KIC 009098810

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 ($S_\oplus$)
009098810-01	OBS	7132.01	4.129091	135.630107	309510.8	3.934	30114.7	22188.3	0.89	5306	57.76	255.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009098810-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED

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.

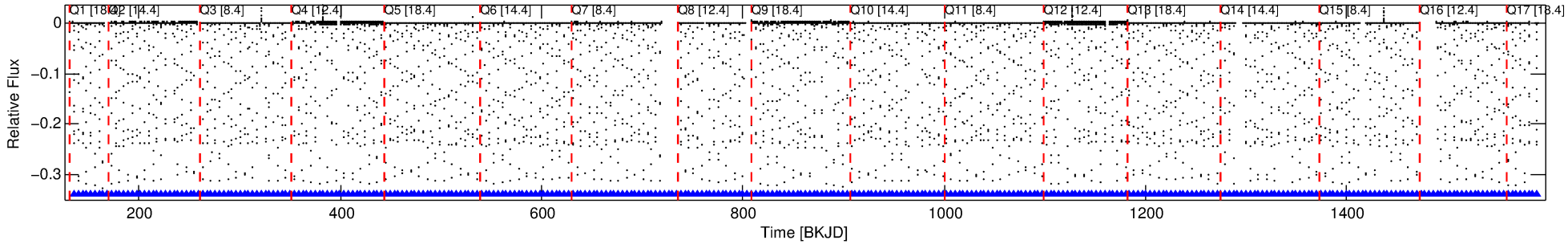
Ephemeris Match Information For 009098810-01

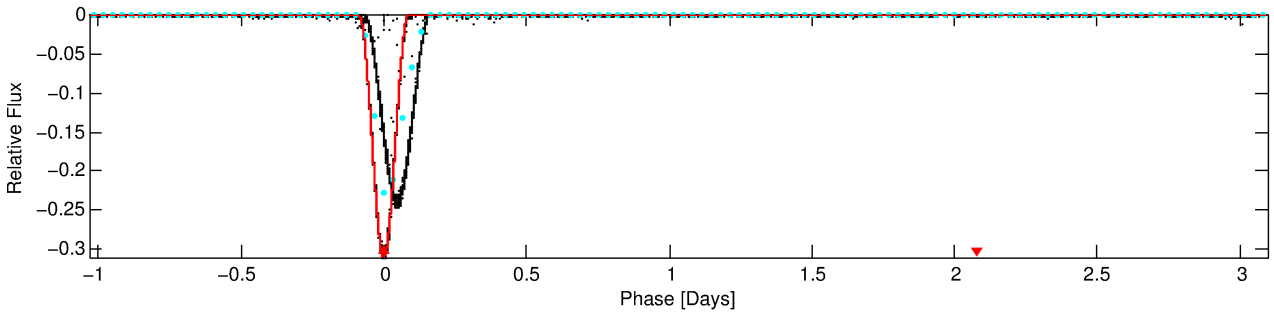
No Significant Match Found

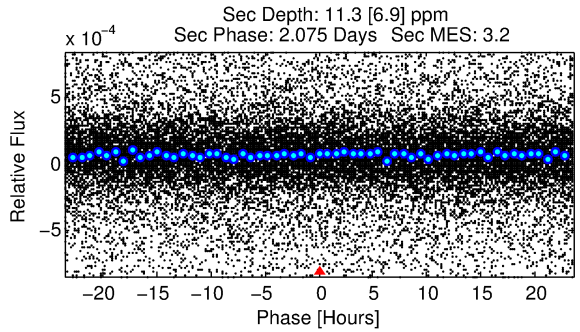
DV One-Page Summary

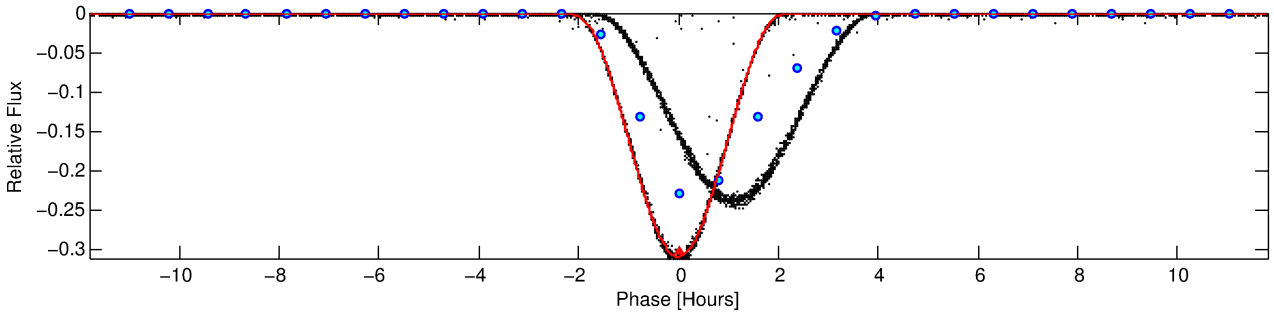
KIC: 9098810 Candidate: 1 of 1 Period: 4.129 d
KOI: K07132 Corr: No Ephemeris Match

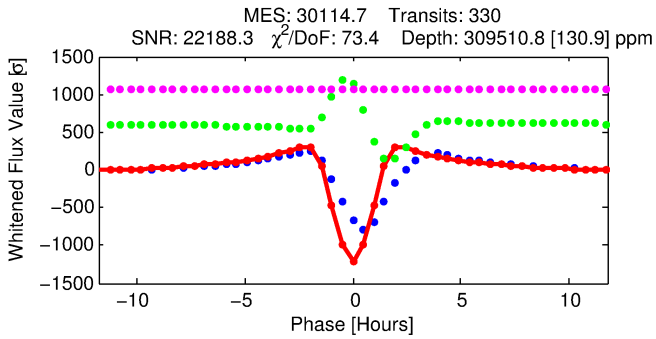
Kp: 13.45 R*: 0.89 Rs Teff: 5306.0 K Logg: 4.45 Fe/H: −0.060

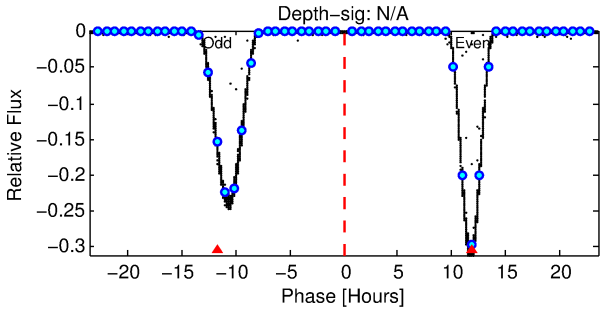


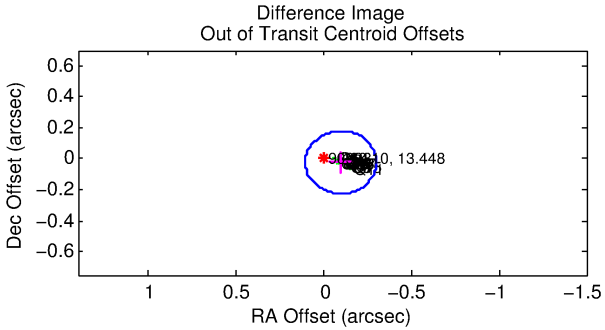












DV Fit Results:

Period = 4.12909 [0.00000] d
Epoch = 135.6301 [0.0000] BKJD
Rp/R* = 0.5960 [0.0207]
a/R* = 11.88 [0.07]
b = 0.61 [0.04]

Seff = 255.72 [114.64]
Teq = 1020 [114] K
Rp = 57.76 [14.77] Re
a = 0.0468 [0.0122] AU

Ag = 0.00 [0.00] [−325.84σ]
Teffp = 399 [62] K [−4.78σ]

DV Diagnostic Results:

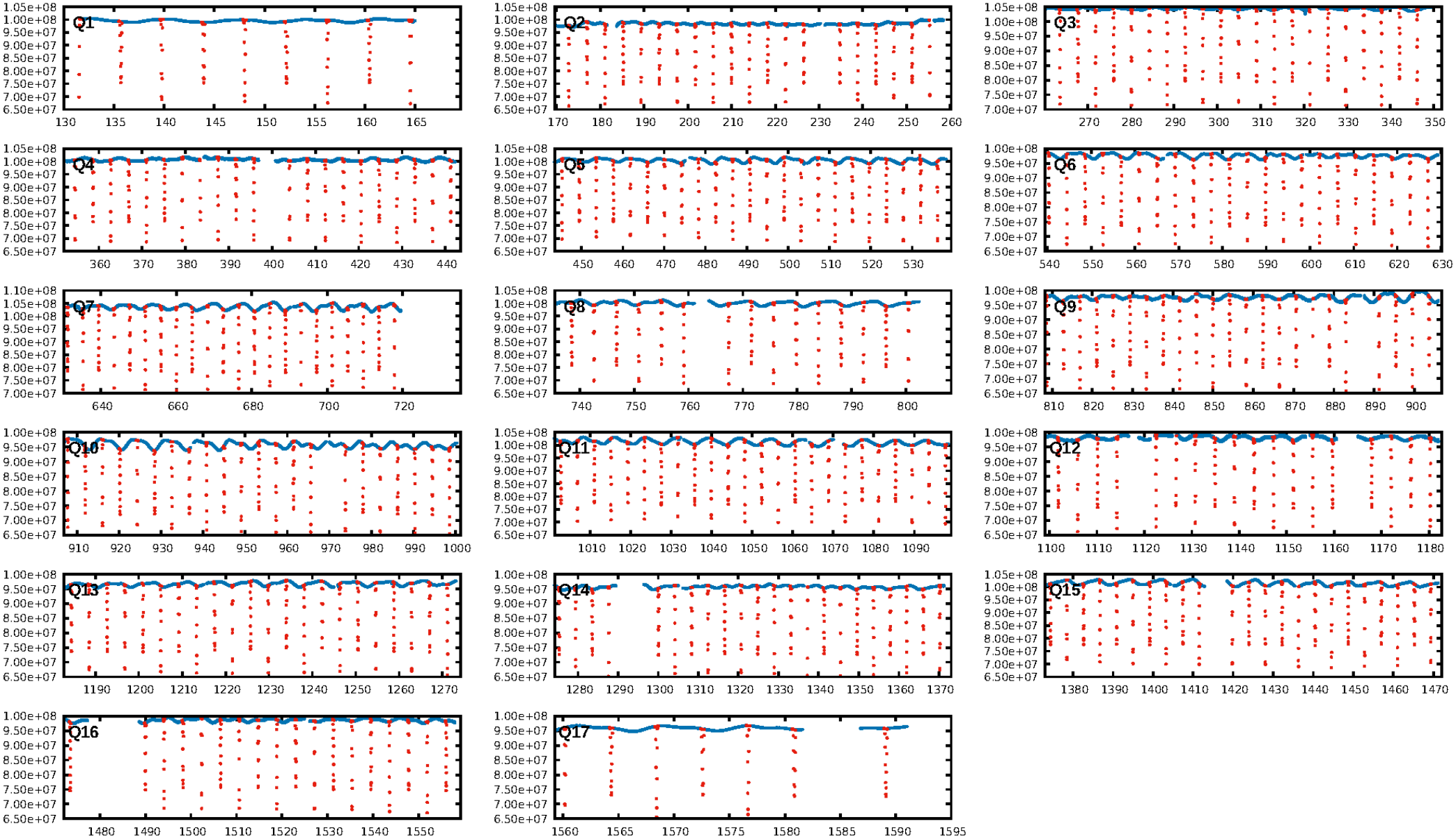
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [314/314]
GhostDiagnostic−chr: 1.56

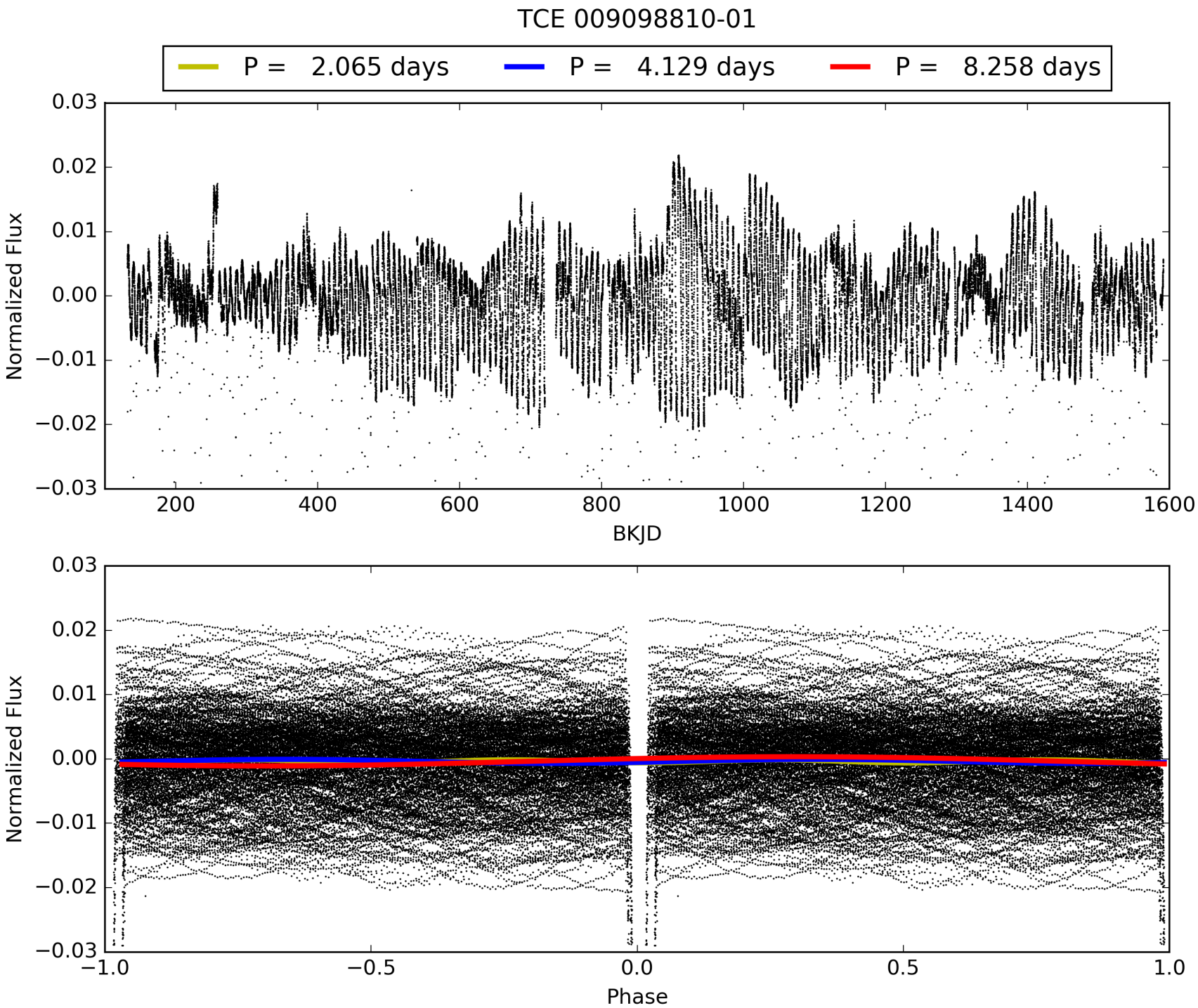
Centroid−sig: 0.0%
Centroid−so: 0.096 arcsec [322.43σ]
OotOffset−rm: 0.100 arcsec [1.49σ]
KicOffset−rm: 0.163 arcsec [2.43σ]
OotOffset−st: 4/4/4/5 [17]
KicOffset−st: 4/4/4/5 [17]
DiffImageQuality−fgm: 1.00 [17/17]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 −− Date Generated: 03−Feb−2016 07:49:21 Z

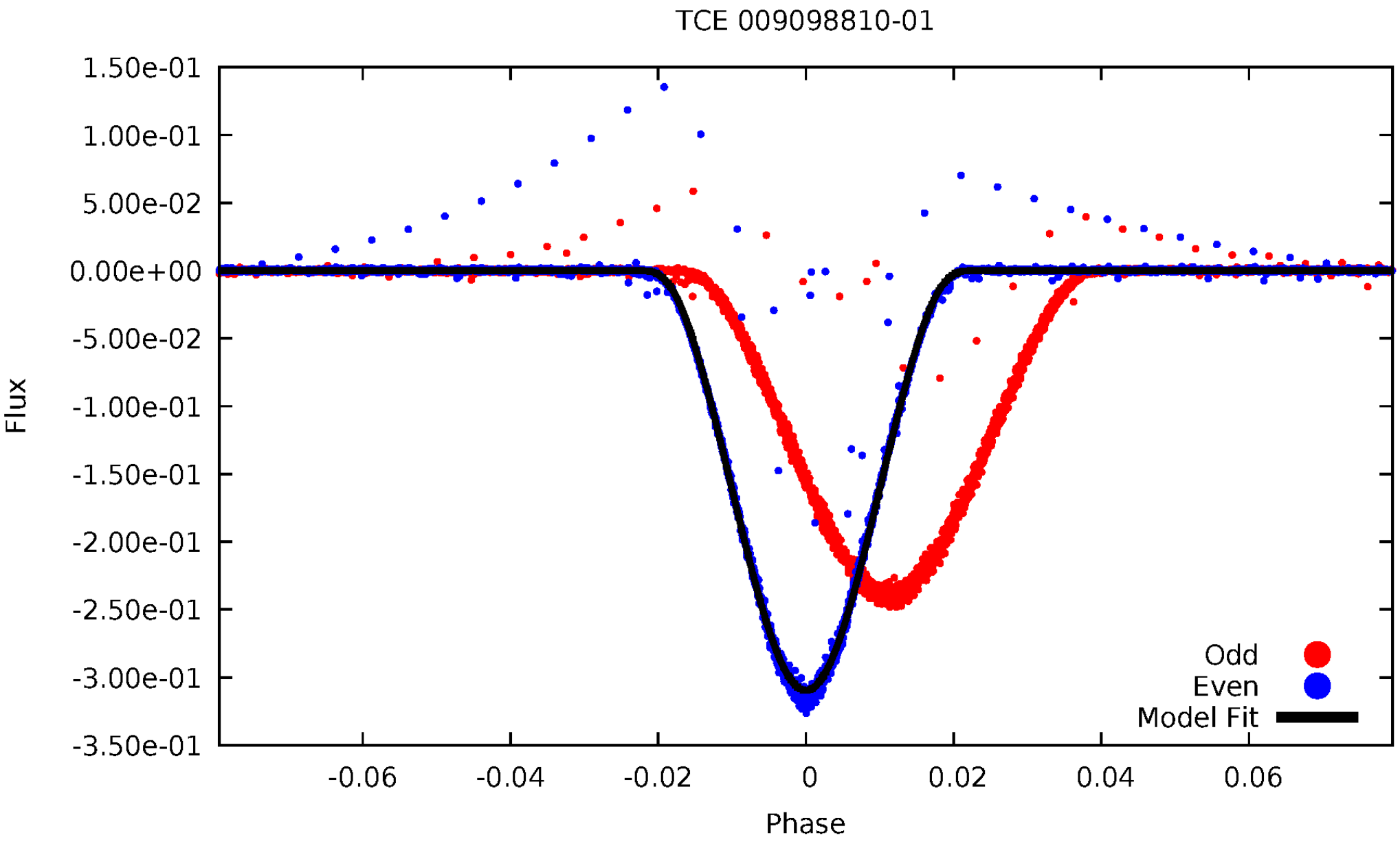
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009098810-01, PDC Light Curves

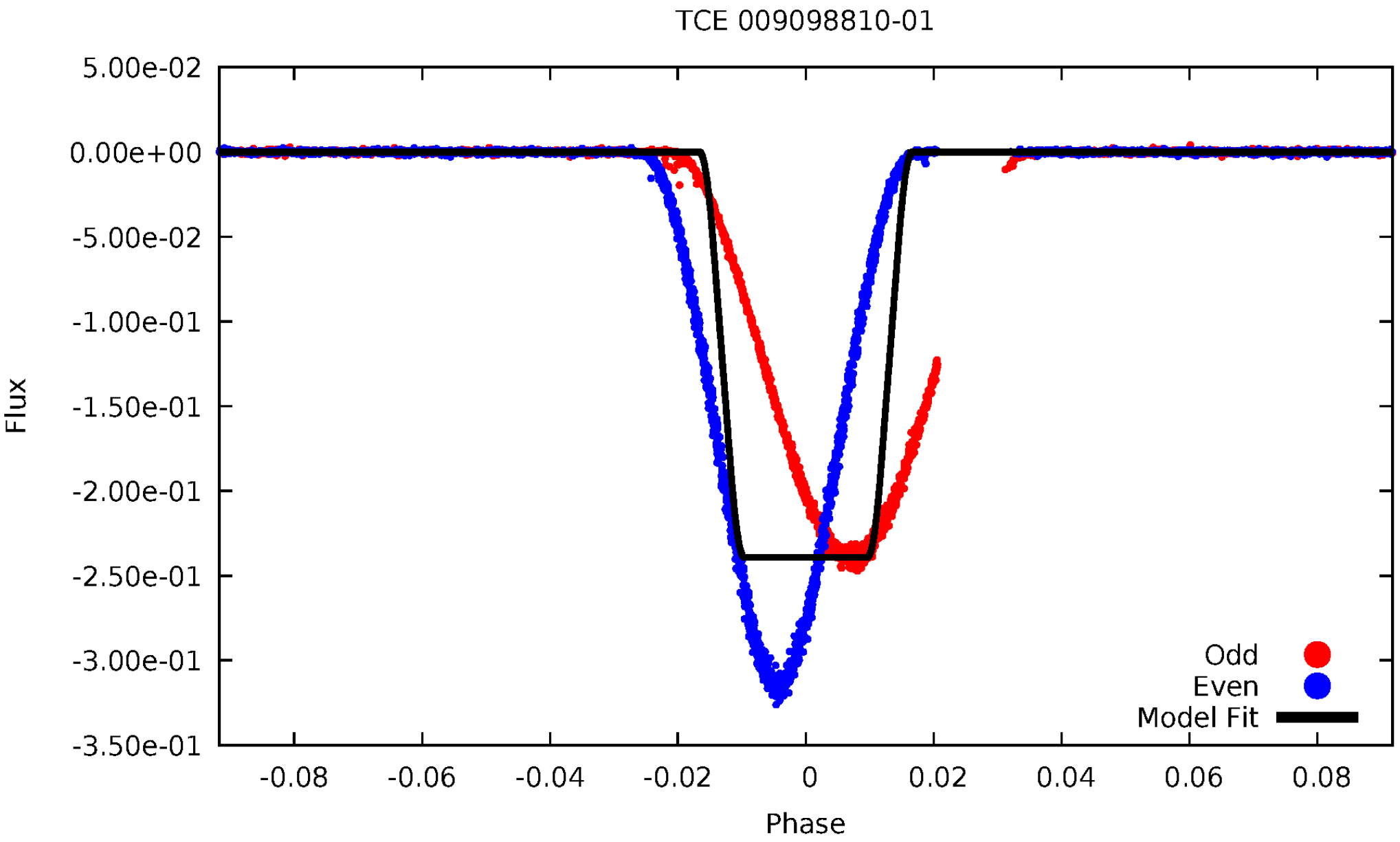



TCE 009098810-01
P = 2.065 days
P = 4.129 days
P = 8.258 days
Normalized Flux
BKJD
Normalized Flux
Phase

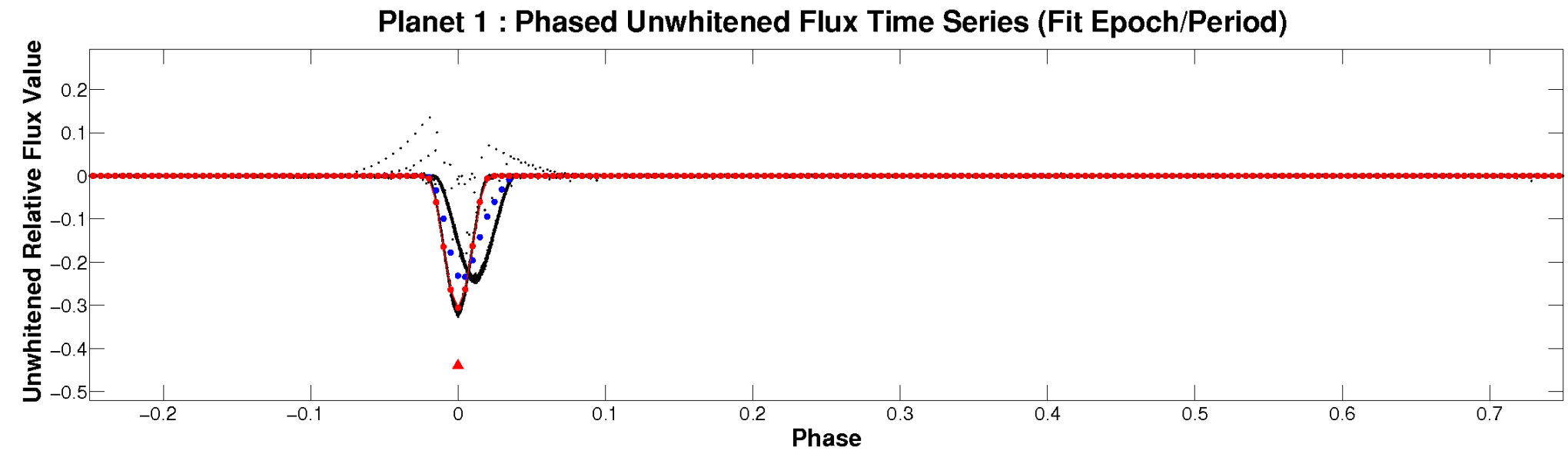
DV Odd/Even

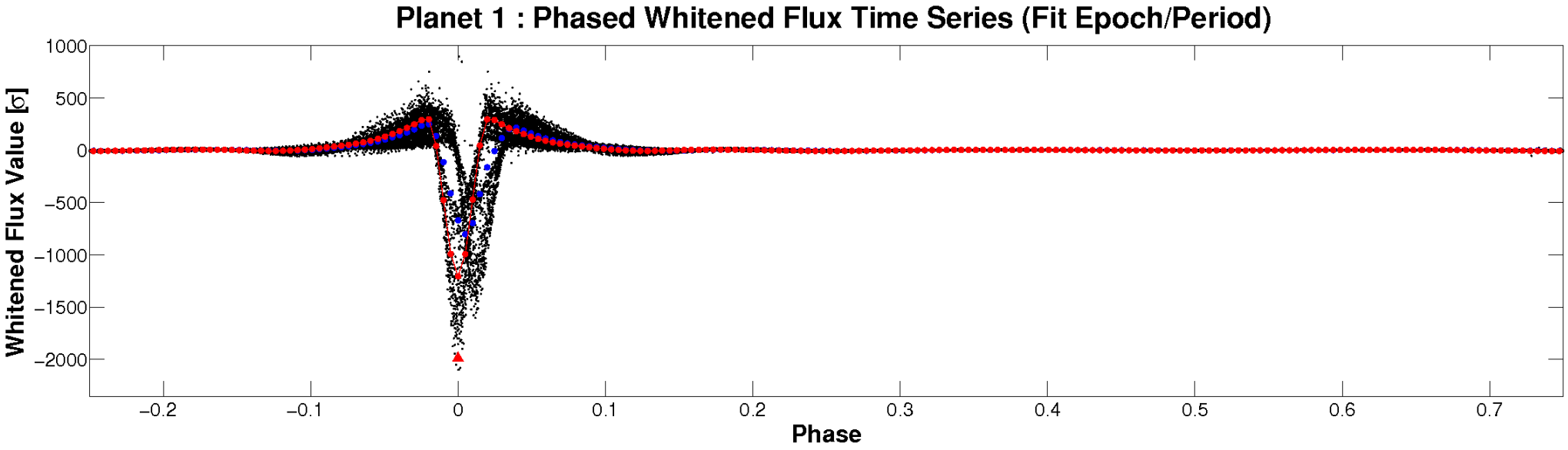

TCE 009098810-01
1.50e-01
1.00e-01
5.00e-02
0.00e+00
-5.00e-02
-1.00e-01
-1.50e-01
-2.00e-01
-2.50e-01
-3.00e-01
-3.50e-01
Flux
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009098810-01
5.00e-02
0.00e+00
-5.00e-02
-1.00e-01
-1.50e-01
-2.00e-01
-2.50e-01
-3.00e-01
-3.50e-01
Flux
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
Phase
Odd
Even
Model Fit

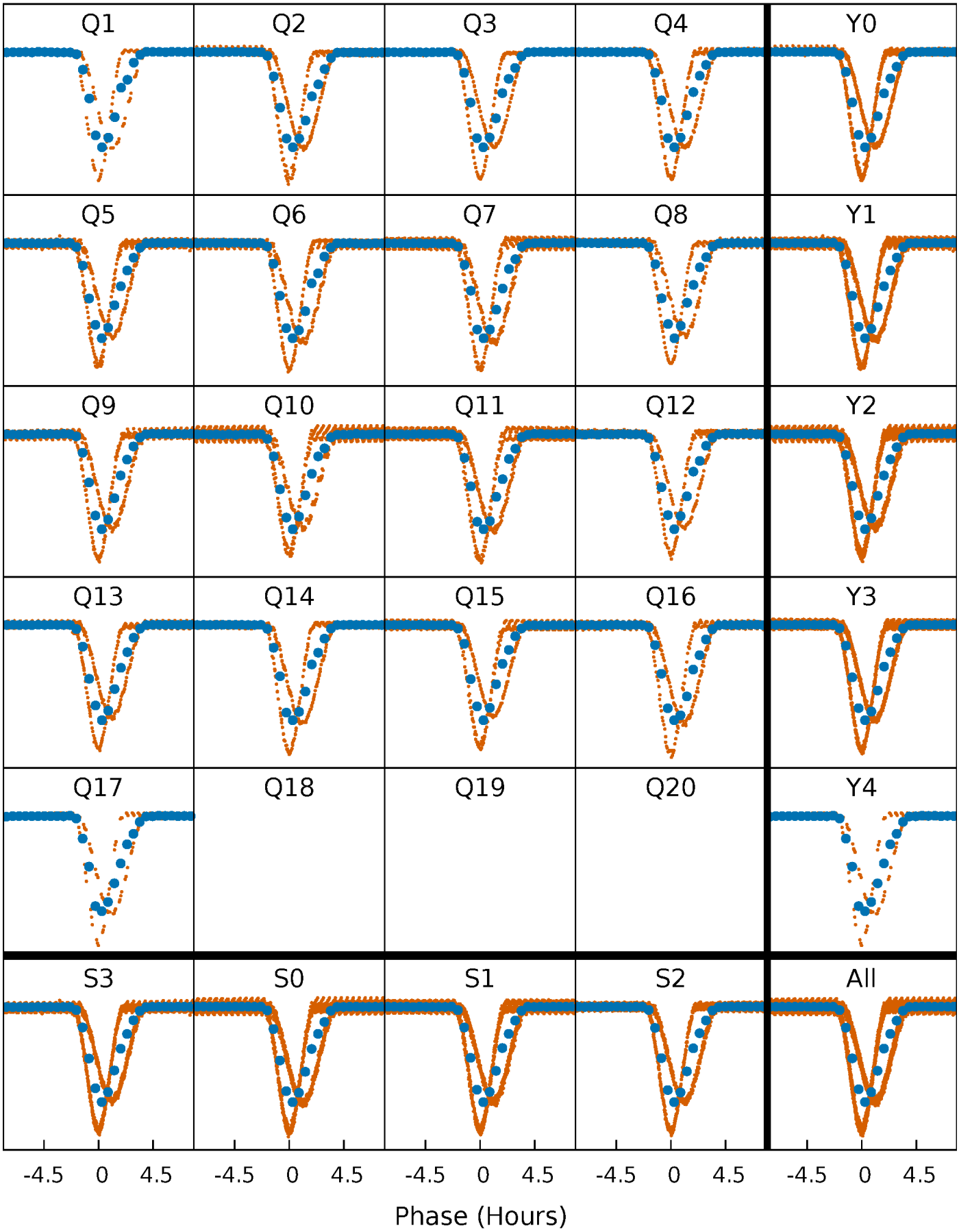
Non-Whitened Vs. Whitened Light Curve





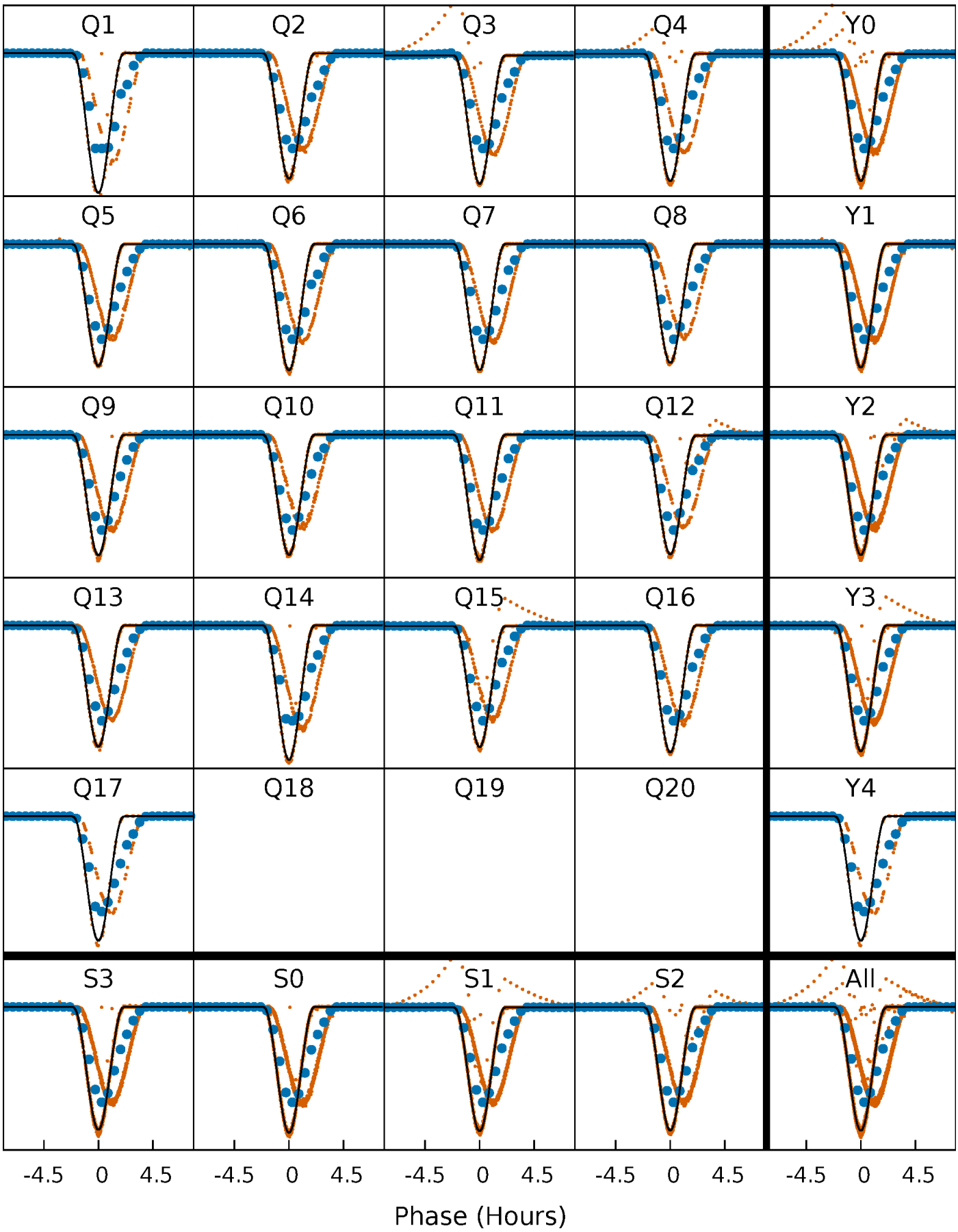
PDC Quarter-Phased Transit Curves

TCE 009098810-01 P= 4.129091 Days T_0=135.630107 (BKJD)



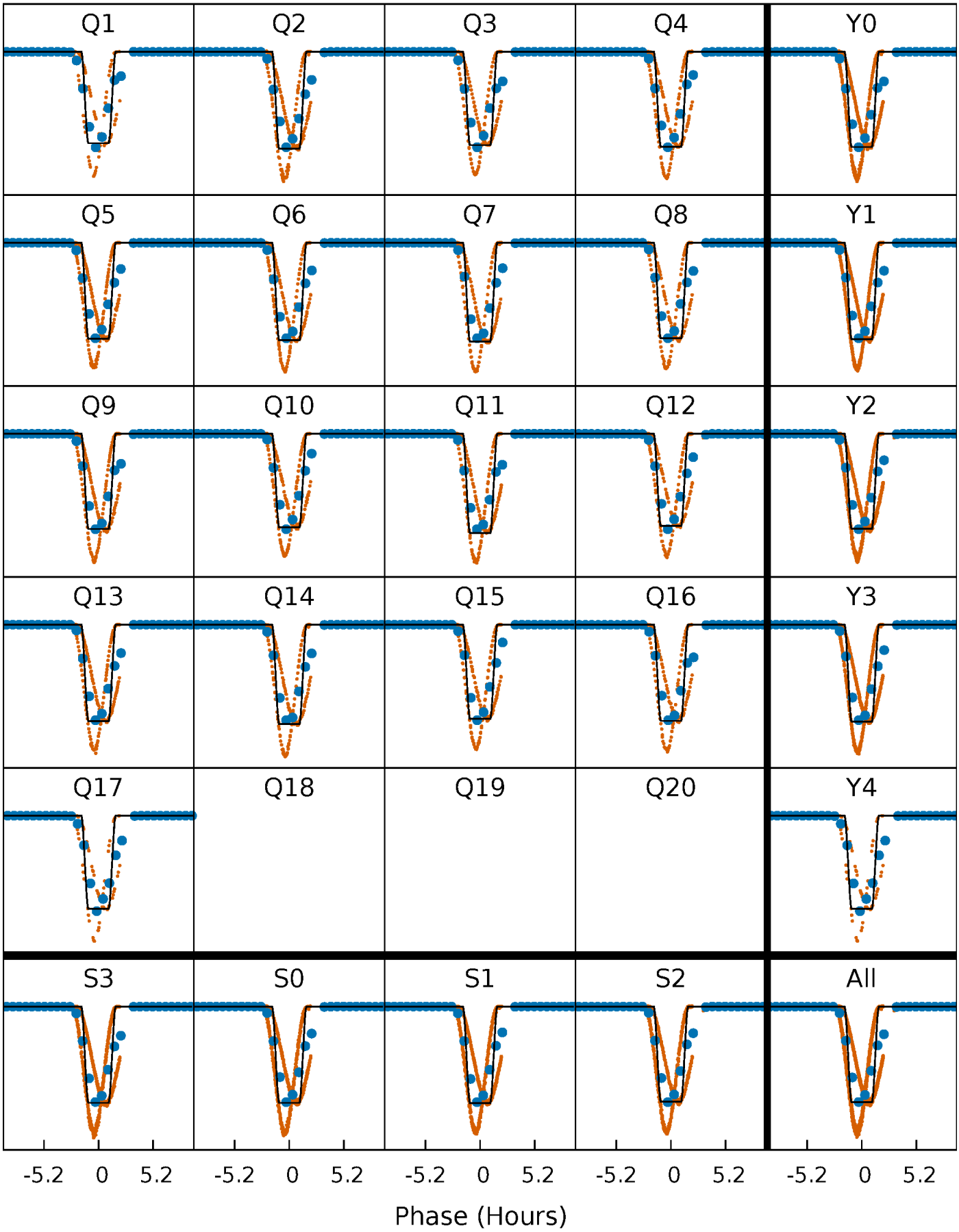
DV Quarter-Phased Transit Curves

TCE 009098810-01 P= 4.129091 Days T_0=135.630107 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

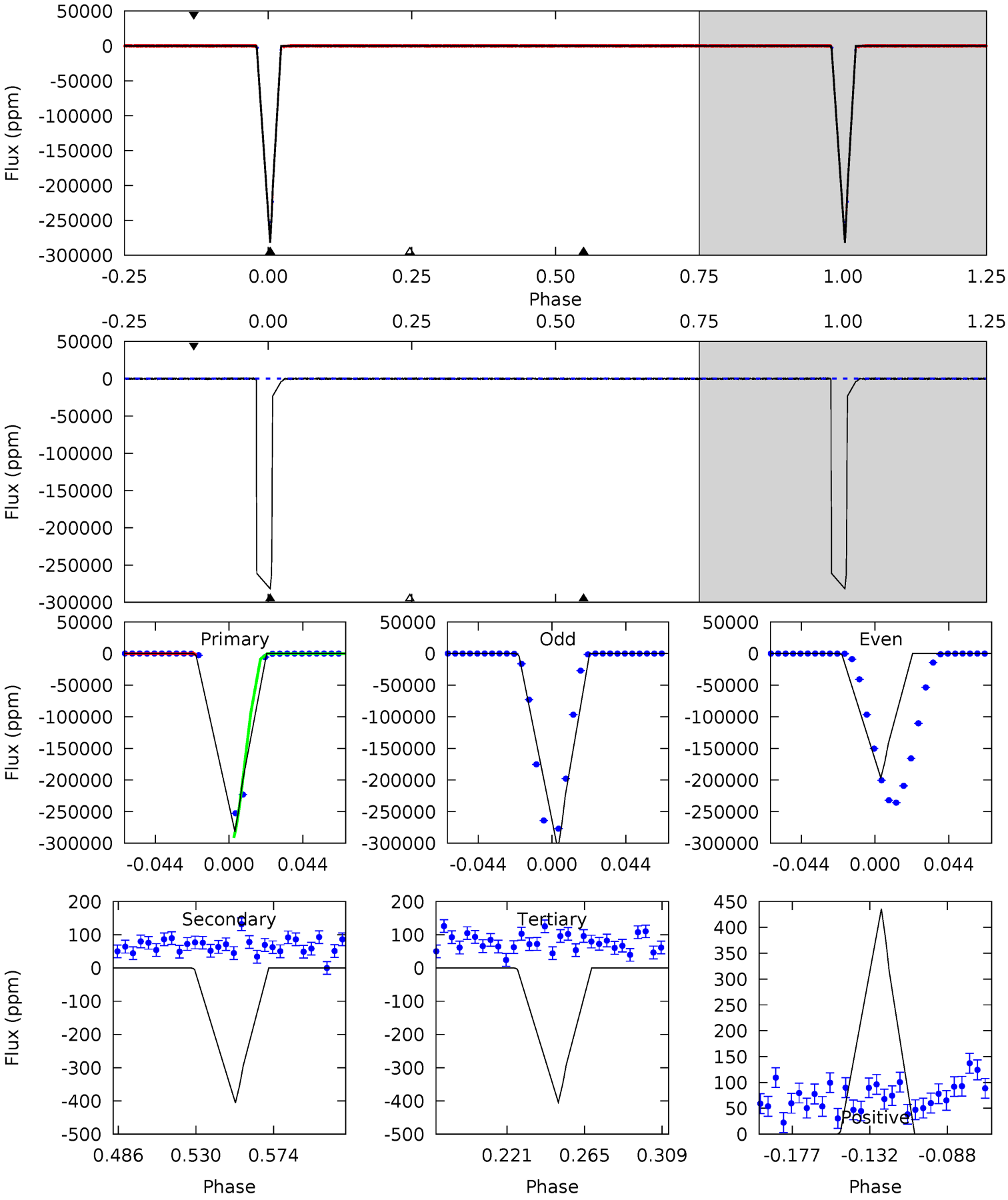
TCE 009098810-01 P= 4.129080 Days T_0=131.520516 (BKJD)



DV Model-Shift Uniqueness Test

009098810-01, P = 4.129091 Days, E = 131.501016 Days

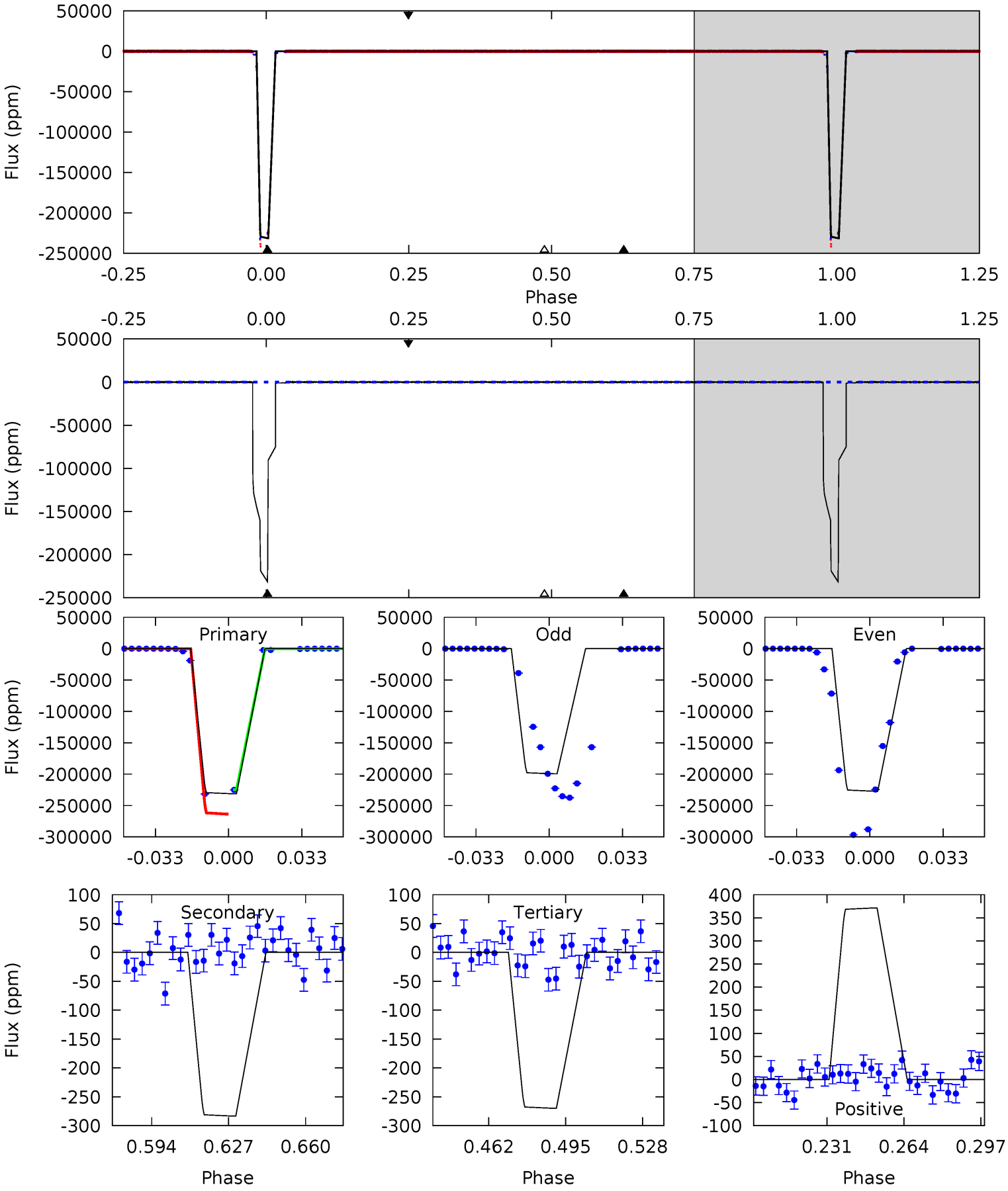
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8613	12.4	12.4	13.3	4.73	2.01	3.17	8601	8600	0.06	-0.91	5571	1.12	0.00	0



Alt Model-Shift Uniqueness Test

009098810-01, P = 4.129080 Days, E = 127.391436 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3605	4.42	4.21	5.79	4.79	2.13	1.21	3601	3600	0.21	-1.37	751.1	0.97	0.00	0



Stellar Parameters For KIC 009098810

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5306^{+159}_{-143}	$4.445^{+0.130}_{-0.259}$	$-0.060^{+0.300}_{-0.250}$	$0.888^{+0.225}_{-0.138}$	$0.802^{+0.115}_{-0.057}$	$1.612^{+0.786}_{-0.844}$
	+3%/-3%	+3%/-6%	+500%/-417%	+25%/-16%	+14%/-7%	+49%/-52%
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 009098810-01 / KOI 7132.01

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-406±33	$59.36^{+10.63}_{-6.37}$	1447^{+120}_{-86}	-2005^{+93}_{-113}	$0.139^{+0.037}_{-0.037}$
Alt.	-283±64	$49.00^{+8.16}_{-5.25}$	1445^{+107}_{-75}	-2013^{+122}_{-93}	$0.138^{+0.056}_{-0.044}$

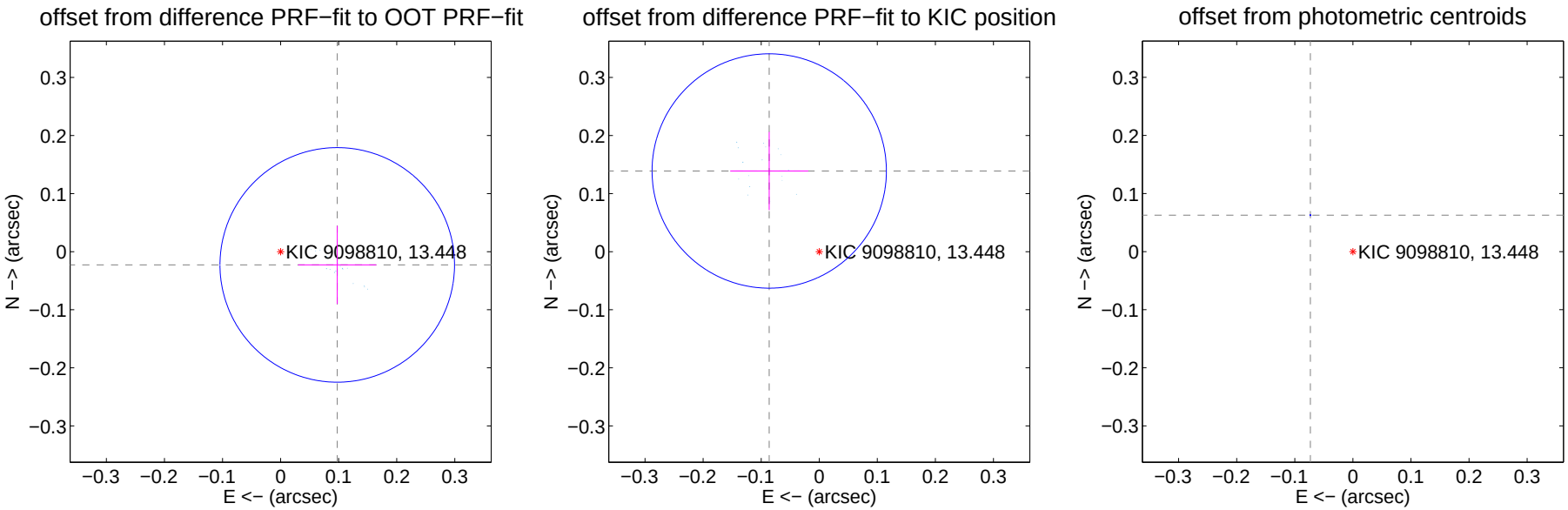
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

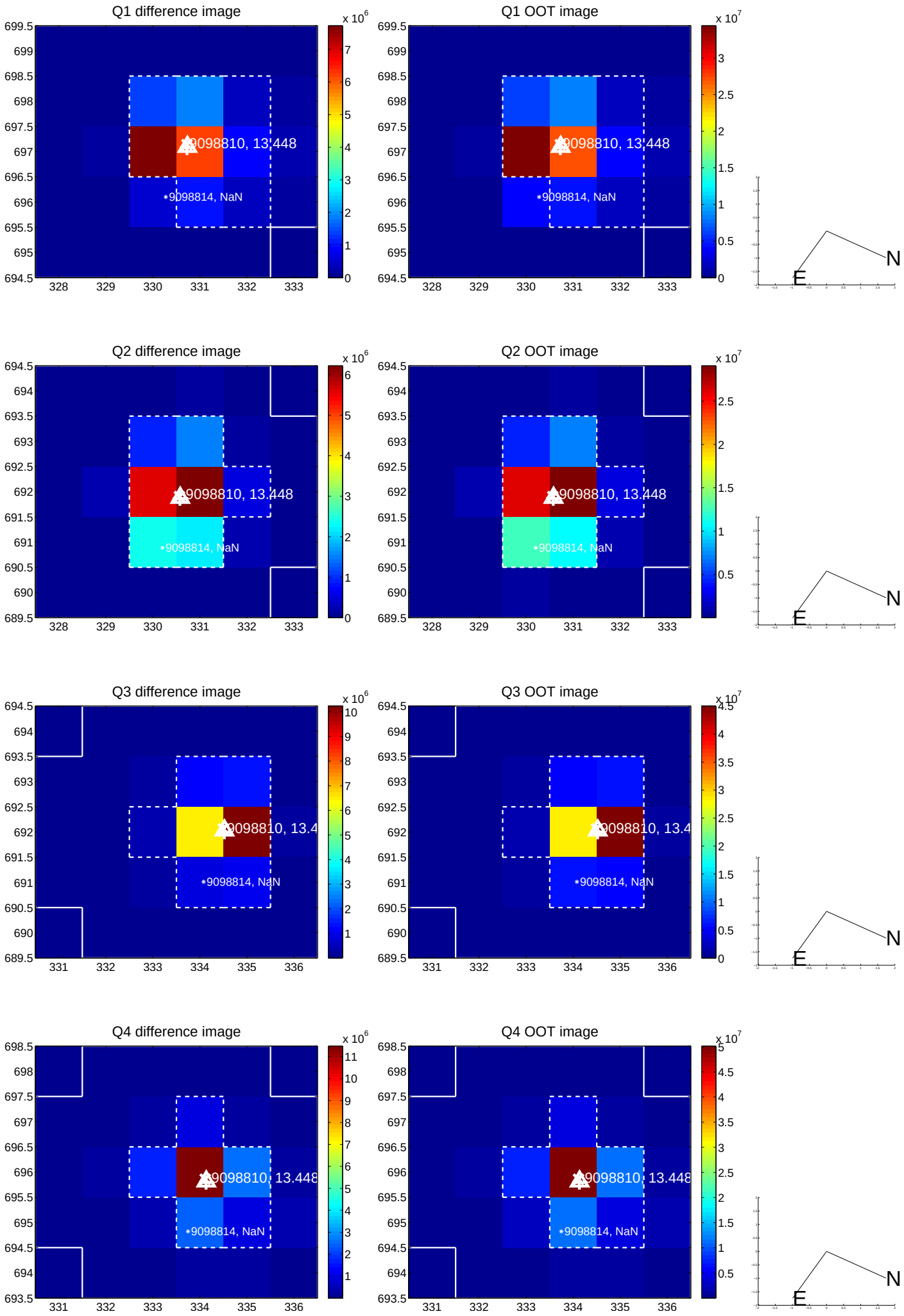
Supplemental centroid analysis for 009098810-01. Kepler magnitude: 13.45. Transit SNR 22188.34
There are 17 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.100 ± 0.067	1.49	-0.098 ± 0.067	-0.023 ± 0.067
PRF-fit source offset from KIC position	0.163 ± 0.067	2.43	0.086 ± 0.067	0.139 ± 0.067
photometric centroid source offset	0.10 ± 0.00	322.43	0.07 ± 0.00	0.06 ± 0.00

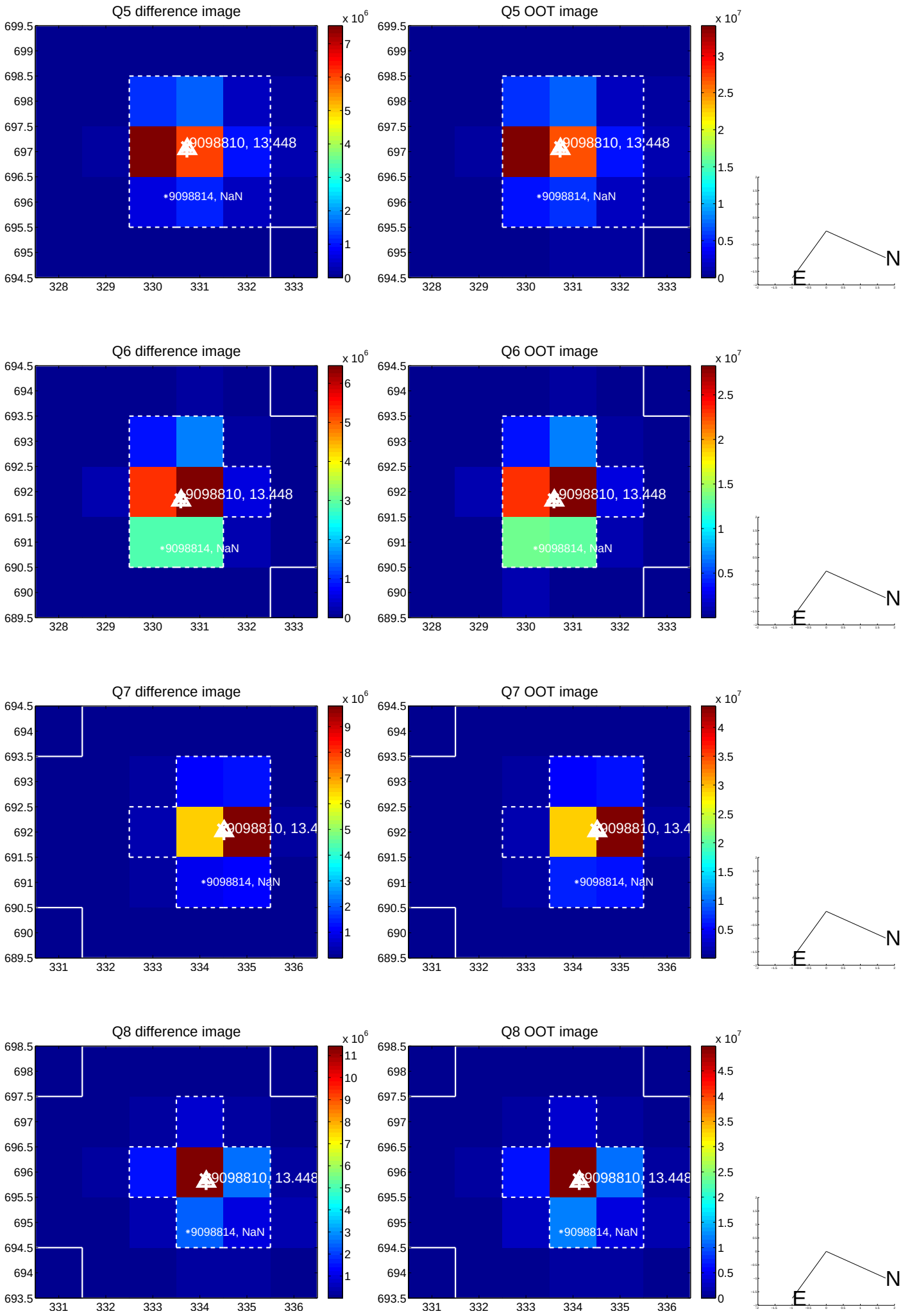


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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



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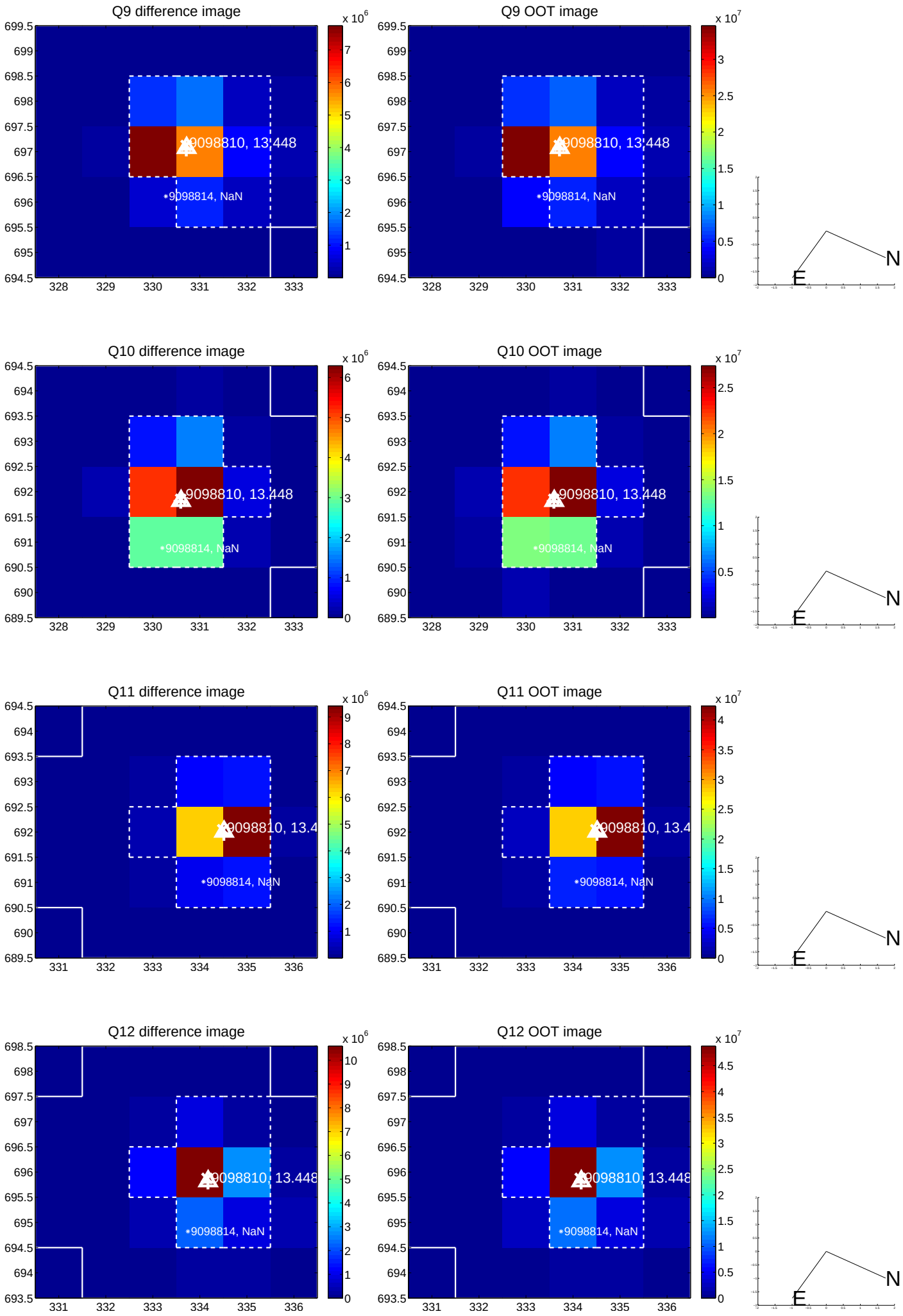
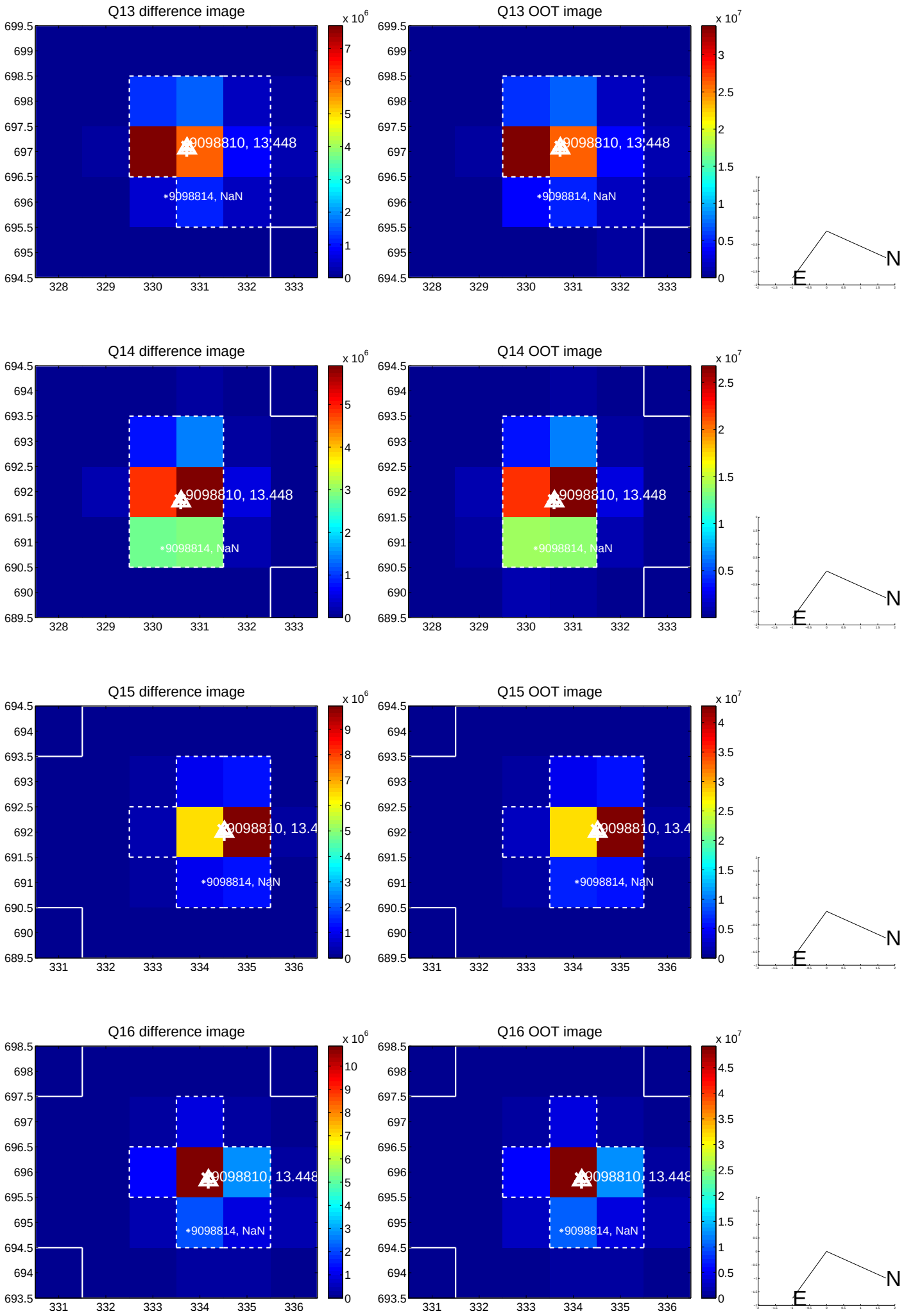
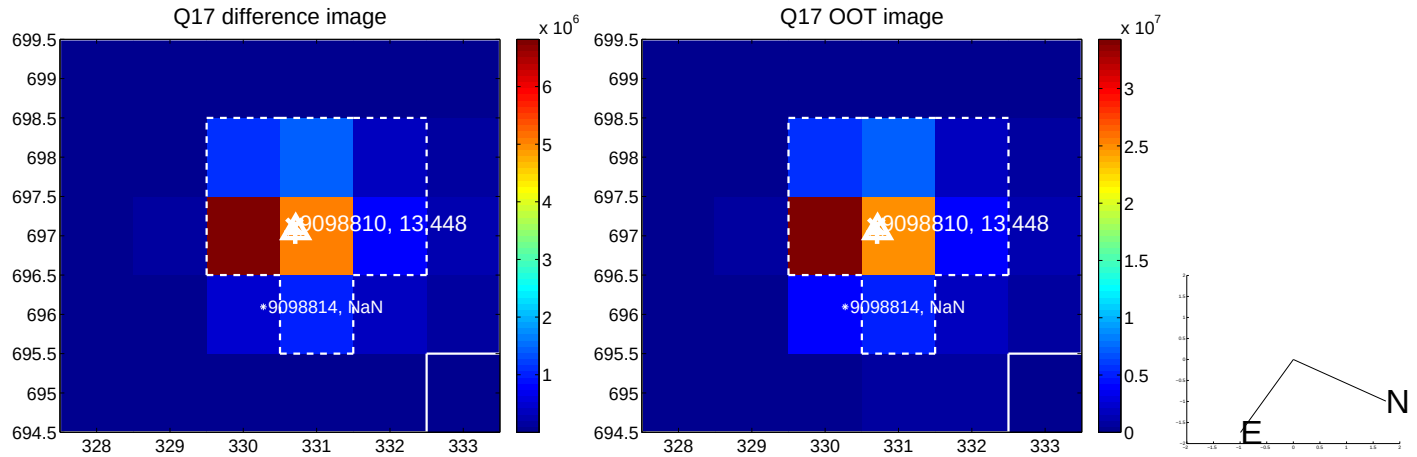
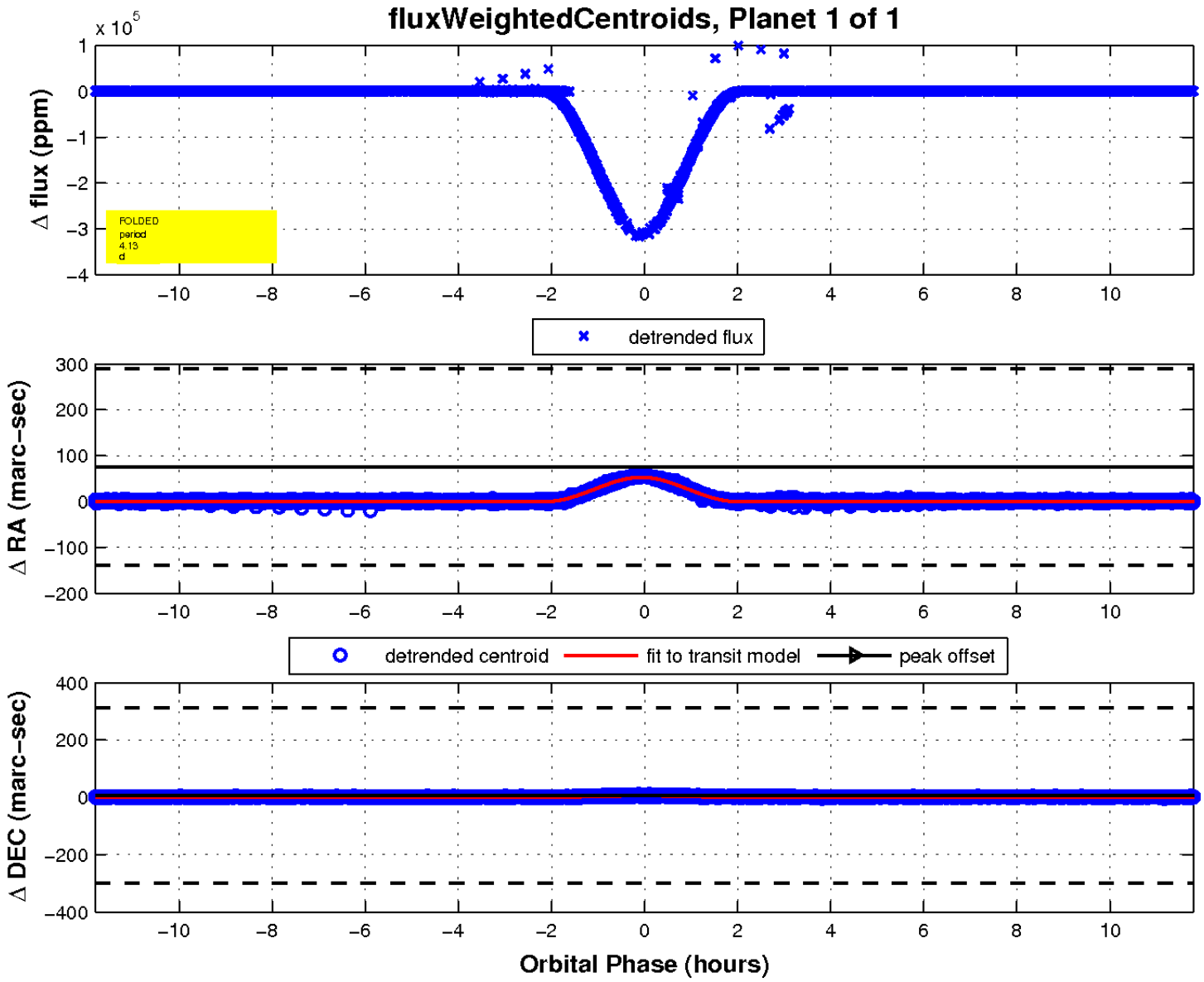
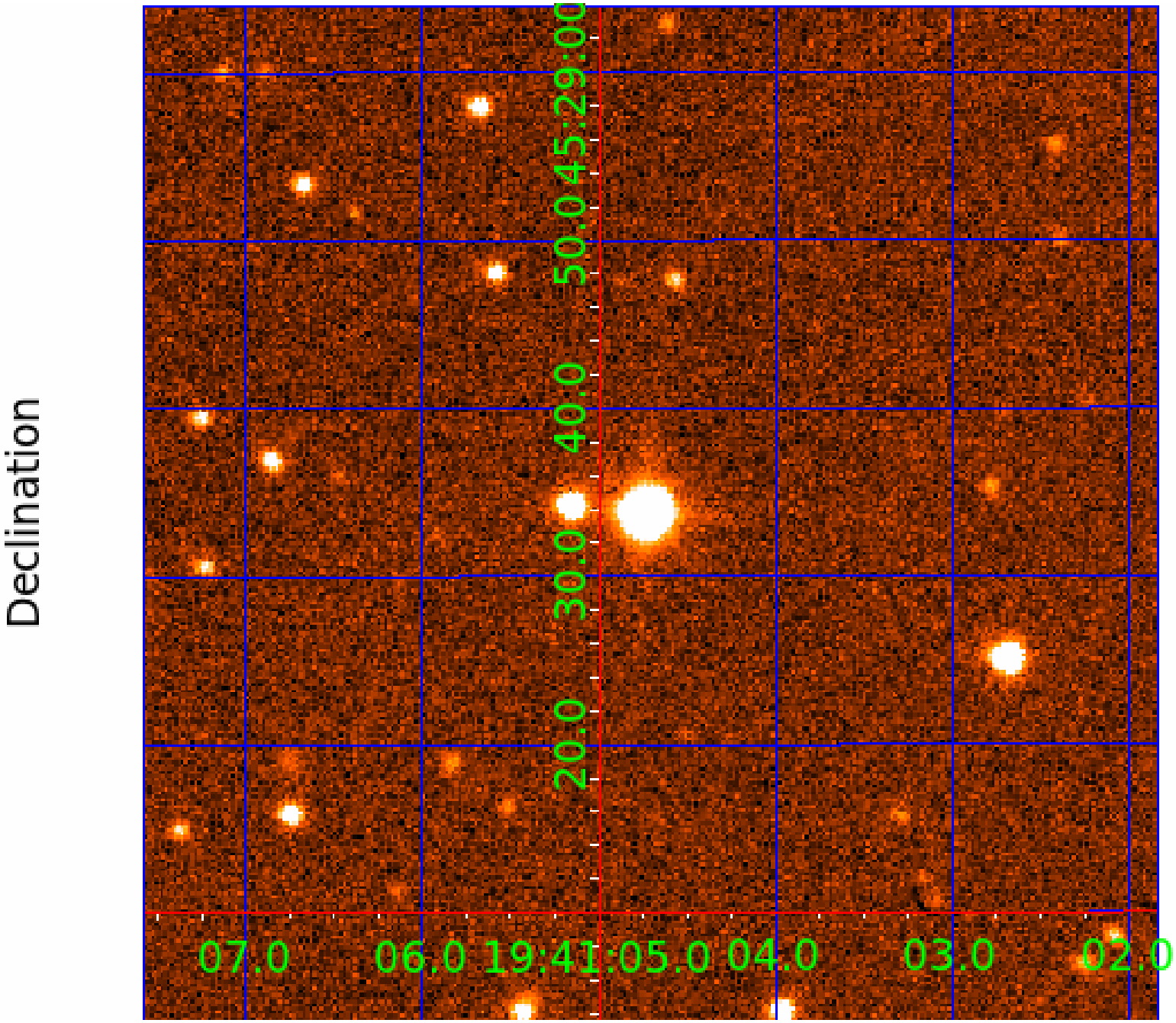


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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





UKIRT Image