KIC 009597440

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 ($S_\oplus$)
009597440-01	OBS	No	531.950096	176.496179	1245.7	12.477	16.3	8.4	0.66	4255	2.97	0.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009597440-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

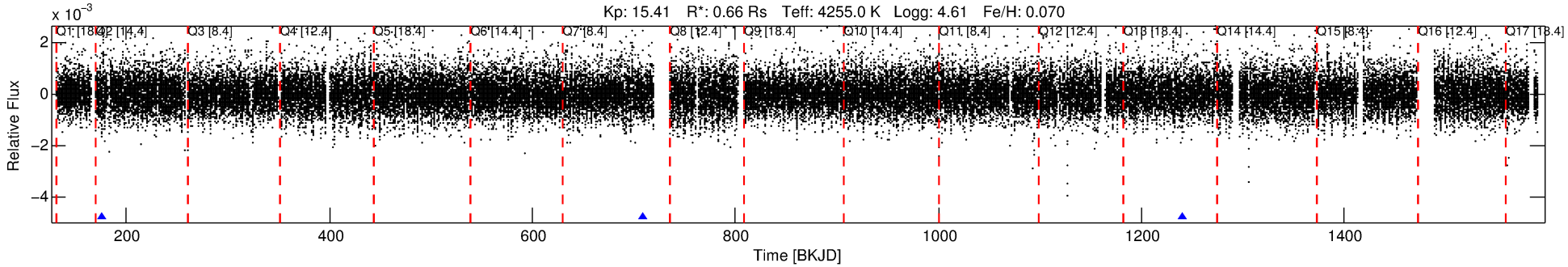
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

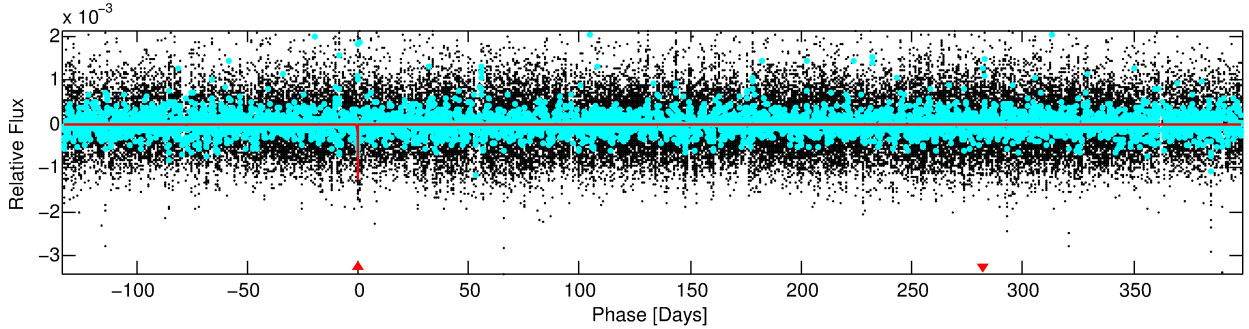
Ephemeris Match Information For 009597440-01

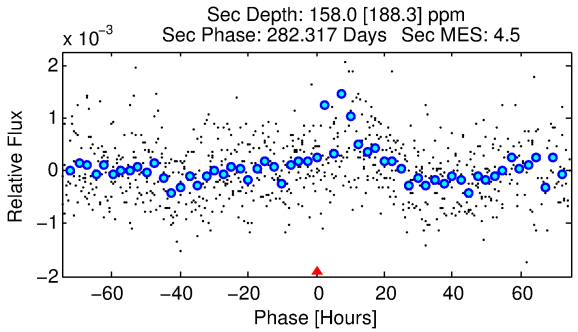
No Significant Match Found

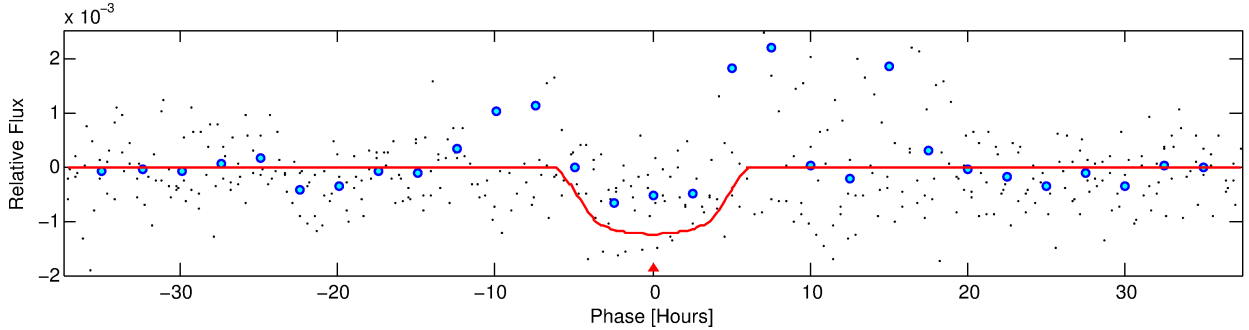
DV One-Page Summary

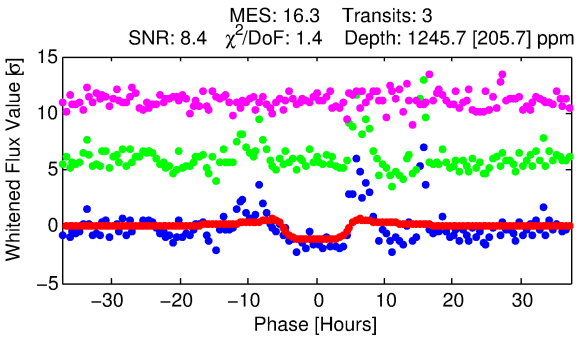
KIC: 9597440 Candidate: 1 of 1 Period: 531.950 d

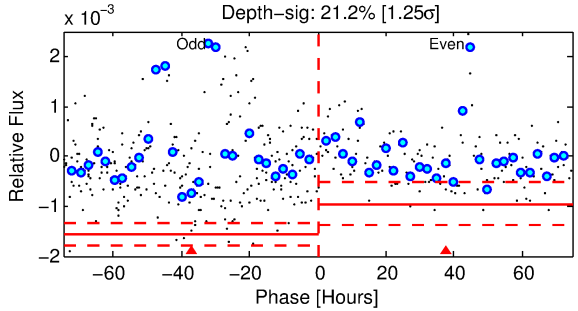


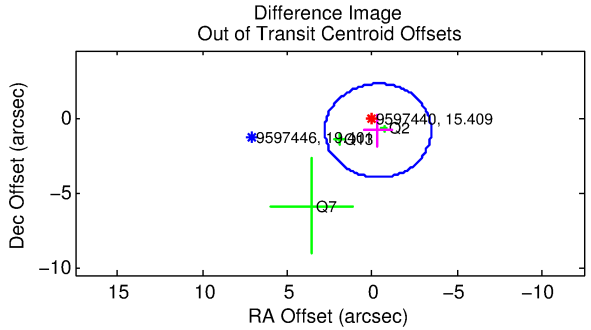












DV Fit Results:

Period = 531.95010 [0.01942] d
Epoch = 176.4962 [0.0240] BKJD
Rp/R* = 0.0412 [0.0053]
a/R* = 157.76 [46.84]
b = 0.92 [0.05]

Seff = 0.10 [0.02]
Teq = 144 [6] K
Rp = 2.97 [0.46] Re
a = 1.1151 [0.0776] AU

Ag = 12275.70 [15007.55] [0.82σ]
Teffp = 2350 [720] K [3.07σ]

DV Diagnostic Results:

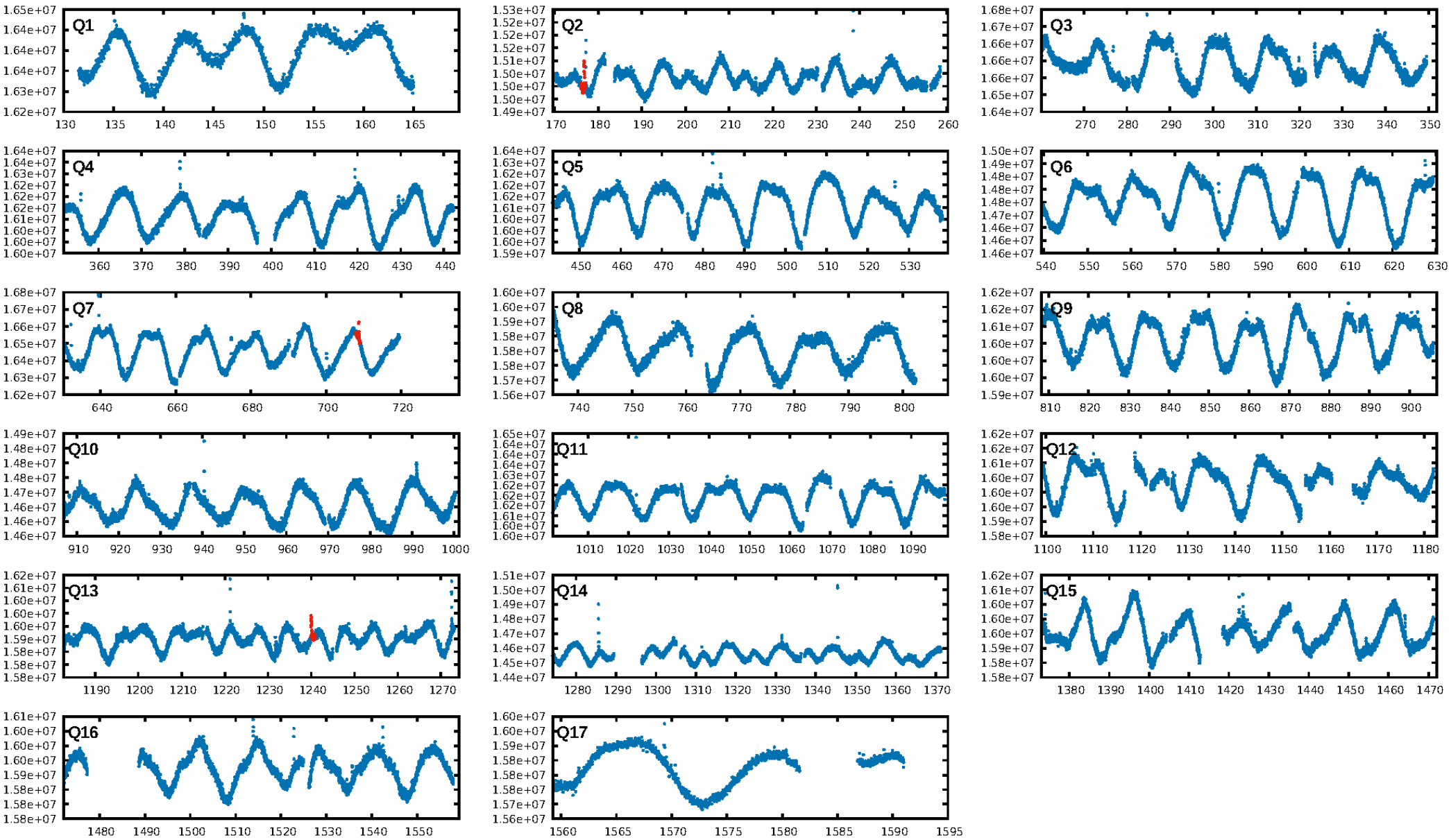
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: 0.0%
ModelChiSquareGof−sig: 60.4%
Bootstrap−pfa: 2.83e−25
RollingBand−fgt: 1.00 [3/3]
GhostDiagnostic−chr: 10.68

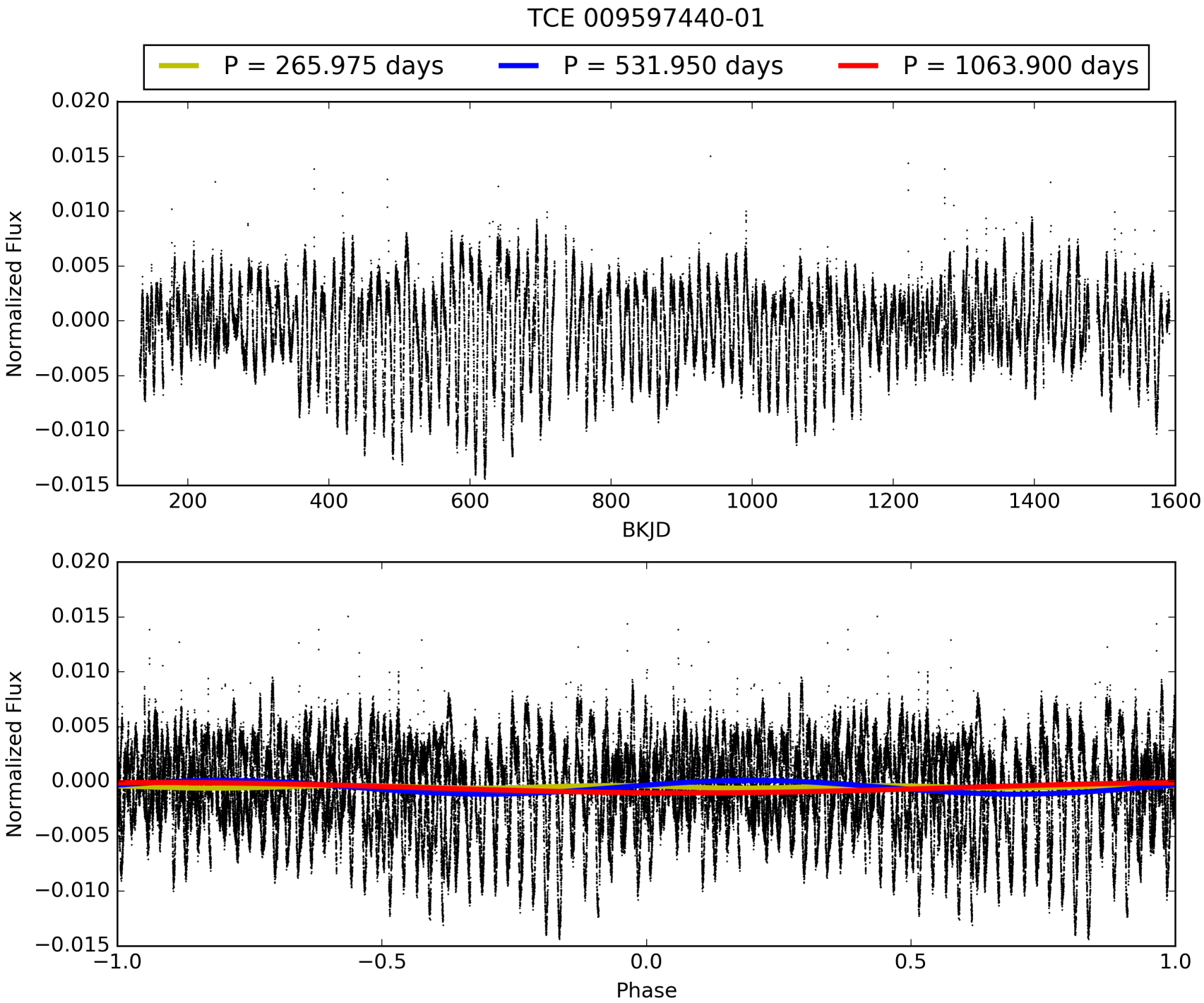
Centroid−sig: 36.3%
Centroid−so: 1.062 arcsec [1.35σ]
OotOffset−rm: 0.932 arcsec [0.89σ]
KicOffset−rm: 0.678 arcsec [0.65σ]
OotOffset−st: 1/1/0/1 [3]
KicOffset−st: 1/1/0/1 [3]
DiffImageQuality−fgm: 0.33 [1/3]
DiffImageOverlap−fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31−Jan−2016 02:34:00 Z

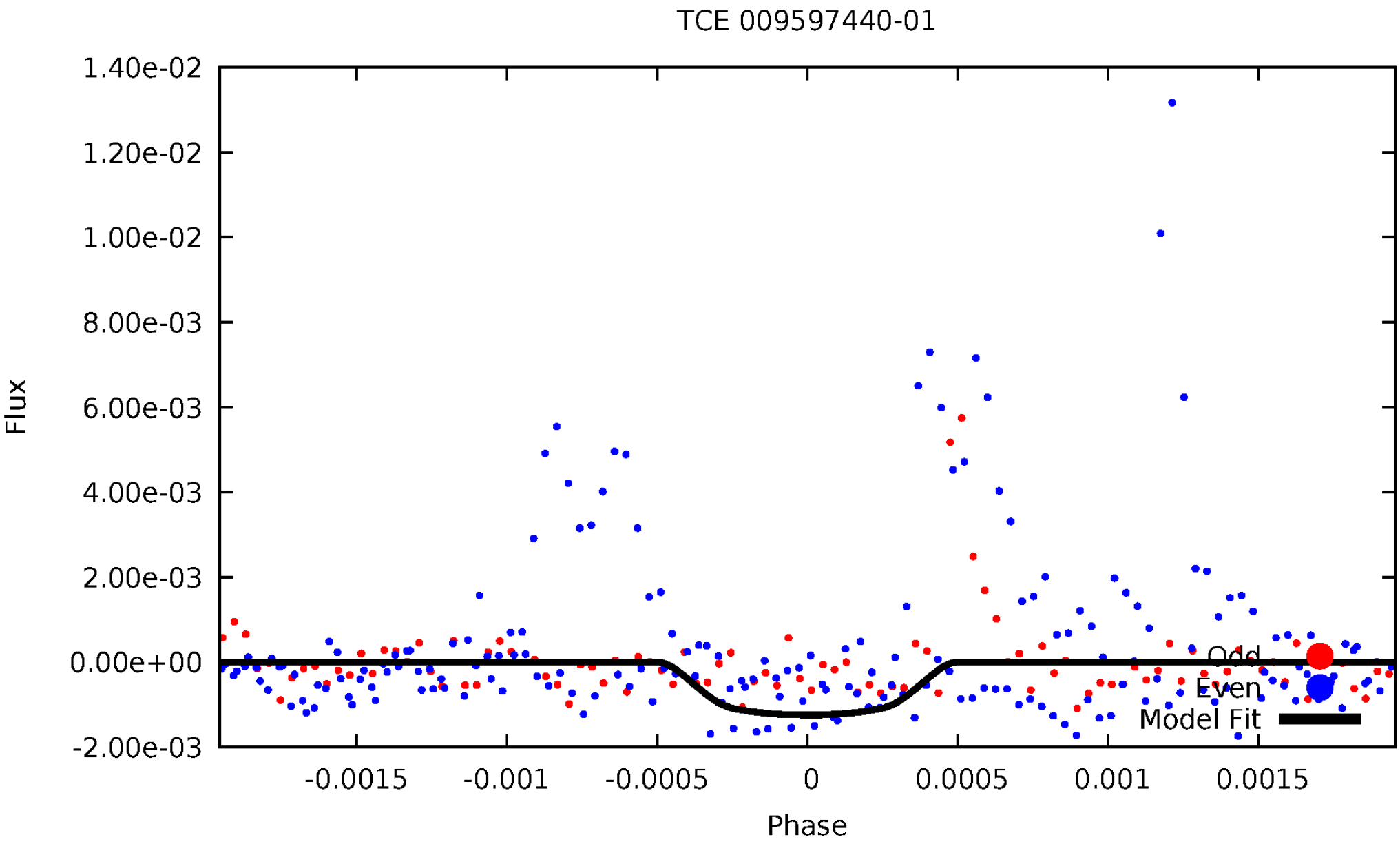
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009597440-01, PDC Light Curves




TCE 009597440-01
P = 265.975 days
P = 531.950 days
P = 1063.900 days
Normalized Flux
BKJD
Phase
0.020
0.015
0.010
0.005
0.000
−0.005
−0.010
−0.015
200
400
600
800
1000
1200
1400
1600
−1.0
−0.5
0.0
0.5
1.0

DV Odd/Even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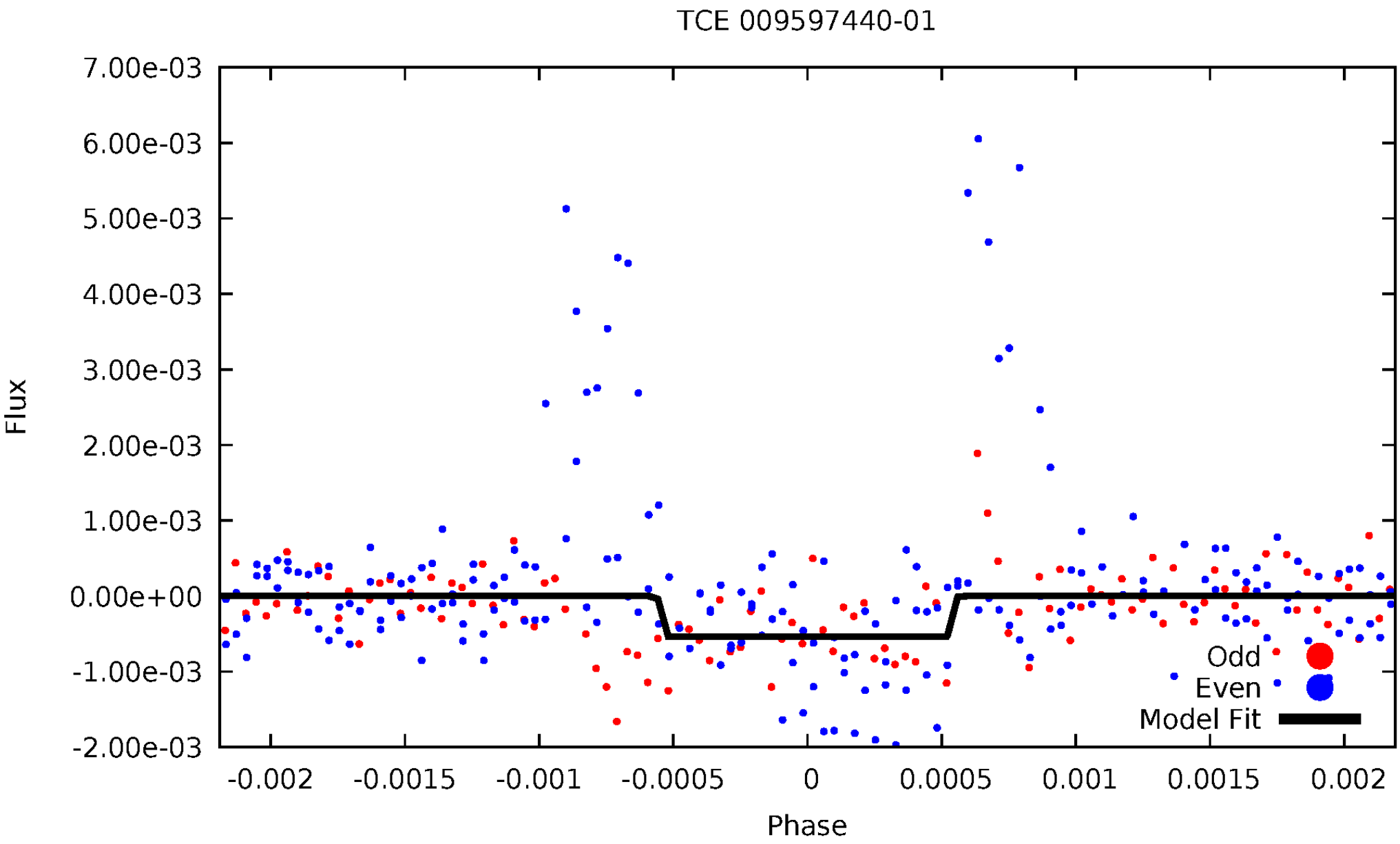
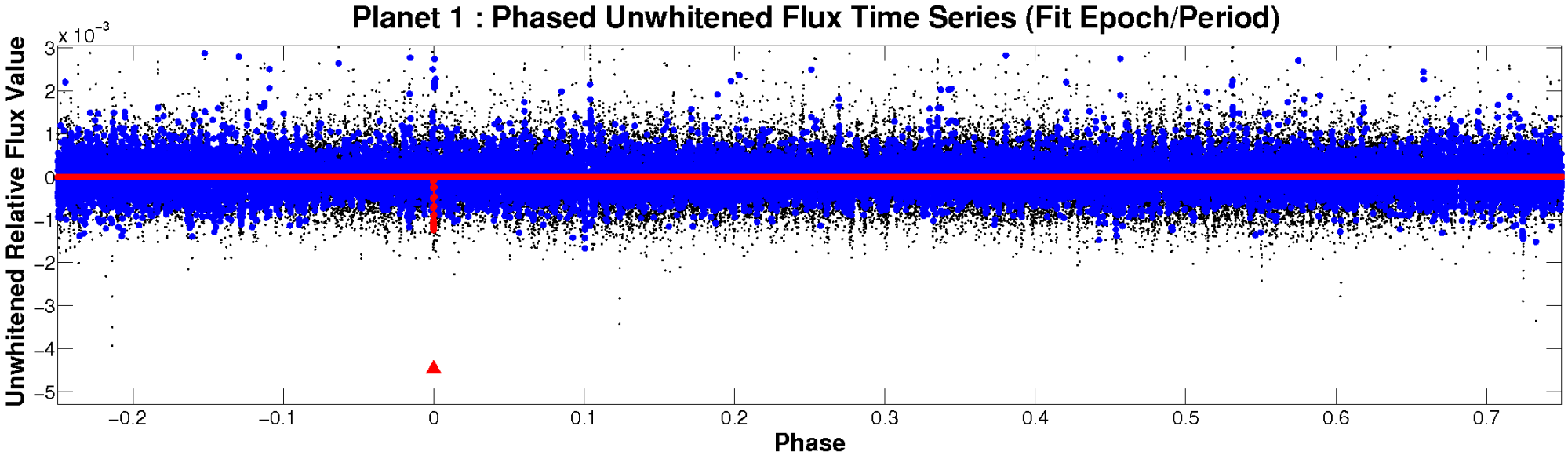
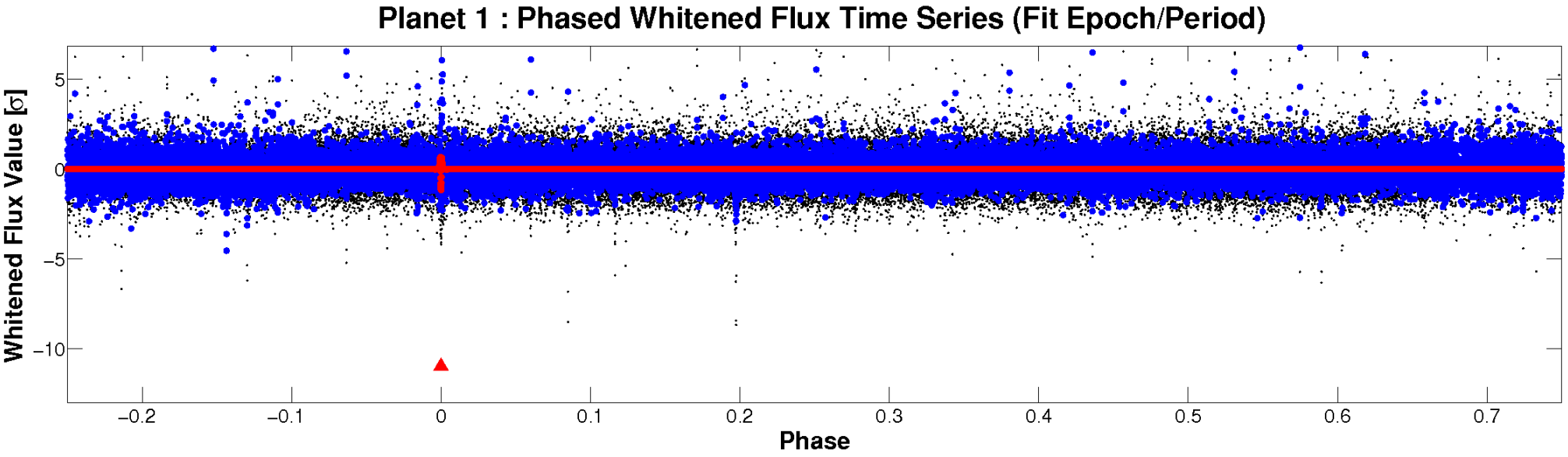
1.40e-02
1.20e-02
1.00e-02
8.00e-03
6.00e-03
4.00e-03
2.00e-03
0.00e+00
-2.00e-03
Flux
-0.0015
-0.001
-0.0005
0
0.0005
0.001
0.0015
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009597440-01
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
-2.00e-03
Flux
-0.002
-0.0015
-0.001
-0.0005
0
0.0005
0.001
0.0015
0.002
Phase
Odd
Even
Model Fit

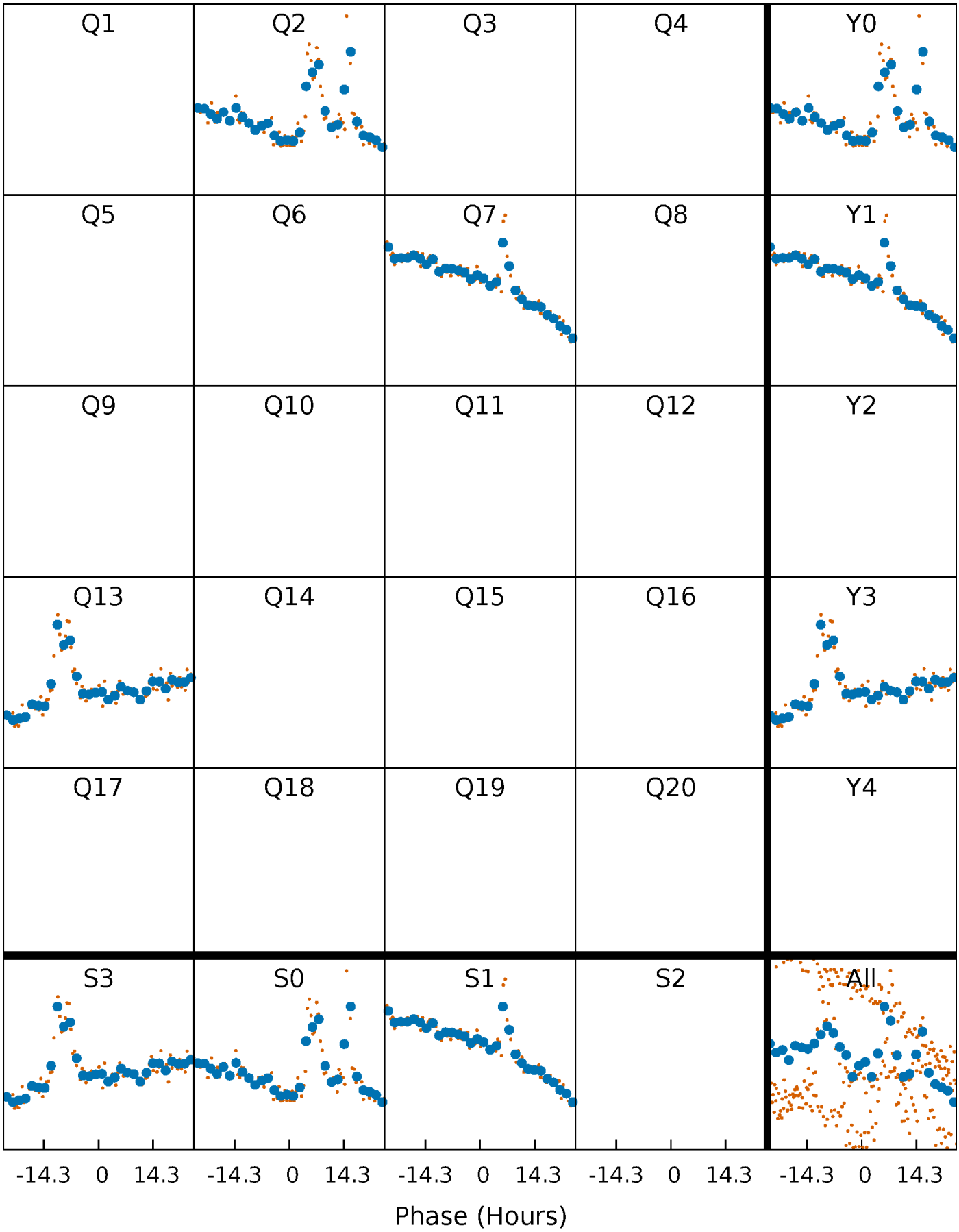
Non-Whitened Vs. Whitened Light Curve





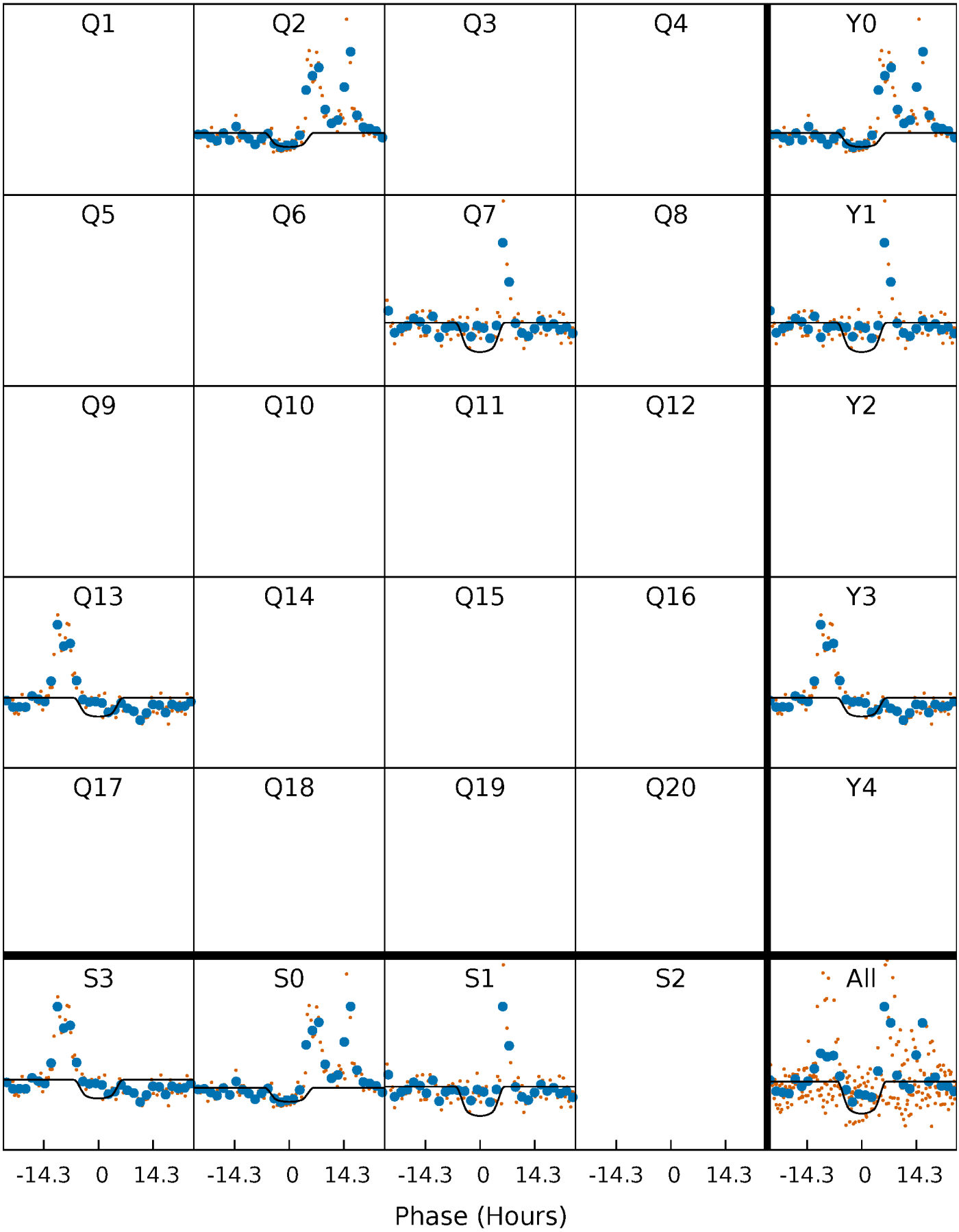
PDC Quarter-Phased Transit Curves

TCE 009597440-01 P=531.950096 Days T_0=176.496179 (BKJD)



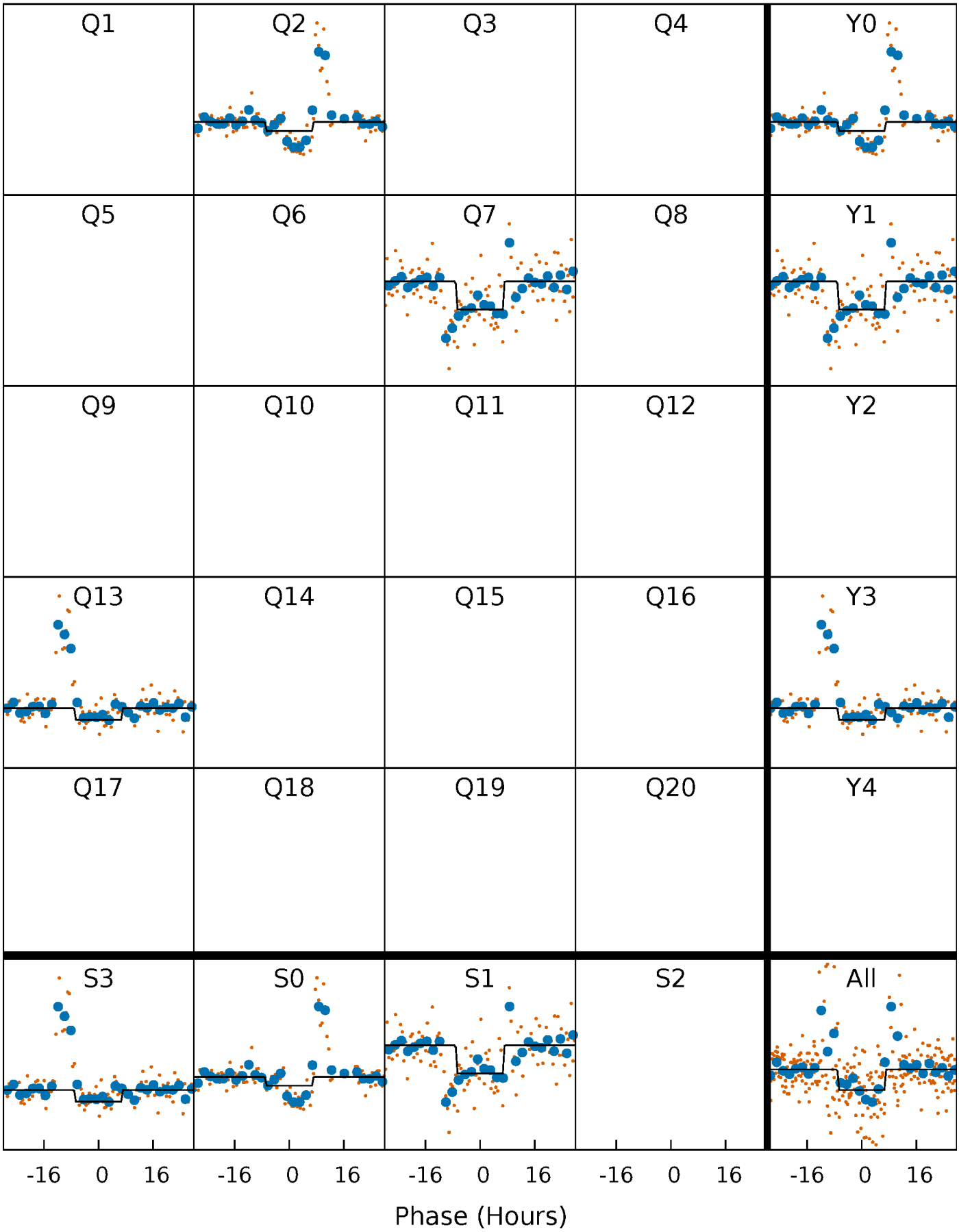
DV Quarter-Phased Transit Curves

TCE 009597440-01 P=531.950096 Days T_0=176.496179 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

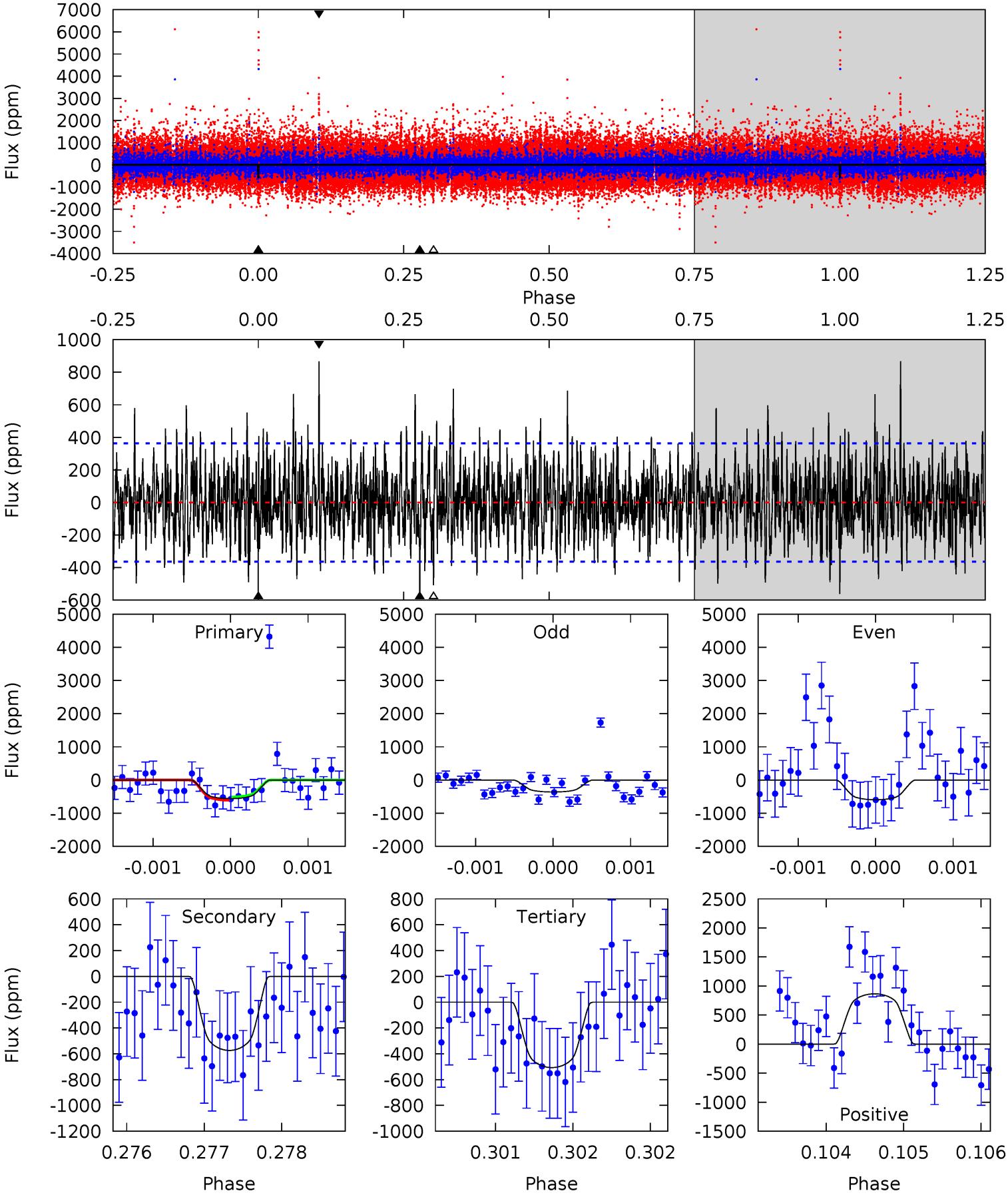
TCE 009597440-01 P=532.028602 Days T_0=176.373831 (BKJD)



DV Model-Shift Uniqueness Test

009597440-01, P = 531.950096 Days, E = 176.496179 Days

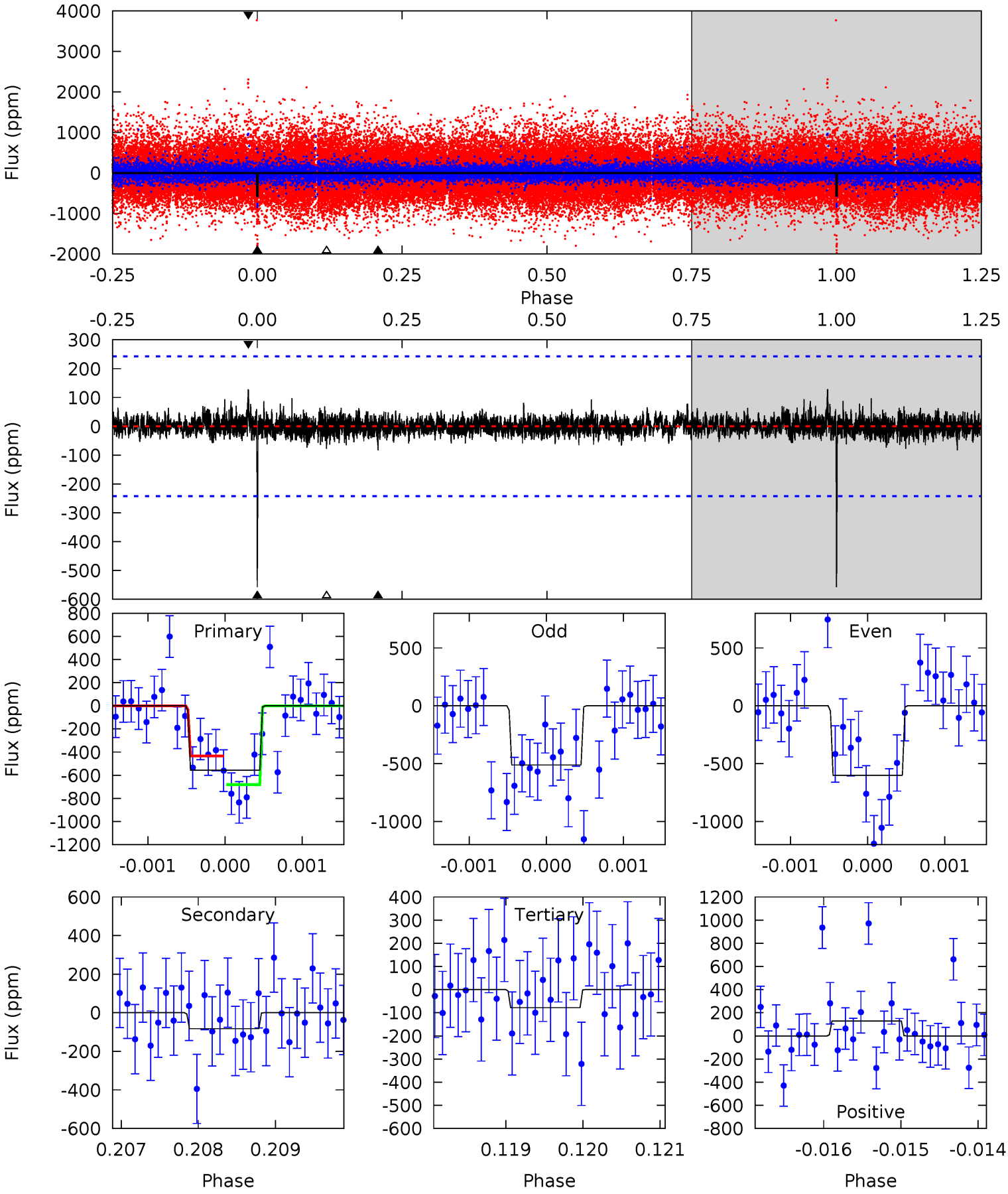
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.42	8.61	7.60	13.0	5.46	3.30	2.62	0.82	-4.57	1.00	-4.39	1.60	0.93	0.60	0.72



Alt Model-Shift Uniqueness Test

009597440-01, P = 532.028602 Days, E = 176.373831 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	1.85	1.74	2.88	5.43	3.25	0.44	10.7	9.61	0.11	-1.02	0.96	1.09	0.19	2.75



Stellar Parameters For KIC 009597440

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	4255^{+128}_{-128}	$4.614^{+0.049}_{-0.018}$	$0.070^{+0.250}_{-0.300}$	$0.660^{+0.031}_{-0.058}$	$0.653^{+0.056}_{-0.056}$	$3.202^{+0.691}_{-0.276}$
	+3%/-3%	+1%/-0%	+357%/-429%	+5%/-9%	+9%/-9%	+22%/-9%
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 009597440-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-574±67	$2.95^{+0.41}_{-0.40}$	201^{+6}_{-8}	3528^{+192}_{-179}	45684^{+16058}_{-11189}
Alt.	-83±45	$1.65^{+0.41}_{-0.39}$	201^{+7}_{-7}	3126^{+336}_{-358}	20229^{+20401}_{-11824}

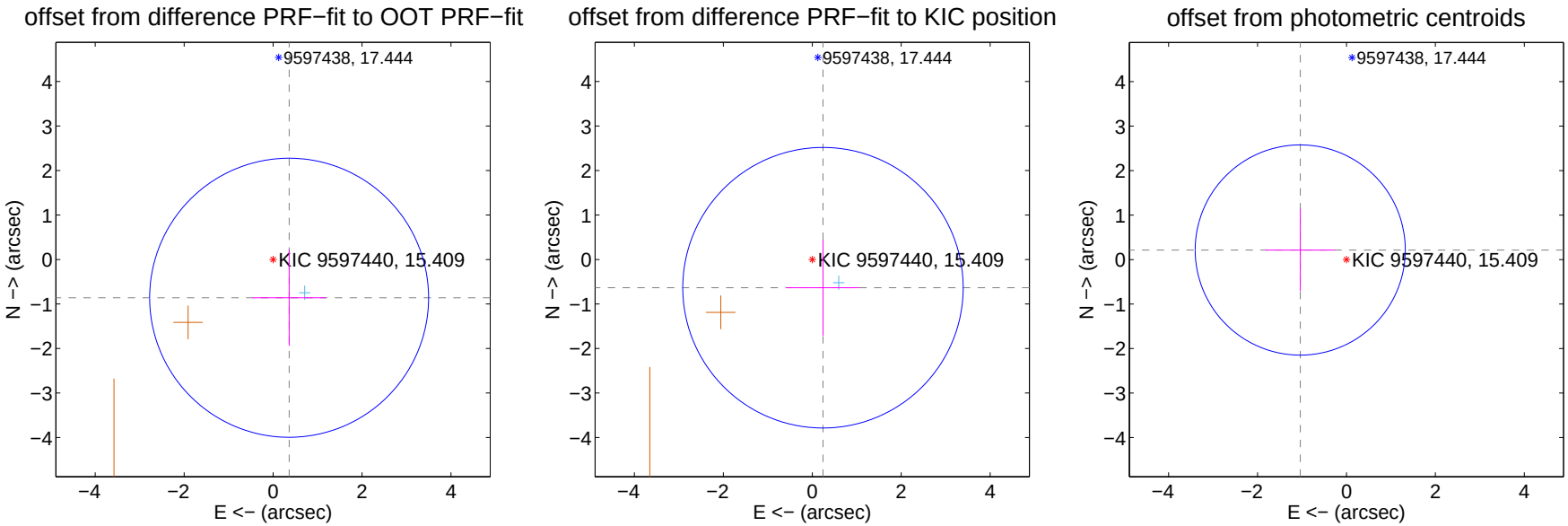
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

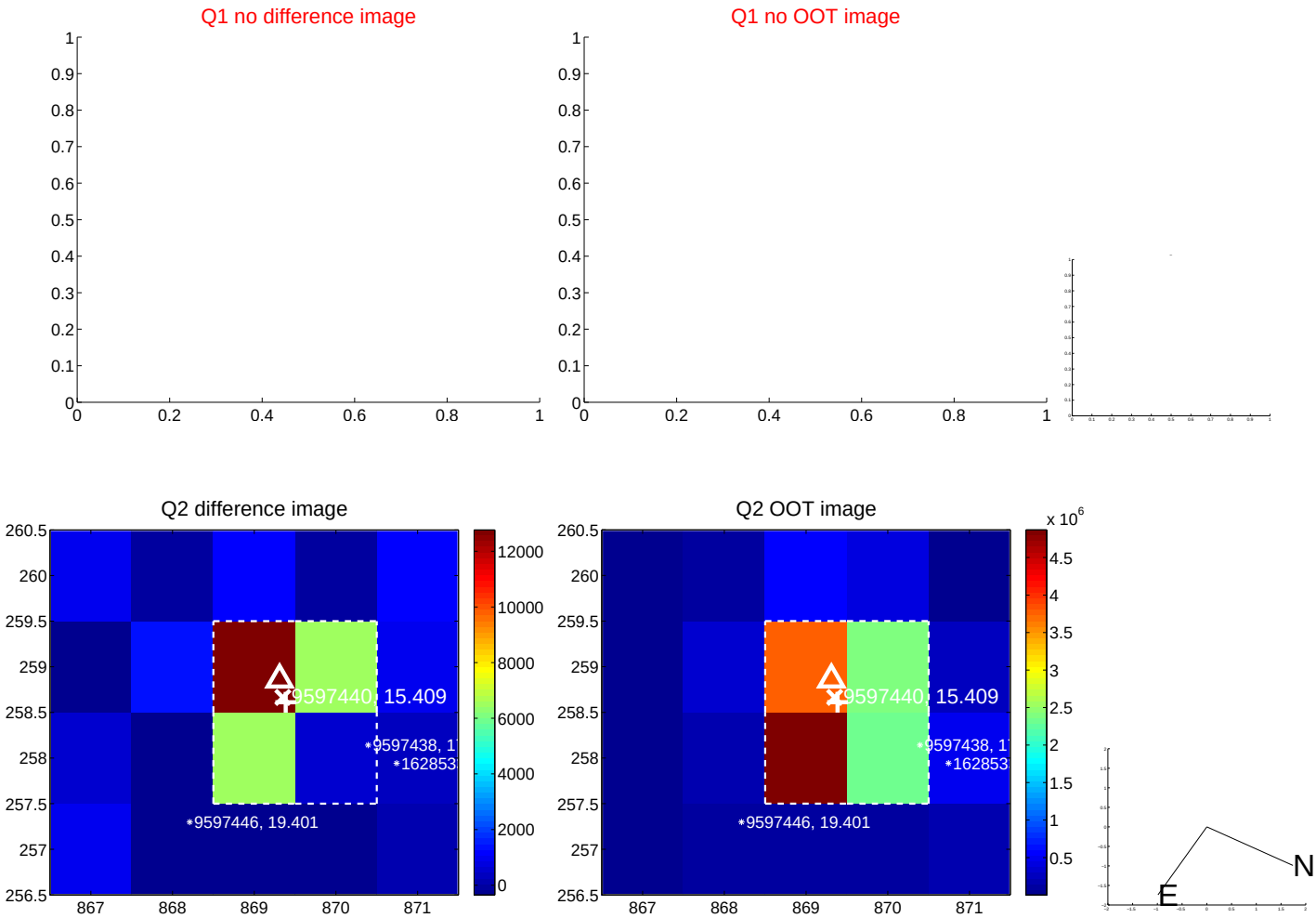
Supplemental centroid analysis for 009597440-01. Kepler magnitude: 15.41. Transit SNR 8.43
There are 1 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.932 ± 1.045	0.89	-0.360 ± 0.823	-0.860 ± 1.080
PRF-fit source offset from KIC position	0.678 ± 1.051	0.65	-0.241 ± 0.823	-0.634 ± 1.080
photometric centroid source offset	1.06 ± 0.79	1.35	1.04 ± 0.78	0.21 ± 0.93

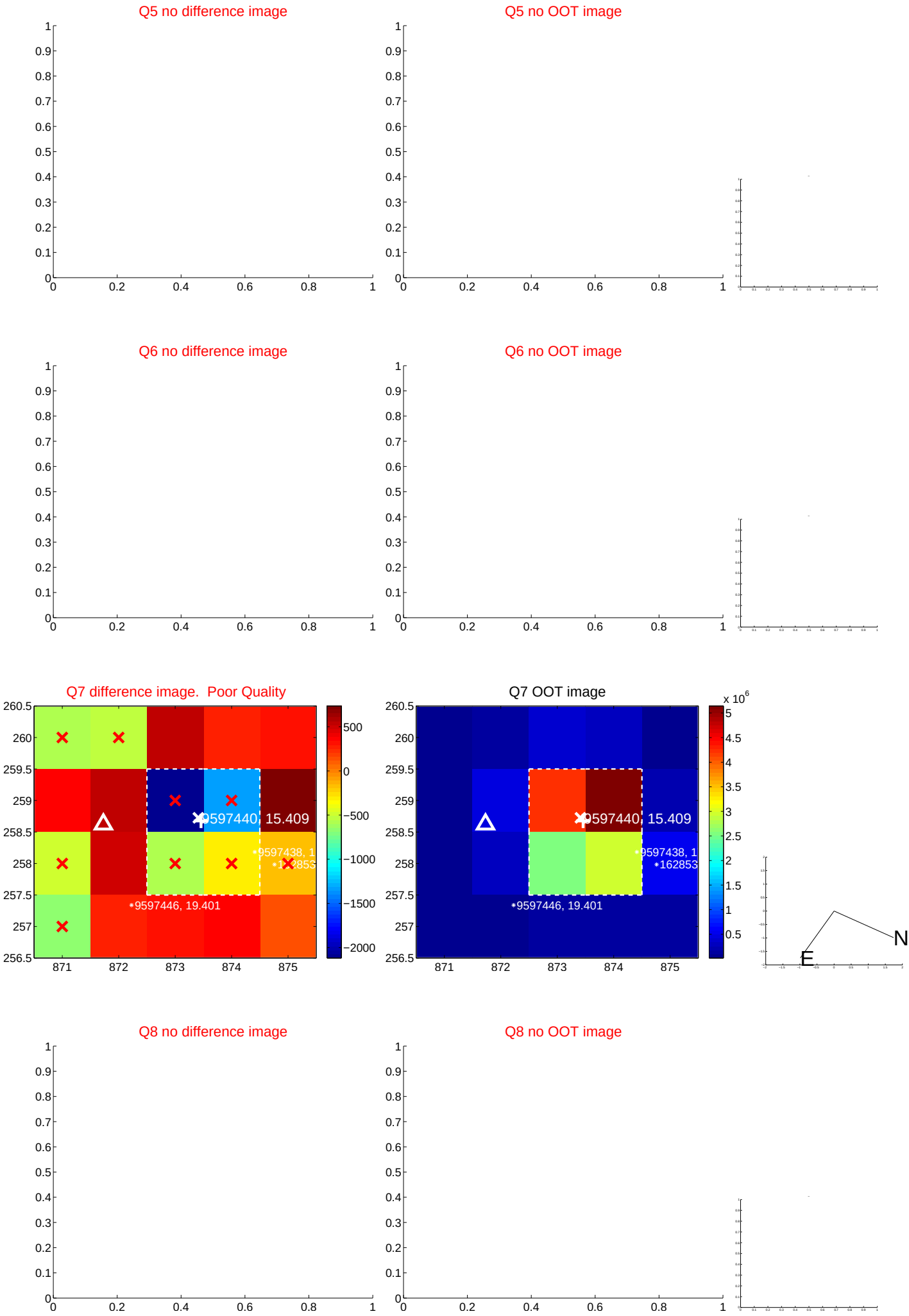


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

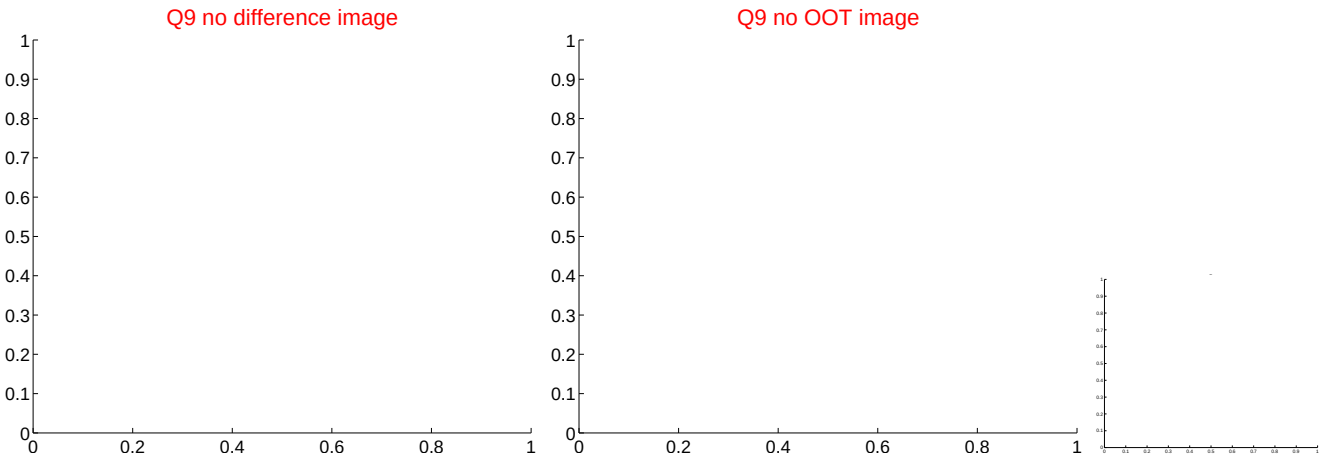
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

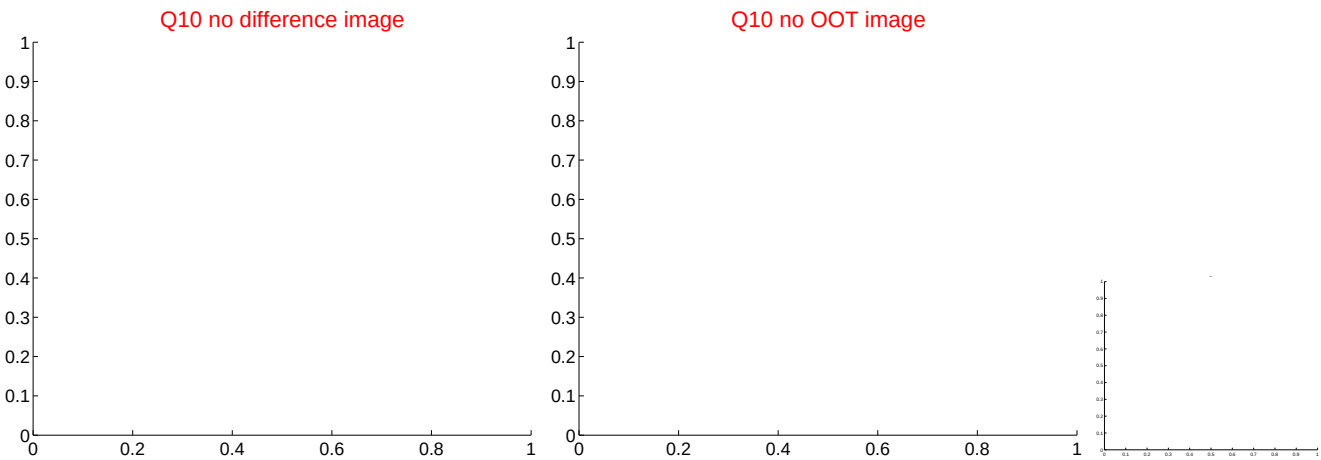


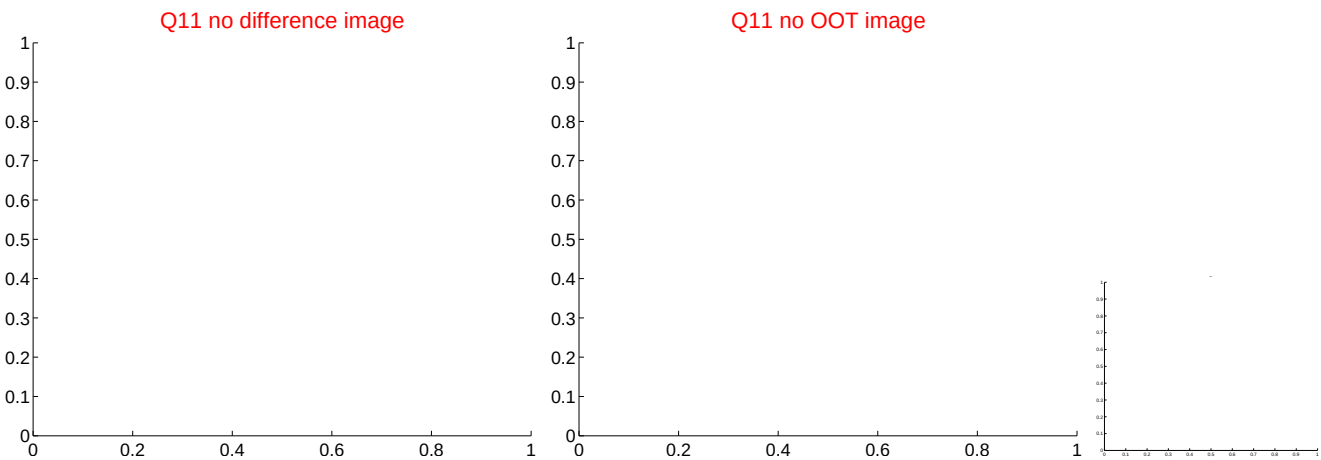
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

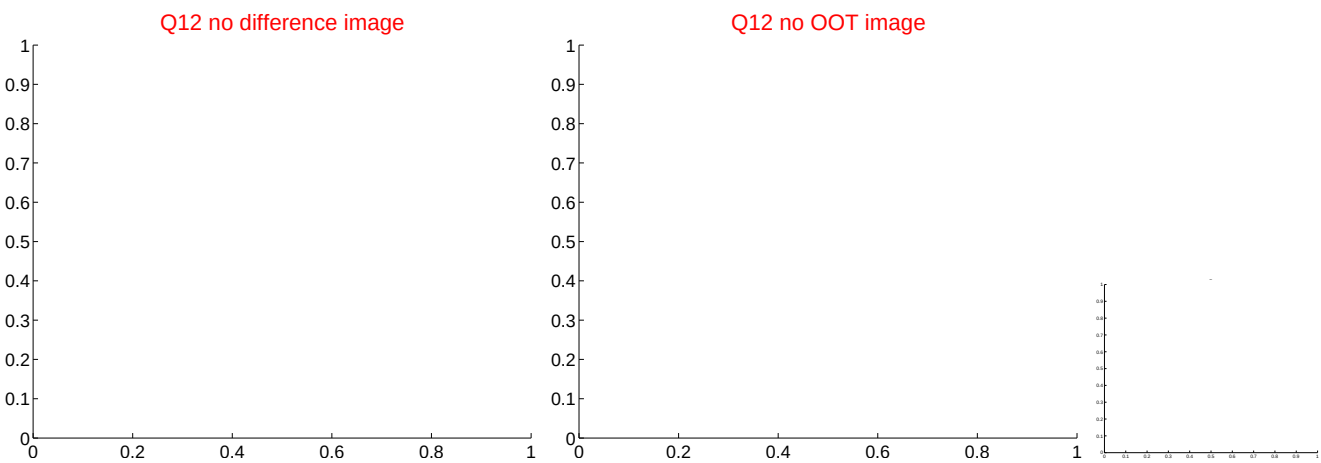


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

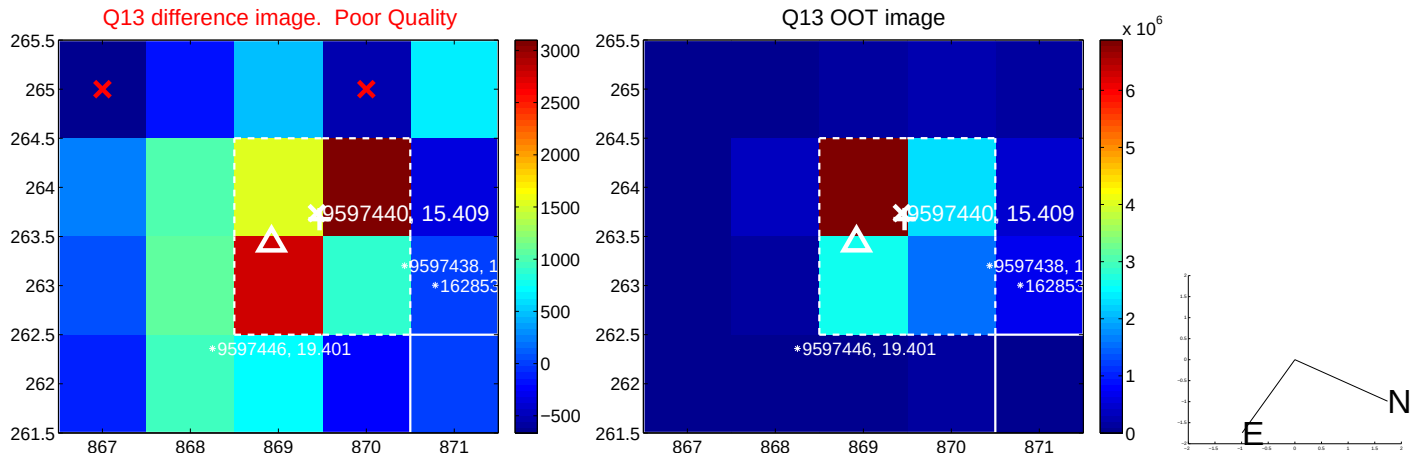


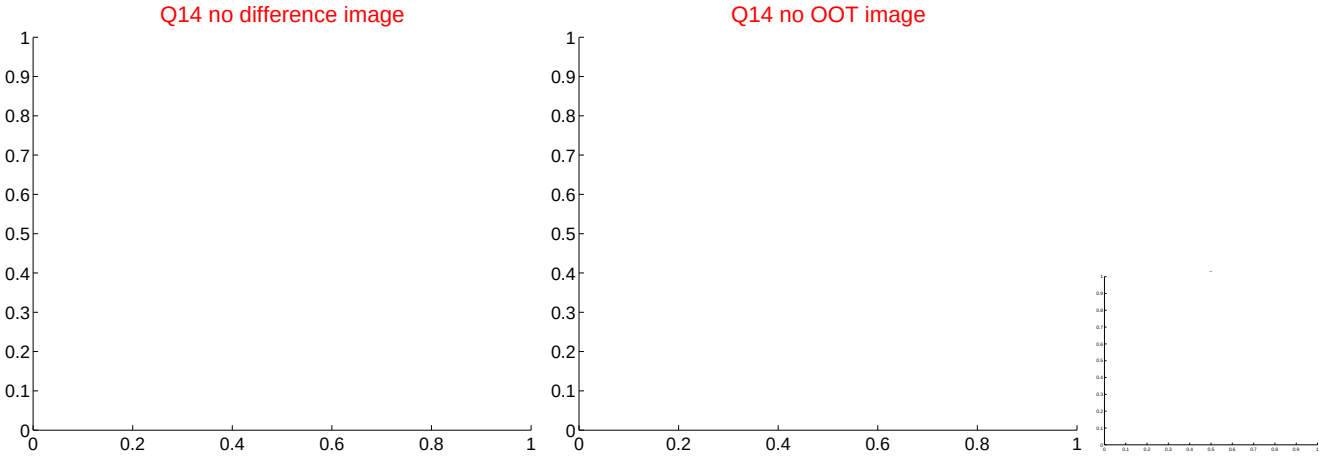


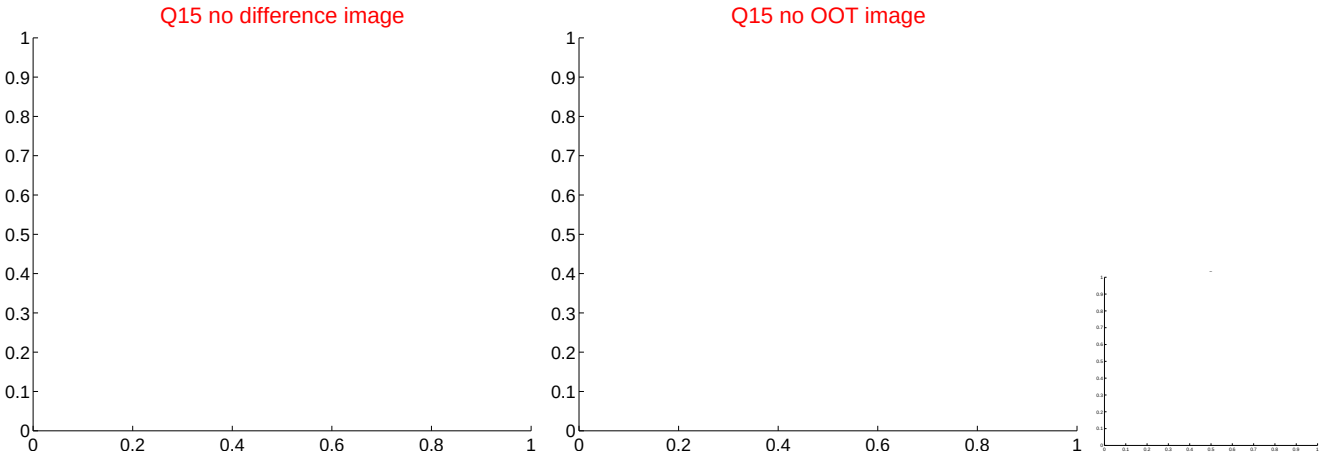


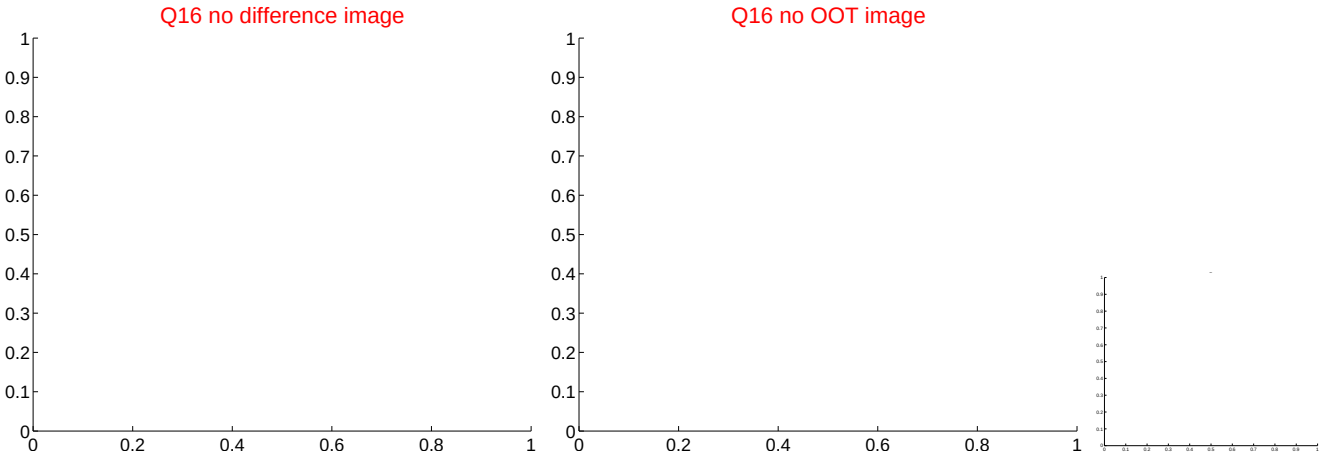


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

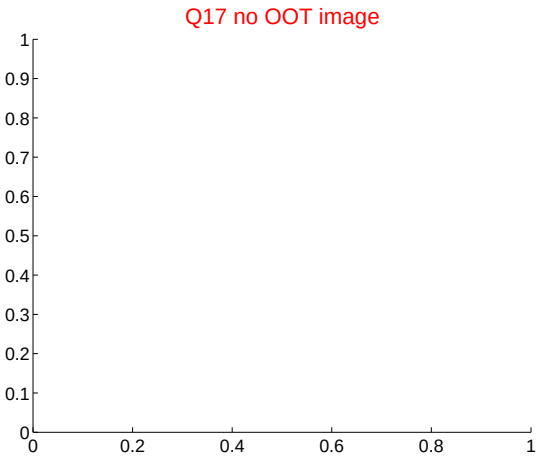


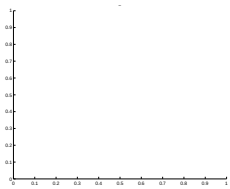


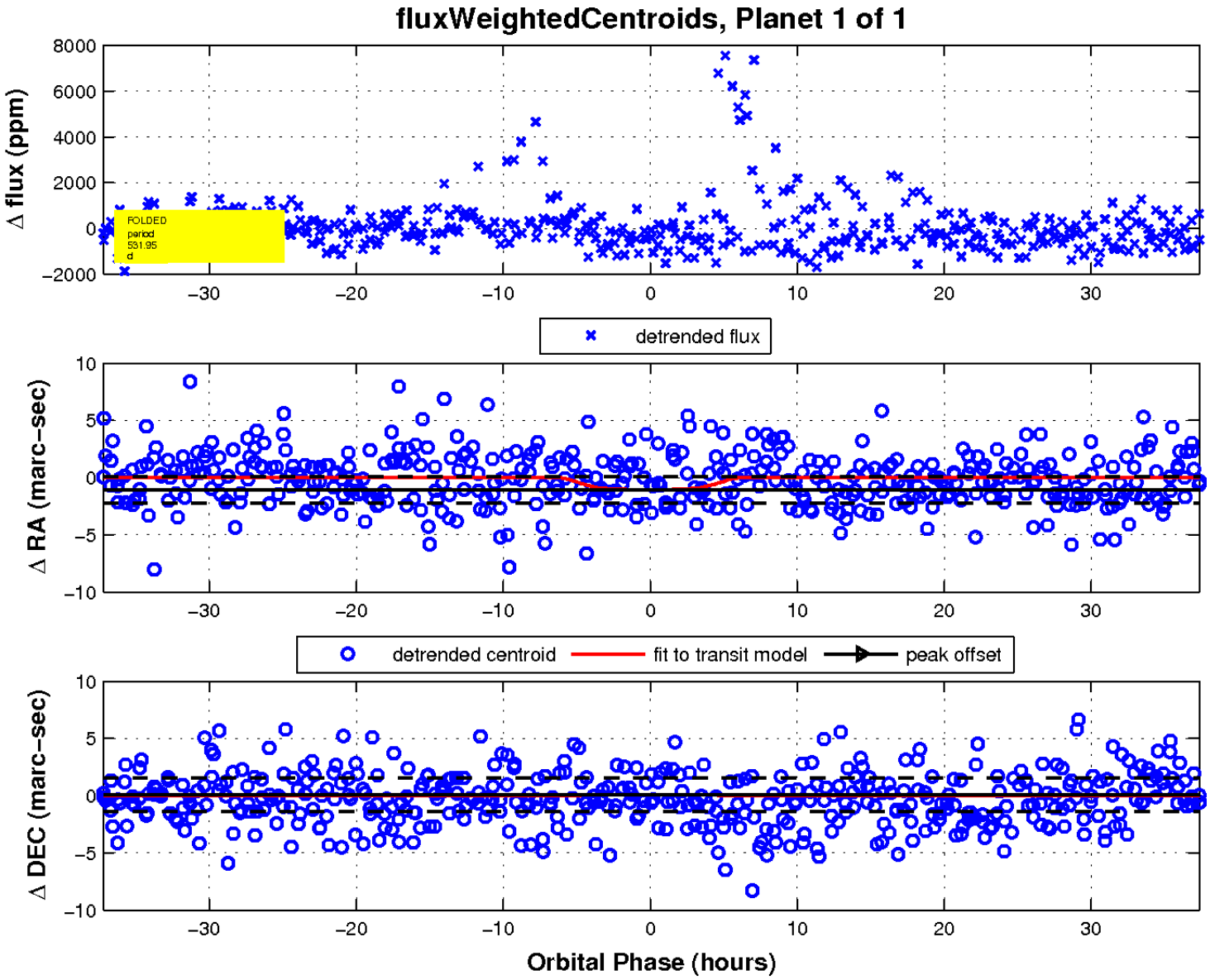




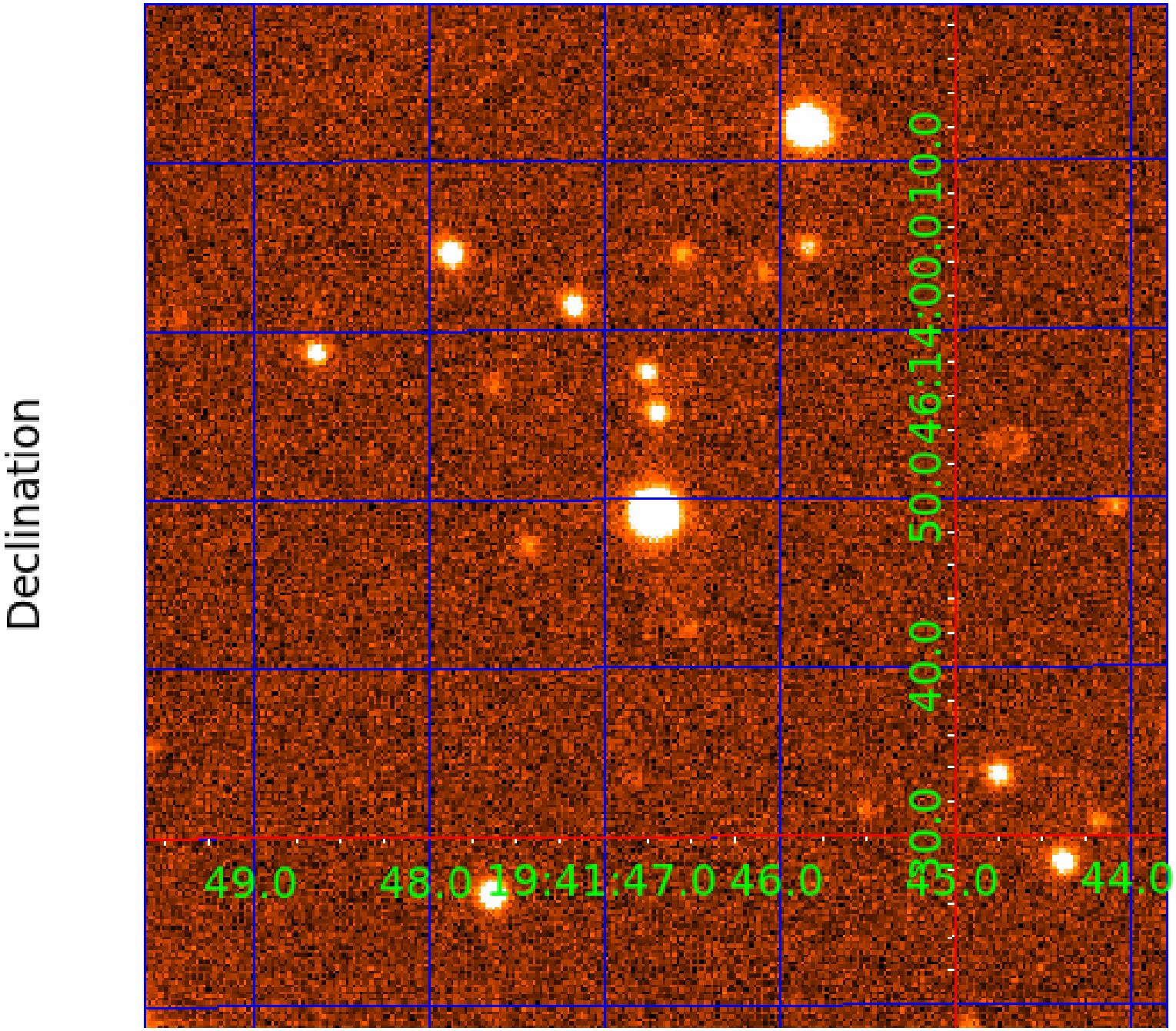
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image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