KIC 009142053

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 ($S_\oplus$)
009142053-01	OBS	No	423.896122	500.313653	281.5	14.859	10.8	9.6	1.02	6289	1.86	1.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009142053-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

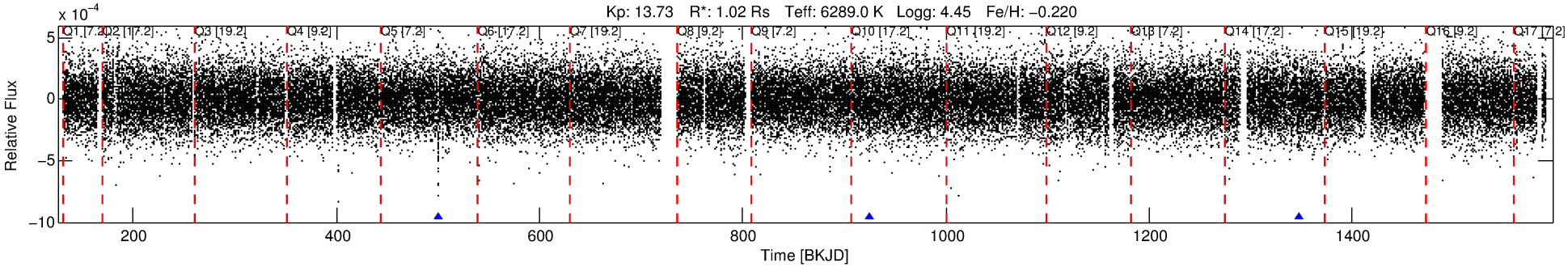
Ephemeris Match Information For 009142053-01

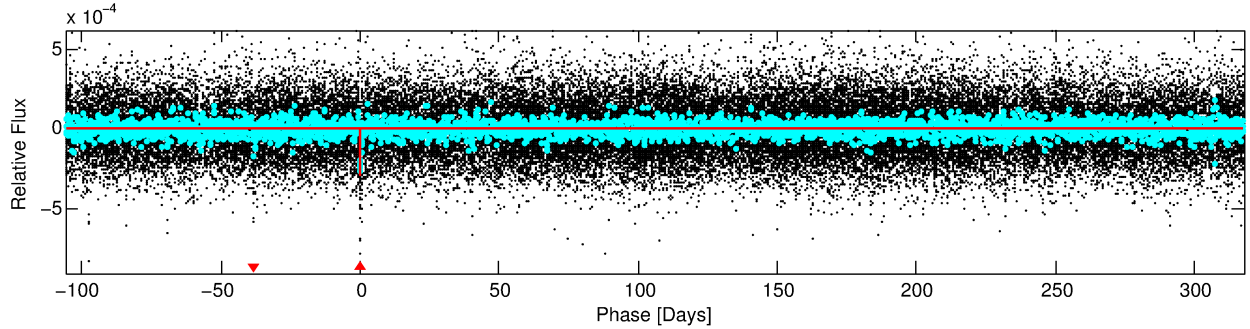
No Significant Match Found

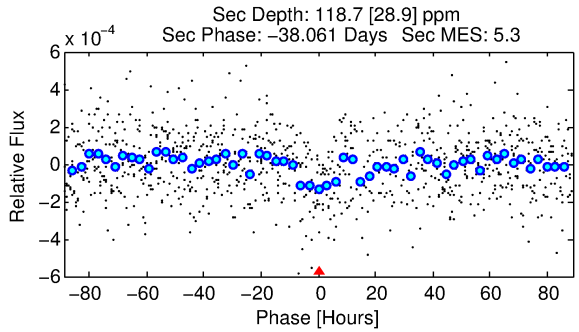
DV One-Page Summary

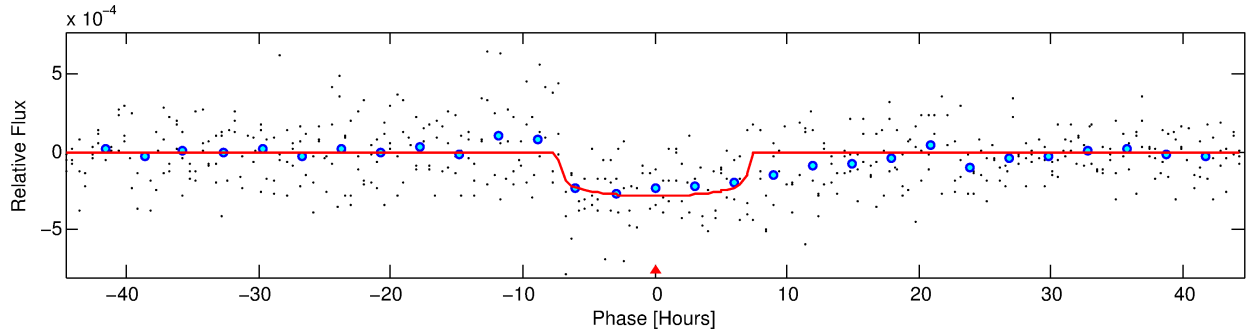
KIC: 9142053 Candidate: 1 of 1 Period: 423.896 d

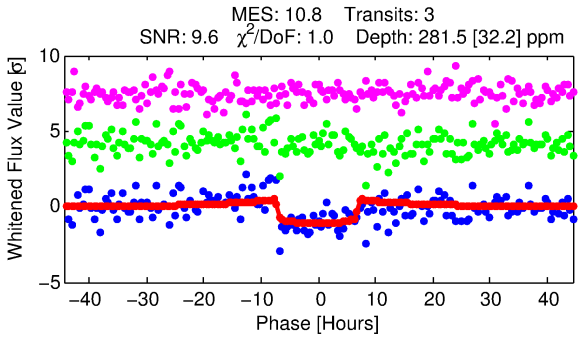
Kp: 13.73 R*: 1.02 Rs Teff: 6289.0 K Logg: 4.45 Fe/H: −0.220

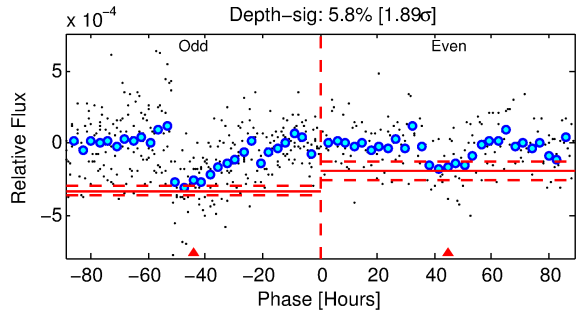


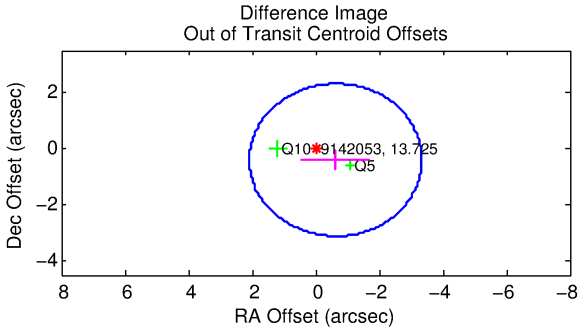












DV Fit Results:

Period = 423.89612 [0.01182] d
Epoch = 500.3137 [0.0149] BKJD
Rp/R* = 0.0167 [0.0038]
a/R* = 147.94 [169.24]
b = 0.76 [0.65]

Seff = 1.14 [0.48]
Teq = 263 [28] K
Rp = 1.86 [0.74] Re
a = 1.1331 [0.3112] AU

Ag = 24202.19 [15775.18] [1.53σ]
Teffp = 5076 [676] K [7.11σ]

DV Diagnostic Results:

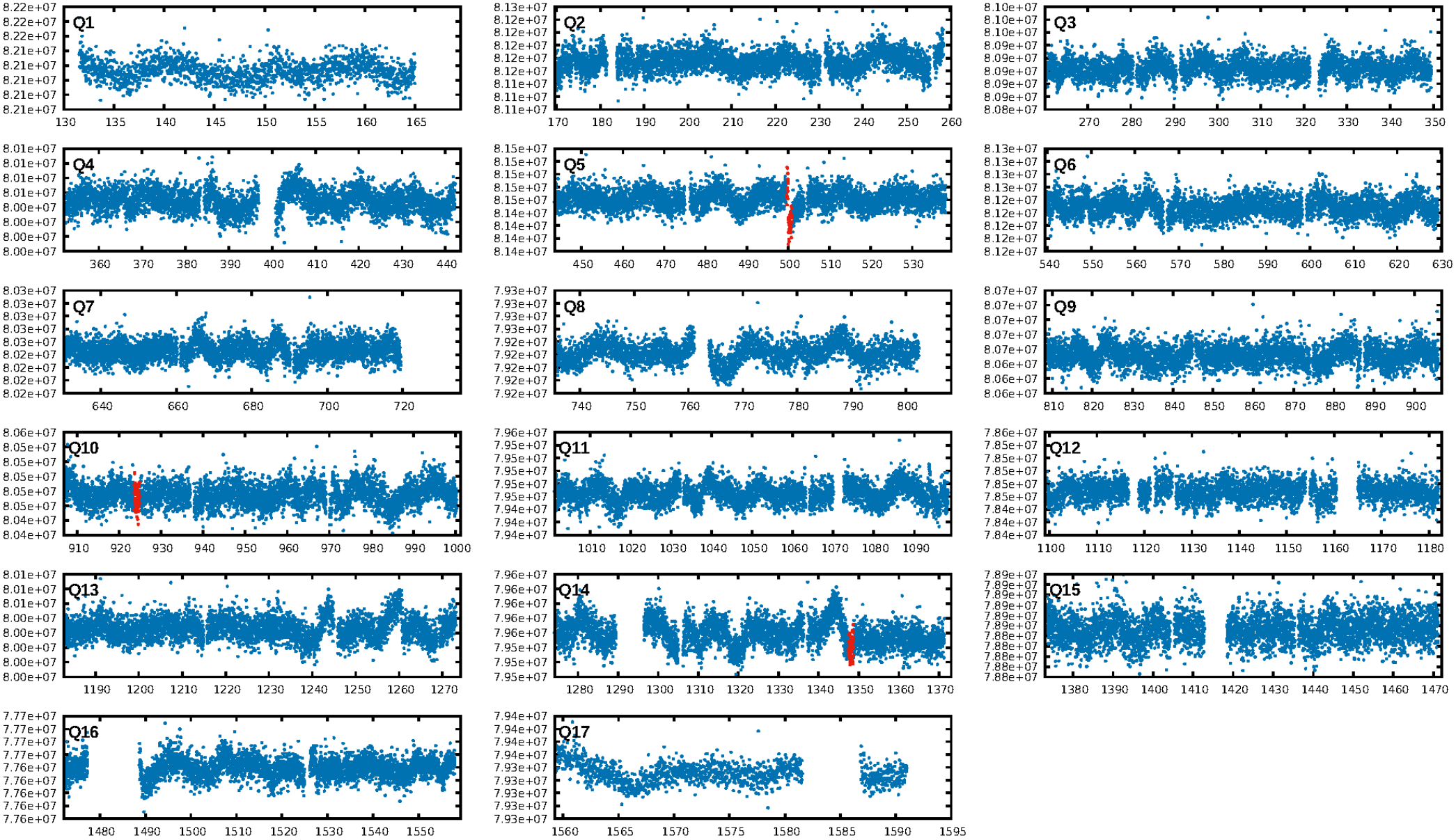
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 0.3%
ModelChiSquareGof−sig: 99.4%
Bootstrap−pfa: 2.87e−12
RollingBand−fgt: 1.00 [3/3]
GhostDiagnostic−chr: 2.158

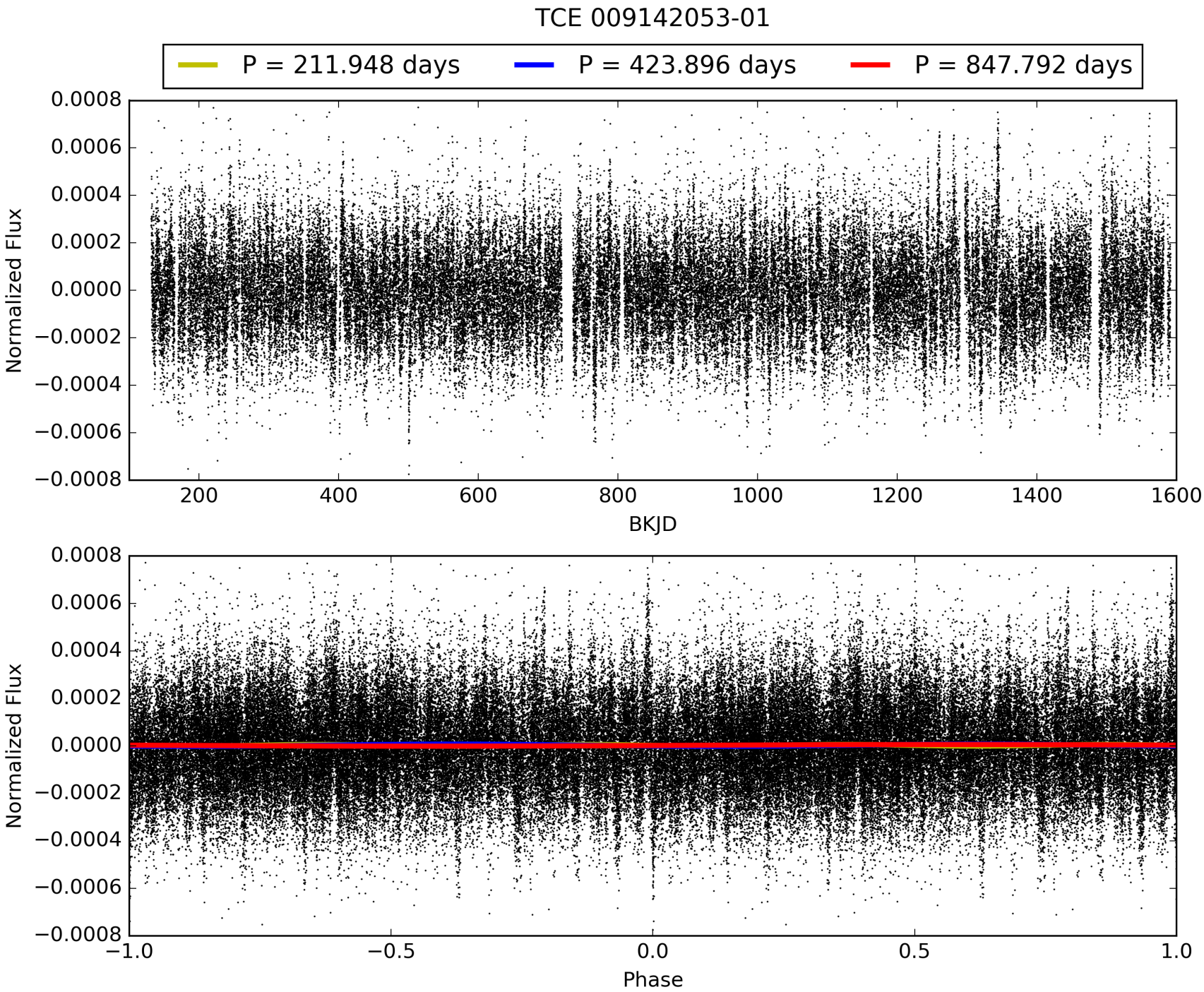
Centroid−sig: 53.8%
Centroid−so: 0.938 arcsec [0.78σ]
OotOffset−rm: 0.748 arcsec [0.83σ]
KicOffset−rm: 0.684 arcsec [0.74σ]
OotOffset−st: 1/0/0/1 [2]
KicOffset−st: 1/0/0/1 [2]
DiffImageQuality−fgm: 1.00 [2/2]
DiffImageOverlap−fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28−Jan−2016 20:44:45 Z

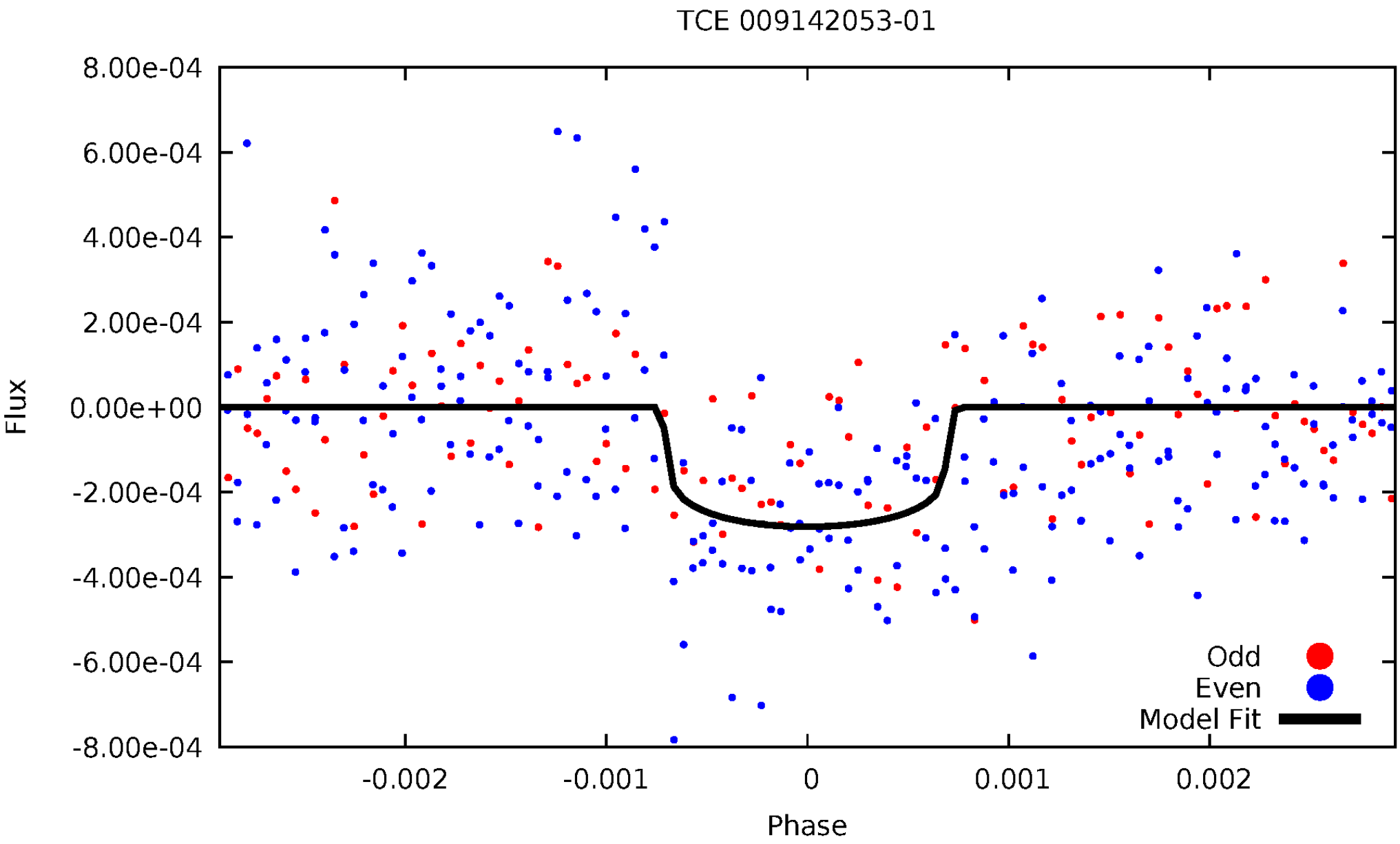
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009142053-01, PDC Light Curves

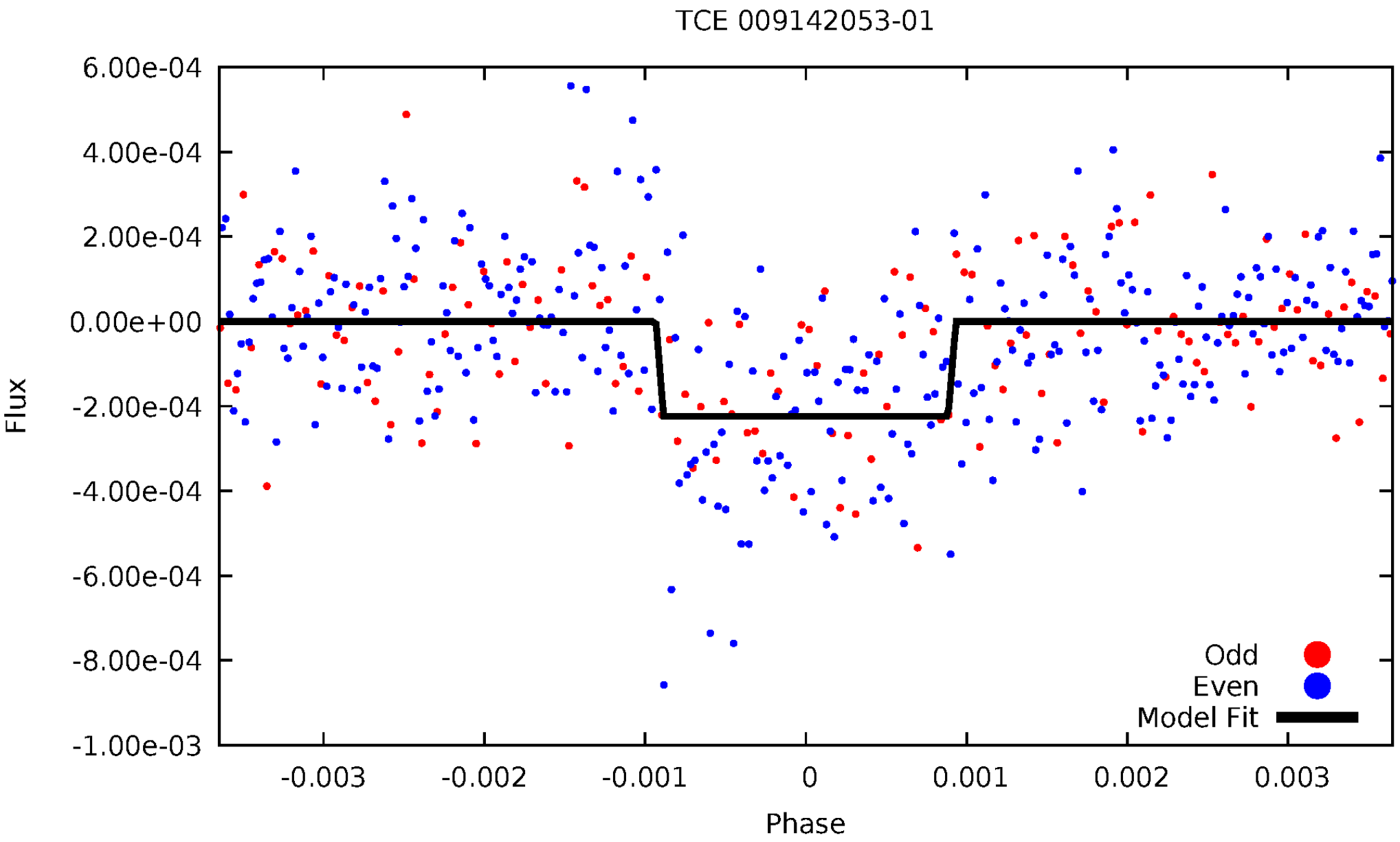



TCE 009142053-01
P = 211.948 days
P = 423.896 days
P = 847.792 days
Normalized Flux
0.0008
0.0006
0.0004
0.0002
0.0000
−0.0002
−0.0004
−0.0006
−0.0008
200
400
600
800
1000
1200
1400
1600
BKJD
Normalized Flux
−1.0
−0.5
0.0
0.5
1.0
Phase

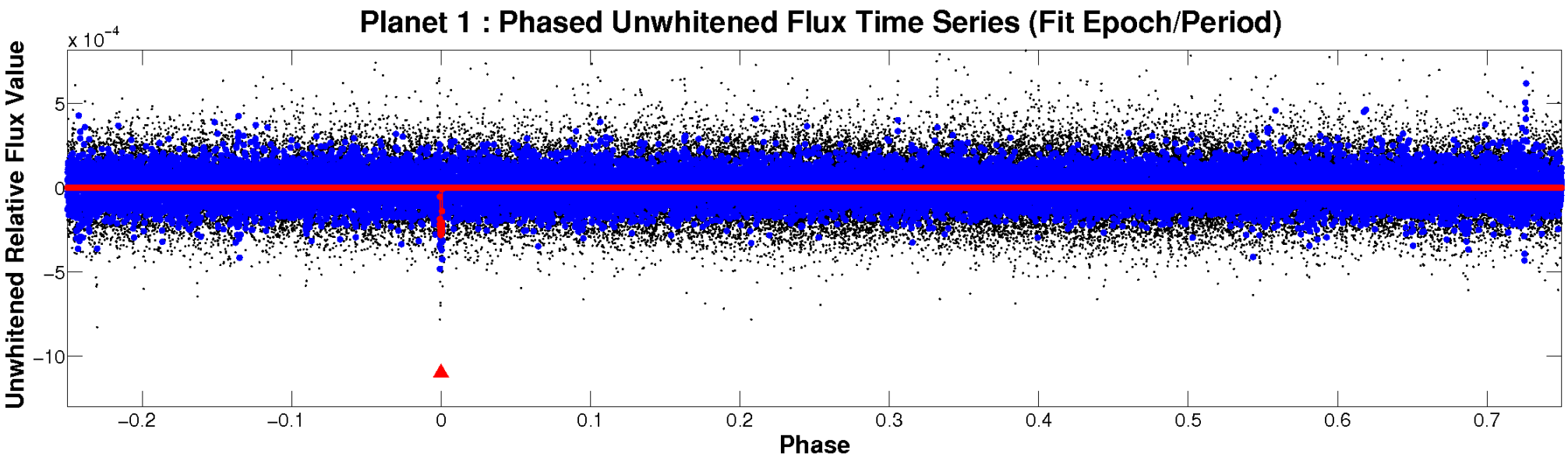
DV Odd/Even

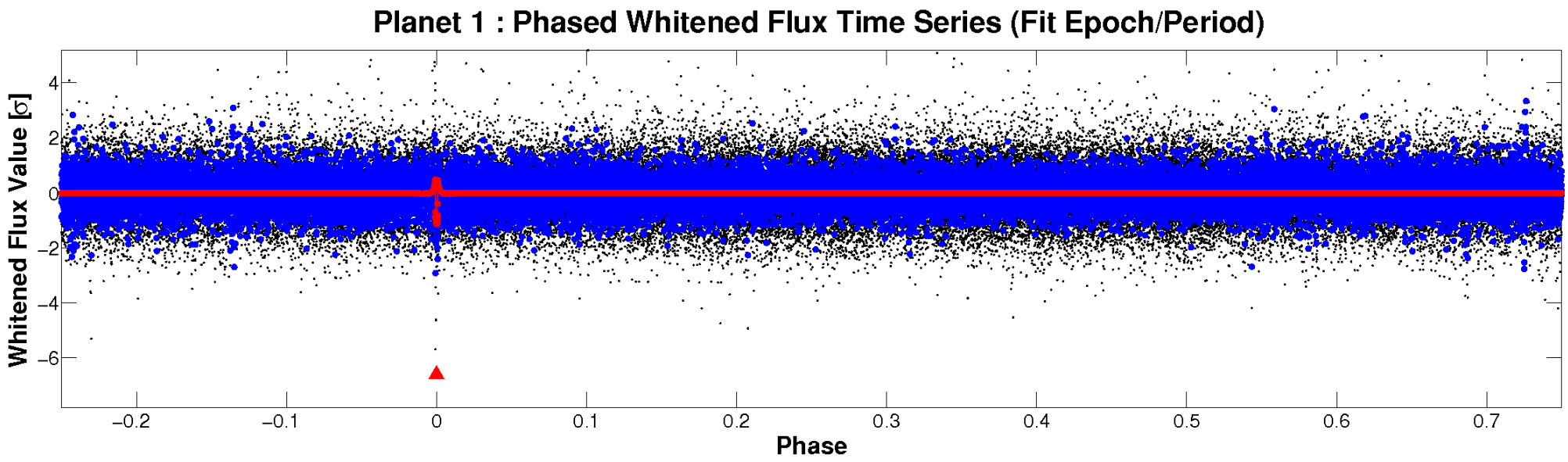

TCE 009142053-01
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.002
-0.001
0
0.001
0.002
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009142053-01
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
-1.00e-03
Flux
-0.003
-0.002
-0.001
0
0.001
0.002
0.003
Phase
Odd
Even
Model Fit

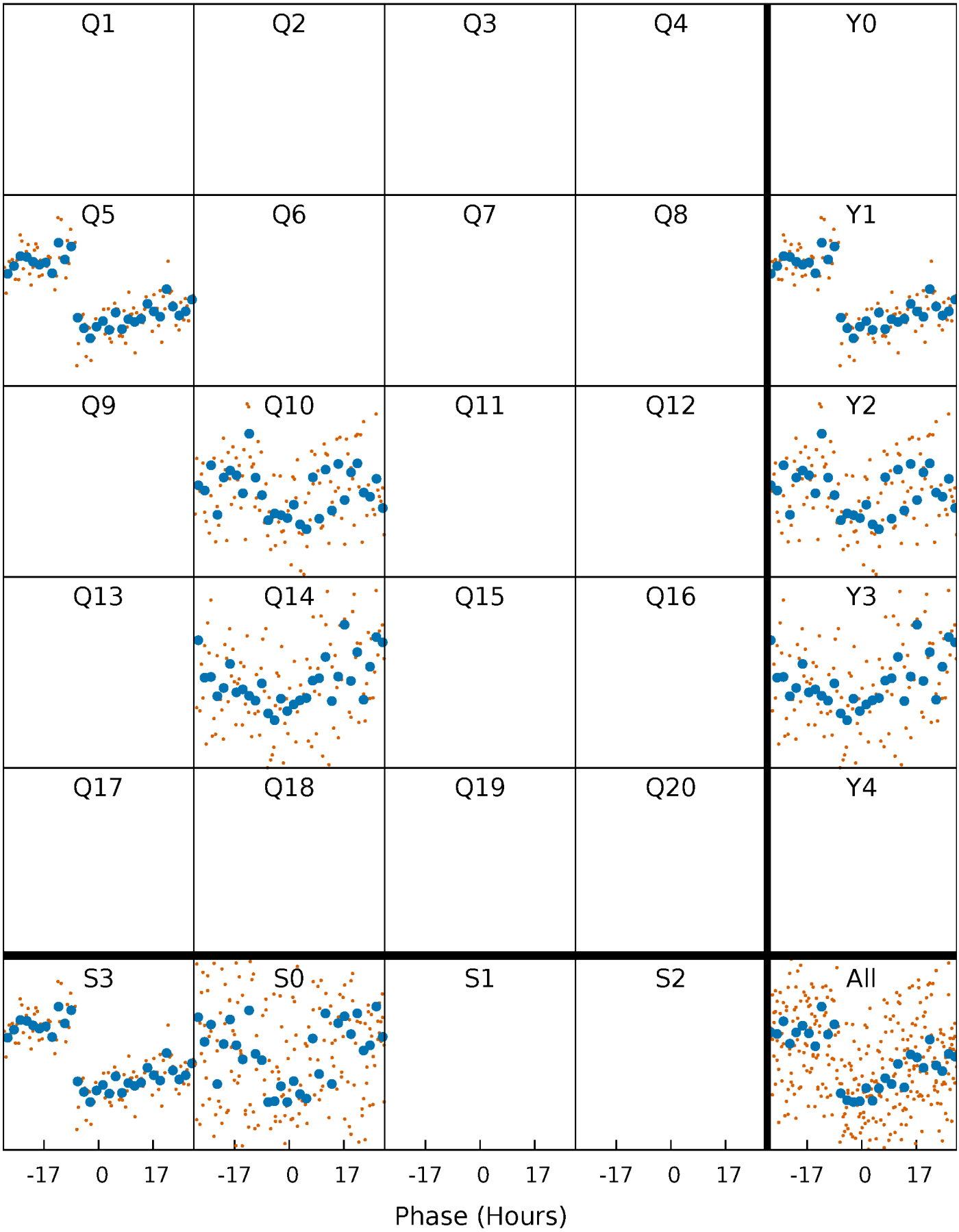
Non-Whitened Vs. Whitened Light Curve





PDC Quarter-Phased Transit Curves

TCE 009142053-01 P=423.896122 Days T_0=500.313653 (BKJD)



DV Quarter-Phased Transit Curves

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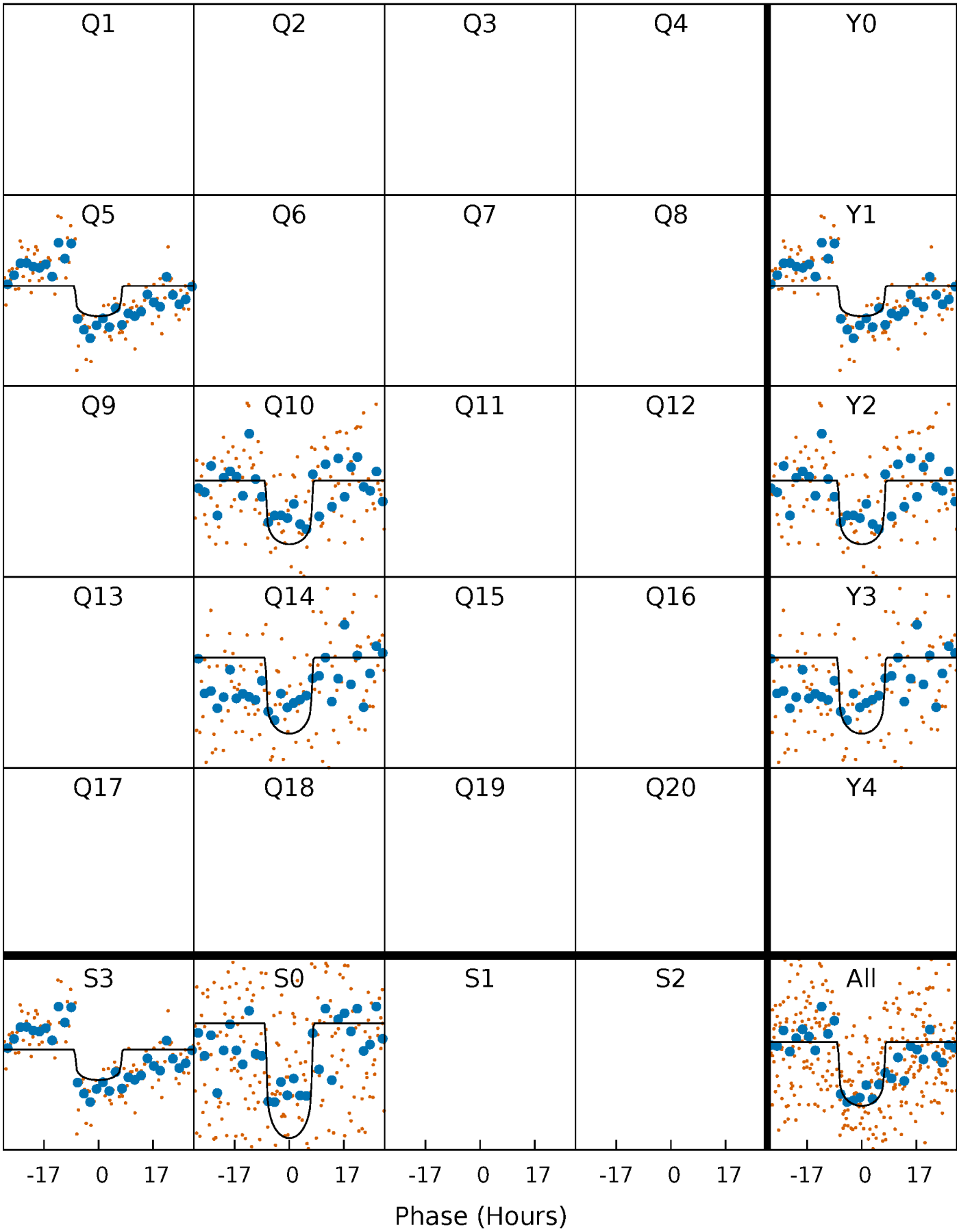
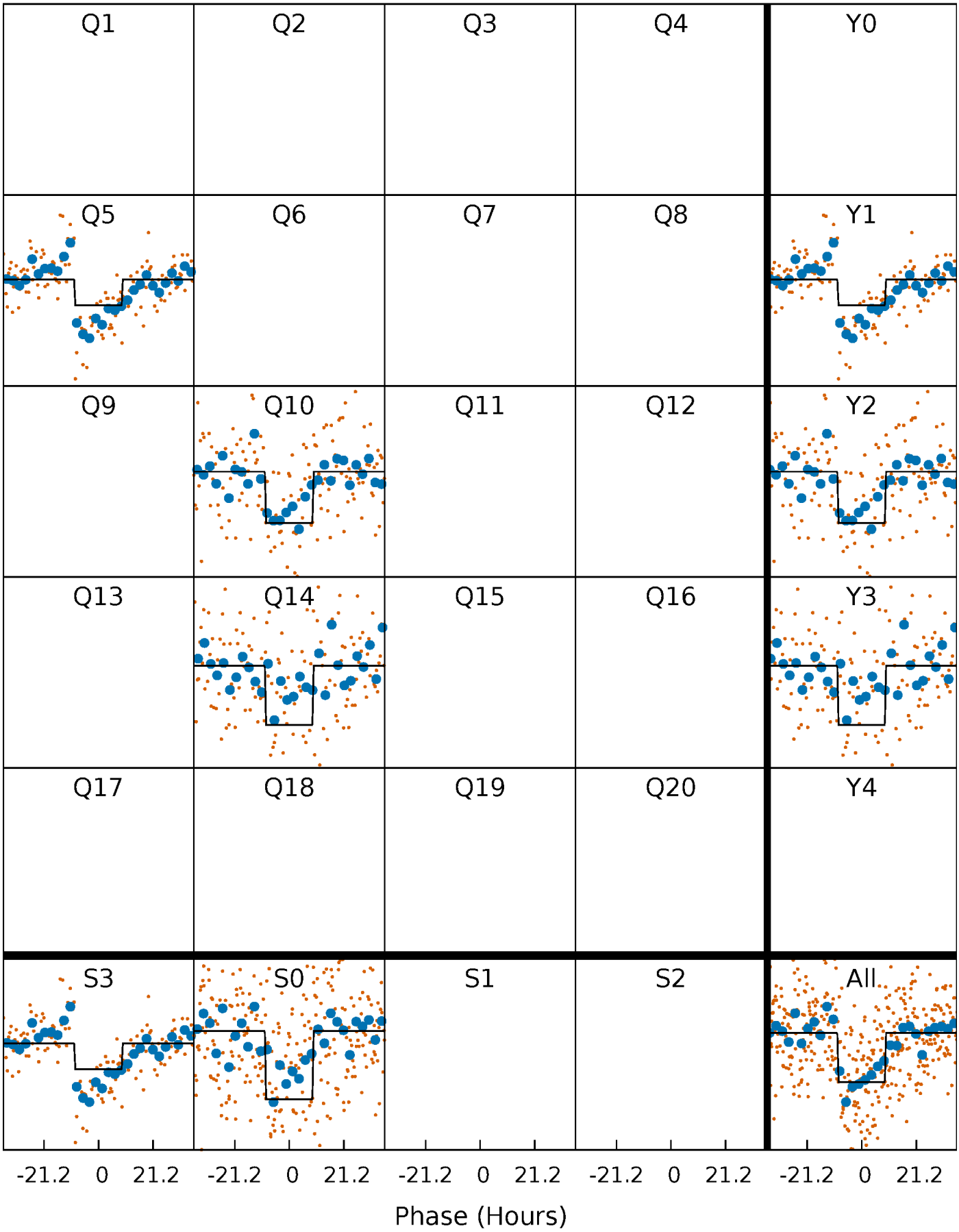


Alt. Detrend Quarter-Phased Transit Curves

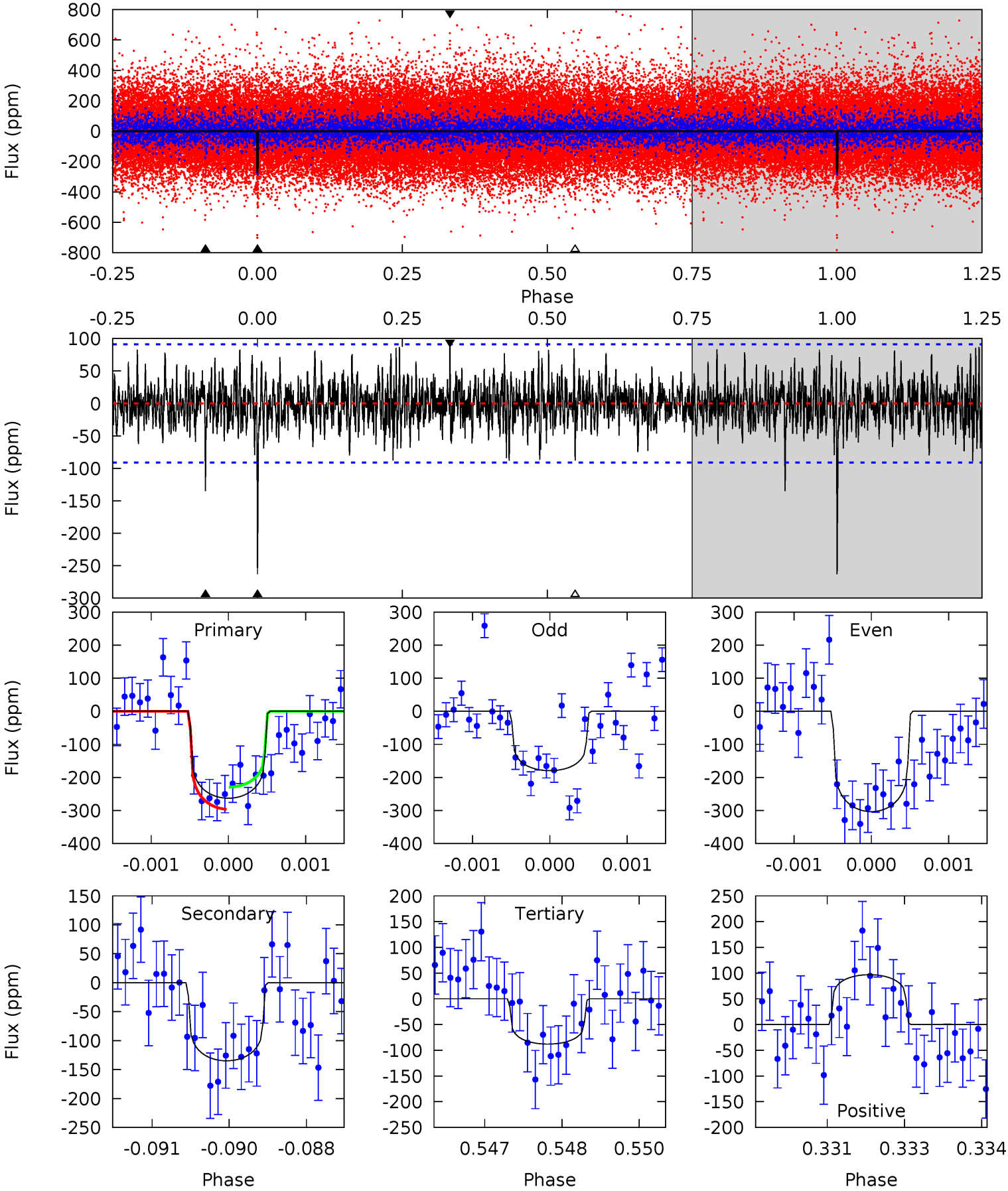
TCE 009142053-01 P=423.860146 Days T_0=500.407114 (BKJD)



DV Model-Shift Uniqueness Test

009142053-01, P = 423.896122 Days, E = 76.417531 Days

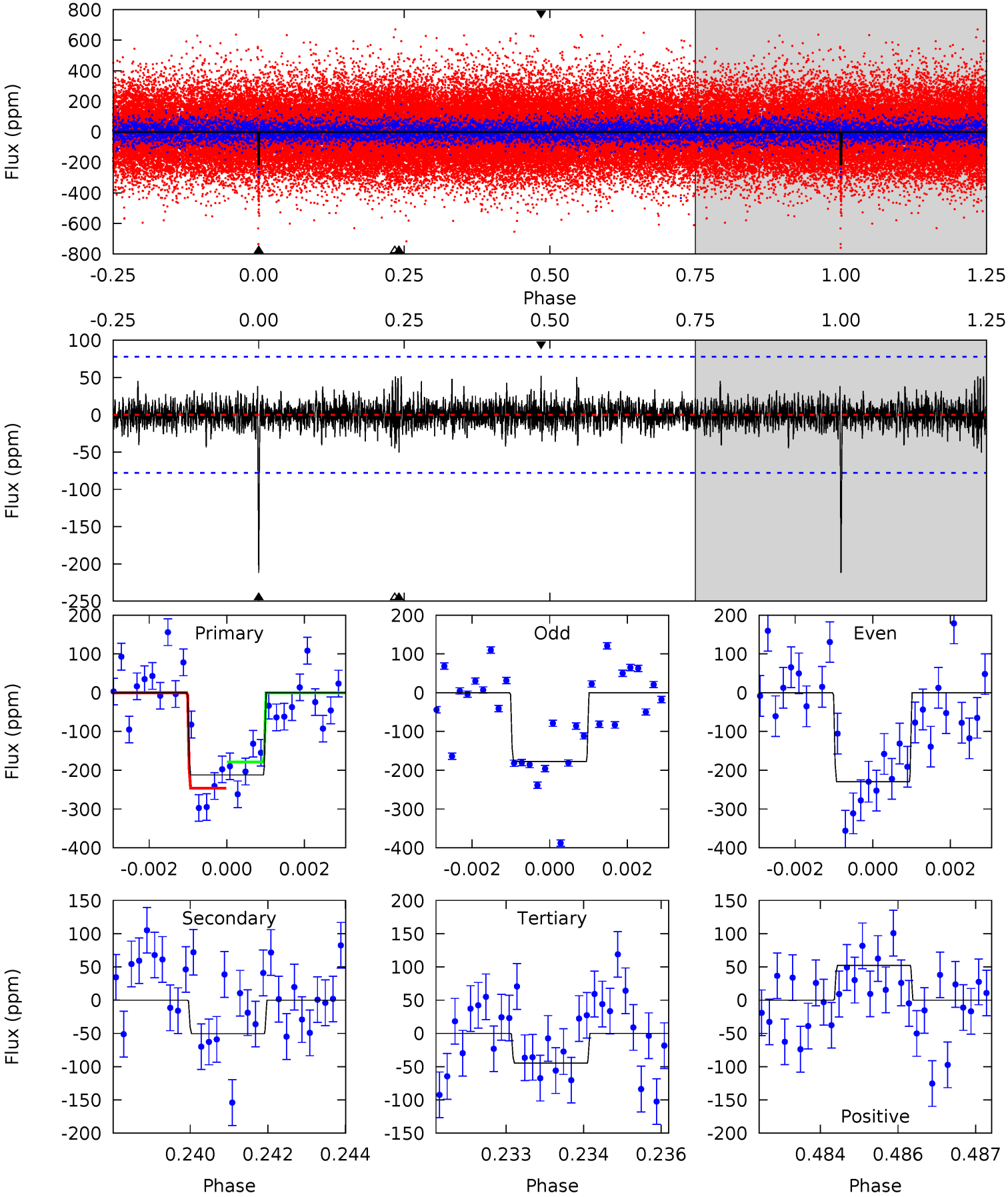
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	7.97	5.20	5.72	5.39	3.19	1.55	10.3	9.81	2.77	2.24	3.44	1.34	0.27	1.97



Alt Model-Shift Uniqueness Test

009142053-01, P = 423.860146 Days, E = 76.546968 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	3.46	3.07	3.58	5.34	3.11	0.83	11.5	11.0	0.39	-0.12	1.67	1.22	0.20	2.32



Stellar Parameters For KIC 009142053

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6289^{+150}_{-206}	$4.454^{+0.054}_{-0.216}$	$-0.220^{+0.250}_{-0.350}$	$1.020^{+0.335}_{-0.112}$	$1.075^{+0.144}_{-0.144}$	$1.427^{+0.419}_{-0.765}$
	+2%/-3%	+1%/-5%	+114%/-159%	+33%/-11%	+13%/-13%	+29%/-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 009142053-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-135±17	$1.95^{+0.53}_{-0.50}$	376^{+27}_{-20}	5274^{+723}_{-463}	24249^{+18982}_{-9106}
Alt.	-50±15	$1.75^{+0.59}_{-0.45}$	378^{+27}_{-20}	4491^{+662}_{-491}	10935^{+10713}_{-5178}

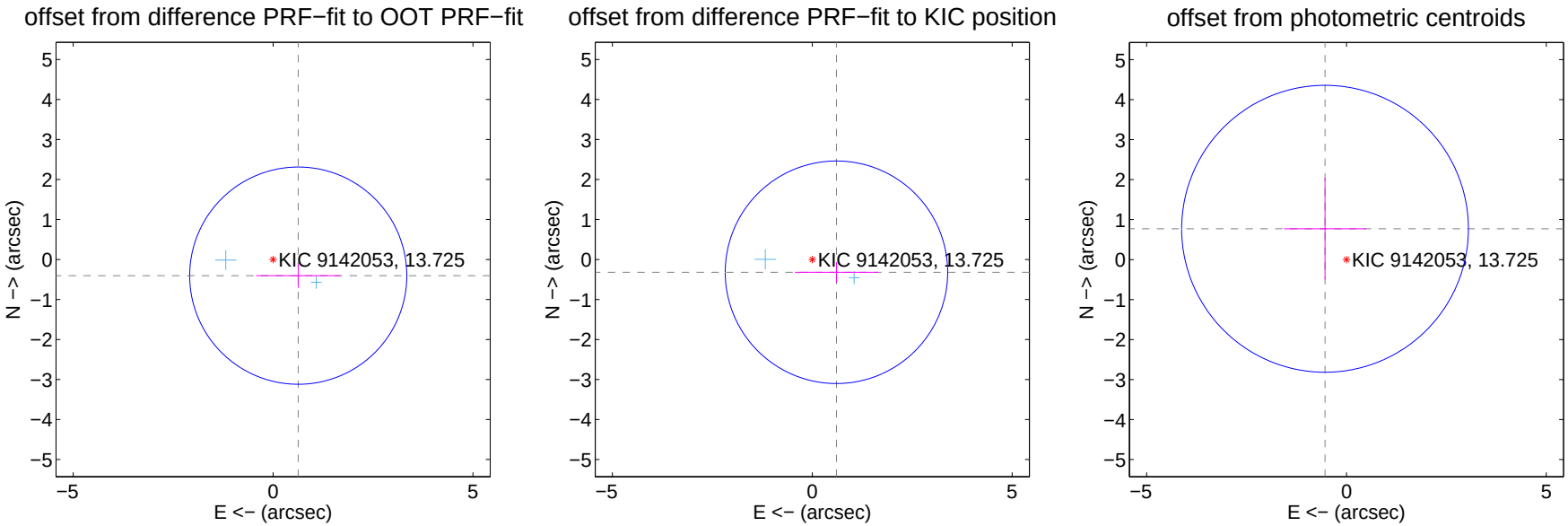
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

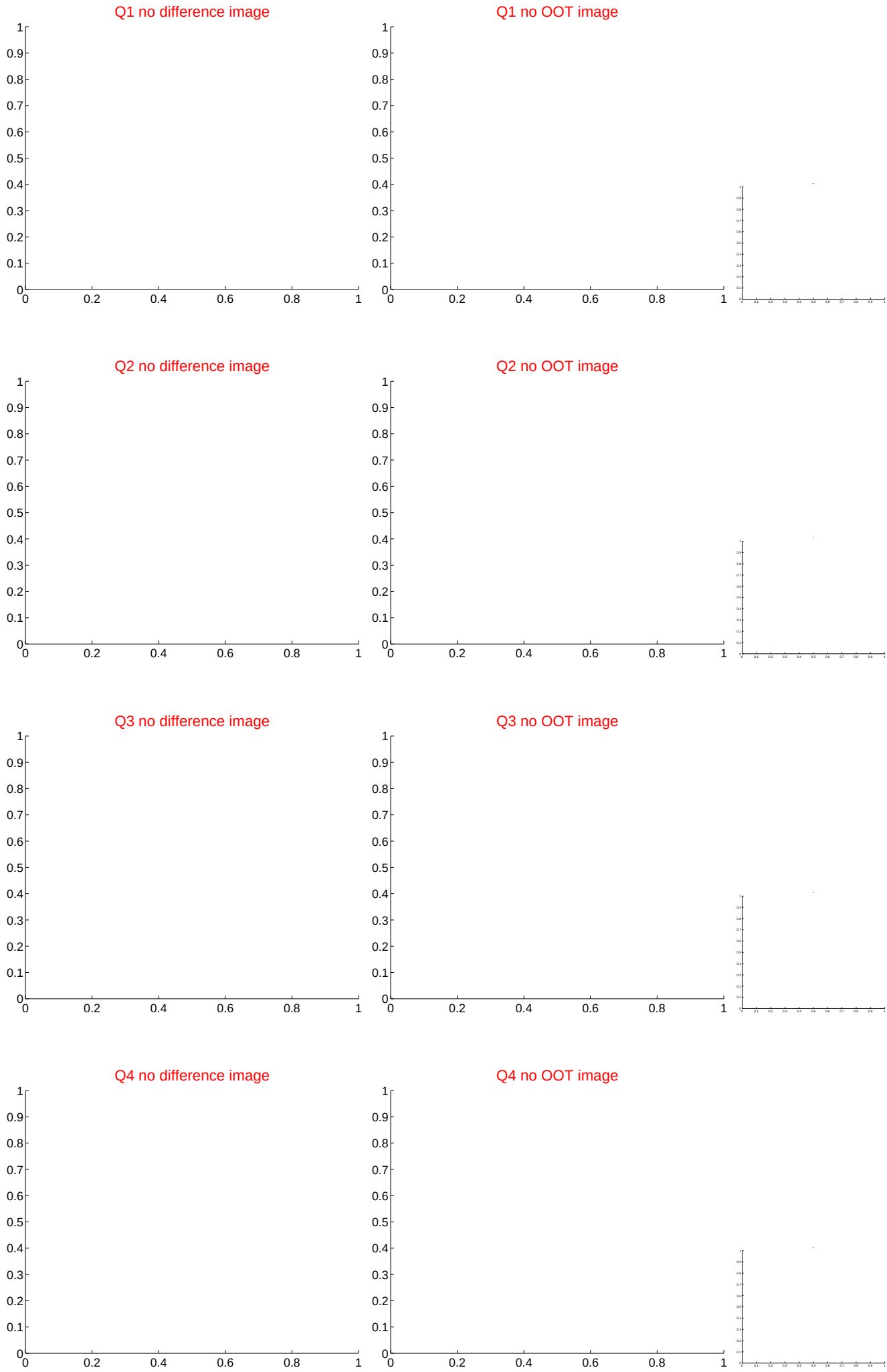
Supplemental centroid analysis for 009142053-01. Kepler magnitude: 13.72. Transit SNR 9.58
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.748 ± 0.905	0.83	-0.629 ± 1.058	-0.404 ± 0.304
PRF-fit source offset from KIC position	0.684 ± 0.927	0.74	-0.605 ± 1.040	-0.319 ± 0.255
photometric centroid source offset	0.94 ± 1.20	0.78	0.54 ± 1.03	0.77 ± 1.27

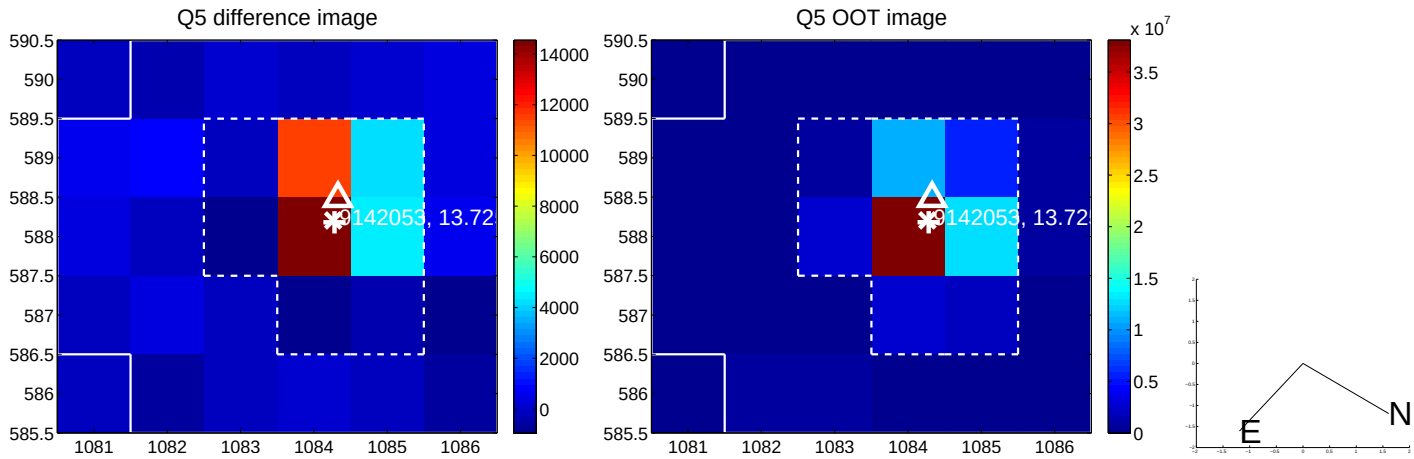


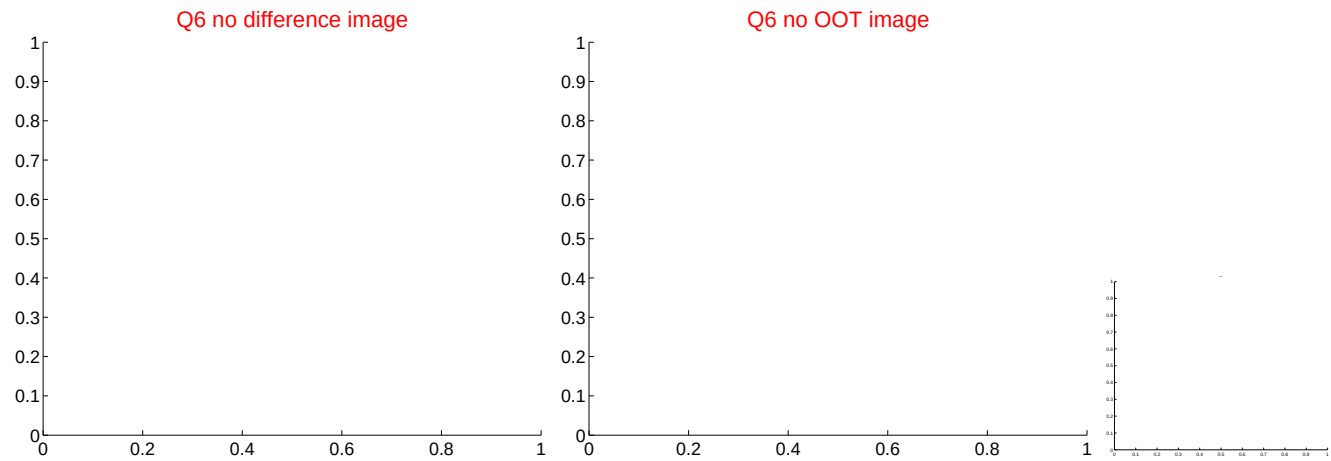
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

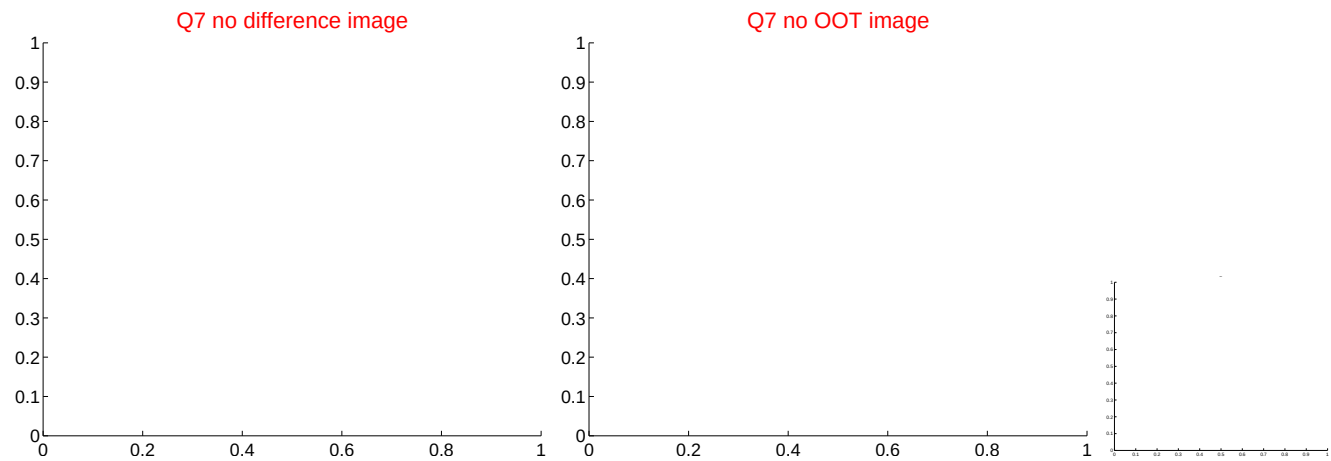
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

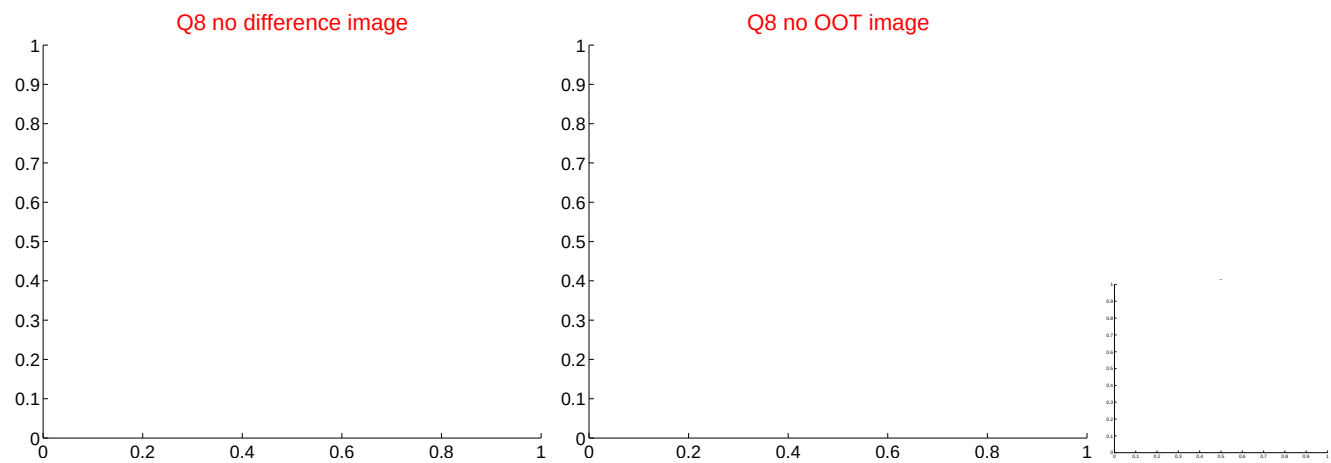


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

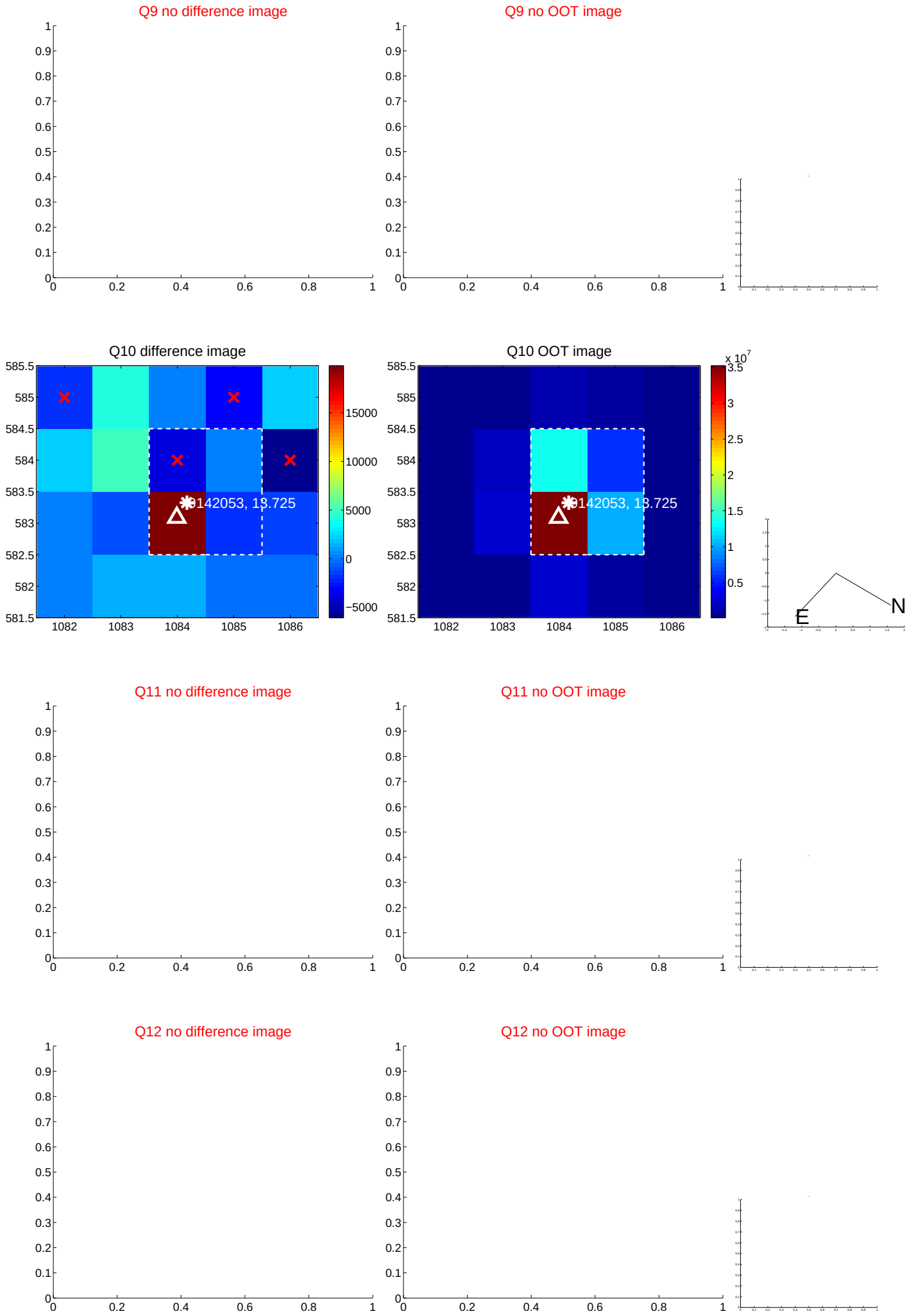




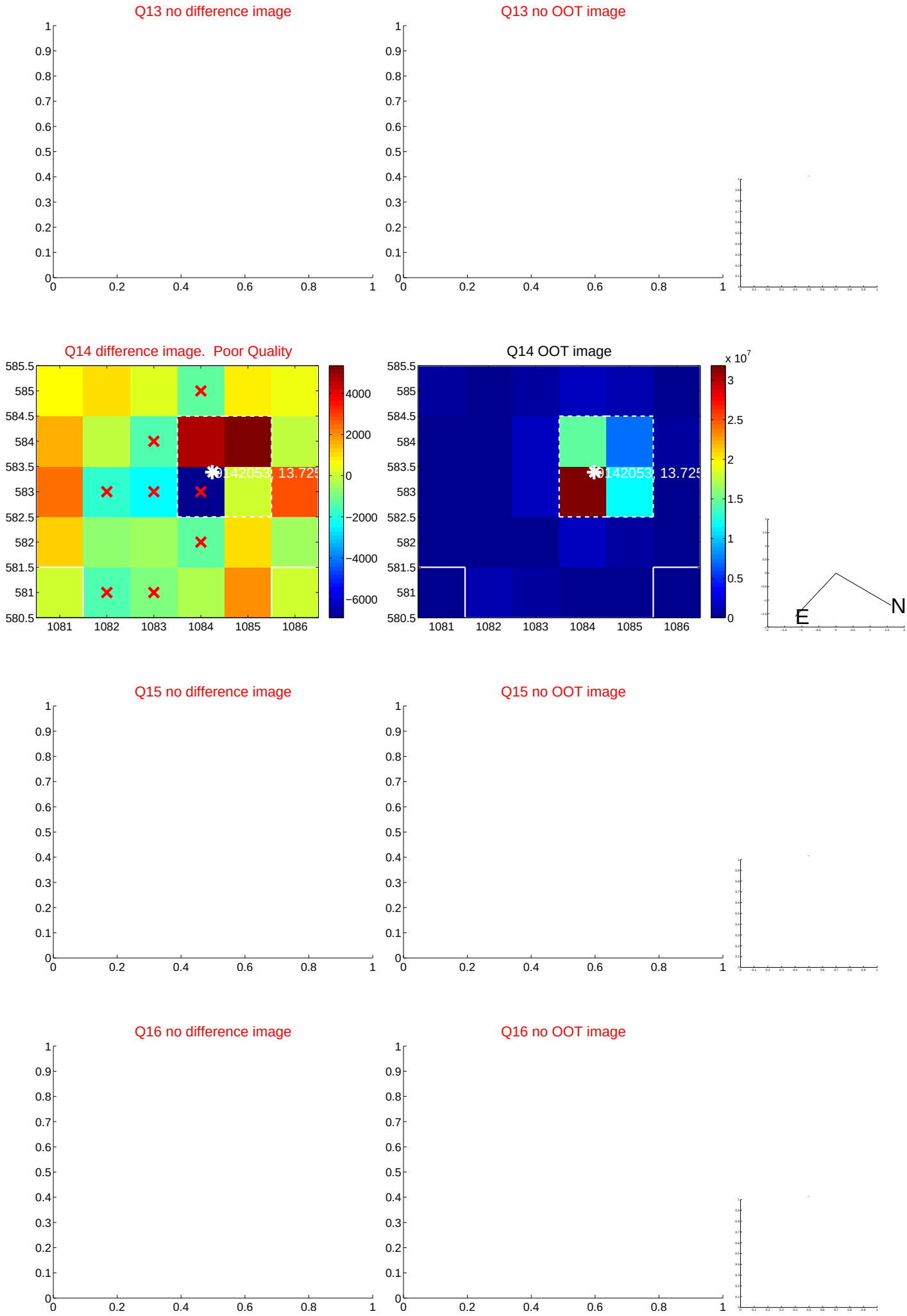




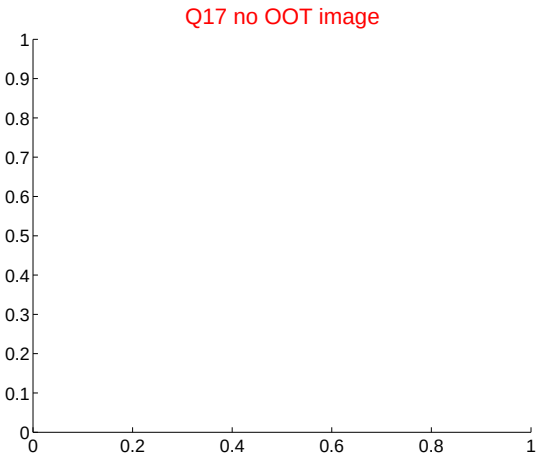
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

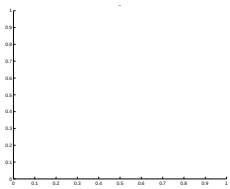


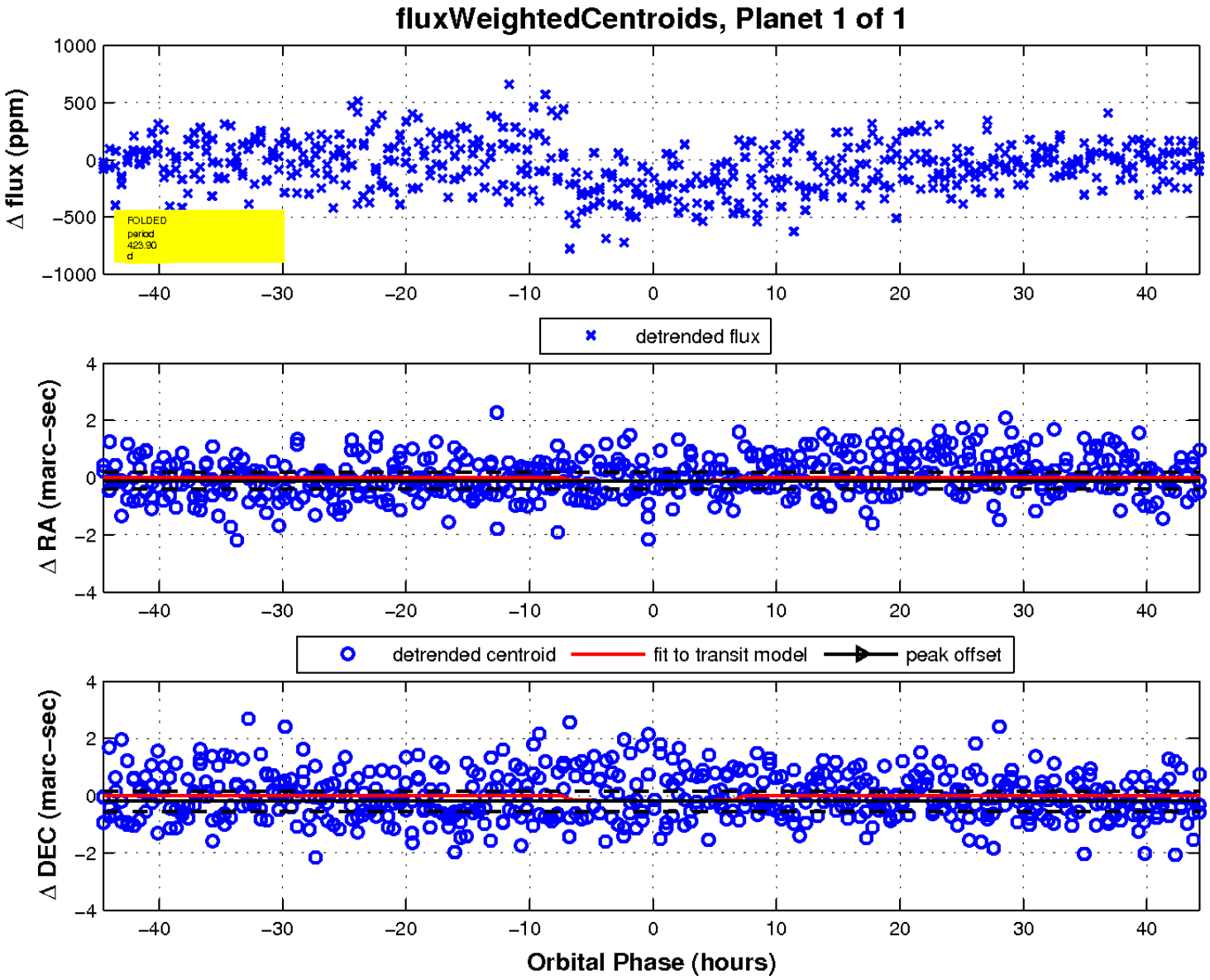
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



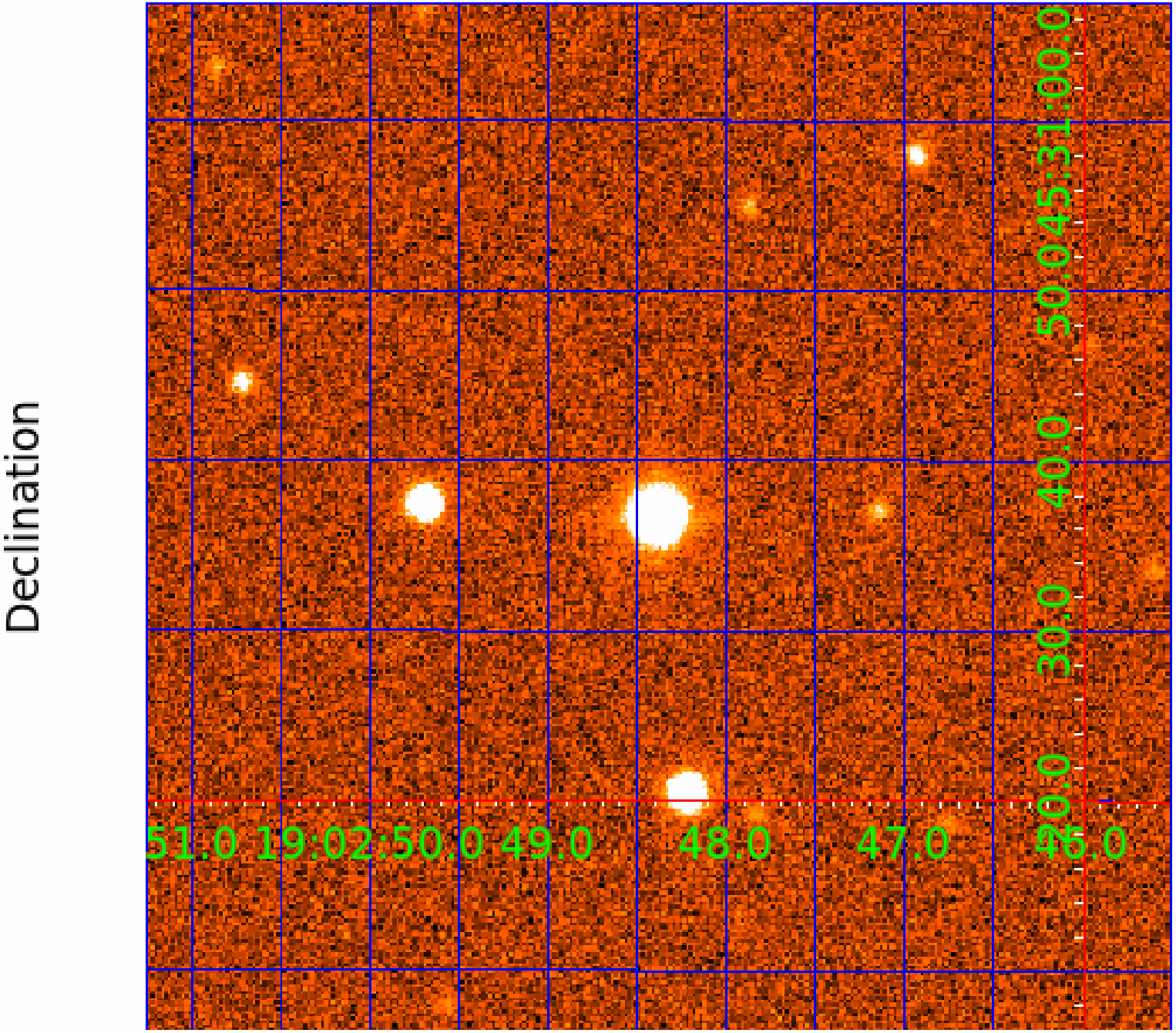
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image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