

KIC 008741677

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})
008741677-01	OBS	No	2.731633	133.920359	7.4	15.771	7.4	4.9	1.15	6331	0.35	1225.38
008741677-02	OBS	No	2.731090	132.261883	20.6	17.996	16.0	13.5	1.15	6331	0.54	1225.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008741677-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008741677-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

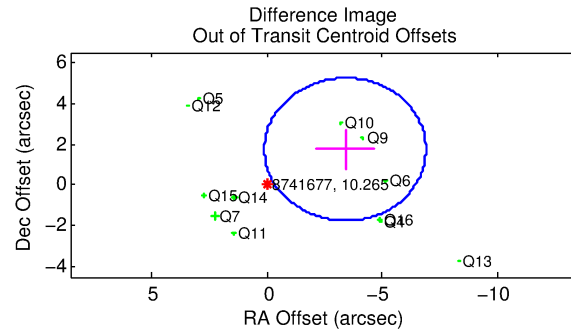
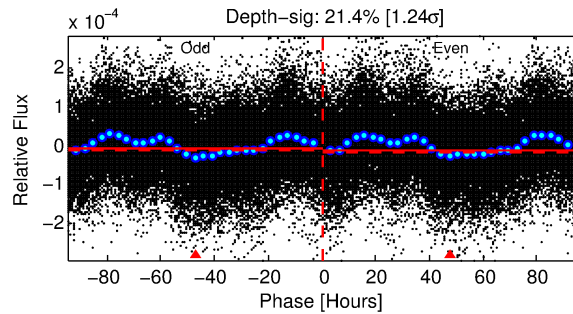
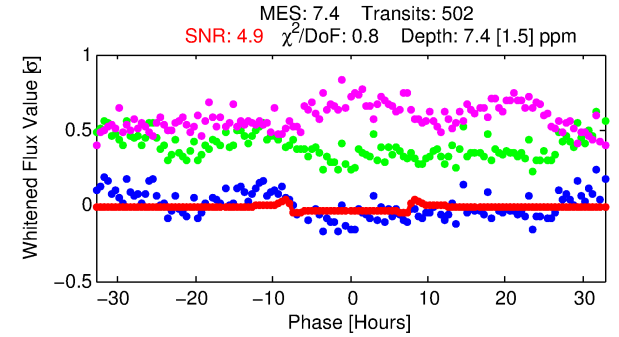
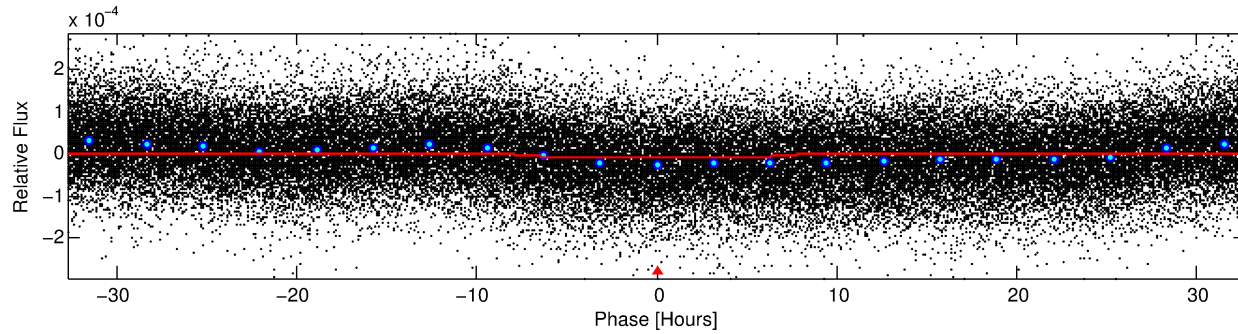
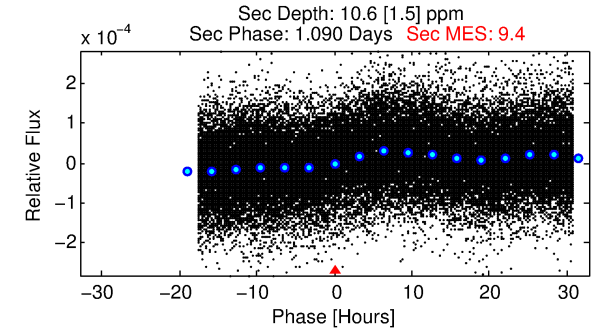
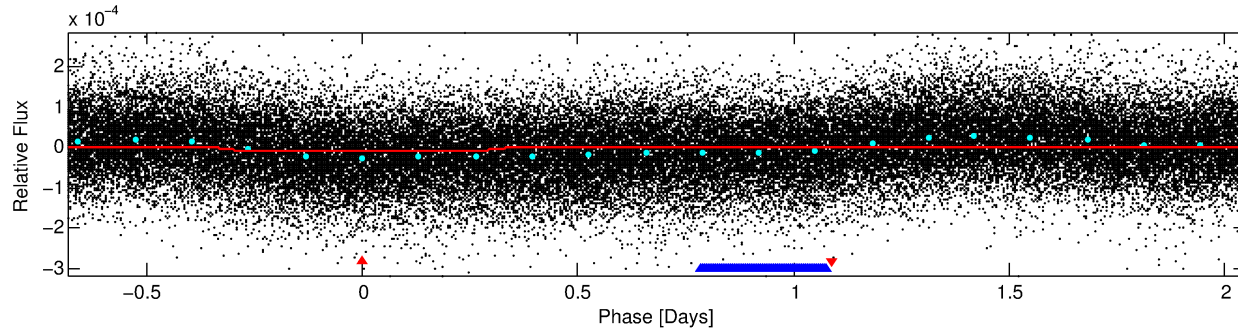
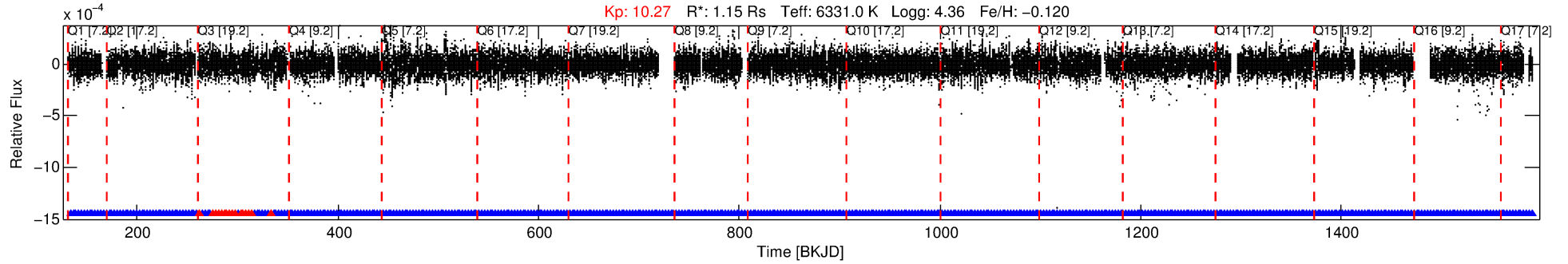
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008741677-01

No Significant Match Found

DV One-Page Summary

KIC: 8741677 Candidate: 1 of 2 Period: 2.732 d



DV Fit Results:

Period = 2.73163 [0.00004] d
Epoch = 133.9204 [0.0078] BKJD
Rp/R* = 0.0028 [0.0006]
a/R* = 1.17 [0.34]
b = 0.82 [0.42]
Seff = 1225.38 [511.51]
Teq = 1509 [157] K
Rp = 0.35 [0.14] Re
a = 0.0394 [0.0106] AU
Ag = 74.05 [44.58] [1.64σ]
Teffp = 6842 [832] K [6.30σ]

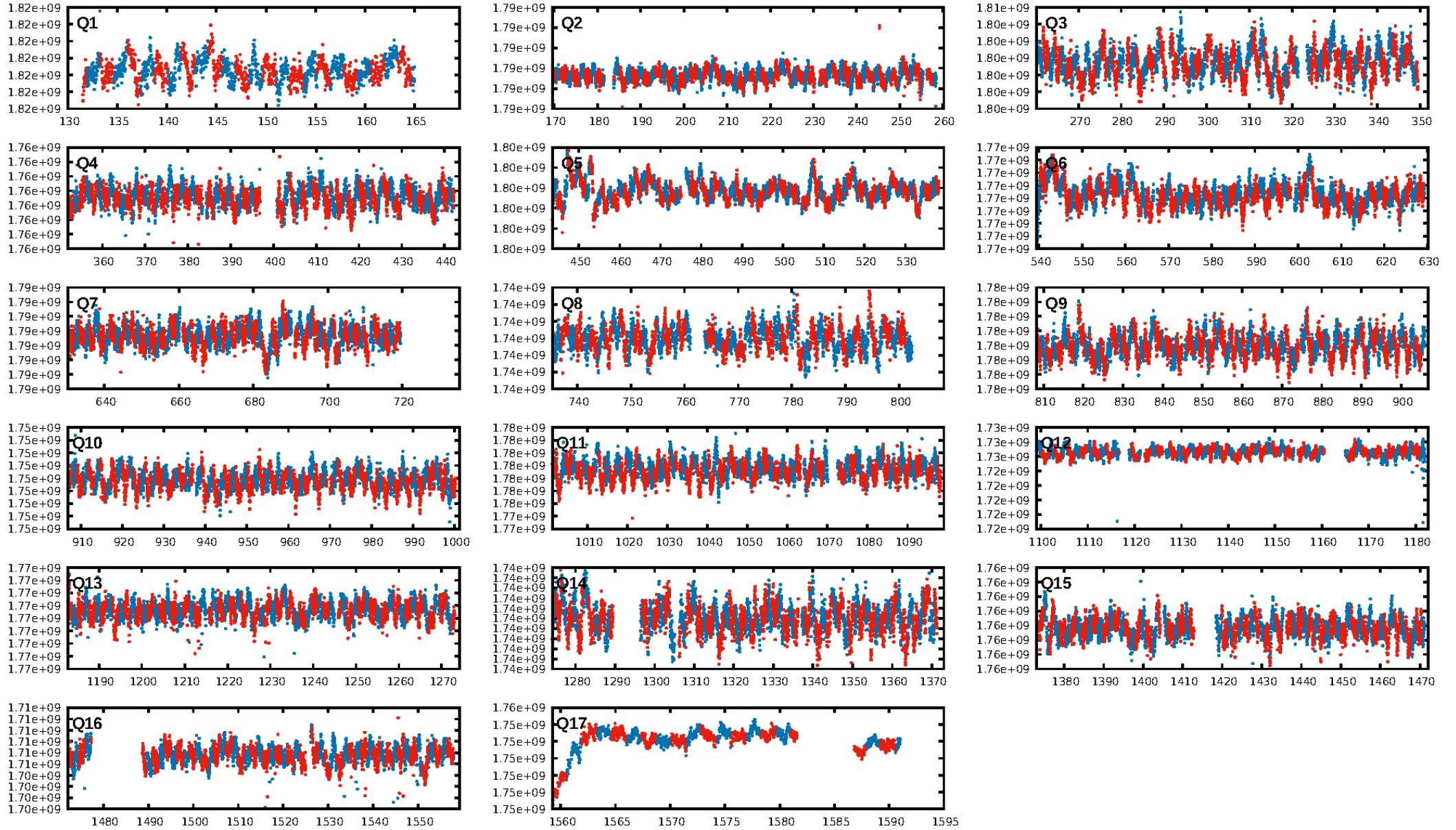
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [462/478]
GhostDiagnostic-chr: 3.584
Centroid-sig: 2.9%
Centroid-so: 2.412 arcsec [1.66σ]
OotOffset-rm: 3.814 arcsec [3.27σ]
KicOffset-rm: 3.401 arcsec [3.18σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.33 [4/12]
DiffImageOverlap-fno: 0.00 [0/17]

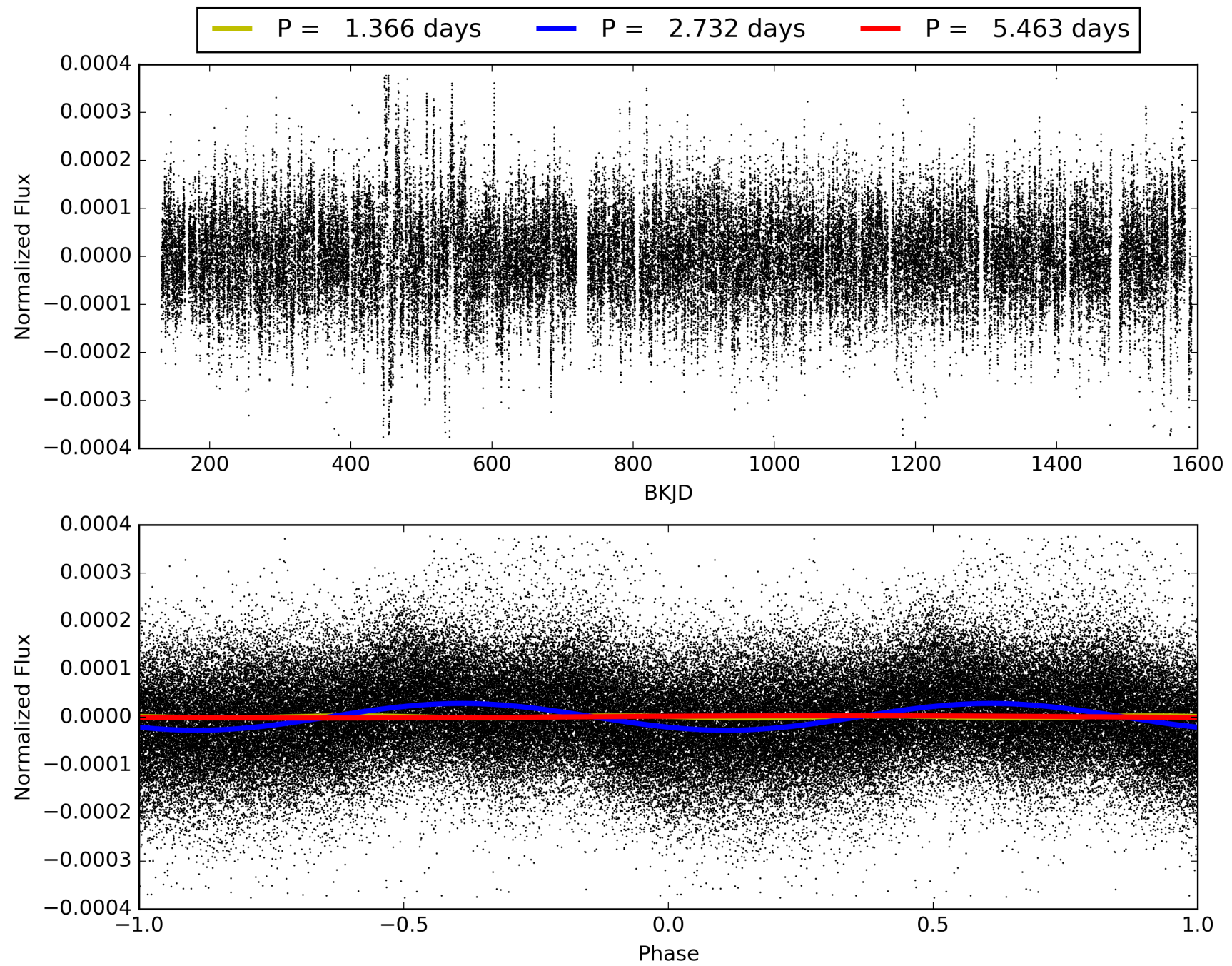
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:05:06 Z

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

TCE 008741677-01, PDC Light Curves

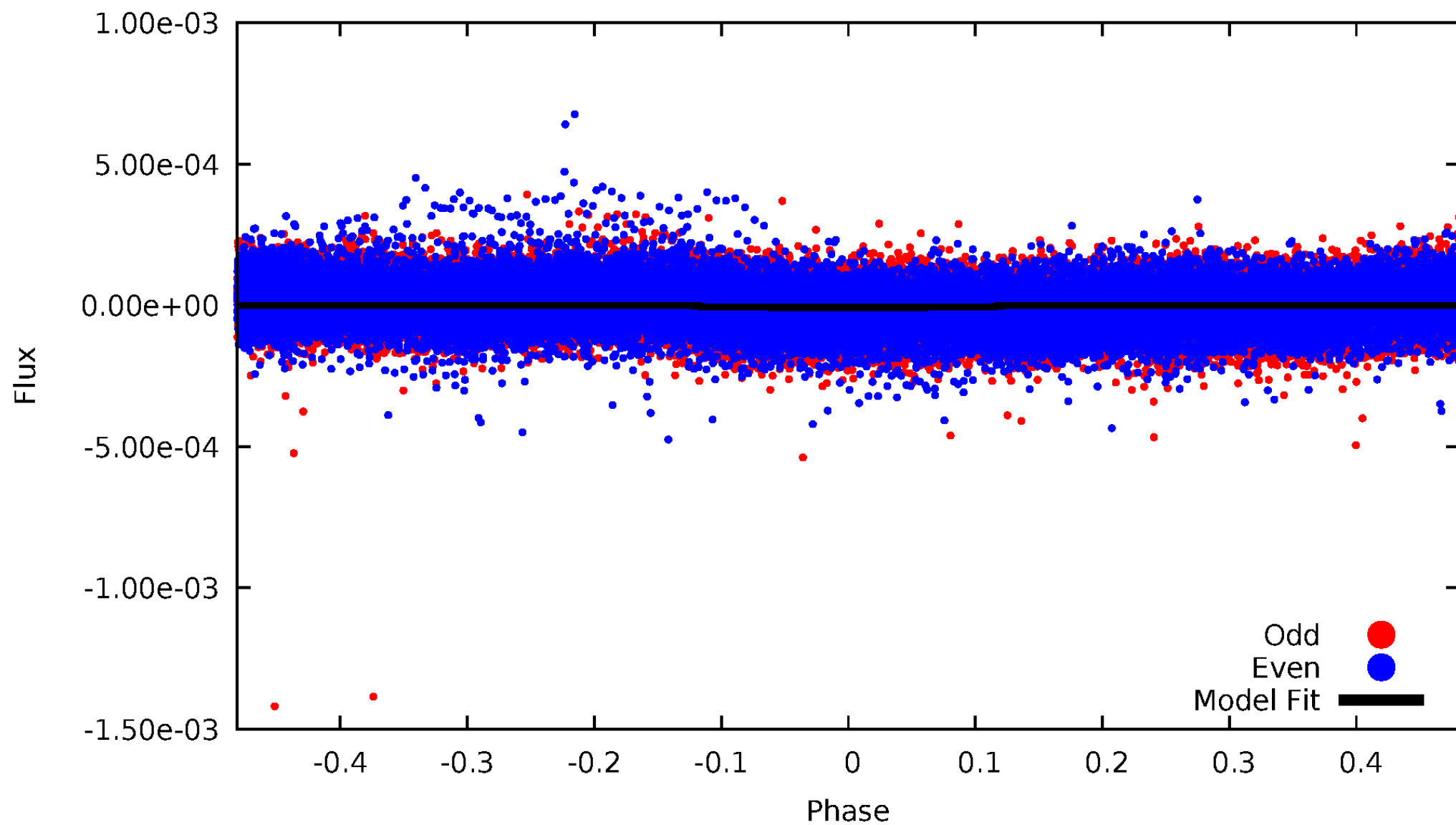


TCE 008741677-01



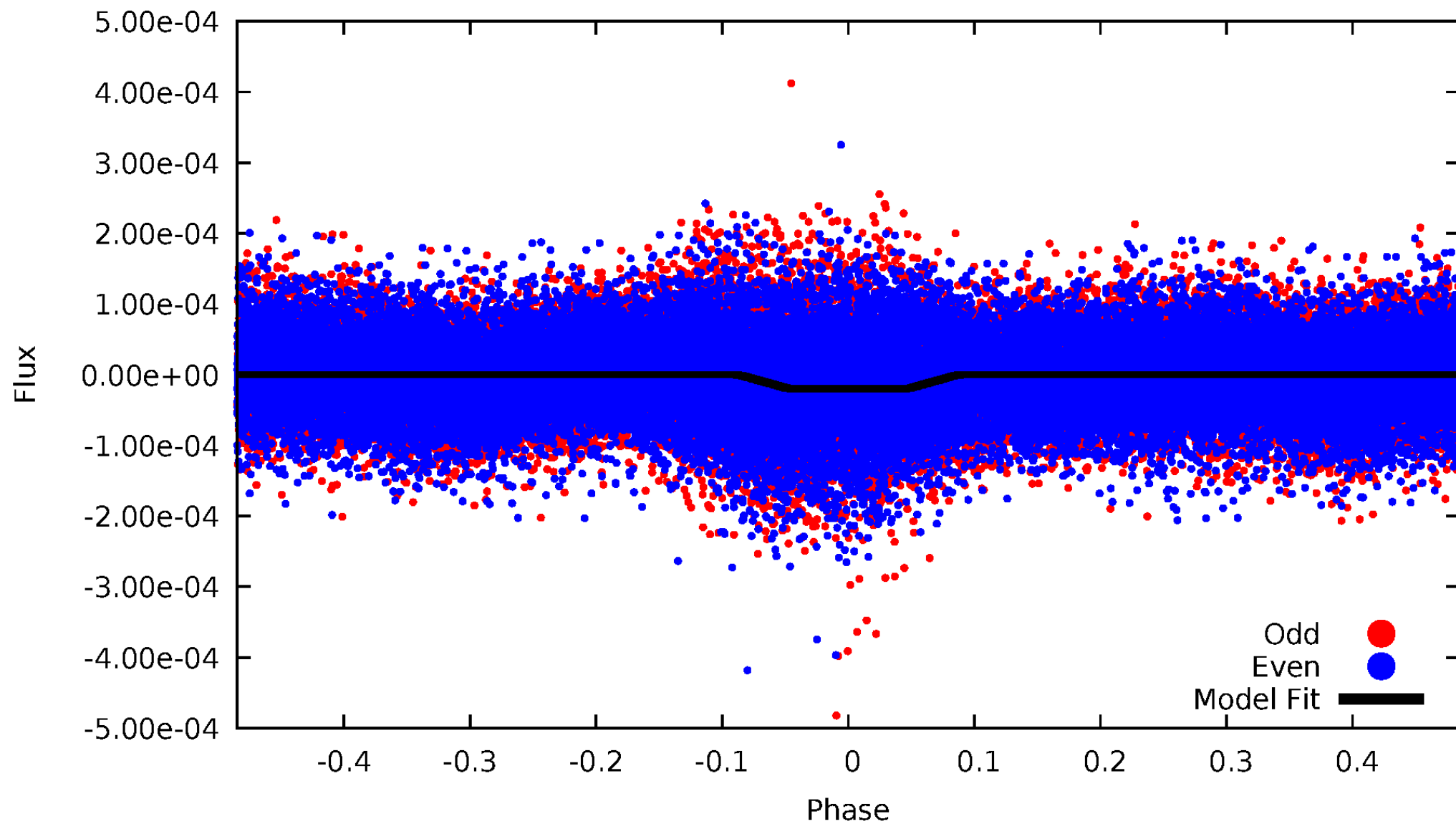
DV Odd/Even

TCE 008741677-01



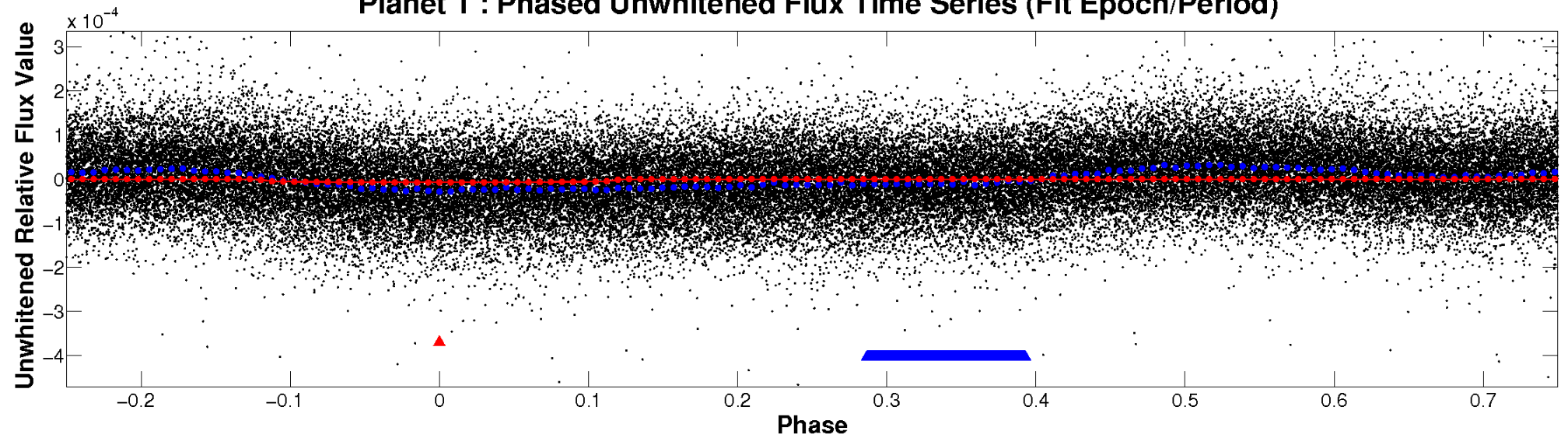
ALT Odd/Even

TCE 008741677-01

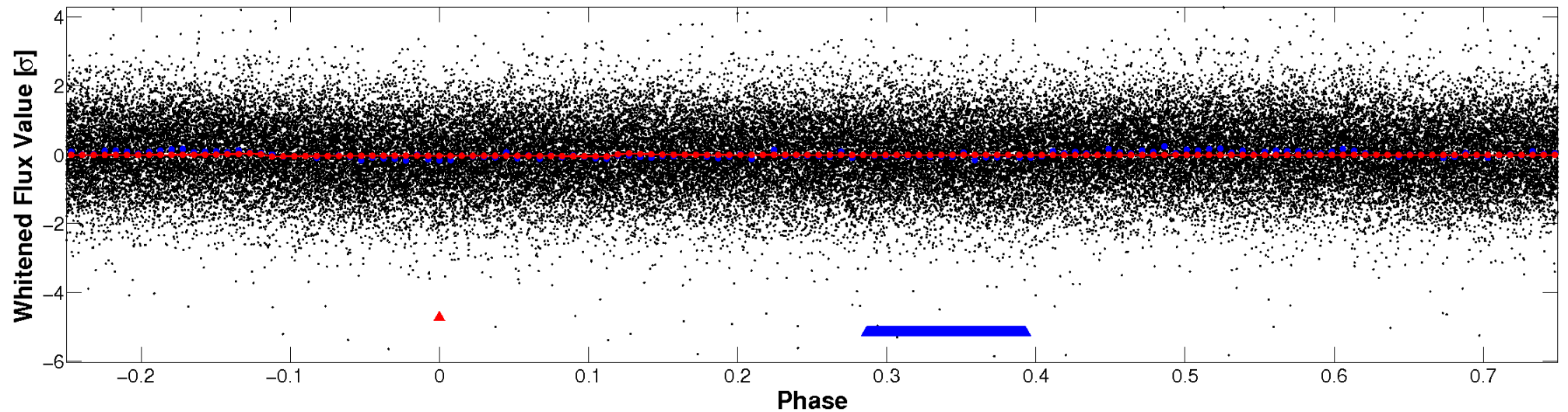


Non-Whitened Vs. Whitened Light Curve

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

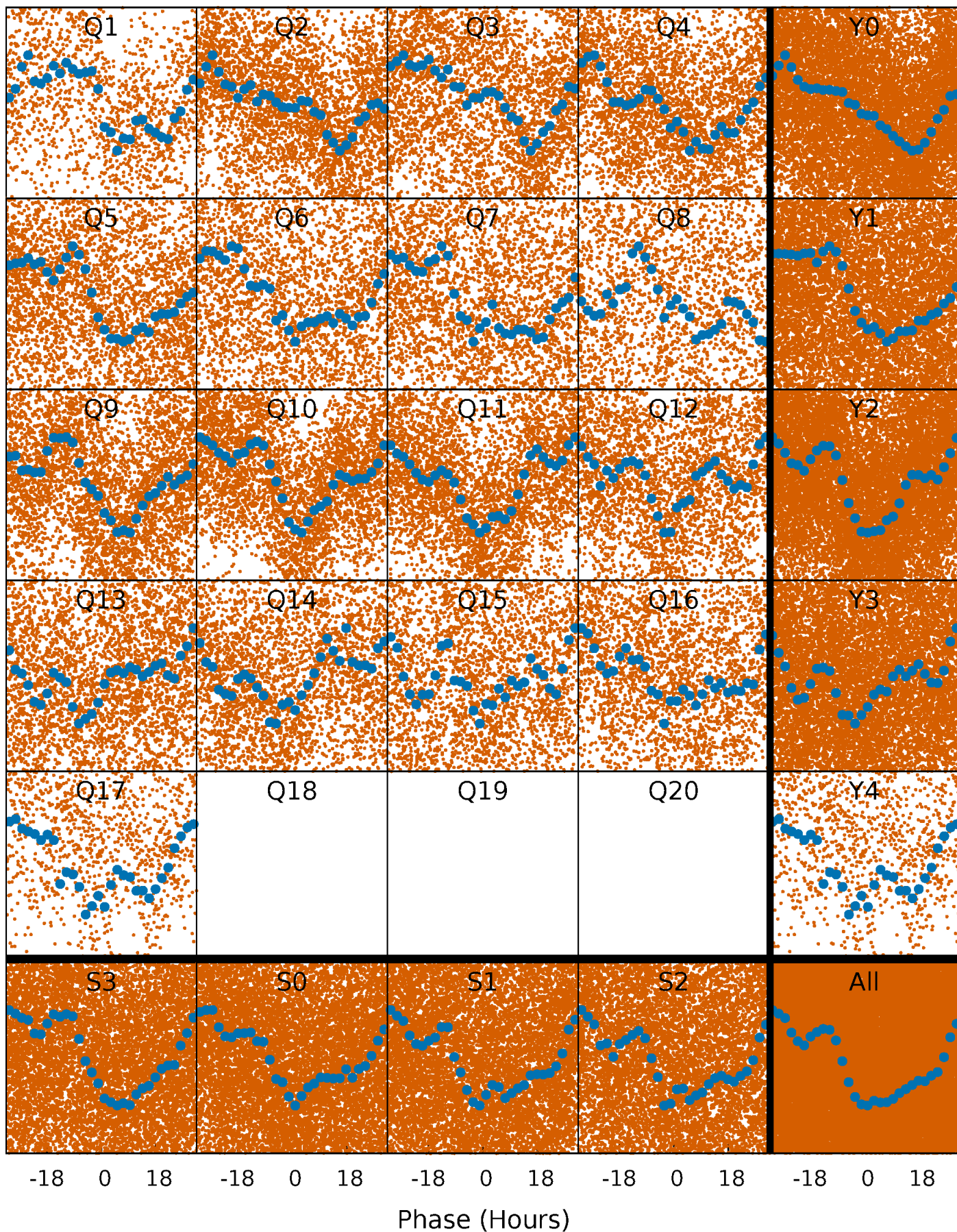


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



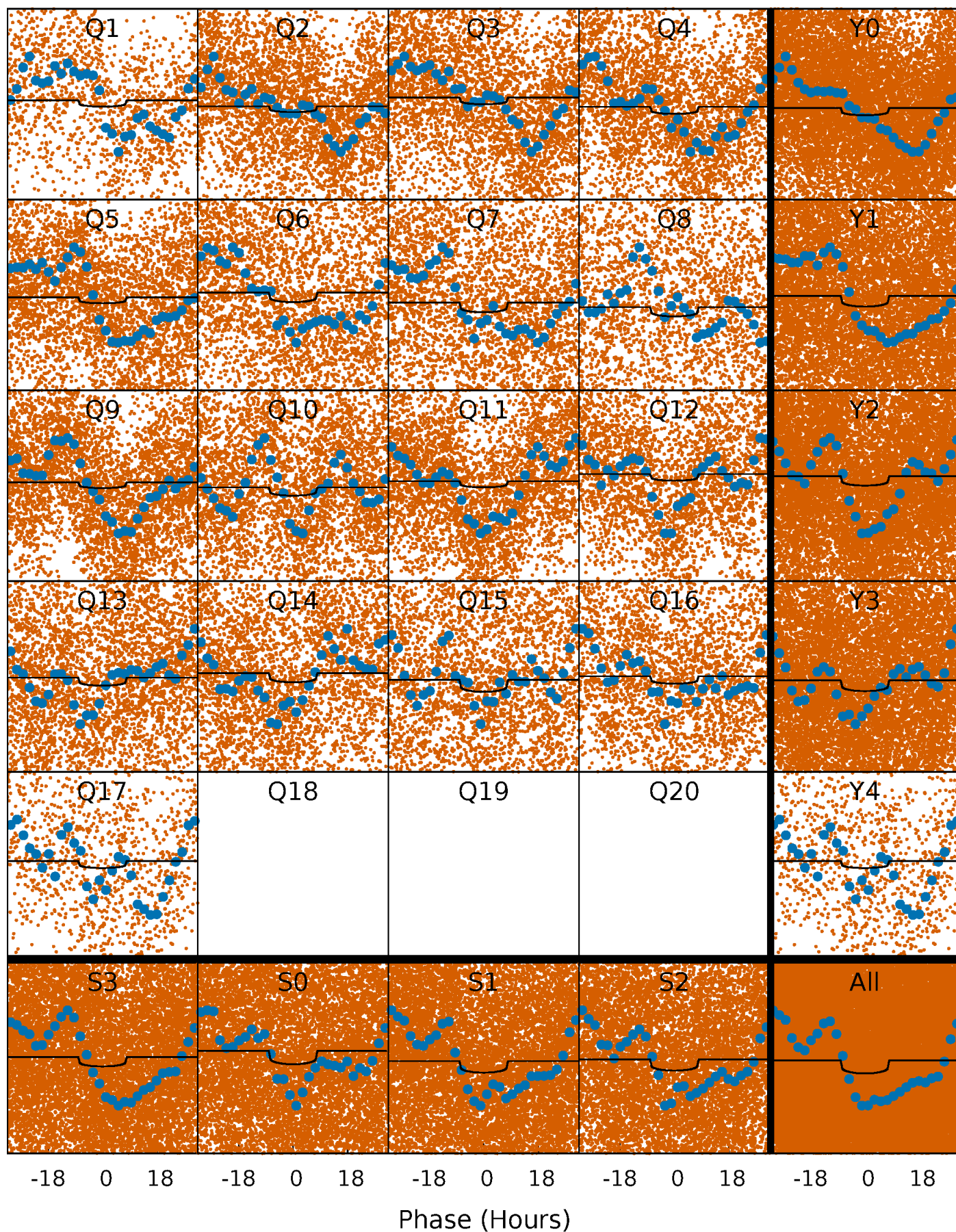
PDC Quarter-Phased Transit Curves

TCE 008741677-01 P= 2.731633 Days $T_0=133.920359$ (BKJD)



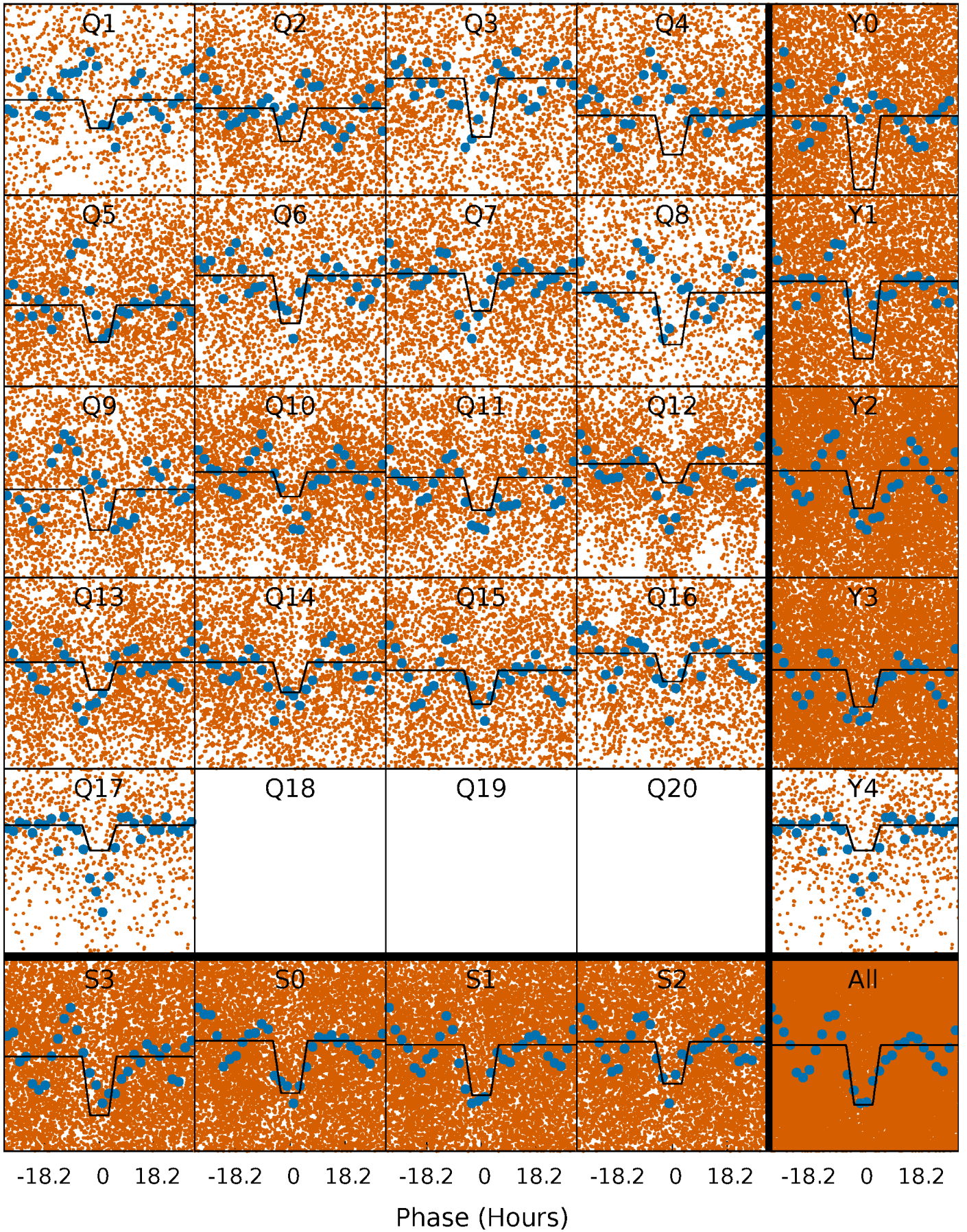
DV Quarter-Phased Transit Curves

TCE 008741677-01 P= 2.731633 Days $T_0=133.920359$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

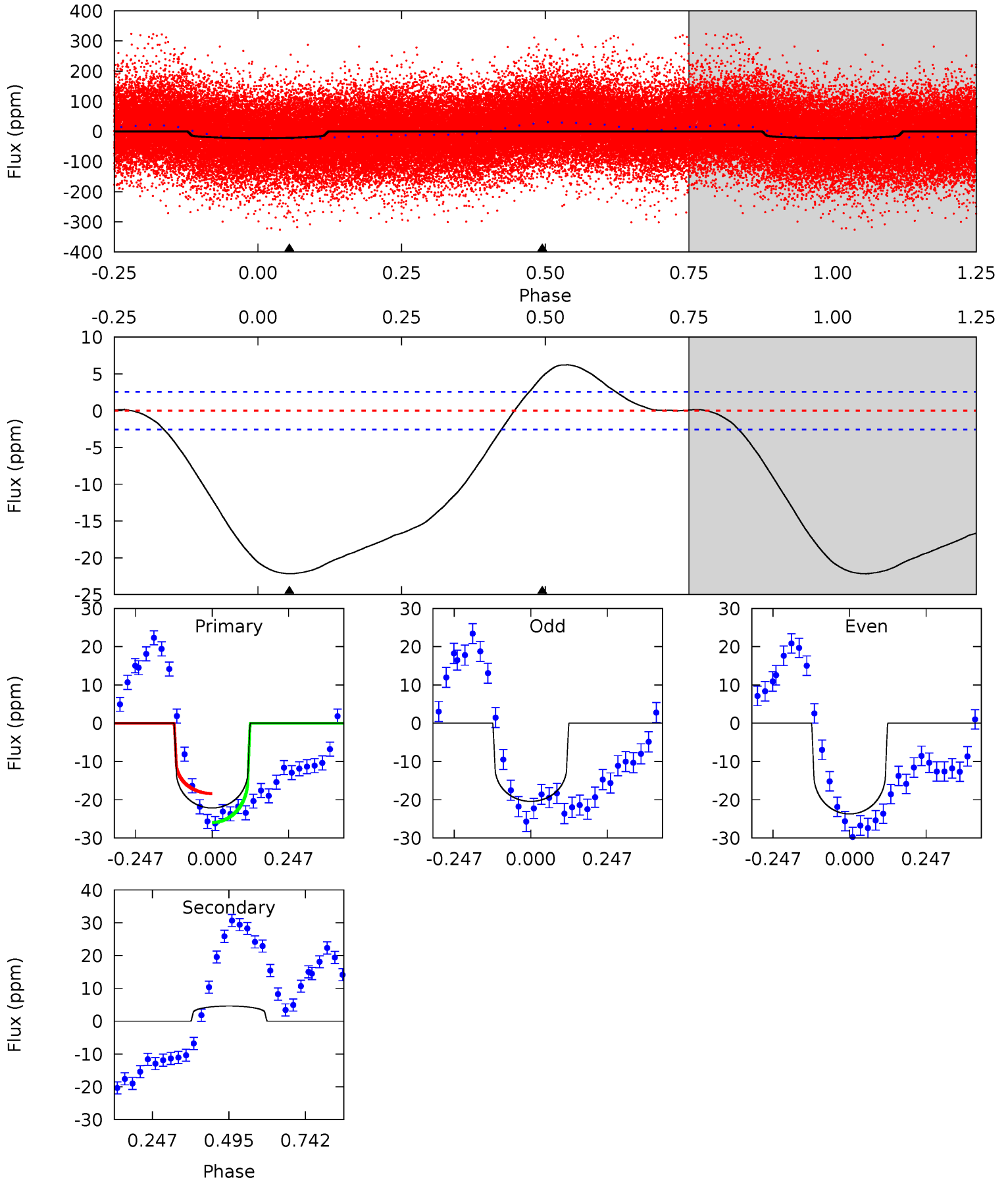
TCE 008741677-01 P= 2.731503 Days $T_0=133.914557$ (BKJD)



DV Model-Shift Uniqueness Test

008741677-01, P = 2.731633 Days, E = 131.188726 Days

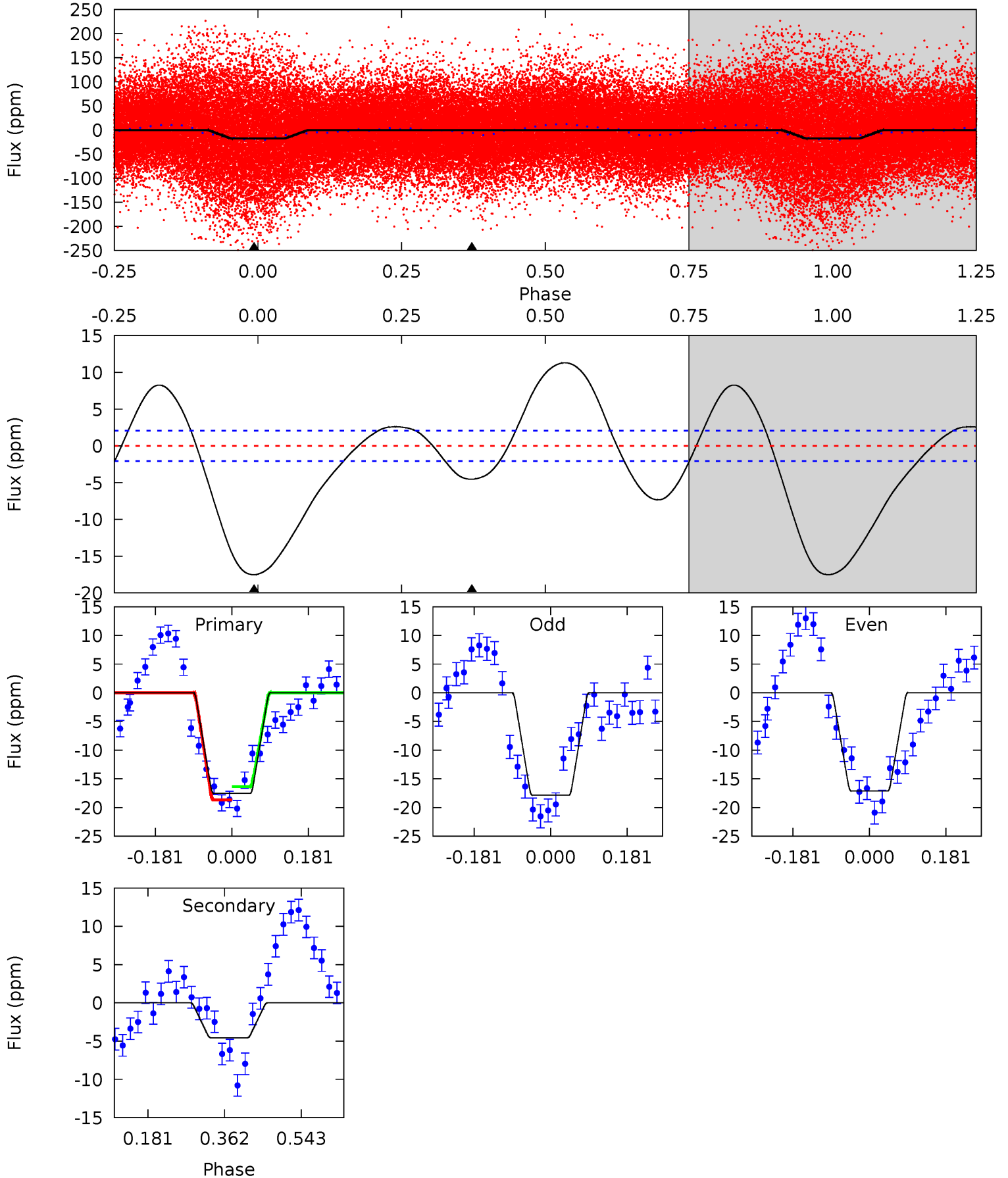
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.7	-7.85	0	0	4.37	1.16	0.87	37.7	37.7	-7.85	-7.85	2.82	1.20	0.22	6.32



Alt Model-Shift Uniqueness Test

008741677-01, P = 2.731503 Days, E = 131.183054 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.6	9.77	0	0	4.44	1.34	11.9	37.6	37.6	9.77	9.77	0.79	1.01	0.39	2.48



Stellar Parameters For KIC 008741677

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6331^{+179}_{-246}	$4.356^{+0.090}_{-0.210}$	$-0.120^{+0.250}_{-0.300}$	$1.151^{+0.371}_{-0.171}$	$1.091^{+0.188}_{-0.141}$	$1.009^{+0.485}_{-0.520}$
	+3%/-4%	+2%/-5%	+208%/-250%	+32%/-15%	+17%/-13%	+48%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008741677-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	5 ± 1	$0.36^{+0.11}_{-0.09}$	2140^{+156}_{-131}	-5568^{+531}_{-771}	$-29.567^{+11.956}_{-22.253}$
Alt.	-5 ± 0	$0.57^{+0.12}_{-0.09}$	2136^{+166}_{-127}	4525^{+340}_{-274}	11^{+5}_{-3}

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

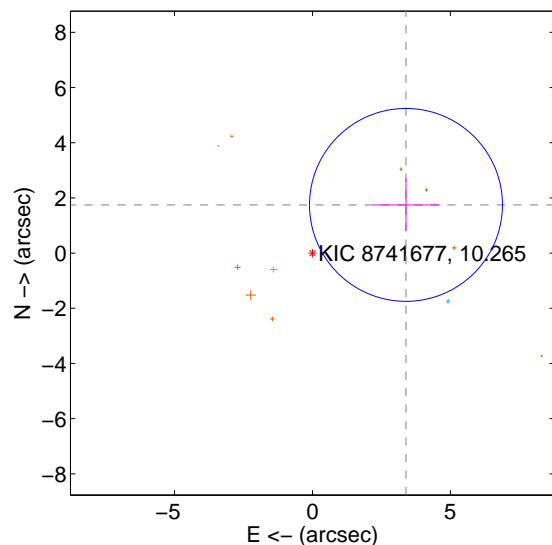
Supplemental centroid analysis for 008741677-01. **Kepler magnitude: 10.27.** Transit SNR 4.88

There are 4 quarters with good PRF difference image offsets

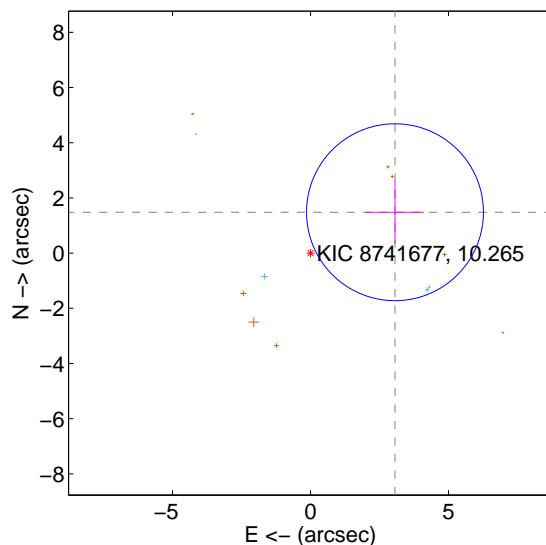
The direct PRF centroid is offset from the target star catalog position by about 0.80 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.814 ± 1.165	3.27	-3.390 ± 1.218	1.747 ± 0.941
PRF-fit source offset from KIC position	3.401 ± 1.069	3.18	-3.061 ± 1.055	1.481 ± 1.126
photometric centroid source offset	2.41 ± 1.46	1.66	-2.41 ± 1.46	-0.16 ± 1.33

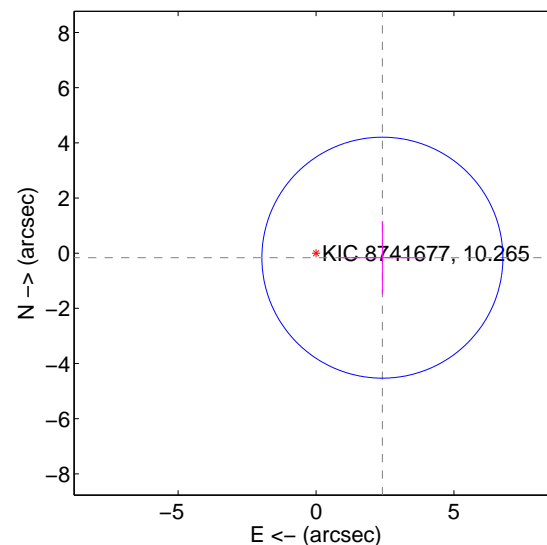
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

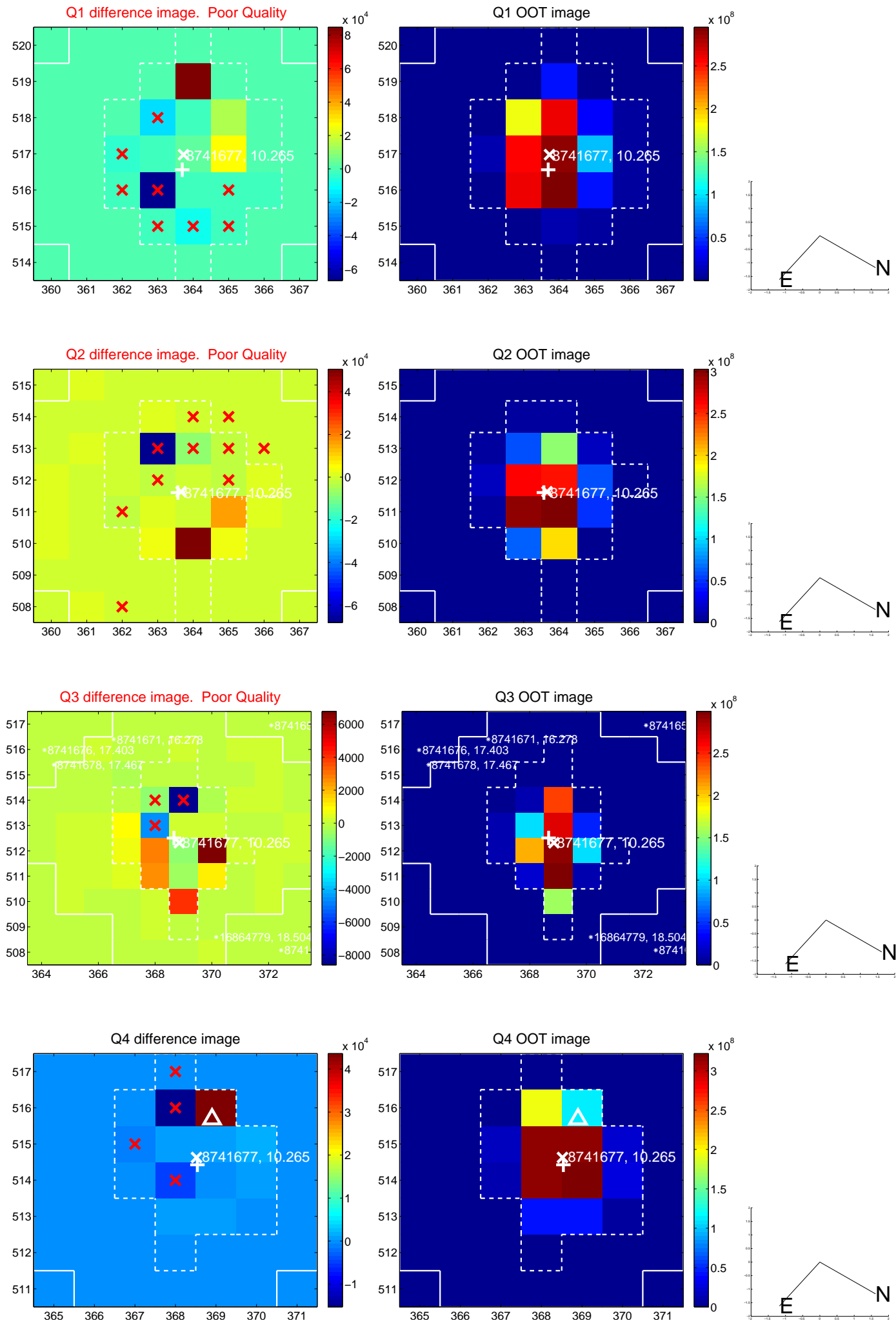


offset from photometric centroids

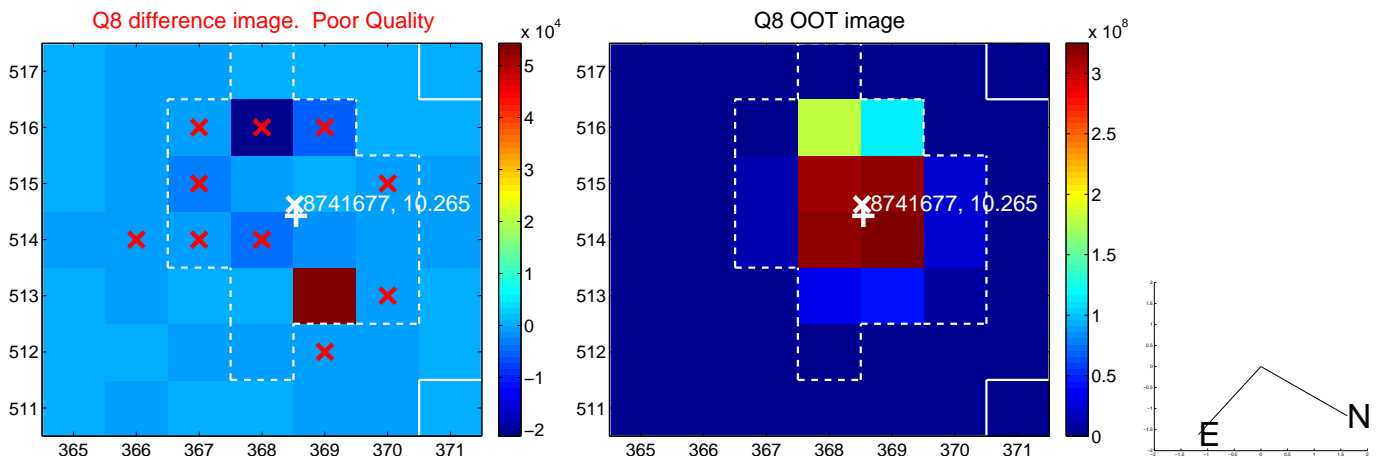
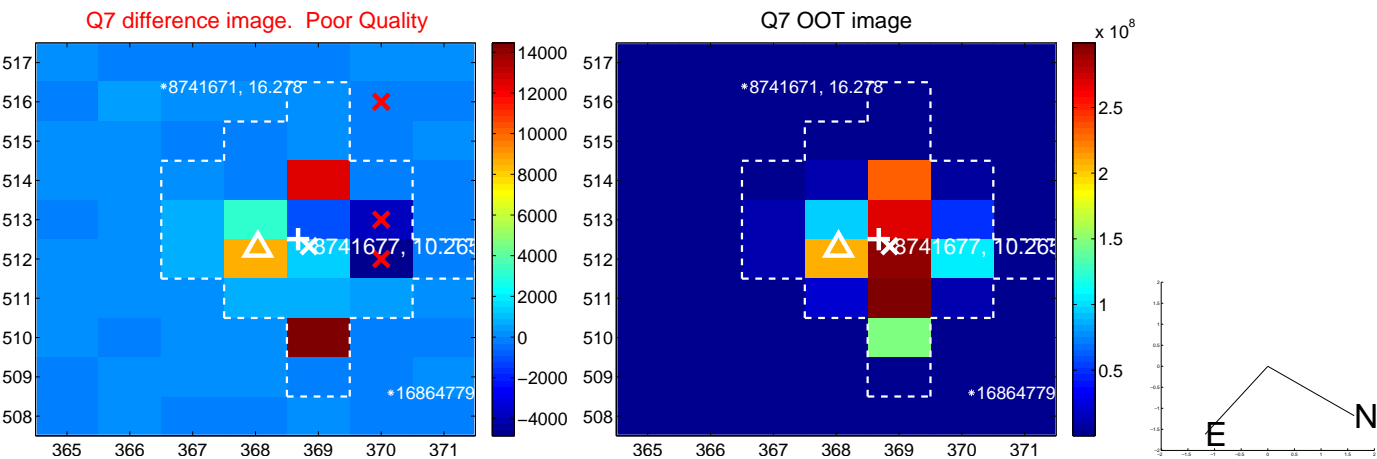
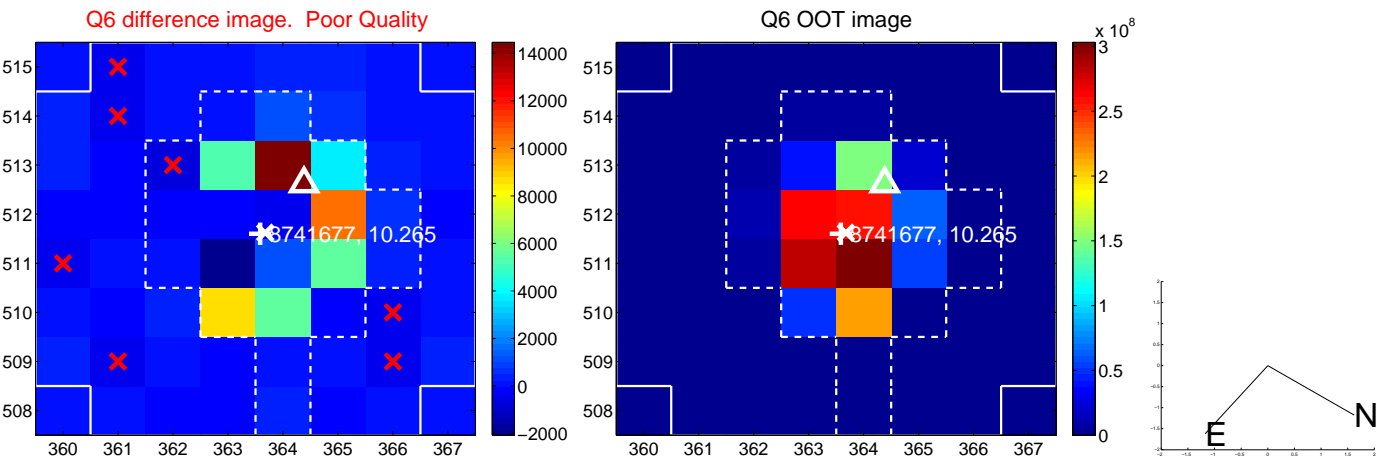
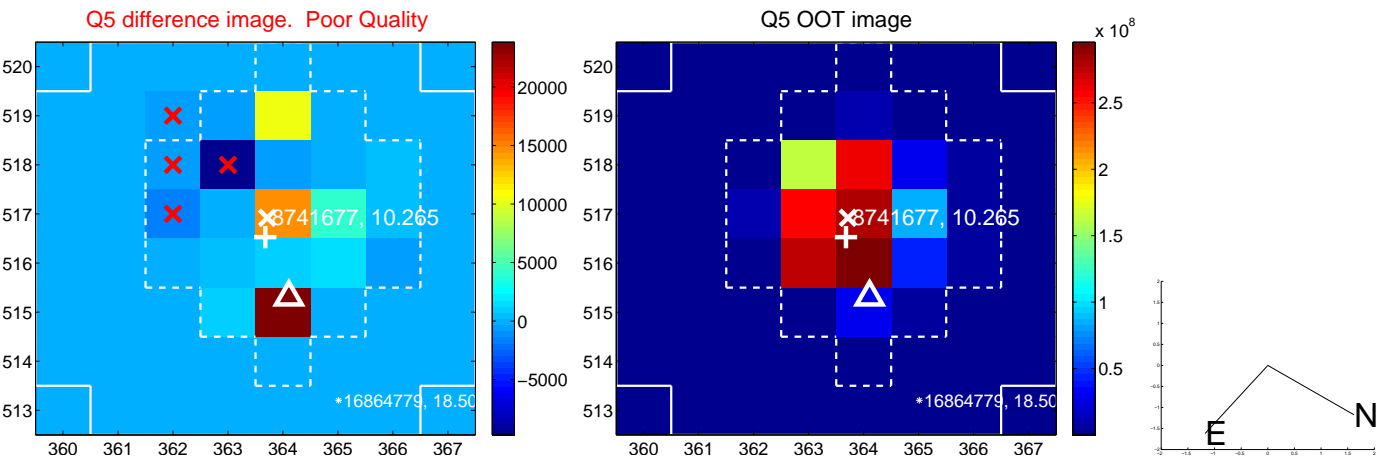


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

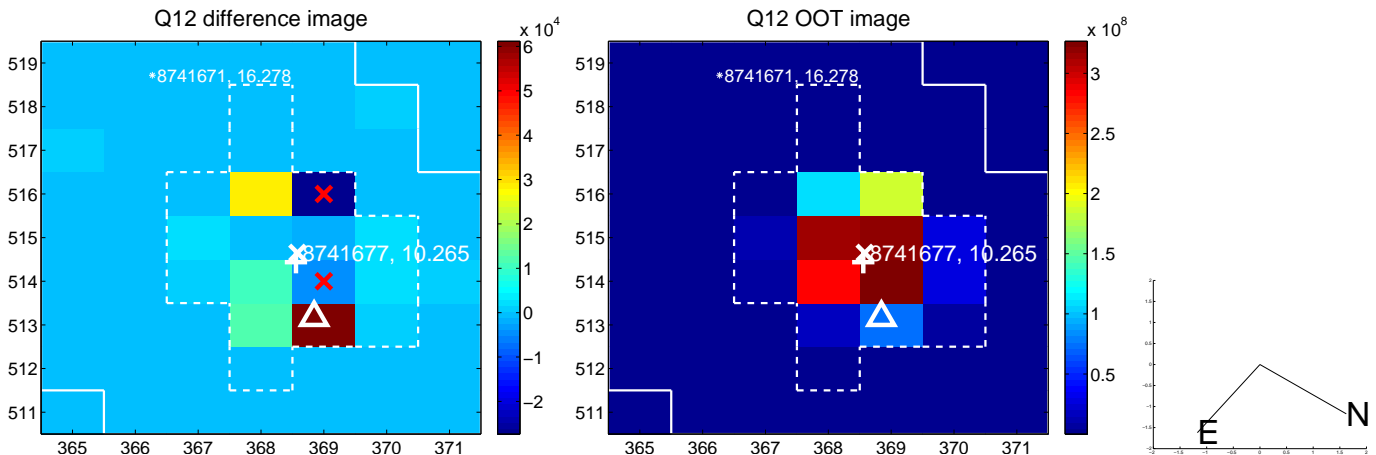
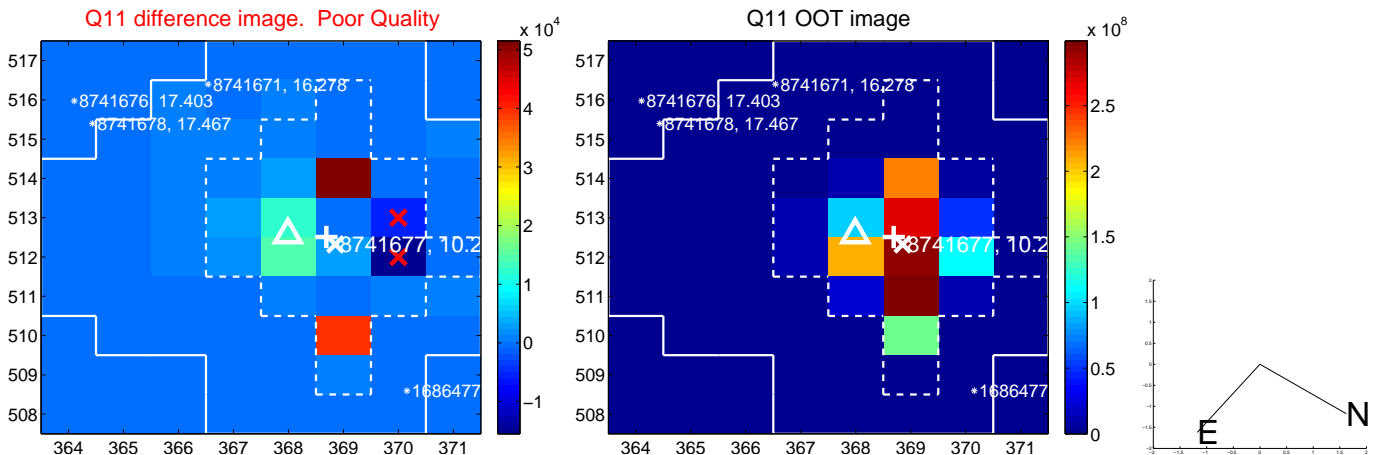
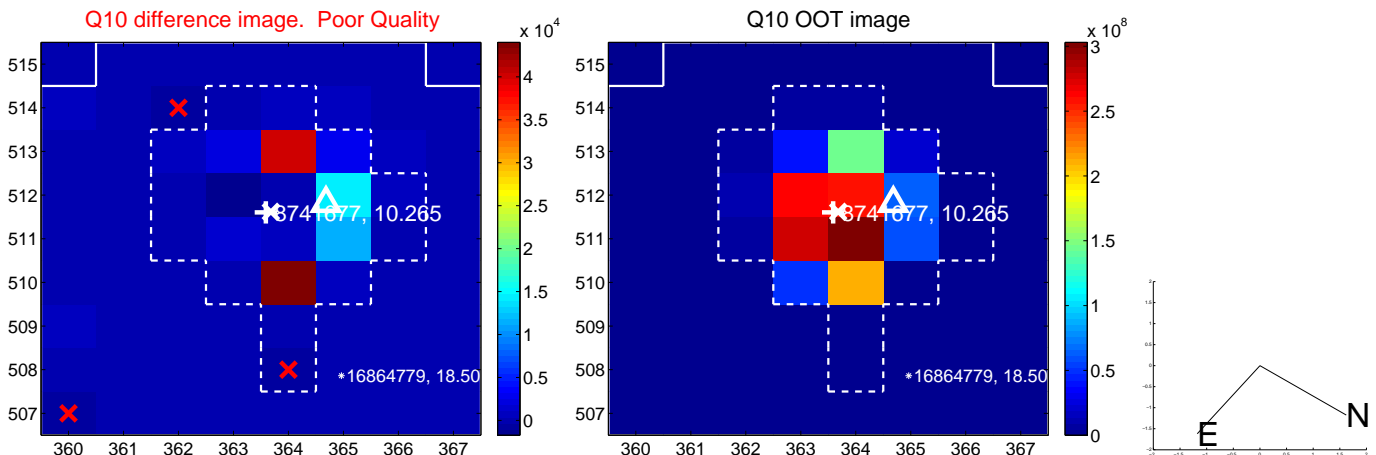
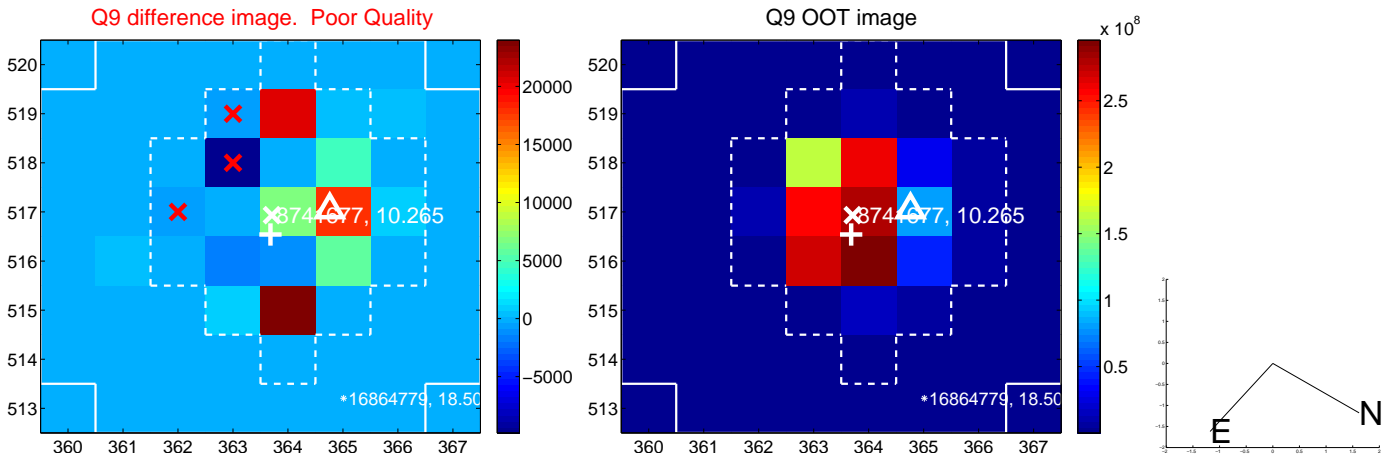
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



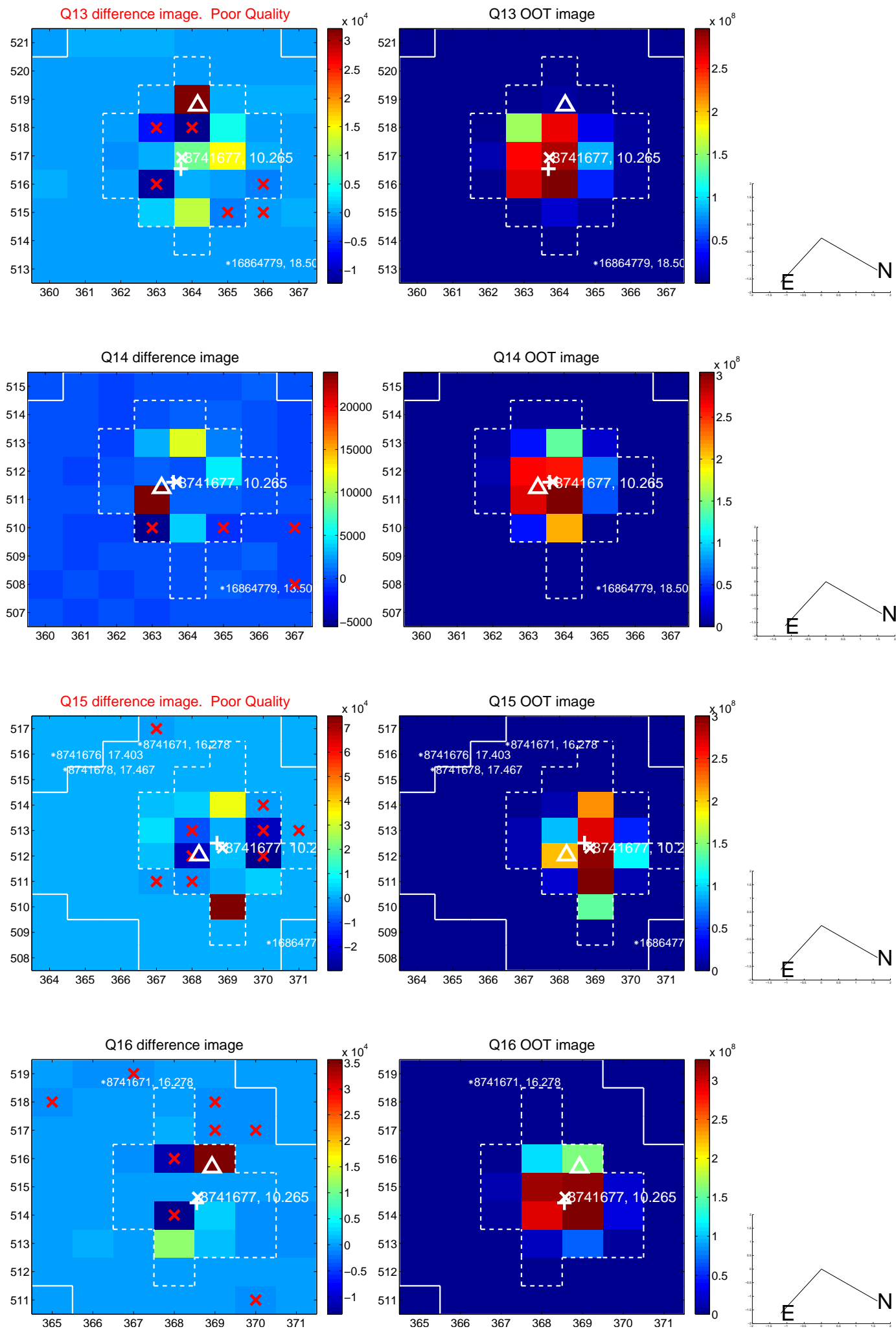
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



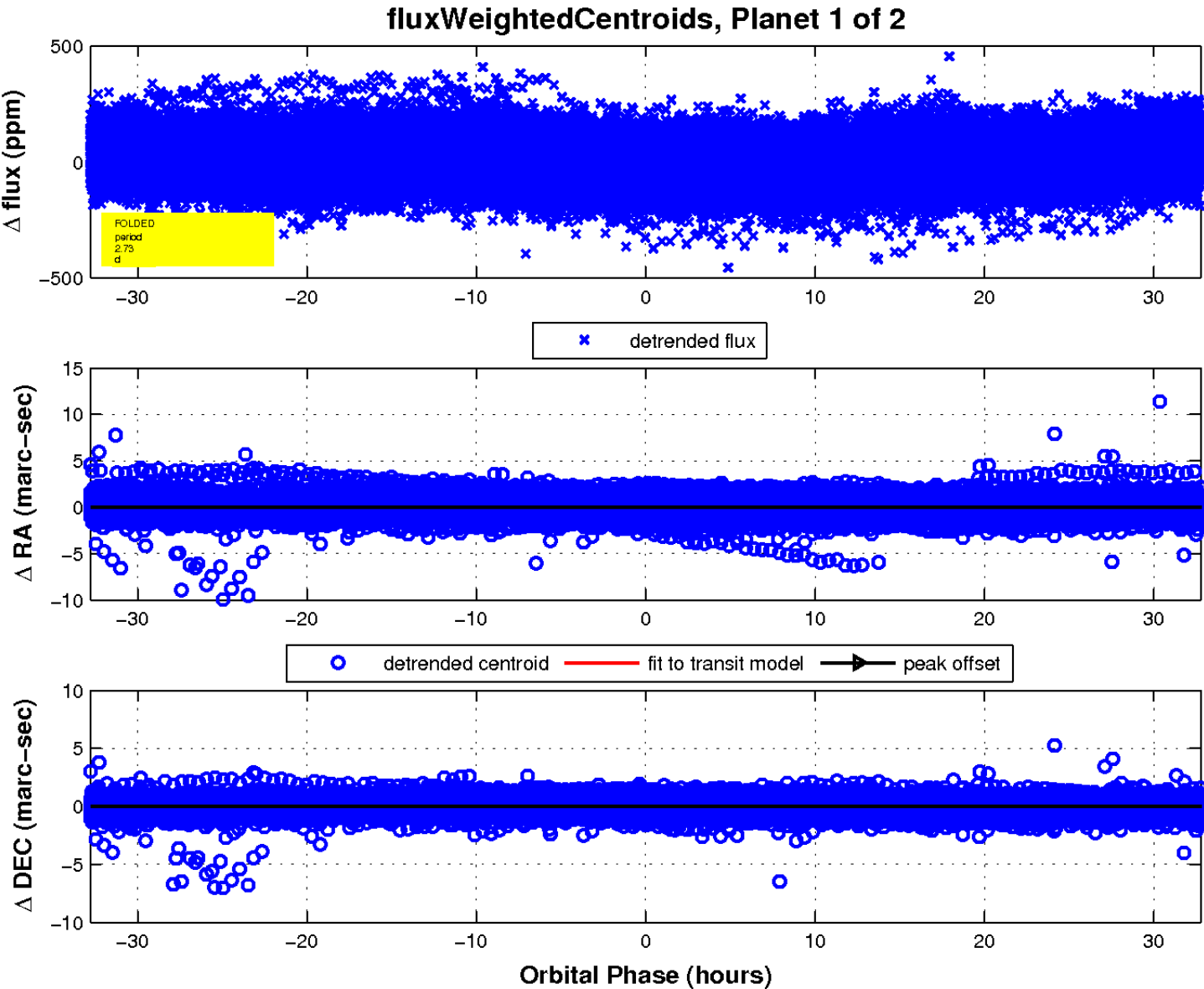
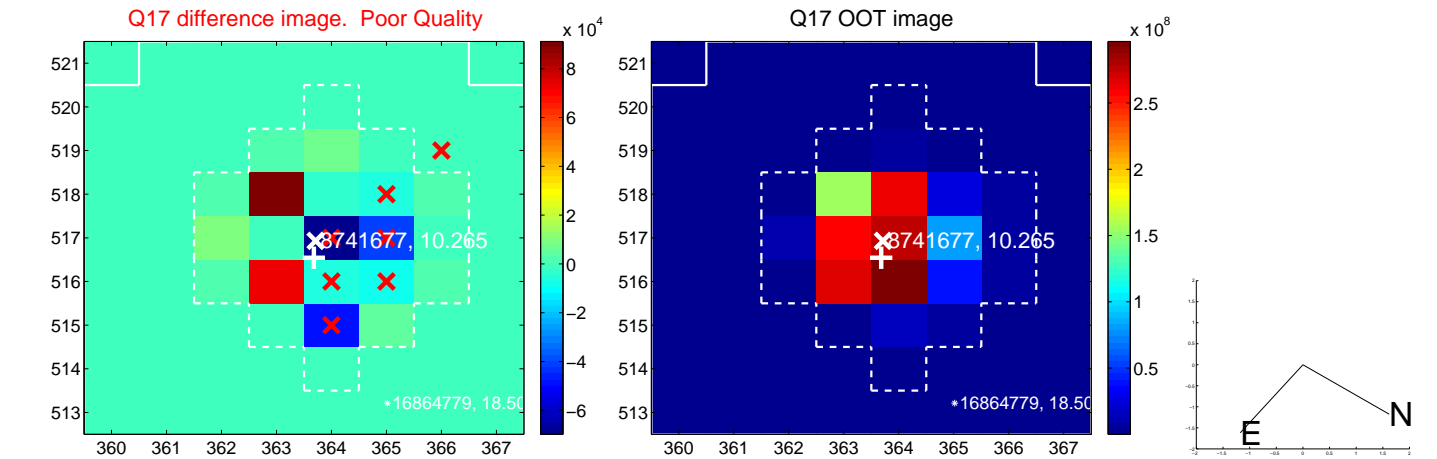
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

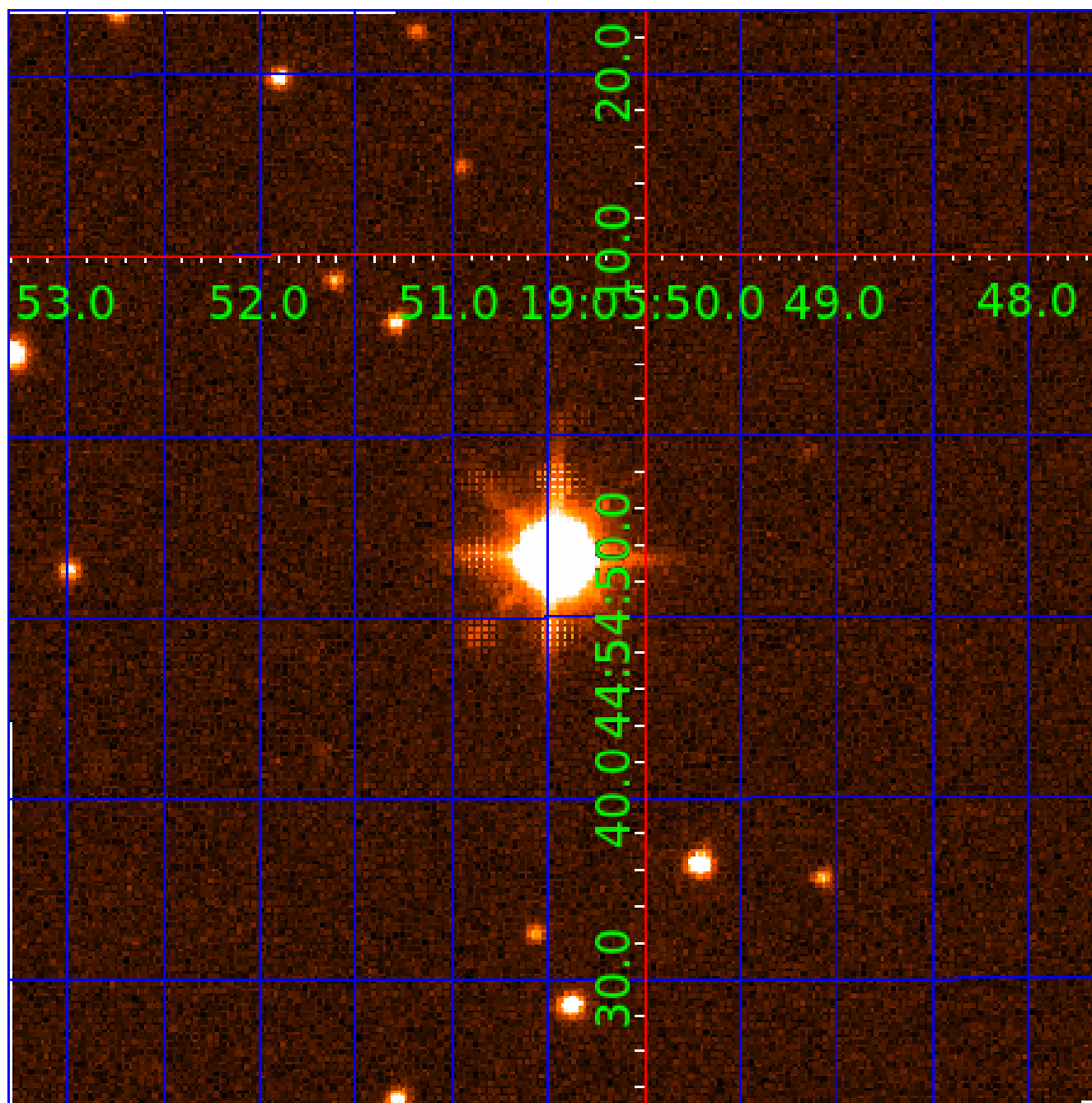


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008741677

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})
008741677-01	OBS	No	2.731633	133.920359	7.4	15.771	7.4	4.9	1.15	6331	0.35	1225.38
008741677-02	OBS	No	2.731090	132.261883	20.6	17.996	16.0	13.5	1.15	6331	0.54	1225.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008741677-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008741677-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

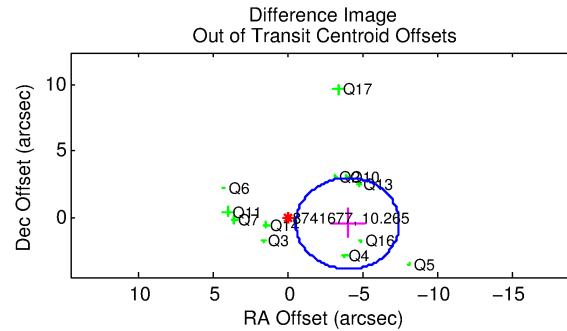
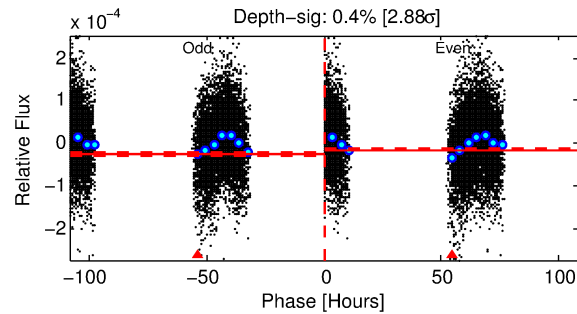
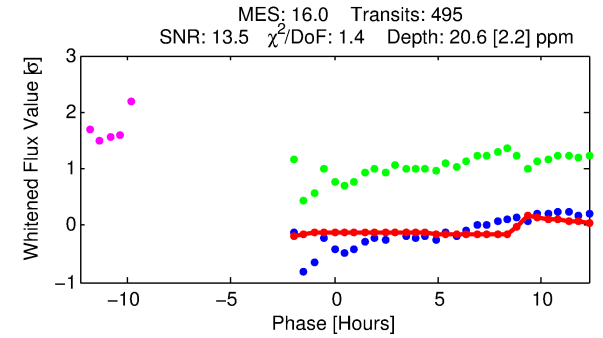
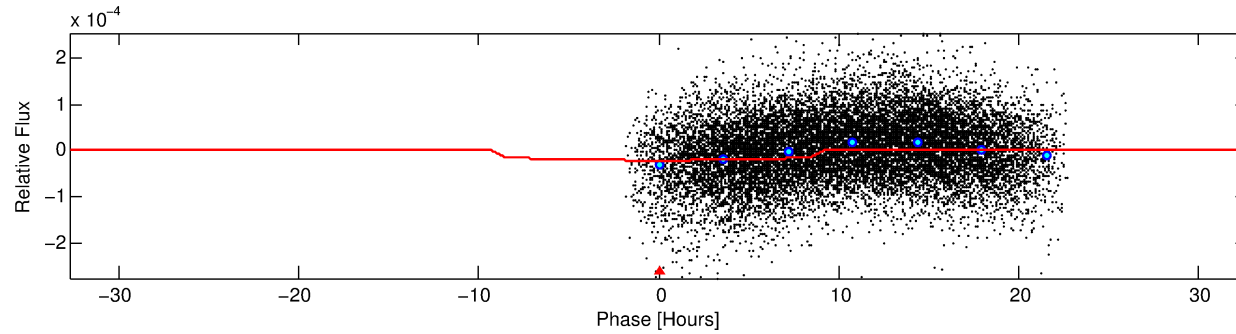
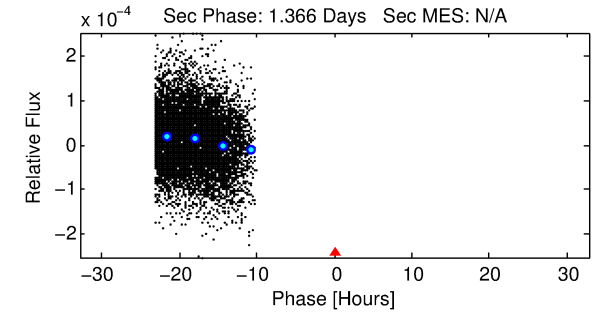
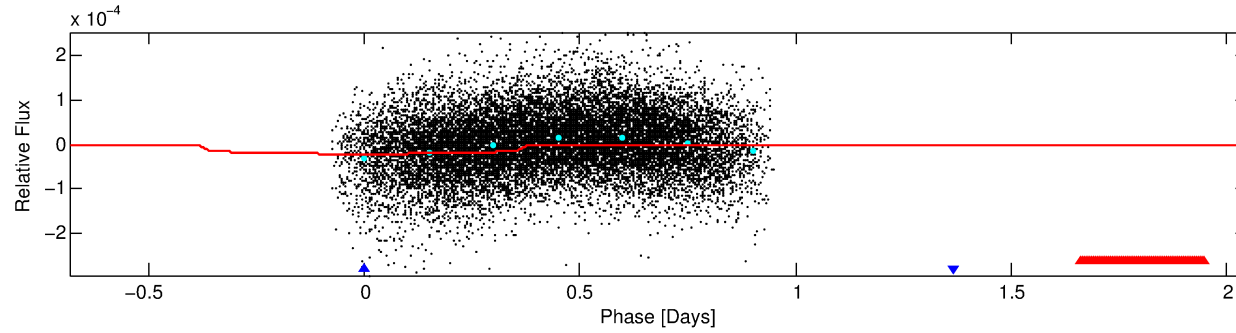
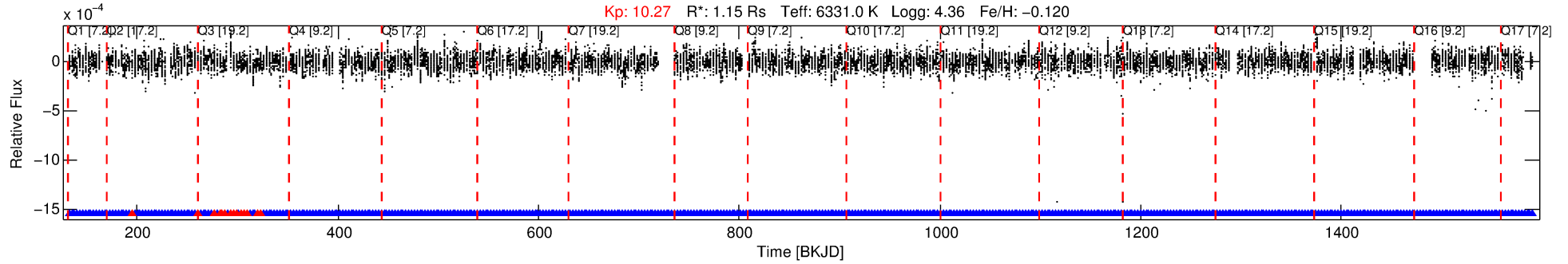
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008741677-02

No Significant Match Found

DV One-Page Summary

KIC: 8741677 Candidate: 2 of 2 Period: 2.731 d



DV Fit Results:

Period = 2.73109 [0.00002] d
Epoch = 132.2619 [0.0180] BKJD
Rp/R* = 0.0043 [0.0015]
a/R* = 1.26 [0.88]
b = 0.45 [3.27]
Seff = 1225.70 [511.65]
Teq = 1509 [157] K
Rp = 0.54 [0.25] Re
a = 0.0394 [0.0106] AU

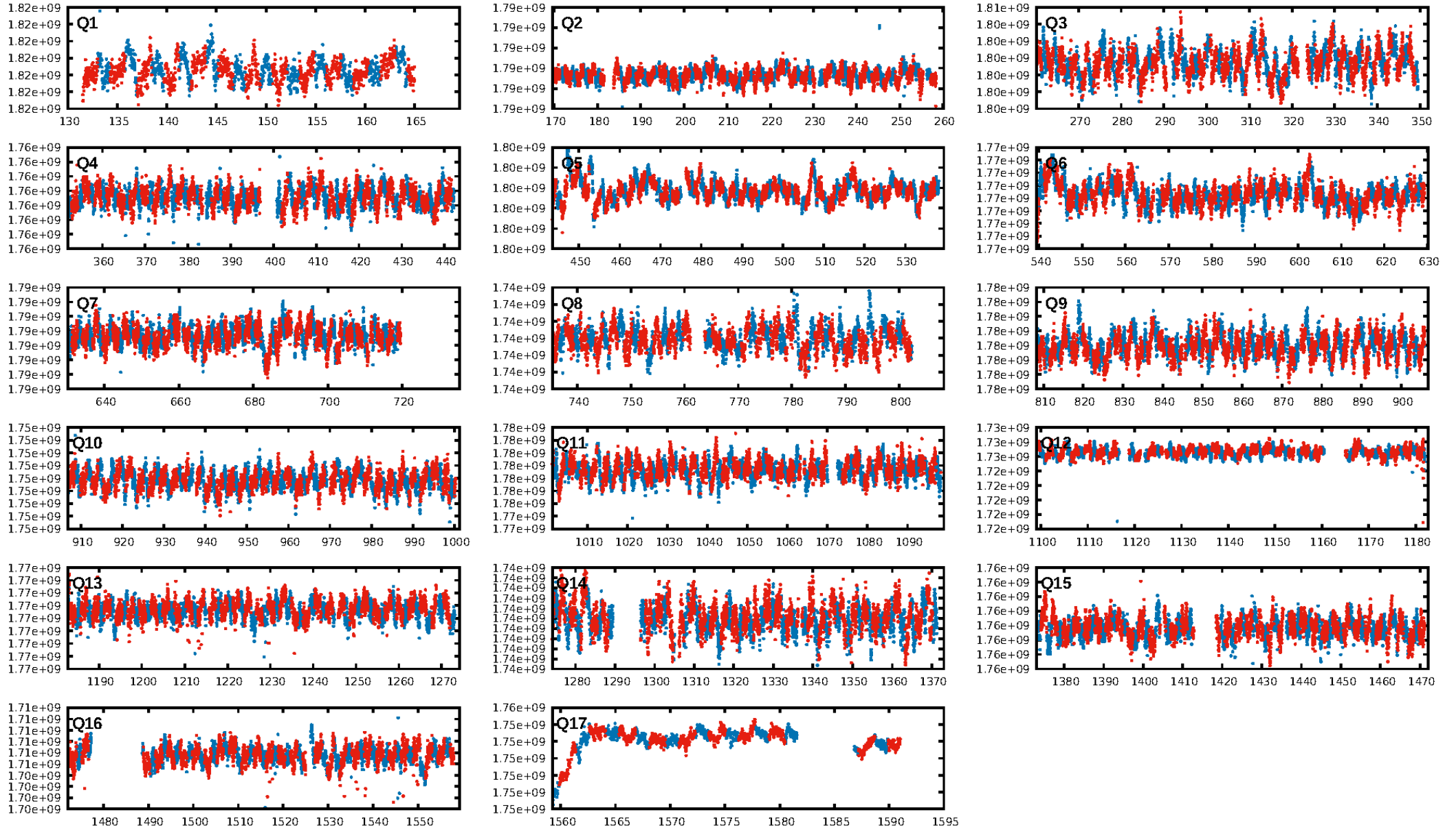
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [458/472]
GhostDiagnostic-chr: 4.228
Centroid-sig: 36.1%
Centroid-so: 0.424 arcsec [0.90σ]
OotOffset-rm: 4.062 arcsec [3.53σ]
KicOffset-rm: 3.531 arcsec [3.32σ]
OotOffset-st: 4/3/2/3 [12]
KicOffset-st: 4/3/2/3 [12]
DiffImageQuality-fgm: 0.17 [2/12]
DiffImageOverlap-fno: 0.00 [0/17]

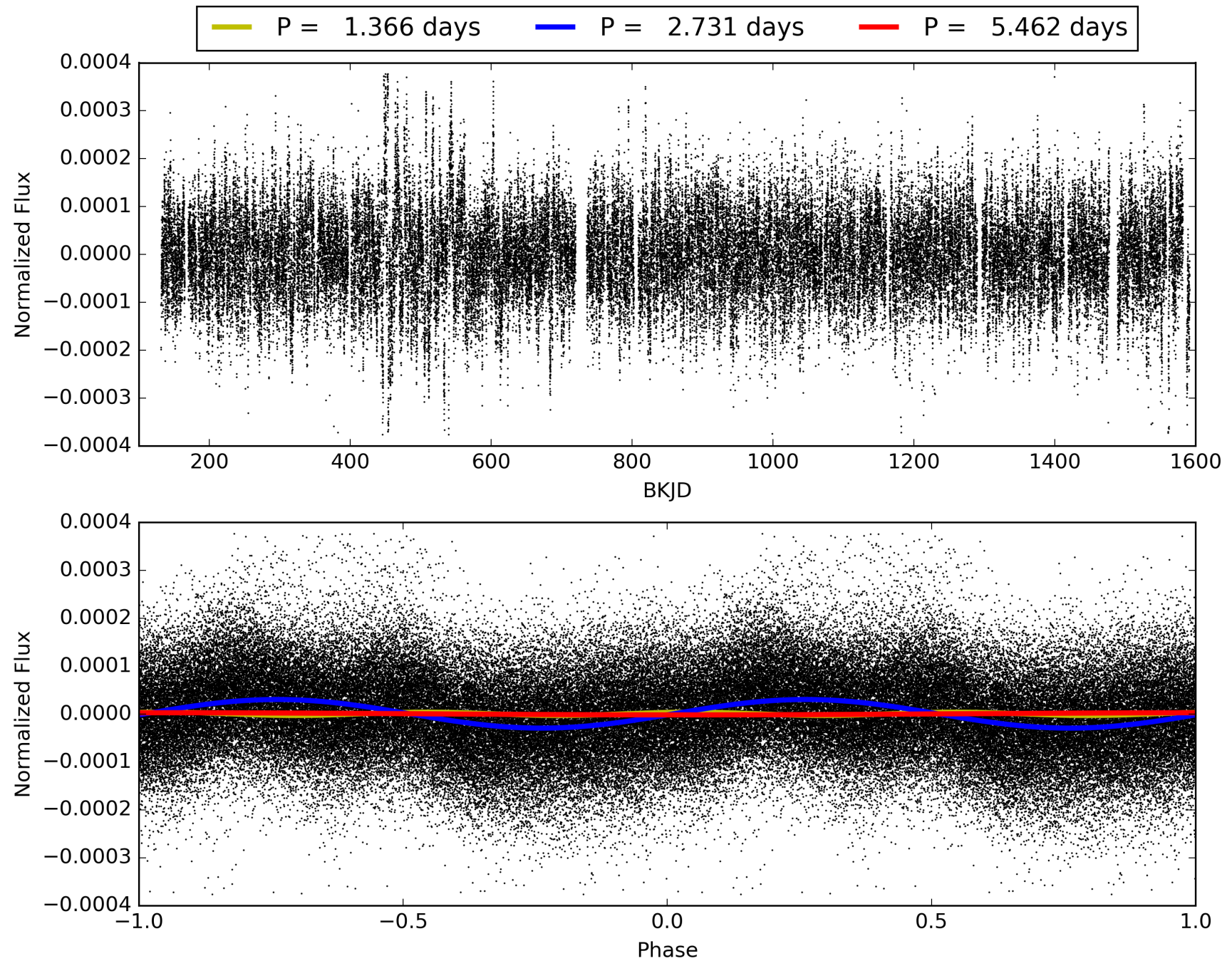
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:05:21 Z

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

TCE 008741677-02, PDC Light Curves

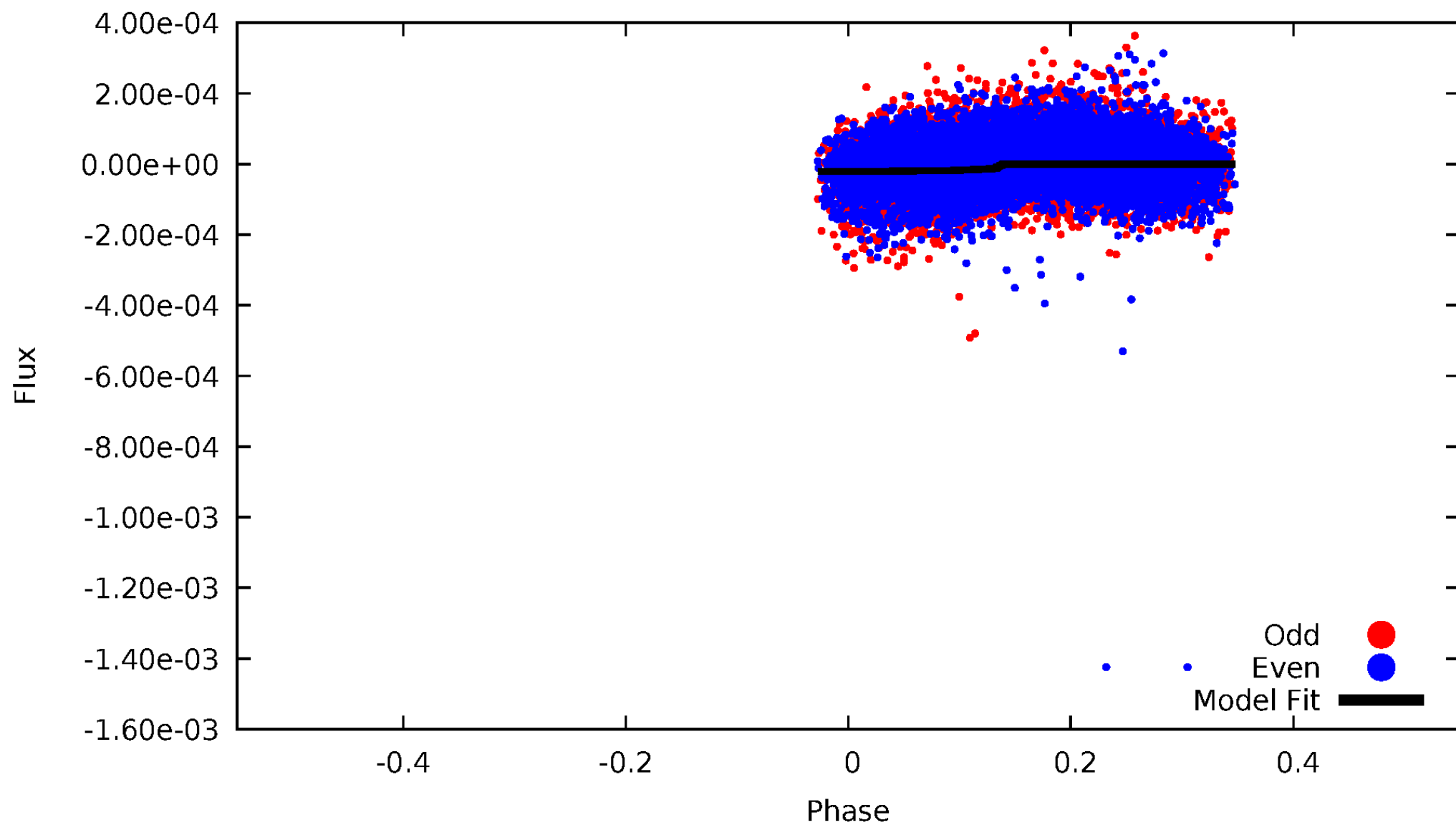


TCE 008741677-02



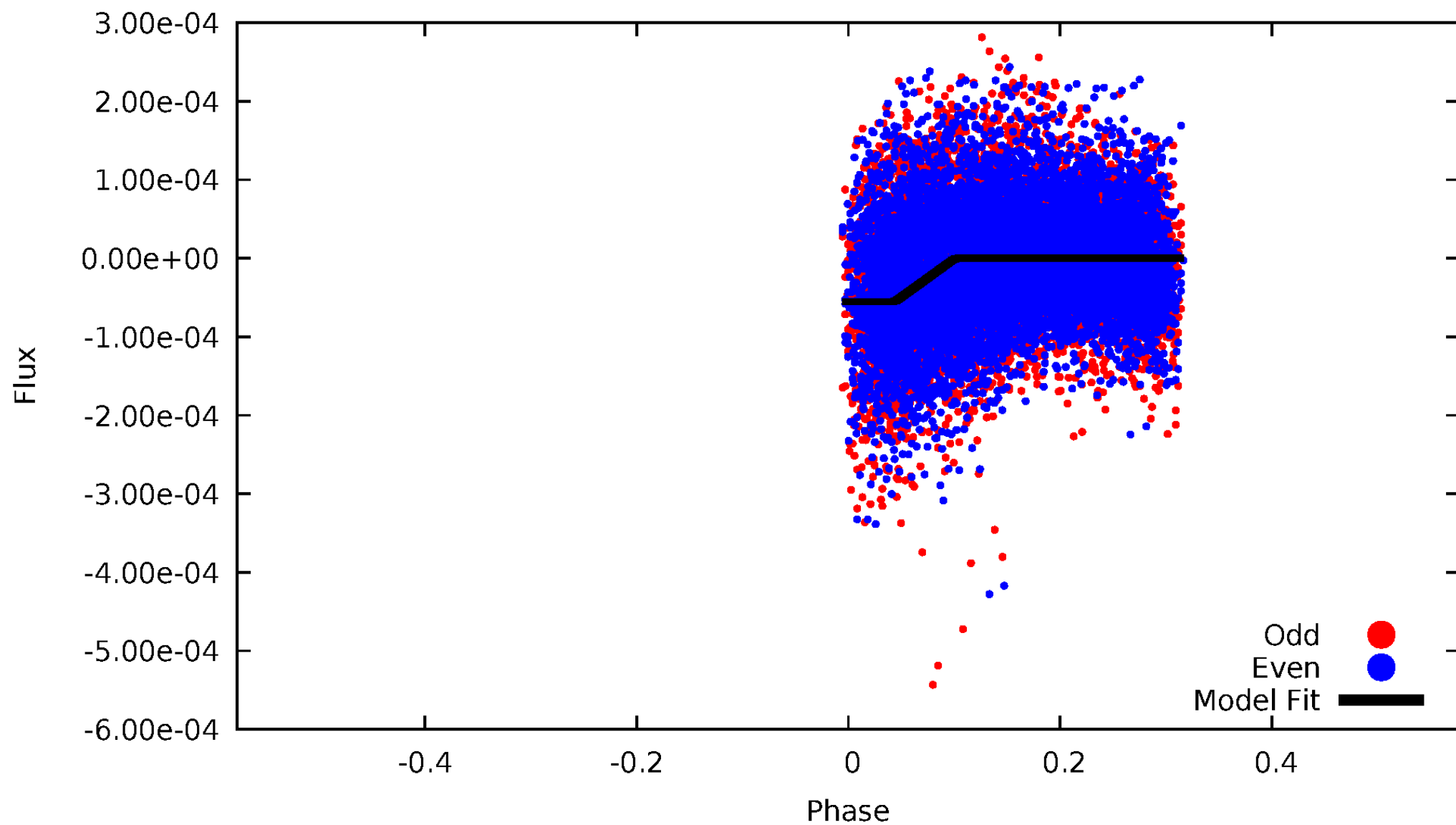
DV Odd/Even

TCE 008741677-02



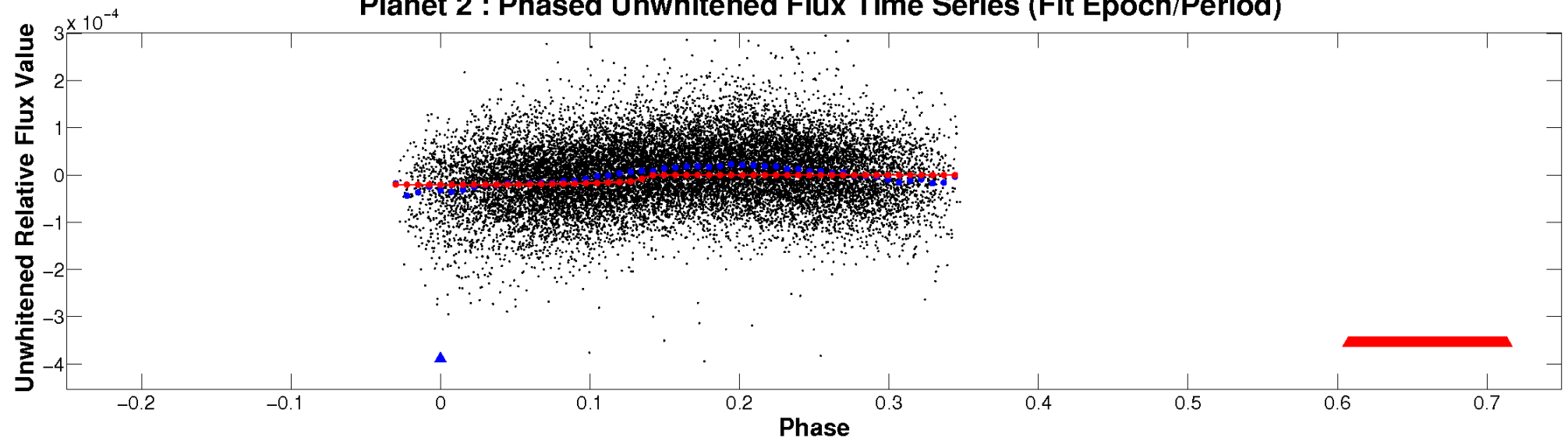
ALT Odd/Even

TCE 008741677-02

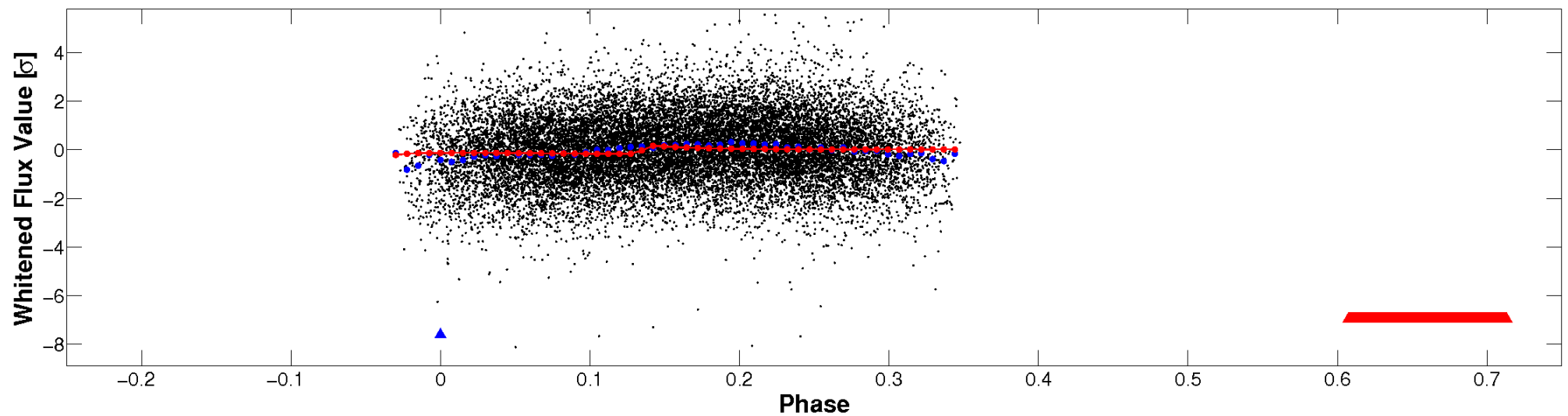


Non-Whitened Vs. Whitened Light Curve

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

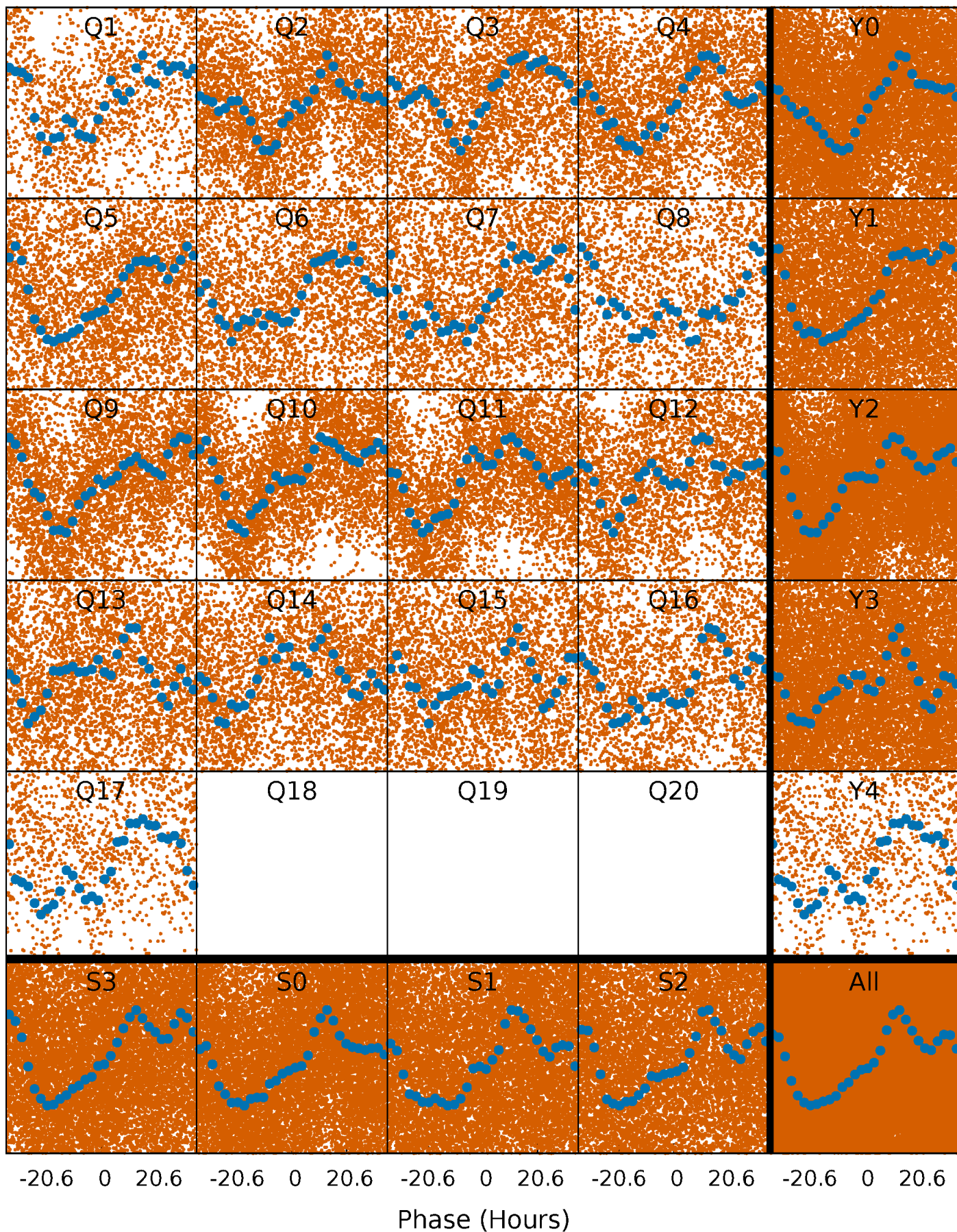


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



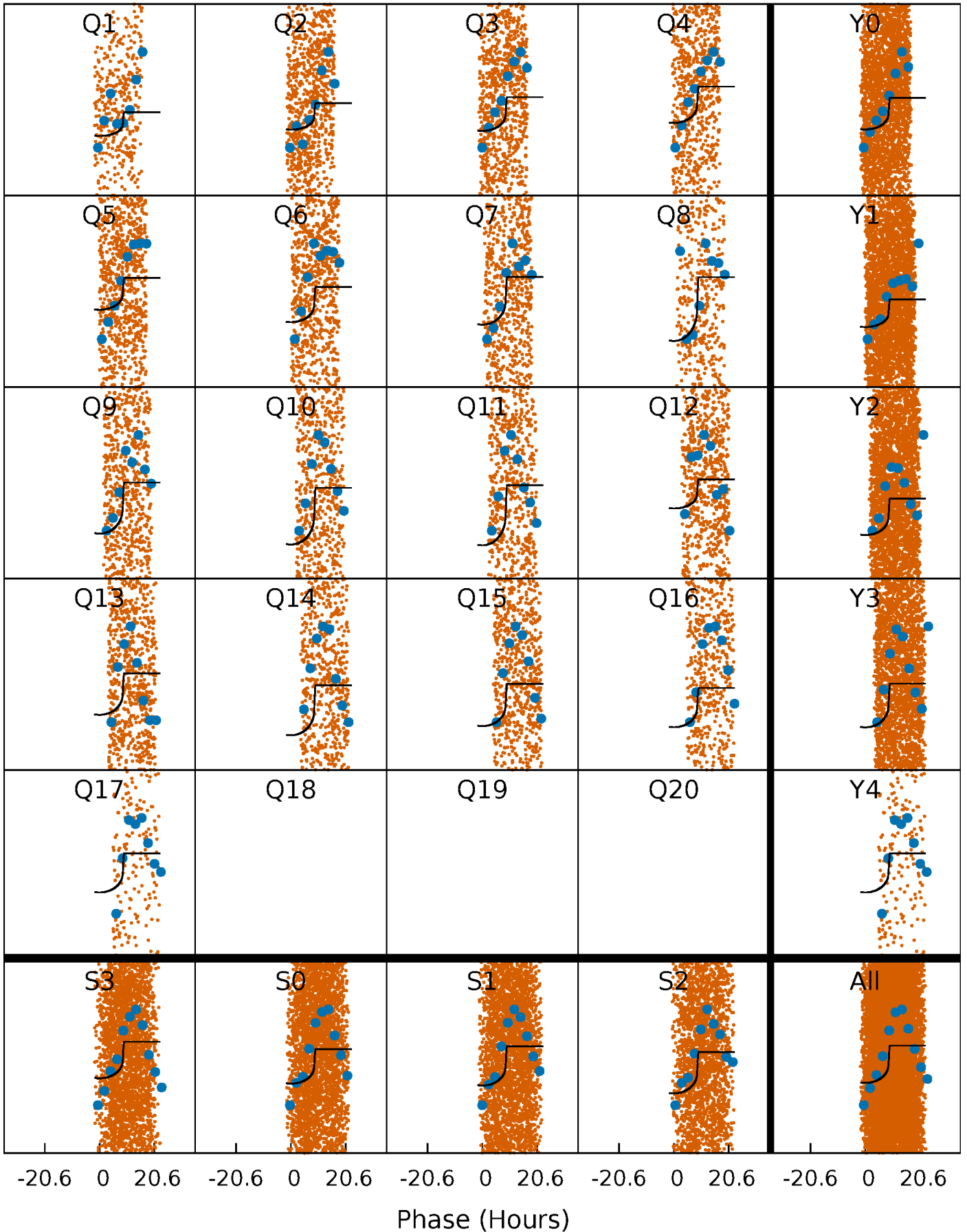
PDC Quarter-Phased Transit Curves

TCE 008741677-02 P= 2.731090 Days $T_0=132.261883$ (BKJD)



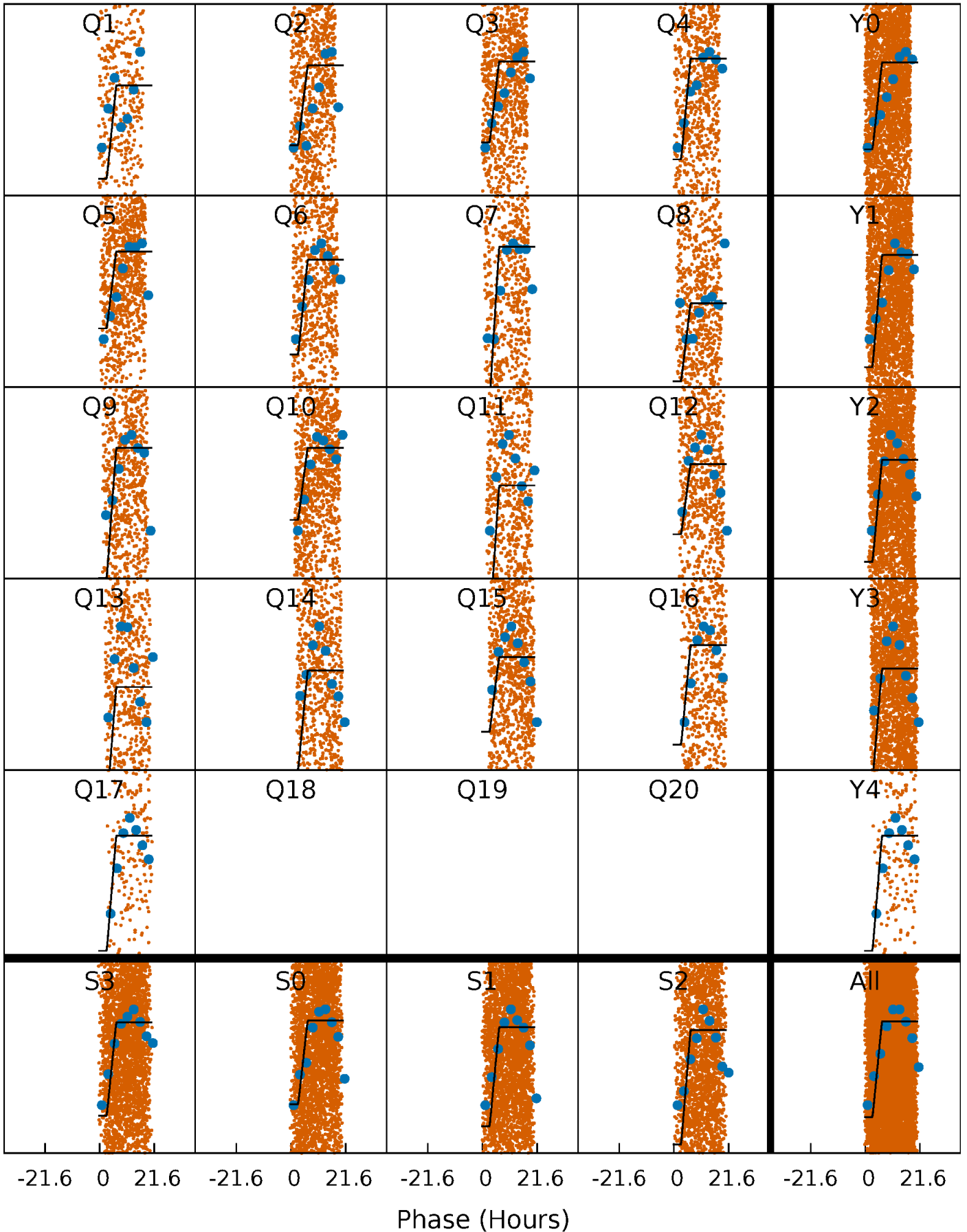
DV Quarter-Phased Transit Curves

TCE 008741677-02 P= 2.731090 Days $T_0=132.261883$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

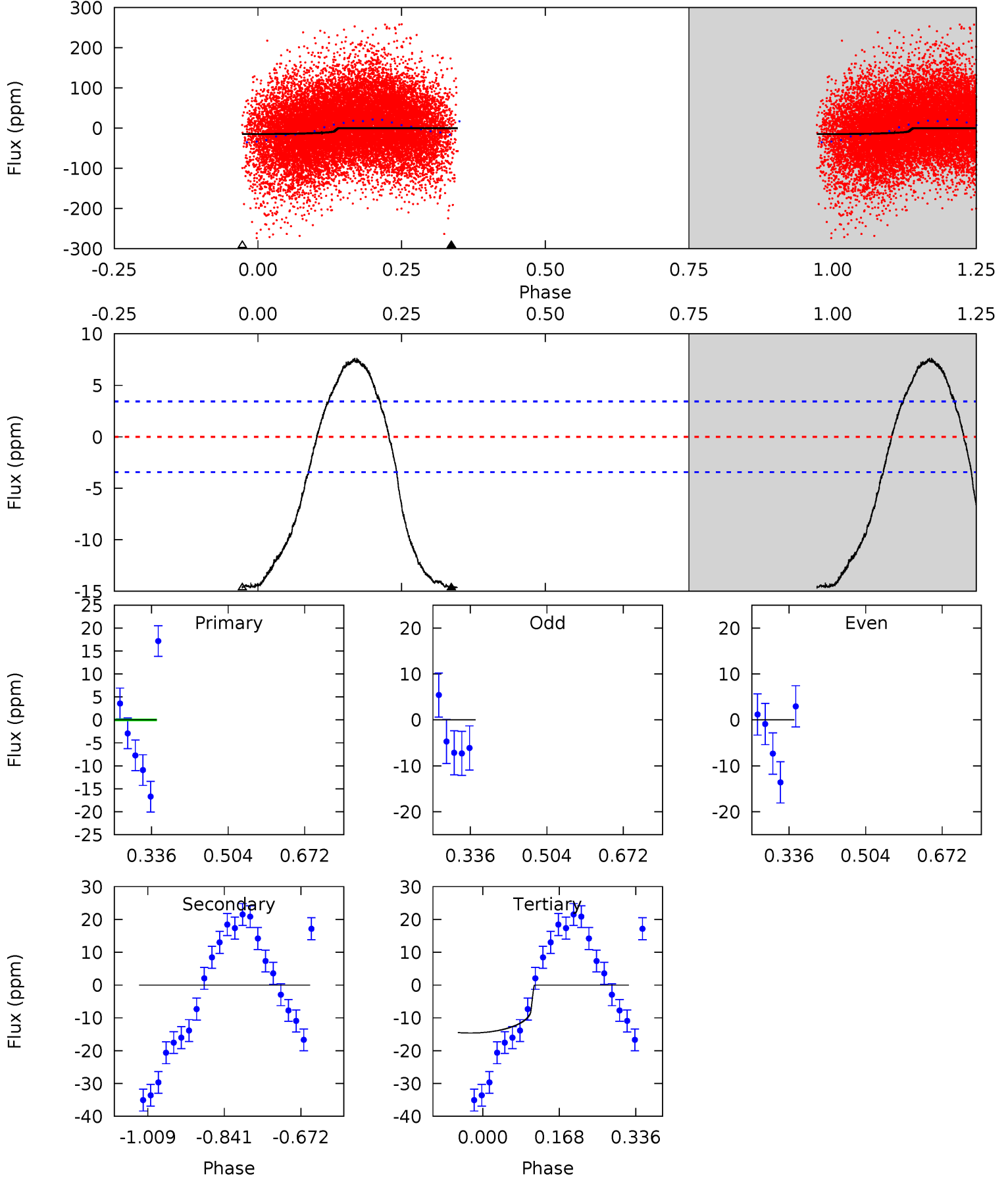
TCE 008741677-02 P= 2.731363 Days $T_0=132.201603$ (BKJD)



DV Model-Shift Uniqueness Test

008741677-02, P = 2.731090 Days, E = 129.530793 Days

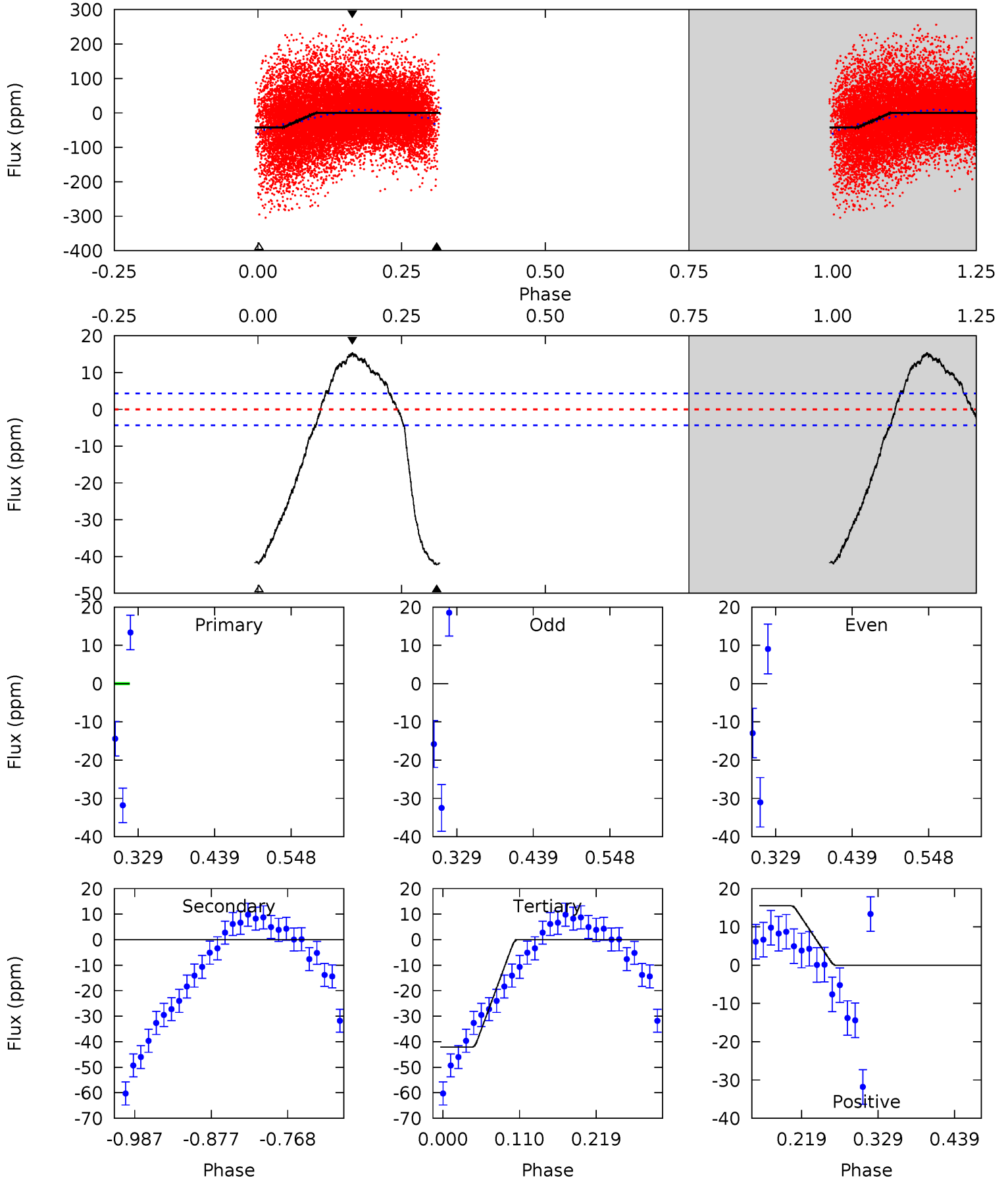
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.1	0	19.0	0	4.45	1.38	9.11	0.09	19.1	-19.0	0	0.19	1.03	0.34	3.86



Alt Model-Shift Uniqueness Test

008741677-02, P = 2.731363 Days, E = 129.470240 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.4	0	44.3	16.3	4.55	1.60	18.1	0.13	28.1	-44.3	-16.3	1.91	1.16	0.27	0.64



Stellar Parameters For KIC 008741677

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6331^{+179}_{-246}	$4.356^{+0.090}_{-0.210}$	$-0.120^{+0.250}_{-0.300}$	$1.151^{+0.371}_{-0.171}$	$1.091^{+0.188}_{-0.141}$	$1.009^{+0.485}_{-0.520}$
	+3%/-4%	+2%/-5%	+208%/-250%	+32%/-15%	+17%/-13%	+48%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008741677-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1	$0.55^{+0.23}_{-0.19}$	2142^{+164}_{-123}	-2485^{+5913}_{-1003}	$0.090^{+2.431}_{-2.290}$
Alt.	0 ± 1	$0.96^{+0.27}_{-0.21}$	2146^{+163}_{-137}	-2587^{+5427}_{-533}	$0.023^{+0.872}_{-0.899}$

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

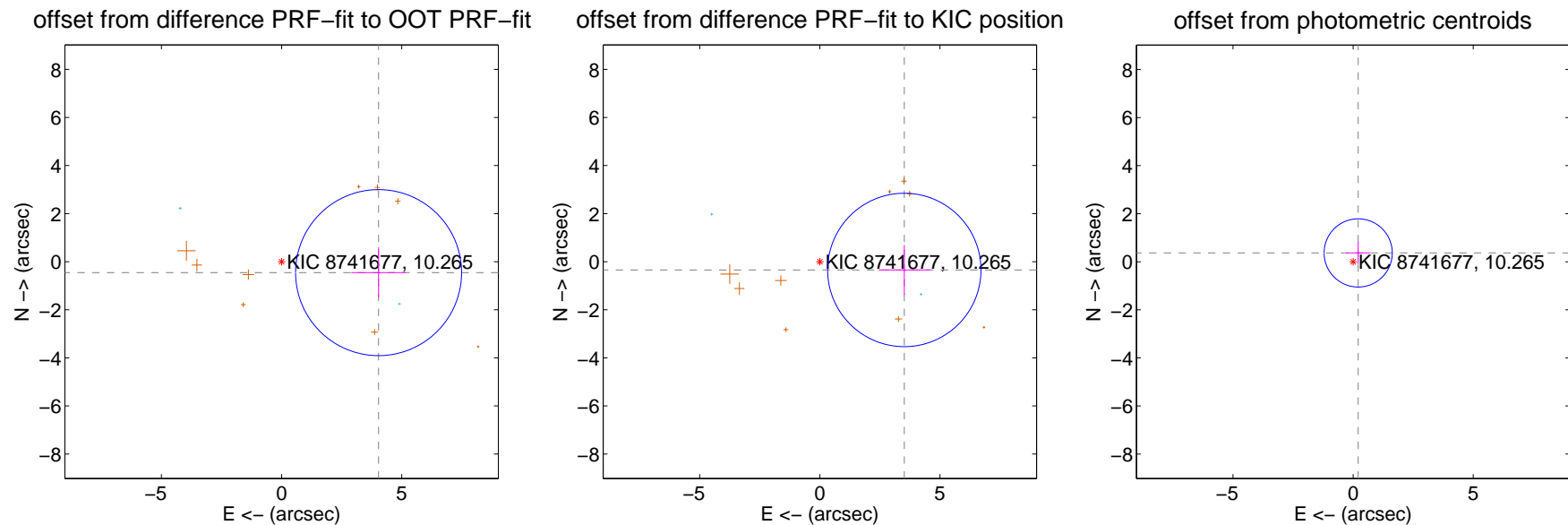
DV Centroid Data

Supplemental centroid analysis for 008741677-02. **Kepler magnitude: 10.27.** Transit SNR 13.50

There are 2 quarters with good PRF difference image offsets

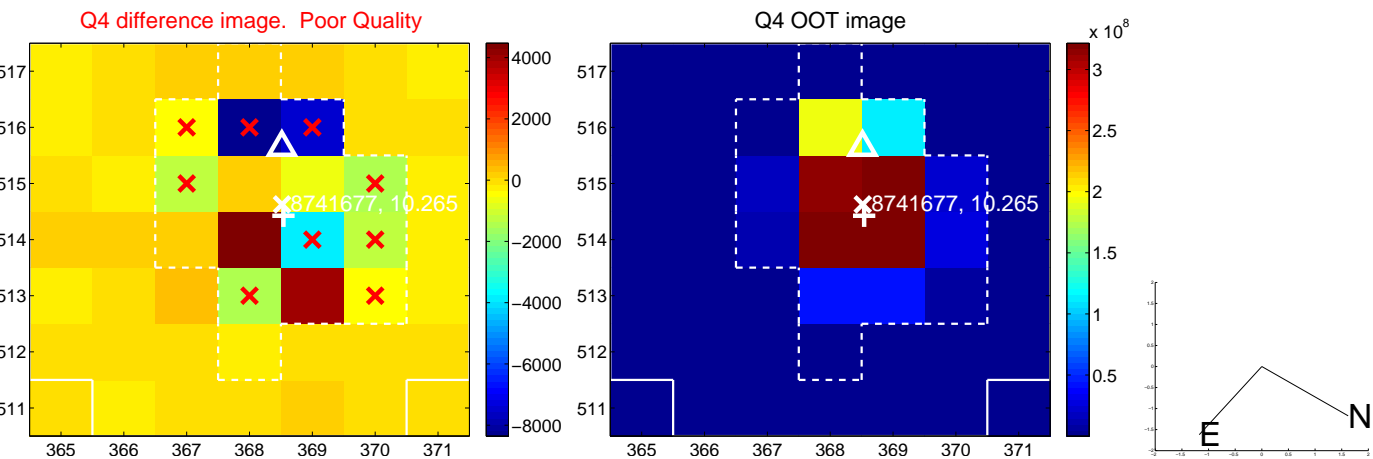
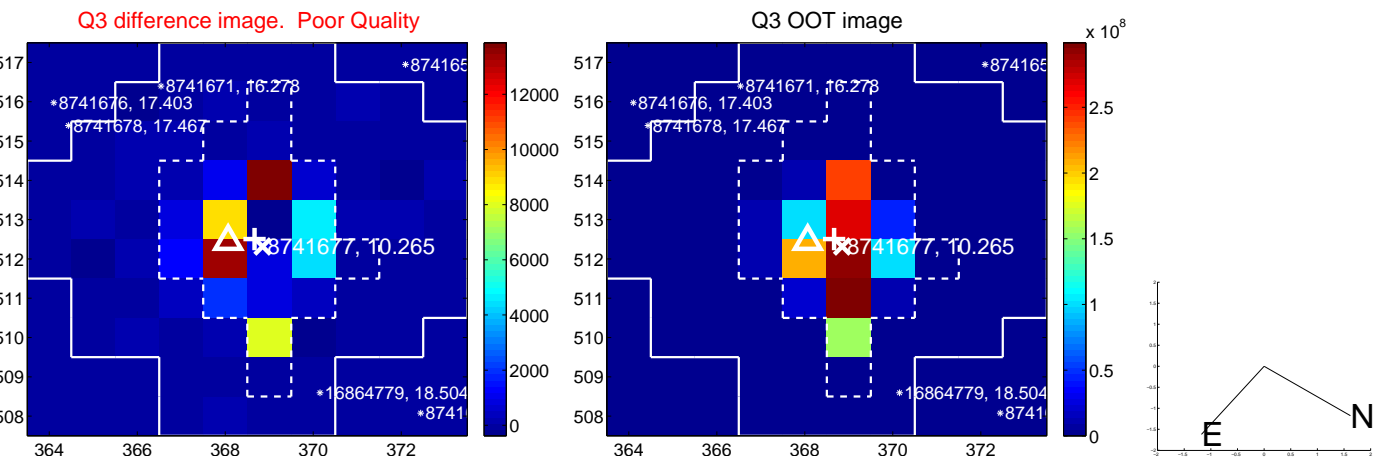
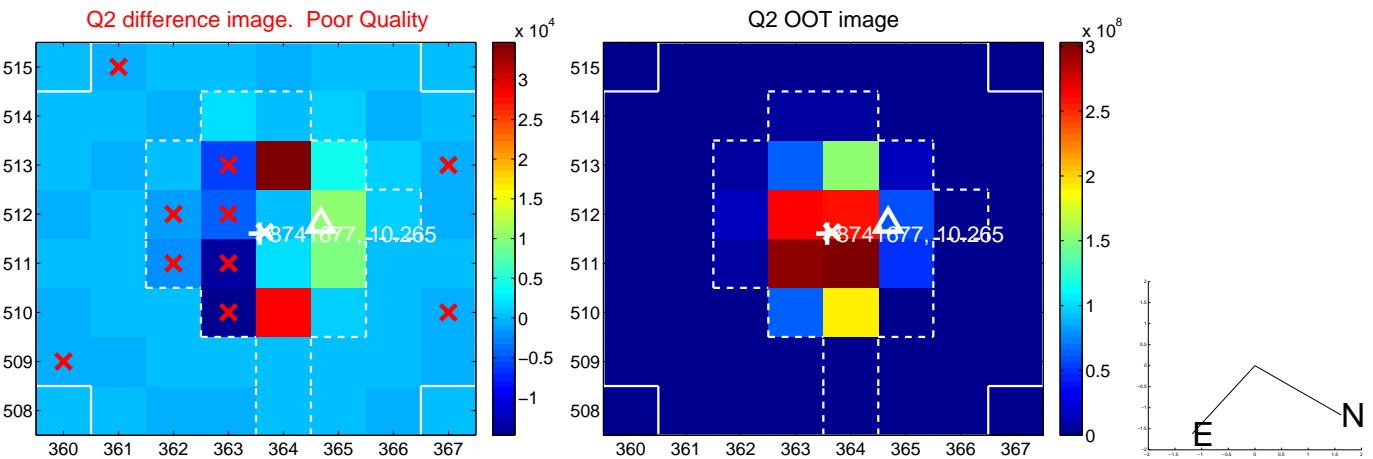
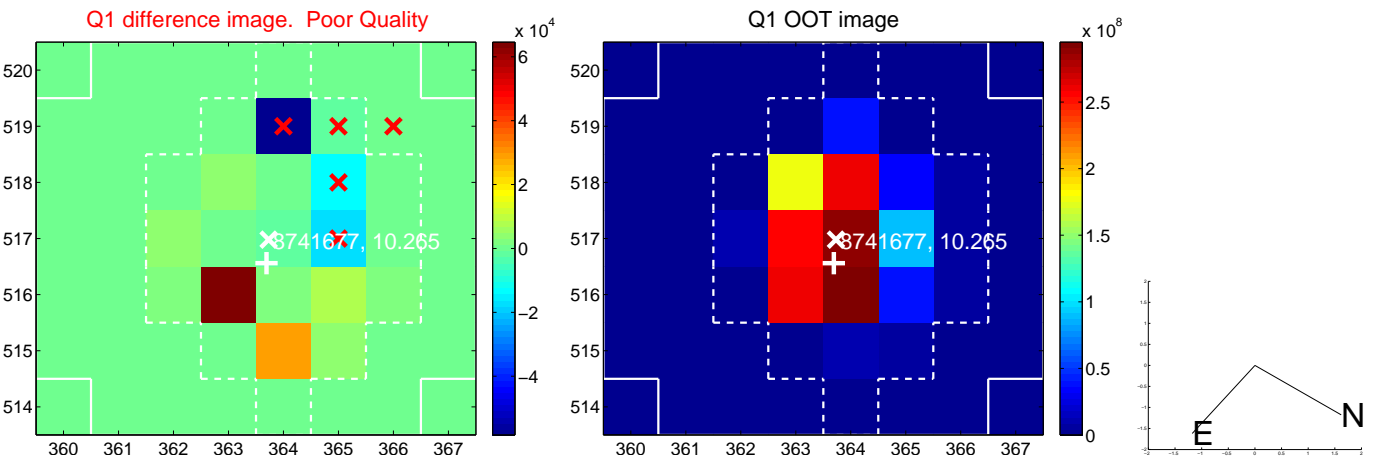
The direct PRF centroid is offset from the target star catalog position by about 1.55 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.062 ± 1.151	3.53	-4.036 ± 1.137	-0.455 ± 1.056
PRF-fit source offset from KIC position	3.531 ± 1.063	3.32	-3.515 ± 1.068	-0.344 ± 1.037
photometric centroid source offset	0.42 ± 0.47	0.90	-0.21 ± 0.50	0.37 ± 0.46

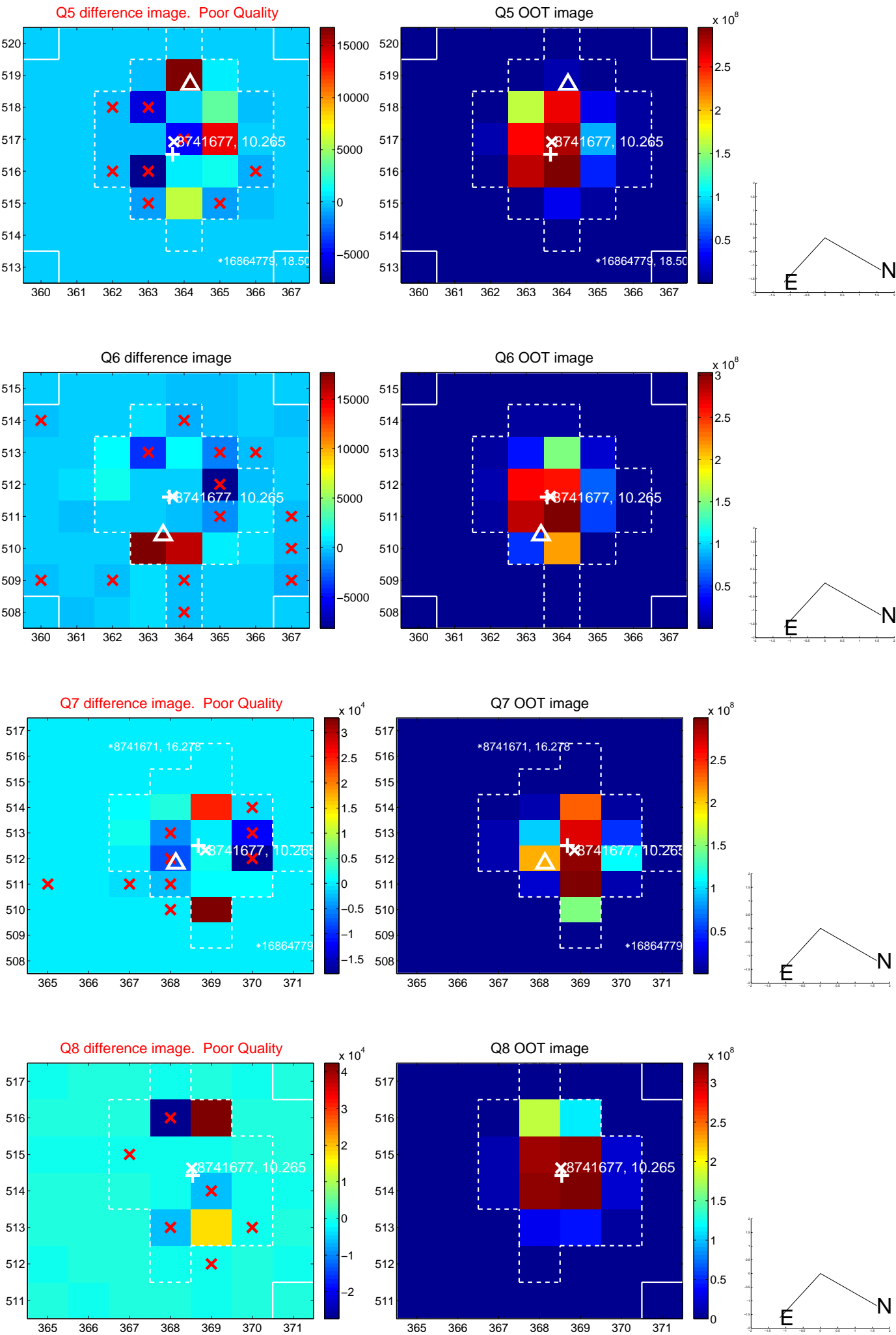


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

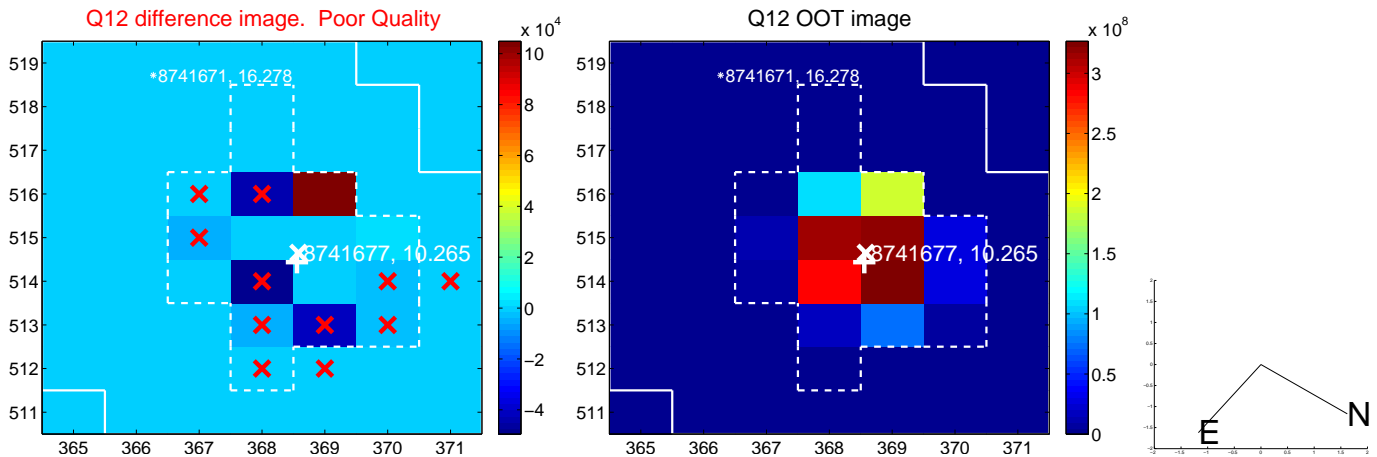
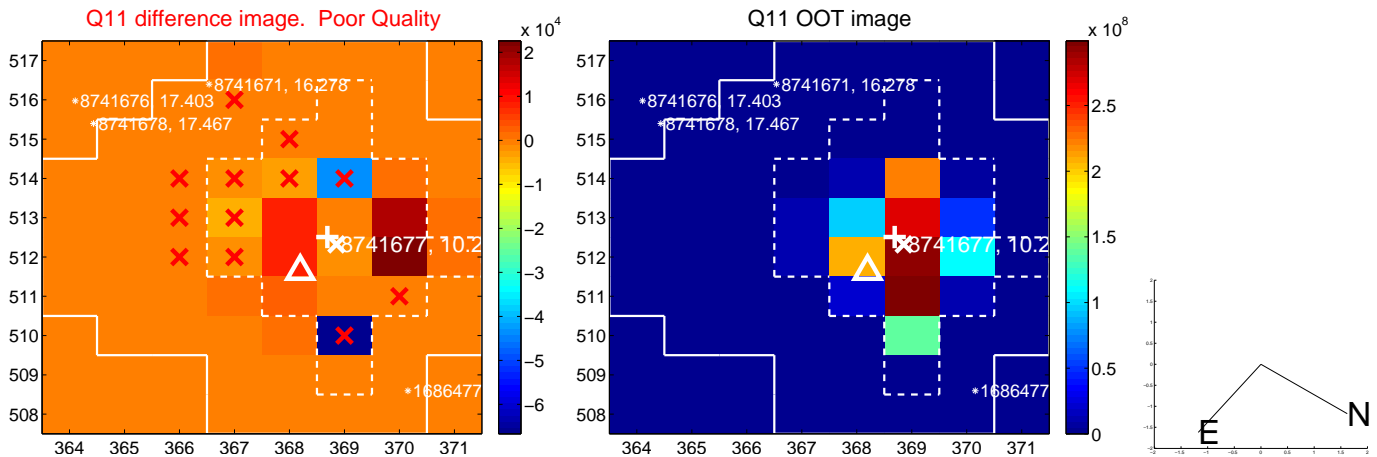
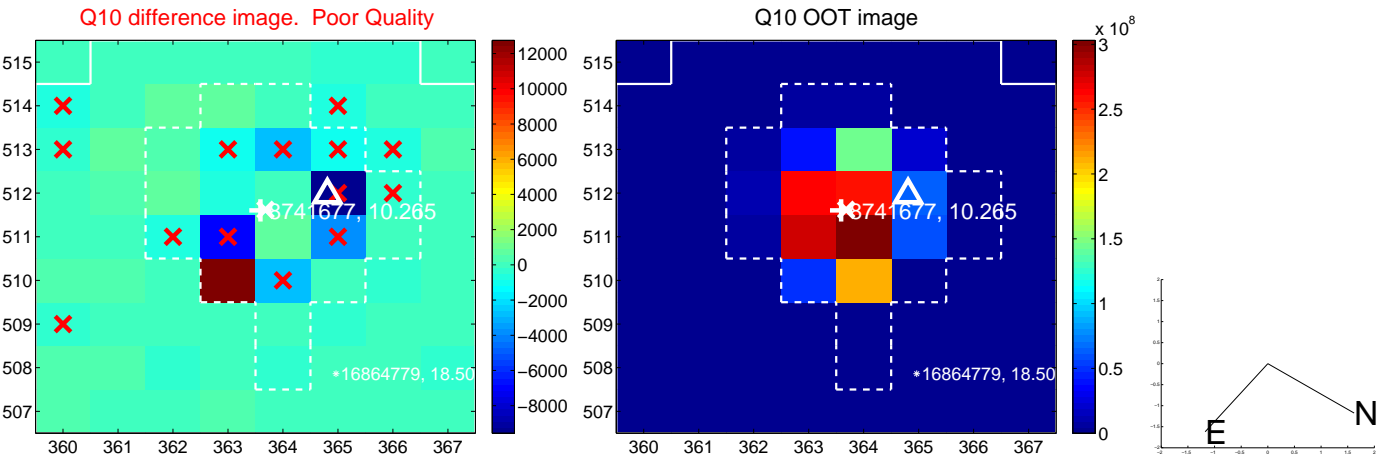
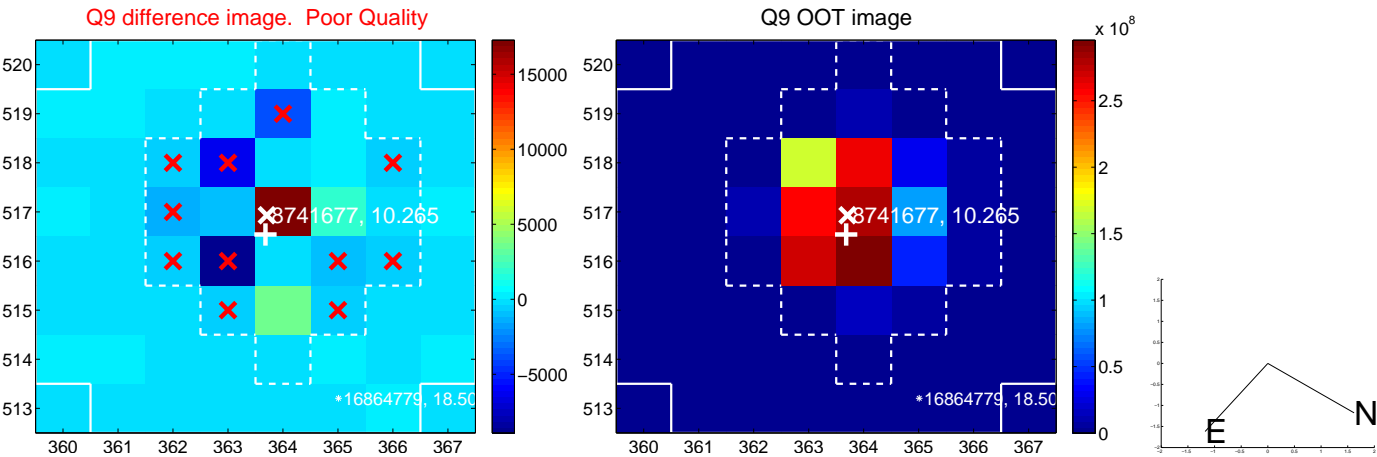
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



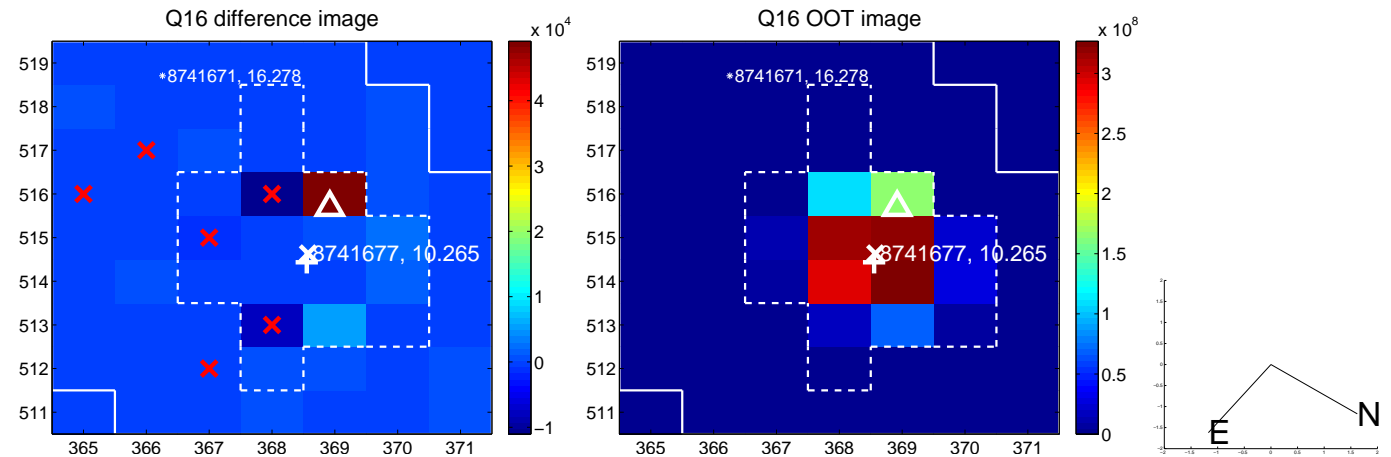
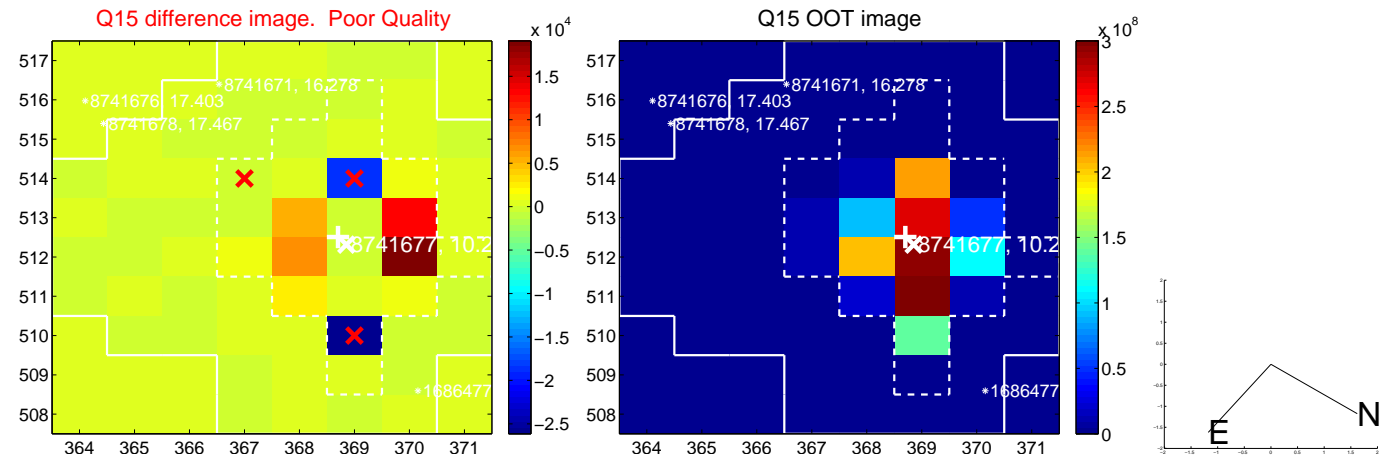
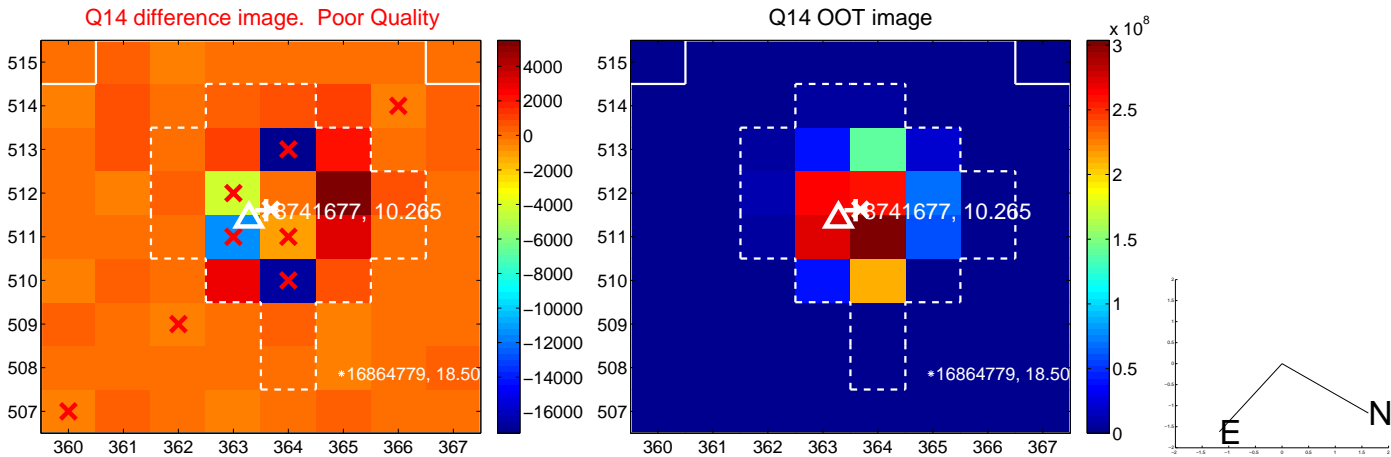
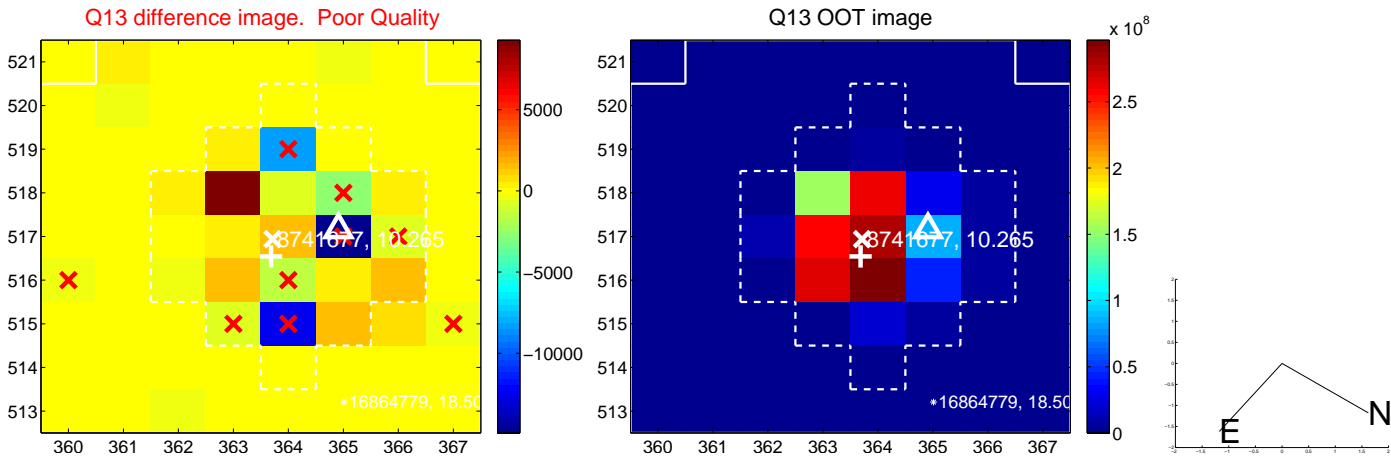
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



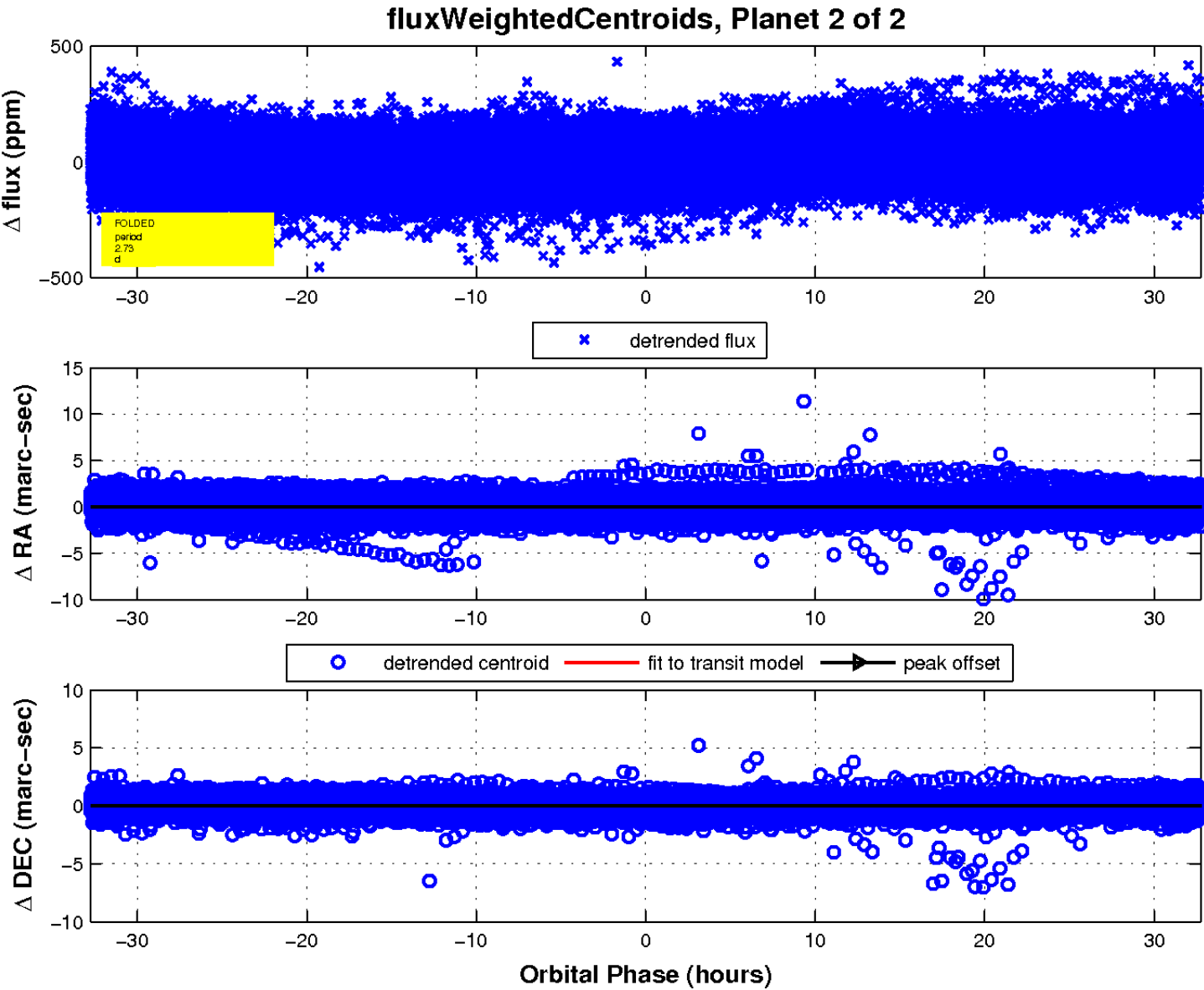
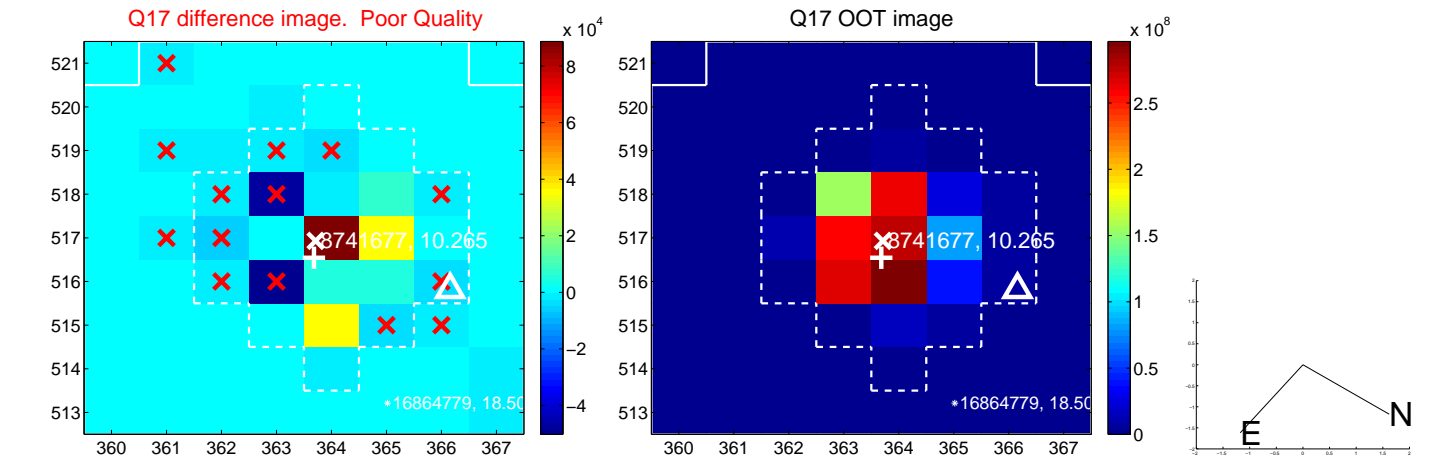
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

