

KIC 003644128

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})
003644128-01	OBS	No	0.891732	131.821246	0.6	3.131	8.5	0.3	4.50	6934	0.37	77754.09
003644128-02	OBS	No	421.074371	278.138815	160.7	9.000	7.3	-1.0	4.50	6934	5.76	21.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003644128-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
003644128-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

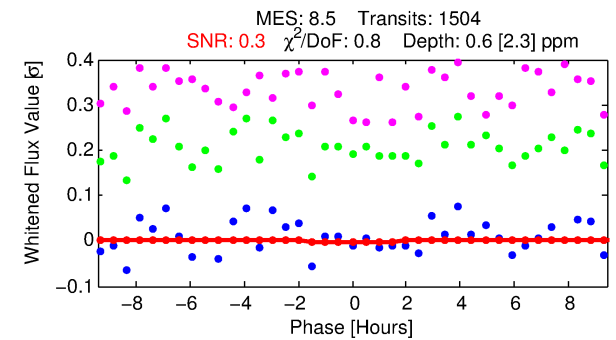
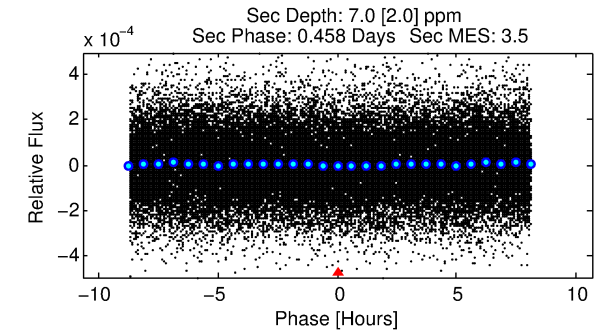
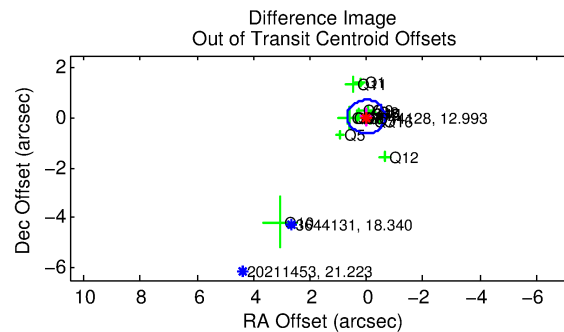
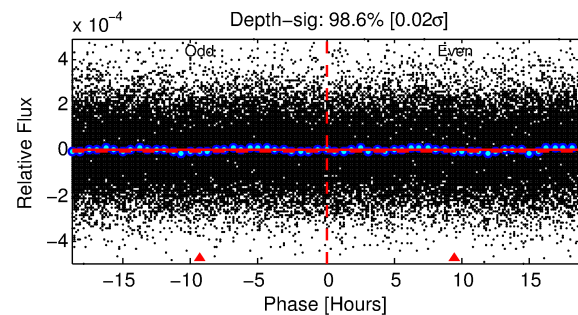
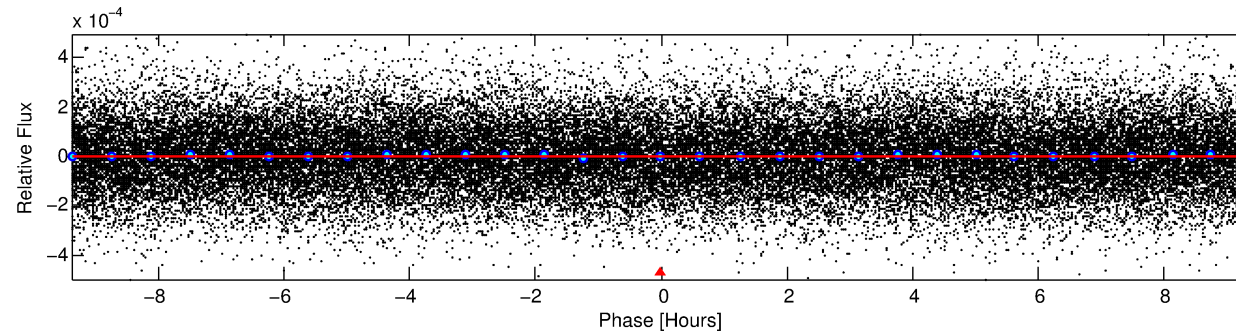
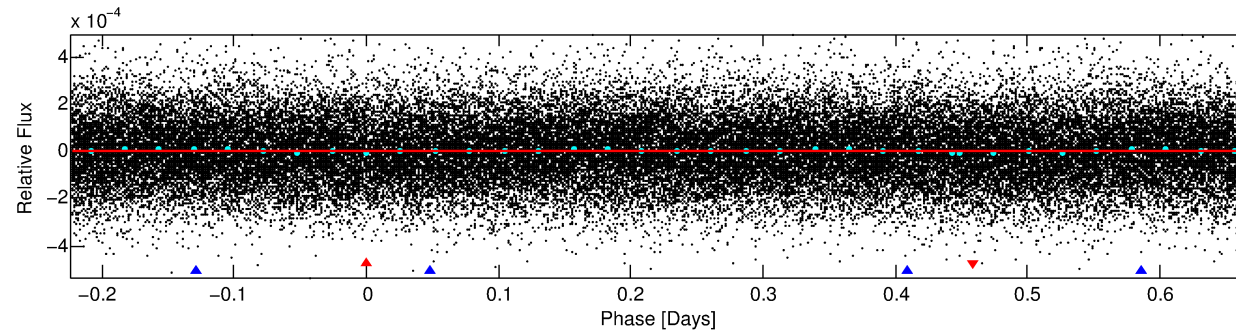
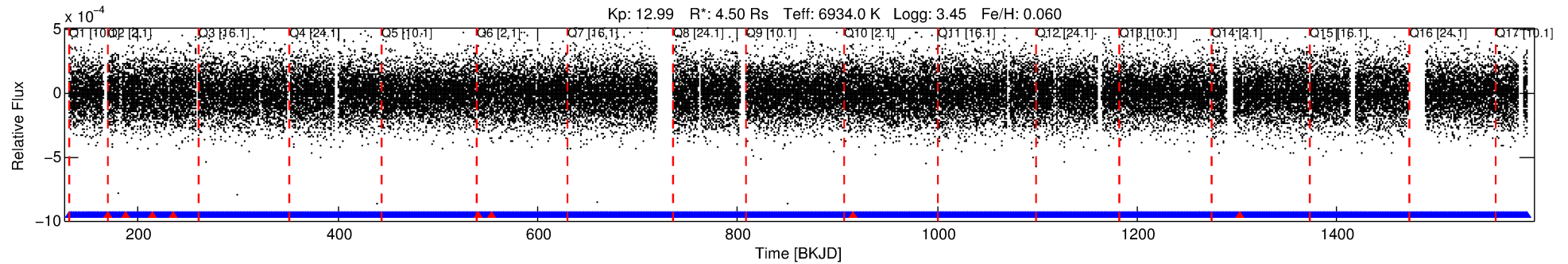
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003644128-01

No Significant Match Found

DV One-Page Summary

KIC: 3644128 Candidate: 1 of 2 Period: 0.892 d



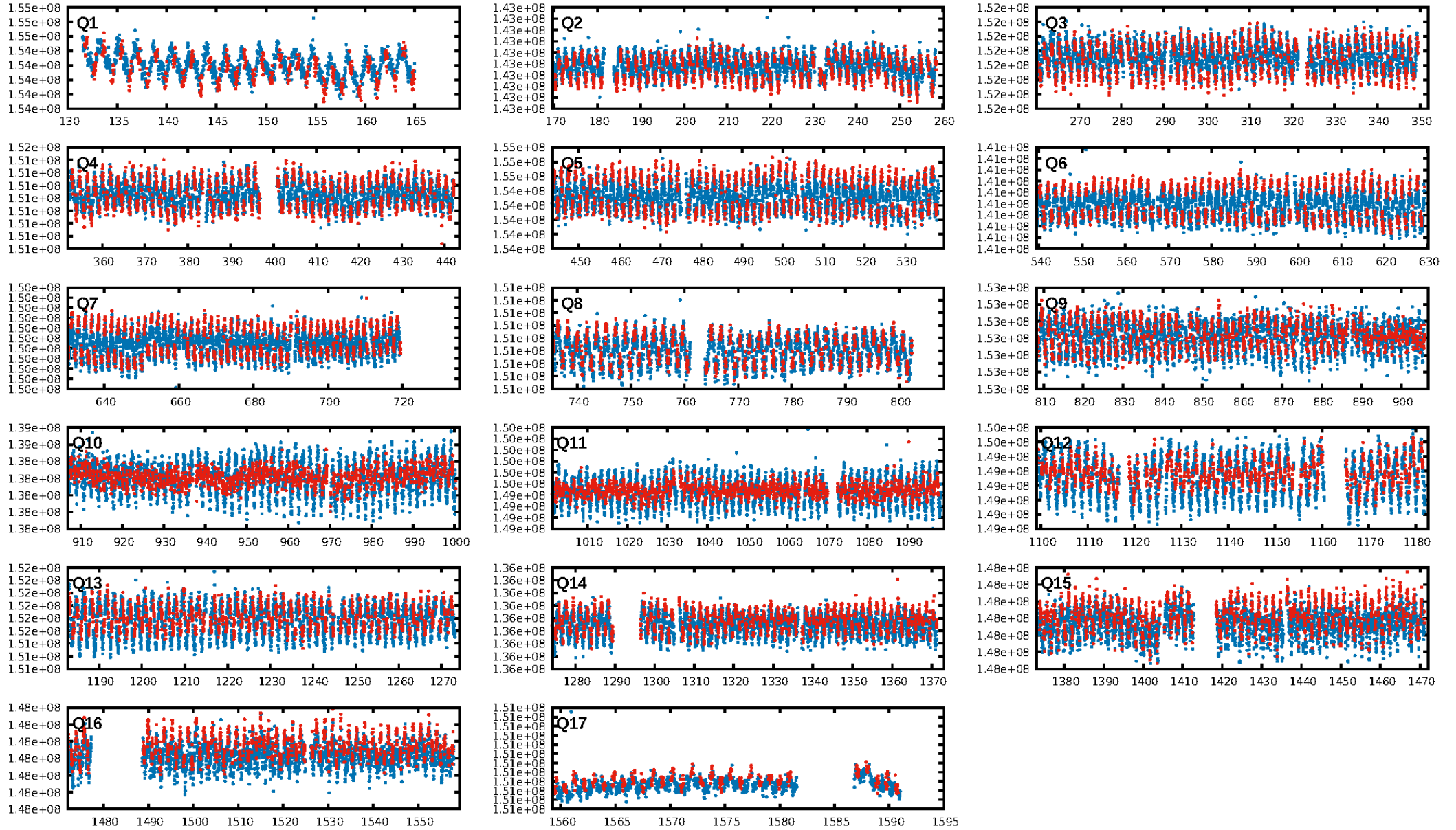
DV Fit Results:

Period = 0.89173 [0.00035] d
Epoch = 131.8212 [0.1078] BKJD
Rp/R* = 0.0007 [0.0016]
a/R* = 1.69 [4.26]
b = 0.74 [2.42]
Seff = 77754.09 [51008.25]
Teq = 4258 [698] K
Rp = 0.37 [0.79] Re
a = 0.0232 [0.0094] AU
Ag = 15.36 [65.99] [0.22σ]
Teffp = 13034 [13847] K [0.63σ]

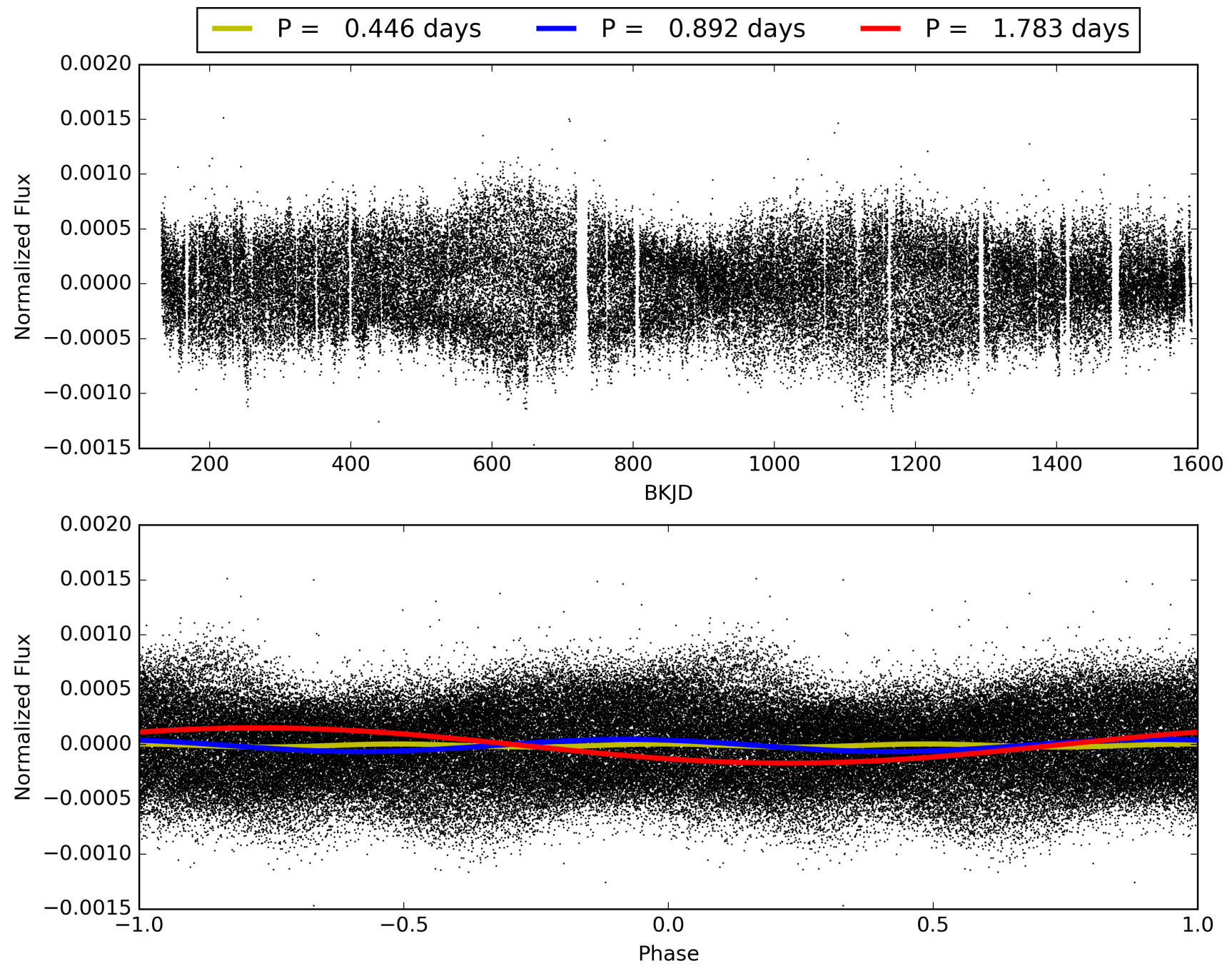
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1058.29σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.29e-14
RollingBand-fgt: 0.99 [1428/1436]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.044 arcsec [0.20σ]
KicOffset-rm: 0.278 arcsec [1.88σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.31 [5/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003644128-01, PDC Light Curves

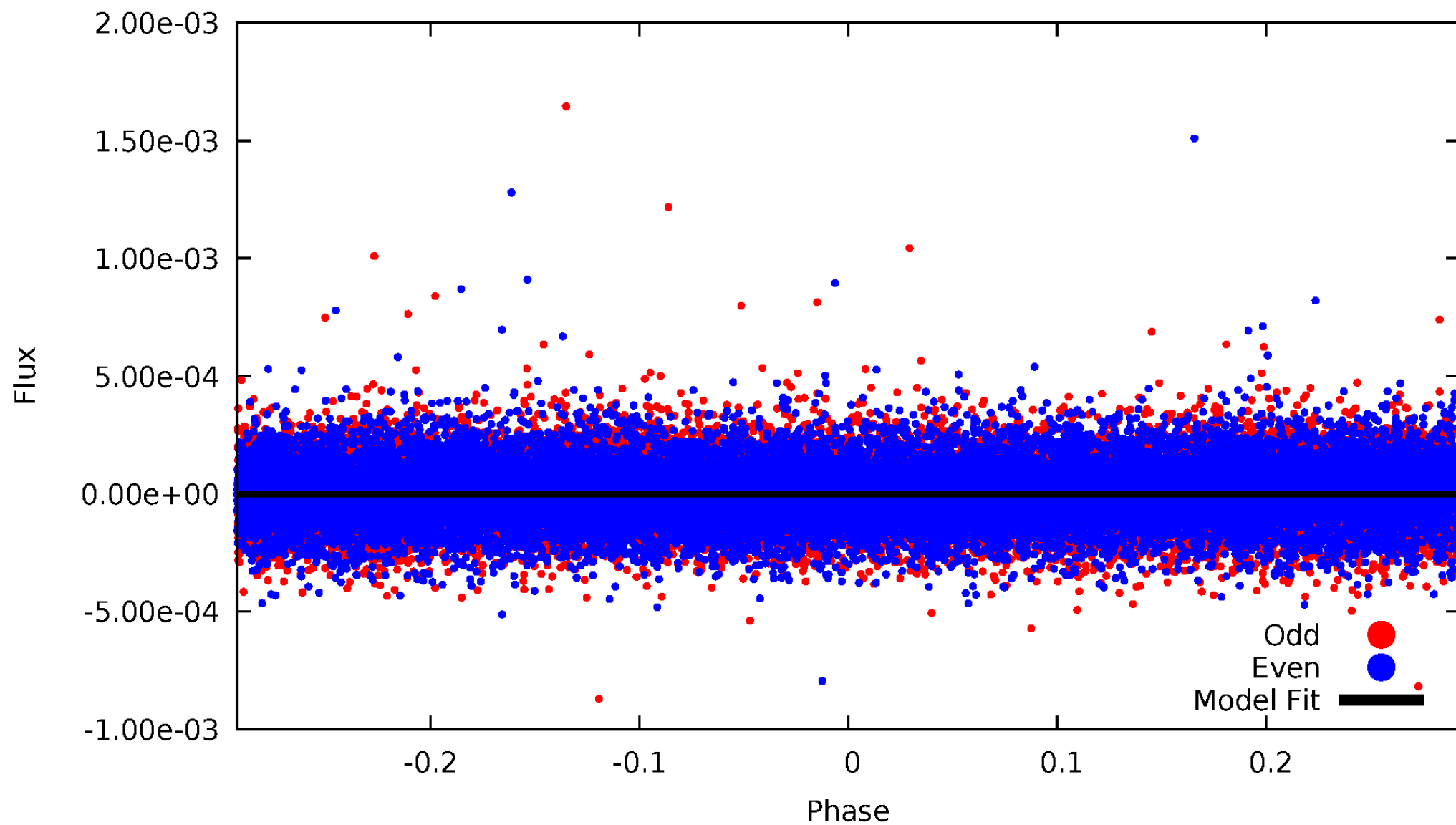


TCE 003644128-01



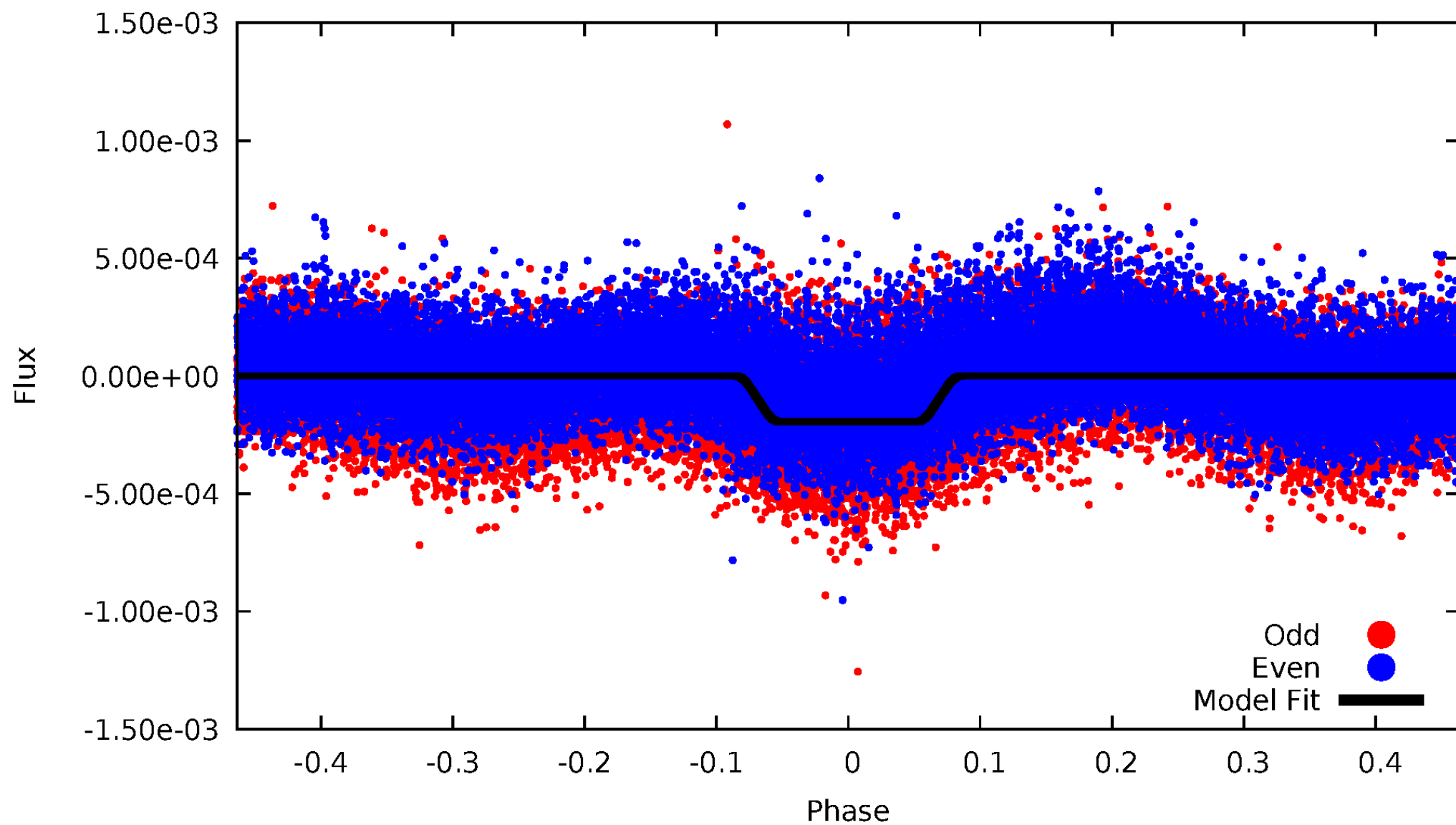
DV Odd/Even

TCE 003644128-01



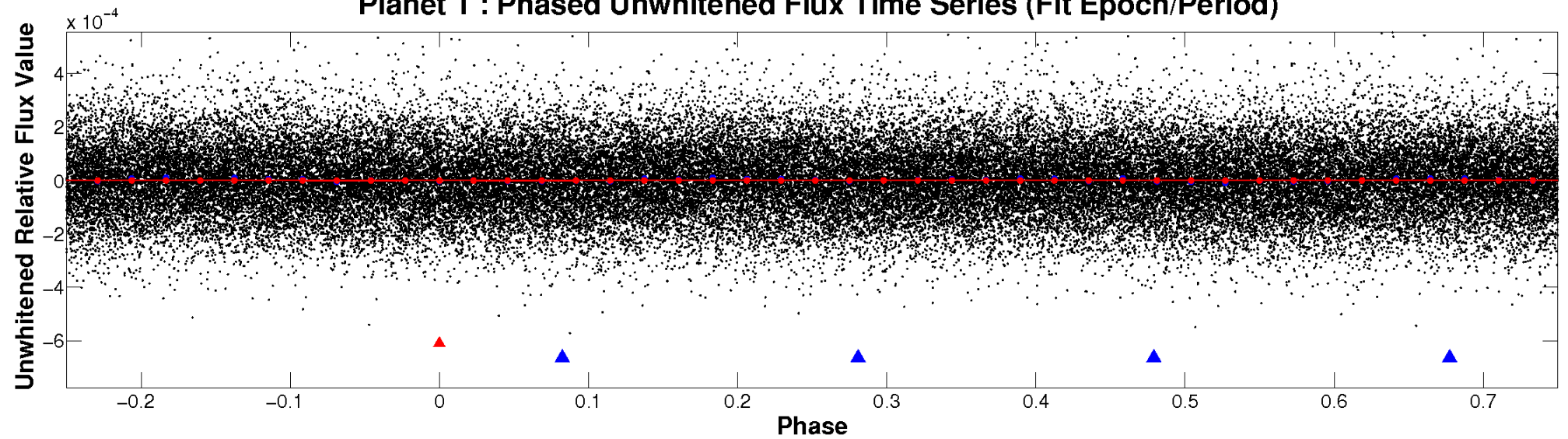
ALT Odd/Even

TCE 003644128-01

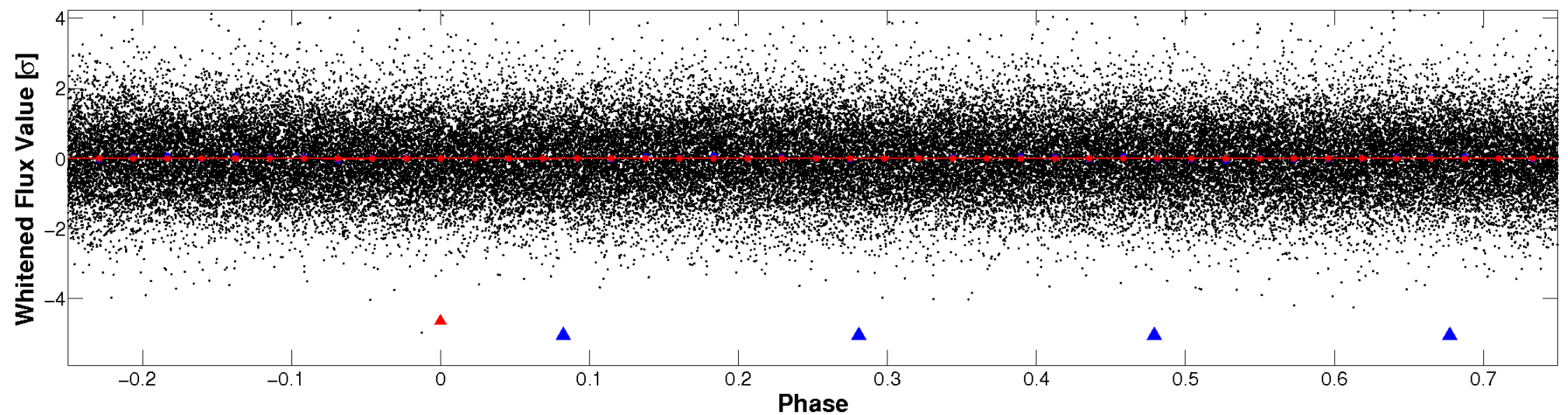


Non-Whitened Vs. Whitened Light Curve

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

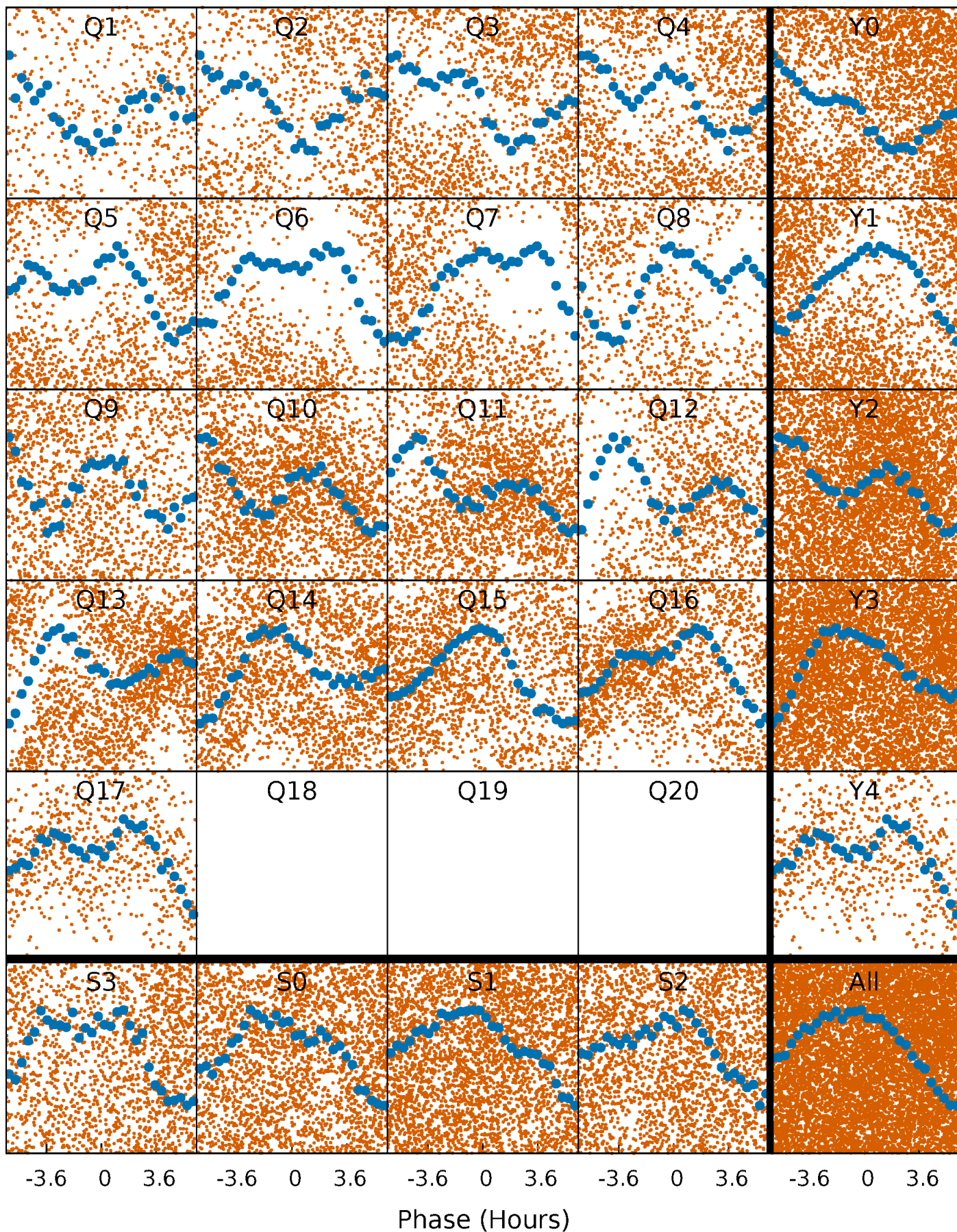


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



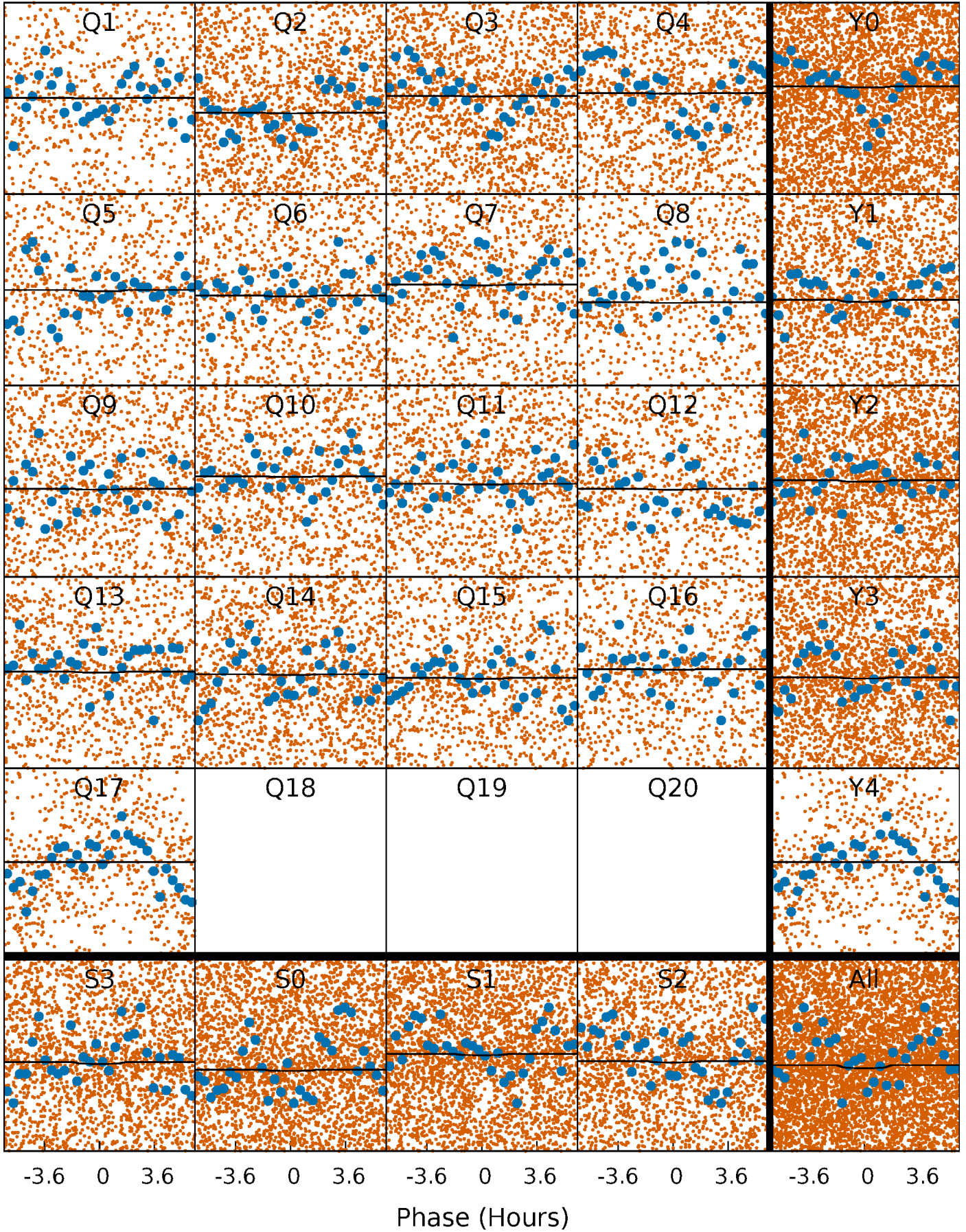
PDC Quarter-Phased Transit Curves

TCE 003644128-01 P= 0.891732 Days $T_0=131.821246$ (BKJD)



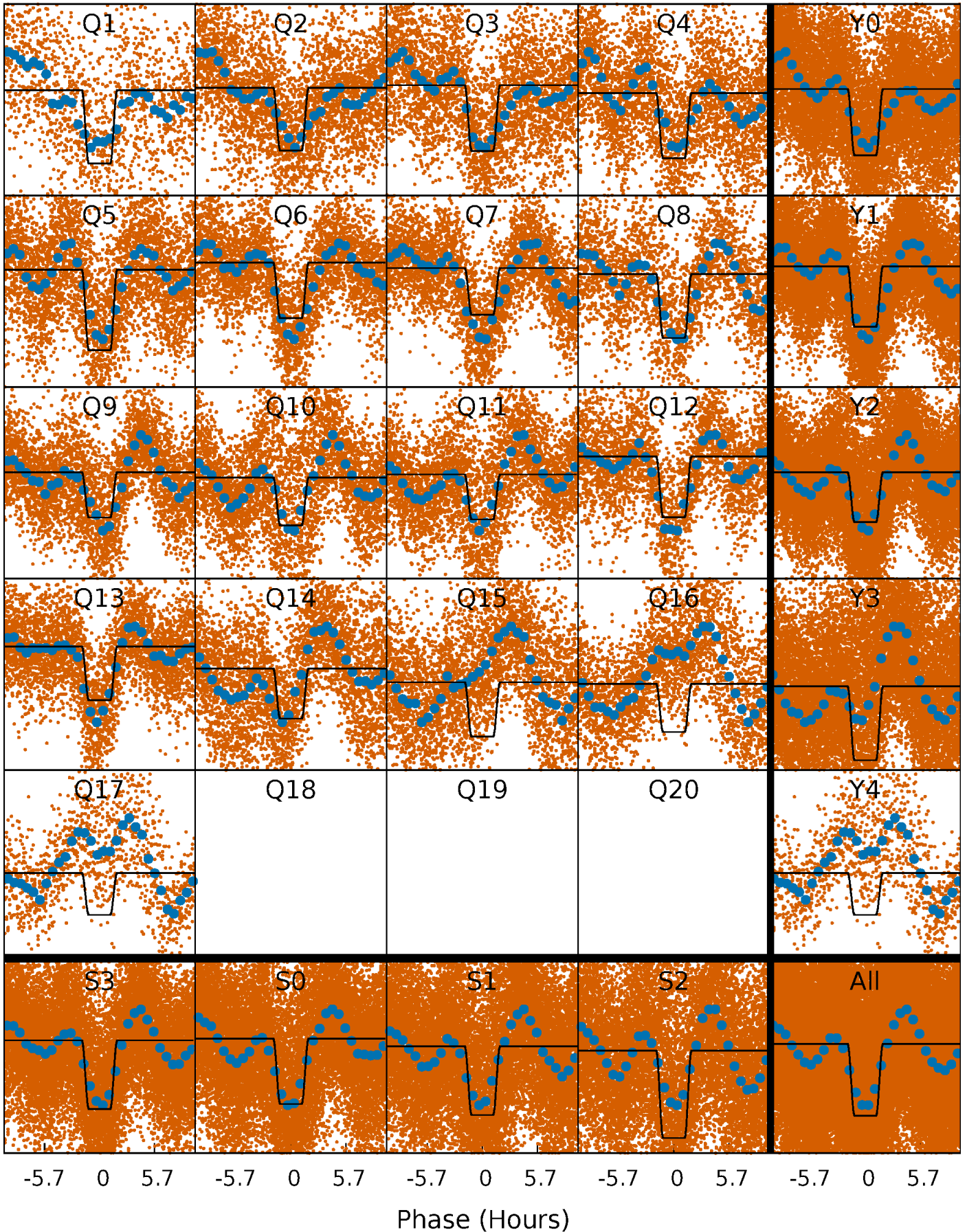
DV Quarter-Phased Transit Curves

TCE 003644128-01 P= 0.891732 Days $T_0=131.821246$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

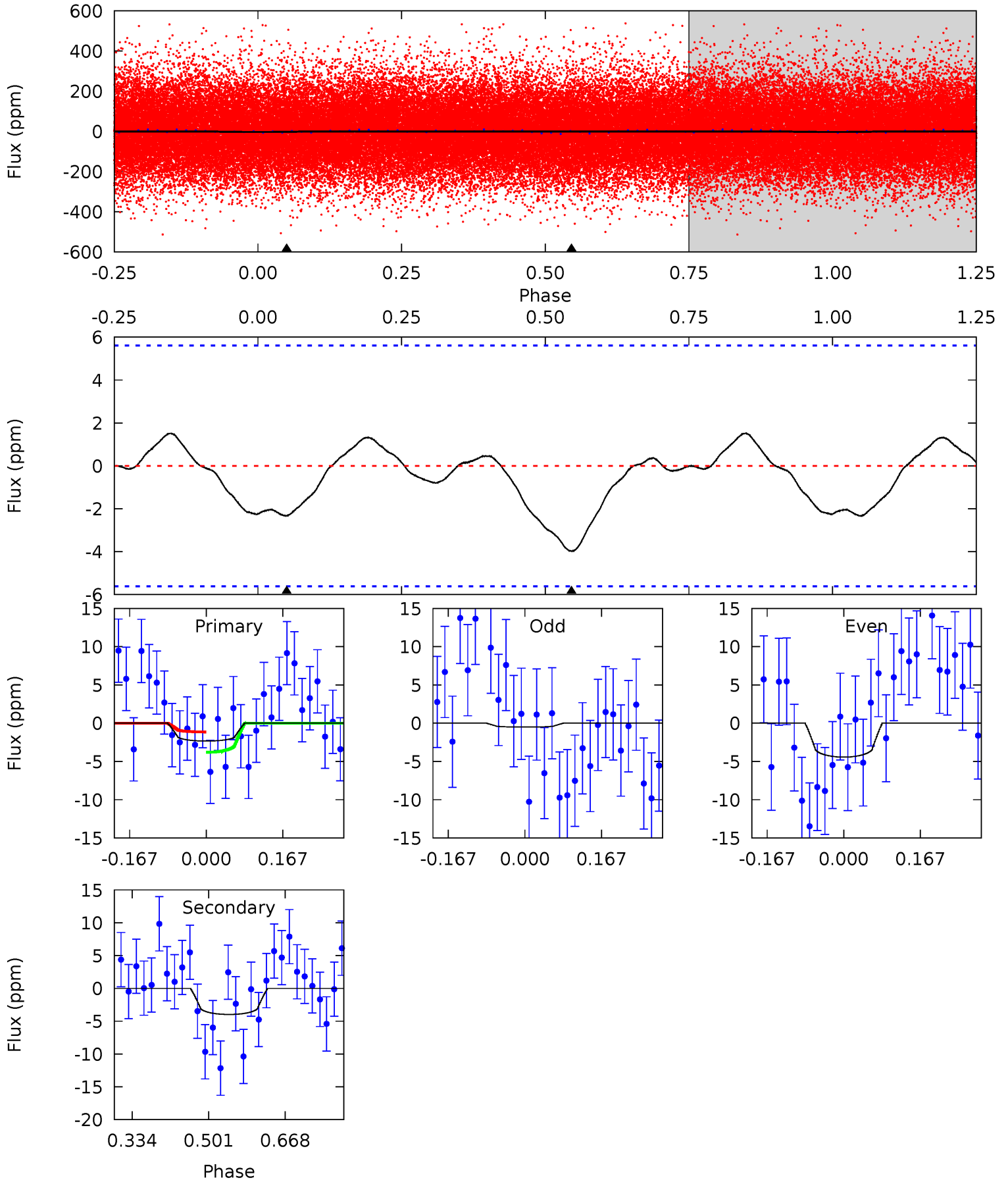
TCE 003644128-01 P= 0.892278 Days $T_0=131.785710$ (BKJD)



DV Model-Shift Uniqueness Test

003644128-01, P = 0.891732 Days, E = 130.929514 Days

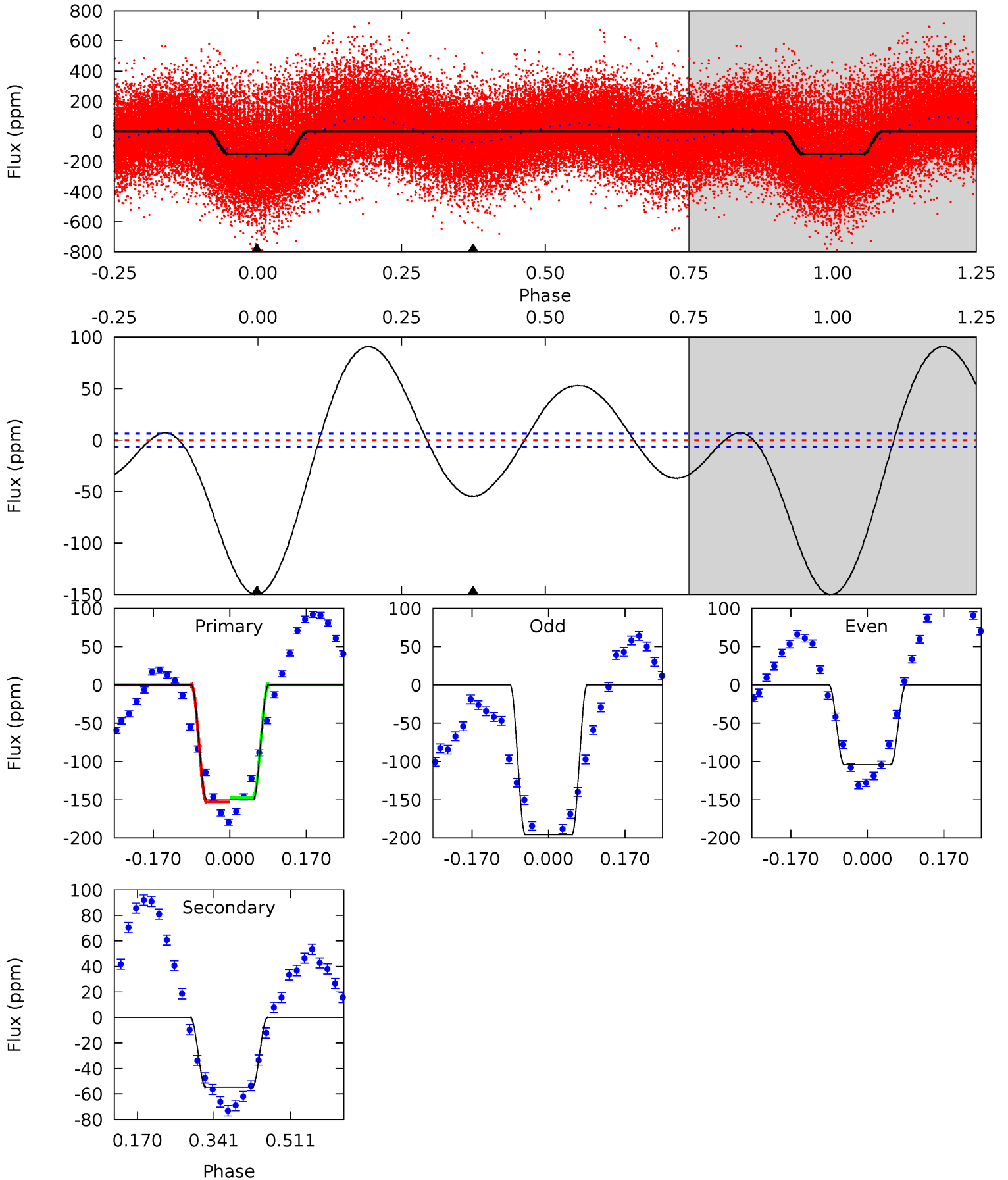
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.85	3.16	0	0	4.46	1.38	0.50	1.85	1.85	3.16	3.16	1.57	0.48	0.28	1.06



Alt Model-Shift Uniqueness Test

003644128-01, P = 0.892278 Days, E = 130.893432 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
105.3	38.4	0	0	4.45	1.37	28.3	105.3	105.3	38.4	38.4	32.2	0.91	0.38	1.82



Stellar Parameters For KIC 003644128

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6934^{+164}_{-246}	$3.454^{+0.374}_{-0.066}$	$0.060^{+0.250}_{-0.250}$	$4.501^{+0.320}_{-1.917}$	$2.102^{+0.073}_{-0.415}$	$0.032^{+0.101}_{-0.007}$
	+2%/-4%	+11%/-2%	+417%/-417%	+7%/-43%	+3%/-20%	+311%/-22%
Source	PHO1	FLK73	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 003644128-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 1	$0.59^{+0.59}_{-0.41}$	5794^{+338}_{-607}	8241^{+17134}_{-3186}	$2.965^{+30.784}_{-2.255}$
Alt.	-55 ± 1	$6.40^{+1.16}_{-1.35}$	5829^{+293}_{-608}	3858^{+683}_{-6759}	$0.390^{+0.216}_{-0.102}$

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 $A_{obs} \gg 1.0$

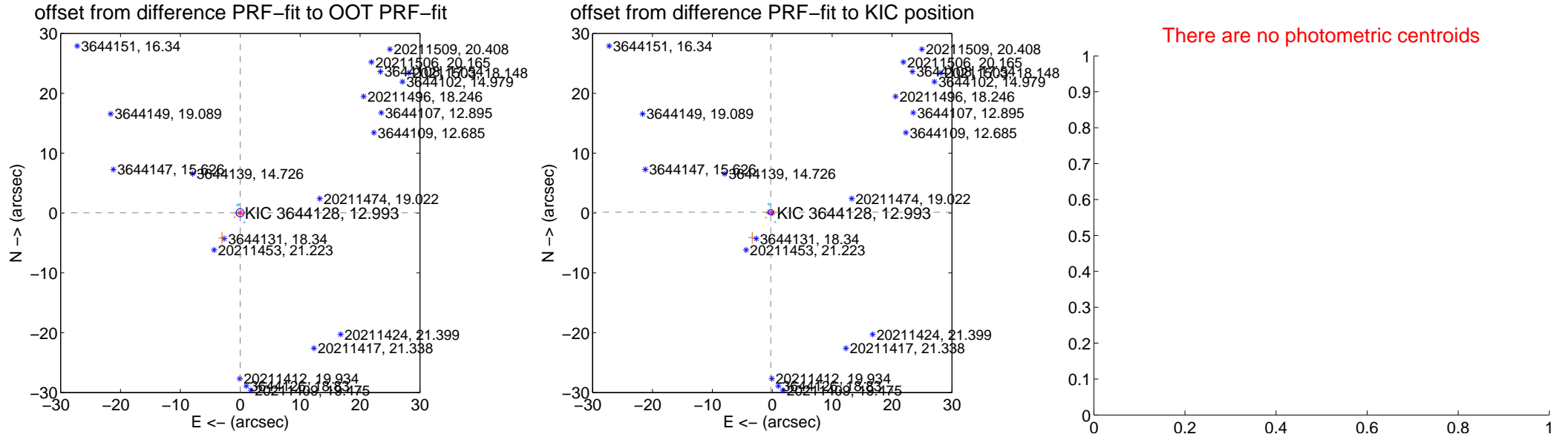
DV Centroid Data

Supplemental centroid analysis for 003644128-01. Kepler magnitude: 12.99. Transit SNR 0.30

There are 5 quarters with good PRF difference image offsets

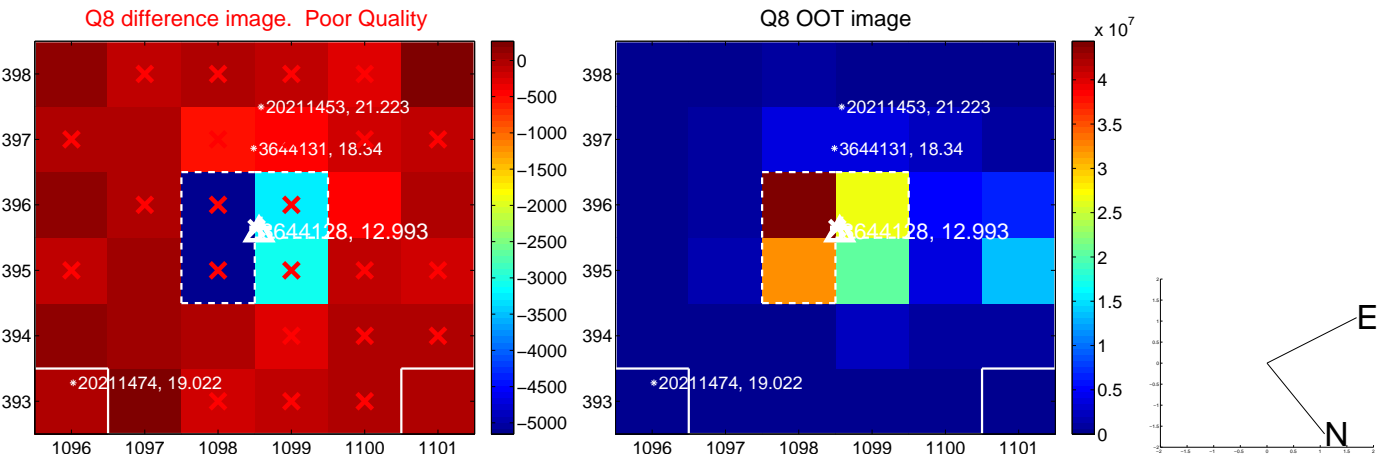
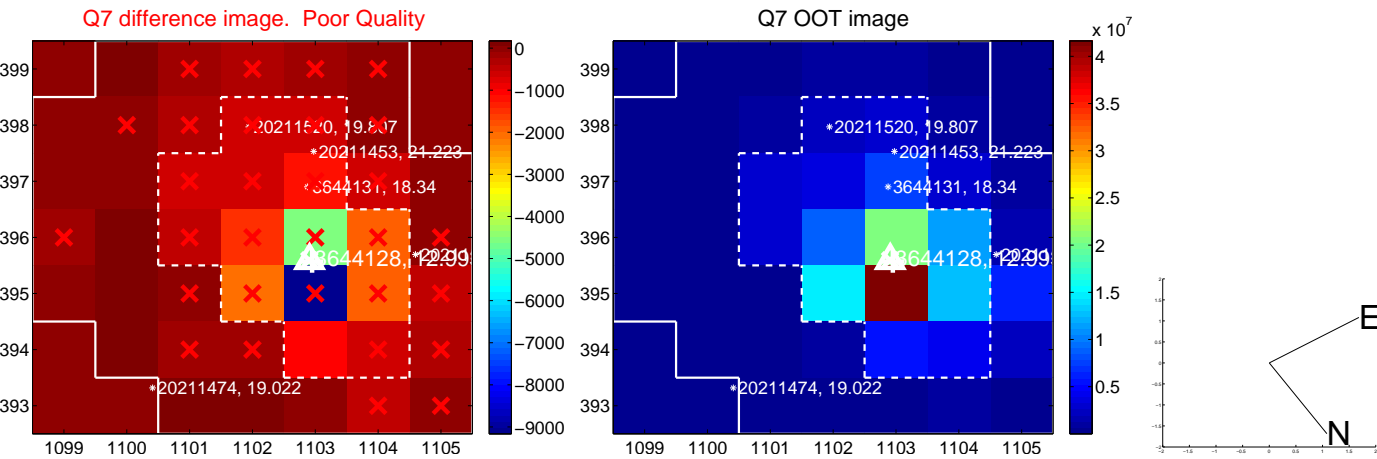
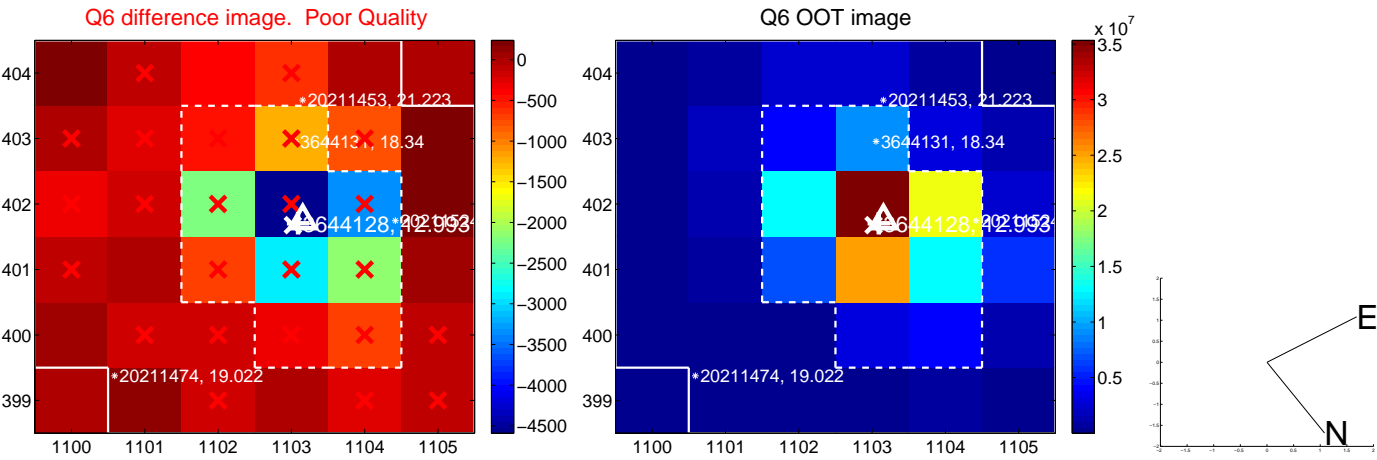
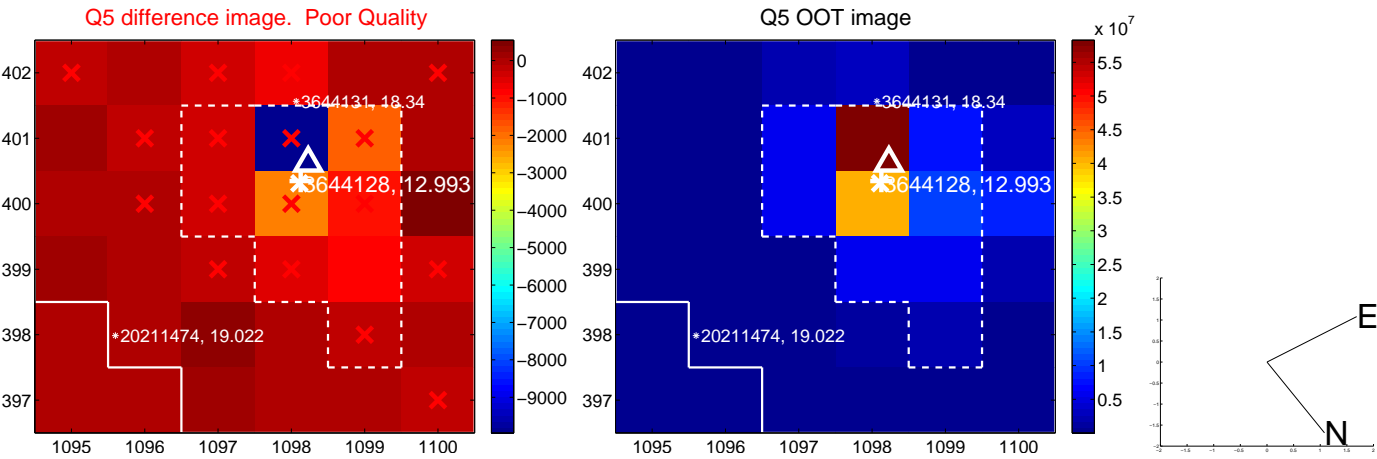
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.044 ± 0.224	0.20	0.022 ± 0.217	0.038 ± 0.317
PRF-fit source offset from KIC position	0.278 ± 0.148	1.88	0.245 ± 0.206	0.130 ± 0.317
photometric centroid source offset	—	—	—	—

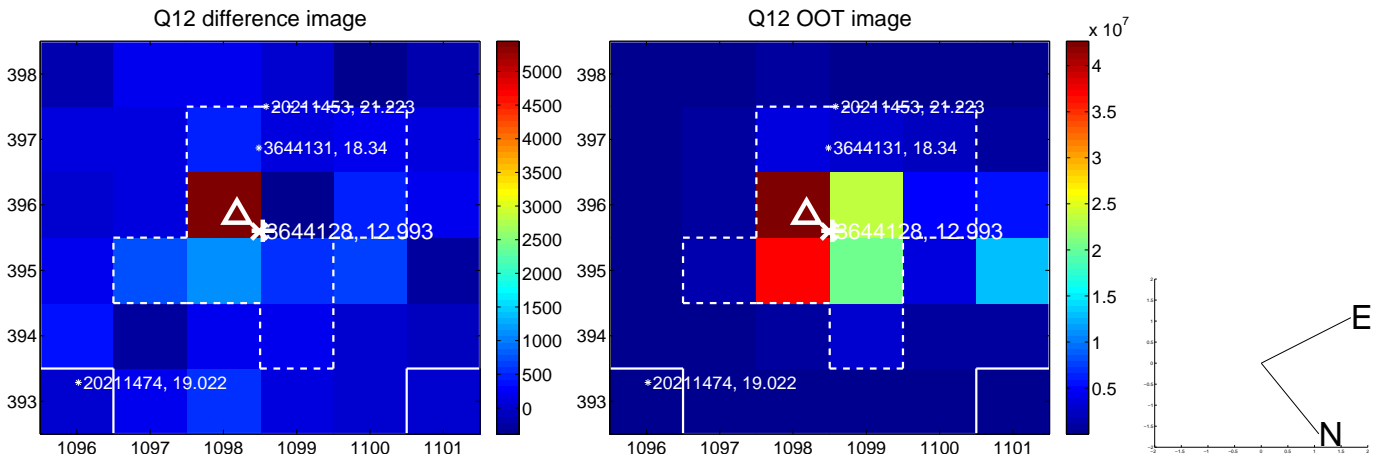
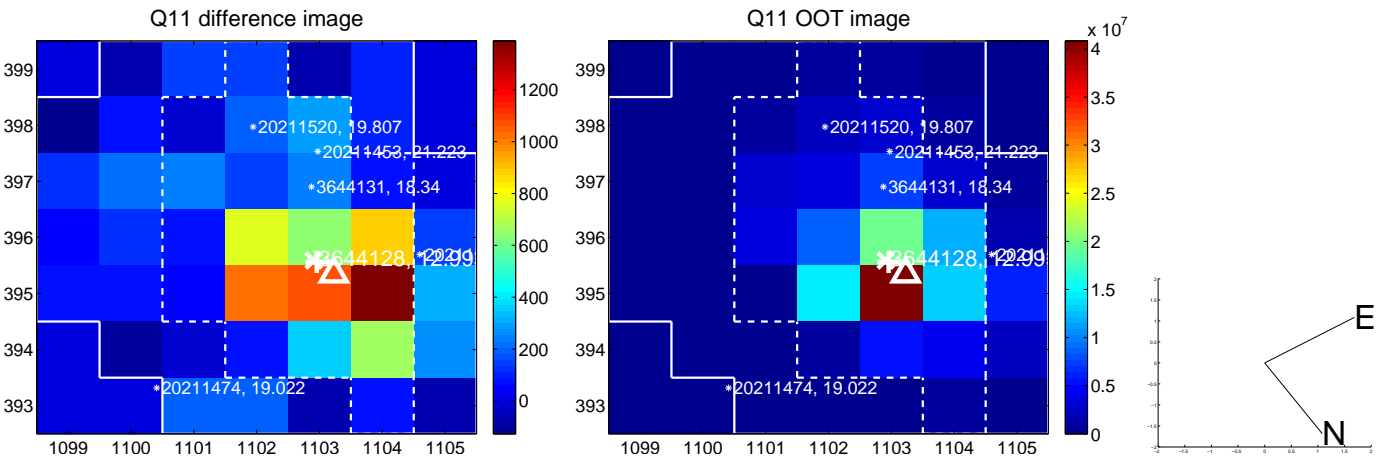
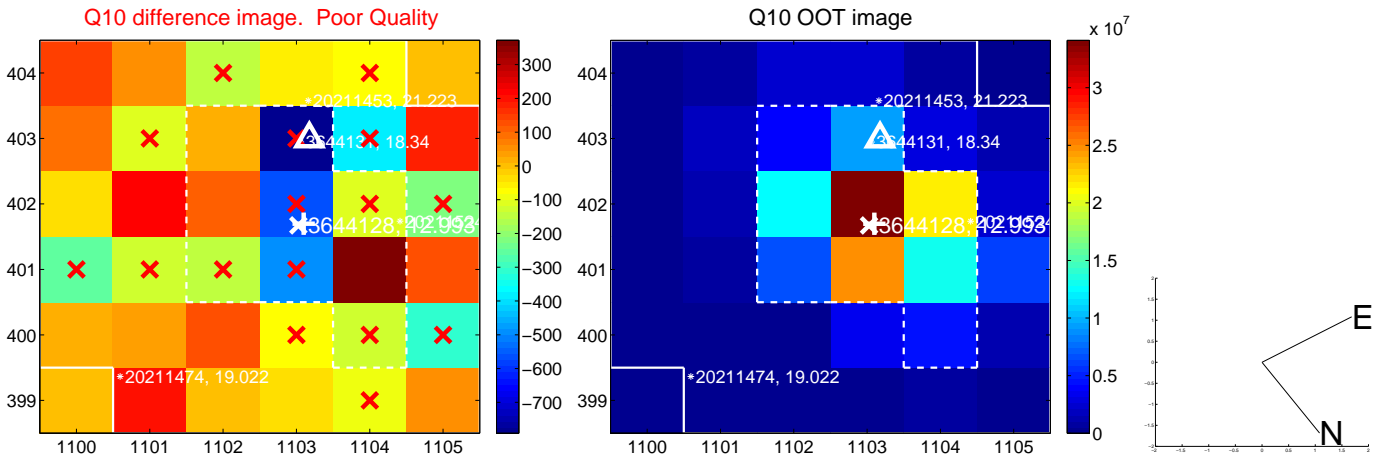
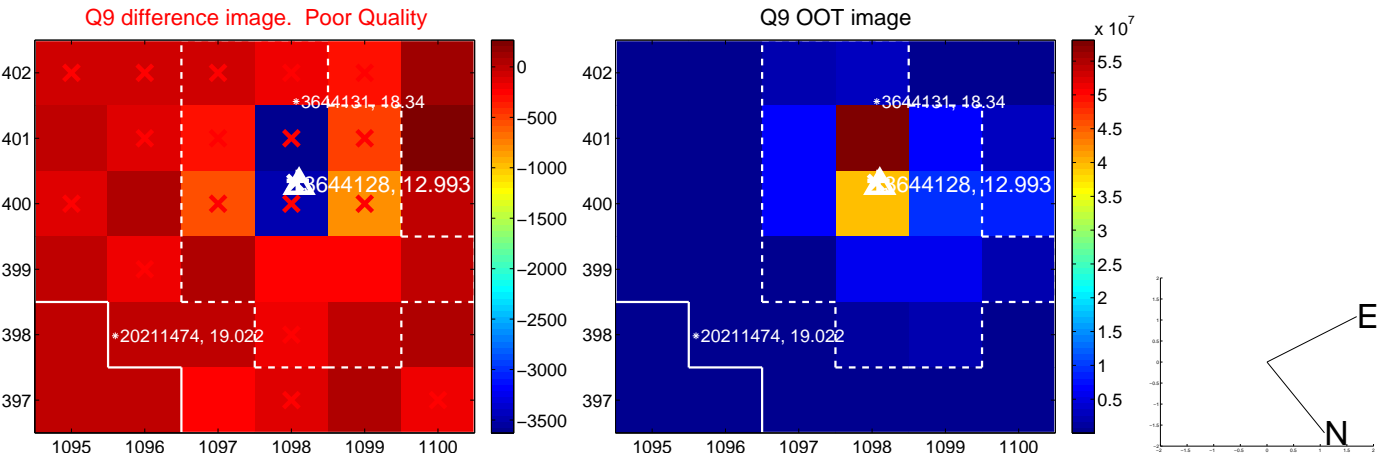


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

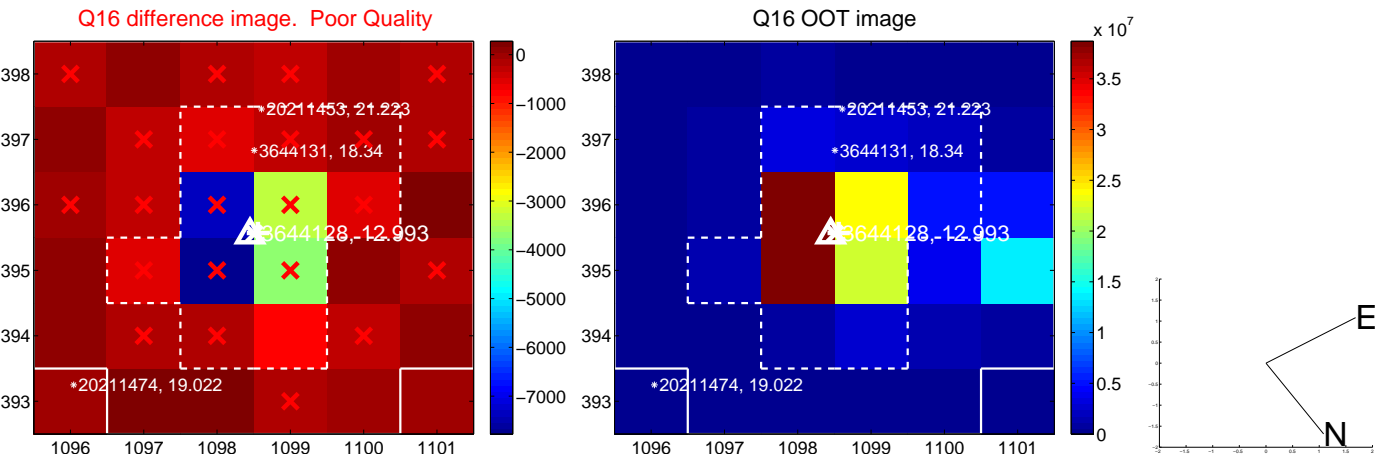
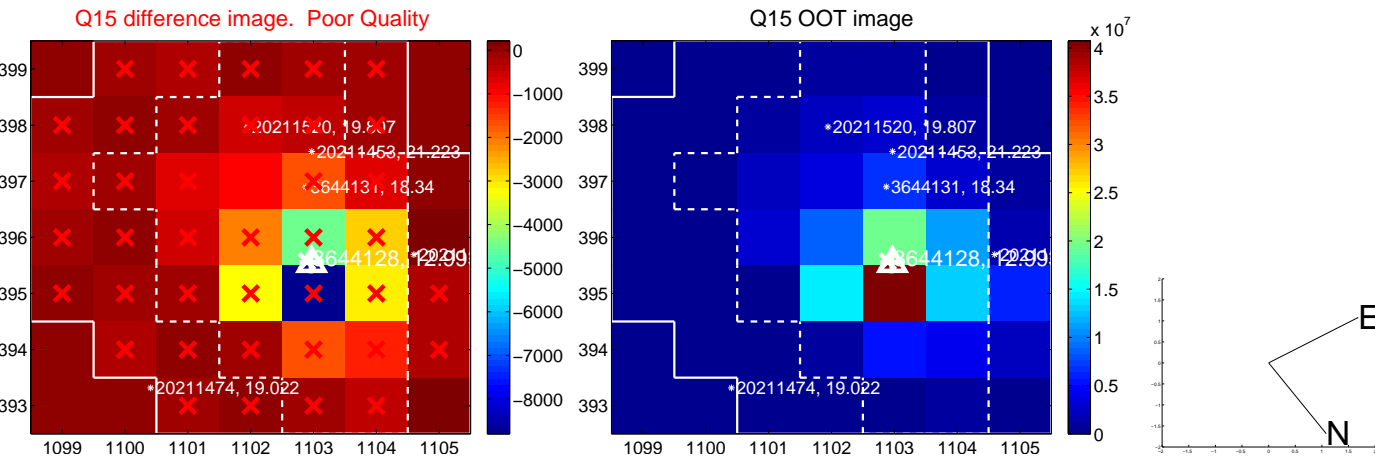
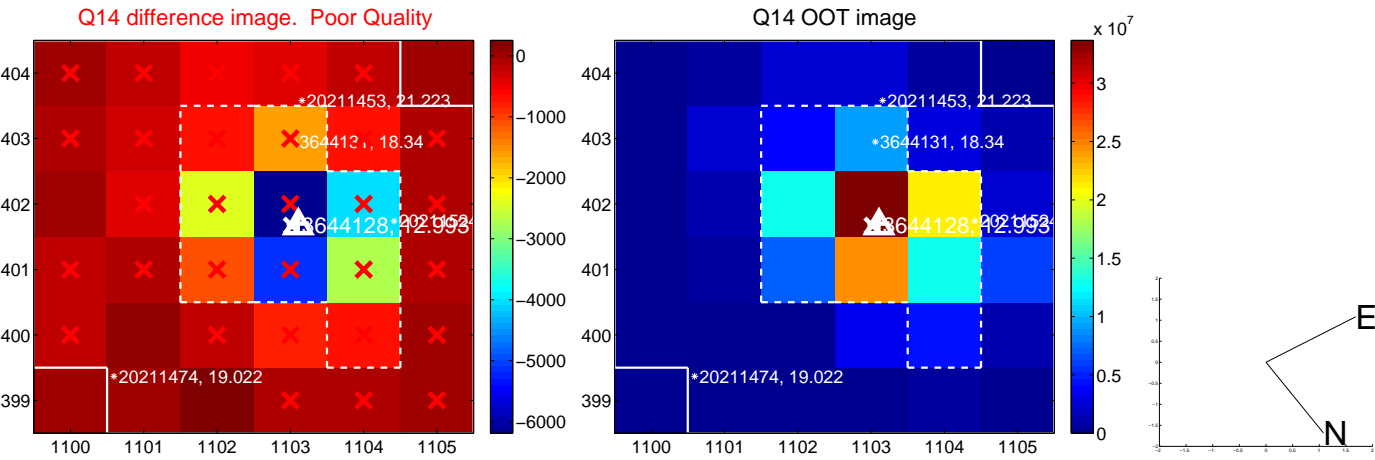
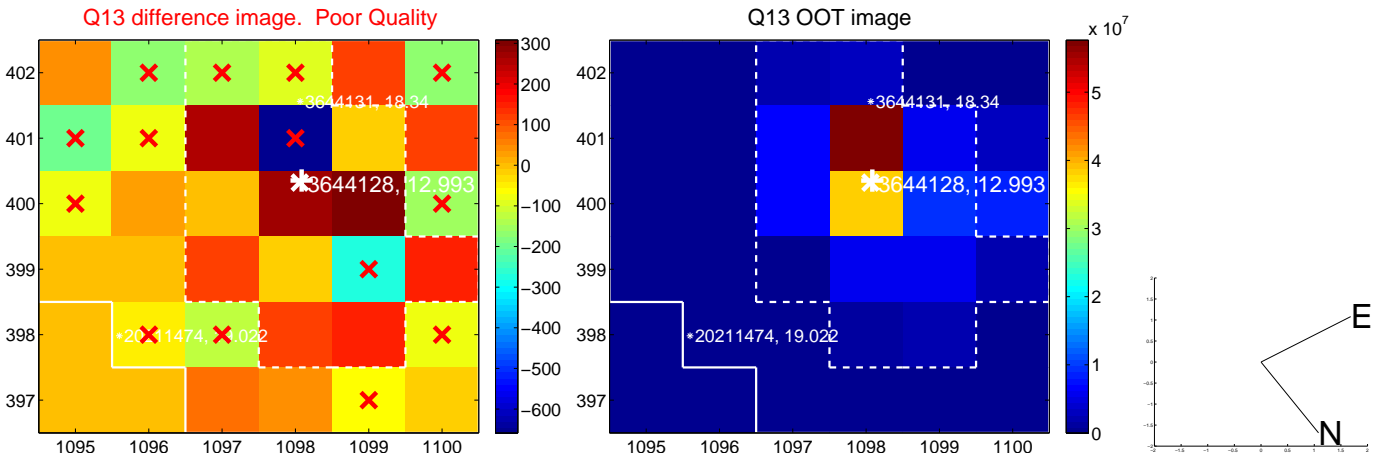
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



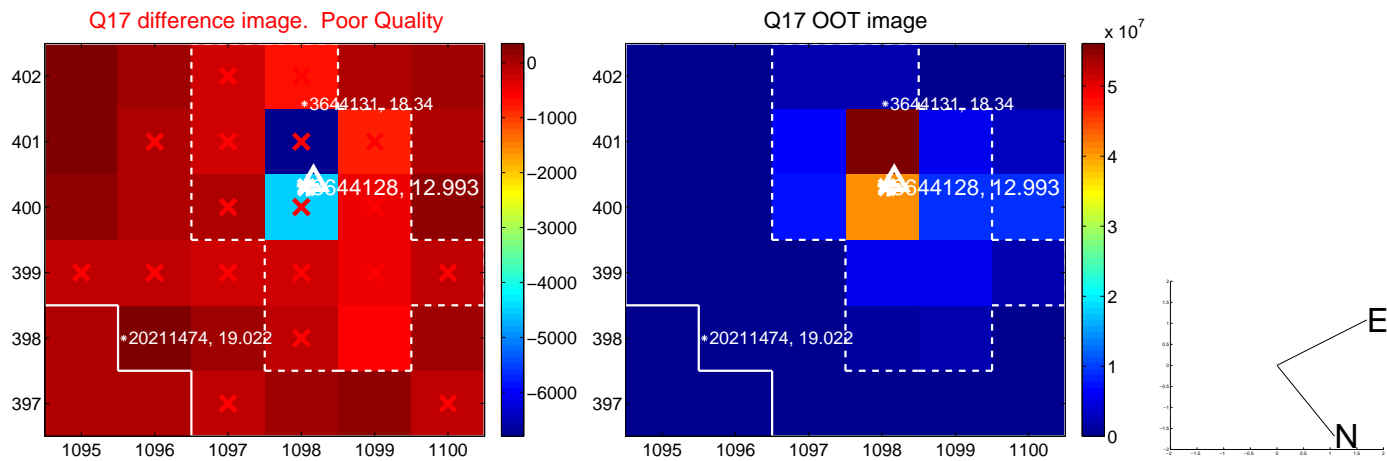
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



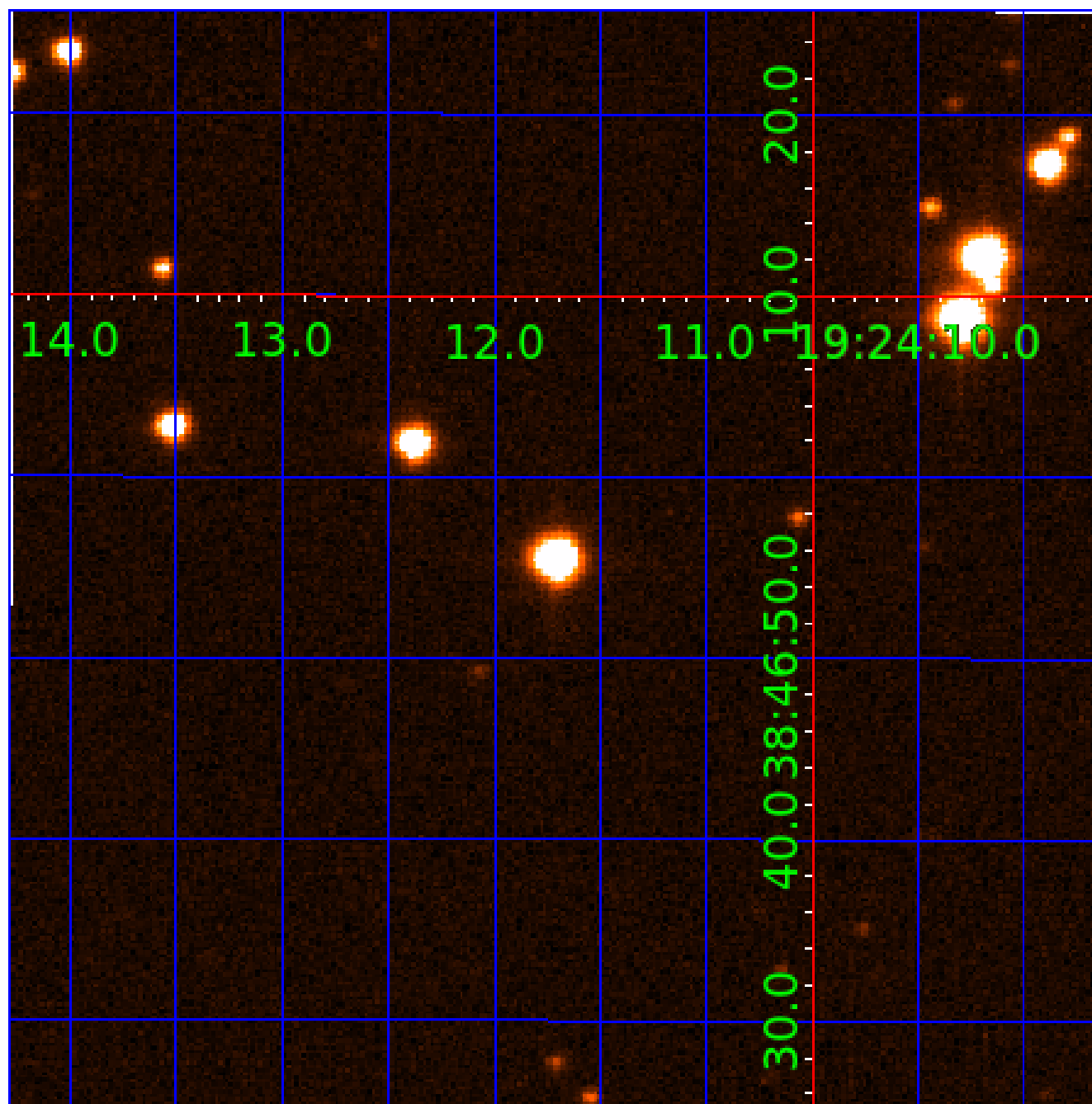
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 003644128

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})
003644128-01	OBS	No	0.891732	131.821246	0.6	3.131	8.5	0.3	4.50	6934	0.37	77754.09
003644128-02	OBS	No	421.074371	278.138815	160.7	9.000	7.3	-1.0	4.50	6934	5.76	21.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003644128-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
003644128-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

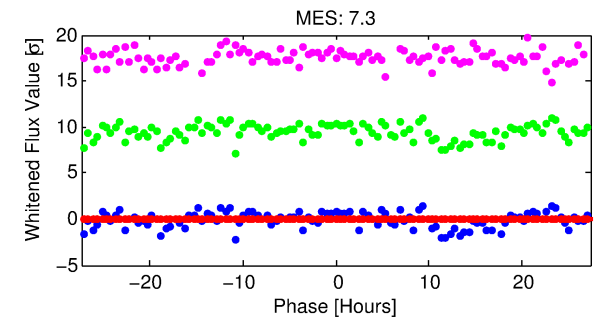
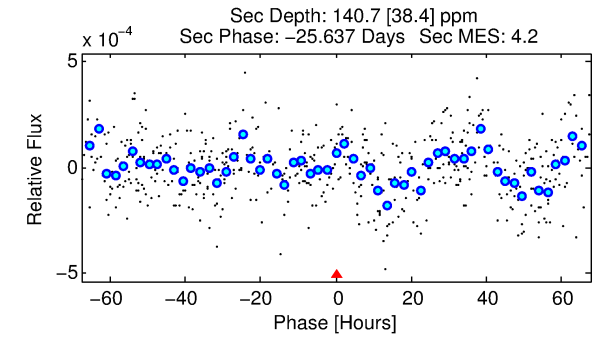
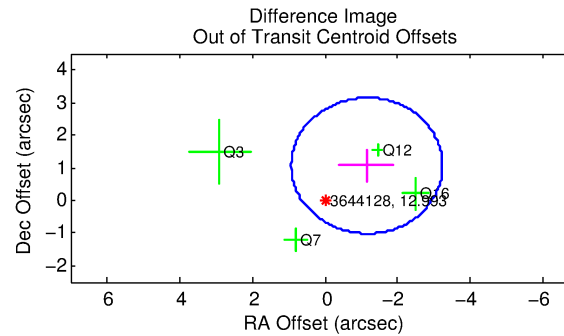
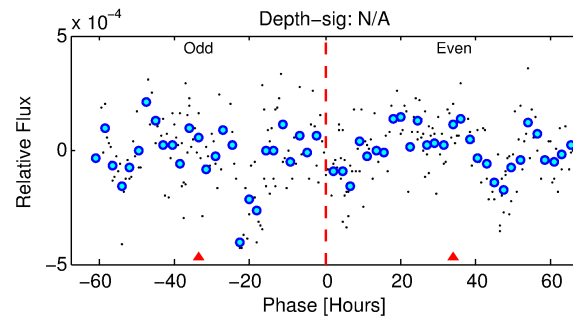
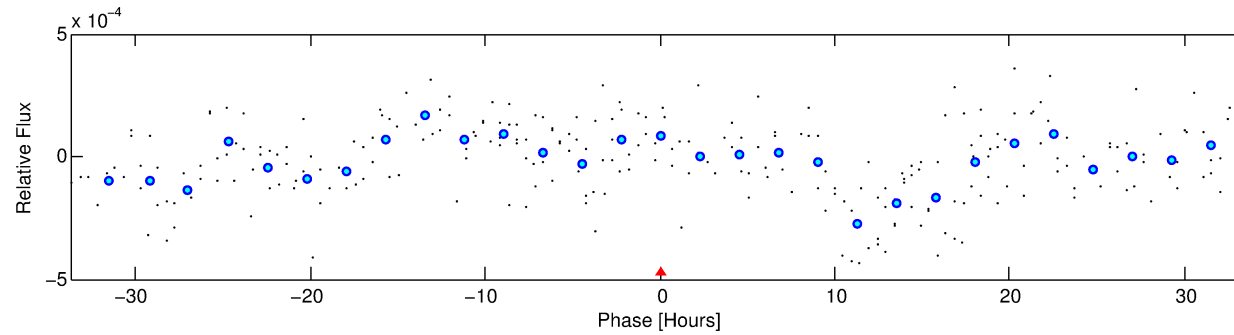
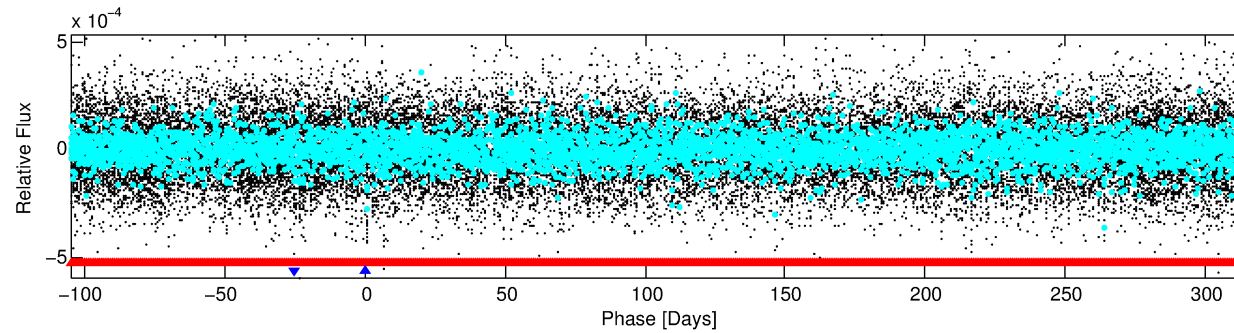
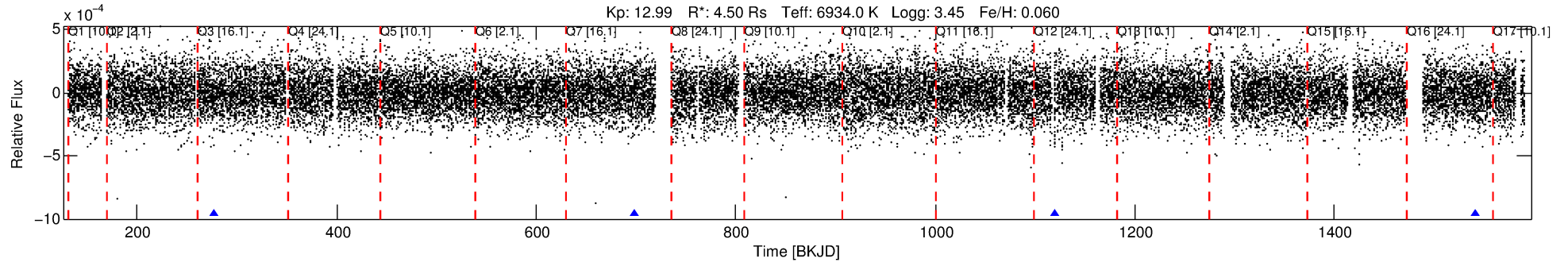
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003644128-02

No Significant Match Found

DV One-Page Summary

KIC: 3644128 Candidate: 2 of 2 Period: 421.074 d



TPS TCE Results:

Period = 421.07437 d
Epoch = 278.1388 BKJD

DV fit results are unavailable

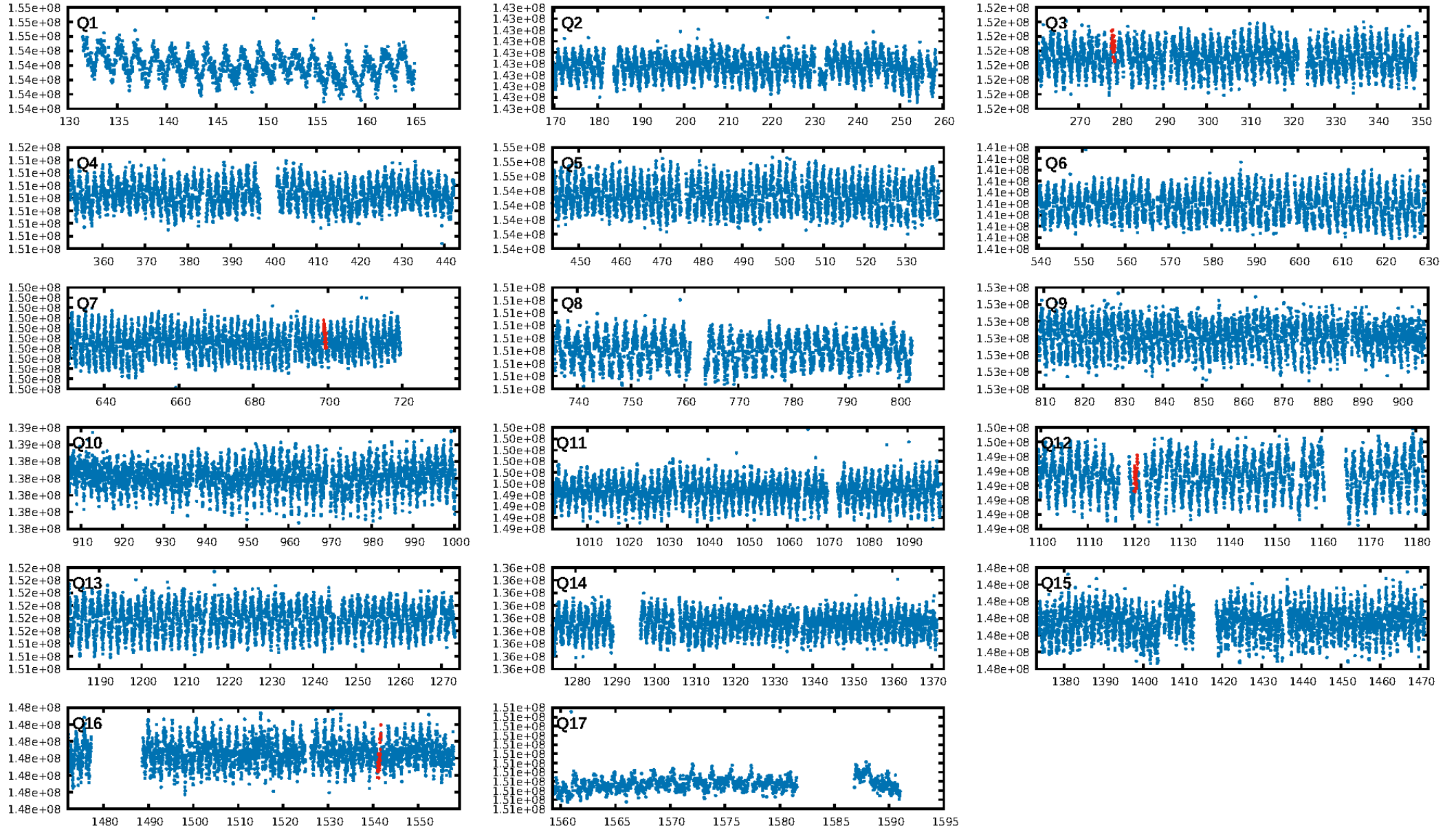
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1058.29σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.24e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.4673
Centroid-sig: 6.8%
Centroid-so: 19.537 arcsec [1.42σ]
OotOffset-rm: 1.566 arcsec [2.26σ]
KicOffset-rm: 1.513 arcsec [1.78σ]
OotOffset-st: 0/2/2/0 [4]
KicOffset-st: 0/2/2/0 [4]
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DiffImageOverlap-fno: 0.00 [0/4]

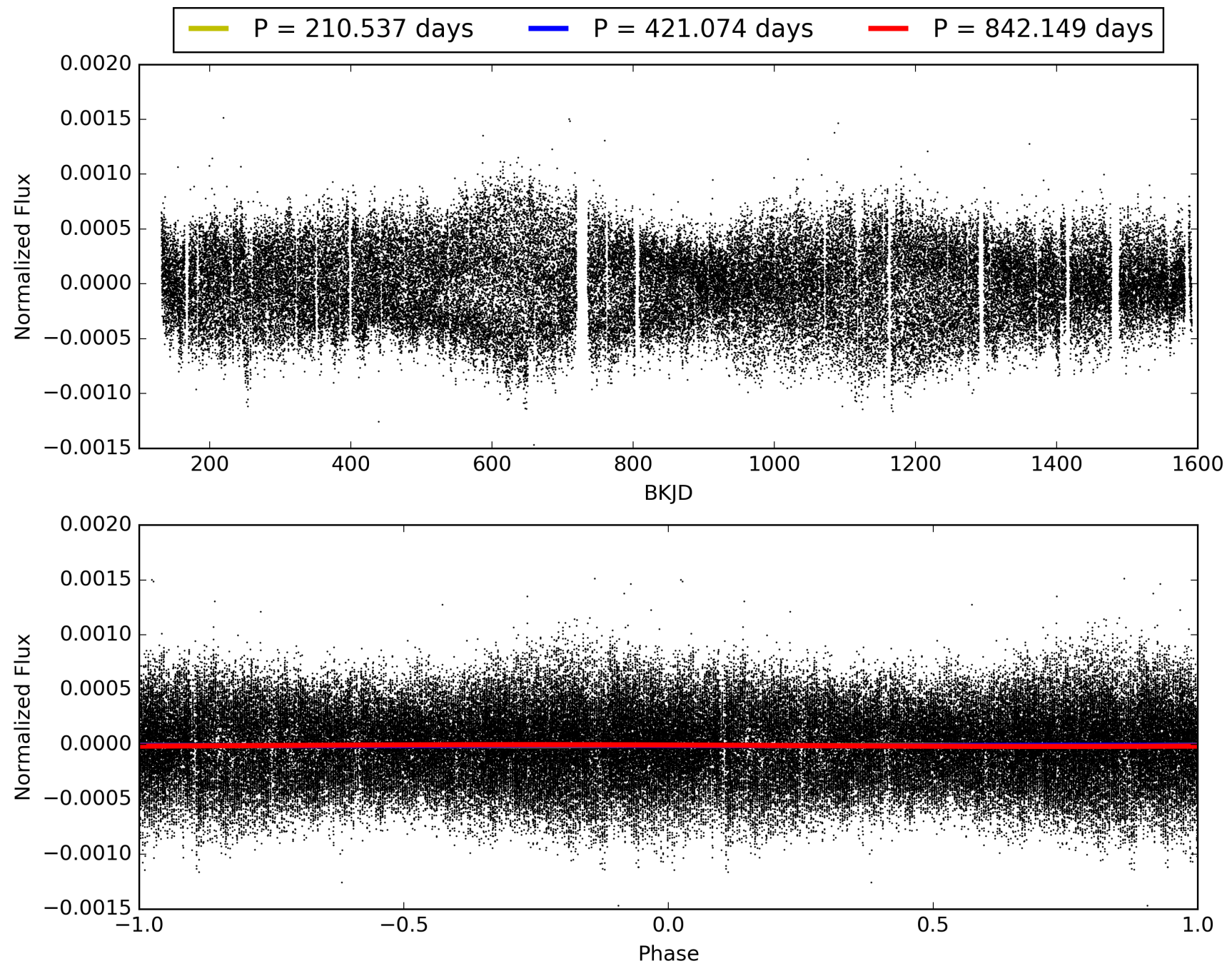
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:03:55 Z

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

TCE 003644128-02, PDC Light Curves

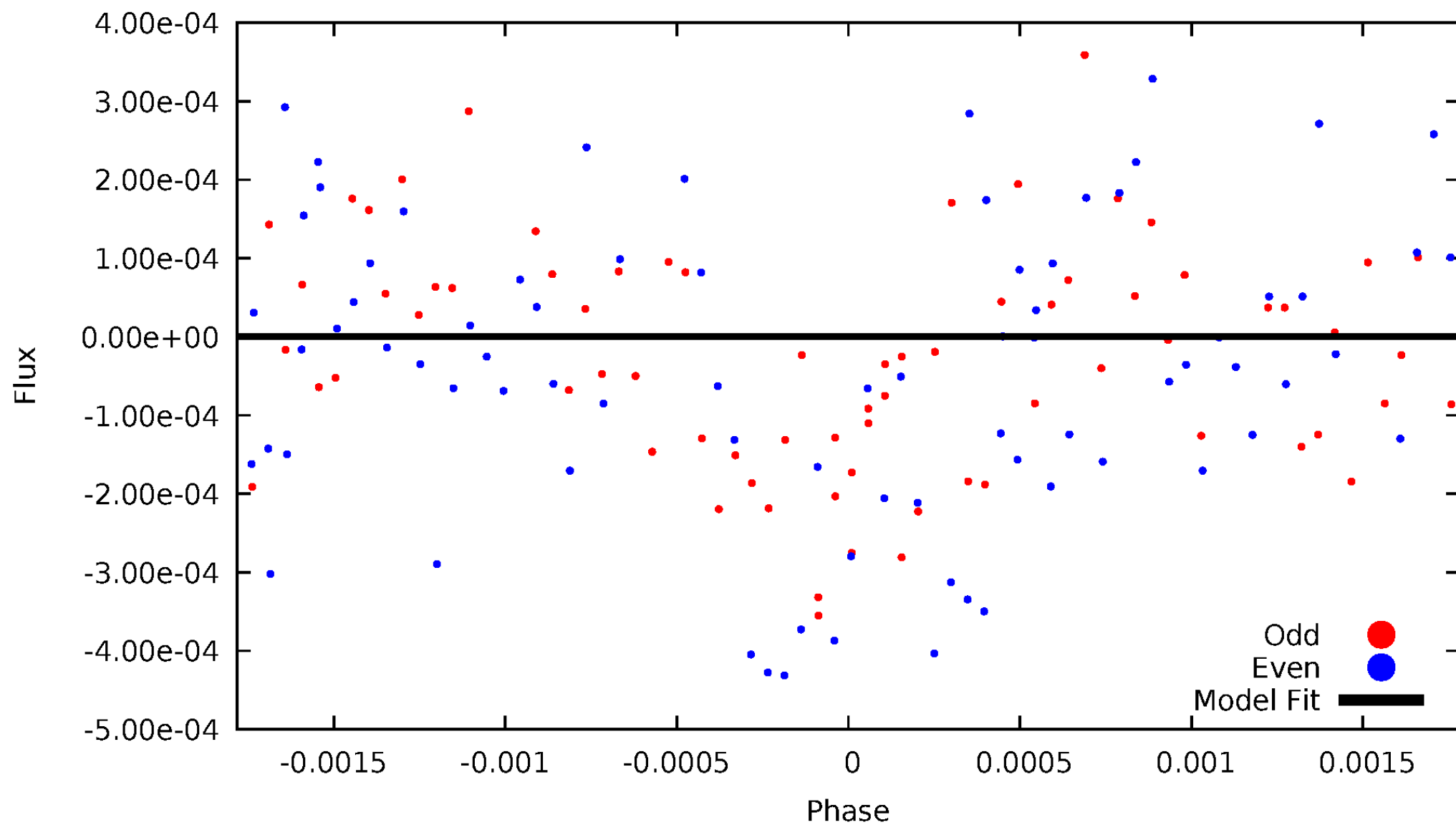


TCE 003644128-02



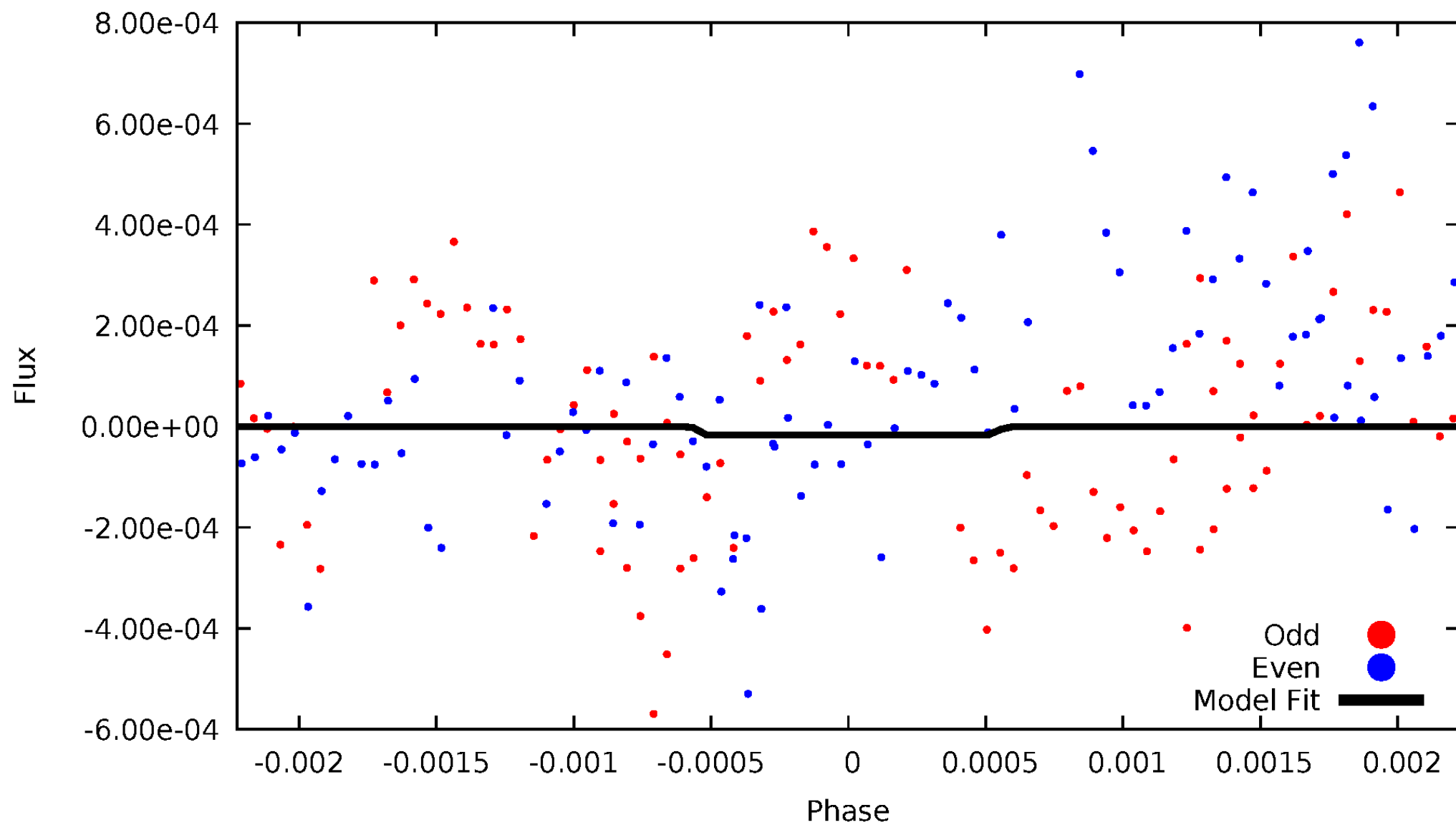
DV Odd/Even

TCE 003644128-02



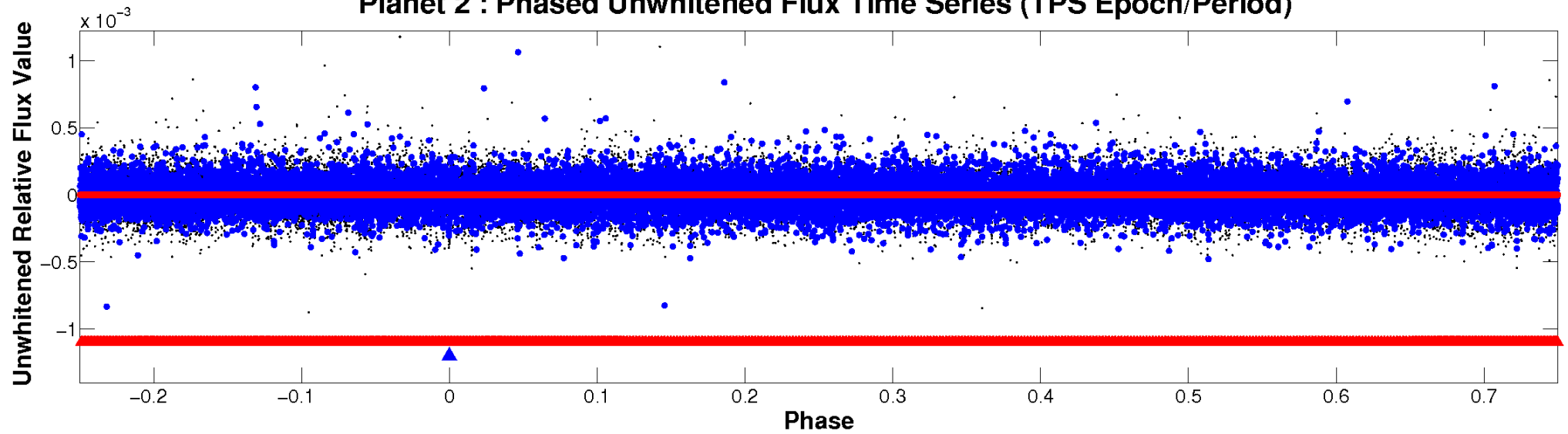
ALT Odd/Even

TCE 003644128-02

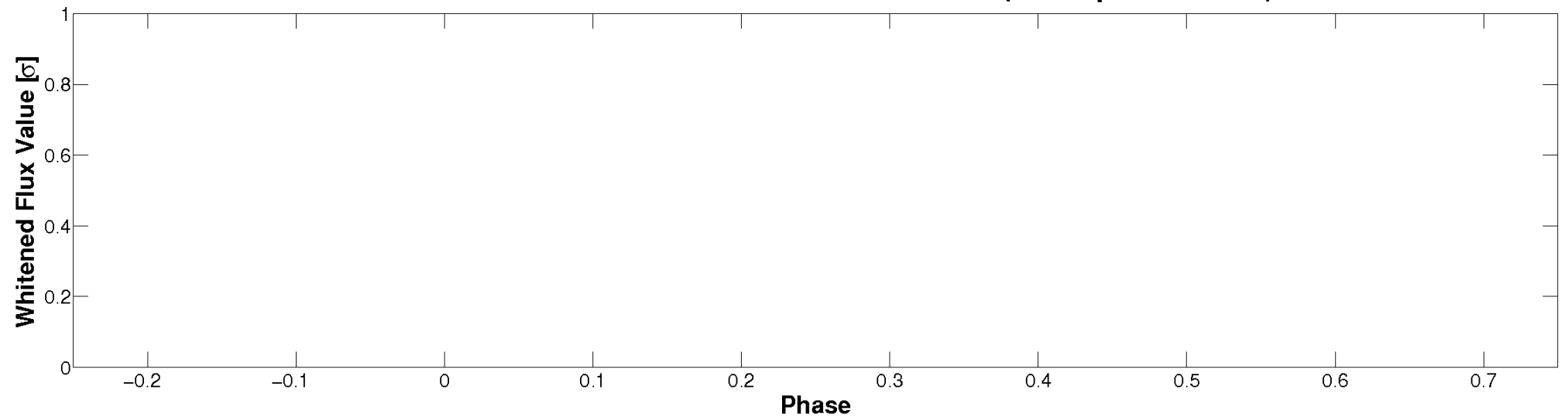


Non-Whitened Vs. Whitened Light Curve

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

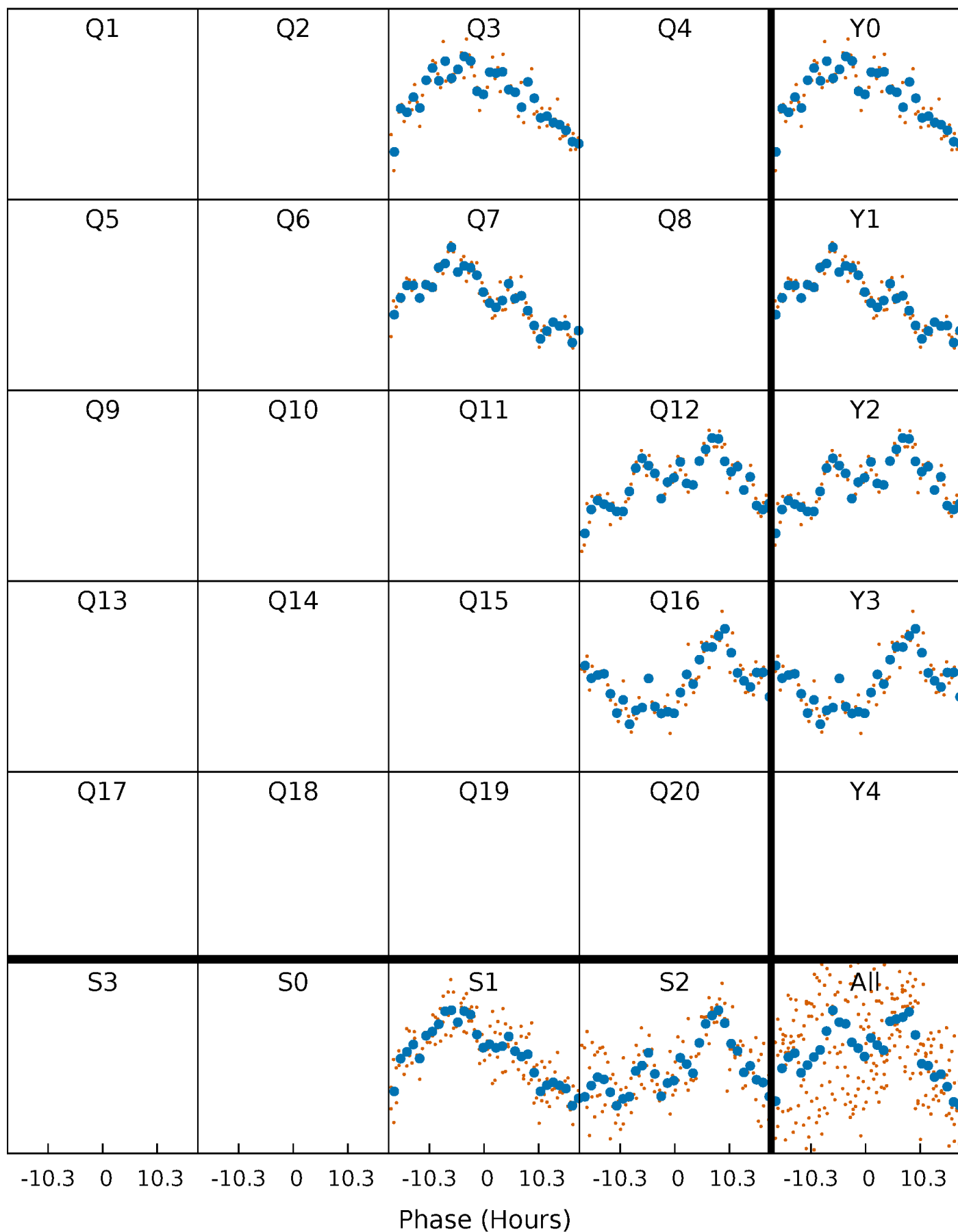


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



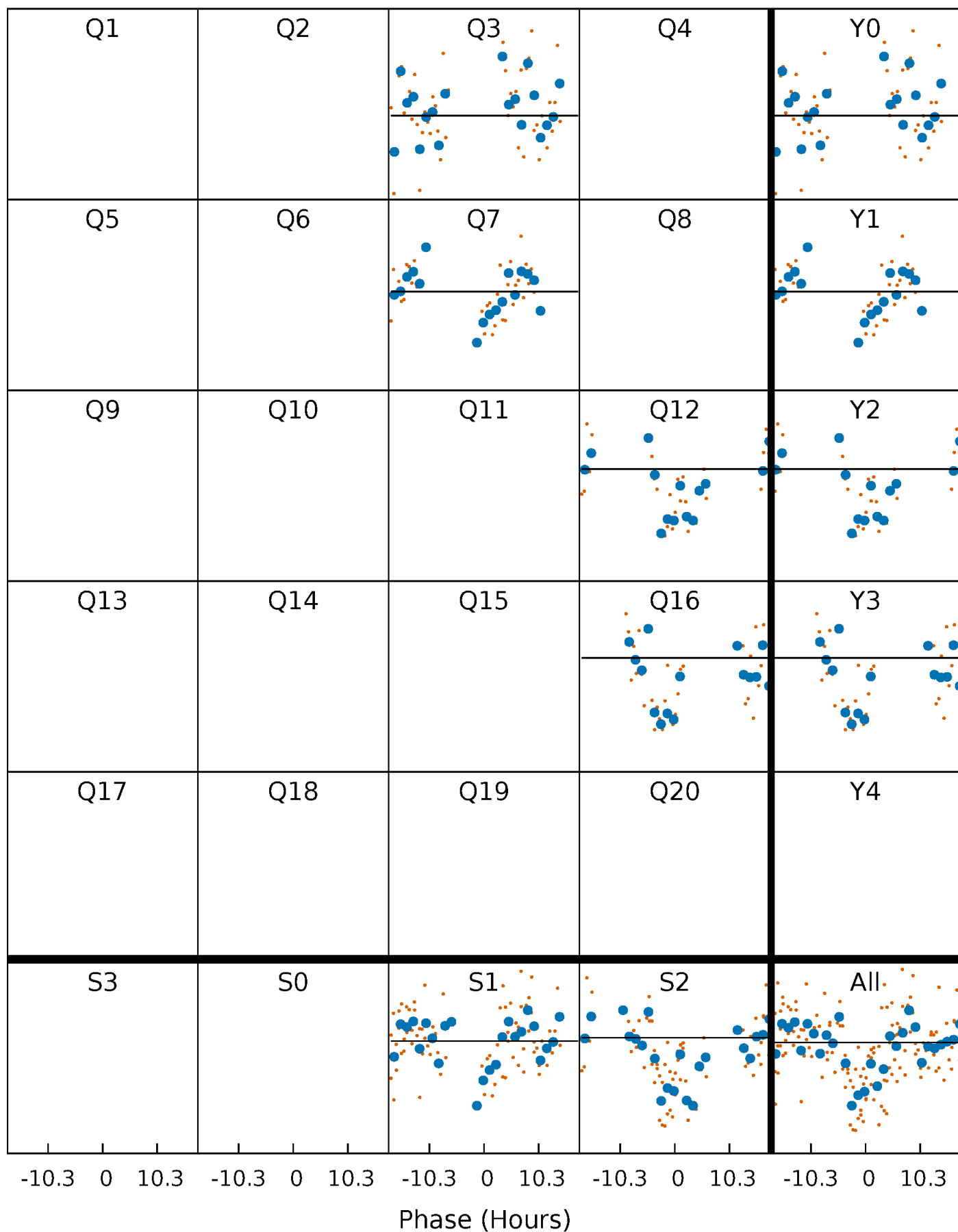
PDC Quarter-Phased Transit Curves

TCE 003644128-02 P=421.074371 Days $T_0=278.138815$ (BKJD)



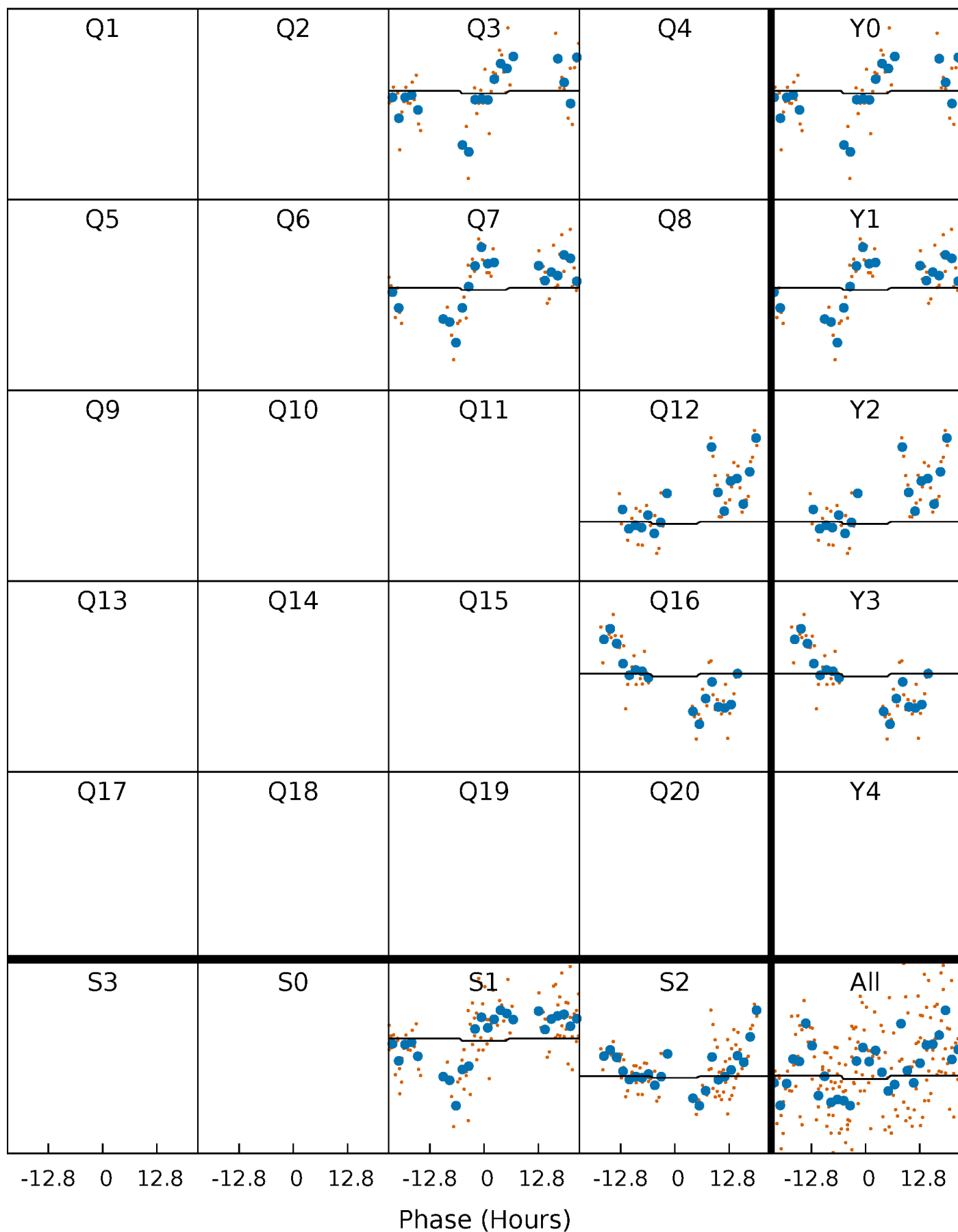
DV Quarter-Phased Transit Curves

TCE 003644128-02 $P=421.074371$ Days $T_0=278.138815$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

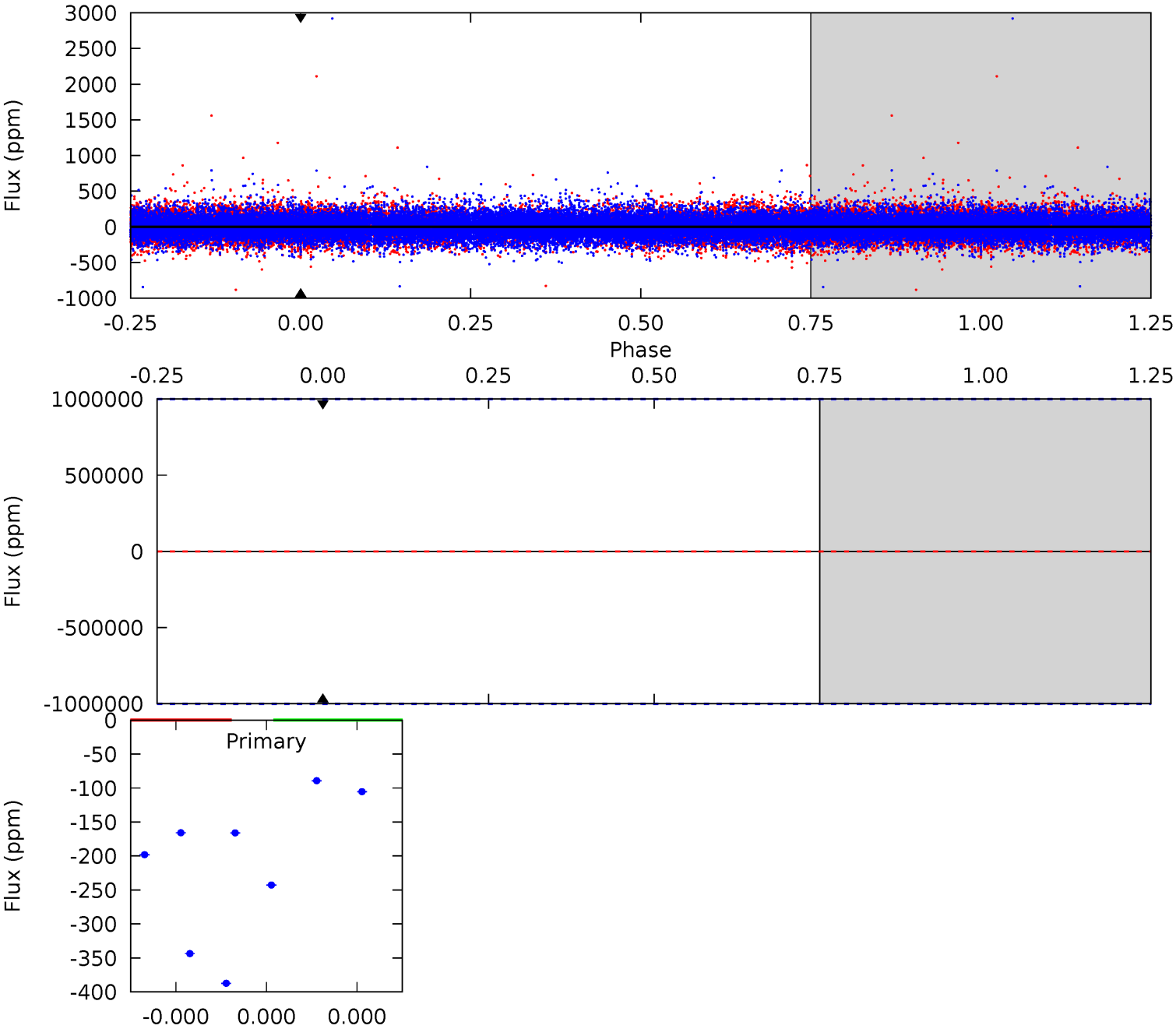
TCE 003644128-02 P=421.074371 Days $T_0=277.583261$ (BKJD)



DV Model-Shift Uniqueness Test

003644128-02, P = 421.074371 Days, E = 278.138815 Days

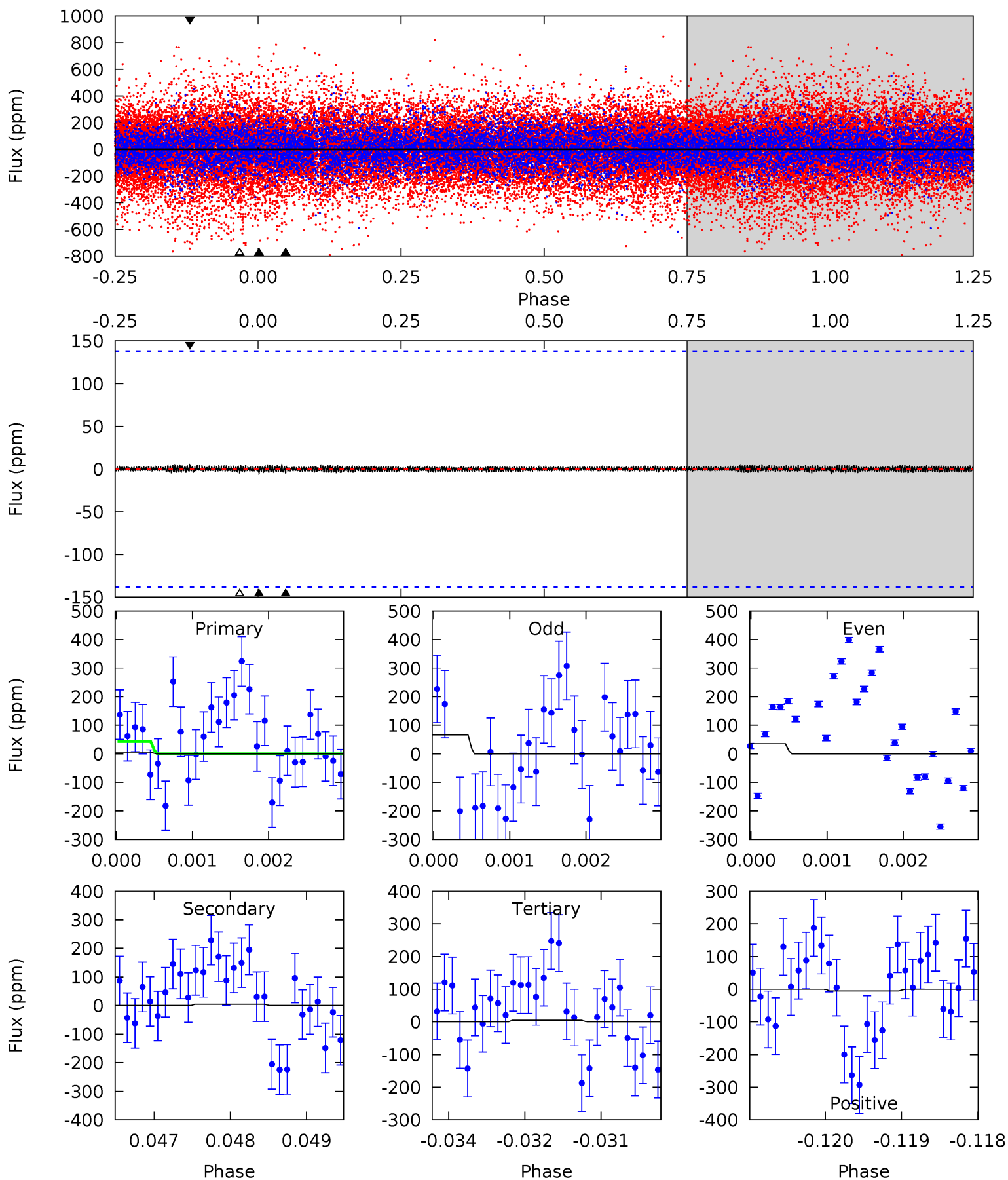
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003644128-02, P = 421.074371 Days, E = 277.583261 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.22	0.19	0.18	0.19	5.43	3.26	0.06	0.03	0.03	0.00	-0.01	0.57	2.04	0.47	0.44



Stellar Parameters For KIC 003644128

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6934^{+164}_{-246}	$3.454^{+0.374}_{-0.066}$	$0.060^{+0.250}_{-0.250}$	$4.501^{+0.320}_{-1.917}$	$2.102^{+0.073}_{-0.415}$	$0.032^{+0.101}_{-0.007}$
	+2%/-4%	+11%/-2%	+417%/-417%	+7%/-43%	+3%/-20%	+311%/-22%
Source	PHO1	FLK73	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 003644128-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$30.91^{+33.36}_{-21.37}$	750^{+38}_{-70}	-5011^{+39794}_{-30677}	$-1495.063^{+203939.894}_{-180227.588}$
Alt.	-5 ± 25	$29.80^{+35.47}_{-20.70}$	745^{+39}_{-79}	2004^{+968}_{-4724}	$2.626^{+73.056}_{-36.830}$

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 $A_{obs} \gg 1.0$

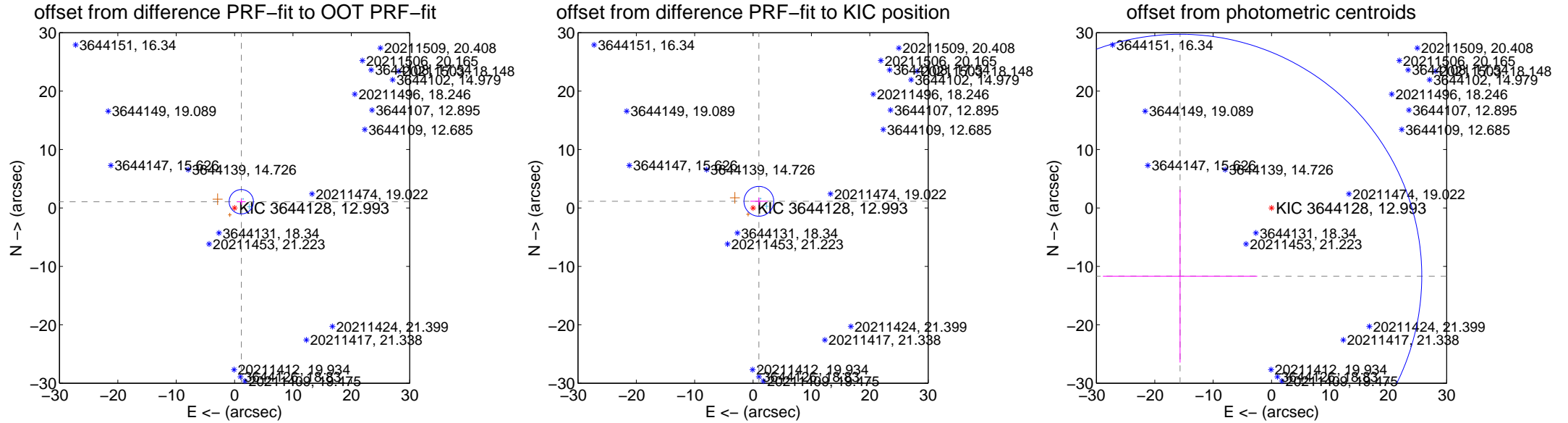
DV Centroid Data

Supplemental centroid analysis for 003644128-02. Kepler magnitude: 12.99. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

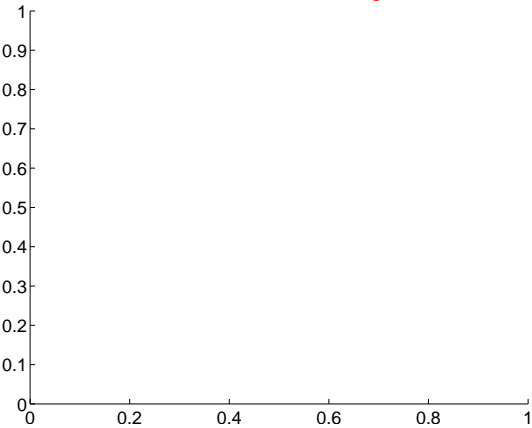
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.566 ± 0.694	2.26	-1.150 ± 0.749	1.063 ± 0.497
PRF-fit source offset from KIC position	1.513 ± 0.850	1.78	-0.996 ± 1.470	1.139 ± 0.667
photometric centroid source offset	19.54 ± 13.80	1.42	15.67 ± 13.23	-11.68 ± 14.78



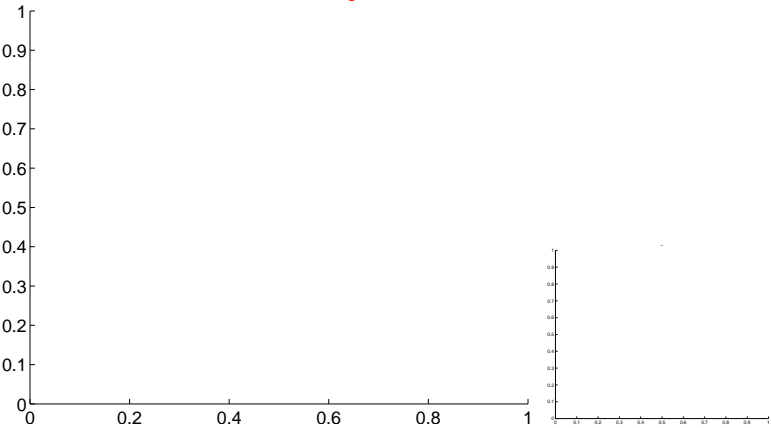
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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

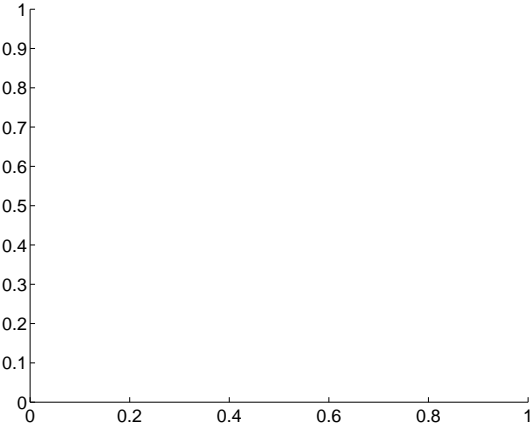
Q1 no difference image



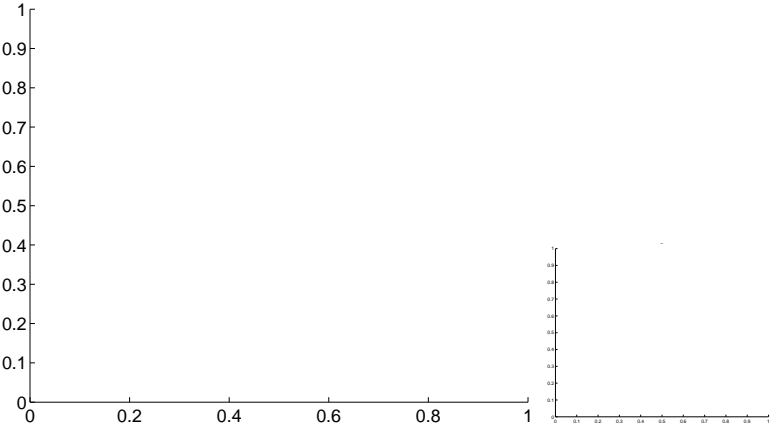
Q1 no OOT image



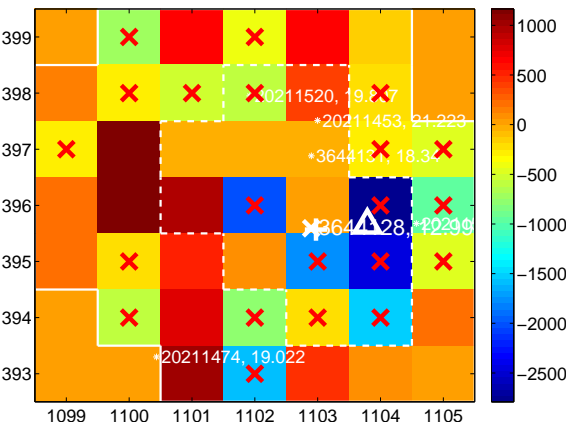
Q2 no difference image



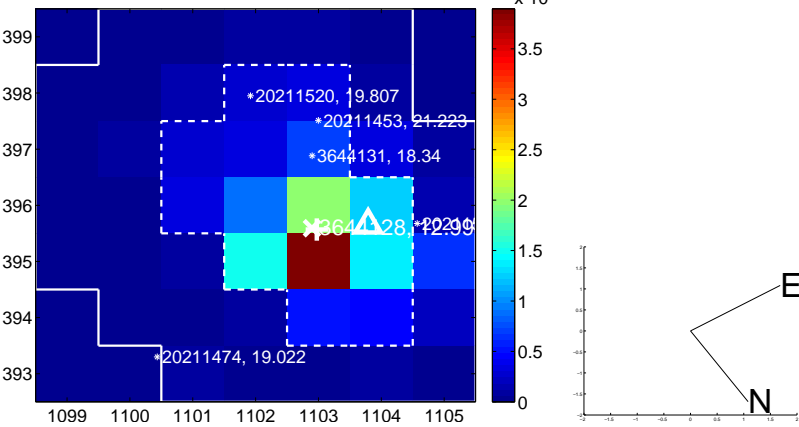
Q2 no OOT image



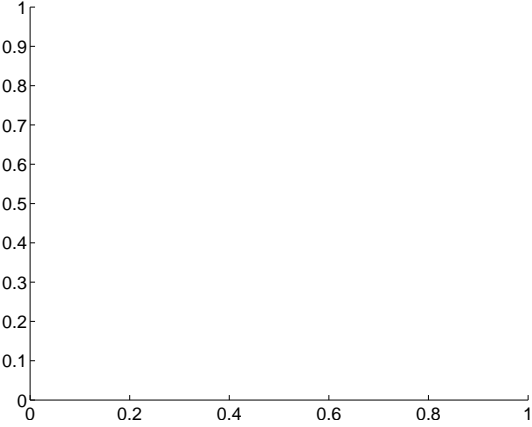
Q3 difference image. Poor Quality



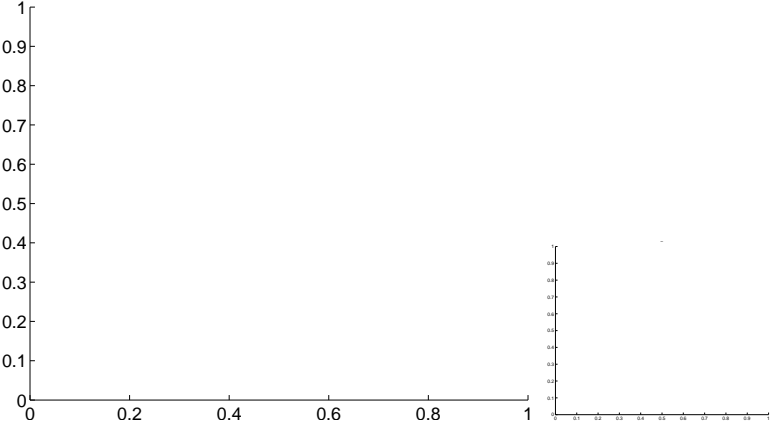
Q3 OOT image



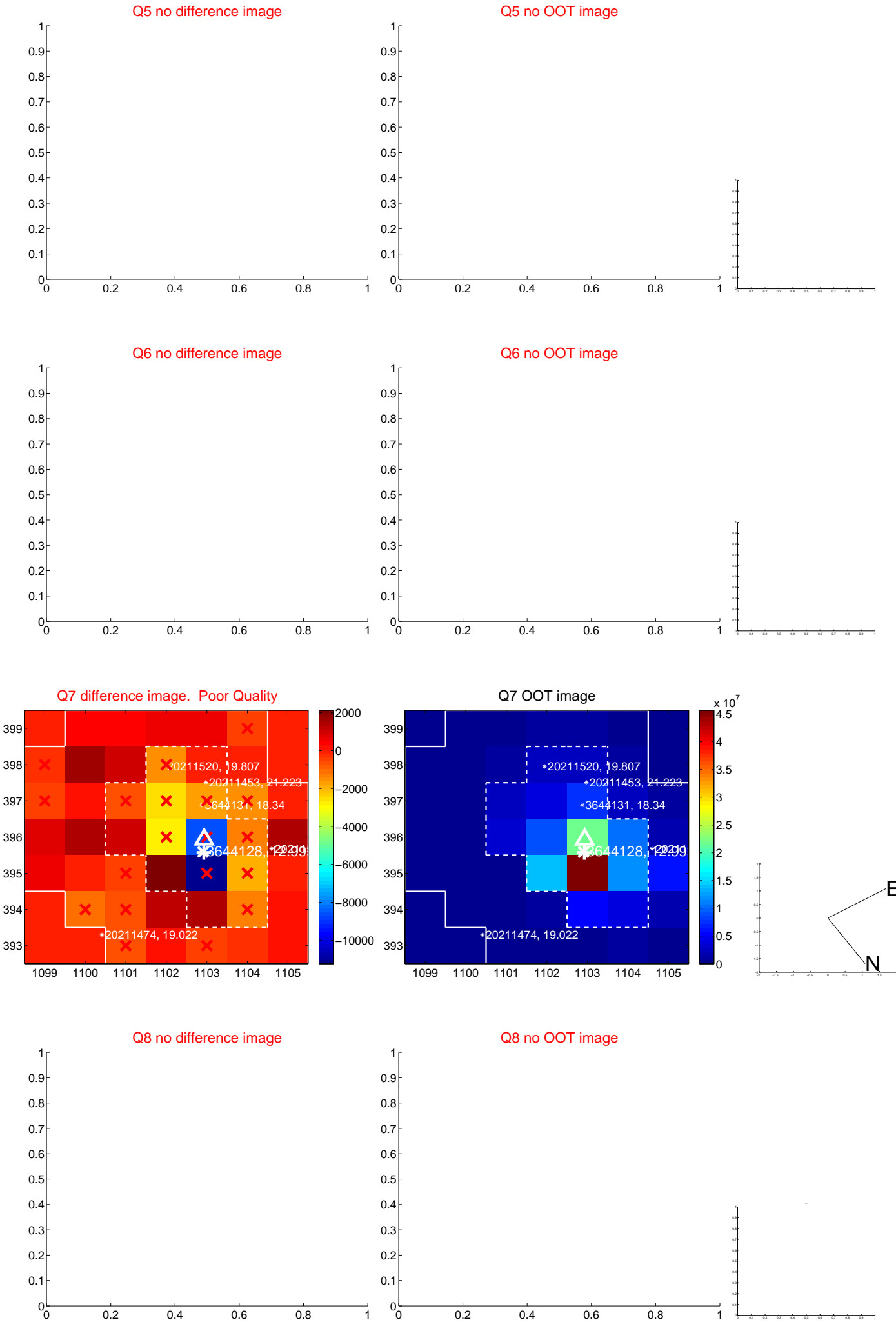
Q4 no difference image



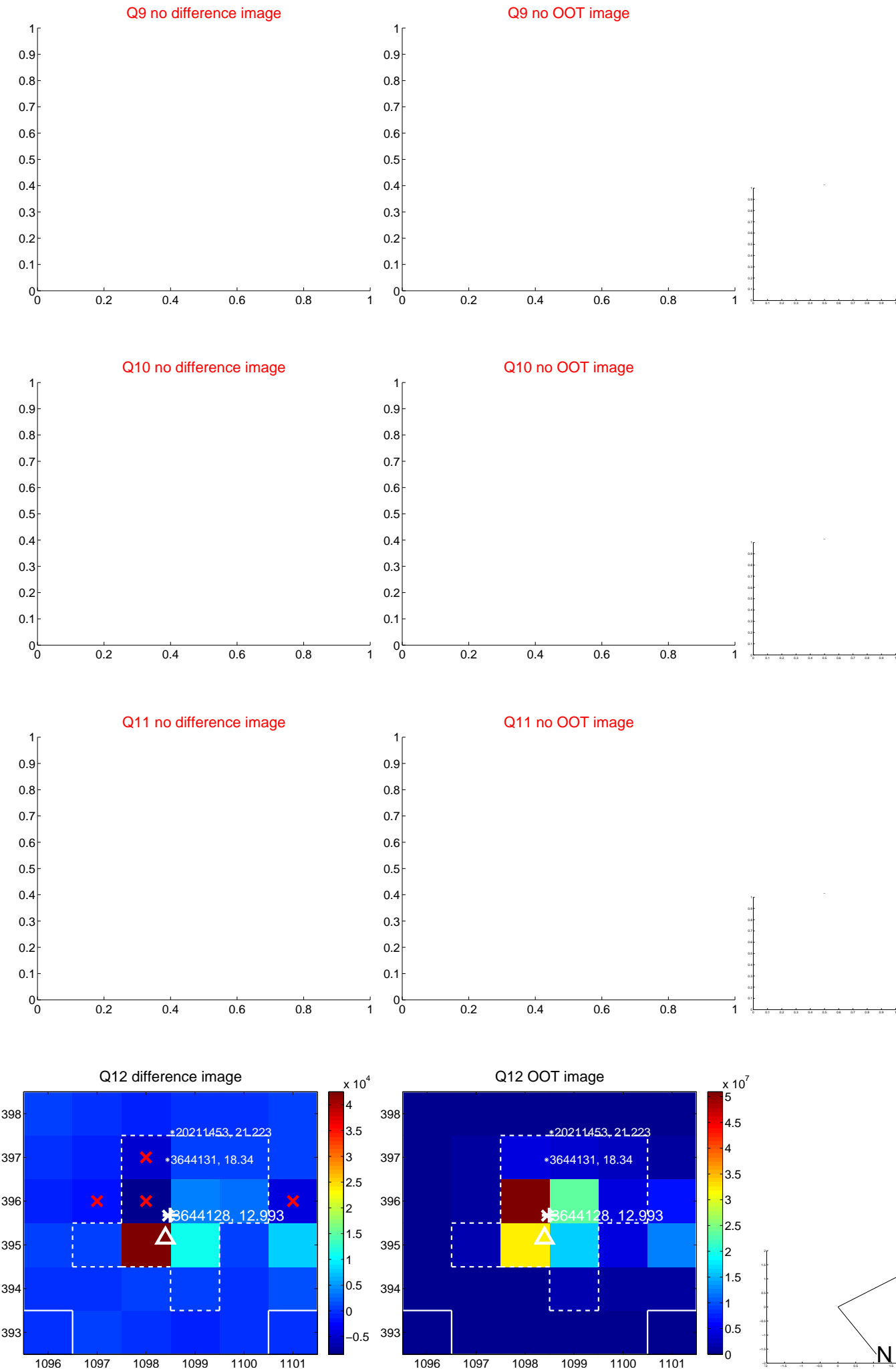
Q4 no OOT image



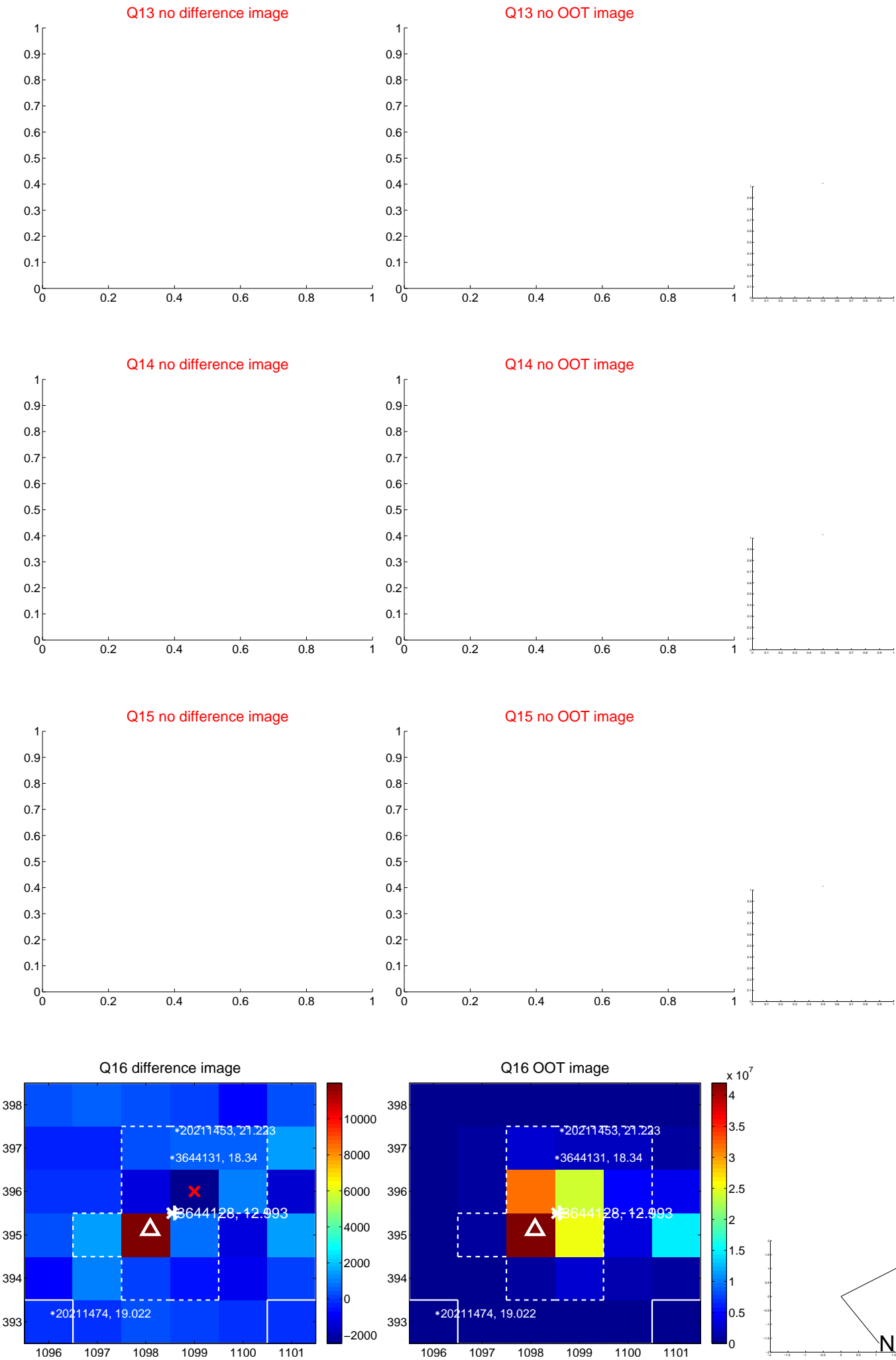
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



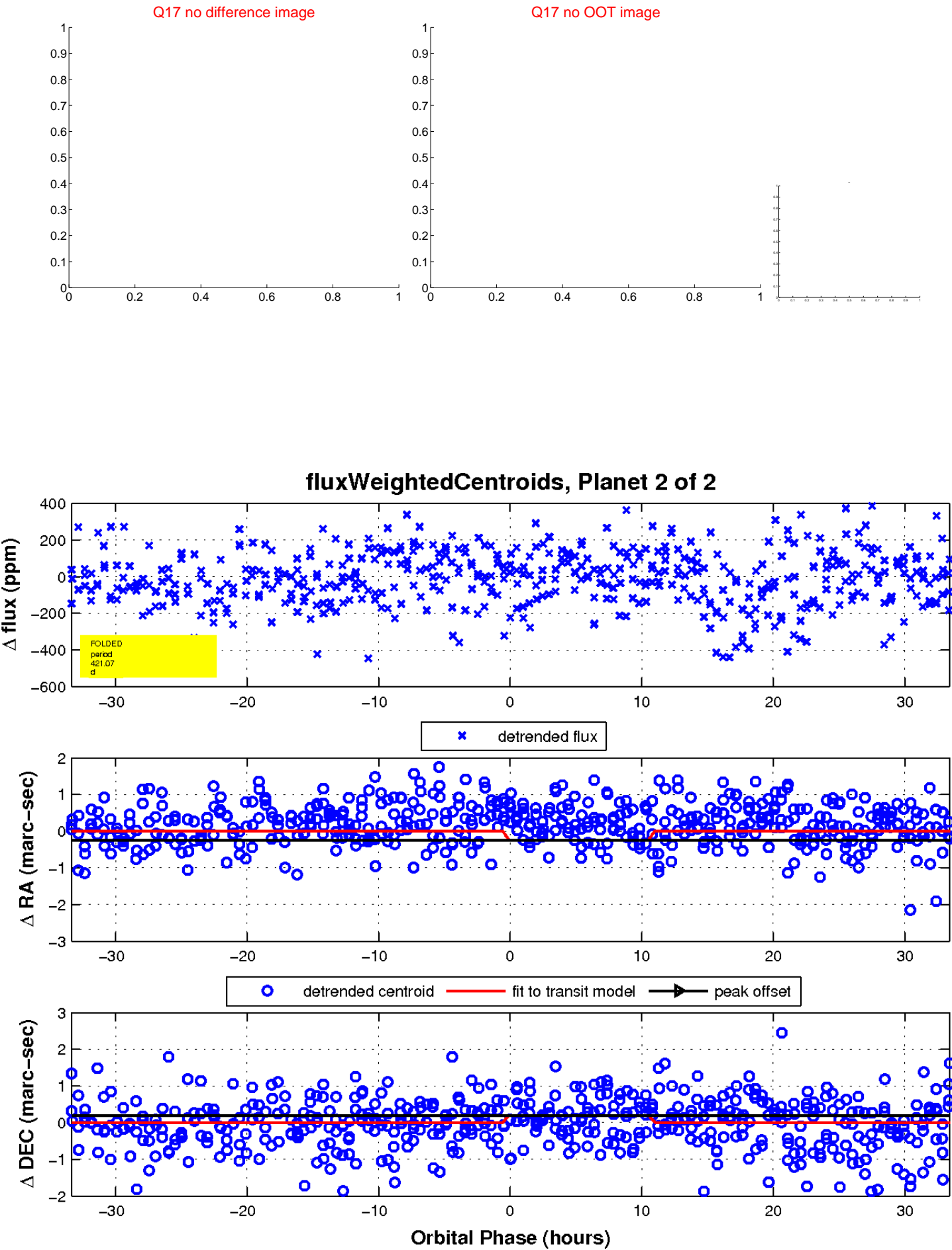
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

