KIC 006445531

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 ($S_\oplus$)
006445531-01	OBS	7779.01	1.710195	131.664594	78.2	2.936	8.5	7.5	1.17	6418	1.24	2302.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006445531-01	OBS	FP	0.00	0	0	1	1	CENT_KIC_POS—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.

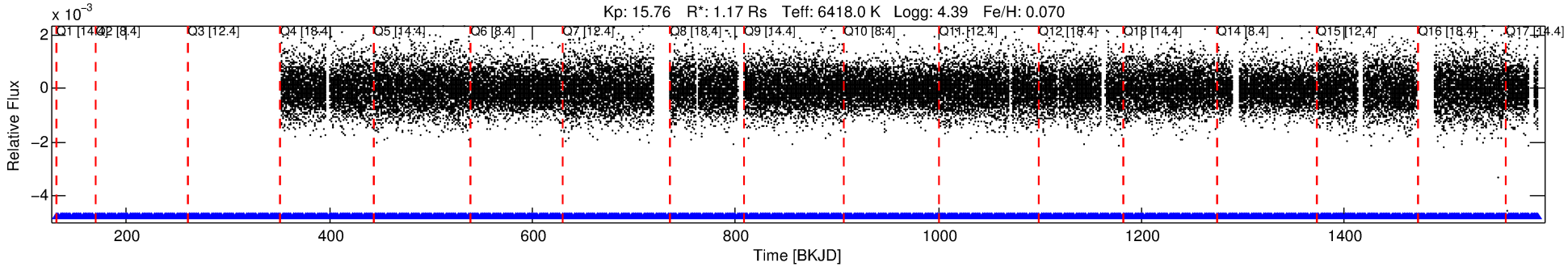
Ephemeris Match Information For 006445531-01

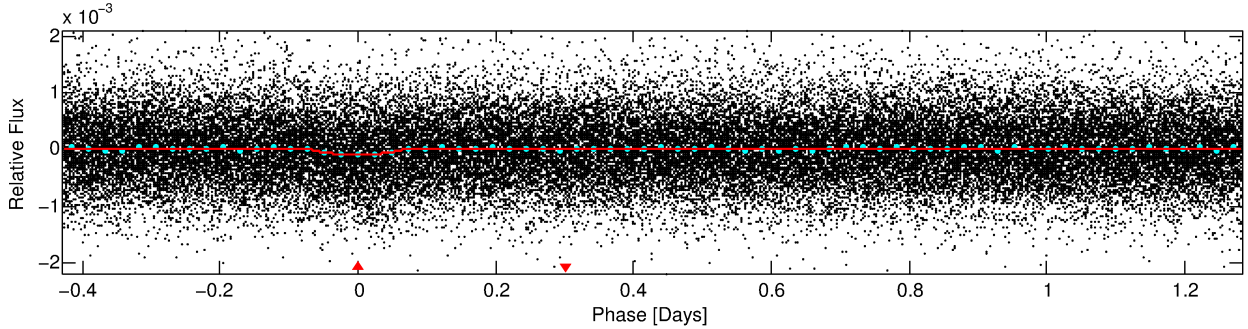
TCE (1)	KIC	Parent (2)	Parent KIC	P_1:P_2	Dist (″)	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
006445531-01	6445531	5293.01	6525196	1:1	106.1	-18	-20	10.15	15.76	2019.70	Direct-PRF	0	4.58	2.95

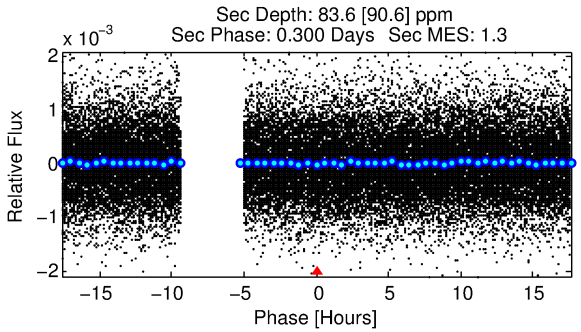
Notes: P_1:P_2 is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth dividied by the child's. σ_P and σ_T are the significance of the match 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.

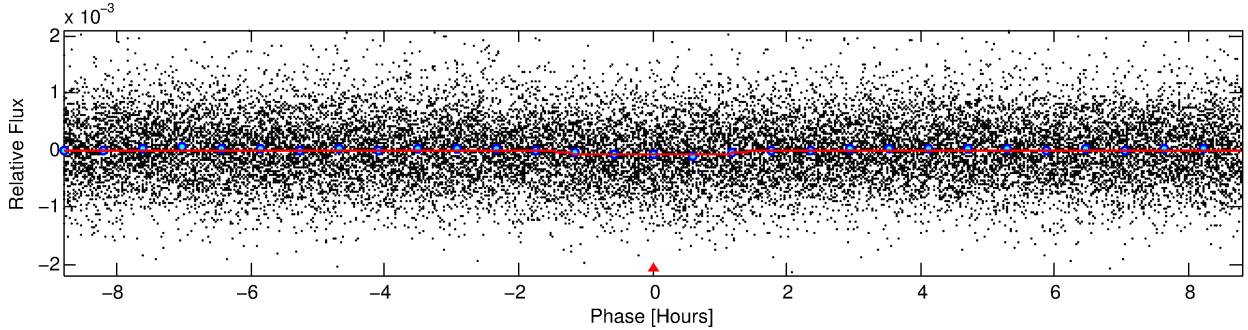
DV One-Page Summary

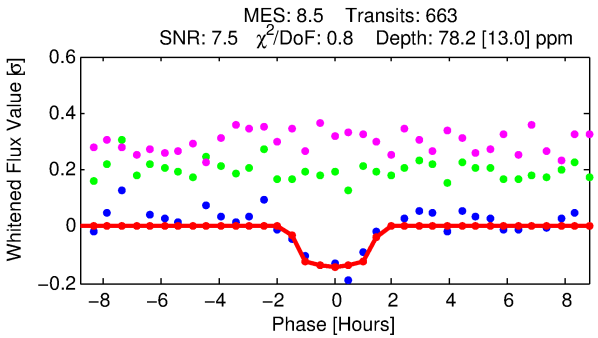
KIC: 6445531 Candidate: 1 of 1 Period: 1.710 d

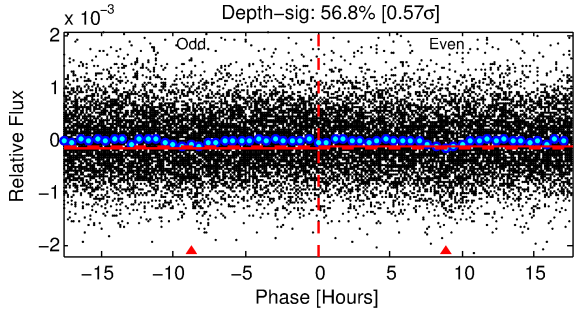


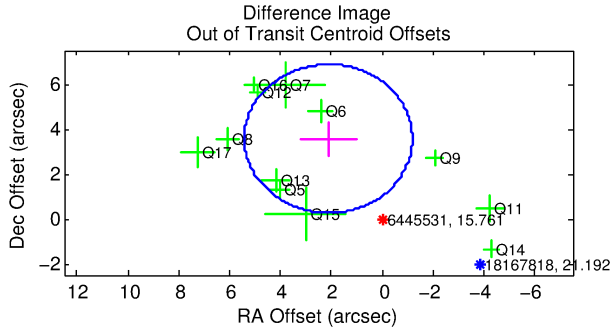












DV Fit Results:

Period = 1.71019 [0.00002] d
Epoch = 131.6646 [0.0057] BKJD
Rp/R* = 0.0097 [0.0063]
a/R* = 2.07 [5.79]
b = 0.92 [0.61]

Seff = 2302.17 [877.76]
Teq = 1766 [168] K
Rp = 1.24 [0.88] Re
a = 0.0301 [0.0073] AU

Ag = 27.15 [46.79] [0.56σ]
Teffp = 6234 [2641] K [1.69σ]

DV Diagnostic Results:

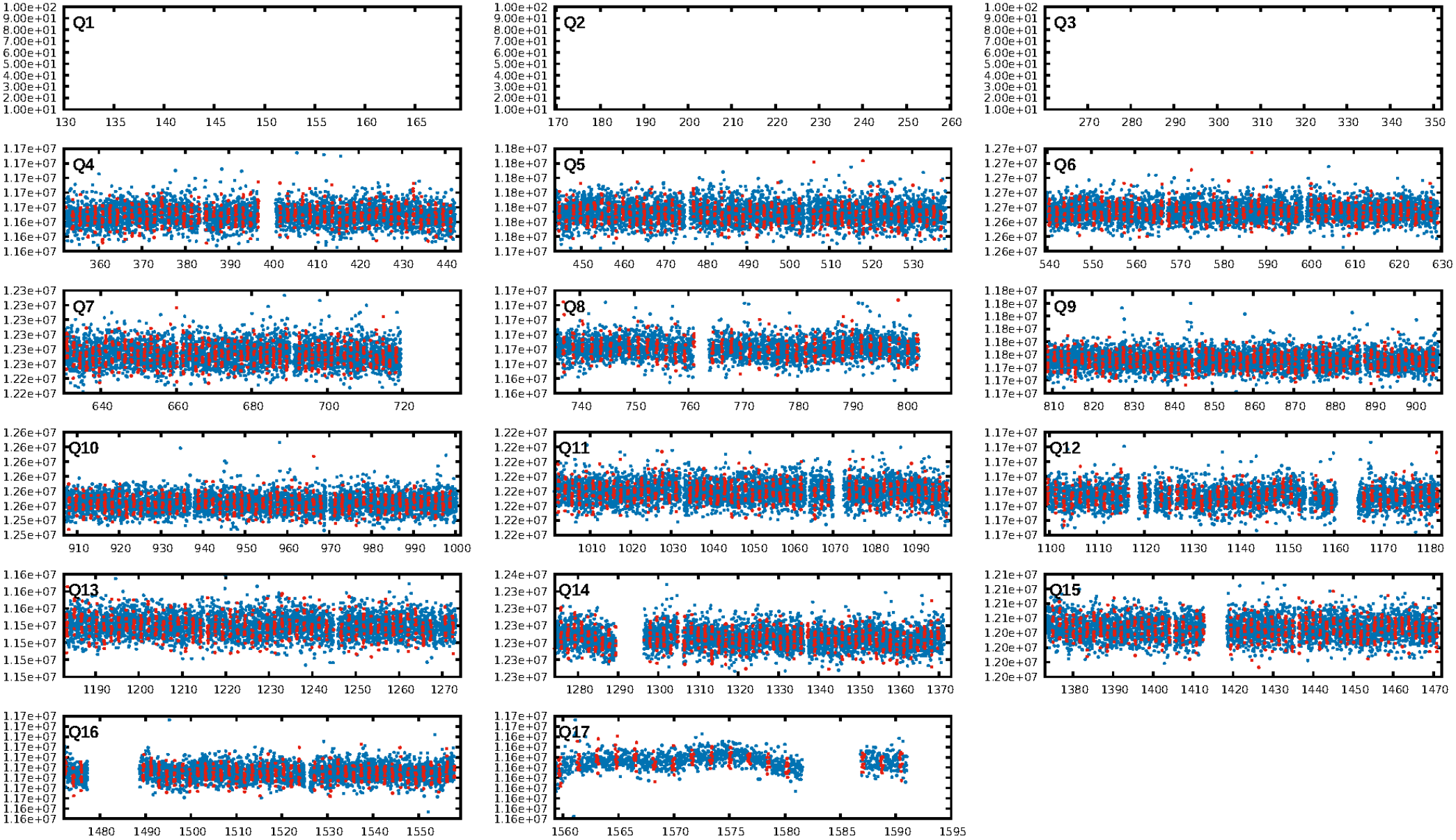
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 3.22e−18
RollingBand−fgt: 1.00 [647/647]
GhostDiagnostic−chr: 0.07061

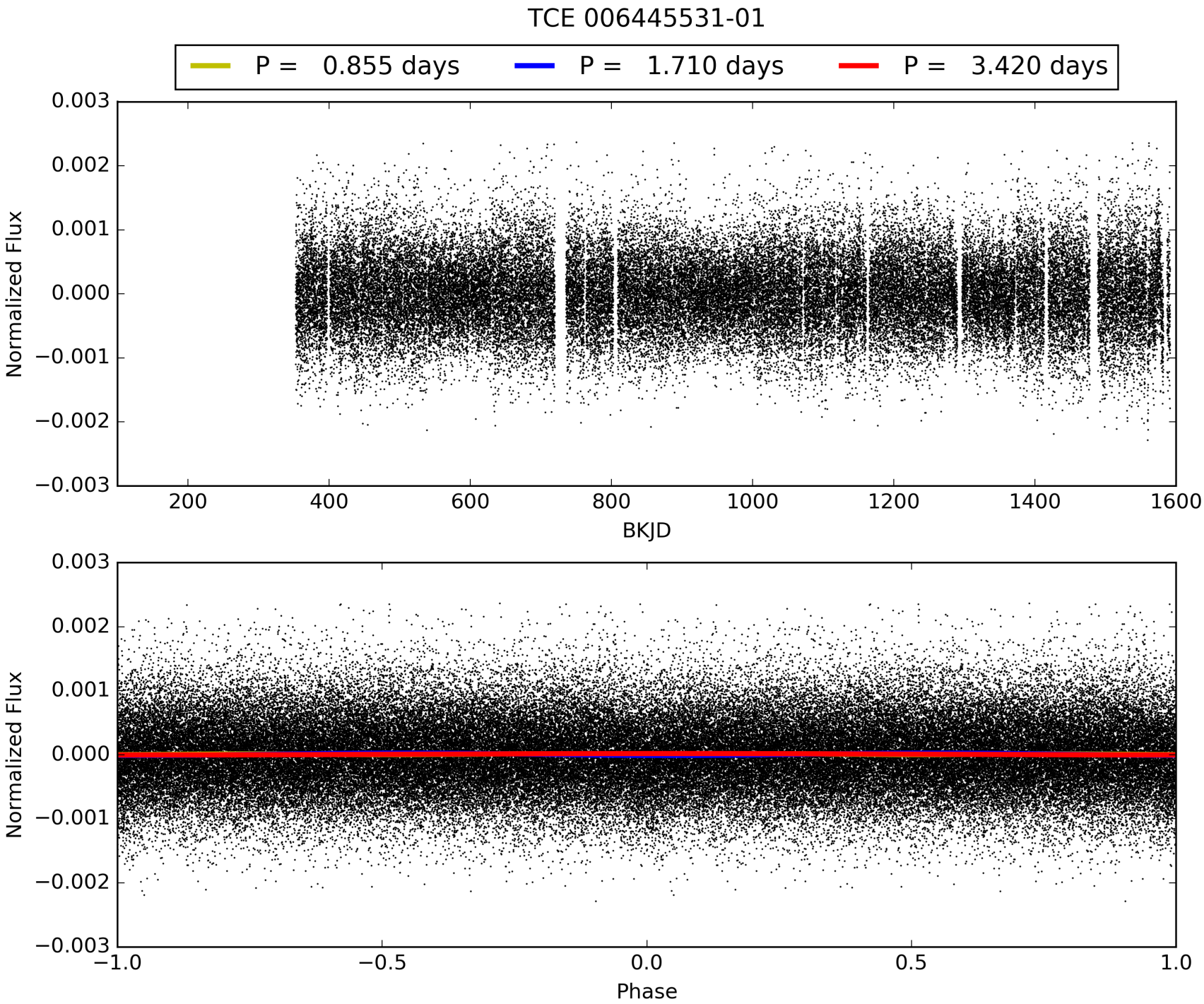
Centroid−sig: 0.0%
Centroid−so: 4.918 arcsec [2.63σ]
OotOffset−rm: 4.147 arcsec [3.76σ]
KicOffset−rm: 1.408 arcsec [1.61σ]
OotOffset−st: 2/3/3/4 [12]
KicOffset−st: 2/3/3/4 [12]
DiffImageQuality−fgm: 0.25 [3/12]
DiffImageOverlap−fno: 1.00 [14/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30−Jan−2016 20:23:14 Z

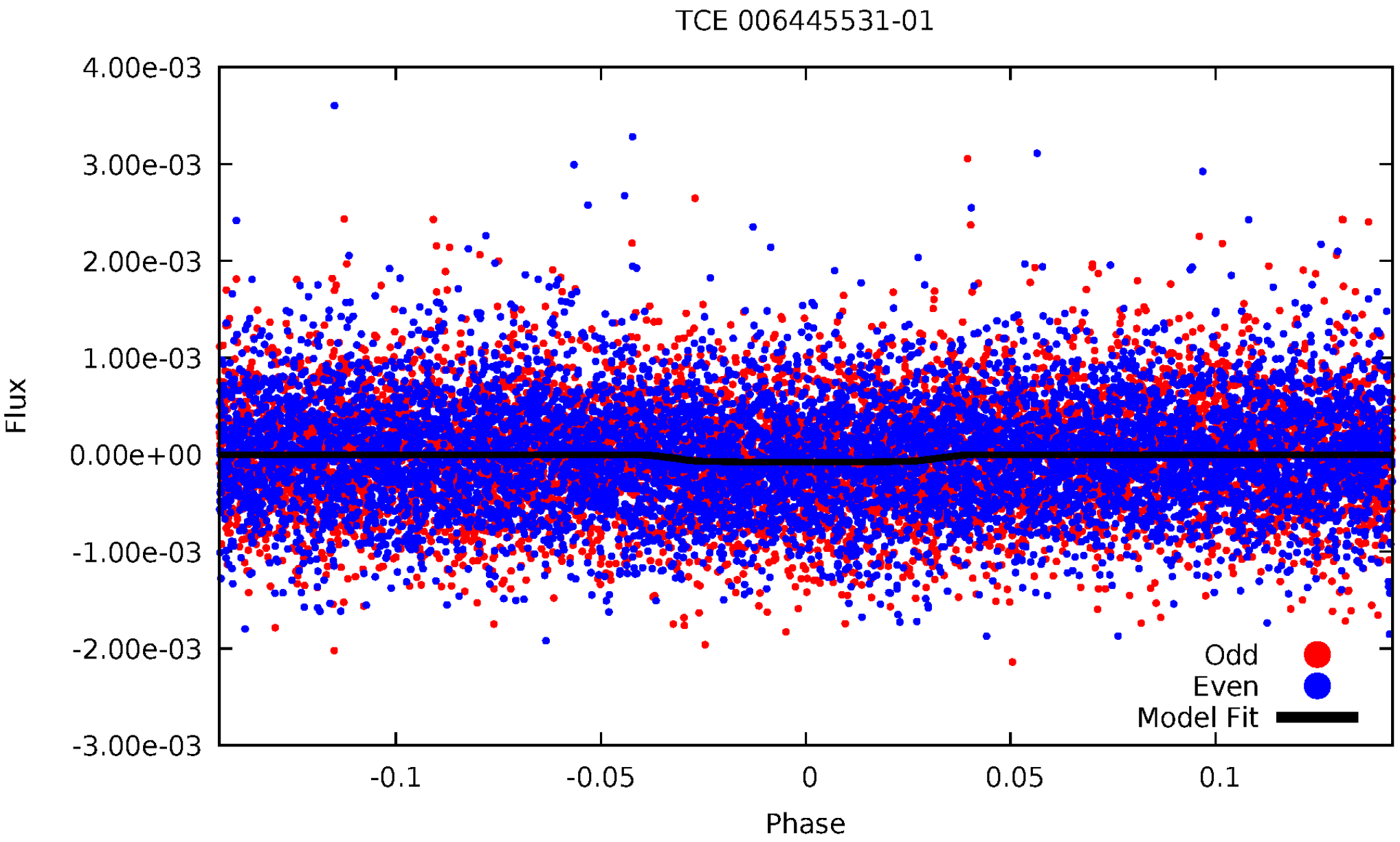
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006445531-01, PDC Light Curves

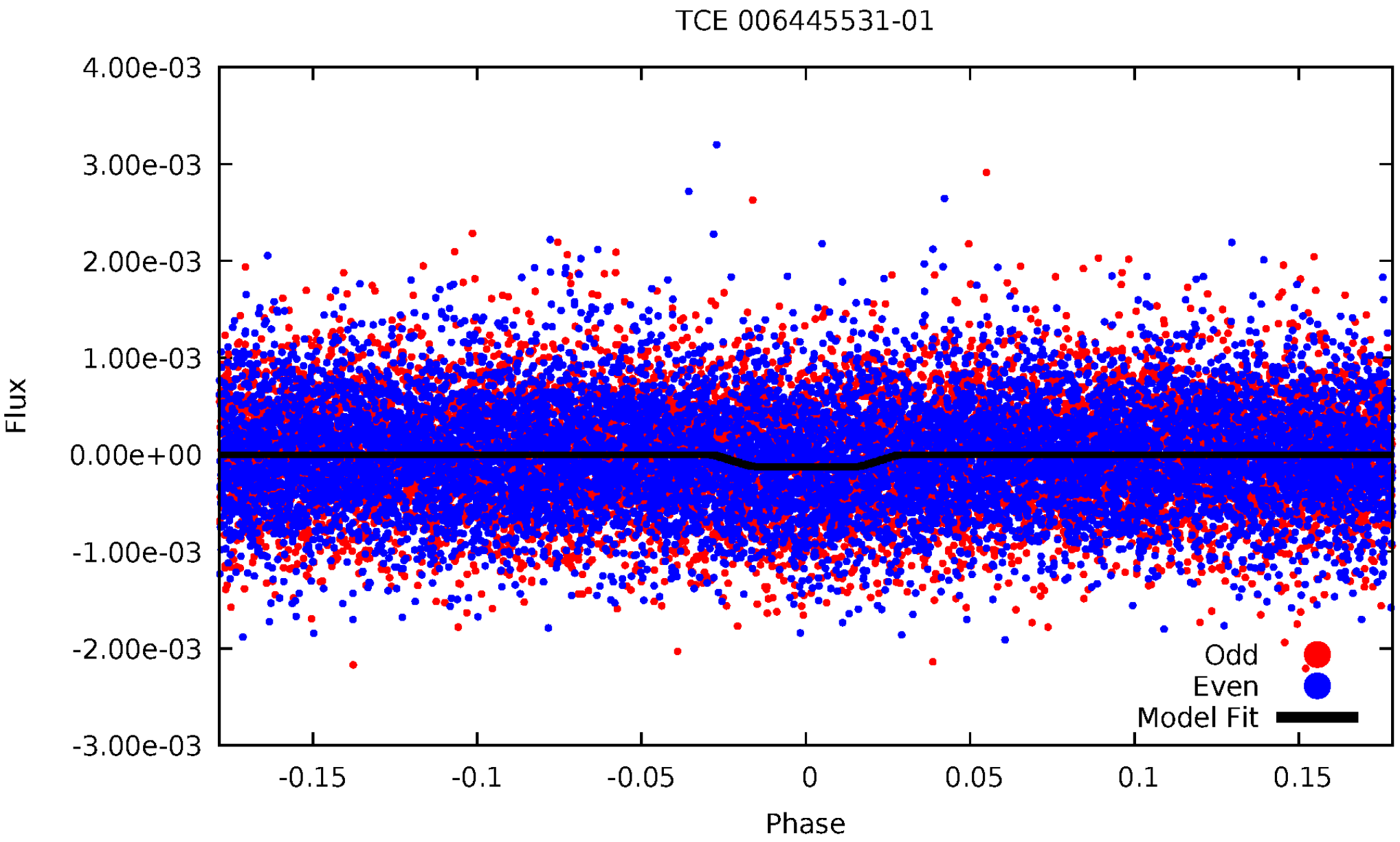



TCE 006445531-01
P = 0.855 days
P = 1.710 days
P = 3.420 days
Normalized Flux
BKJD
Normalized Flux
Phase

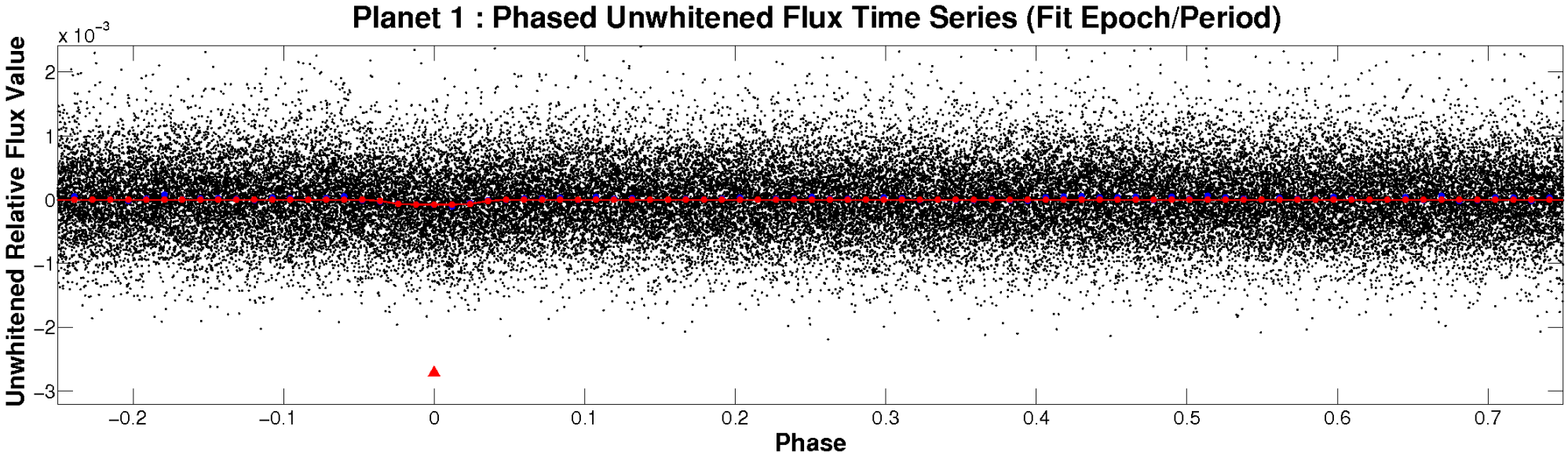
DV Odd/Even

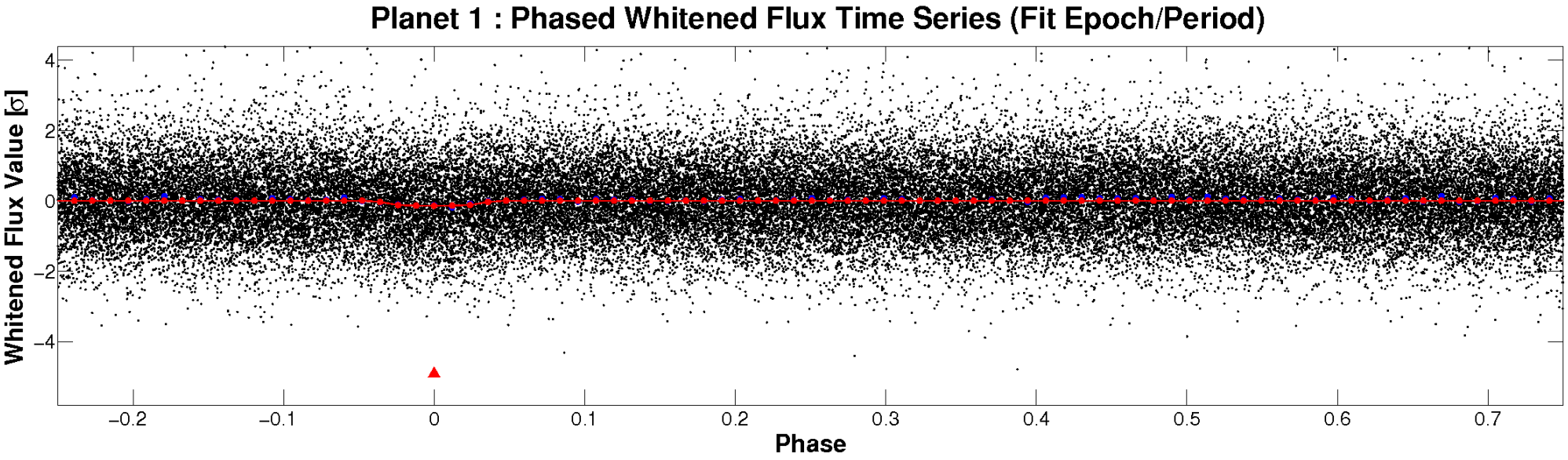

TCE 006445531-01
4.00e-03
3.00e-03
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
-2.00e-03
-3.00e-03
Flux
-0.1
-0.05
0
0.05
0.1
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 006445531-01
4.00e-03
3.00e-03
2.00e-03
1.00e-03
0.00e+00
-1.00e-03
-2.00e-03
-3.00e-03
Flux
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
Phase
Odd
Even
Model Fit

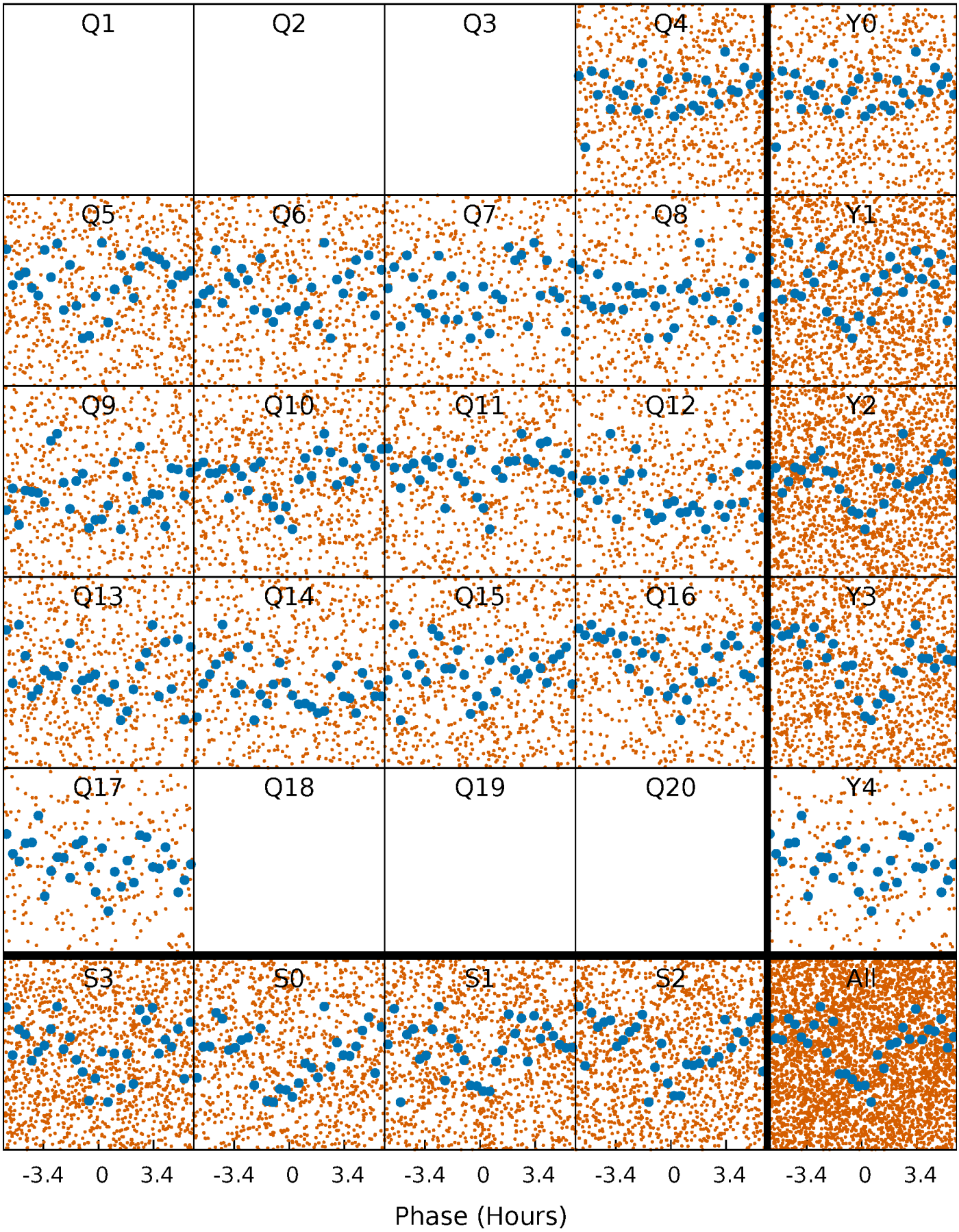
Non-Whitened Vs. Whitened Light Curve





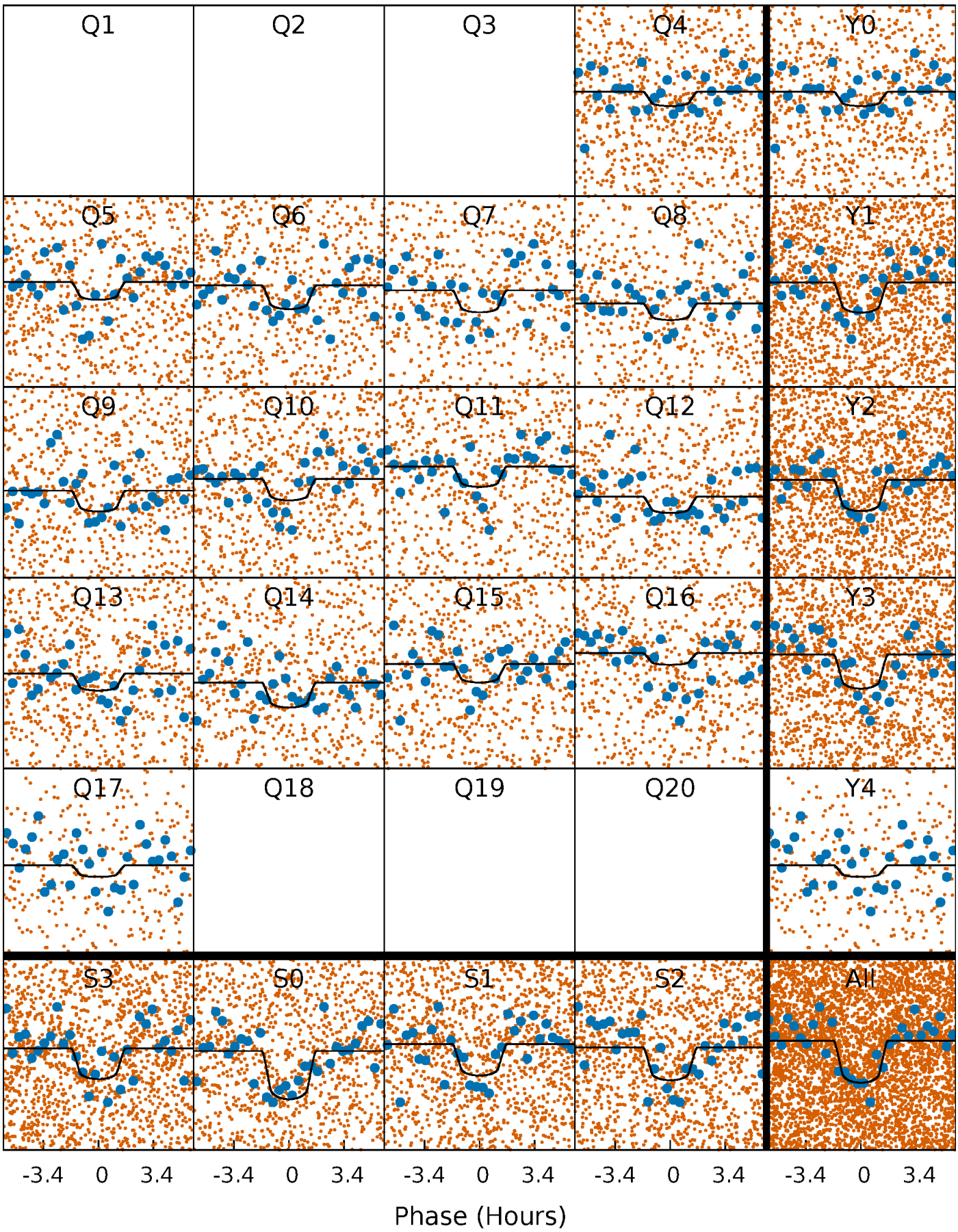
PDC Quarter-Phased Transit Curves

TCE 006445531-01 P= 1.710195 Days T_0=131.664594 (BKJD)



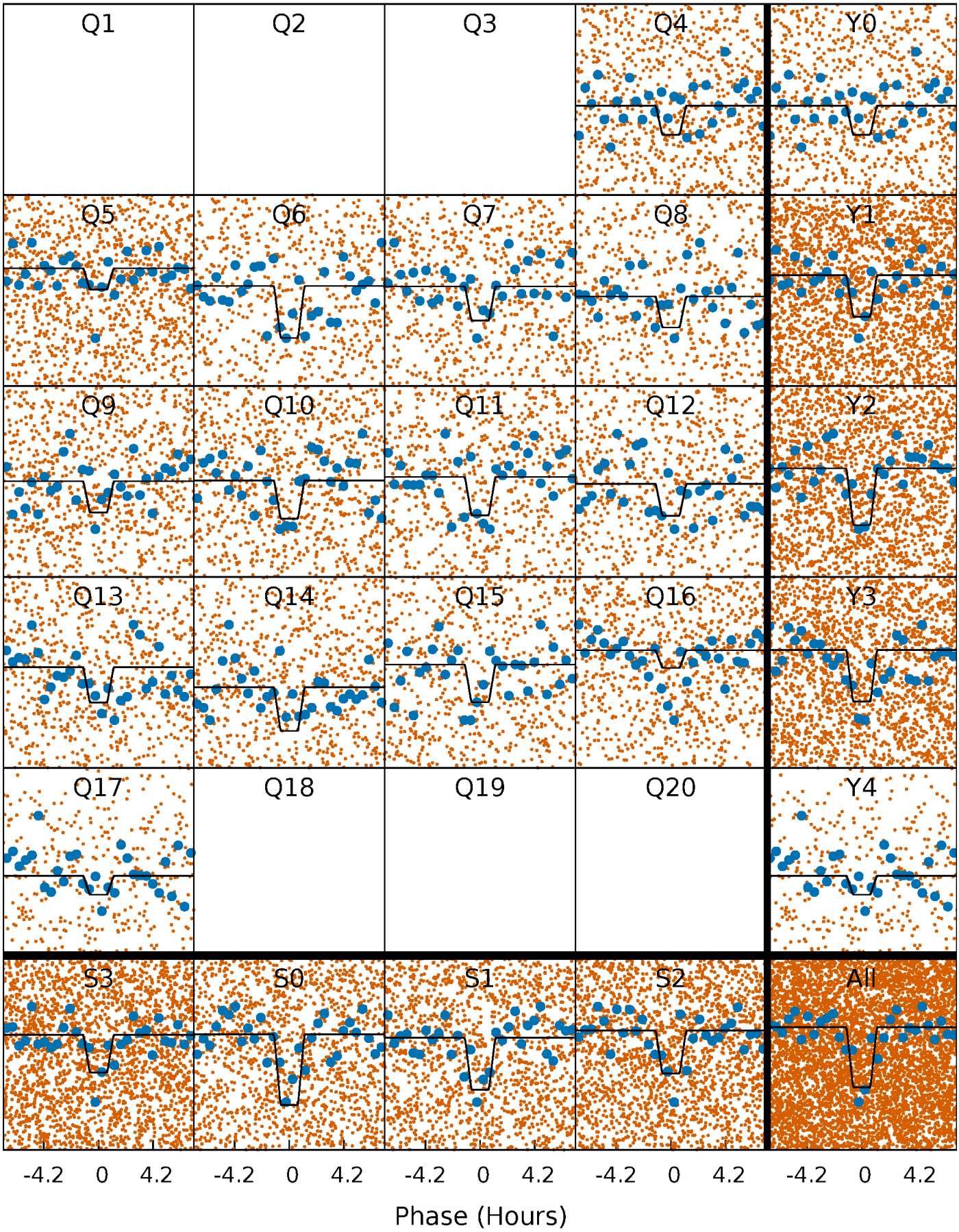
DV Quarter-Phased Transit Curves

TCE 006445531-01 P= 1.710195 Days T_0=131.664594 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

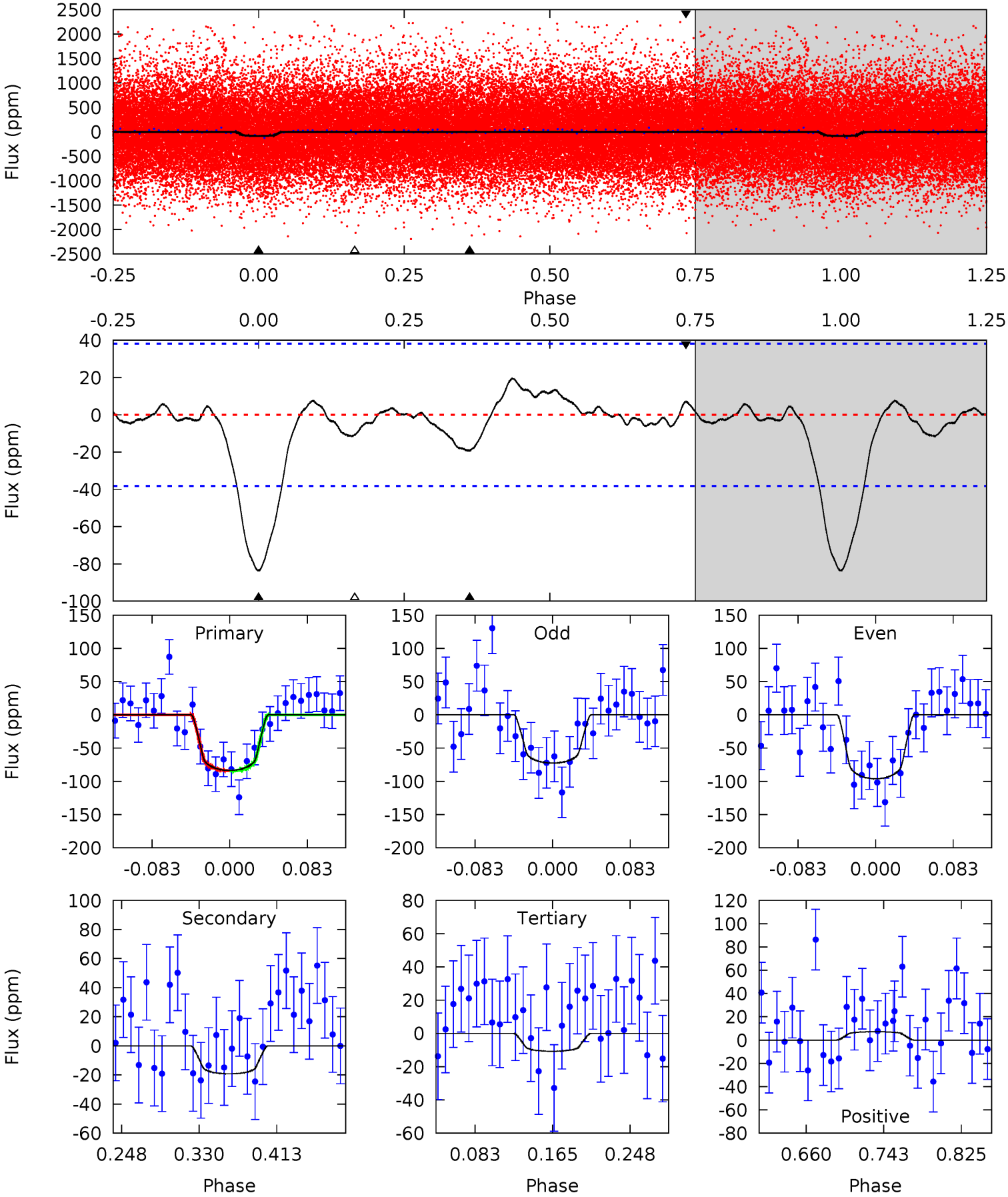
TCE 006445531-01 P= 1.710282 Days T_0=131.619104 (BKJD)



DV Model-Shift Uniqueness Test

006445531-01, P = 1.710195 Days, E = 131.664594 Days

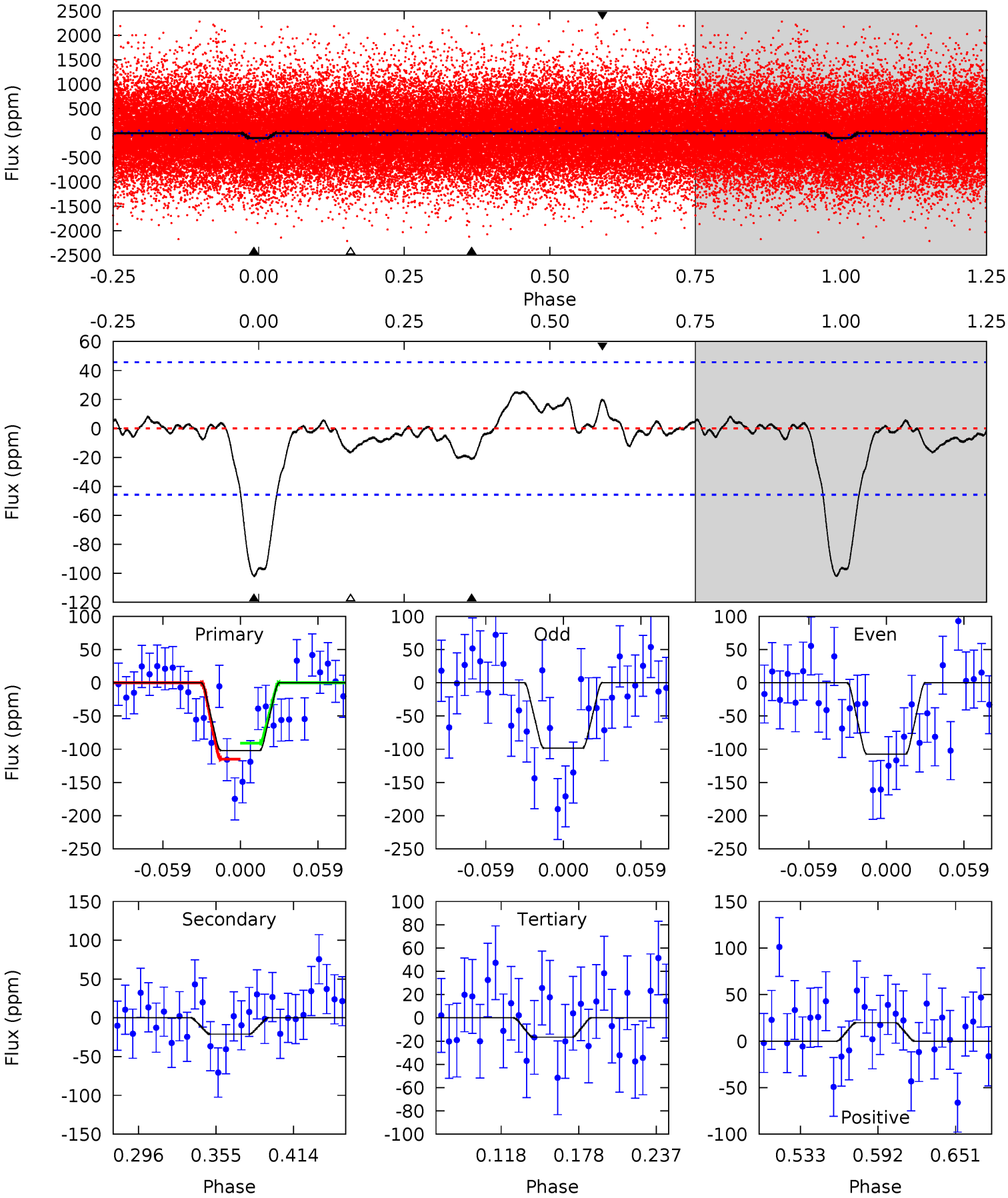
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	2.32	1.30	0.86	4.60	1.74	0.70	8.78	9.23	1.02	1.46	1.42	1.06	0.19	0.03



Alt Model-Shift Uniqueness Test

006445531-01, P = 1.710282 Days, E = 131.619104 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	2.15	1.70	2.02	4.67	1.89	0.91	8.73	8.40	0.45	0.13	0.46	1.10	0.20	1.23



Stellar Parameters For KIC 006445531

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6418^{+179}_{-246}	$4.395^{+0.062}_{-0.188}$	$0.070^{+0.200}_{-0.350}$	$1.171^{+0.345}_{-0.148}$	$1.241^{+0.144}_{-0.199}$	$1.090^{+0.370}_{-0.541}$
	+3%/-4%	+1%/-4%	+286%/-500%	+29%/-13%	+12%/-16%	+34%/-50%
Source	KIC0	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 006445531-01 / KOI 7779.01

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-19±8	$1.37^{+0.87}_{-0.73}$	2507^{+159}_{-126}	4267^{+1562}_{-849}	$4.552^{+15.591}_{-3.160}$
Alt.	-21±10	$1.50^{+0.86}_{-0.77}$	2509^{+170}_{-137}	4197^{+1584}_{-763}	$4.159^{+14.605}_{-2.659}$

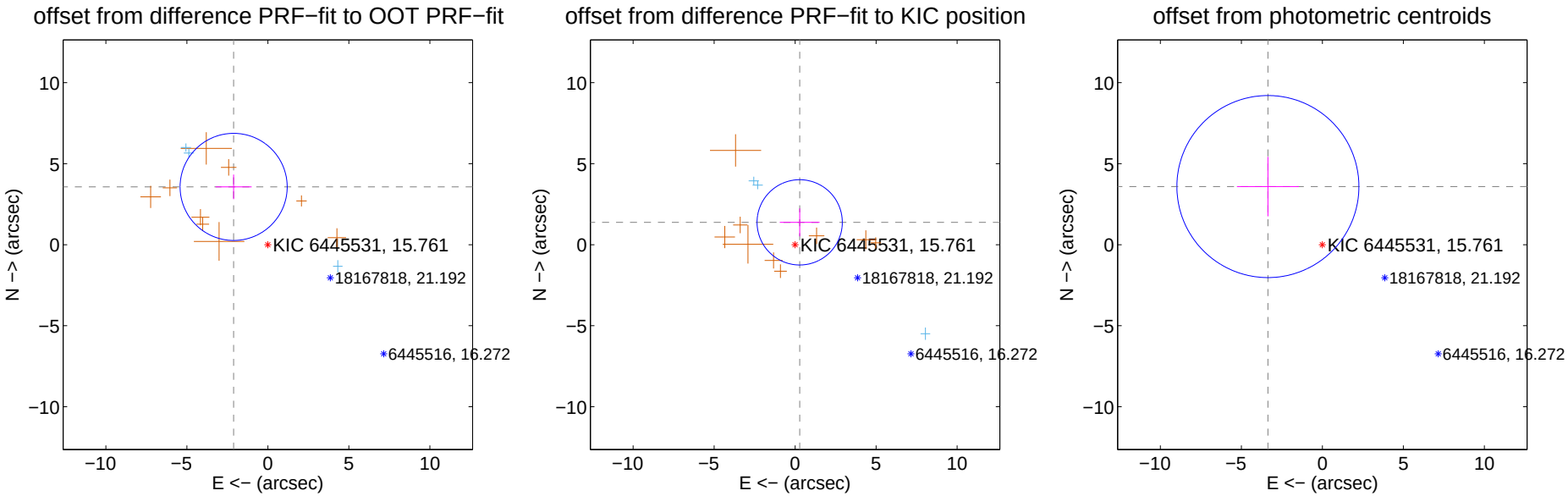
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

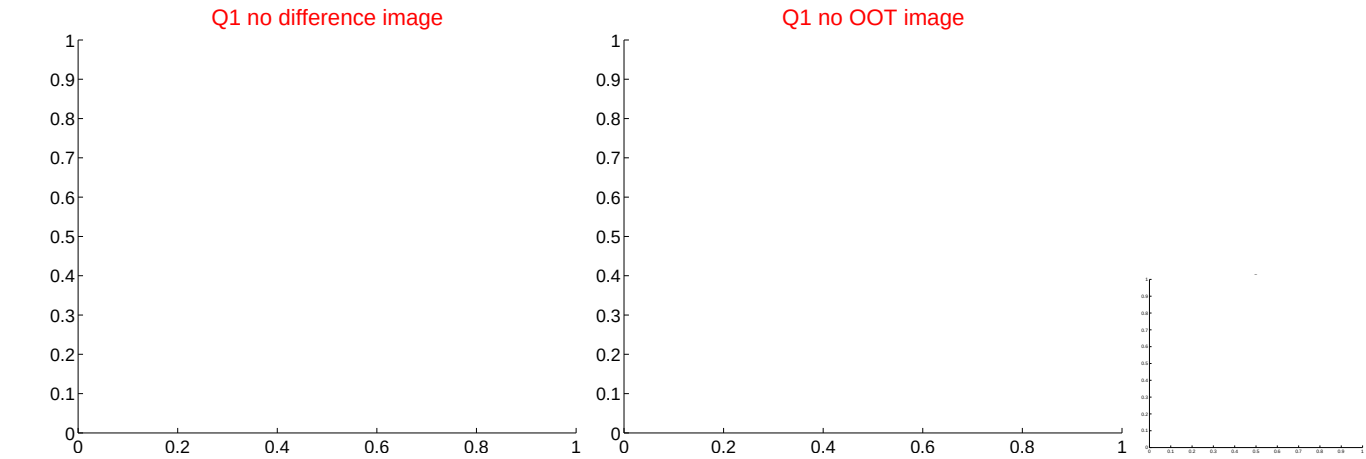
Supplemental centroid analysis for 006445531-01. Kepler magnitude: 15.76. Transit SNR 7.53
There are 3 quarters with good PRF difference image offsets
The OOT PRF centroid is offset from the target star catalog position by about 3.81 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

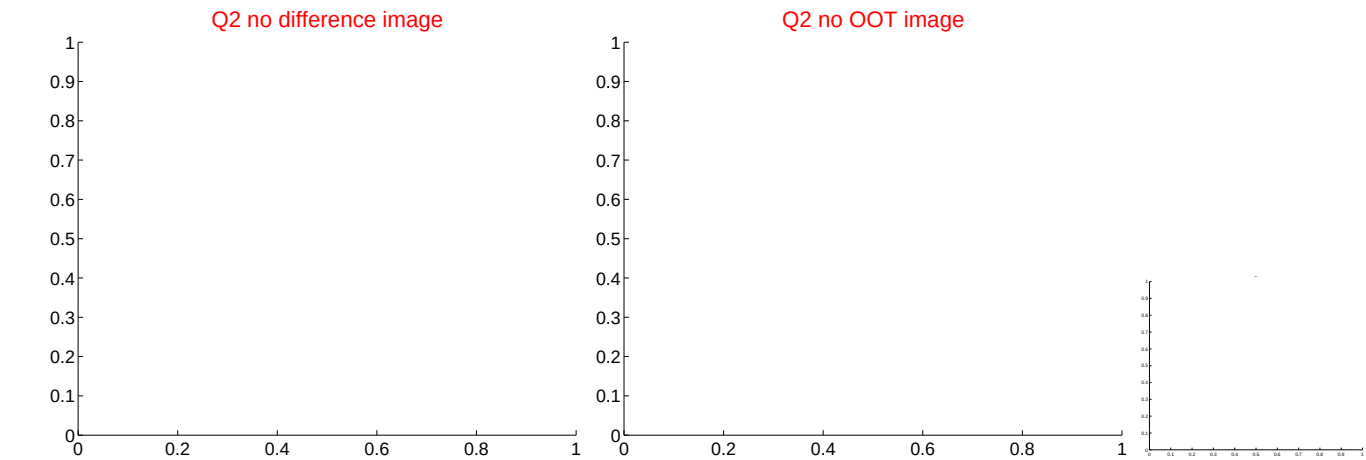
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.147 ± 1.102	3.76	2.114 ± 1.112	3.568 ± 0.760
PRF-fit source offset from KIC position	1.408 ± 0.877	1.61	-0.281 ± 1.230	1.380 ± 0.859
photometric centroid source offset	4.92 ± 1.87	2.63	3.36 ± 1.91	3.59 ± 1.84

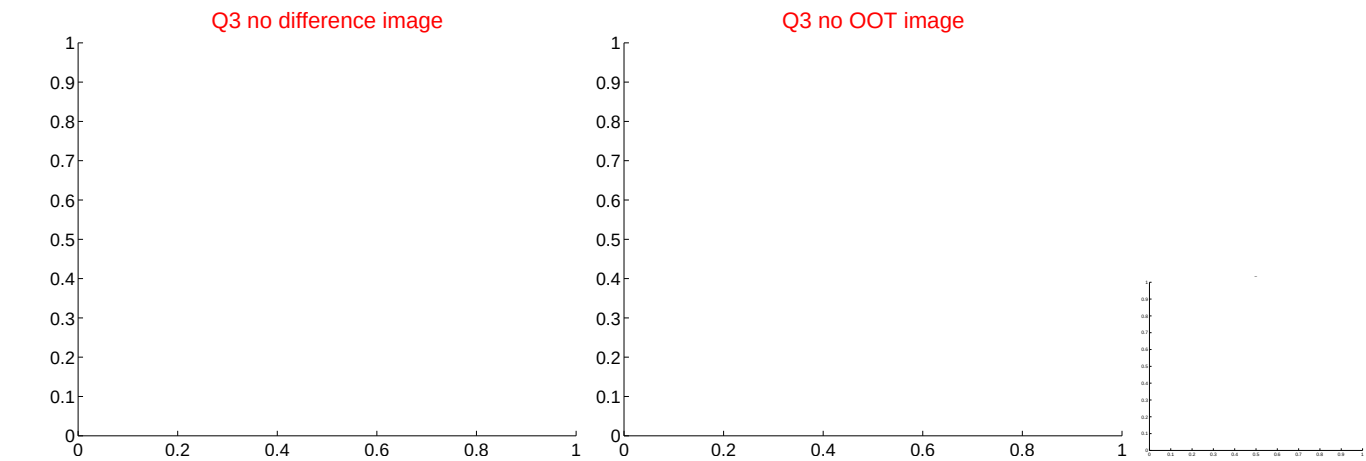


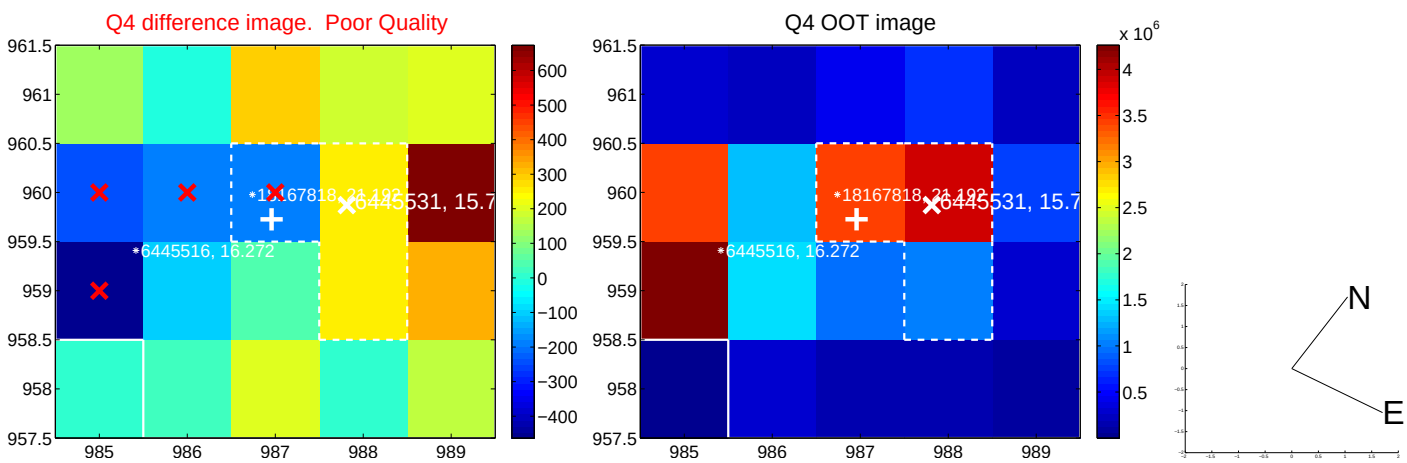
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

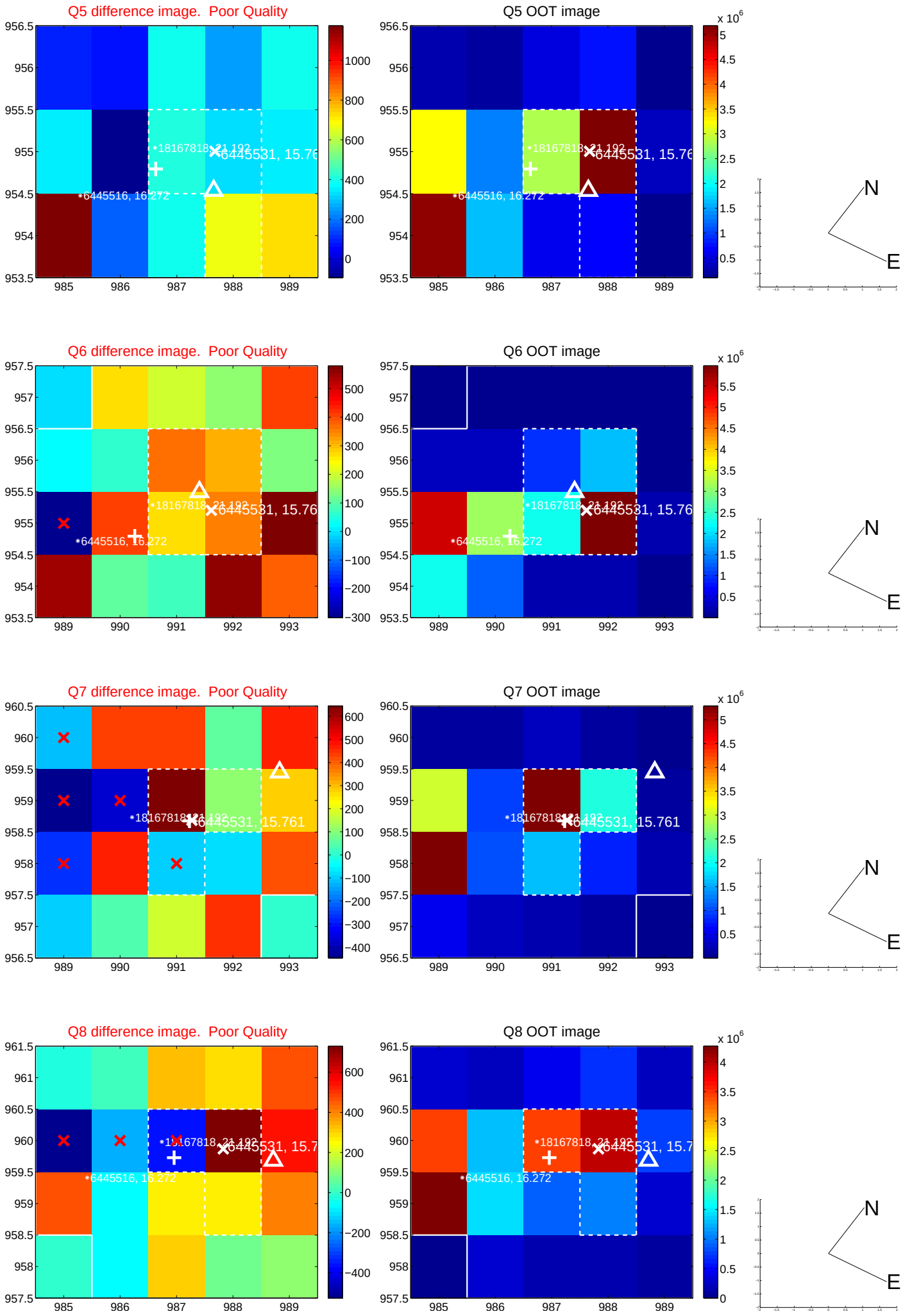




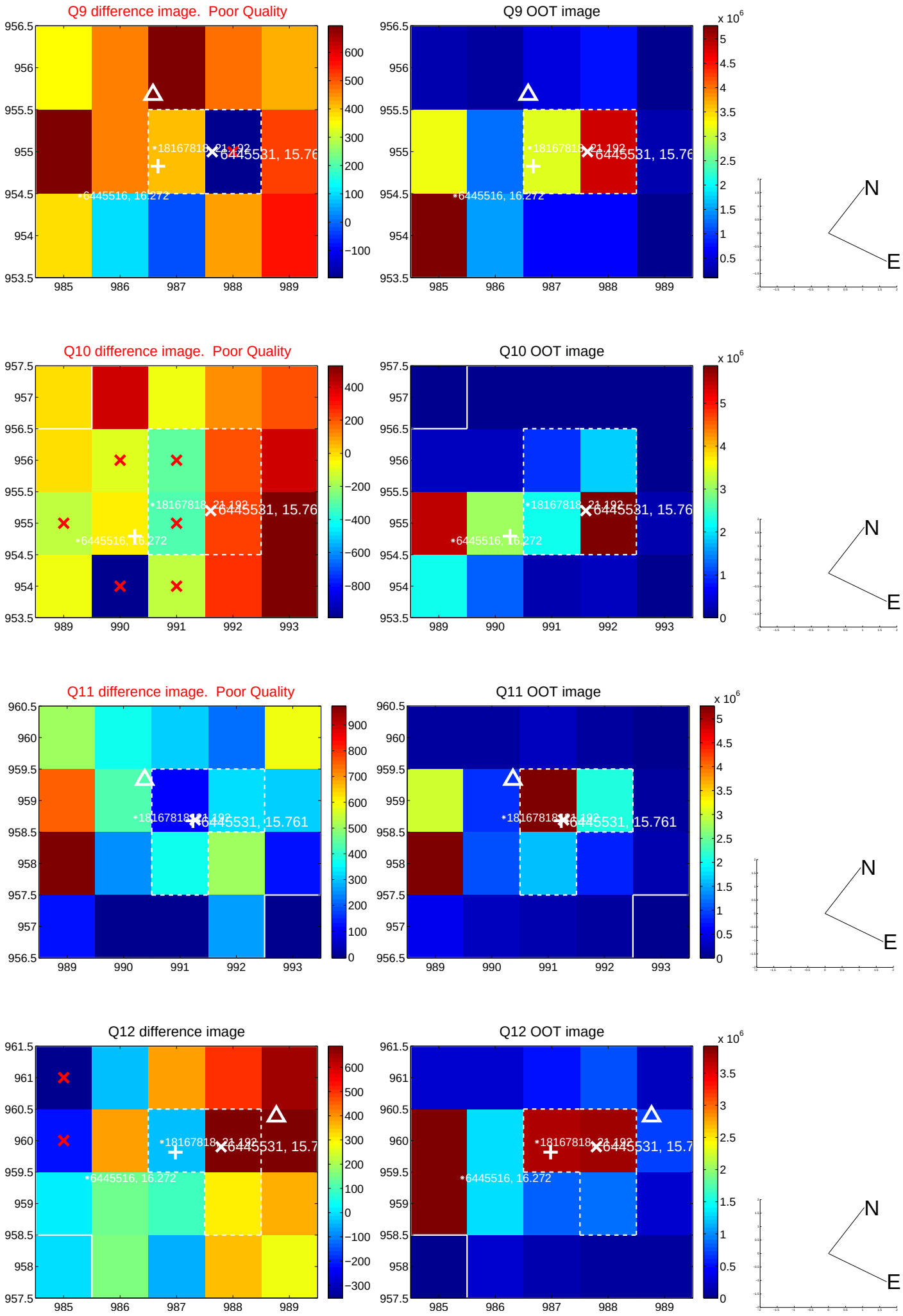




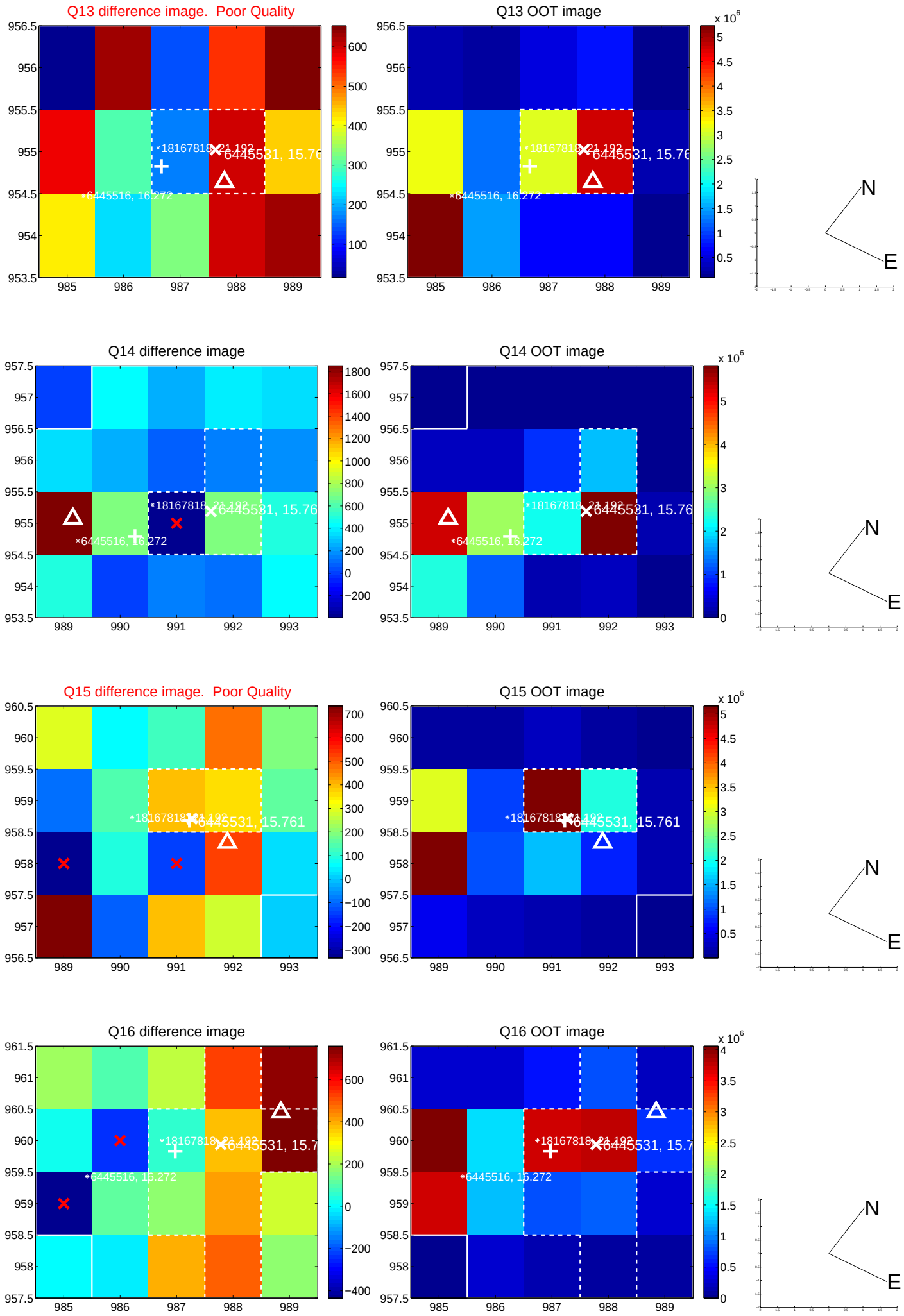
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



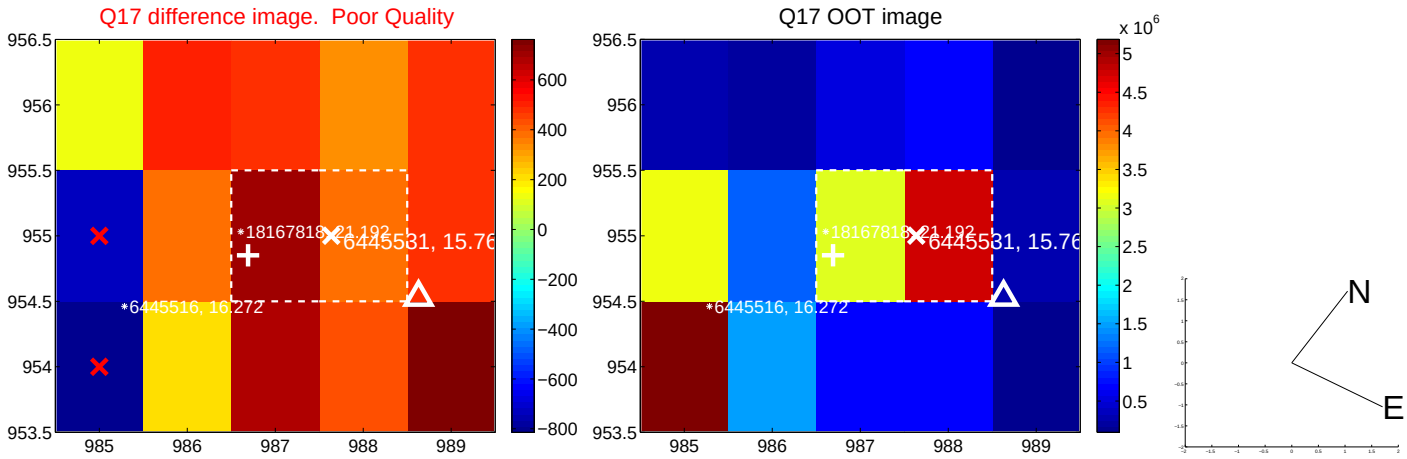
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

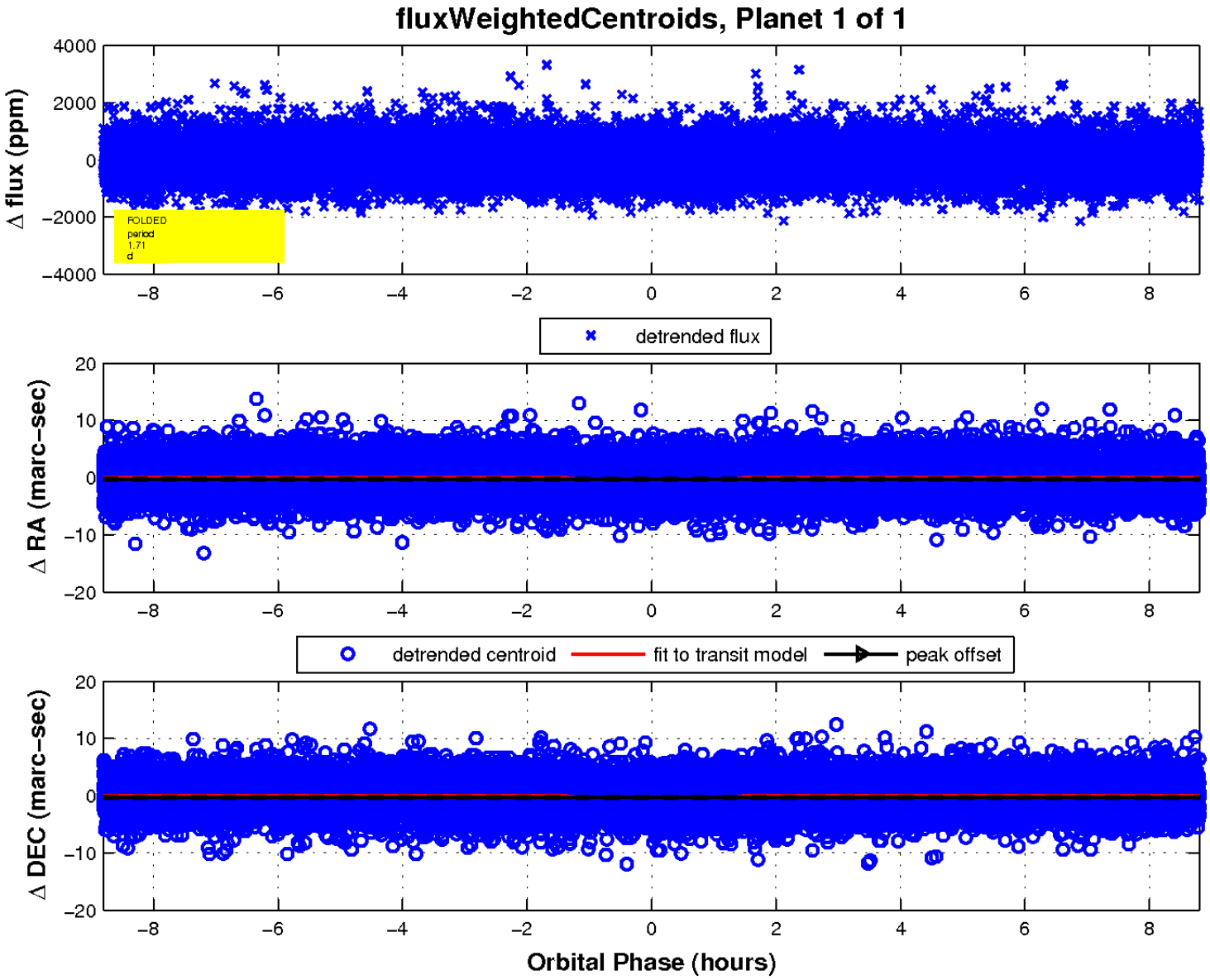


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

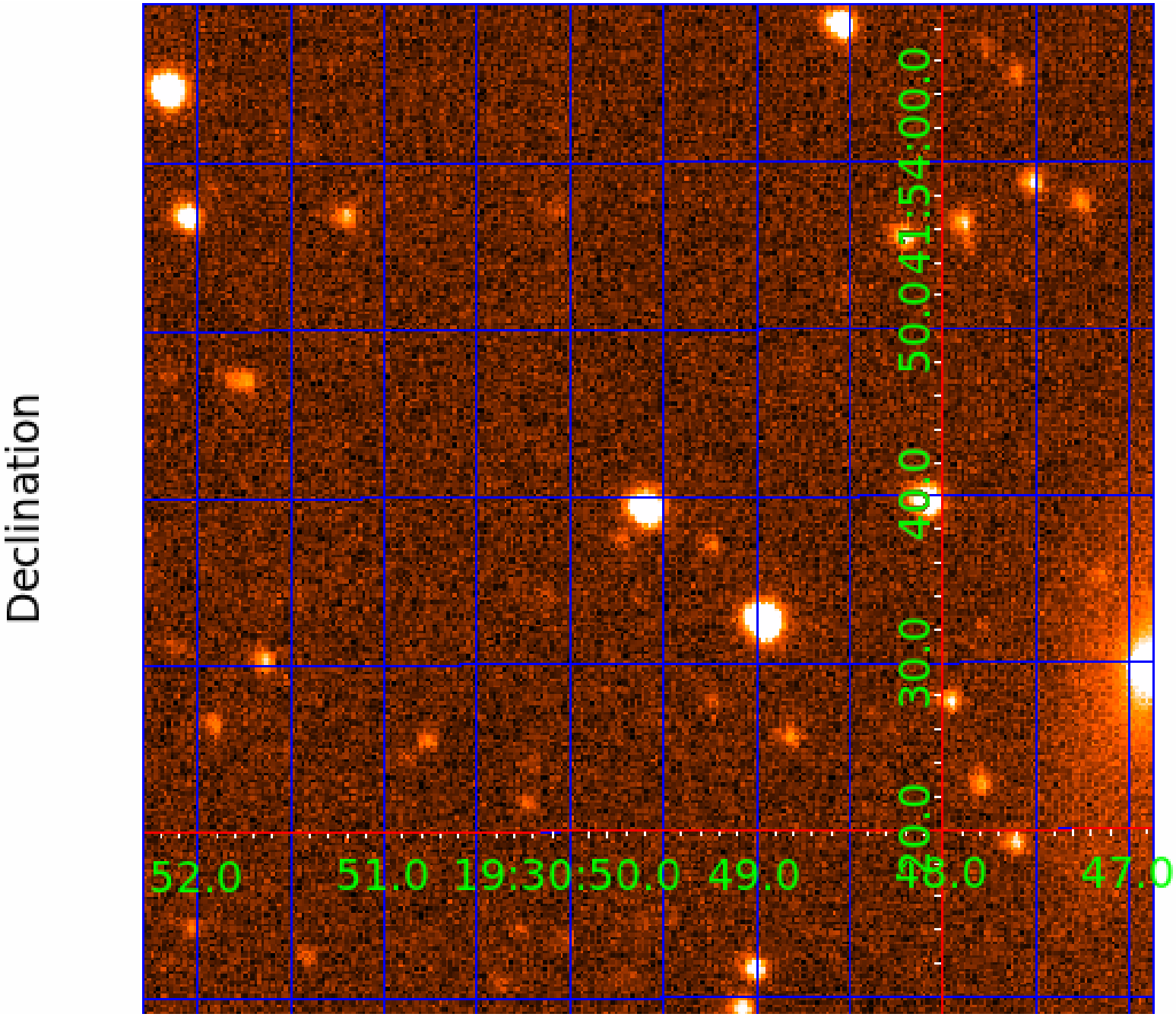


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
52.0
51.0
19:30:50.0
49.0
48.0
47.0
20.0
30.0
40.0
50.0
41:54:00.0