

KIC 011973805

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})
011973805-01	OBS	No	4.256022	134.679144	21.7	8.252	7.3	6.5	1.46	7072	0.85	1468.34
011973805-02	OBS	No	4.255985	133.927521	9.5	15.269	7.1	3.6	1.46	7072	0.46	1468.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011973805-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT
011973805-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

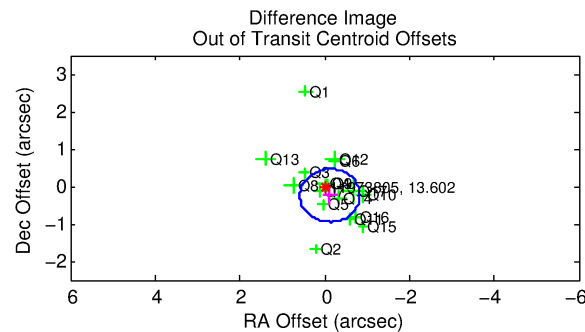
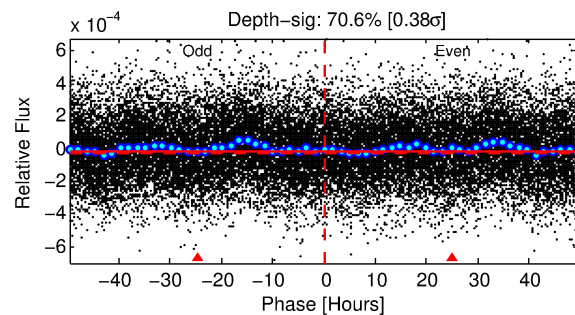
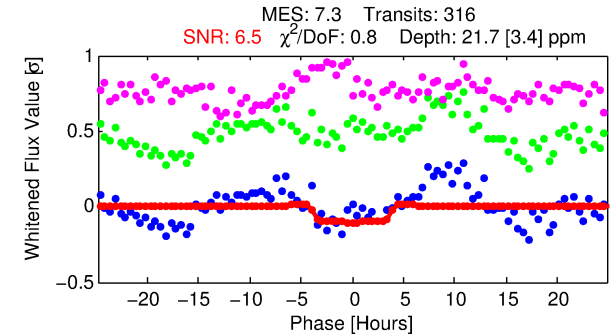
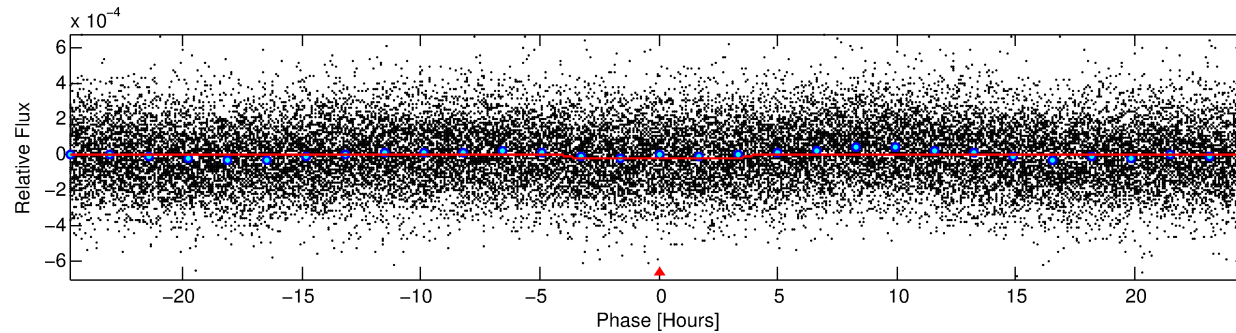
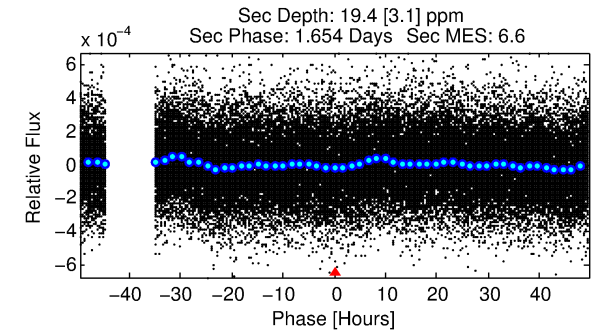
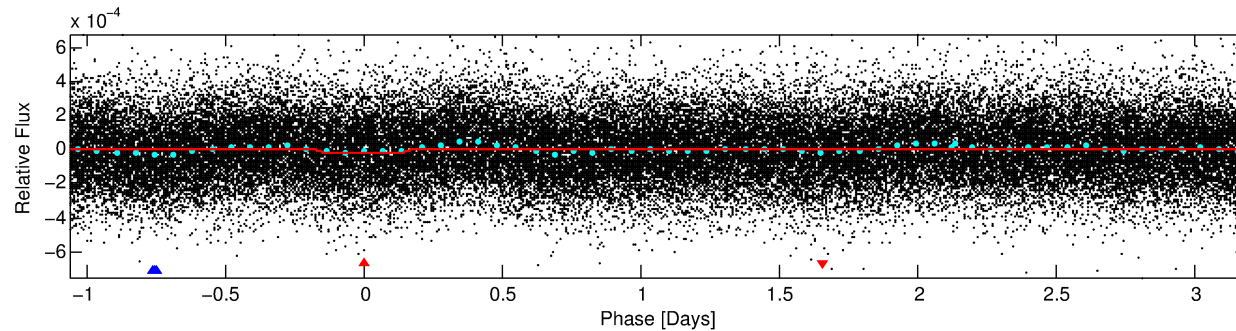
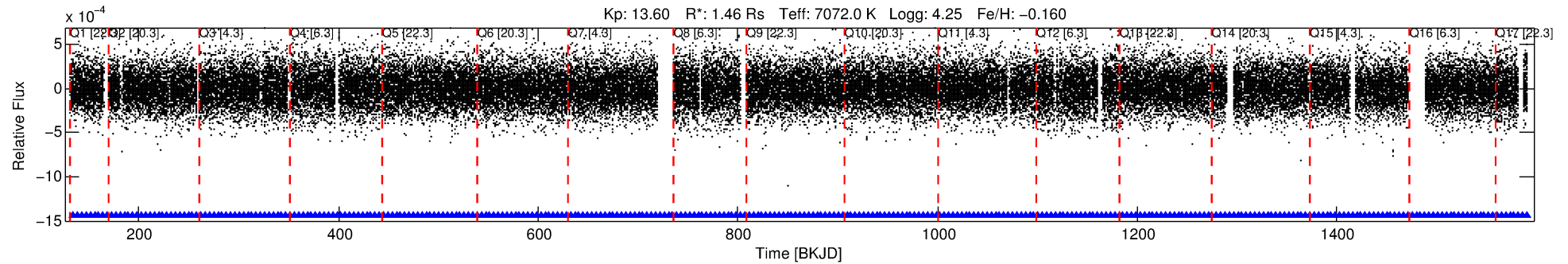
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011973805-01

No Significant Match Found

DV One-Page Summary

KIC: 11973805 Candidate: 1 of 2 Period: 4.256 d



DV Fit Results:

Period = 4.25602 [0.00009] d
Epoch = 134.6791 [0.0147] BKJD
Rp/R* = 0.0053 [0.0011]
a/R* = 1.53 [1.07]
b = 0.96 [0.10]
Seff = 1468.33 [615.45]
Teq = 1578 [165] K
Rp = 0.85 [0.32] Re
a = 0.0571 [0.0155] AU
Ag = 48.57 [28.27] [1.68σ]
Teffp = 6443 [741] K [6.41σ]

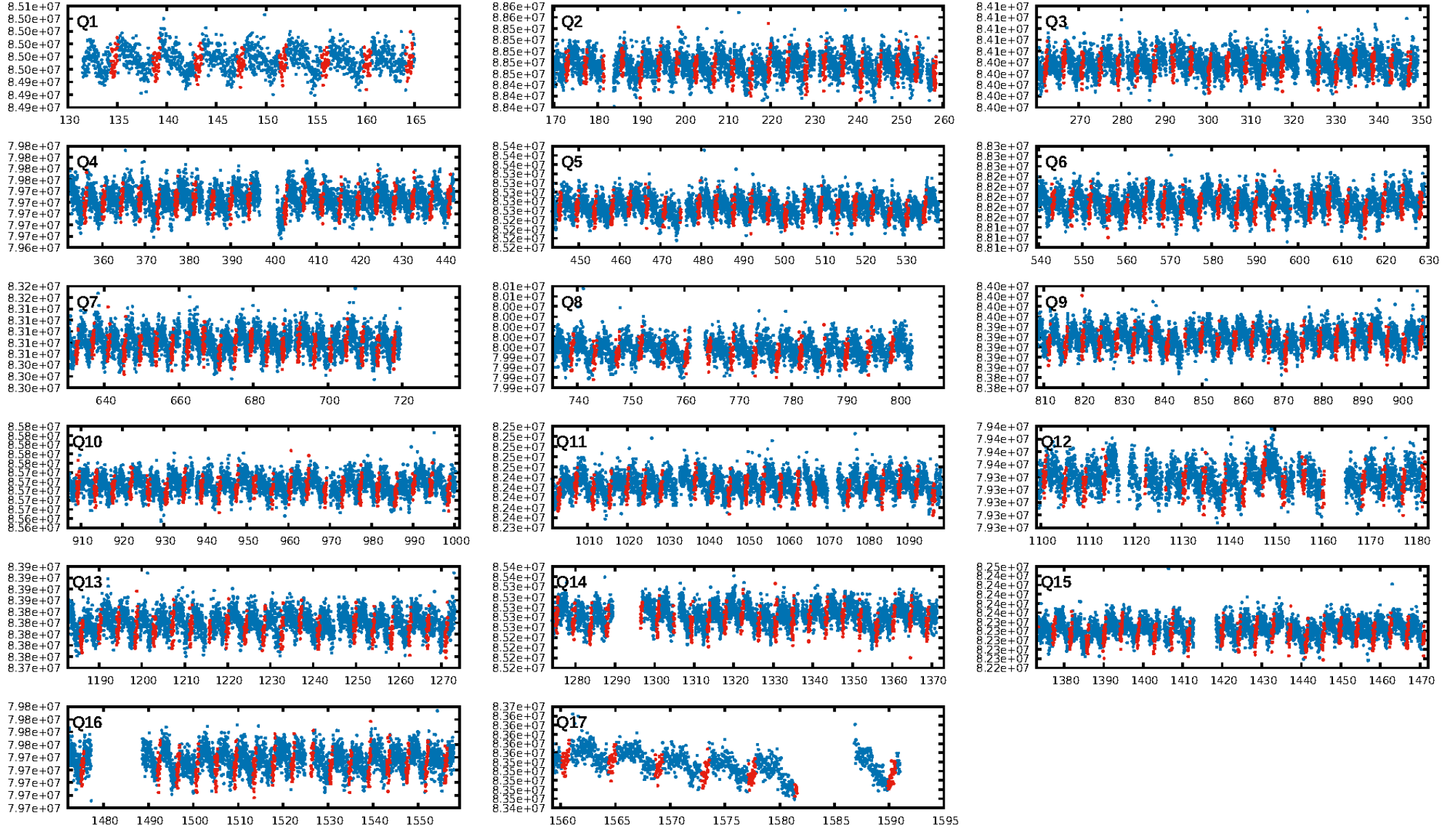
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.84e-12
RollingBand-fgt: 1.00 [301/301]
GhostDiagnostic-chr: 1.035
Centroid-sig: 43.0%
Centroid-so: 1.877 arcsec [1.14σ]
OotOffset-rm: 0.273 arcsec [1.16σ]
KicOffset-rm: 0.290 arcsec [1.22σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

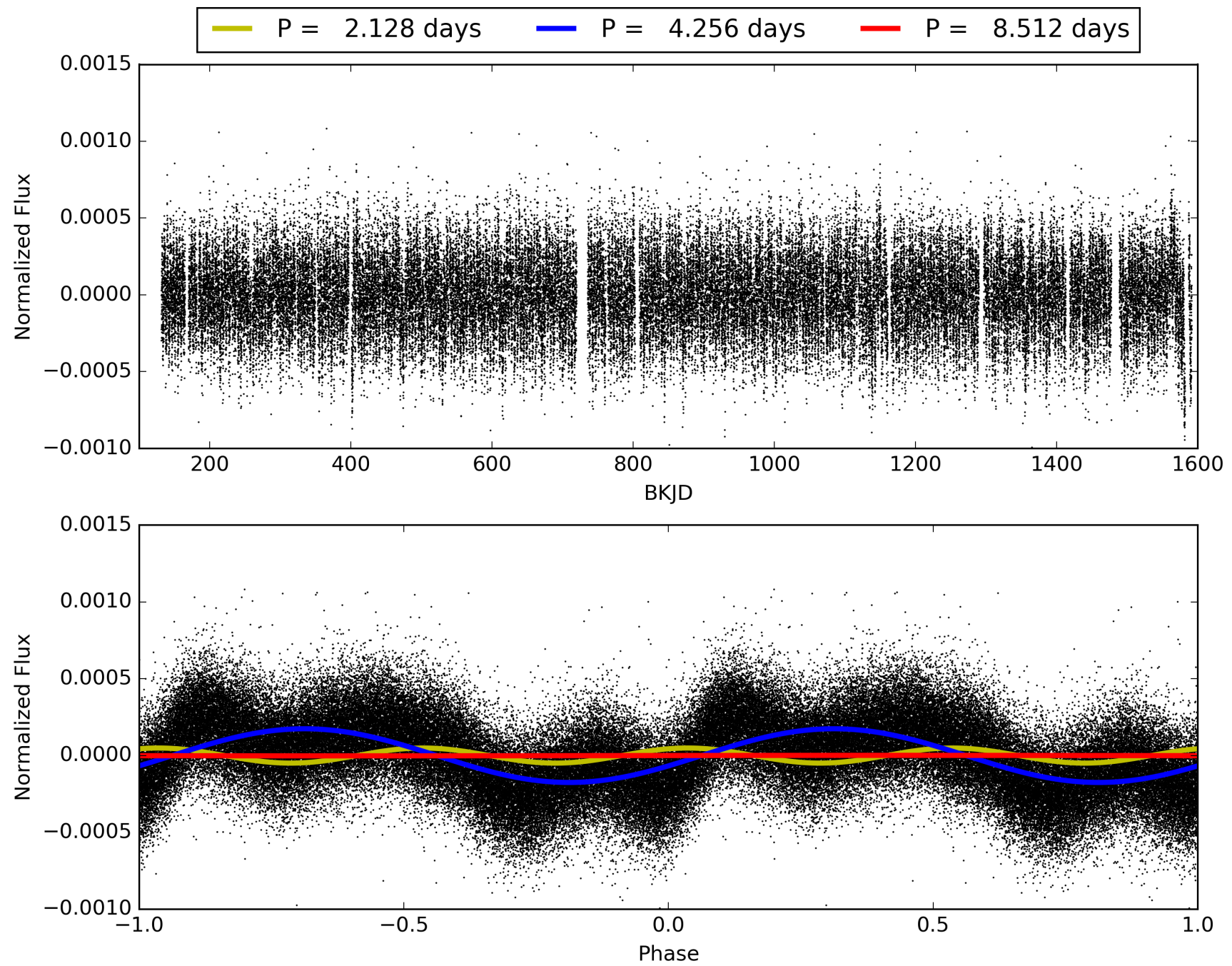
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:28:31 Z

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

TCE 011973805-01, PDC Light Curves

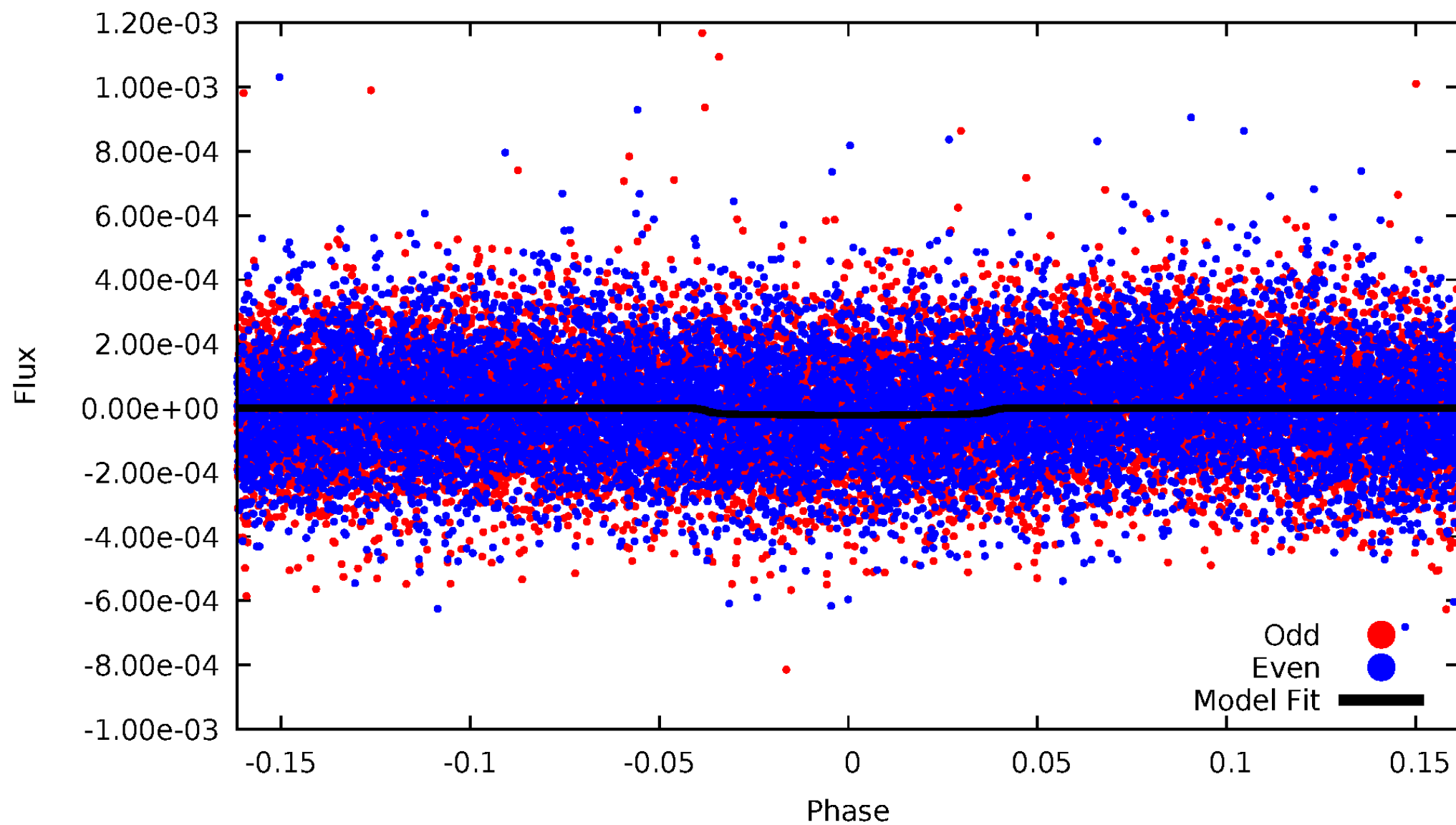


TCE 011973805-01



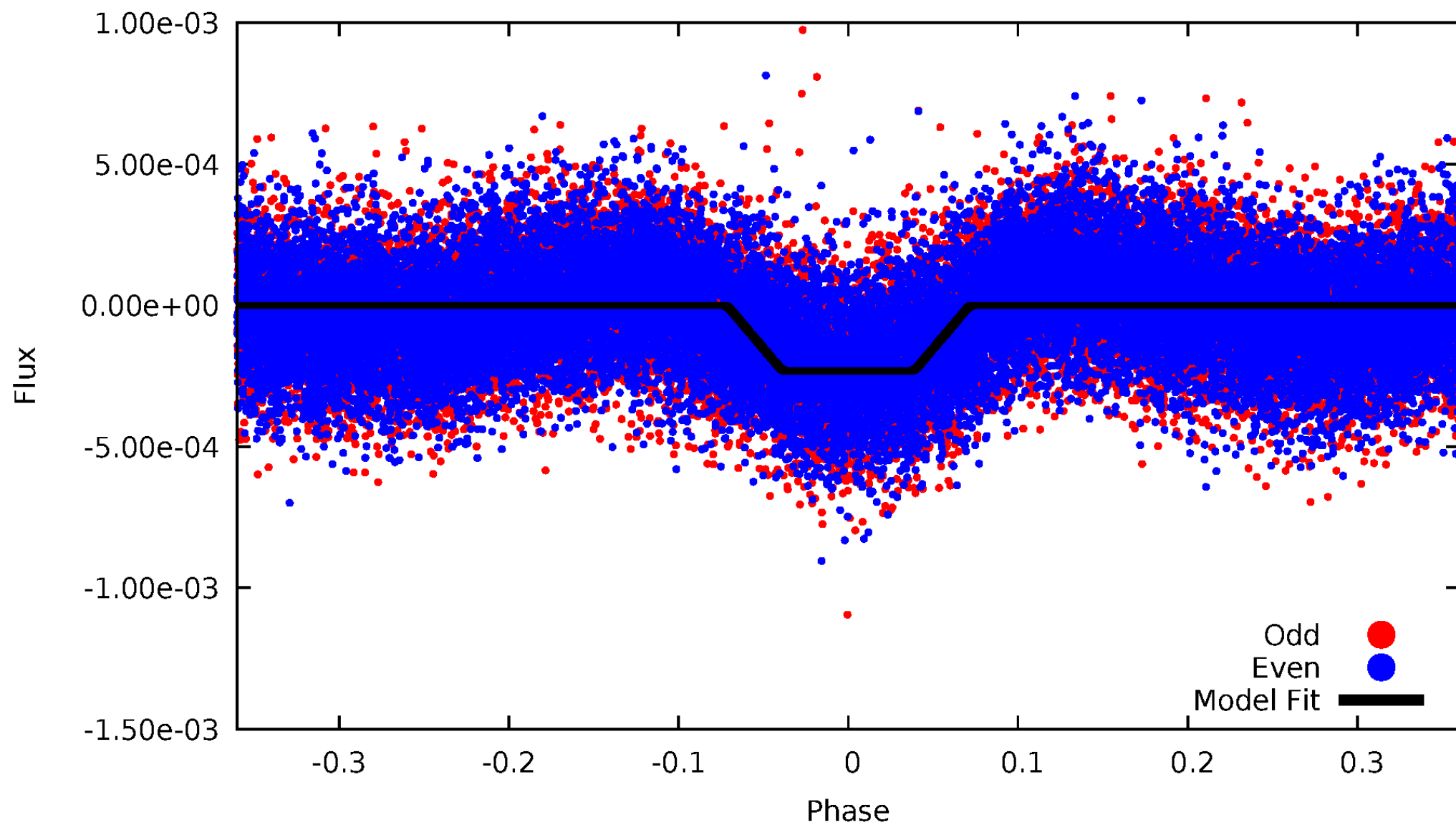
DV Odd/Even

TCE 011973805-01



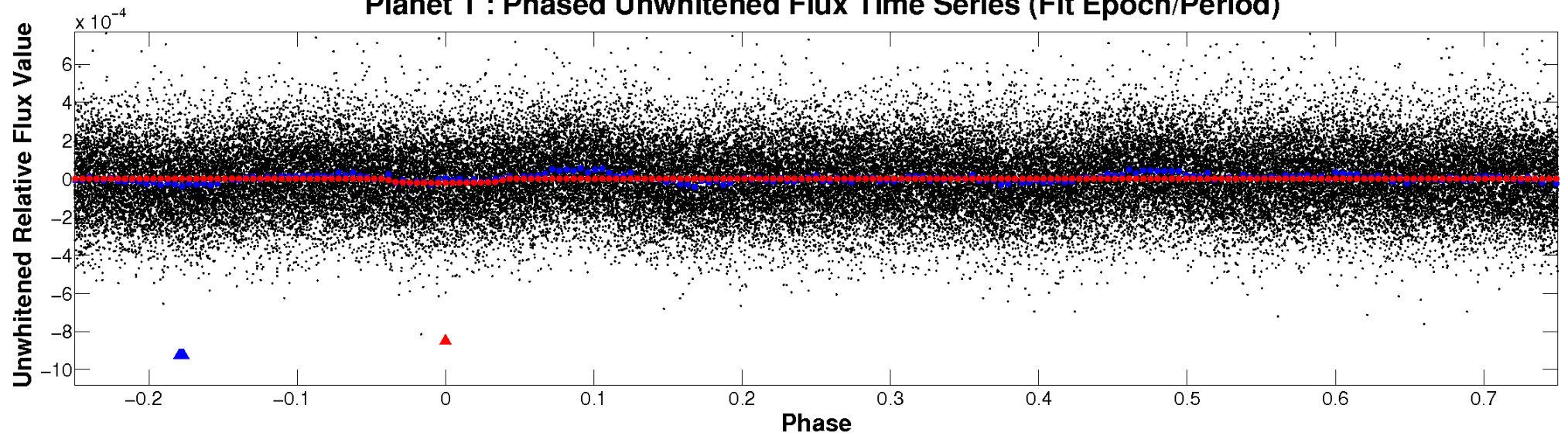
ALT Odd/Even

TCE 011973805-01

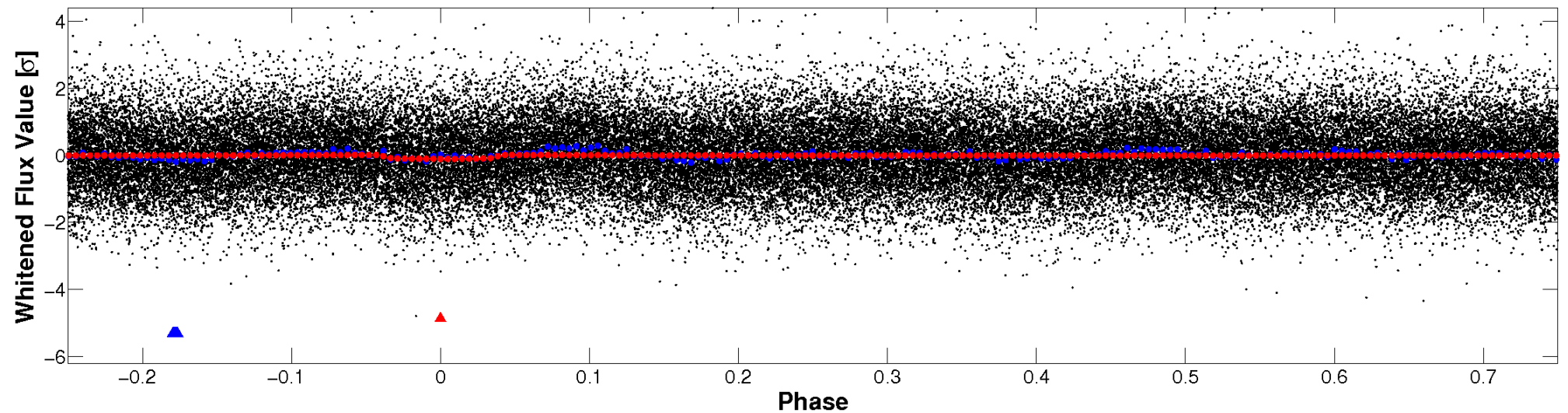


Non-Whitened Vs. Whitened Light Curve

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

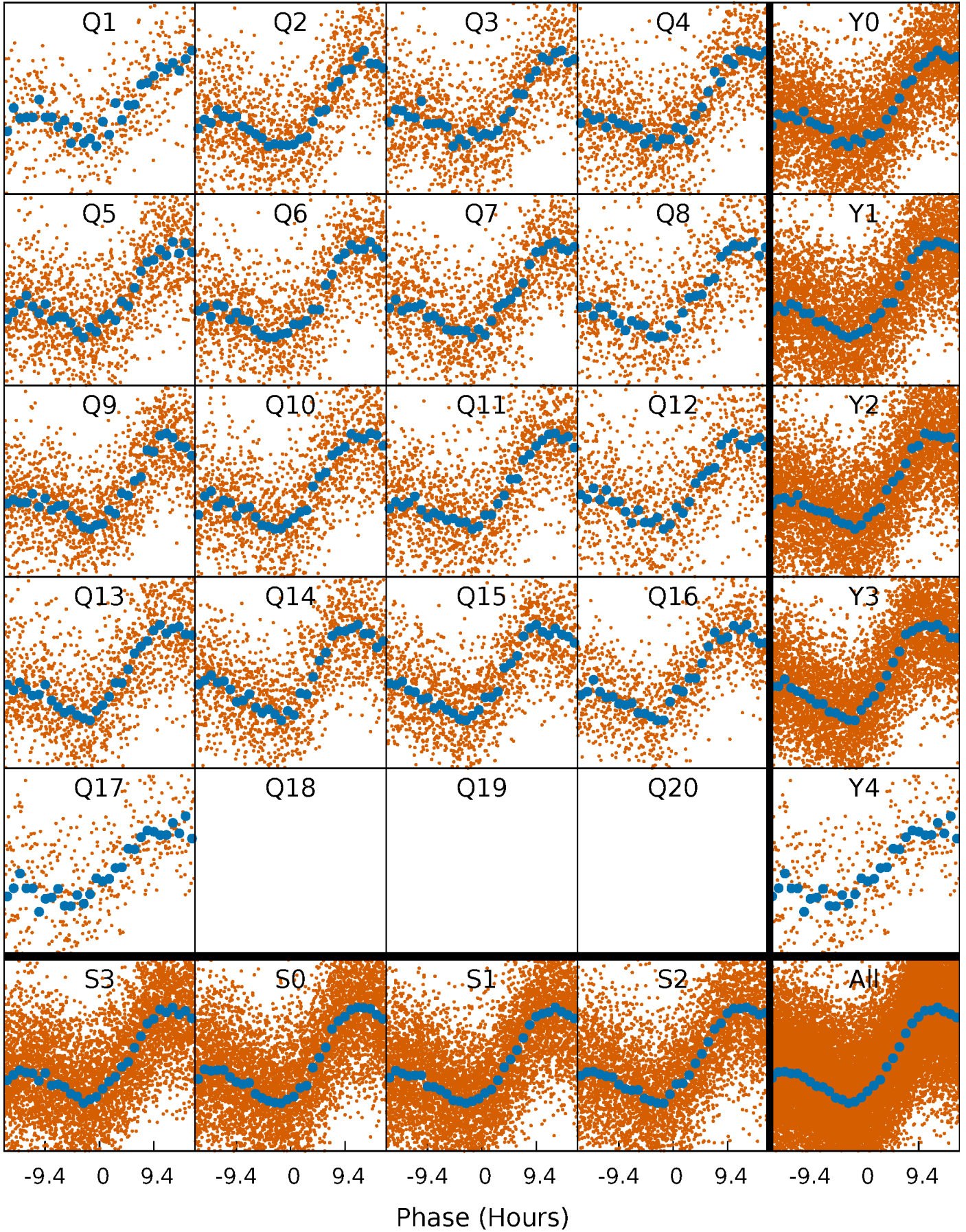


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



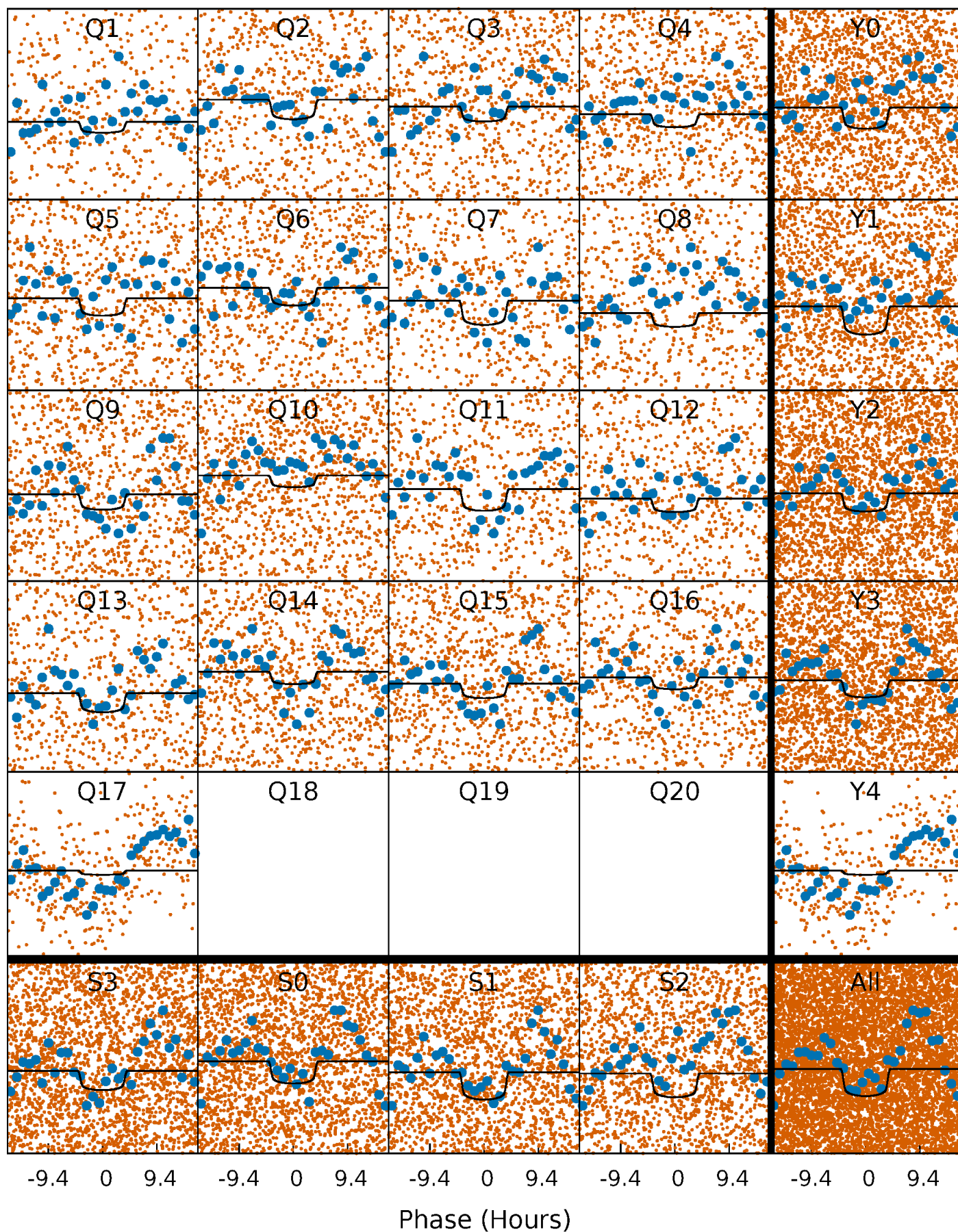
PDC Quarter-Phased Transit Curves

TCE 011973805-01 P= 4.256022 Days $T_0=134.679144$ (BKJD)



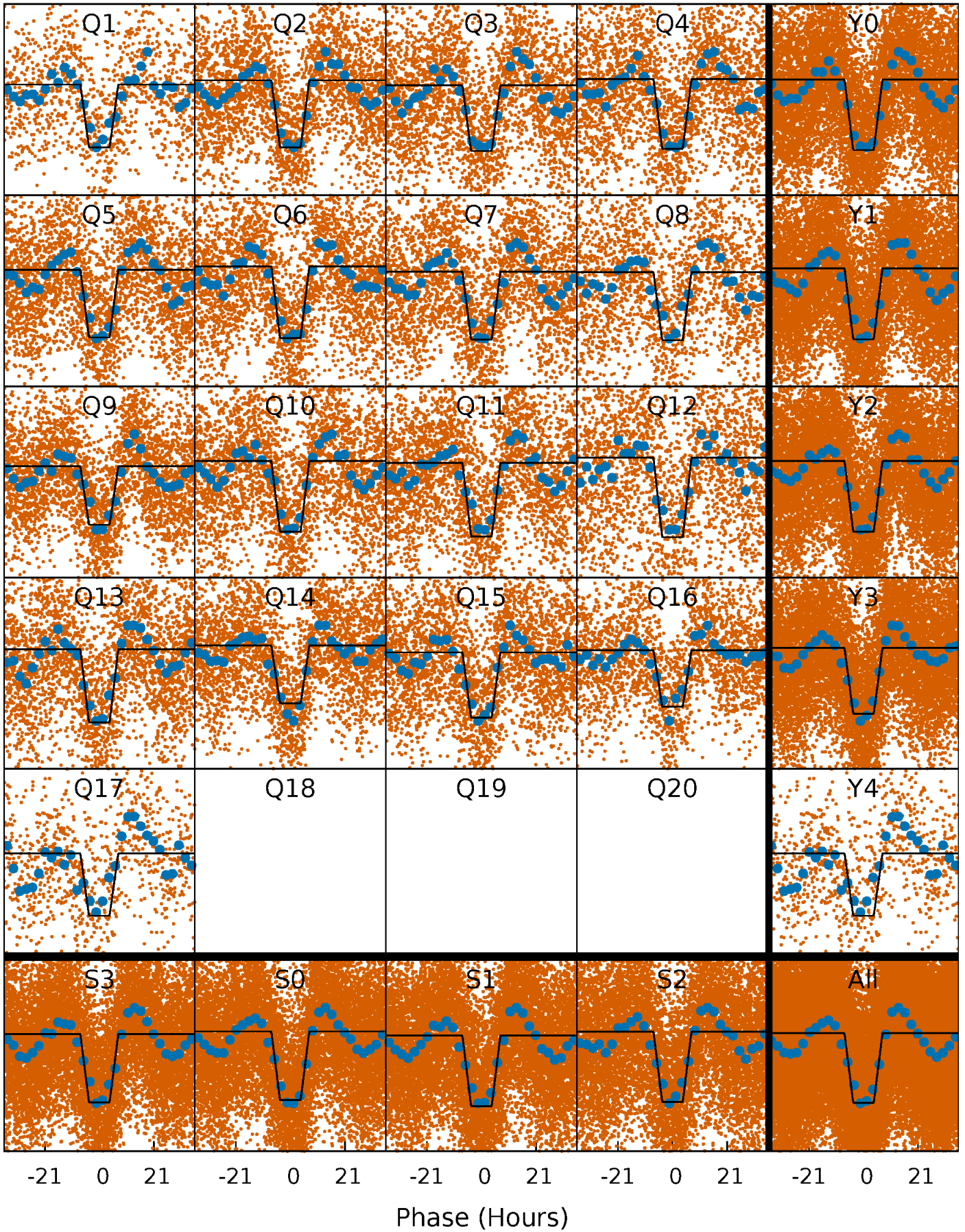
DV Quarter-Phased Transit Curves

TCE 011973805-01 P= 4.256022 Days $T_0=134.679144$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

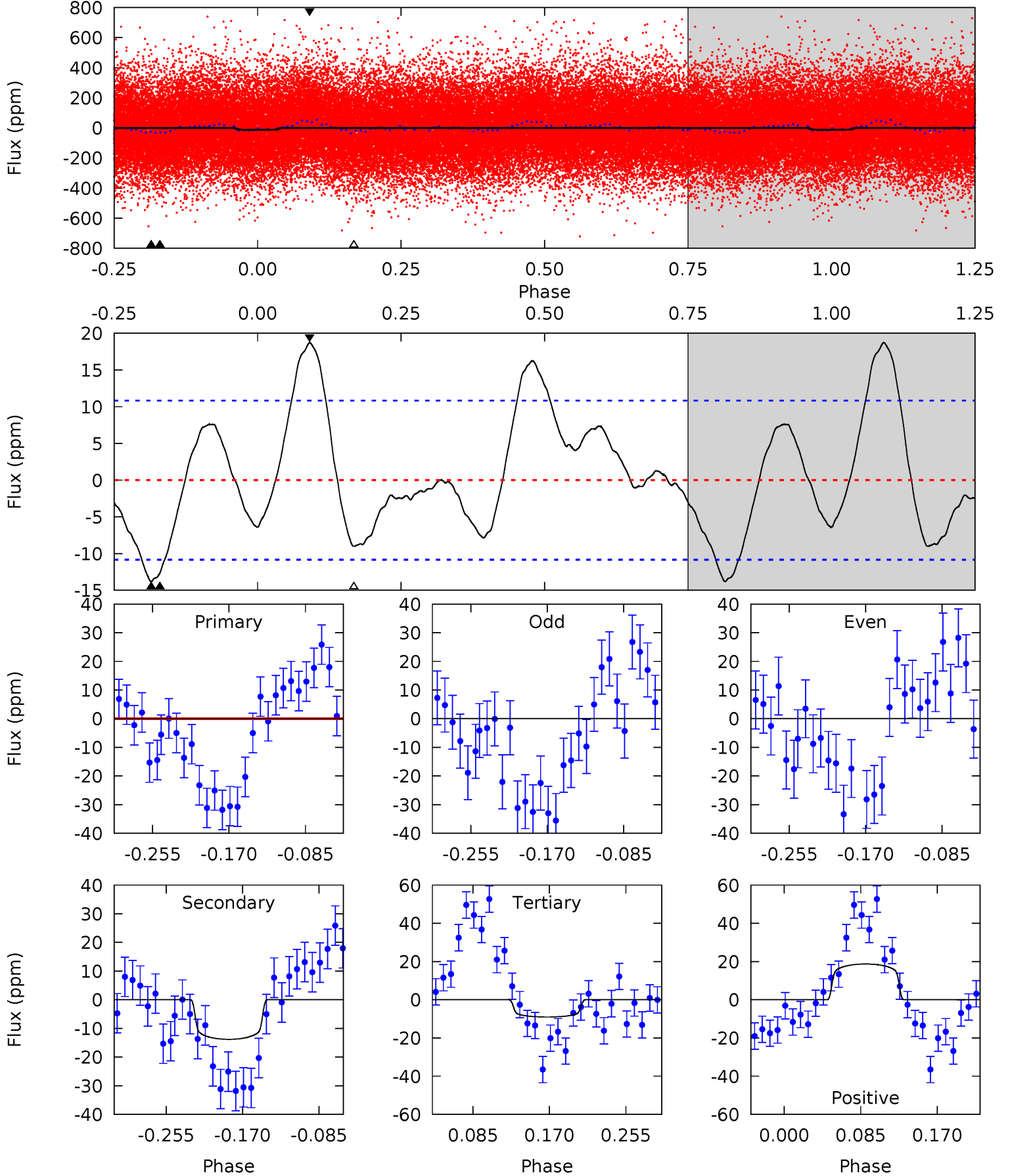
TCE 011973805-01 P= 4.255886 Days $T_0=134.651046$ (BKJD)



DV Model-Shift Uniqueness Test

011973805-01, P = 4.256022 Days, E = 130.423122 Days

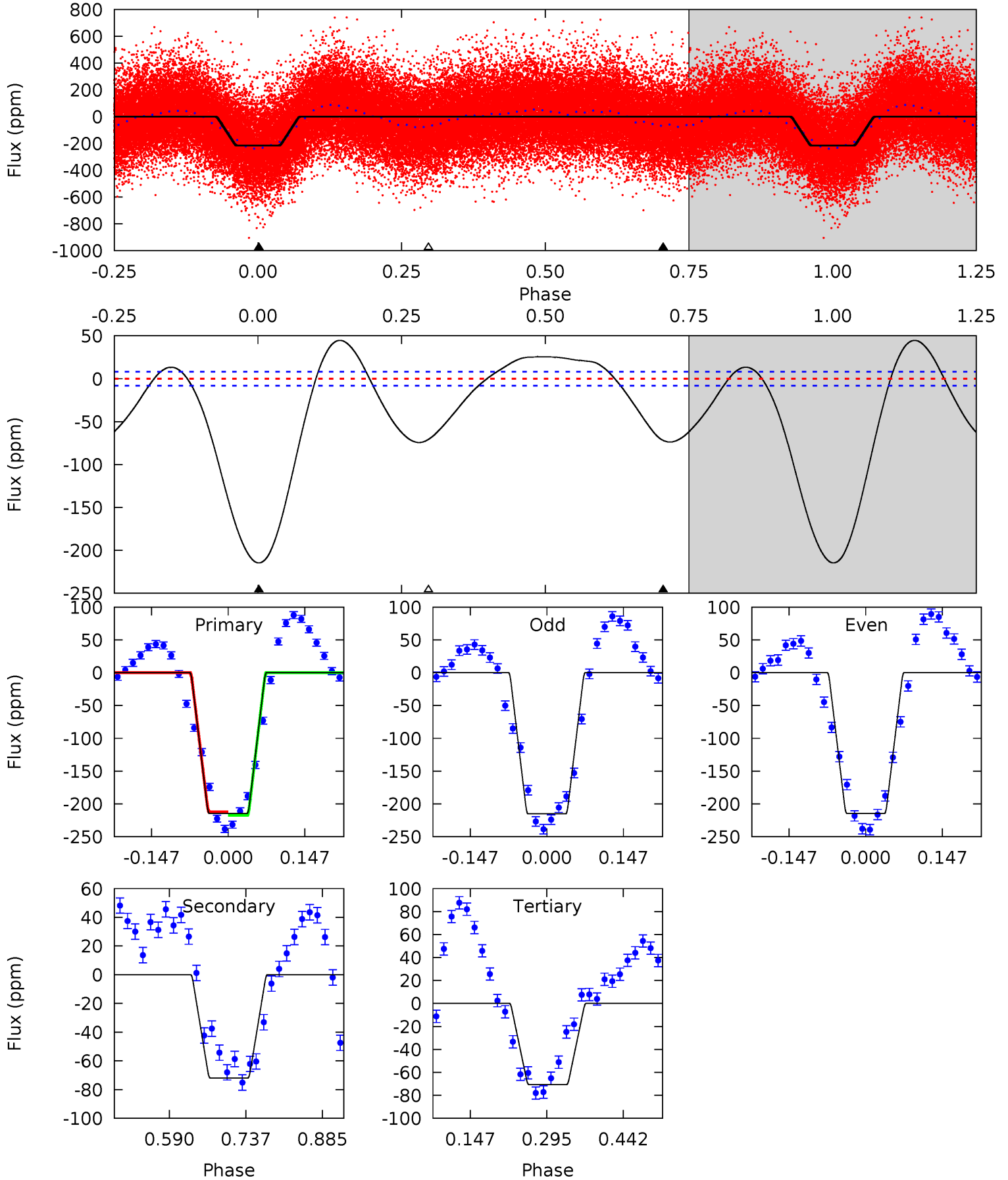
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.38	5.87	3.83	7.95	4.60	1.72	2.97	1.54	-2.58	2.03	-2.08	0.09	1.11	0.58	1.60



Alt Model-Shift Uniqueness Test

011973805-01, P = 4.255886 Days, E = 130.395160 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
118.6	39.7	39.0	0	4.48	1.45	20.4	79.6	118.6	0.69	39.7	0.20	1.00	0.17	1.46



Stellar Parameters For KIC 011973805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7072^{+200}_{-275}	$4.245^{+0.090}_{-0.210}$	$-0.160^{+0.250}_{-0.350}$	$1.461^{+0.478}_{-0.221}$	$1.375^{+0.203}_{-0.203}$	$0.621^{+0.316}_{-0.336}$
	+3%/-4%	+2%/-5%	+156%/-219%	+33%/-15%	+15%/-15%	+51%/-54%
Source	PHO1	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 011973805-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 2	$0.87^{+0.23}_{-0.18}$	2238^{+181}_{-136}	5809^{+805}_{-535}	31^{+20}_{-12}
Alt.	-72 ± 2	$2.48^{+0.49}_{-0.31}$	2232^{+161}_{-122}	5246^{+223}_{-235}	20^{+6}_{-5}

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 $A_{obs} \gg 1.0$

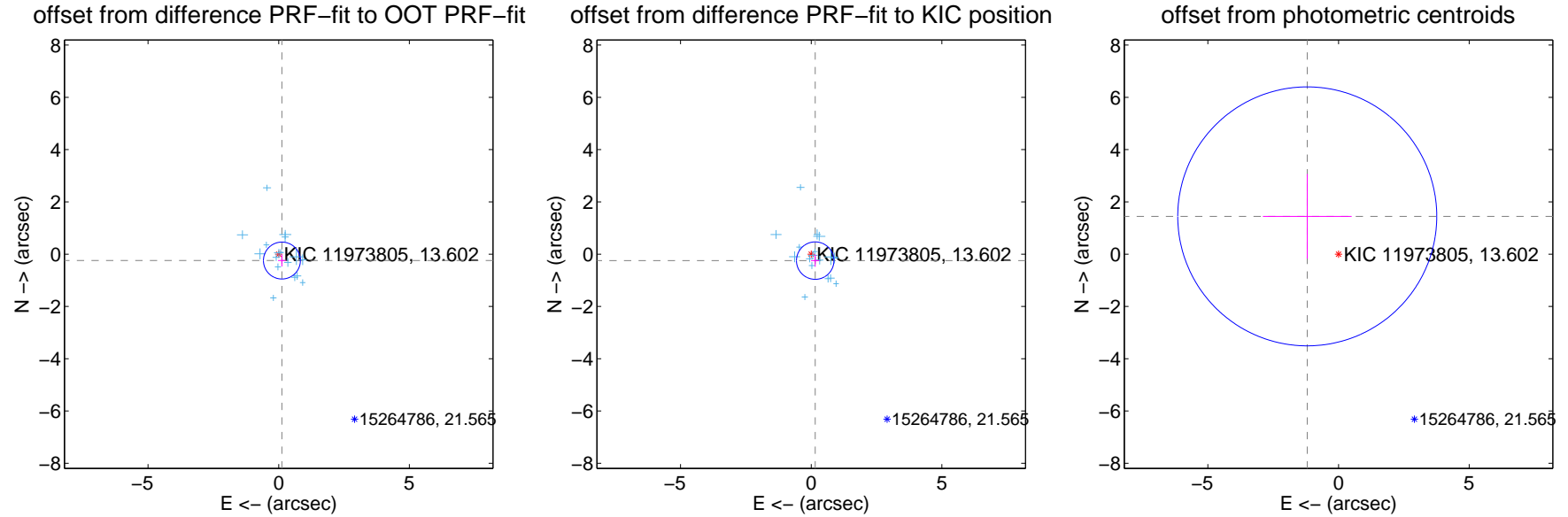
DV Centroid Data

Supplemental centroid analysis for 011973805-01. Kepler magnitude: 13.60. Transit SNR 6.52

There are 17 quarters with good PRF difference image offsets

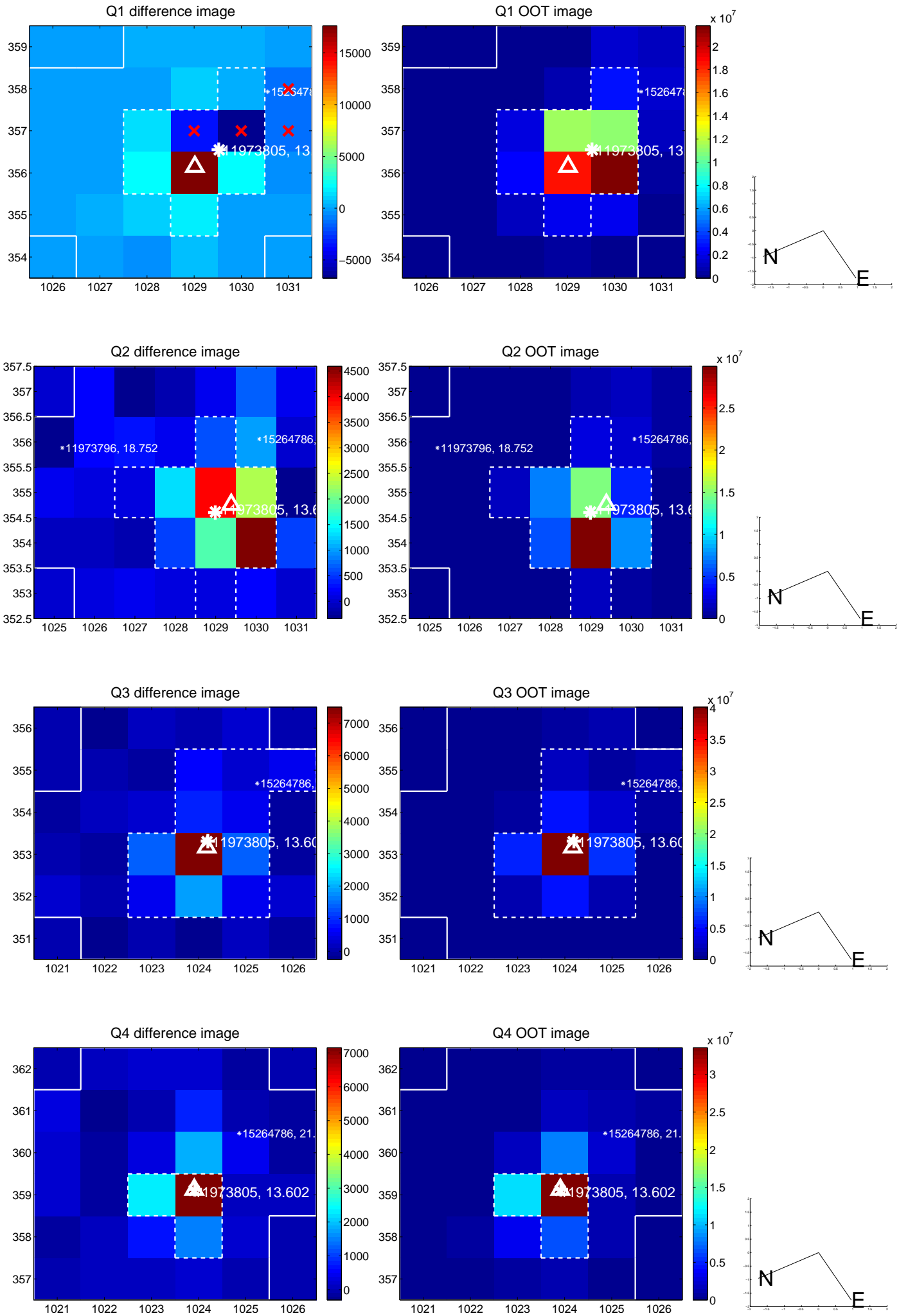
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.273 ± 0.236	1.16	-0.123 ± 0.147	-0.244 ± 0.228
PRF-fit source offset from KIC position	0.290 ± 0.239	1.22	-0.153 ± 0.158	-0.247 ± 0.235
photometric centroid source offset	1.88 ± 1.65	1.14	1.20 ± 1.70	1.45 ± 1.62

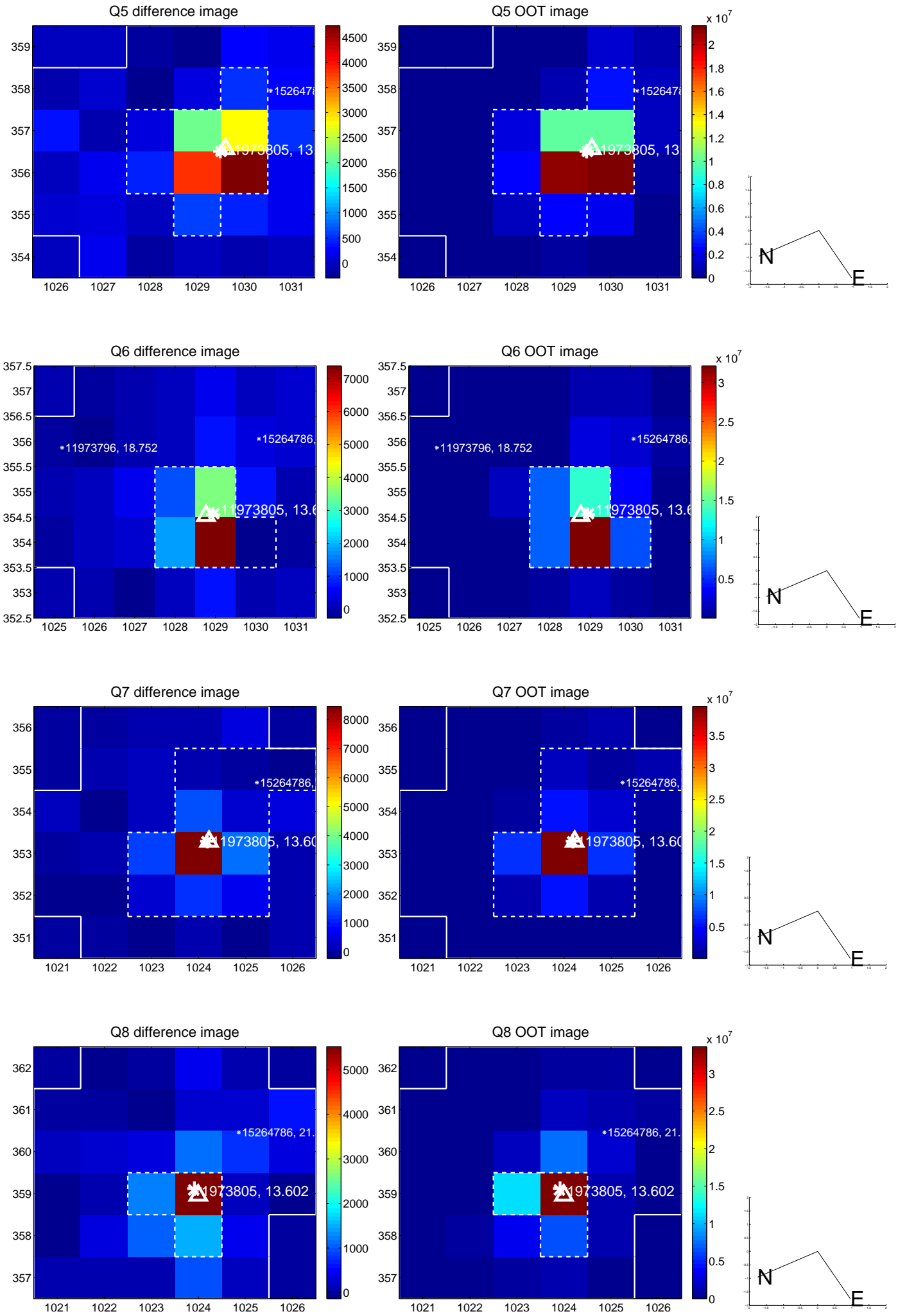


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

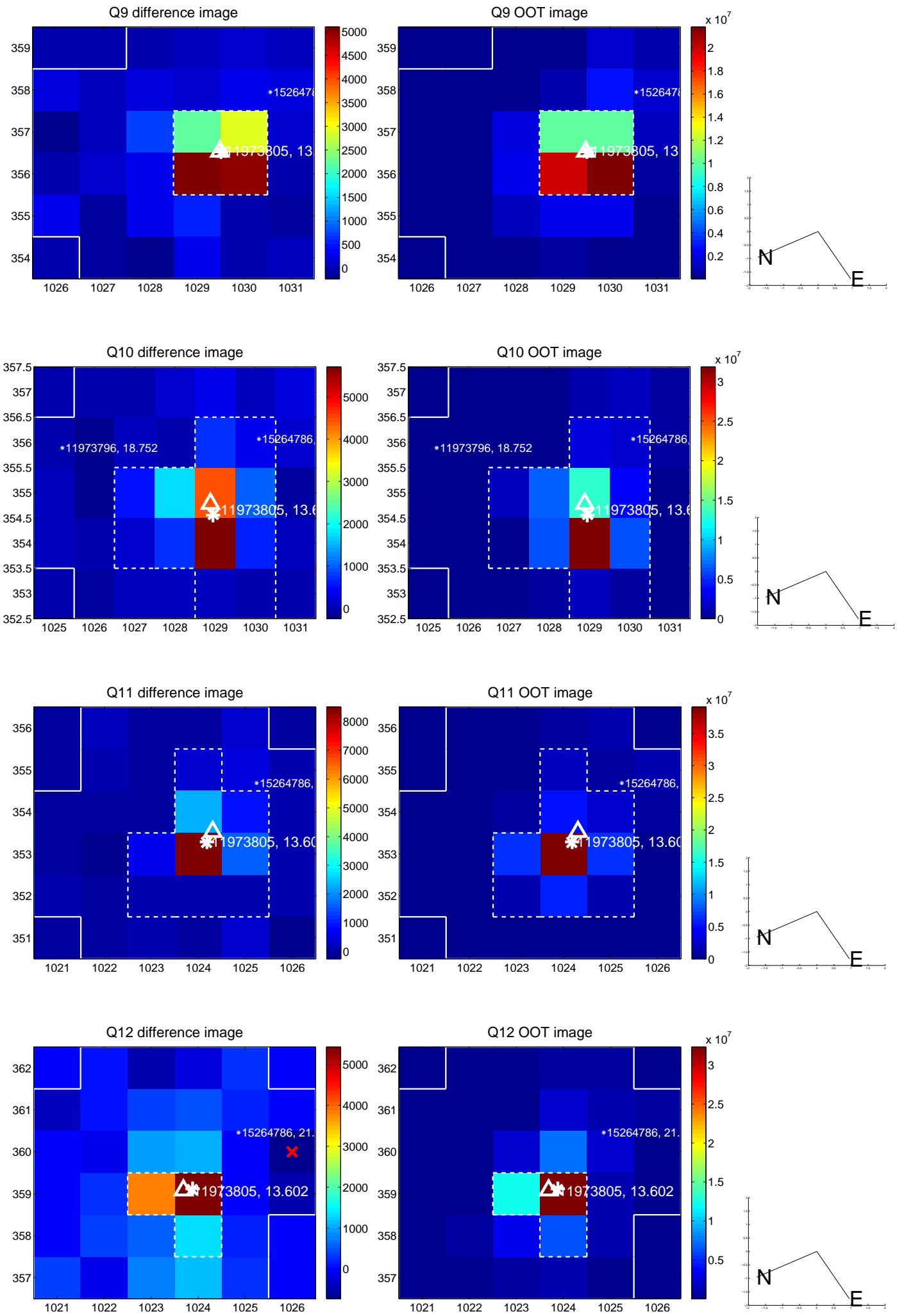
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



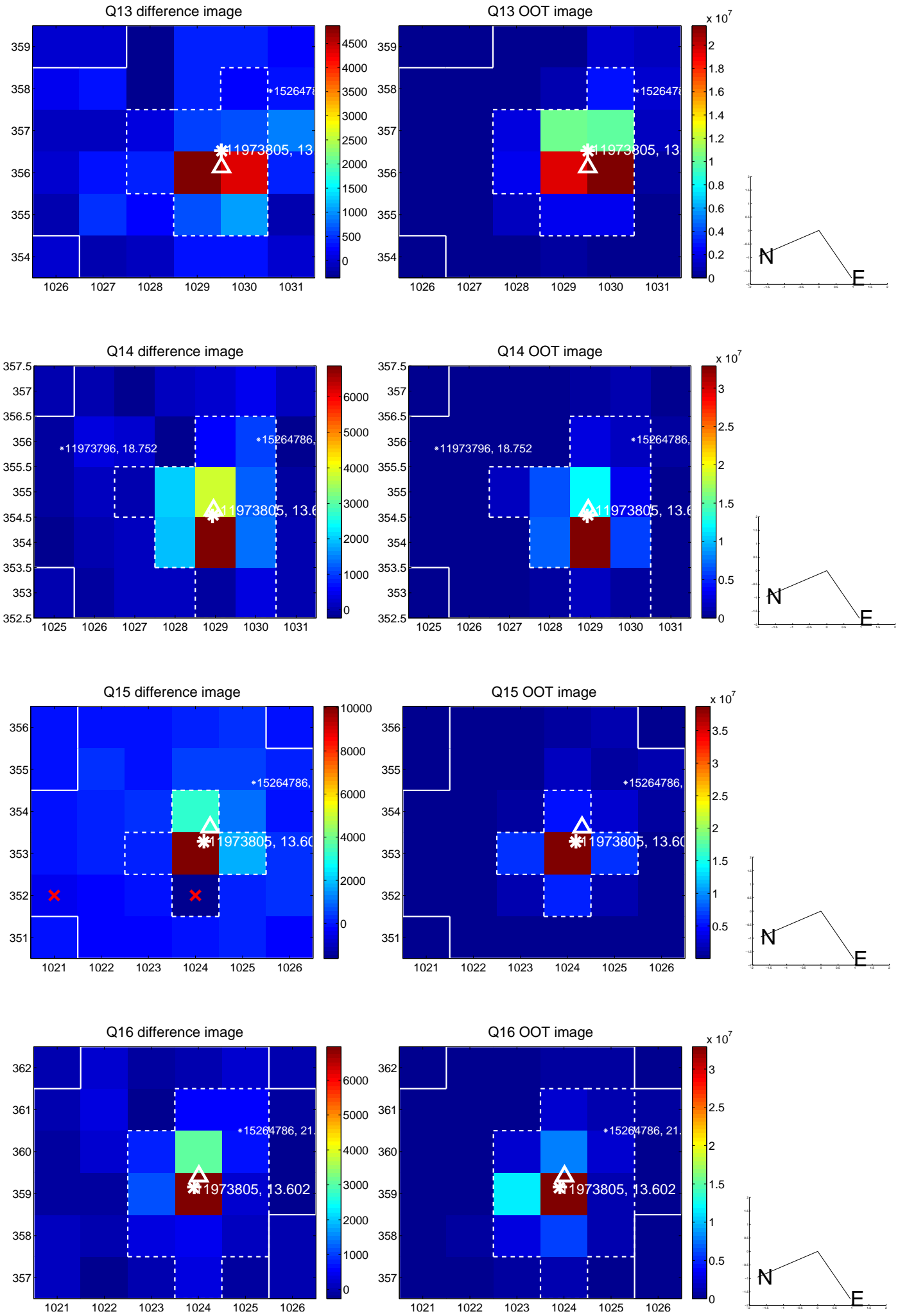
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



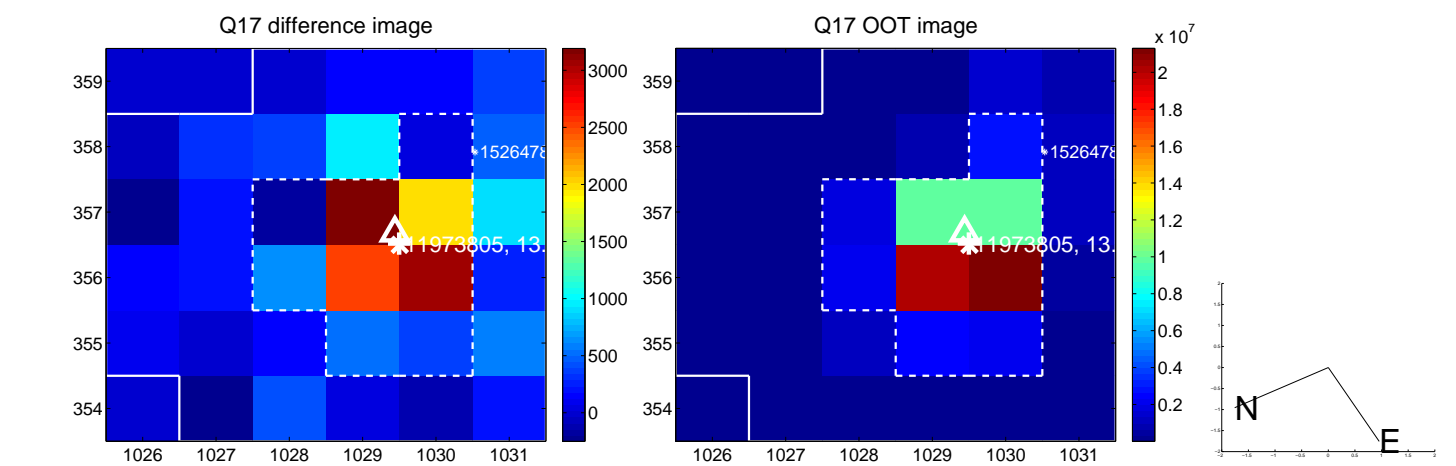
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



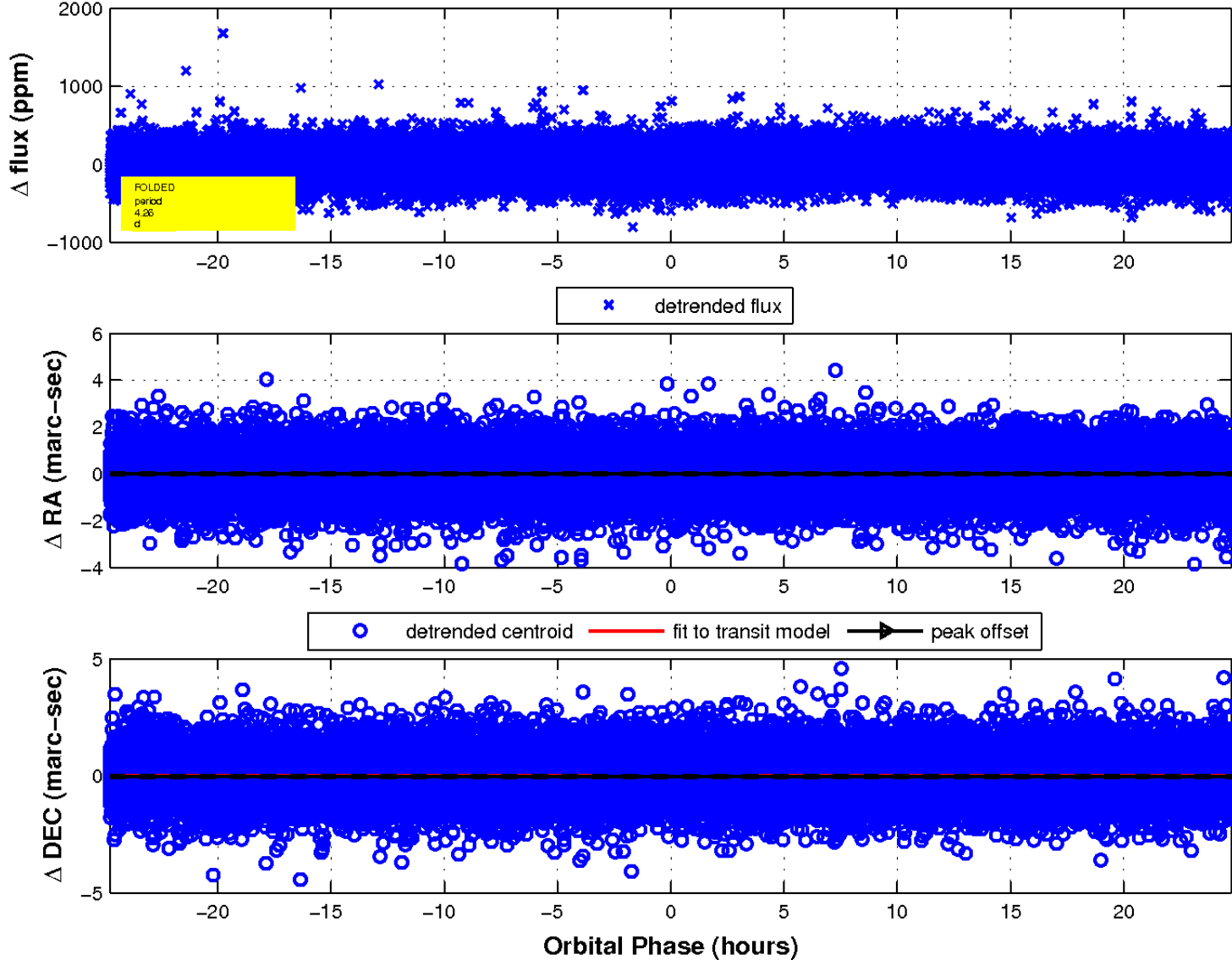
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

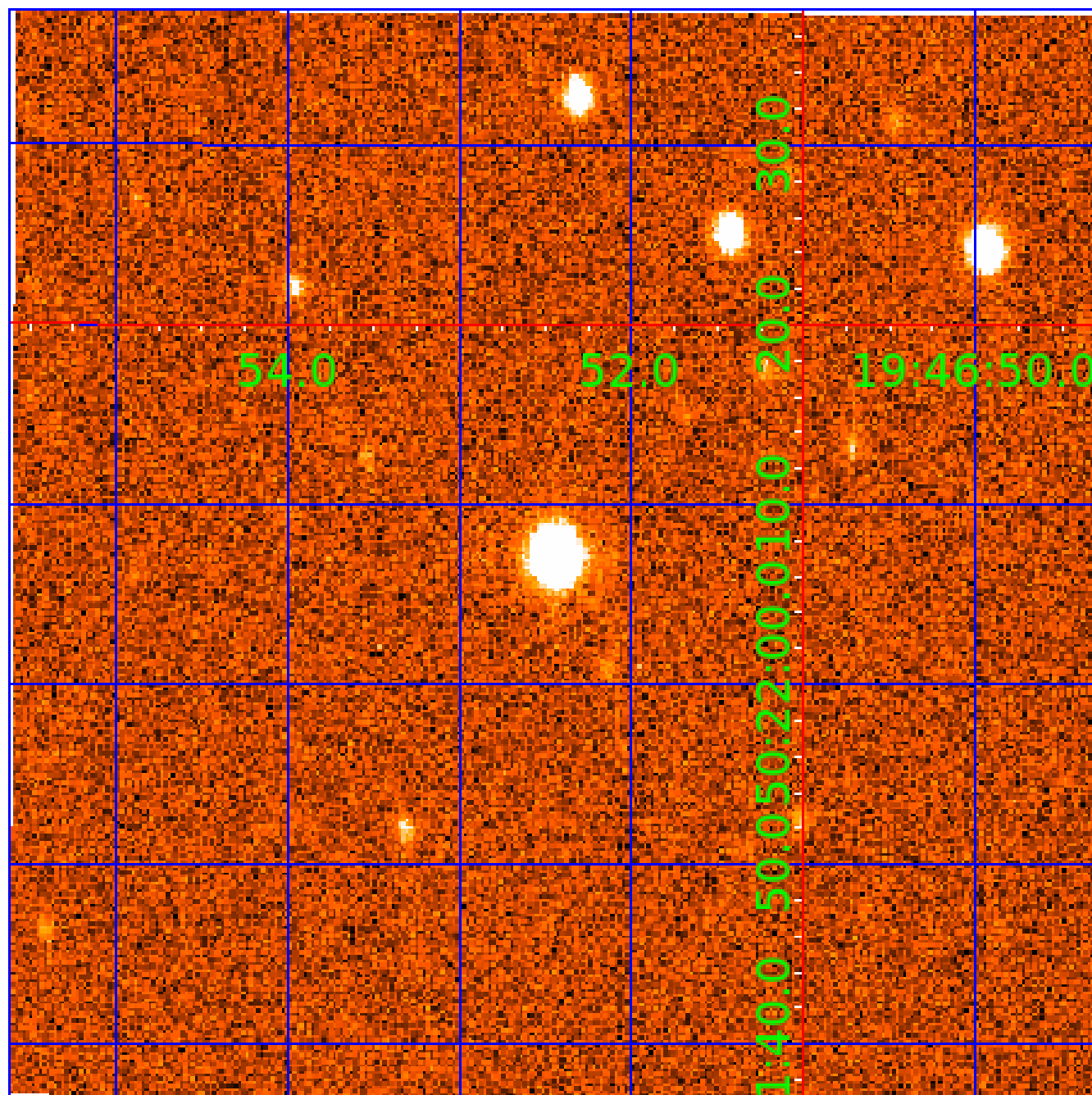


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 011973805

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})
011973805-01	OBS	No	4.256022	134.679144	21.7	8.252	7.3	6.5	1.46	7072	0.85	1468.34
011973805-02	OBS	No	4.255985	133.927521	9.5	15.269	7.1	3.6	1.46	7072	0.46	1468.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011973805-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT
011973805-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

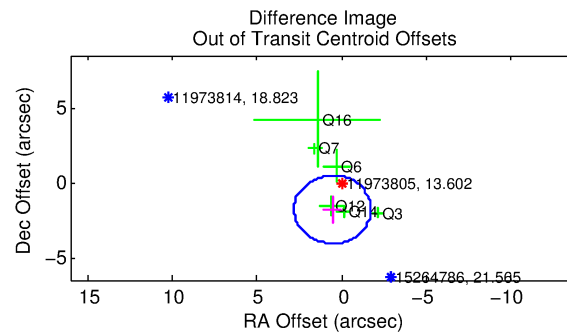
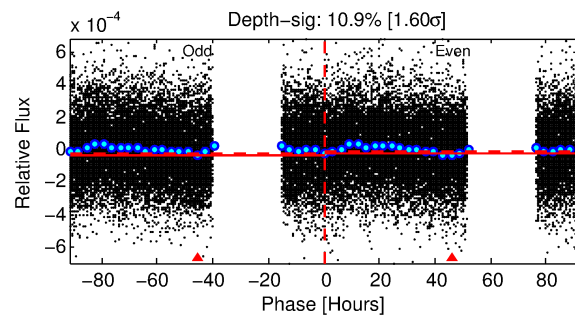
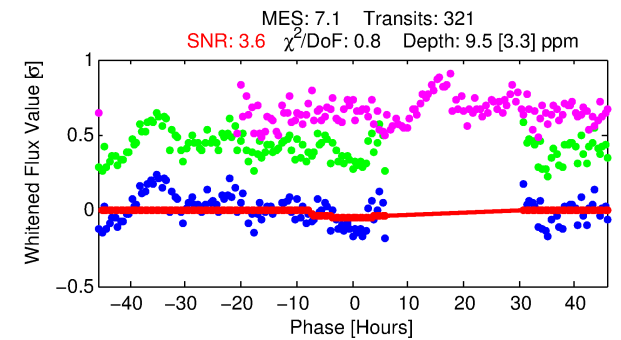
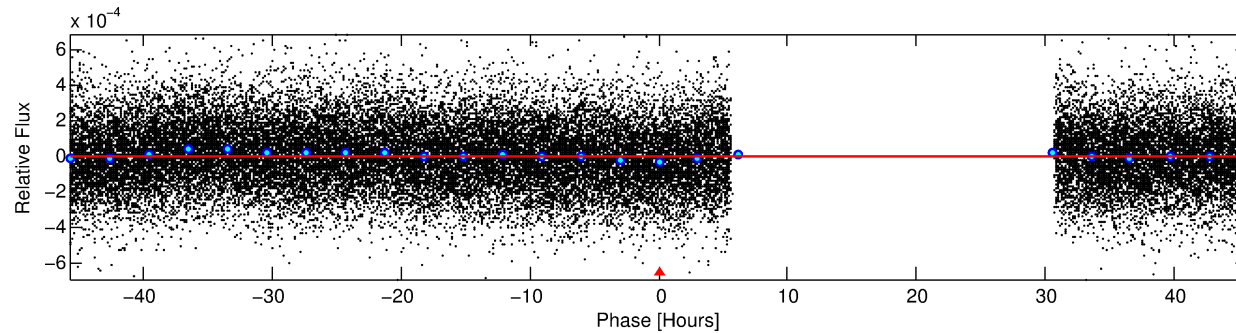
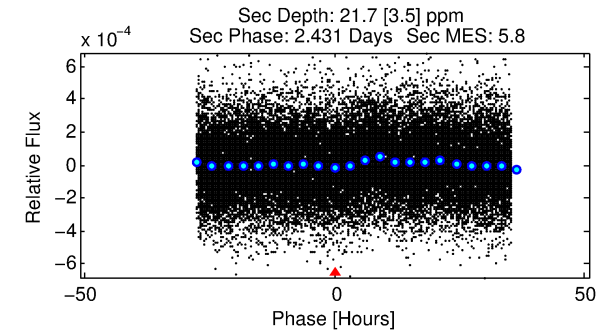
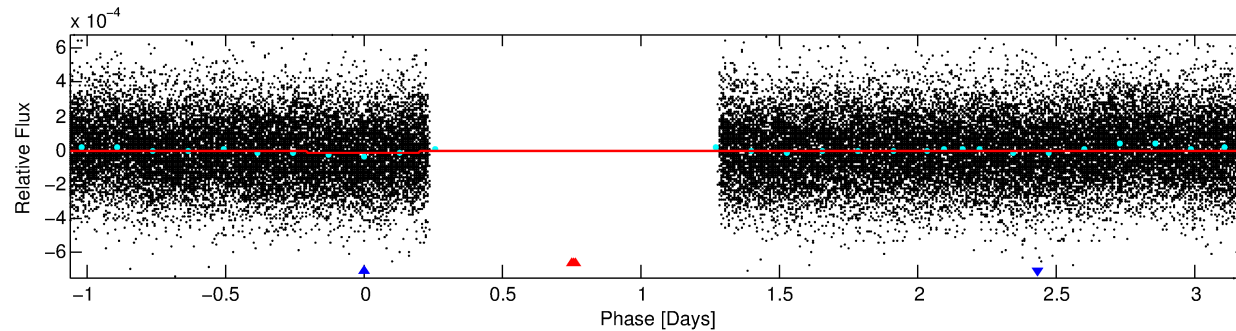
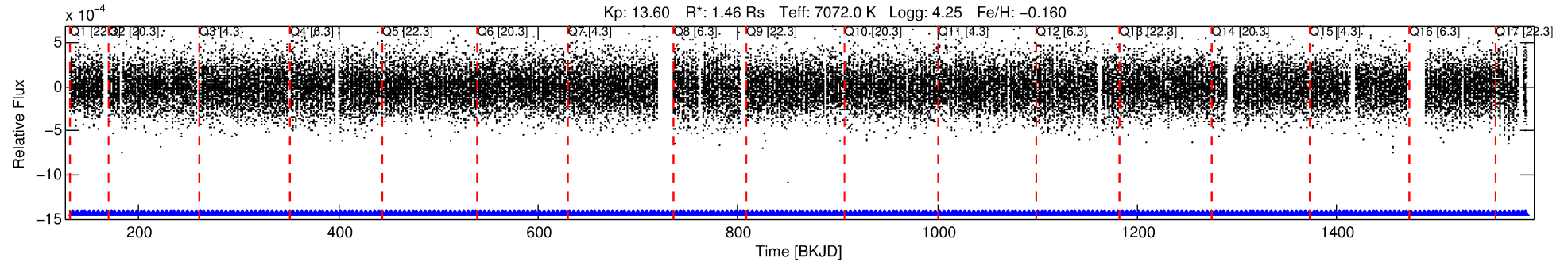
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011973805-02

No Significant Match Found

DV One-Page Summary

KIC: 11973805 Candidate: 2 of 2 Period: 4.256 d



DV Fit Results:

Period = 4.25599 [0.00031] d
Epoch = 133.9275 [0.1168] BKJD
Rp/R* = 0.0029 [0.0104]
a/R* = 2.21 [36.76]
b = 0.07 [295.39]
Seff = 1468.35 [615.46]
Teq = 1578 [165] K
Rp = 0.46 [1.66] Re
a = 0.0571 [0.0155] AU
Ag = 187.83 [1370.52] [0.14σ]
Teffp = 9035 [16461] K [0.45σ]

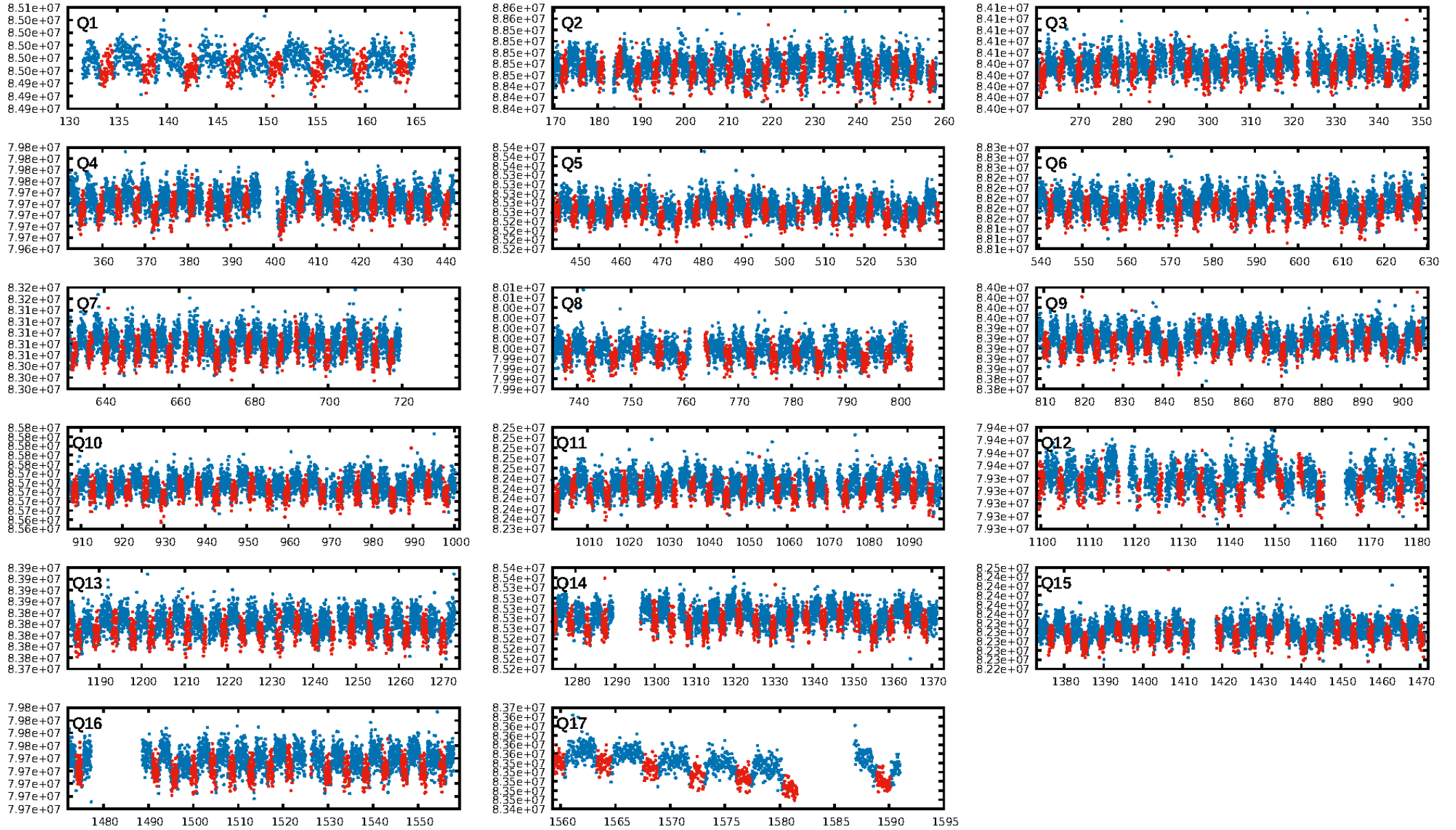
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.67e-11
RollingBand-fgt: 1.00 [306/306]
GhostDiagnostic-chr: 2.391
Centroid-sig: 7.8%
Centroid-so: 5.726 arcsec [1.97σ]
OotOffset-rm: 1.875 arcsec [2.48σ]
KicOffset-rm: 1.869 arcsec [2.28σ]
OotOffset-st: 2/2/2/0 [6]
KicOffset-st: 2/2/2/0 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 0.00 [0/17]

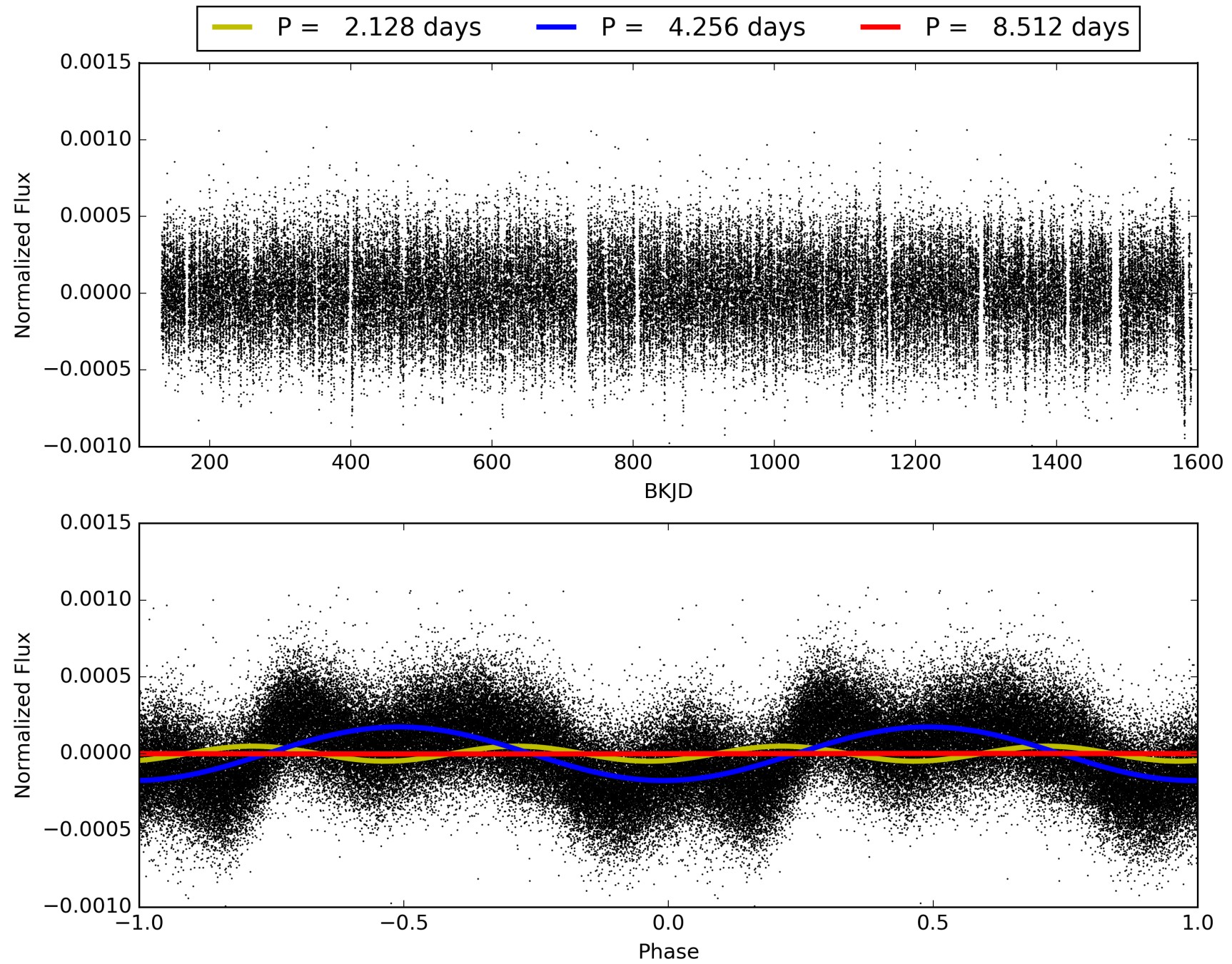
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:28:42 Z

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

TCE 011973805-02, PDC Light Curves

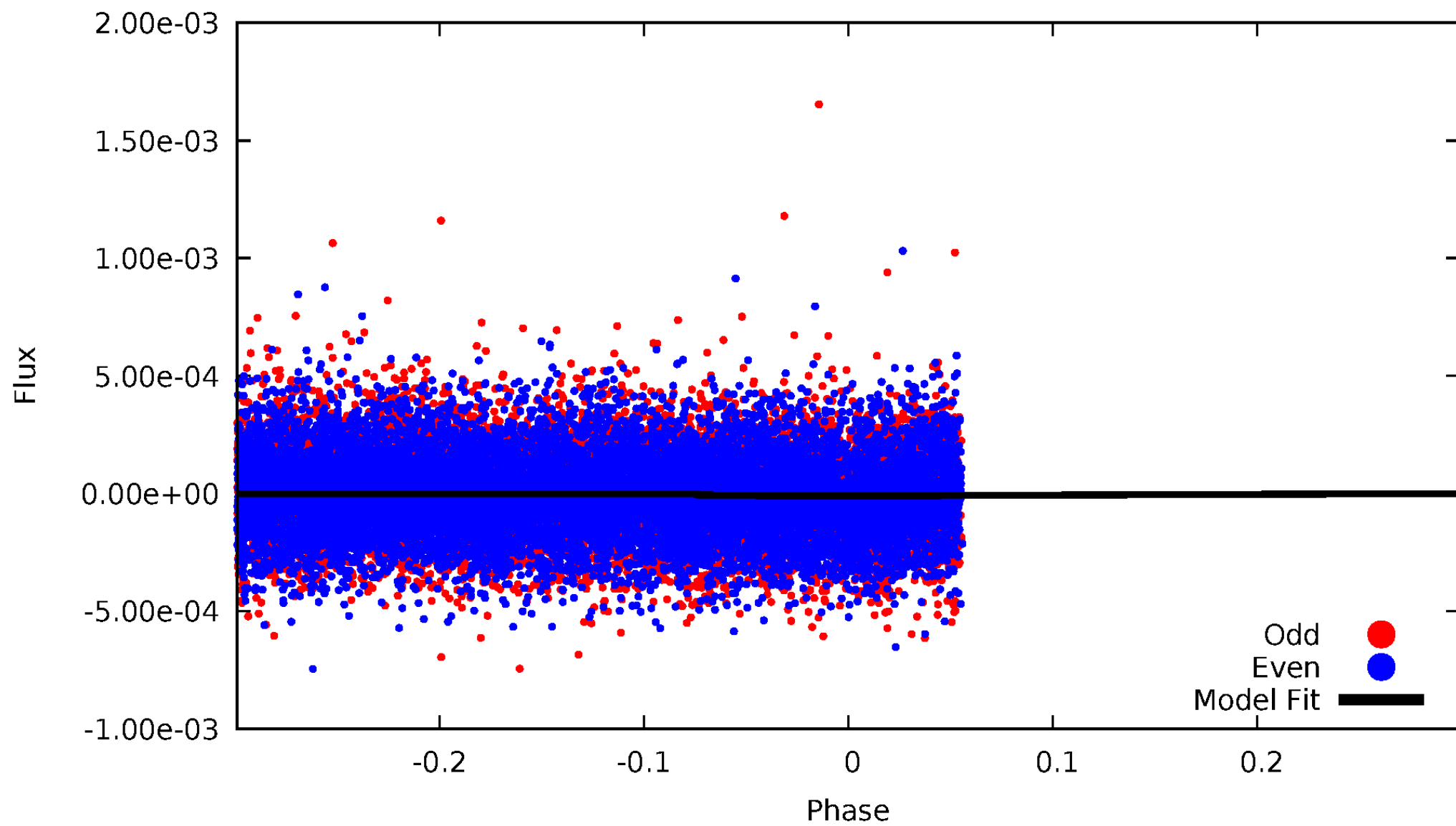


TCE 011973805-02



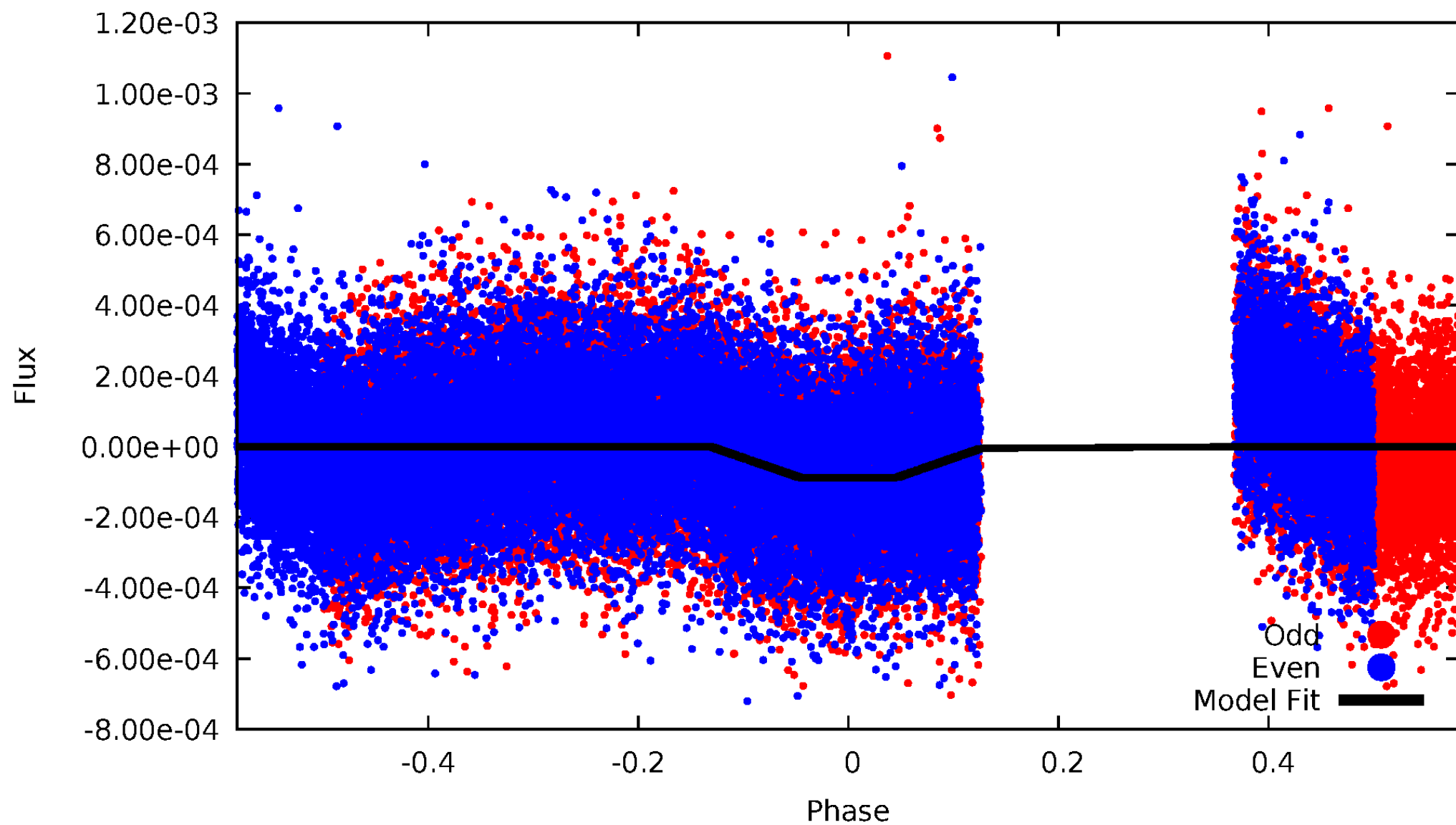
DV Odd/Even

TCE 011973805-02



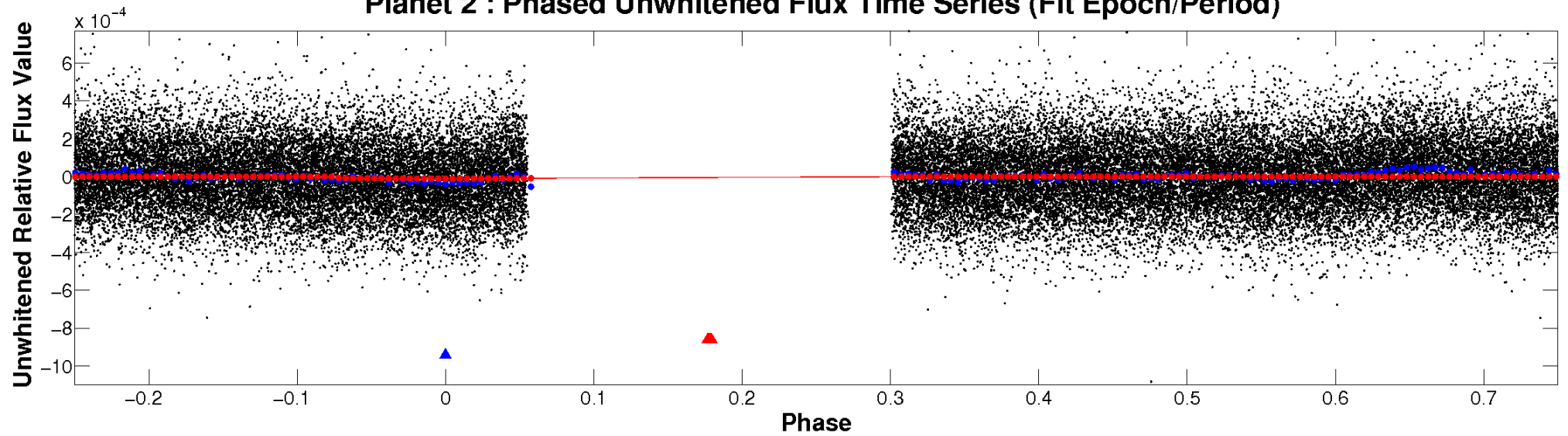
ALT Odd/Even

TCE 011973805-02

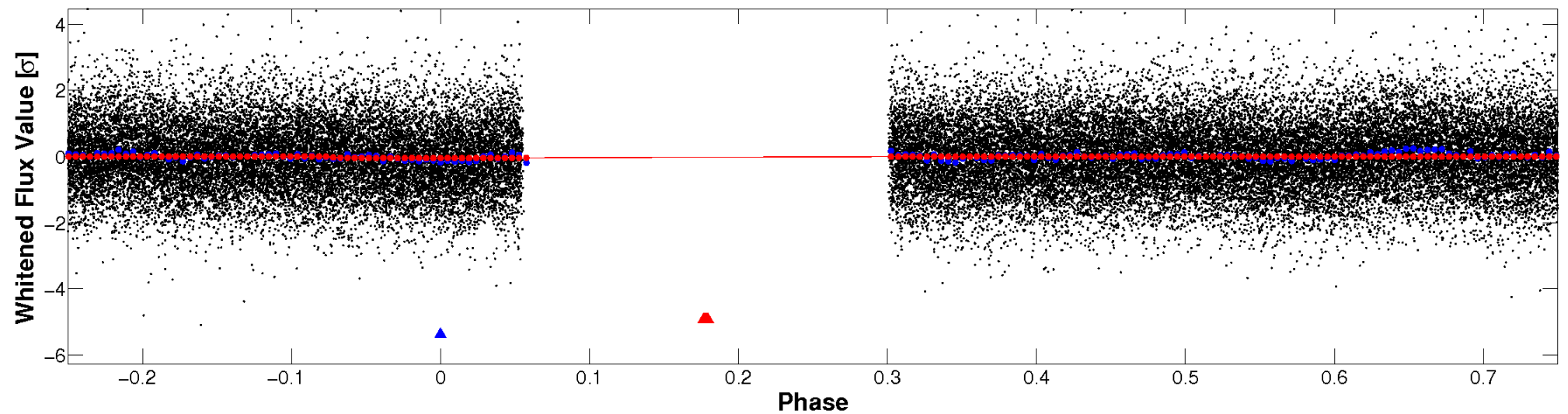


Non-Whitened Vs. Whitened Light Curve

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

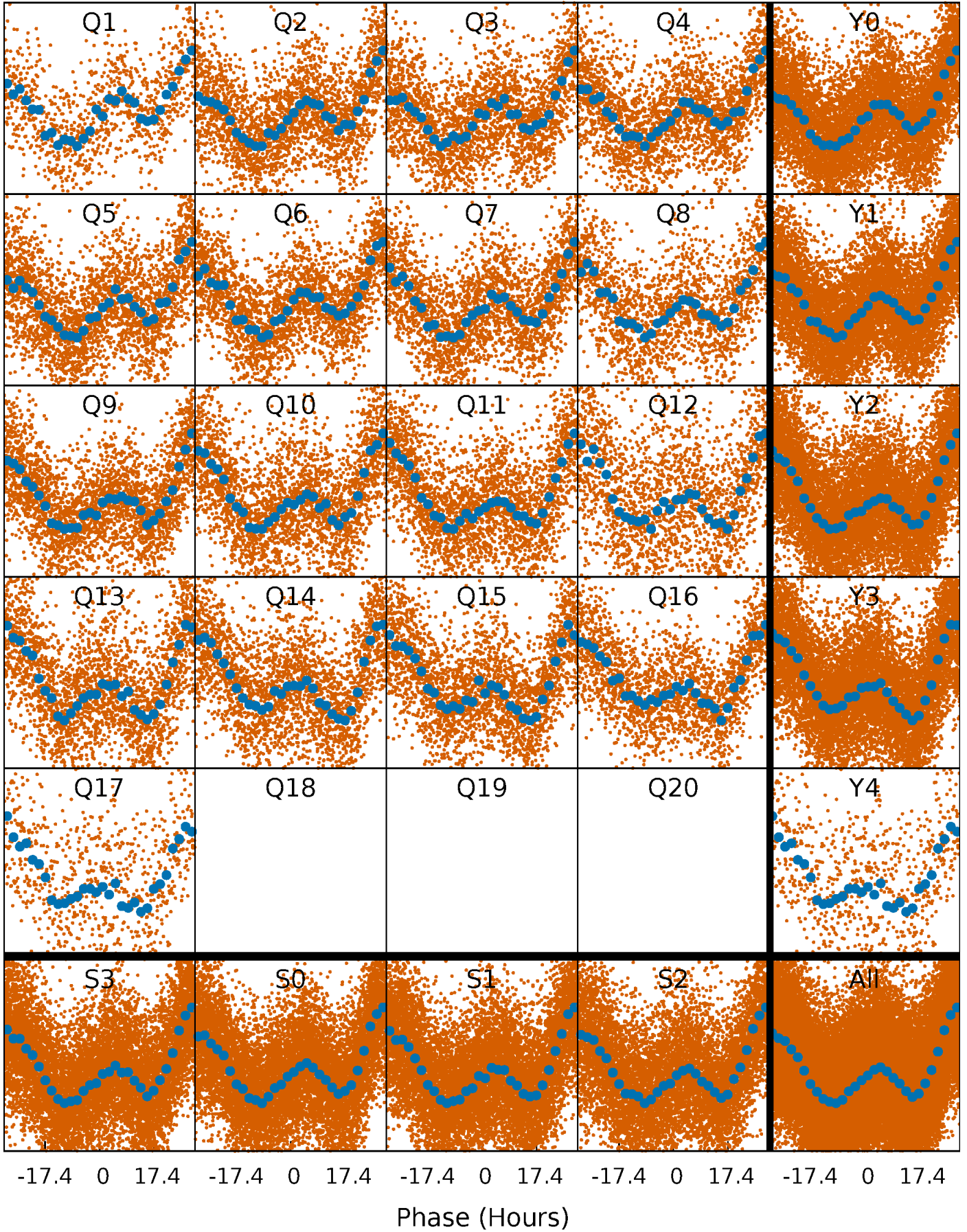


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



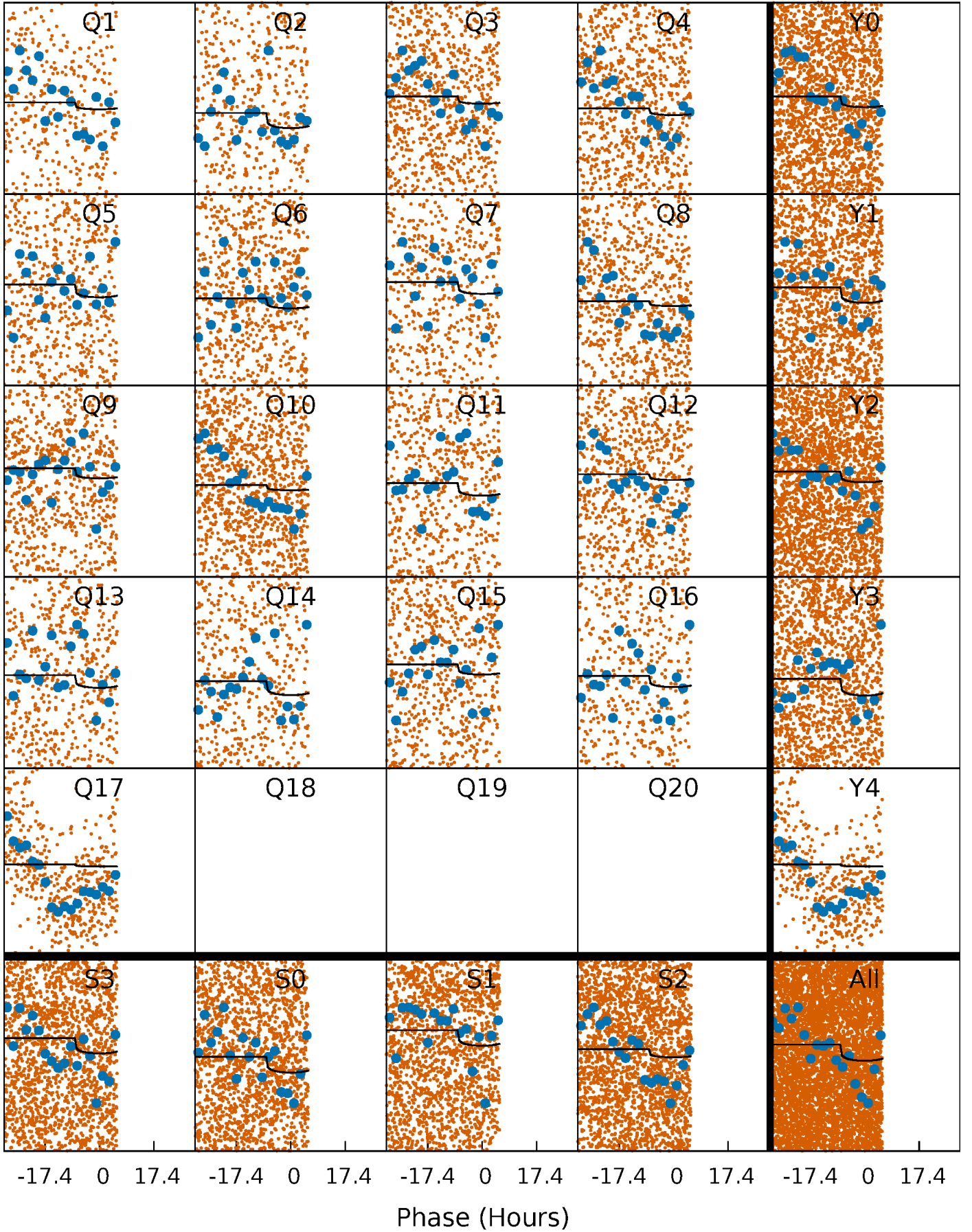
PDC Quarter-Phased Transit Curves

TCE 011973805-02 P= 4.255985 Days $T_0=133.927521$ (BKJD)



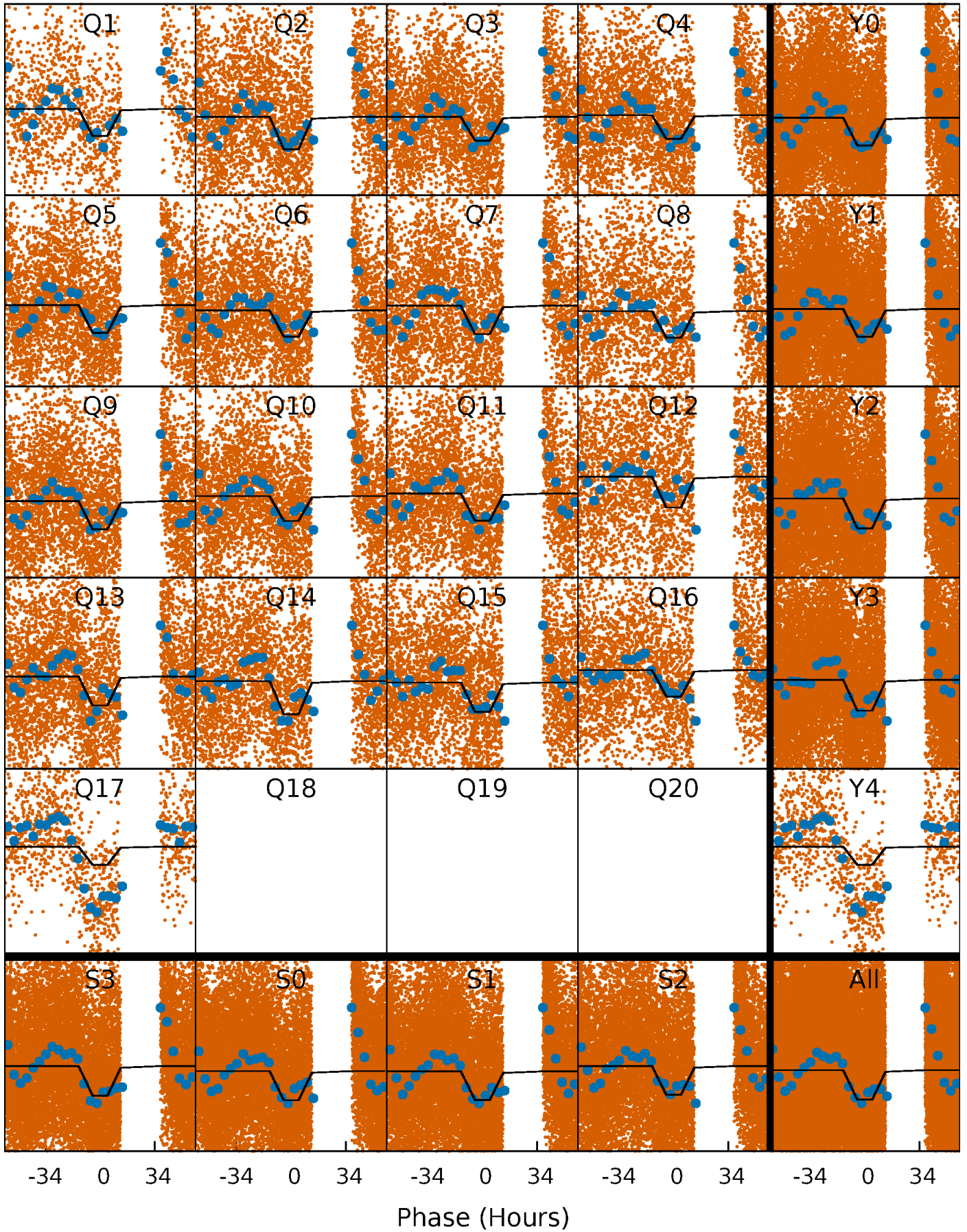
DV Quarter-Phased Transit Curves

TCE 011973805-02 $P = 4.255985$ Days $T_0 = 133.927521$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

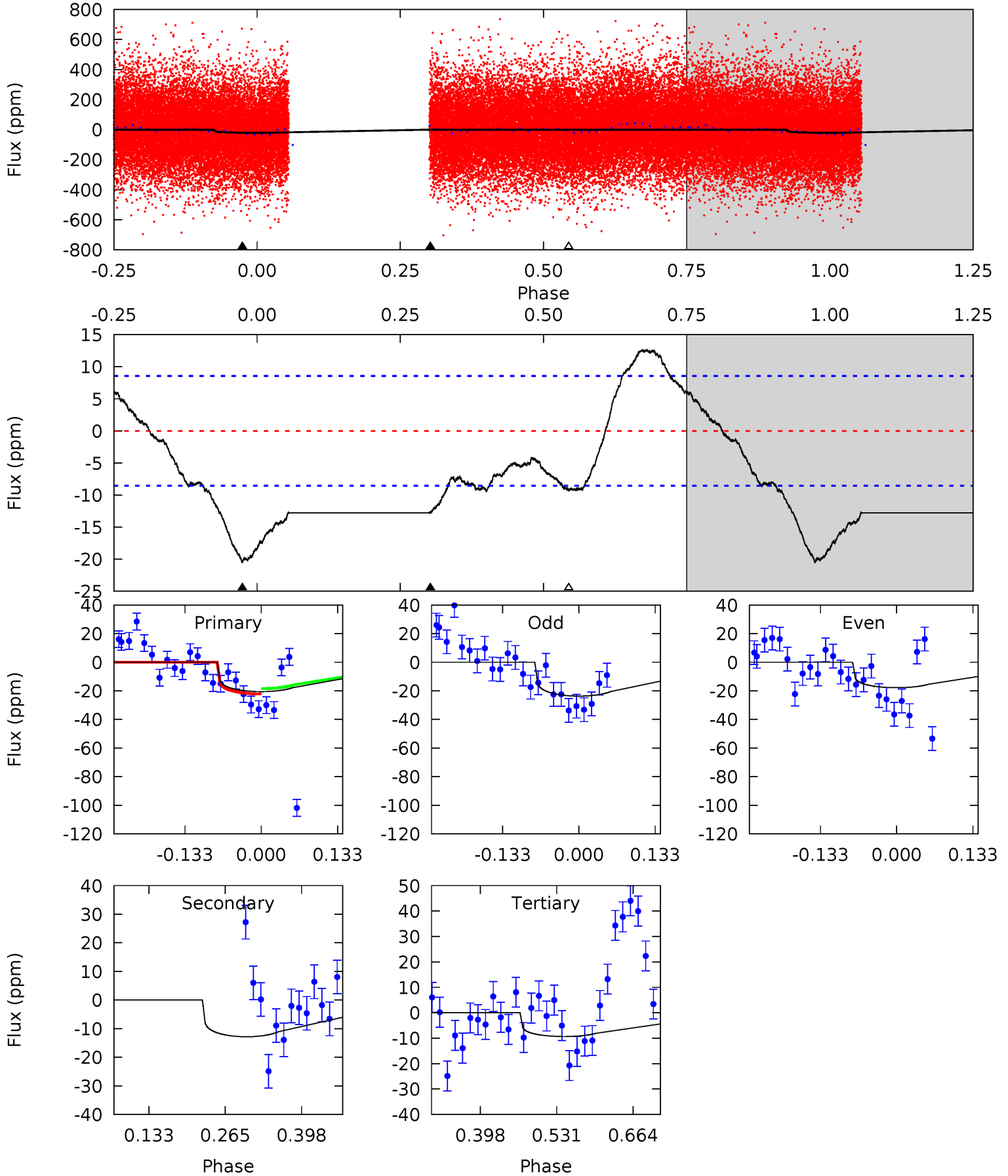
TCE 011973805-02 P= 4.256112 Days $T_0=133.613239$ (BKJD)



DV Model-Shift Uniqueness Test

011973805-02, P = 4.255985 Days, E = 129.671536 Days

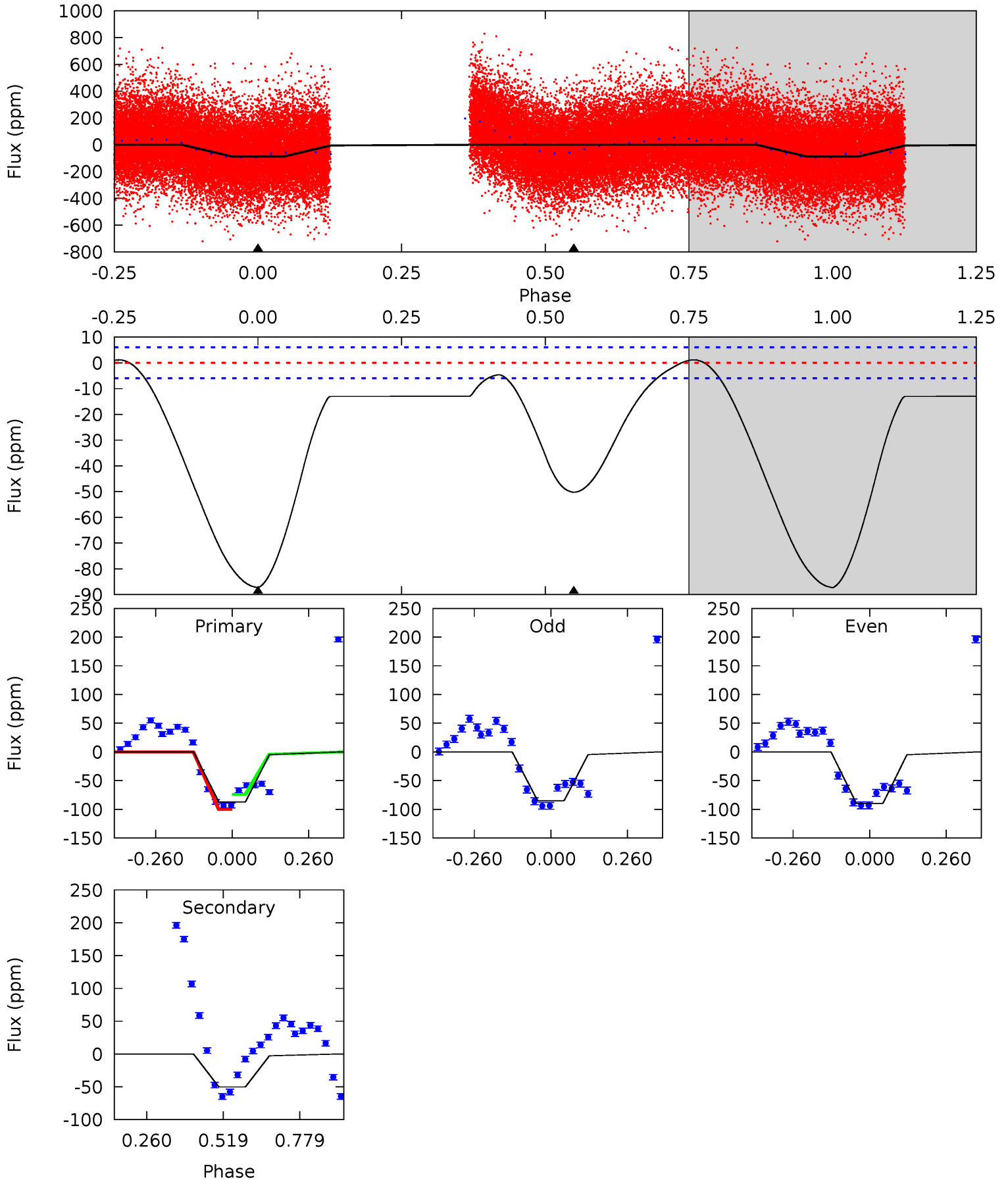
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	6.75	4.92	0	4.51	1.50	3.87	5.89	10.8	1.83	6.75	1.55	1.04	0.38	0.98



Alt Model-Shift Uniqueness Test

011973805-02, P = 4.256112 Days, E = 129.357127 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
63.4	36.5	0	0	4.36	1.13	1.83	63.4	63.4	36.5	36.5	1.72	1.01	0.01	9.58



Stellar Parameters For KIC 011973805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7072^{+200}_{-275}	$4.245^{+0.090}_{-0.210}$	$-0.160^{+0.250}_{-0.350}$	$1.461^{+0.478}_{-0.221}$	$1.375^{+0.203}_{-0.203}$	$0.621^{+0.316}_{-0.336}$
	+3%/-4%	+2%/-5%	+156%/-219%	+33%/-15%	+15%/-15%	+51%/-54%
Source	PHO1	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 011973805-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-13 ± 2	$1.39^{+1.42}_{-0.96}$	2238^{+169}_{-131}	4736^{+3802}_{-1114}	12^{+114}_{-9}
Alt.	-50 ± 1	$1.94^{+1.51}_{-1.26}$	2237^{+166}_{-130}	5486^{+4318}_{-1225}	24^{+166}_{-17}

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

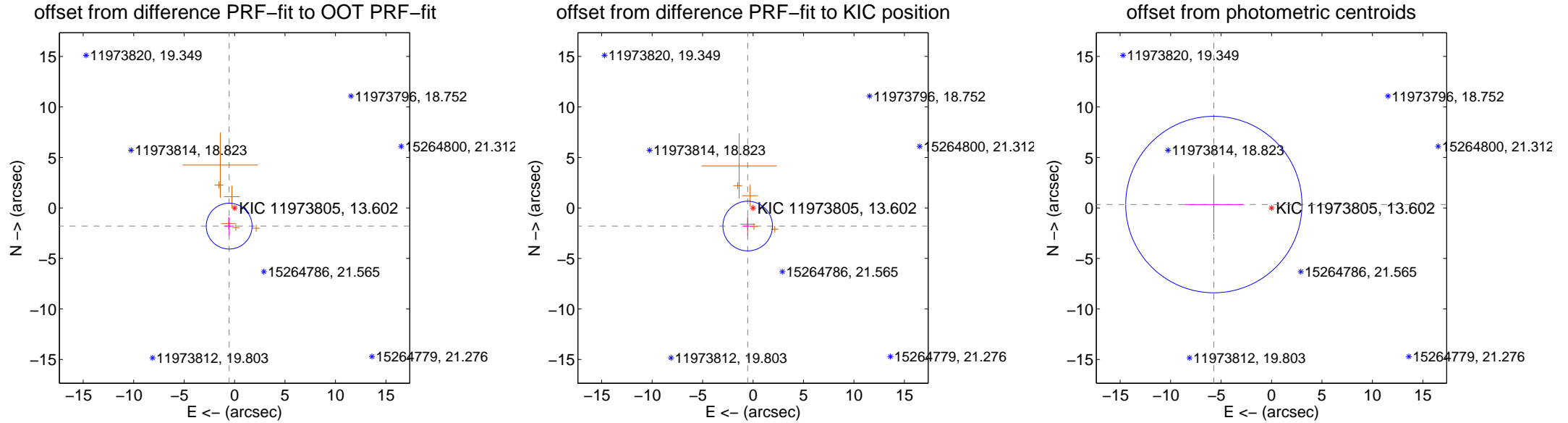
DV Centroid Data

Supplemental centroid analysis for 011973805-02. Kepler magnitude: 13.60. Transit SNR 3.64

There are 0 quarters with good PRF difference image offsets

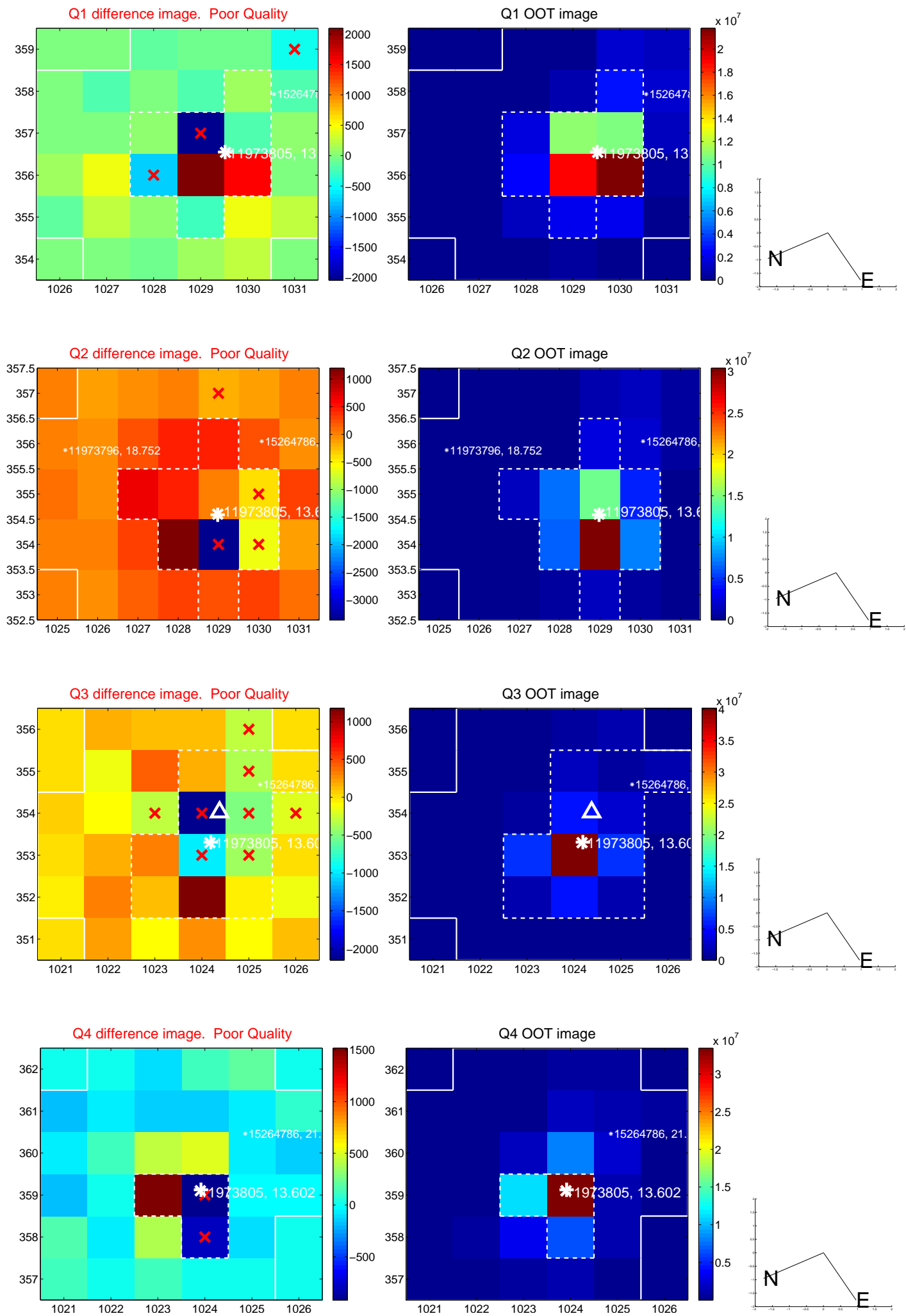
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.875 ± 0.757	2.48	0.536 ± 0.504	-1.797 ± 0.893
PRF-fit source offset from KIC position	1.869 ± 0.819	2.28	0.530 ± 0.531	-1.792 ± 0.964
photometric centroid source offset	5.73 ± 2.91	1.97	5.72 ± 2.91	0.34 ± 2.80

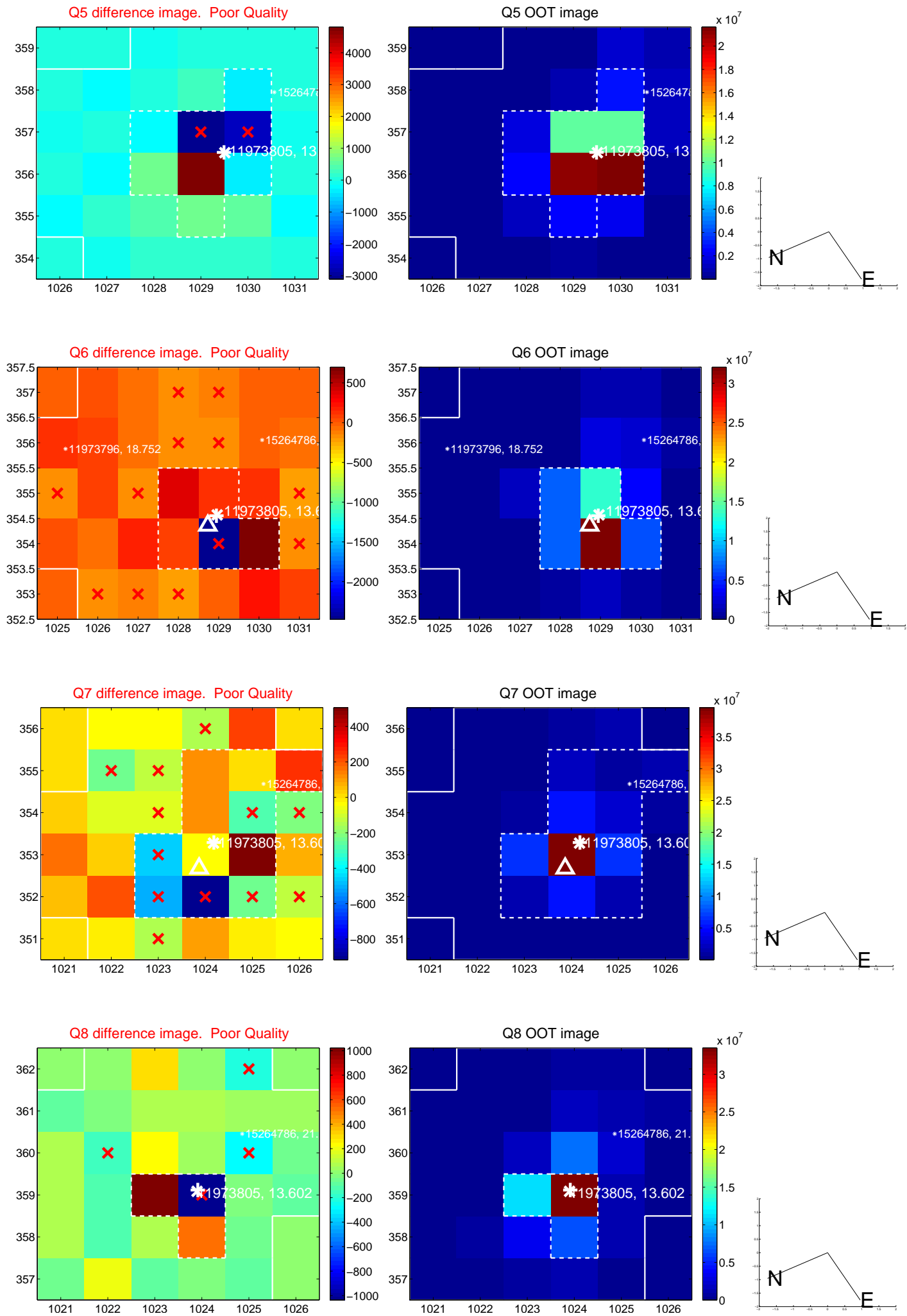


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

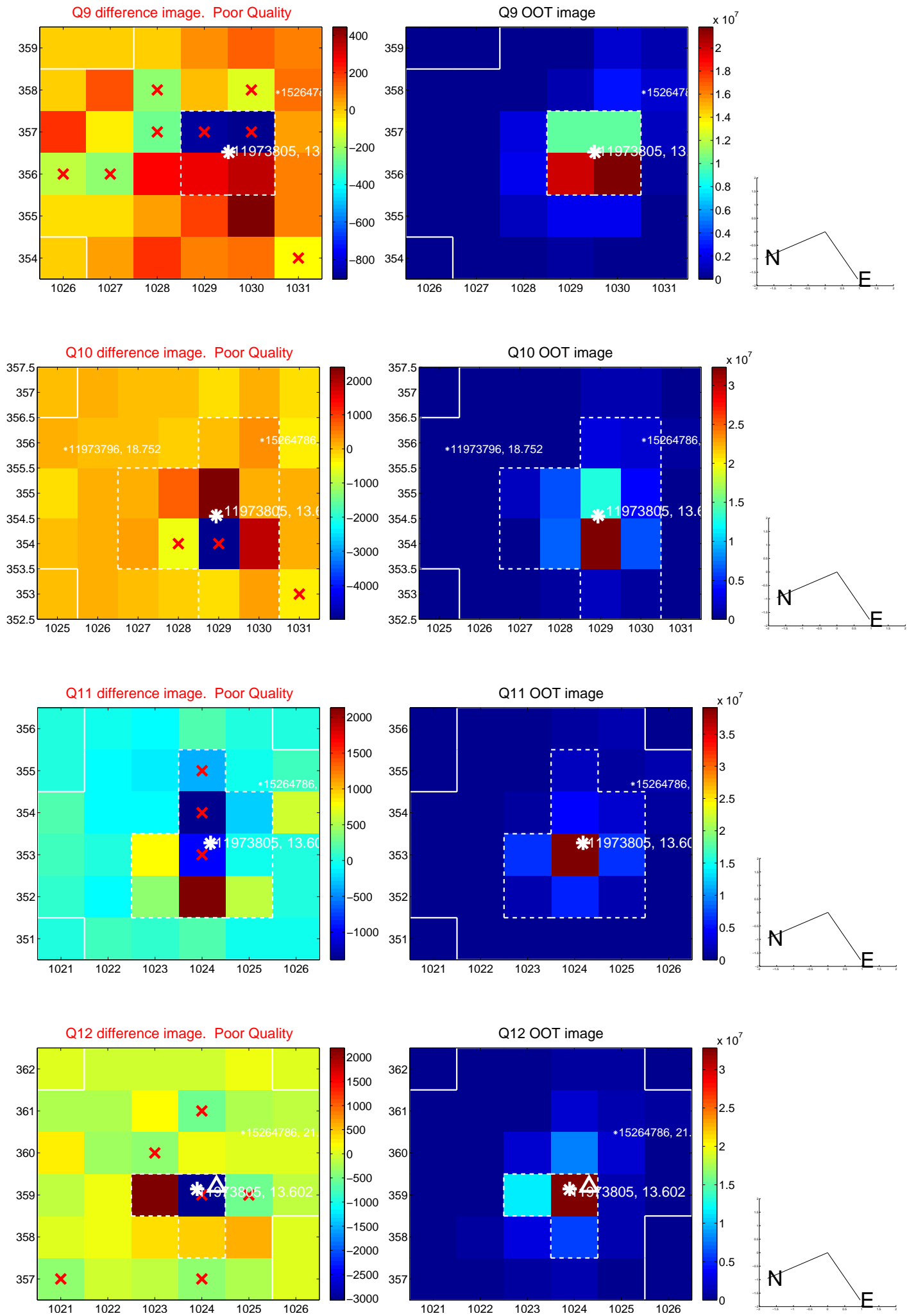
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



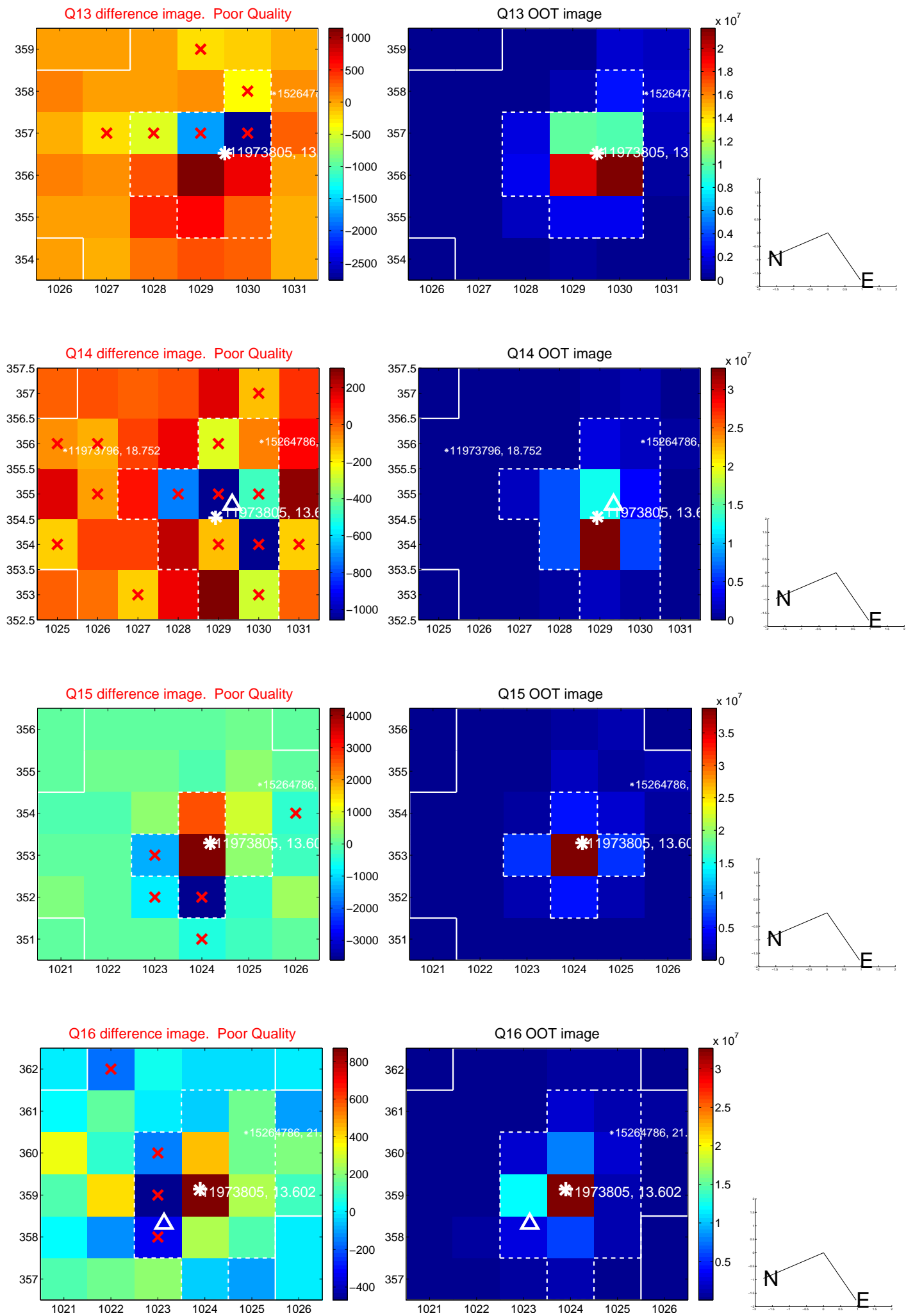
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



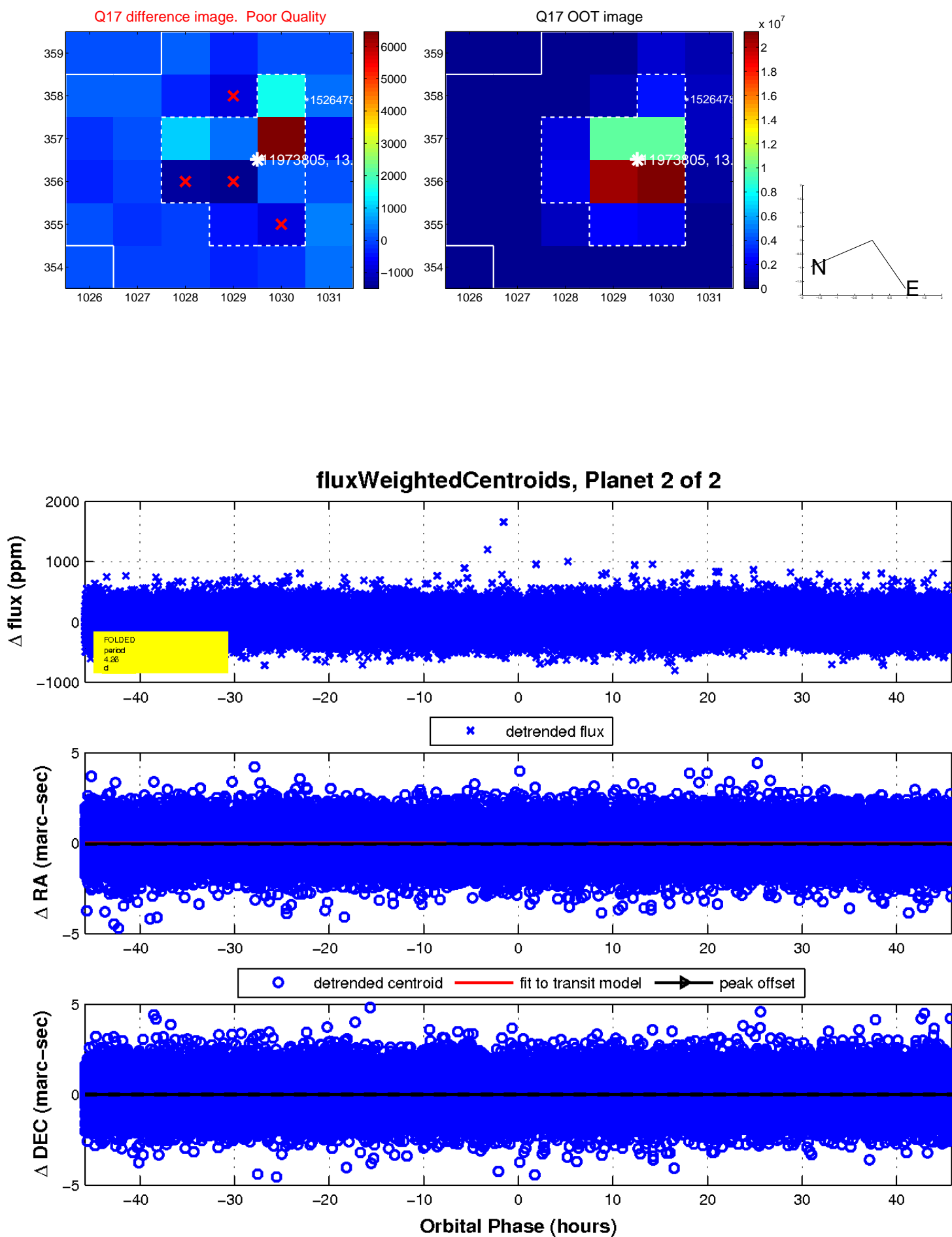
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



This astronomical image shows a field of stars against a dark background. A blue grid is overlaid on the image. Green text labels provide coordinates for specific points: '54.0' and '52.0' are positioned horizontally, while '19:46:50.0' and '1:40.0 50.050:22.00.010.0' are positioned vertically. A red dashed line is also visible, intersecting the grid.

Declination