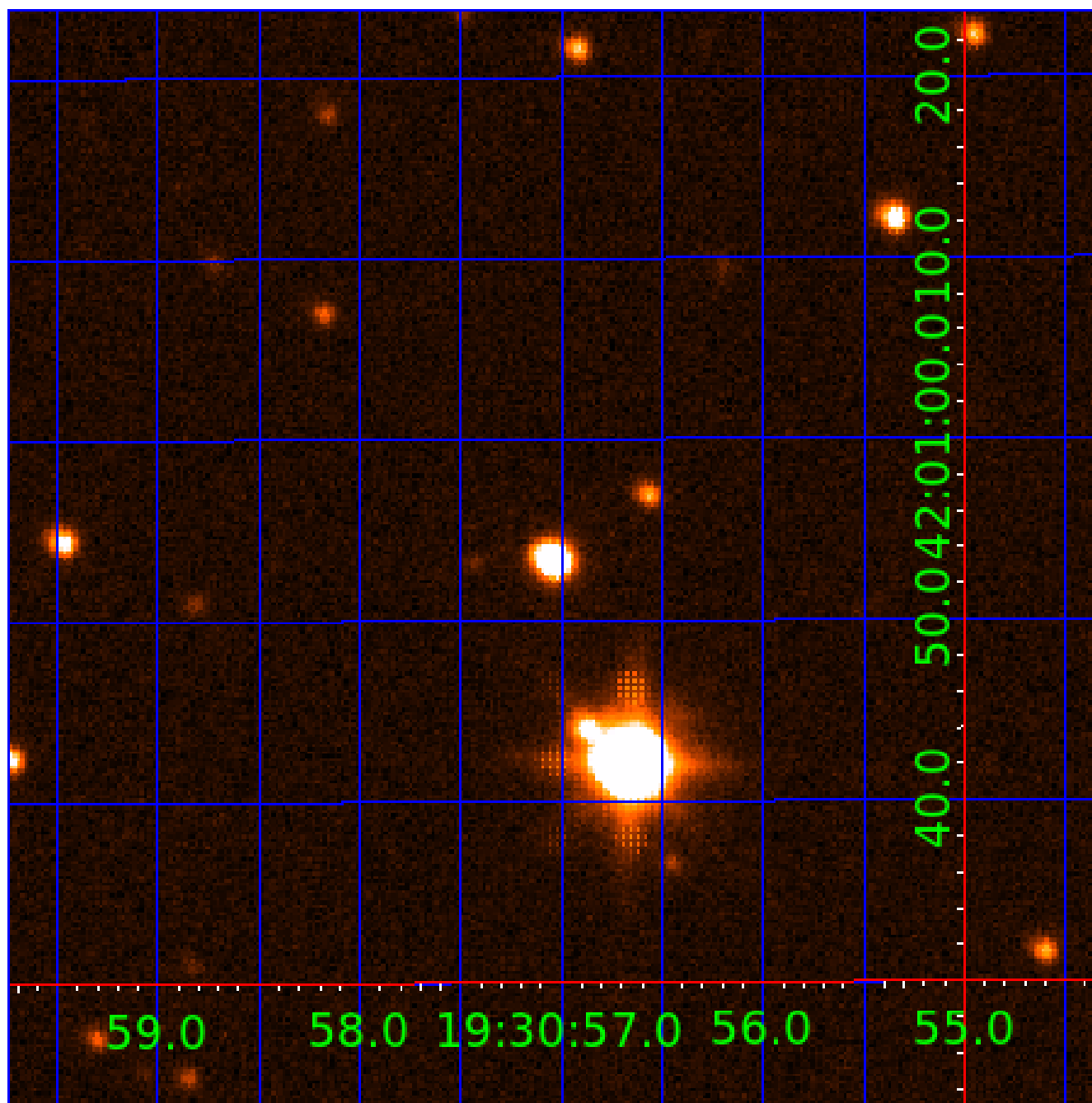


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006609270

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})
006609270-01	OBS	3090.01	3.822220	132.152915	369.3	1.938	14.1	16.2	0.51	3729	0.99	30.87
006609270-02	OBS	3090.02	15.036957	133.646668	412.7	2.397	8.3	9.1	0.51	3729	1.25	4.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006609270-01	OBS	PC	0.61	0	0	0	0	CENT_FEW_DIFFS
006609270-02	OBS	FP	0.02	0	0	1	0	CENT_RESOLVED_OFFSET

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 006609270-02

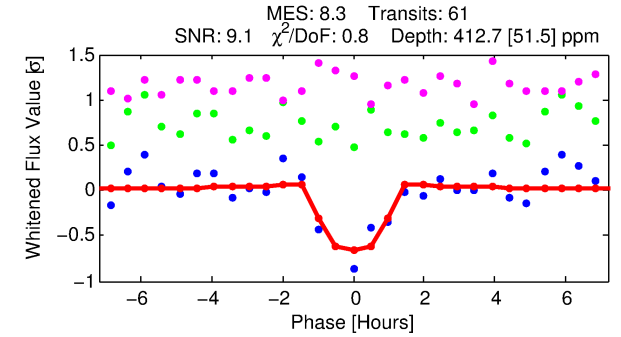
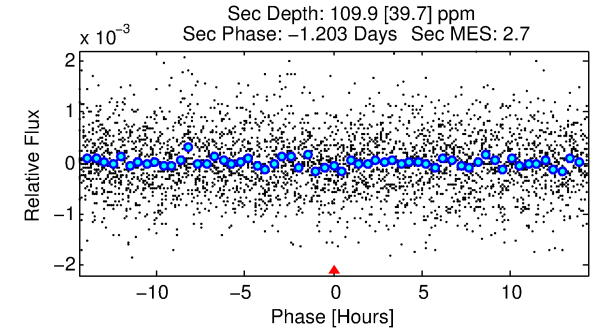
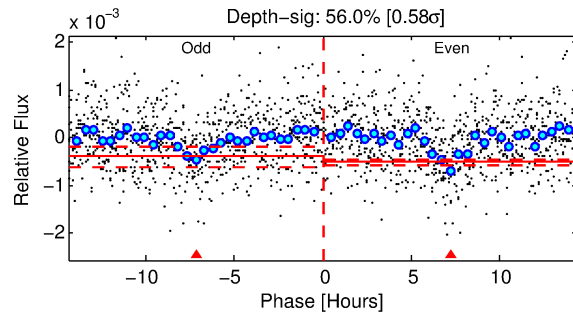
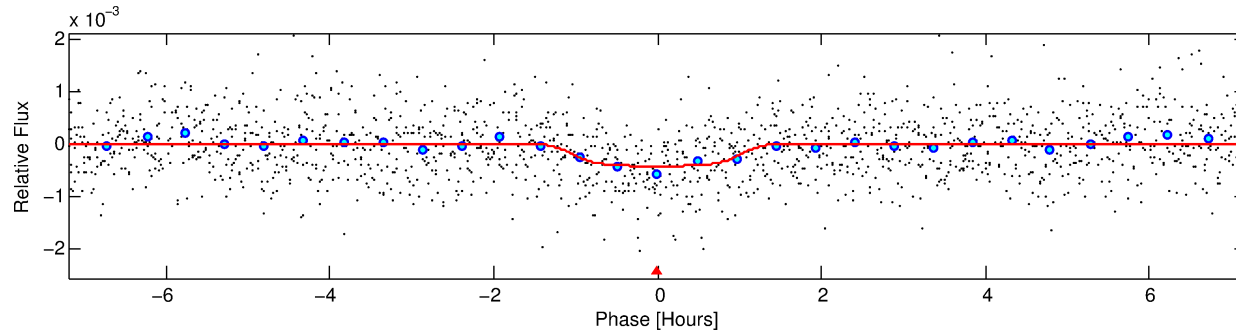
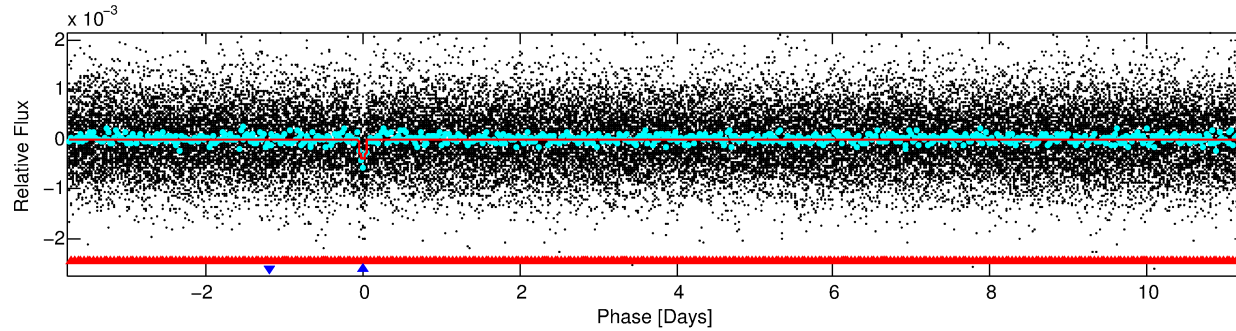
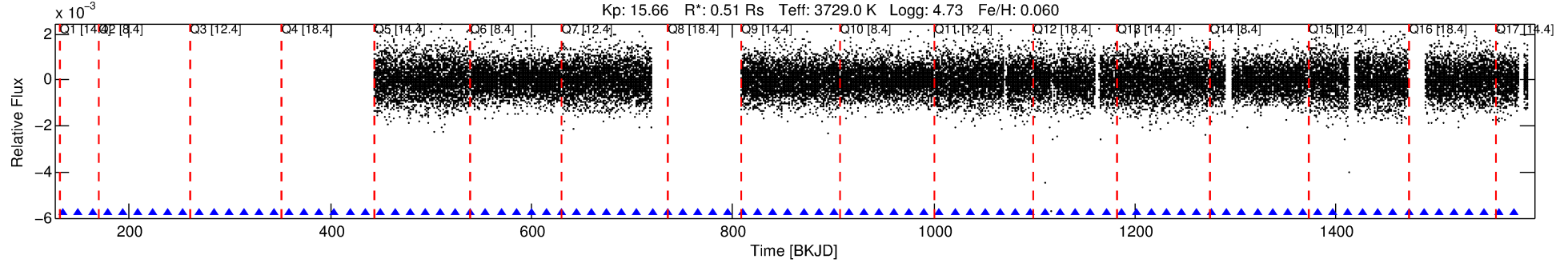
No Significant Match Found

DV One-Page Summary

KIC: 6609270 Candidate: 2 of 2 Period: 15.037 d

KOI: K03090.02 Corr: 0.884

Kp: 15.66 R*: 0.51 Rs Teff: 3729.0 K Logg: 4.73 Fe/H: 0.060



DV Fit Results:

Period = 15.03696 [0.00014] d
Epoch = 133.6467 [0.0088] BKJD
Rp/R* = 0.0224 [0.0110]
a/R* = 22.98 [47.18]
b = 0.90 [0.43]
Seff = 4.97 [0.55]
Teq = 381 [11] K
Rp = 1.25 [0.62] Re
a = 0.0960 [0.0054] AU
Ag = 353.57 [370.00] [0.95σ]
Teffp = 2553 [668] K [3.25σ]

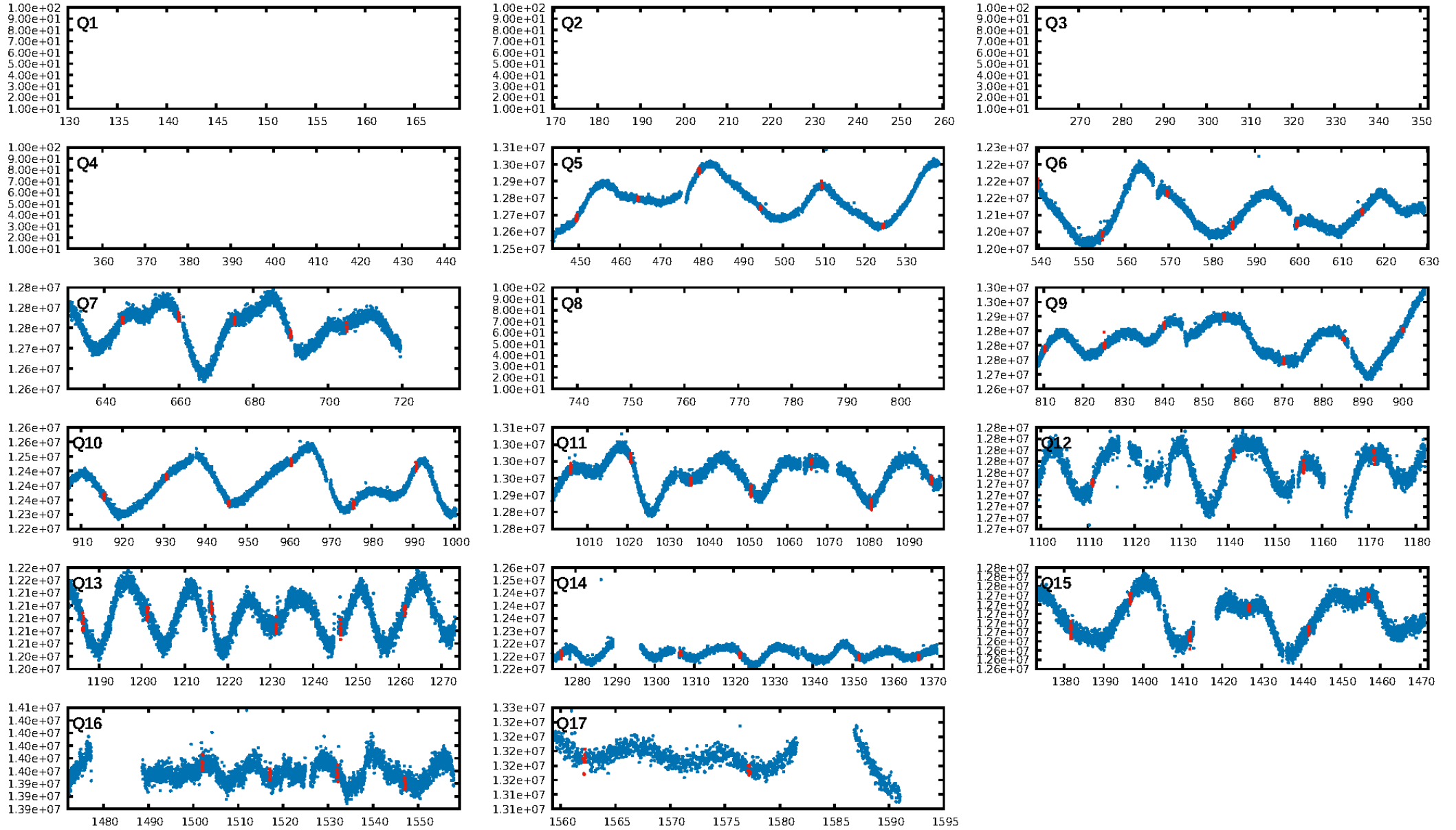
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [87.31σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.55e-16
RollingBand-fgt: 1.00 [59/59]
GhostDiagnostic-chr: -2.915
Centroid-sig: 0.0%
Centroid-so: 2.330 arcsec [3.30σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [12/12]

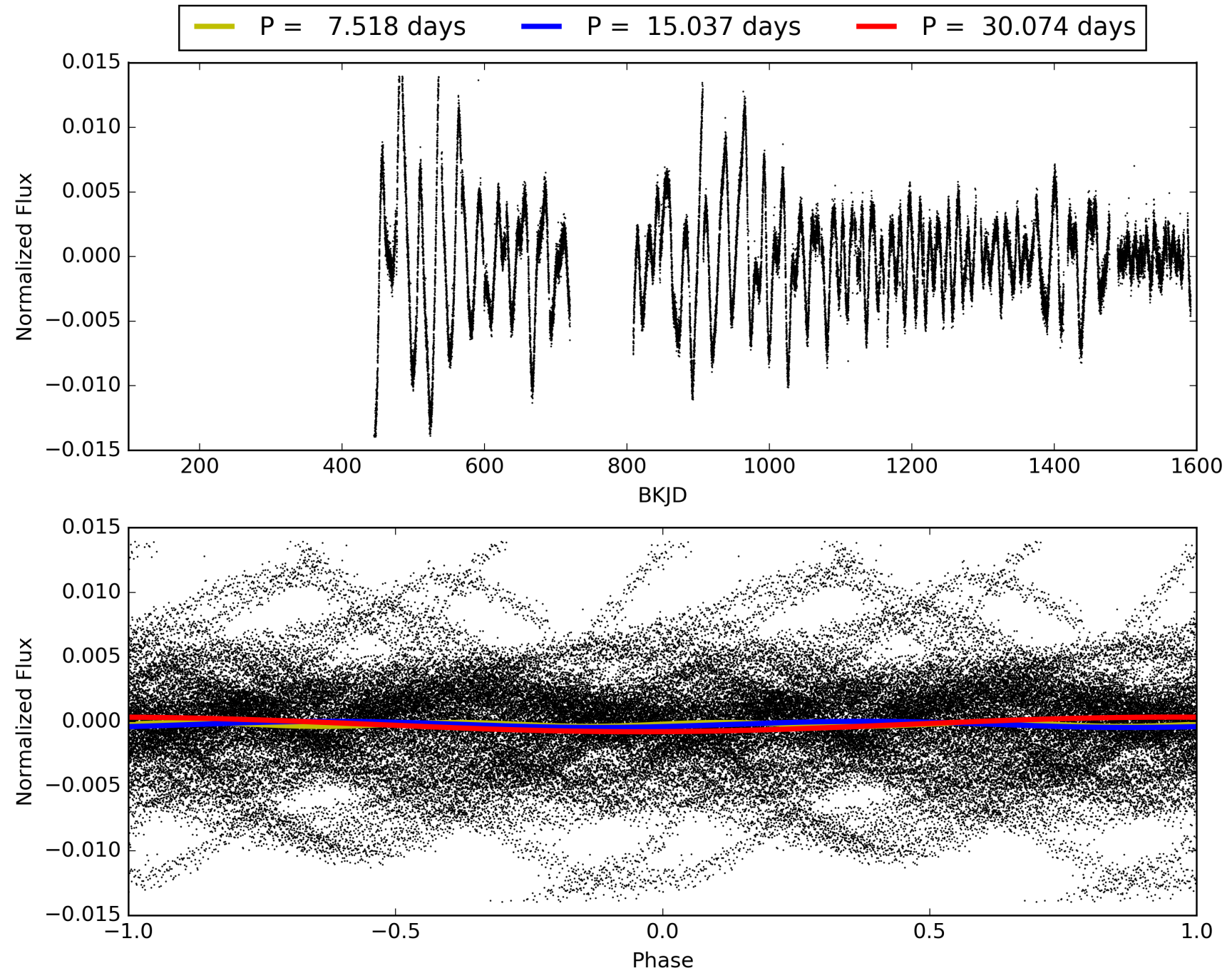
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:52:26 Z

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

TCE 006609270-02, PDC Light Curves

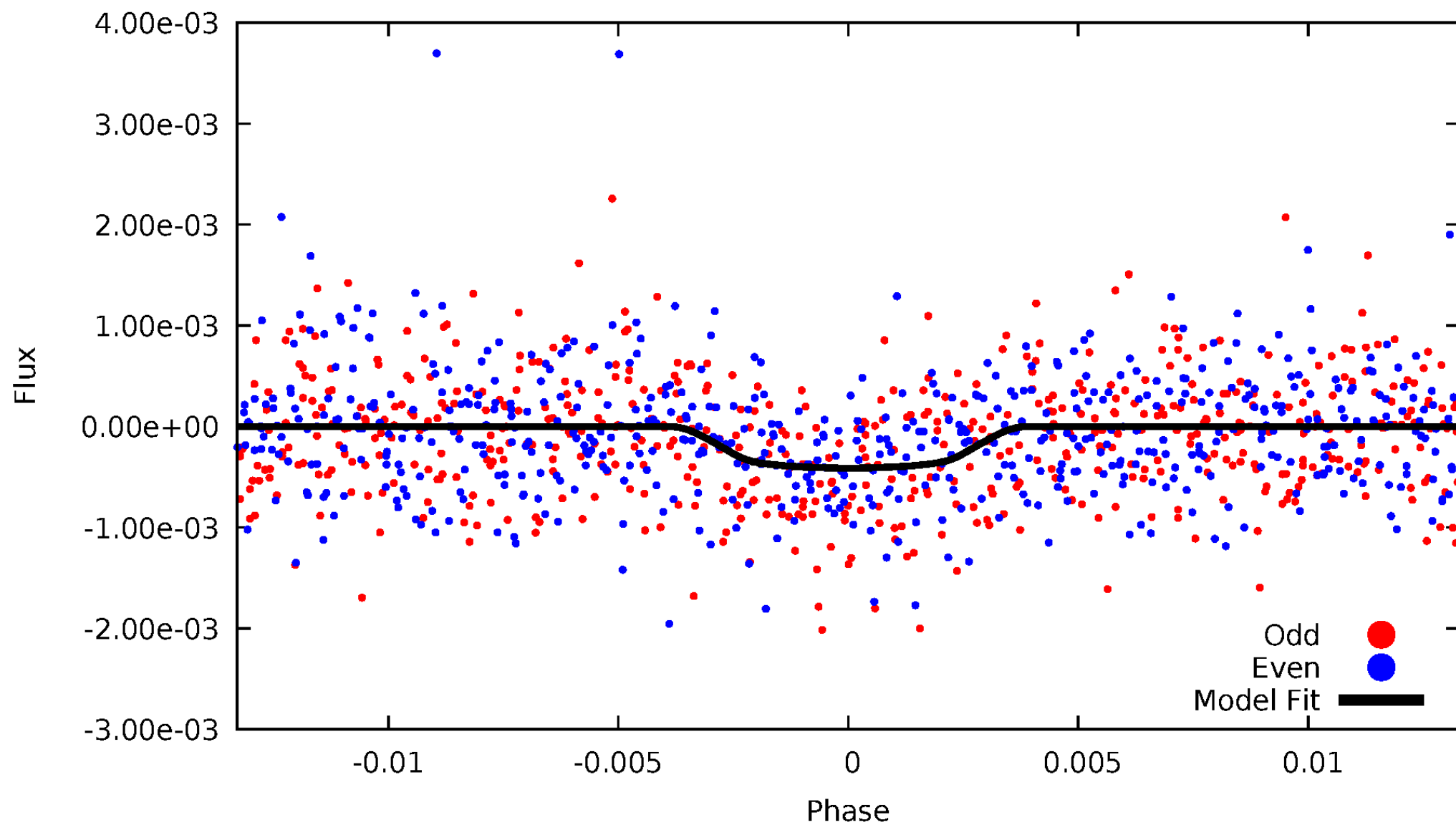


TCE 006609270-02



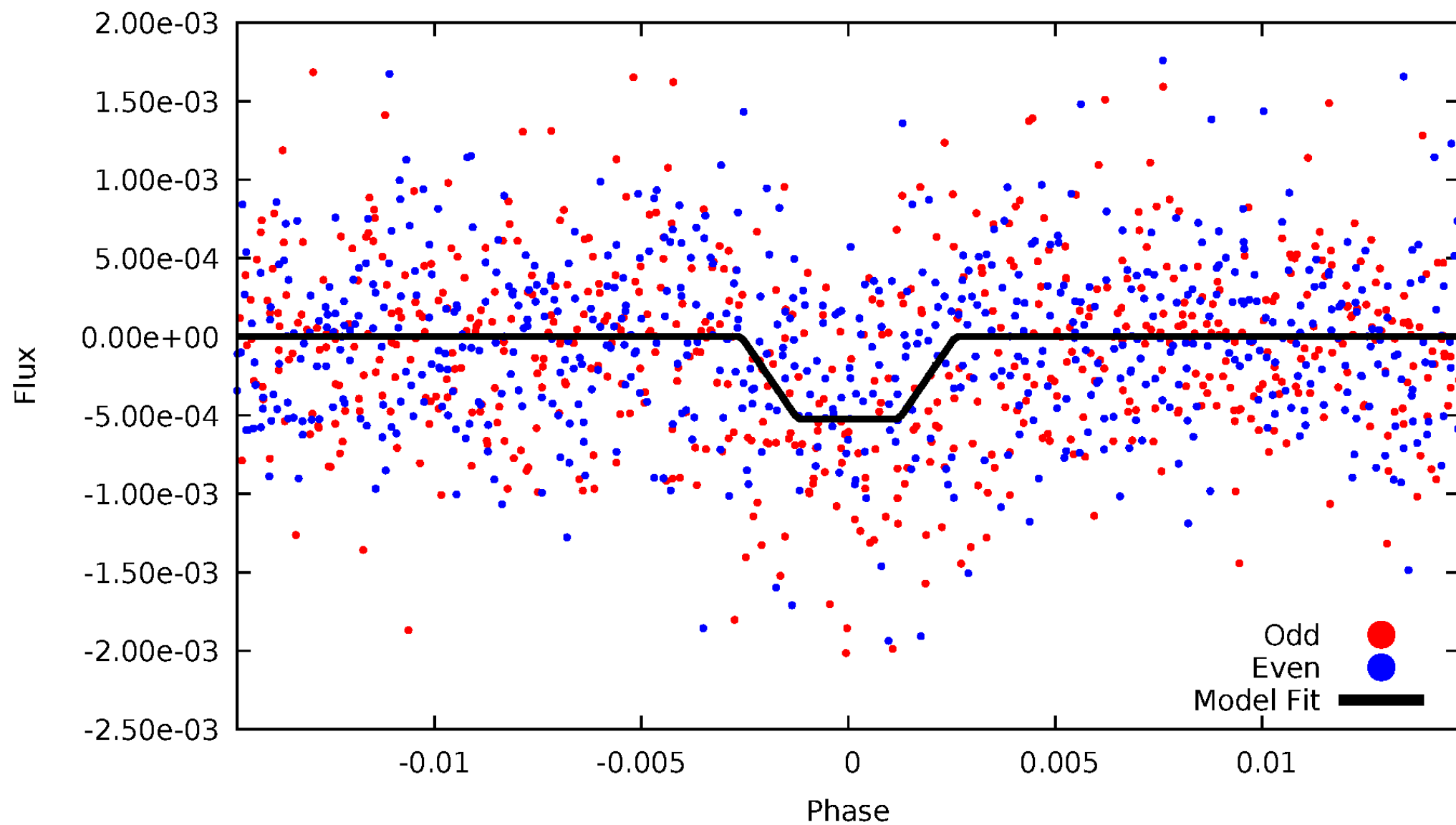
DV Odd/Even

TCE 006609270-02



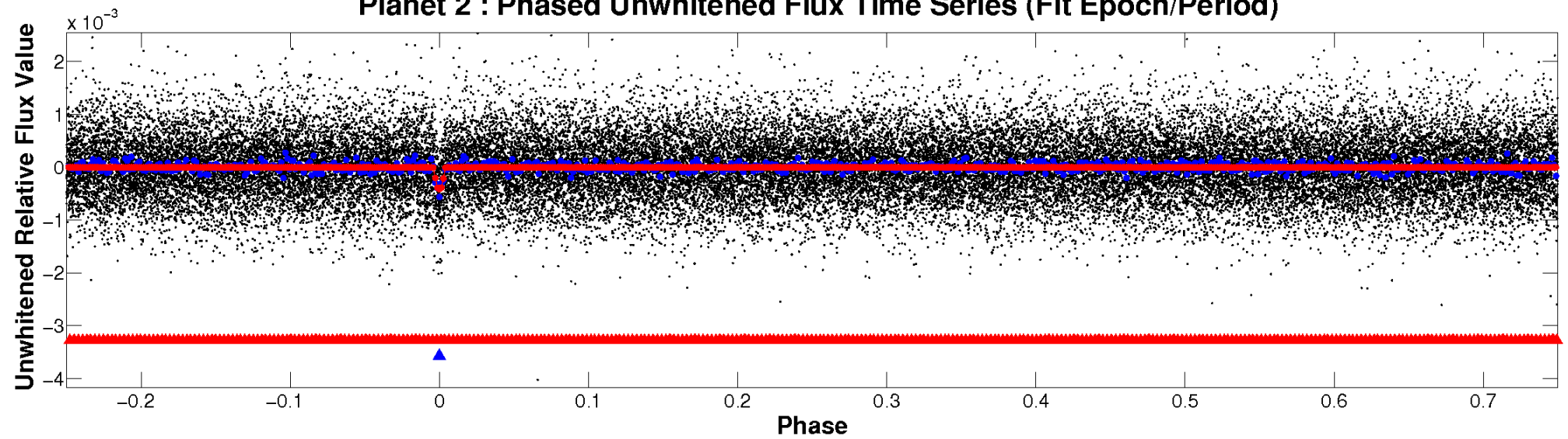
ALT Odd/Even

TCE 006609270-02

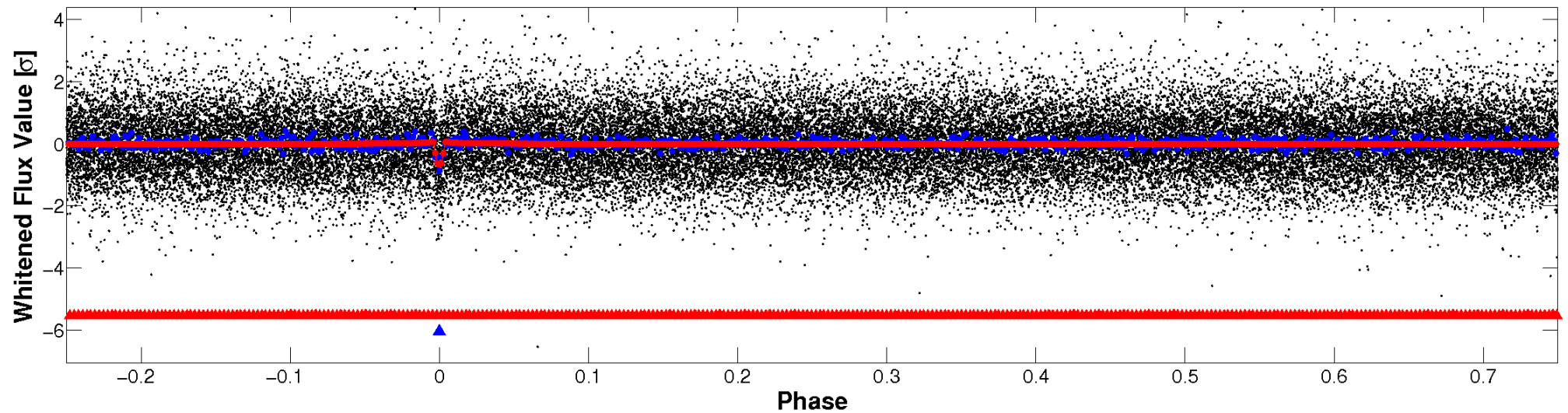


Non-Whitened Vs. Whitened Light Curve

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

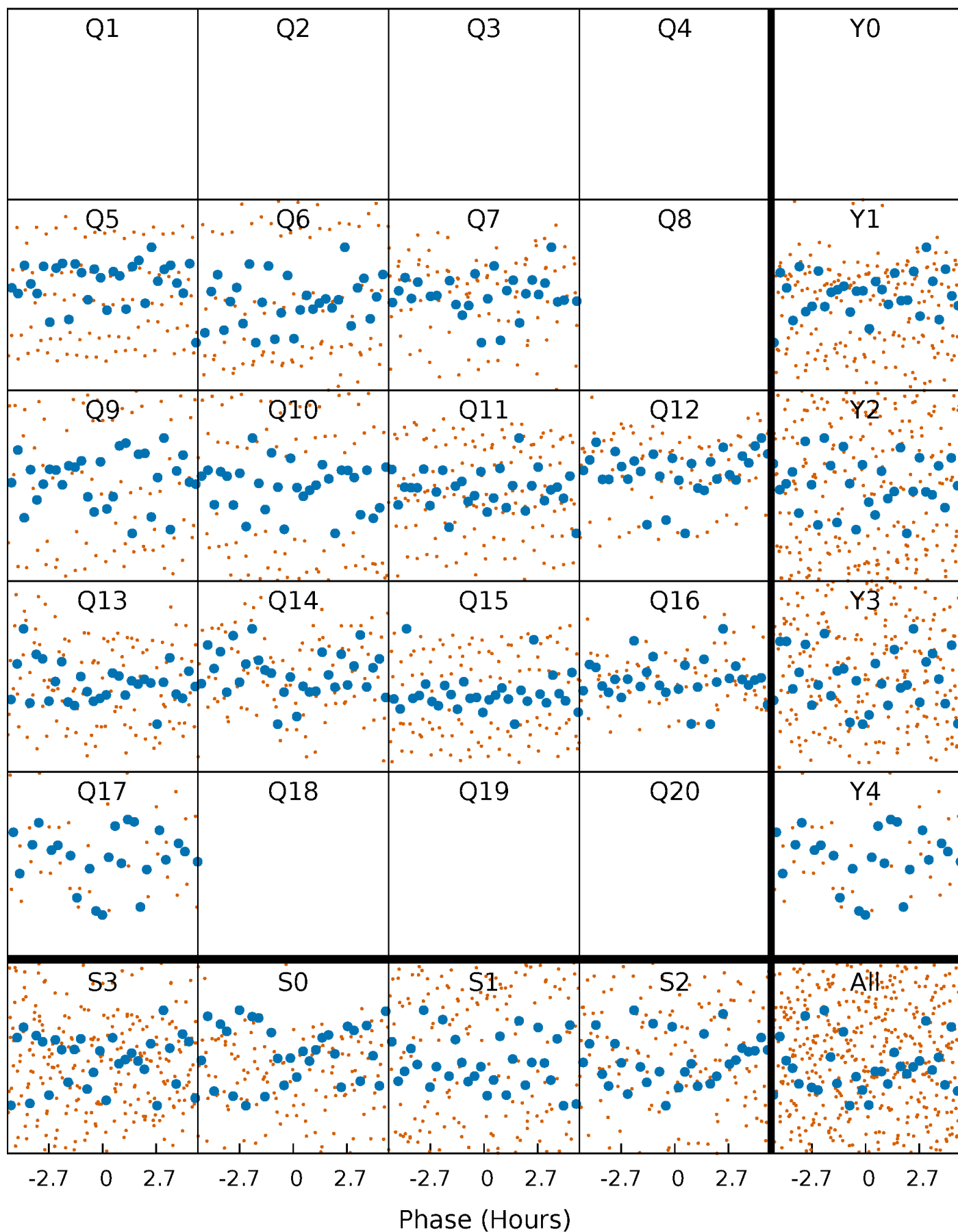


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



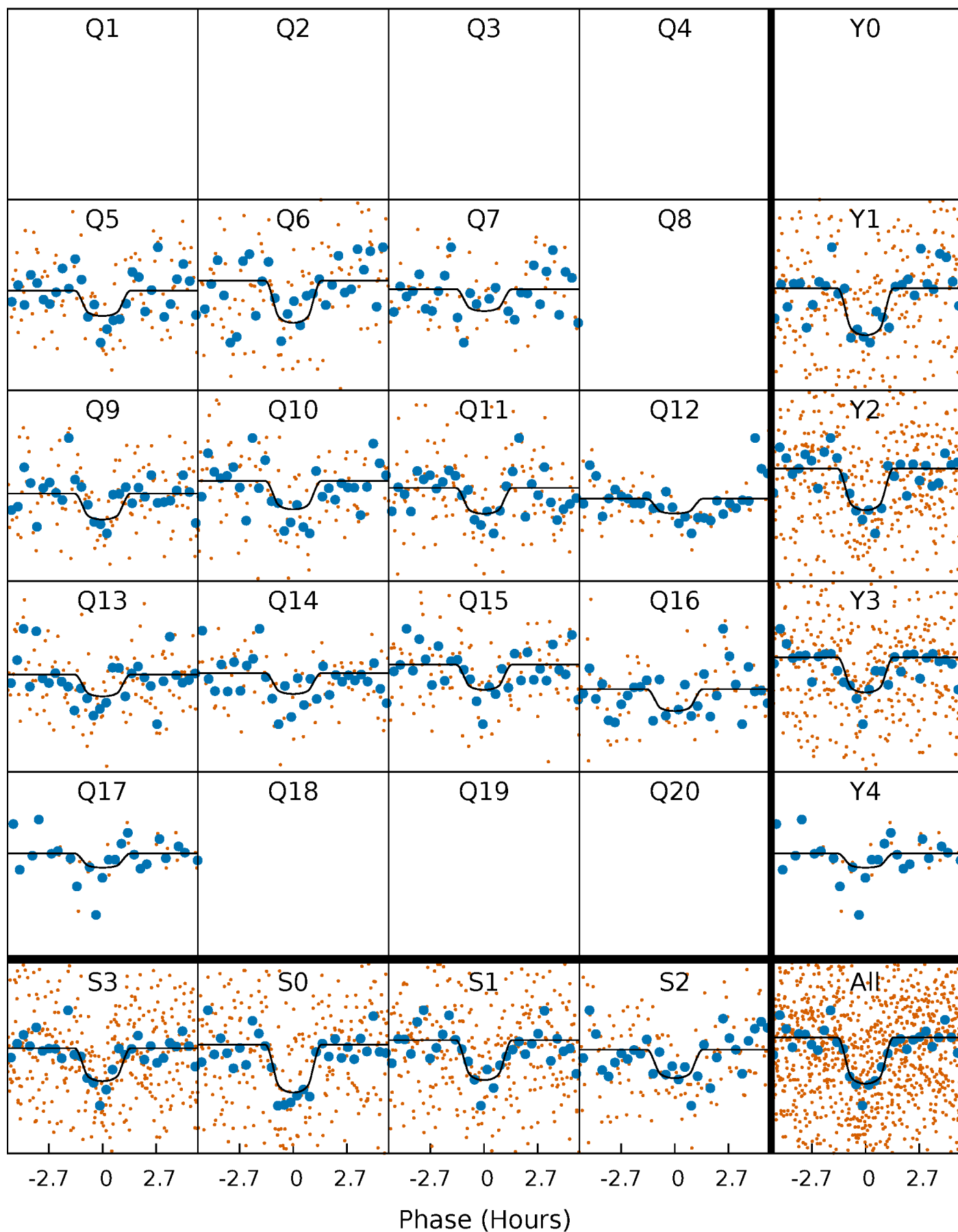
PDC Quarter-Phased Transit Curves

TCE 006609270-02 P= 15.036957 Days $T_0=133.646668$ (BKJD)



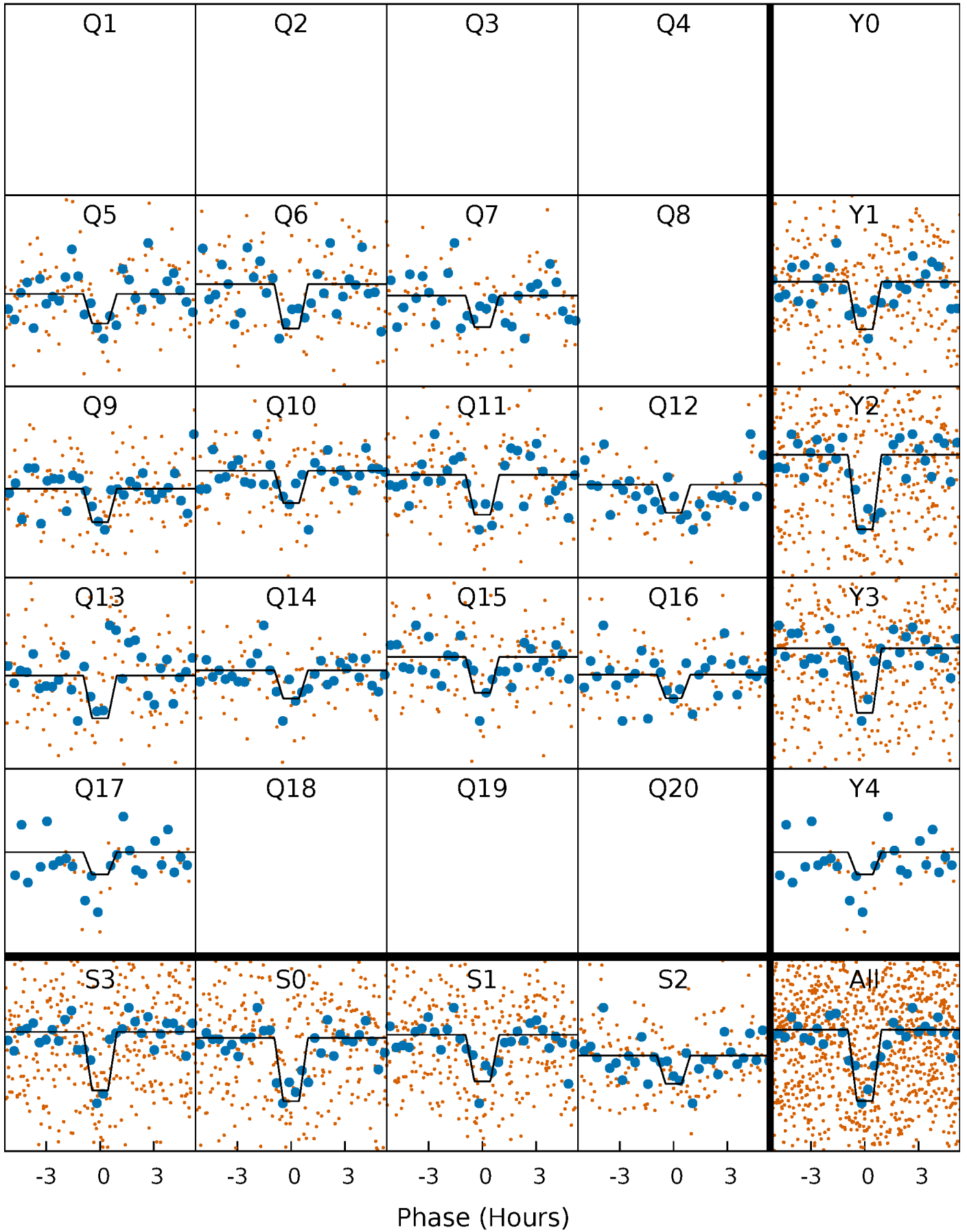
DV Quarter-Phased Transit Curves

TCE 006609270-02 P= 15.036957 Days $T_0=133.646668$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

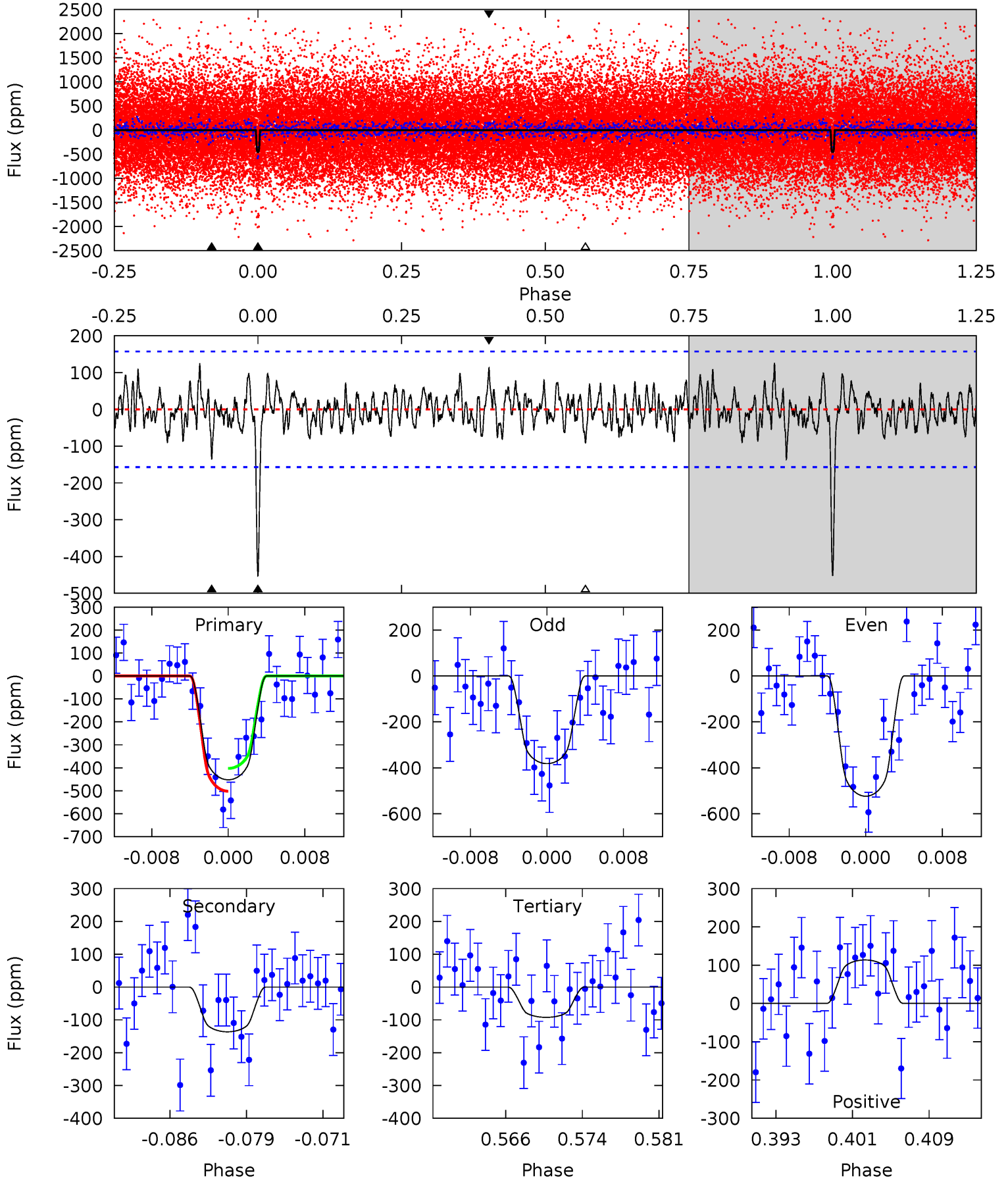
TCE 006609270-02 P= 15.036813 Days $T_0=133.651187$ (BKJD)



DV Model-Shift Uniqueness Test

006609270-02, P = 15.036957 Days, E = 133.646668 Days

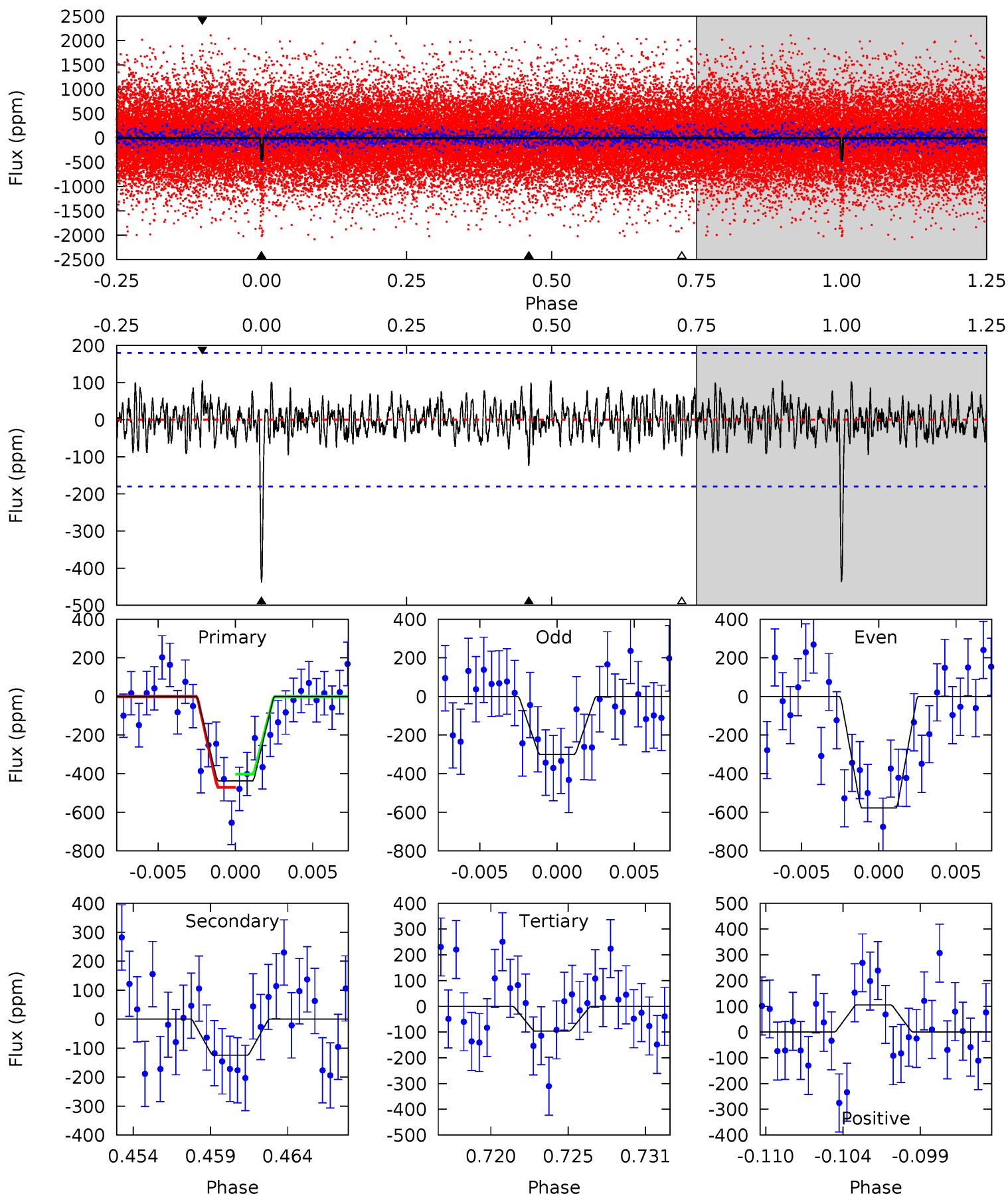
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	4.40	2.98	3.66	5.07	2.66	1.20	11.6	10.9	1.42	0.74	2.29	1.02	0.22	1.61



Alt Model-Shift Uniqueness Test

006609270-02, $P = 15.036813$ Days, $E = 133.651187$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	3.55	2.75	3.02	5.15	2.79	1.01	9.74	9.48	0.80	0.54	4.00	0.97	0.19	0.98



Stellar Parameters For KIC 006609270

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3729^{+75}_{-67}	$4.733^{+0.039}_{-0.021}$	$0.060^{+0.150}_{-0.150}$	$0.514^{+0.029}_{-0.037}$	$0.520^{+0.037}_{-0.030}$	$5.410^{+0.894}_{-0.570}$
	+2%/-2%	+1%/-0%	+250%/-250%	+6%/-7%	+7%/-6%	+17%/-11%
Source	SPE70	PHO2	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 006609270-02 / KOI 3090.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-136 ± 31	$1.24^{+0.59}_{-0.59}$	530^{+12}_{-12}	3059^{+690}_{-329}	461^{+1192}_{-266}
Alt.	-124 ± 35	$1.29^{+0.61}_{-0.58}$	531^{+12}_{-12}	2979^{+622}_{-327}	371^{+942}_{-214}

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

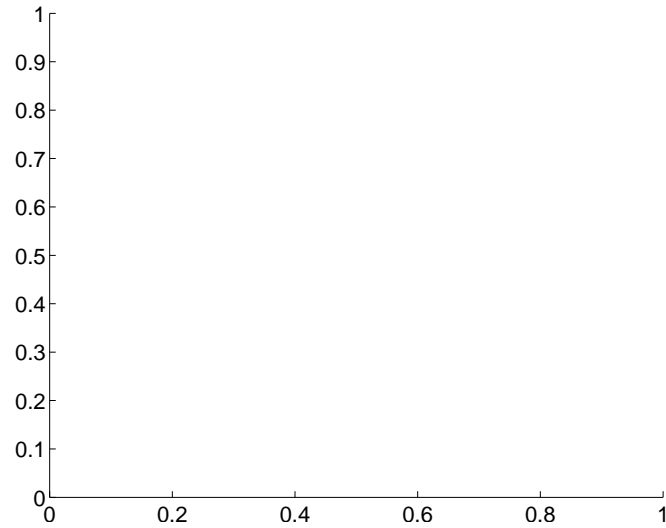
Supplemental centroid analysis for 006609270-02. Kepler magnitude: 15.66. Transit SNR 9.13

There are 0 quarters with good PRF difference image offsets

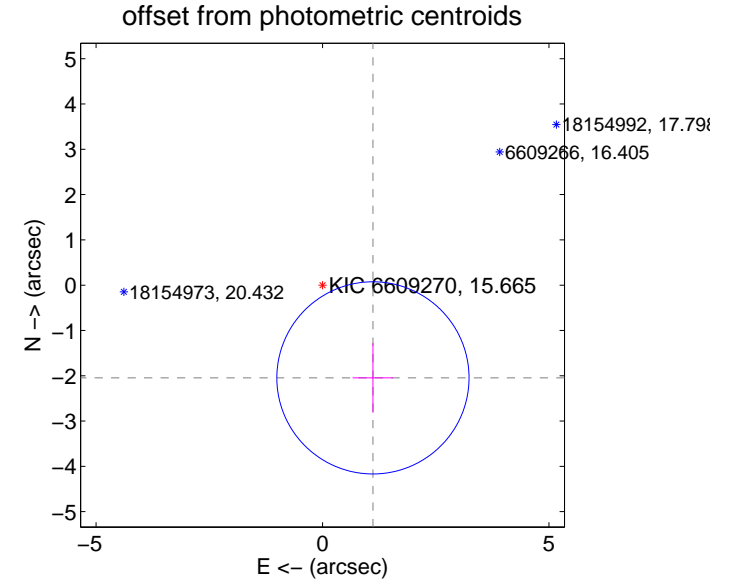
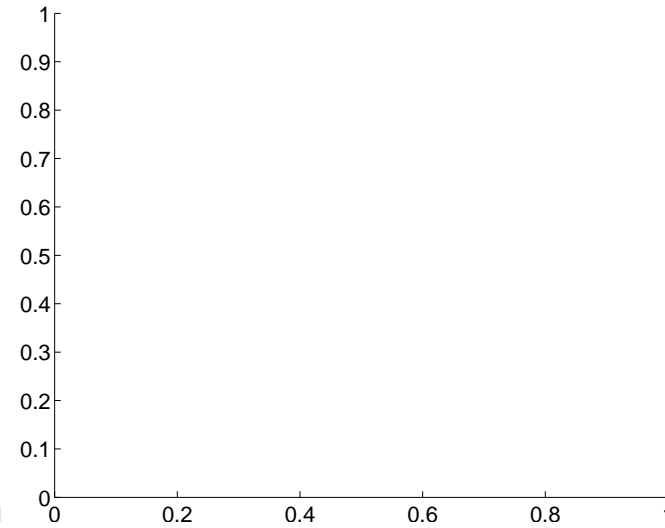
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	2.33 ± 0.71	3.30	-1.11 ± 0.45	-2.05 ± 0.77

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC

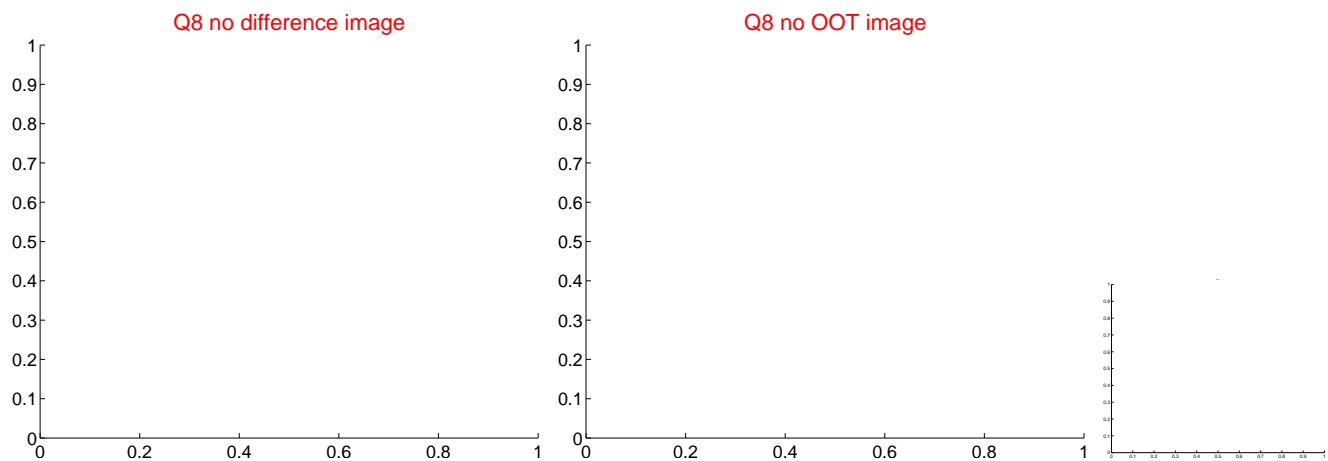
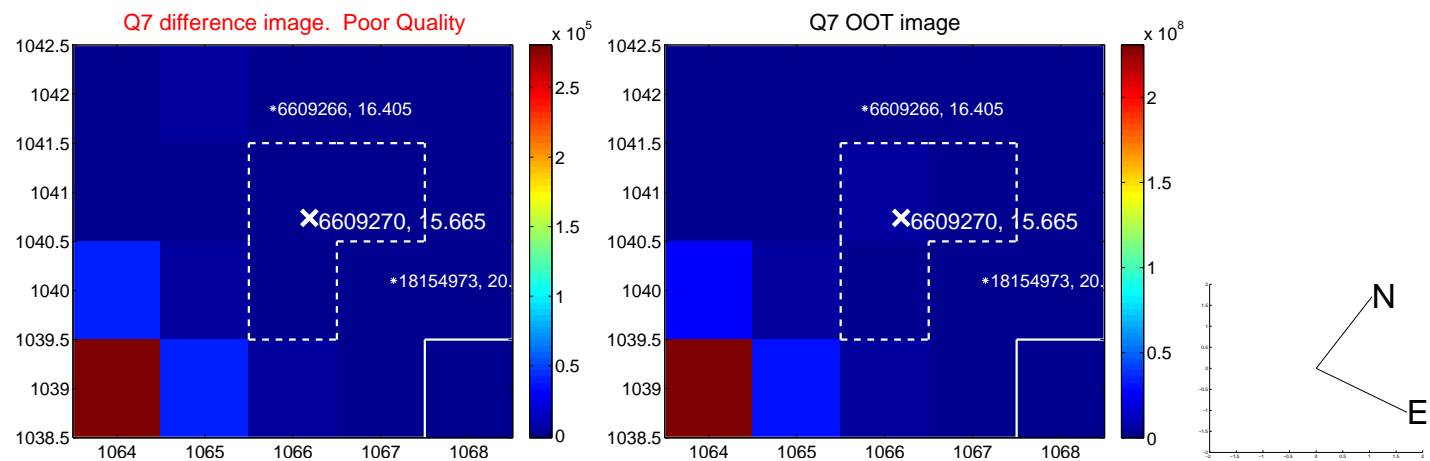
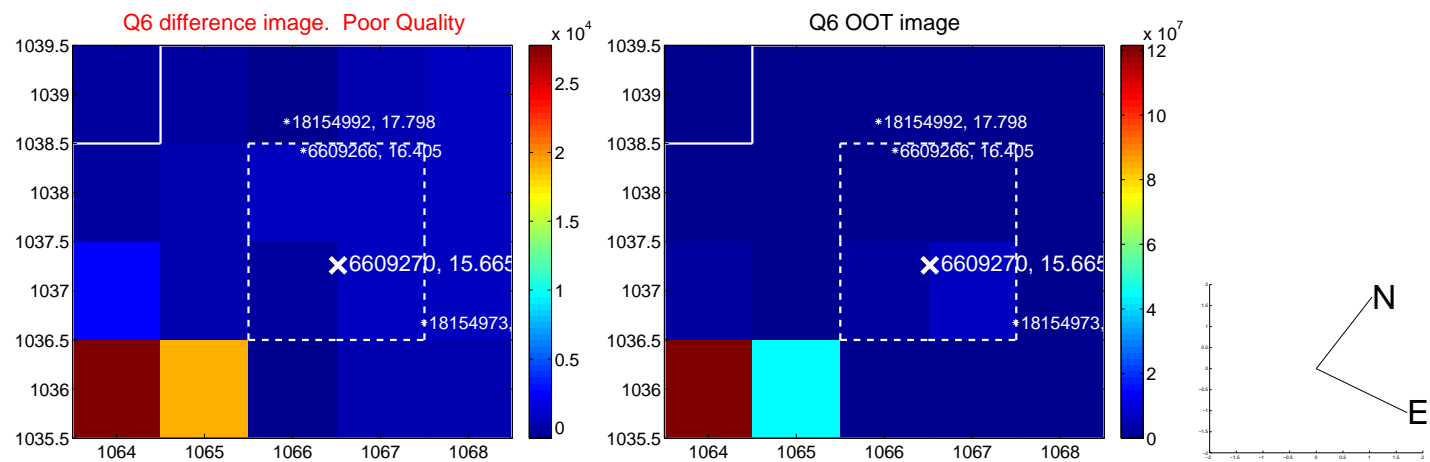
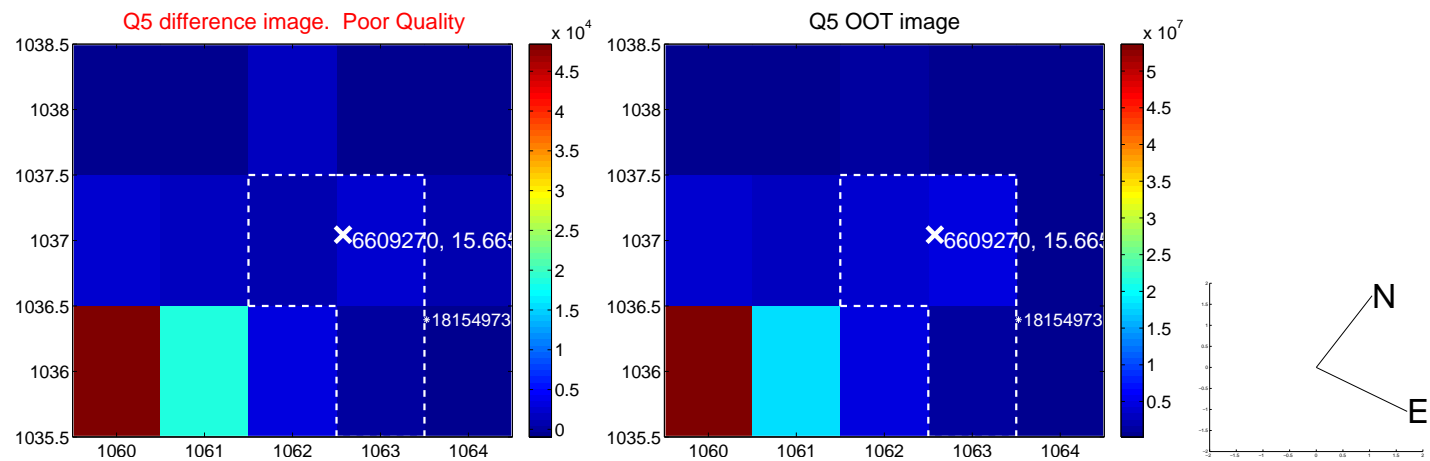


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

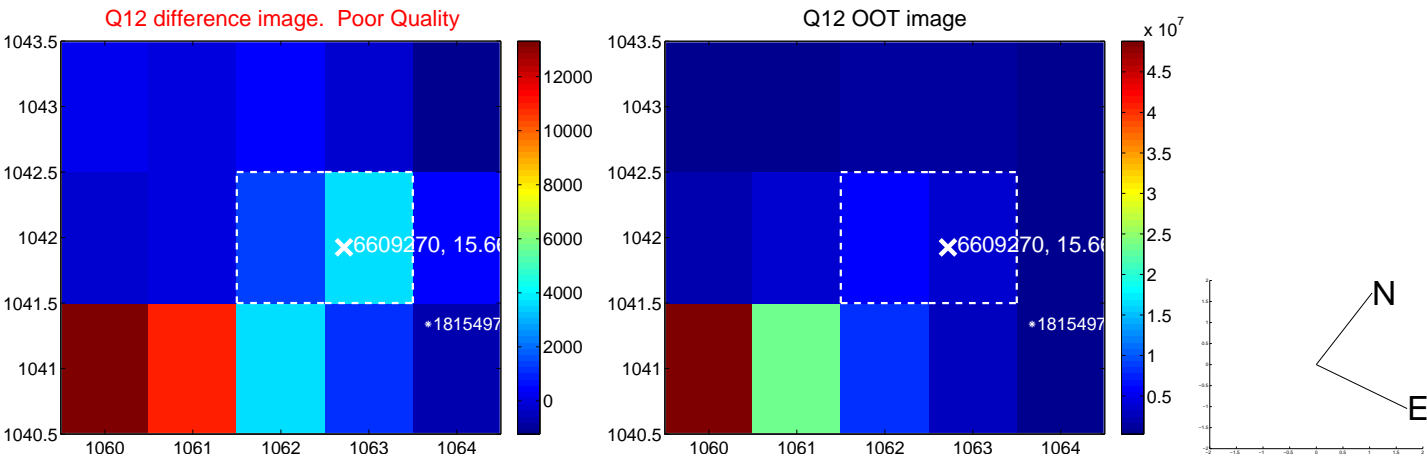
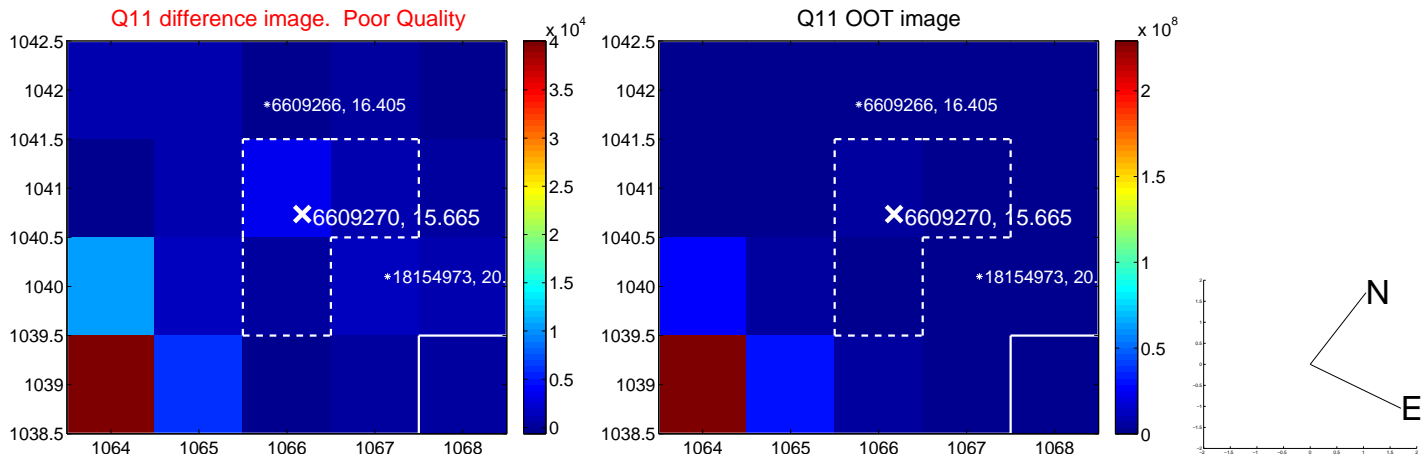
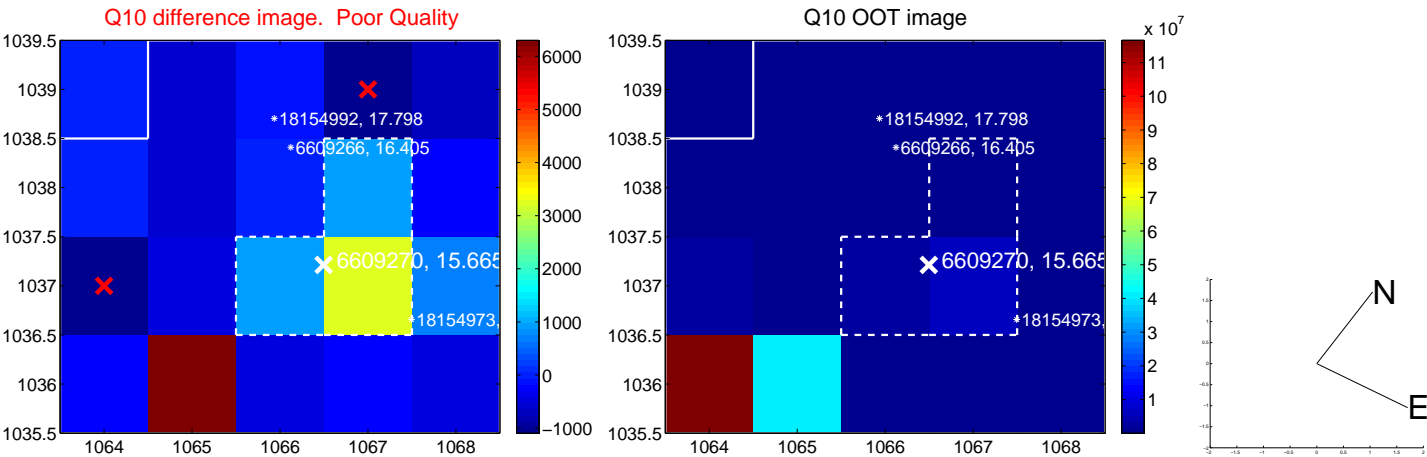
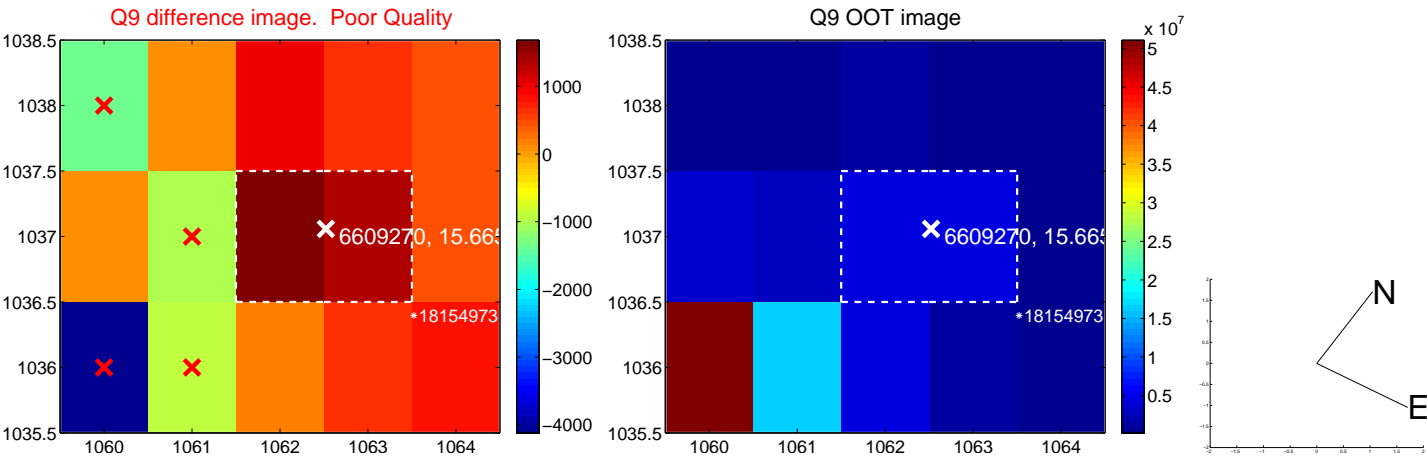
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



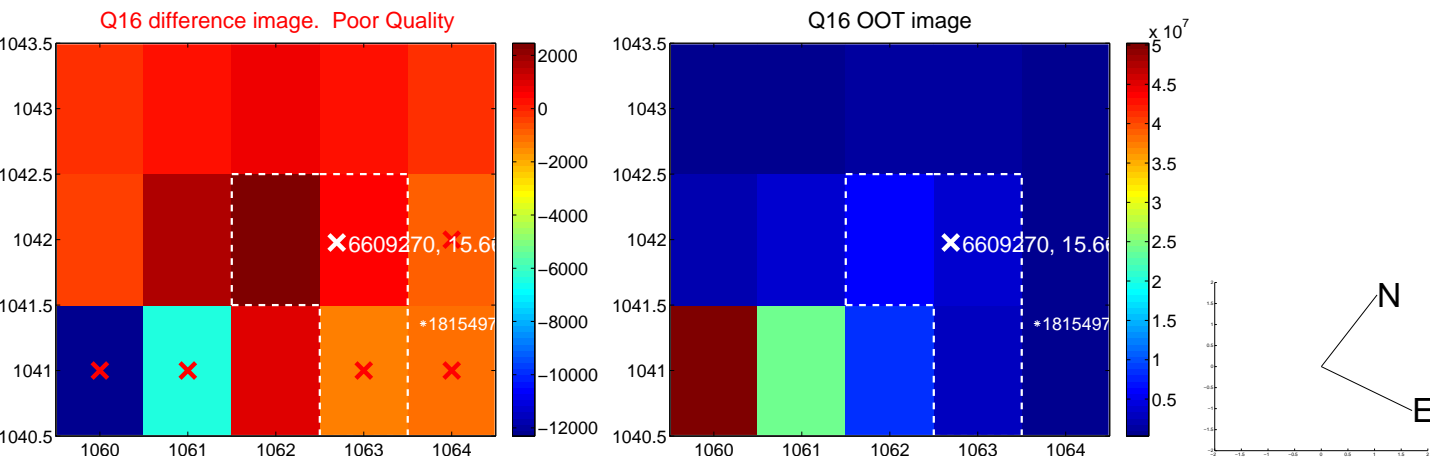
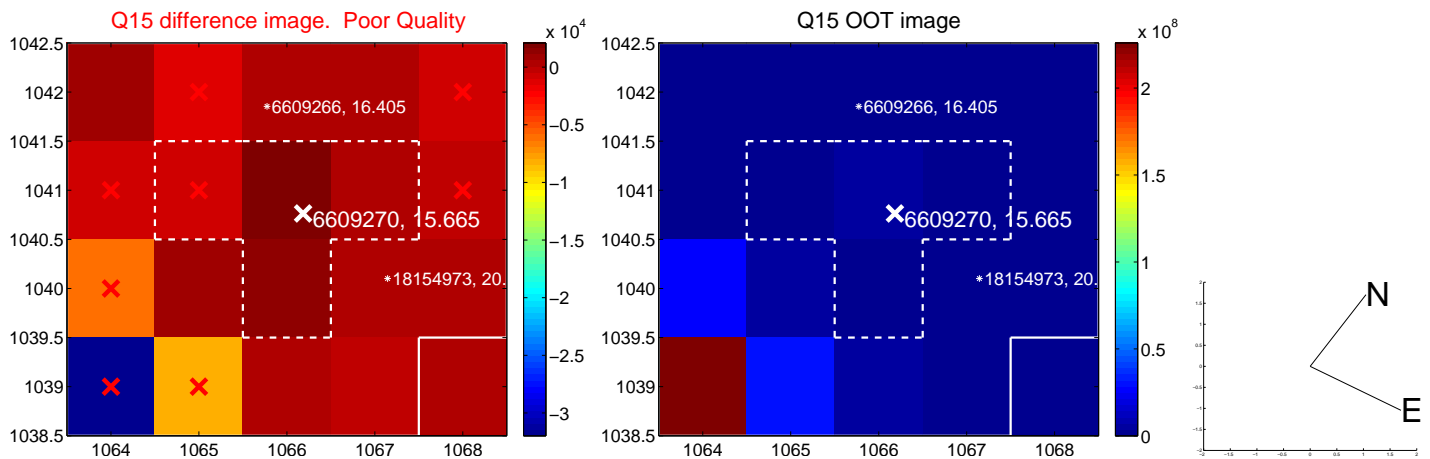
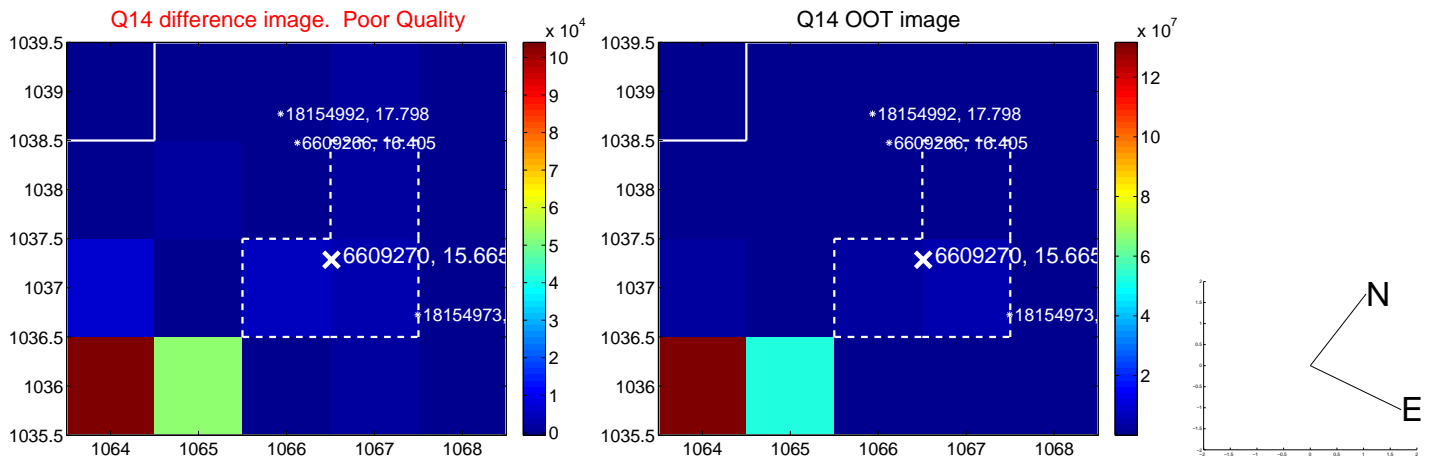
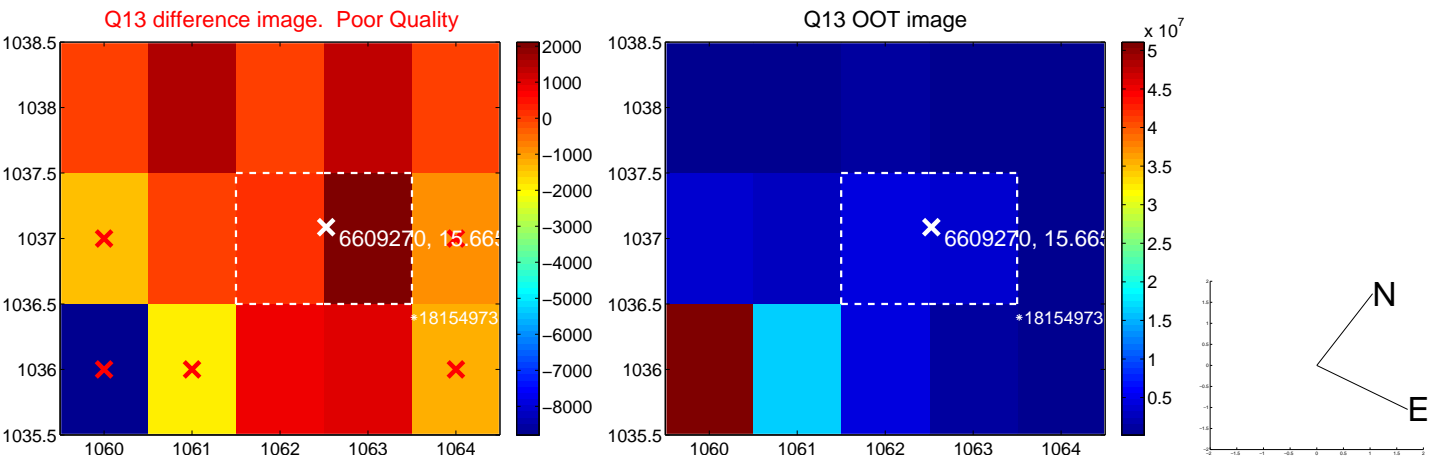
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



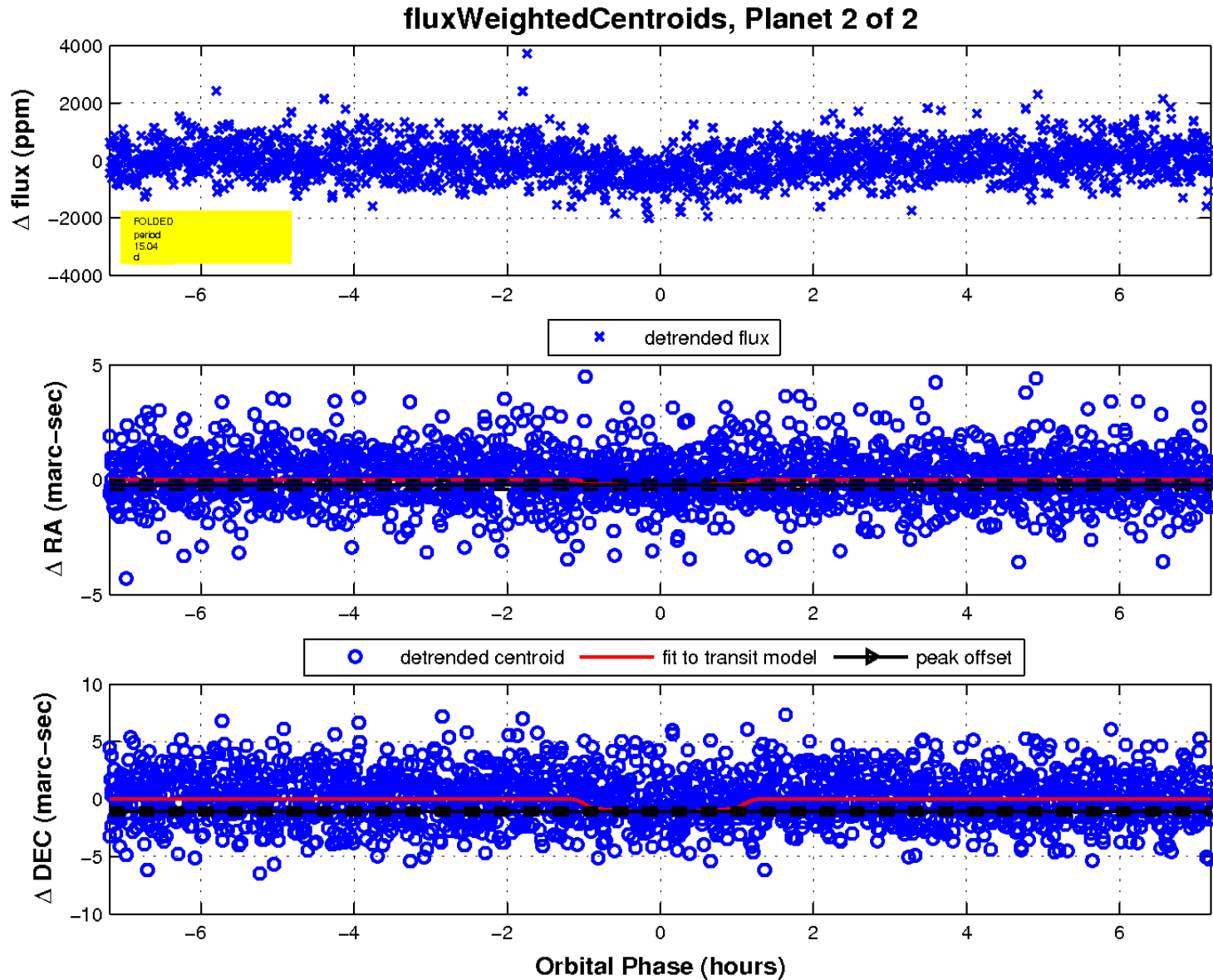
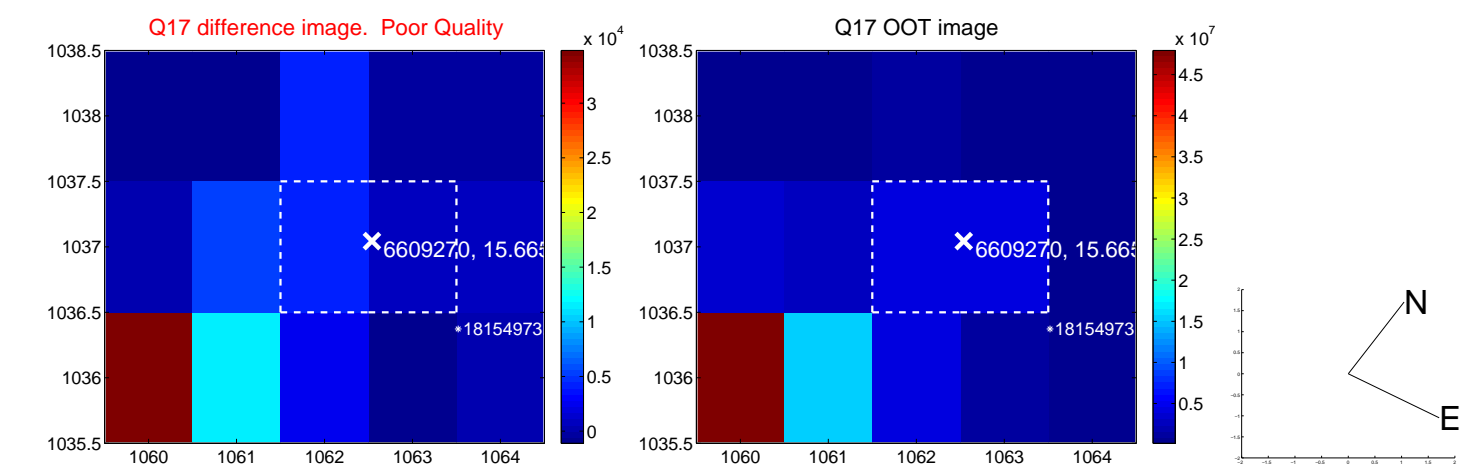
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

