KIC 006509282

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 ($S_\oplus$)
006509282-01	OBS	5287.01	3.989242	132.204201	239.2	1.735	15.8	17.0	16.19	4998	30.57	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006509282-01	OBS	PC	1.00	0	0	0	0	PLANET_IN_STAR

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.

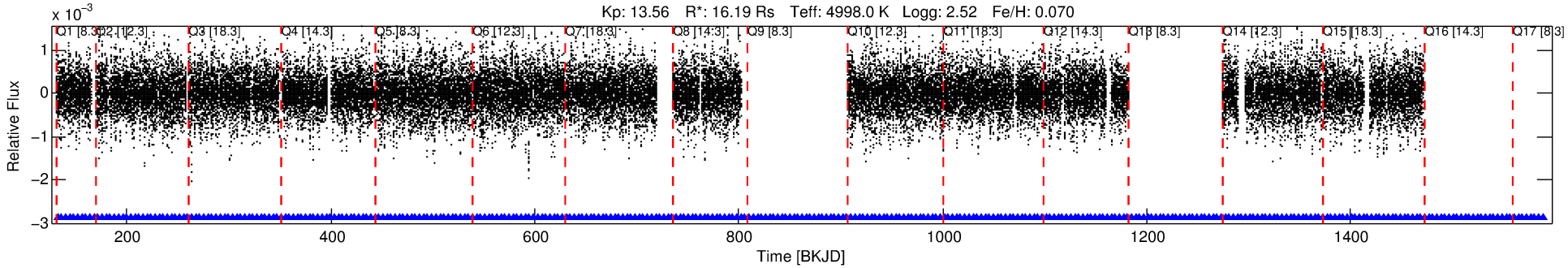
Ephemeris Match Information For 006509282-01

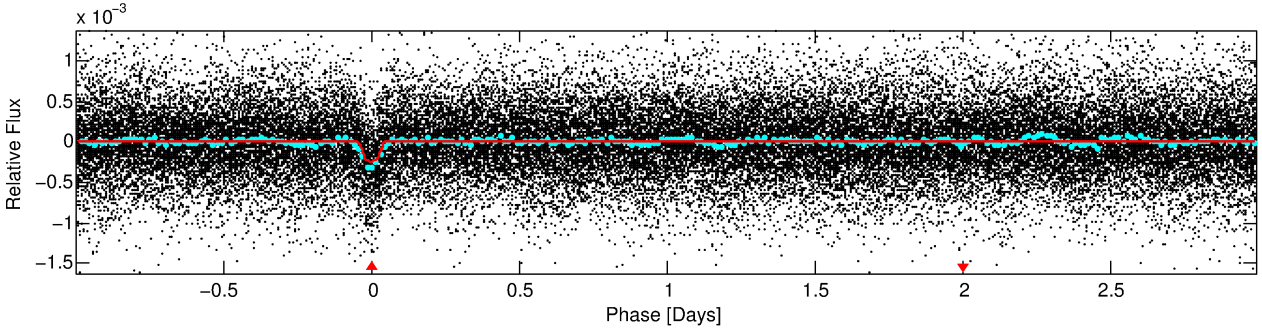
No Significant Match Found

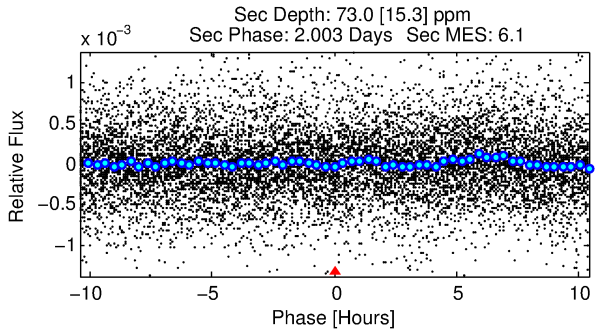
DV One-Page Summary

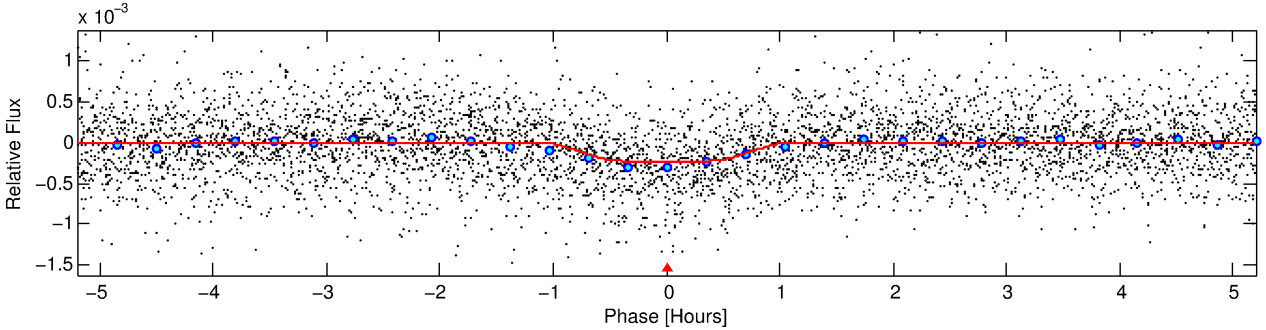
KIC: 6509282 Candidate: 1 of 1 Period: 3.989 d
KOI: K05287.01 Corr: 0.857

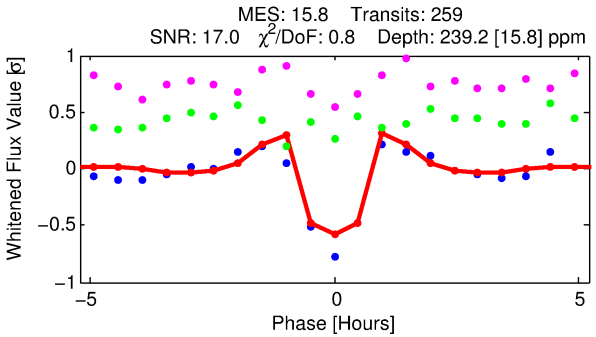
Kp: 13.56 R*: 16.19 Rs Teff: 4998.0 K Logg: 2.52 Fe/H: 0.070

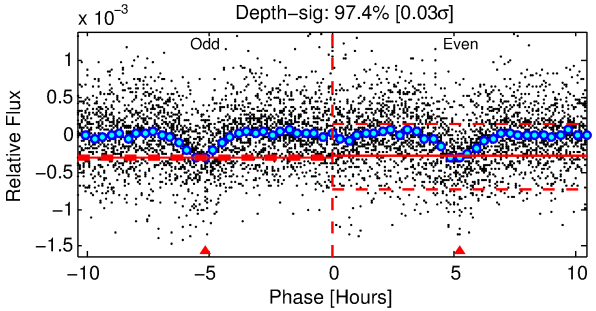


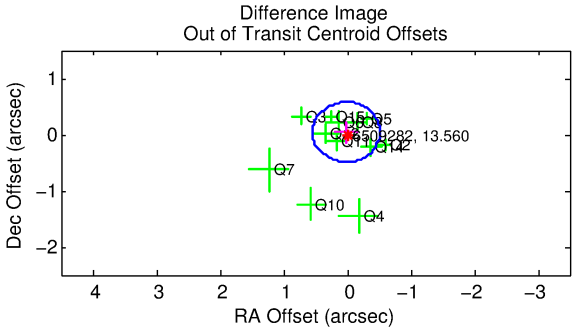












DV Fit Results:

Period = 3.98924 [0.00001] d
Epoch = 132.2042 [0.0010] BKJD
Rp/R* = 0.0173 [0.0047]
a/R* = 8.34 [8.82]
b = 0.90 [0.23]

Seff = N/A
Teq = N/A
Rp = 30.57 [14.00] Re
a = N/A

Ag = N/A
Teffp = N/A

DV Diagnostic Results:

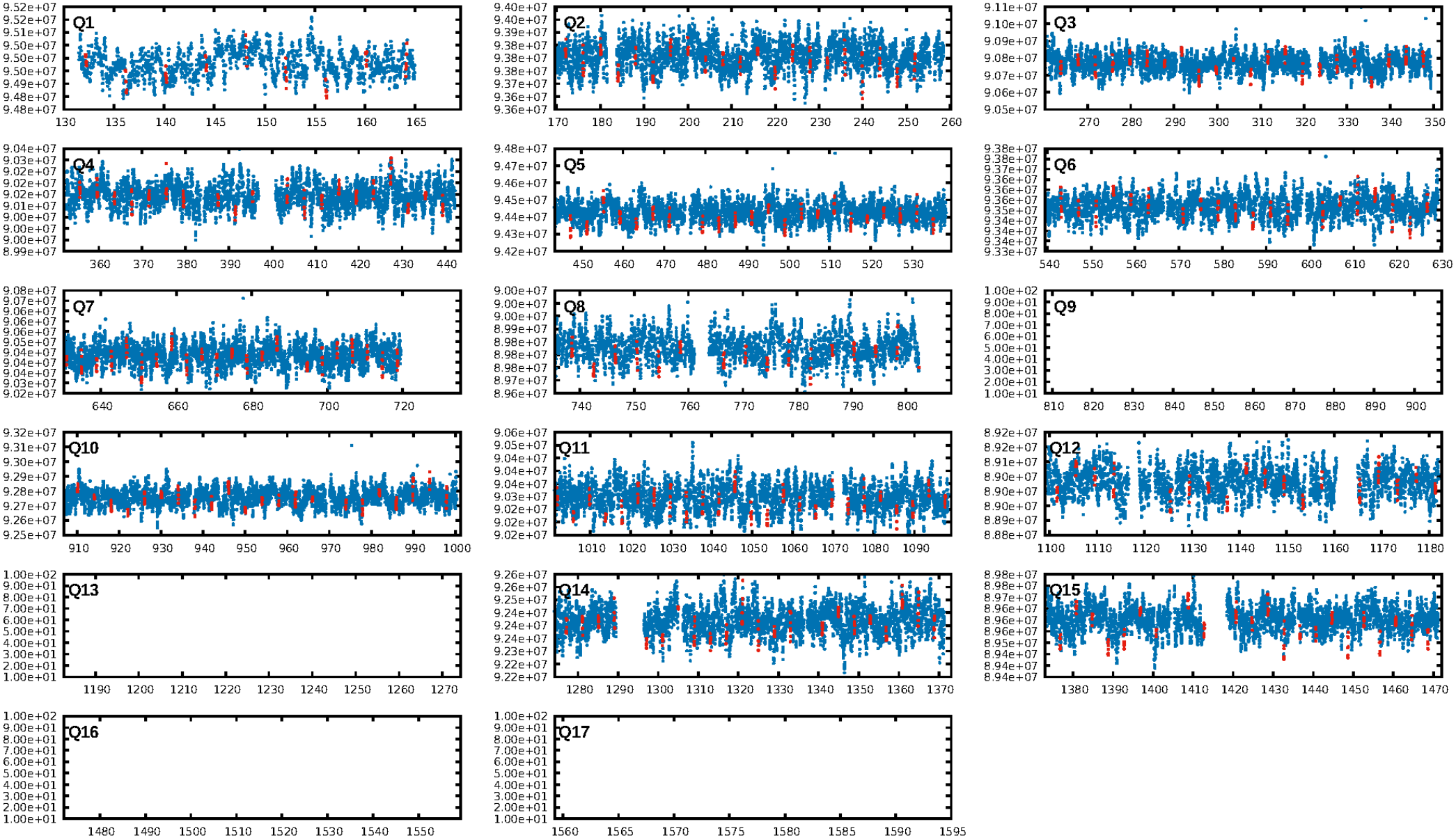
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 1.46e−54
RollingBand−fgt: 1.00 [250/250]
GhostDiagnostic−chr: 2.049

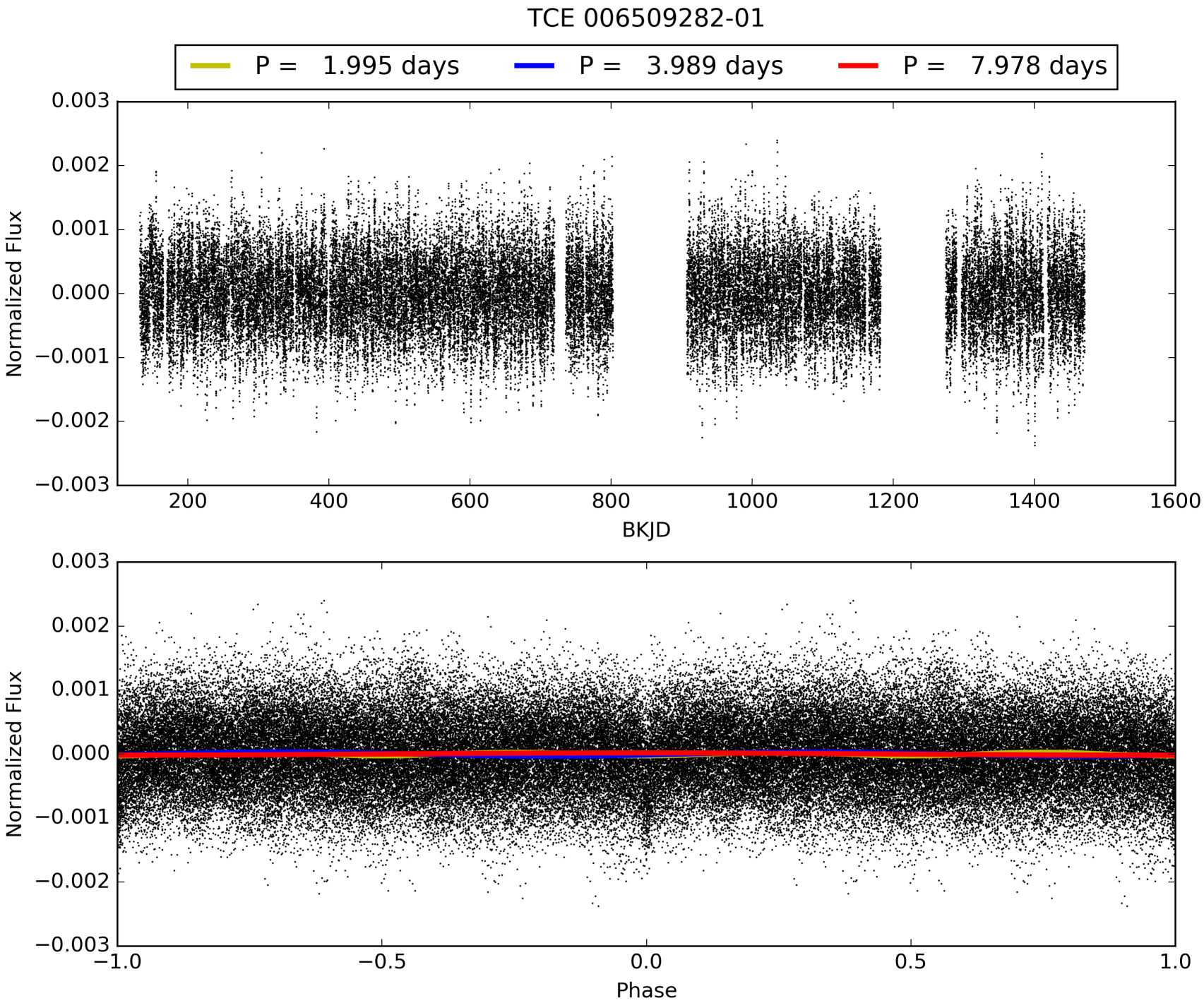
Centroid−sig: 12.0%
Centroid−so: 0.521 arcsec [1.76σ]
OotOffset−rm: 0.049 arcsec [0.28σ]
KicOffset−rm: 0.077 arcsec [0.48σ]
OotOffset−st: 4/4/3/1 [12]
KicOffset−st: 4/4/3/1 [12]
DiffImageQuality−fgm: 1.00 [12/12]
DiffImageOverlap−fno: 1.00 [13/13]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 19:50:47 Z

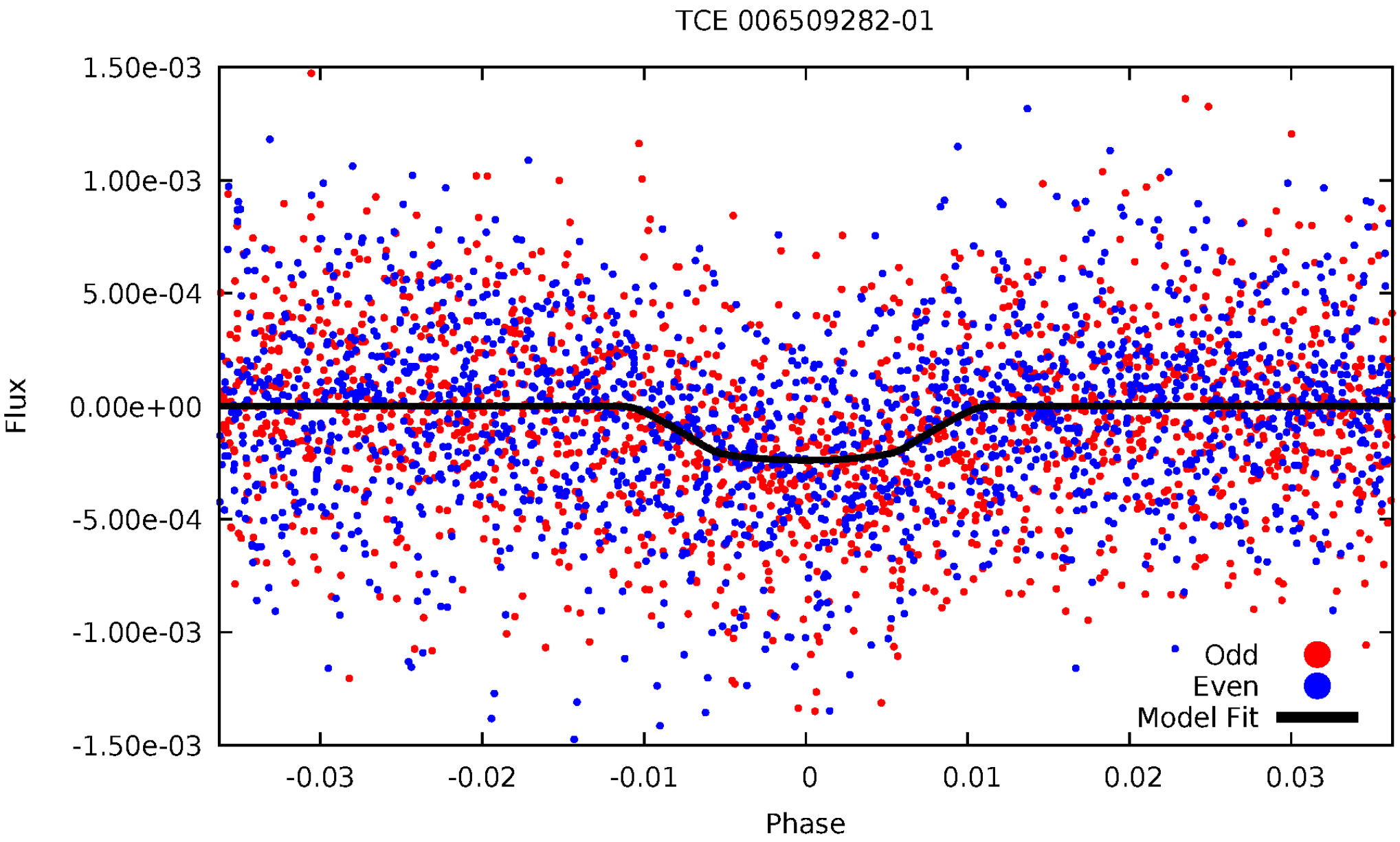
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006509282-01, PDC Light Curves

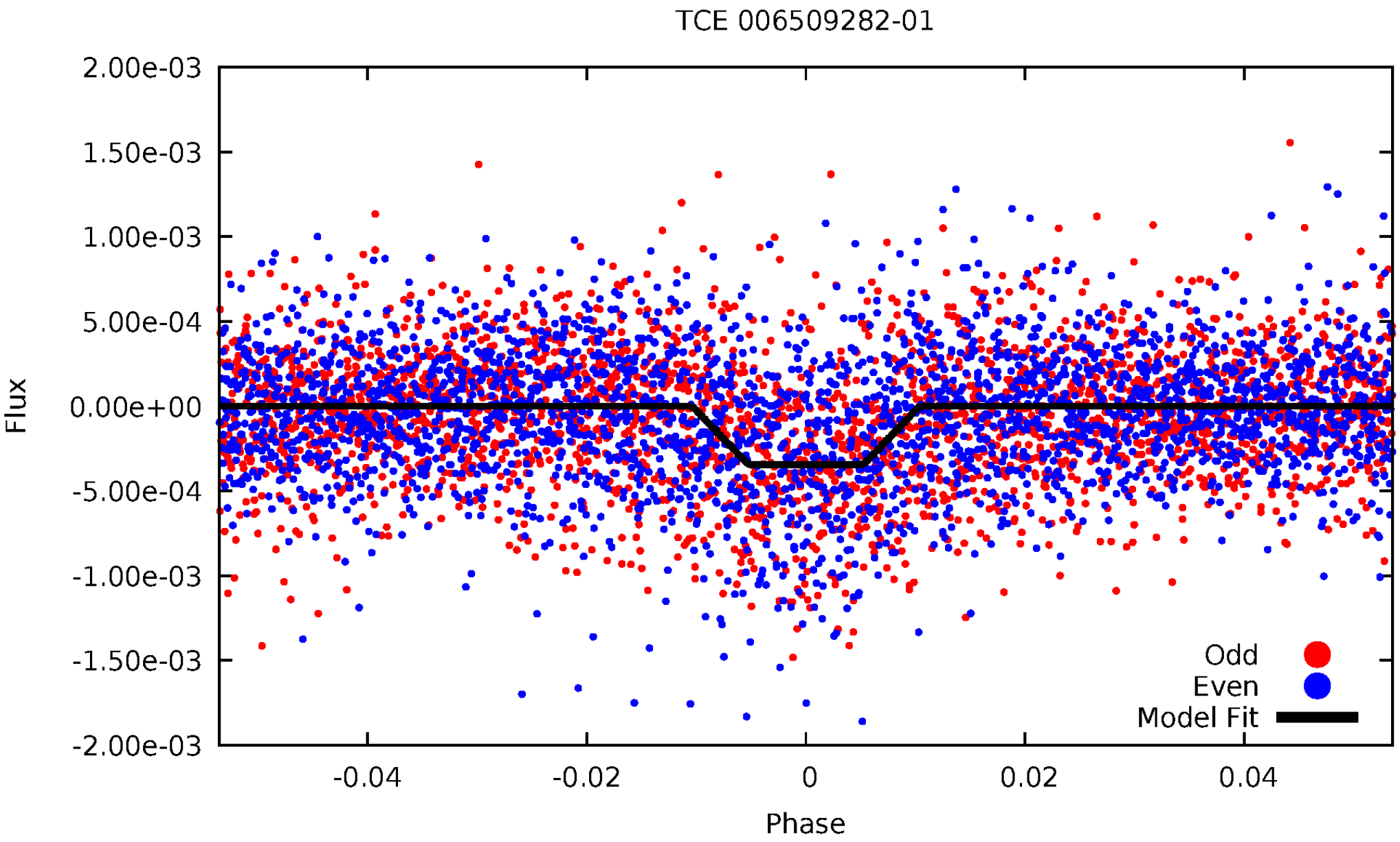



TCE 006509282-01
P = 1.995 days
P = 3.989 days
P = 7.978 days
Normalized Flux
BKJD
Normalized Flux
Phase

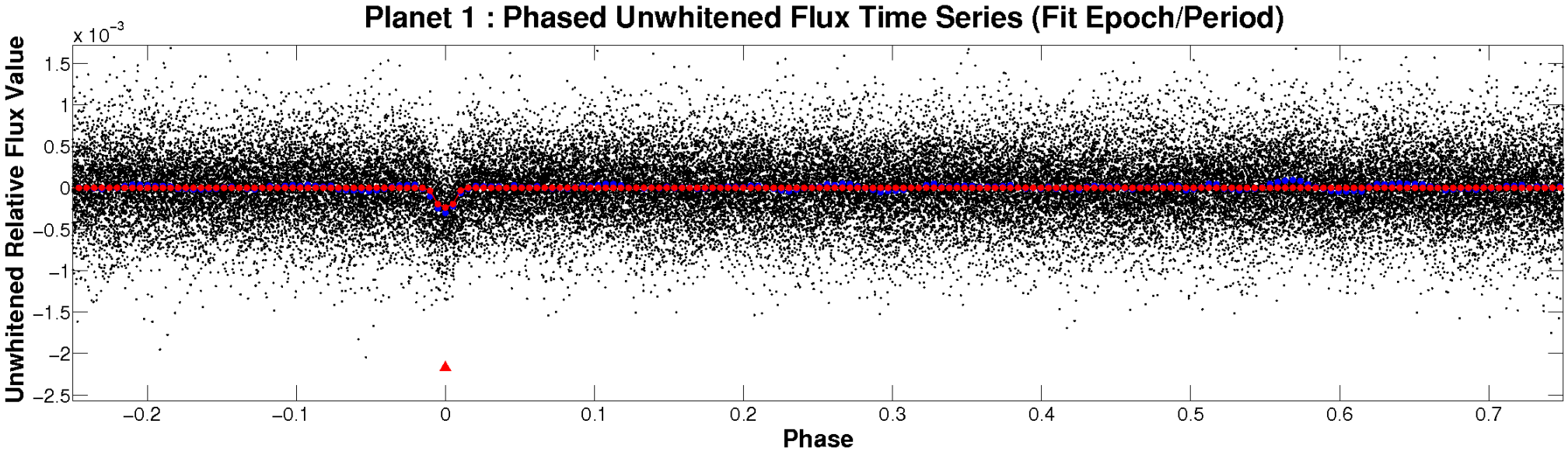
DV Odd/Even

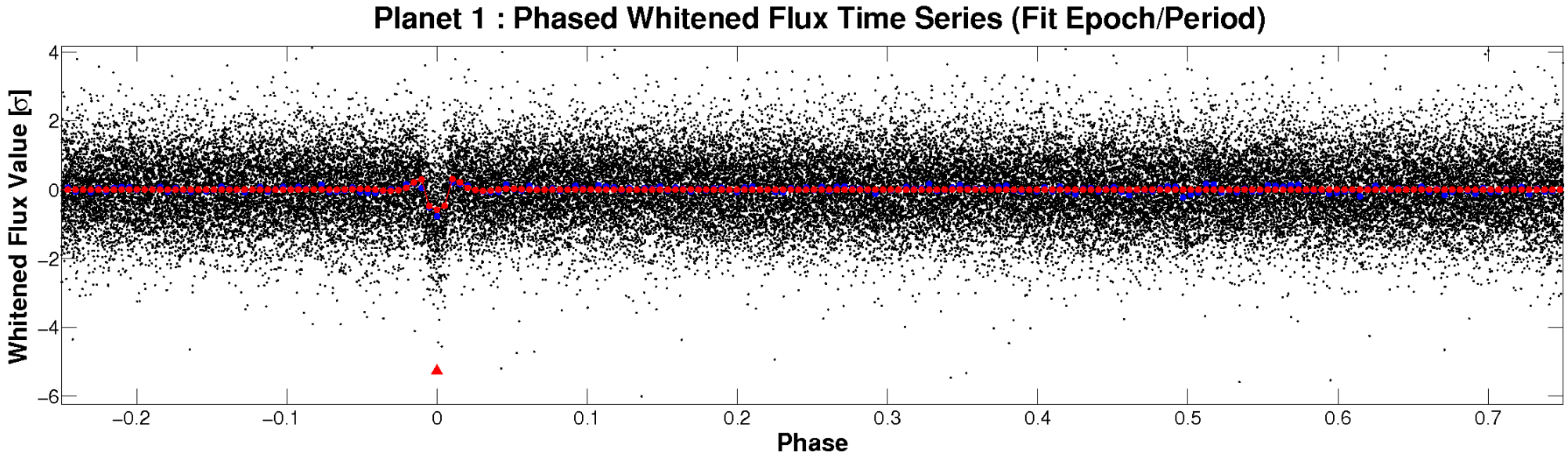

TCE 006509282-01
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
Flux
-0.03
-0.02
-0.01
0
0.01
0.02
0.03
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 006509282-01
2.00e-03
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
-2.00e-03
Flux
-0.04
-0.02
0
0.02
0.04
Phase
Odd
Even
Model Fit

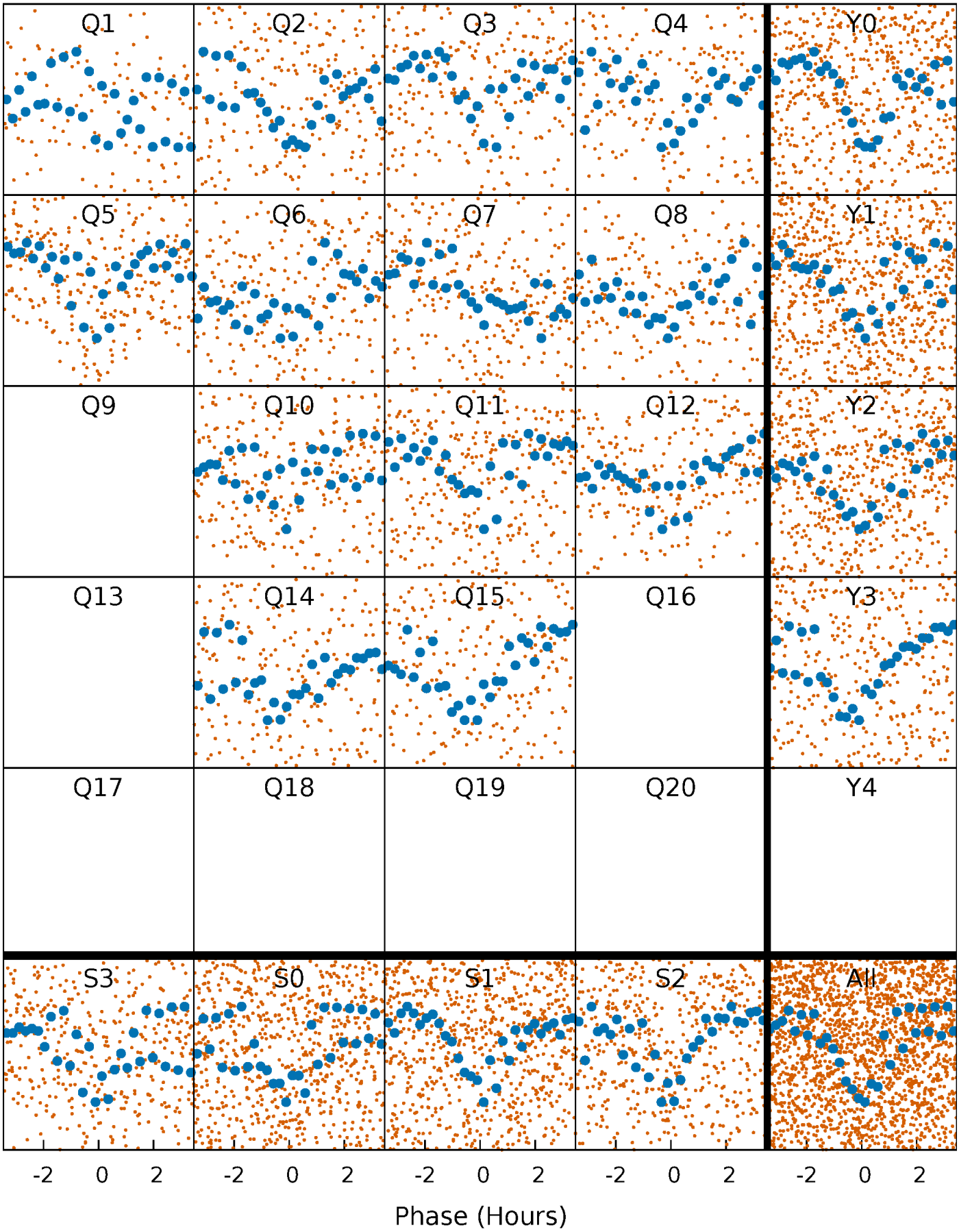
Non-Whitened Vs. Whitened Light Curve





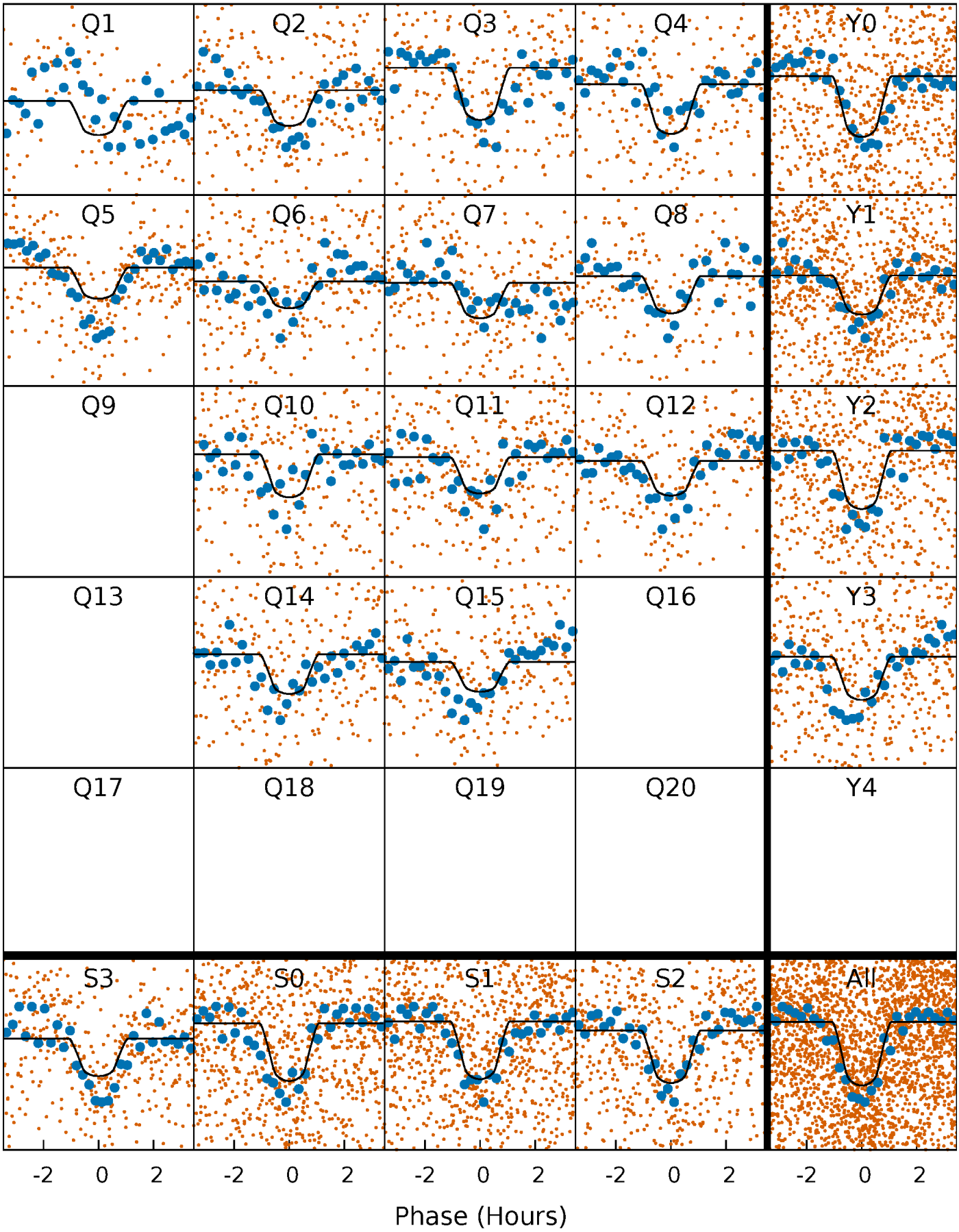
PDC Quarter-Phased Transit Curves

TCE 006509282-01 P= 3.989242 Days T_0=132.204201 (BKJD)



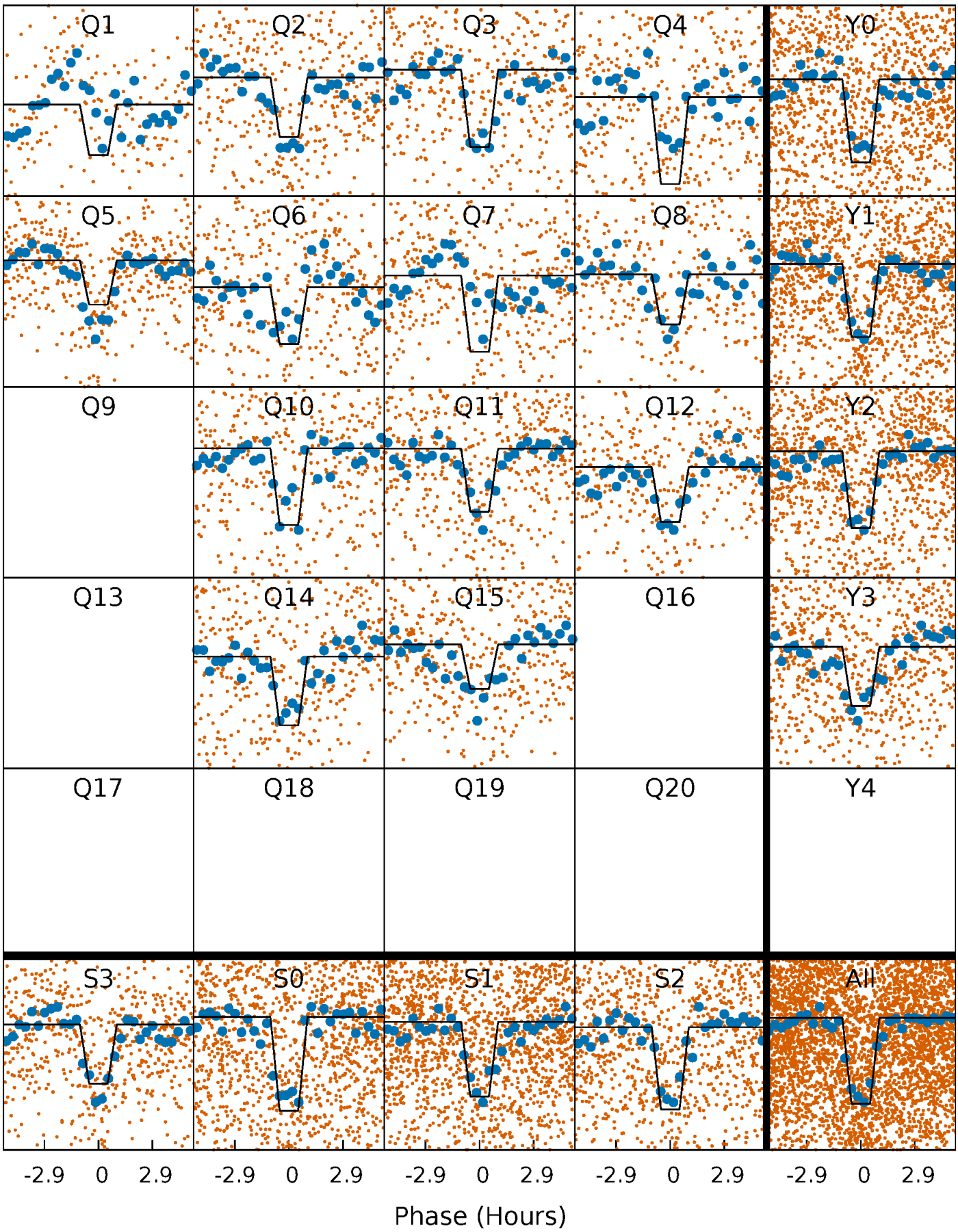
DV Quarter-Phased Transit Curves

TCE 006509282-01 P= 3.989242 Days T_0=132.204201 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

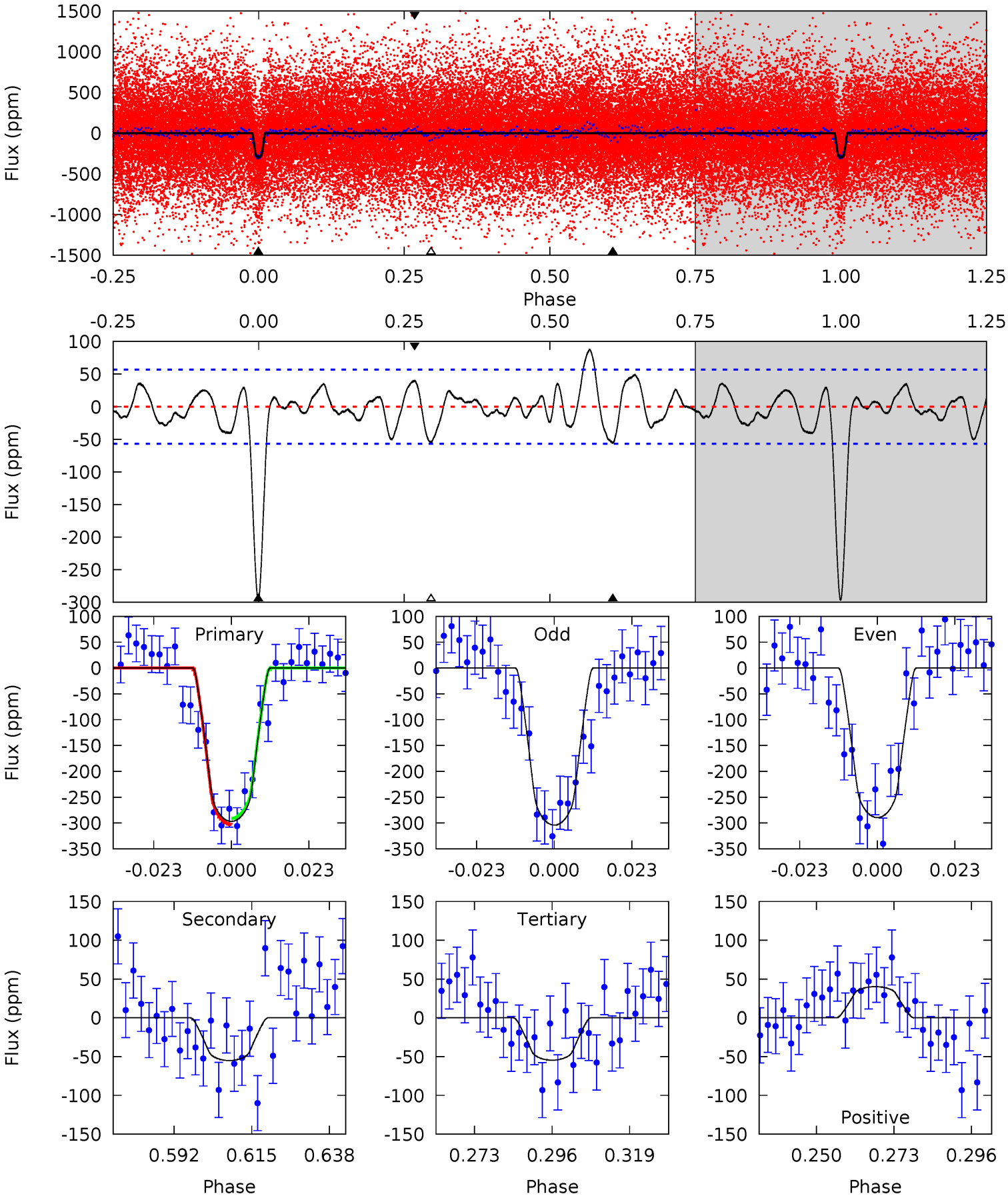
TCE 006509282-01 P= 3.989173 Days T_0=132.212570 (BKJD)



DV Model-Shift Uniqueness Test

006509282-01, P = 3.989242 Days, E = 128.214959 Days

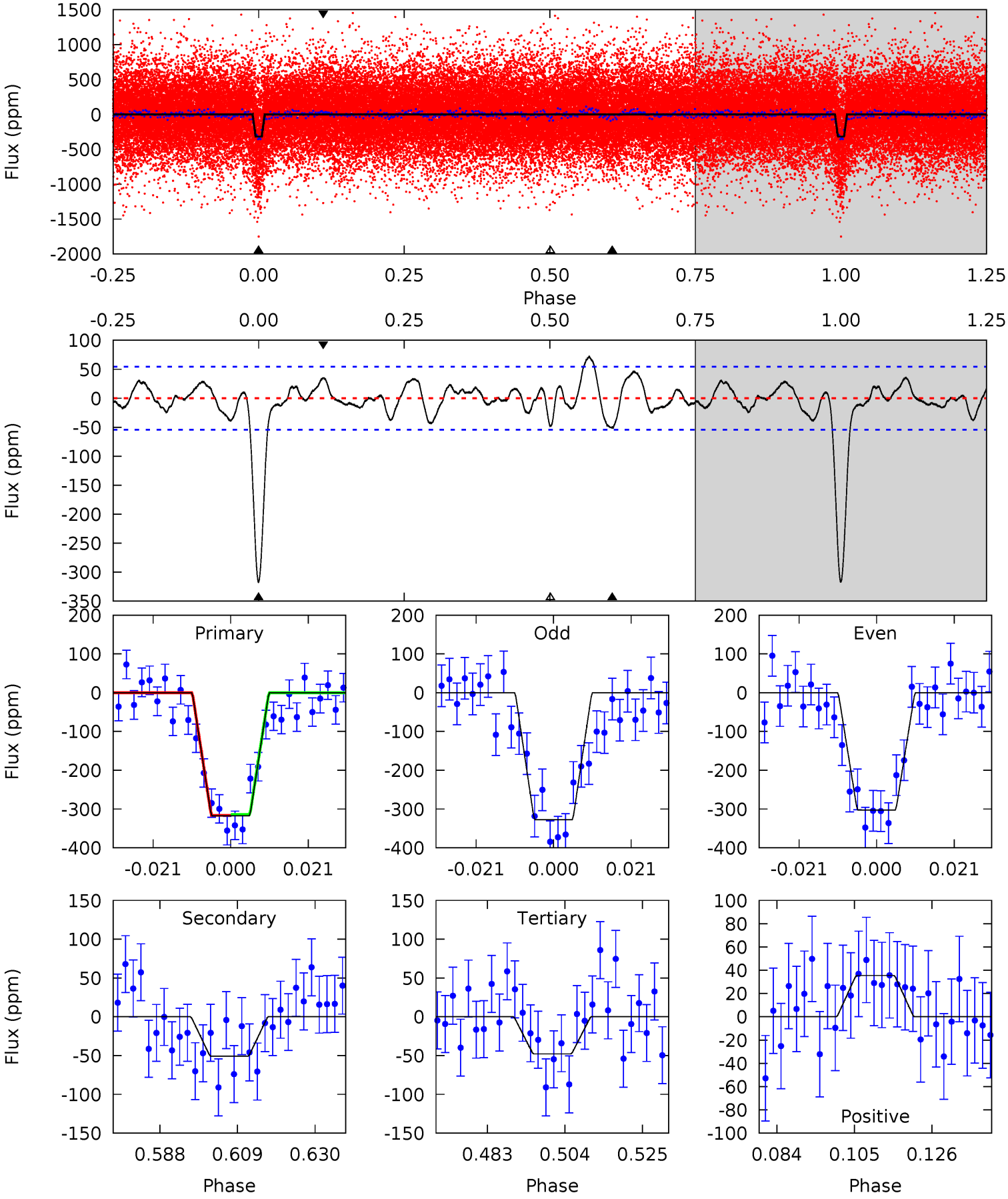
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.4	4.72	4.68	3.44	4.87	2.28	2.06	20.7	22.0	0.04	1.28	0.63	1.02	0.23	0.49



Alt Model-Shift Uniqueness Test

006509282-01, P = 3.989173 Days, E = 128.223397 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.5	4.57	4.30	3.19	4.88	2.31	1.86	24.2	25.3	0.28	1.38	1.11	1.06	0.18	0.11



Stellar Parameters For KIC 006509282

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	4998^{+52}_{-281}	$2.524^{+0.030}_{-0.030}$	$0.070^{+0.150}_{-0.500}$	$16.187^{+1.050}_{-5.949}$	$3.192^{+0.103}_{-2.051}$	$0.001^{+0.001}_{-0.000}$
	+1%/-6%	+1%/-1%	+214%/-714%	+6%/-37%	+3%/-64%	+61%/-11%
Source	PHO1	AST9	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 006509282-01 / KOI 5287.01

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-55±12	$30.30^{+8.32}_{-8.34}$	4594^{+92}_{-288}	-3423^{+6291}_{-302}	$0.171^{+0.169}_{-0.067}$
Alt.	-51±11	$32.52^{+7.91}_{-8.69}$	4596^{+94}_{-260}	-3550^{+584}_{-240}	$0.139^{+0.113}_{-0.058}$

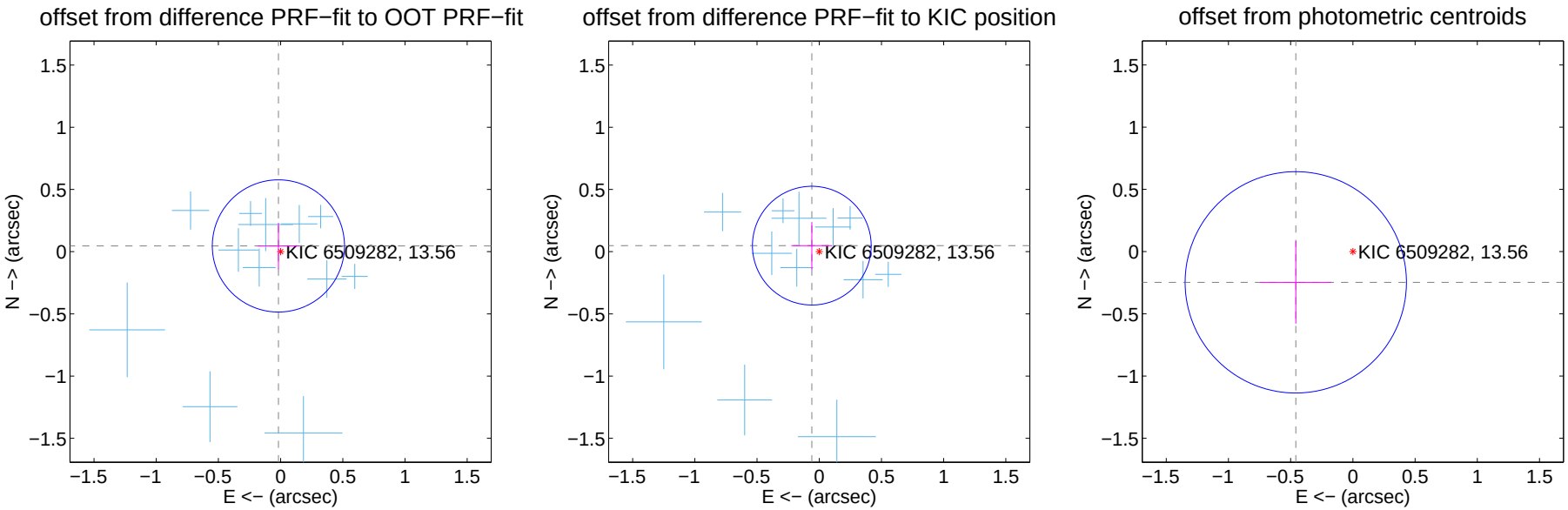
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

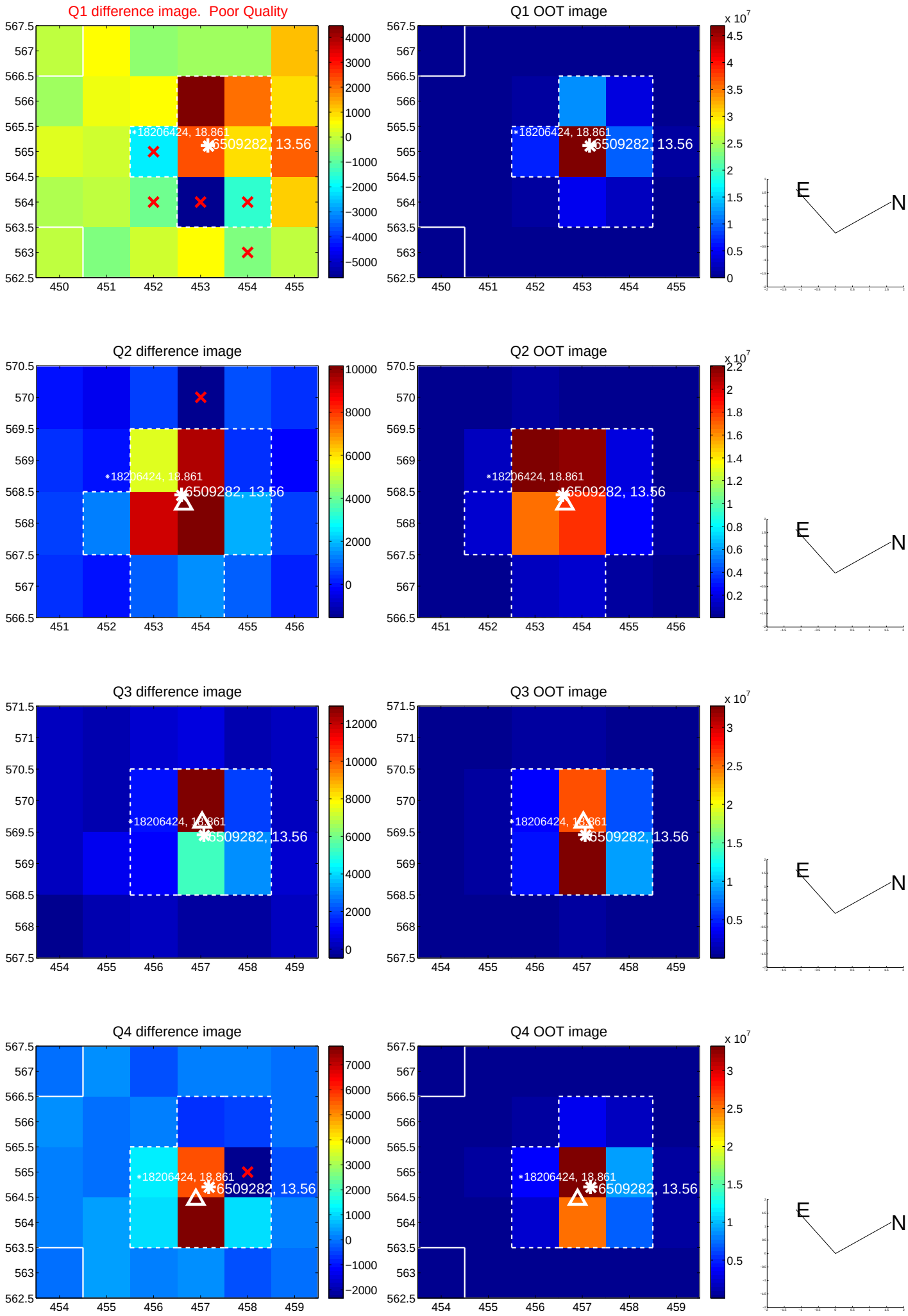
Supplemental centroid analysis for 006509282-01. Kepler magnitude: 13.56. Transit SNR 16.97
There are 12 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.049 ± 0.177	0.28	0.018 ± 0.169	0.046 ± 0.186
PRF-fit source offset from KIC position	0.077 ± 0.159	0.48	0.060 ± 0.165	0.049 ± 0.190
photometric centroid source offset	0.52 ± 0.30	1.76	0.46 ± 0.29	-0.25 ± 0.33

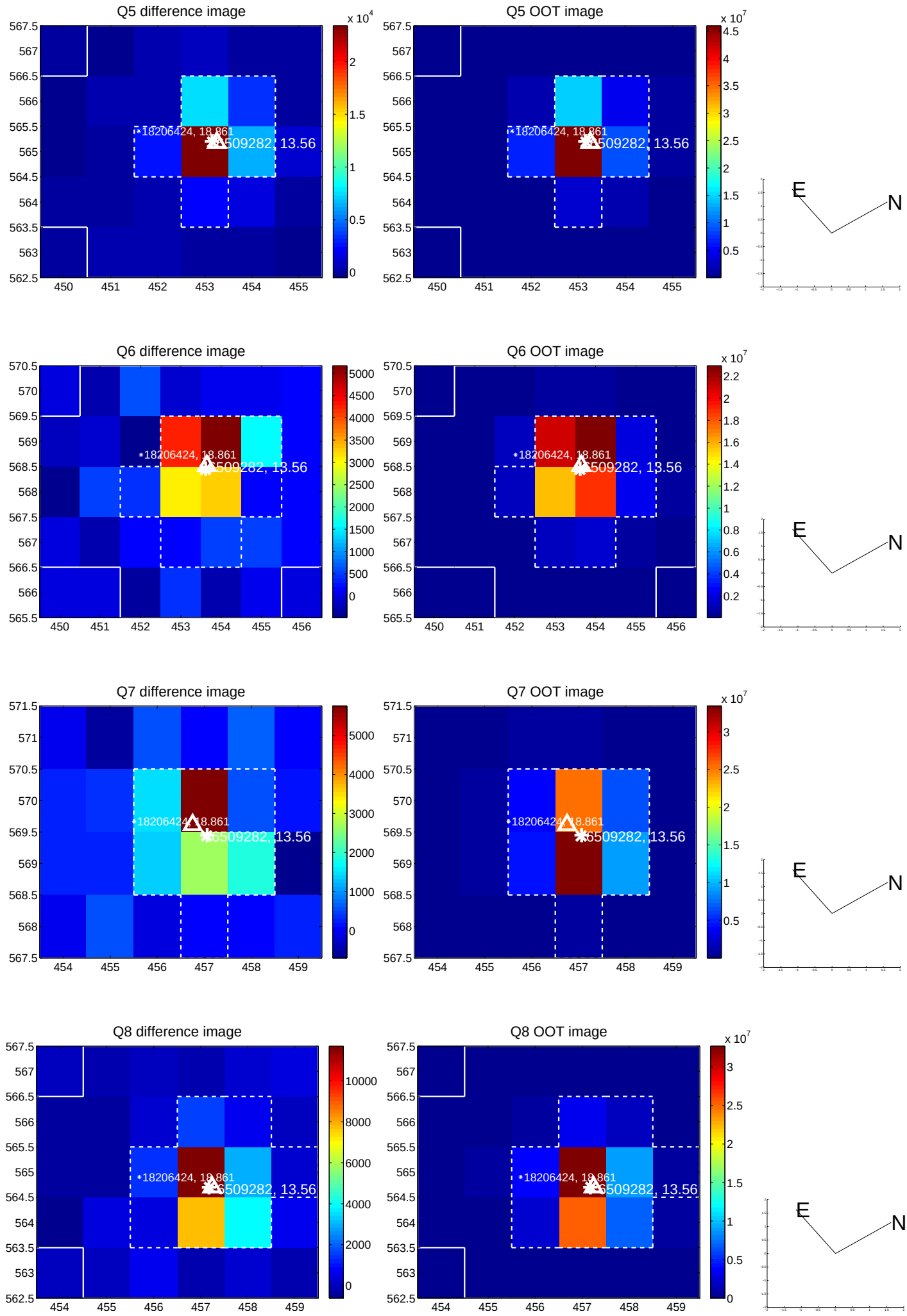


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

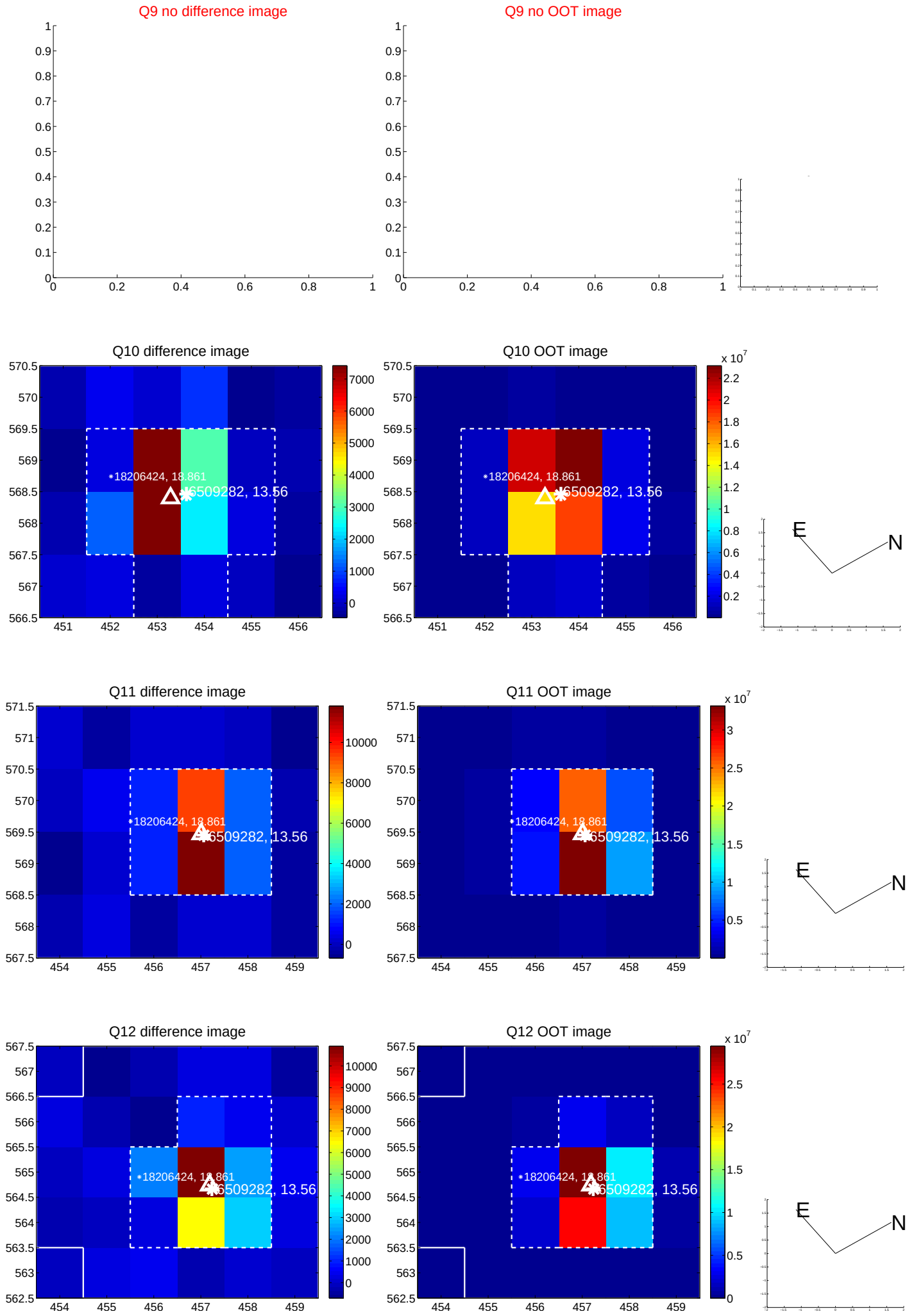
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



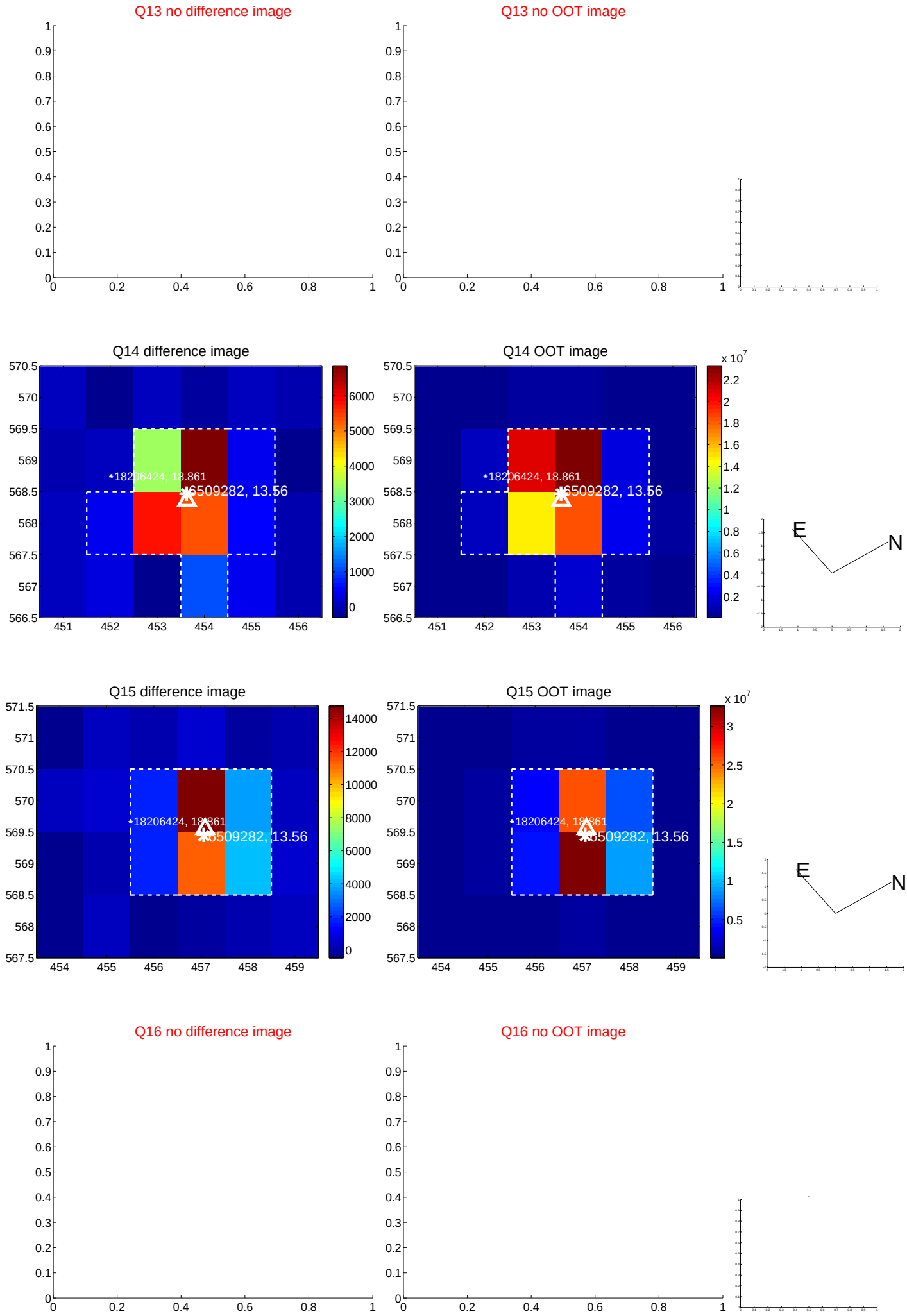
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



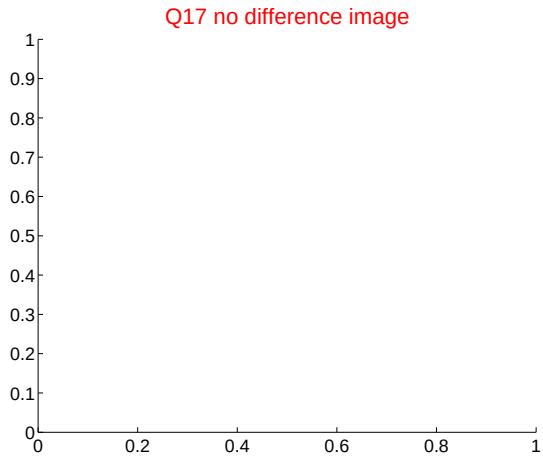
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

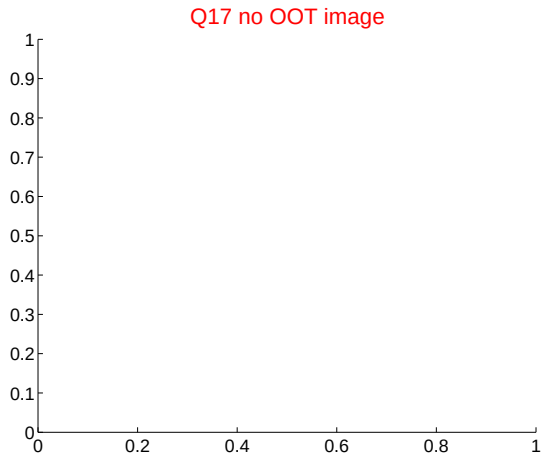


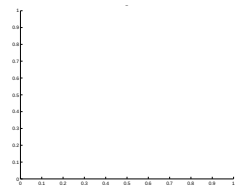
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

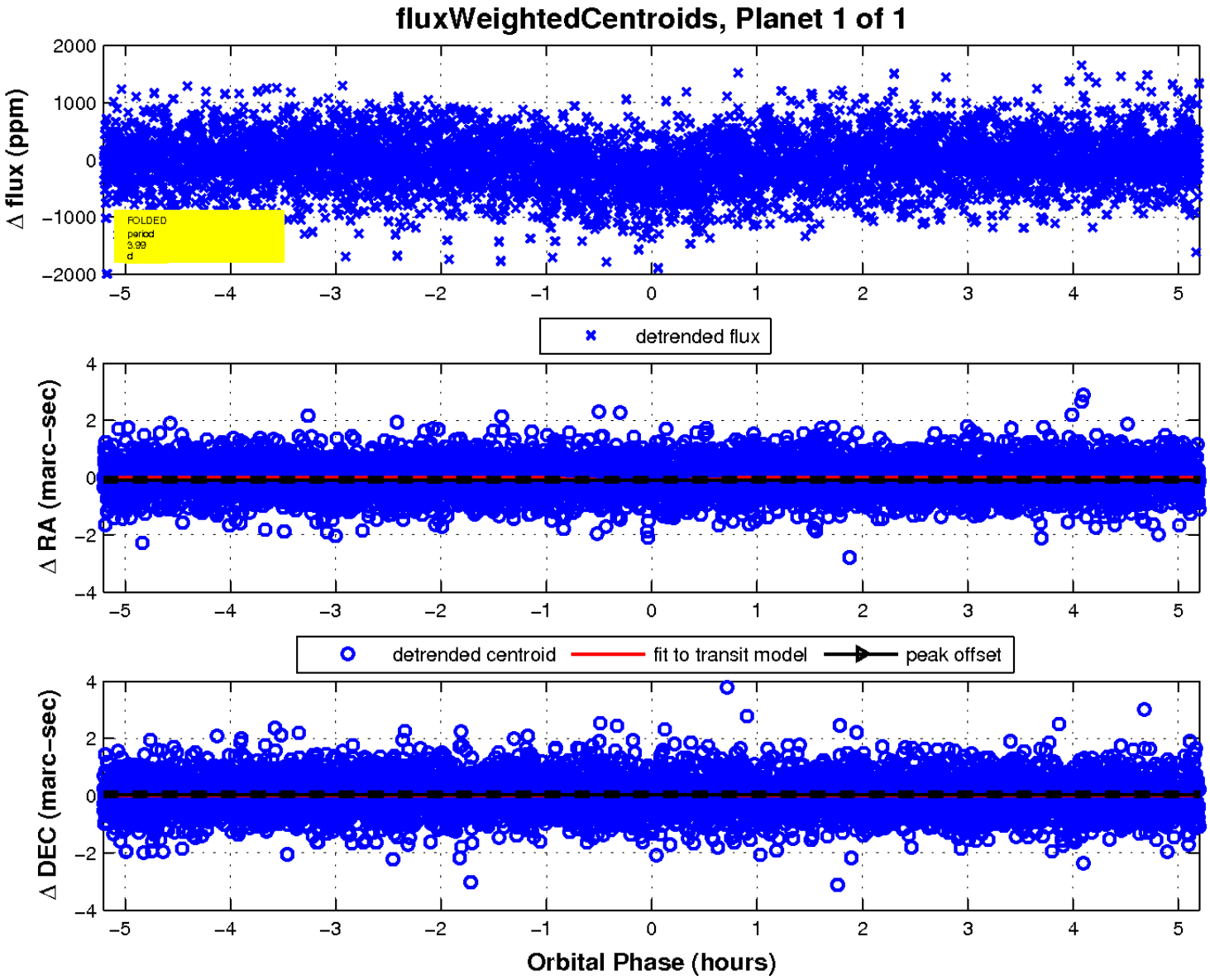


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

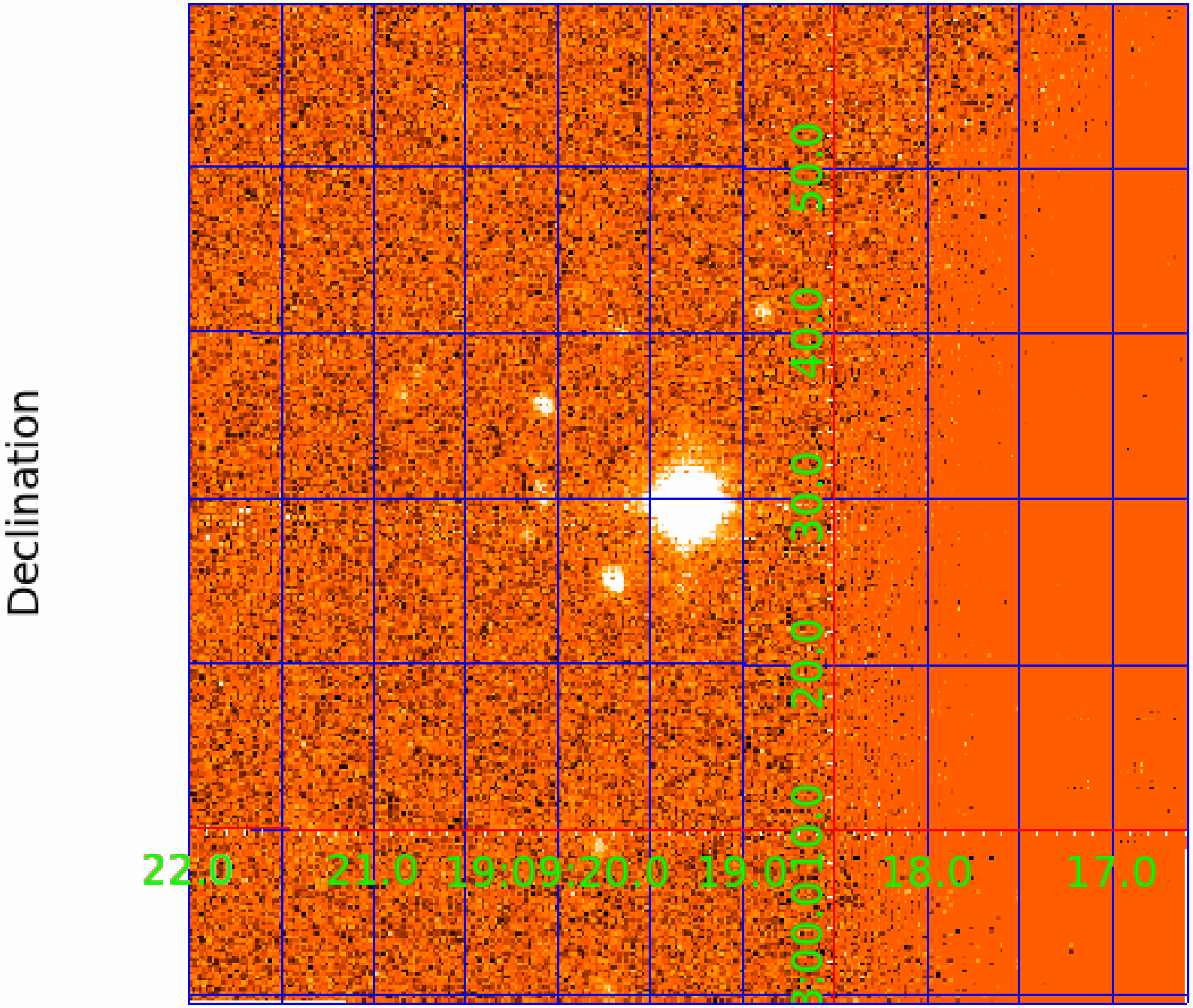








UKIRT Image


Declination
22.0
21.0
19:09:20.0
19.0
18.0
17.0
3:00:10.0
20.0
30.0
40.0
50.0