

KIC 006128841

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})
006128841-01	OBS	No	376.862958	250.563726	1434.3	10.500	48.7	-1.0	1.37	5892	5.17	2.01
006128841-03	OBS	No	382.516243	234.588087	399.4	12.000	9.4	-1.0	1.37	5892	2.73	1.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006128841-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
006128841-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

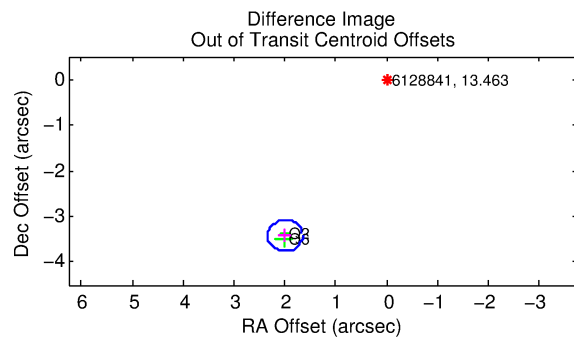
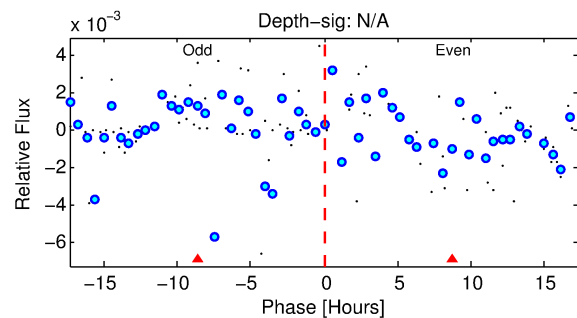
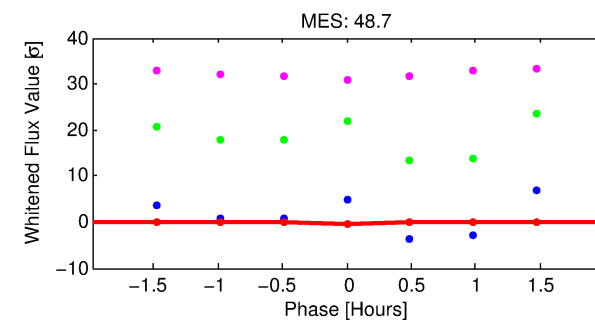
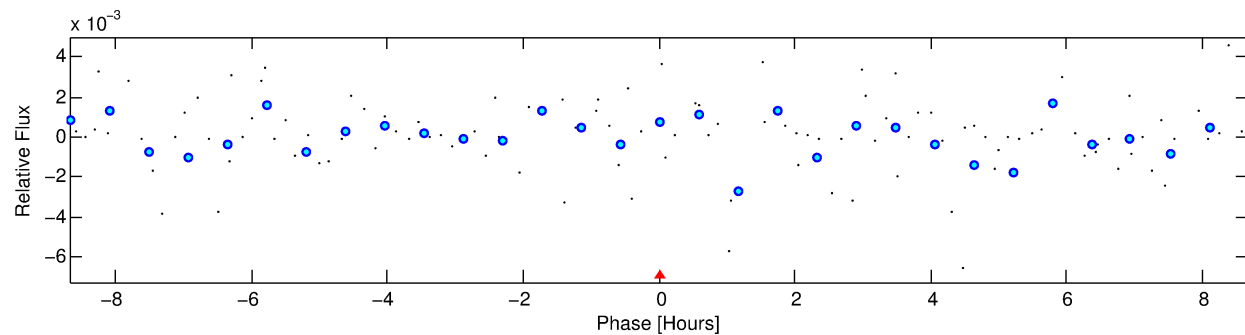
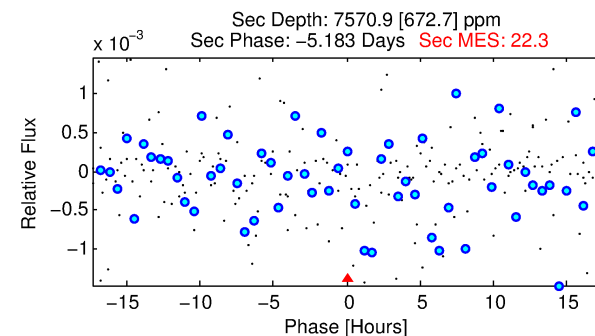
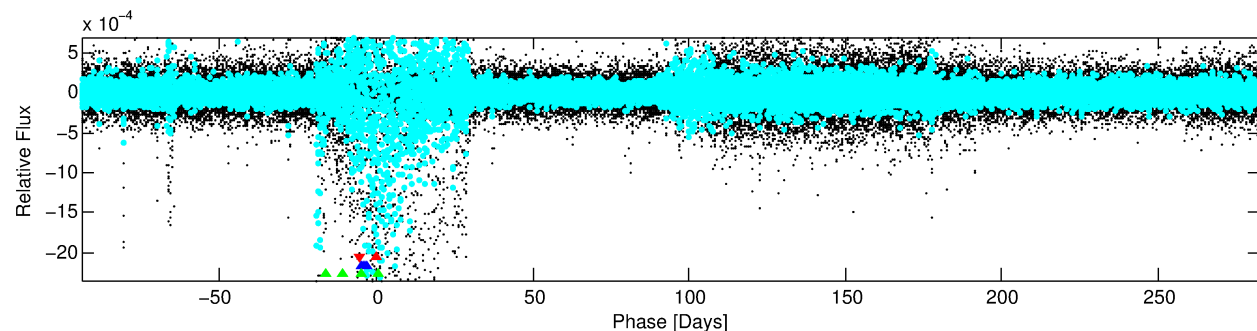
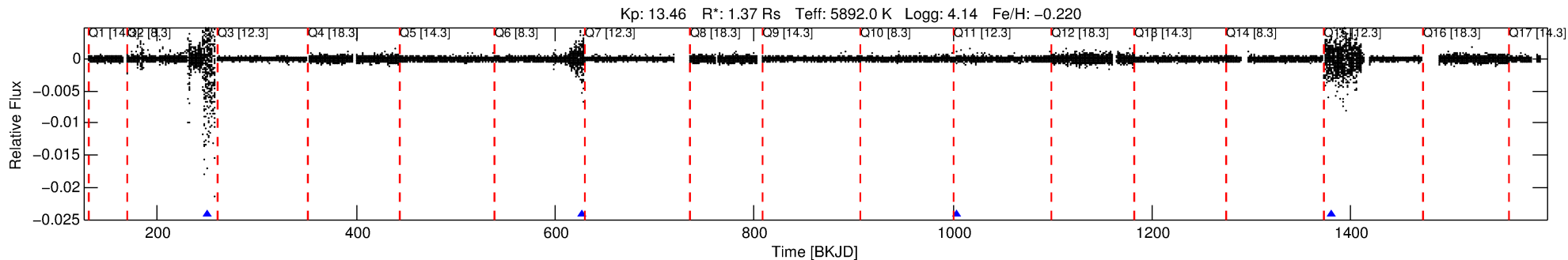
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006128841-01

No Significant Match Found

DV One-Page Summary

KIC: 6128841 Candidate: 1 of 3 Period: 376.863 d



TPS TCE Results:

Period = 376.86296 d
Epoch = 250.5637 BKJD

DV fit results are unavailable

DV Diagnostic Results:

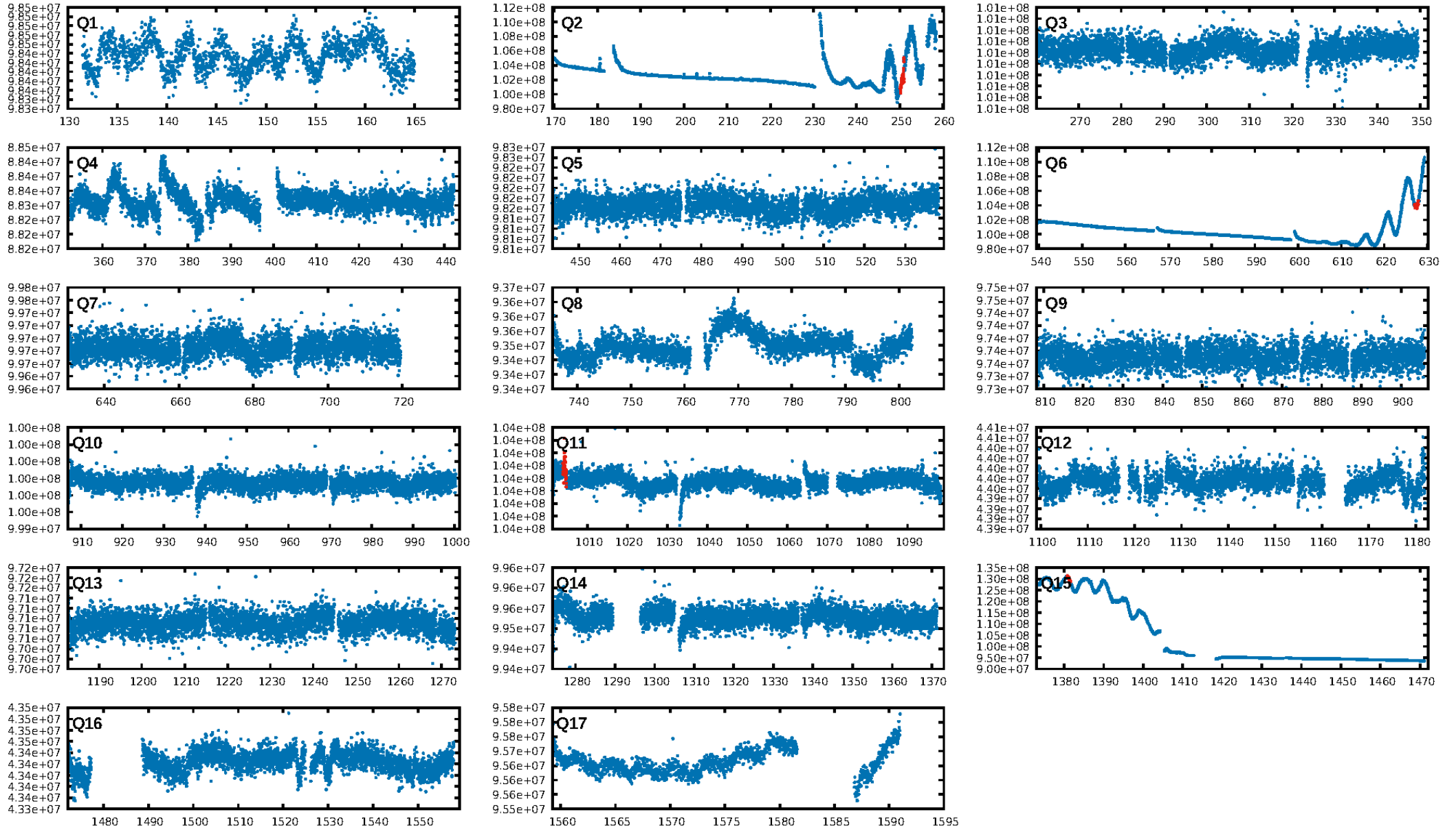
ShortPeriod-sig: 62.8% [0.89σ]
LongPeriod-sig: 100.0% [8.51σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.11e-21
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 6.461

Centroid-sig: N/A
Centroid-so: 4.919 arcsec [12.01σ]
OotOffset-rm: 3.957 arcsec [34.60σ]
KicOffset-rm: 2.782 arcsec [24.34σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

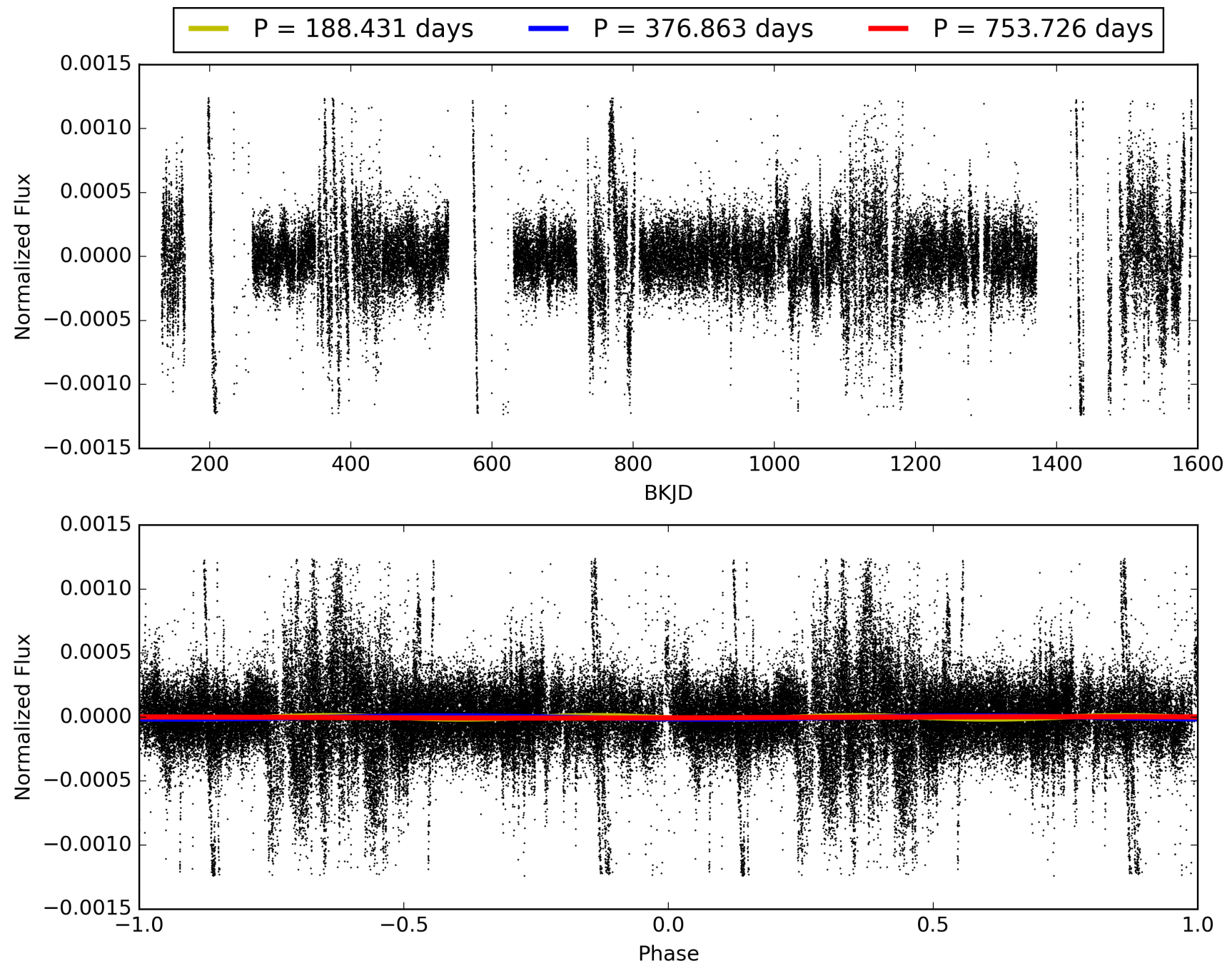
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:53:59 Z

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

TCE 006128841-01, PDC Light Curves

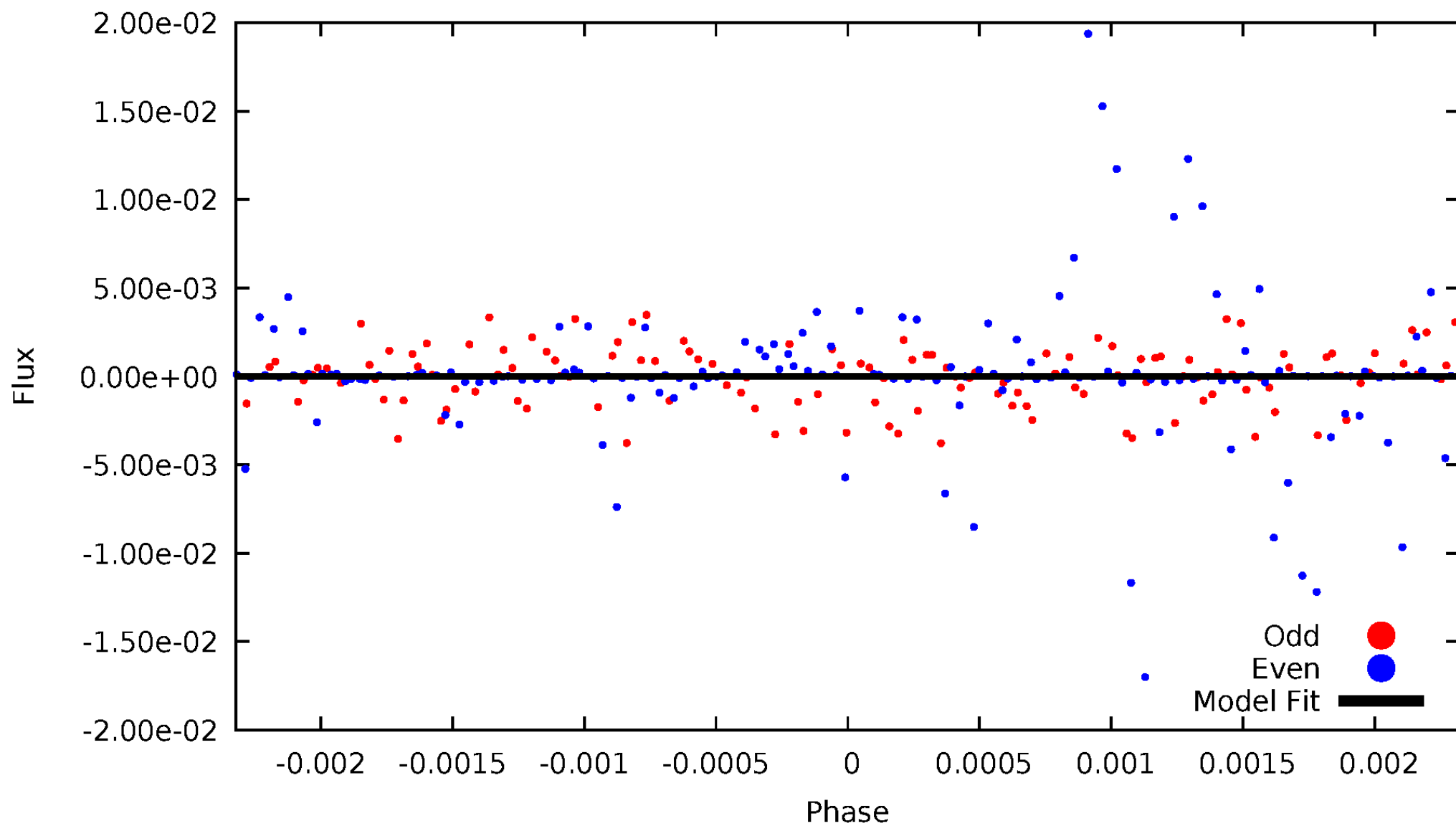


TCE 006128841-01



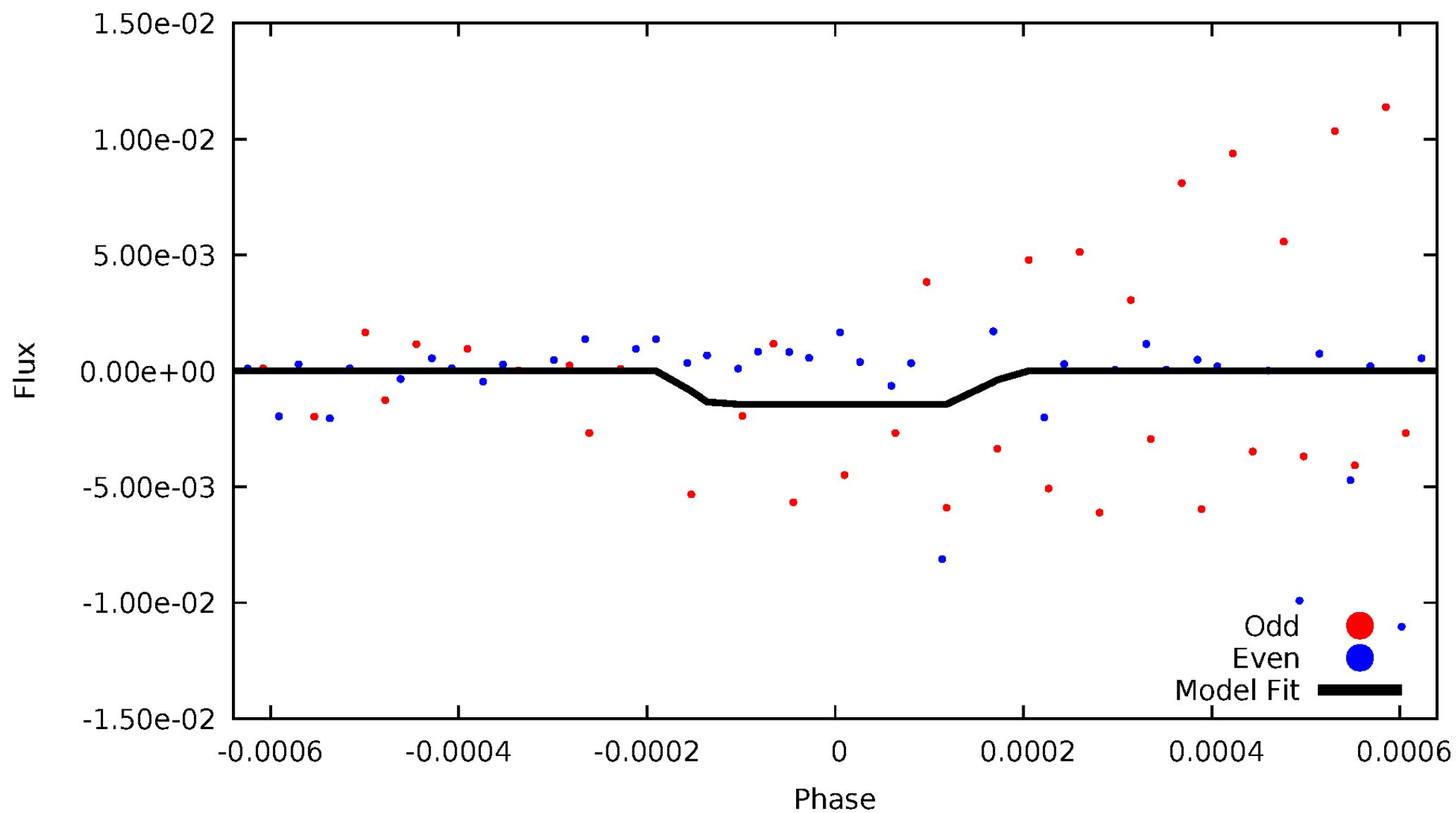
DV Odd/Even

TCE 006128841-01



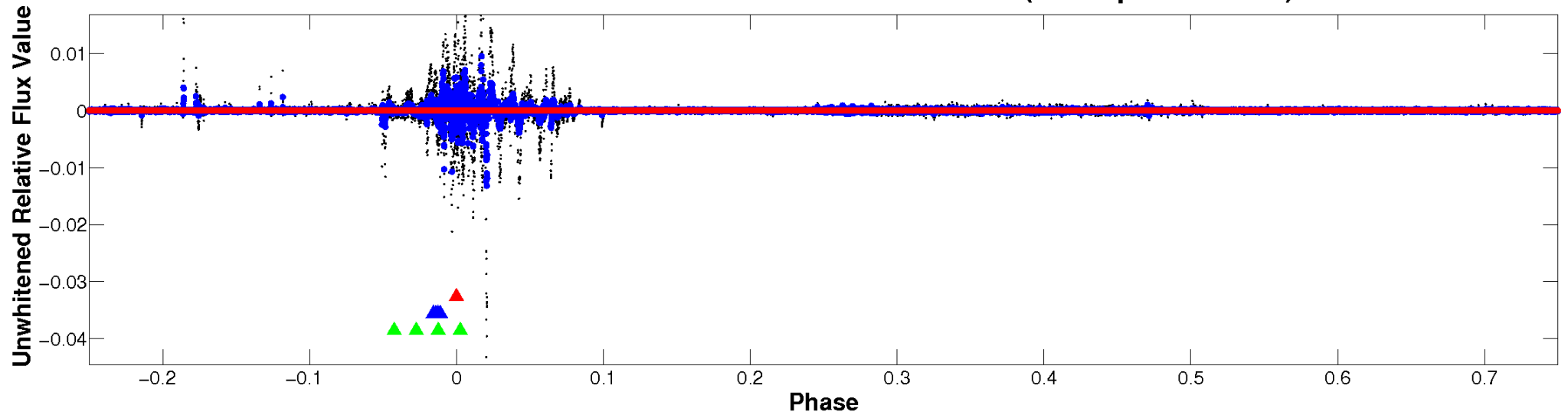
ALT Odd/Even

TCE 006128841-01



Non-Whitened Vs. Whitened Light Curve

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

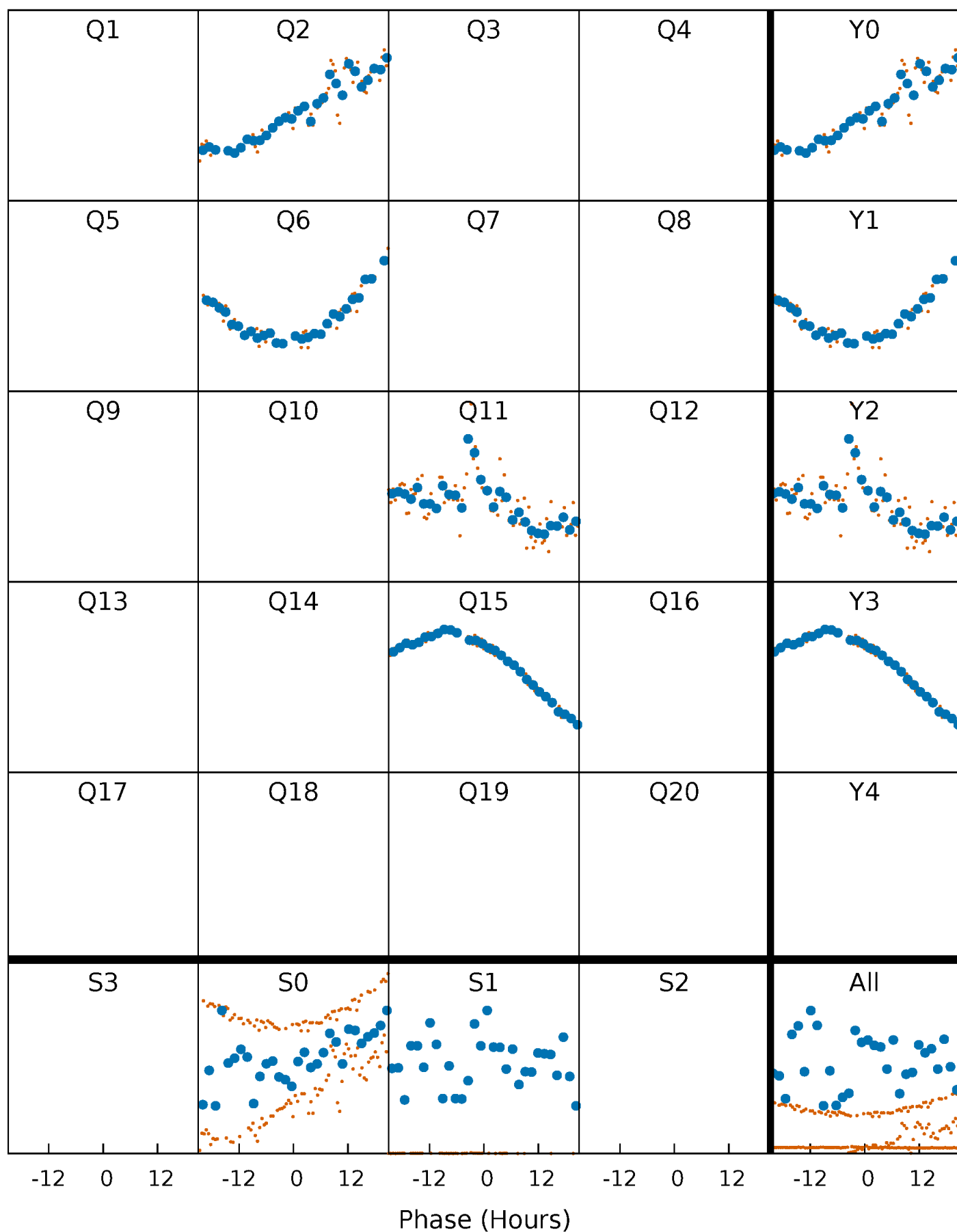


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



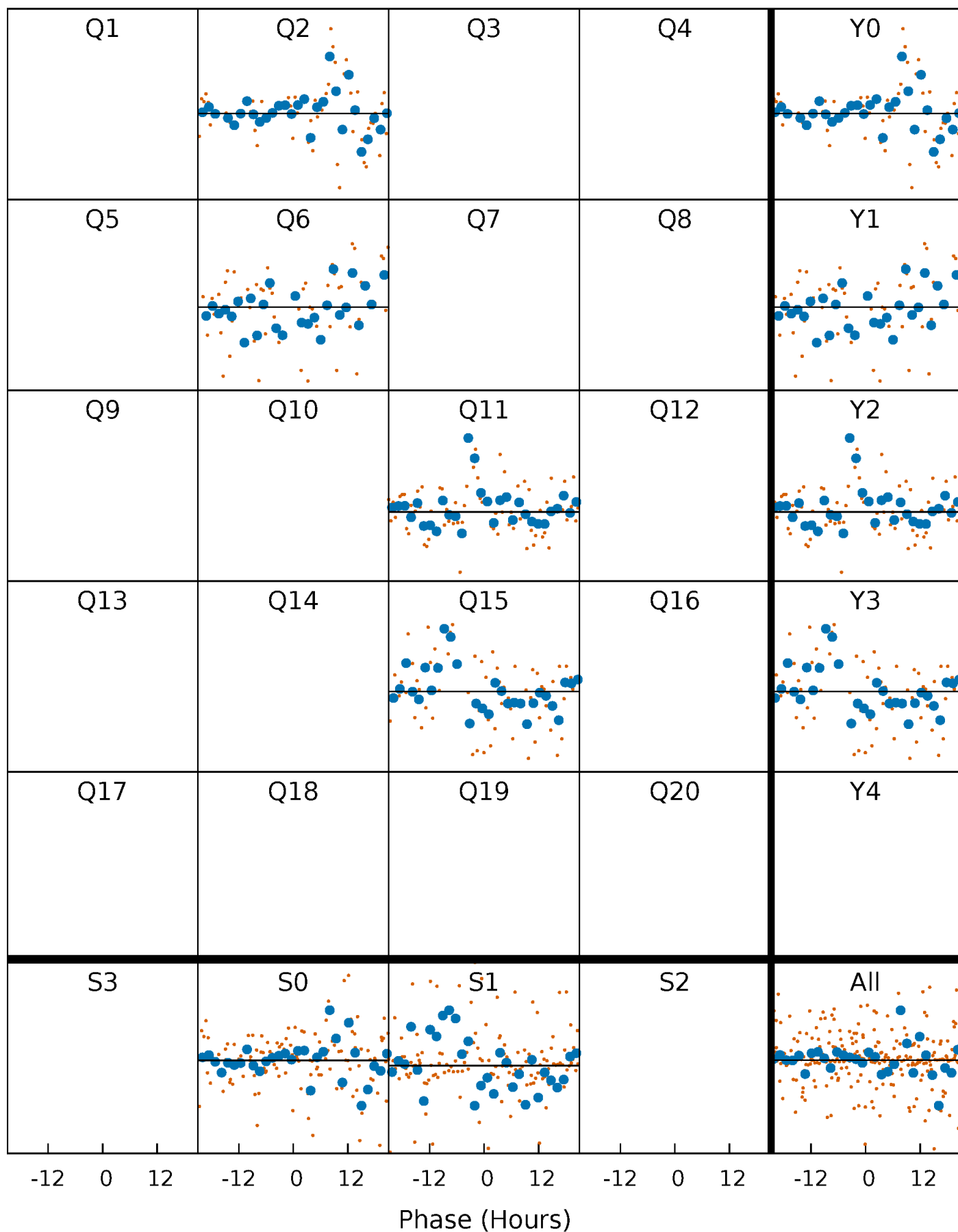
PDC Quarter-Phased Transit Curves

TCE 006128841-01 P=376.862958 Days $T_0=250.563726$ (BKJD)



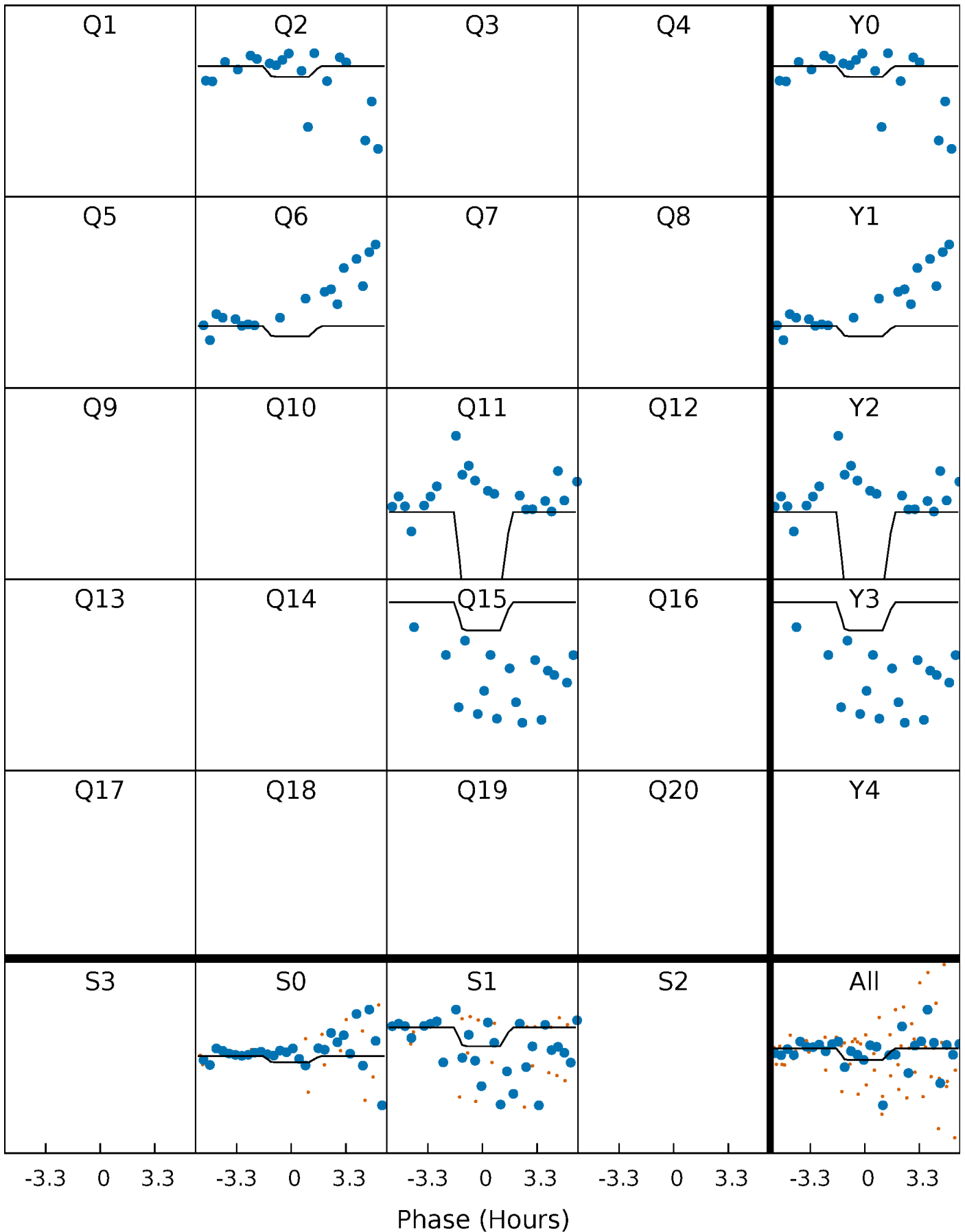
DV Quarter-Phased Transit Curves

TCE 006128841-01 P=376.862958 Days $T_0=250.563726$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

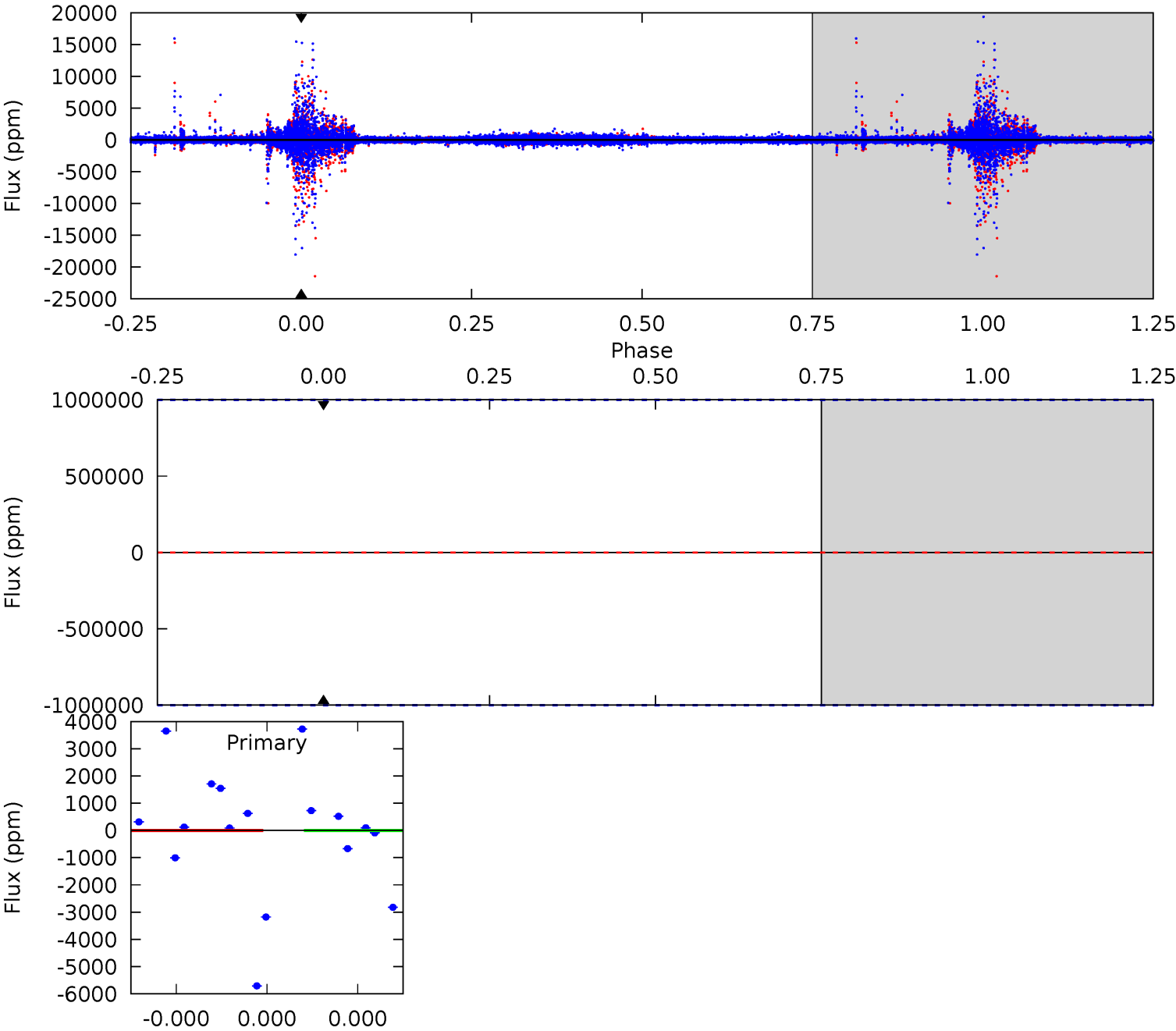
TCE 006128841-01 P=376.862958 Days $T_0=250.517348$ (BKJD)



DV Model-Shift Uniqueness Test

006128841-01, P = 376.862958 Days, E = 250.563726 Days

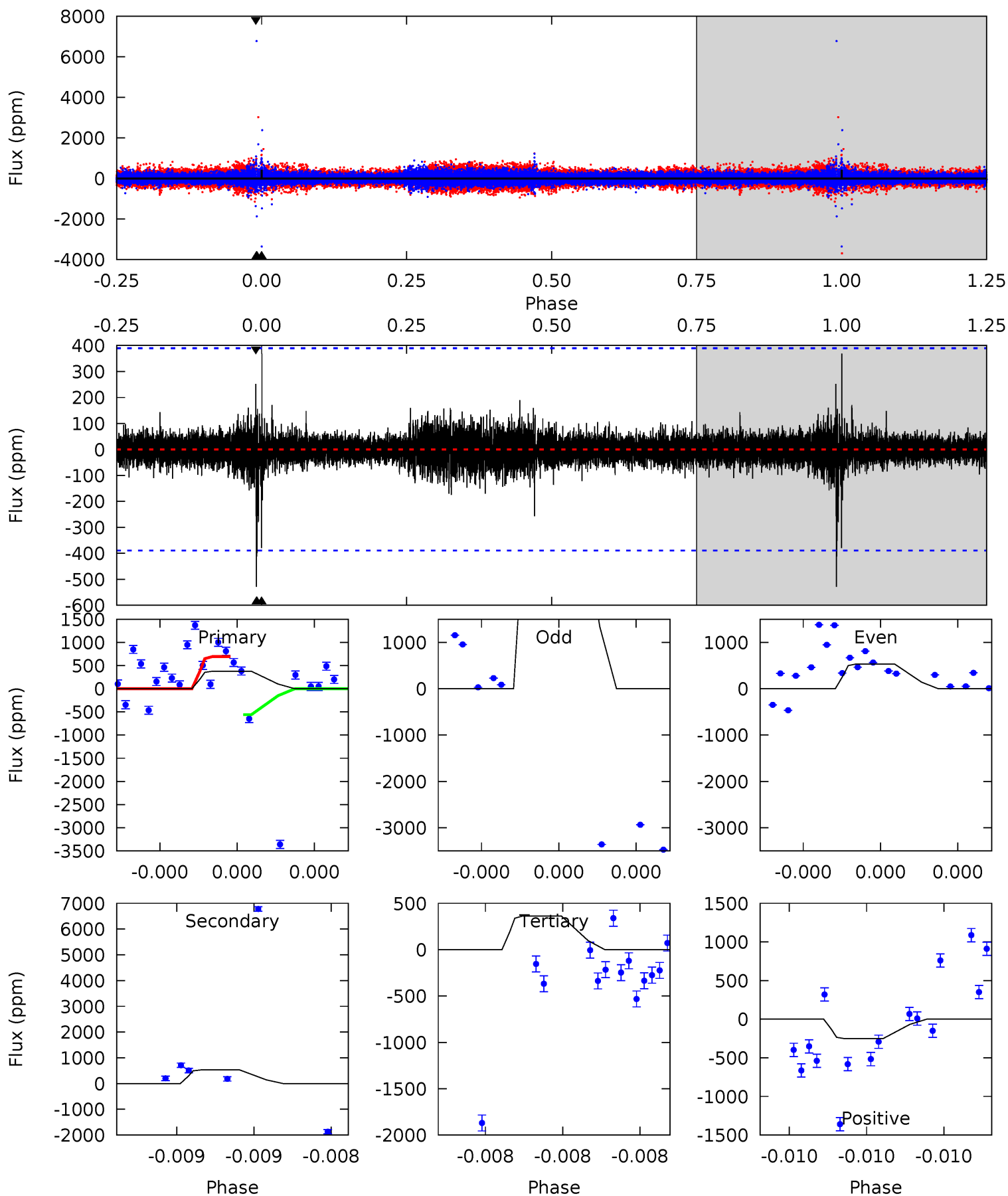
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006128841-01, P = 376.862958 Days, E = 250.517348 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.50	7.68	5.27	3.65	5.65	3.59	0.52	0.23	1.85	2.40	4.02	4.33	2.80	0.41	0.81



Stellar Parameters For KIC 006128841

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5892^{+195}_{-195}	$4.142^{+0.312}_{-0.168}$	$-0.220^{+0.300}_{-0.300}$	$1.370^{+0.369}_{-0.451}$	$0.950^{+0.142}_{-0.103}$	$0.520^{+1.070}_{-0.234}$
	+3%/-3%	+8%/-4%	+136%/-136%	+27%/-33%	+15%/-11%	+206%/-45%
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 006128841-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$12.37^{+12.32}_{-8.74}$	422^{+33}_{-39}	3986^{+16352}_{-20065}	$4431^{+836814}_{-469699}$
Alt.	-529 ± 69	$12.21^{+12.68}_{-8.54}$	419^{+35}_{-39}	3546^{+2065}_{-637}	2009^{+20364}_{-1515}

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

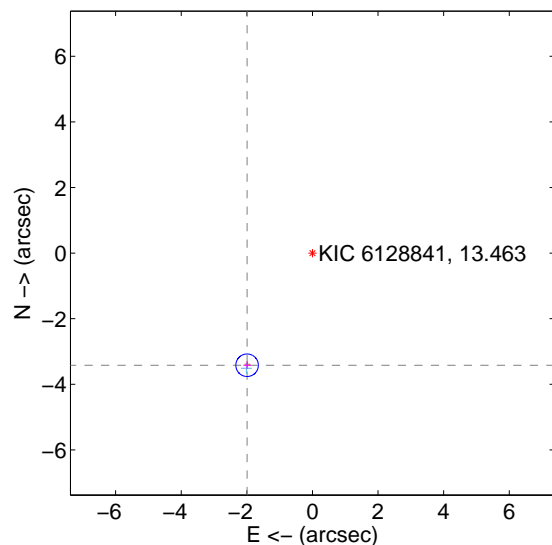
Supplemental centroid analysis for 006128841-01. Kepler magnitude: 13.46. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

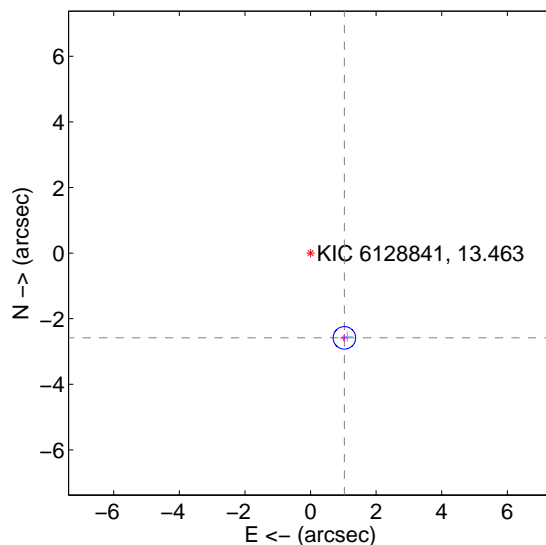
The OOT PRF centroid is offset from the target star catalog position by about 3.28 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.957 ± 0.114	34.60	1.992 ± 0.115	-3.419 ± 0.114
PRF-fit source offset from KIC position	2.782 ± 0.114	24.34	-1.033 ± 0.115	-2.584 ± 0.114
photometric centroid source offset	4.92 ± 0.41	12.01	-4.90 ± 0.41	-0.46 ± 0.67

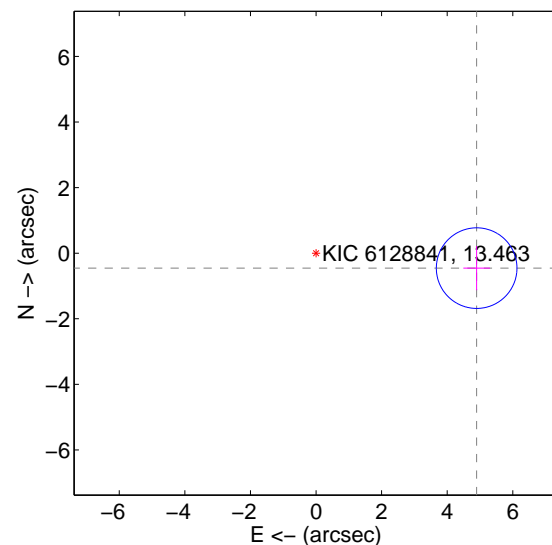
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

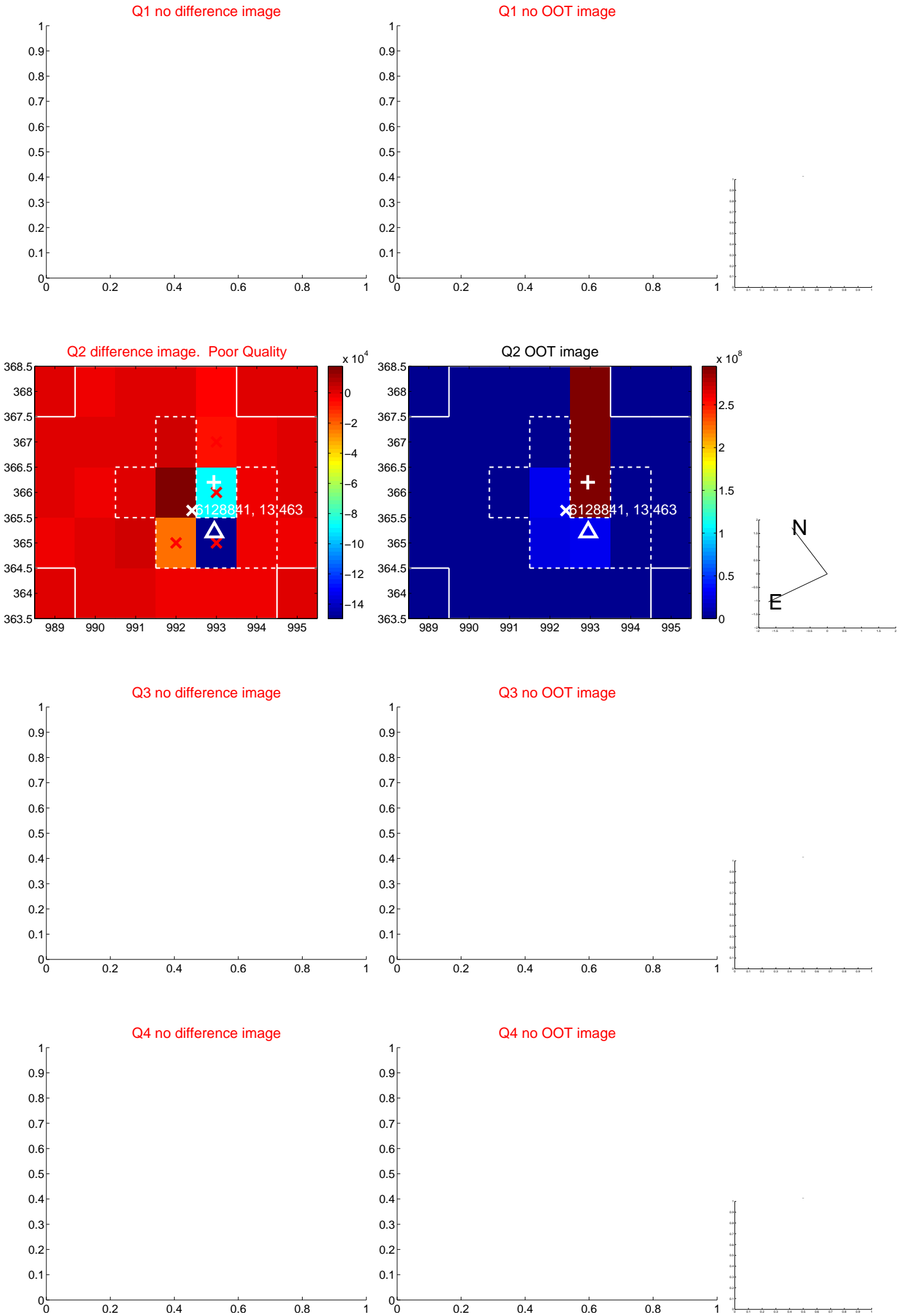


offset from photometric centroids



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.

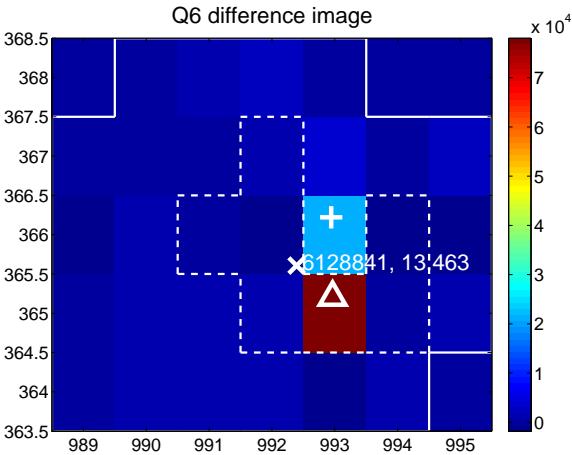
Q5 no difference image



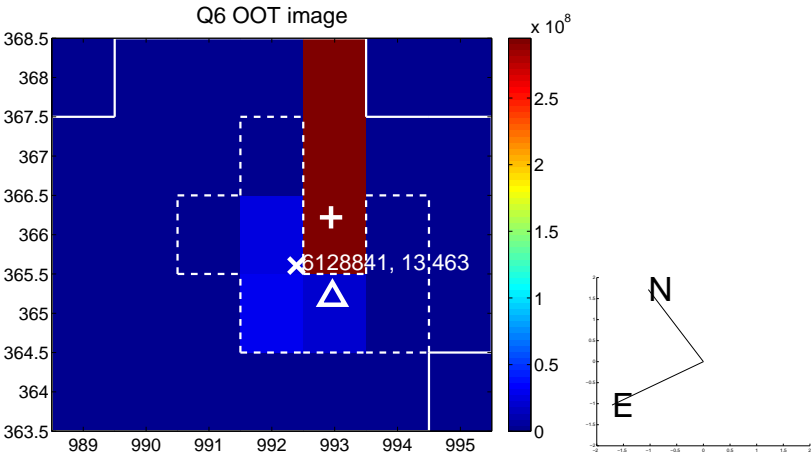
Q5 no OOT image



Q6 difference image



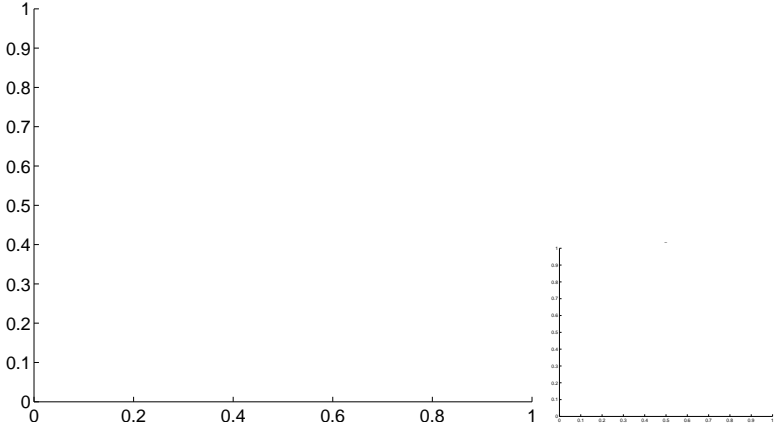
Q6 OOT image



Q7 no difference image



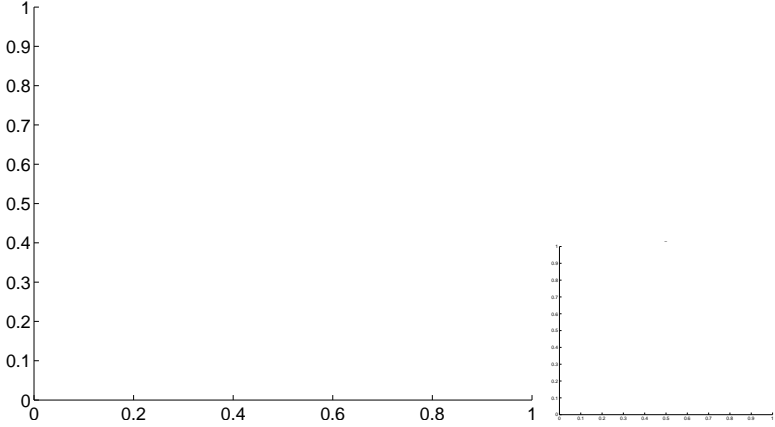
Q7 no OOT image



Q8 no difference image



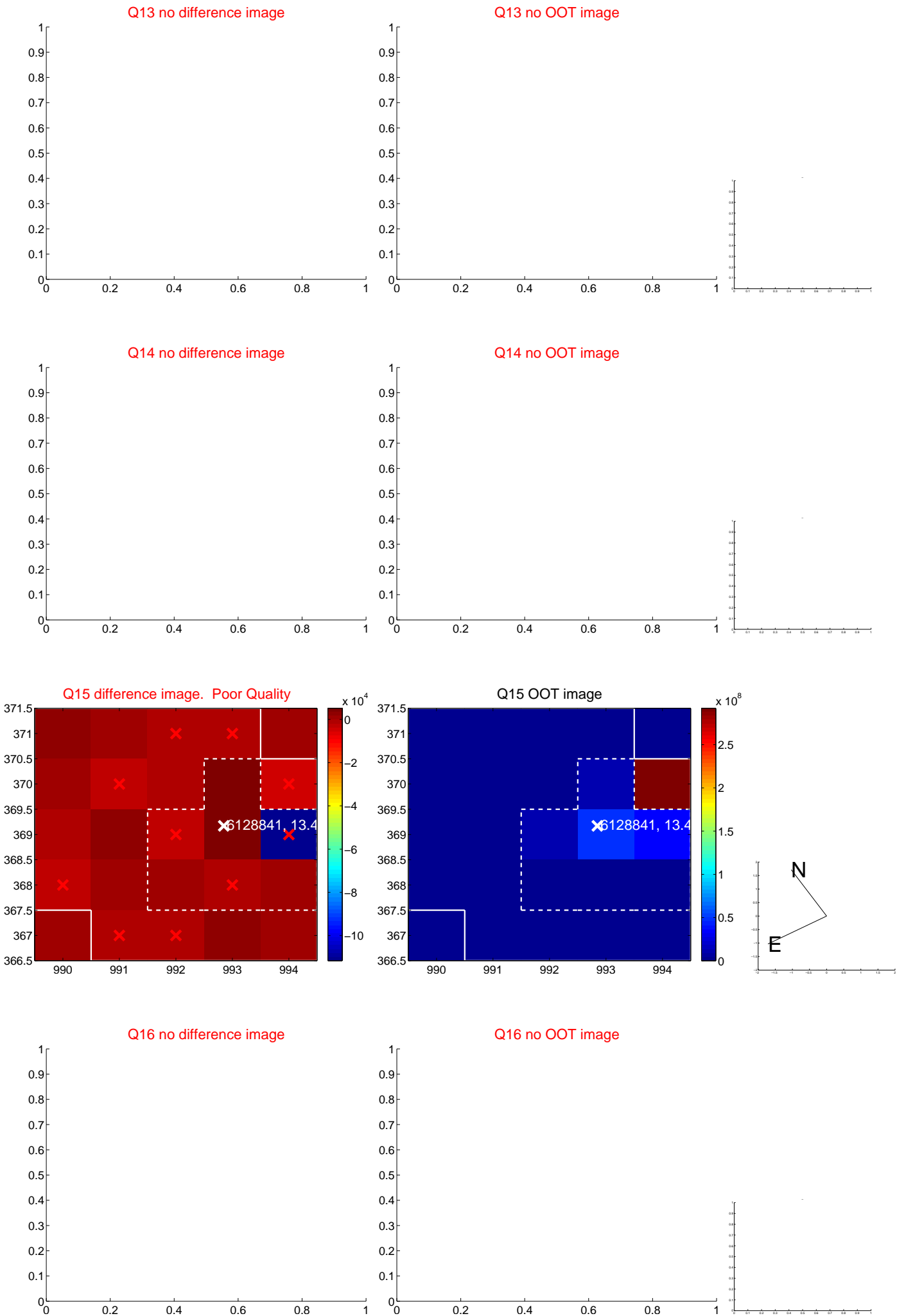
Q8 no OOT image



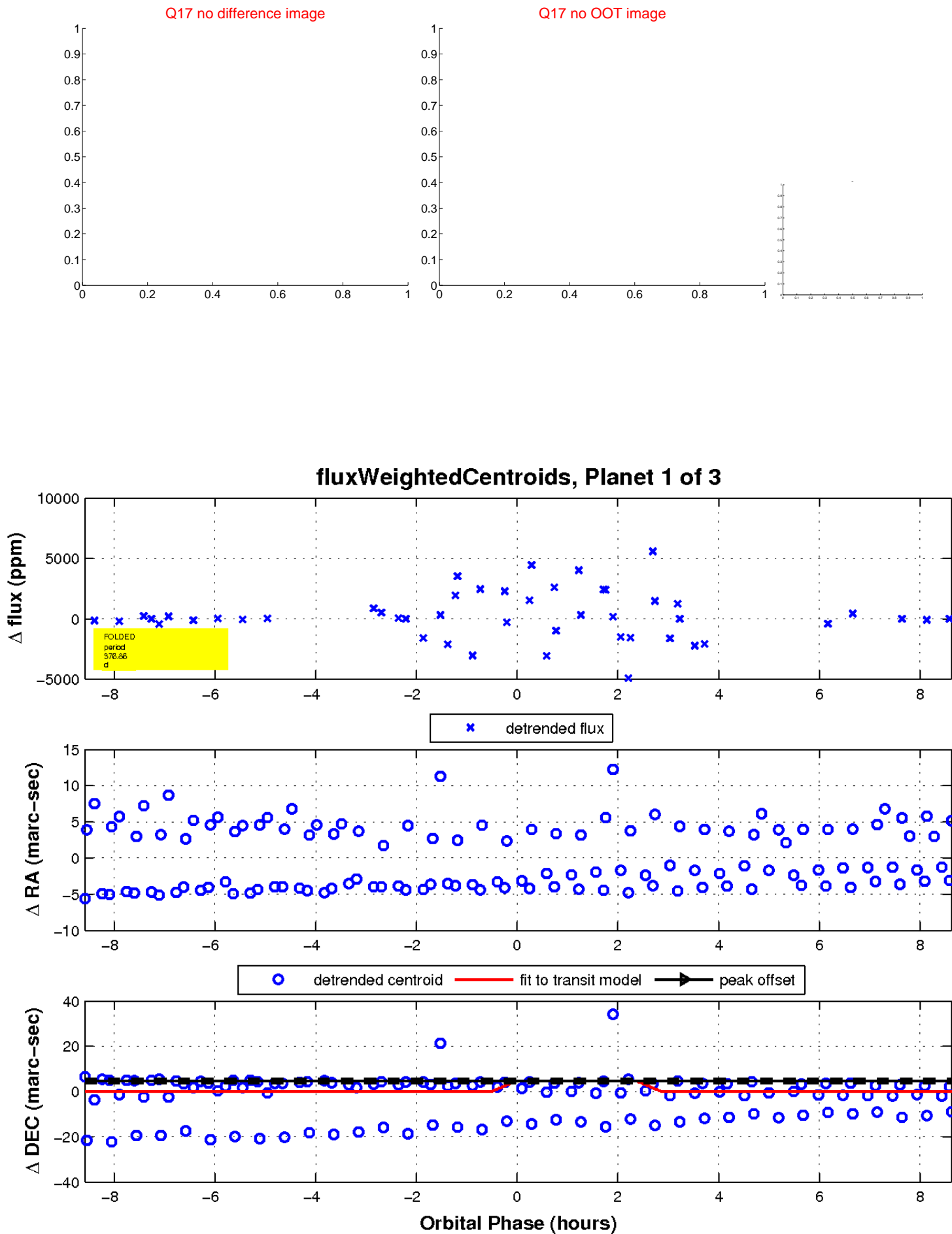
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

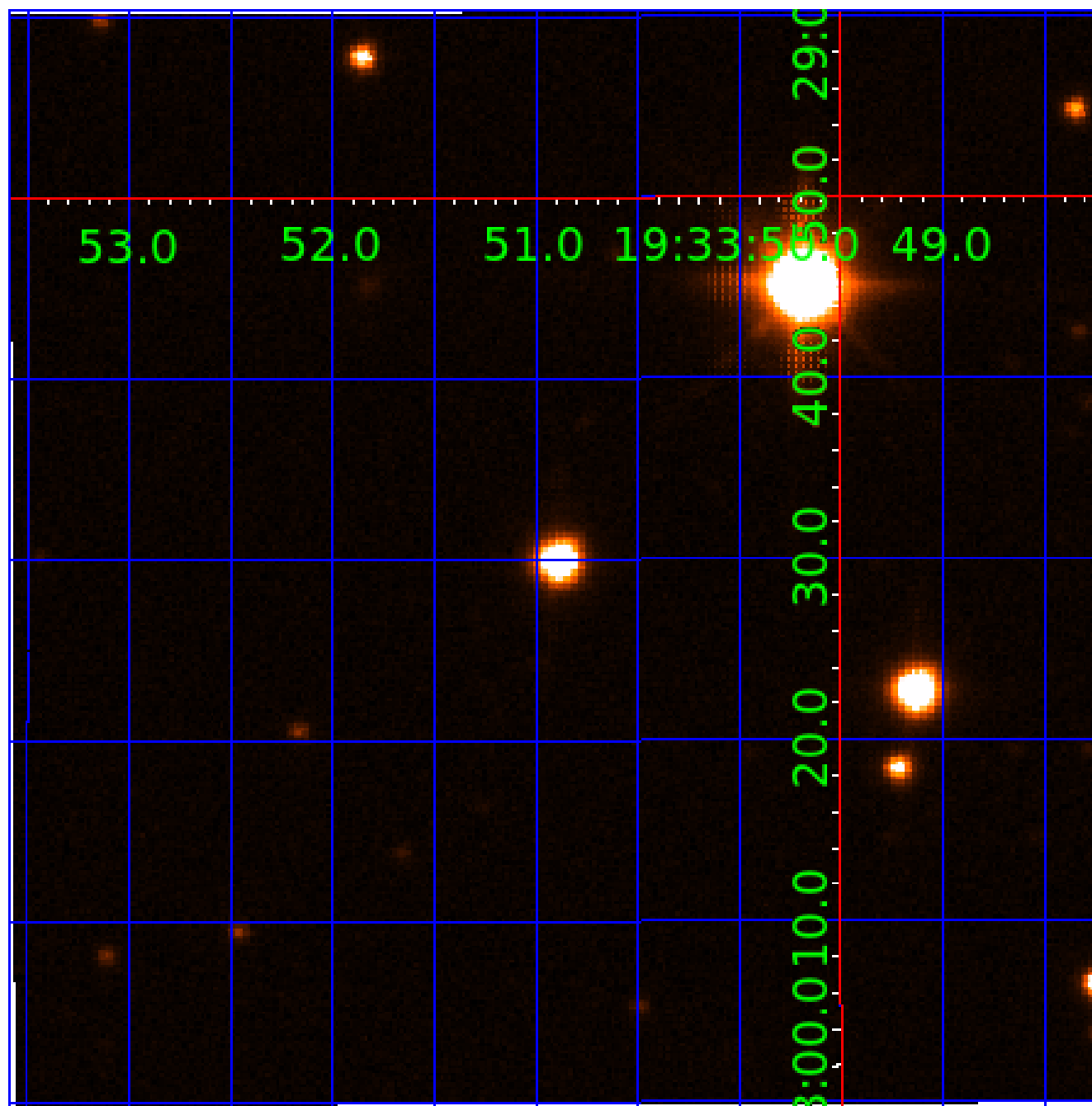


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006128841

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})
006128841-01	OBS	No	376.862958	250.563726	1434.3	10.500	48.7	-1.0	1.37	5892	5.17	2.01
006128841-03	OBS	No	382.516243	234.588087	399.4	12.000	9.4	-1.0	1.37	5892	2.73	1.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006128841-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
006128841-03	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

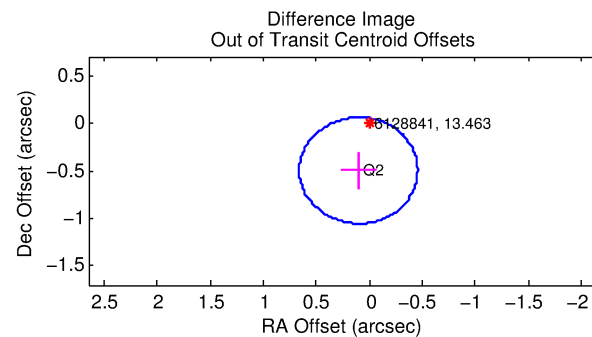
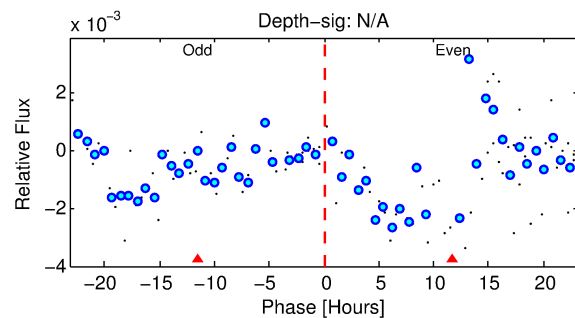
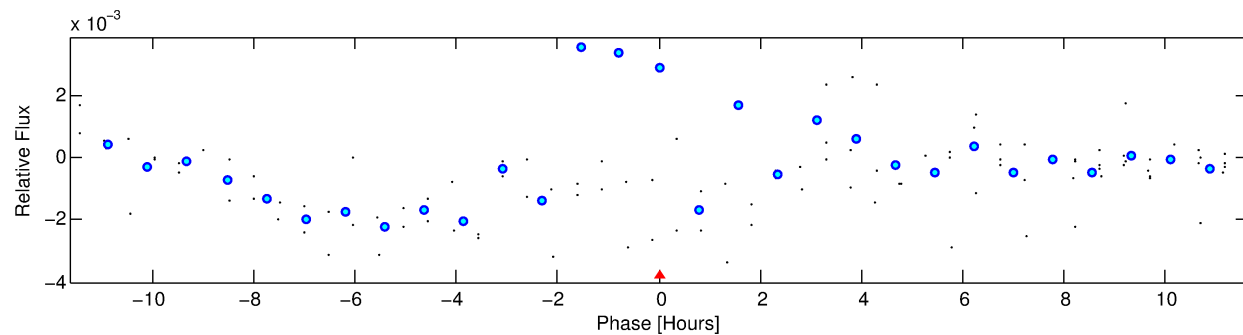
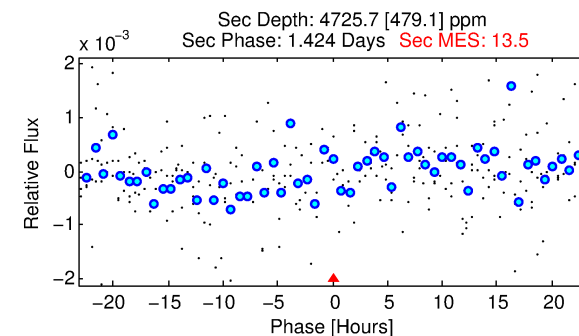
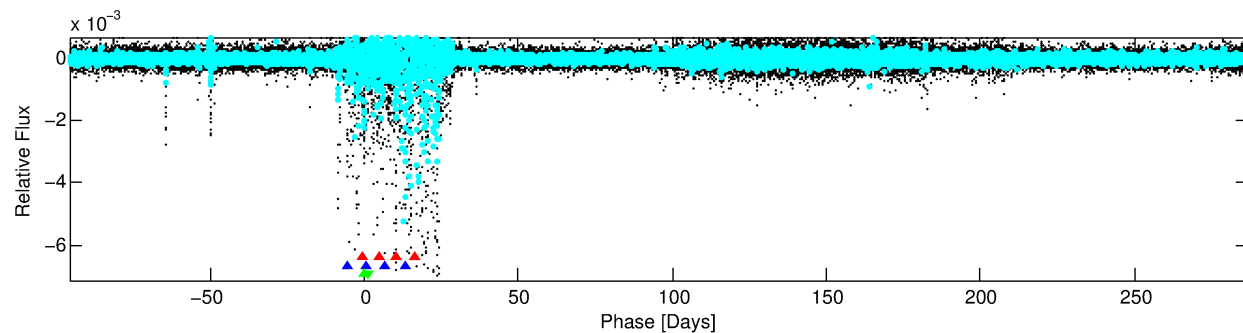
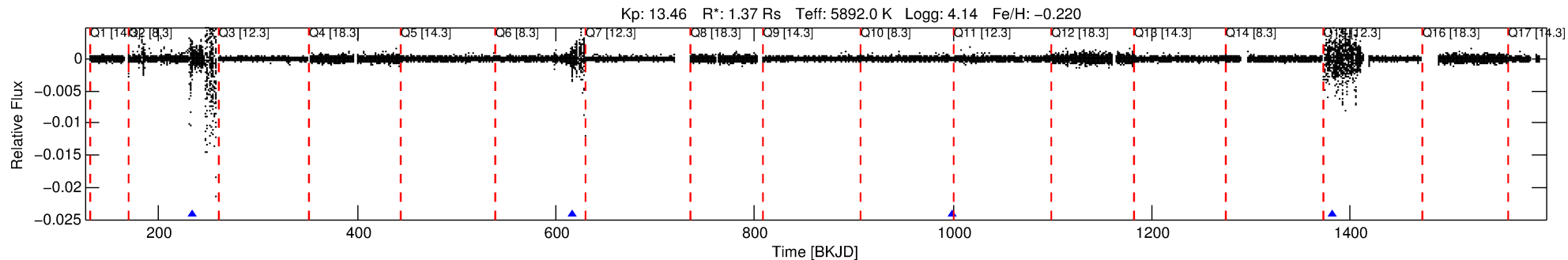
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006128841-03

No Significant Match Found

DV One-Page Summary

KIC: 6128841 Candidate: 3 of 3 Period: 382.516 d



TPS TCE Results:

Period = 382.51624 d
Epoch = 234.5881 BKJD

DV fit results are unavailable

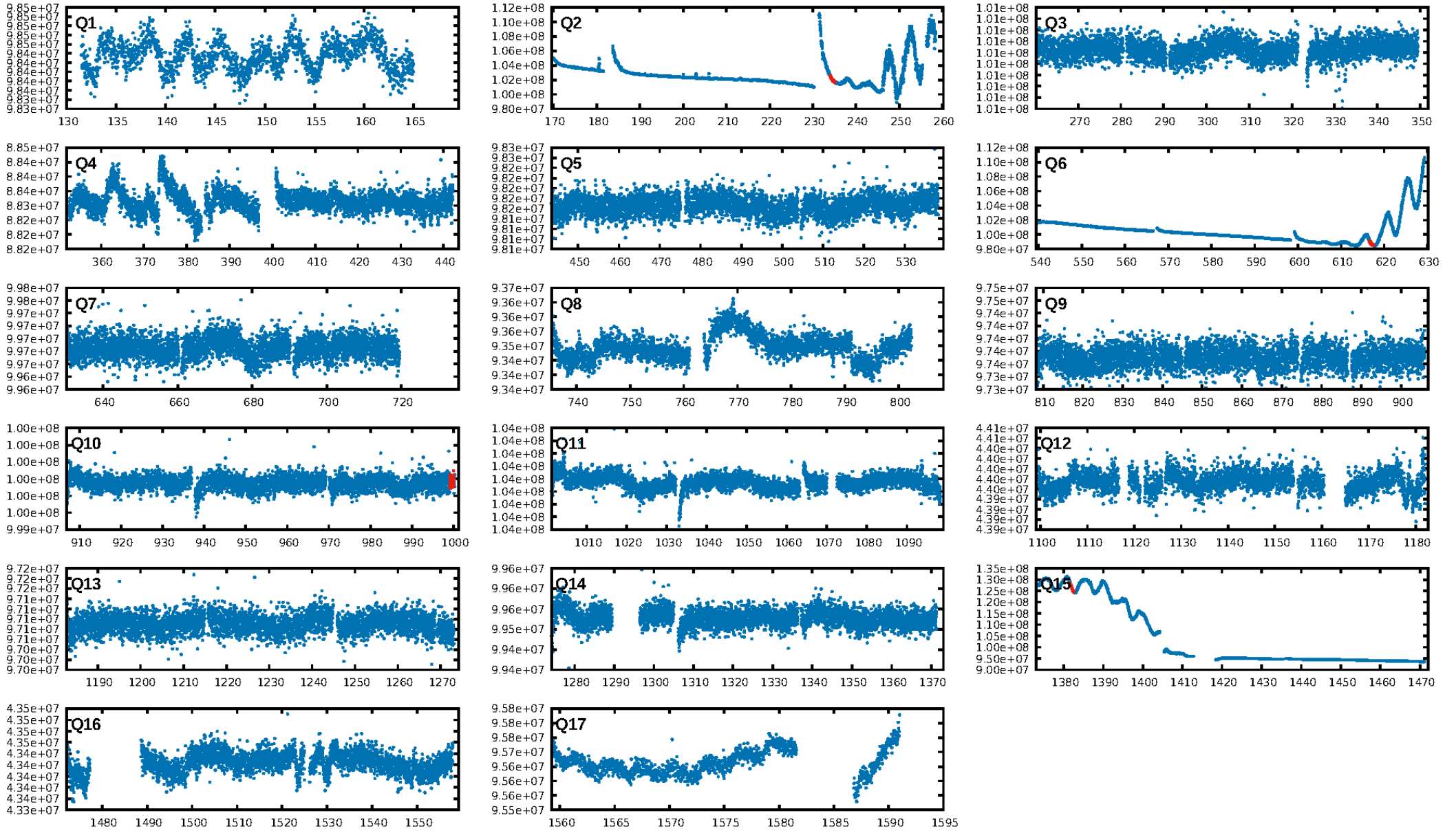
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.51 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.93e-06
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.01175
Centroid-sig: N/A
Centroid-so: 5.082 arcsec [58.51 σ]
OotOffset-rm: 0.507 arcsec [2.73 σ]
KicOffset-rm: 2.873 arcsec [18.02 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.75 [3/4]

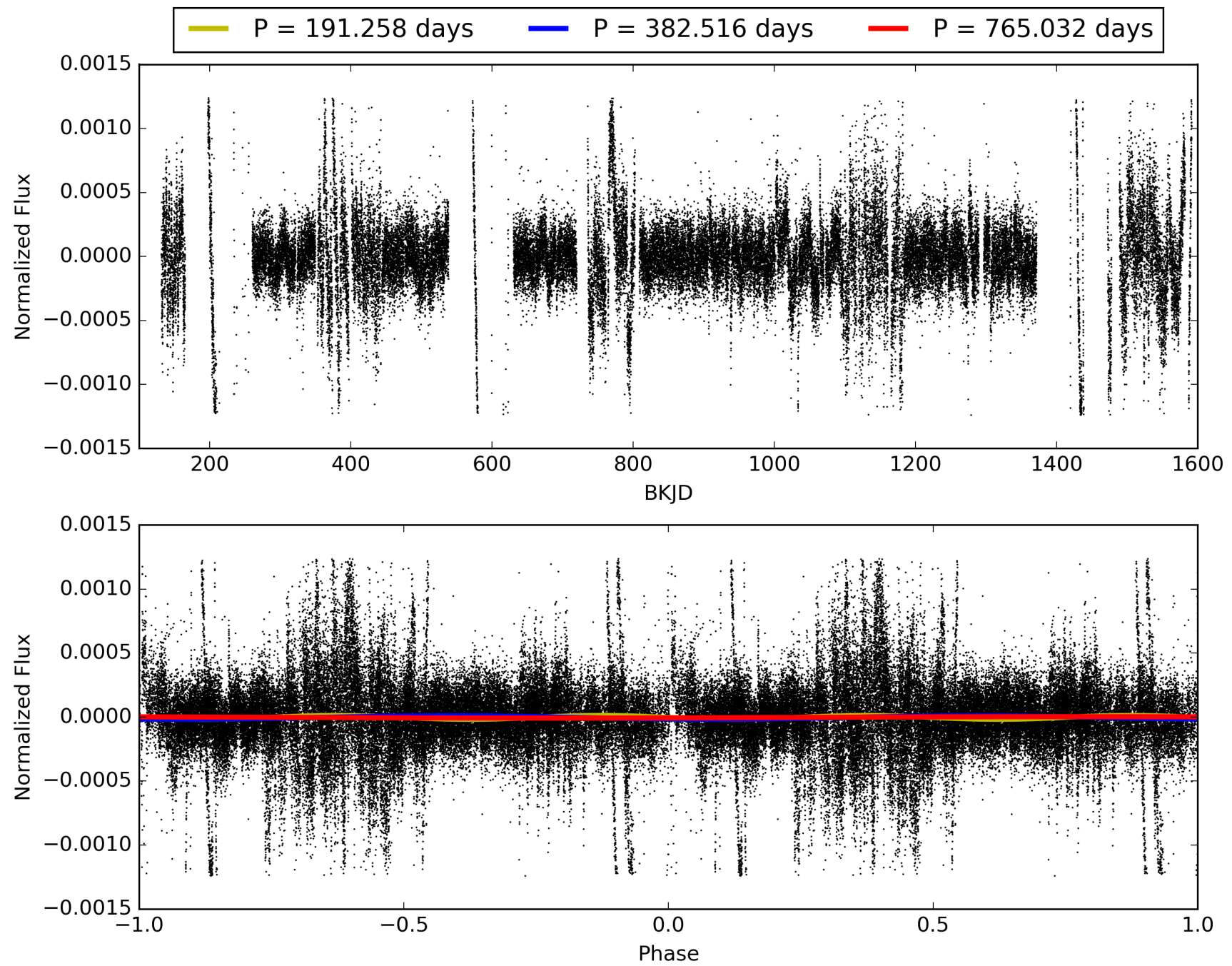
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:54:22 Z

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

TCE 006128841-03, PDC Light Curves

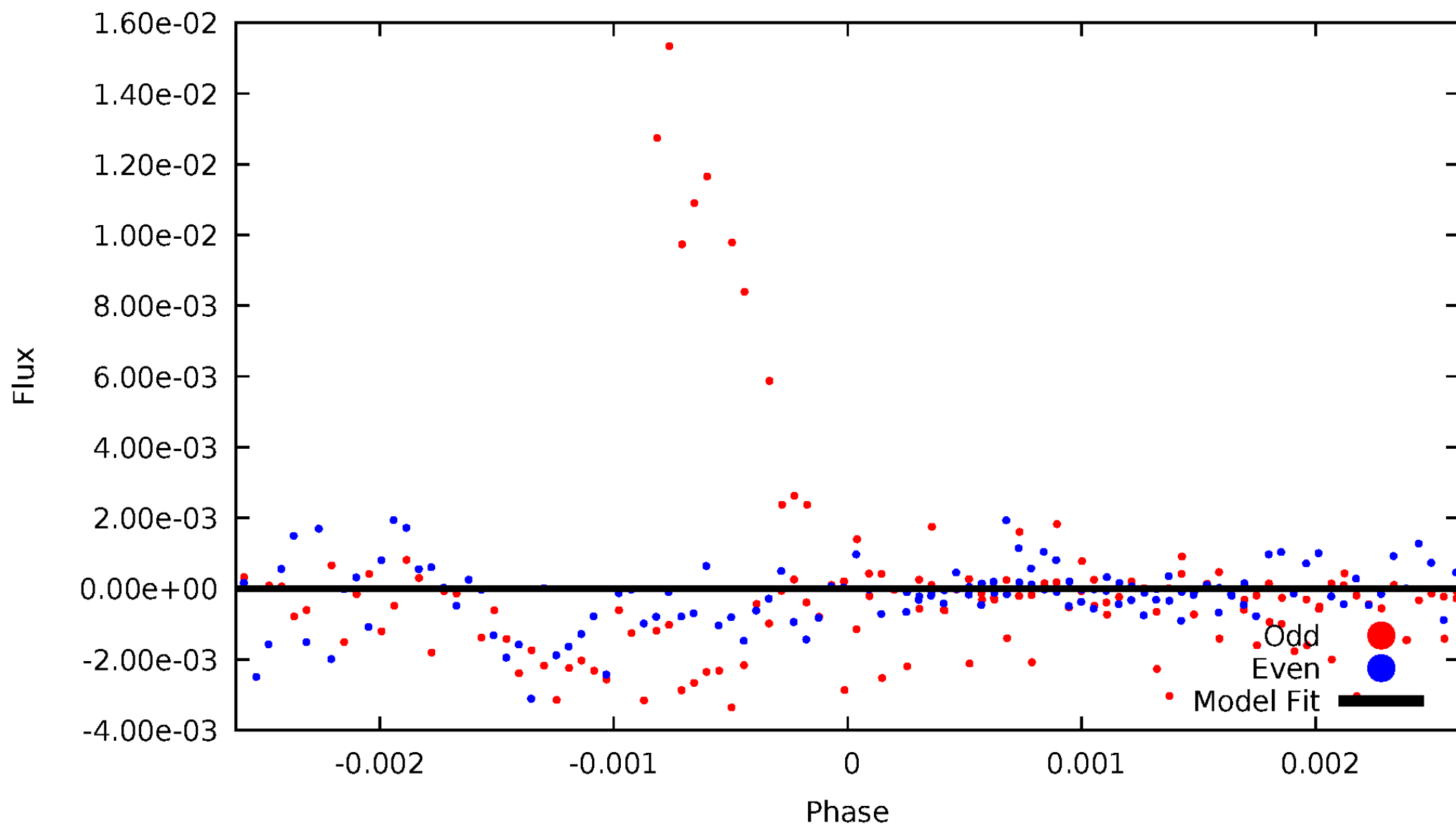


TCE 006128841-03



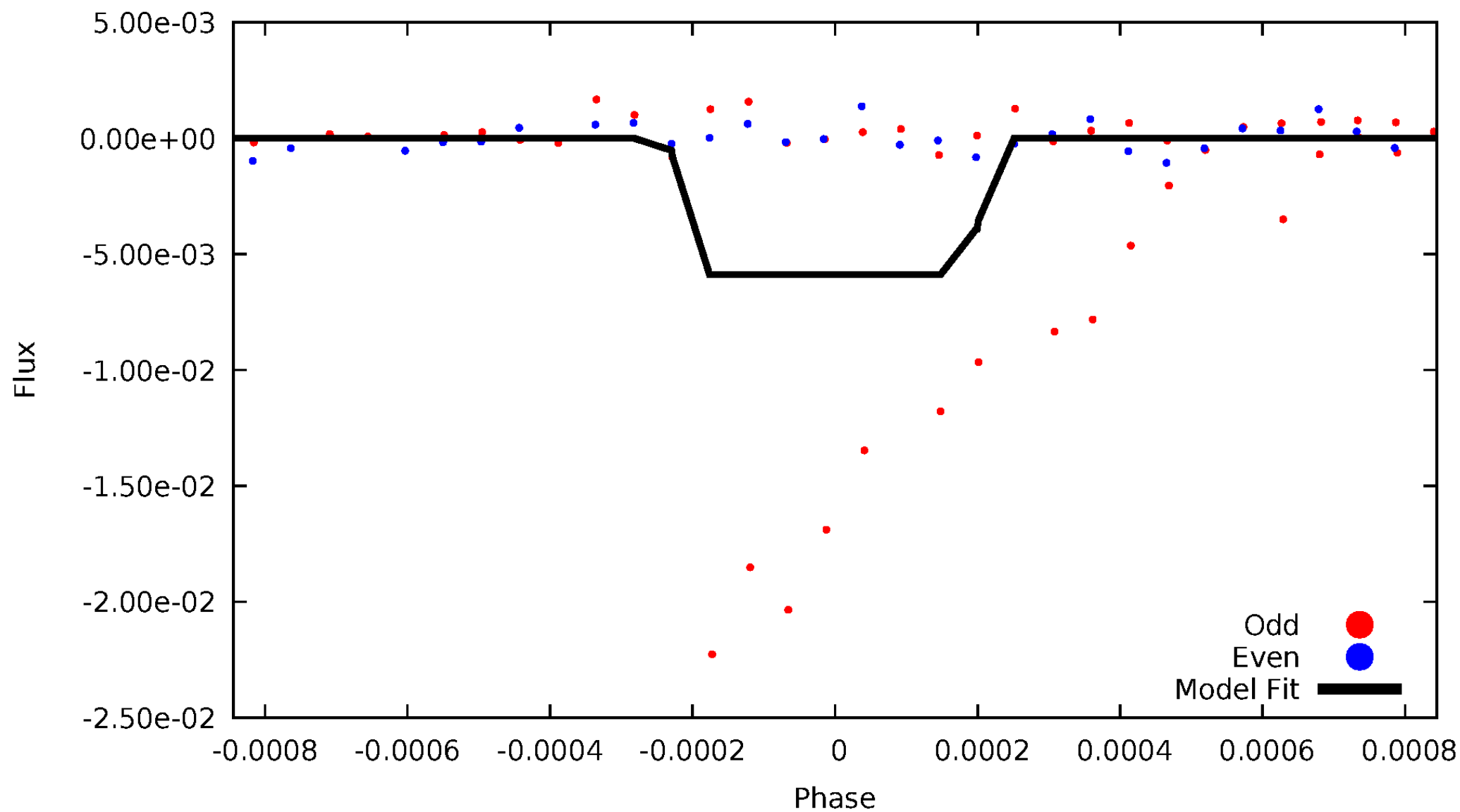
DV Odd/Even

TCE 006128841-03



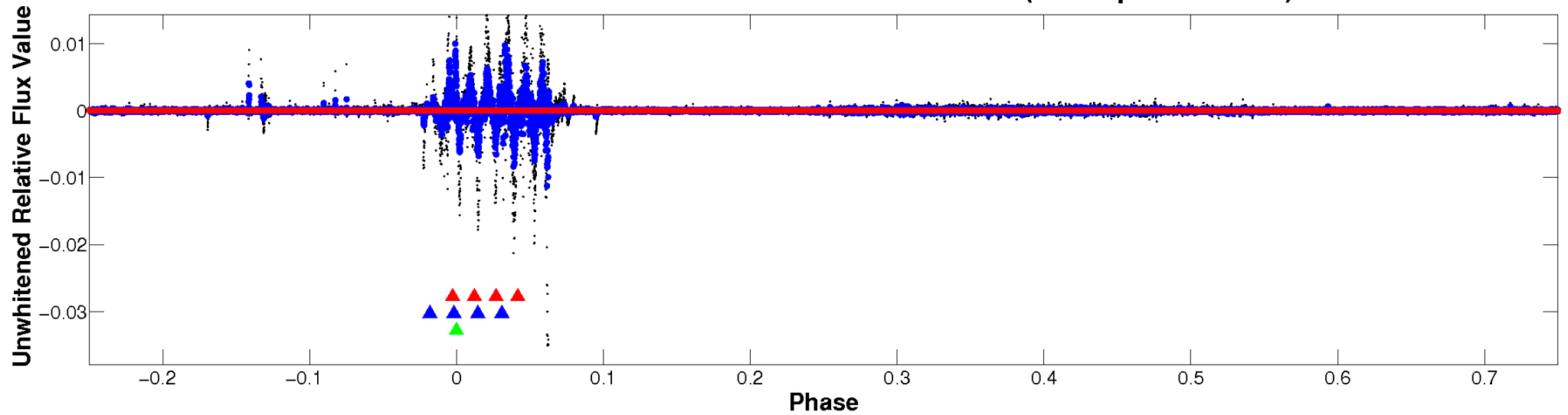
ALT Odd/Even

TCE 006128841-03



Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

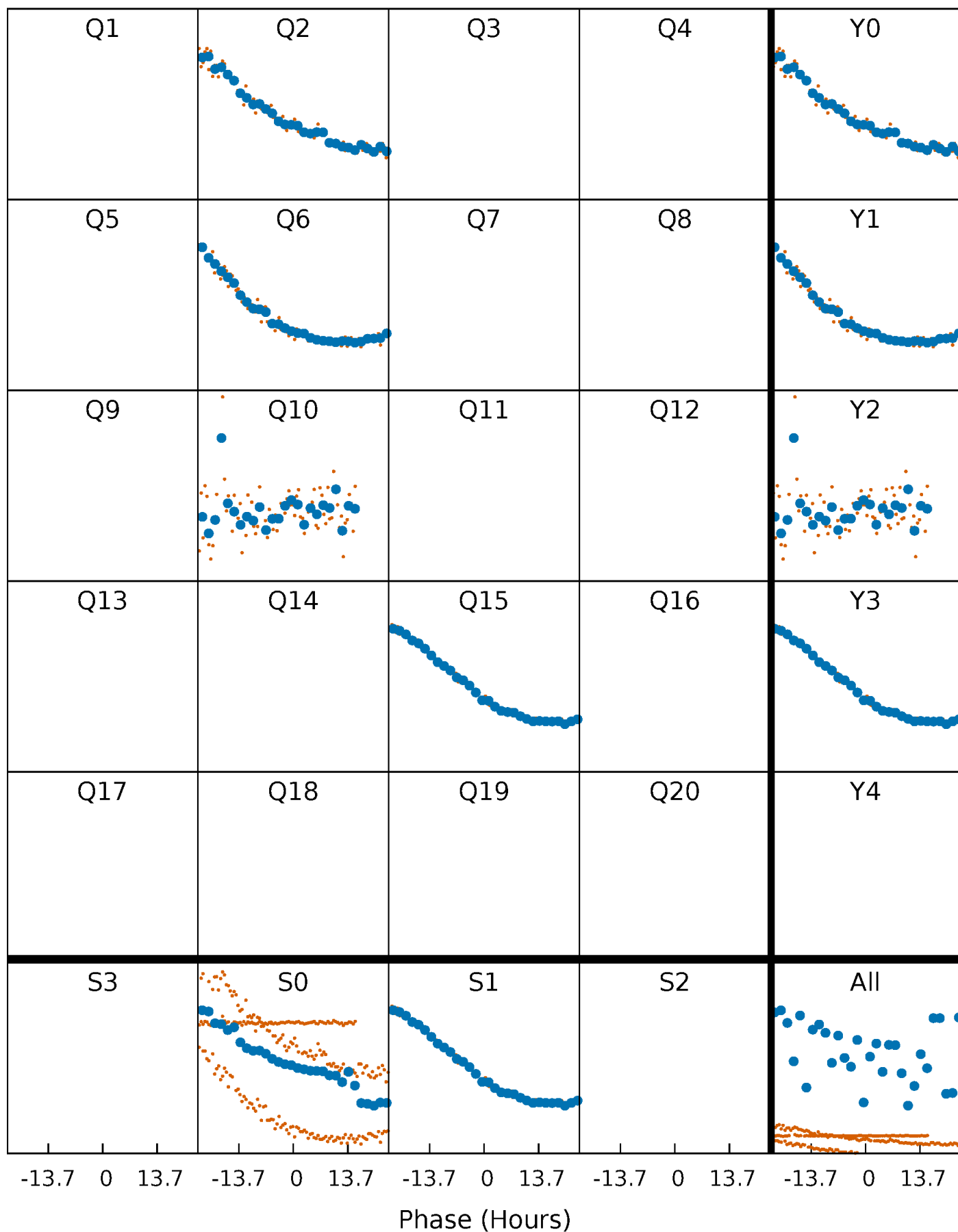


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



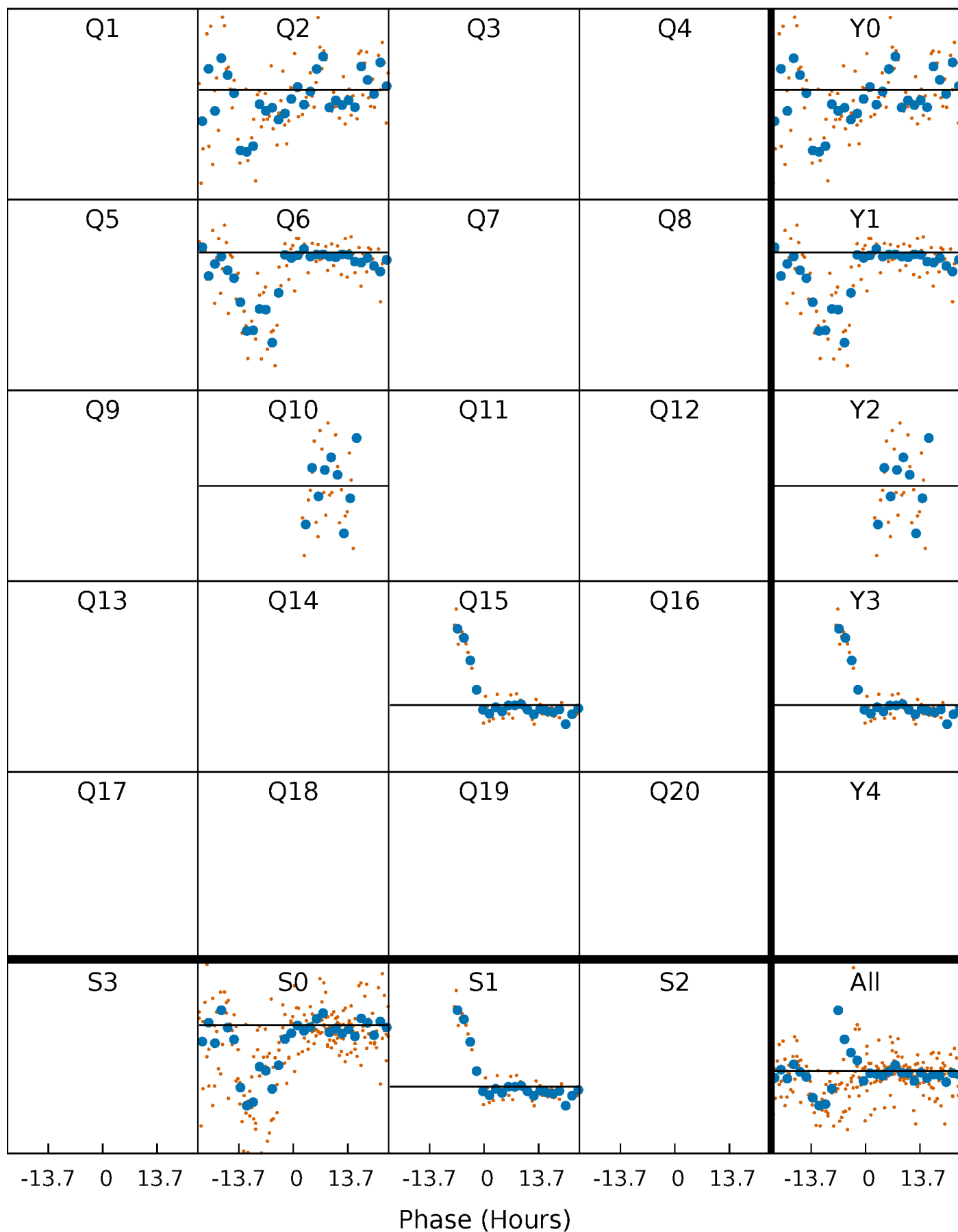
PDC Quarter-Phased Transit Curves

TCE 006128841-03 P=382.516243 Days $T_0=234.588087$ (BKJD)



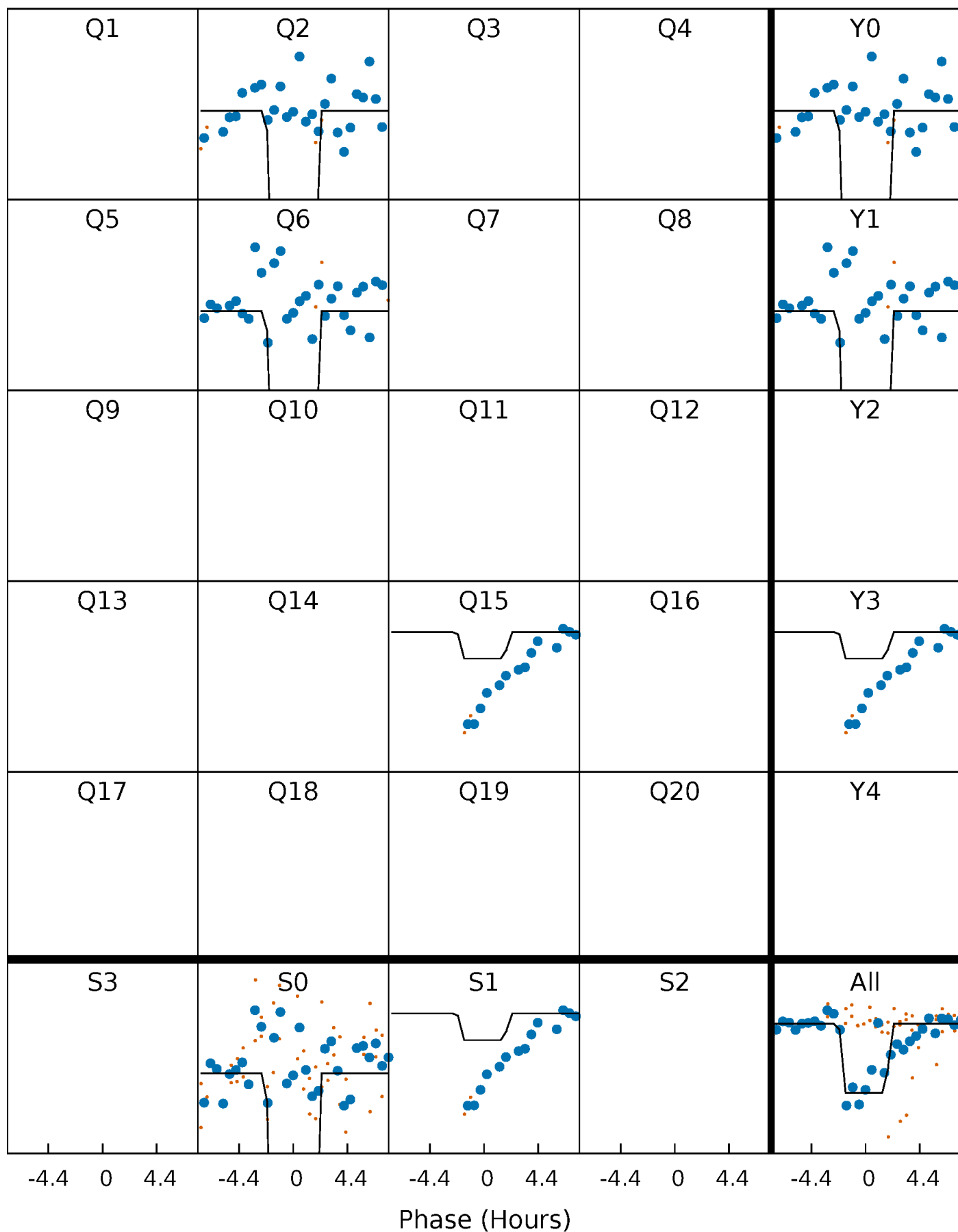
DV Quarter-Phased Transit Curves

TCE 006128841-03 $P=382.516243$ Days $T_0=234.588087$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

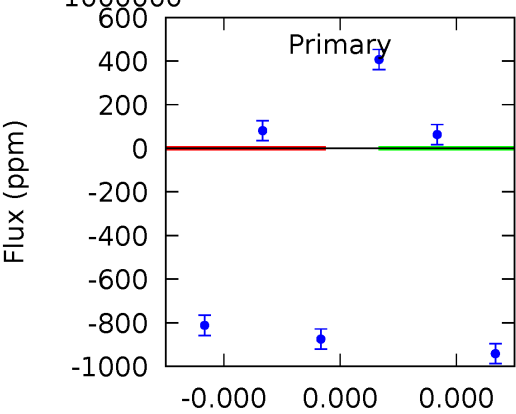
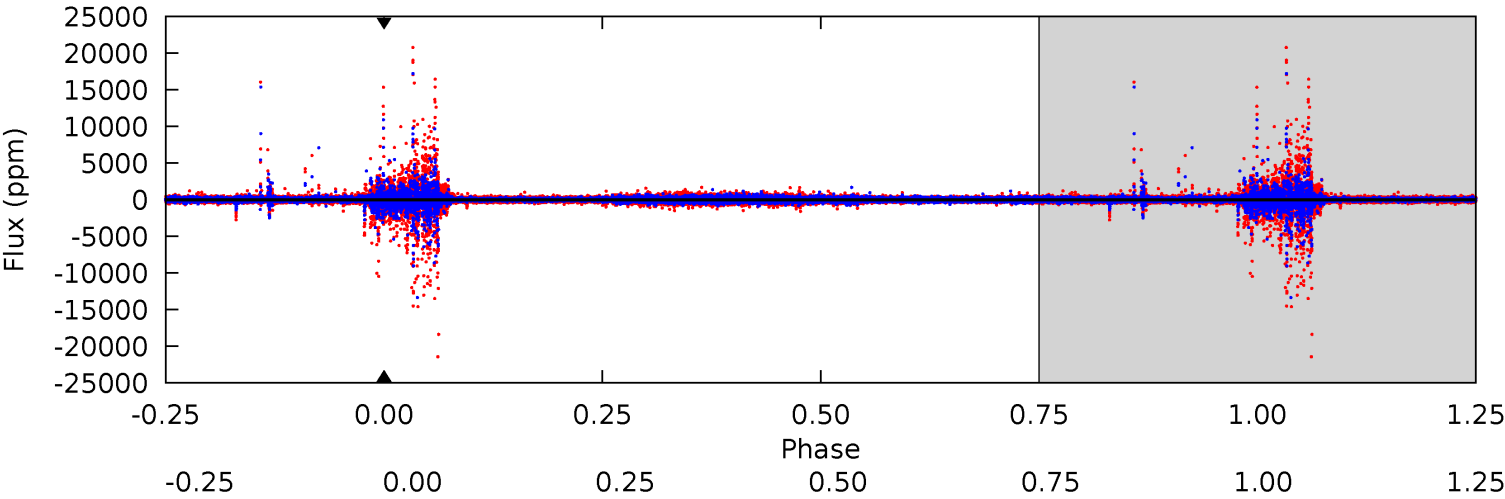
TCE 006128841-03 P=382.516243 Days $T_0=234.342340$ (BKJD)



DV Model-Shift Uniqueness Test

006128841-03, P = 382.516243 Days, E = 234.588087 Days

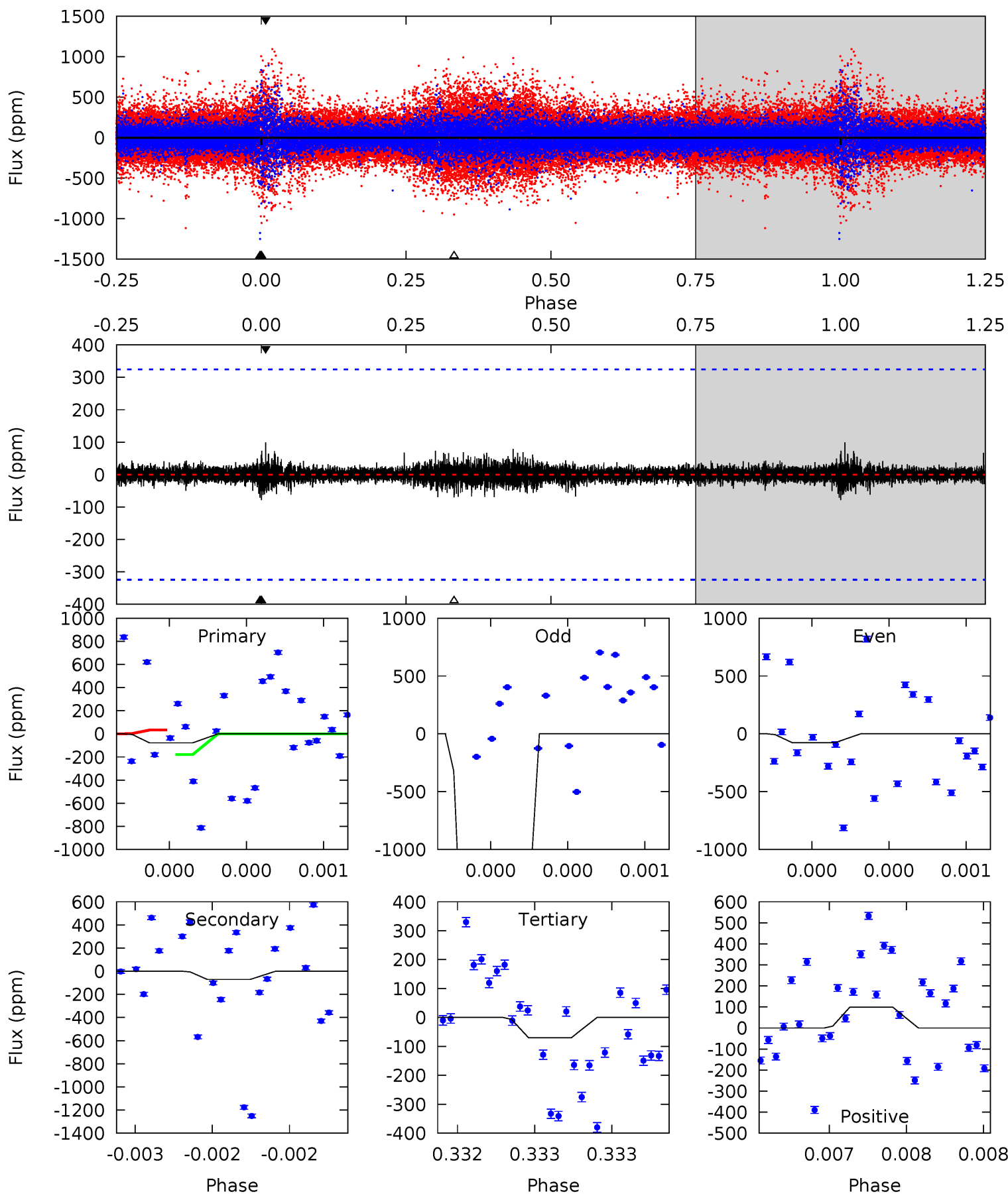
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006128841-03, P = 382.516243 Days, E = 234.342340 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.34	1.22	1.20	1.70	5.58	3.49	0.25	0.14	-0.36	0.02	-0.48	6.11	-46.4	0.56	0



Stellar Parameters For KIC 006128841

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5892^{+195}_{-195}	$4.142^{+0.312}_{-0.168}$	$-0.220^{+0.300}_{-0.300}$	$1.370^{+0.369}_{-0.451}$	$0.950^{+0.142}_{-0.103}$	$0.520^{+1.070}_{-0.234}$
	+3%/-3%	+8%/-4%	+136%/-136%	+27%/-33%	+15%/-11%	+206%/-45%
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 006128841-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$10.59^{+11.39}_{-7.03}$	419^{+36}_{-41}	5283^{+18017}_{-25460}	$13601^{+986162}_{-761968}$
Alt.	-71 ± 58	$15.34^{+12.65}_{-10.29}$	419^{+34}_{-42}	2435^{+911}_{-490}	139^{+1269}_{-122}

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

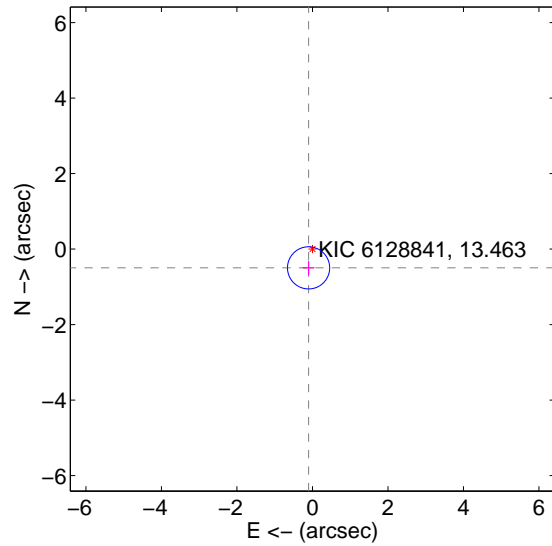
Supplemental centroid analysis for 006128841-03. Kepler magnitude: 13.46. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

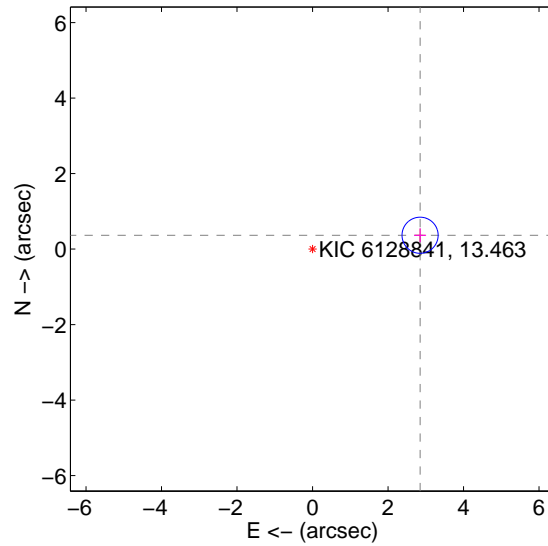
The OOT PRF centroid is offset from the target star catalog position by about 3.08 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.507 ± 0.186	2.73	0.102 ± 0.159	-0.497 ± 0.187
PRF-fit source offset from KIC position	2.873 ± 0.159	18.02	-2.849 ± 0.159	0.367 ± 0.187
photometric centroid source offset	5.08 ± 0.09	58.51	-4.35 ± 0.07	2.64 ± 0.12

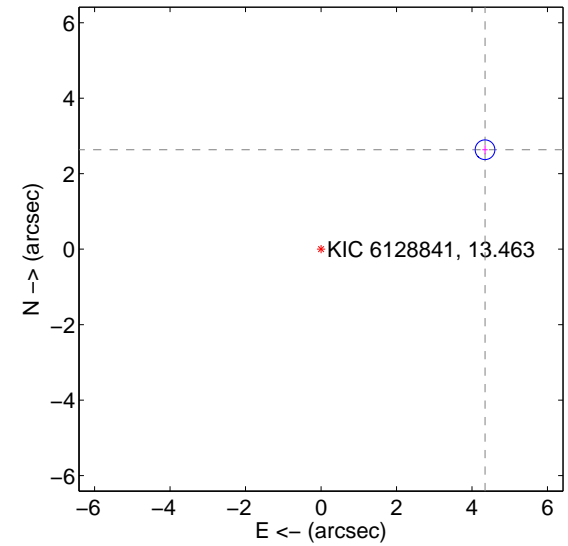
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

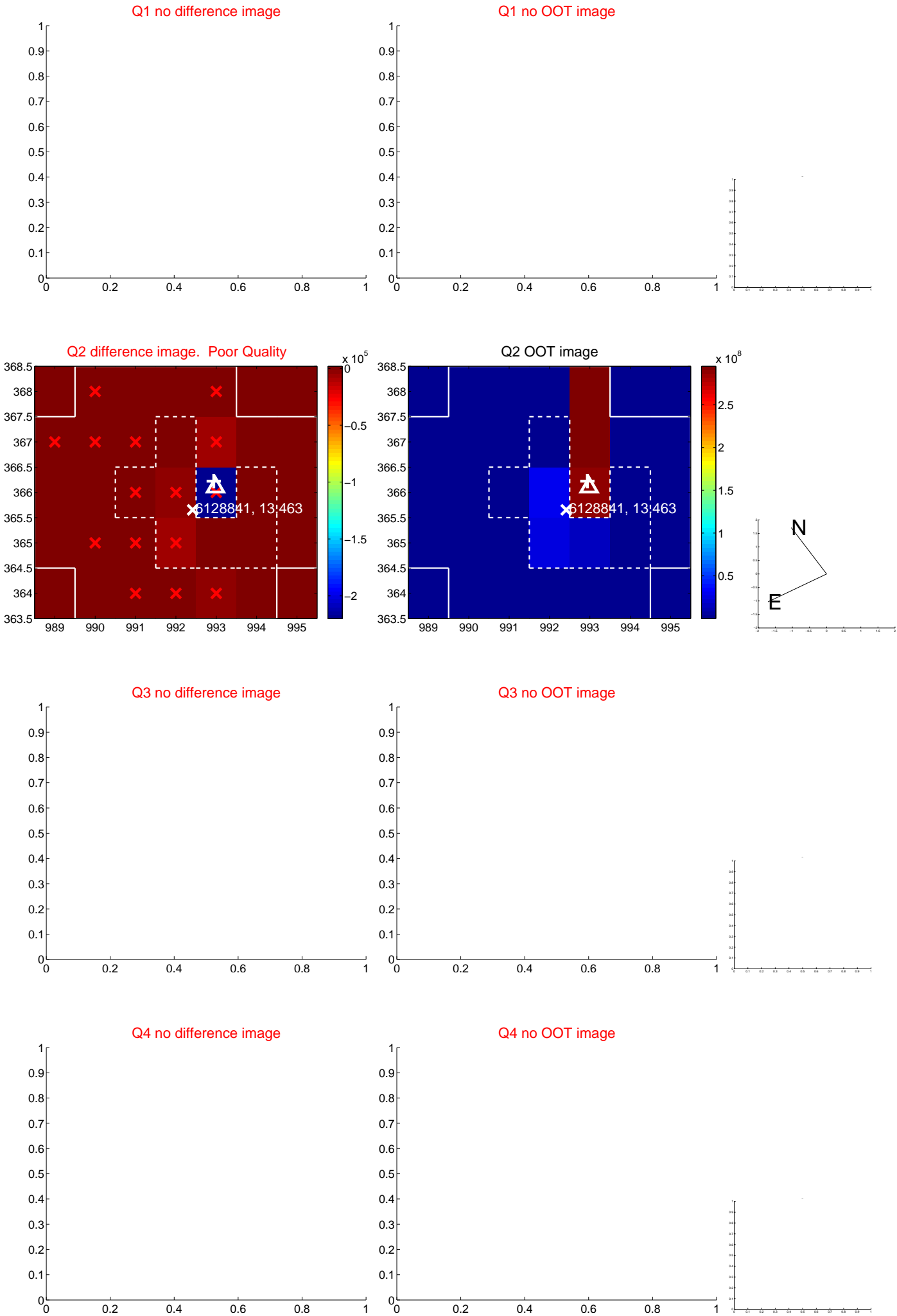


offset from photometric centroids

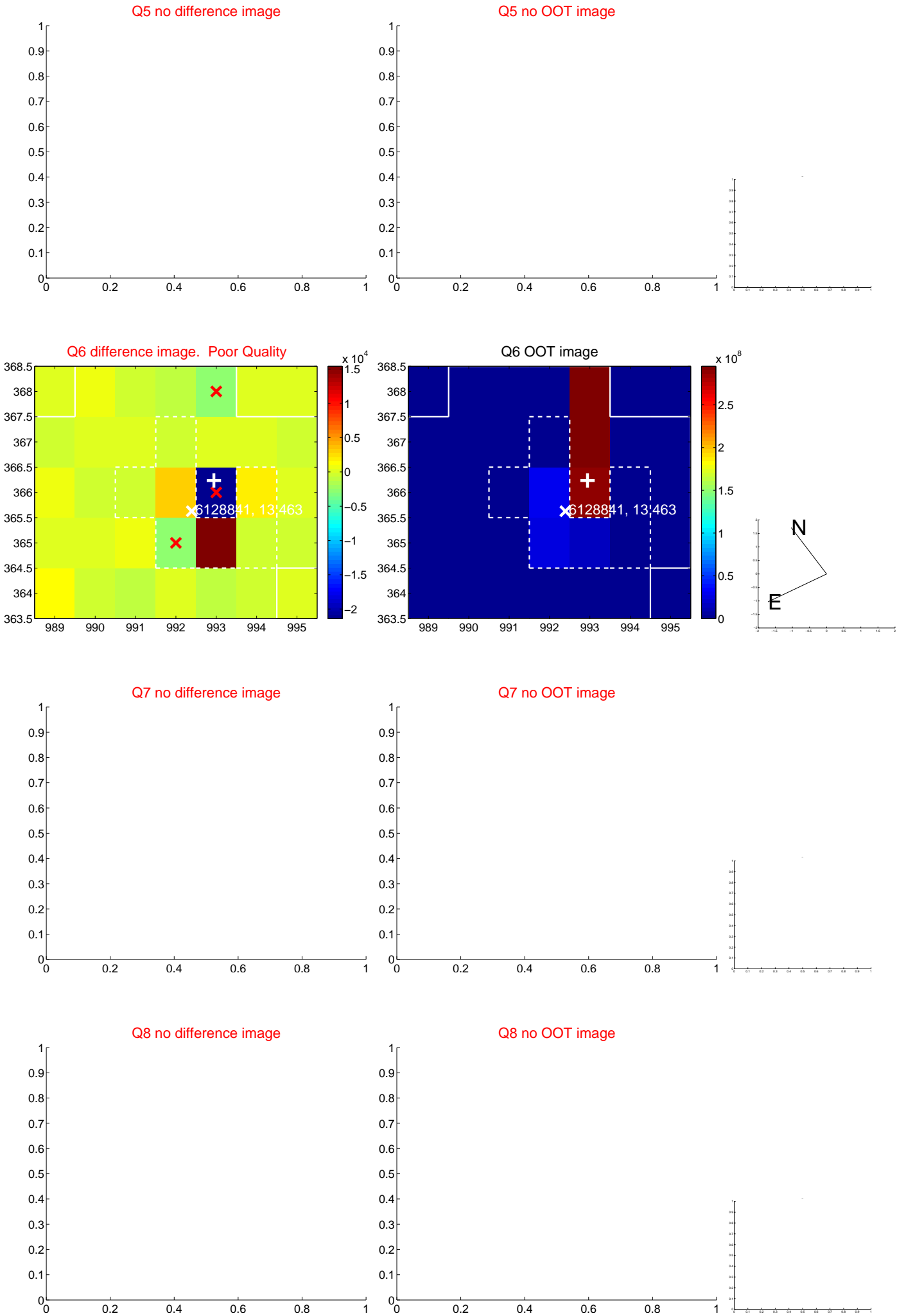


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

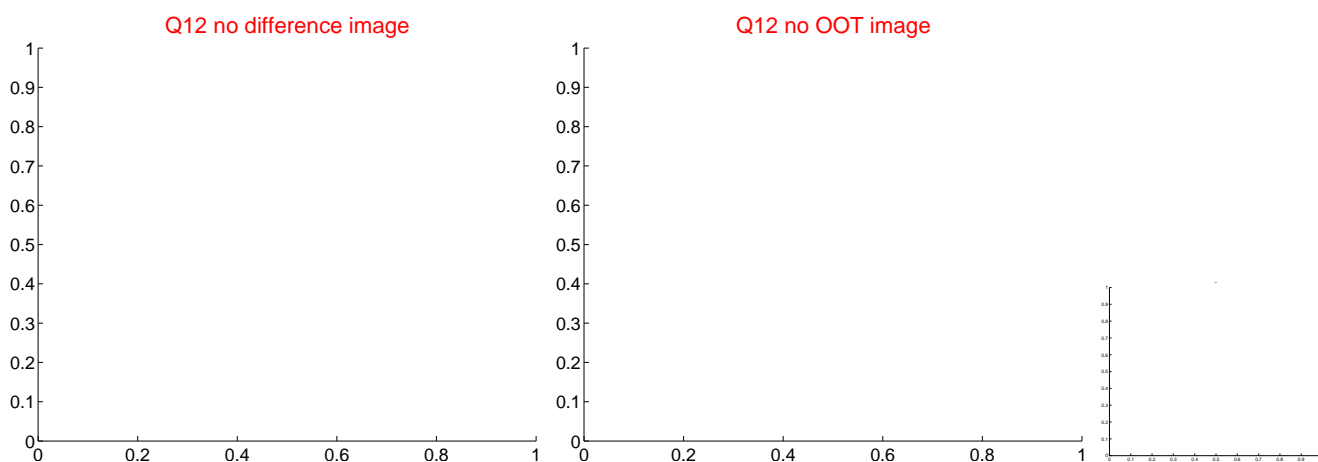
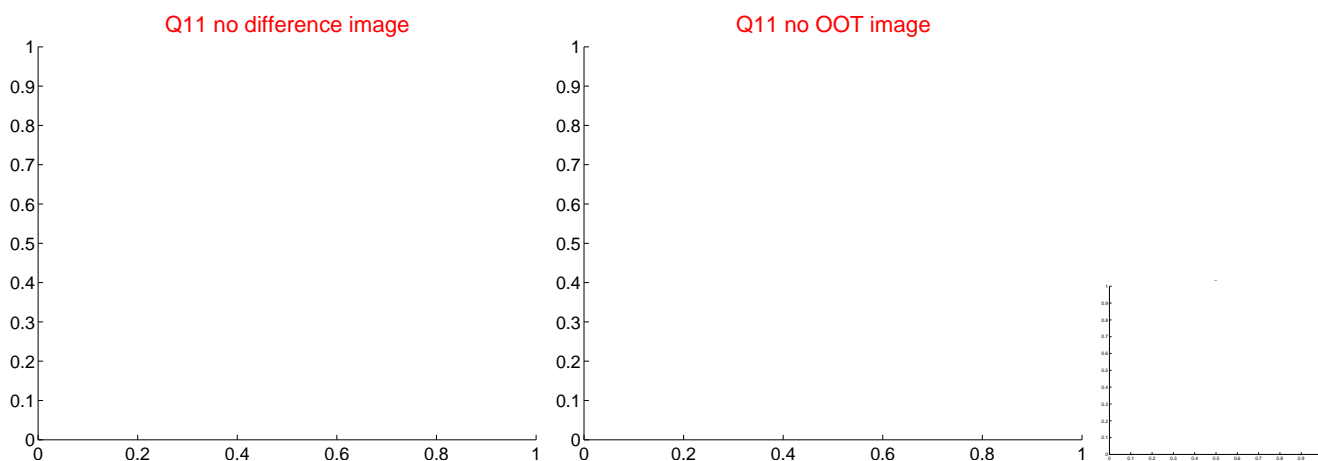
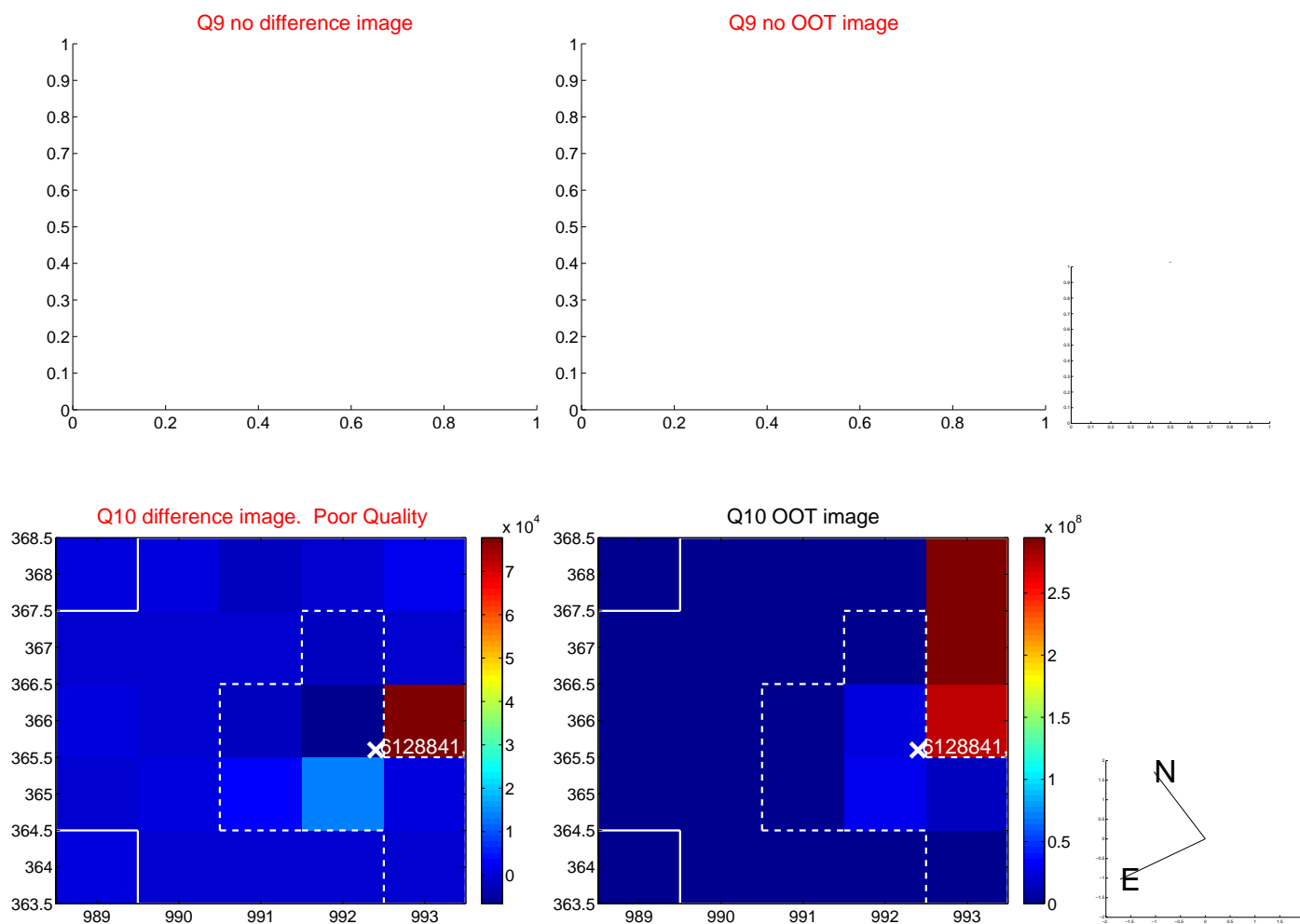
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



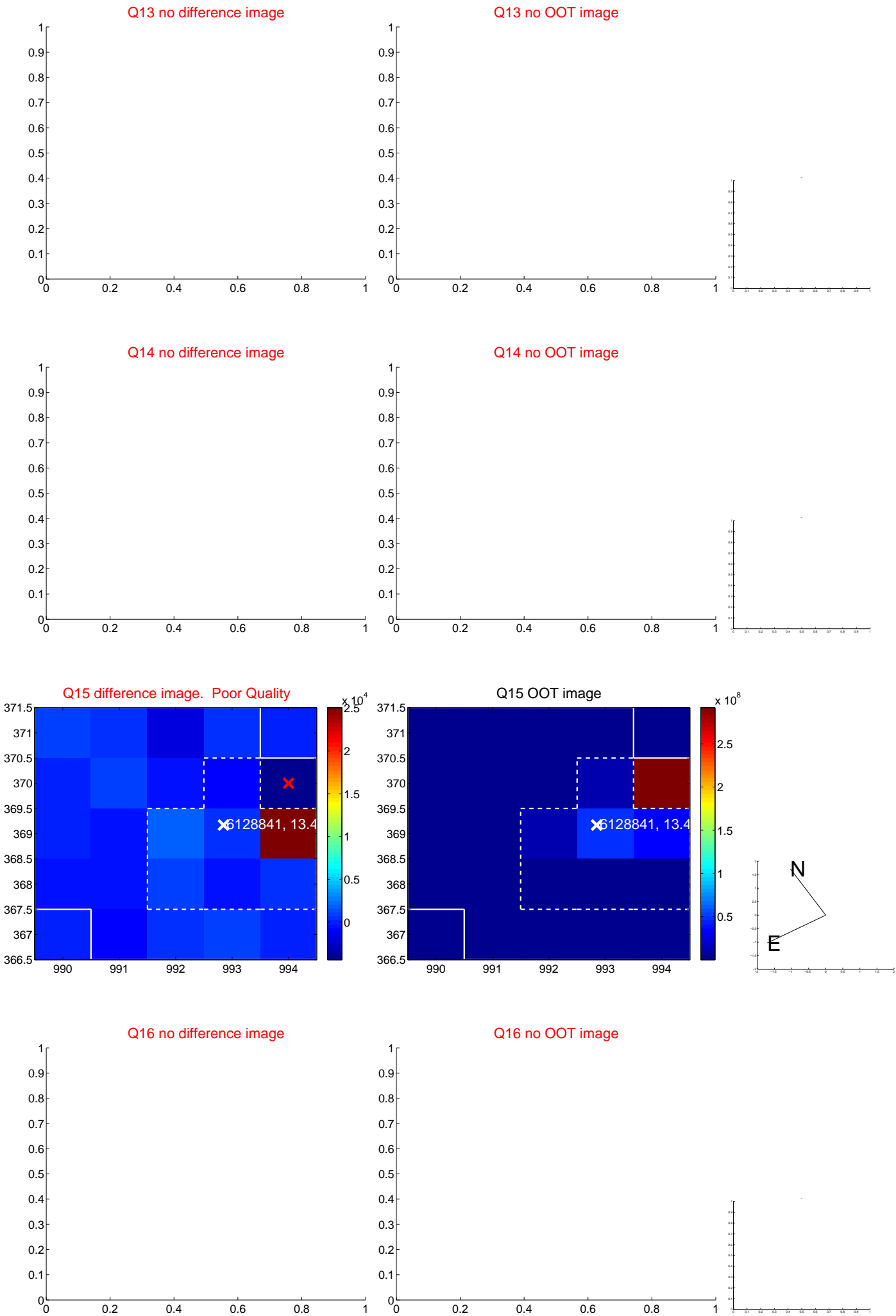
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



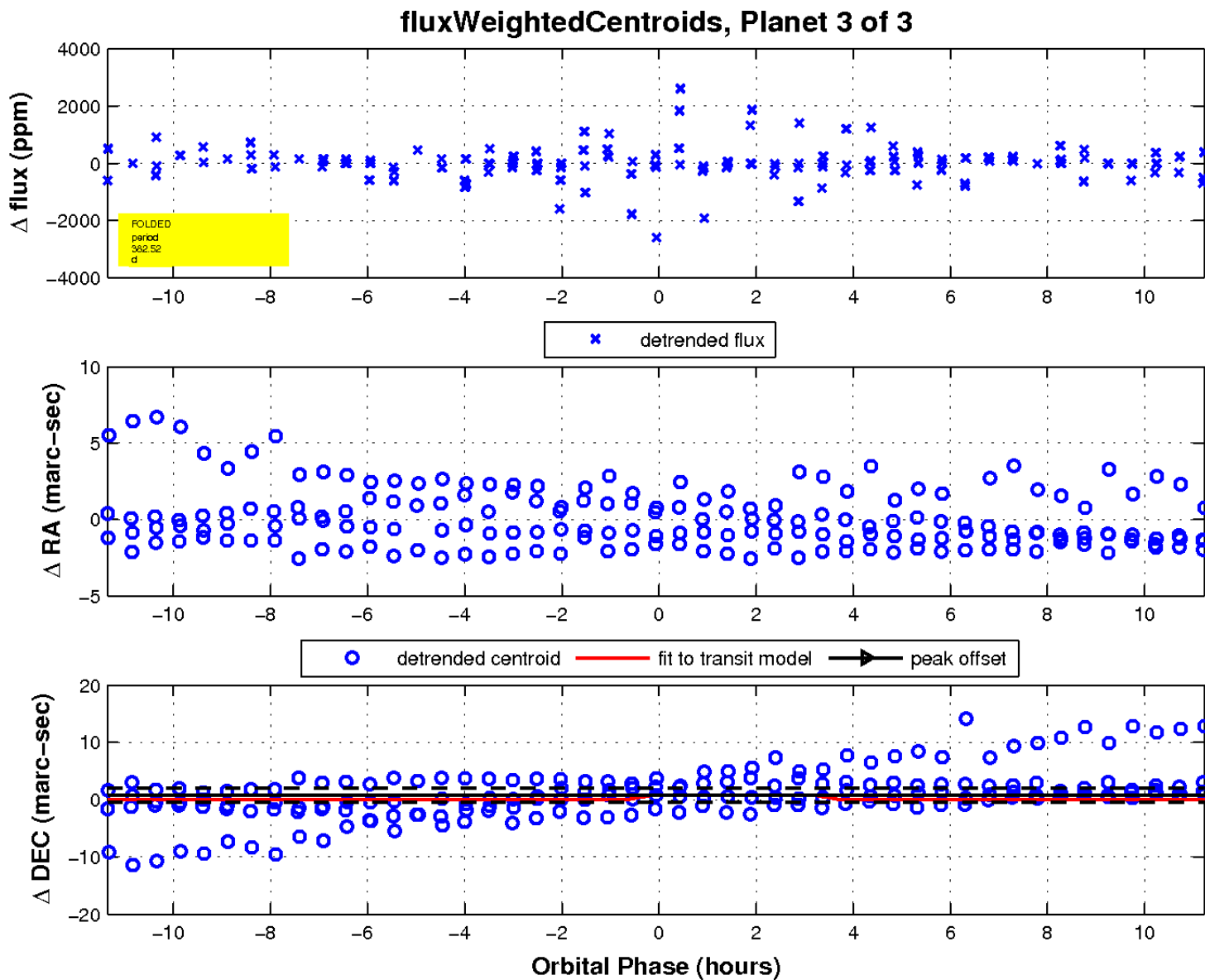
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

