

KIC 006441436

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})
006441436-01	OBS	No	0.800504	131.870546	156.2	2.126	12.0	8.9	1.60	7379	2.10	17812.15
006441436-02	OBS	No	0.800524	132.270558	291.3	3.783	13.5	14.3	1.60	7379	3.48	17811.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006441436-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006441436-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD

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

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

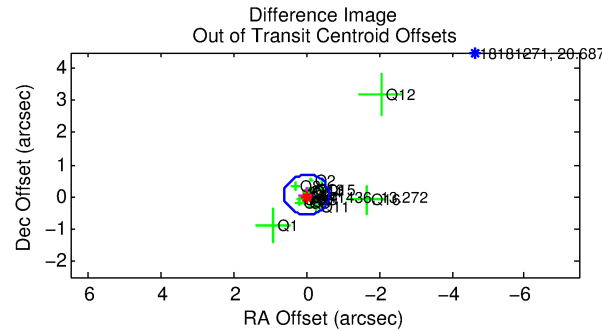
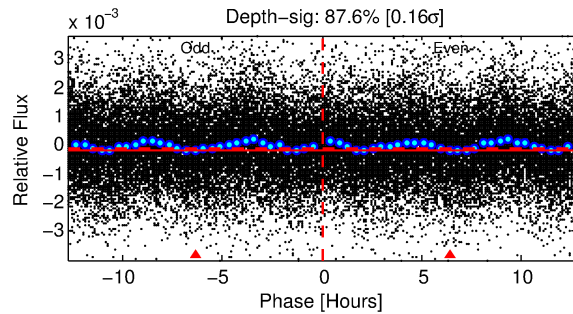
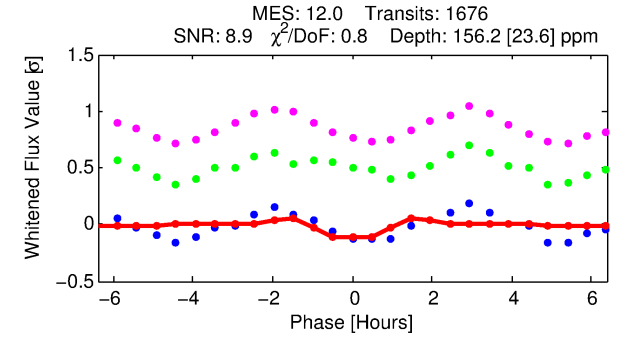
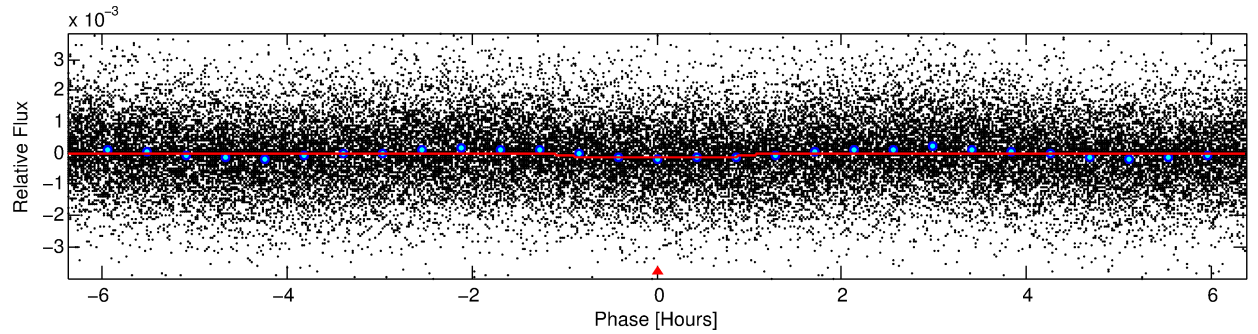
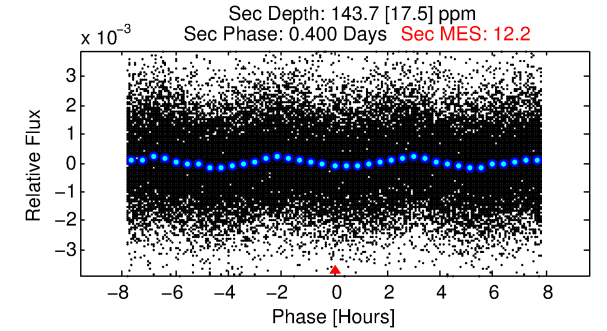
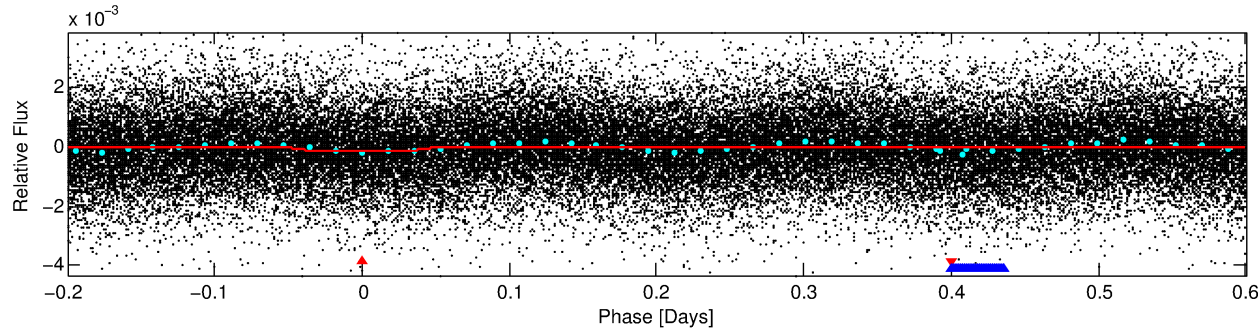
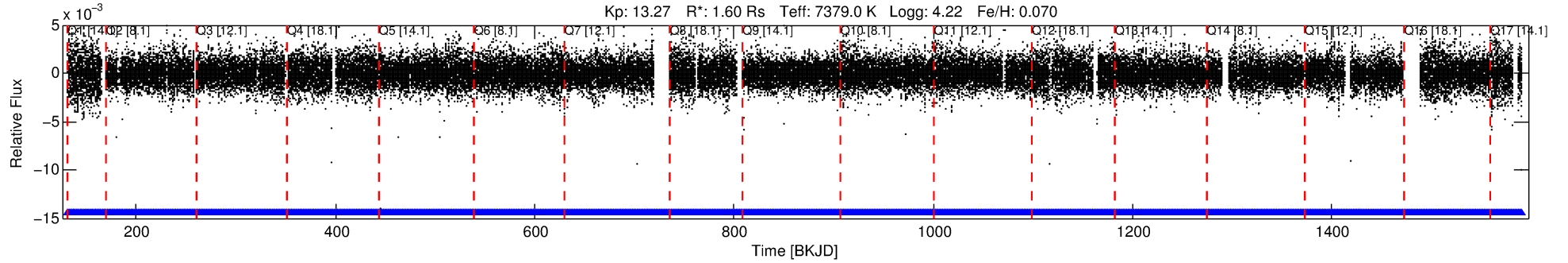
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006441436-01

No Significant Match Found

DV One-Page Summary

KIC: 6441436 Candidate: 1 of 2 Period: 0.801 d



DV Fit Results:

Period = 0.80050 [0.00001] d
Epoch = 131.8705 [0.0021] BKJD
Rp/R* = 0.0120 [0.0044]
a/R* = 2.54 [4.74]
b = 0.56 [2.73]
Seff = 17812.15 [8051.67]
Teq = 2946 [333] K
Rp = 2.10 [1.10] Re
a = 0.0196 [0.0059] AU
Ag = 6.88 [5.87] [1.00σ]
Teffp = 7376 [1411] K [3.06σ]

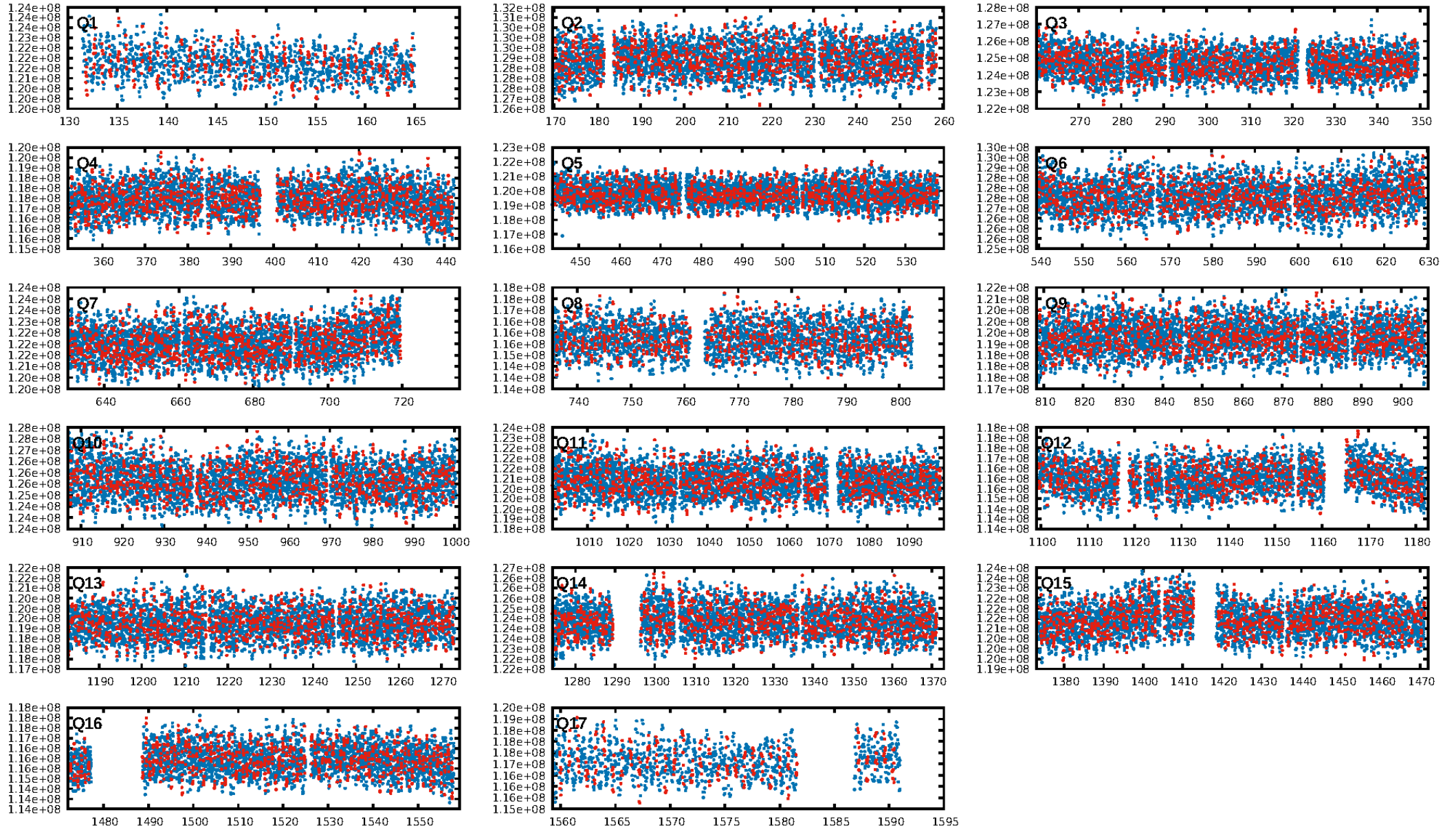
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.88e-46
RollingBand-fgt: 1.00 [1601/1601]
GhostDiagnostic-chr: 1.545
Centroid-sig: 17.2%
Centroid-so: 0.191 arcsec [1.42σ]
OotOffset-rm: 0.062 arcsec [0.30σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.130 arcsec [1.09σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

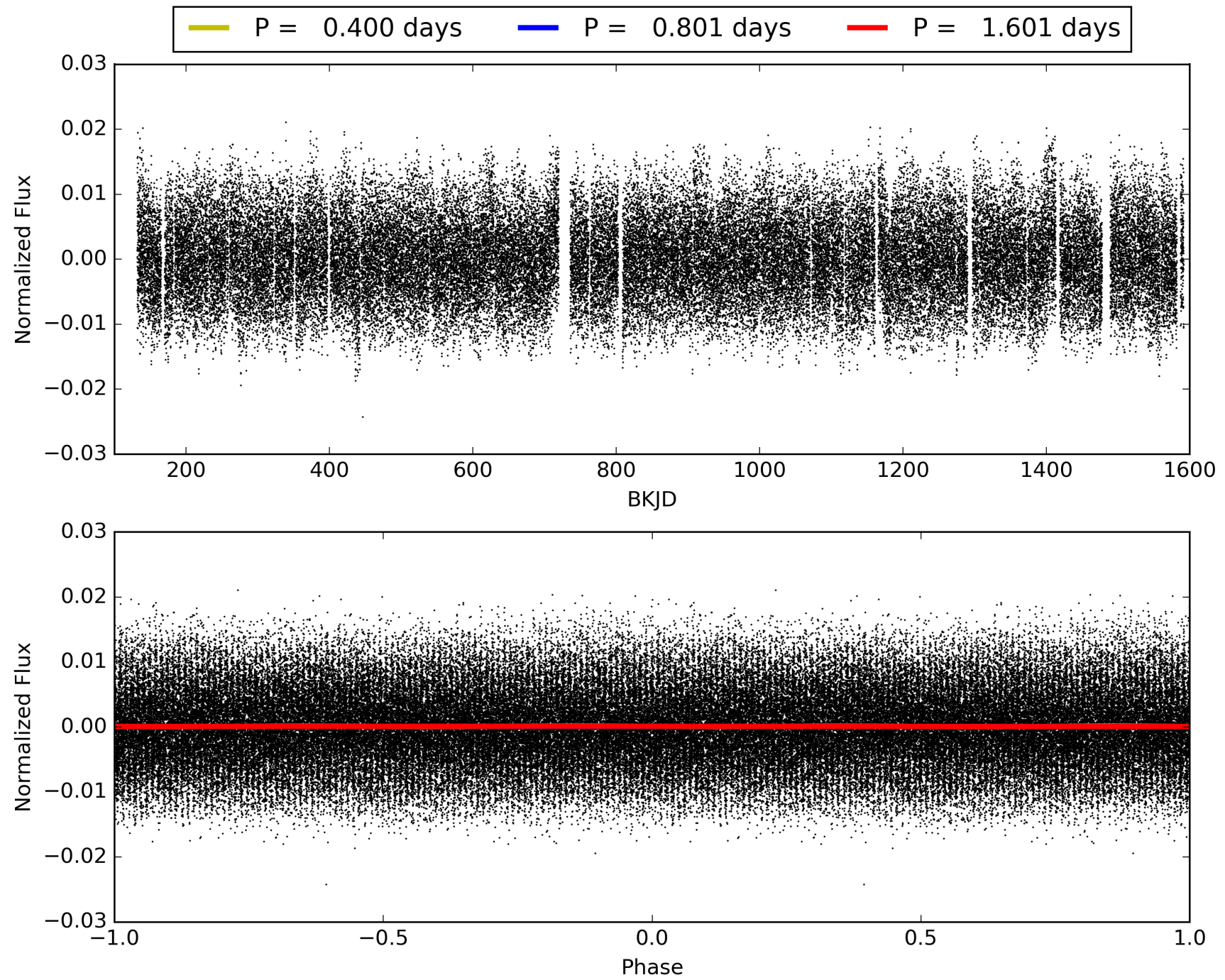
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:48:31 Z

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

TCE 006441436-01, PDC Light Curves

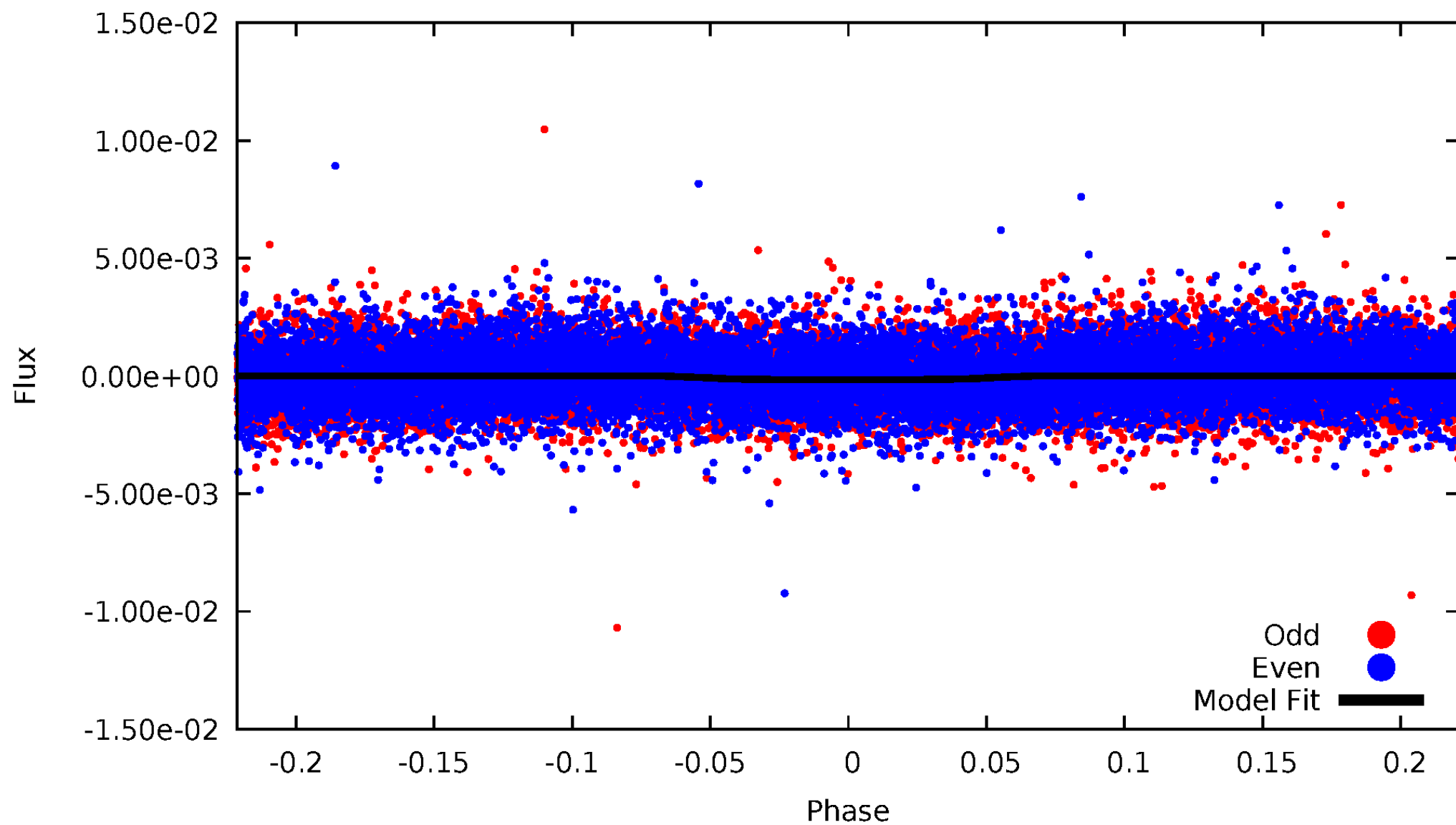


TCE 006441436-01



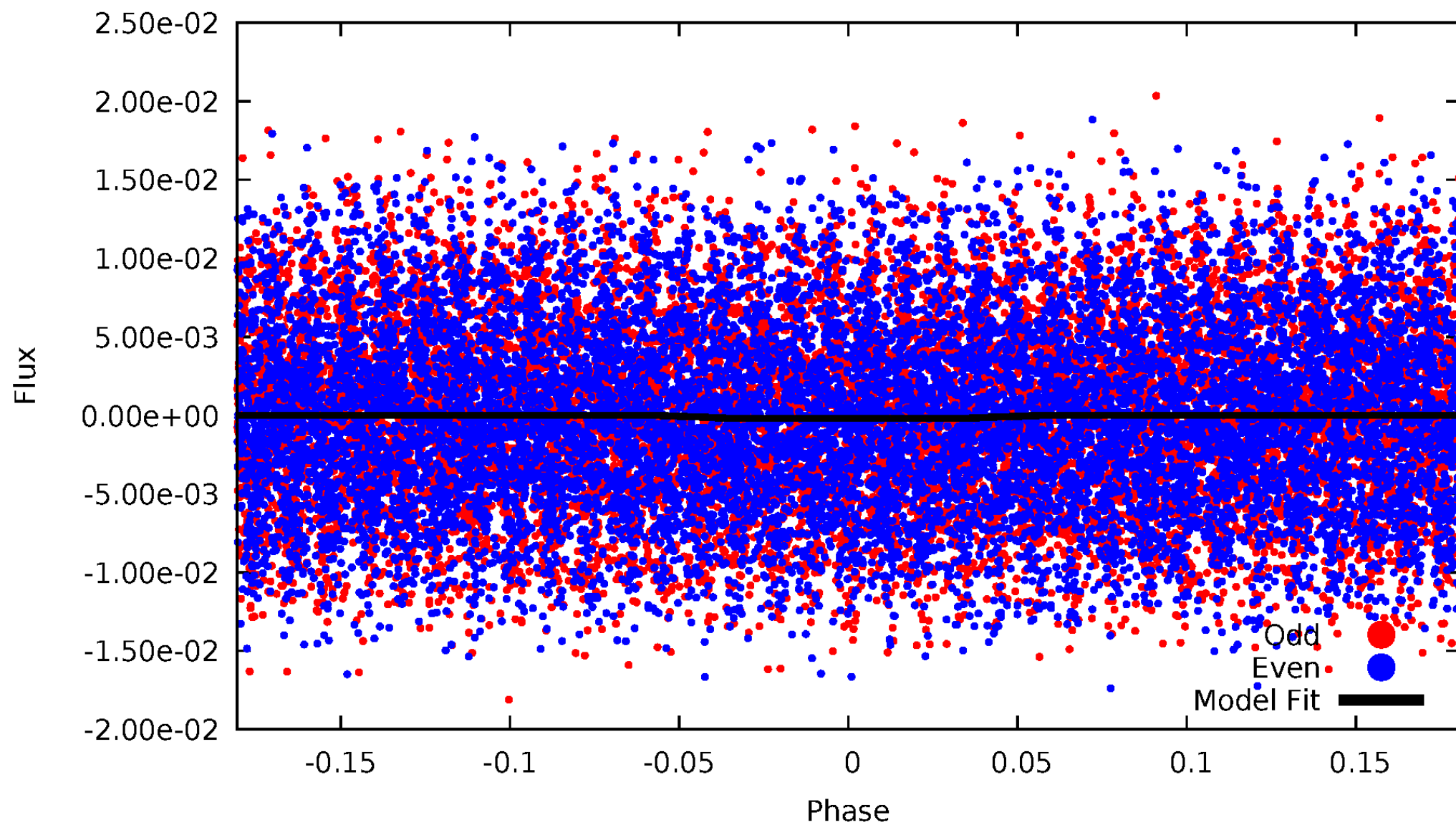
DV Odd/Even

TCE 006441436-01



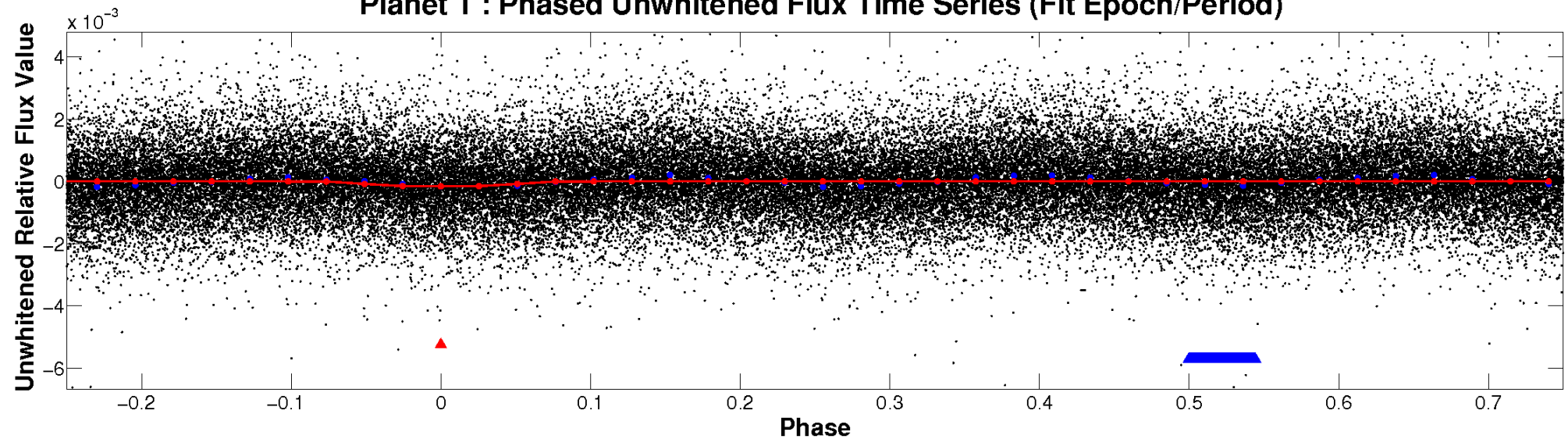
ALT Odd/Even

TCE 006441436-01

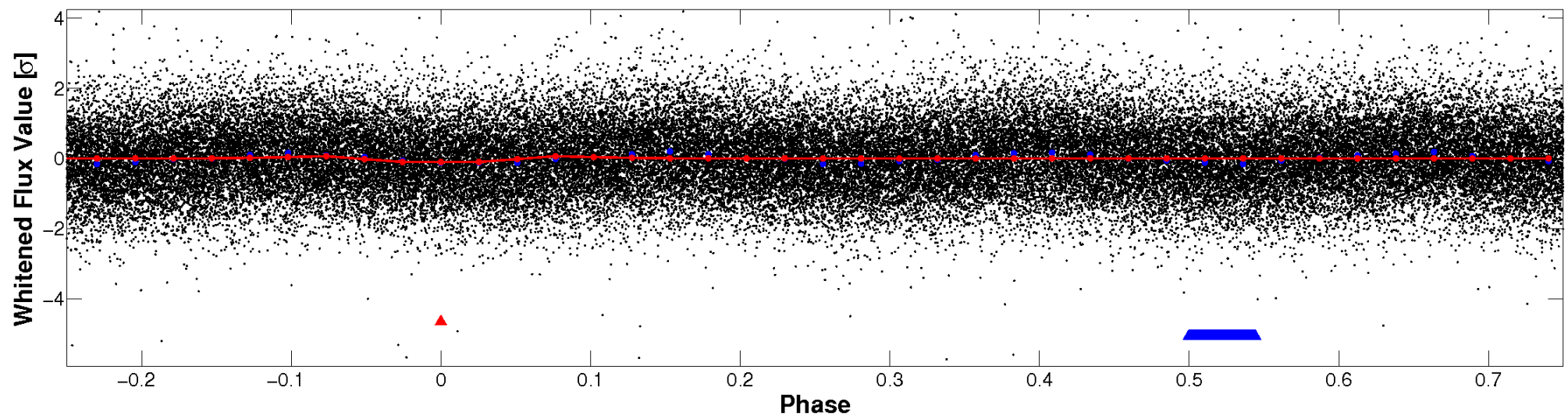


Non-Whitened Vs. Whitened Light Curve

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

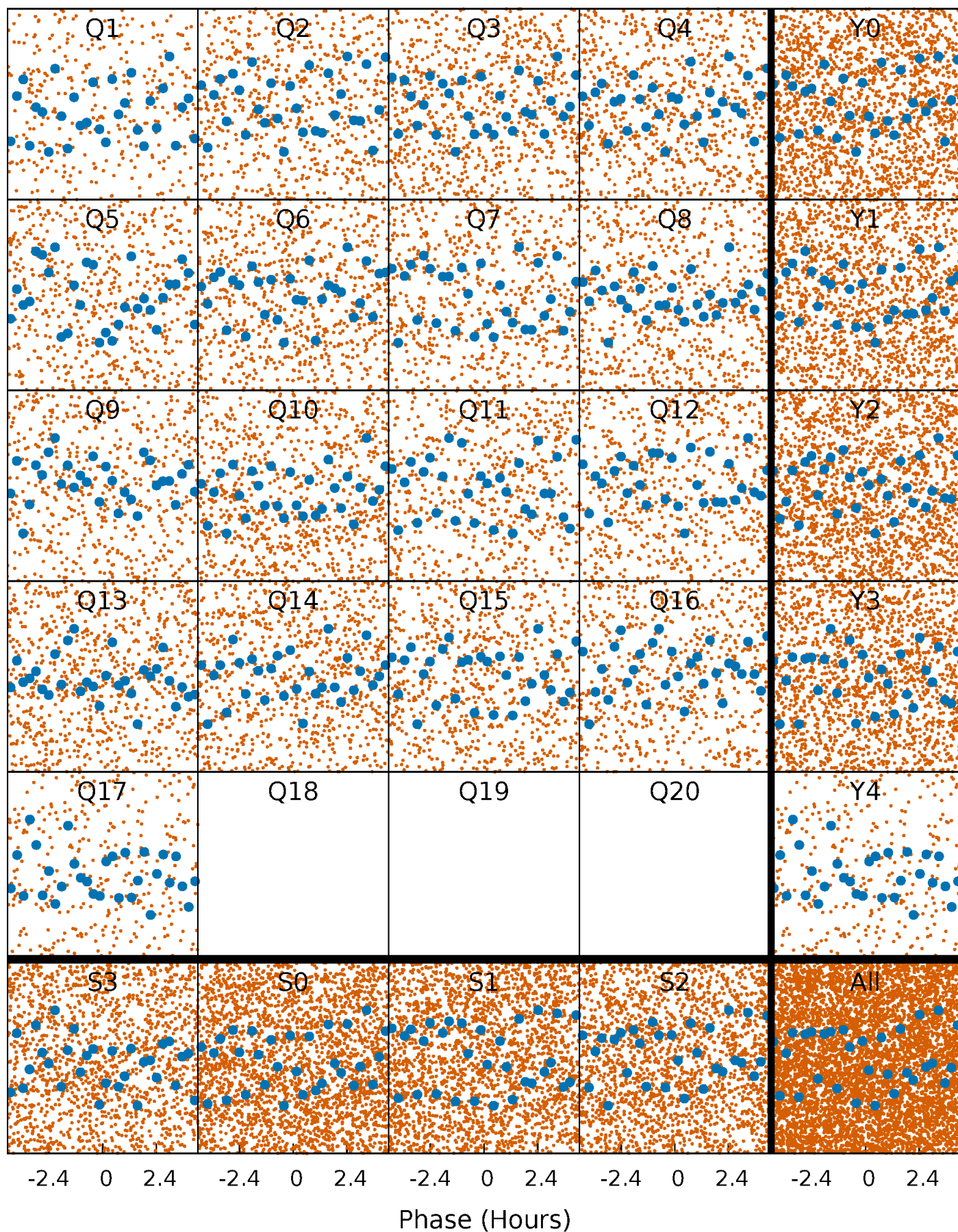


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



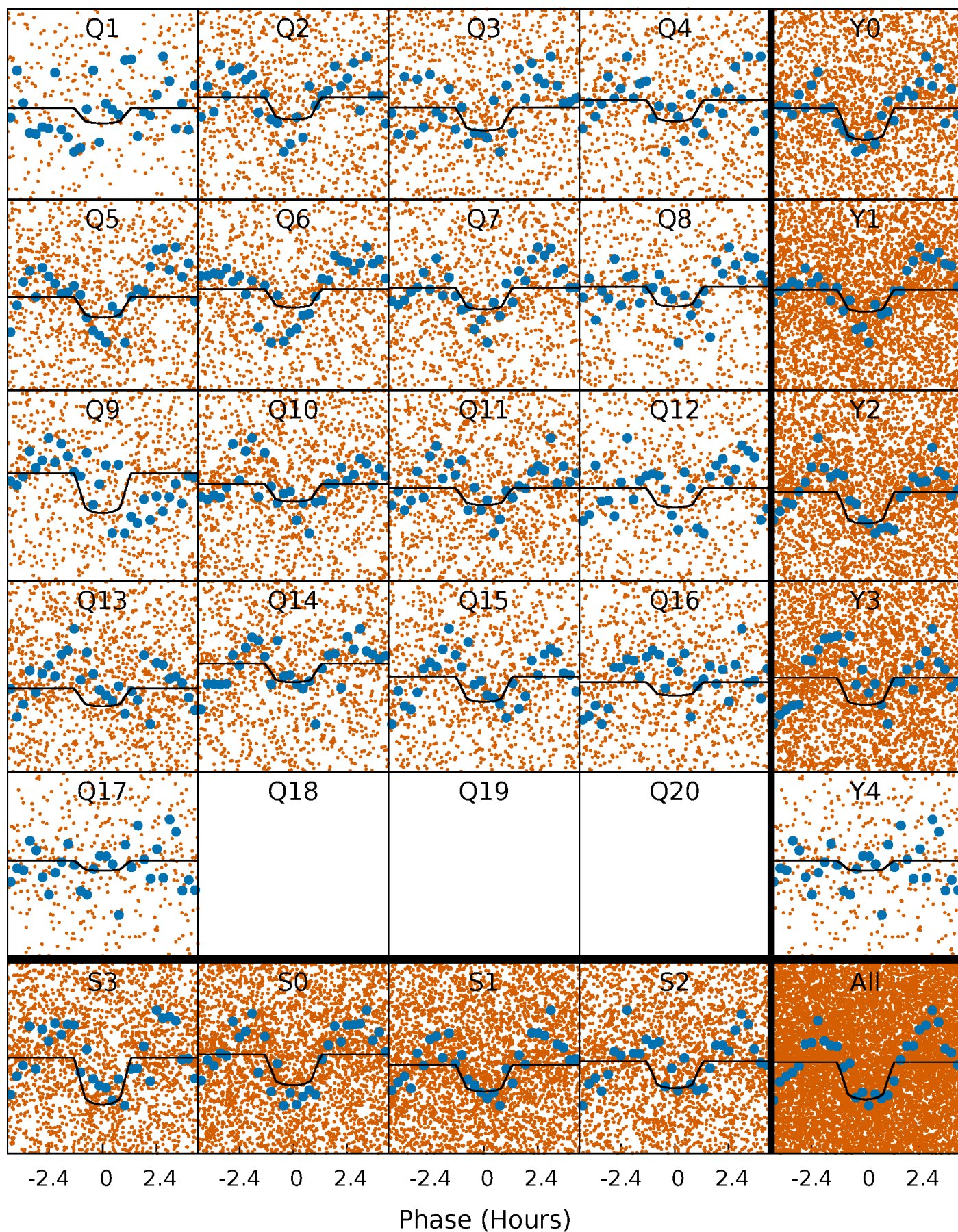
PDC Quarter-Phased Transit Curves

TCE 006441436-01 P= 0.800504 Days $T_0=131.870545$ (BKJD)



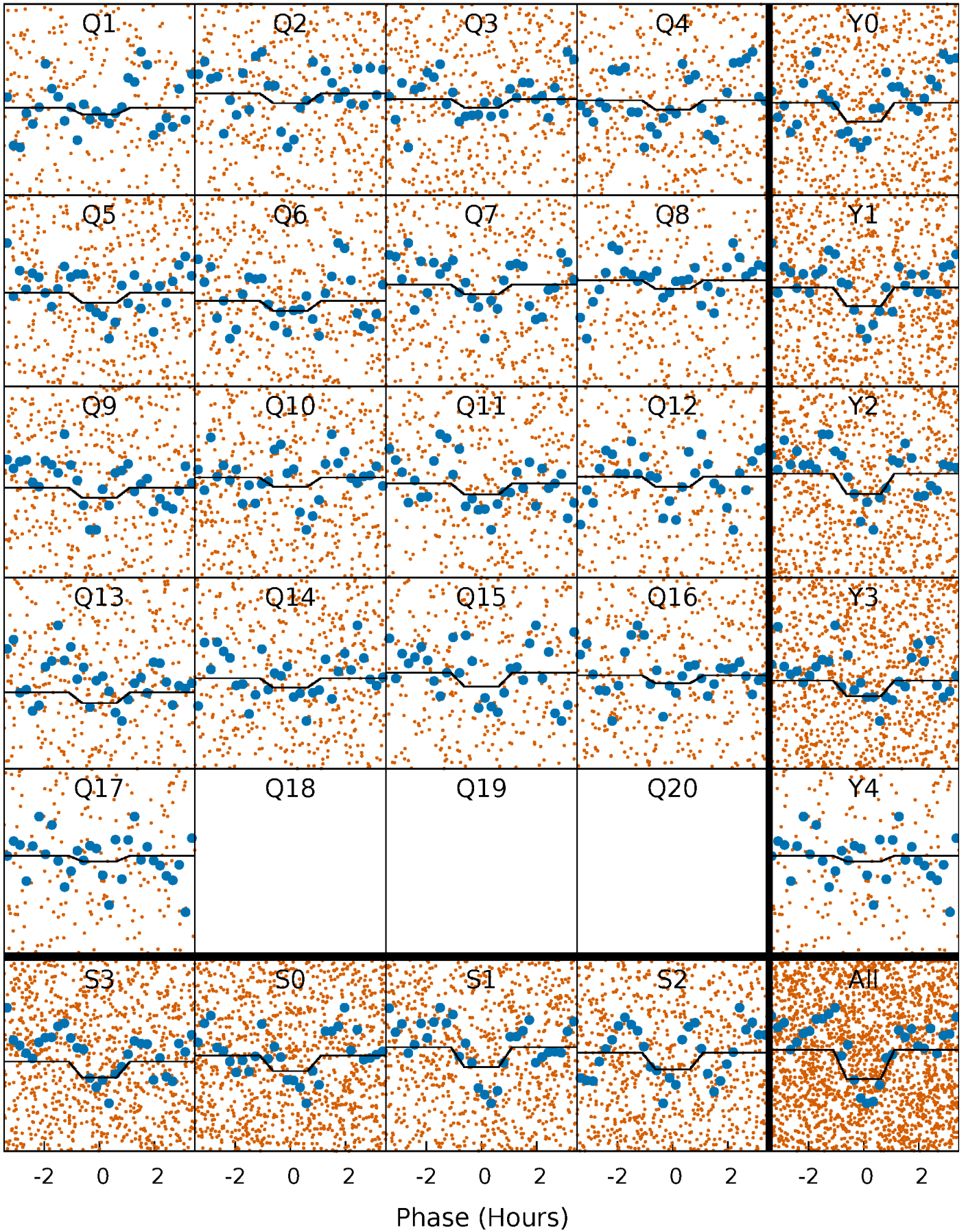
DV Quarter-Phased Transit Curves

TCE 006441436-01 P= 0.800504 Days $T_0=131.870545$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

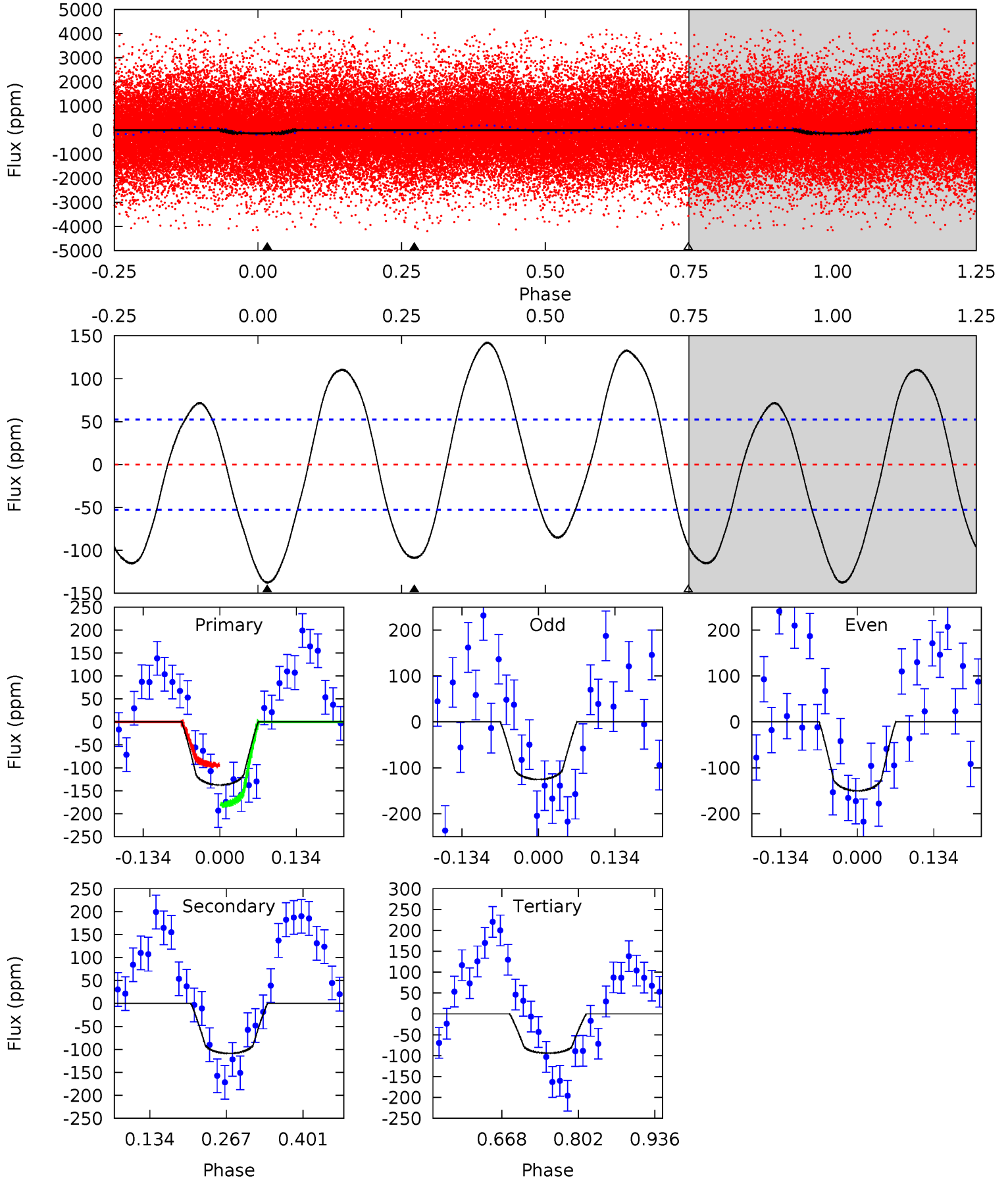
TCE 006441436-01 P= 0.800521 Days $T_0=131.862949$ (BKJD)



DV Model-Shift Uniqueness Test

006441436-01, P = 0.800504 Days, E = 131.070041 Days

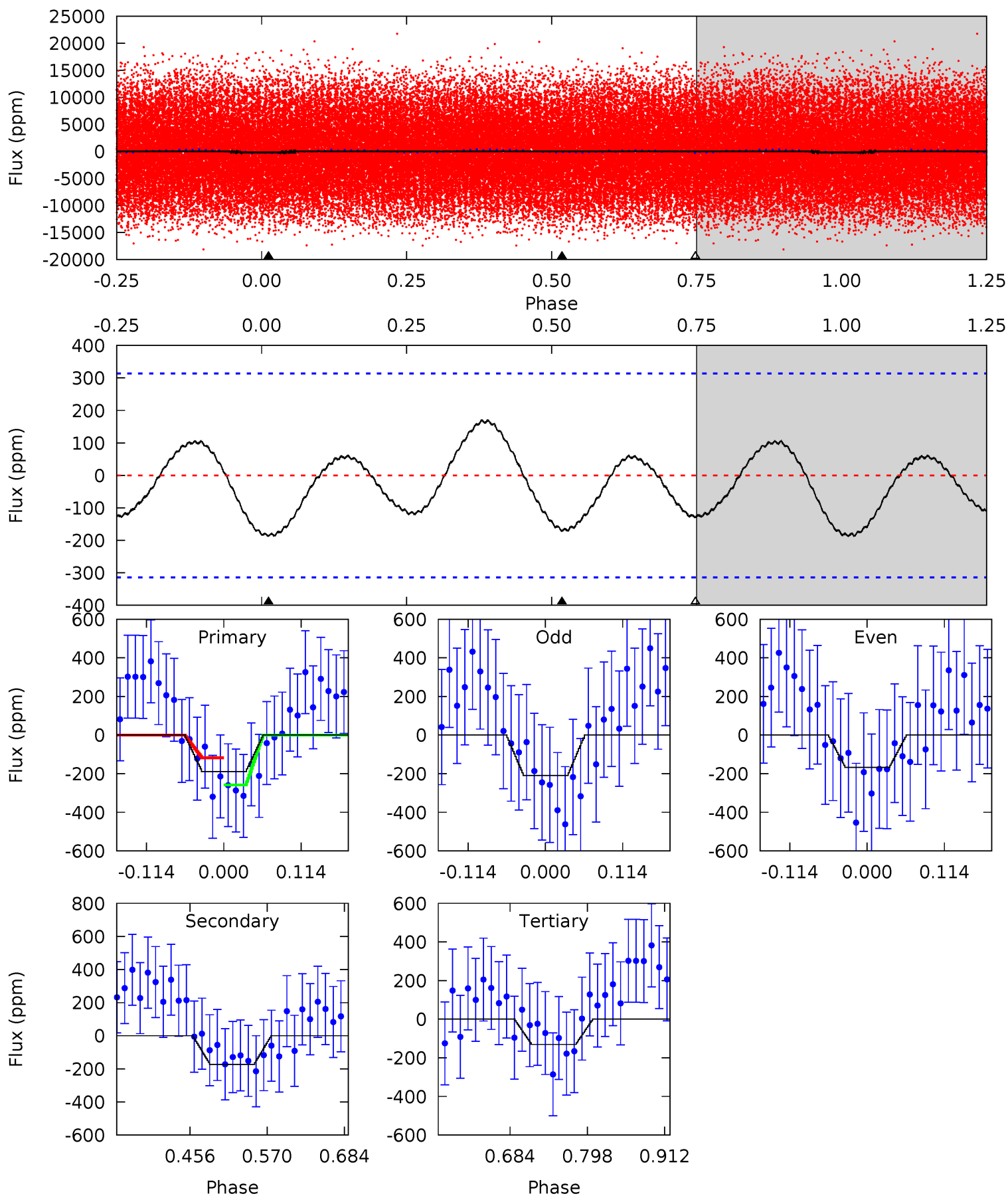
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	9.33	8.07	0	4.50	1.50	6.91	3.73	11.8	1.26	9.33	1.07	0.98	0.51	3.77



Alt Model-Shift Uniqueness Test

006441436-01, P = 0.800521 Days, E = 131.062428 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.72	2.50	1.89	0	4.54	1.58	1.25	0.83	2.72	0.61	2.50	0.31	0.72	0.48	1.02



Stellar Parameters For KIC 006441436

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7379^{+206}_{-324}	$4.222^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.605^{+0.602}_{-0.201}$	$1.566^{+0.214}_{-0.214}$	$0.534^{+0.209}_{-0.283}$
	+3%/-4%	+2%/-5%	+286%/-500%	+38%/-13%	+14%/-14%	+39%/-53%
Source	KIC0	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 006441436-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-109±12	$2.17^{+0.96}_{-0.85}$	4175^{+332}_{-236}	6660^{+2364}_{-1100}	$4.873^{+7.833}_{-2.566}$
Alt.	-173±69	$2.62^{+0.94}_{-0.83}$	4185^{+318}_{-263}	6774^{+2039}_{-1199}	$5.064^{+6.869}_{-2.654}$

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 $A_{obs} \gg 1.0$

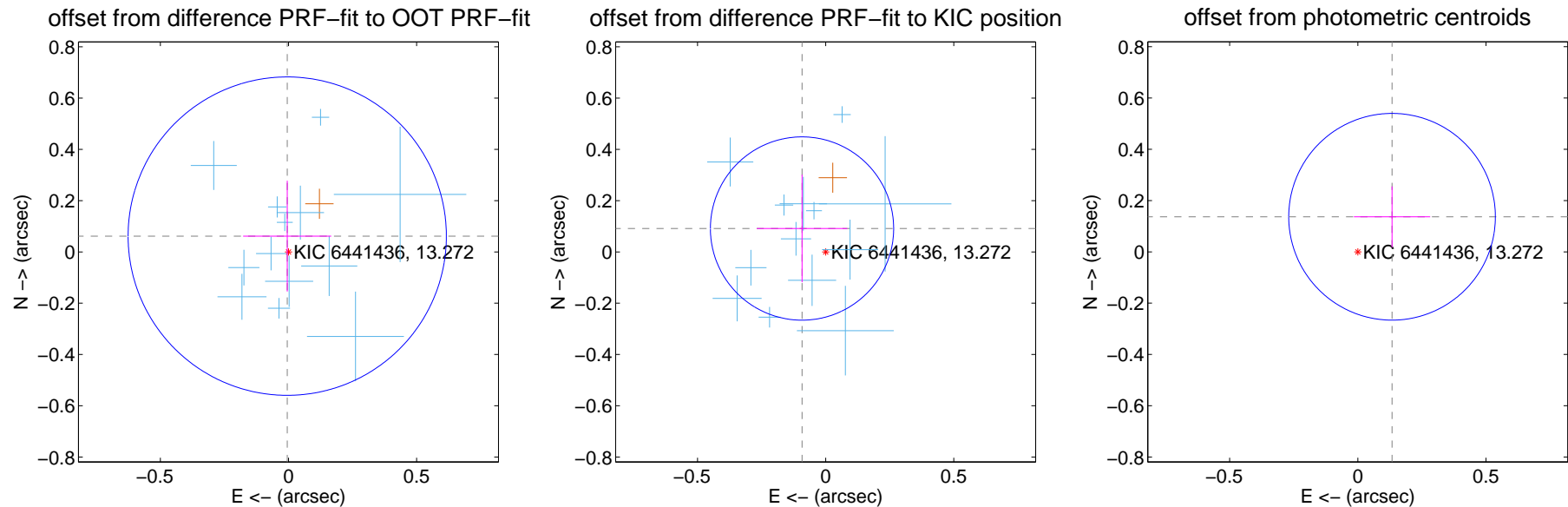
DV Centroid Data

Supplemental centroid analysis for 006441436-01. Kepler magnitude: 13.27. Transit SNR 8.92

There are 15 quarters with good PRF difference image offsets

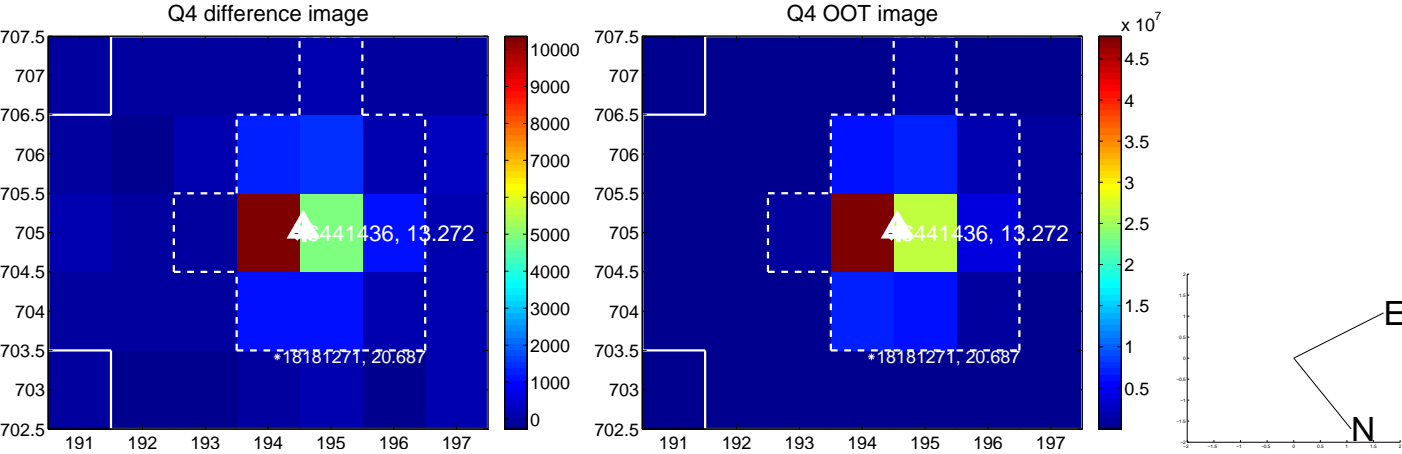
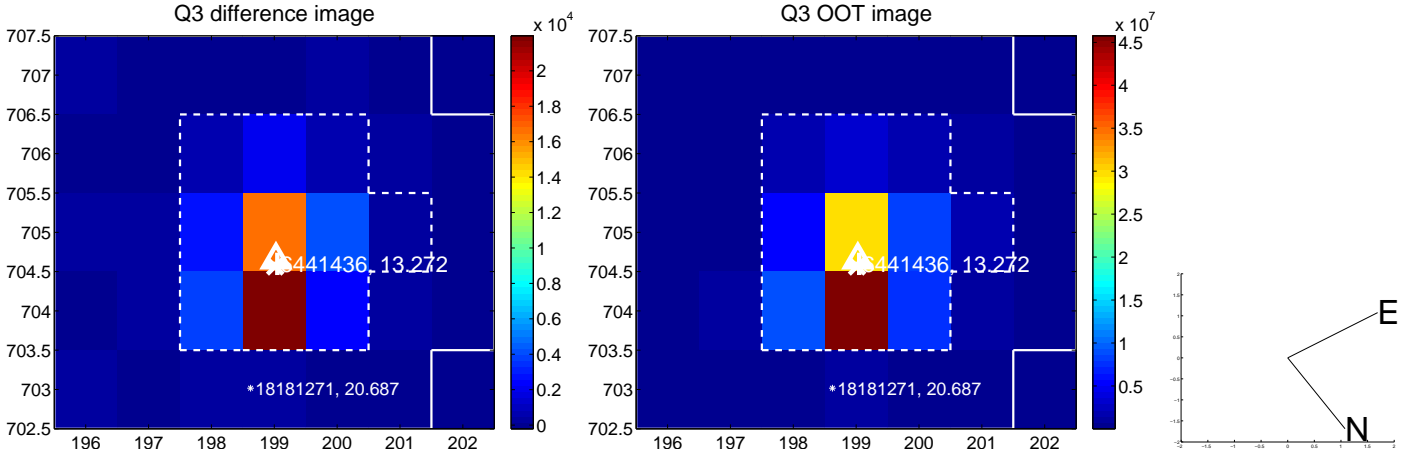
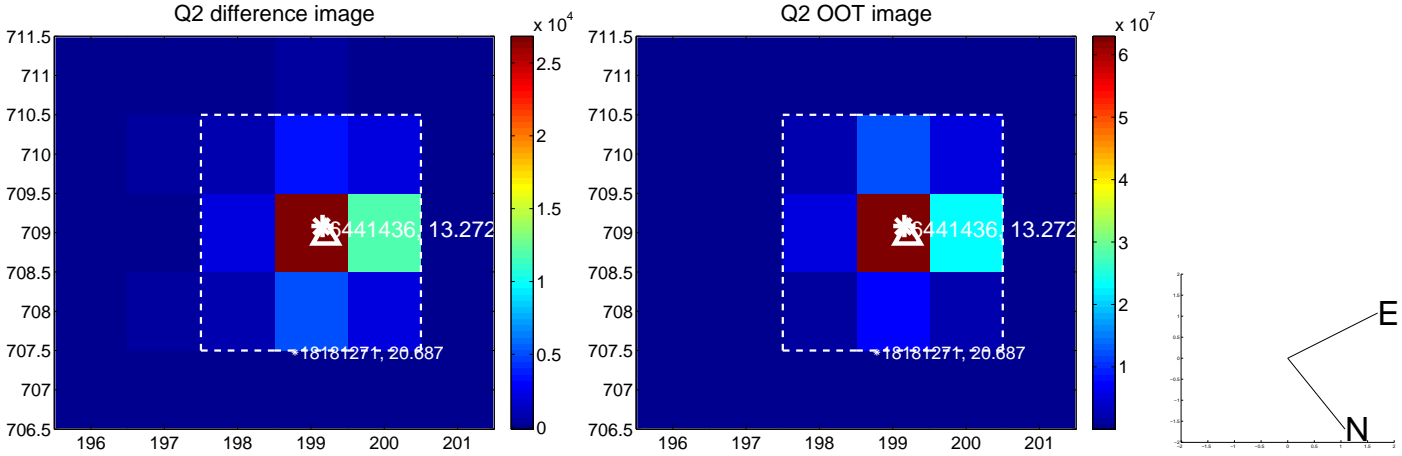
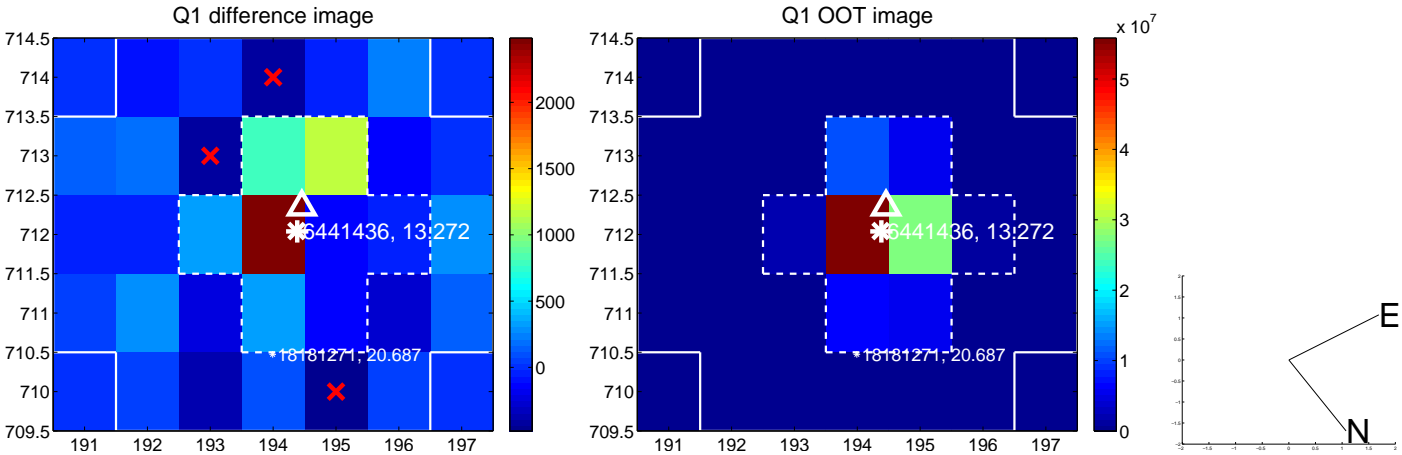
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.062 ± 0.207	0.30	0.005 ± 0.172	0.062 ± 0.216
PRF-fit source offset from KIC position	0.130 ± 0.119	1.09	0.092 ± 0.176	0.091 ± 0.210
photometric centroid source offset	0.19 ± 0.13	1.42	-0.13 ± 0.15	0.14 ± 0.12

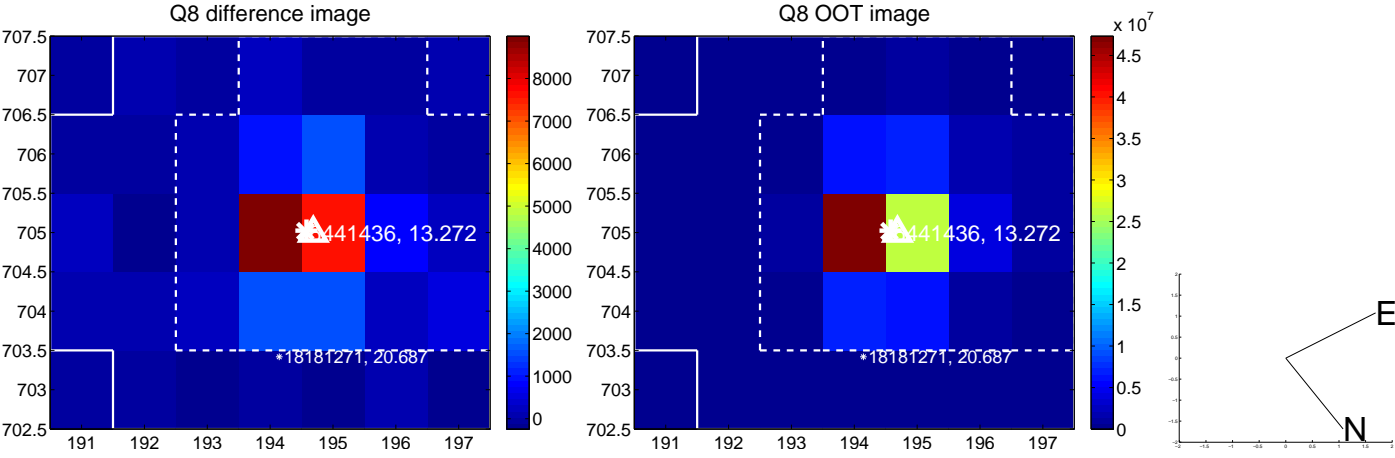
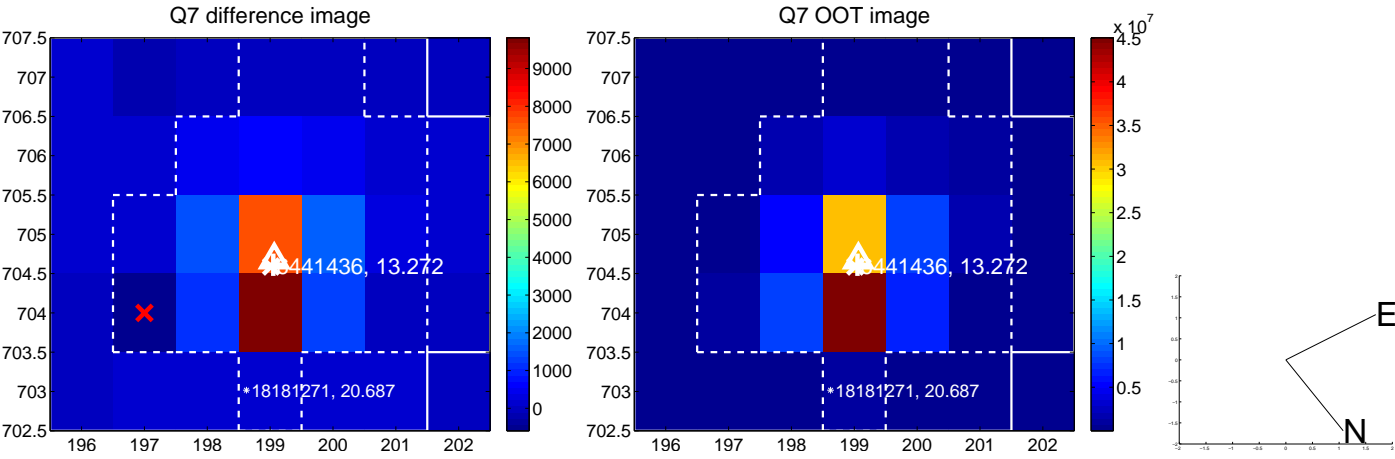
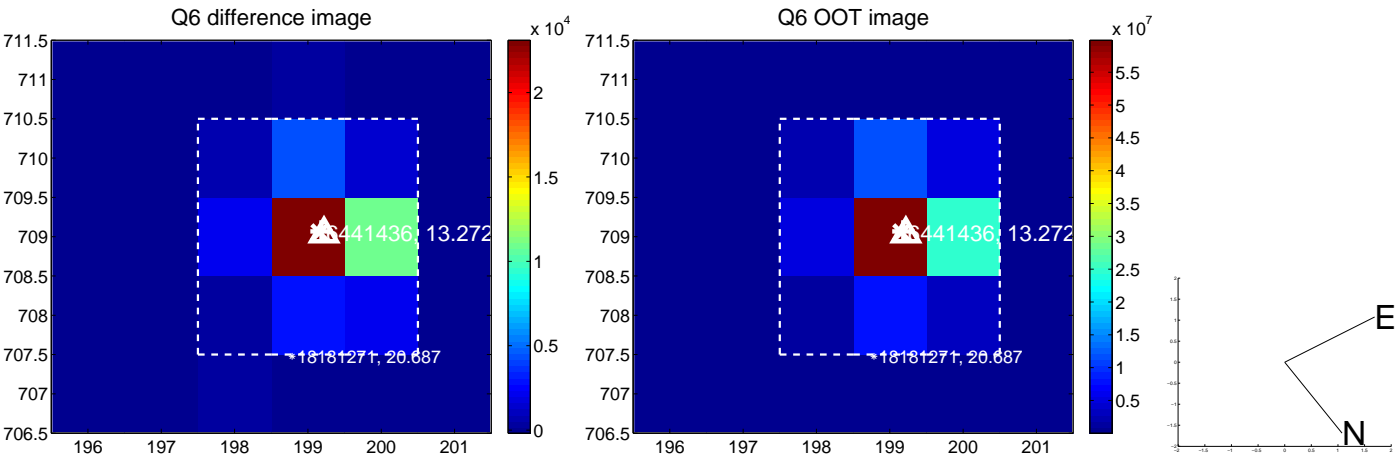
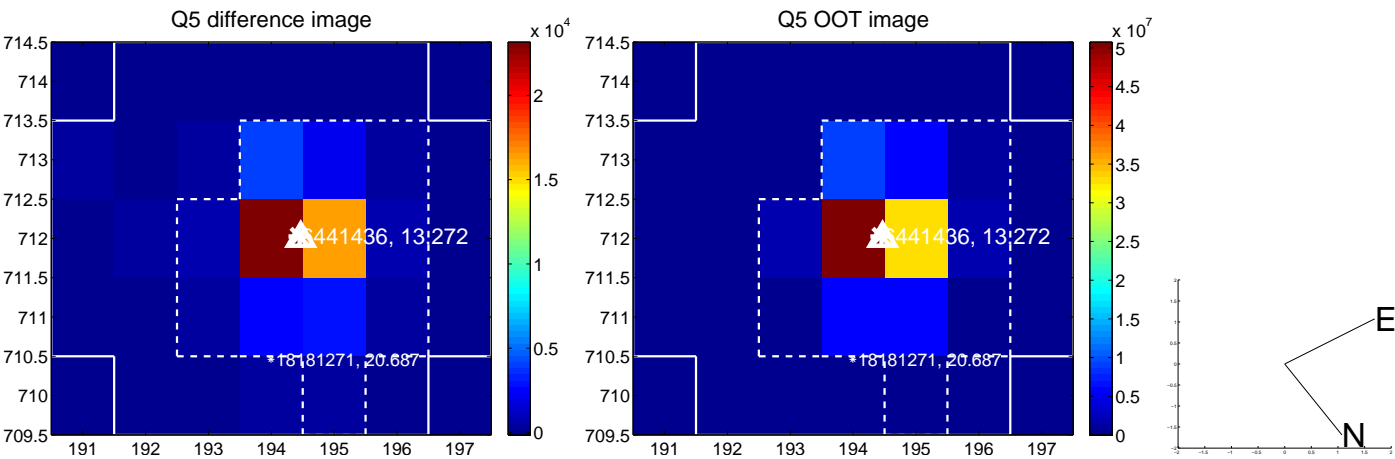


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

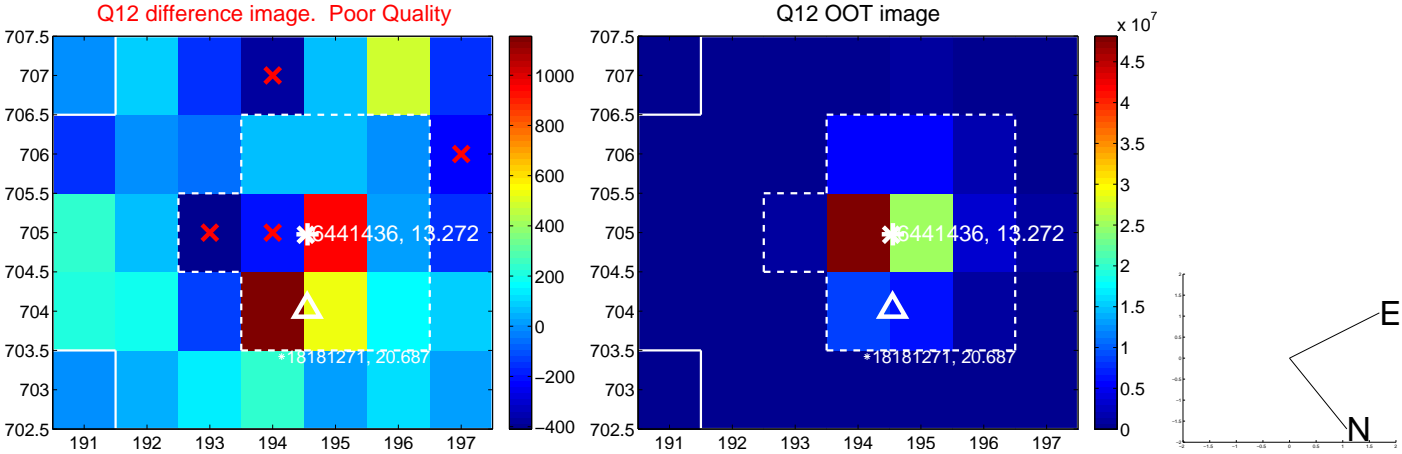
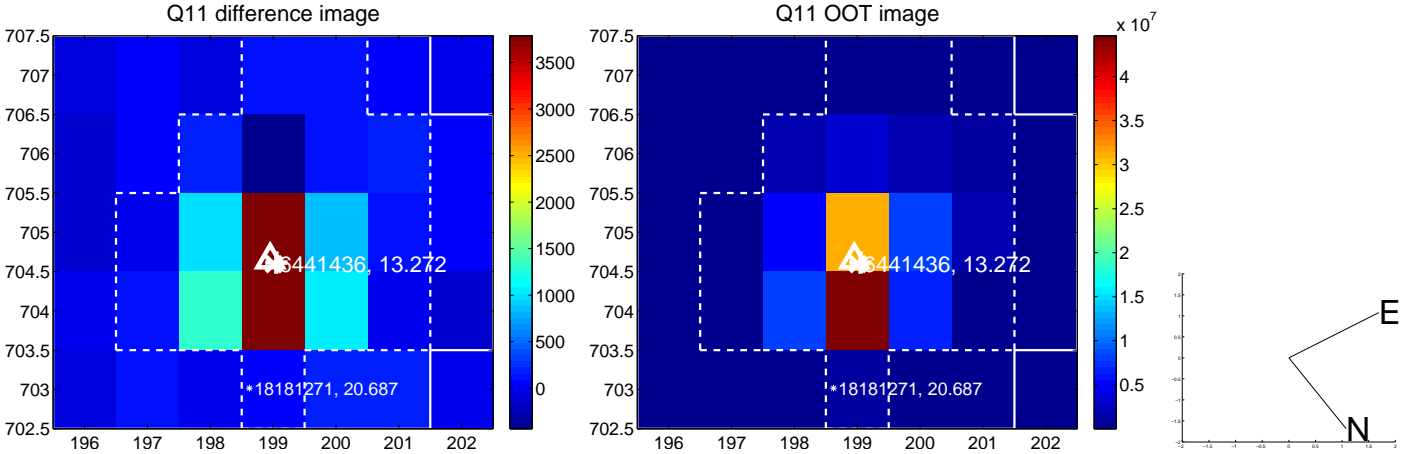
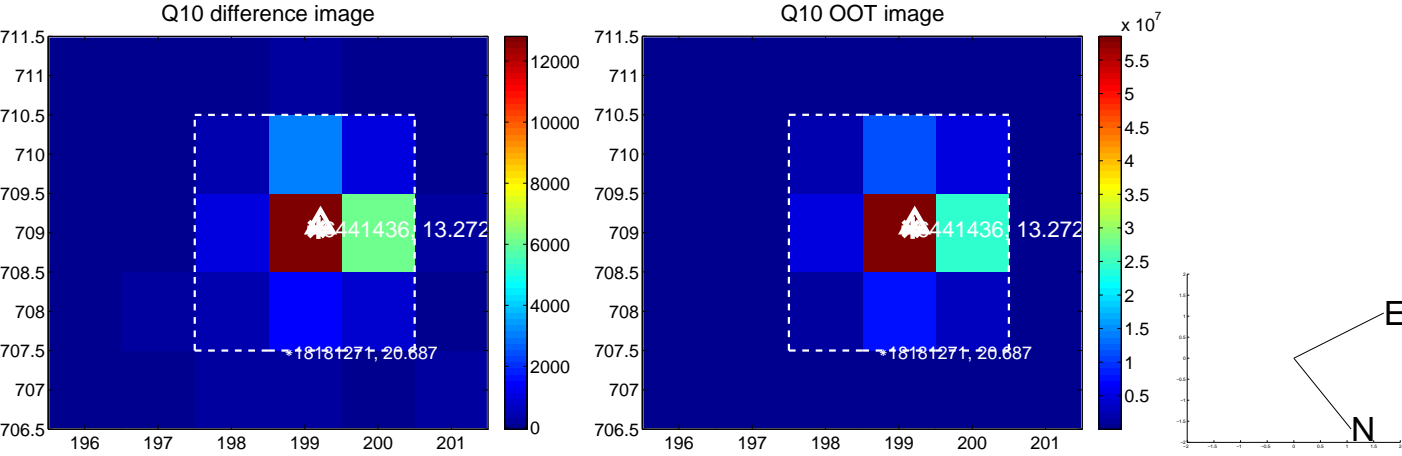
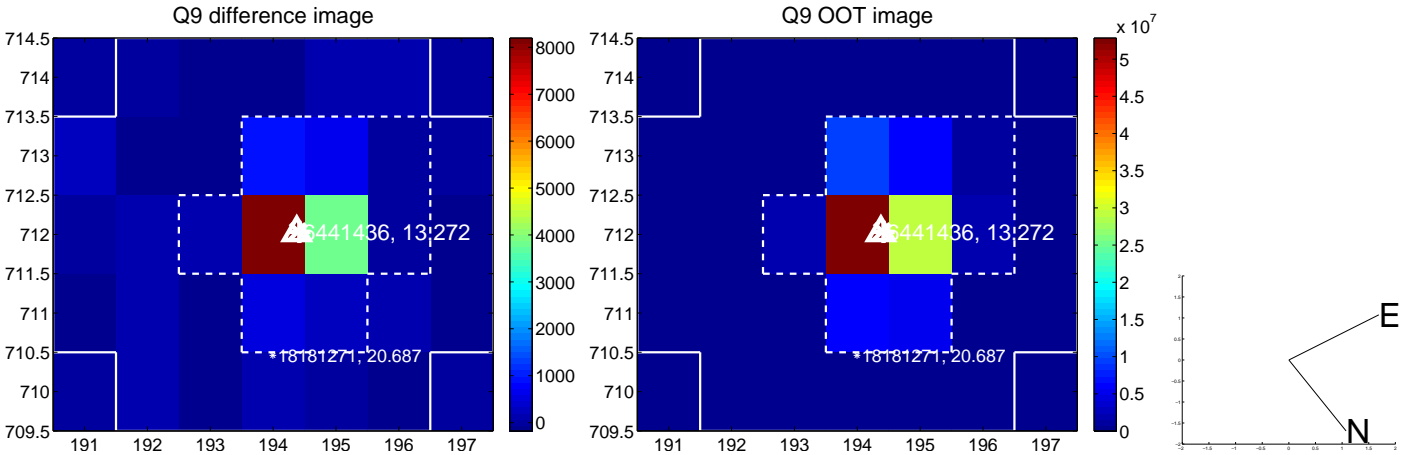
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



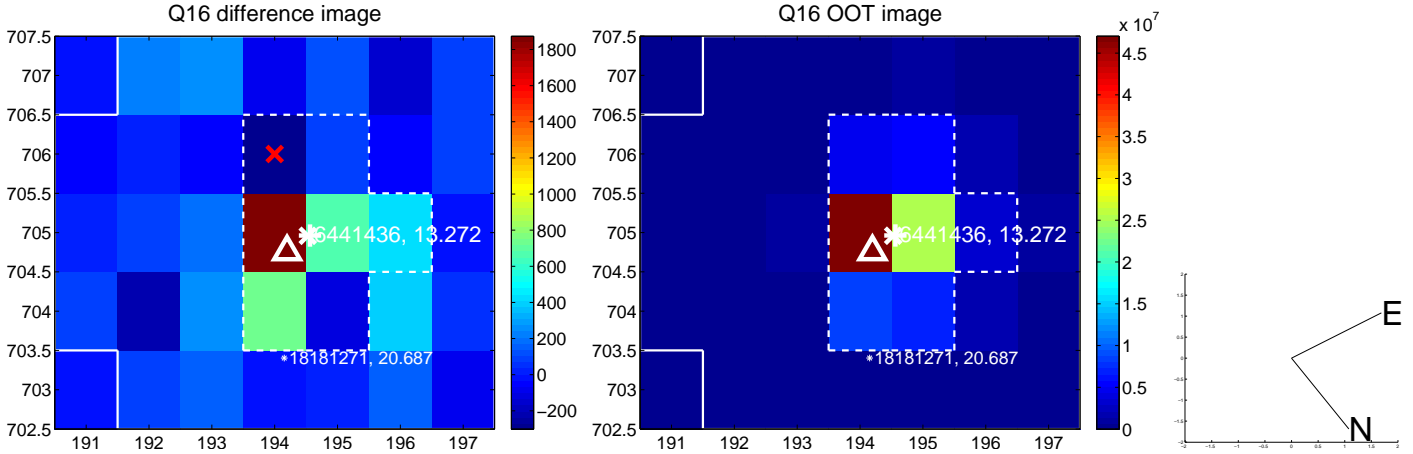
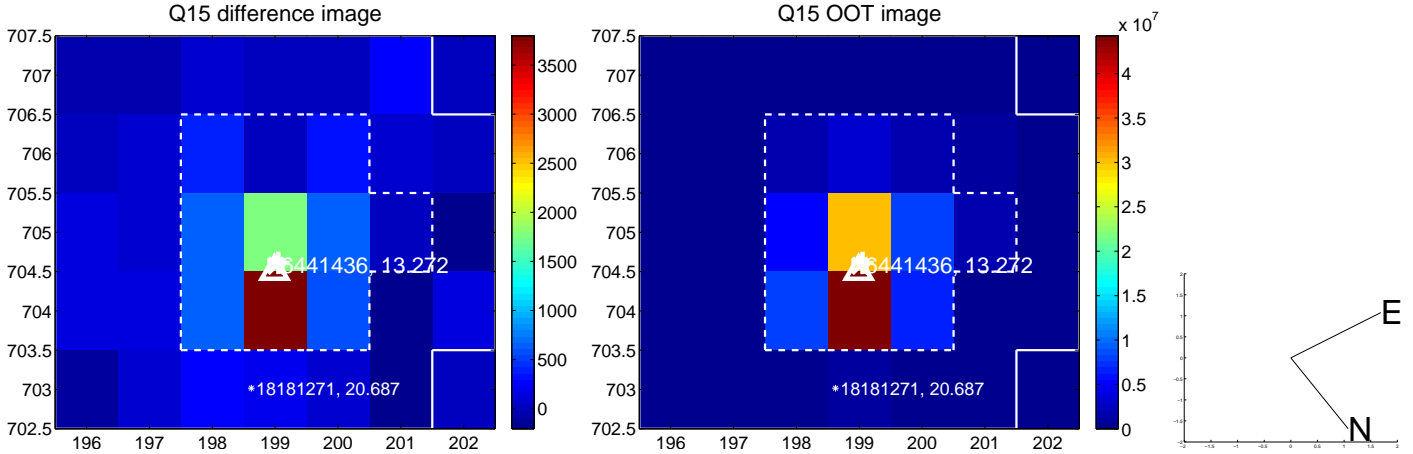
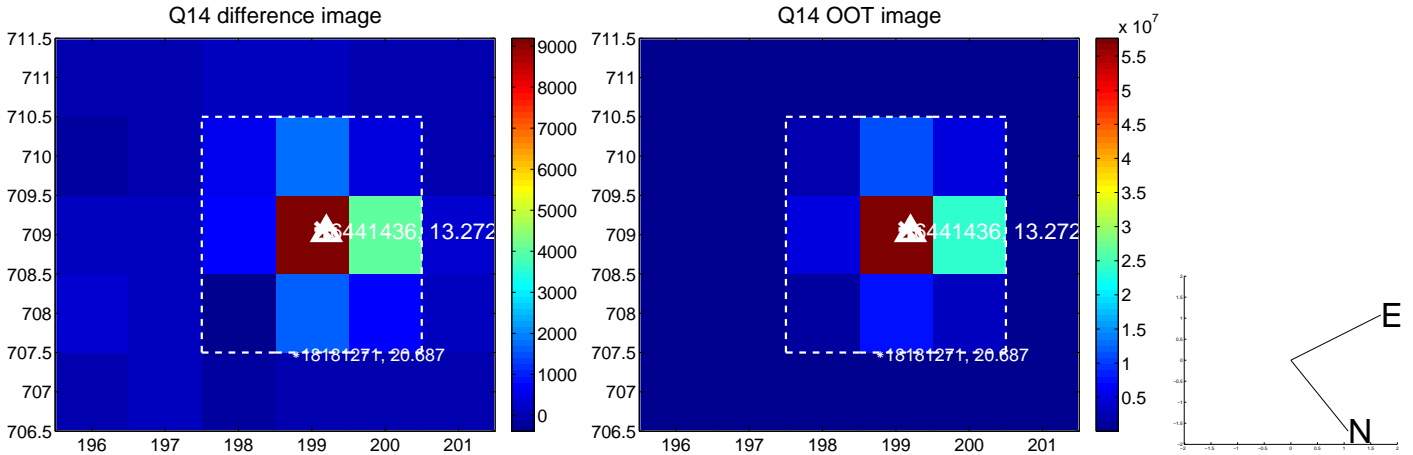
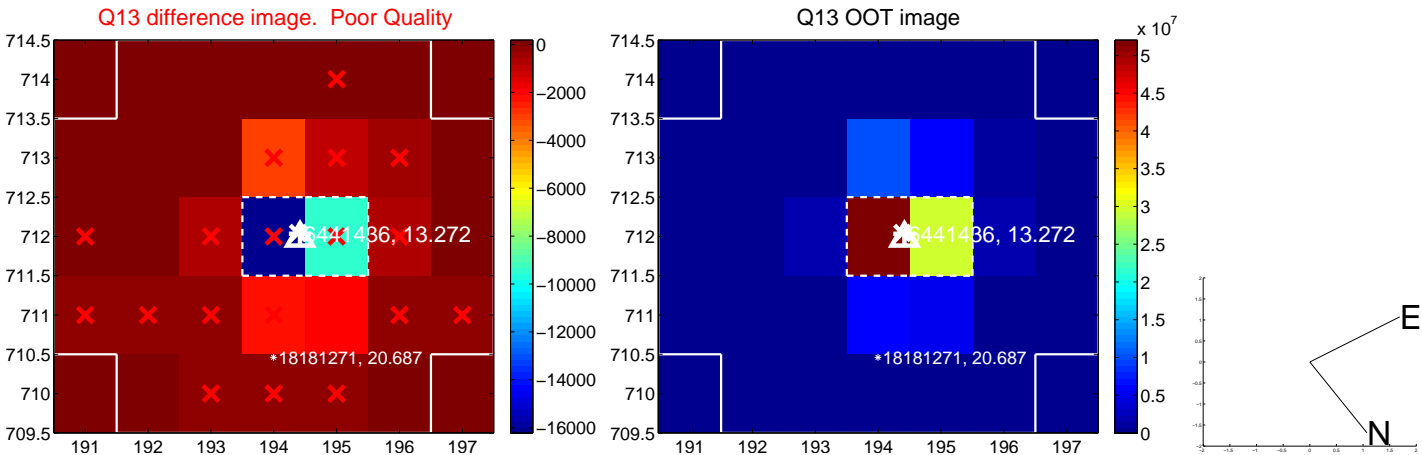
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



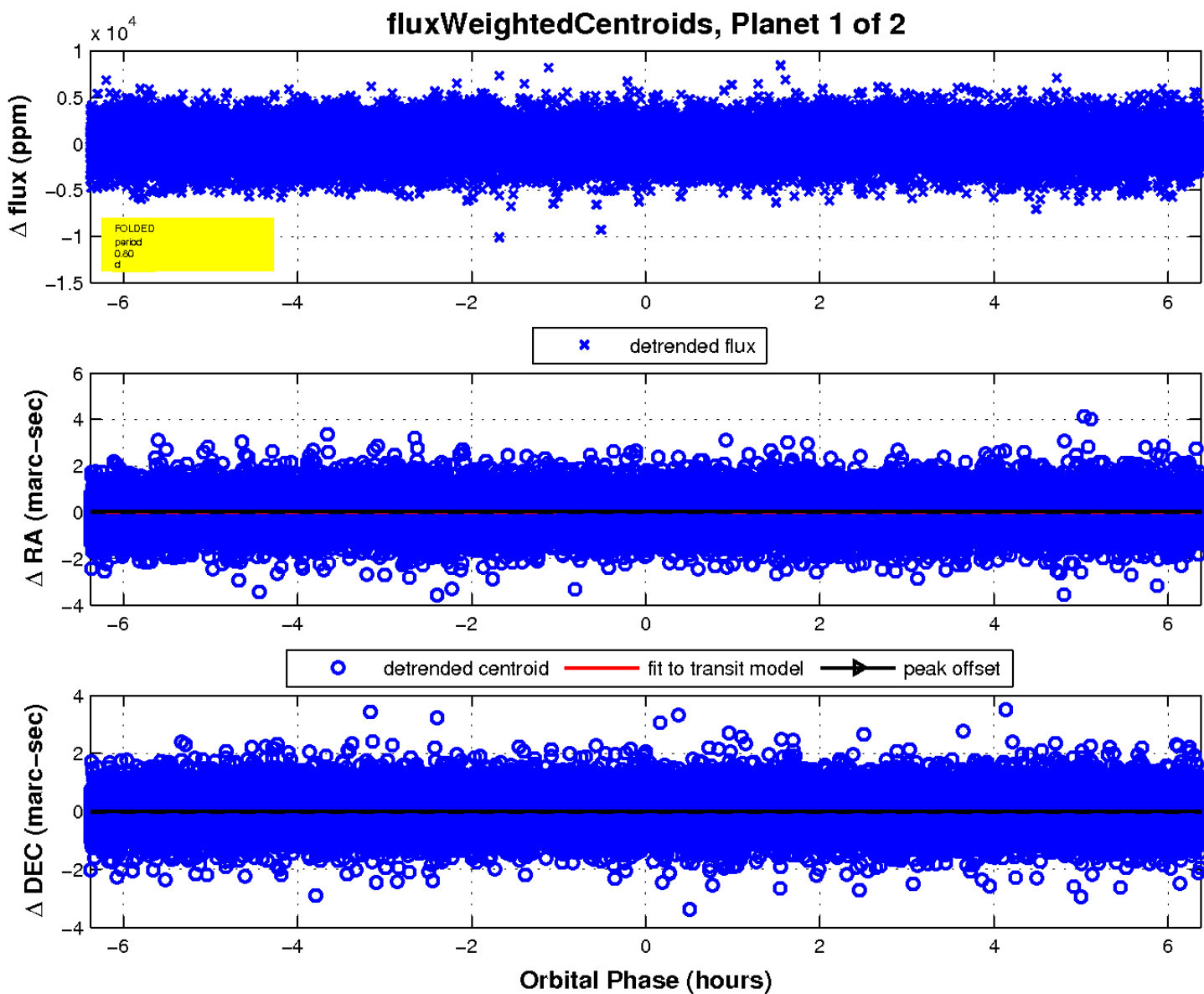
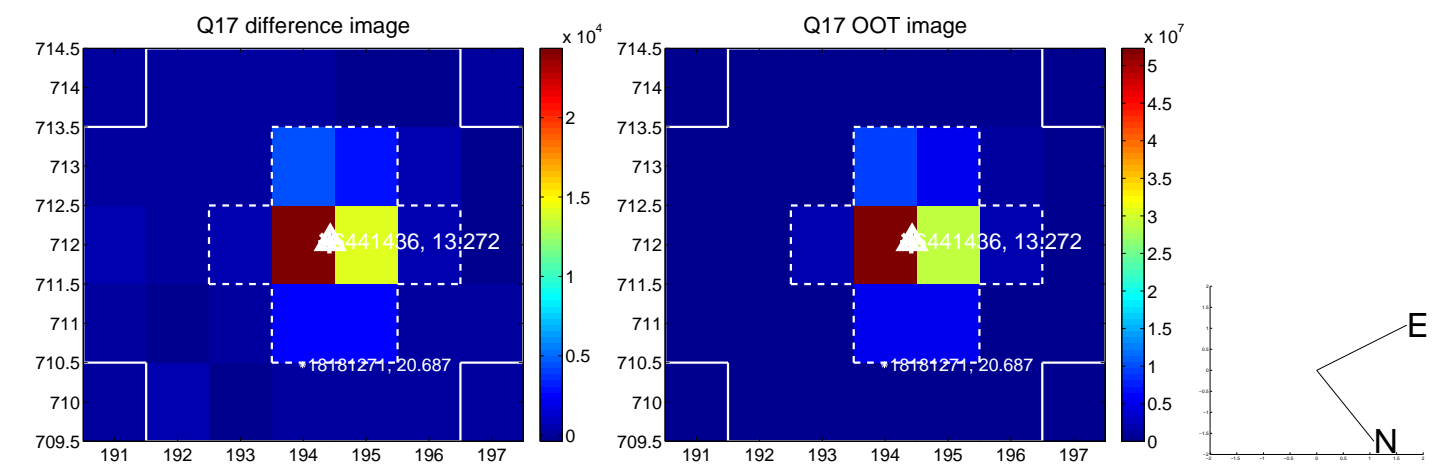
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

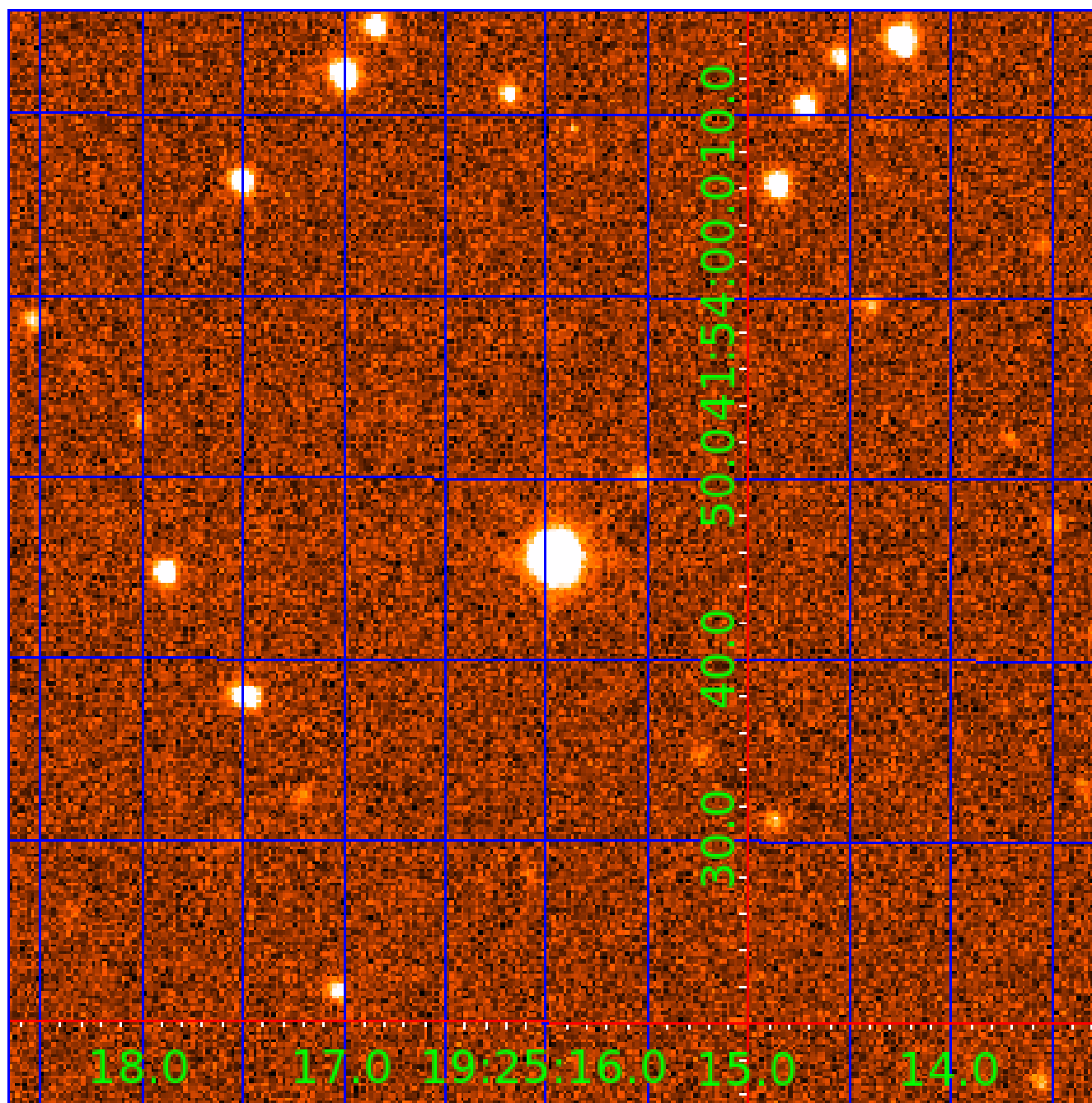


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006441436

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})
006441436-01	OBS	No	0.800504	131.870546	156.2	2.126	12.0	8.9	1.60	7379	2.10	17812.15
006441436-02	OBS	No	0.800524	132.270558	291.3	3.783	13.5	14.3	1.60	7379	3.48	17811.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006441436-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006441436-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD

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

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

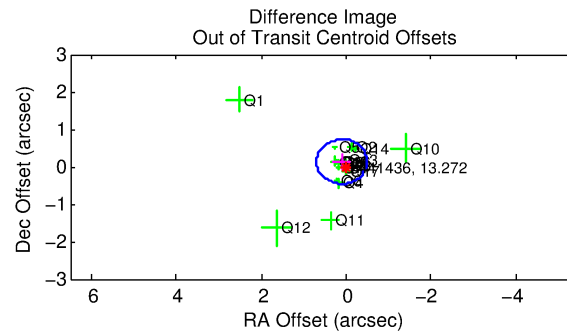
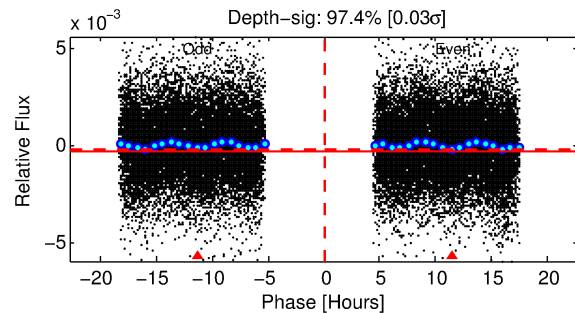
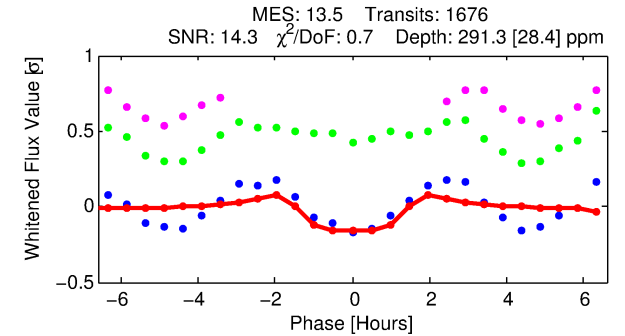
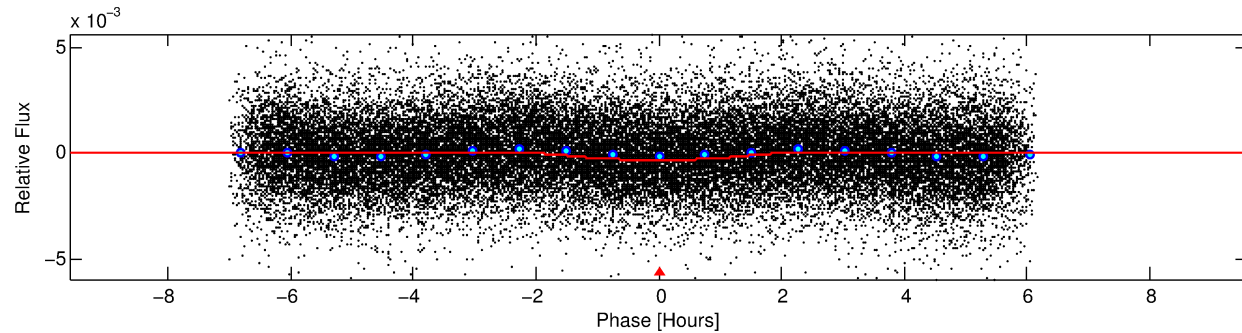
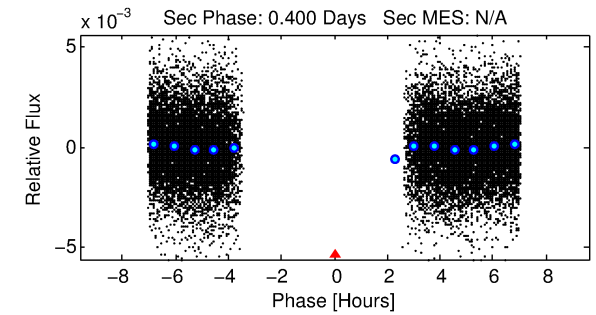
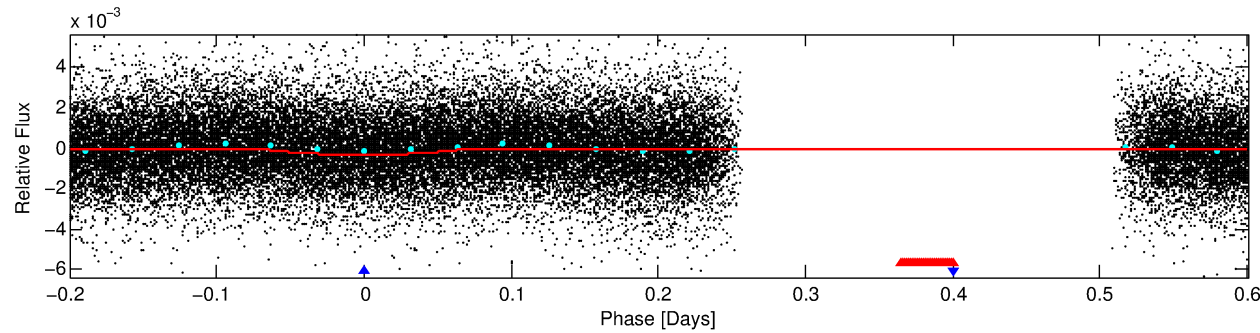
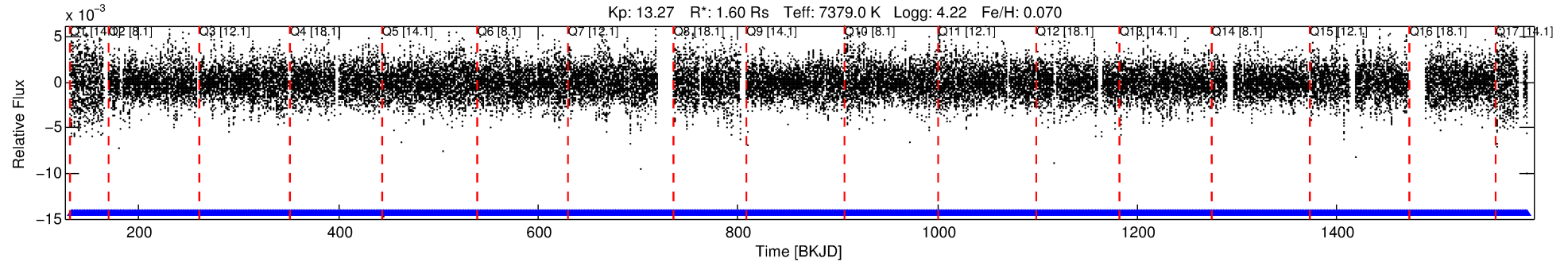
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006441436-02

No Significant Match Found

DV One-Page Summary

KIC: 6441436 Candidate: 2 of 2 Period: 0.801 d



DV Fit Results:

Period = 0.80052 [0.00001] d
Epoch = 132.2706 [0.0020] BKJD
Rp/R* = 0.0199 [0.0011]
a/R* = 1.11 [0.02]
b = 0.97 [0.01]
Seff = 17811.57 [8051.41]
Teff = 2946 [333] K
Rp = 3.48 [1.32] Re
a = 0.0196 [0.0059] AU

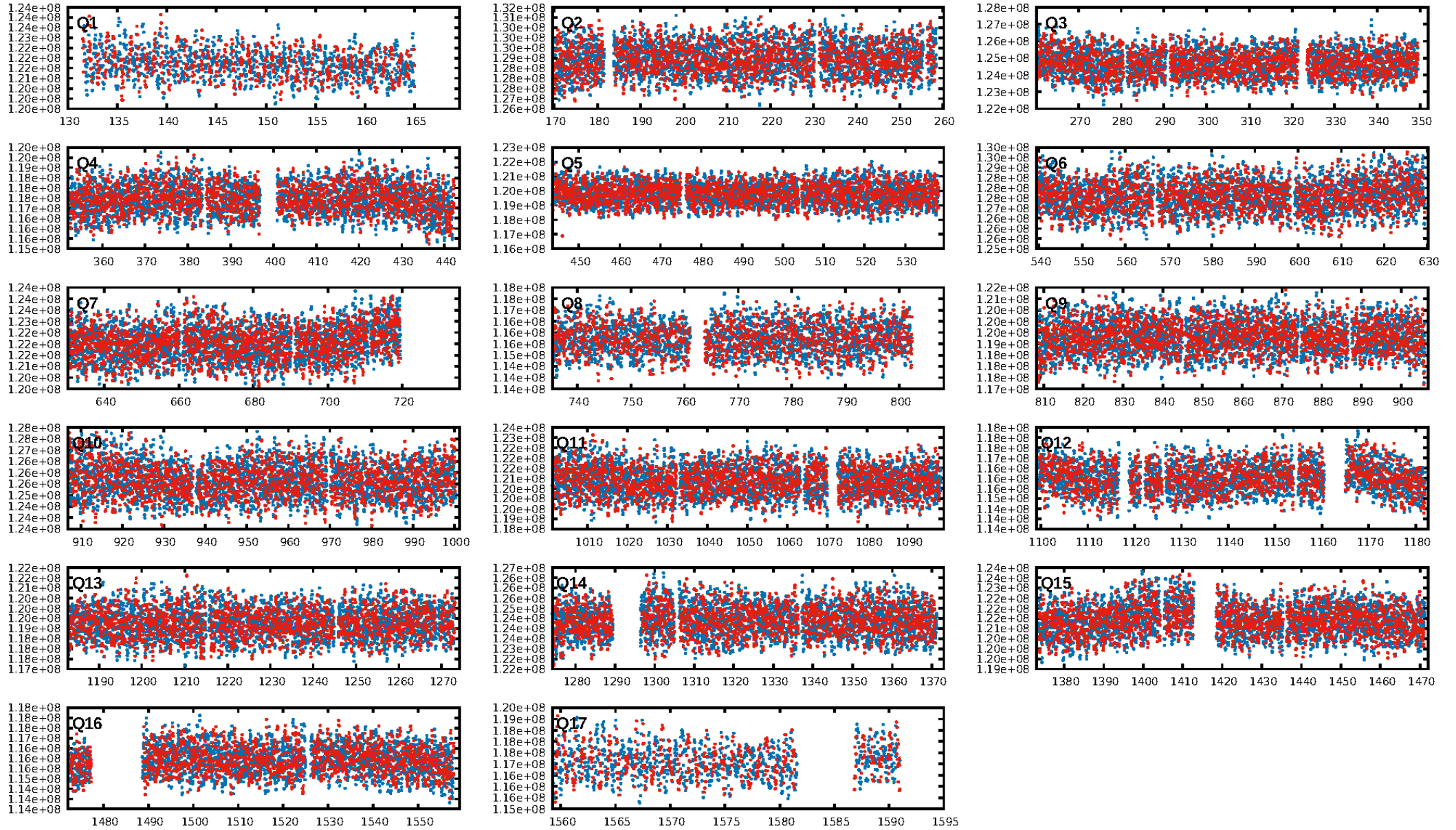
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.18e-54
RollingBand-fgt: 1.00 [1600/1600]
GhostDiagnostic-chr: 1.533
Centroid-sig: 23.8%
Centroid-so: 0.112 arcsec [1.88σ]
OotOffset-rm: 0.167 arcsec [0.85σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.271 arcsec [1.34σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.65 [11/17]
DiffImageOverlap-fno: 0.00 [0/17]

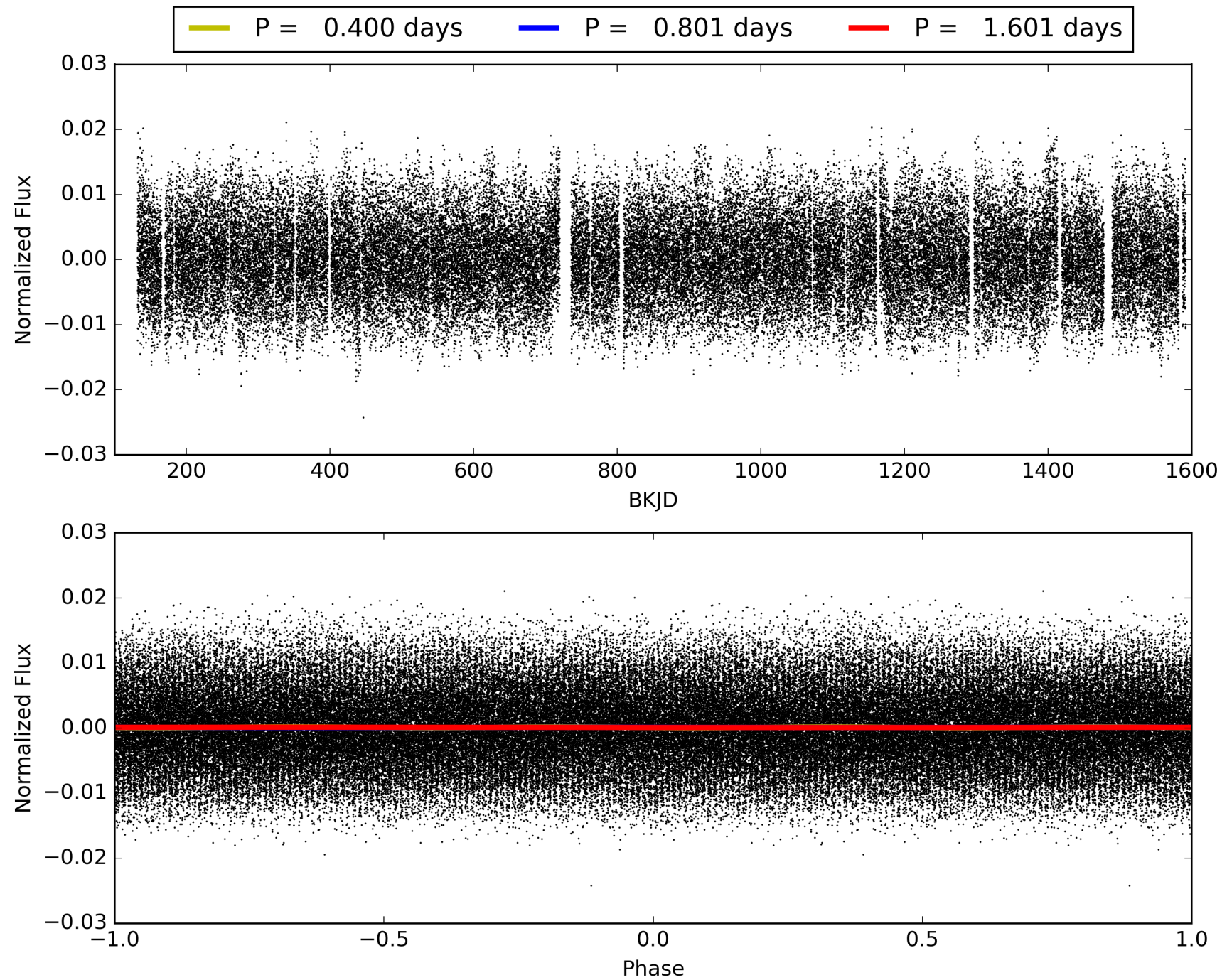
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:48:43 Z

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

TCE 006441436-02, PDC Light Curves

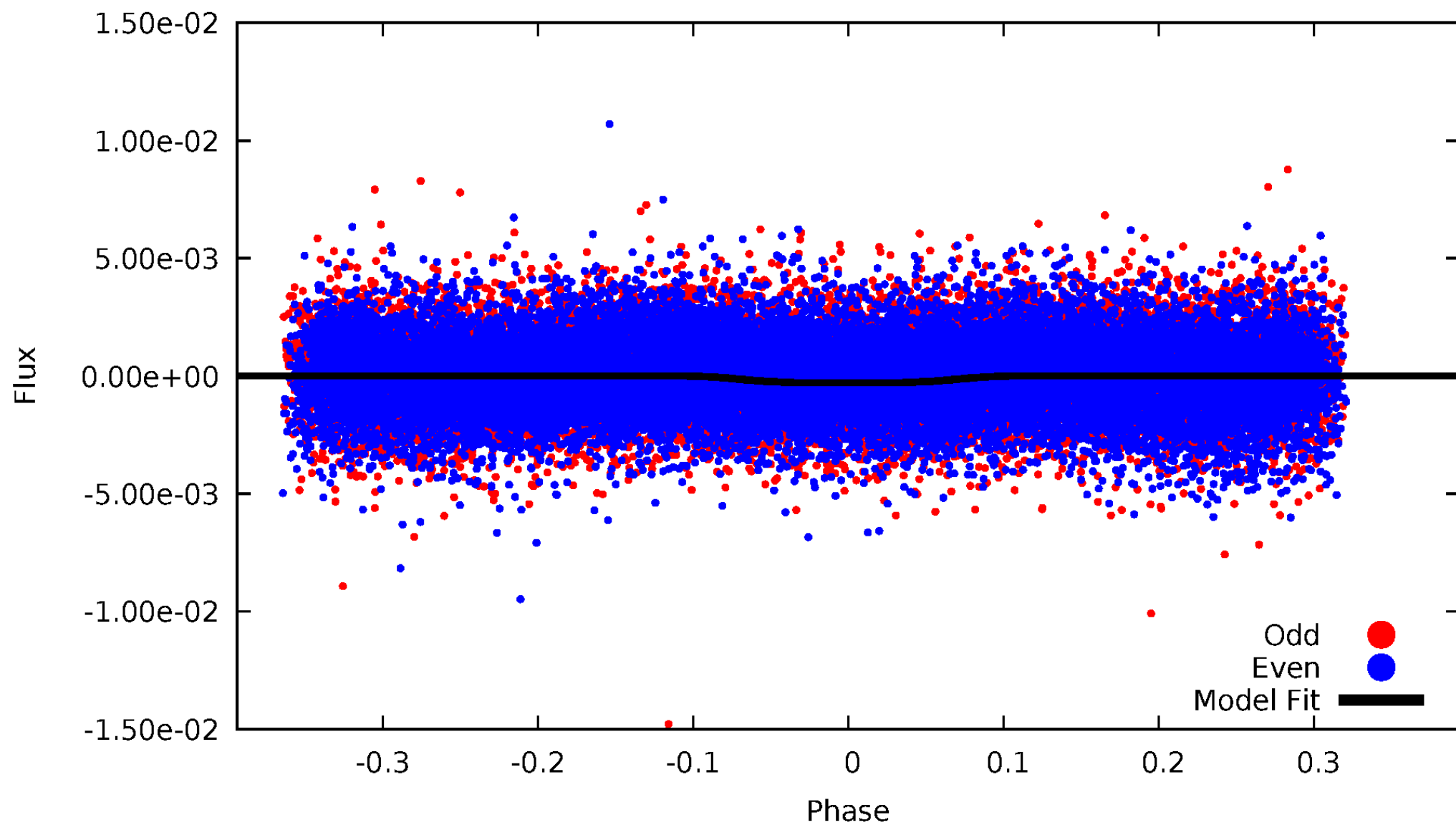


TCE 006441436-02



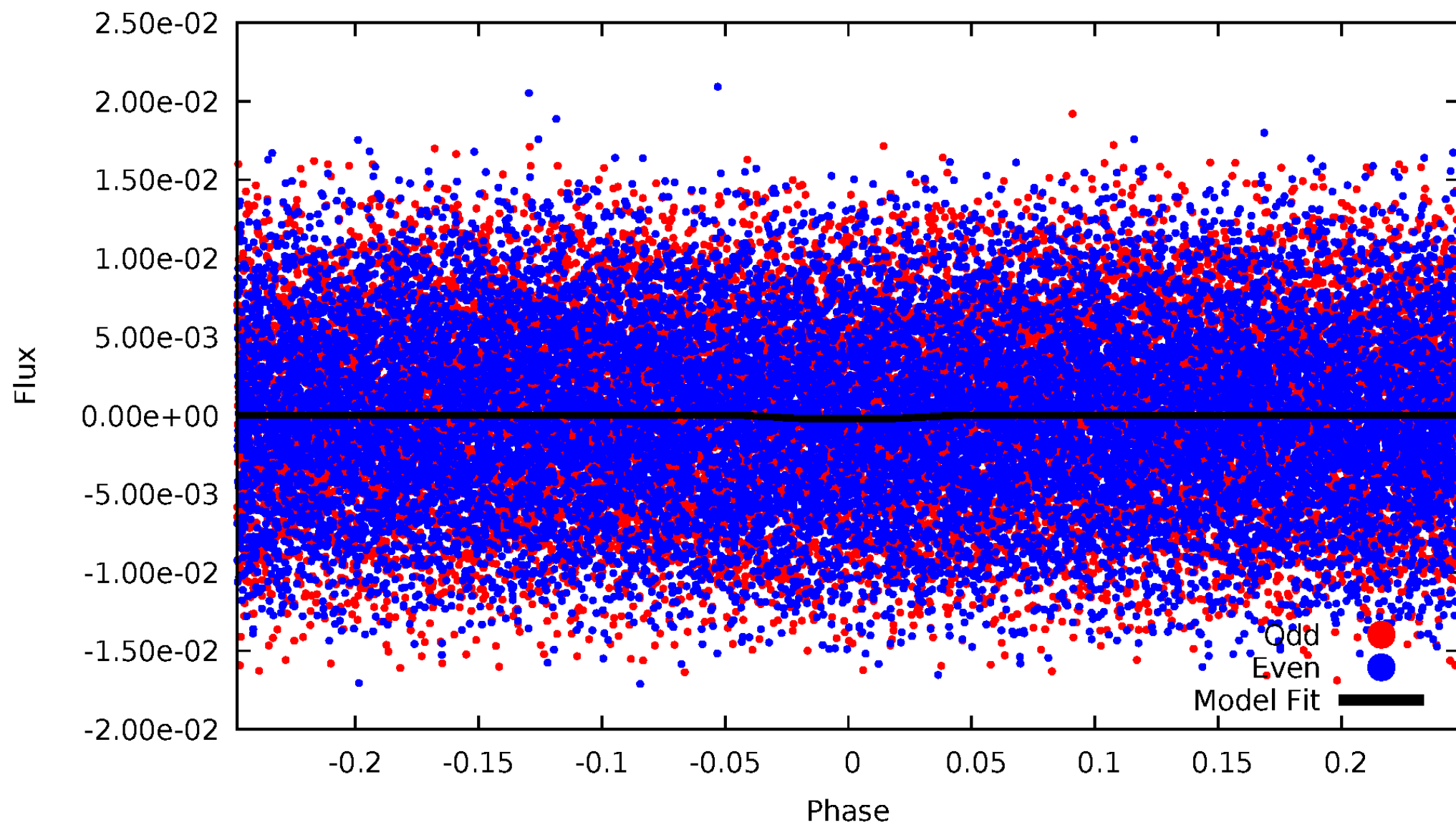
DV Odd/Even

TCE 006441436-02



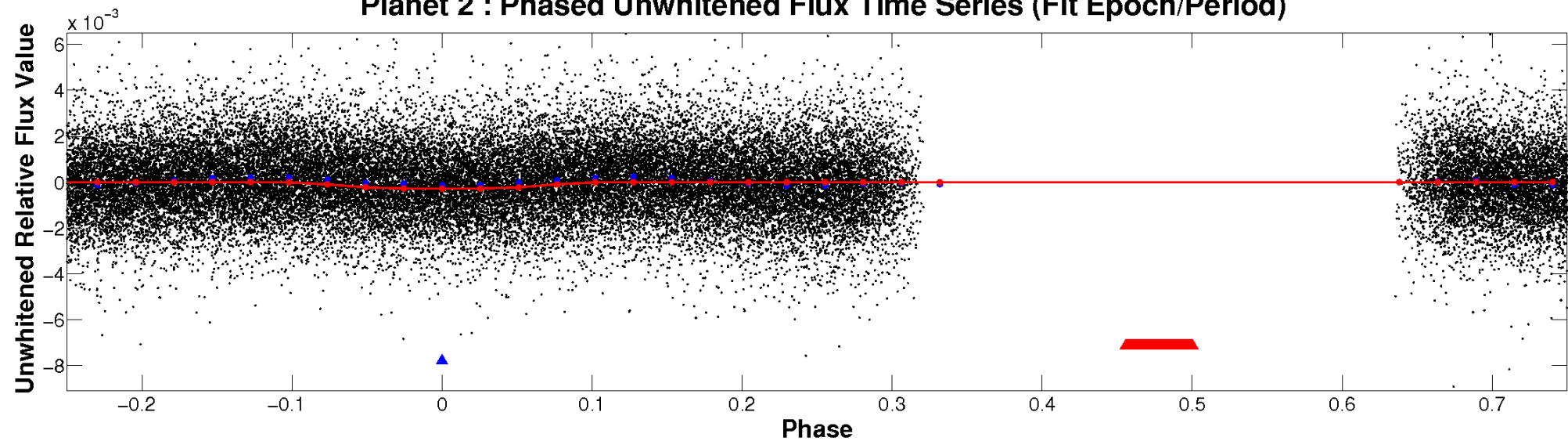
ALT Odd/Even

TCE 006441436-02

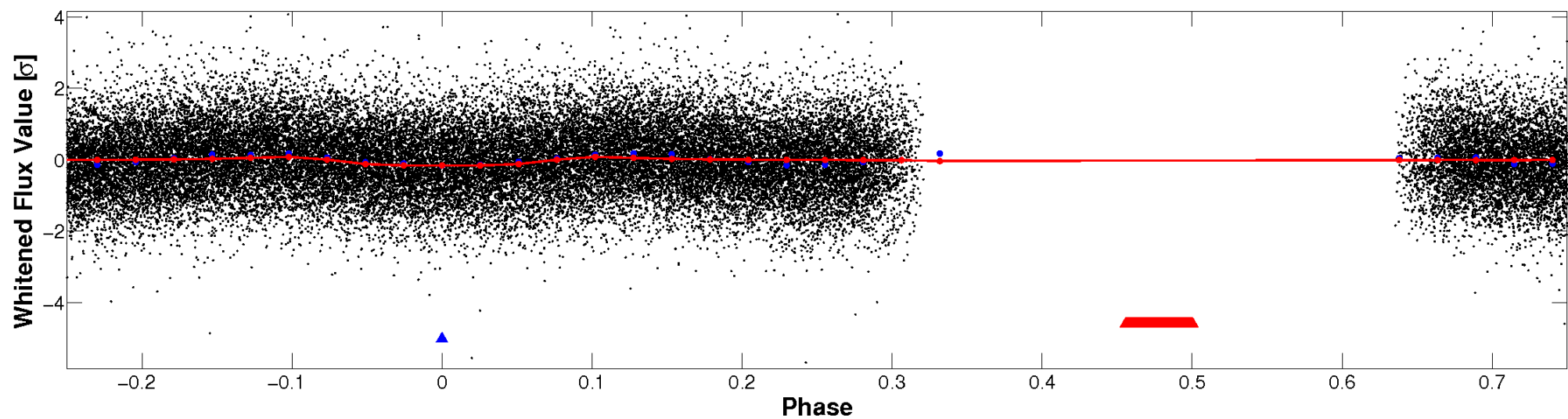


Non-Whitened Vs. Whitened Light Curve

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

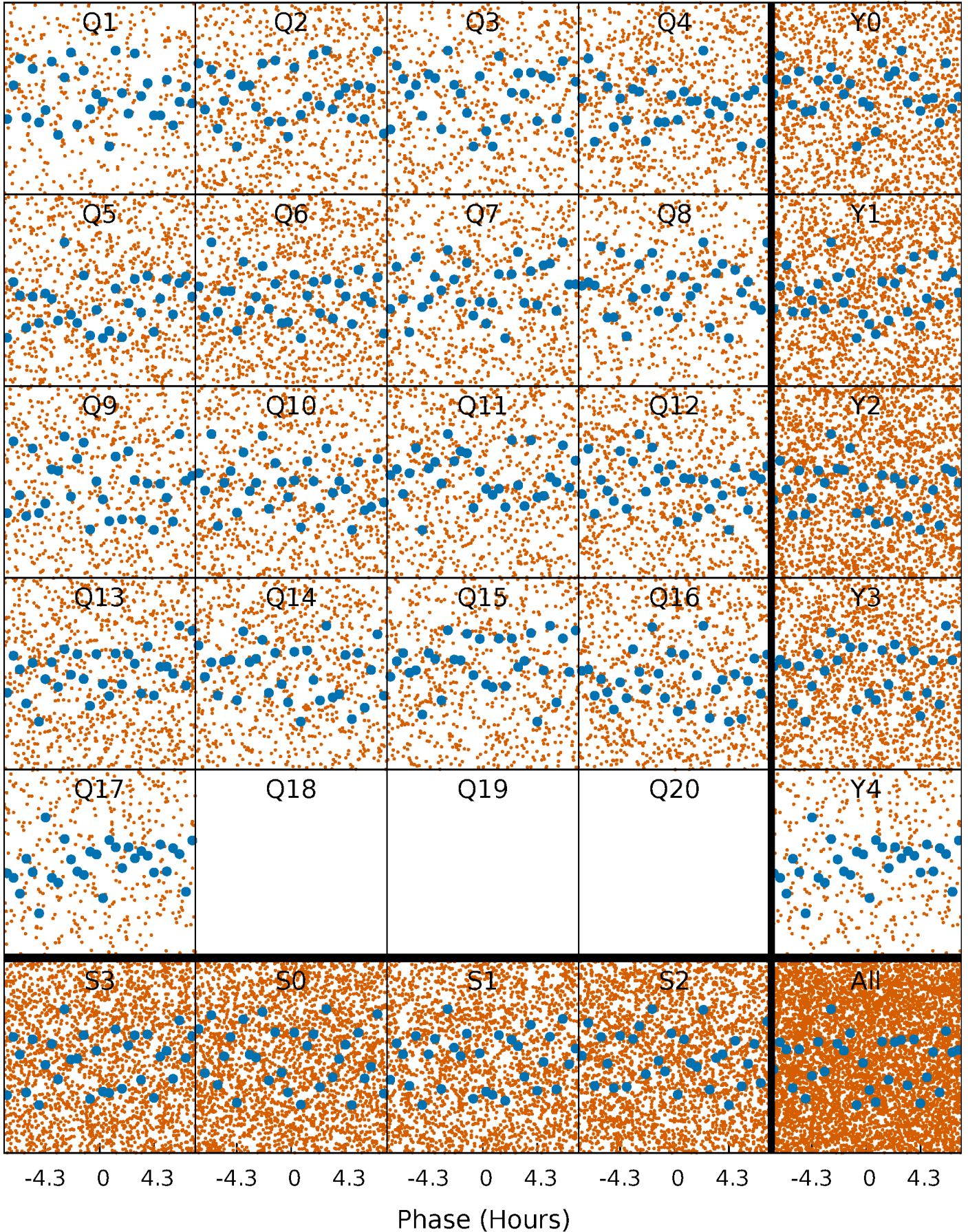


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



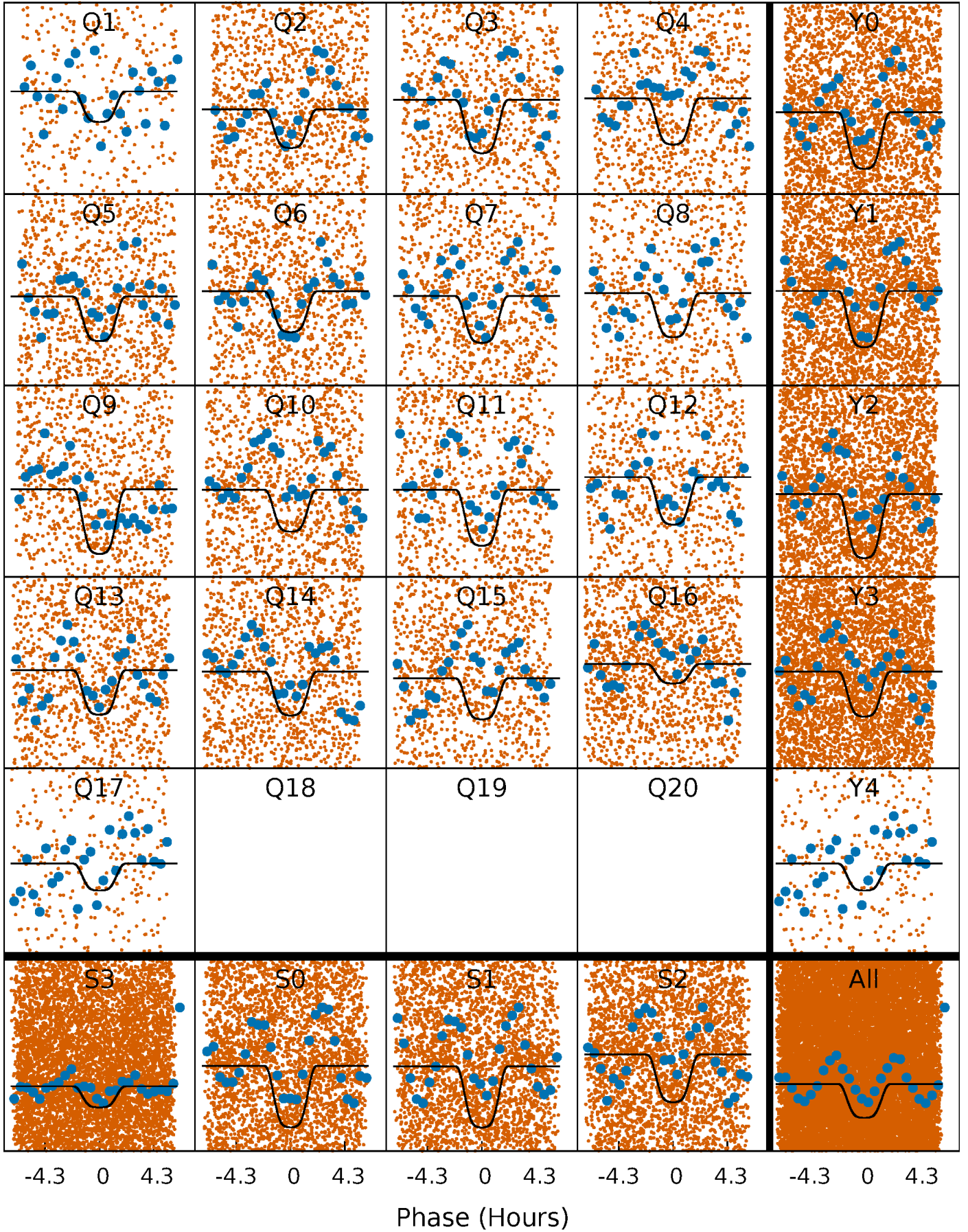
PDC Quarter-Phased Transit Curves

TCE 006441436-02 P= 0.800524 Days $T_0=132.270558$ (BKJD)



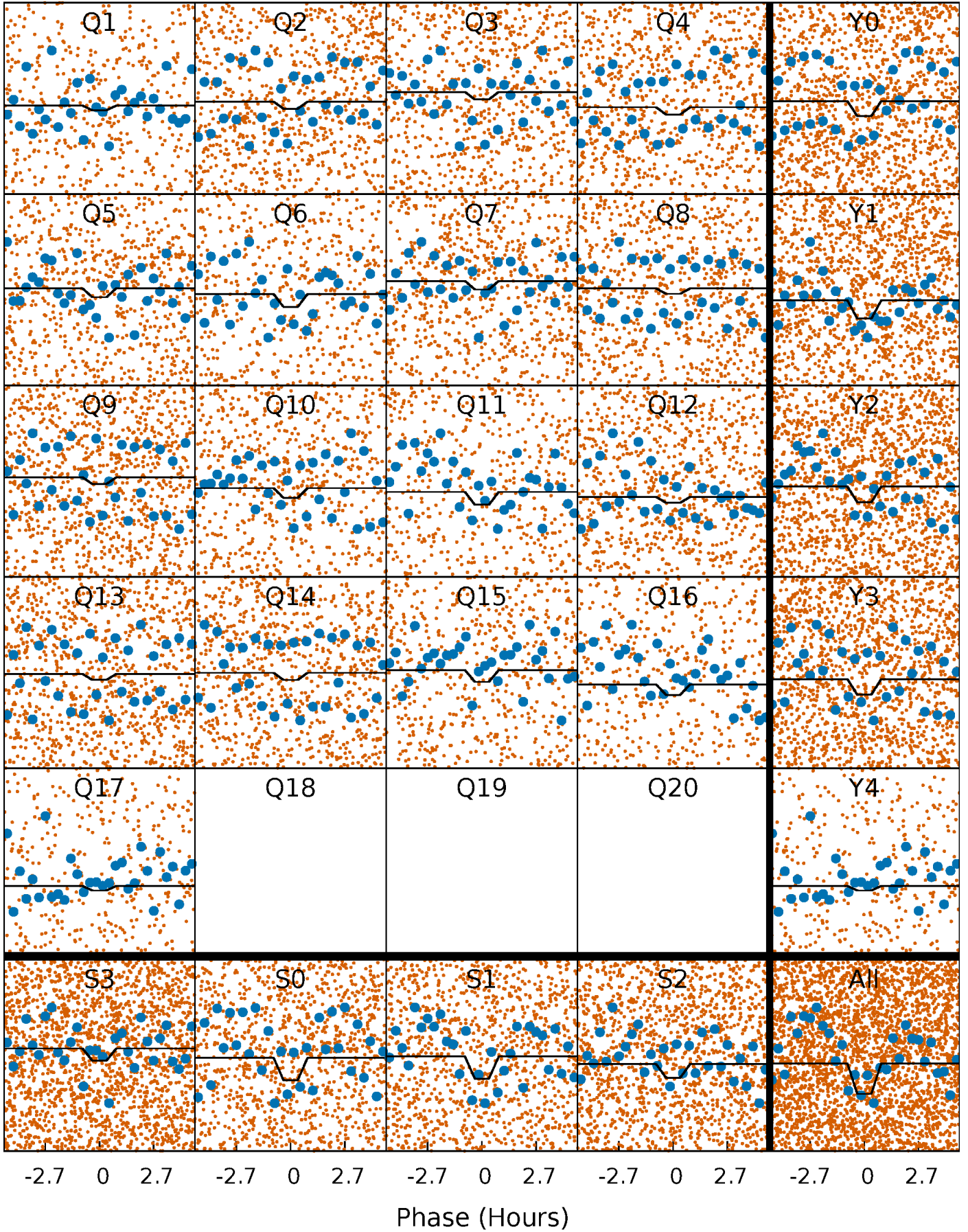
DV Quarter-Phased Transit Curves

TCE 006441436-02 P= 0.800524 Days $T_0=132.270558$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

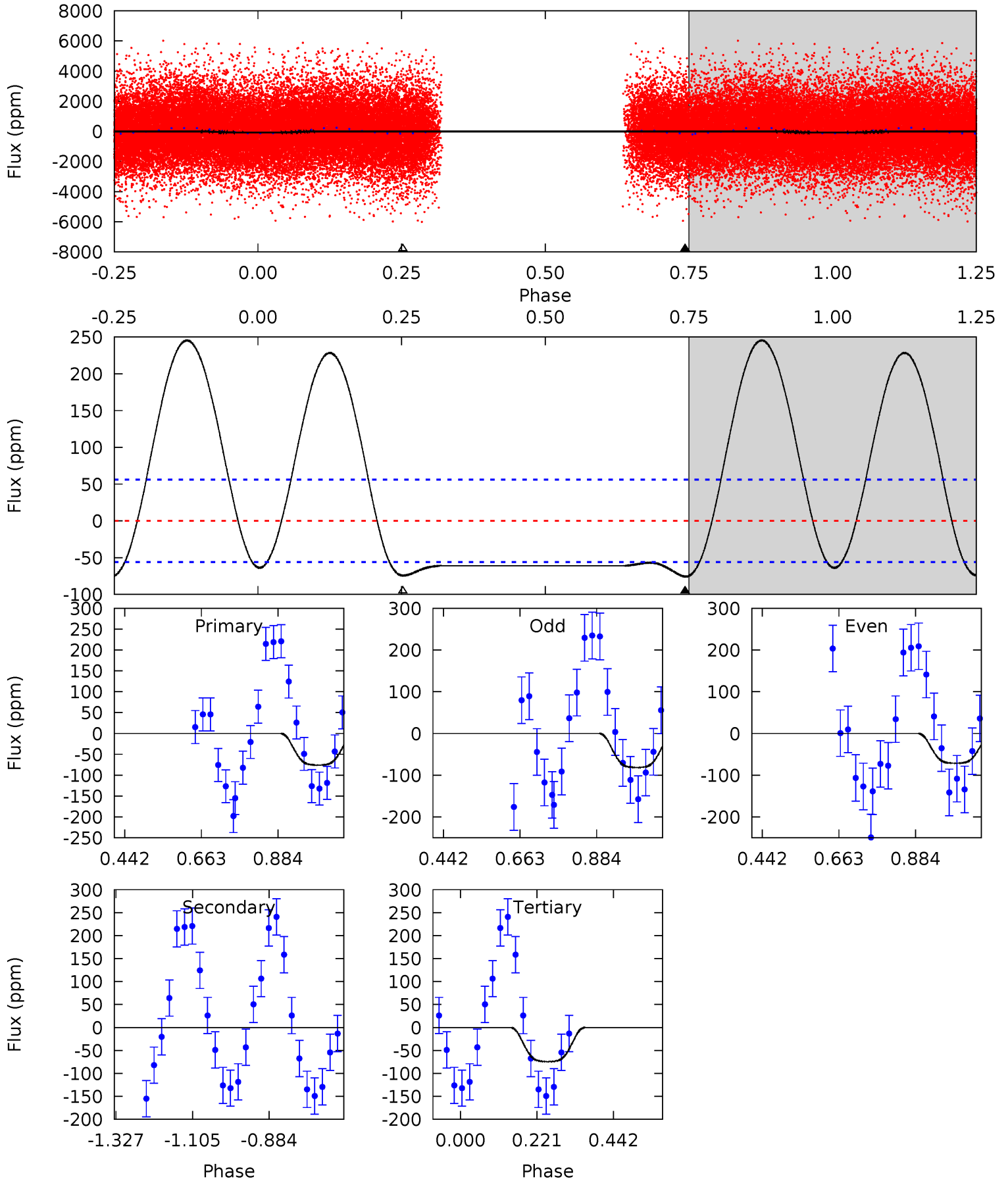
TCE 006441436-02 P= 0.800535 Days $T_0=132.269779$ (BKJD)



DV Model-Shift Uniqueness Test

006441436-02, P = 0.800524 Days, E = 131.470034 Days

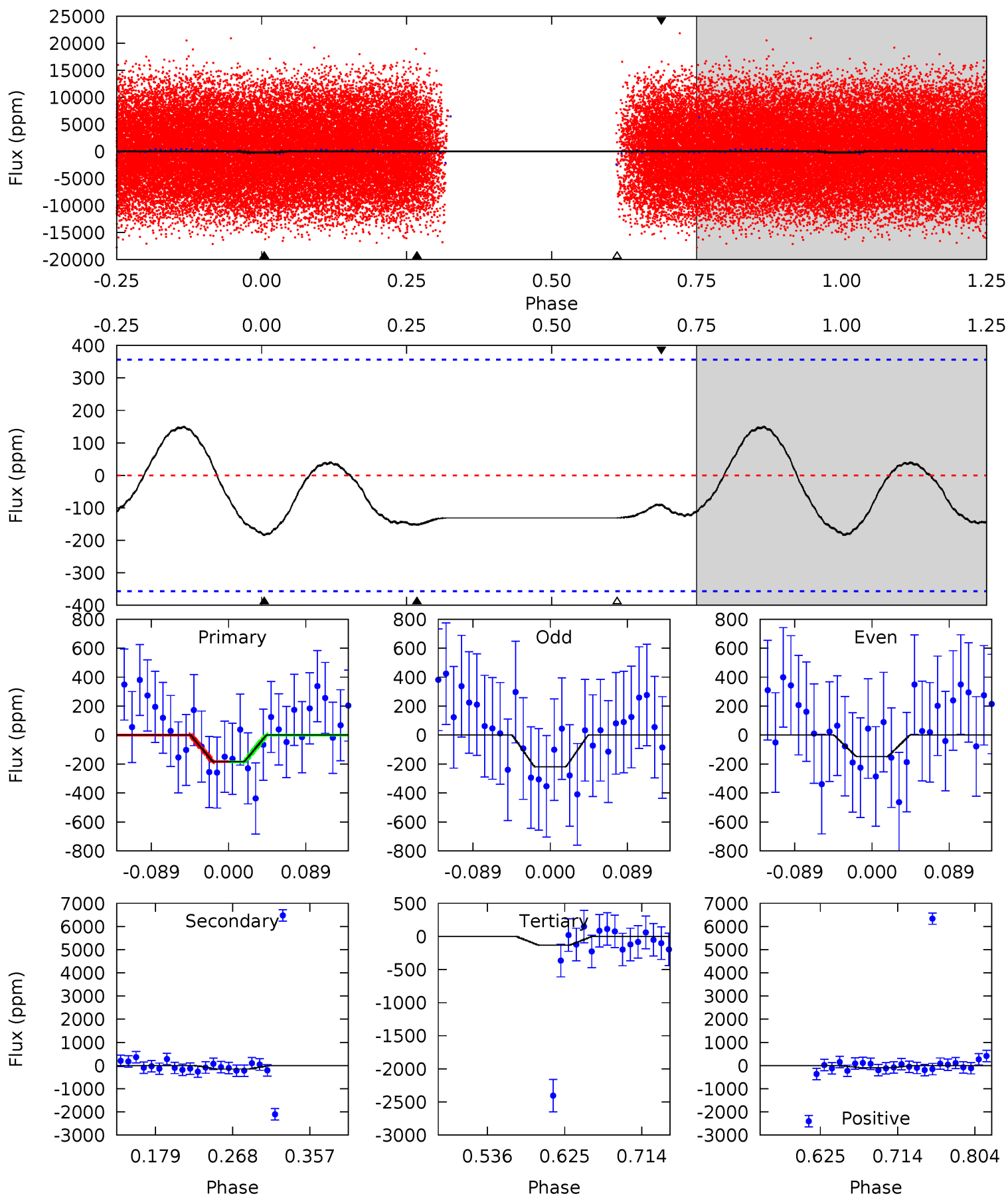
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.94	0	5.84	0	4.40	1.22	8.55	0.10	5.94	-5.84	0	0.41	0.77	0.76	0.63



Alt Model-Shift Uniqueness Test

006441436-02, P = 0.800535 Days, E = 131.469244 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.36	1.95	1.69	-1.16	4.59	1.70	1.18	0.67	3.52	0.26	3.11	0.45	0.71	0.45	0.01



Stellar Parameters For KIC 006441436

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7379^{+206}_{-324}	$4.222^{+0.072}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.605^{+0.602}_{-0.201}$	$1.566^{+0.214}_{-0.214}$	$0.534^{+0.209}_{-0.283}$
	+3%/-4%	+2%/-5%	+286%/-500%	+38%/-13%	+14%/-14%	+39%/-53%
Source	KIC0	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 006441436-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 13	$3.58^{+0.59}_{-0.38}$	4171^{+321}_{-213}	-3808^{+621}_{-391}	$-0.002^{+0.196}_{-0.195}$
Alt.	-152 ± 78	$2.67^{+0.53}_{-0.32}$	4183^{+348}_{-229}	6523^{+960}_{-1196}	$4.250^{+2.740}_{-2.333}$

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

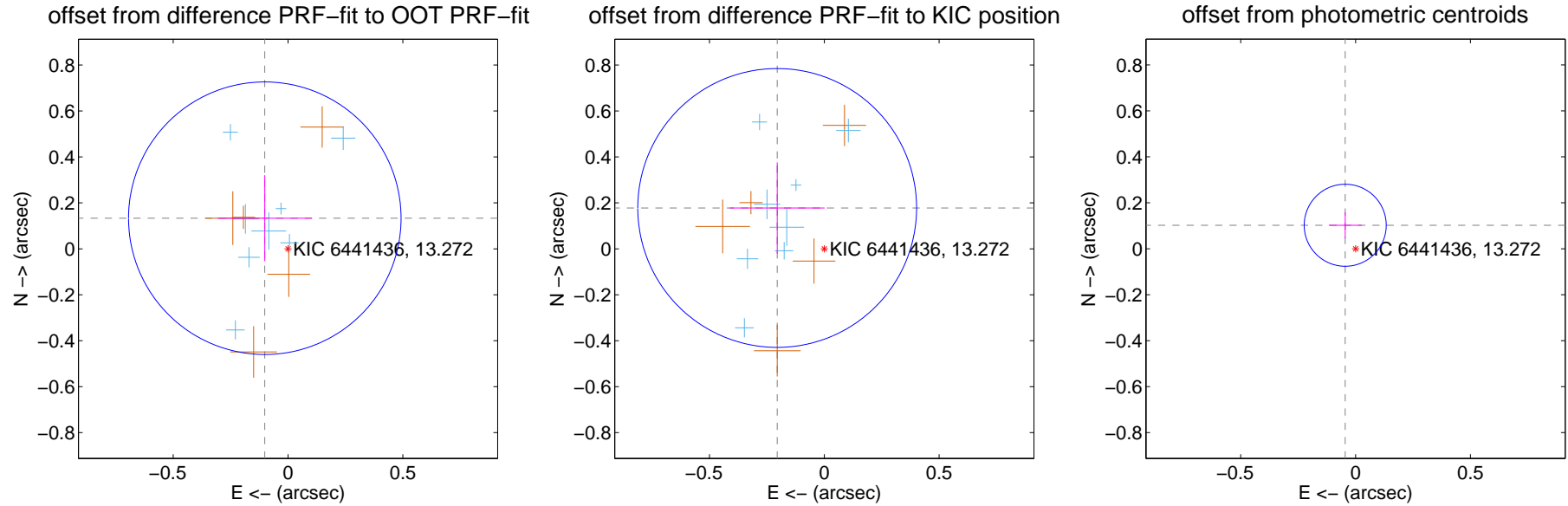
DV Centroid Data

Supplemental centroid analysis for 006441436-02. Kepler magnitude: 13.27. Transit SNR 14.29

There are 11 quarters with good PRF difference image offsets

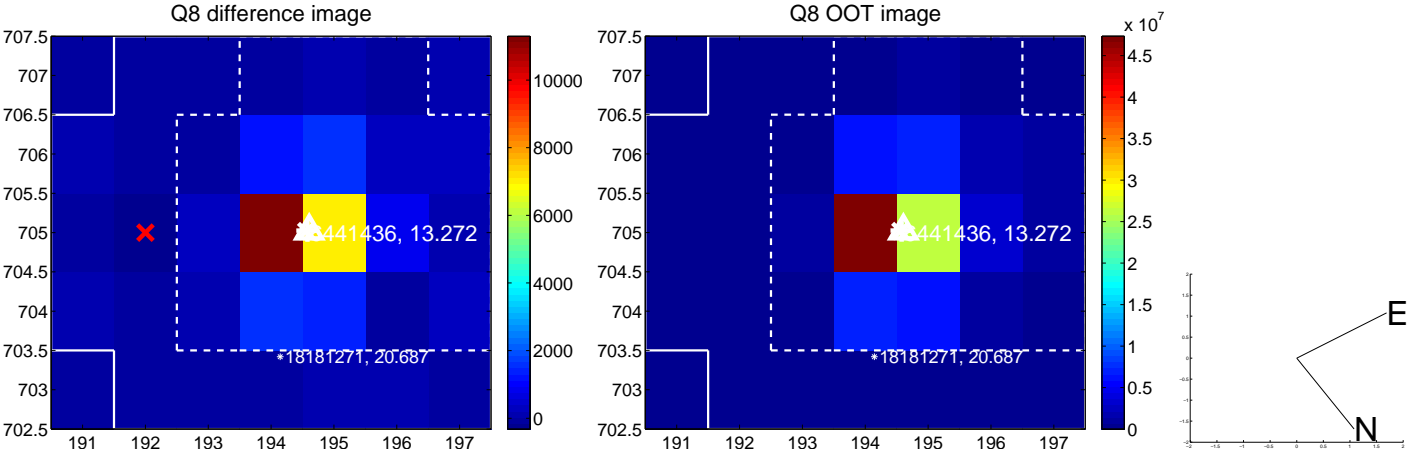
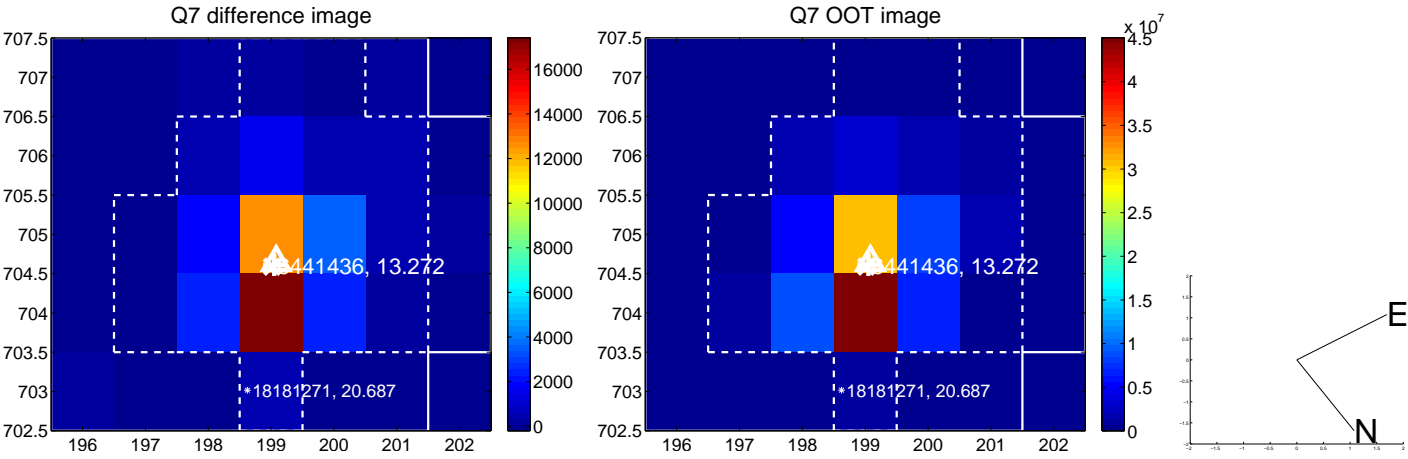
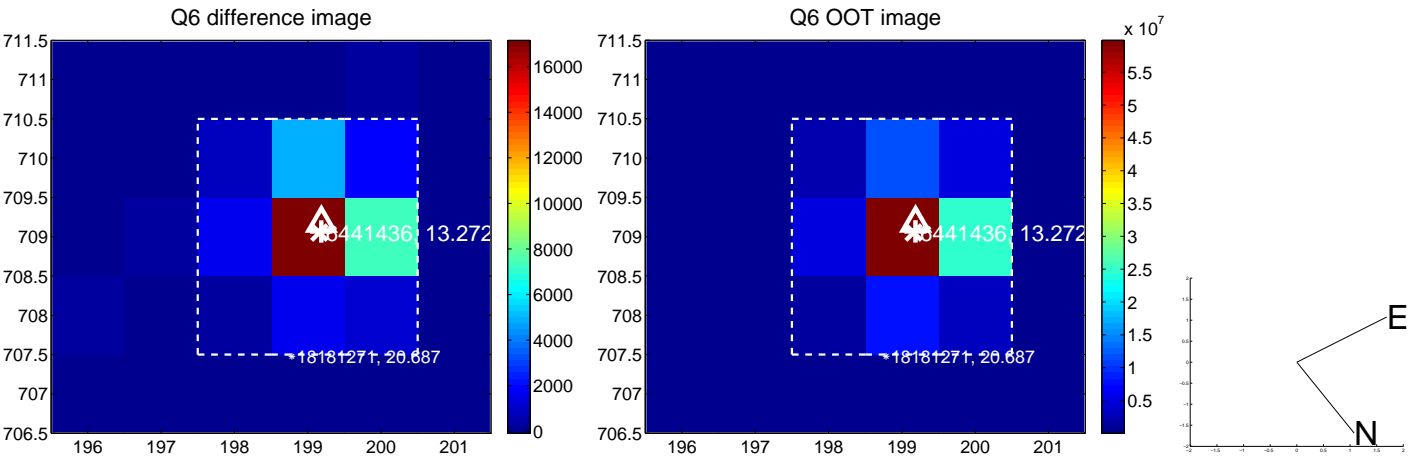
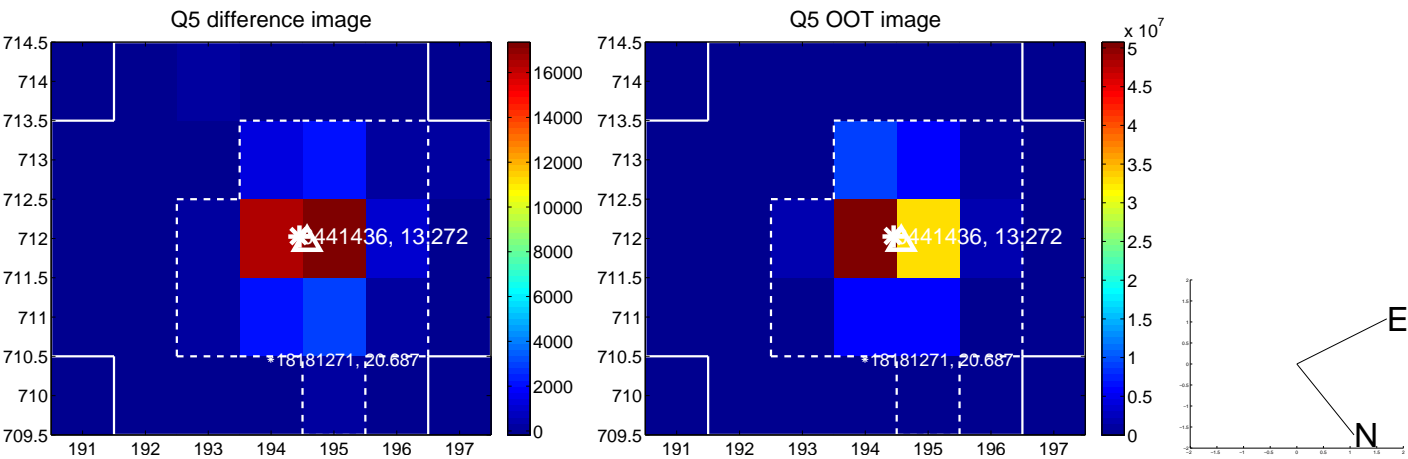
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.167 ± 0.198	0.85	0.101 ± 0.206	0.133 ± 0.187
PRF-fit source offset from KIC position	0.271 ± 0.202	1.34	0.205 ± 0.207	0.178 ± 0.199
photometric centroid source offset	0.11 ± 0.06	1.88	0.05 ± 0.07	0.10 ± 0.06

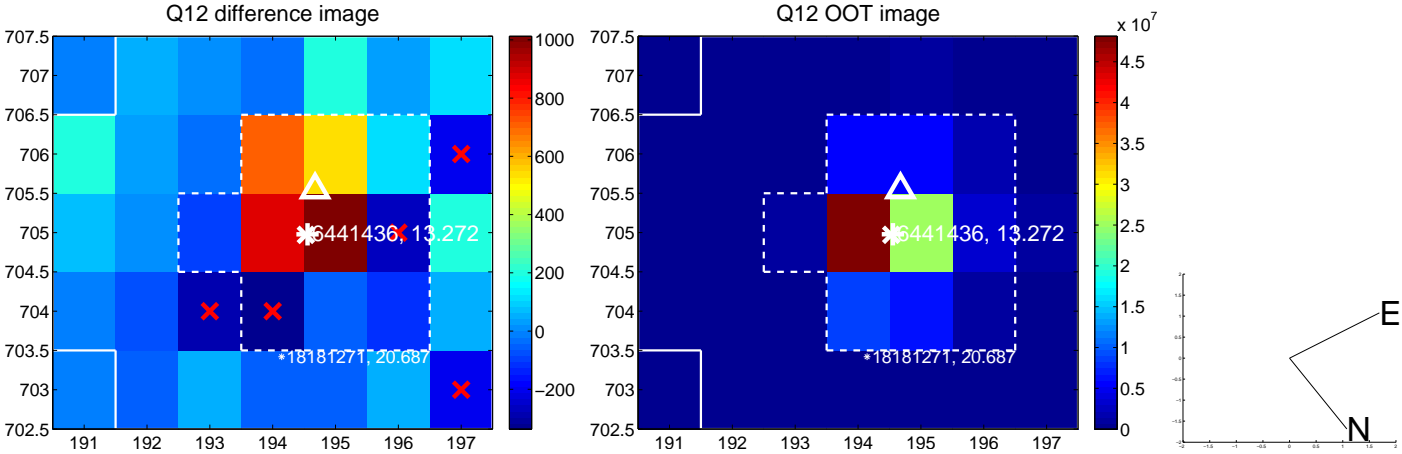
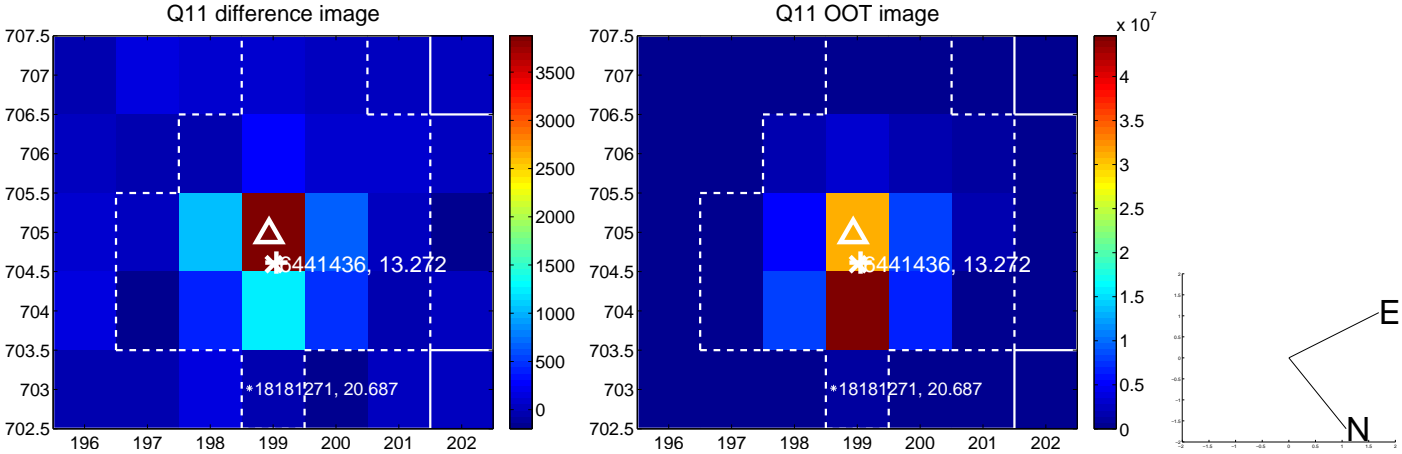
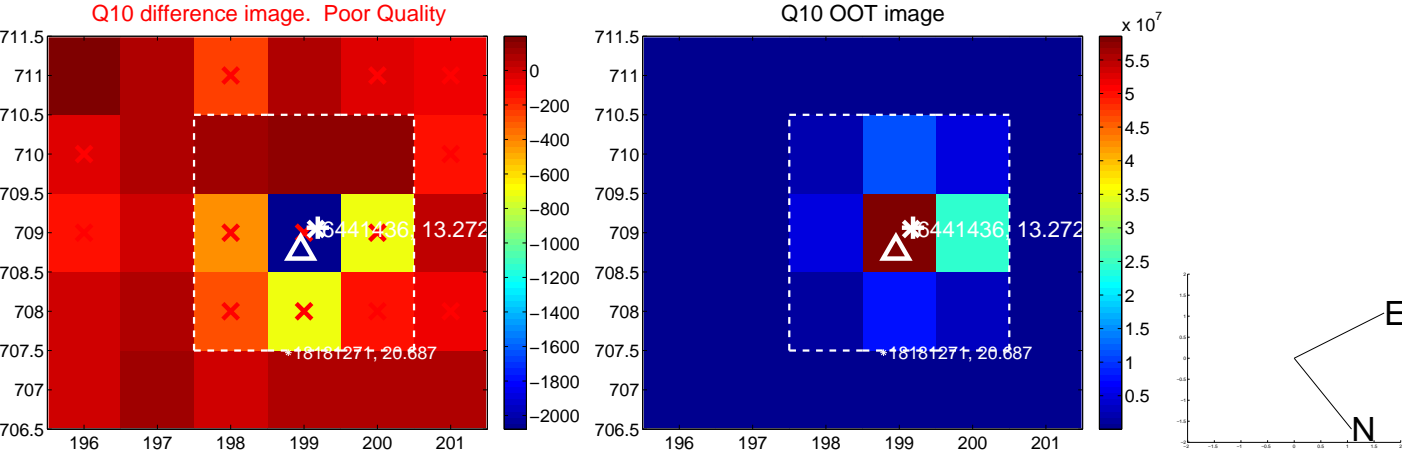
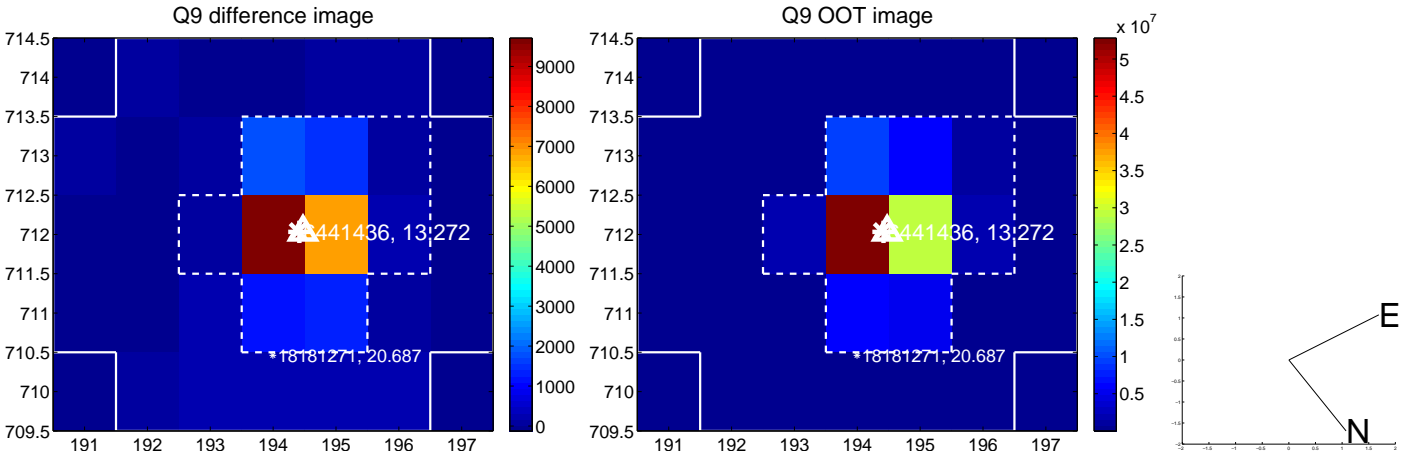


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

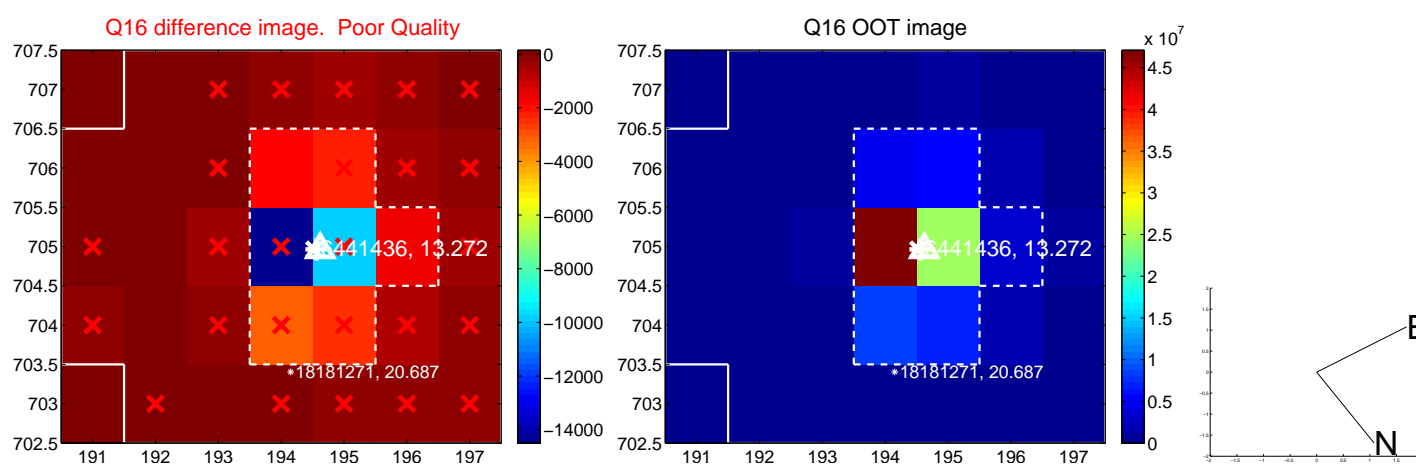
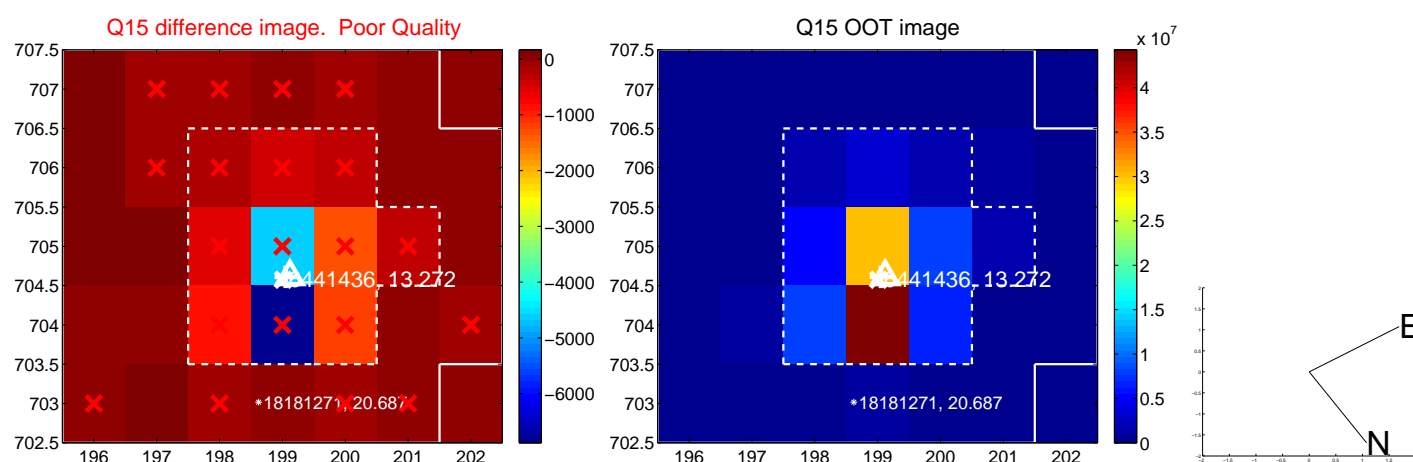
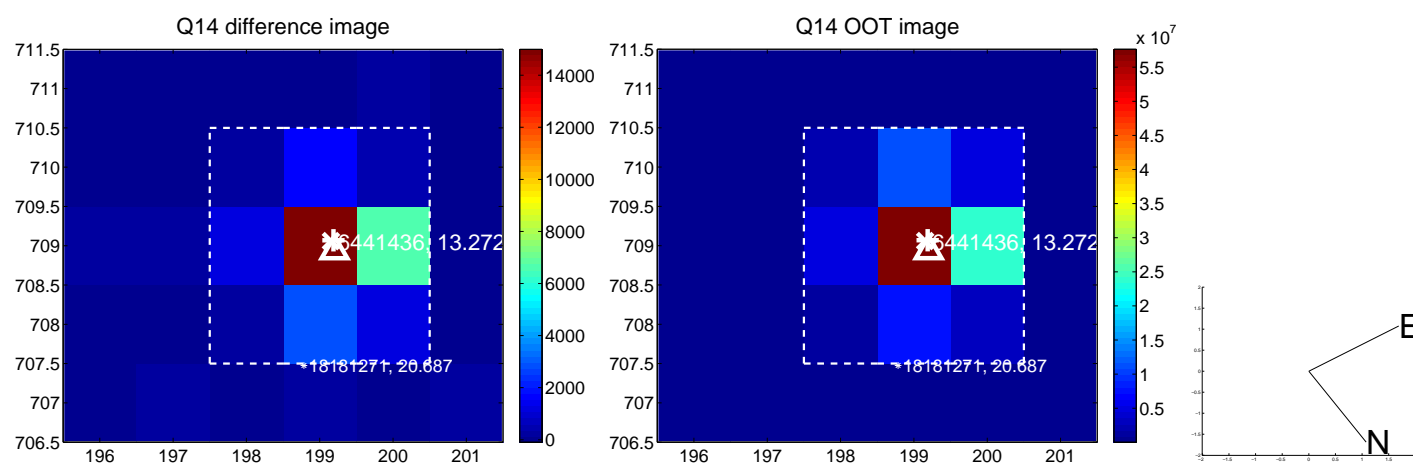
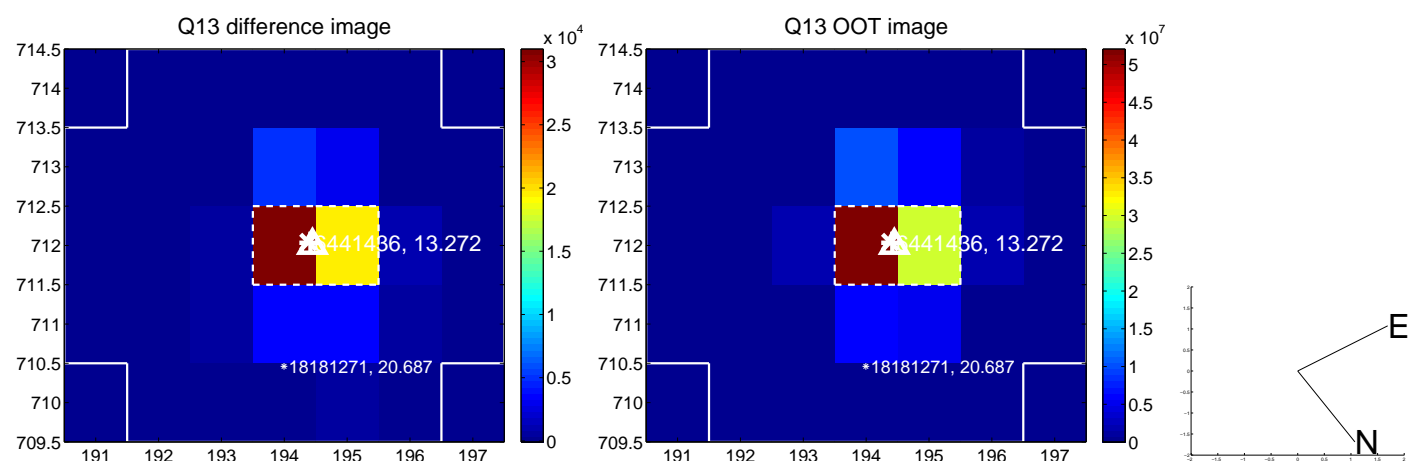
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

