KIC 009108085

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 ($S_\oplus$)
009108085-01	OBS	2470.01	2.174956	131.935541	61.1	4.408	20.8	21.7	1.15	5749	1.01	1187.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009108085-01	OBS	FP	0.00	0	0	1	1	CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH

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 009108085-01

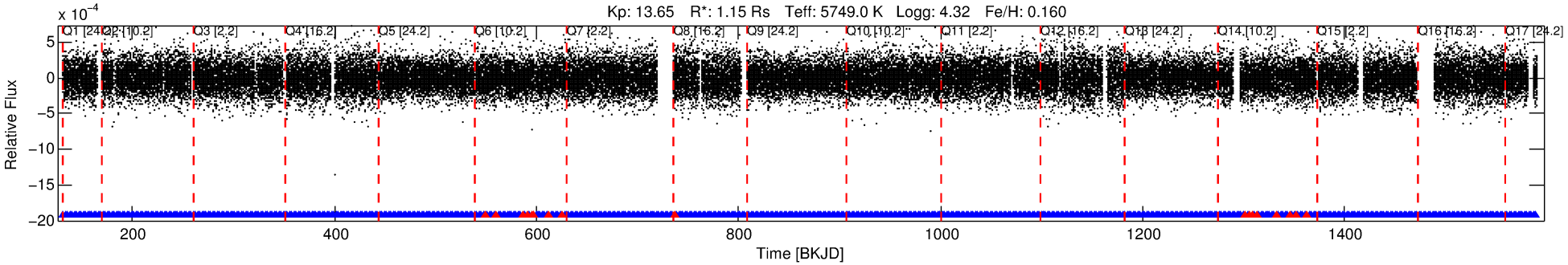
TCE (1)	KIC	Parent (2)	Parent KIC	P_1:P_2	Dist (″)	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
009108085-01	9108085	5615.01	9108058	1:1	28.0	0	7	14.28	13.65	11224.00	Direct-PRF	0	1.08	2.42

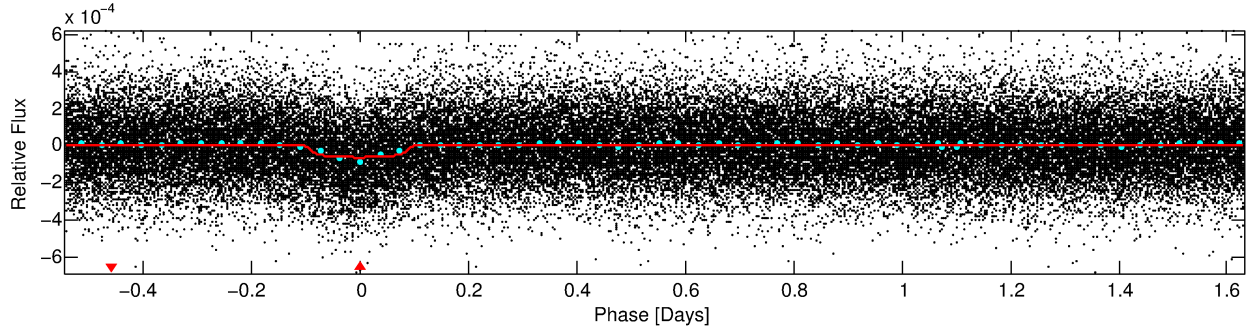
Notes: P_1:P_2 is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth dividied by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should recieve extra scrutiny, especially if the period ratio is very large.

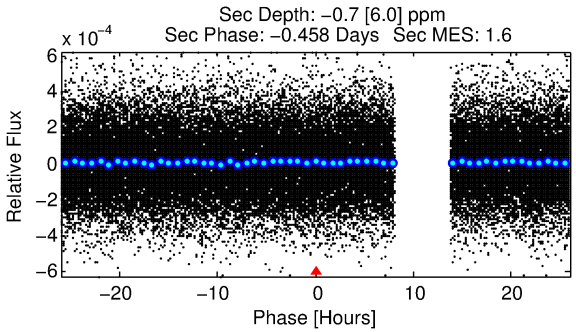
DV One-Page Summary

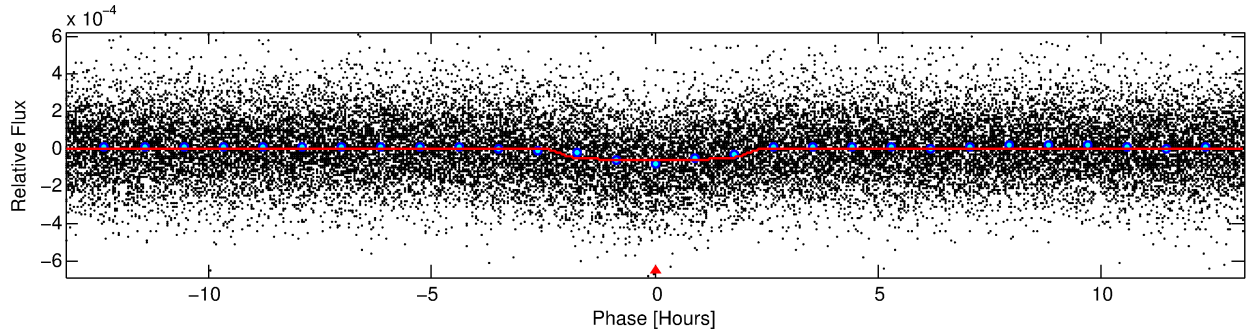
KIC: 9108085 Candidate: 1 of 1 Period: 2.175 d
KOI: K02470.01 Corr: 0.927

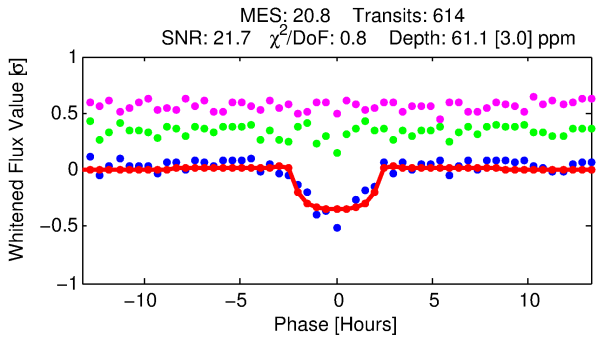
Kp: 13.65 R*: 1.15 Rs Teff: 5749.0 K Logg: 4.32 Fe/H: 0.160

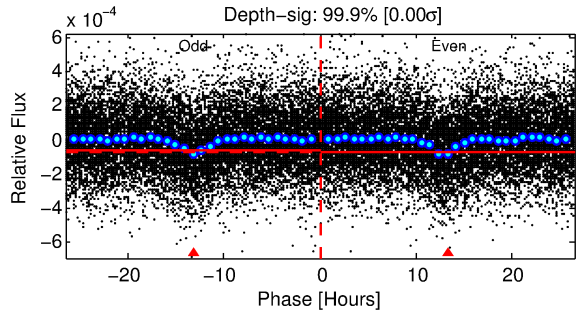


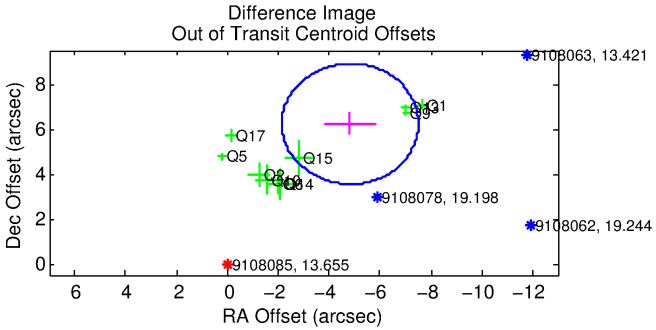












DV Fit Results:

Period = 2.17496 [0.00001] d
Epoch = 131.9355 [0.0026] BKJD
Rp/R* = 0.0081 [0.0025]
a/R* = 2.36 [2.67]
b = 0.82 [0.55]

Seff = 1187.03 [249.58]
Teq = 1497 [79] K
Rp = 1.01 [0.35] Re
a = 0.0330 [0.0044] AU

Ag = N/A
Teffp = N/A

DV Diagnostic Results:

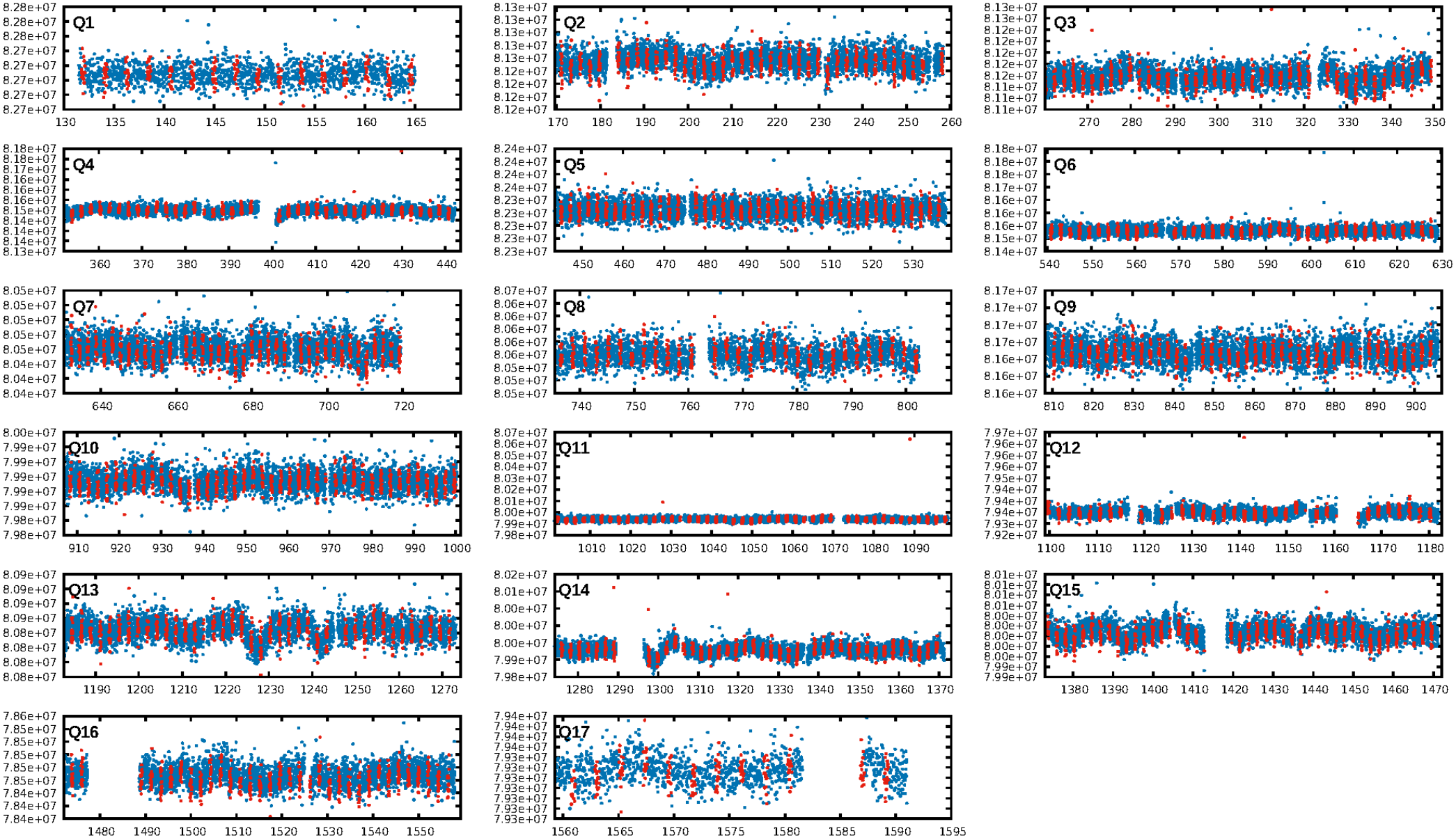
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 3.99e−87
RollingBand−fgt: 0.97 [569/586]
GhostDiagnostic−chr: −0.1579

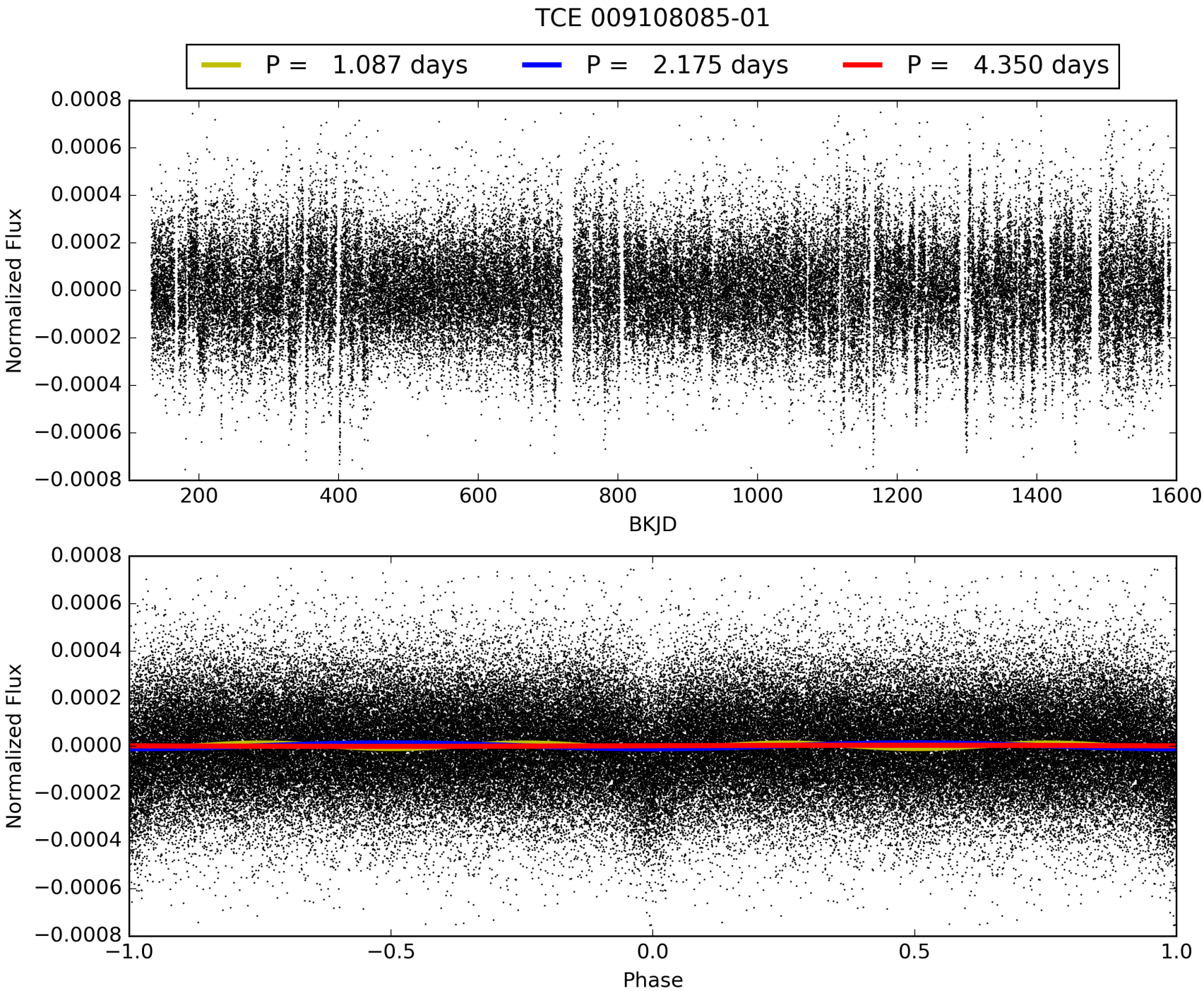
Centroid−sig: 0.0%
Centroid−so: 6.579 arcsec [10.15σ]
OotOffset−rm: 7.880 arcsec [8.81σ]
KicOffset−rm: 7.776 arcsec [9.42σ]
OotOffset−st: 4/1/0/5 [10]
KicOffset−st: 4/1/0/5 [10]
DiffImageQuality−fgm: 0.00 [0/10]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 19:00:59 Z

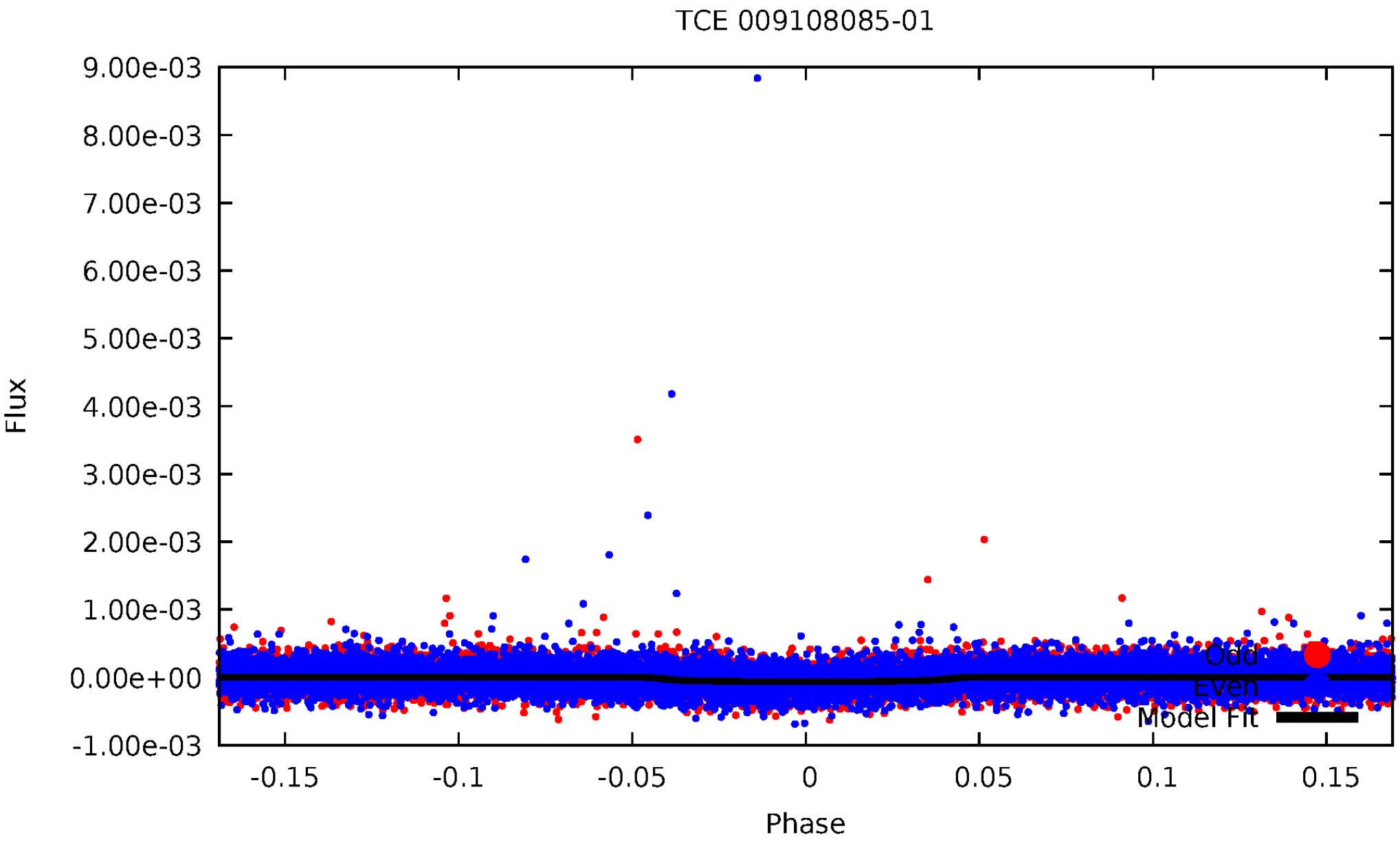
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009108085-01, PDC Light Curves




TCE 009108085-01
P = 1.087 days
P = 2.175 days
P = 4.350 days
Normalized Flux
BKJD
Normalized Flux
Phase

DV Odd/Even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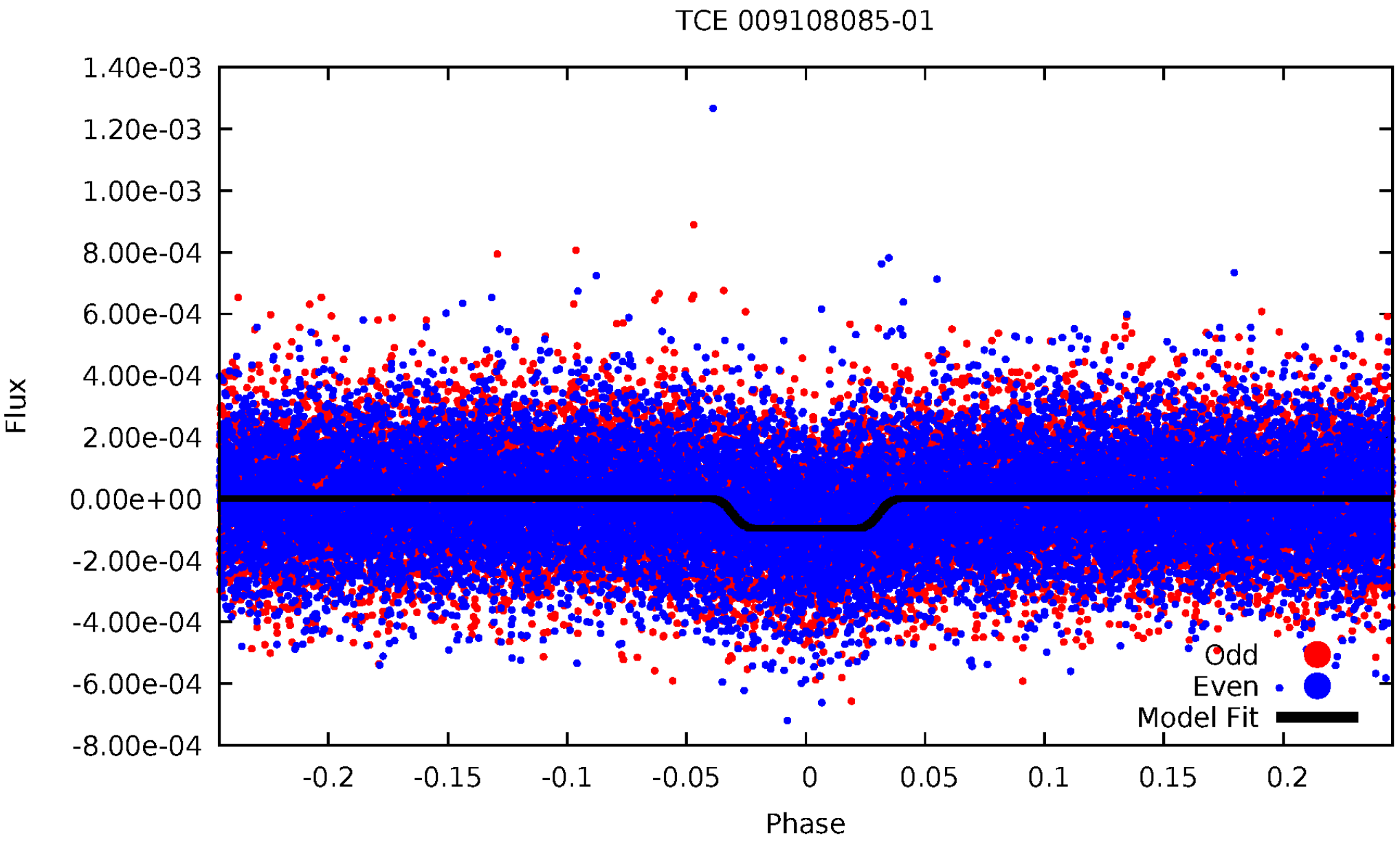
8.00e-03
7.00e-03
6.00e-03
5.00e-03
4.00e-03
3.00e-03
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
Flux
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
Phase
Odd
Even
Model Fit

ALT Odd/Even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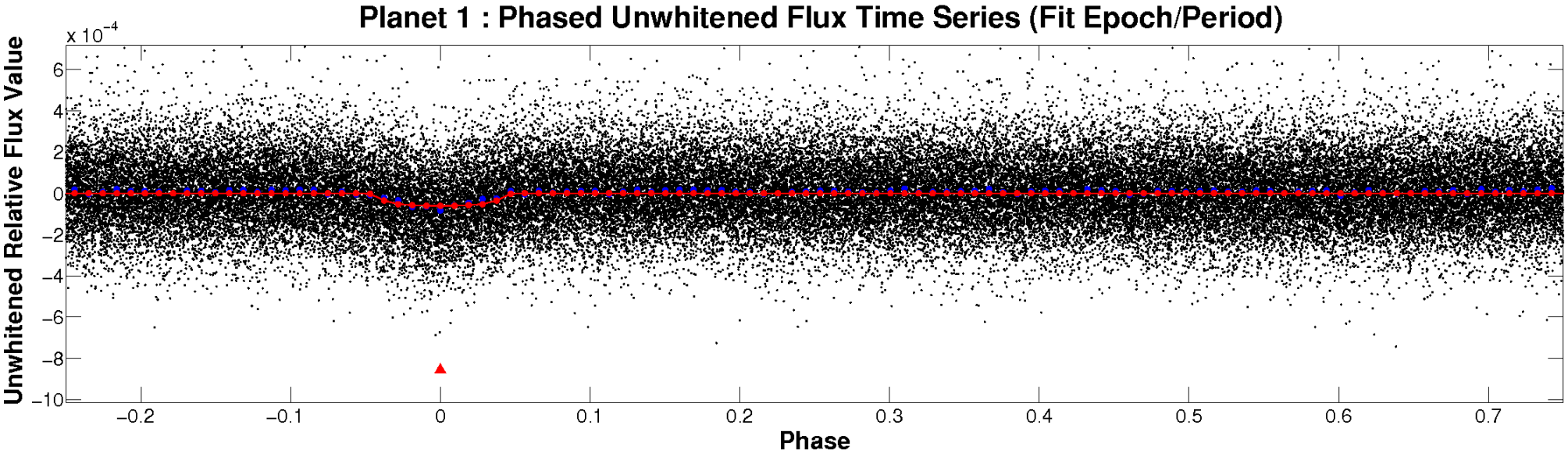
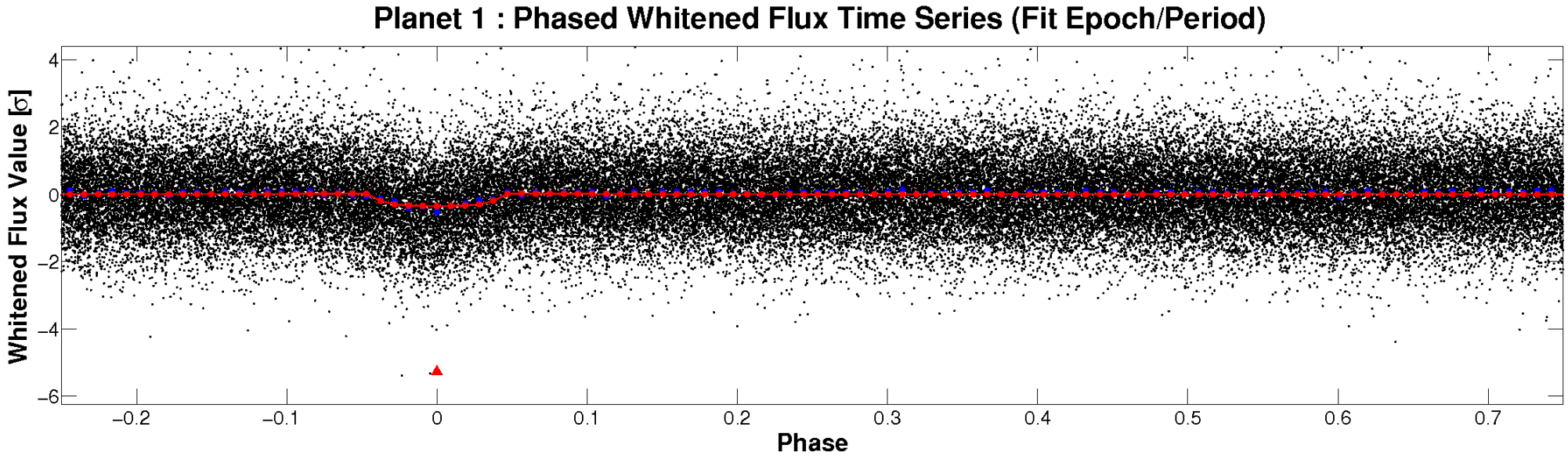
1.20e-03
1.00e-03
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
Phase
Odd
Even
Model Fit

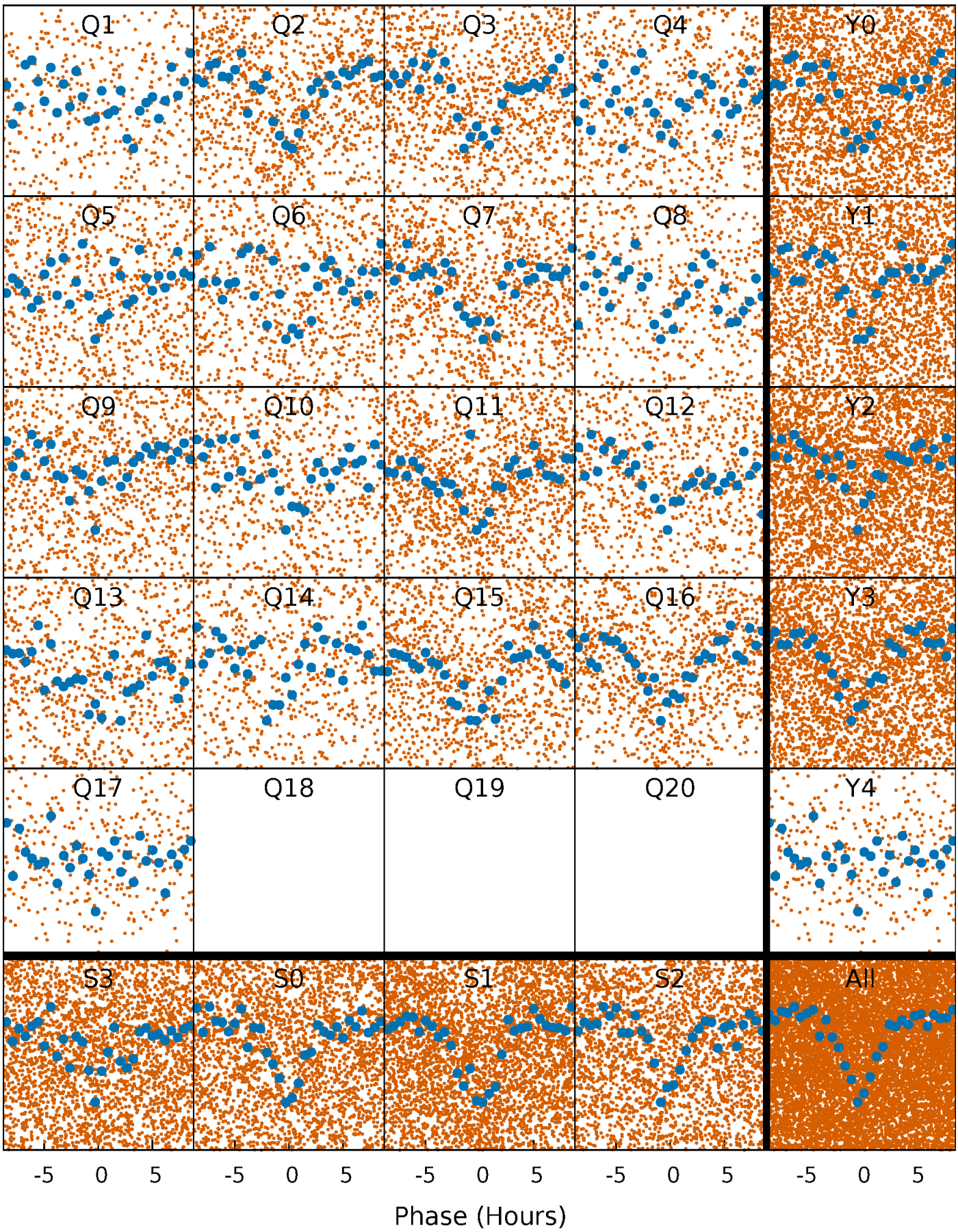
Non-Whitened Vs. Whitened Light Curve





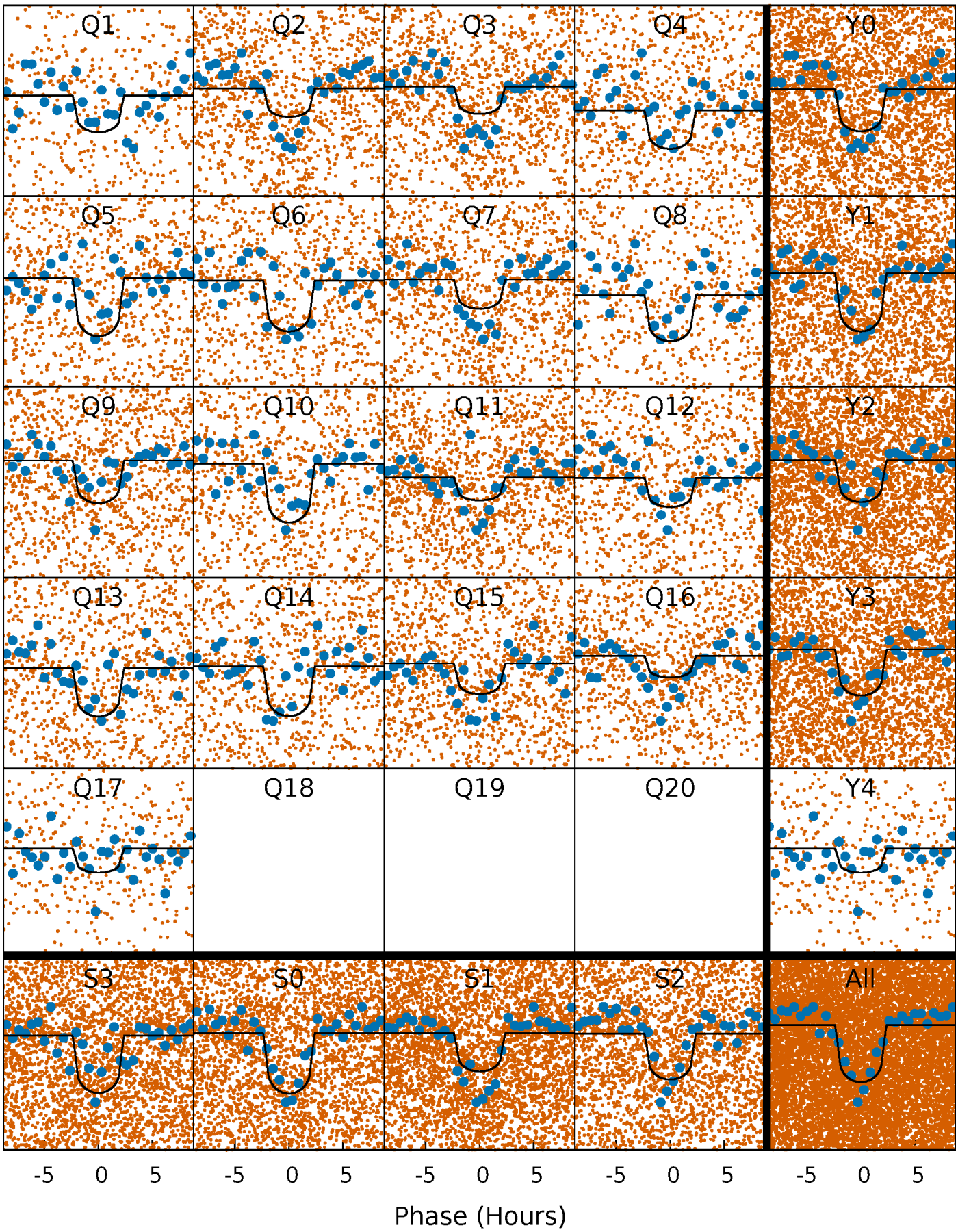
PDC Quarter-Phased Transit Curves

TCE 009108085-01 P= 2.174956 Days T_0=131.935541 (BKJD)



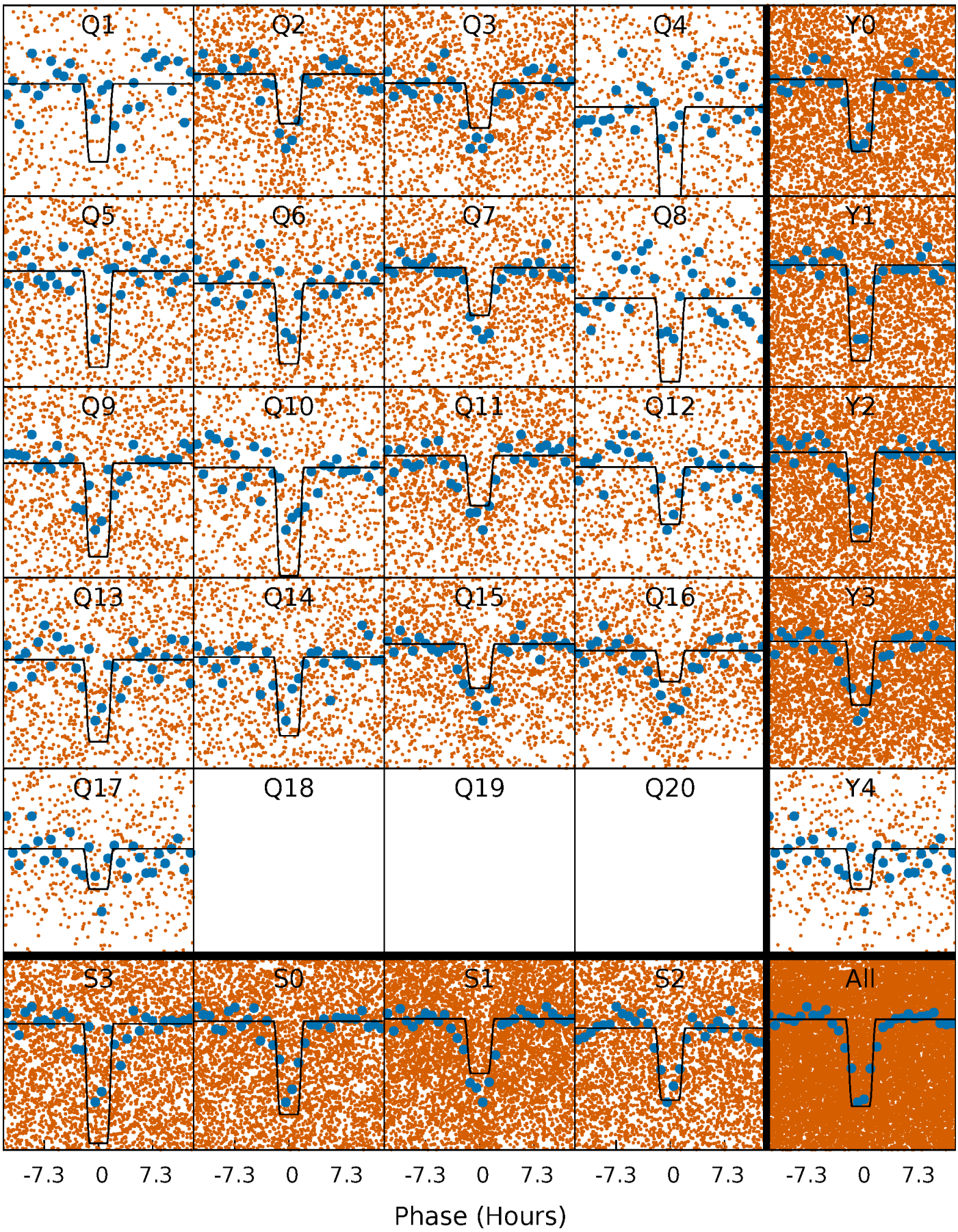
DV Quarter-Phased Transit Curves

TCE 009108085-01 P= 2.174956 Days T_0=131.935541 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

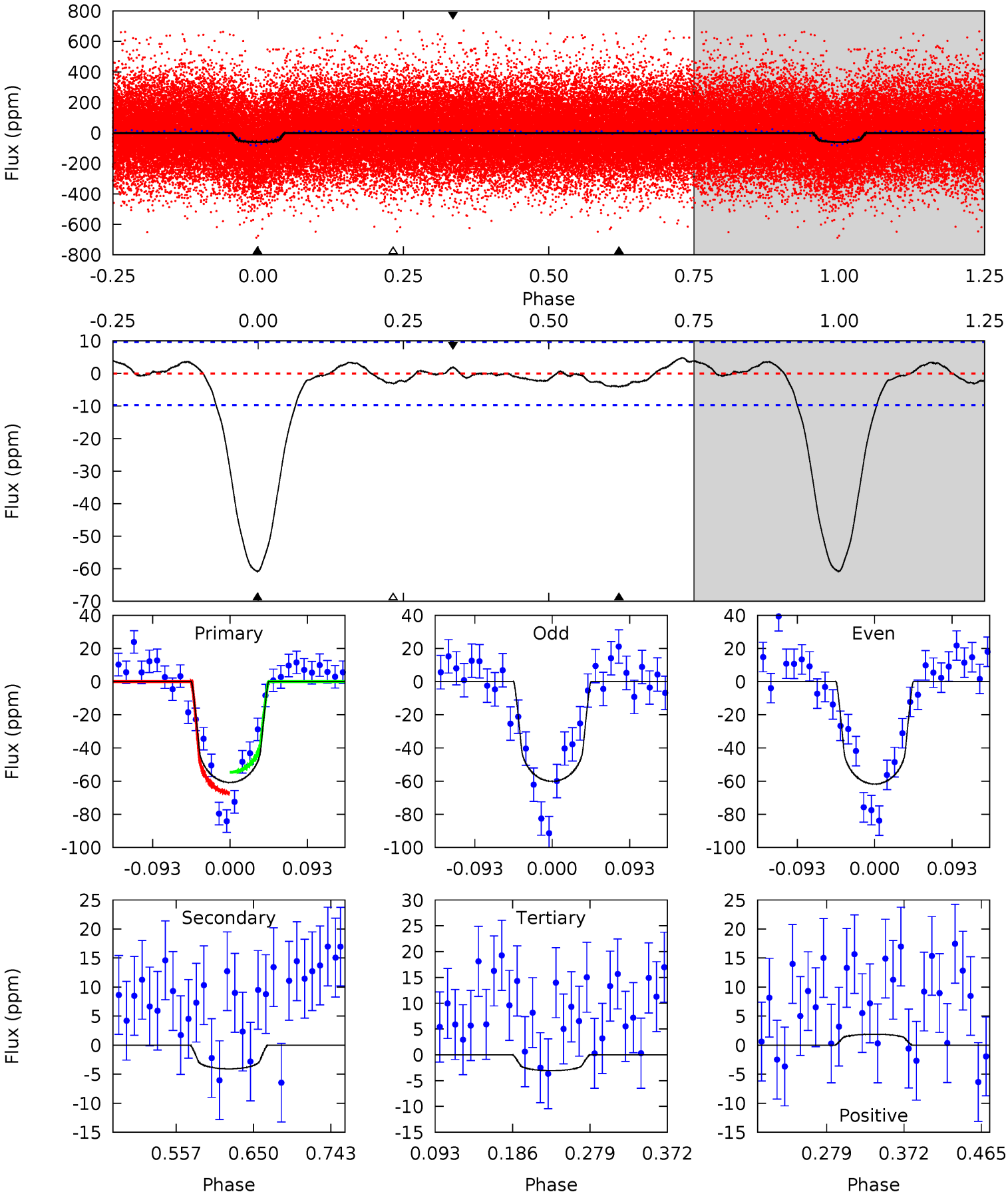
TCE 009108085-01 P= 2.174897 Days T_0=131.946977 (BKJD)



DV Model-Shift Uniqueness Test

009108085-01, P = 2.174956 Days, E = 129.760585 Days

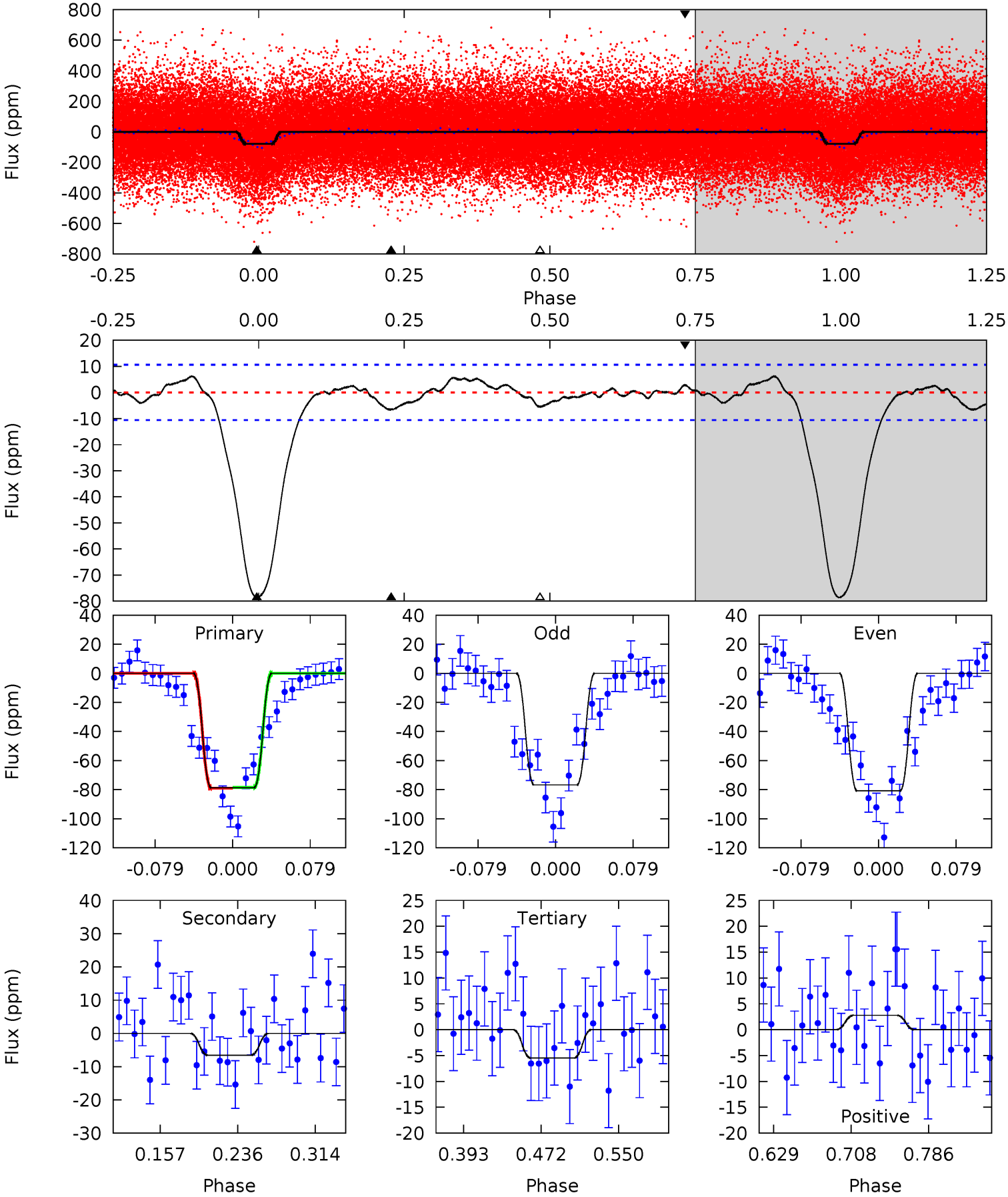
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.7	1.93	1.45	0.89	4.58	1.68	0.89	27.2	27.8	0.48	1.04	0.39	0.97	0.07	2.92



Alt Model-Shift Uniqueness Test

009108085-01, P = 2.174897 Days, E = 129.772080 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.2	2.86	2.38	1.22	4.62	1.76	1.18	31.9	33.0	0.47	1.64	0.89	1.07	0.07	0.11



Stellar Parameters For KIC 009108085

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5749^{+77}_{-77}	$4.323^{+0.115}_{-0.115}$	$0.160^{+0.150}_{-0.150}$	$1.150^{+0.174}_{-0.159}$	$1.014^{+0.072}_{-0.058}$	$0.938^{+0.462}_{-0.309}$
	+1%/-1%	+3%/-3%	+94%/-94%	+15%/-14%	+7%/-6%	+49%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009108085-01 / KOI 2470.01

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4±2	$1.00^{+0.32}_{-0.29}$	2095^{+88}_{-80}	3314^{+527}_{-503}	$2.321^{+3.047}_{-1.361}$
Alt.	-7±2	$1.21^{+0.34}_{-0.33}$	2089^{+88}_{-84}	3378^{+411}_{-352}	$2.654^{+2.482}_{-1.306}$

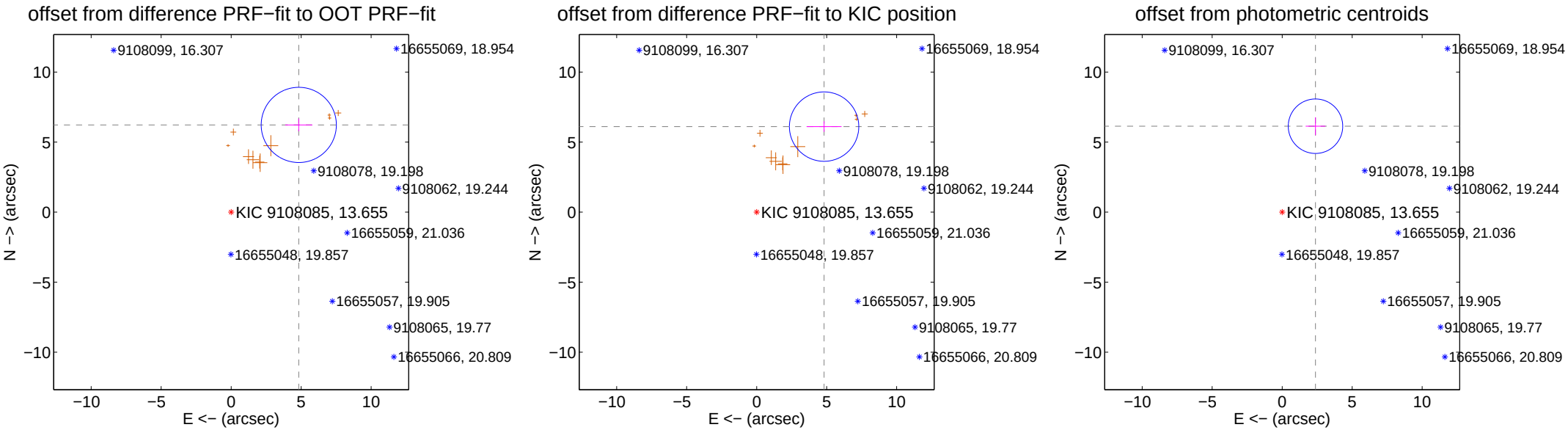
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

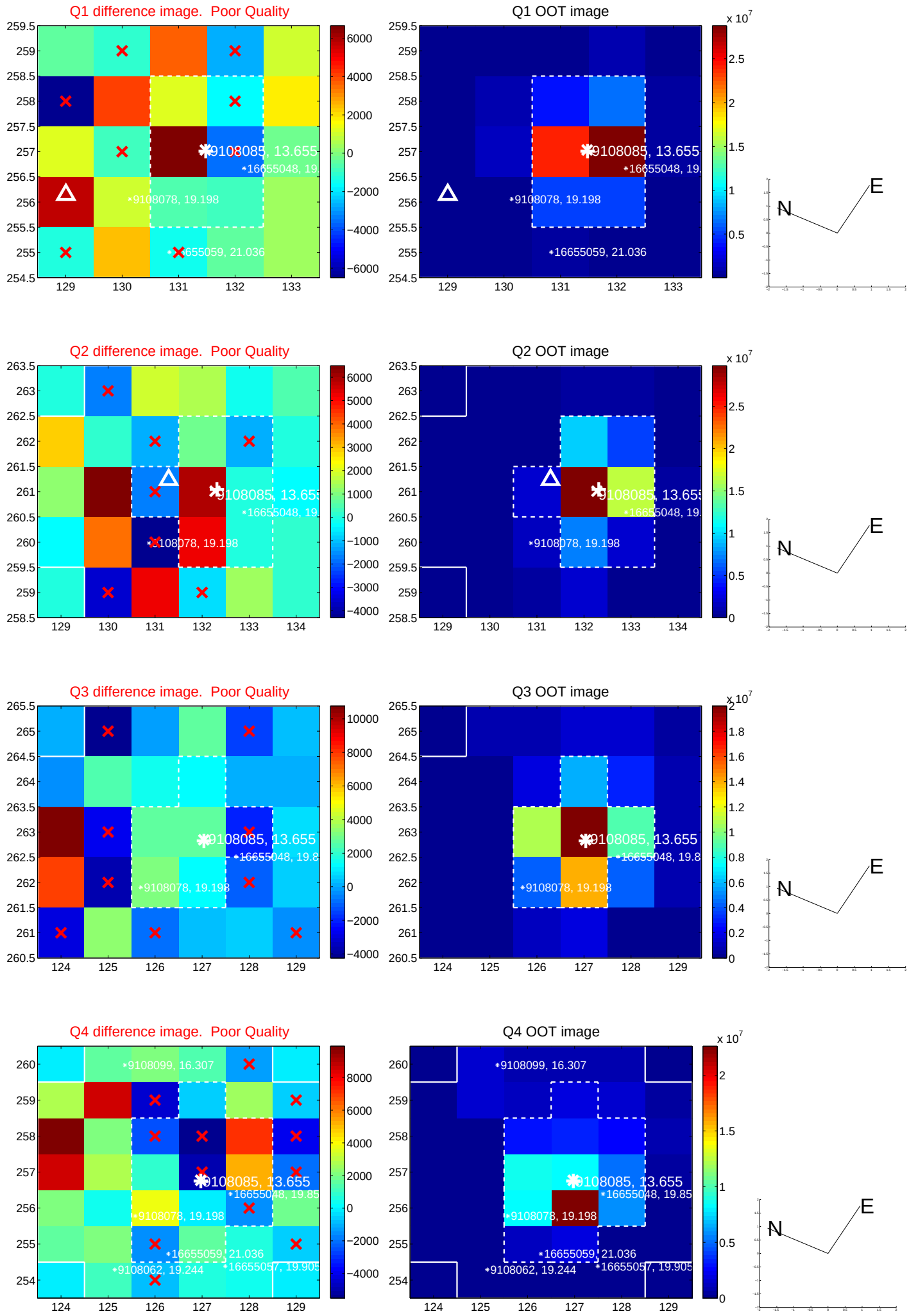
Supplemental centroid analysis for 009108085-01. Kepler magnitude: 13.65. Transit SNR 21.66
There are 0 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.880 ± 0.895	8.81	-4.829 ± 0.971	6.226 ± 0.456
PRF-fit source offset from KIC position	7.776 ± 0.826	9.42	-4.816 ± 1.246	6.106 ± 0.374
photometric centroid source offset	6.58 ± 0.65	10.15	-2.38 ± 0.70	6.13 ± 0.64

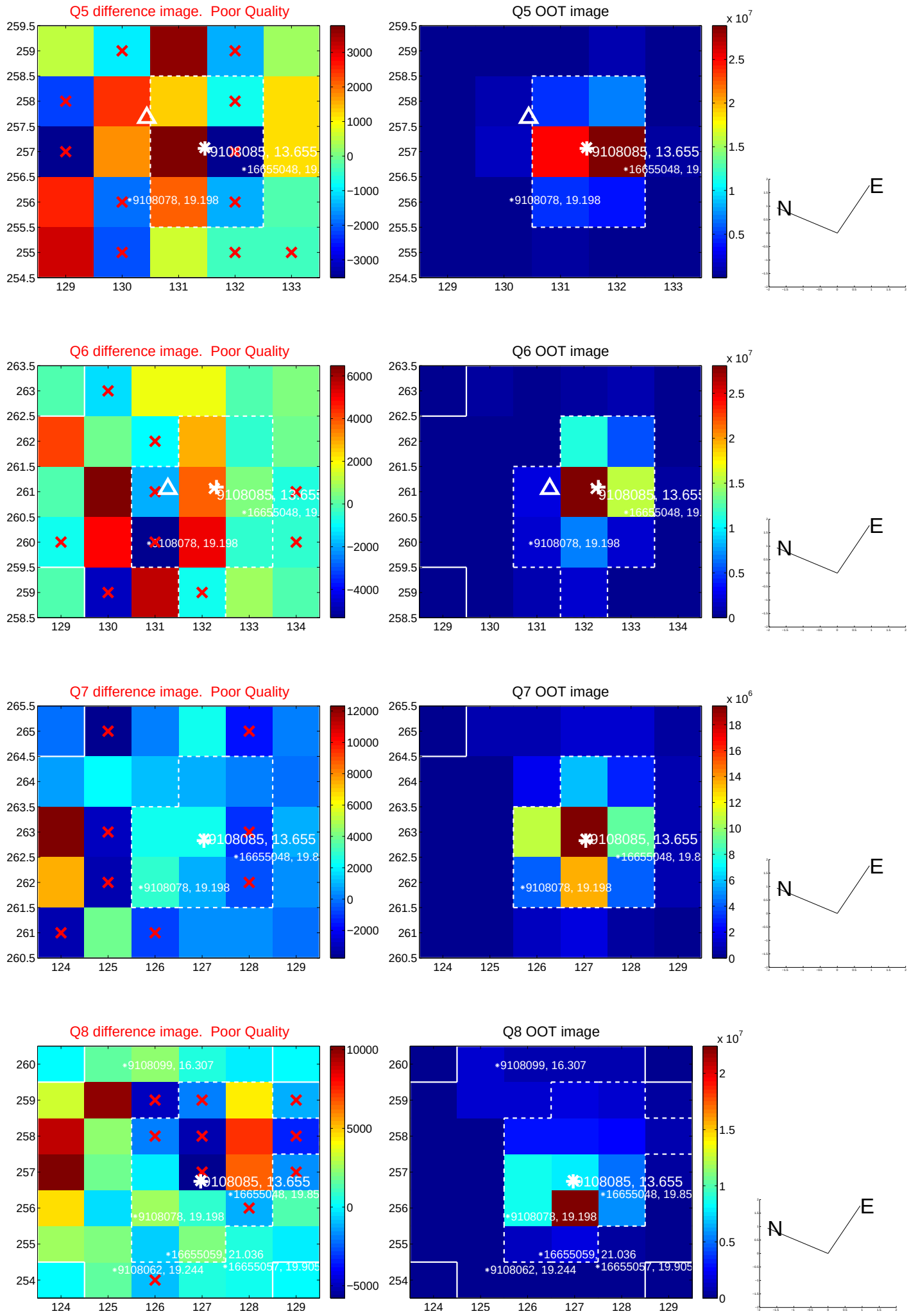


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

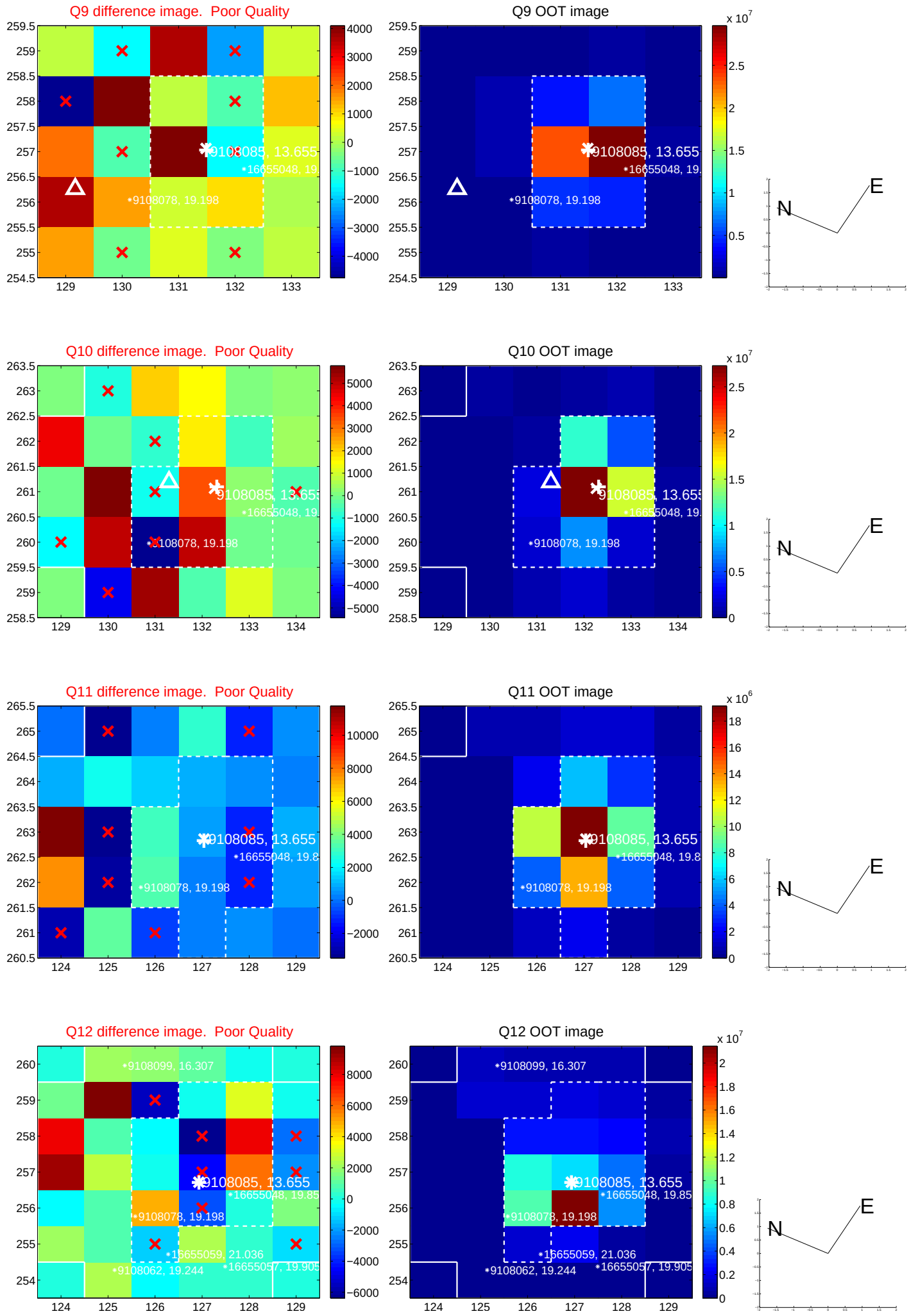
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



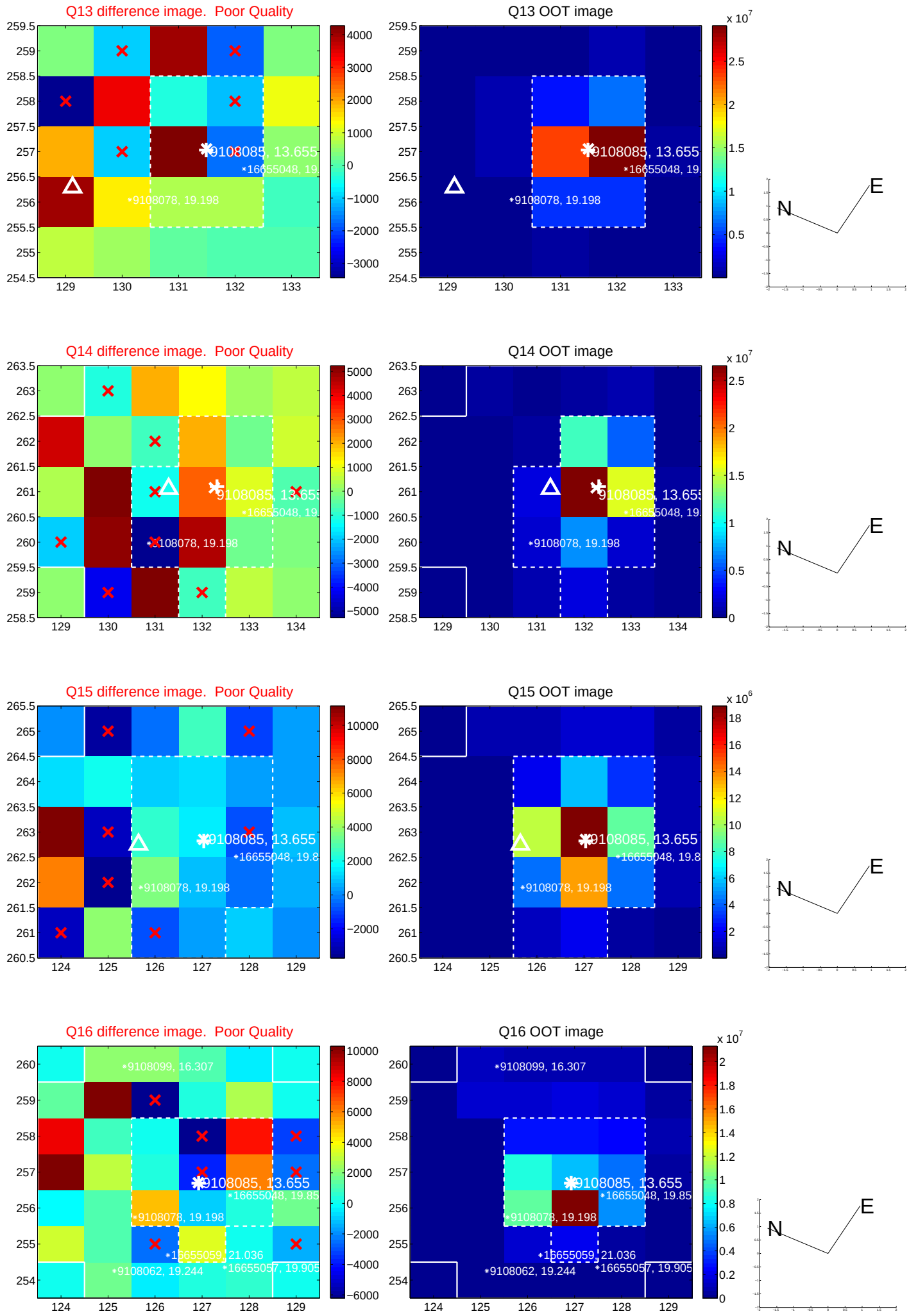
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



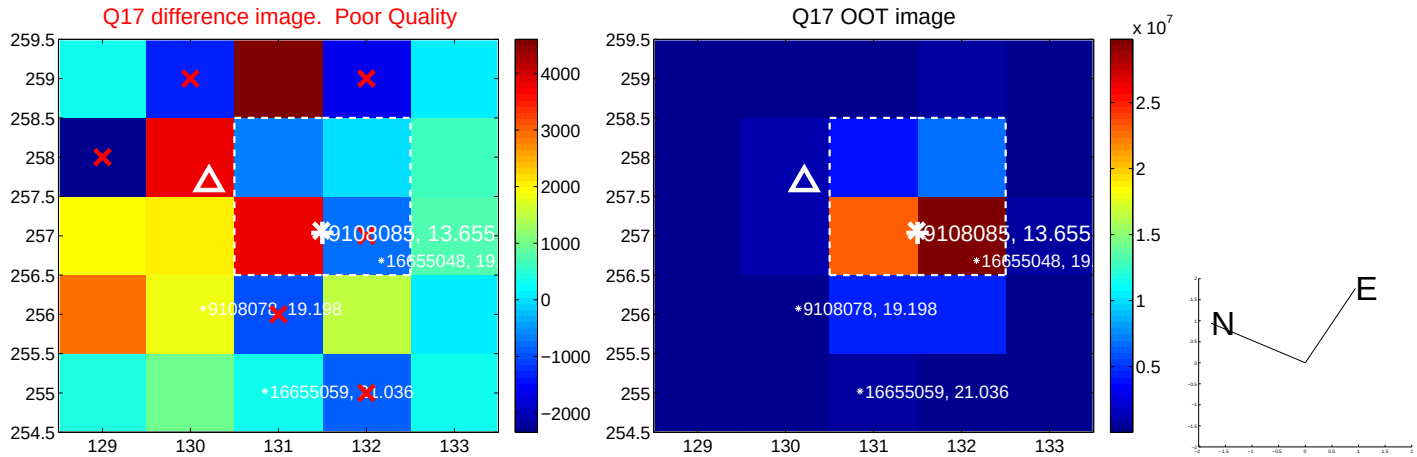
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

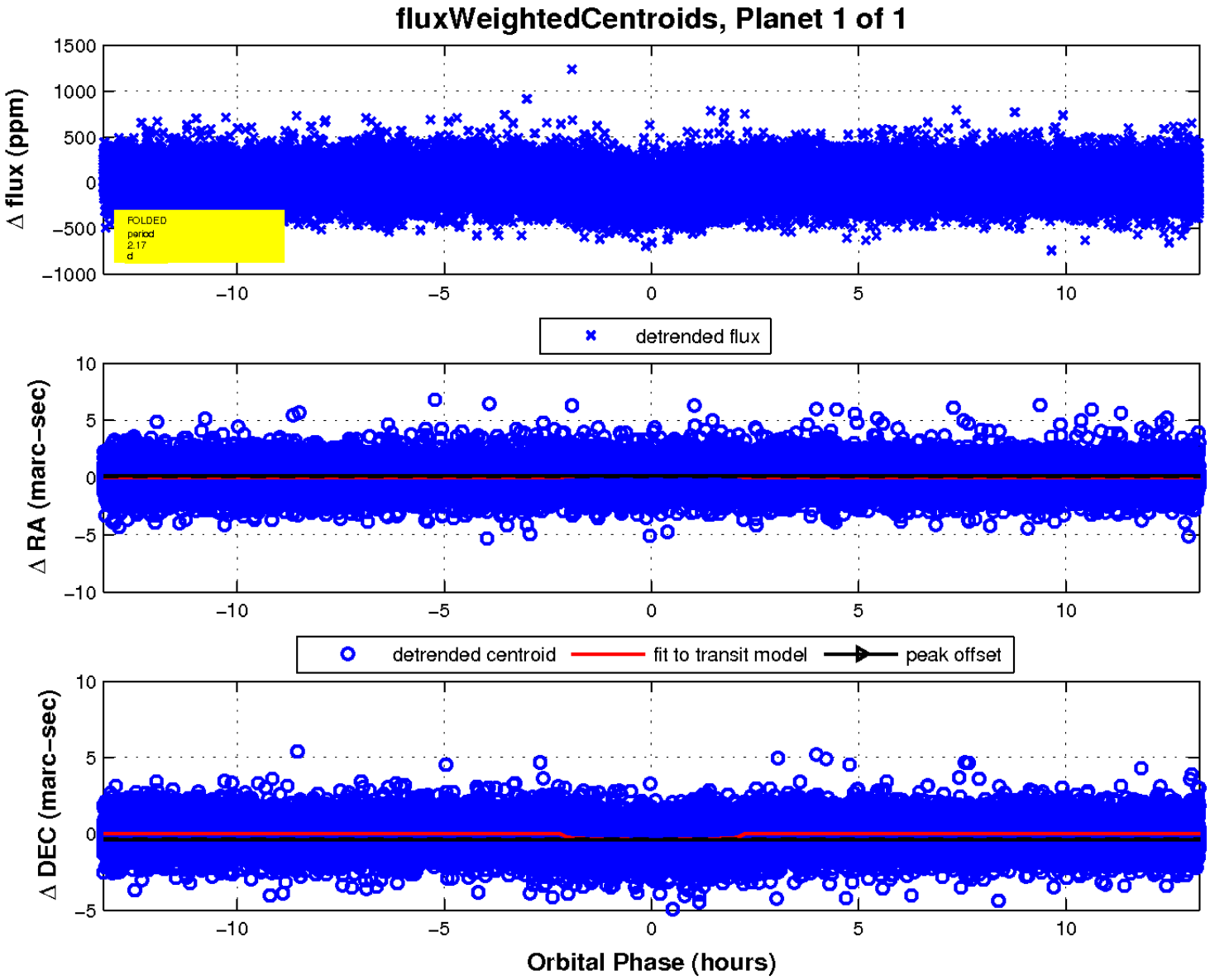


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

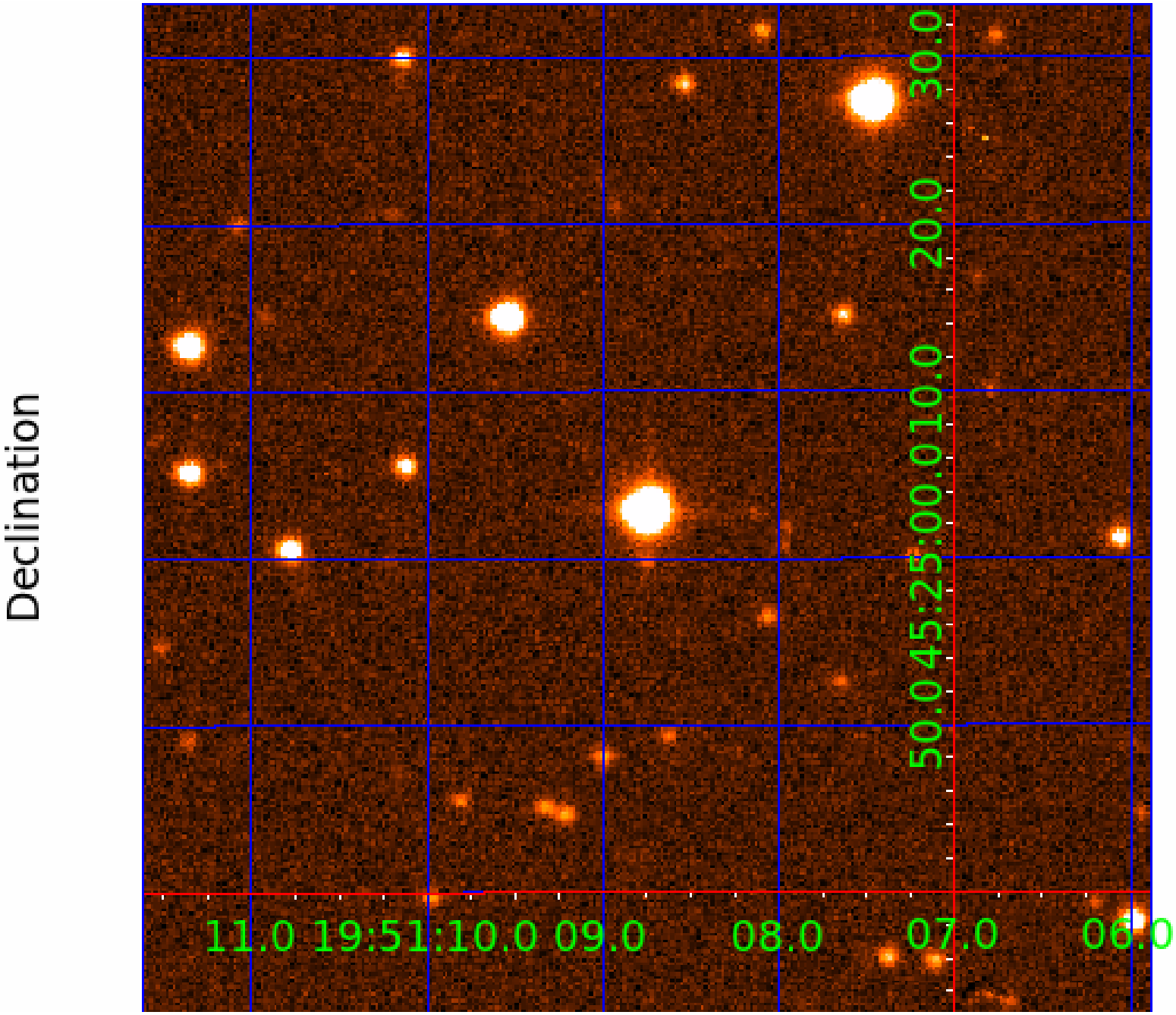


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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