

KIC 006071684

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})
006071684-01	OBS	No	0.987436	131.895323	235.7	0.724	11.3	2.9	1.68	6529	3.87	10664.92
006071684-02	OBS	No	0.812281	131.974907	314.3	9.747	9.2	14.5	1.68	6529	3.95	13836.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006071684-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006071684-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

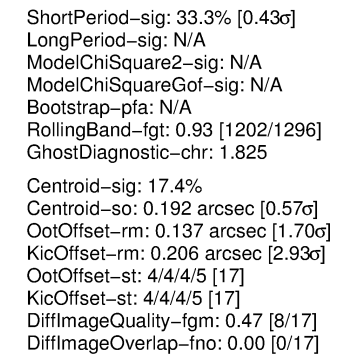
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

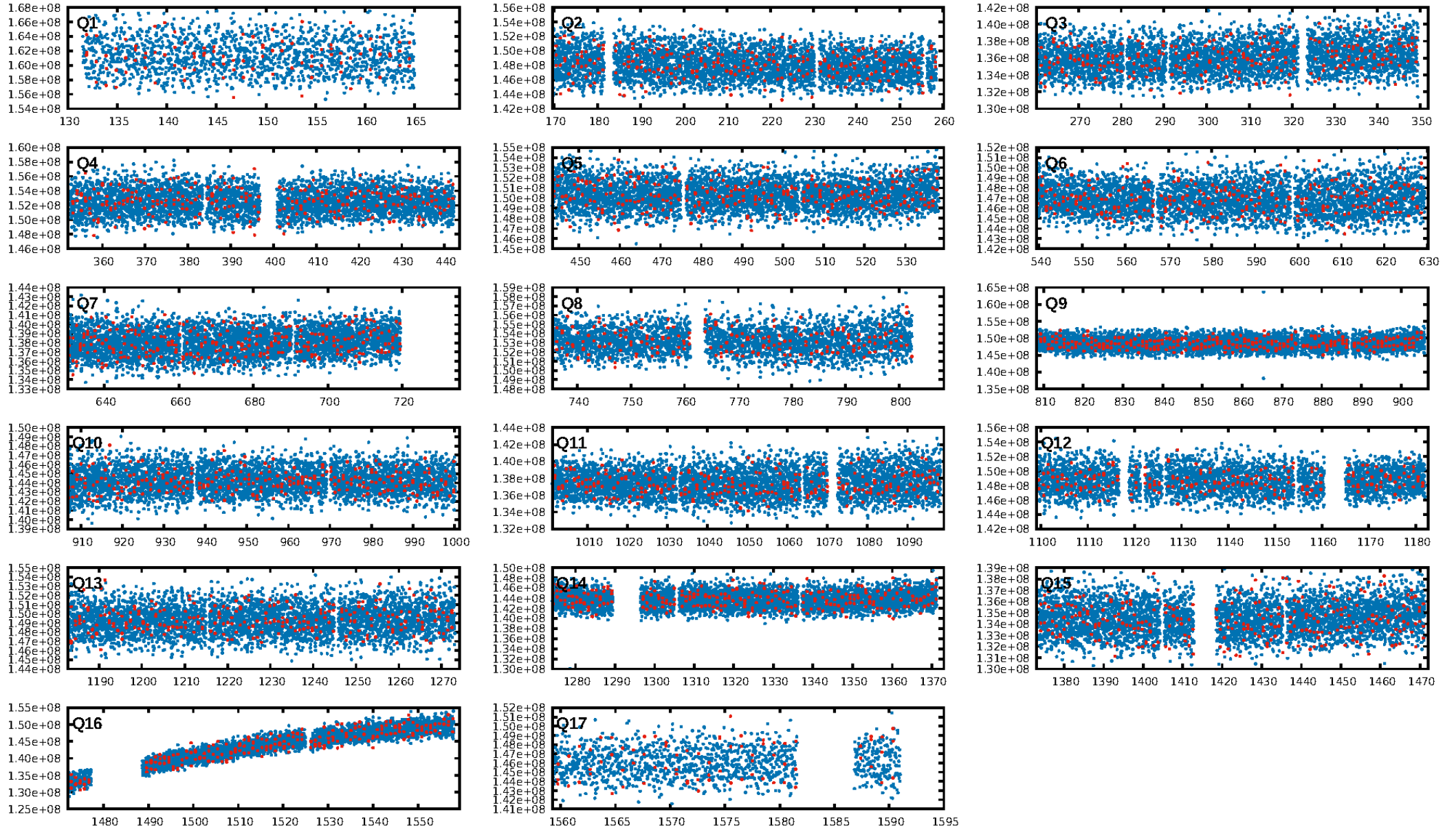
Ephemeris Match Information For 006071684-01

No Significant Match Found

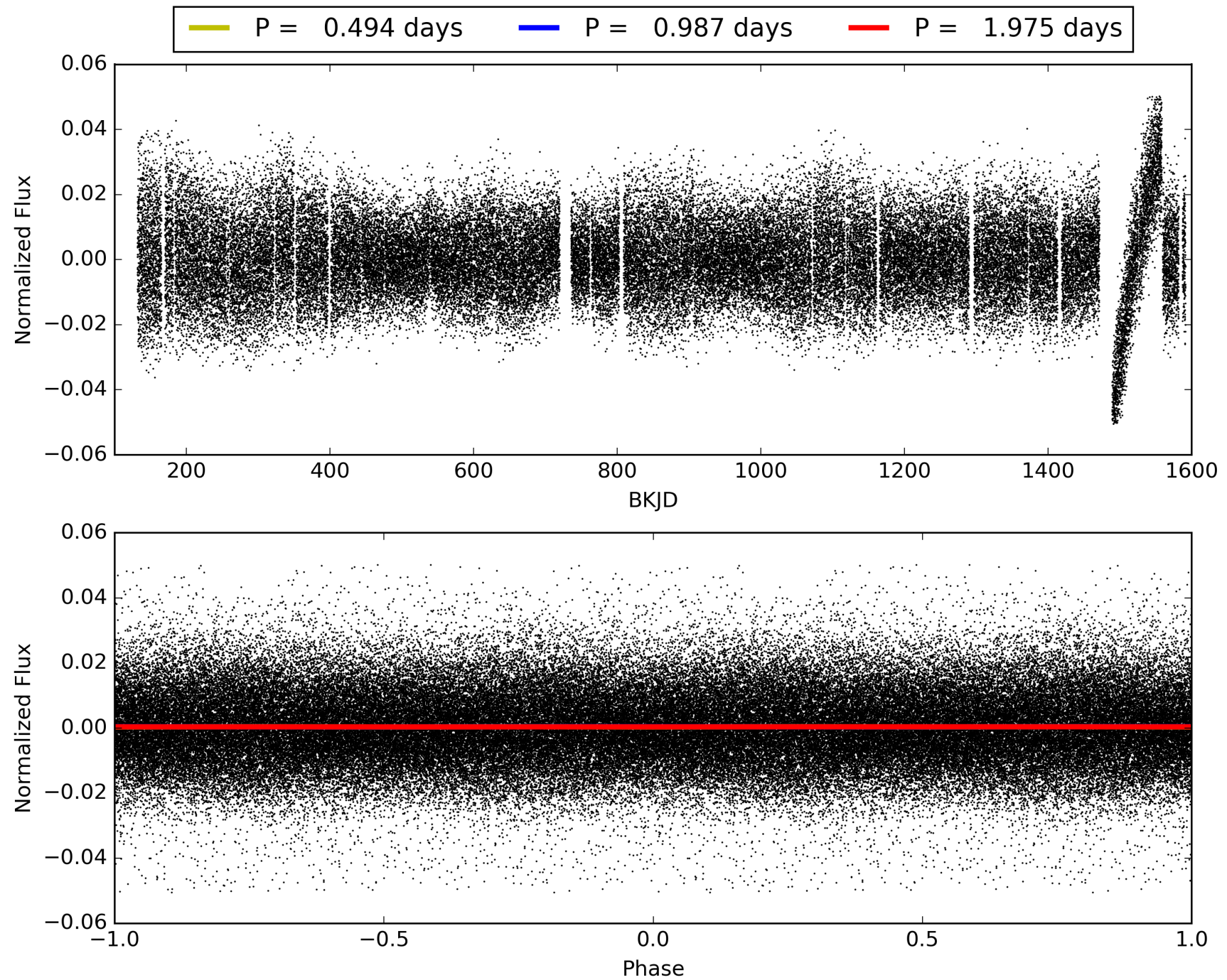
KIC: 6071684 Candidate: 1 of 2 Period: 0.987 d



TCE 006071684-01, PDC Light Curves

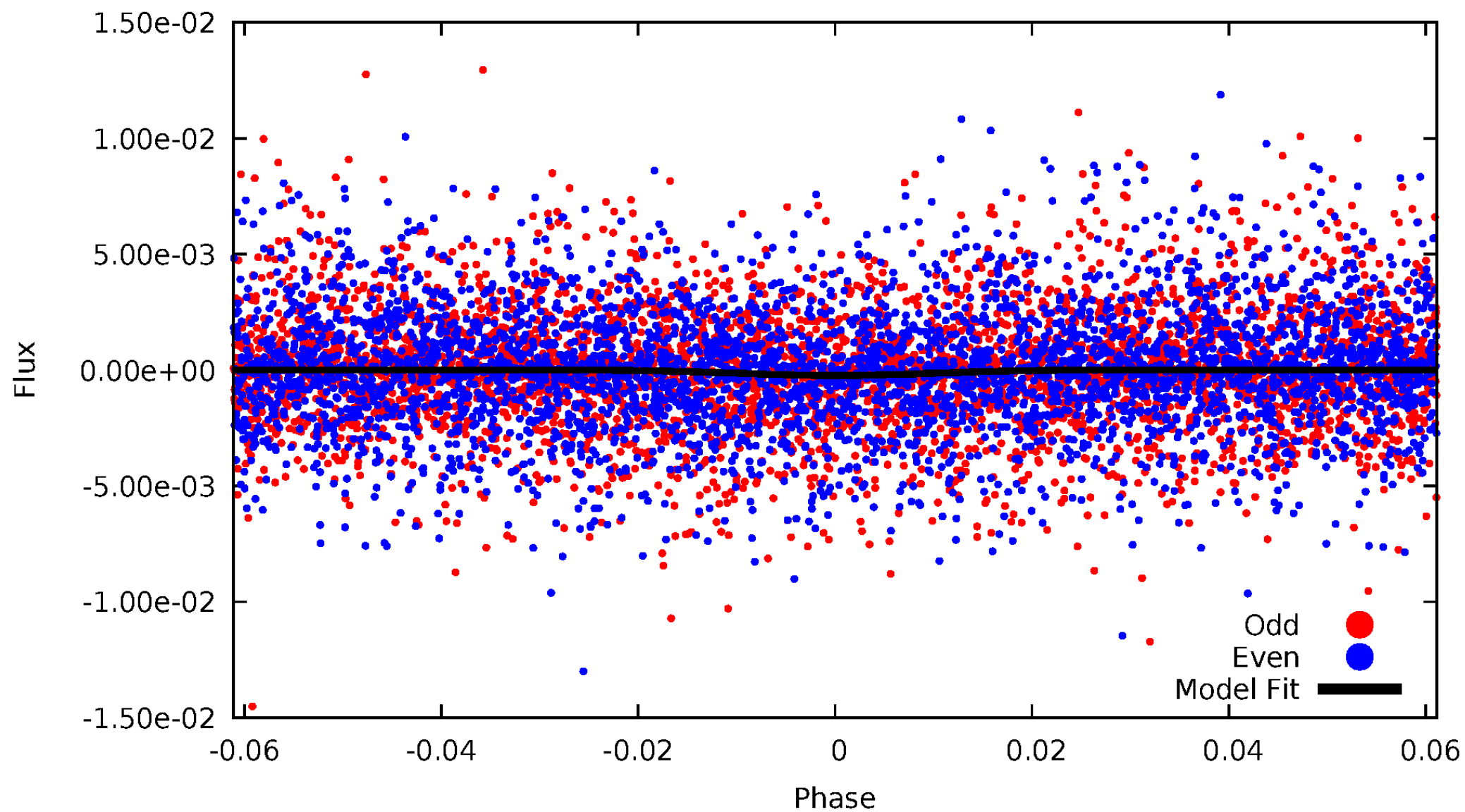


TCE 006071684-01



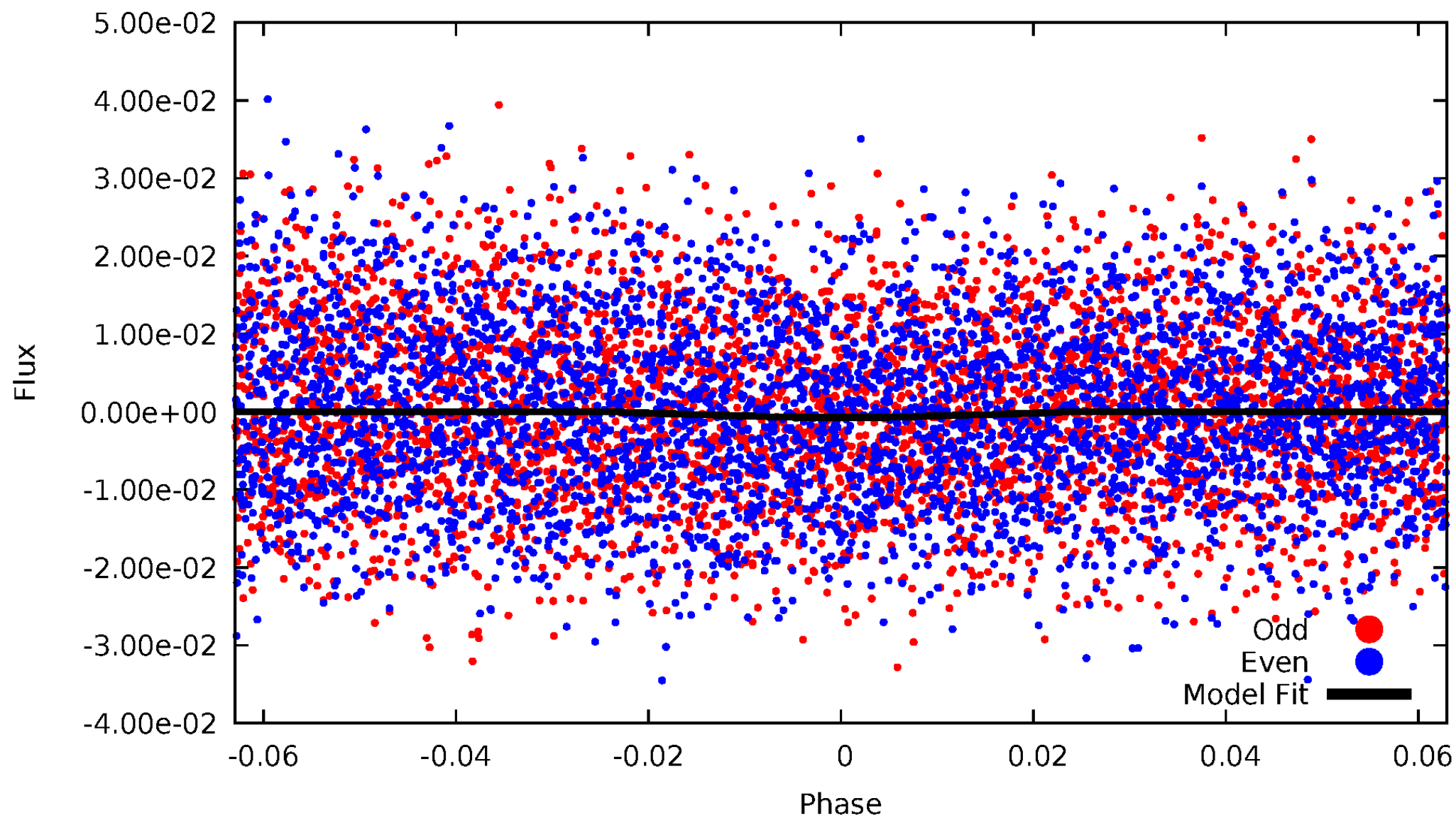
DV Odd/Even

TCE 006071684-01



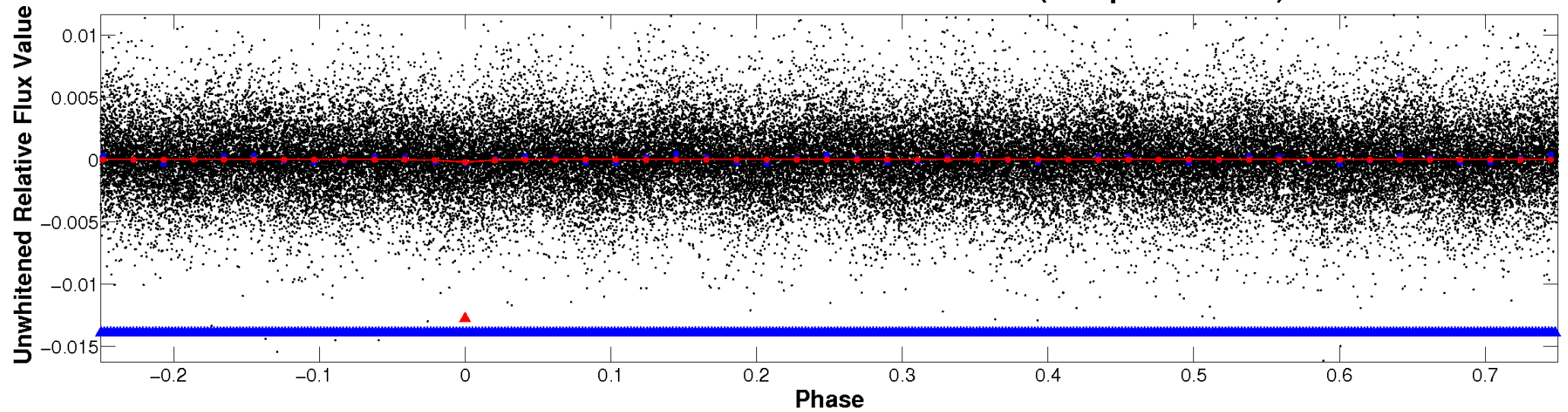
ALT Odd/Even

TCE 006071684-01

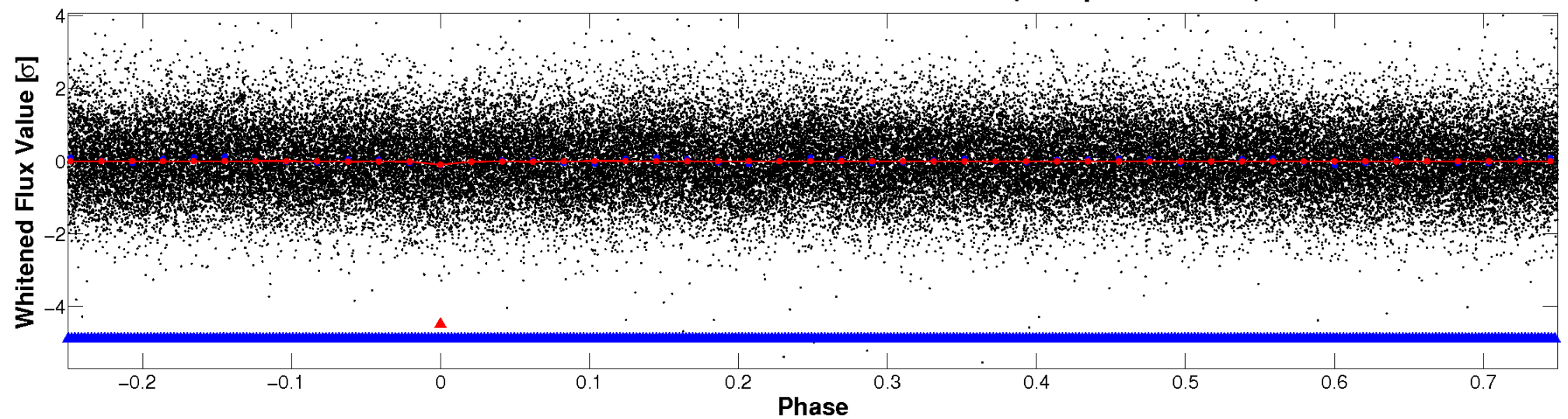


Non-Whitened Vs. Whitened Light Curve

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

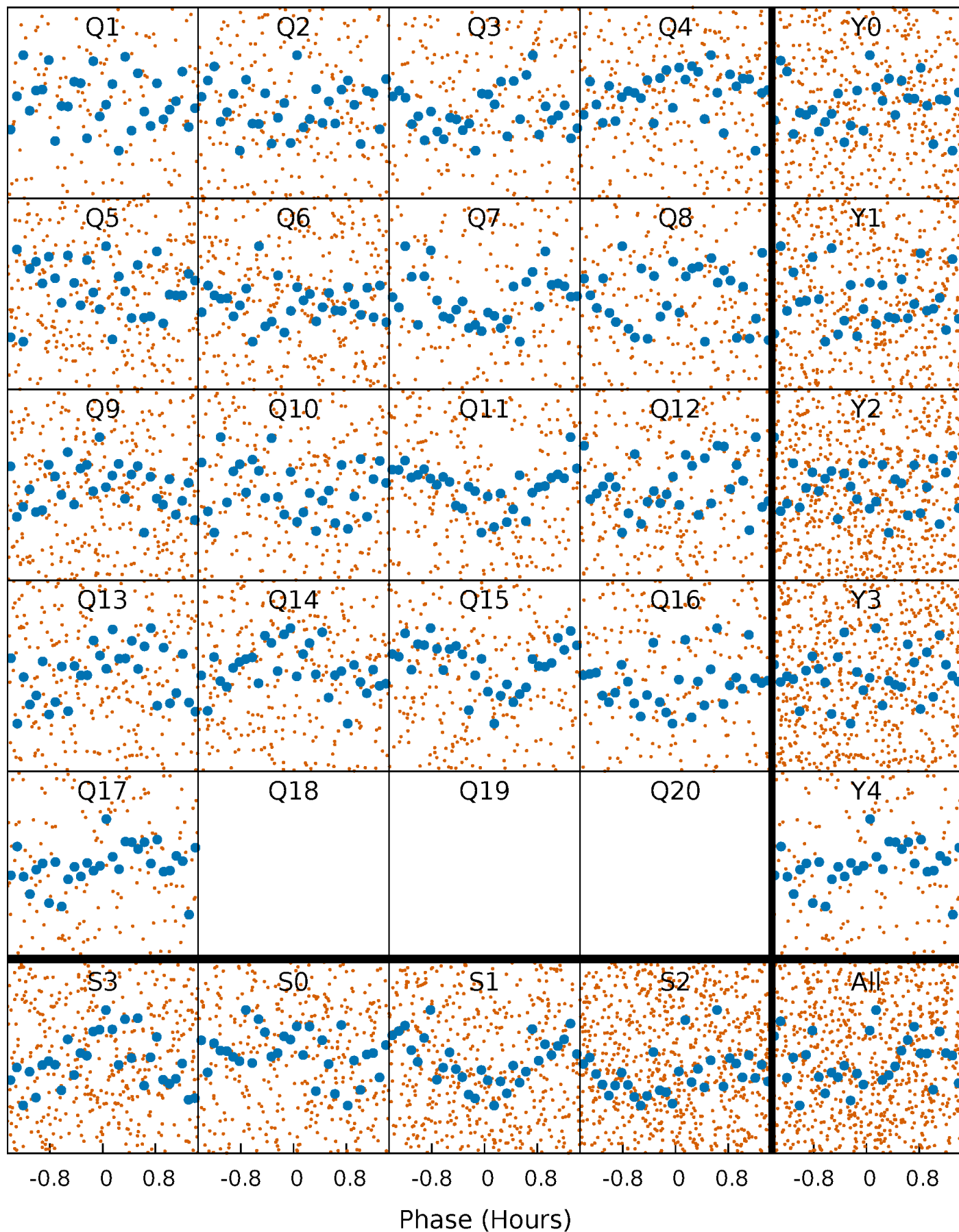


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



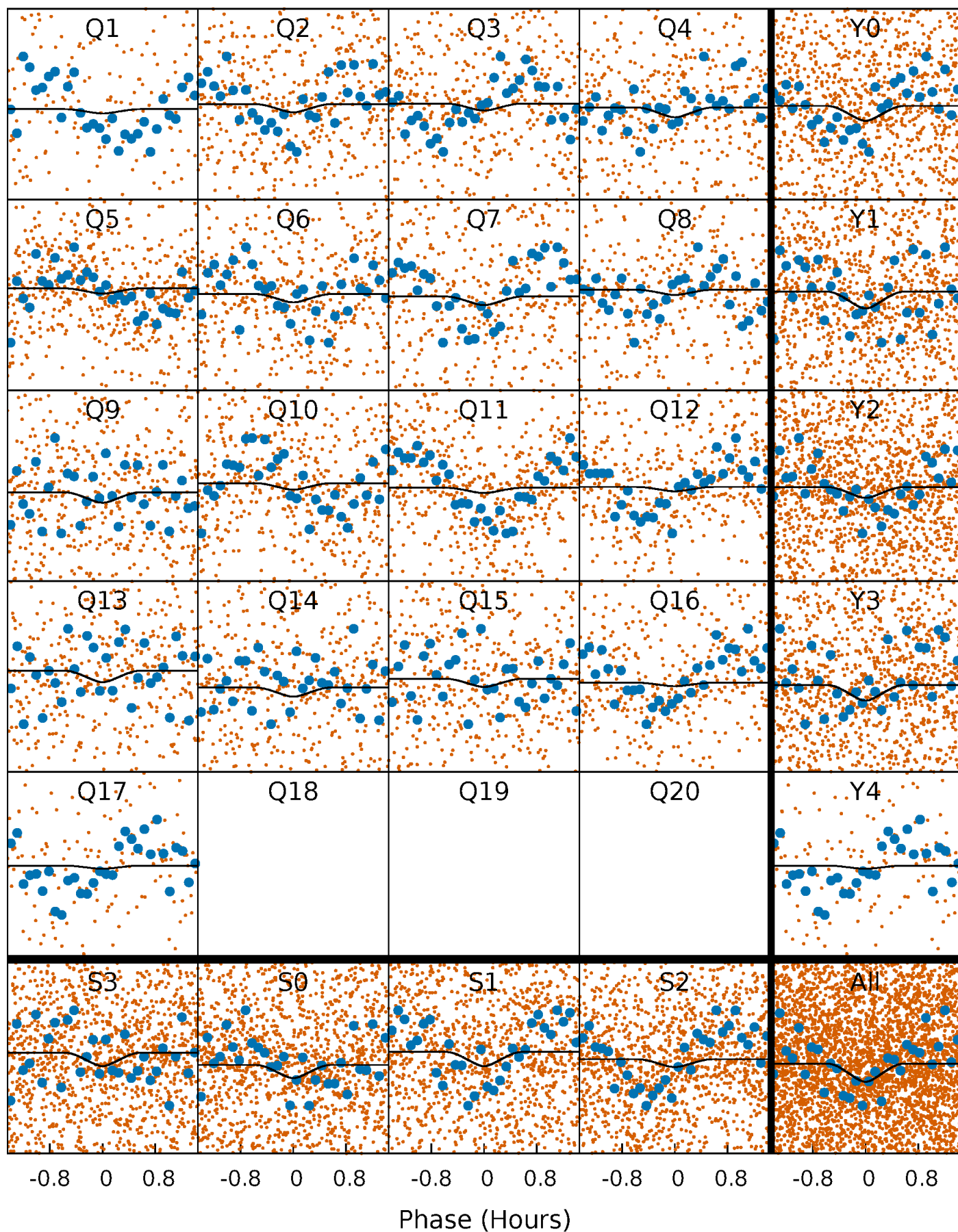
PDC Quarter-Phased Transit Curves

TCE 006071684-01 P= 0.987436 Days $T_0=131.895323$ (BKJD)



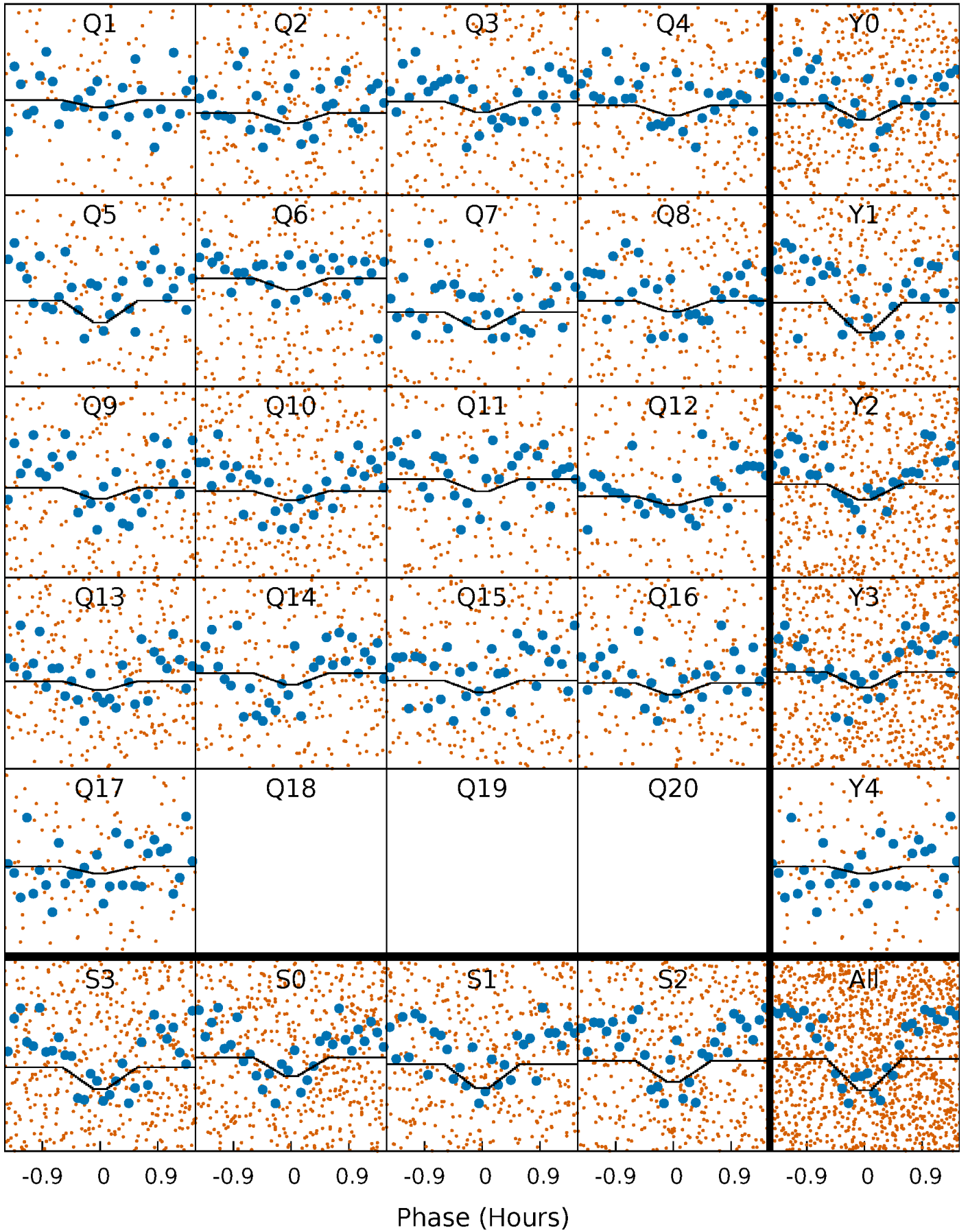
DV Quarter-Phased Transit Curves

TCE 006071684-01 P= 0.987436 Days $T_0=131.895323$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

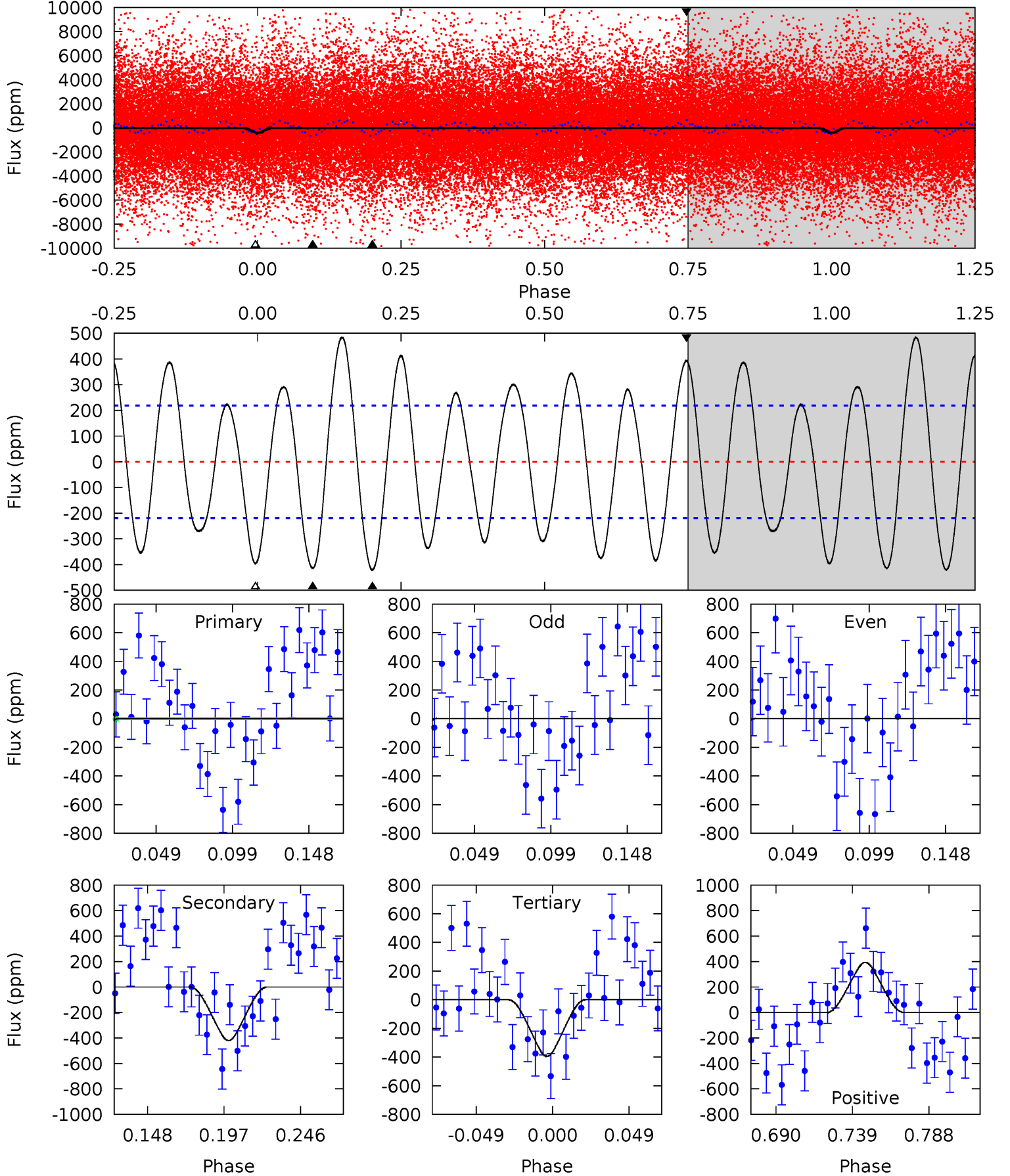
TCE 006071684-01 P= 0.987222 Days $T_0=131.901114$ (BKJD)



DV Model-Shift Uniqueness Test

006071684-01, P = 0.987436 Days, E = 130.907887 Days

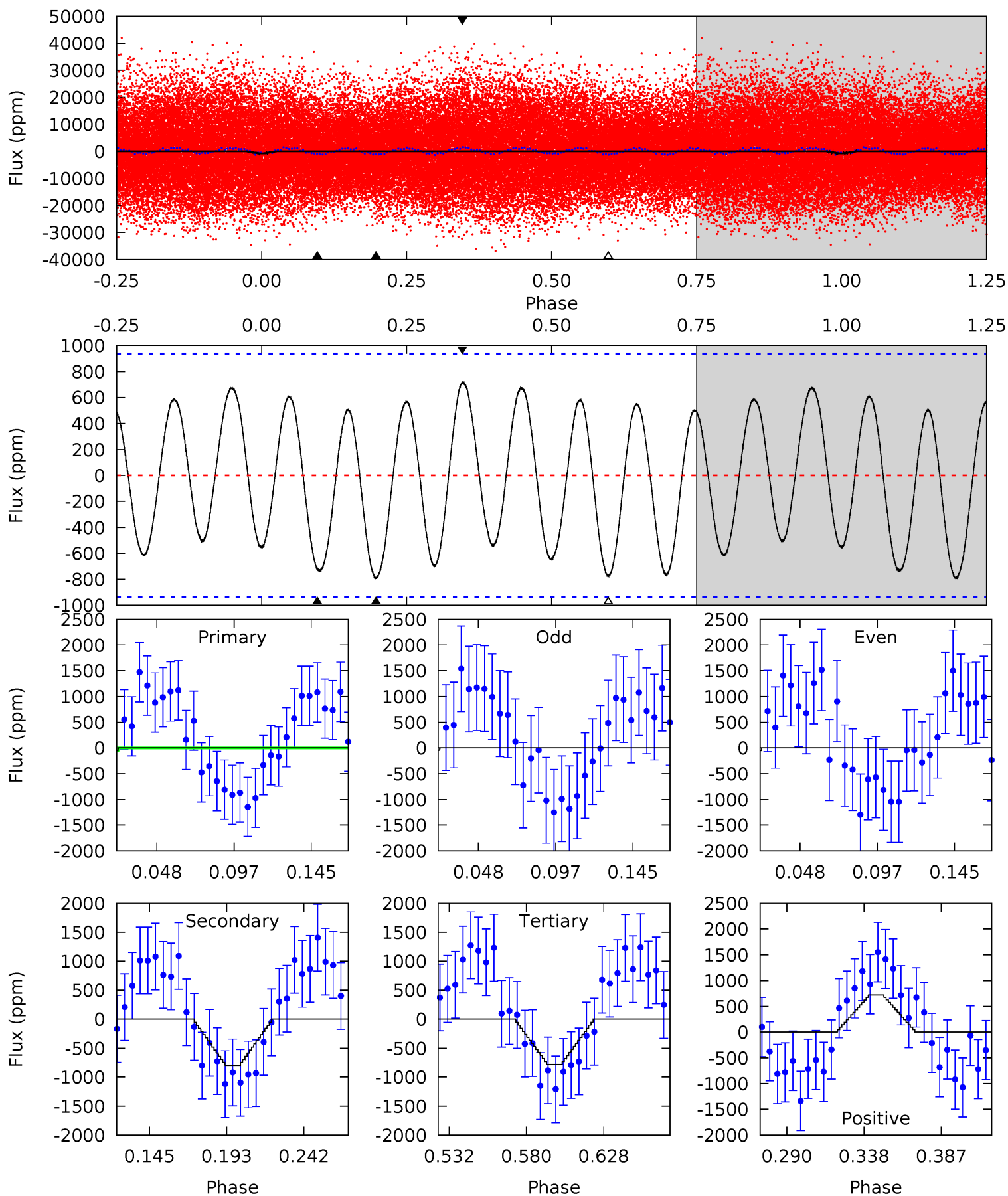
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.91	9.05	8.51	8.47	4.71	1.97	5.13	0.39	0.44	0.53	0.58	0.09	1.45	0.53	2.77



Alt Model-Shift Uniqueness Test

006071684-01, P = 0.987222 Days, E = 130.913892 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.68	4.01	3.93	3.62	4.72	1.97	2.25	-0.25	0.06	0.08	0.39	0.29	1.98	0.47	0.20



Stellar Parameters For KIC 006071684

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6529^{+155}_{-214}	$4.074^{+0.279}_{-0.172}$	$-0.220^{+0.250}_{-0.300}$	$1.677^{+0.494}_{-0.494}$	$1.218^{+0.188}_{-0.188}$	$0.364^{+0.588}_{-0.173}$
	+2%/-3%	+7%/-4%	+114%/-136%	+29%/-29%	+15%/-15%	+161%/-48%
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 006071684-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-421 ± 46	$15.59^{+17.80}_{-10.67}$	3569^{+315}_{-309}	2995^{+2520}_{-6271}	$0.416^{+3.804}_{-0.328}$
Alt.	-797 ± 199	$16.58^{+17.78}_{-11.17}$	3597^{+283}_{-311}	3542^{+2505}_{-6642}	$0.676^{+5.724}_{-0.531}$

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

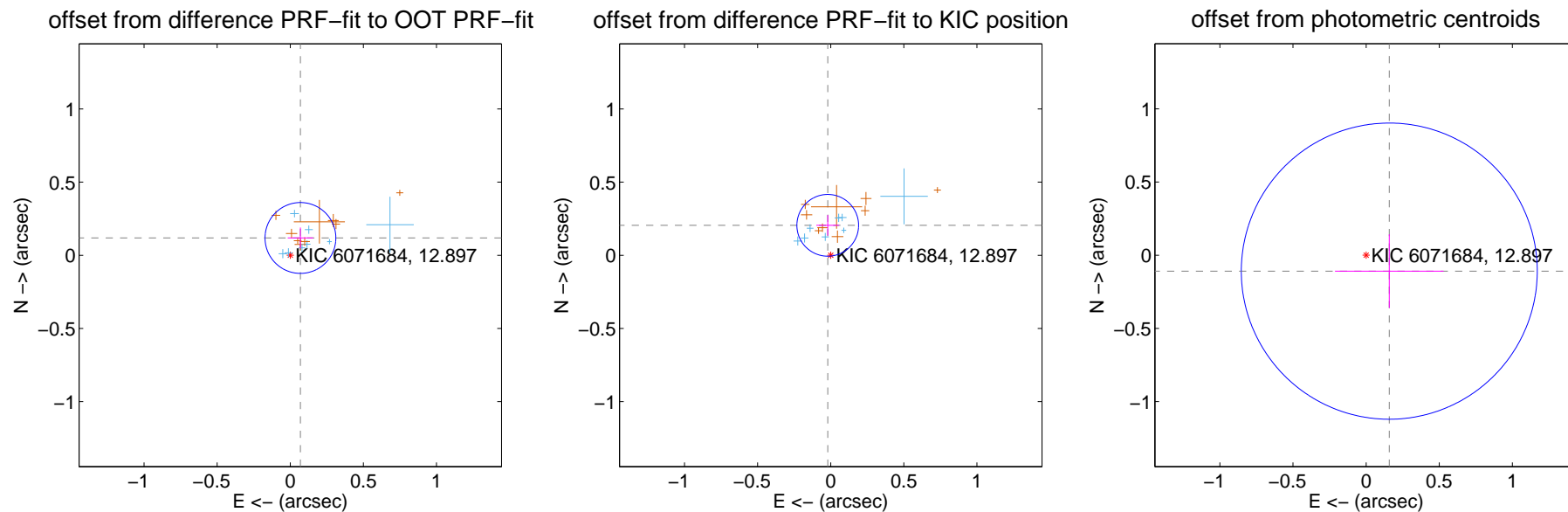
DV Centroid Data

Supplemental centroid analysis for 006071684-01. Kepler magnitude: 12.90. Transit SNR 2.93

There are 8 quarters with good PRF difference image offsets

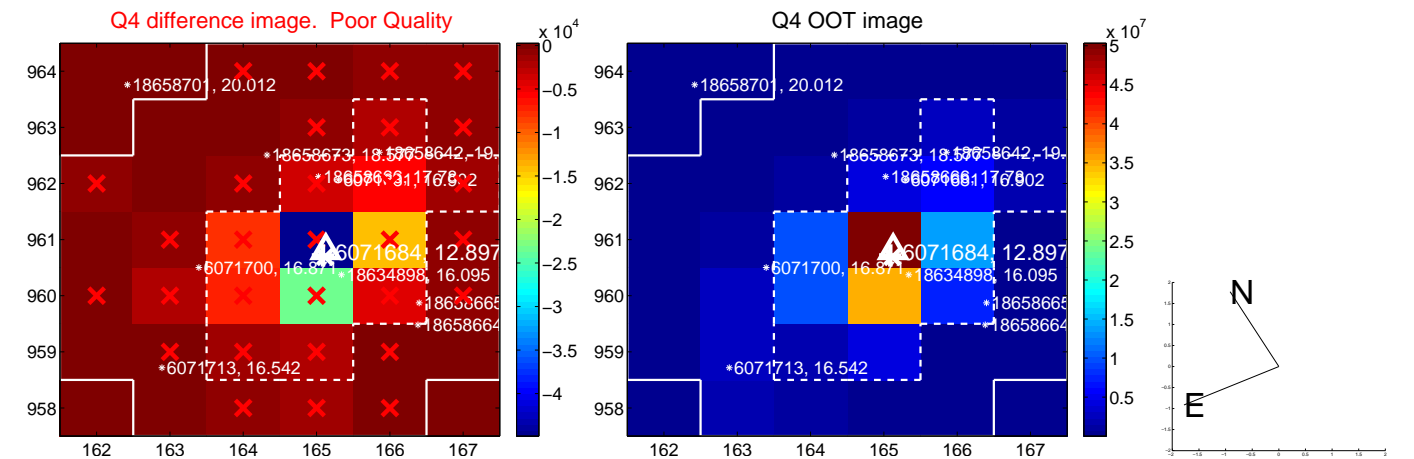
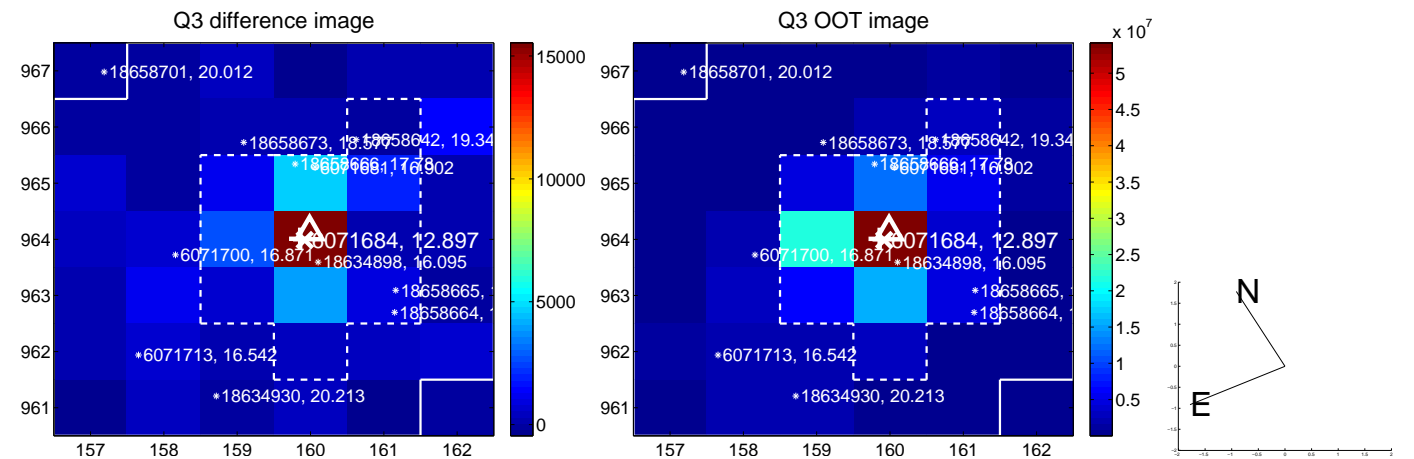
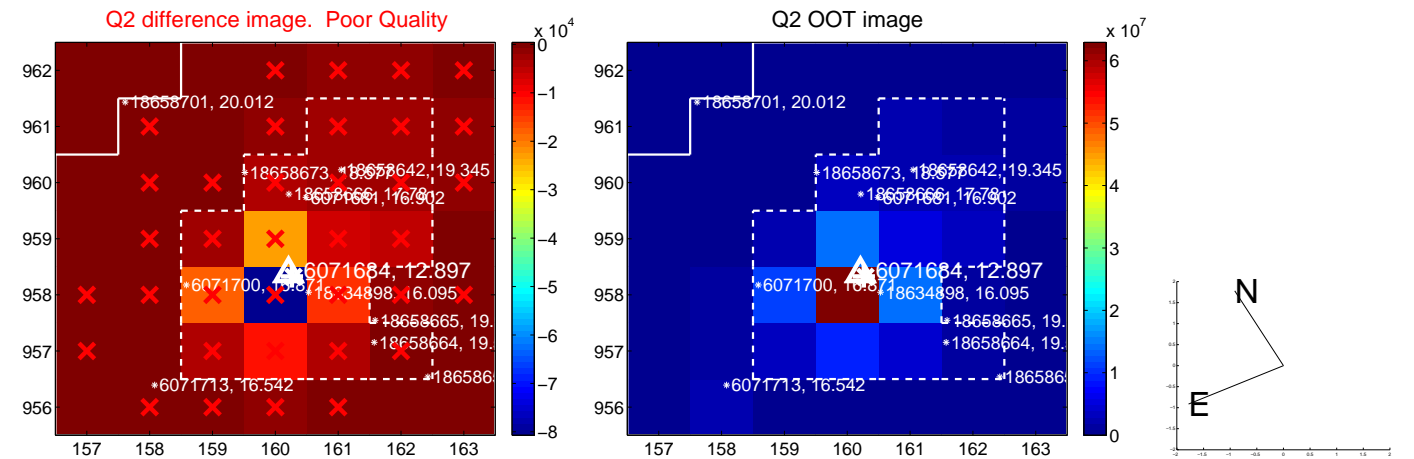
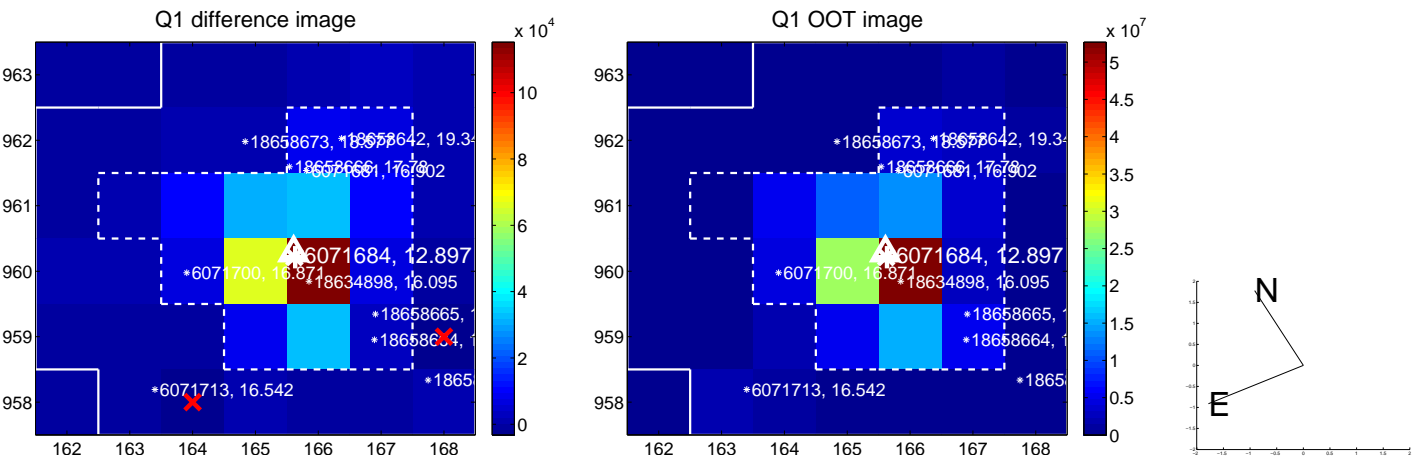
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.137 ± 0.081	1.70	-0.070 ± 0.087	0.118 ± 0.072
PRF-fit source offset from KIC position	0.206 ± 0.070	2.93	0.020 ± 0.078	0.205 ± 0.070
photometric centroid source offset	0.19 ± 0.34	0.57	-0.16 ± 0.37	-0.11 ± 0.25

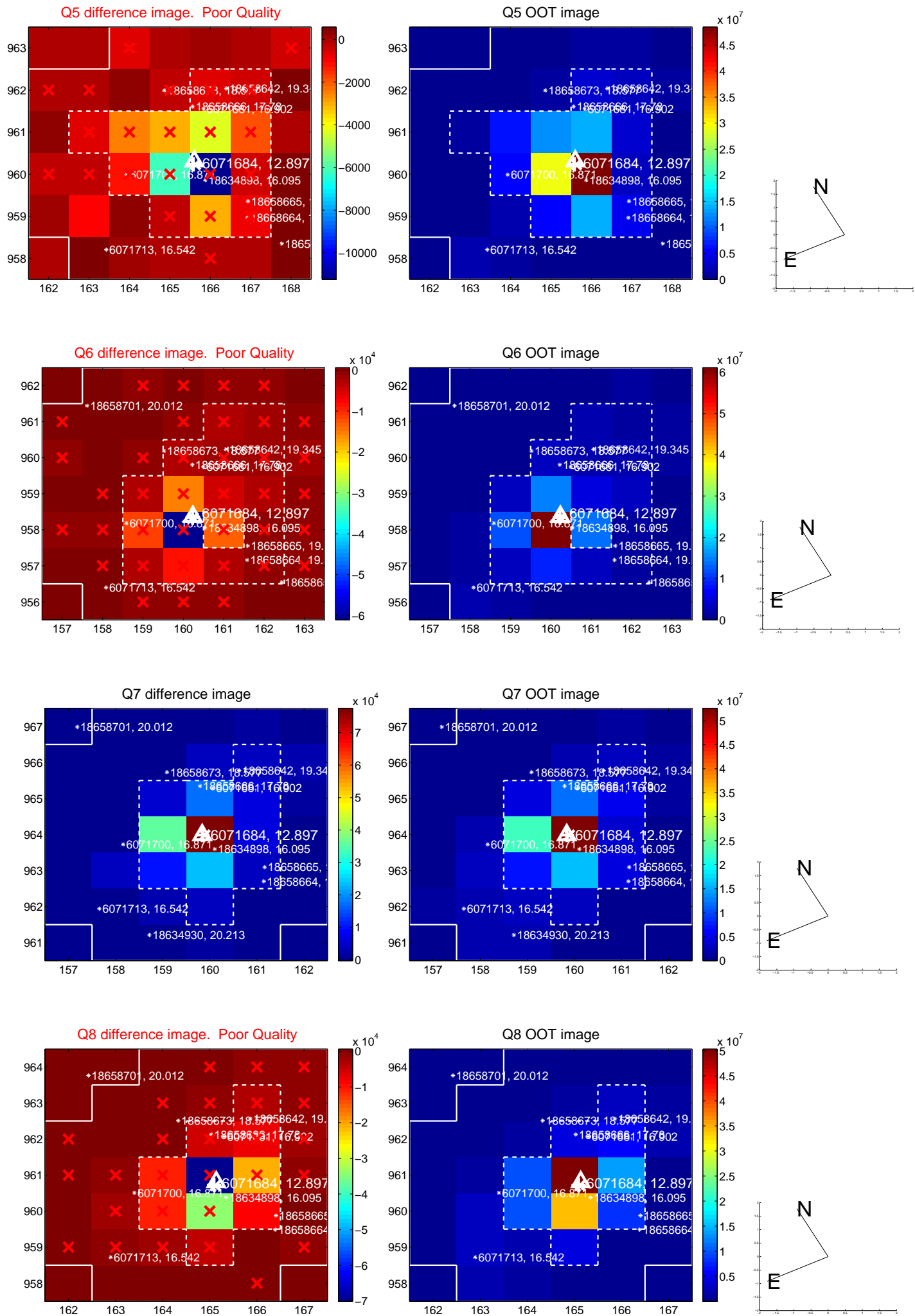


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

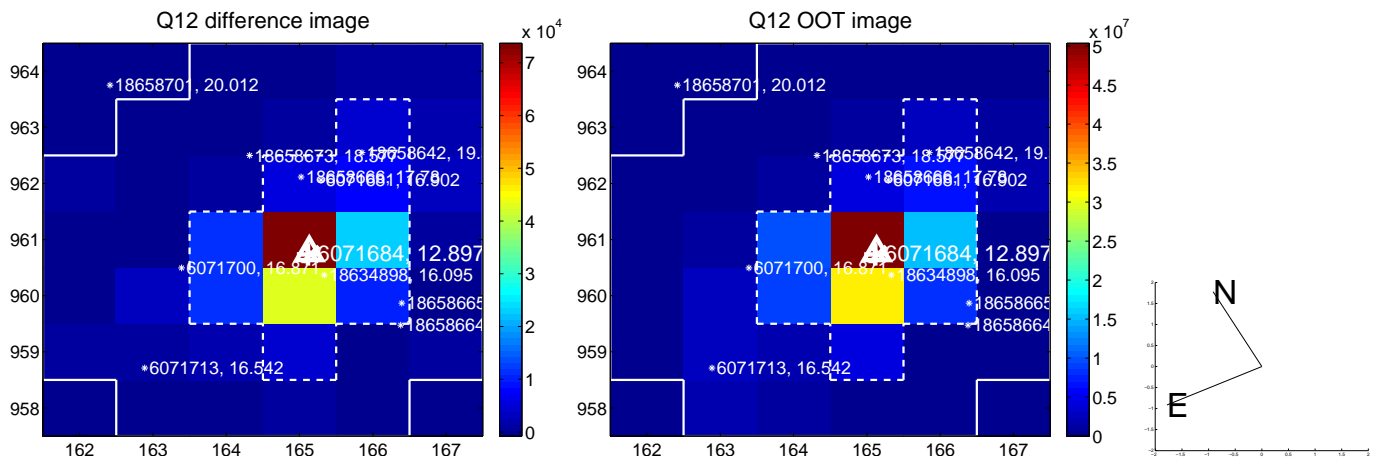
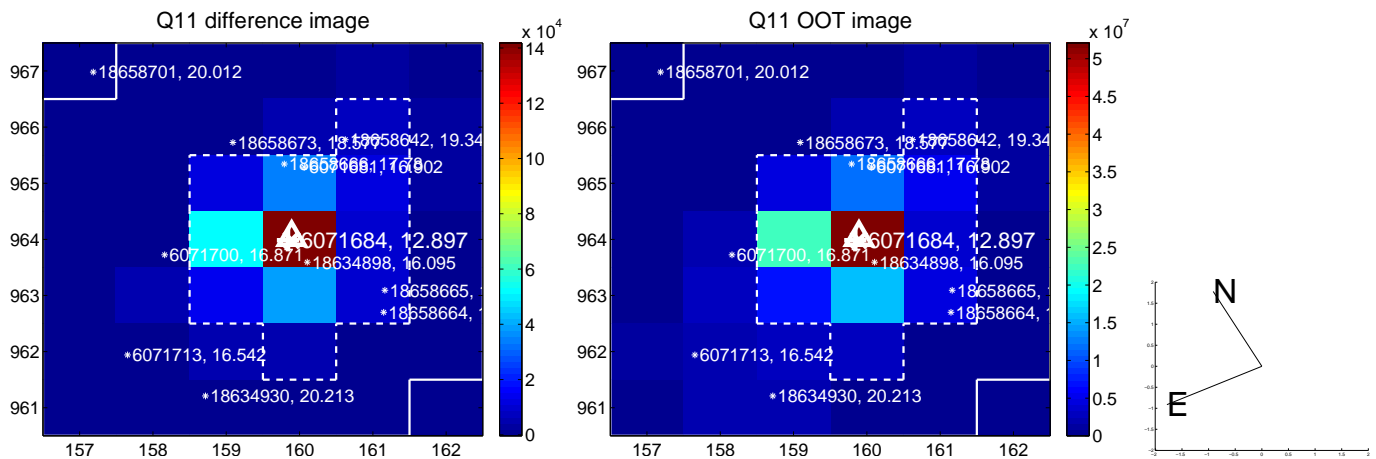
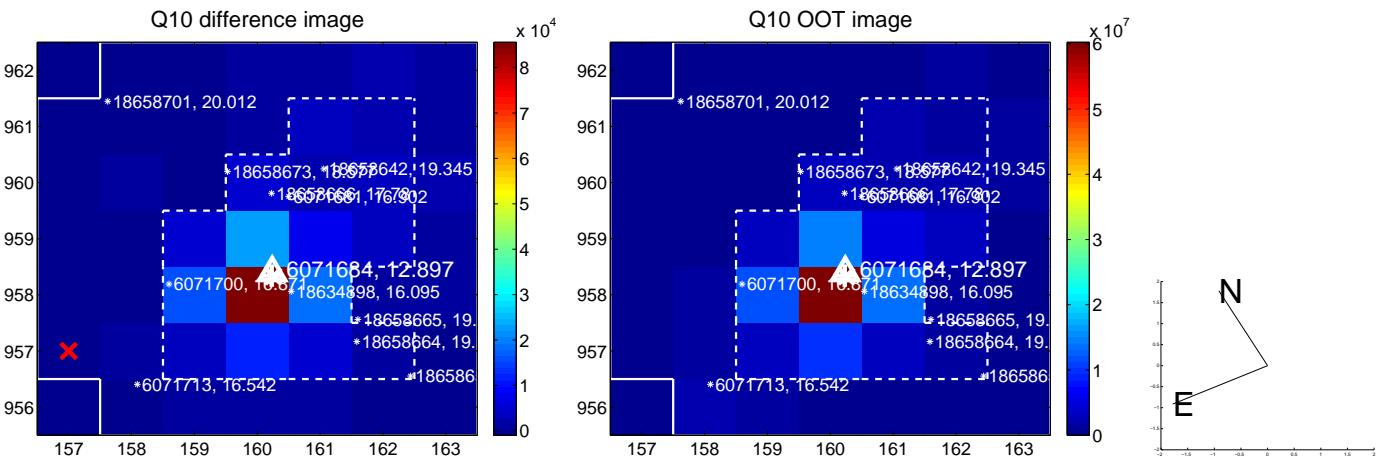
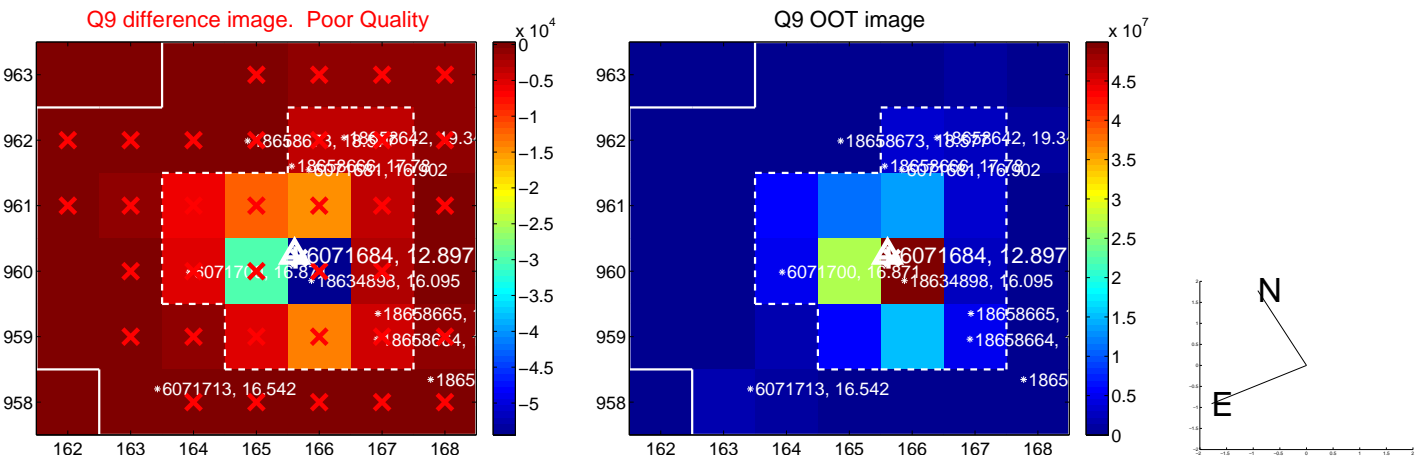
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



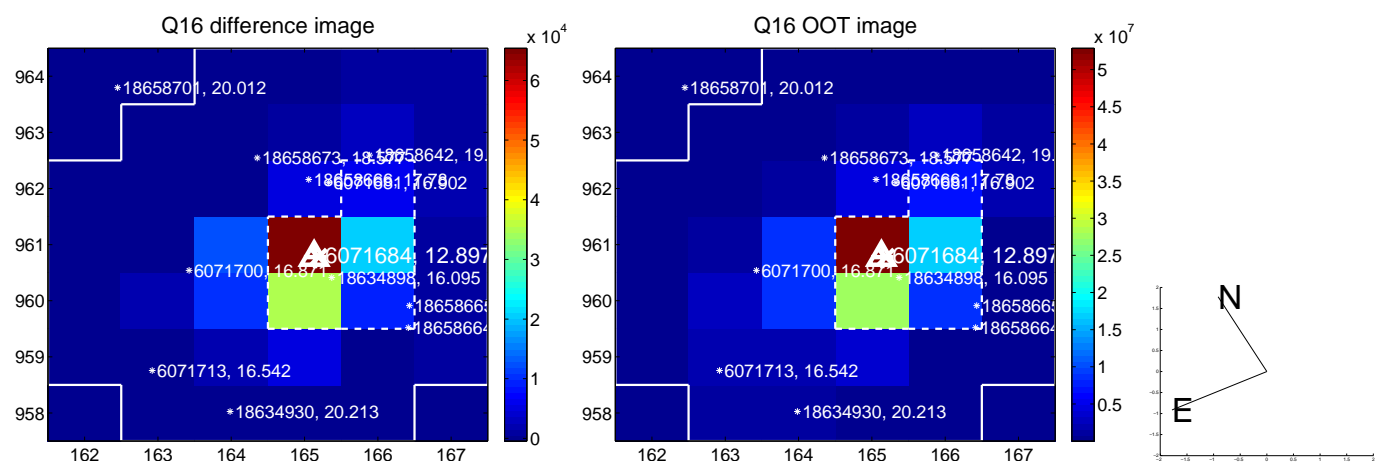
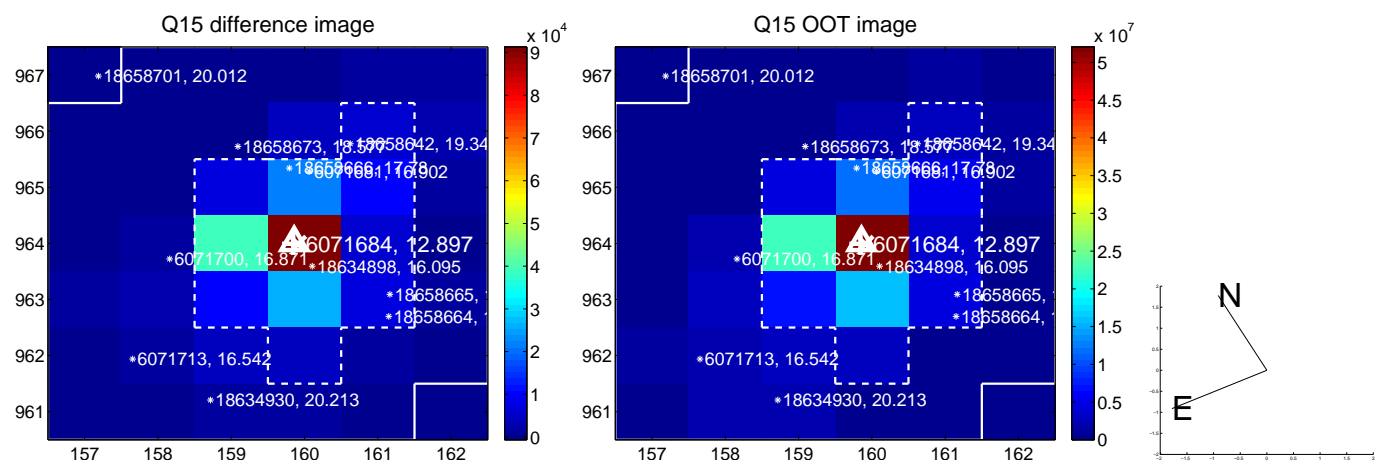
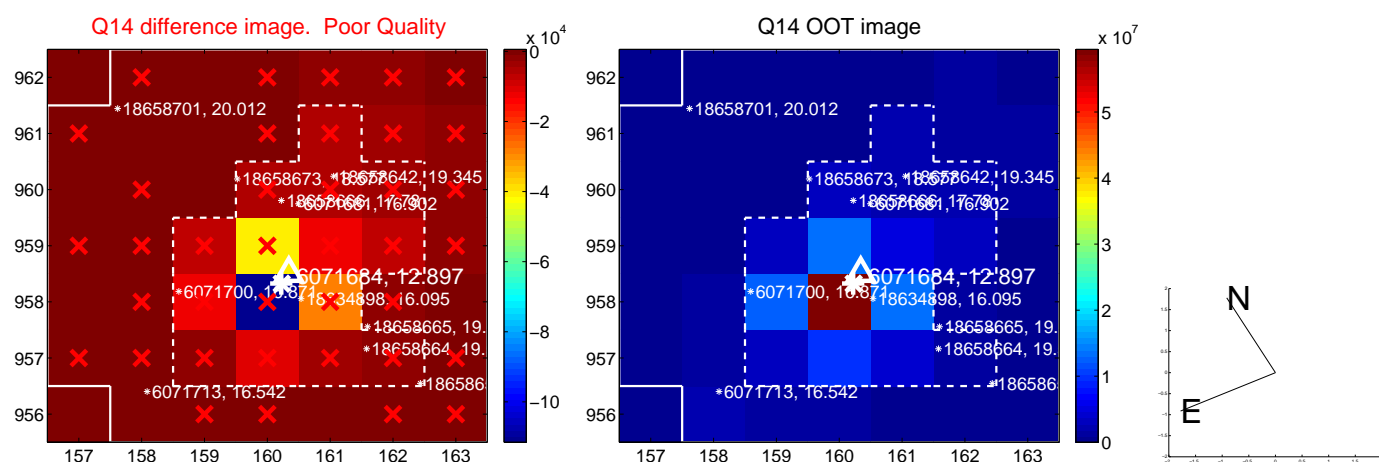
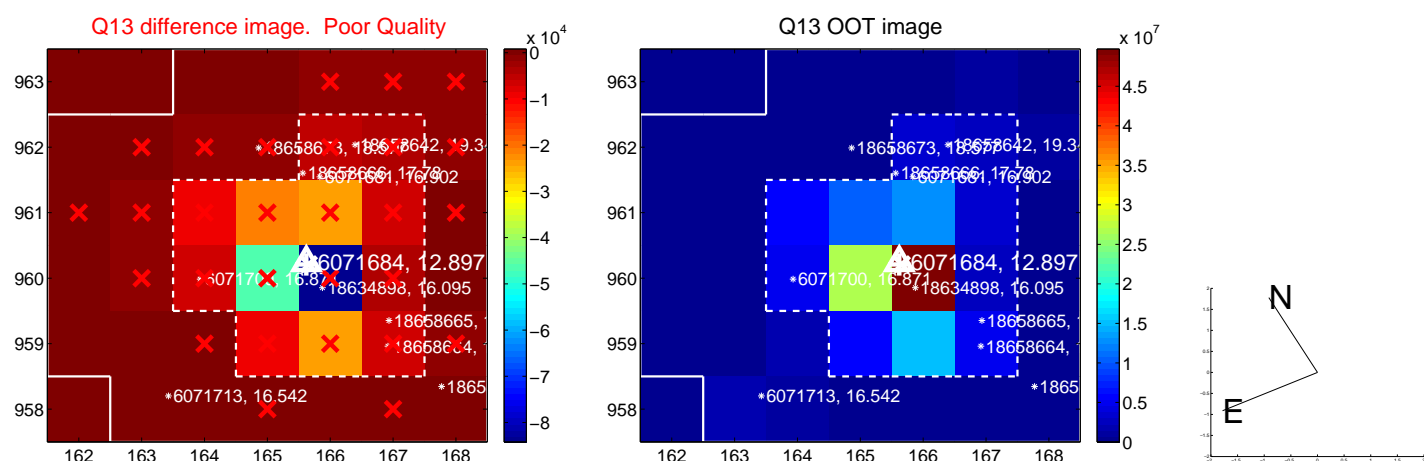
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



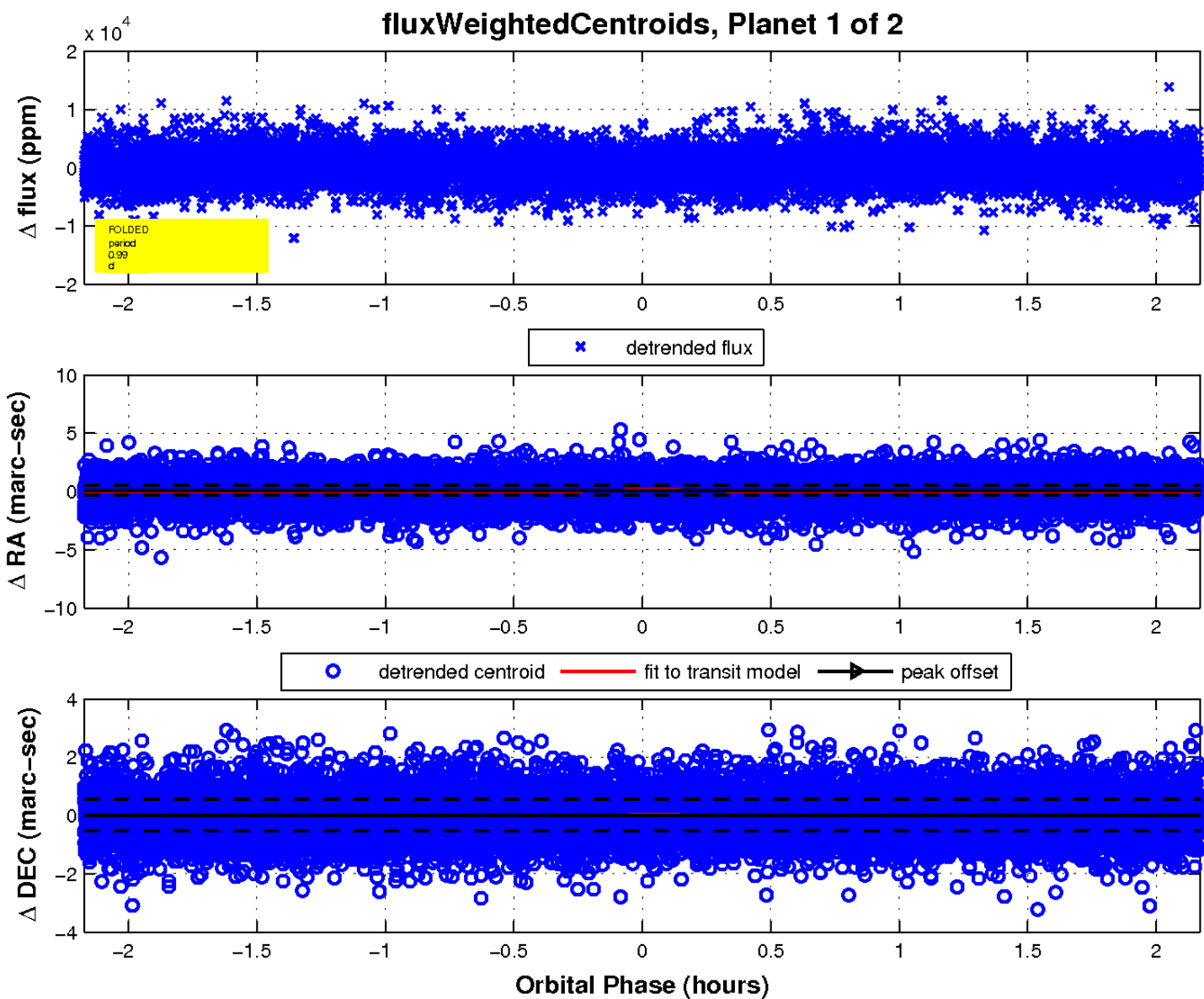
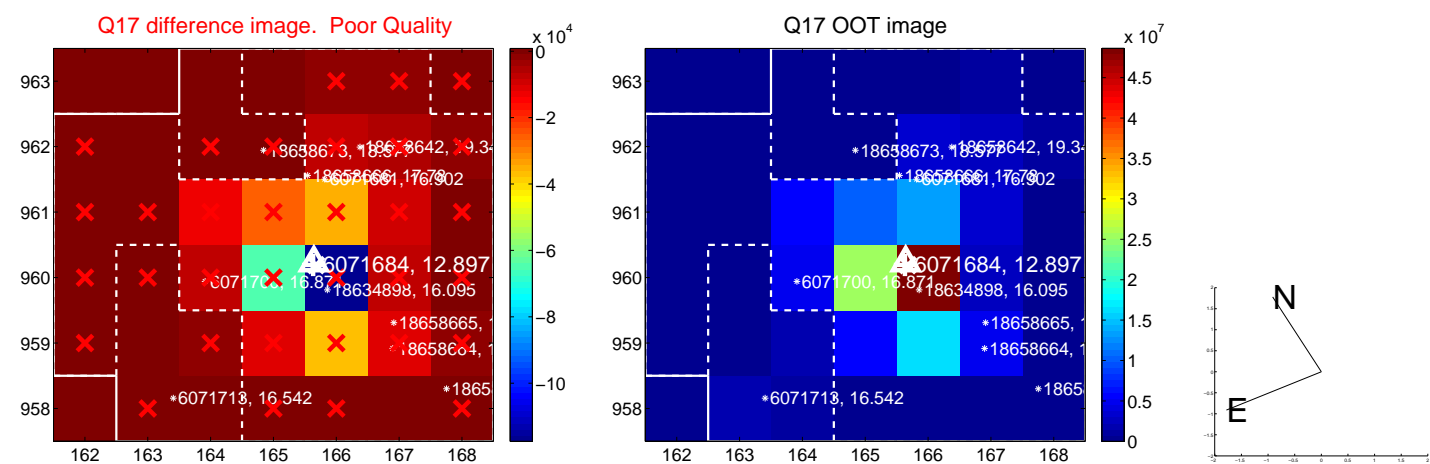
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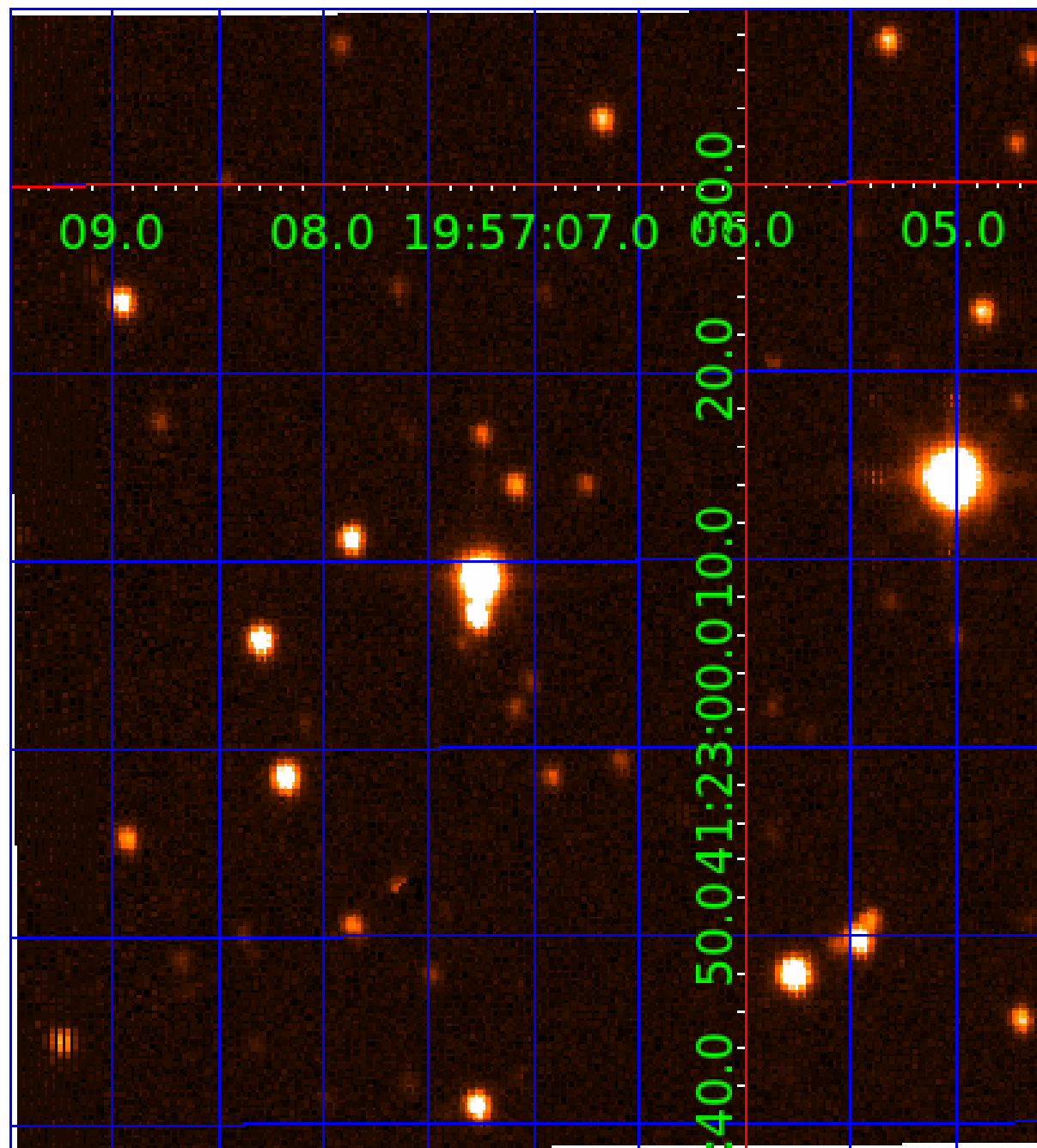


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006071684

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})
006071684-01	OBS	No	0.987436	131.895323	235.7	0.724	11.3	2.9	1.68	6529	3.87	10664.92
006071684-02	OBS	No	0.812281	131.974907	314.3	9.747	9.2	14.5	1.68	6529	3.95	13836.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006071684-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006071684-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

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

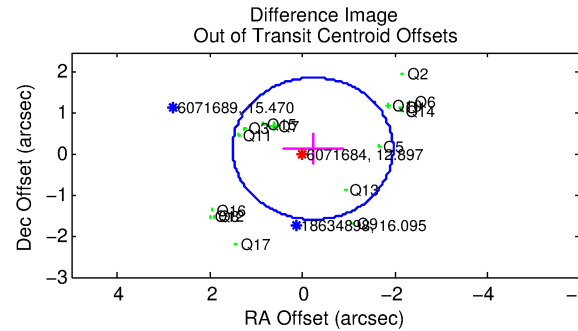
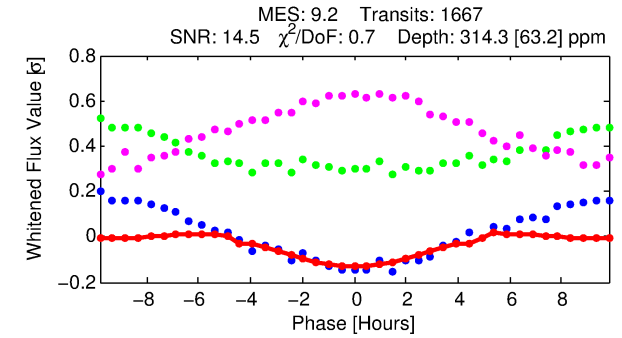
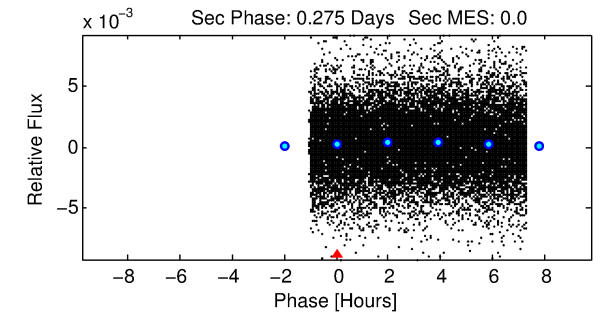
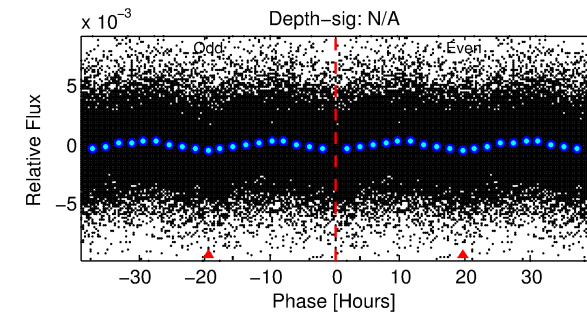
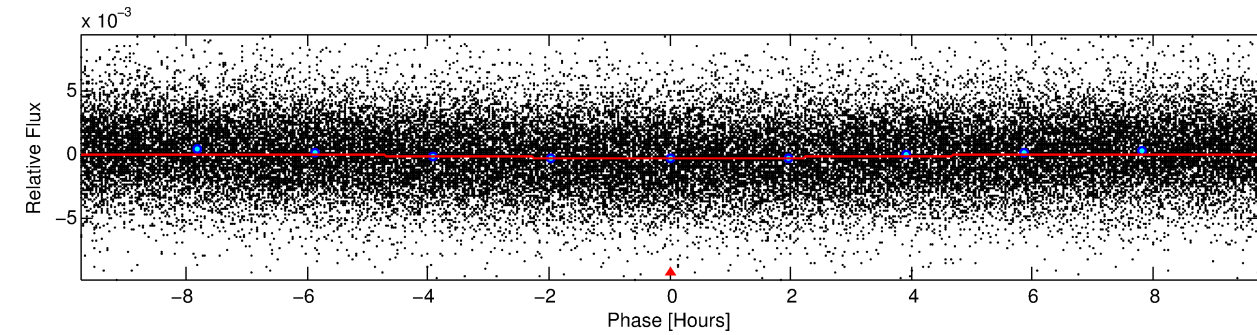
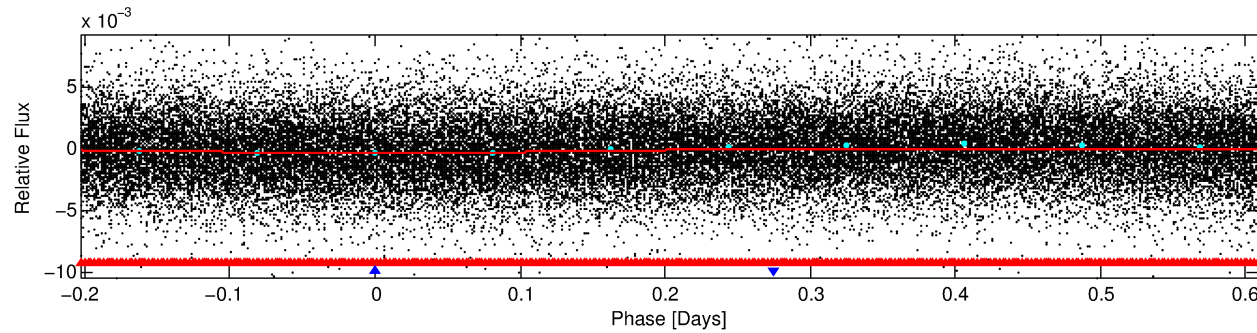
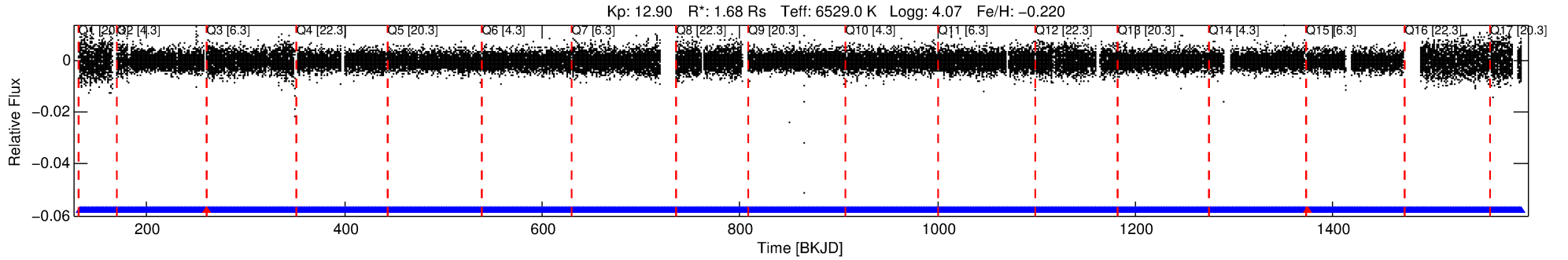
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006071684-02

No Significant Match Found

DV One-Page Summary

KIC: 6071684 Candidate: 2 of 2 Period: 0.812 d



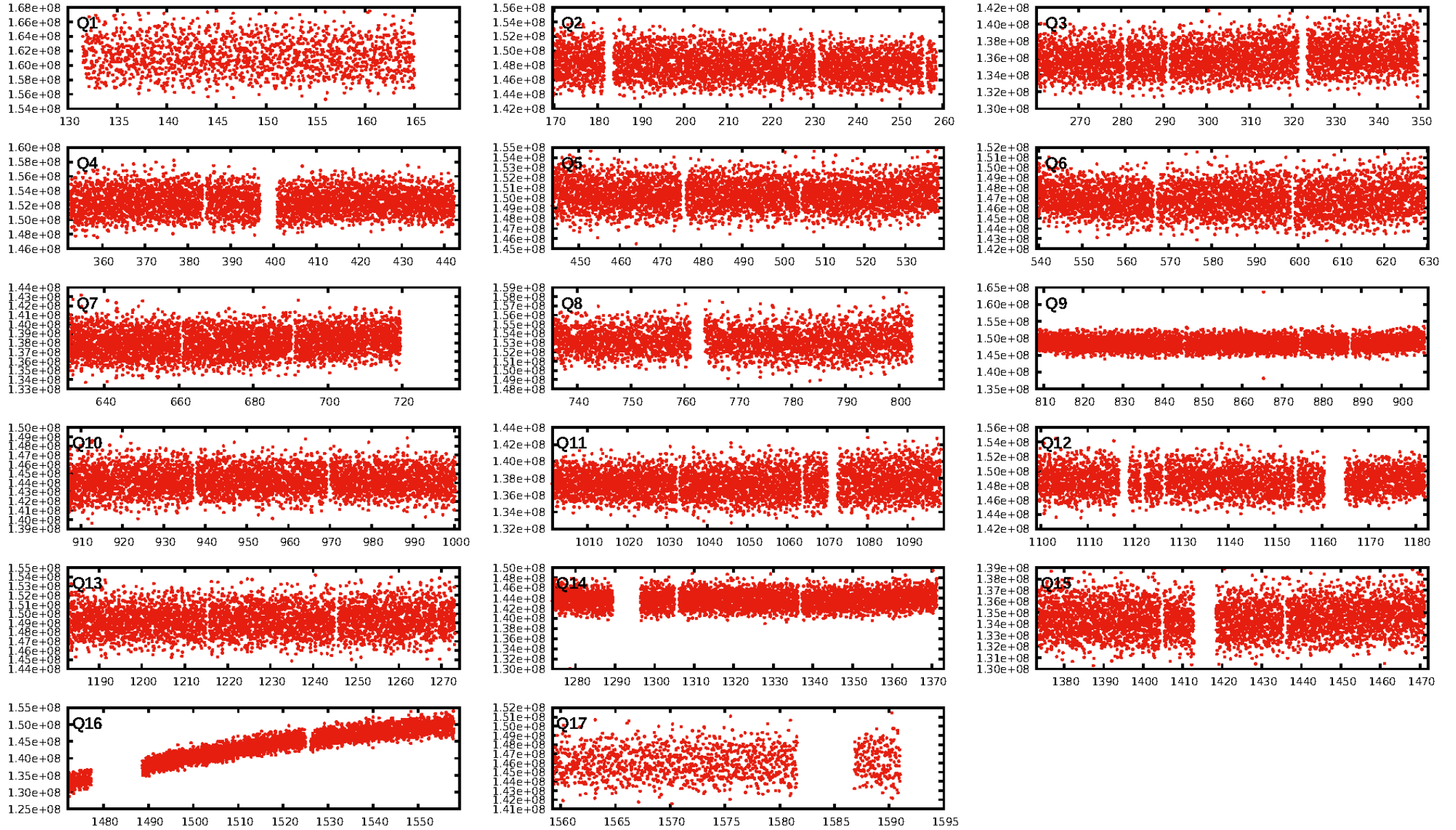
DV Fit Results:

Period = 0.81228 [0.00001] d
Epoch = 131.9749 [0.0073] BKJD
Rp/R* = 0.0216 [0.0034]
a/R* = 1.00 [0.00]
b = 0.98 [0.01]
Seff = 13836.56 [6766.91]
Teff = 2766 [338] K
Rp = 3.95 [1.32] Re
a = 0.0182 [0.0053] AU
Ag = N/A
Teffp = N/A

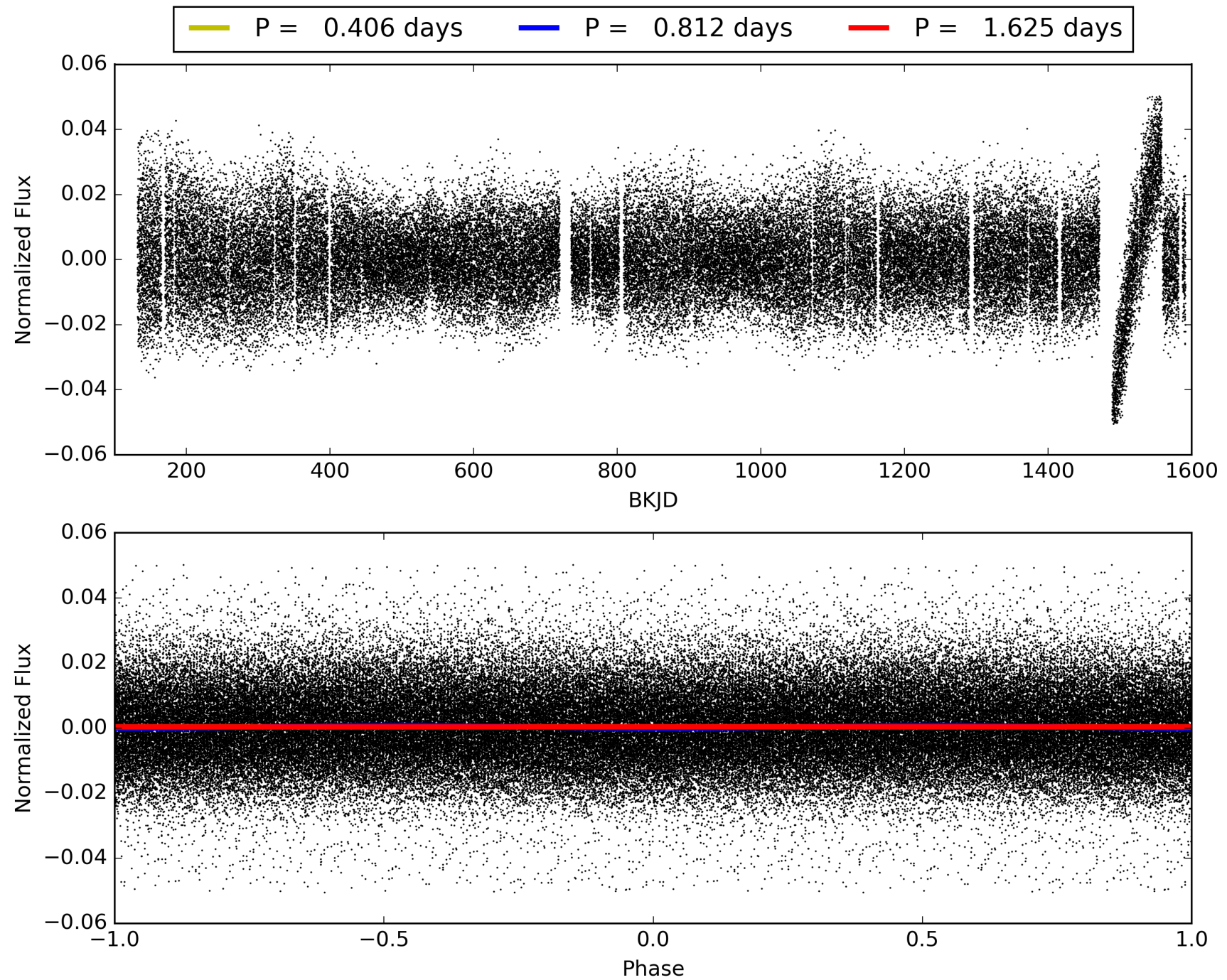
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 33.3% [0.43]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1590/1592]
GhostDiagnostic-chr: 1.329
Centroid-sig: 0.0%
Centroid-so: 0.697 arcsec [9.50]
OotOffset-rm: 0.268 arcsec [0.46]
KicOffset-rm: 0.213 arcsec [0.52]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.12 [2/17]

TCE 006071684-02, PDC Light Curves

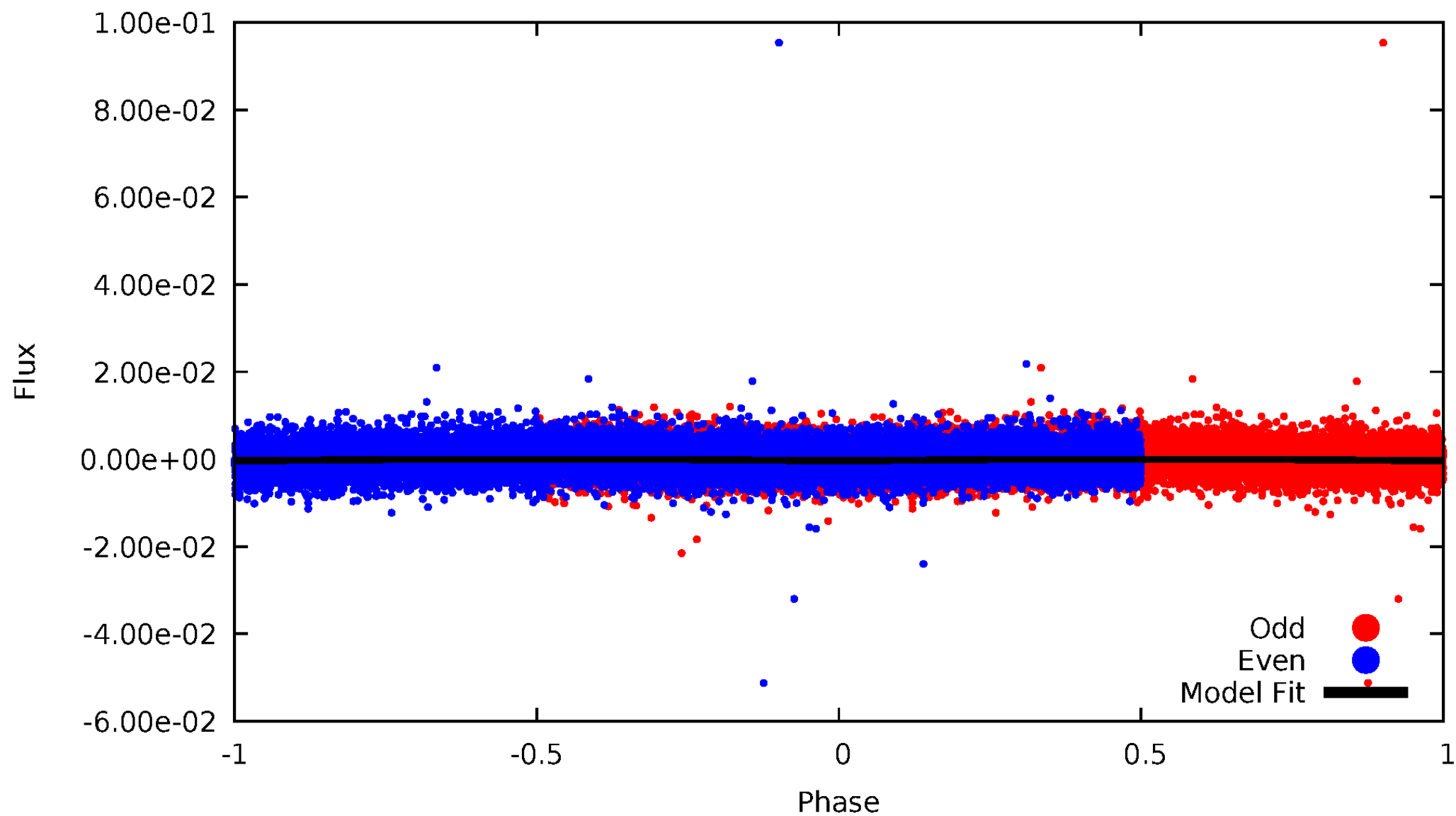


TCE 006071684-02



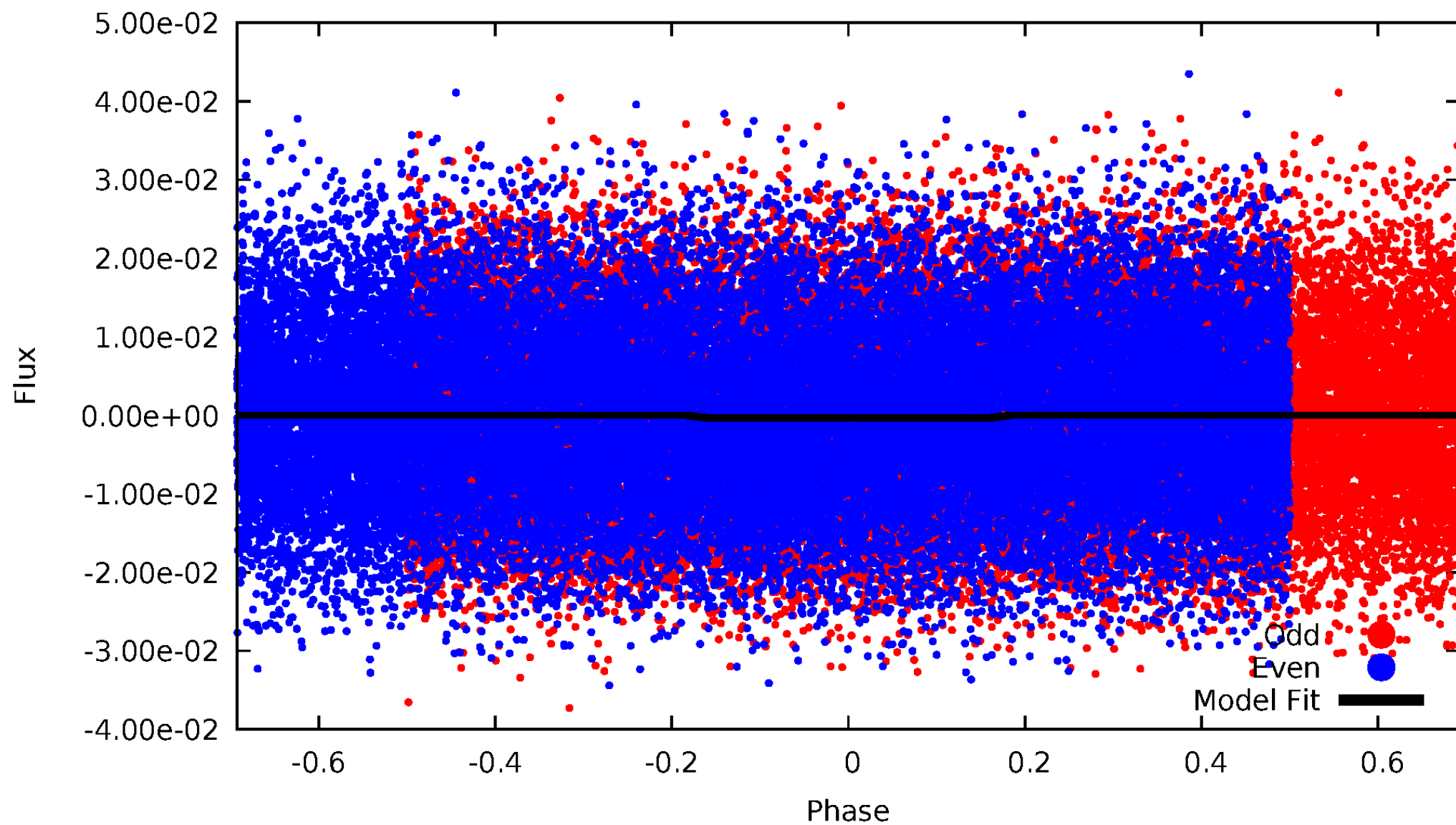
DV Odd/Even

TCE 006071684-02



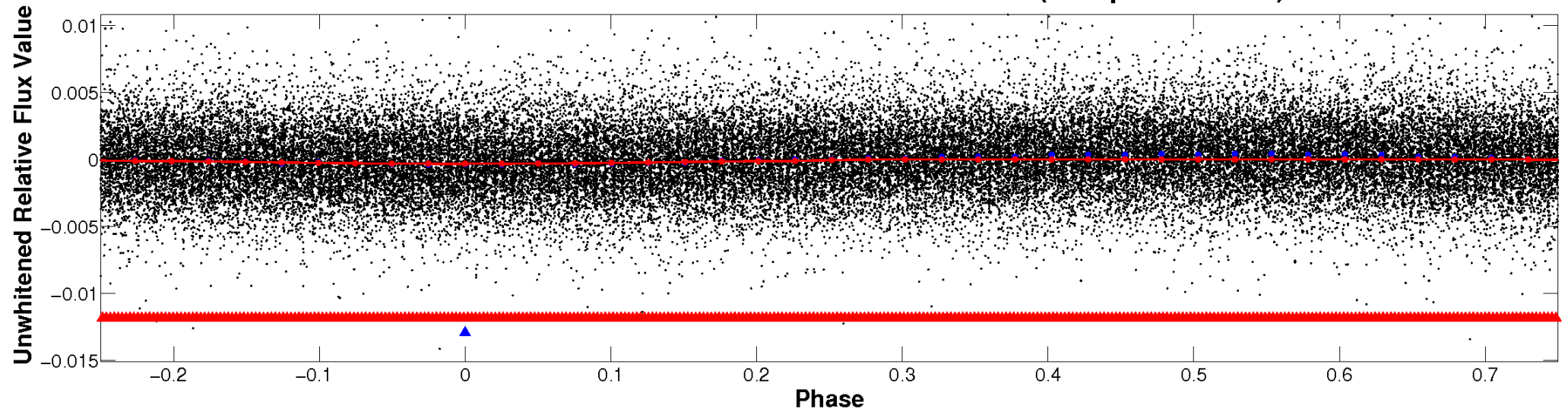
ALT Odd/Even

TCE 006071684-02

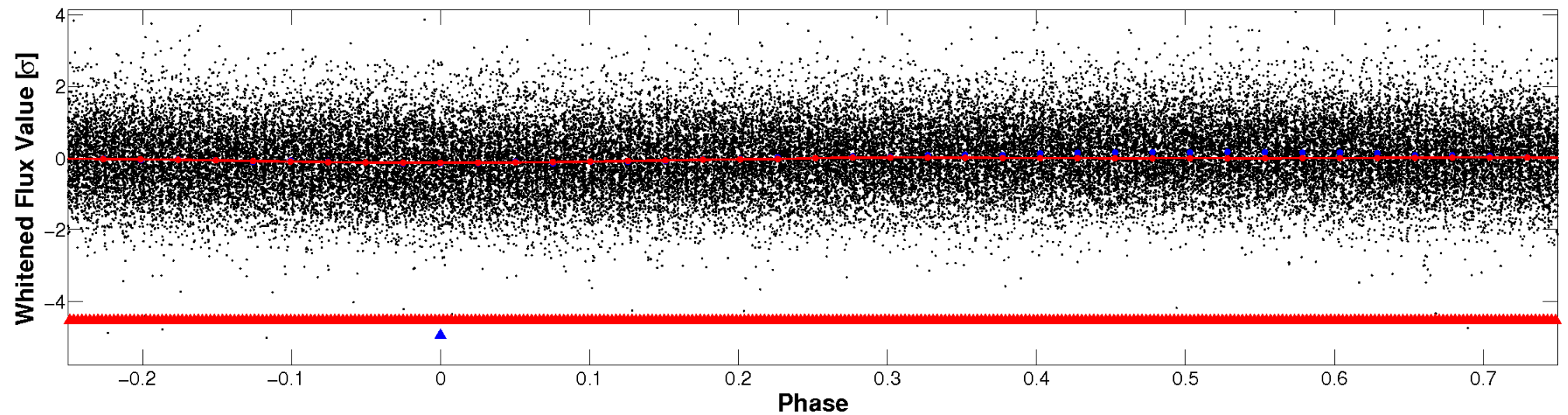


Non-Whitened Vs. Whitened Light Curve

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

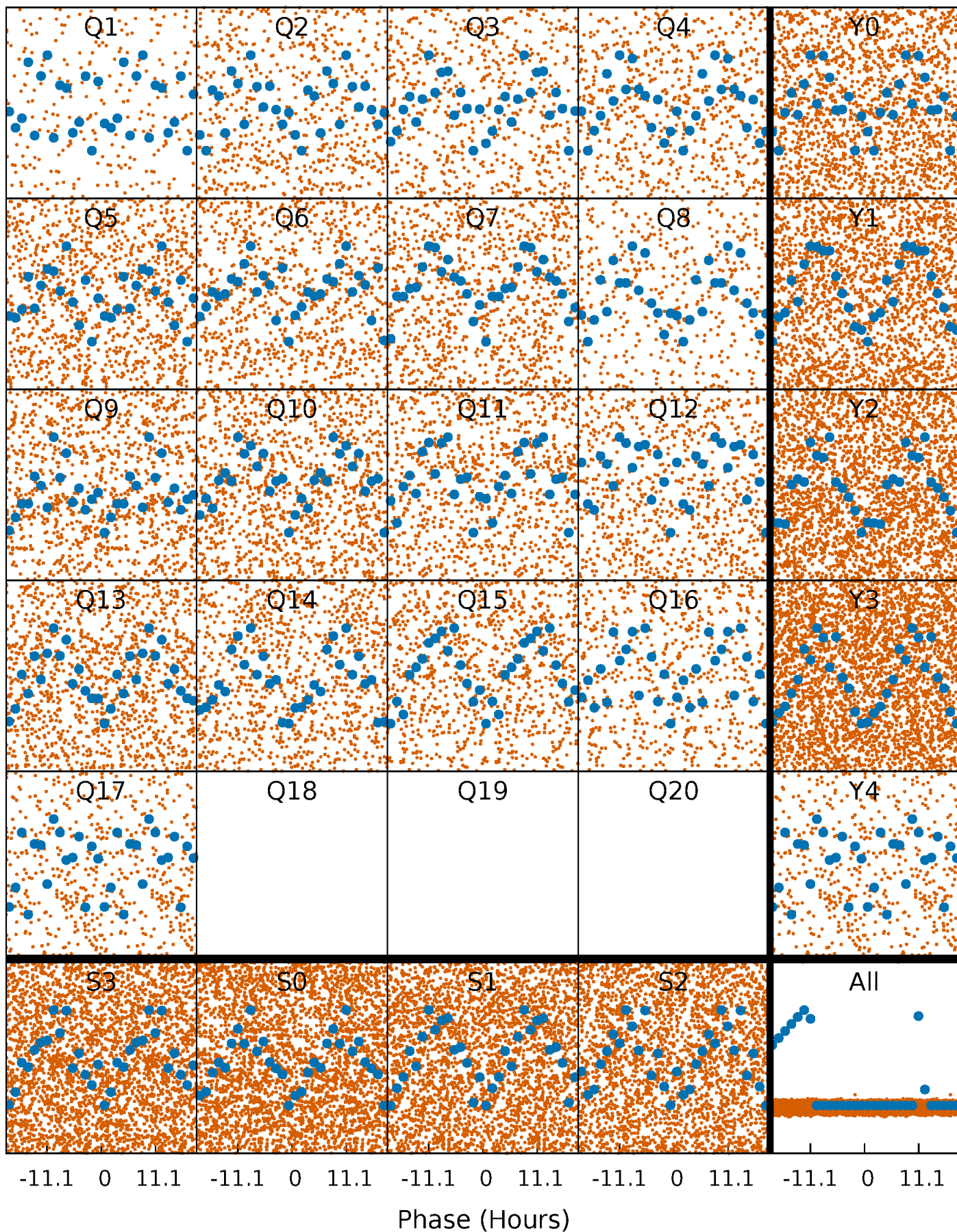


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



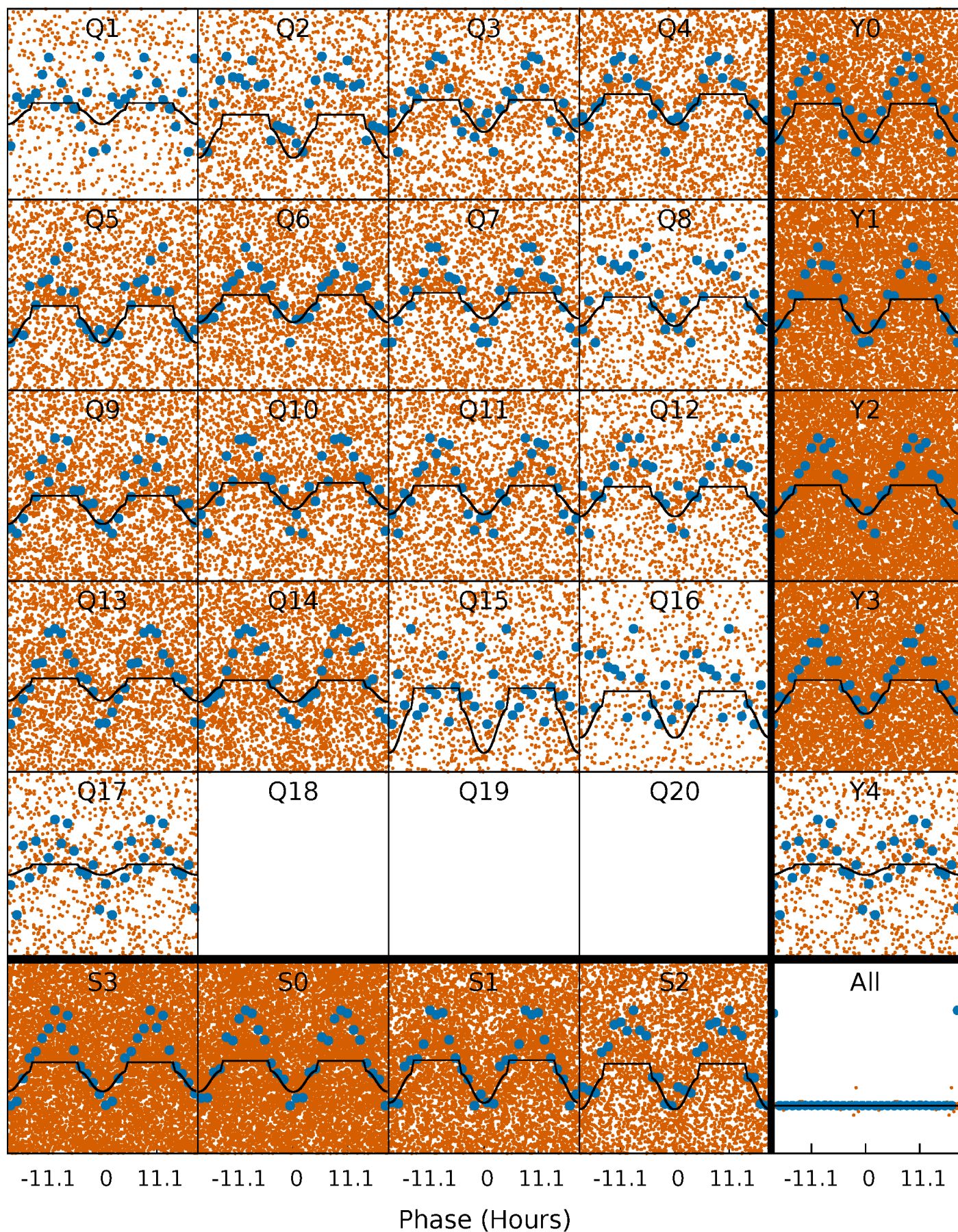
PDC Quarter-Phased Transit Curves

TCE 006071684-02 P= 0.812281 Days $T_0=131.974907$ (BKJD)



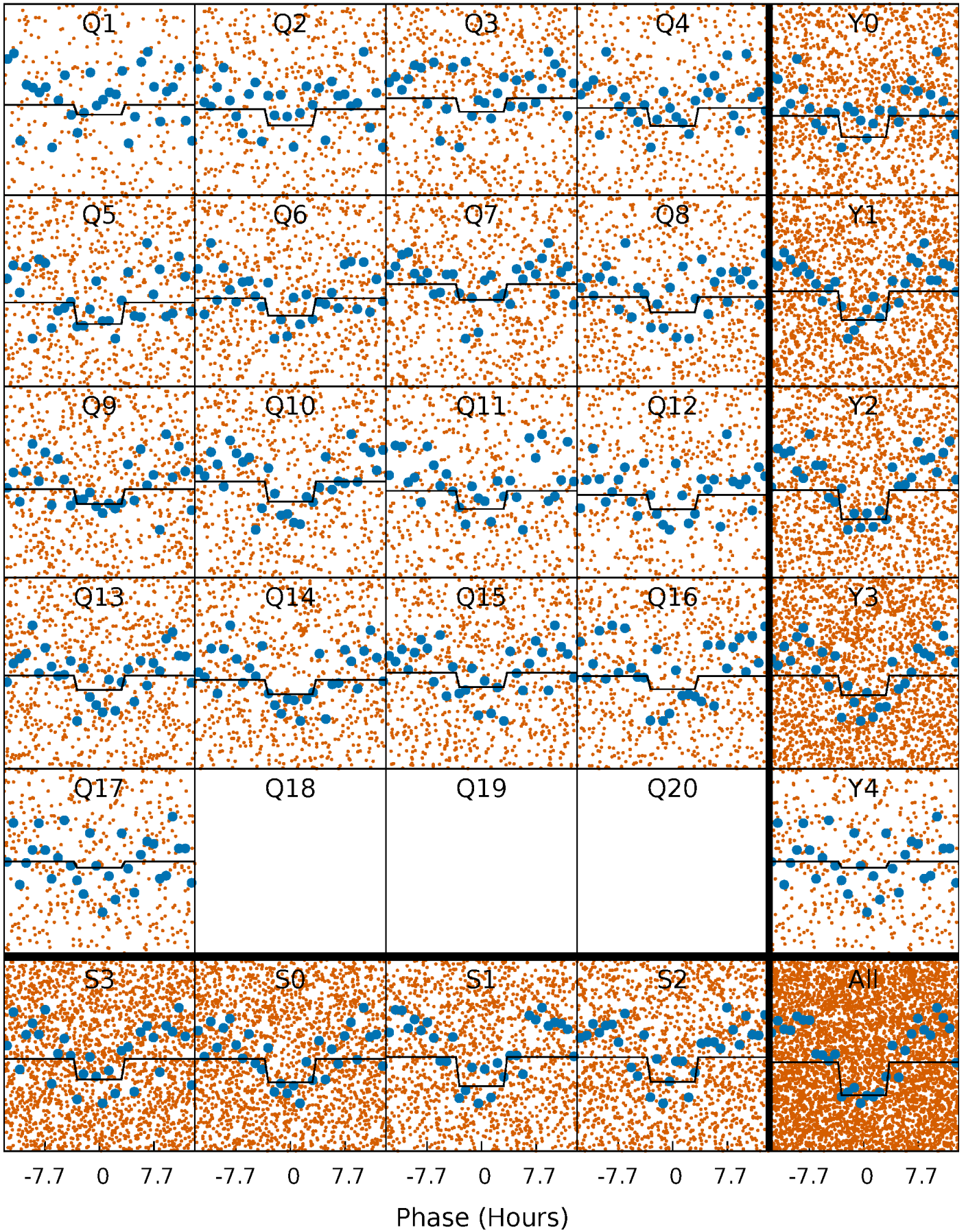
DV Quarter-Phased Transit Curves

TCE 006071684-02 $P = 0.812281$ Days $T_0 = 131.974907$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

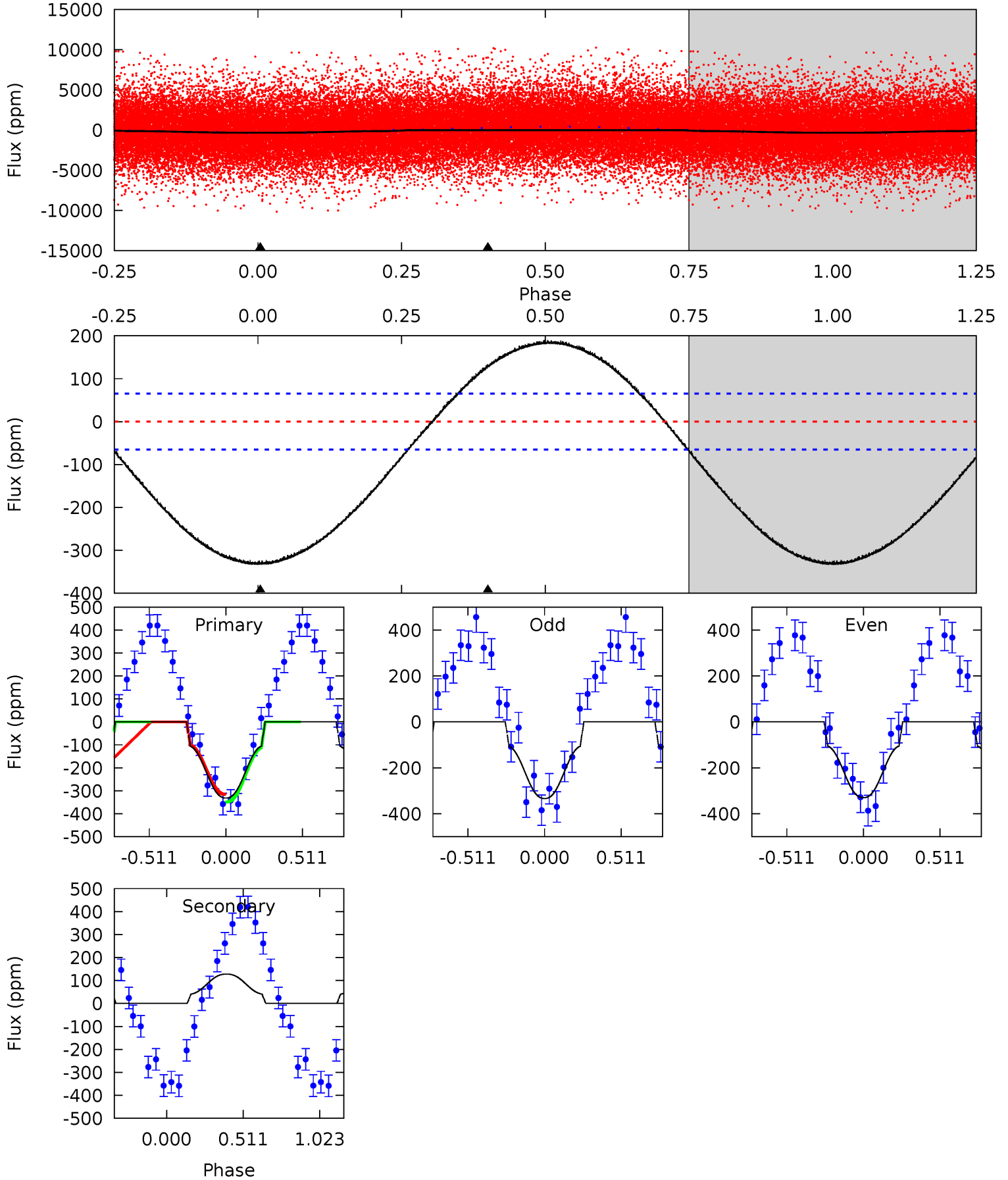
TCE 006071684-02 P= 0.812245 Days $T_0=132.030019$ (BKJD)



DV Model-Shift Uniqueness Test

006071684-02, P = 0.812281 Days, E = 131.162626 Days

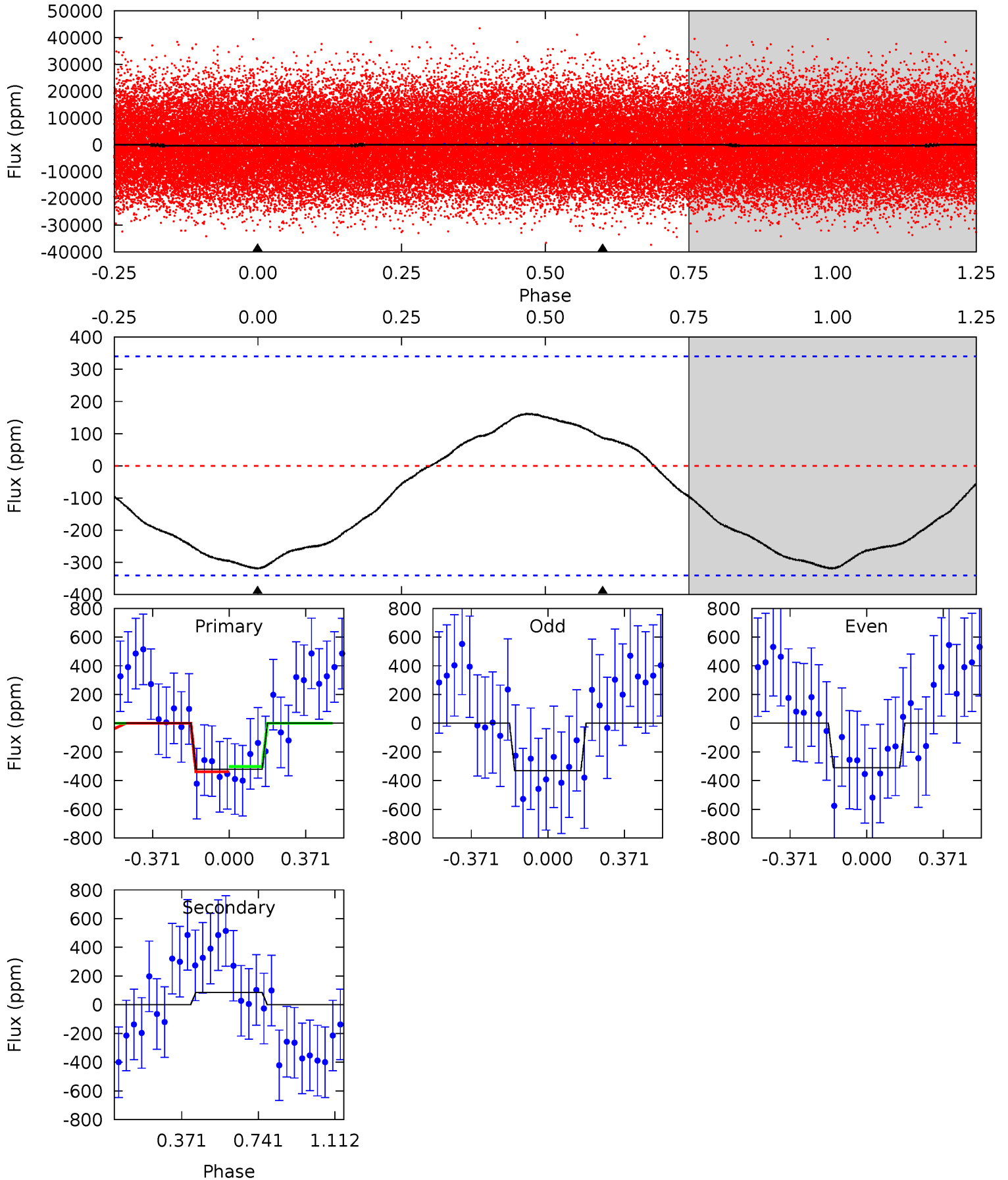
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	-8.26	0	0	4.21	0.66	3.00	21.4	21.4	-8.26	-8.26	0.12	1.07	0.36	1.08



Alt Model-Shift Uniqueness Test

006071684-02, P = 0.812245 Days, E = 131.217774 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.02	-1.08	0	0	4.28	0.90	0.42	4.02	4.02	-1.08	-1.08	0.13	1.10	0.34	0.22



Stellar Parameters For KIC 006071684

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6529^{+155}_{-214}	$4.074^{+0.279}_{-0.172}$	$-0.220^{+0.250}_{-0.300}$	$1.677^{+0.494}_{-0.494}$	$1.218^{+0.188}_{-0.188}$	$0.364^{+0.588}_{-0.173}$
	+2%/-3%	+7%/-4%	+114%/-136%	+29%/-29%	+15%/-15%	+161%/-48%
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 006071684-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	128 ± 15	$3.84^{+0.99}_{-0.82}$	3793^{+334}_{-301}	-4999^{+272}_{-359}	$-1.609^{+0.629}_{-0.987}$
Alt.	86 ± 80	$3.24^{+0.86}_{-0.74}$	3810^{+293}_{-336}	-4957^{+1037}_{-785}	$-1.489^{+1.309}_{-1.969}$

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

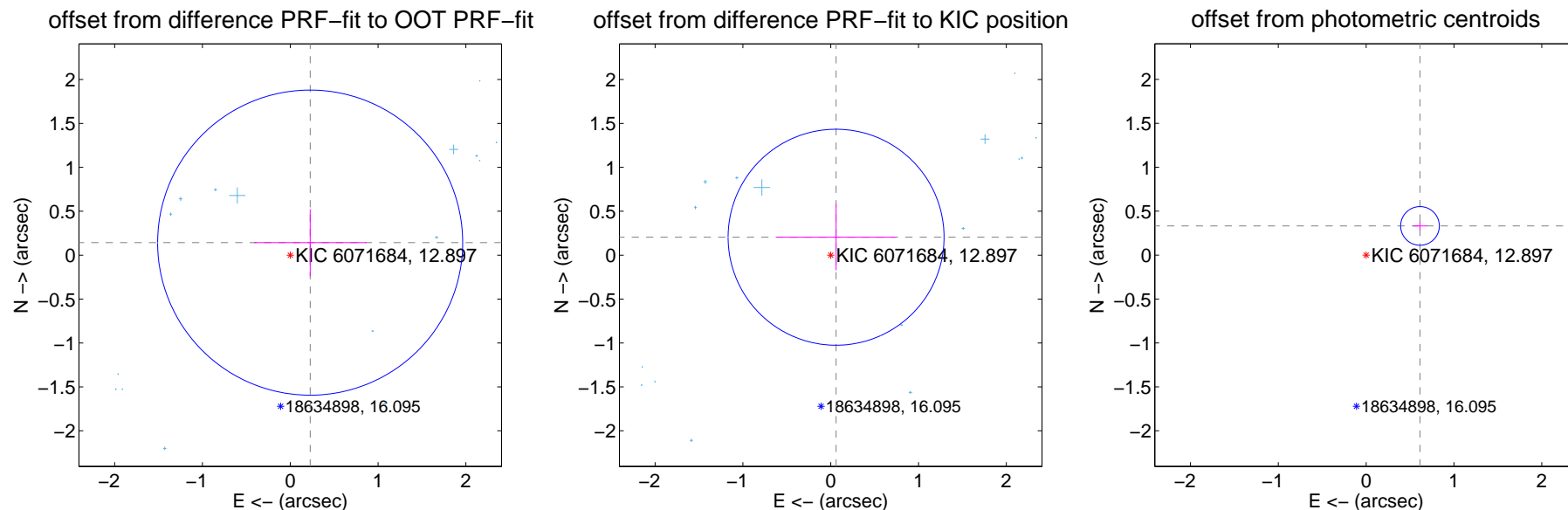
DV Centroid Data

Supplemental centroid analysis for 006071684-02. Kepler magnitude: 12.90. Transit SNR 14.53

There are 16 quarters with good PRF difference image offsets

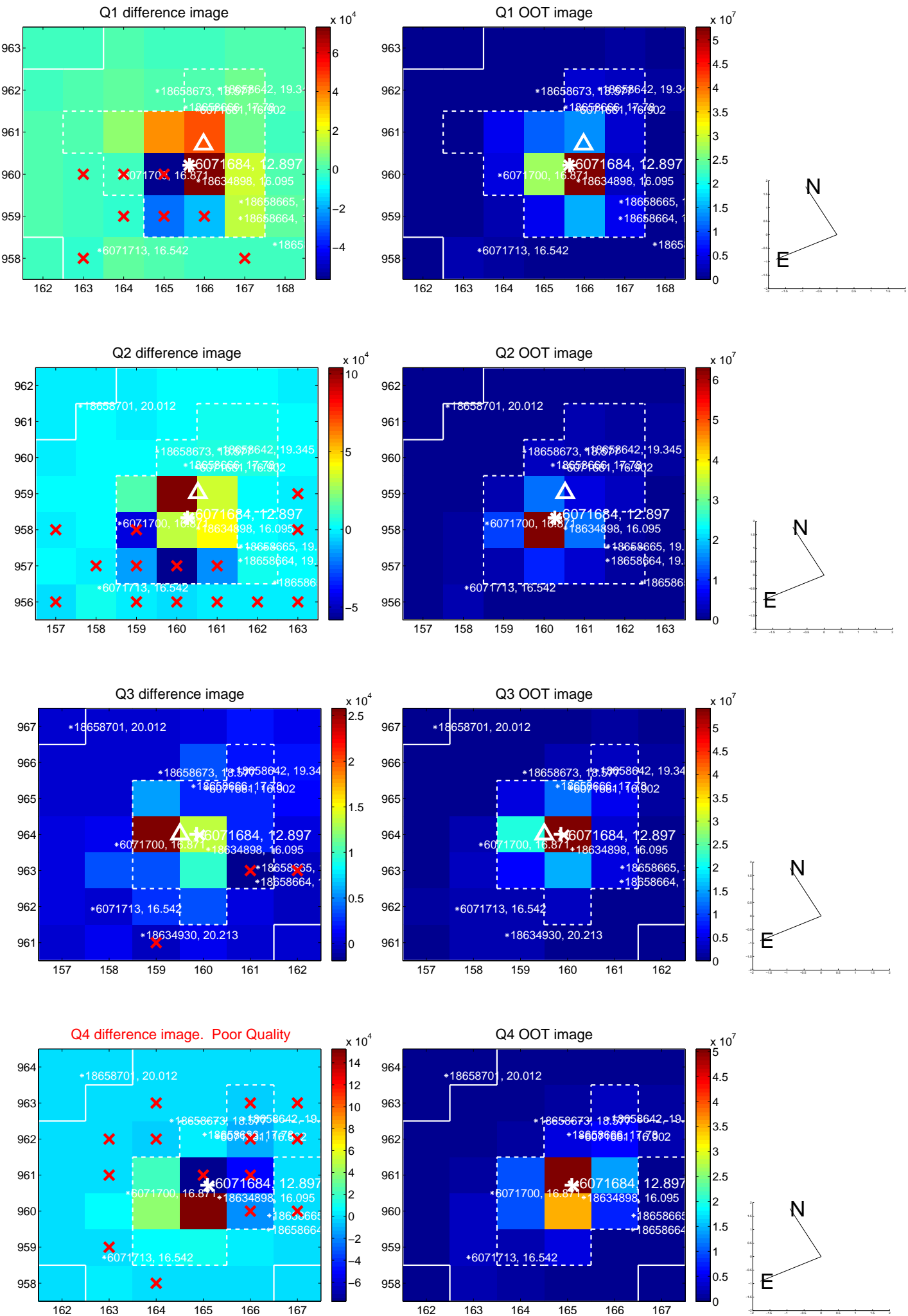
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.268 ± 0.579	0.46	-0.227 ± 0.641	0.143 ± 0.380
PRF-fit source offset from KIC position	0.213 ± 0.410	0.52	-0.061 ± 0.676	0.204 ± 0.377
photometric centroid source offset	0.70 ± 0.07	9.50	-0.61 ± 0.08	0.33 ± 0.05

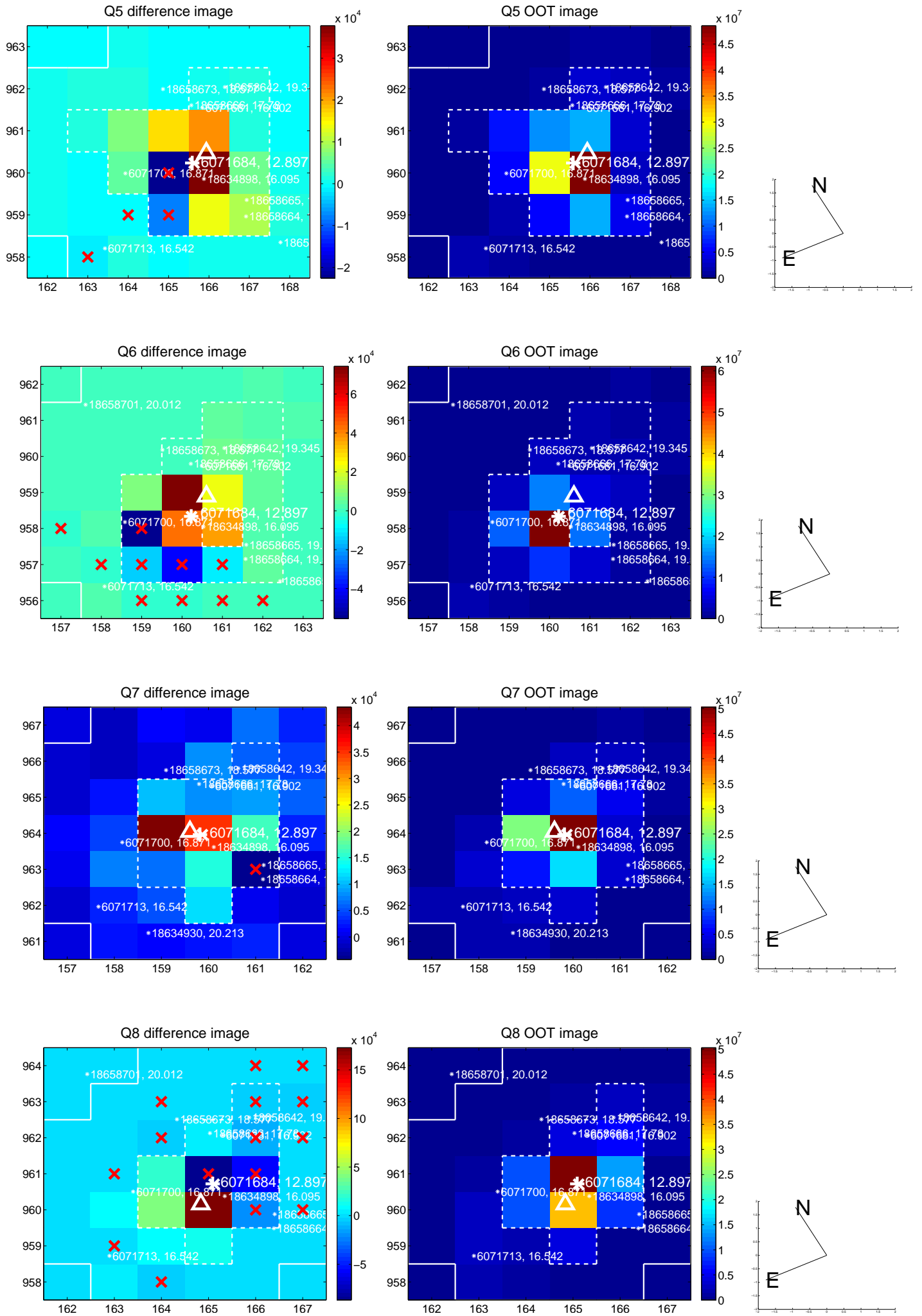


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

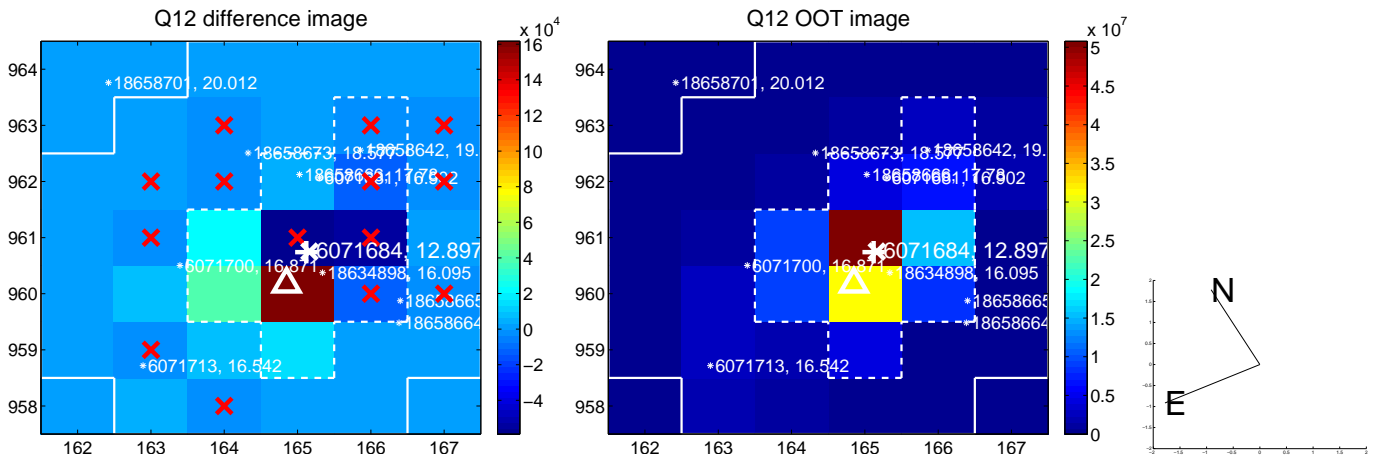
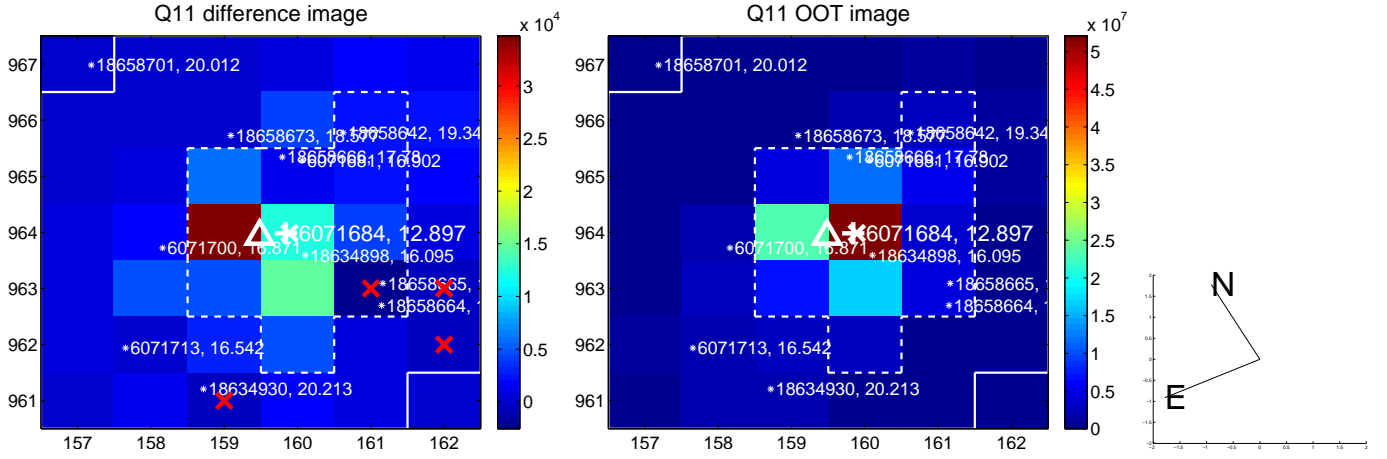
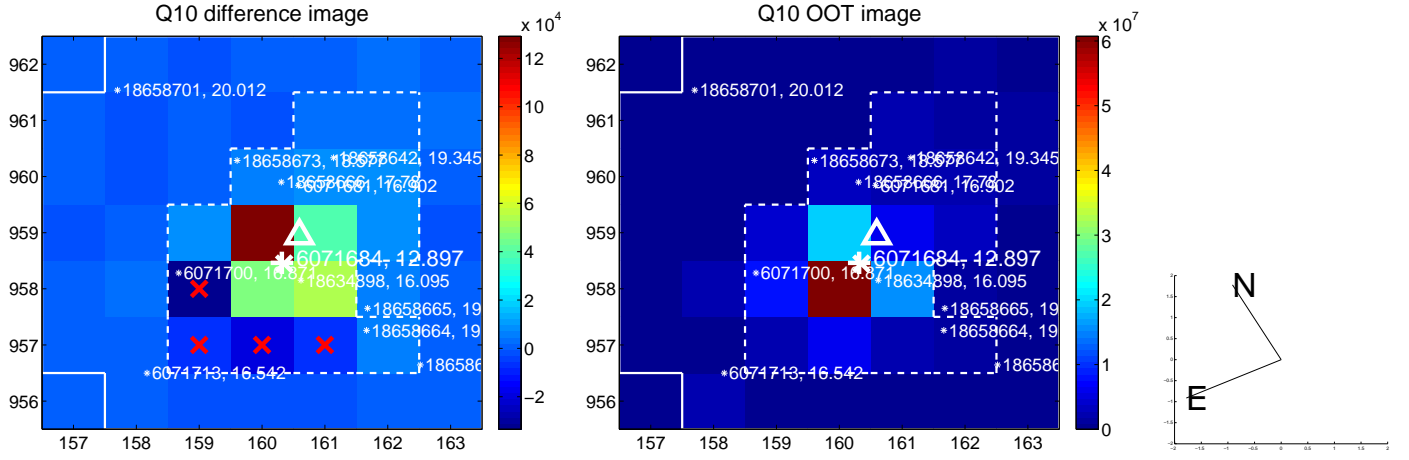
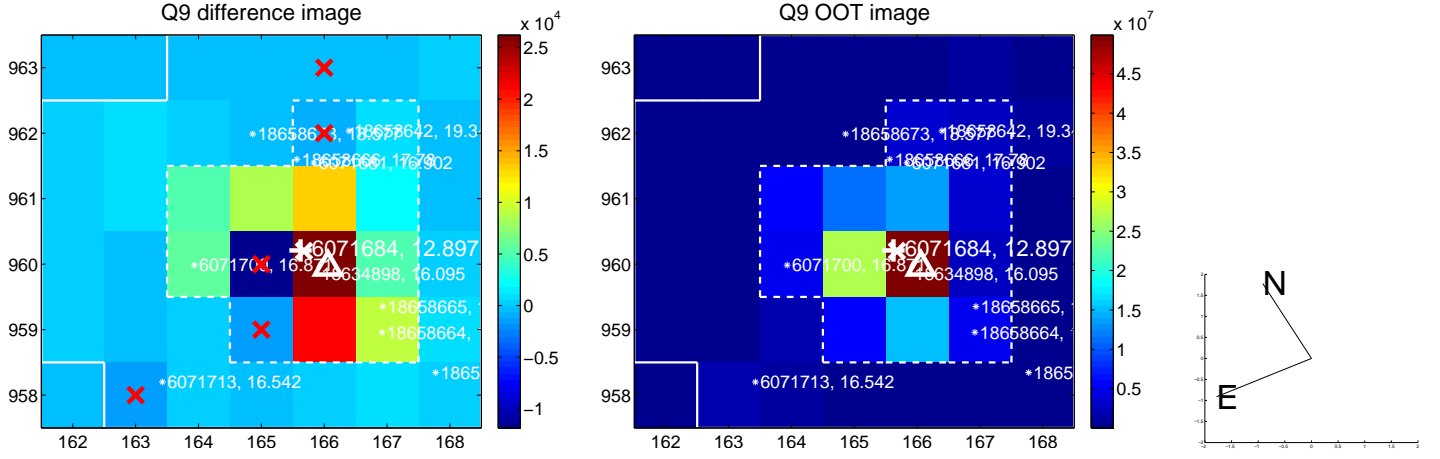
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



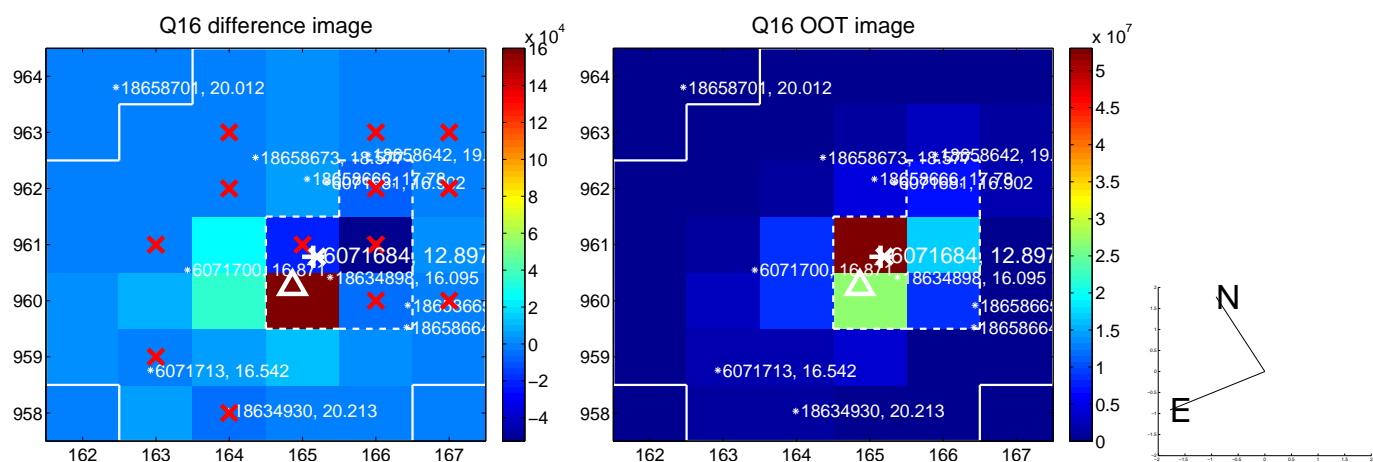
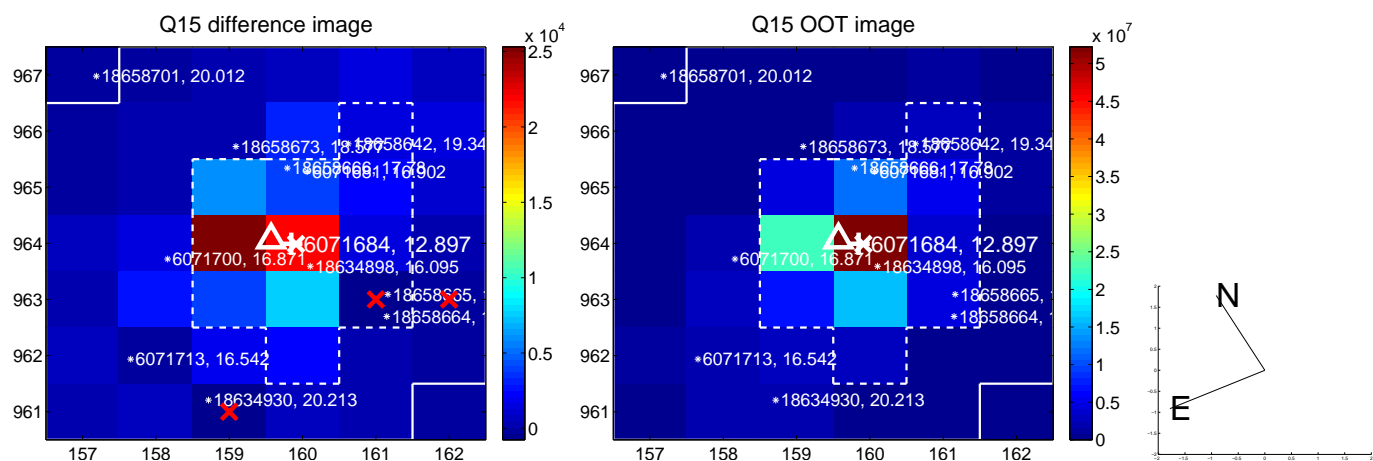
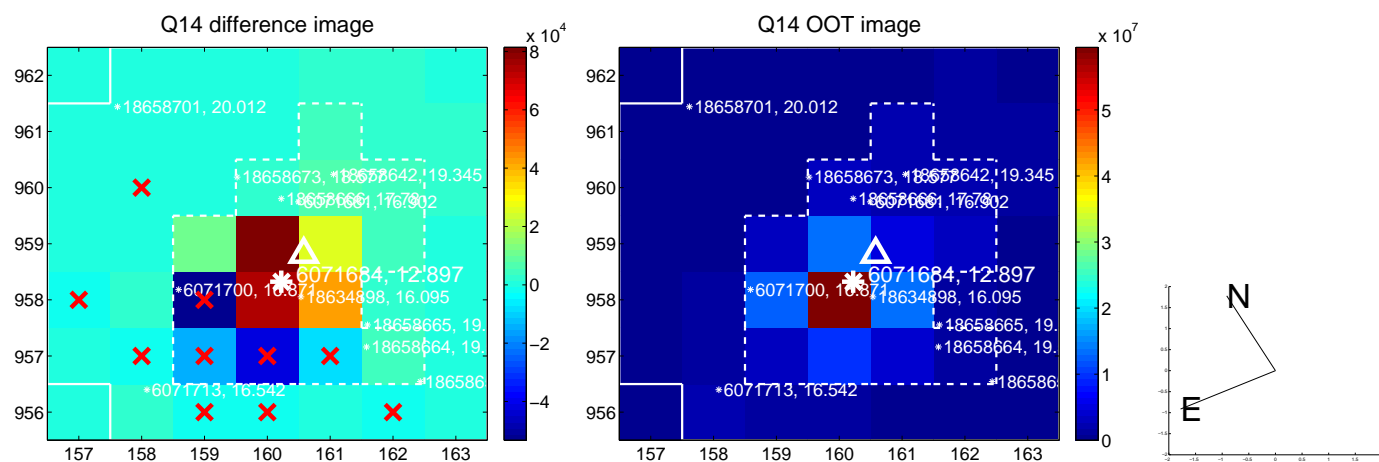
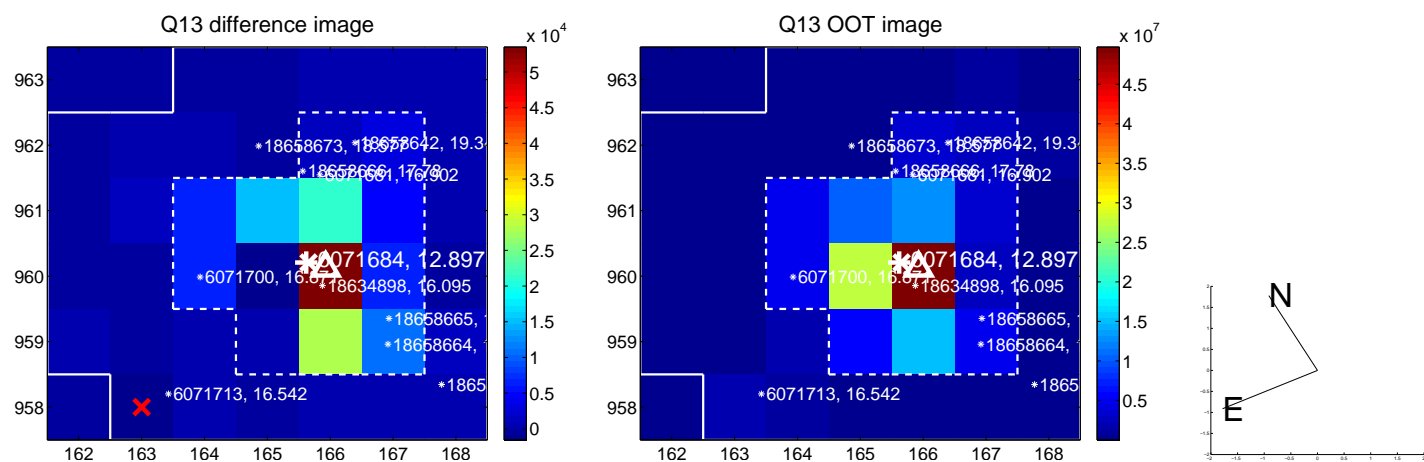
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



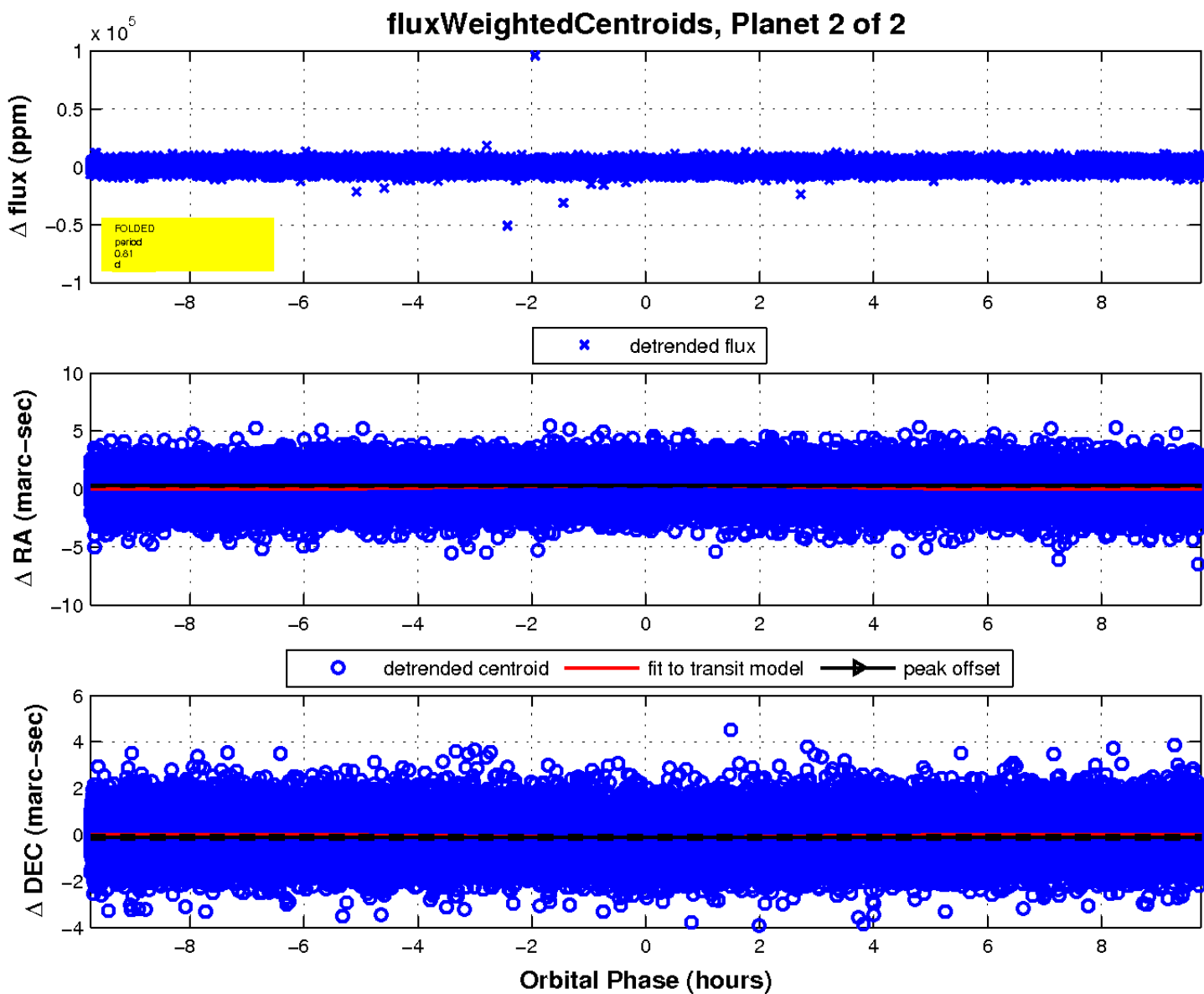
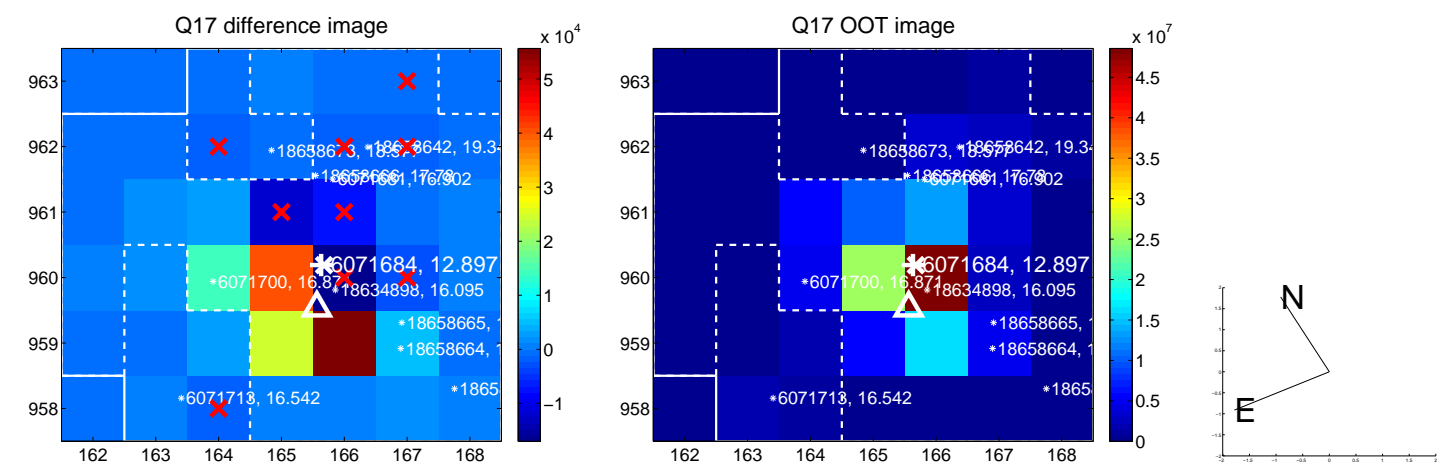
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

