

KIC 012061756

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})
012061756-01	OBS	No	1.556649	132.454327	27.8	1.854	10.3	10.0	2.29	6645	1.52	9529.07
012061756-02	OBS	No	1.556402	133.026285	13.6	3.595	7.9	5.8	2.29	6645	0.99	9531.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012061756-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
012061756-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—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.

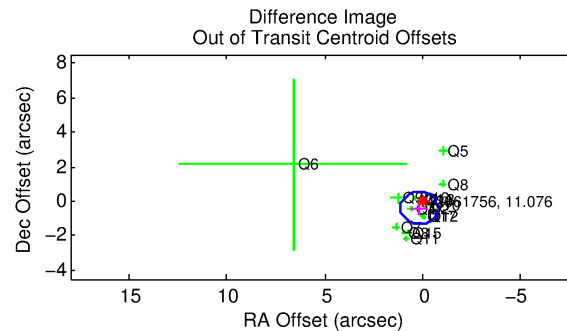
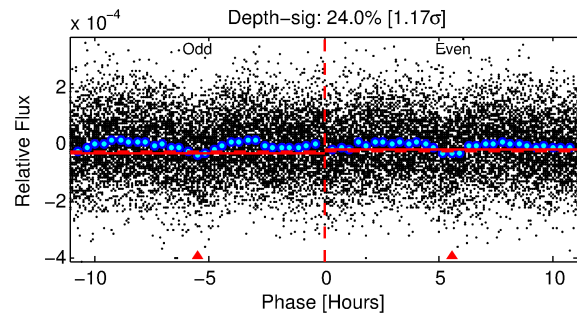
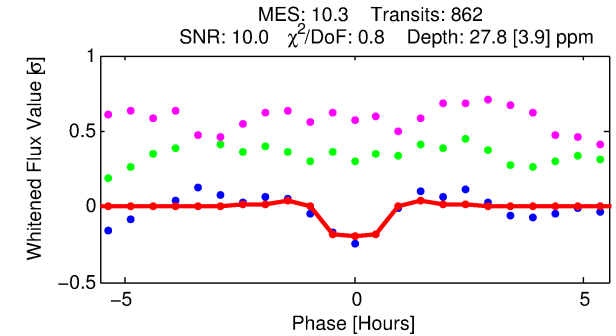
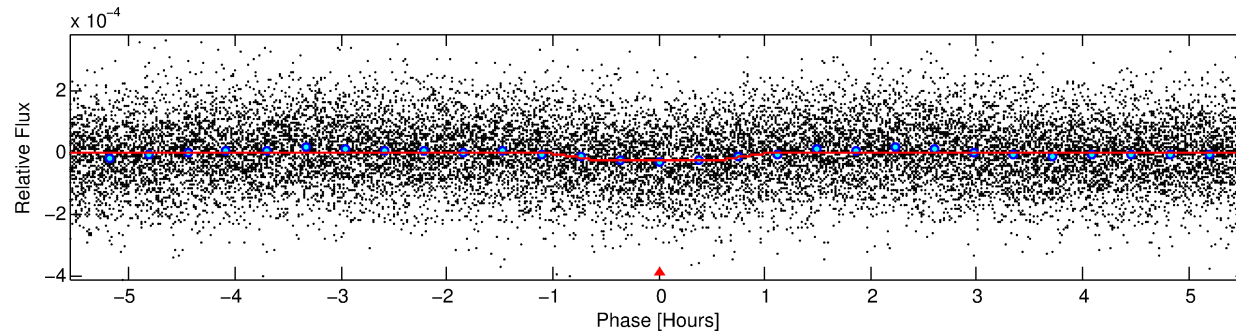
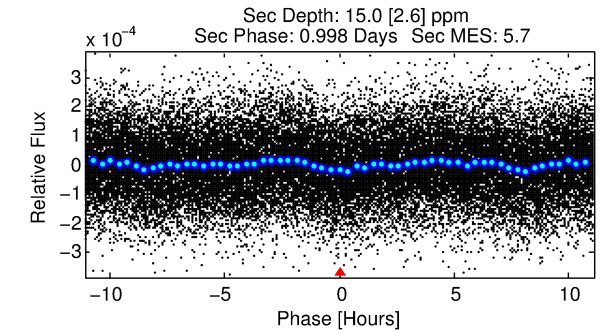
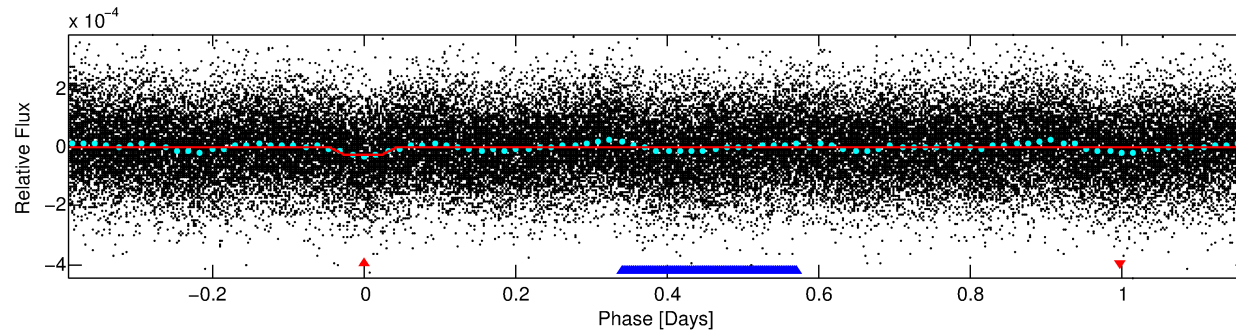
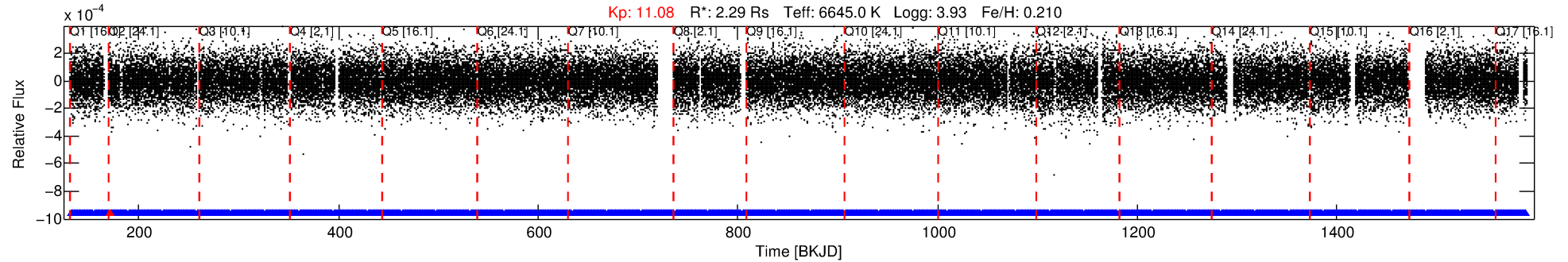
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012061756-01

No Significant Match Found

DV One-Page Summary

KIC: 12061756 Candidate: 1 of 2 Period: 1.557 d



DV Fit Results:

Period = 1.55665 [0.00001] d
Epoch = 132.4543 [0.0020] BKJD
Rp/R* = 0.0061 [0.0018]
a/R* = 2.15 [3.02]
b = 0.96 [0.15]
Seff = 9529.07 [4929.14]
Teq = 2519 [326] K
Rp = 1.52 [0.71] Re
a = 0.0310 [0.0100] AU
Ag = 3.43 [2.73] [0.89σ]
Teffp = 5303 [849] K [3.06σ]

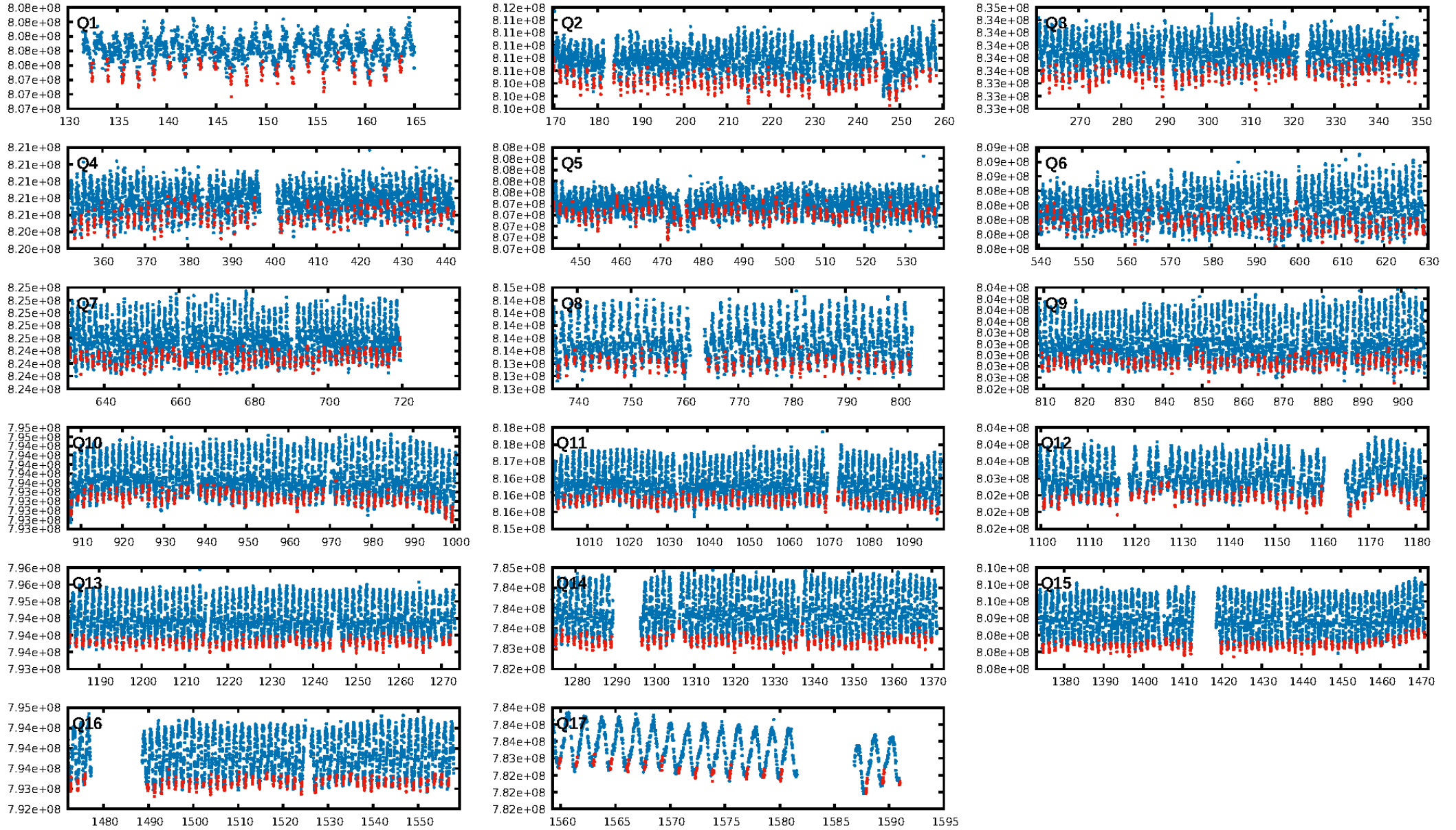
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.04e-20
RollingBand-fgt: 1.00 [823/824]
GhostDiagnostic-chr: 7.708
Centroid-sig: 15.4%
Centroid-so: 0.824 arcsec [1.63σ]
OotOffset-rm: 0.430 arcsec [1.38σ]
KicOffset-rm: 0.353 arcsec [1.08σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

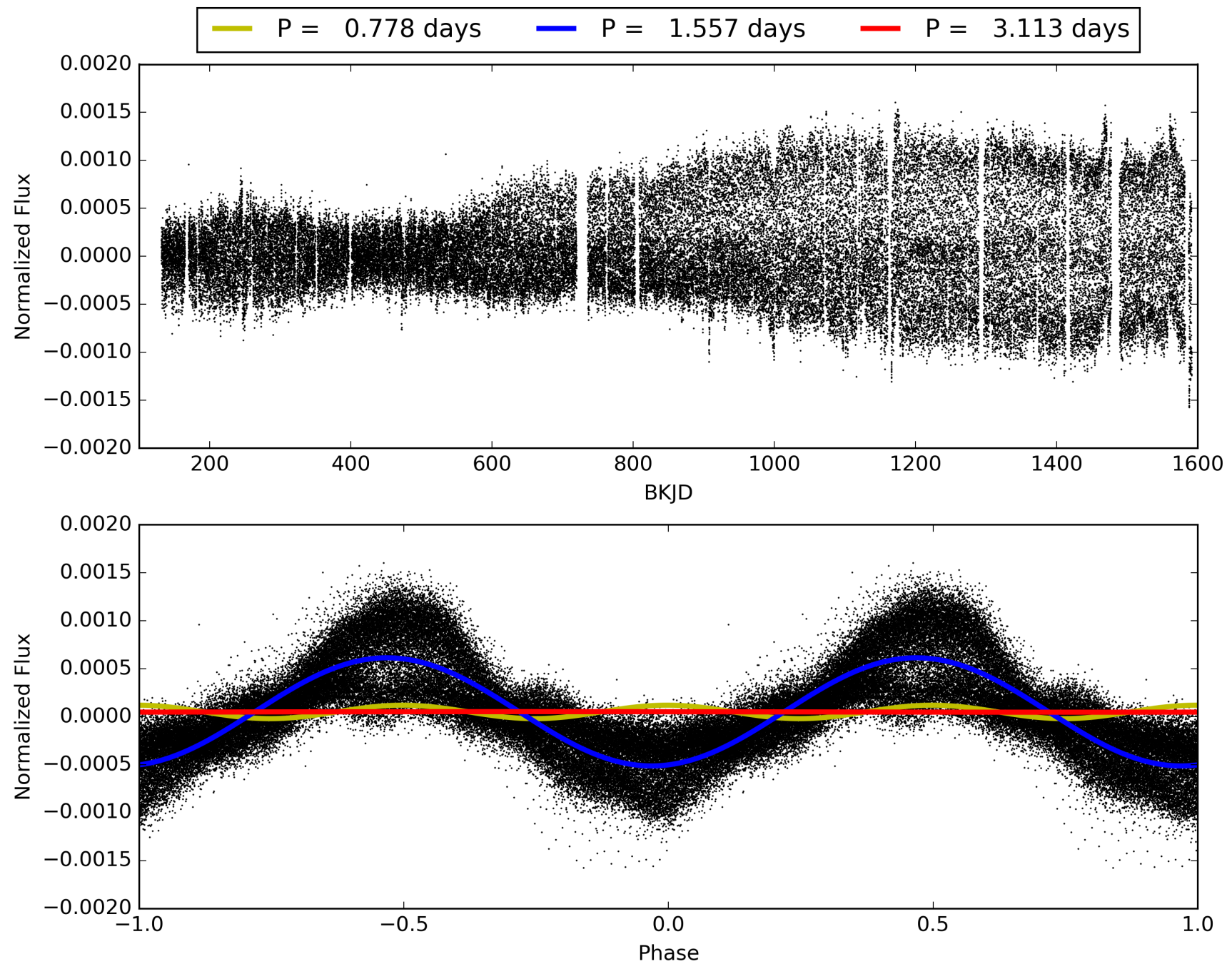
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:52:30 Z

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

TCE 012061756-01, PDC Light Curves

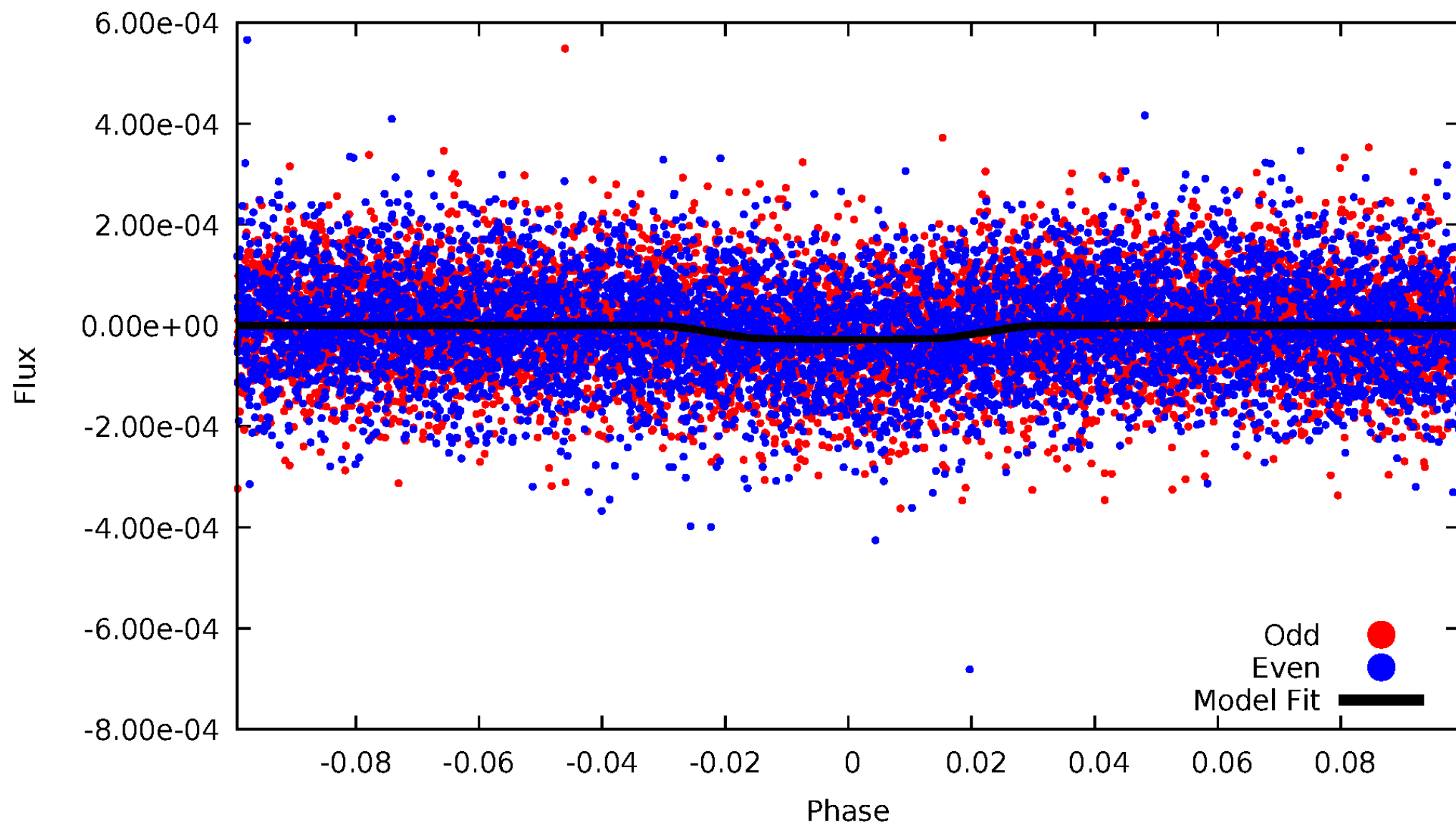


TCE 012061756-01



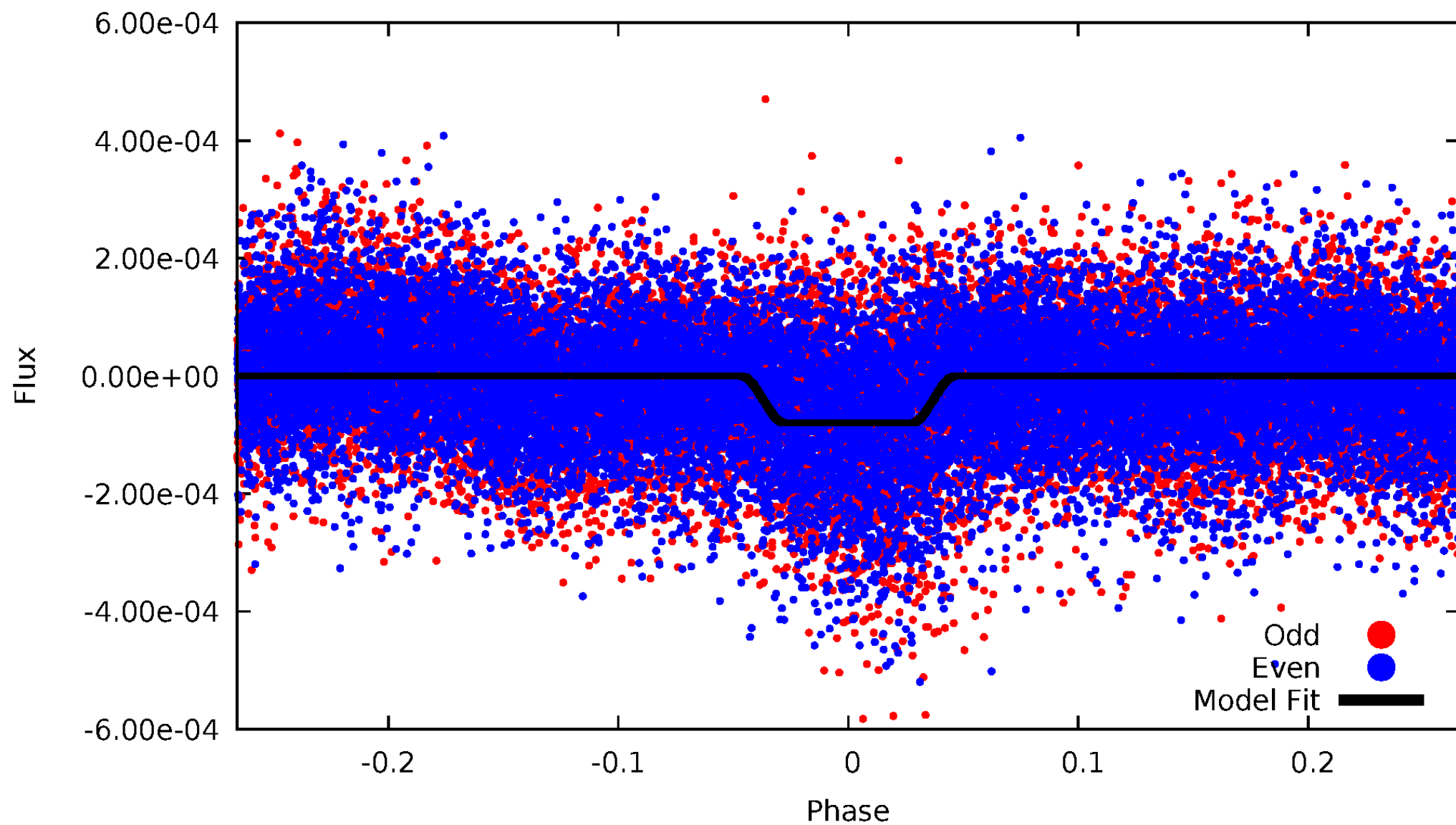
DV Odd/Even

TCE 012061756-01



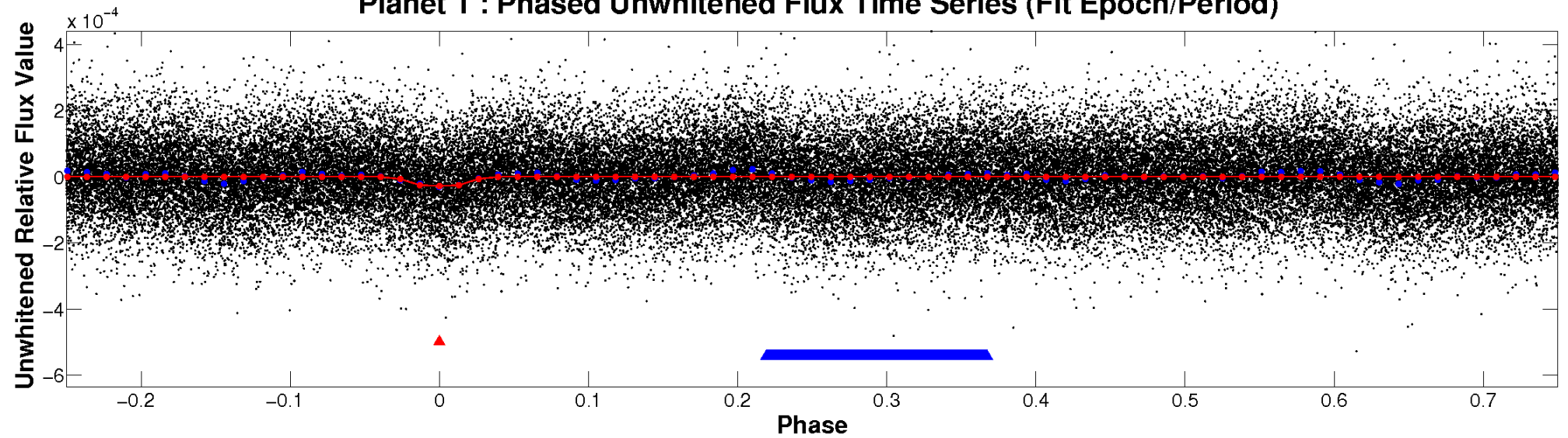
ALT Odd/Even

TCE 012061756-01

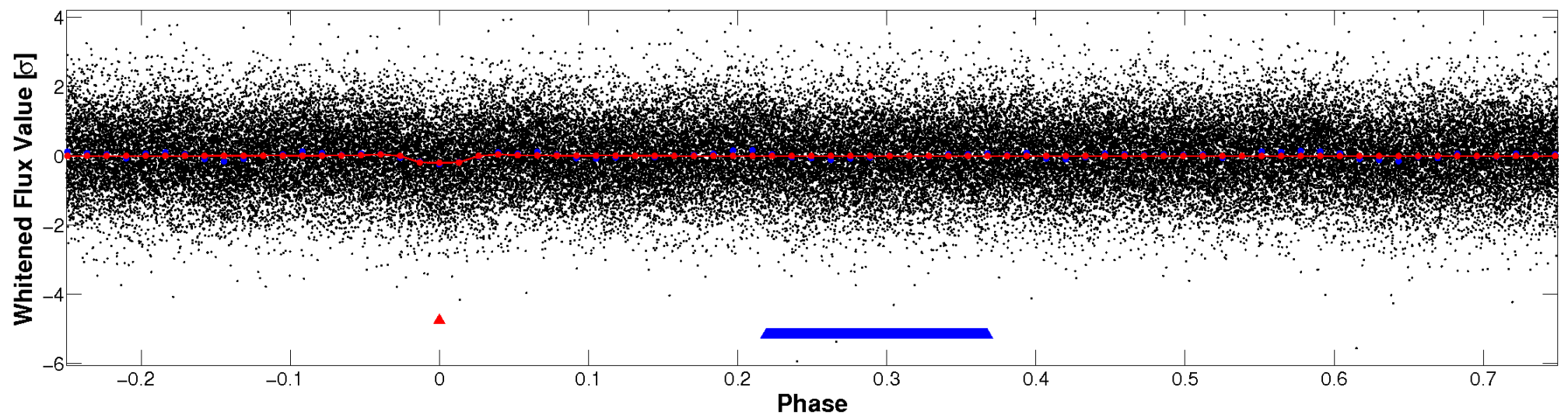


Non-Whitened Vs. Whitened Light Curve

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

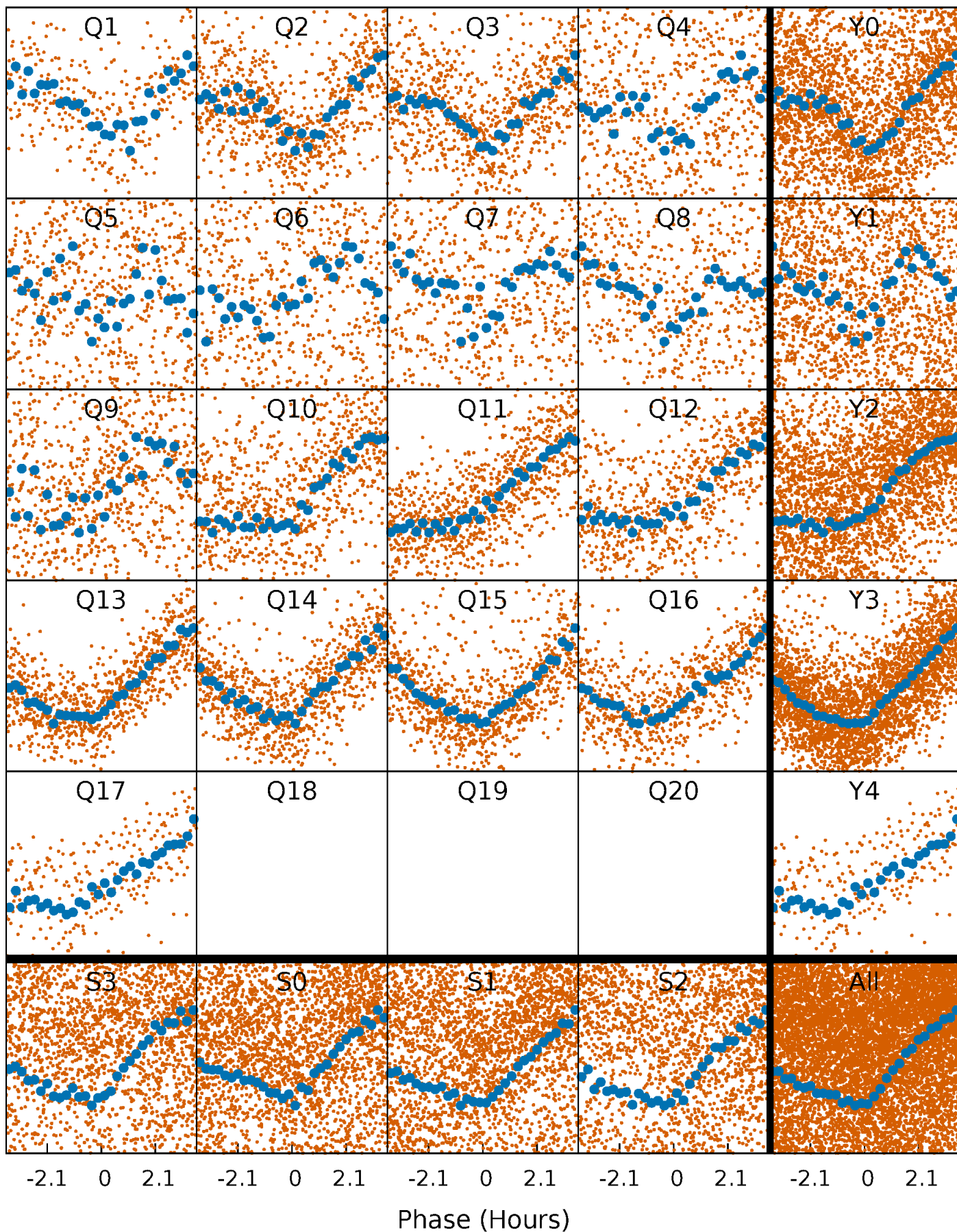


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



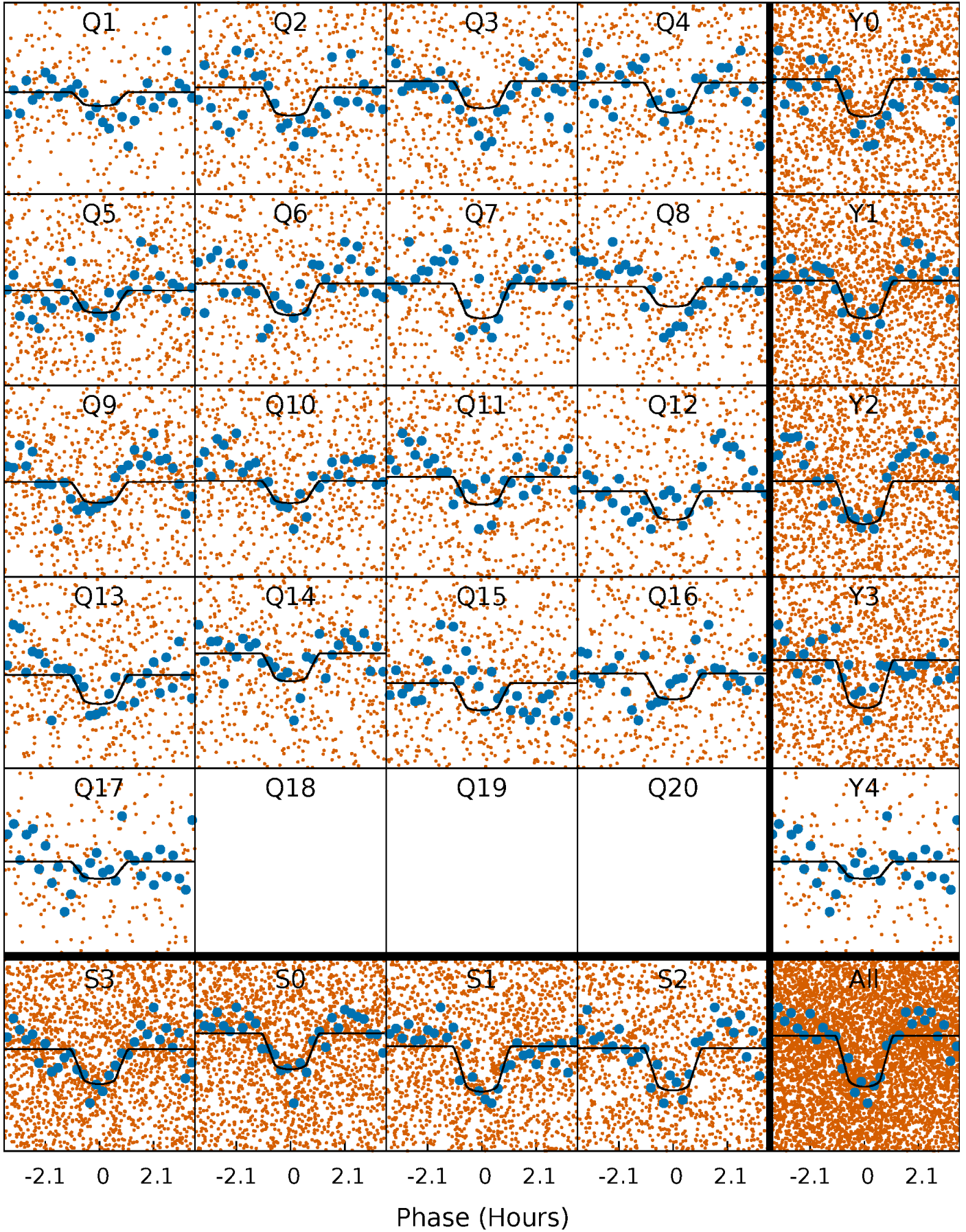
PDC Quarter-Phased Transit Curves

TCE 012061756-01 P= 1.556649 Days $T_0=132.454328$ (BKJD)



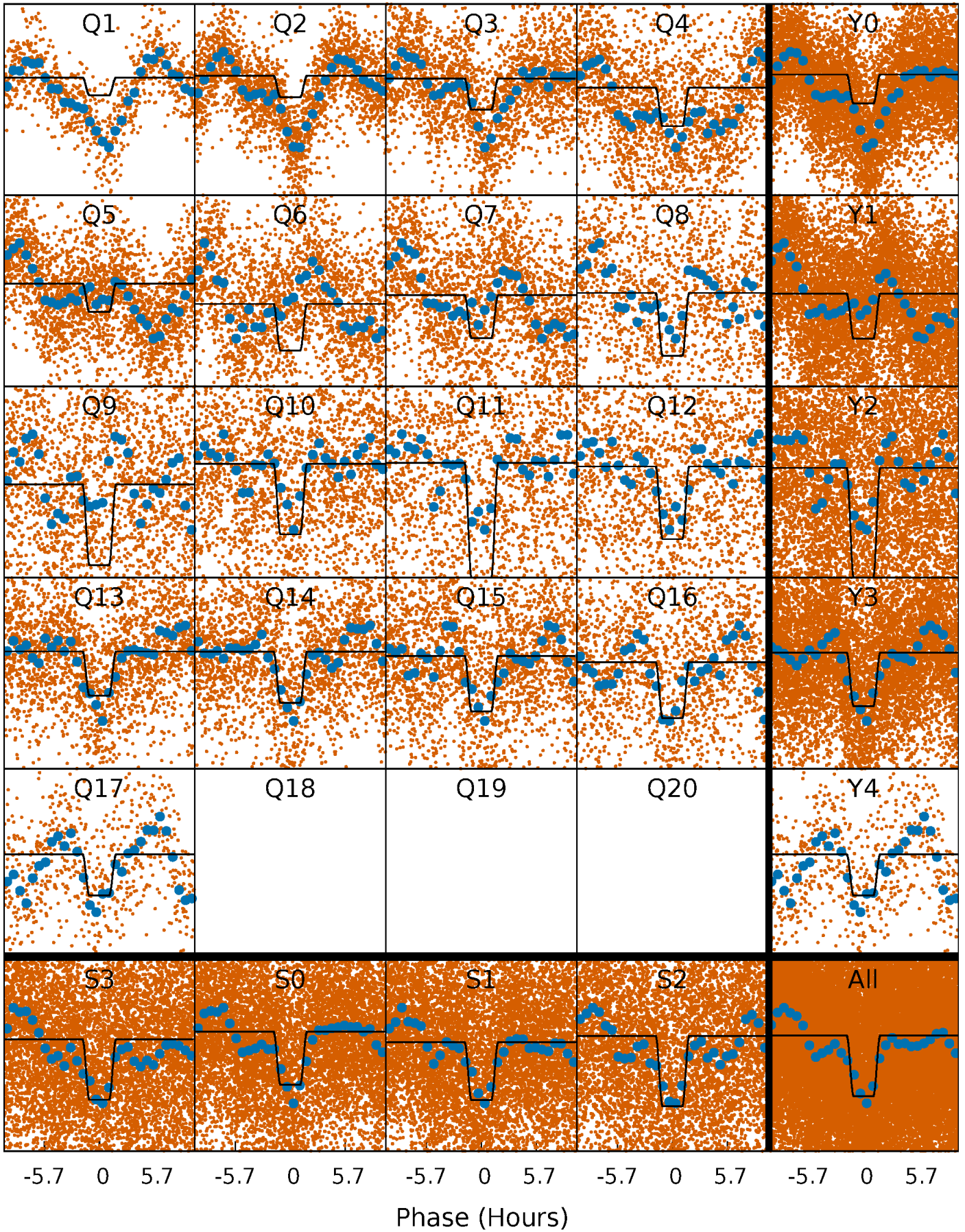
DV Quarter-Phased Transit Curves

TCE 012061756-01 P= 1.556649 Days $T_0=132.454328$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

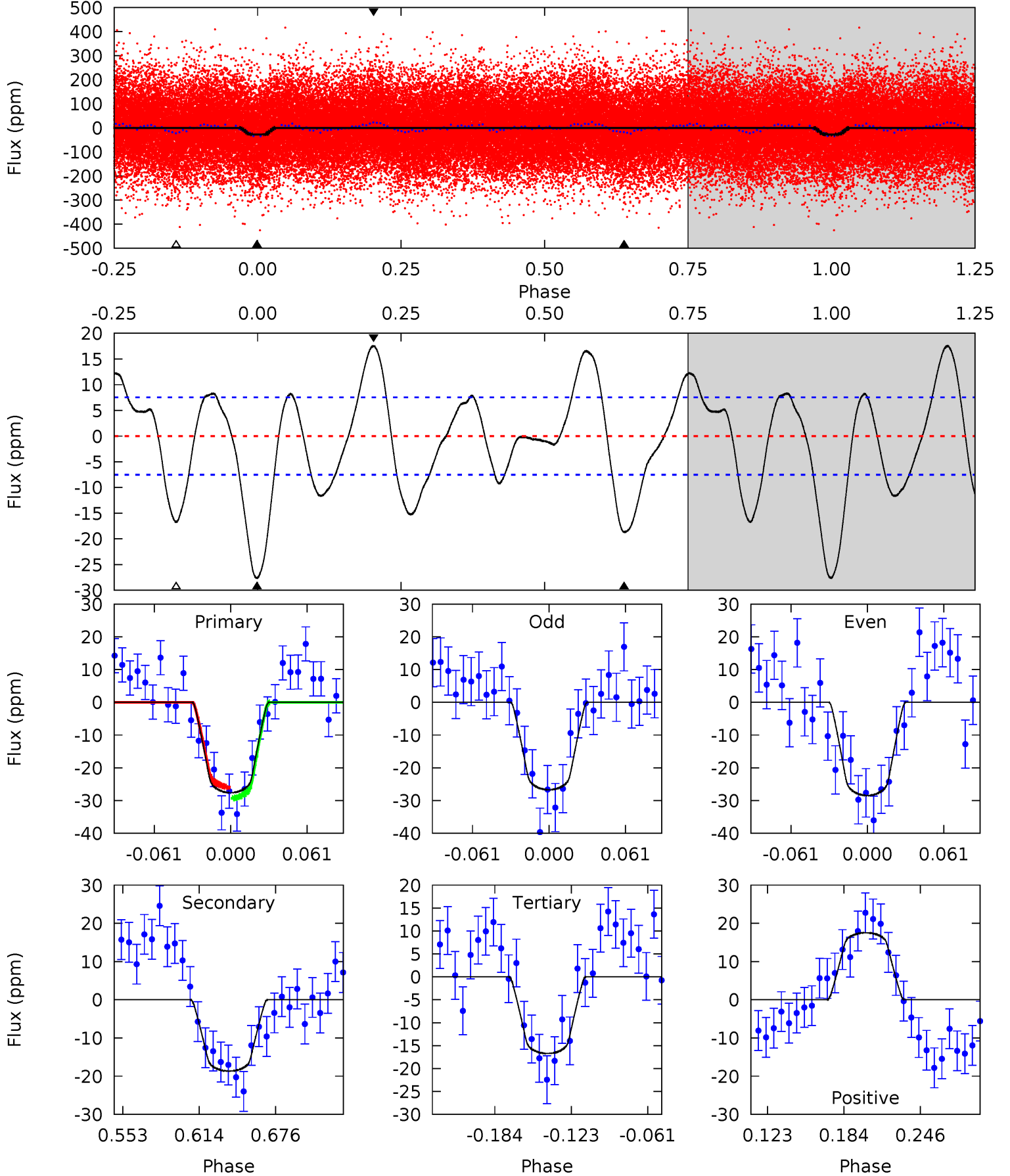
TCE 012061756-01 P= 1.556630 Days $T_0=132.448826$ (BKJD)



DV Model-Shift Uniqueness Test

012061756-01, P = 1.556649 Days, E = 130.897679 Days

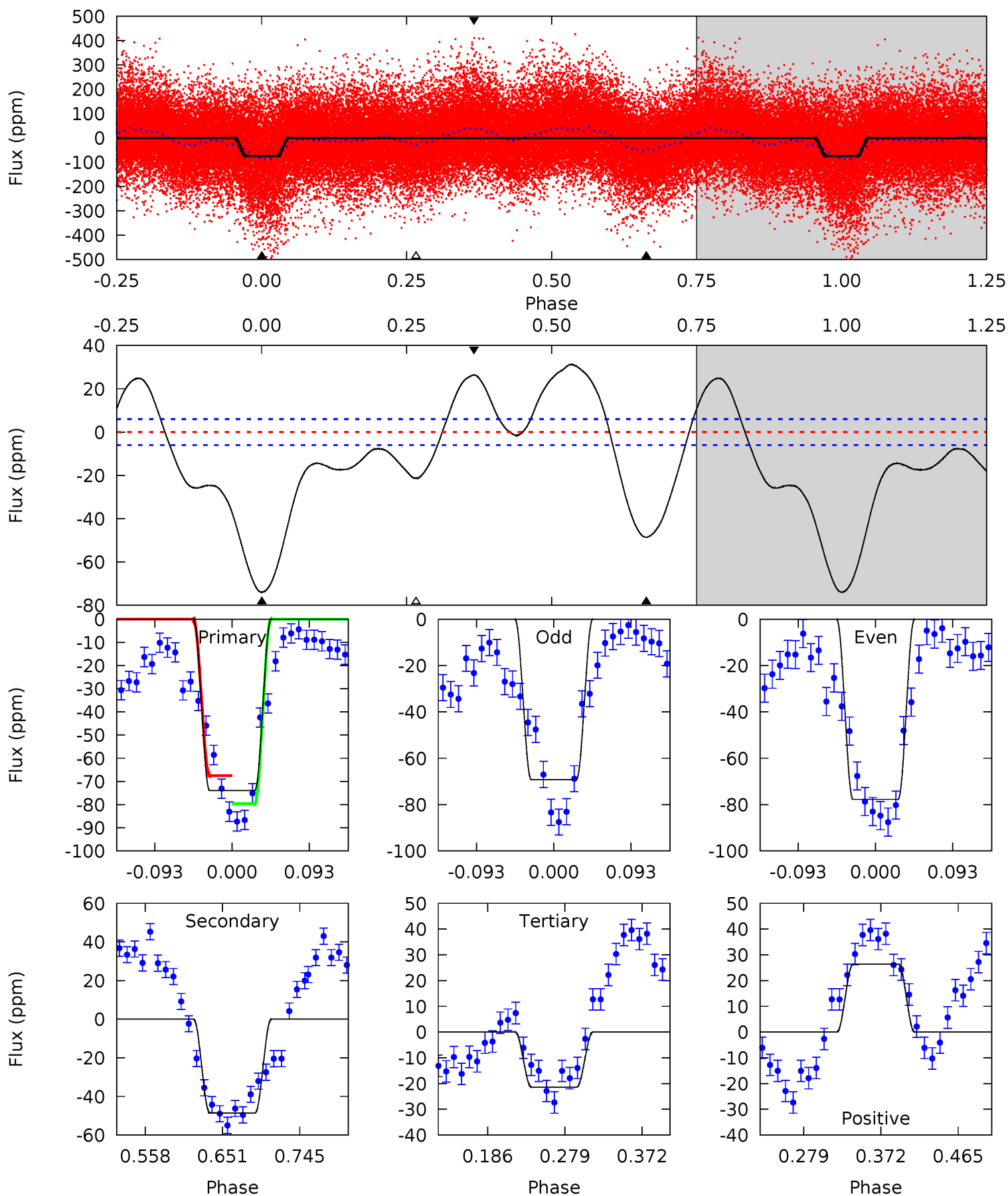
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	11.6	10.4	10.9	4.67	1.87	5.16	6.76	6.25	1.21	0.70	0.54	1.05	0.39	1.06



Alt Model-Shift Uniqueness Test

012061756-01, P = 1.556630 Days, E = 130.892196 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.3	37.0	16.3	20.1	4.58	1.68	13.8	40.0	36.2	20.7	16.9	3.24	1.10	0.30	4.61



Stellar Parameters For KIC 012061756

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6645^{+185}_{-255}	$3.933^{+0.282}_{-0.165}$	$0.210^{+0.200}_{-0.350}$	$2.289^{+0.669}_{-0.817}$	$1.637^{+0.186}_{-0.372}$	$0.192^{+0.395}_{-0.085}$
	+3%/-4%	+7%/-4%	+95%/-167%	+29%/-36%	+11%/-23%	+205%/-44%
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 012061756-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-19 ± 2	$1.47^{+0.53}_{-0.50}$	3483^{+282}_{-314}	5476^{+1099}_{-656}	$4.415^{+5.470}_{-2.032}$
Alt.	-49 ± 1	$2.14^{+0.63}_{-0.59}$	3475^{+281}_{-323}	5741^{+774}_{-511}	$5.408^{+4.973}_{-2.079}$

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 $A_{obs} \gg 1.0$

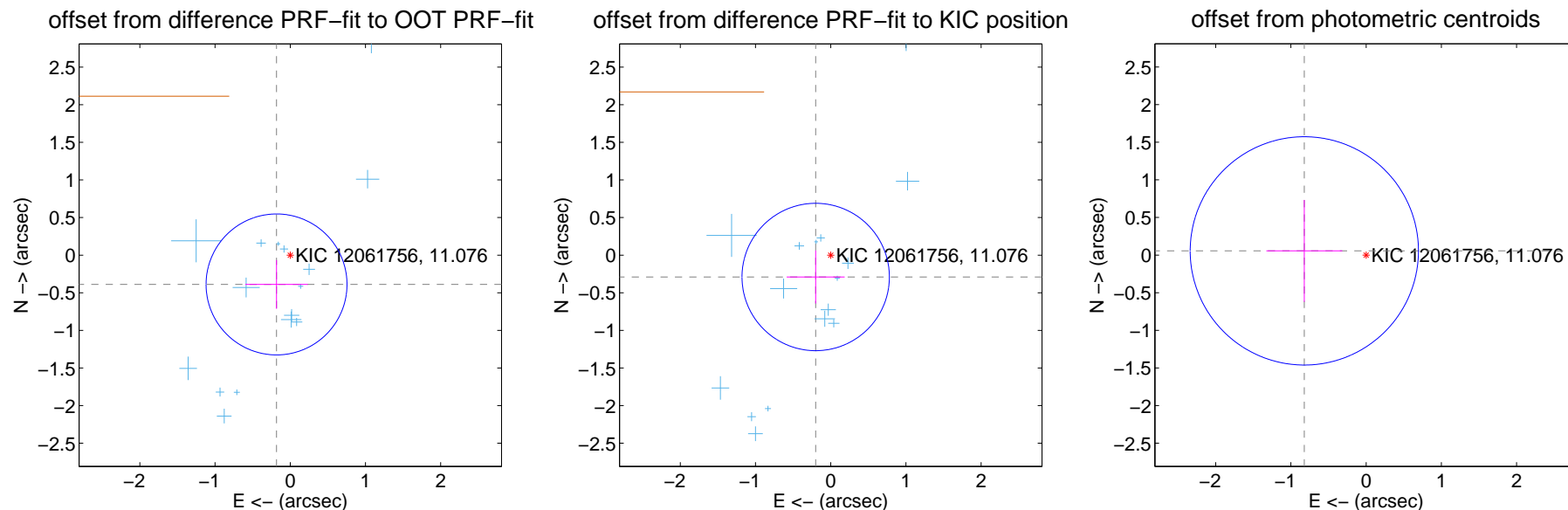
DV Centroid Data

Supplemental centroid analysis for 012061756-01. **Kepler magnitude: 11.08.** Transit SNR 9.99

There are 16 quarters with good PRF difference image offsets

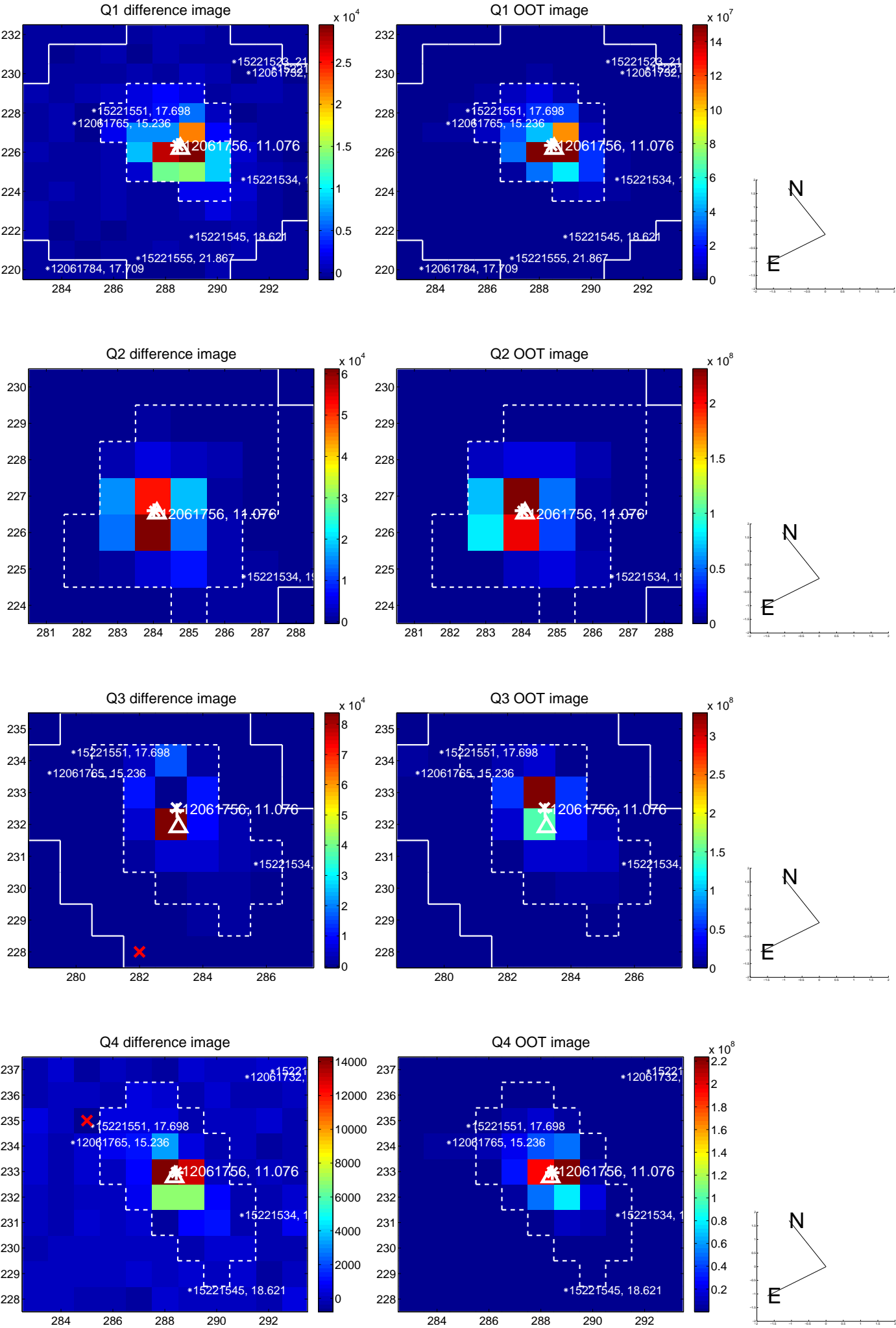
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.430 ± 0.312	1.38	0.183 ± 0.416	-0.390 ± 0.324
PRF-fit source offset from KIC position	0.353 ± 0.327	1.08	0.200 ± 0.385	-0.290 ± 0.353
photometric centroid source offset	0.82 ± 0.51	1.63	0.82 ± 0.50	0.06 ± 0.68

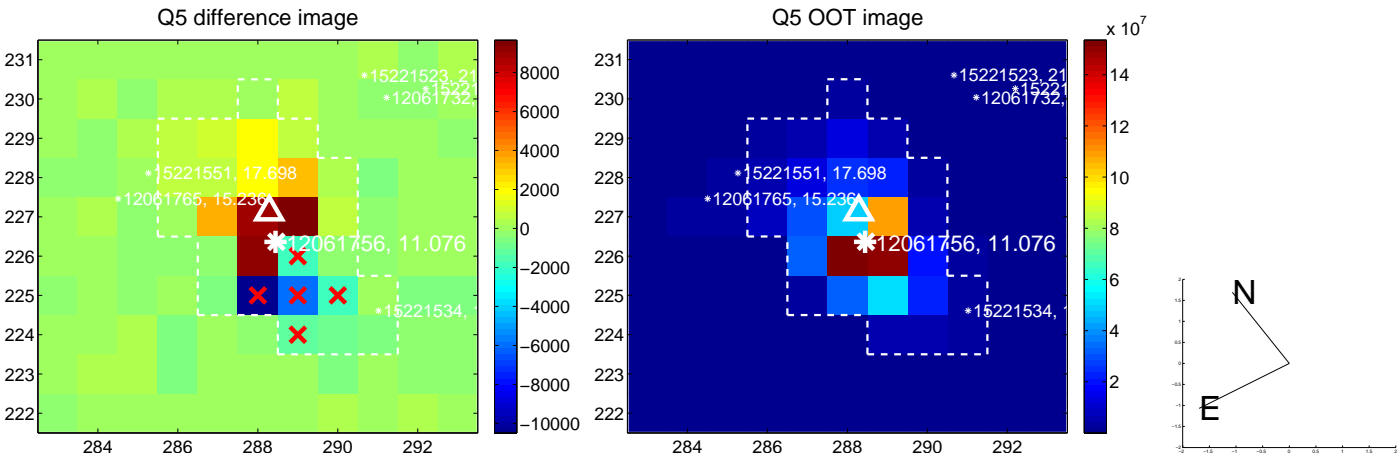


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

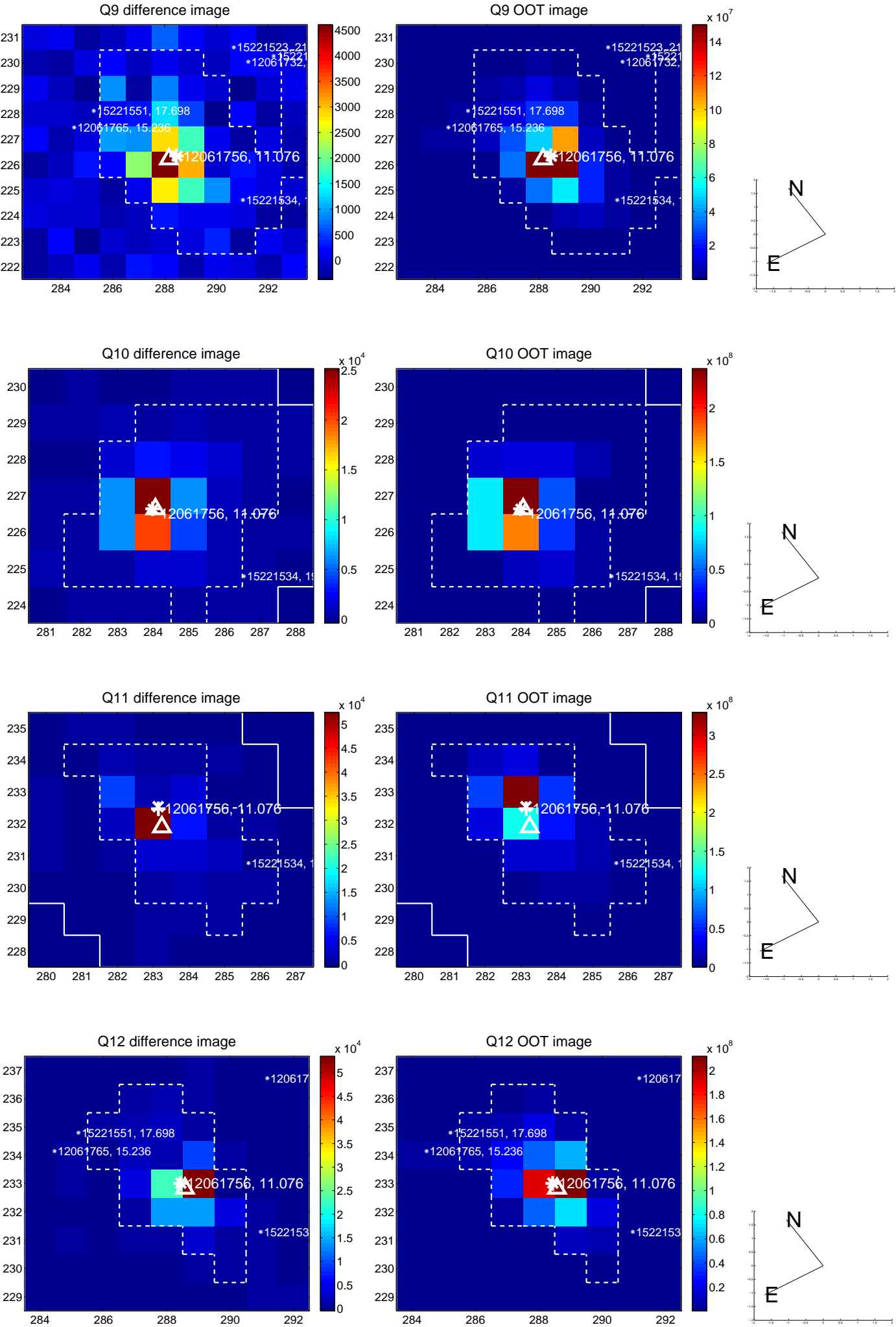
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



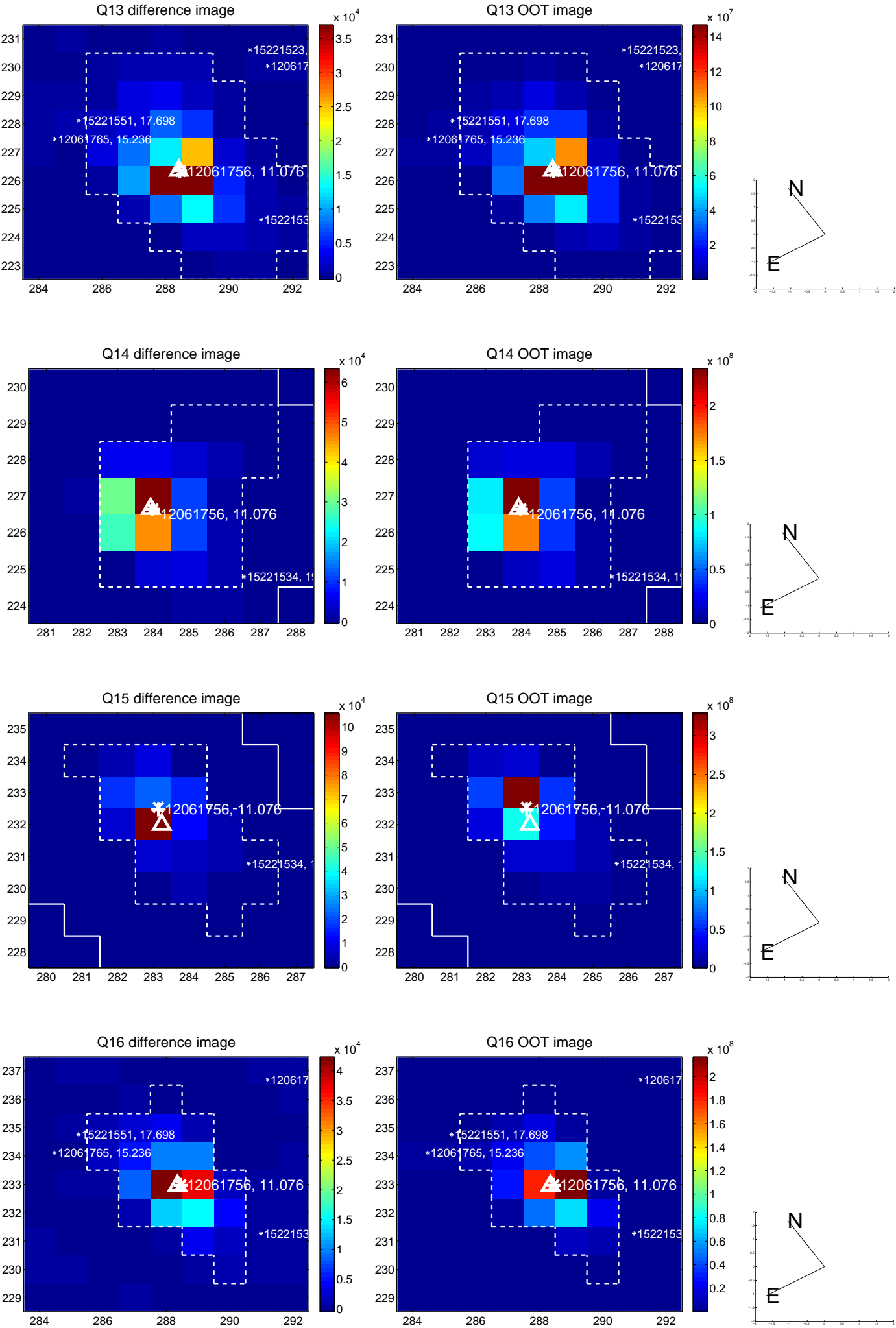
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



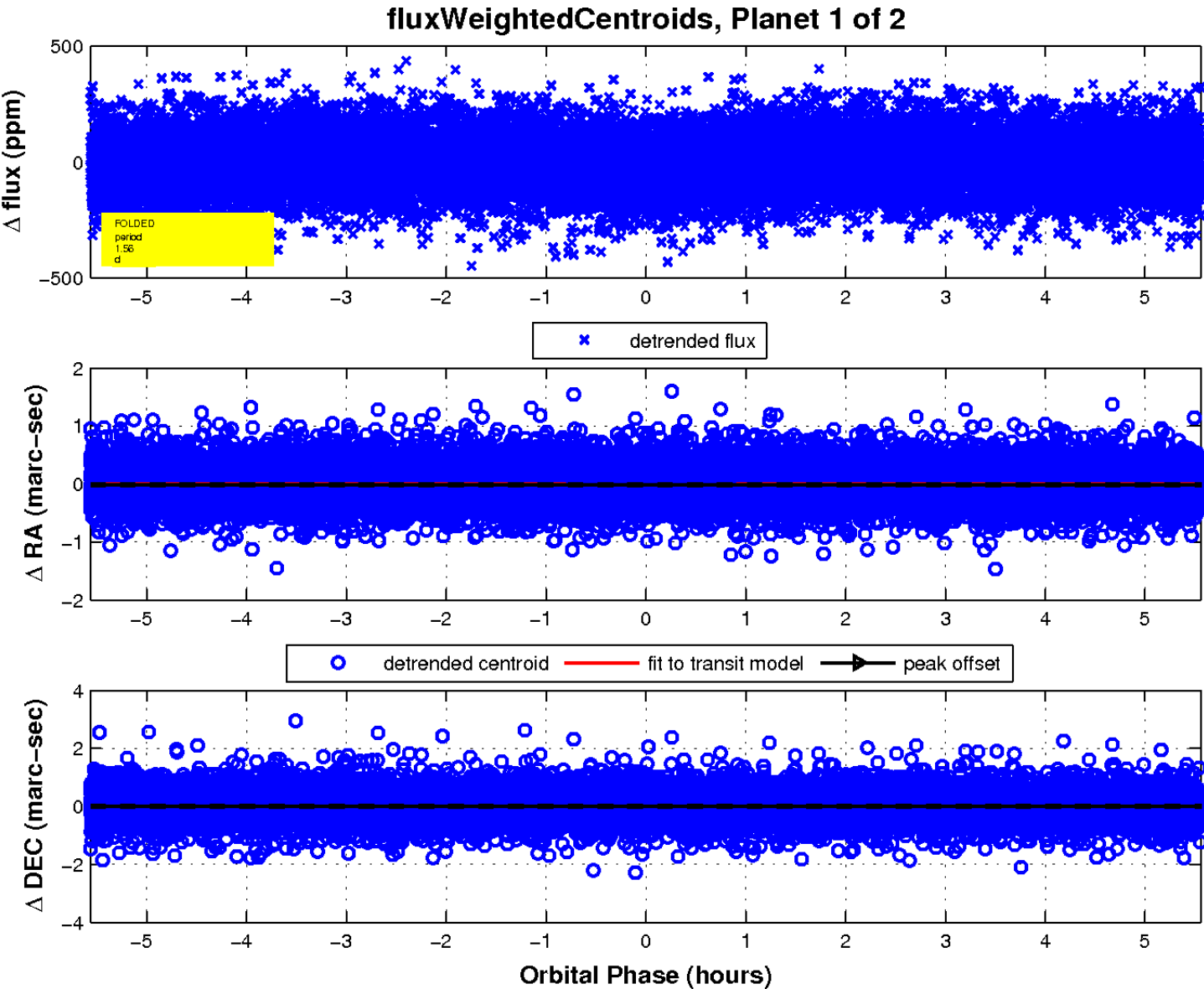
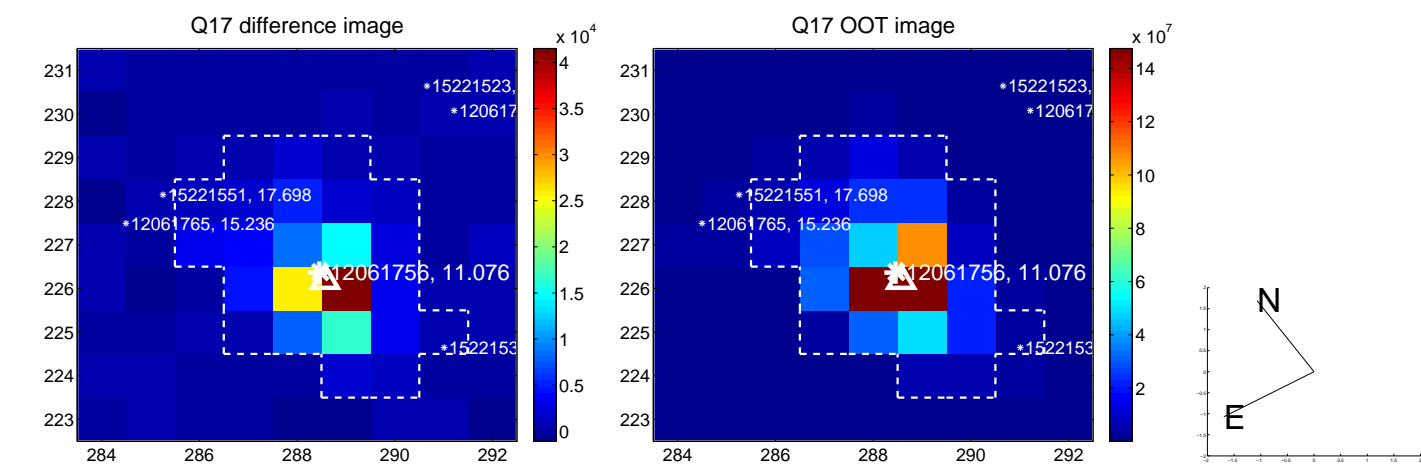
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



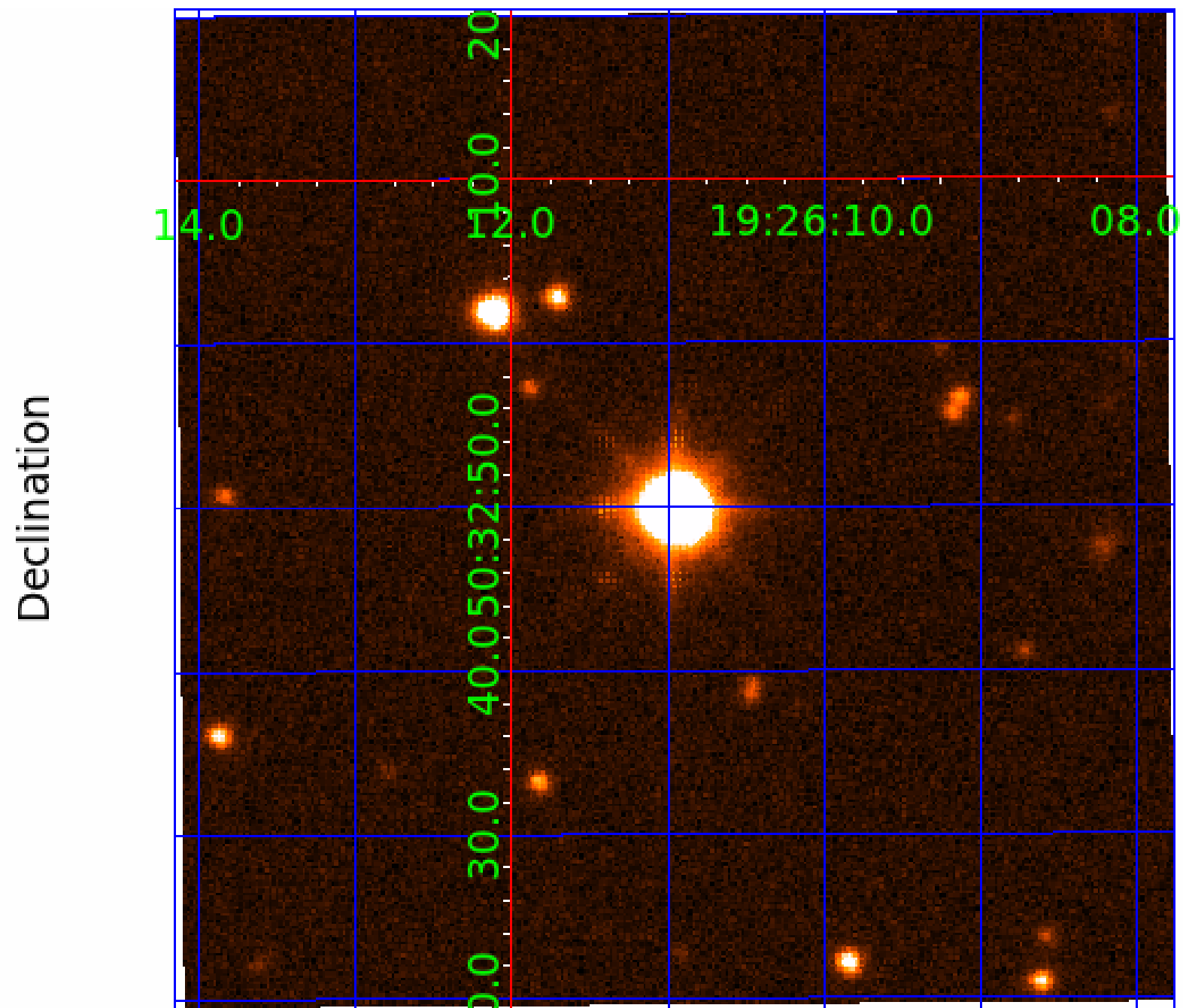
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 012061756

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})
012061756-01	OBS	No	1.556649	132.454327	27.8	1.854	10.3	10.0	2.29	6645	1.52	9529.07
012061756-02	OBS	No	1.556402	133.026285	13.6	3.595	7.9	5.8	2.29	6645	0.99	9531.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012061756-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
012061756-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—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.

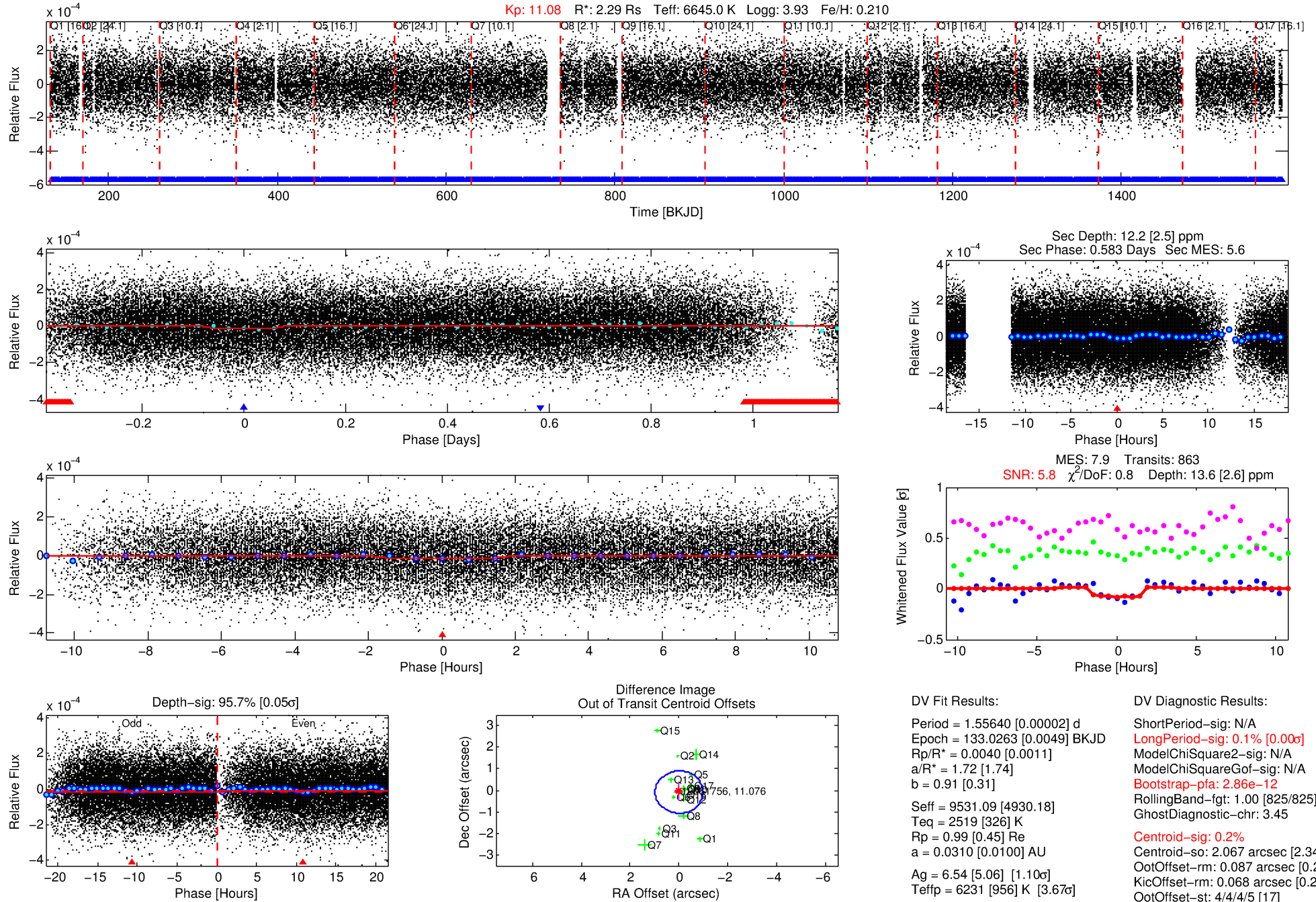
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012061756-02

No Significant Match Found

DV One-Page Summary

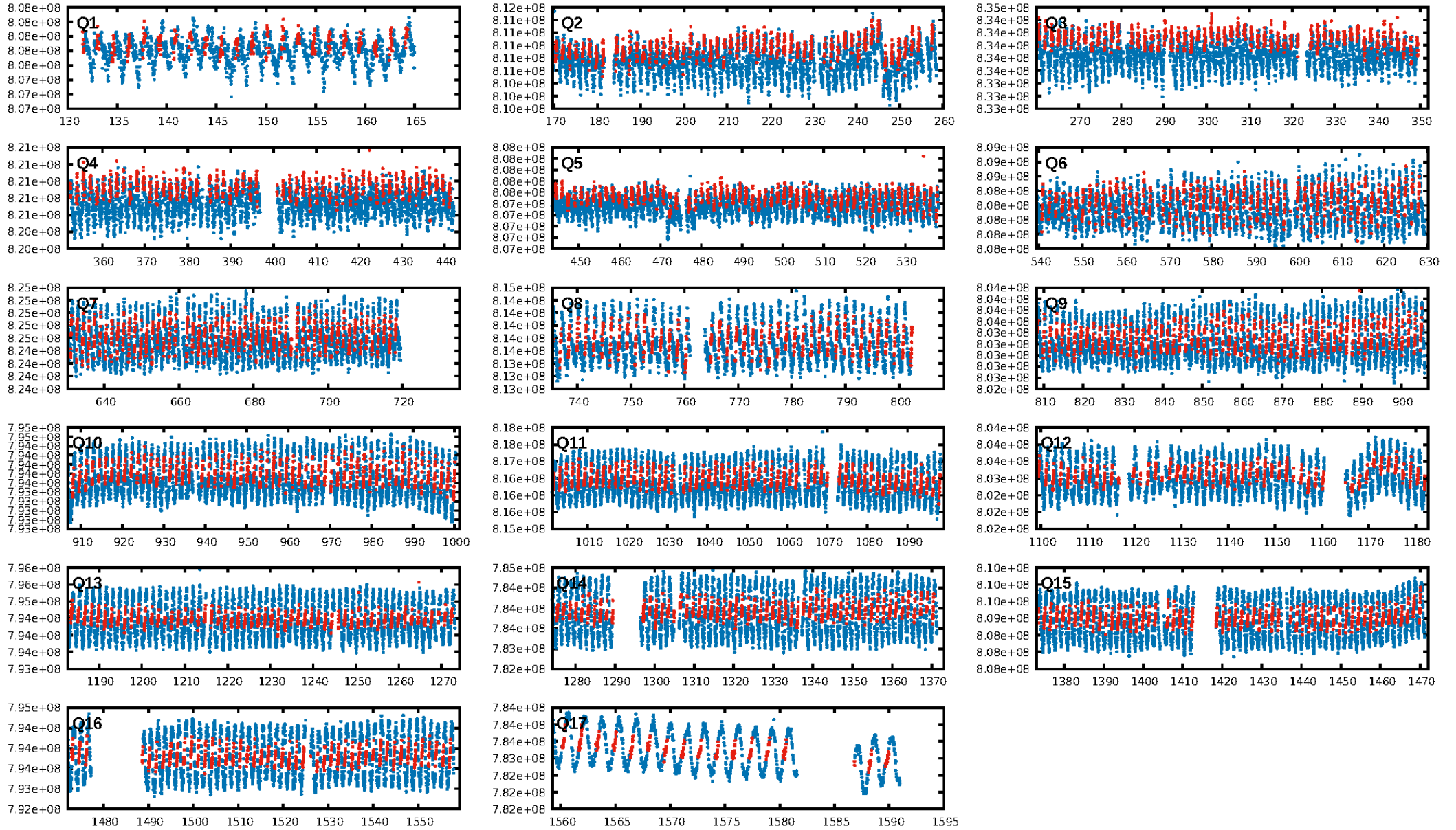
KIC: 12061756 Candidate: 2 of 2 Period: 1.556 d



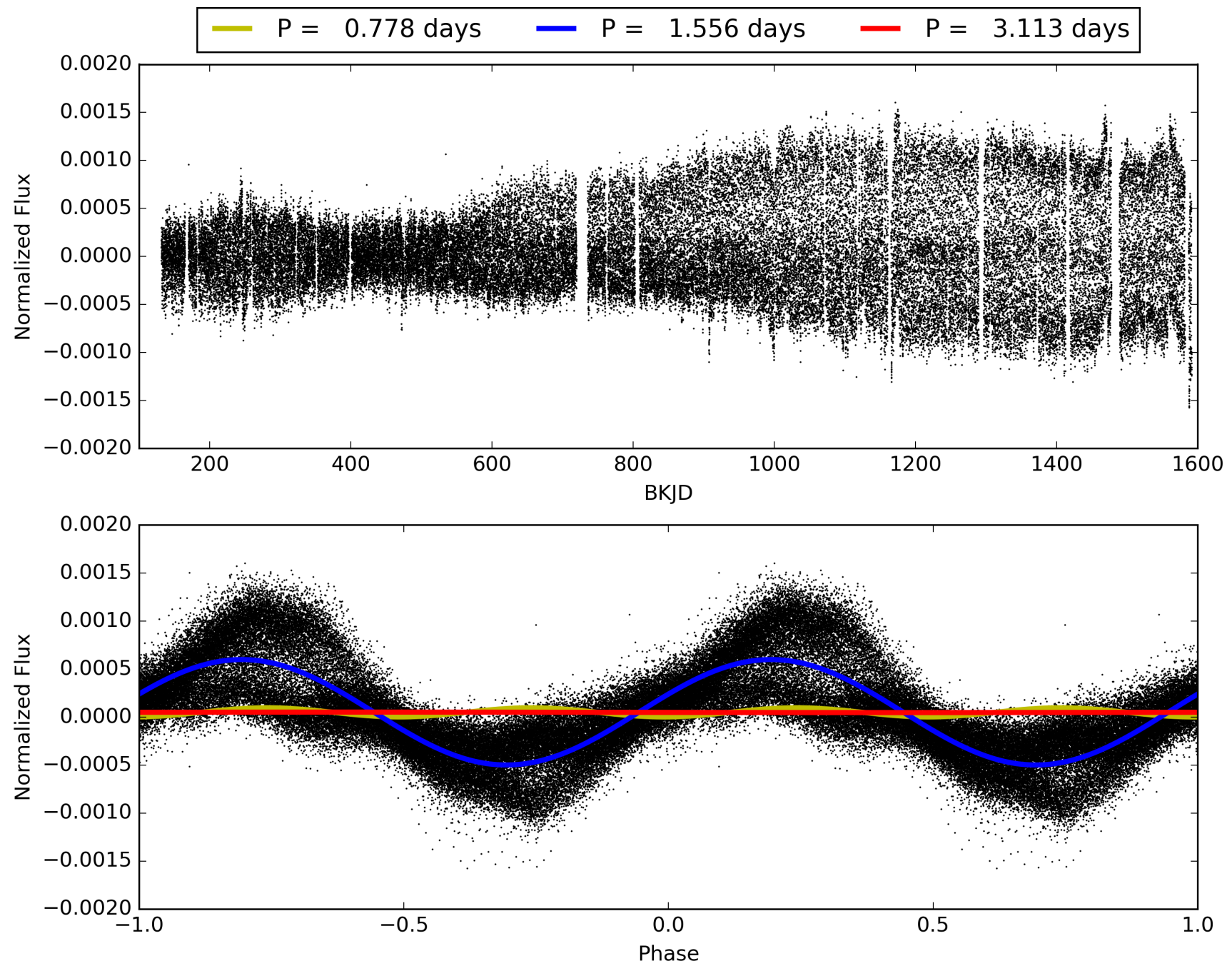
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:52:39 Z

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

TCE 012061756-02, PDC Light Curves

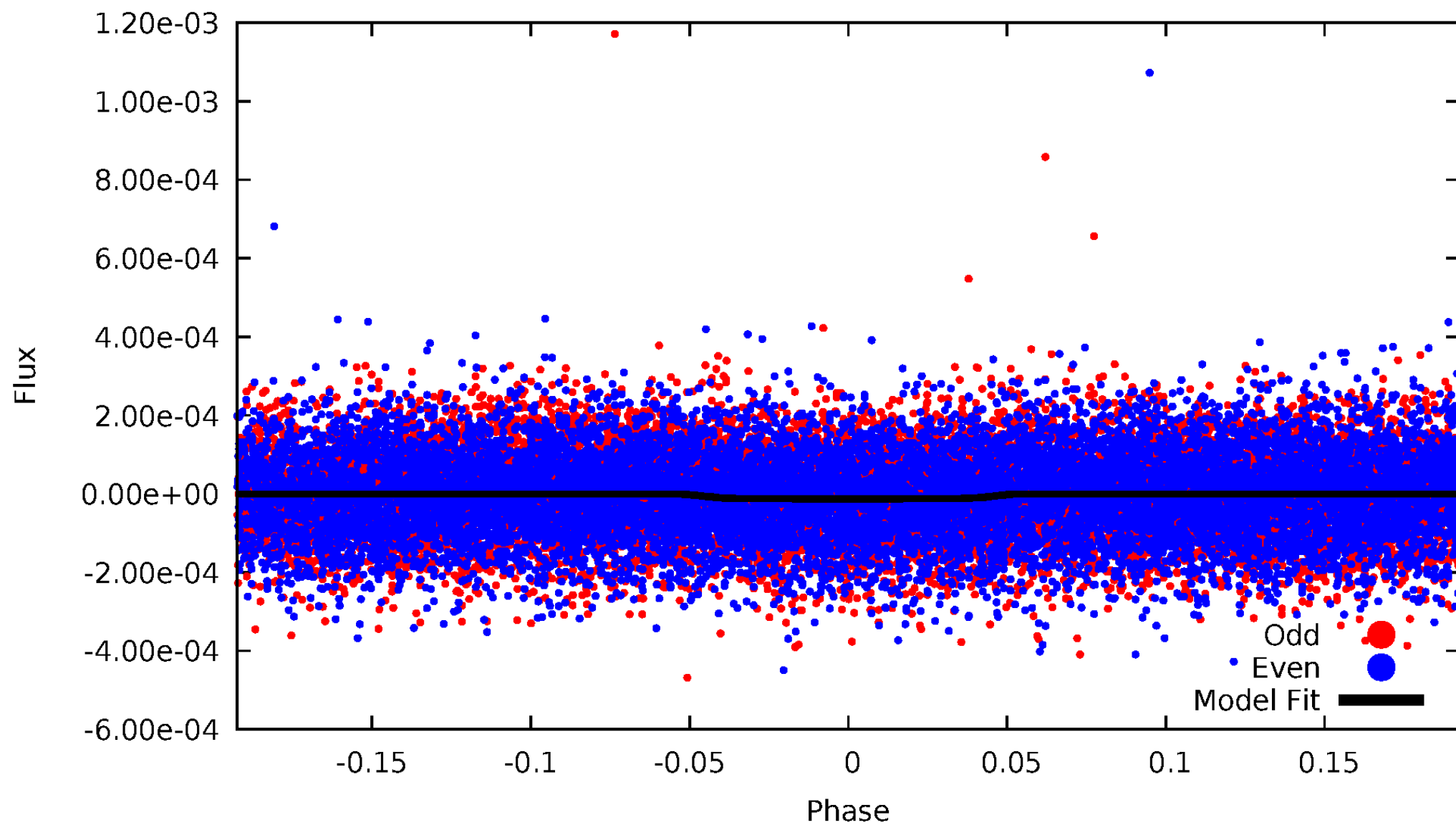


TCE 012061756-02



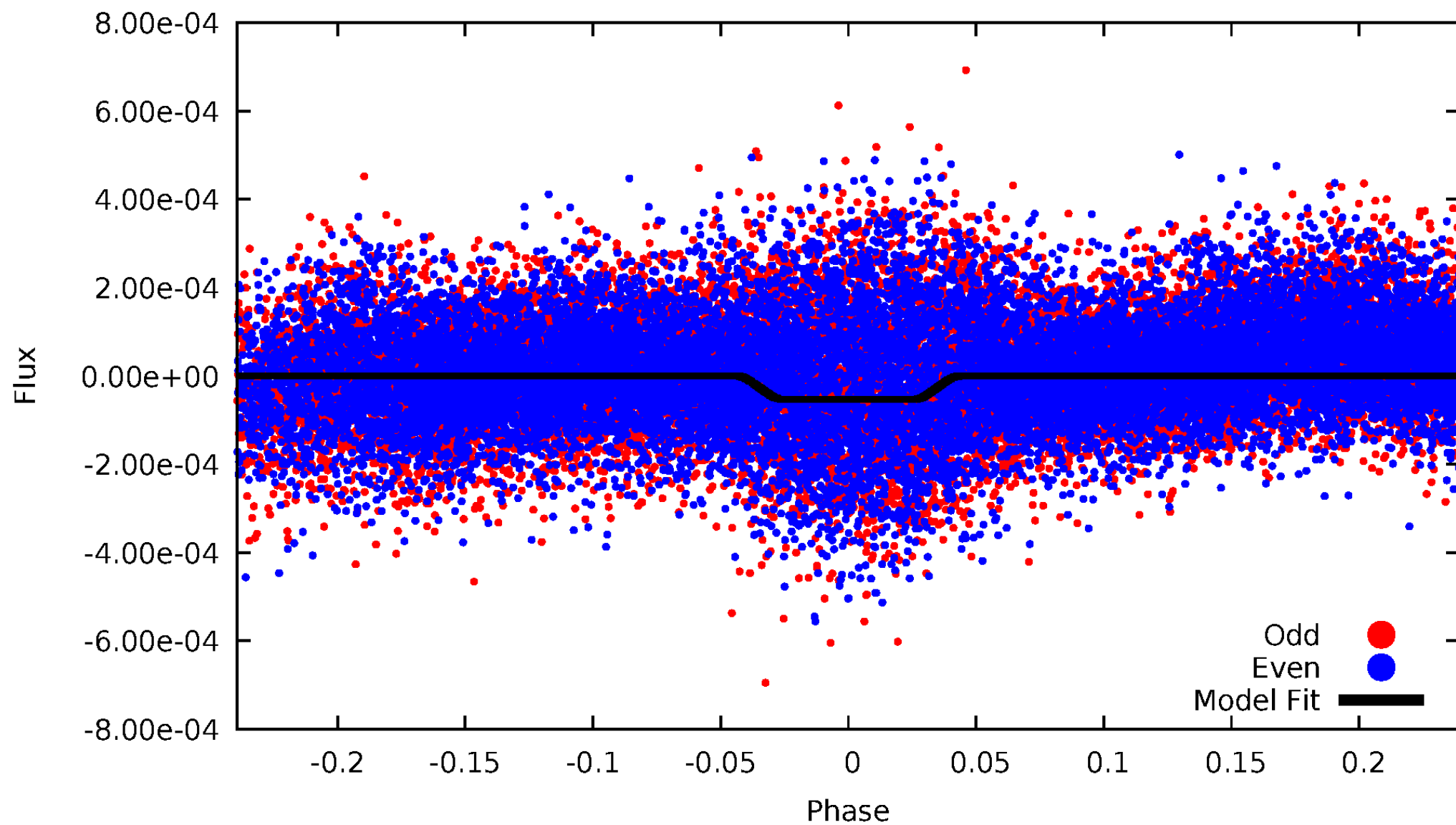
DV Odd/Even

TCE 012061756-02



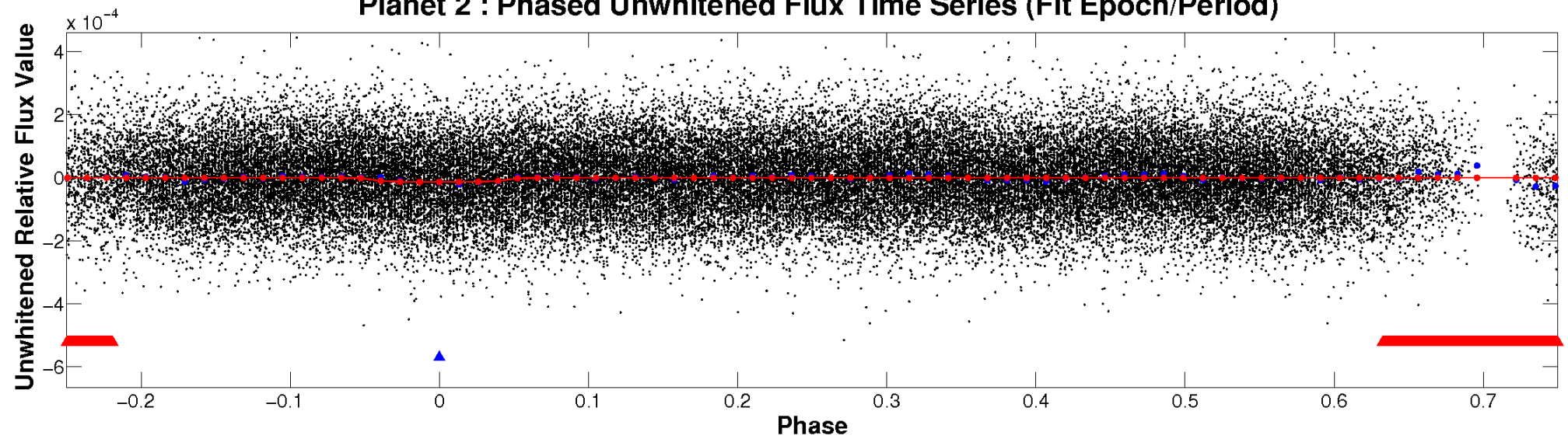
ALT Odd/Even

TCE 012061756-02

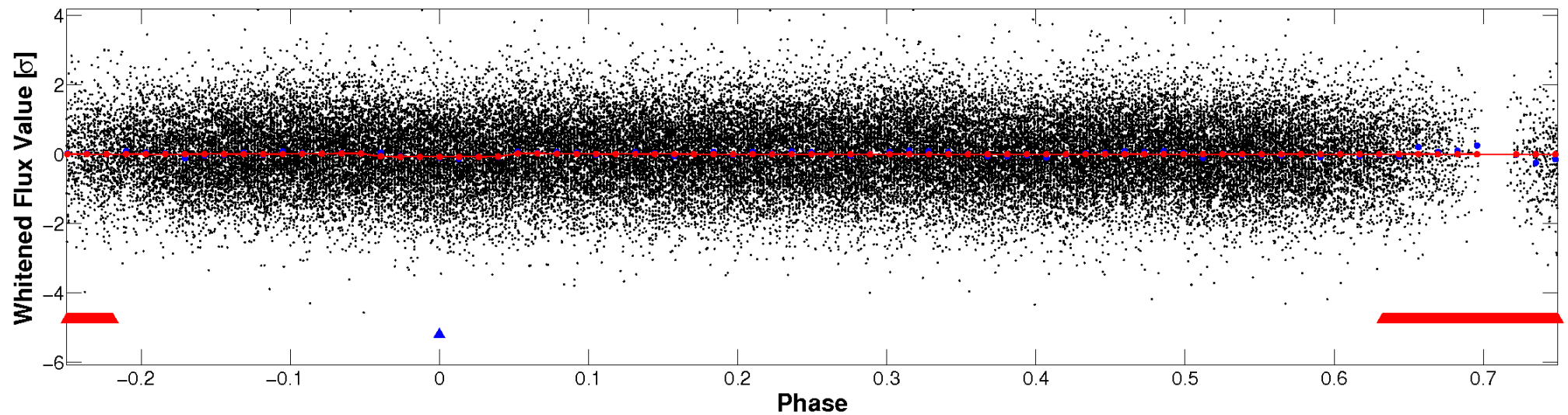


Non-Whitened Vs. Whitened Light Curve

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

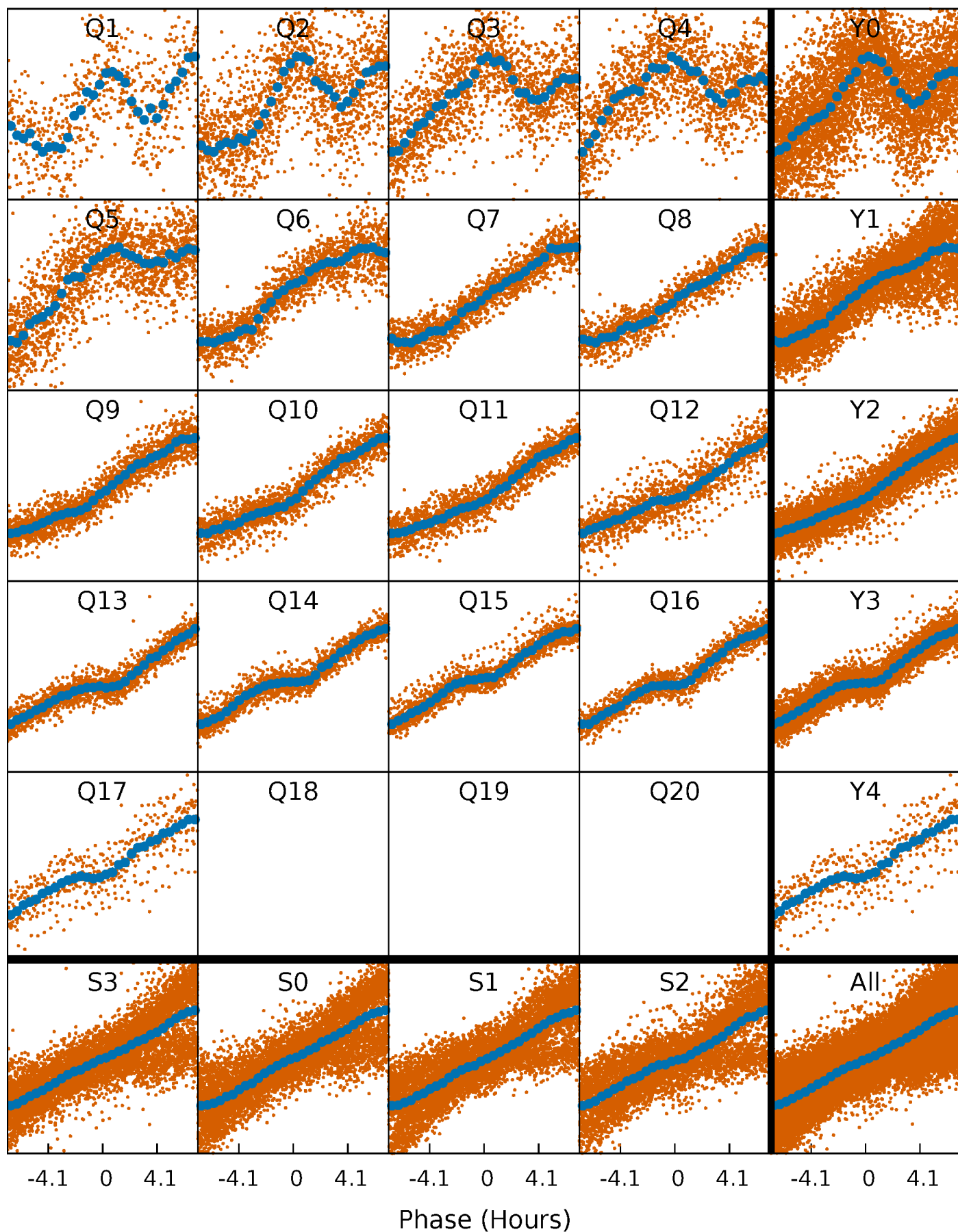


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



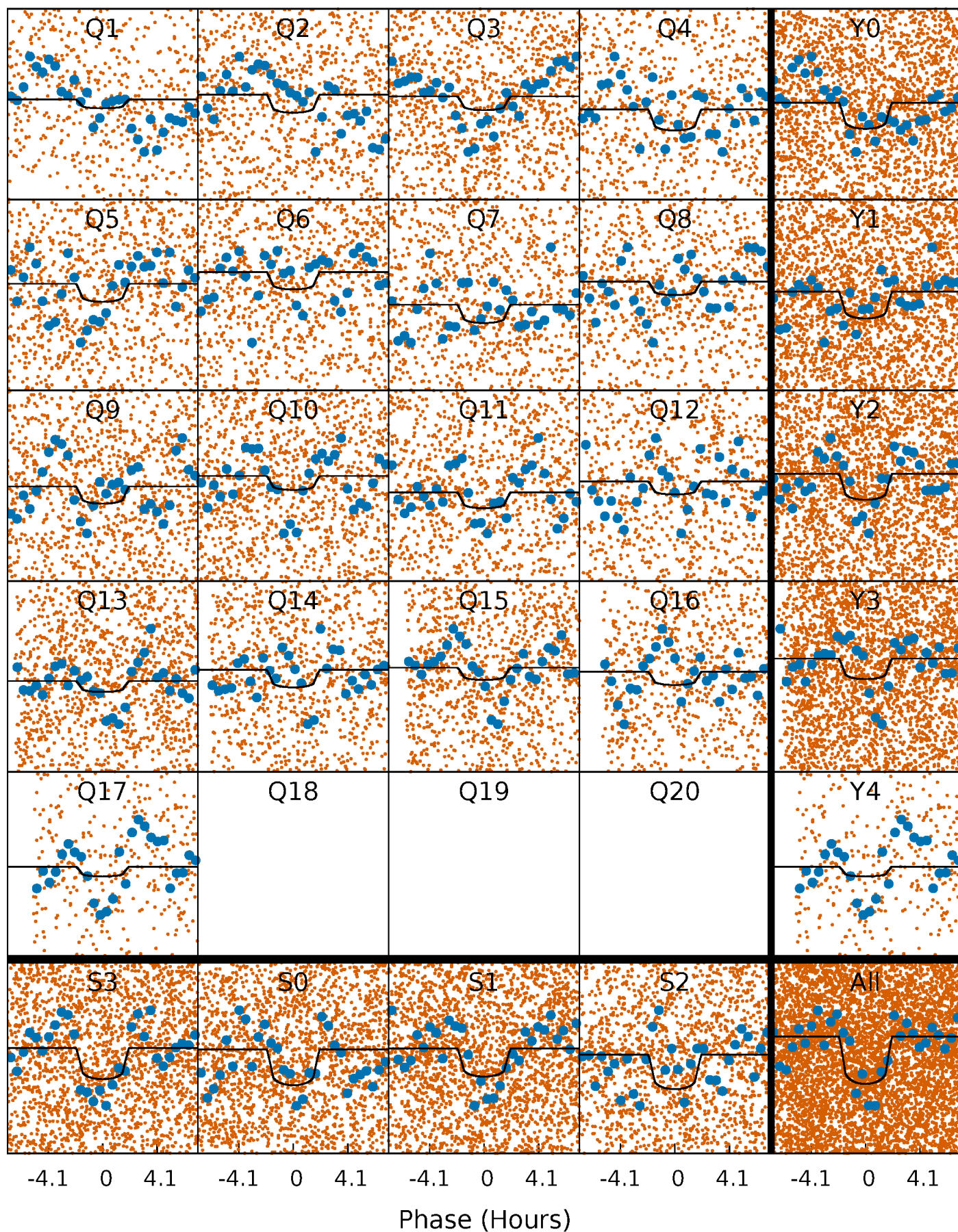
PDC Quarter-Phased Transit Curves

TCE 012061756-02 P= 1.556402 Days $T_0=133.026285$ (BKJD)



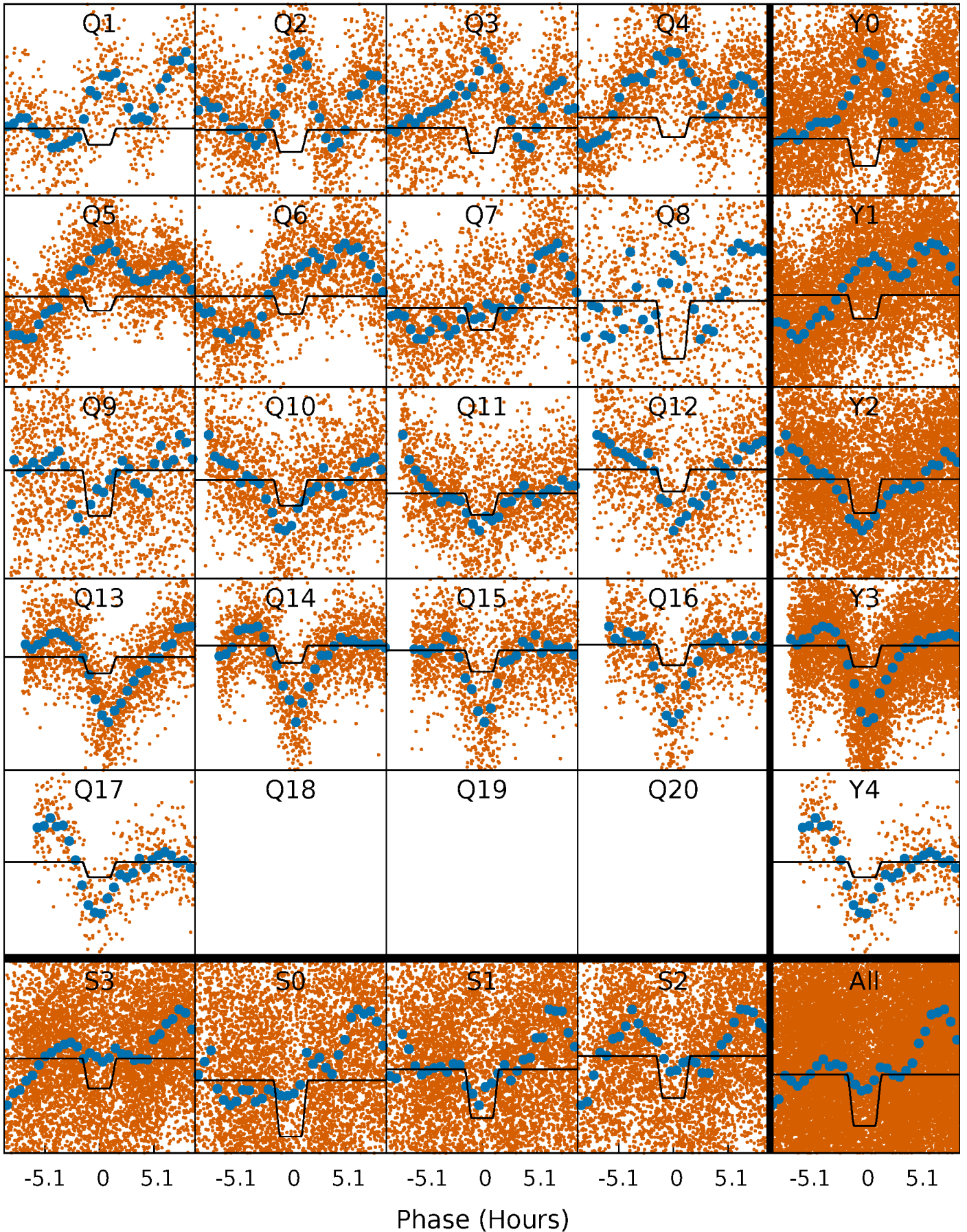
DV Quarter-Phased Transit Curves

TCE 012061756-02 P= 1.556402 Days $T_0=133.026285$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

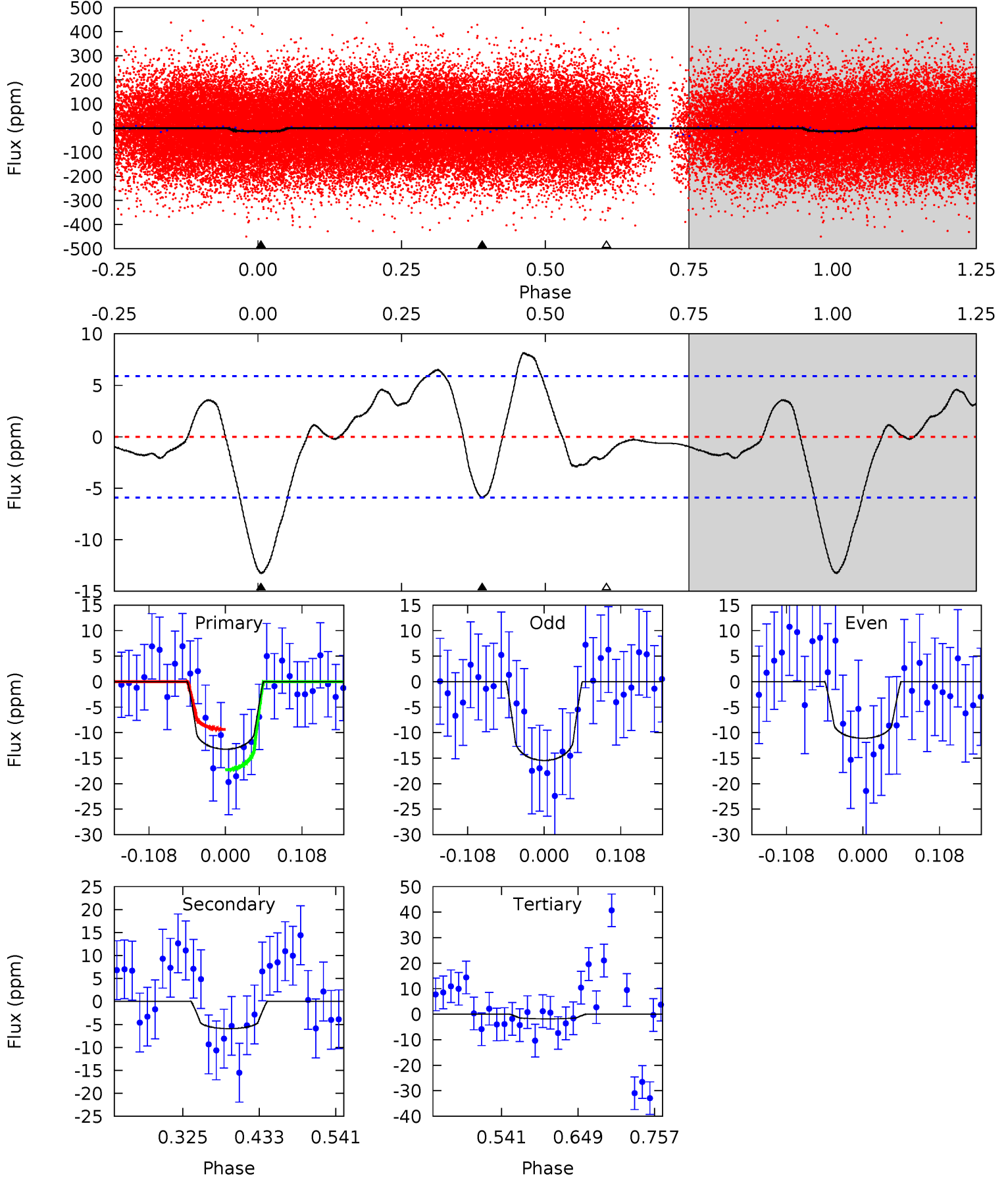
TCE 012061756-02 P= 1.556460 Days $T_0=133.009165$ (BKJD)



DV Model-Shift Uniqueness Test

012061756-02, P = 1.556402 Days, E = 131.469883 Days

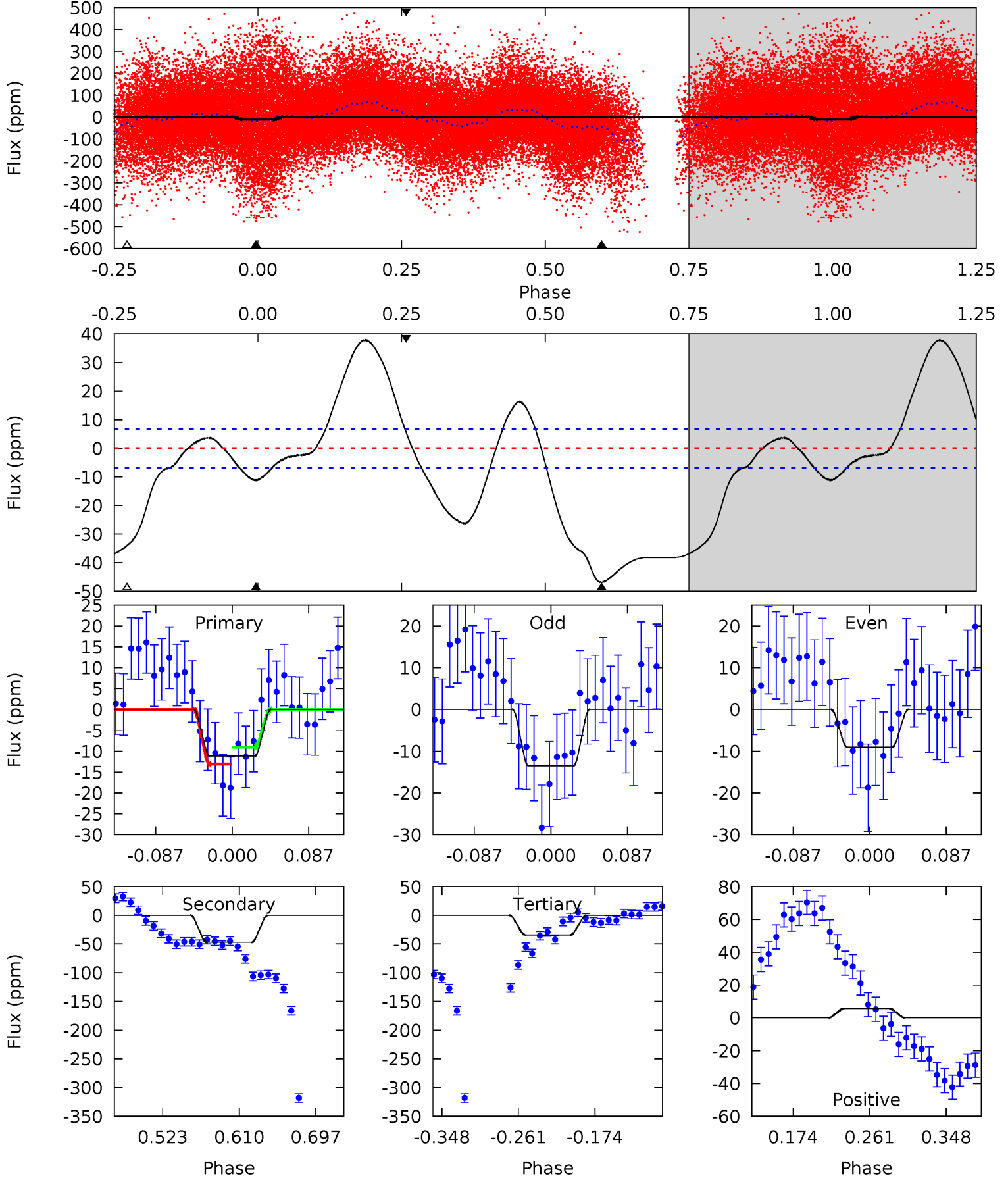
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	4.56	1.39	0	4.55	1.61	1.81	8.82	10.2	3.18	4.56	1.68	1.09	0.38	3.05



Alt Model-Shift Uniqueness Test

012061756-02, P = 1.556460 Days, E = 131.452705 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.51	31.5	22.9	3.78	4.59	1.71	12.6	-15.4	3.73	8.63	27.7	1.46	0.74	0.45	1.30



Stellar Parameters For KIC 012061756

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6645^{+185}_{-255}	$3.933^{+0.282}_{-0.165}$	$0.210^{+0.200}_{-0.350}$	$2.289^{+0.669}_{-0.817}$	$1.637^{+0.186}_{-0.372}$	$0.192^{+0.395}_{-0.085}$
	+3%/-4%	+7%/-4%	+95%/-167%	+29%/-36%	+11%/-23%	+205%/-44%
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 012061756-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-6 ± 1	$0.93^{+0.33}_{-0.29}$	3475^{+287}_{-304}	5161^{+988}_{-637}	$3.519^{+3.934}_{-1.706}$
Alt.	-47 ± 1	$1.76^{+0.46}_{-0.40}$	3483^{+257}_{-320}	6358^{+648}_{-548}	$7.927^{+5.040}_{-2.822}$

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

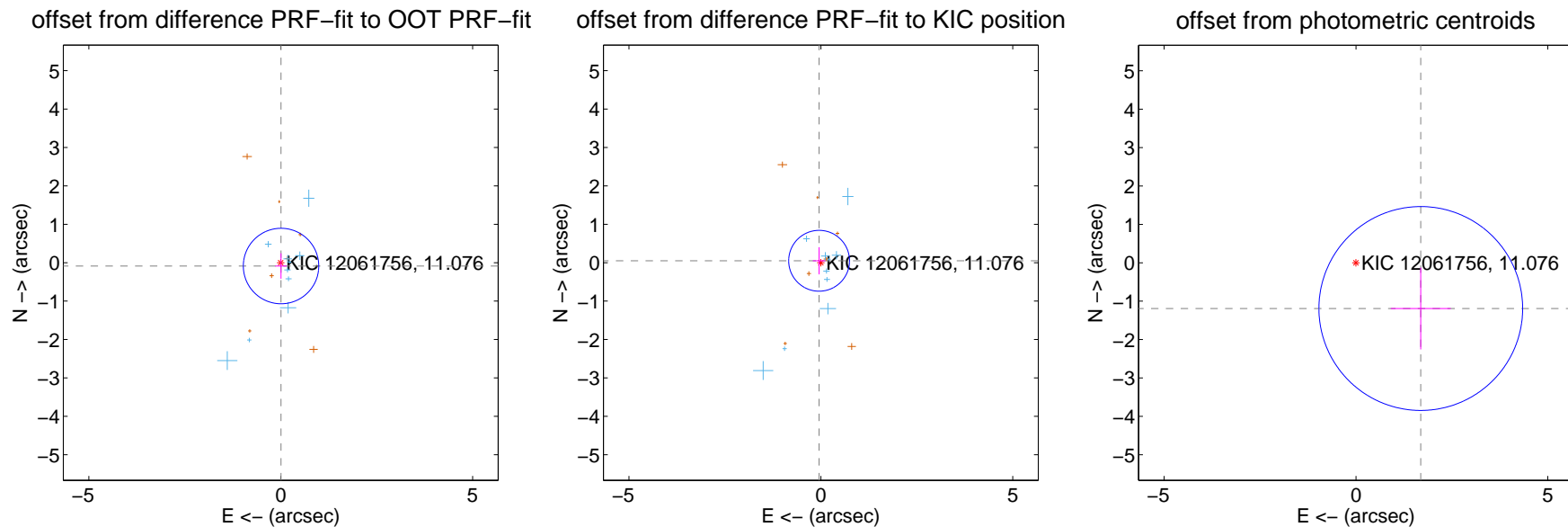
DV Centroid Data

Supplemental centroid analysis for 012061756-02. **Kepler magnitude: 11.08.** Transit SNR 5.83

There are 10 quarters with good PRF difference image offsets

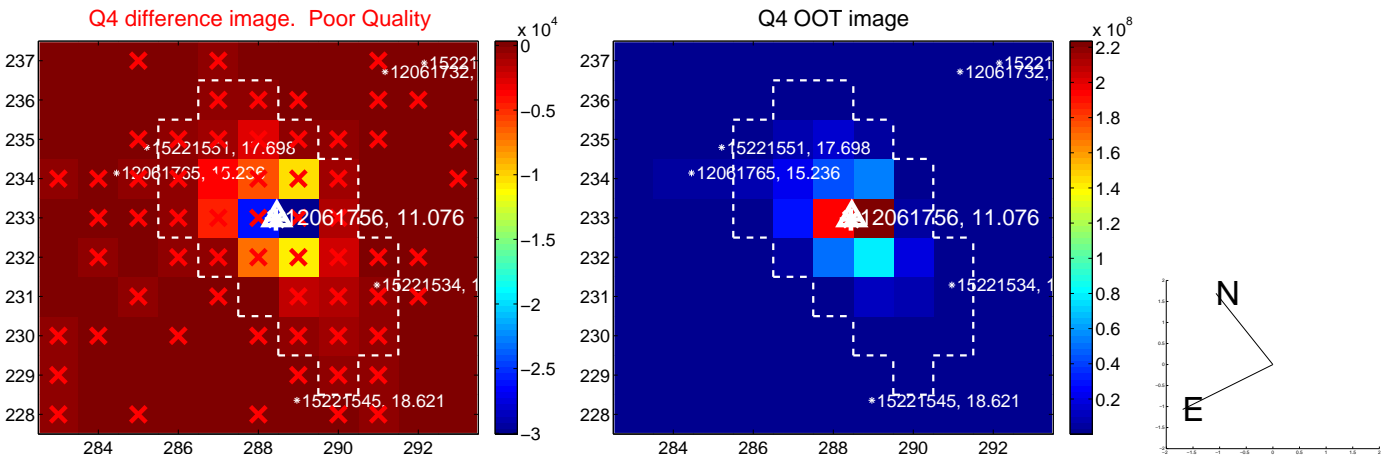
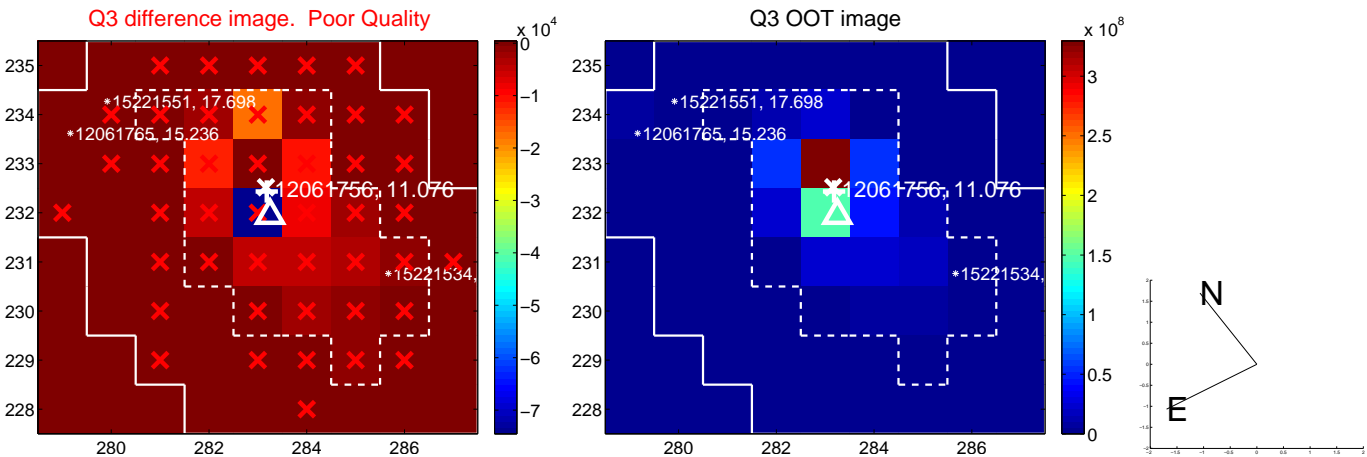
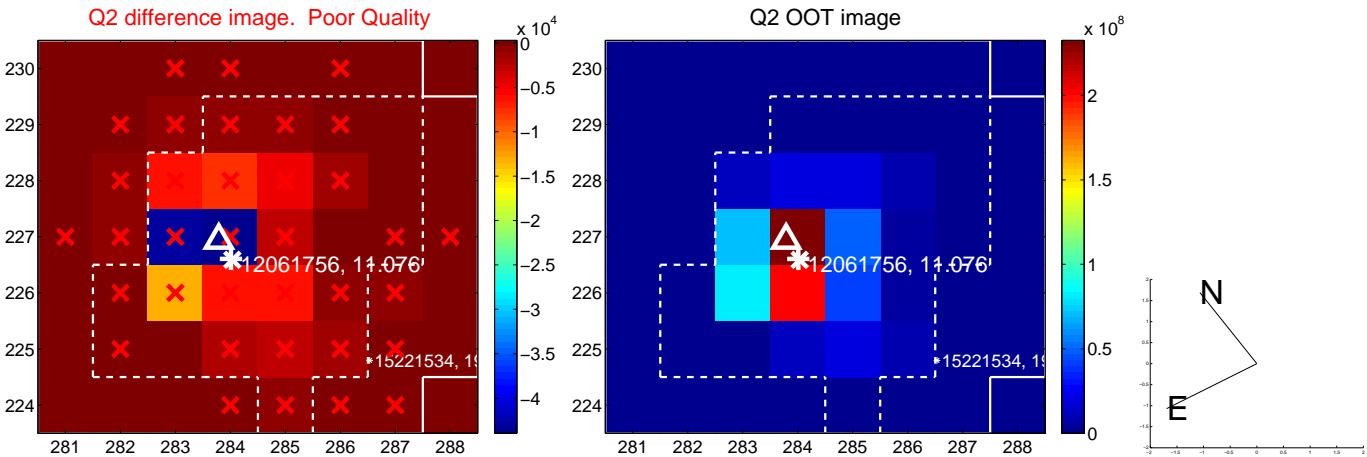
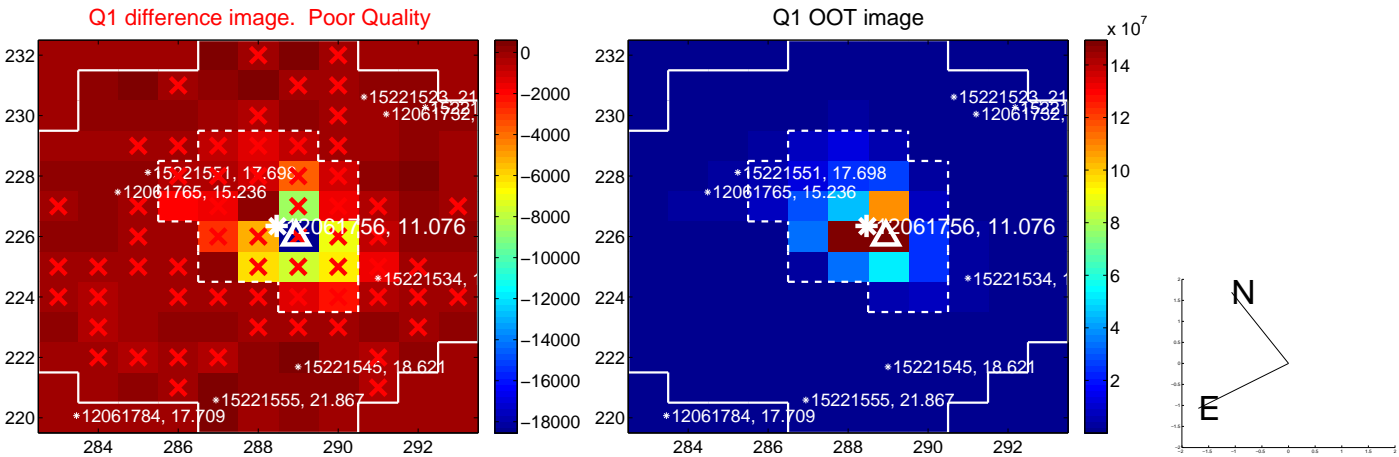
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.087 ± 0.328	0.27	-0.008 ± 0.149	-0.087 ± 0.331
PRF-fit source offset from KIC position	0.068 ± 0.264	0.26	0.046 ± 0.163	0.050 ± 0.355
photometric centroid source offset	2.07 ± 0.89	2.34	-1.69 ± 0.78	-1.19 ± 1.06

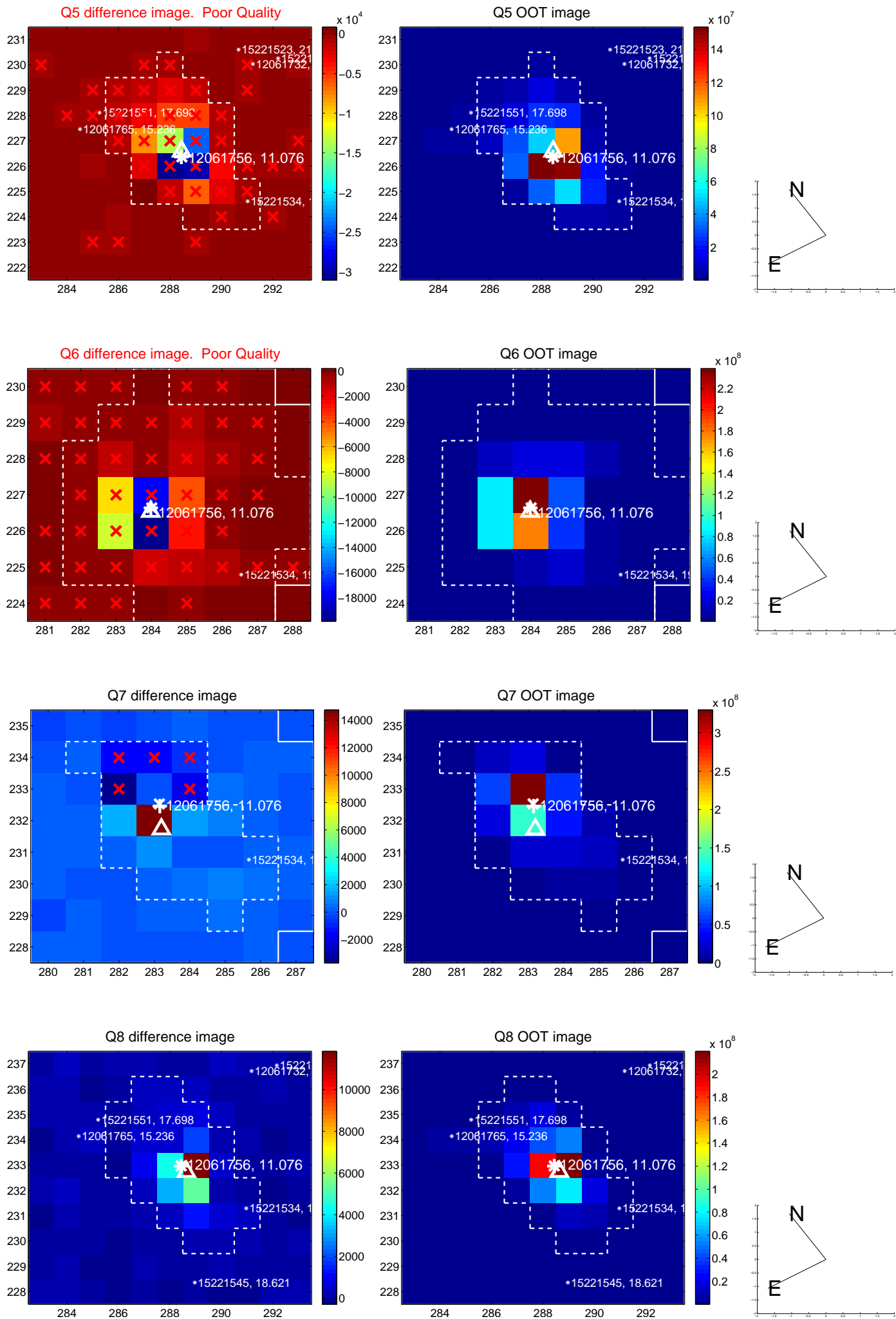


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

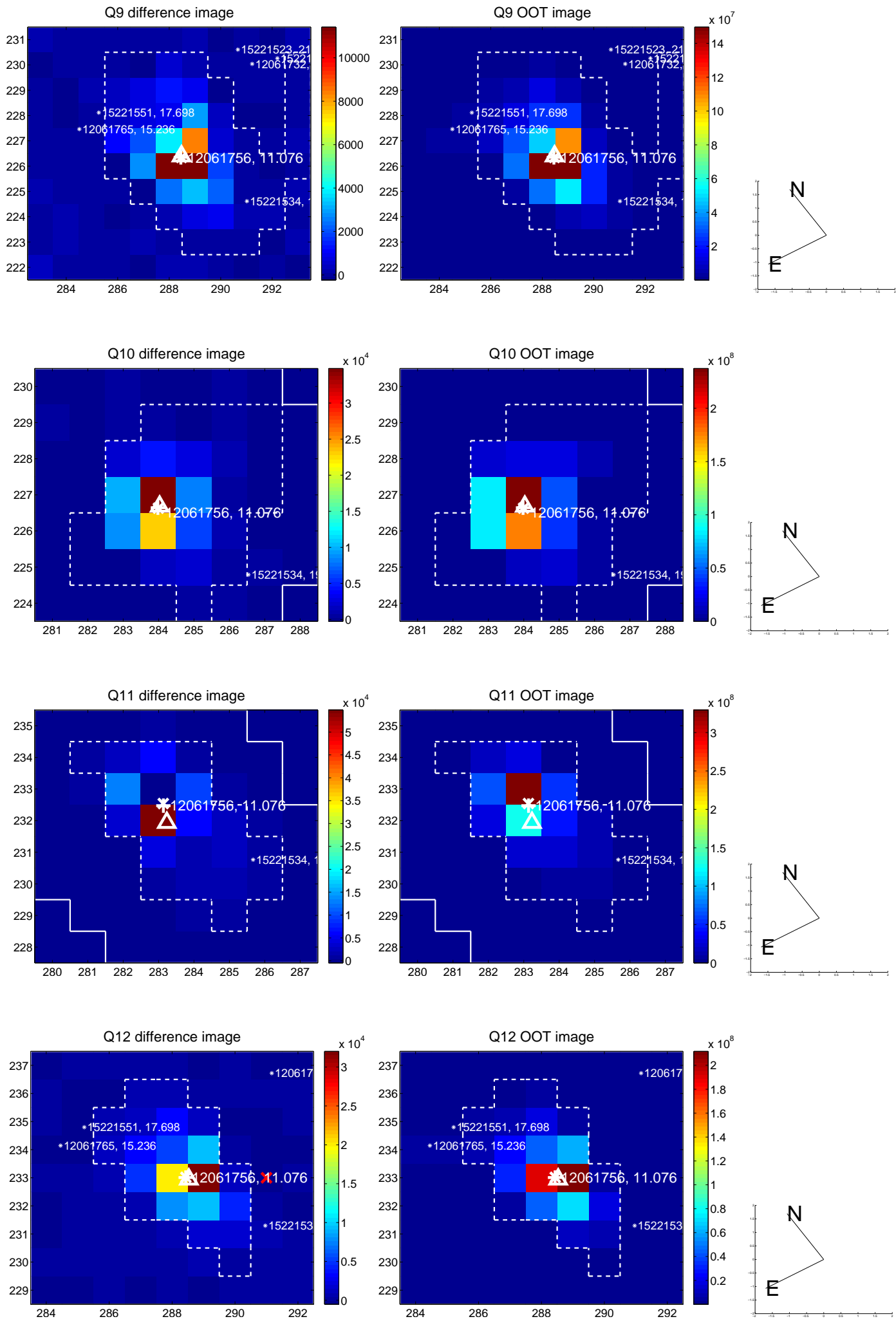
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



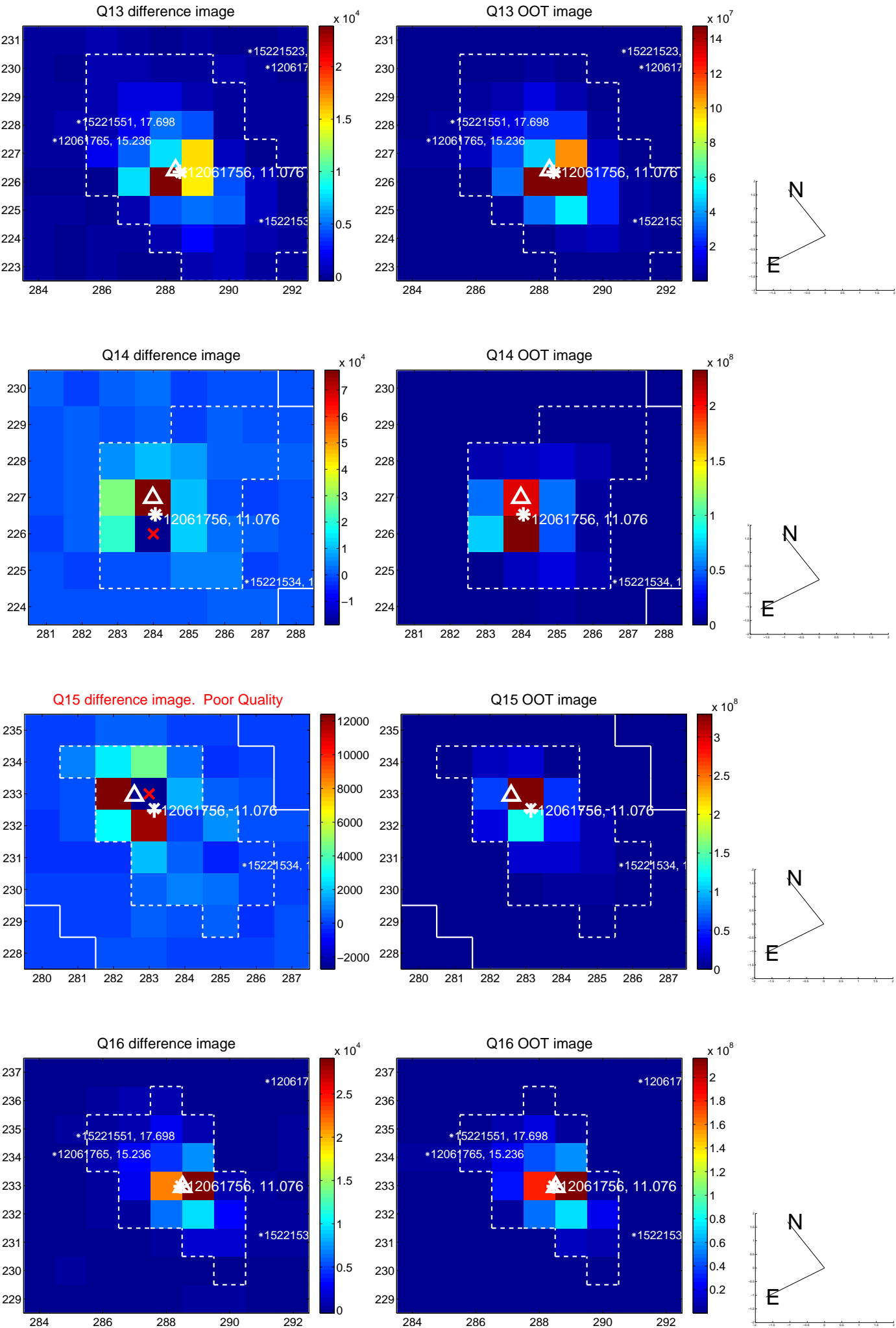
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



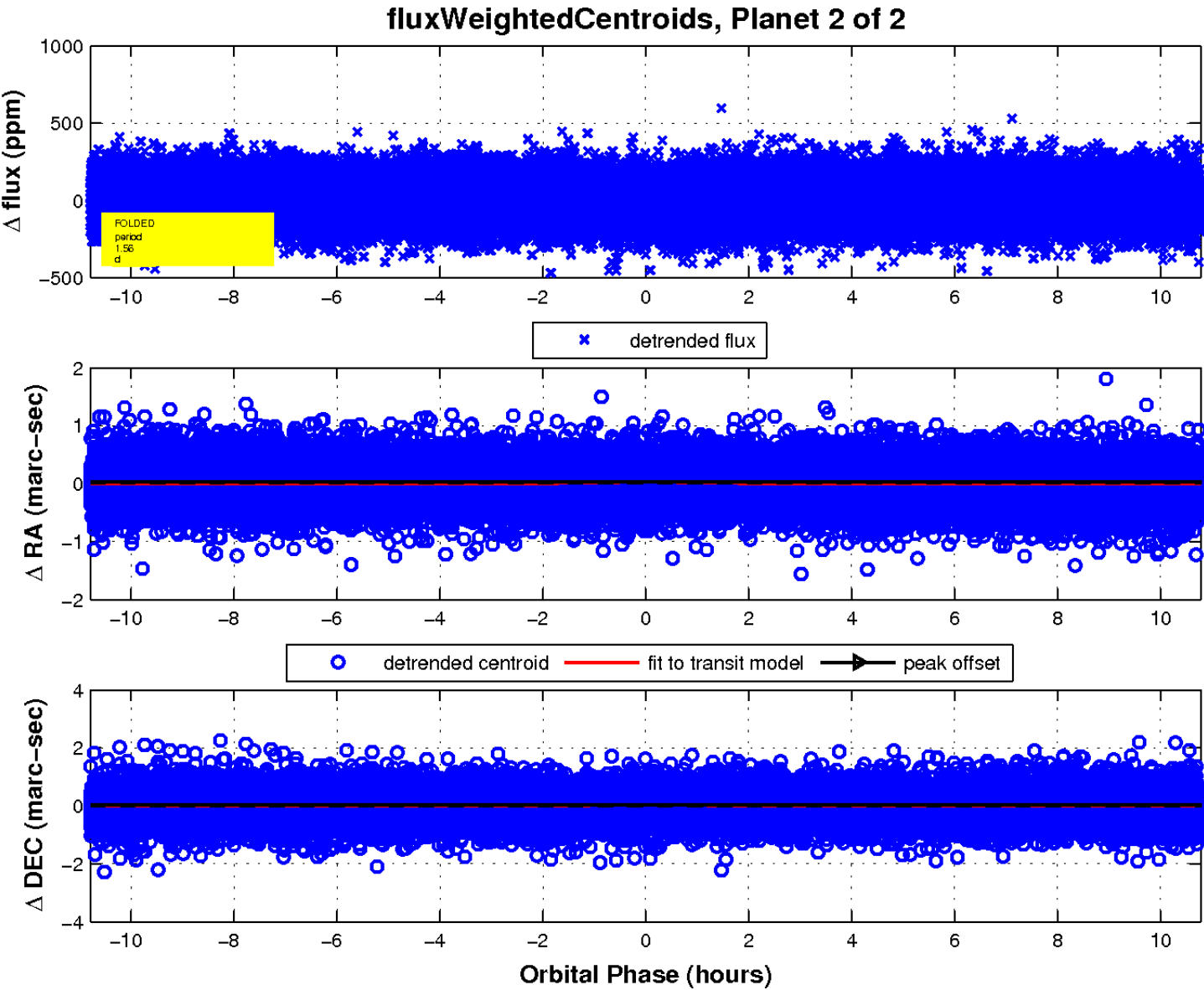
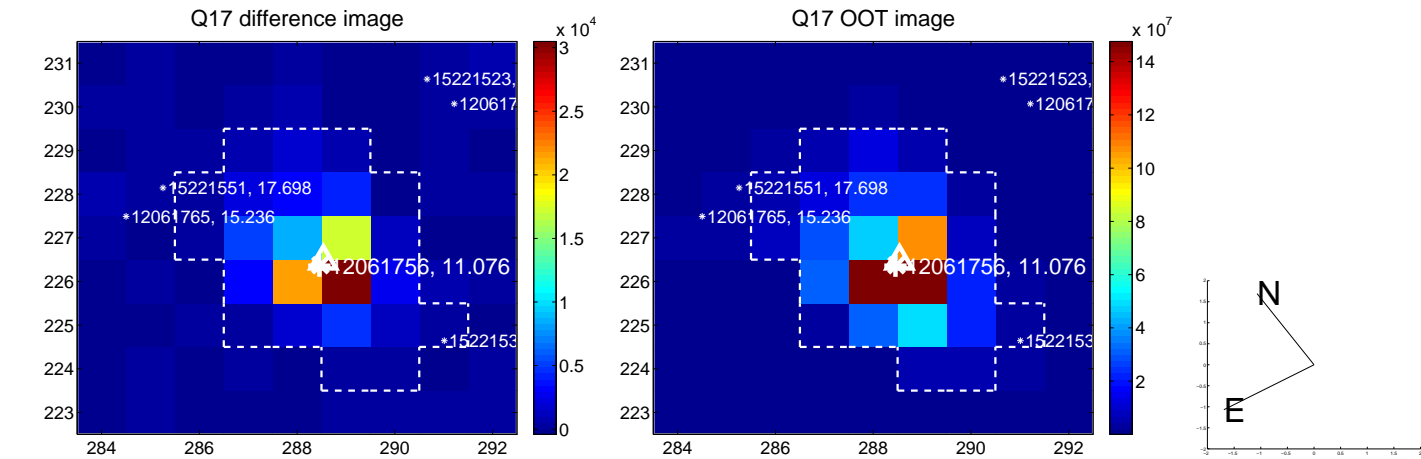
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

