

KIC 006357702

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})
006357702-01	OBS	No	0.519021	131.752284	82.4	1.026	11.7	12.3	3.73	7559	3.95	0.00
006357702-02	OBS	No	1.422611	132.241701	98.1	11.610	10.1	16.0	3.73	7559	3.73	40801.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006357702-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
006357702-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—CENT_SATURATED

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

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

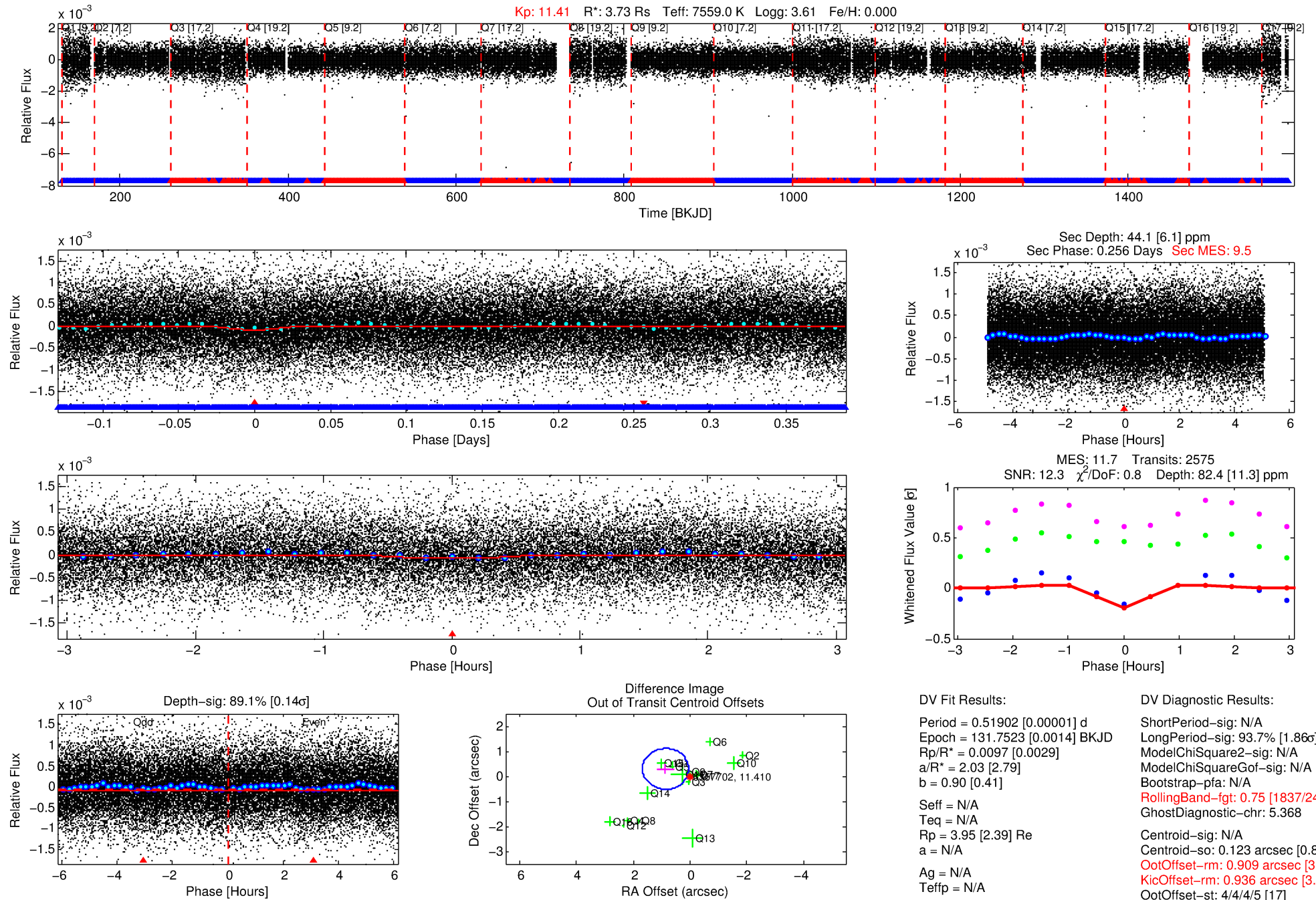
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006357702-01

No Significant Match Found

DV One-Page Summary

KIC: 6357702 Candidate: 1 of 2 Period: 0.519 d



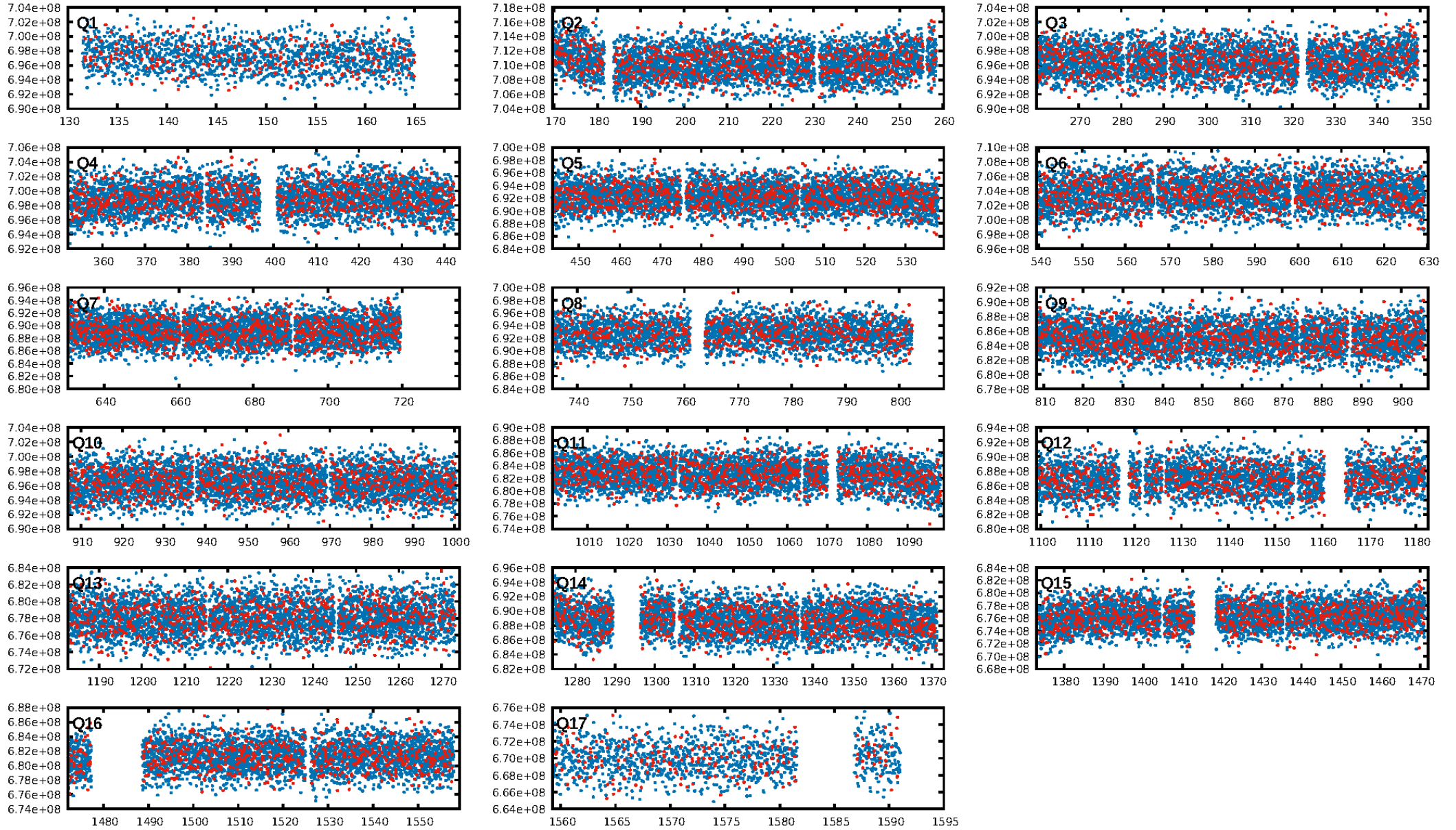
DV Fit Results:

Period = 0.51902 [0.00001] d
Epoch = 131.7523 [0.0014] BKJD
Rp/R* = 0.0097 [0.0029]
a/R* = 2.03 [2.79]
b = 0.90 [0.41]
Seff = N/A
Teq = N/A
Rp = 3.95 [2.39] Re
a = N/A
Ag = N/A
Teffp = N/A

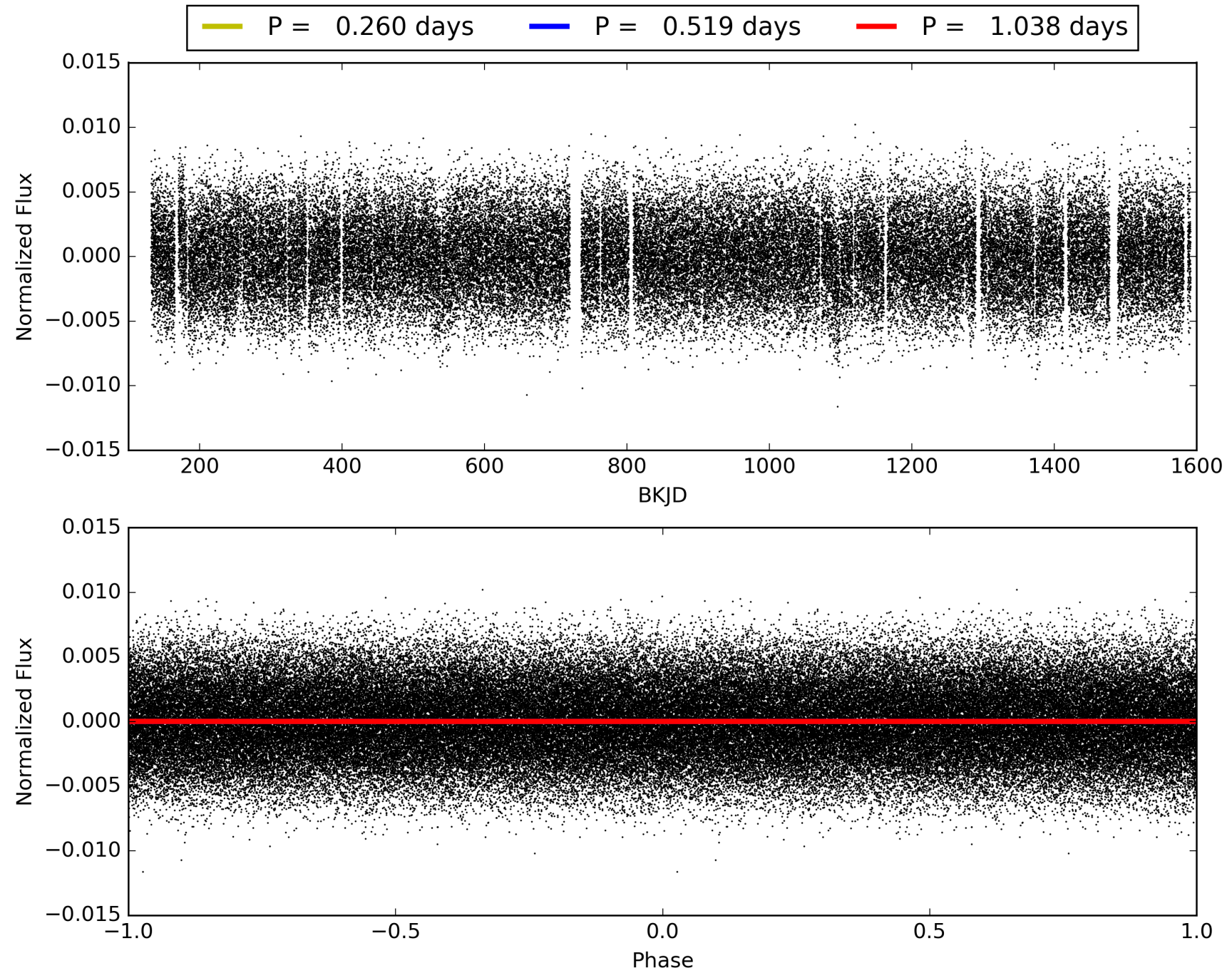
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 93.7% [1.86σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.75 [1837/2459]
GhostDiagnostic-chr: 5.368
Centroid-sig: N/A
Centroid-so: 0.123 arcsec [0.82σ]
OotOffset-rm: 0.909 arcsec [3.35σ]
KicOffset-rm: 0.936 arcsec [3.49σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006357702-01, PDC Light Curves

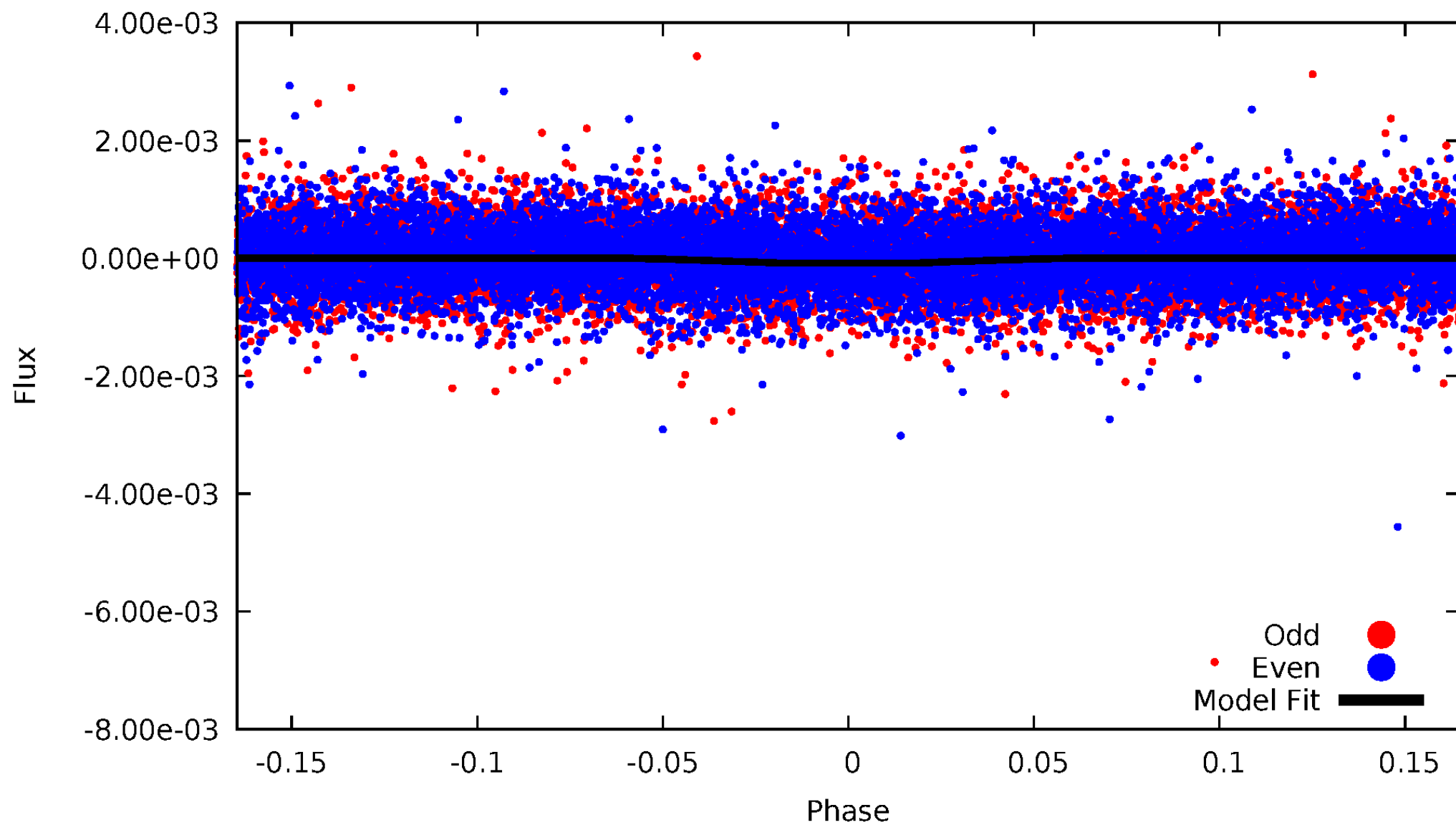


TCE 006357702-01



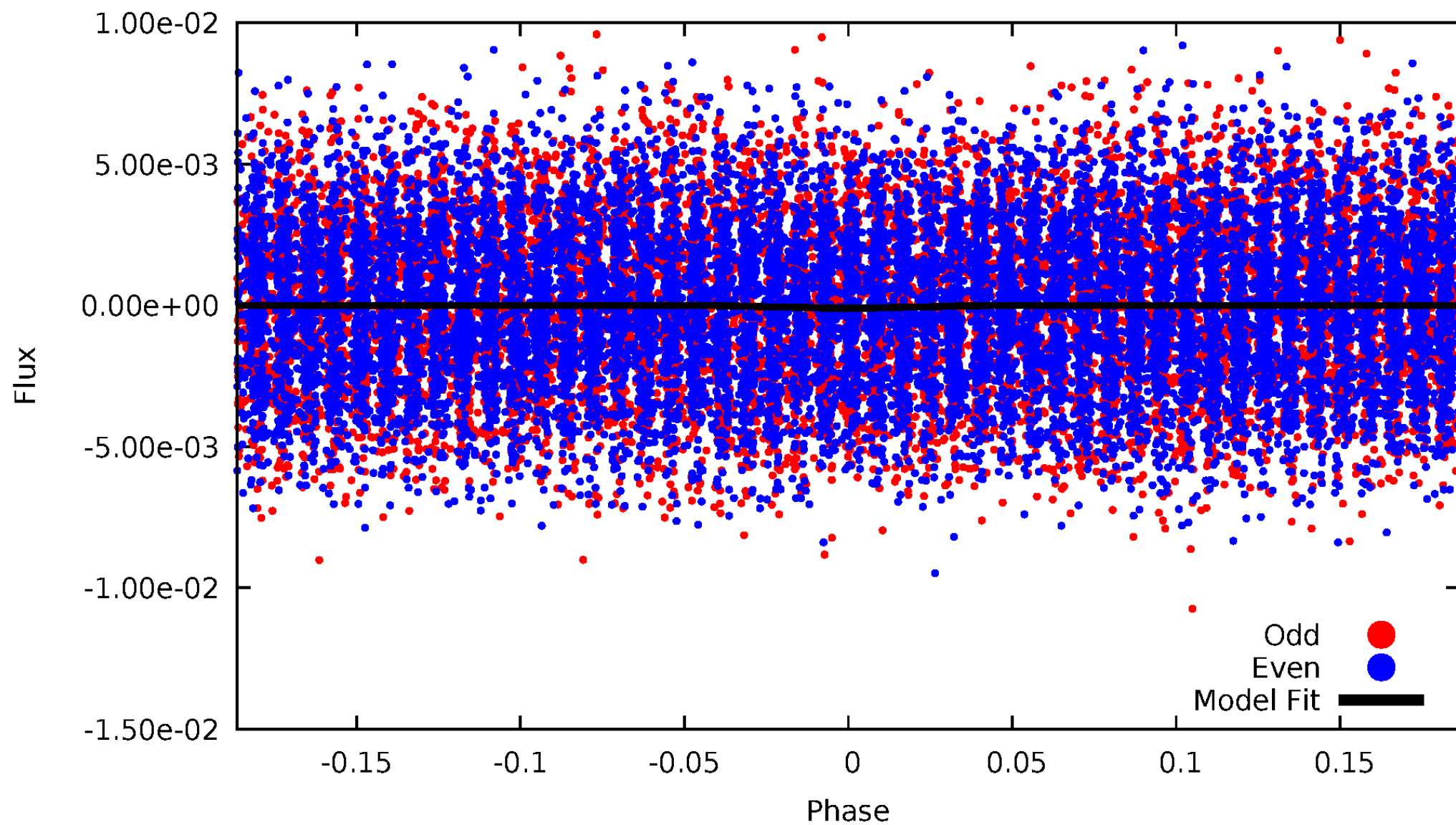
DV Odd/Even

TCE 006357702-01

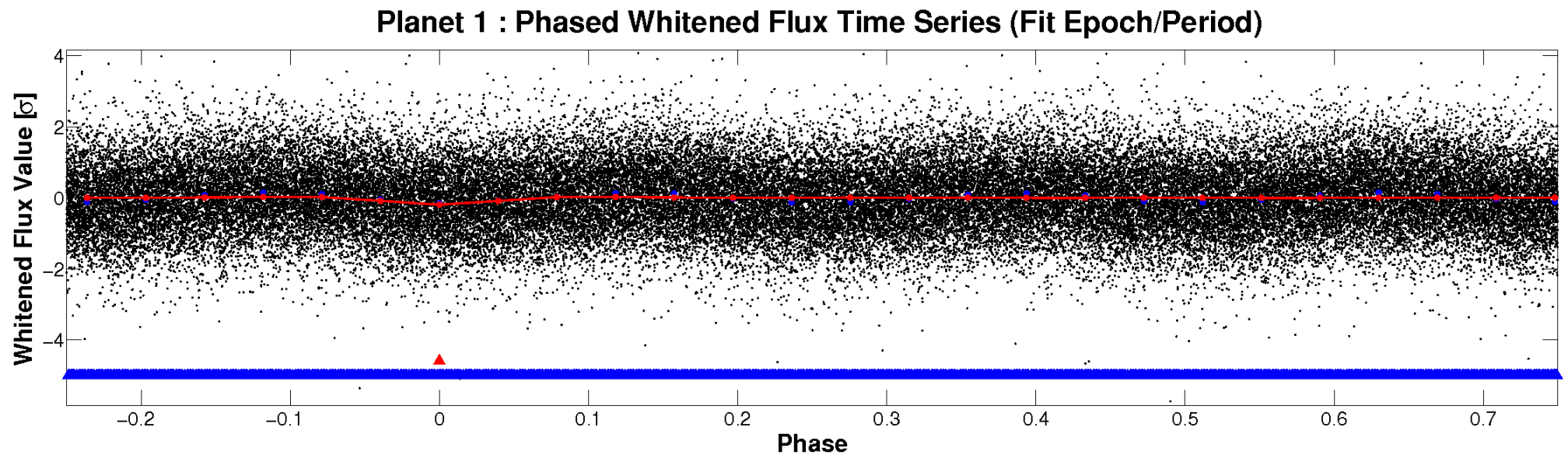
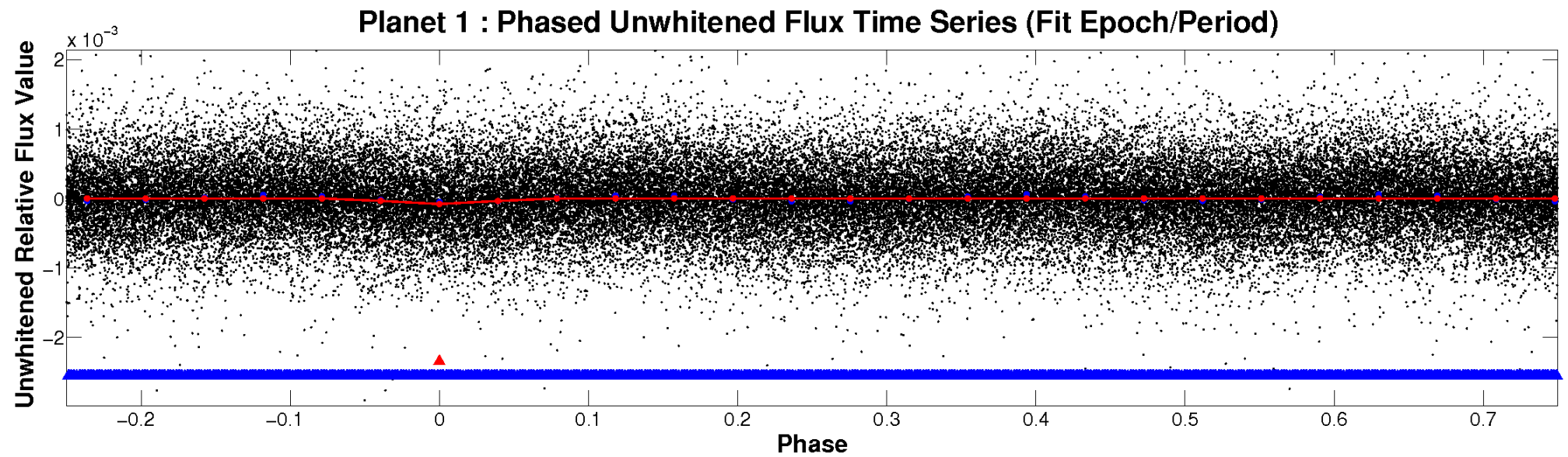


ALT Odd/Even

TCE 006357702-01

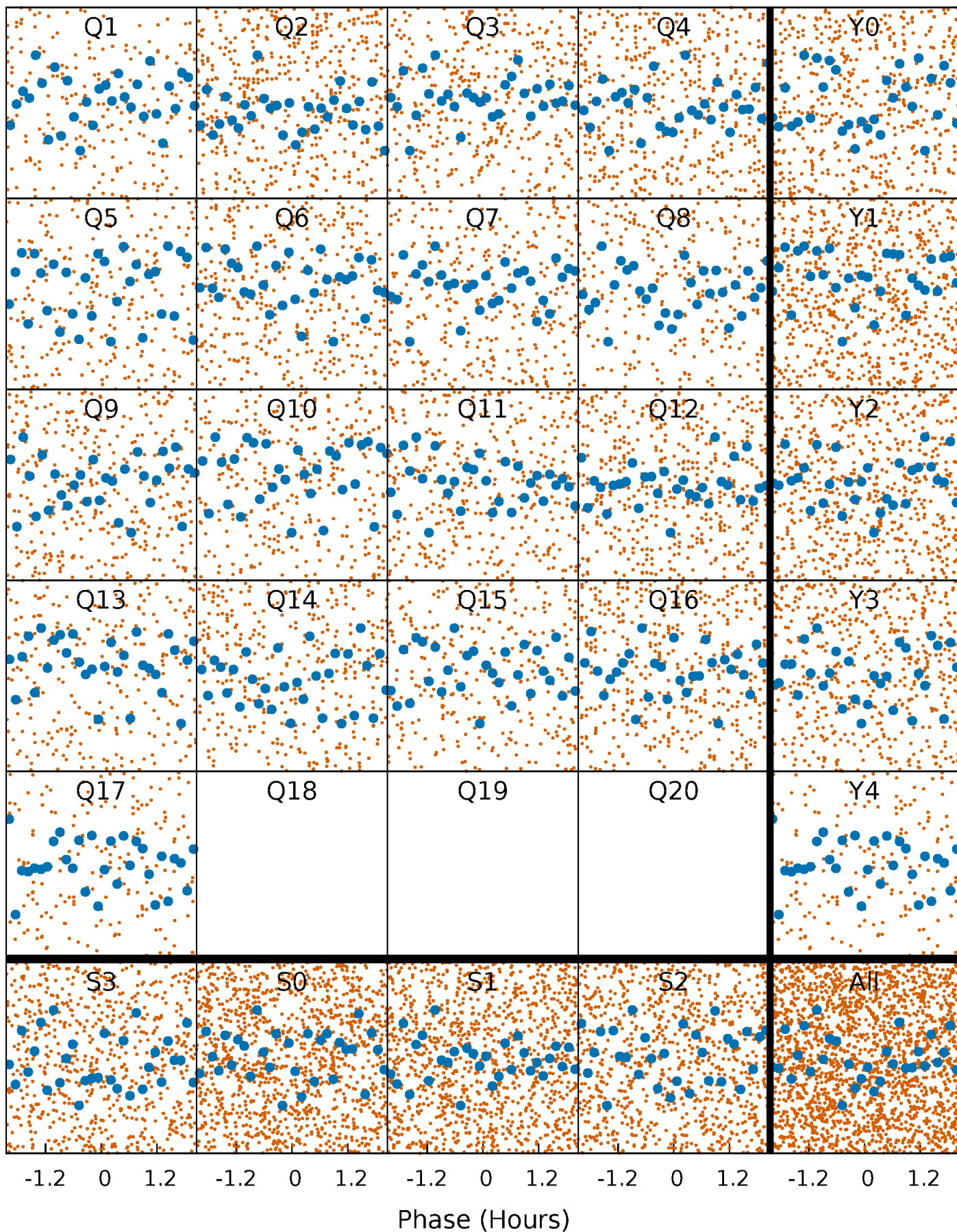


Non-Whitened Vs. Whitened Light Curve



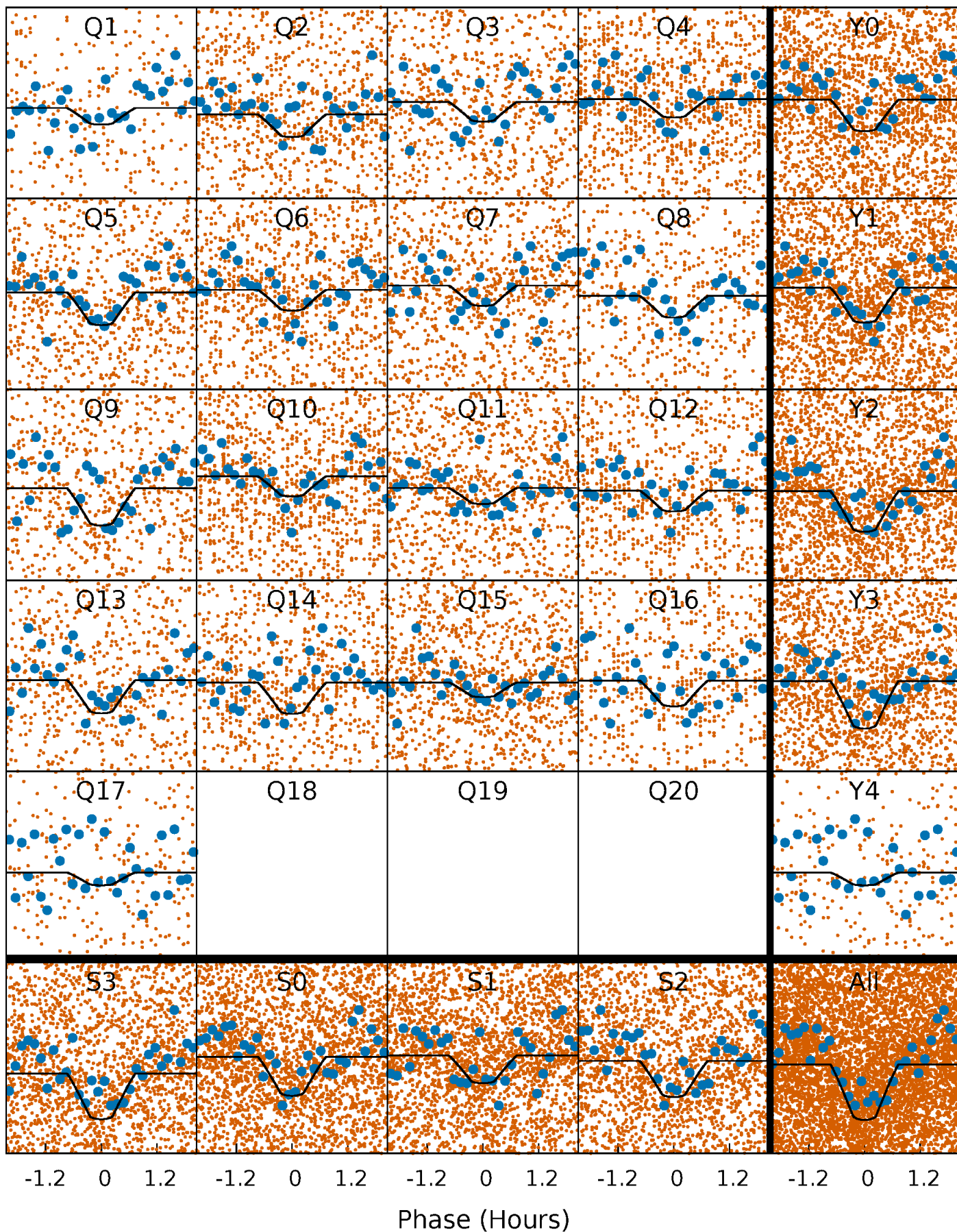
PDC Quarter-Phased Transit Curves

TCE 006357702-01 P= 0.519021 Days $T_0=131.752284$ (BKJD)



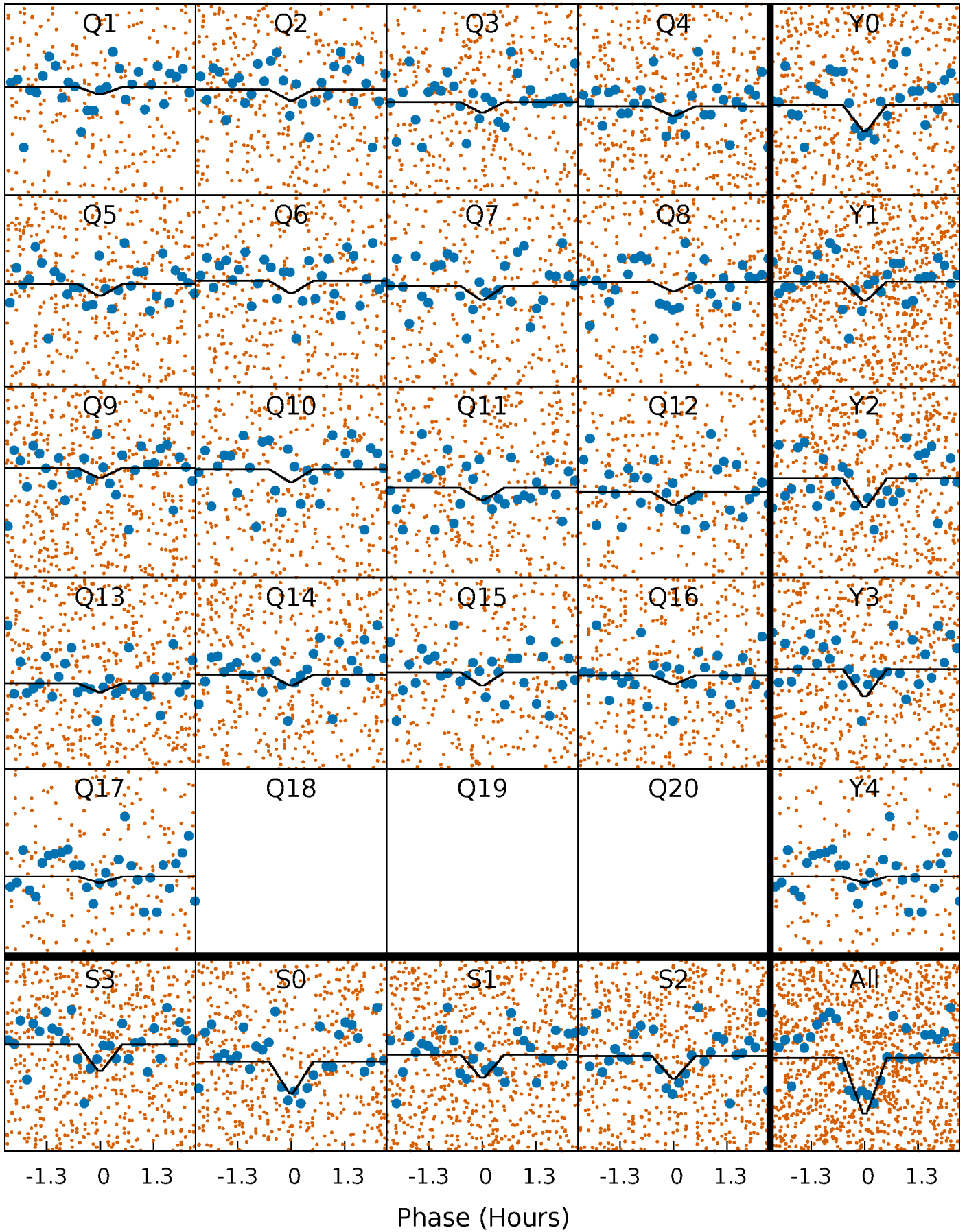
DV Quarter-Phased Transit Curves

TCE 006357702-01 P= 0.519021 Days $T_0=131.752284$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

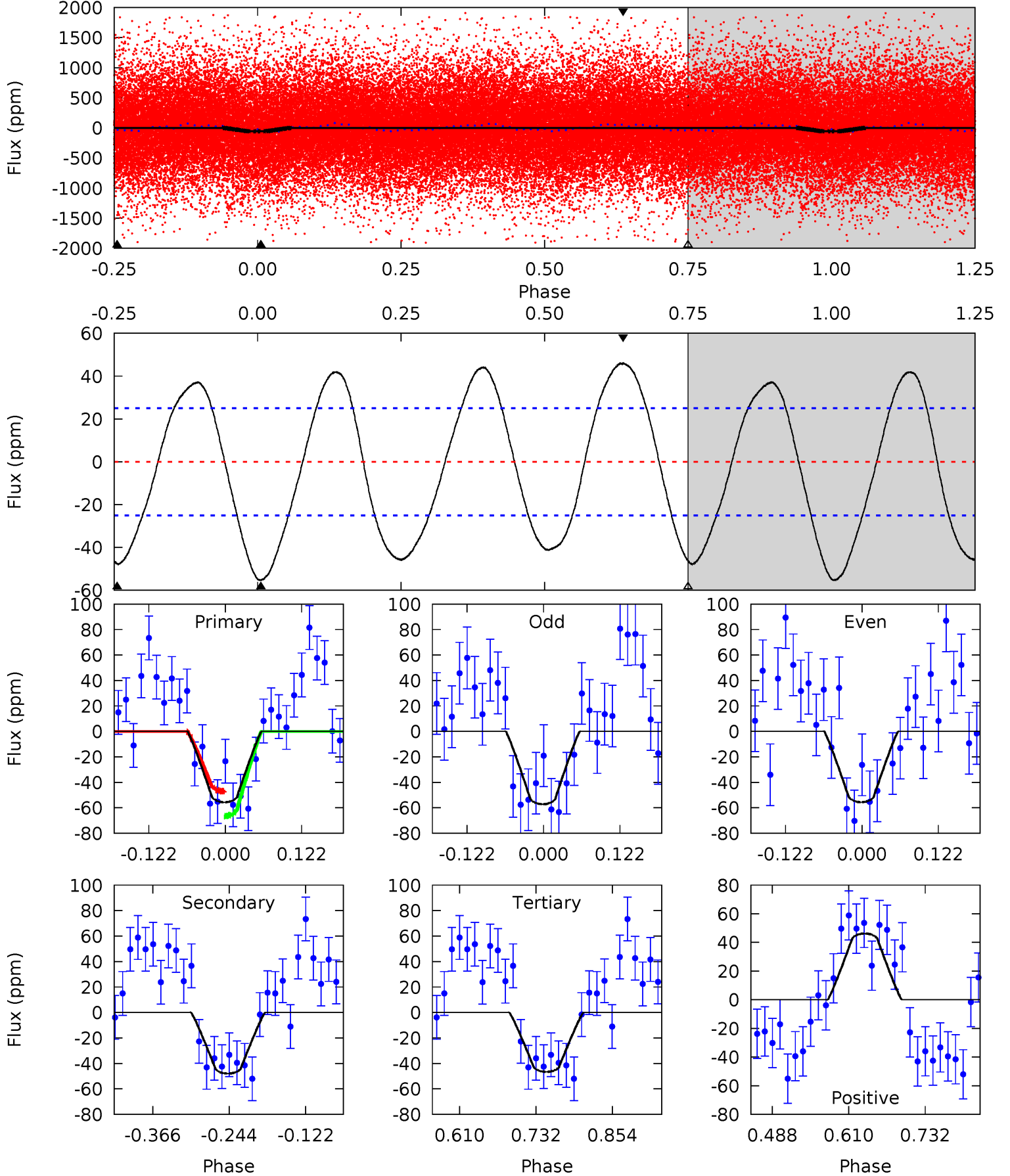
TCE 006357702-01 P= 0.519025 Days $T_0=131.744891$ (BKJD)



DV Model-Shift Uniqueness Test

006357702-01, P = 0.519021 Days, E = 131.233263 Days

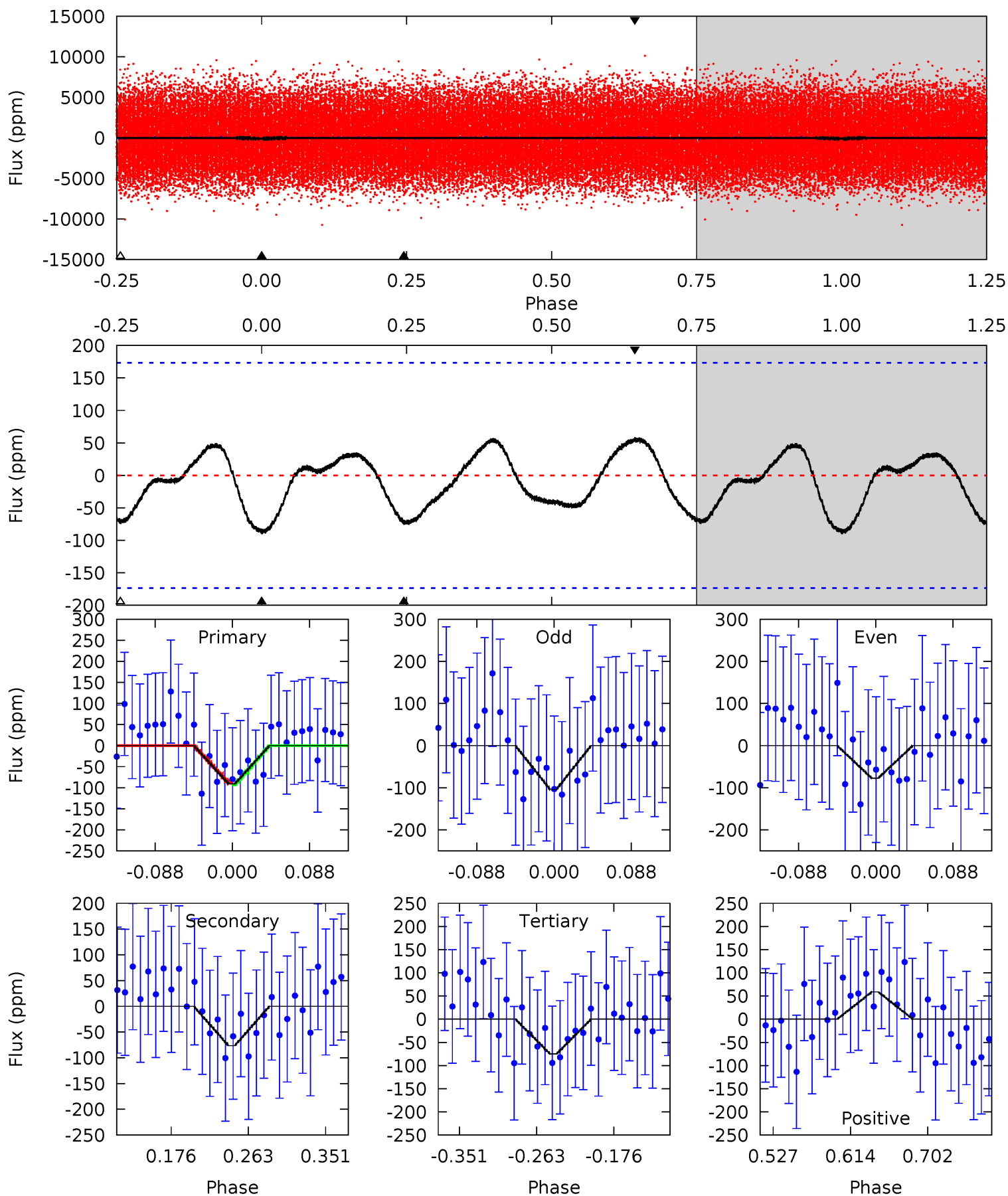
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	8.66	8.41	8.34	4.52	1.55	5.73	1.64	1.71	0.25	0.31	0.15	0.93	0.45	1.76



Alt Model-Shift Uniqueness Test

006357702-01, P = 0.519025 Days, E = 131.225866 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.40	2.02	1.98	1.56	4.59	1.71	0.96	0.42	0.84	0.04	0.46	0.35	0.58	0.39	0.07



Stellar Parameters For KIC 006357702

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7559^{+209}_{-339}	$3.612^{+0.476}_{-0.084}$	$0.000^{+0.200}_{-0.350}$	$3.733^{+0.611}_{-1.955}$	$2.082^{+0.252}_{-0.546}$	$0.056^{+0.286}_{-0.015}$
	+3%/-4%	+13%/-2%	+inf%/-inf%	+16%/-52%	+12%/-26%	+507%/-27%
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 006357702-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-48 ± 6	$3.53^{+1.37}_{-1.33}$	6789^{+522}_{-832}	5153^{+1823}_{-8295}	$0.555^{+0.812}_{-0.268}$
Alt.	-76 ± 38	$3.60^{+1.47}_{-1.27}$	6836^{+498}_{-913}	6000^{+2090}_{-3255}	$0.775^{+1.160}_{-0.472}$

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 $A_{obs} \gg 1.0$

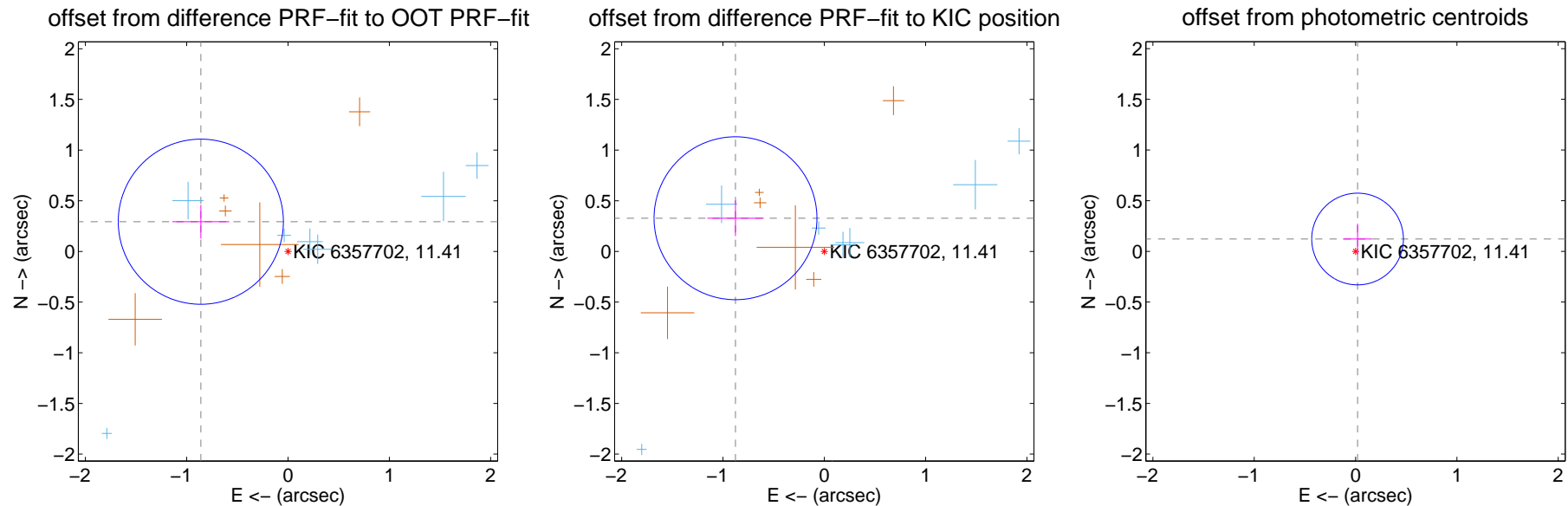
DV Centroid Data

Supplemental centroid analysis for 006357702-01. **Kepler magnitude: 11.41.** Transit SNR 12.29

There are 9 quarters with good PRF difference image offsets

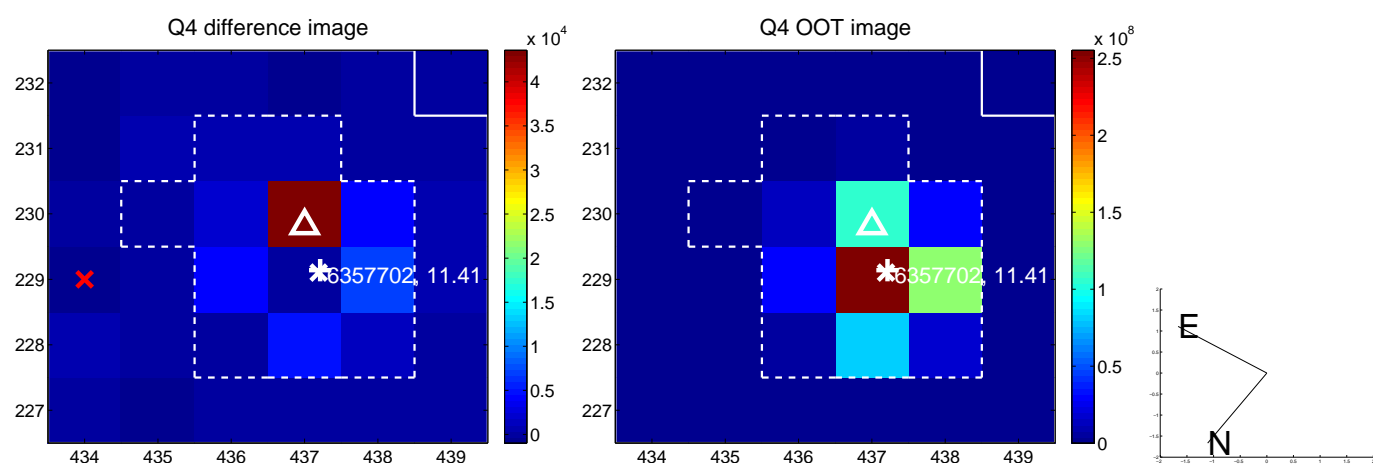
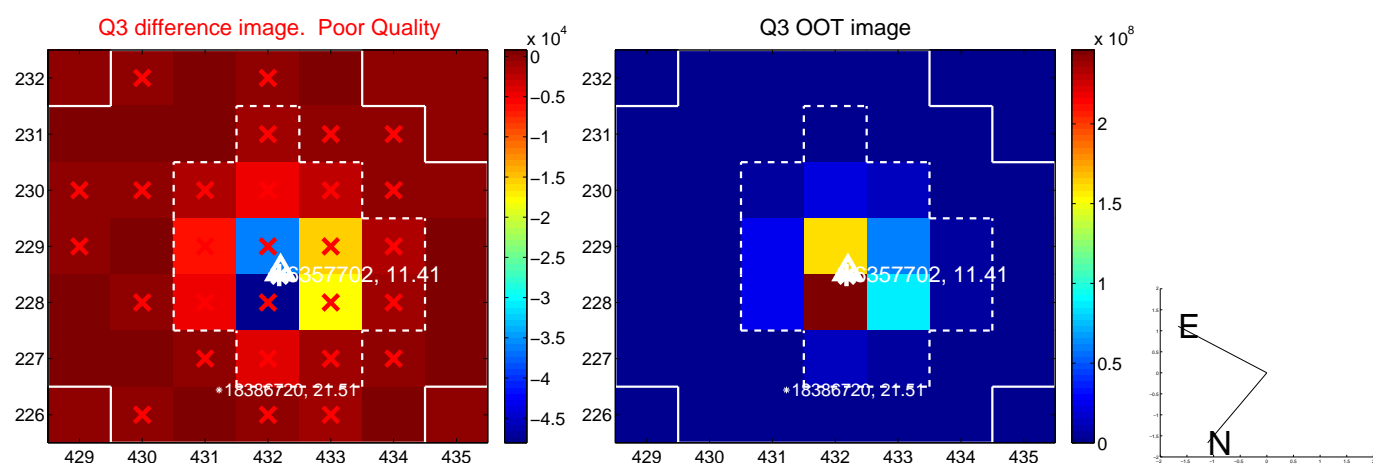
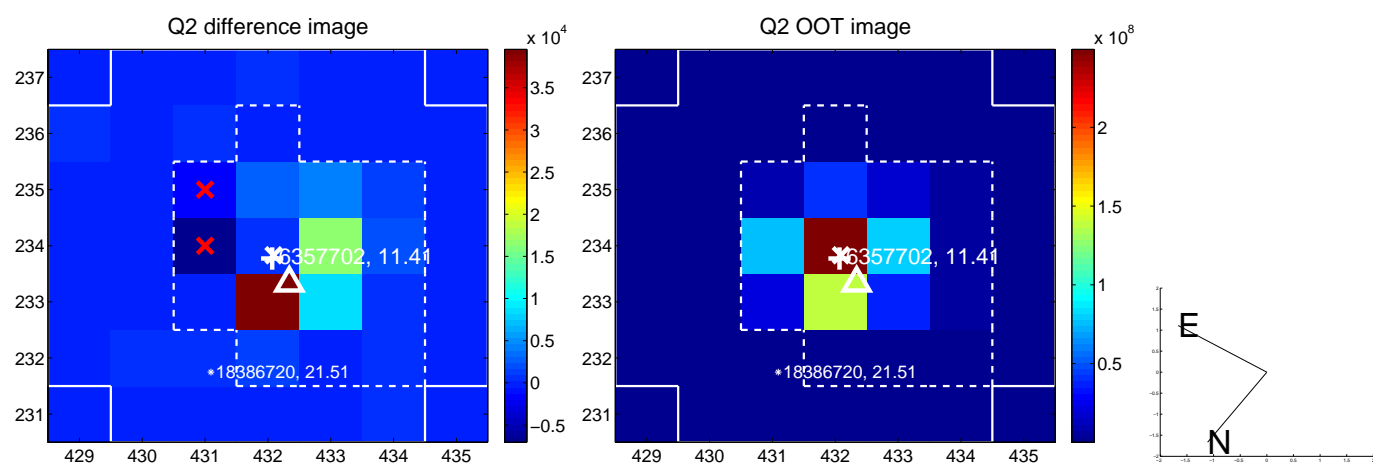
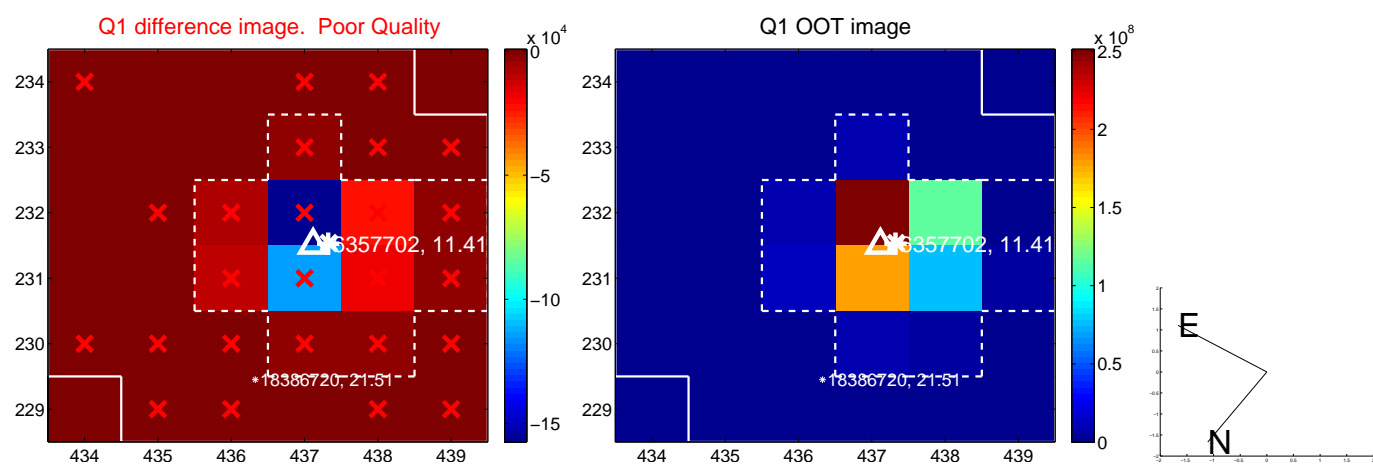
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.909 ± 0.272	3.35	0.861 ± 0.281	0.293 ± 0.165
PRF-fit source offset from KIC position	0.936 ± 0.268	3.49	0.876 ± 0.278	0.327 ± 0.176
photometric centroid source offset	0.12 ± 0.15	0.82	-0.02 ± 0.14	0.12 ± 0.15

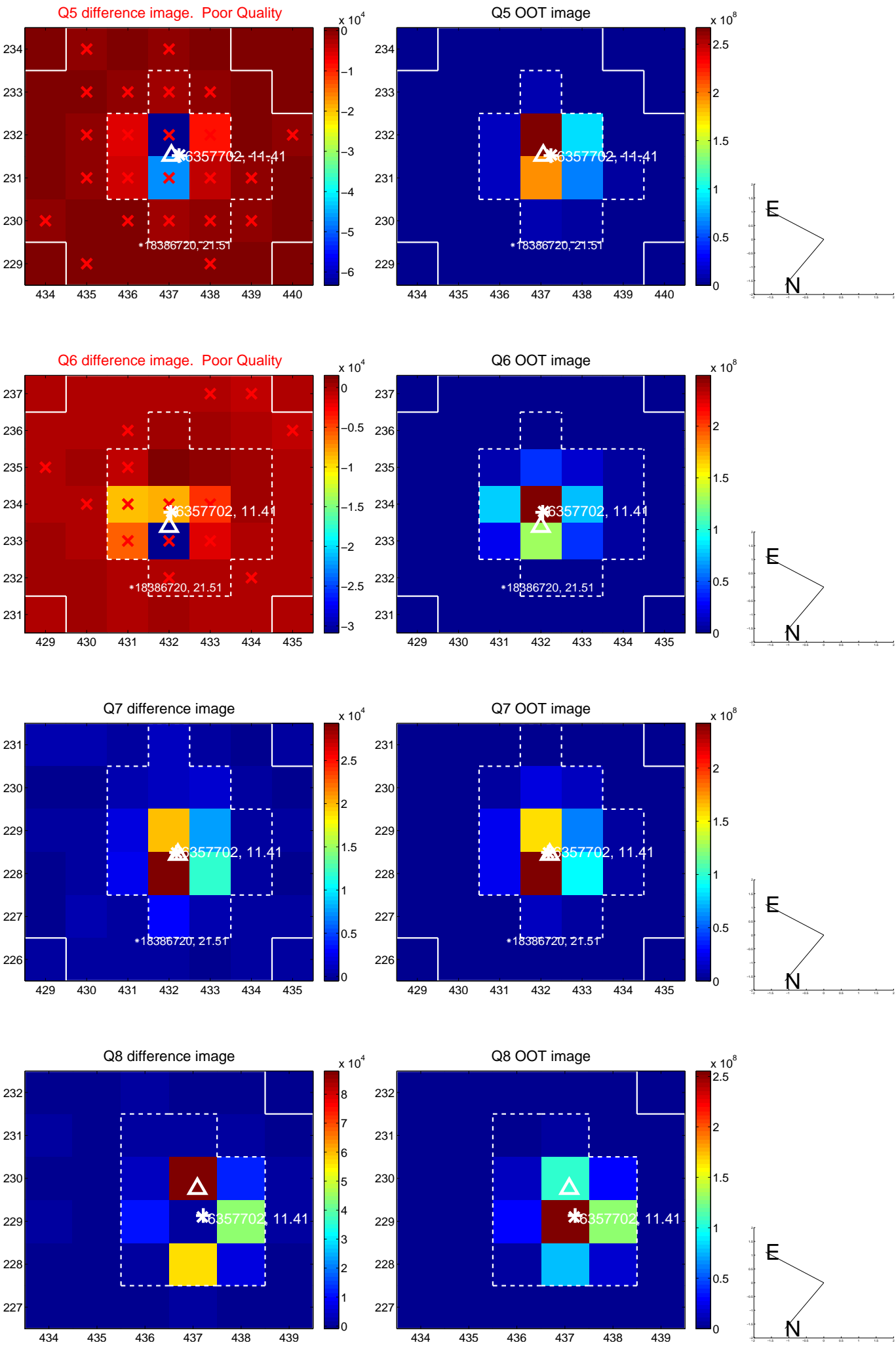


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

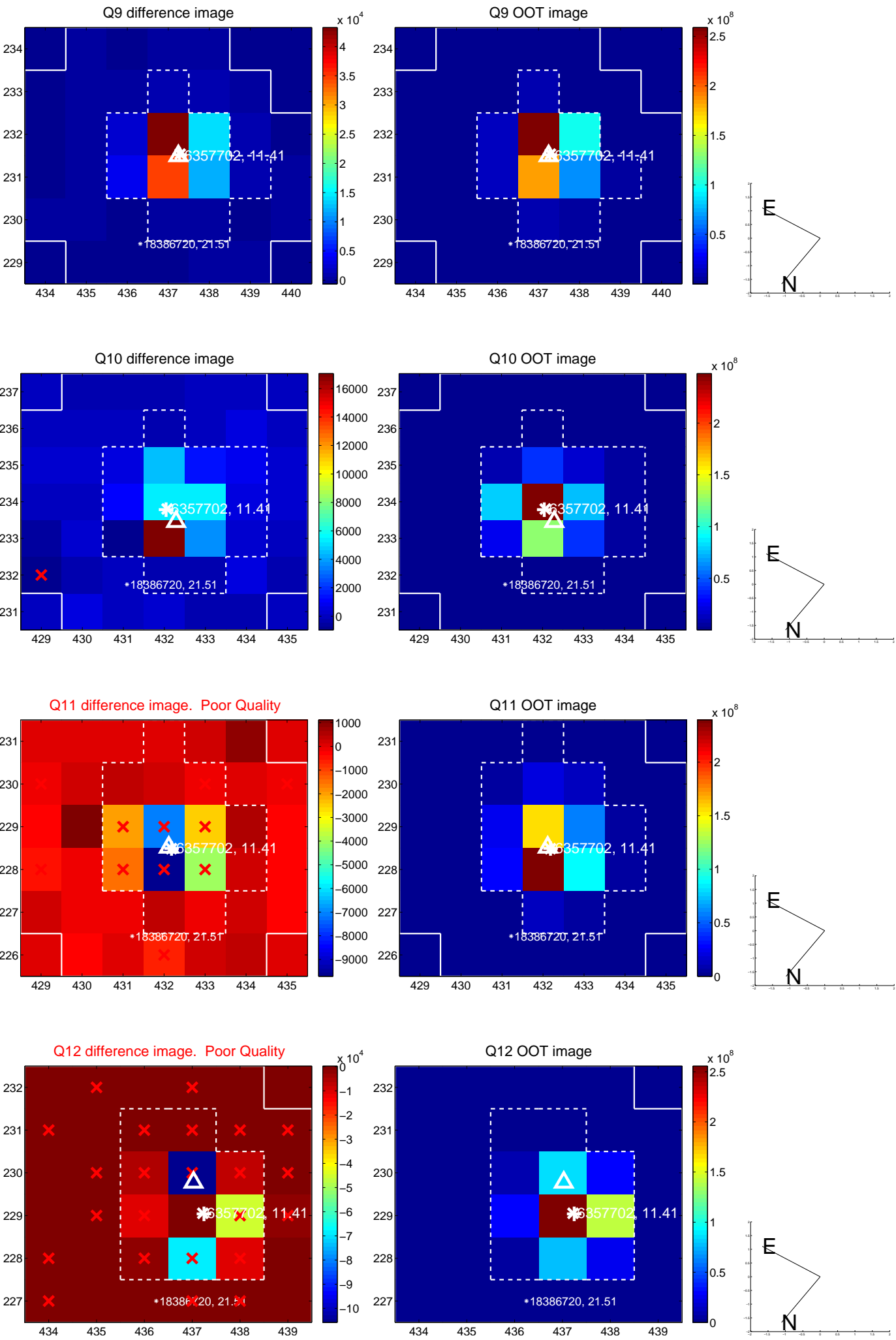
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



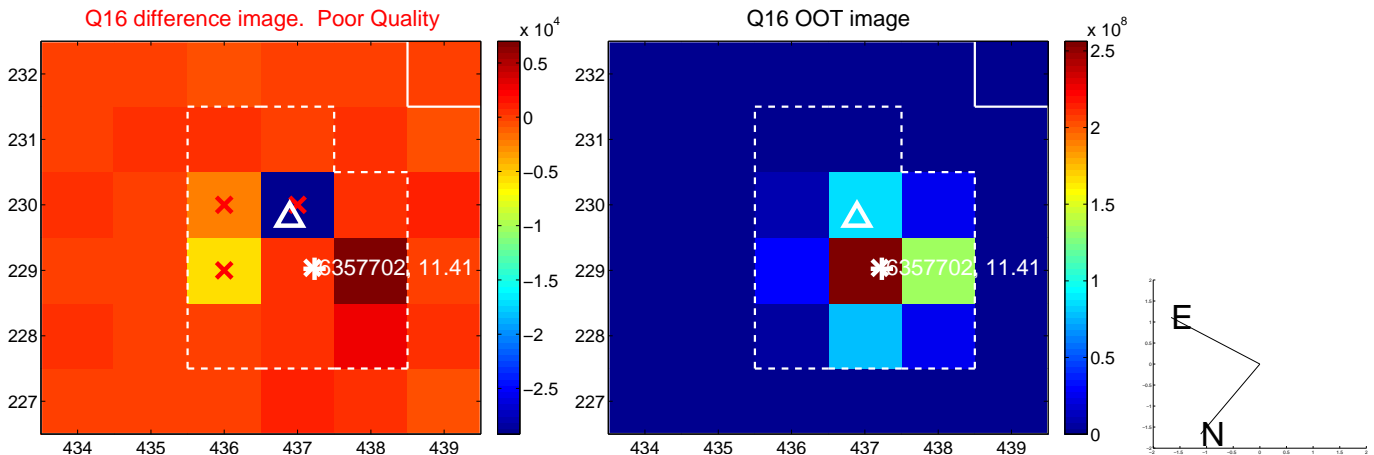
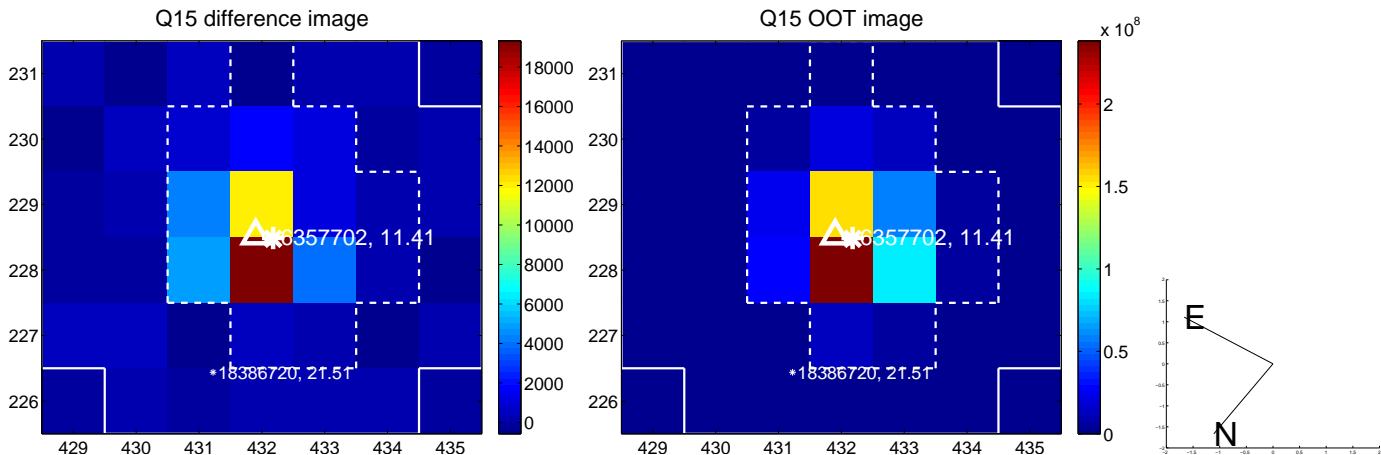
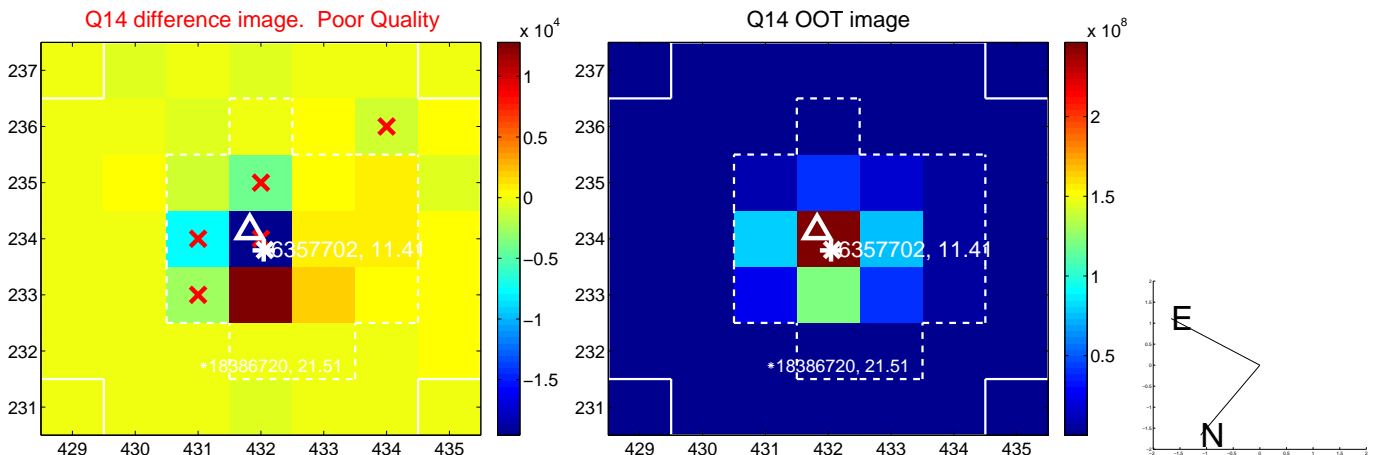
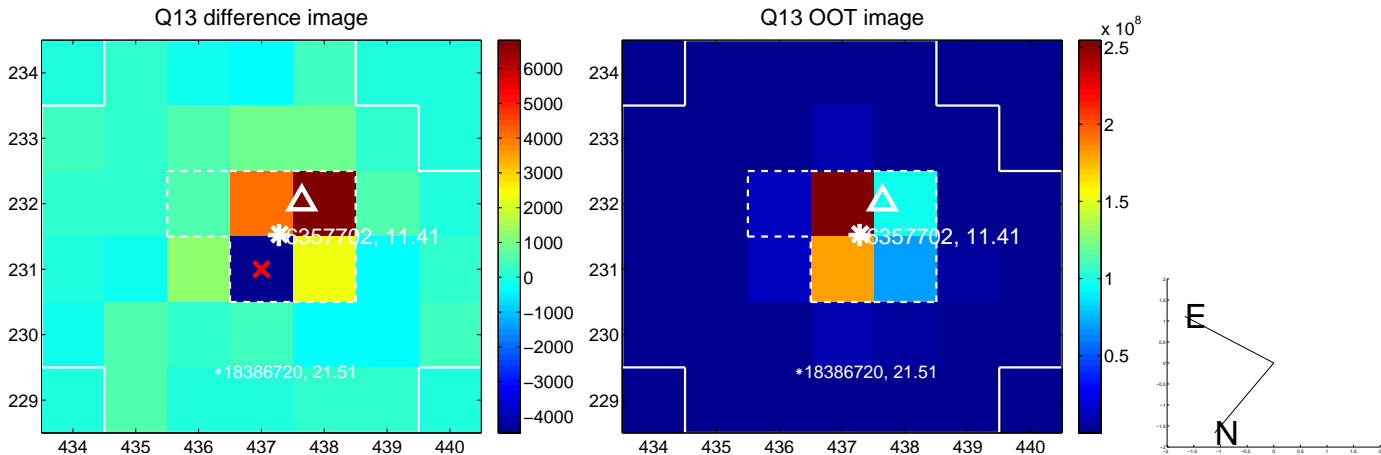
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



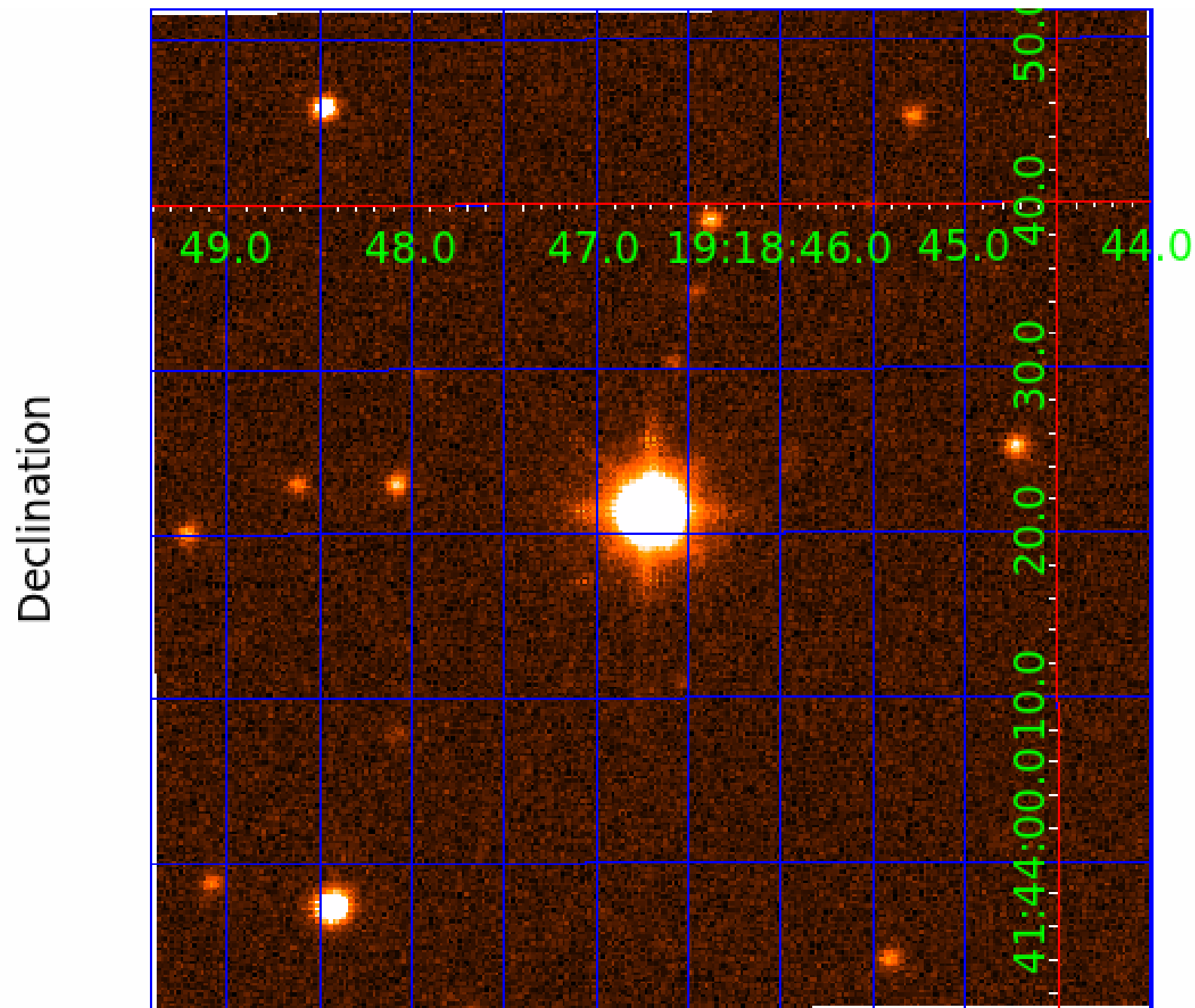
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006357702

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})
006357702-01	OBS	No	0.519021	131.752284	82.4	1.026	11.7	12.3	3.73	7559	3.95	0.00
006357702-02	OBS	No	1.422611	132.241701	98.1	11.610	10.1	16.0	3.73	7559	3.73	40801.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006357702-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
006357702-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—CENT_SATURATED

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

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

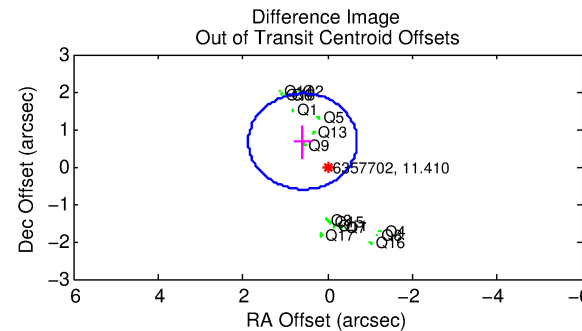
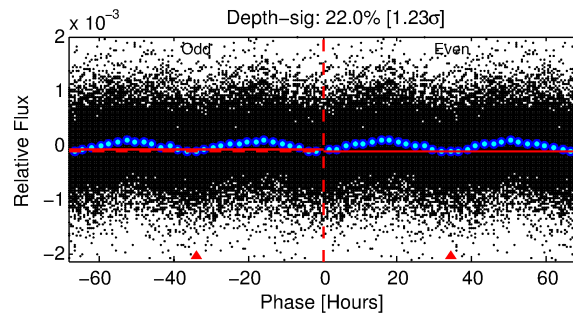
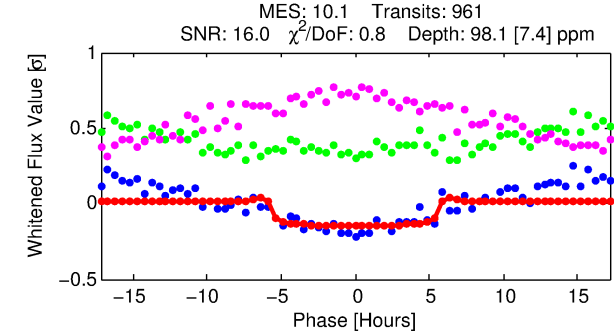
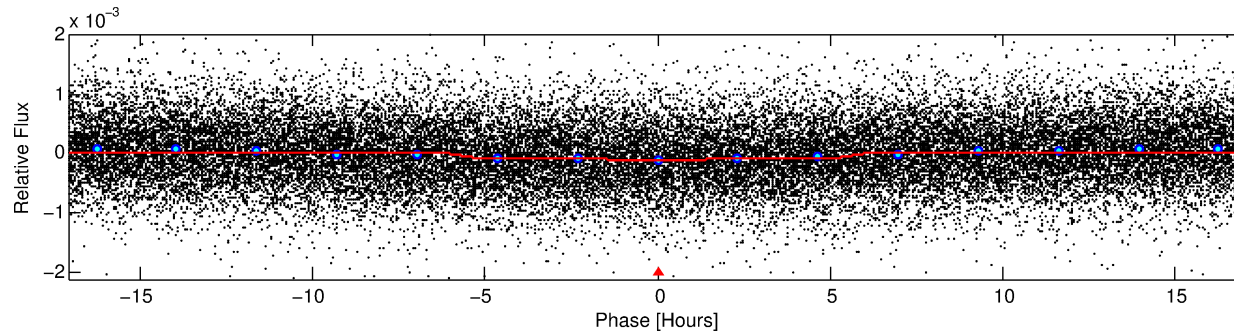
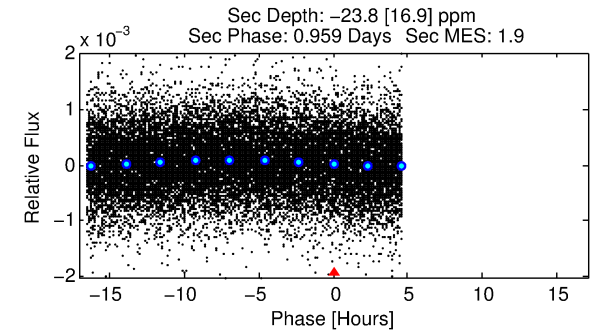
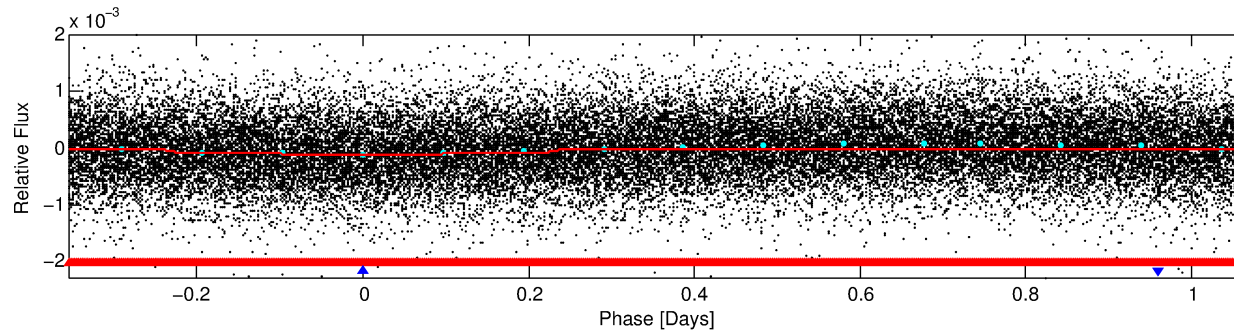
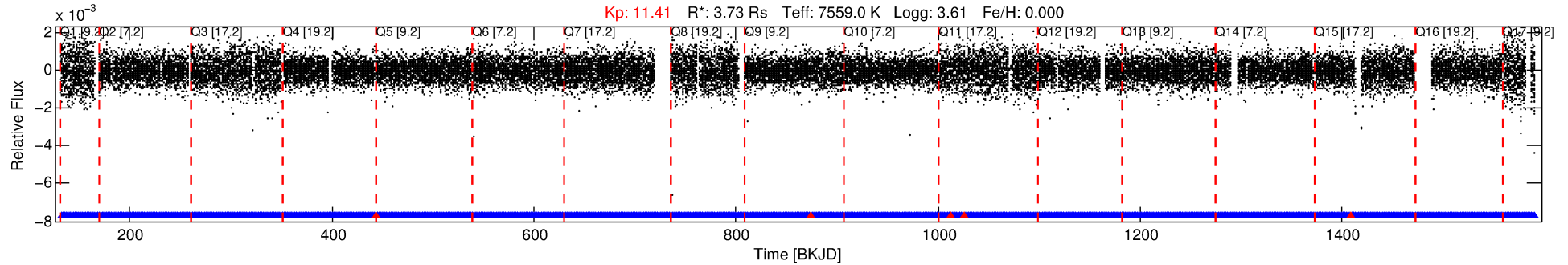
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006357702-02

No Significant Match Found

DV One-Page Summary

KIC: 6357702 Candidate: 2 of 2 Period: 1.423 d



DV Fit Results:

Period = 1.42261 [0.00002] d
Epoch = 132.2417 [0.0053] BKJD
Rp/R* = 0.0092 [0.0057]
a/R* = 1.15 [0.99]
b = 0.01 [321.12]
Seff = 40801.43 [33842.60]
Teq = 3624 [751] K
Rp = 3.73 [3.02] Re
a = 0.0316 [0.0160] AU
Ag = N/A
Teffp = N/A

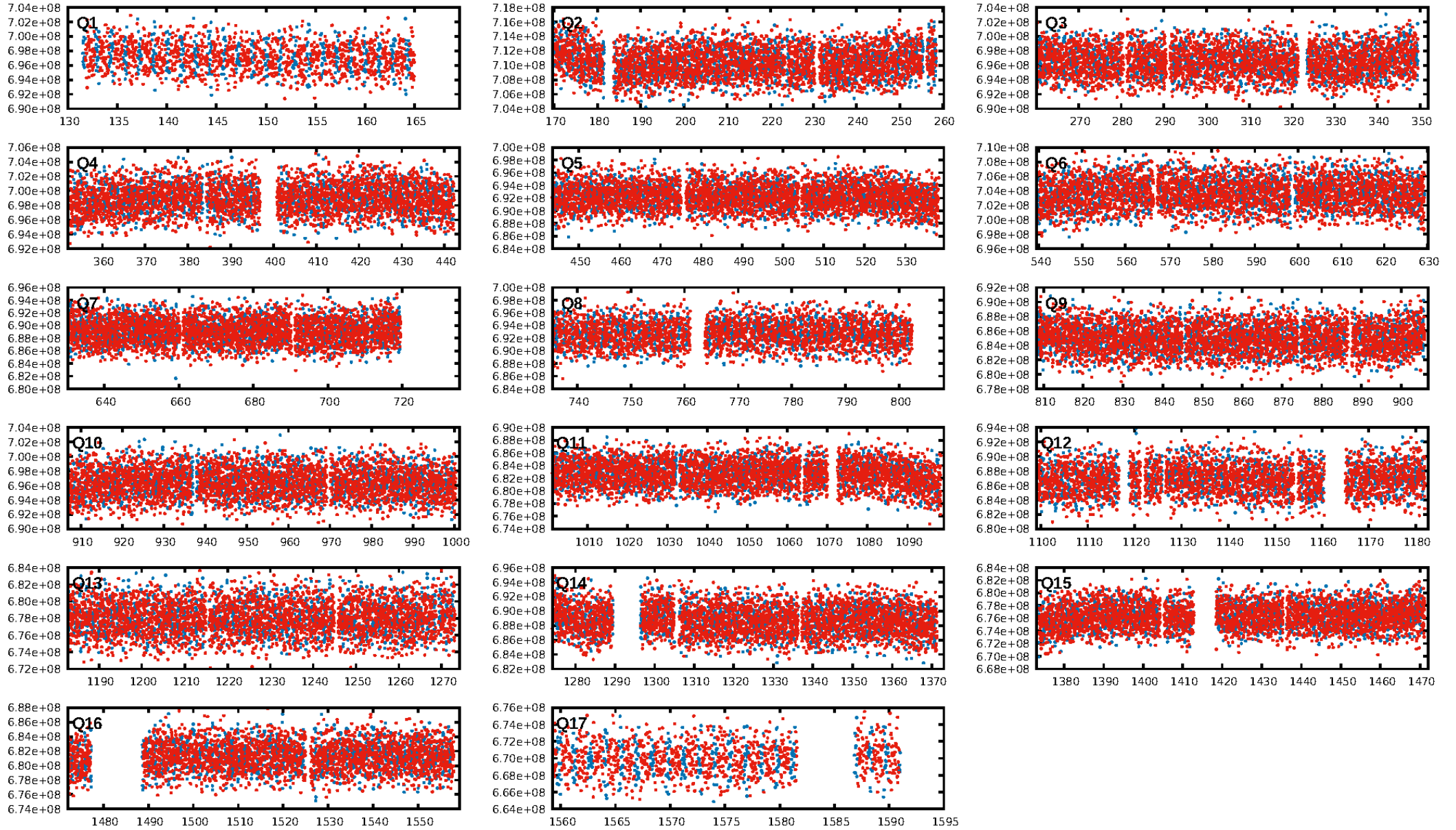
DV Diagnostic Results:

ShortPeriod-sig: 93.7% [1.86σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [913/918]
GhostDiagnostic-chr: 1.29
Centroid-sig: N/A
Centroid-so: 0.145 arcsec [1.89σ]
OotOffset-rm: 0.891 arcsec [2.09σ]
KicOffset-rm: 0.944 arcsec [2.05σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.00 [0/17]

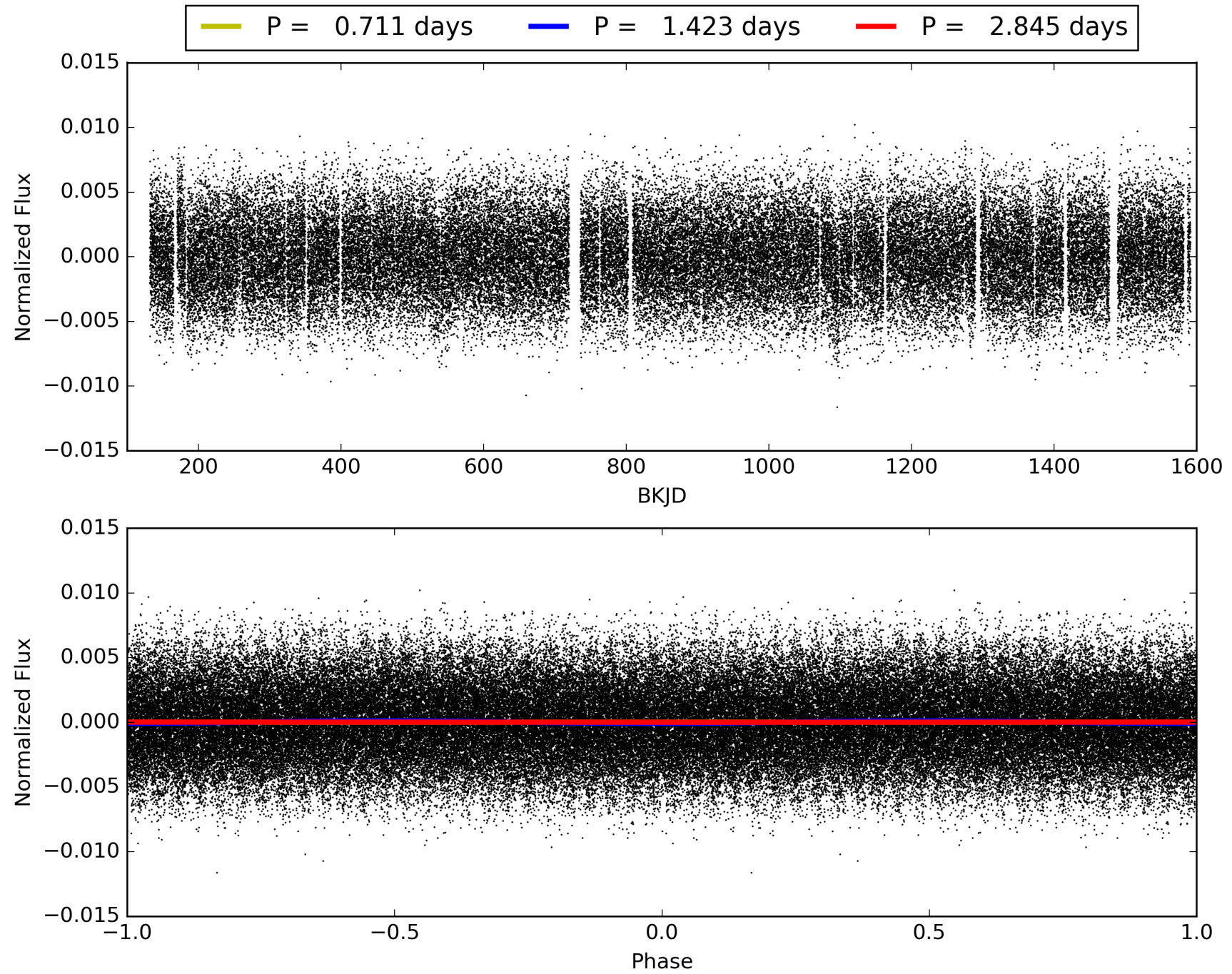
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:53:30 Z

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

TCE 006357702-02, PDC Light Curves

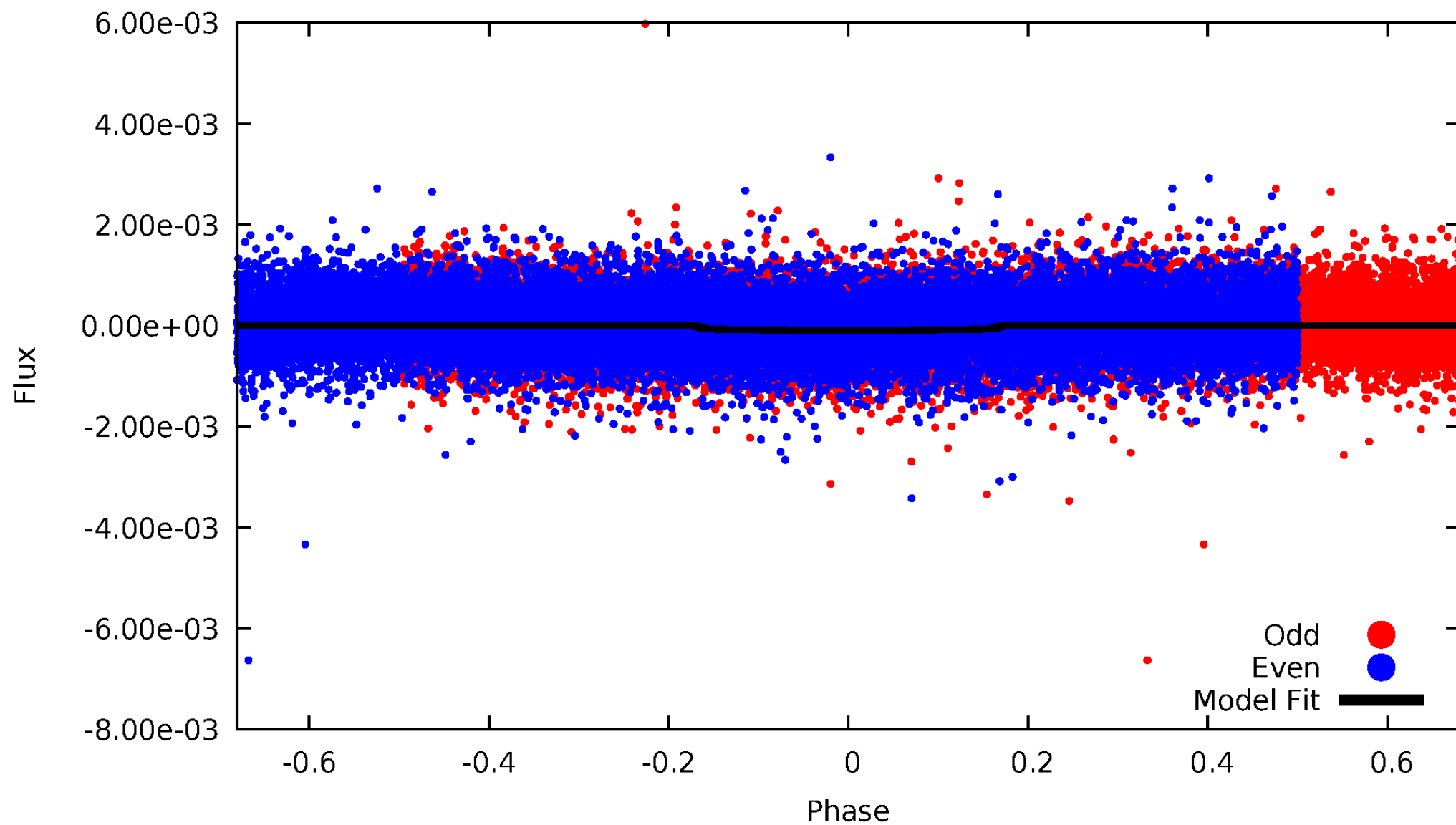


TCE 006357702-02



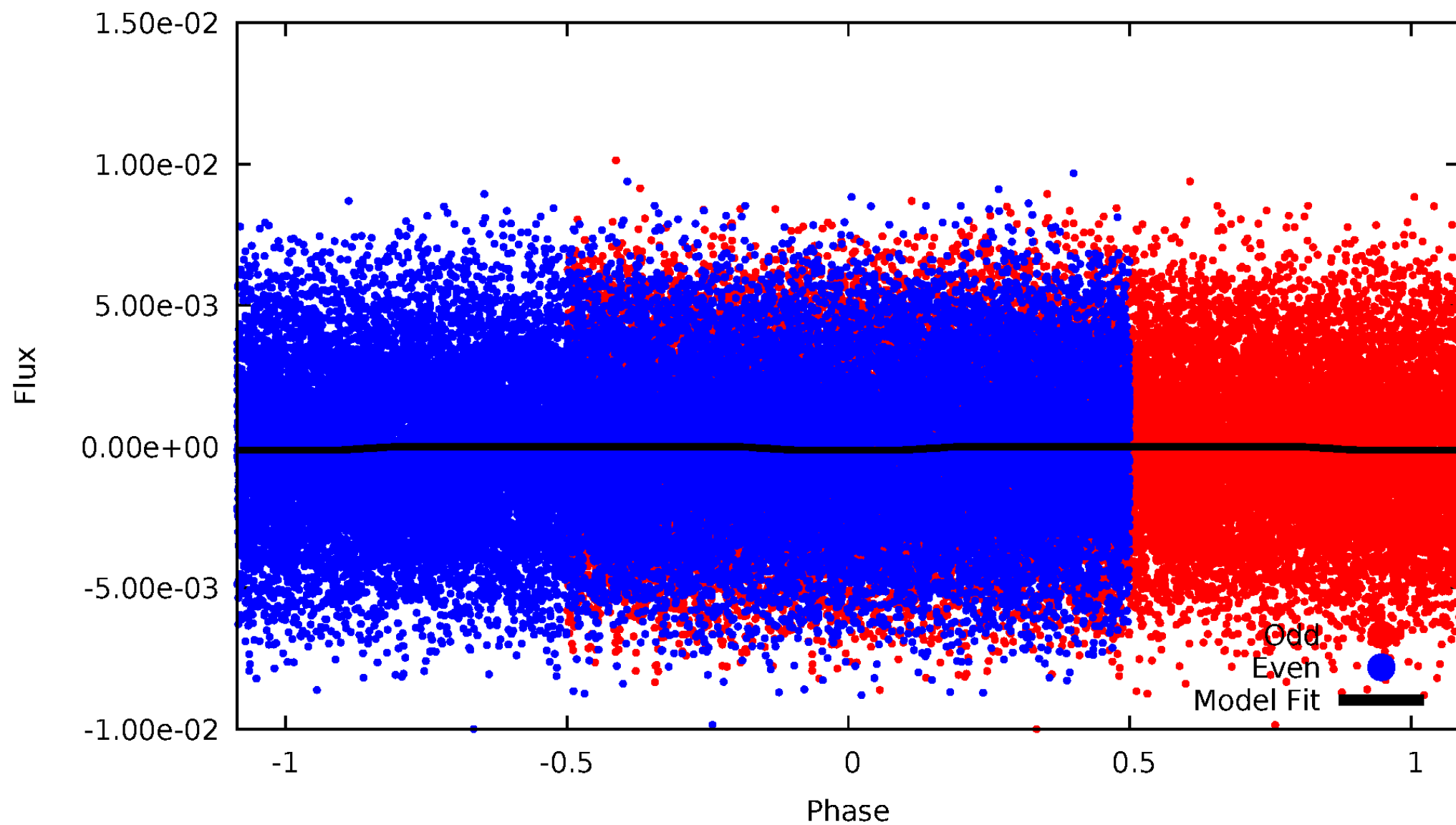
DV Odd/Even

TCE 006357702-02



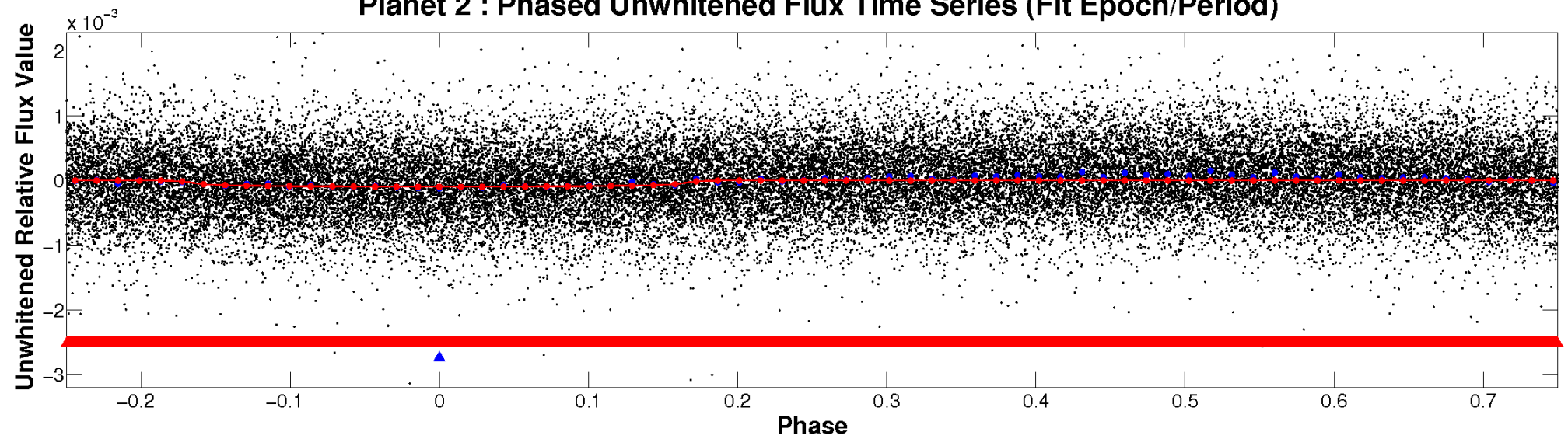
ALT Odd/Even

TCE 006357702-02

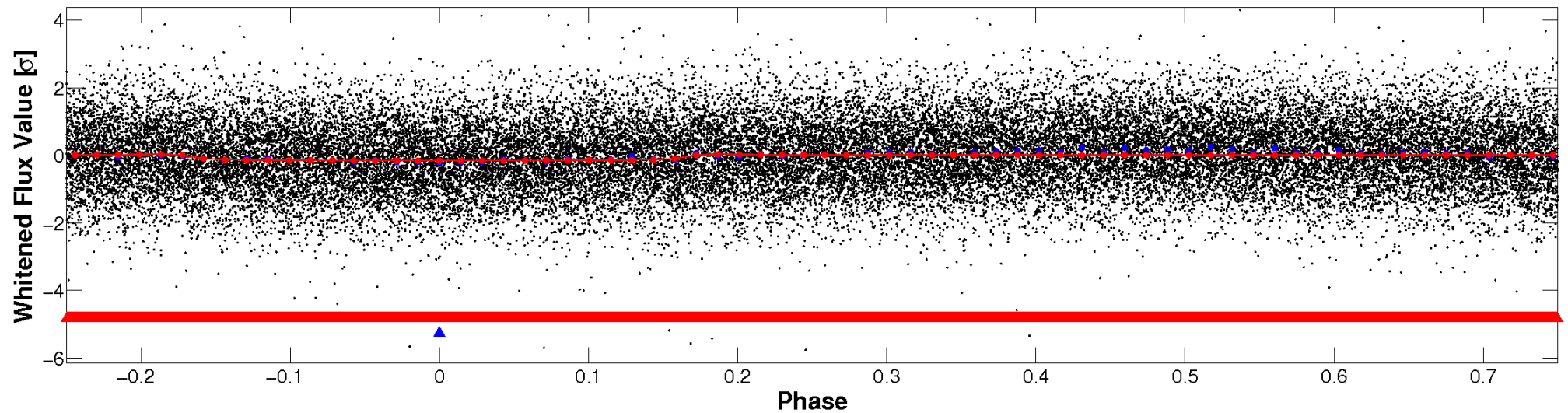


Non-Whitened Vs. Whitened Light Curve

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

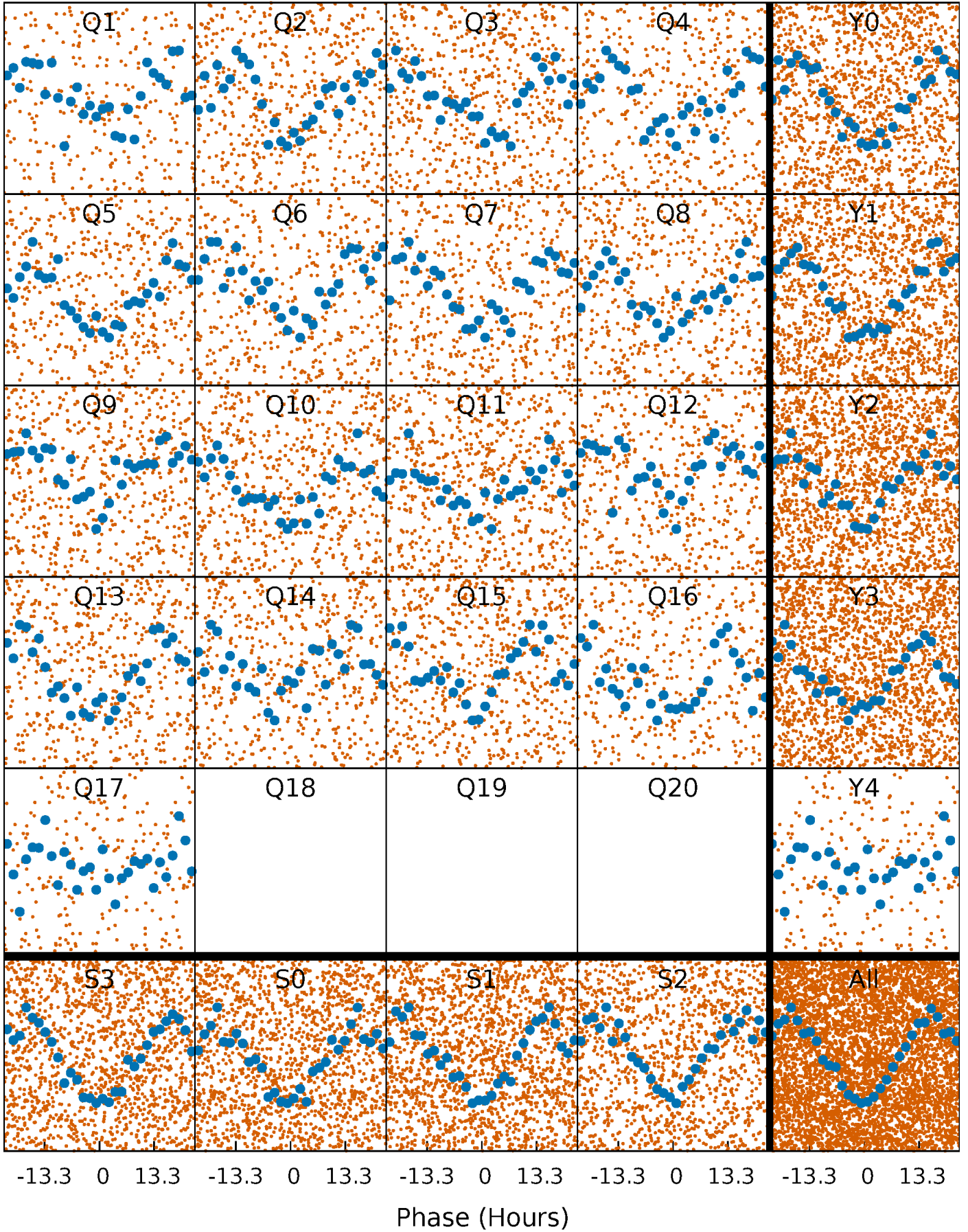


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



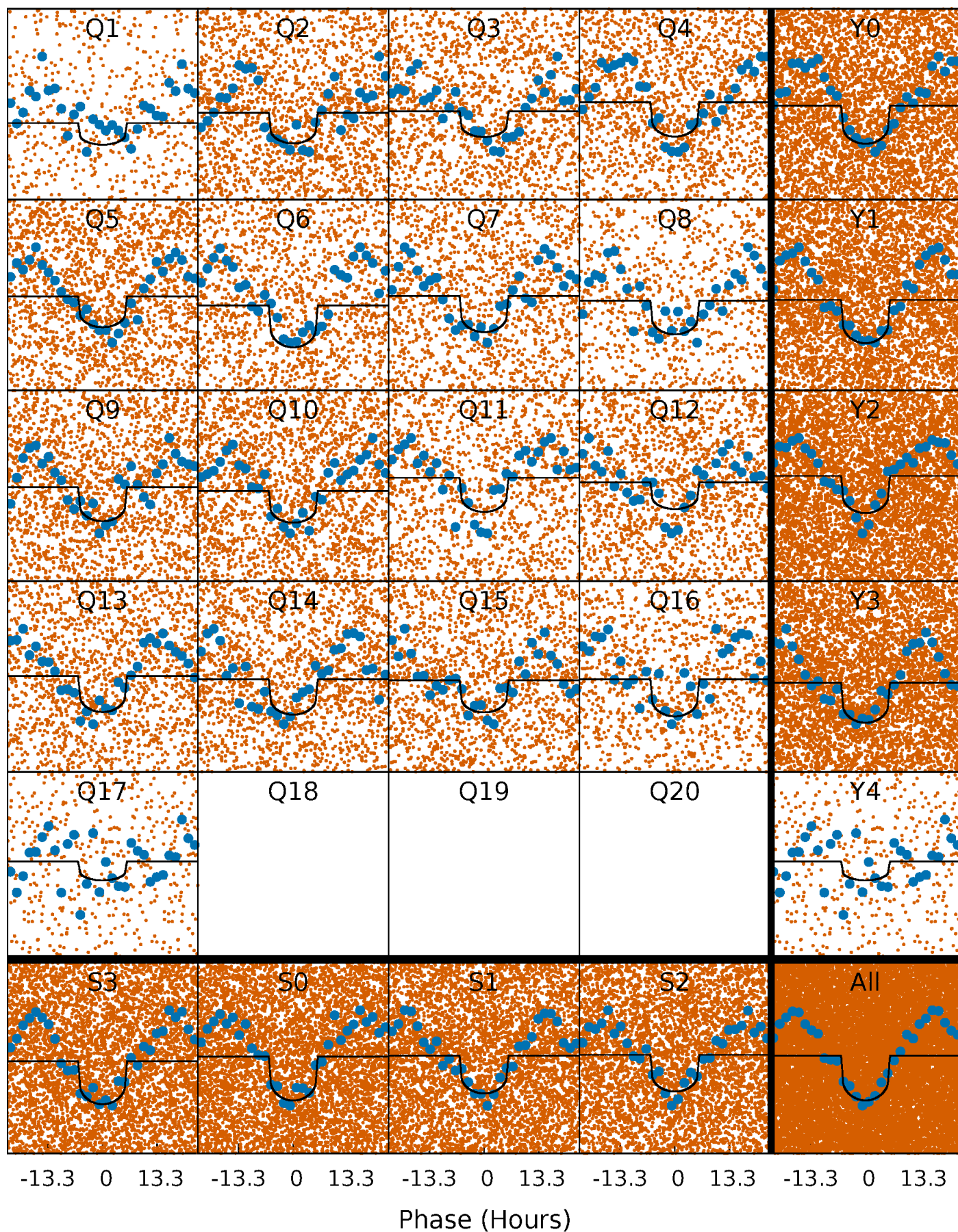
PDC Quarter-Phased Transit Curves

TCE 006357702-02 P= 1.422611 Days $T_0=132.241701$ (BKJD)



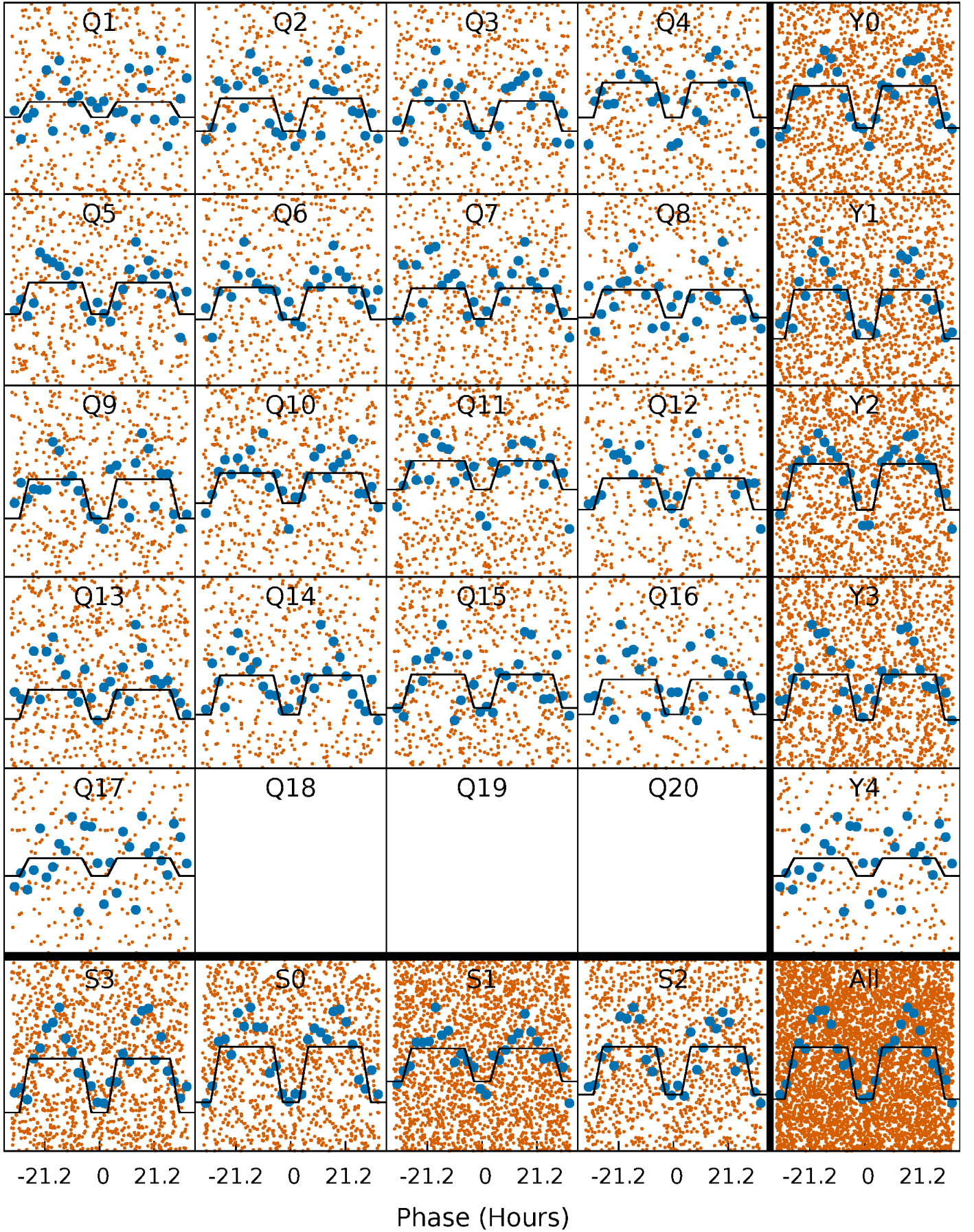
DV Quarter-Phased Transit Curves

TCE 006357702-02 P= 1.422611 Days $T_0=132.241701$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

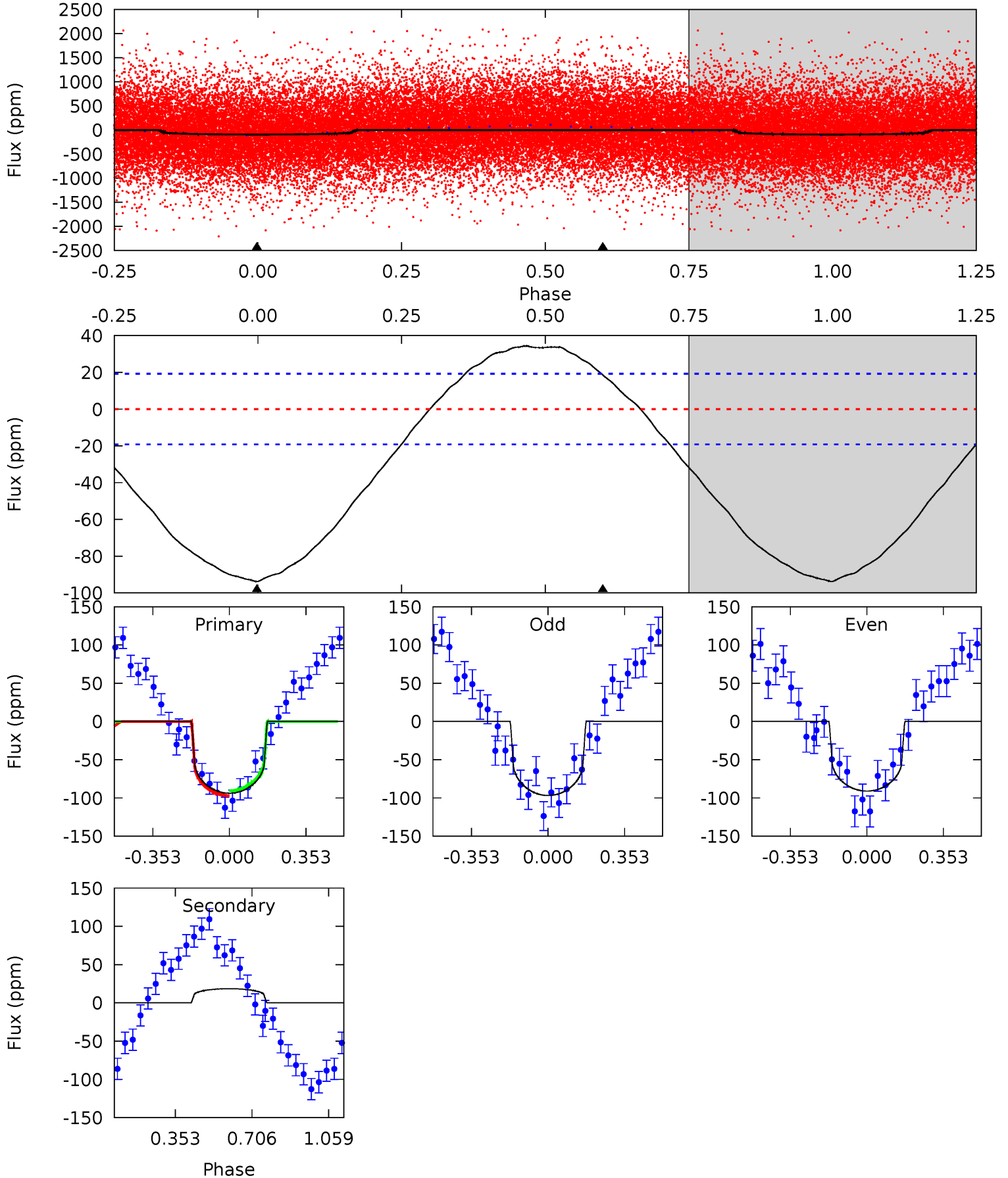
TCE 006357702-02 $P = 1.422405$ Days $T_0 = 132.327055$ (BKJD)



DV Model-Shift Uniqueness Test

006357702-02, P = 1.422611 Days, E = 130.819090 Days

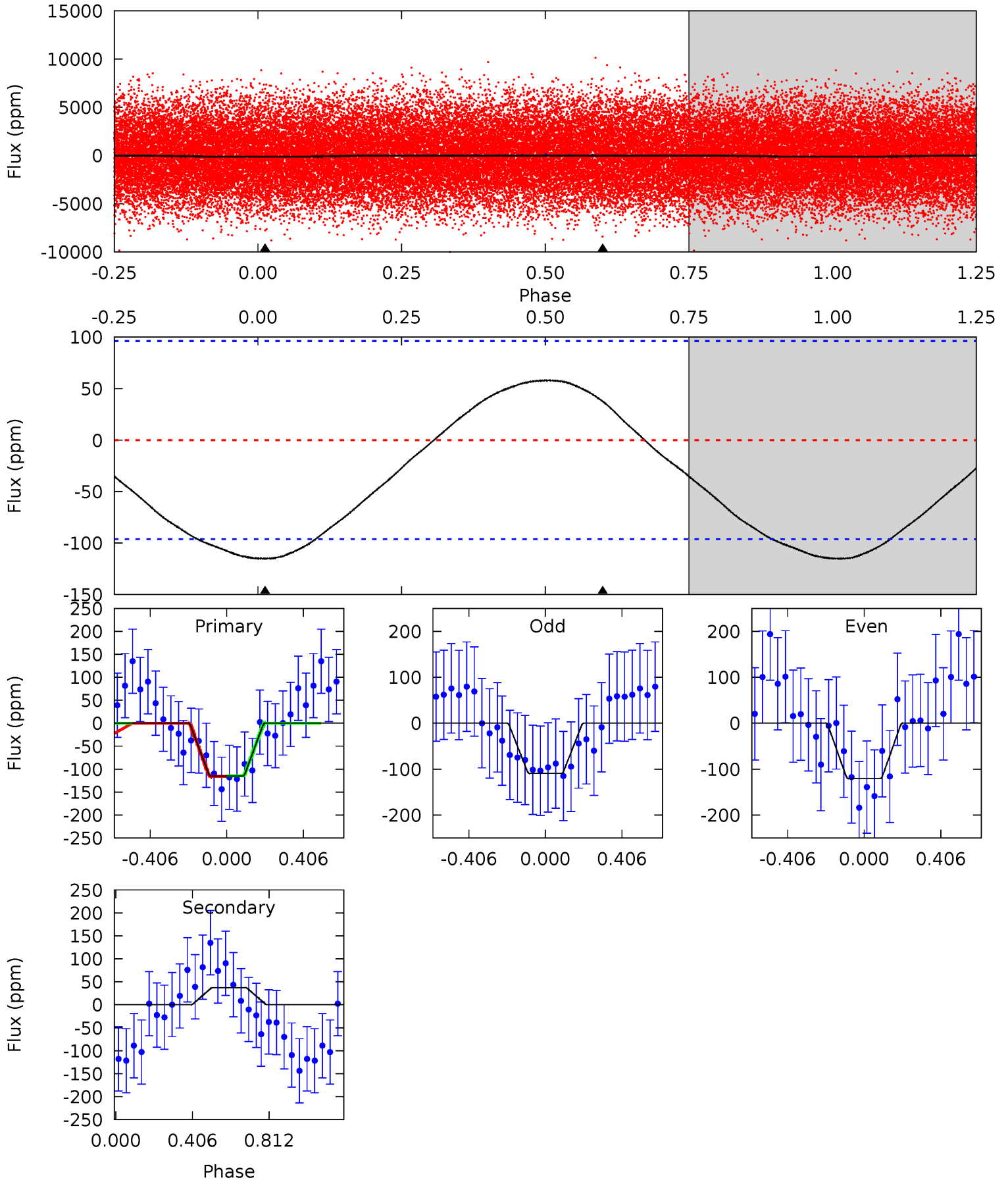
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.9	-4.15	0	0	4.29	0.93	2.28	20.9	20.9	-4.15	-4.15	0.64	1.05	0.27	0.72



Alt Model-Shift Uniqueness Test

006357702-02, P = 1.422405 Days, E = 130.904650 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.10	-1.66	0	0	4.26	0.83	0.61	5.10	5.10	-1.66	-1.66	0.25	1.40	0.34	0.03



Stellar Parameters For KIC 006357702

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7559^{+209}_{-339}	$3.612^{+0.476}_{-0.084}$	$0.000^{+0.200}_{-0.350}$	$3.733^{+0.611}_{-1.955}$	$2.082^{+0.252}_{-0.546}$	$0.056^{+0.286}_{-0.015}$
	+3%/-4%	+13%/-2%	+inf%/-inf%	+16%/-52%	+12%/-26%	+507%/-27%
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 006357702-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	19 ± 4	$3.33^{+2.37}_{-1.91}$	4878^{+357}_{-622}	-5460^{+703}_{-2139}	$-0.917^{+0.612}_{-4.066}$
Alt.	38 ± 23	$4.13^{+2.43}_{-1.98}$	4863^{+381}_{-643}	-5667^{+969}_{-1880}	$-1.049^{+0.751}_{-3.296}$

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 $A_{obs} \gg 1.0$

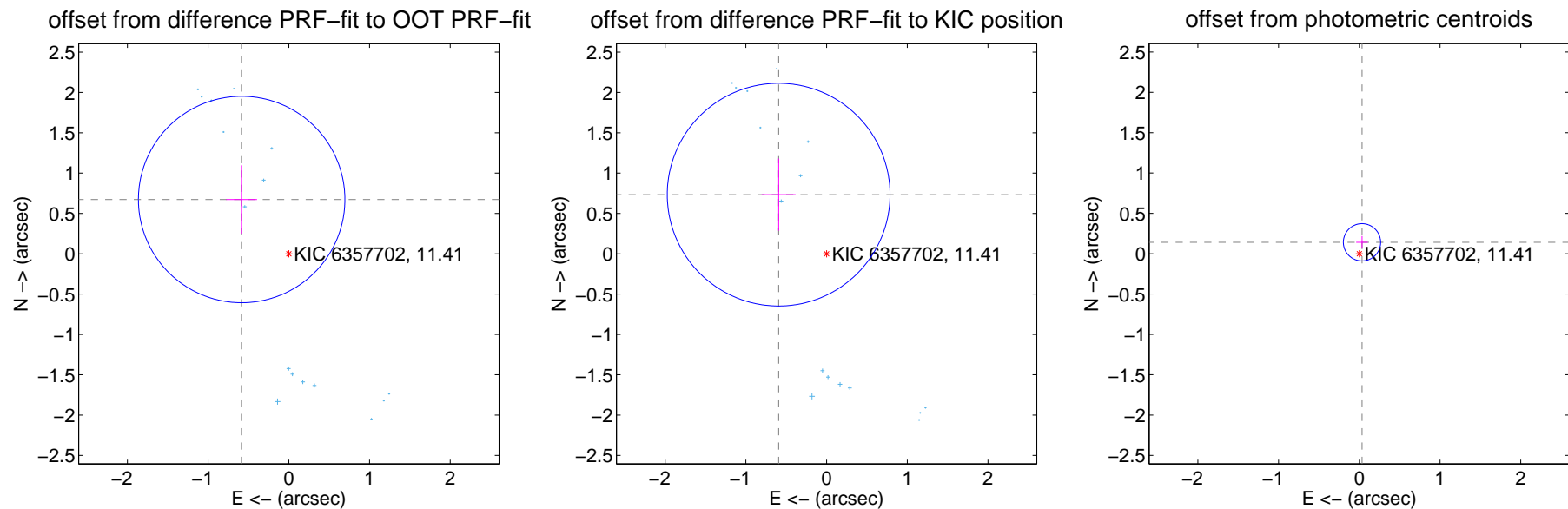
DV Centroid Data

Supplemental centroid analysis for 006357702-02. **Kepler magnitude: 11.41.** Transit SNR 15.97

There are 16 quarters with good PRF difference image offsets

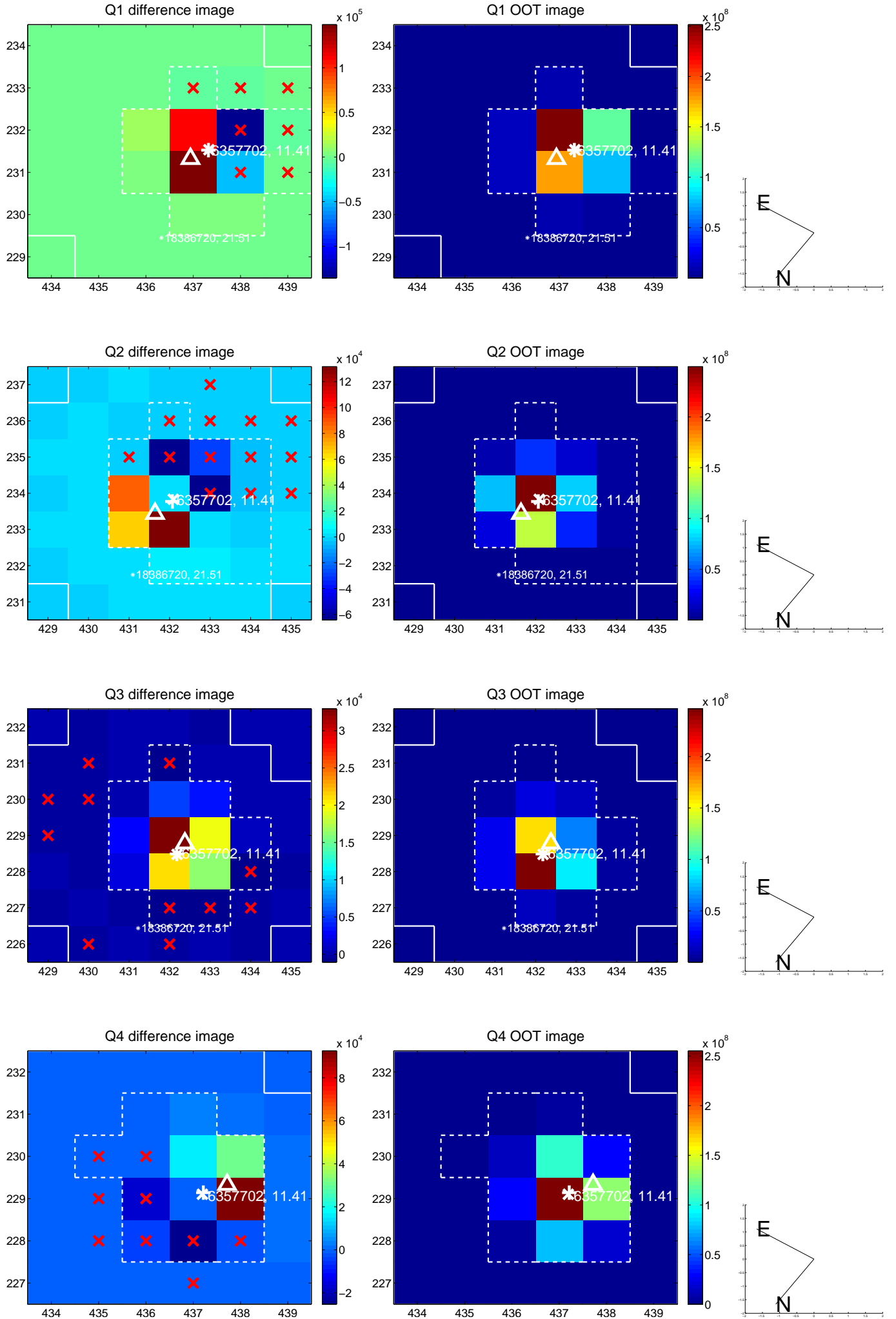
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.891 ± 0.426	2.09	0.585 ± 0.191	0.673 ± 0.424
PRF-fit source offset from KIC position	0.944 ± 0.460	2.05	0.594 ± 0.210	0.733 ± 0.447
photometric centroid source offset	0.15 ± 0.08	1.89	-0.03 ± 0.07	0.14 ± 0.08

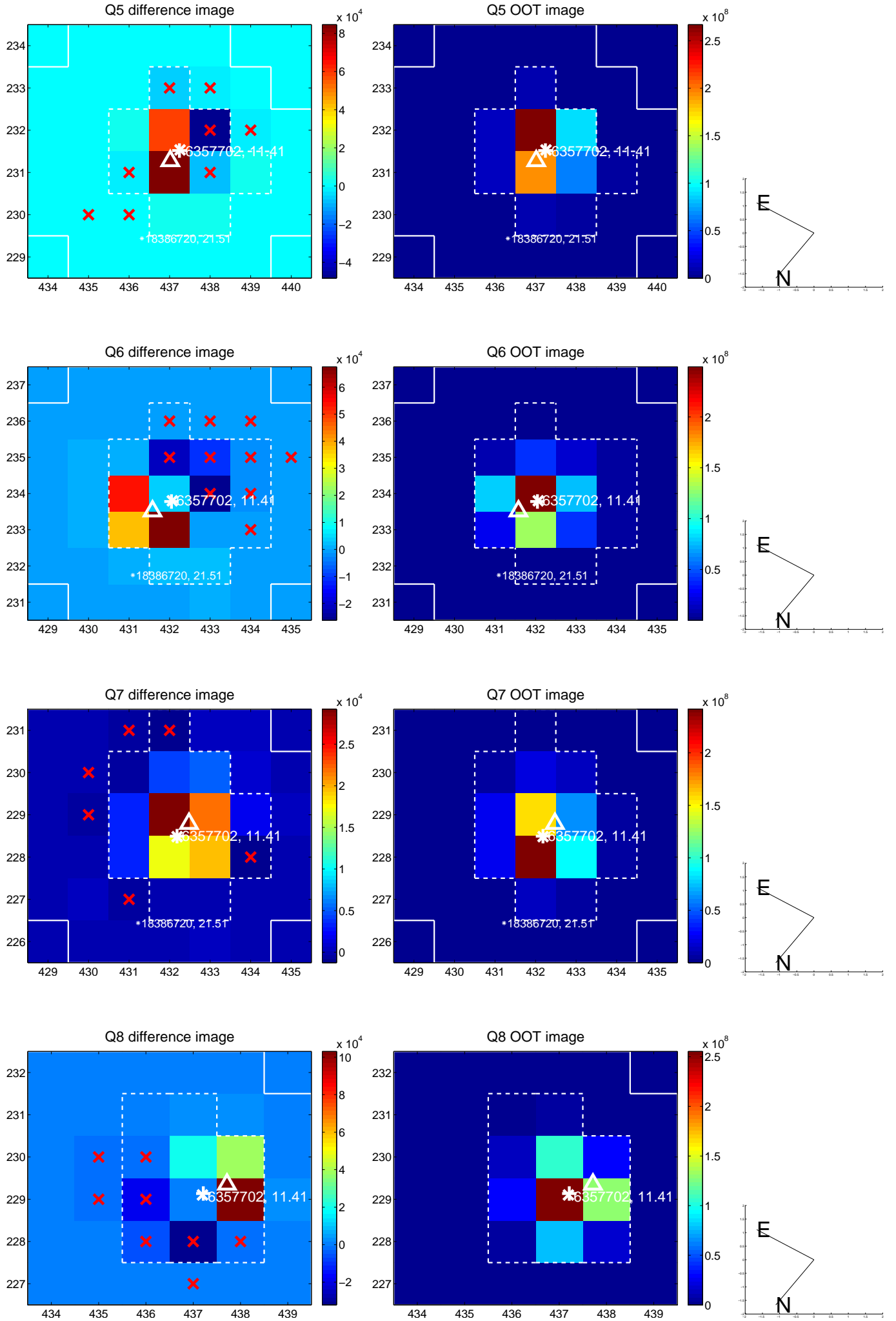


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

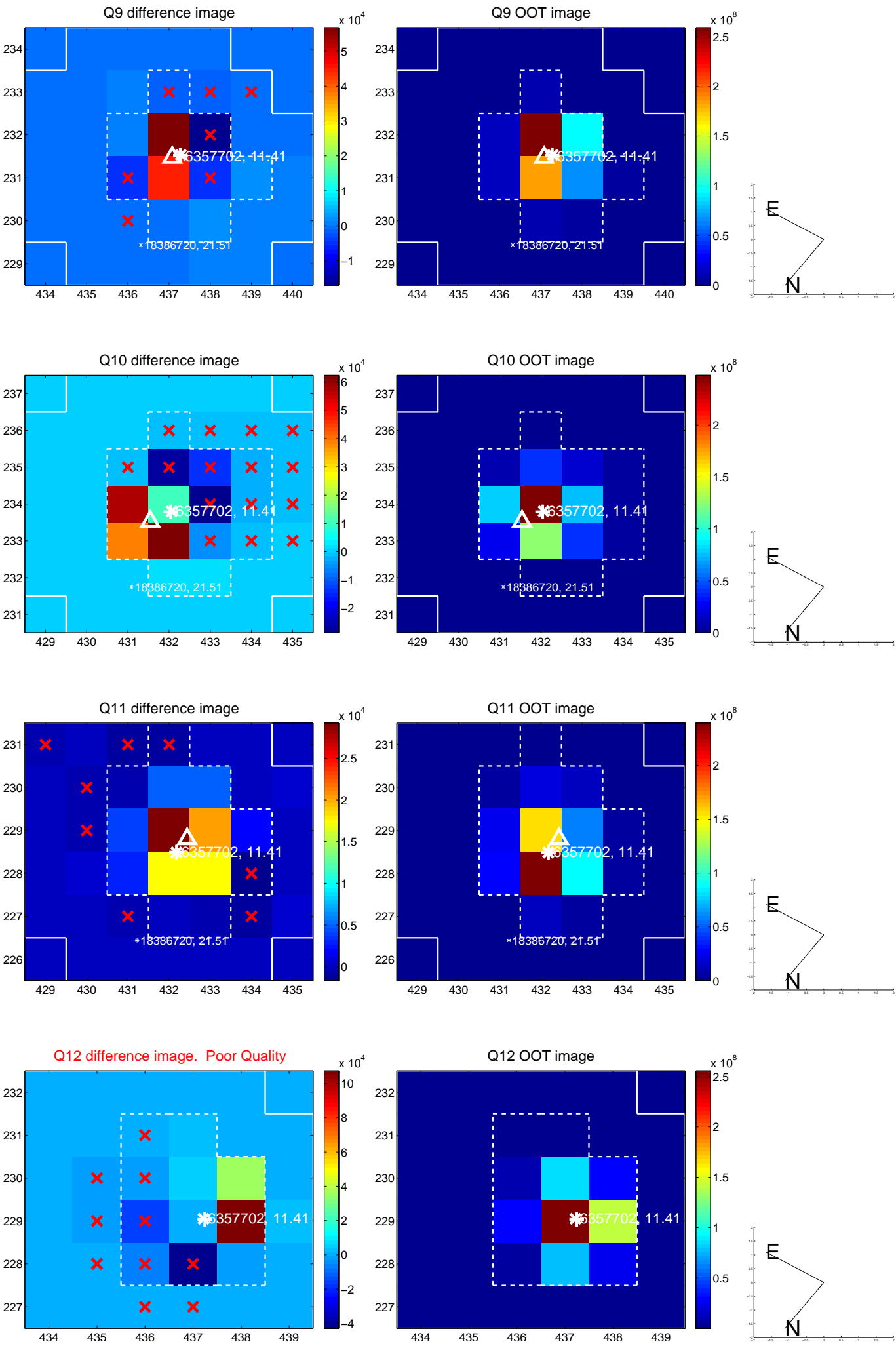
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



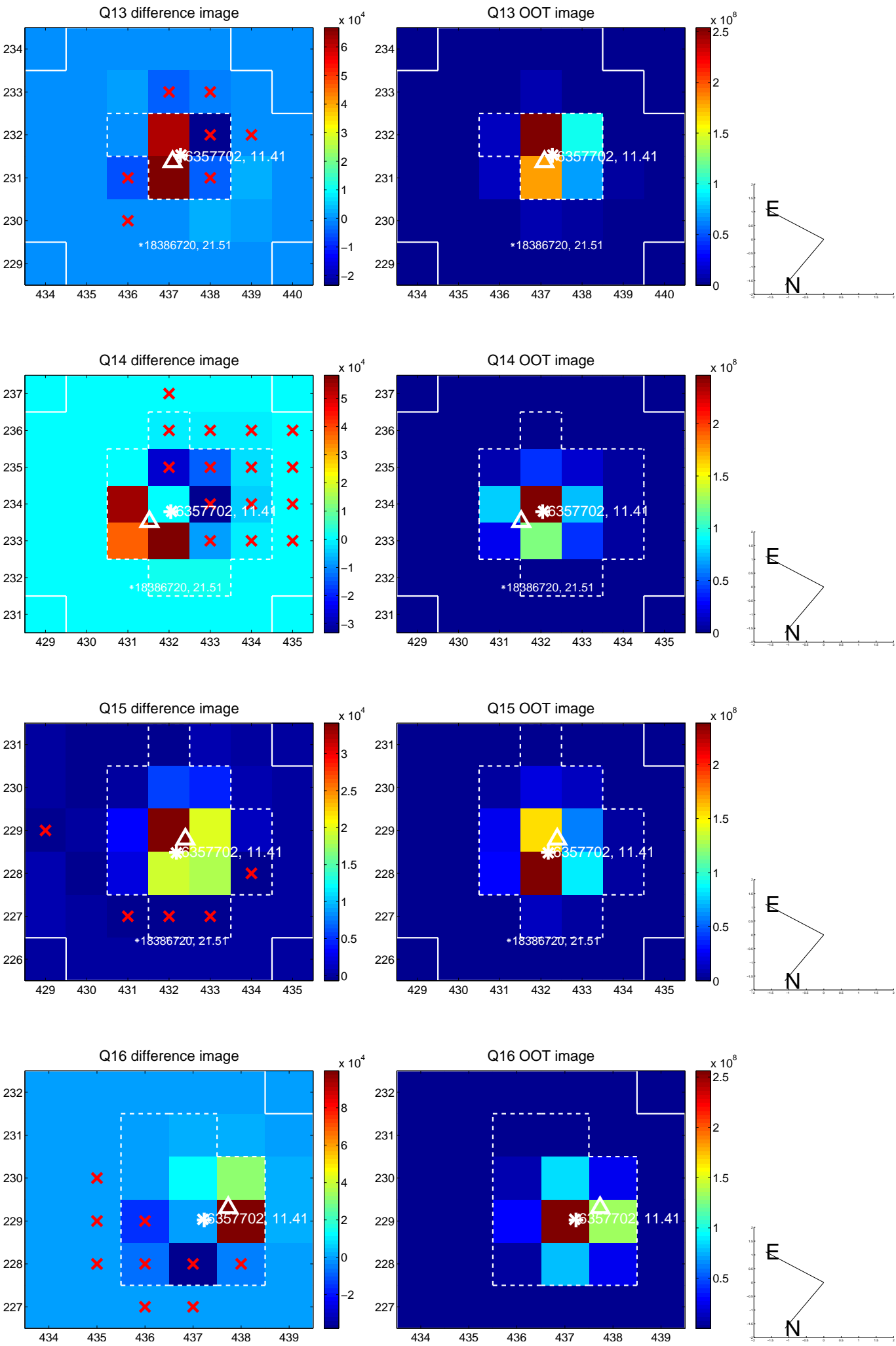
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



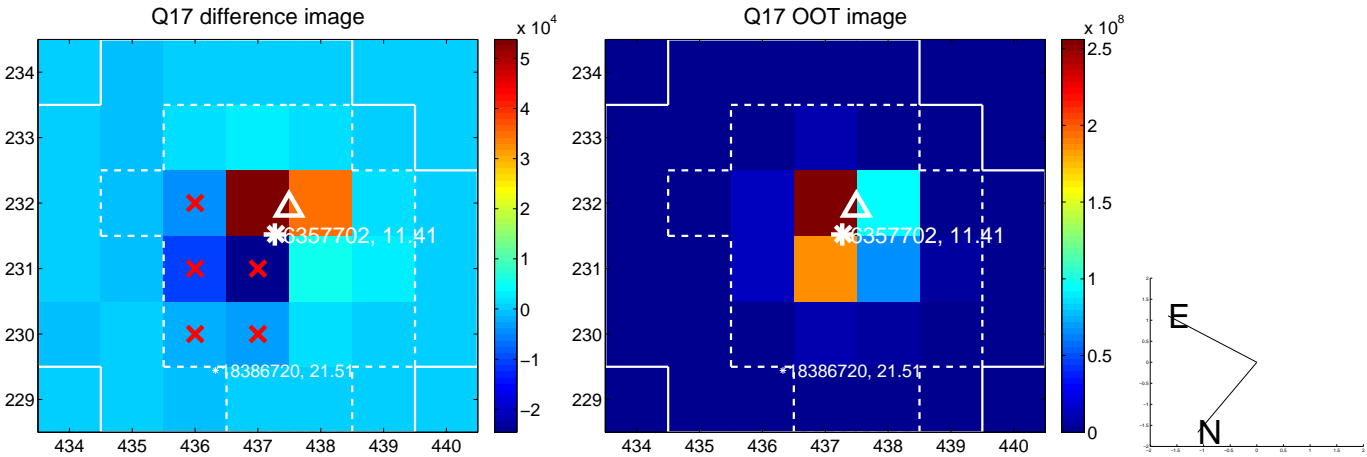
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



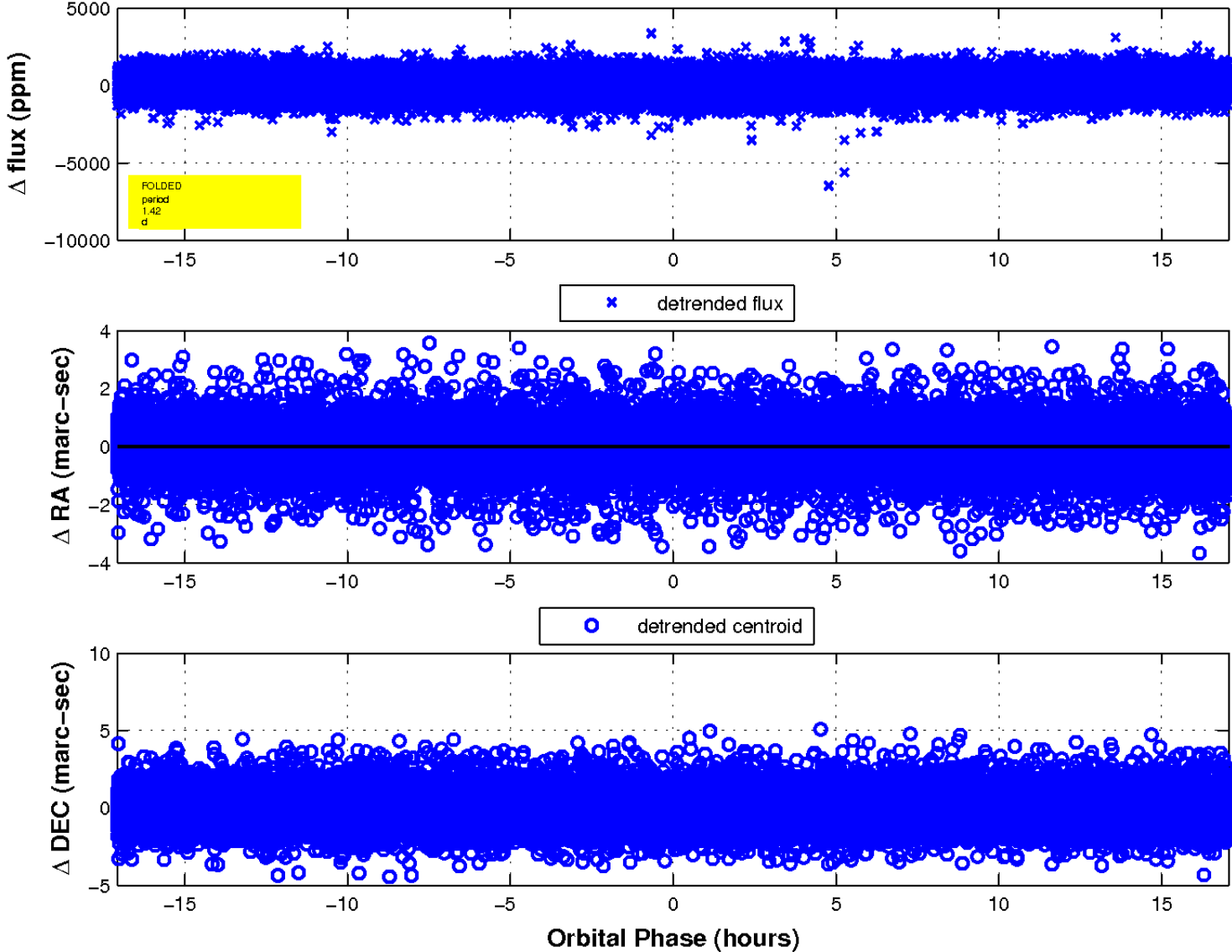
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

