KIC 006470998

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 ($S_\oplus$)
006470998-01	OBS	No	0.594584	131.959936	117.7	5.348	10.0	3.8	0.88	5737	1.76	4220.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006470998-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_RESOLVED_OFFSET

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.

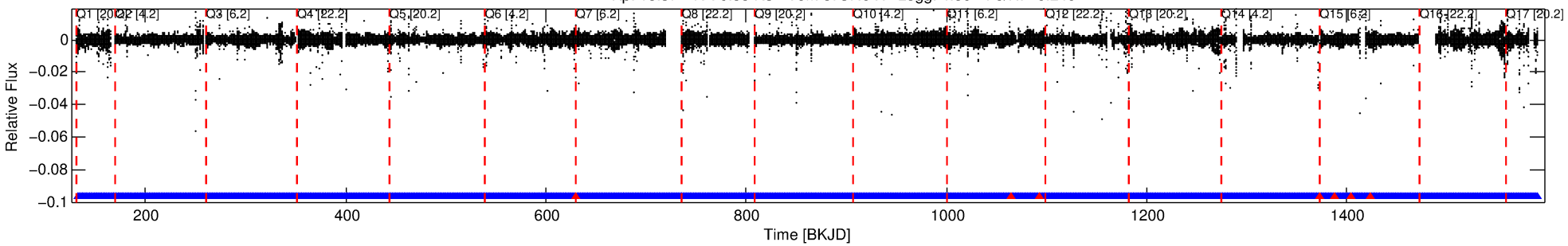
Ephemeris Match Information For 006470998-01

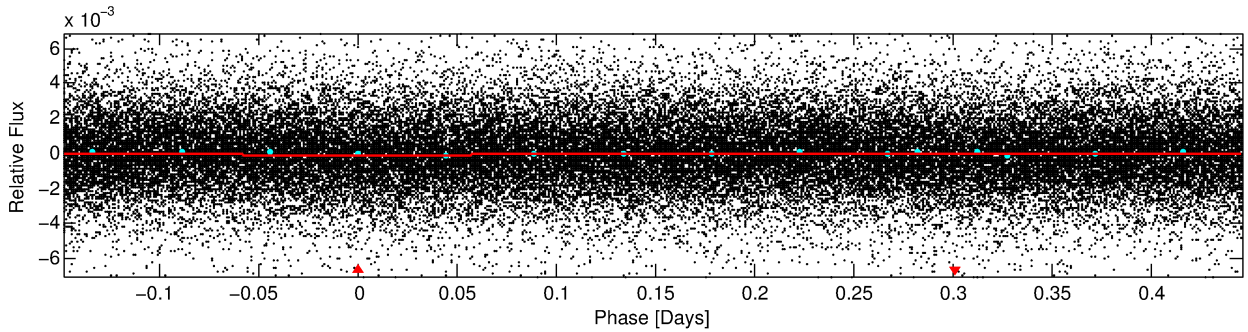
No Significant Match Found

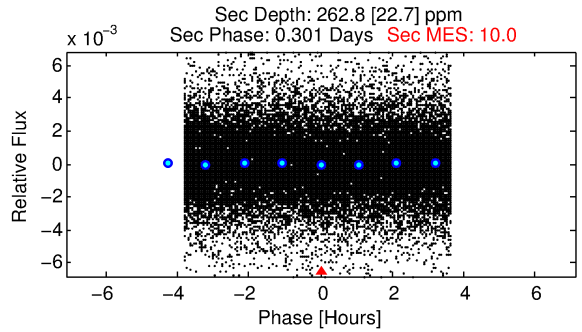
DV One-Page Summary

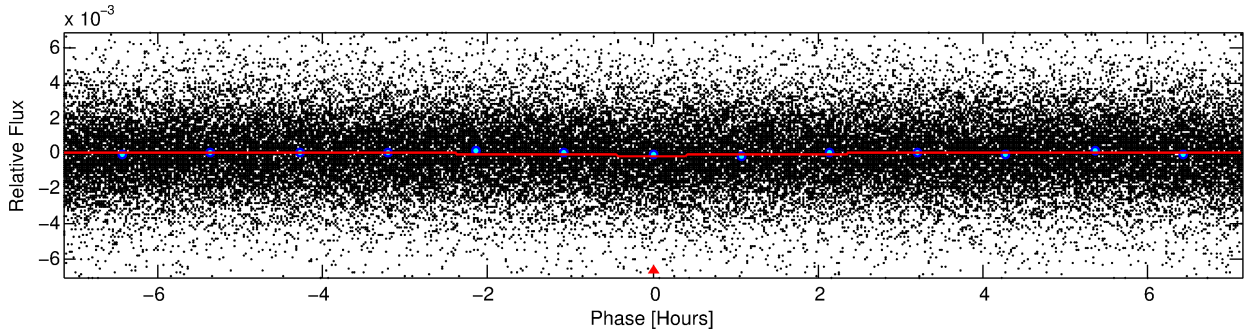
KIC: 6470998 Candidate: 1 of 1 Period: 0.595 d

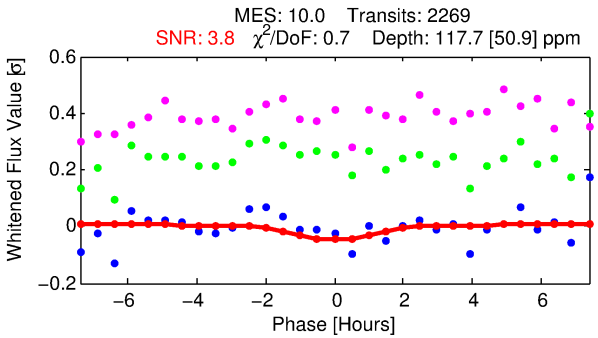
Kp: 15.37 R*: 0.88 Rs Teff: 5737.0 K Logg: 4.50 Fe/H: −0.240

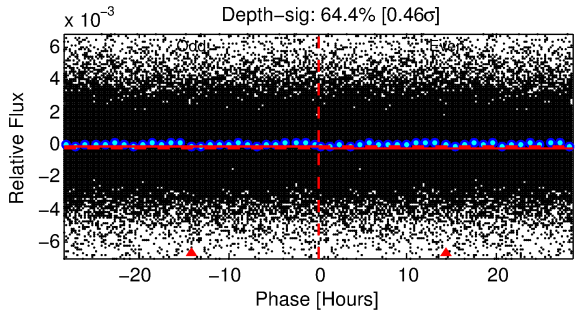


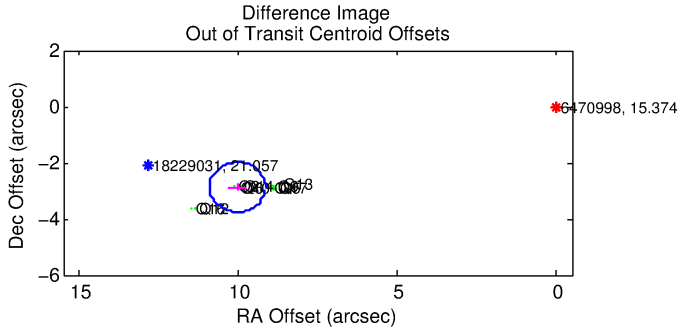












DV Fit Results:

Period = 0.59458 [0.00004] d
Epoch = 131.9599 [0.0168] BKJD
Rp/R* = 0.0184 [0.0425]
a/R* = 1.02 [0.03]
b = 1.00 [0.07]

Seff = 4220.36 [1447.58]
Teq = 2055 [176] K
Rp = 1.76 [4.09] Re
a = 0.0133 [0.0029] AU

Ag = 8.25 [38.18] [0.19σ]
Teffp = 5385 [6220] K [0.54σ]

DV Diagnostic Results:

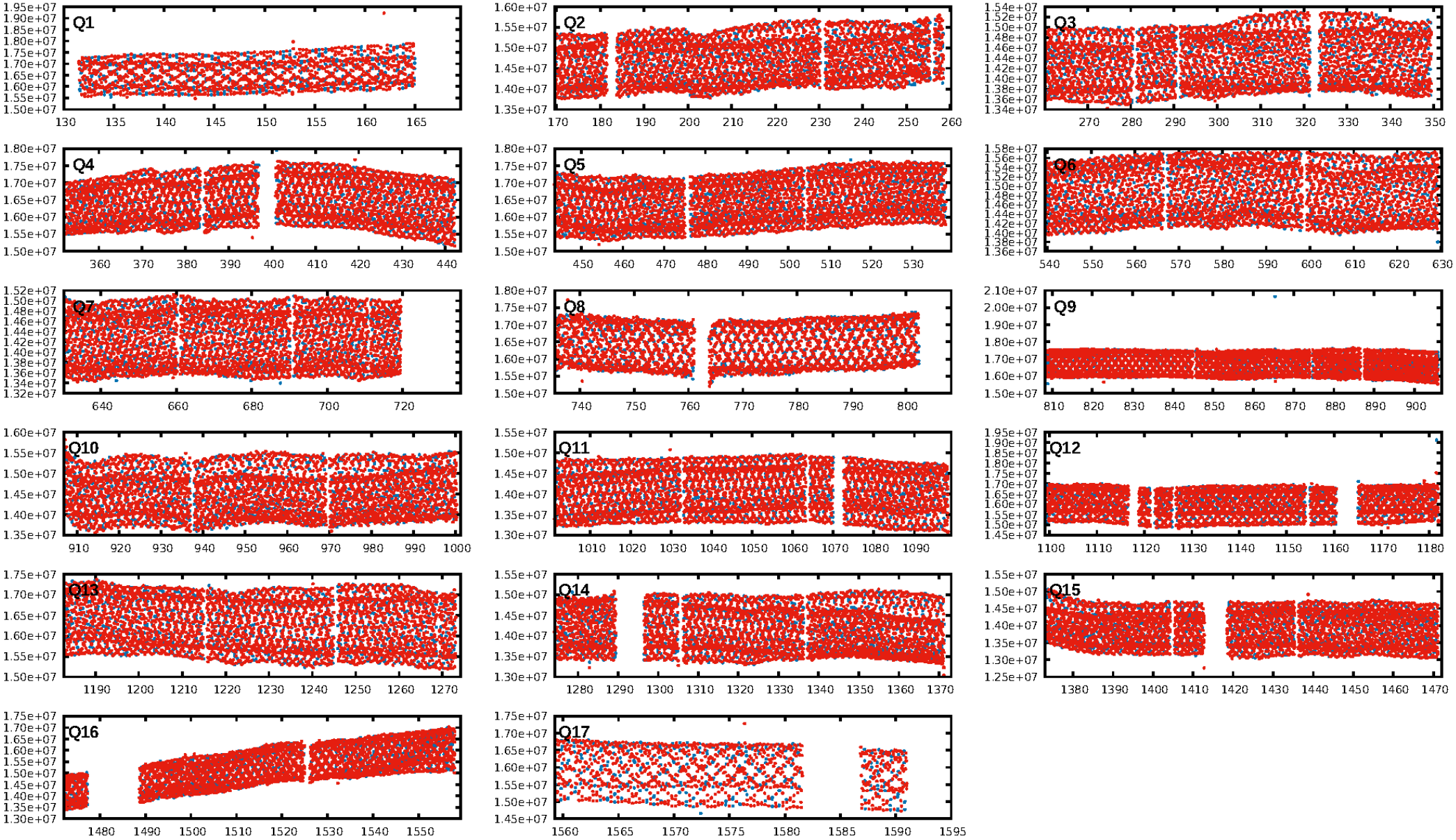
ShortPeriod−sig: N/A
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [2159/2167]
GhostDiagnostic−chr: −0.8133

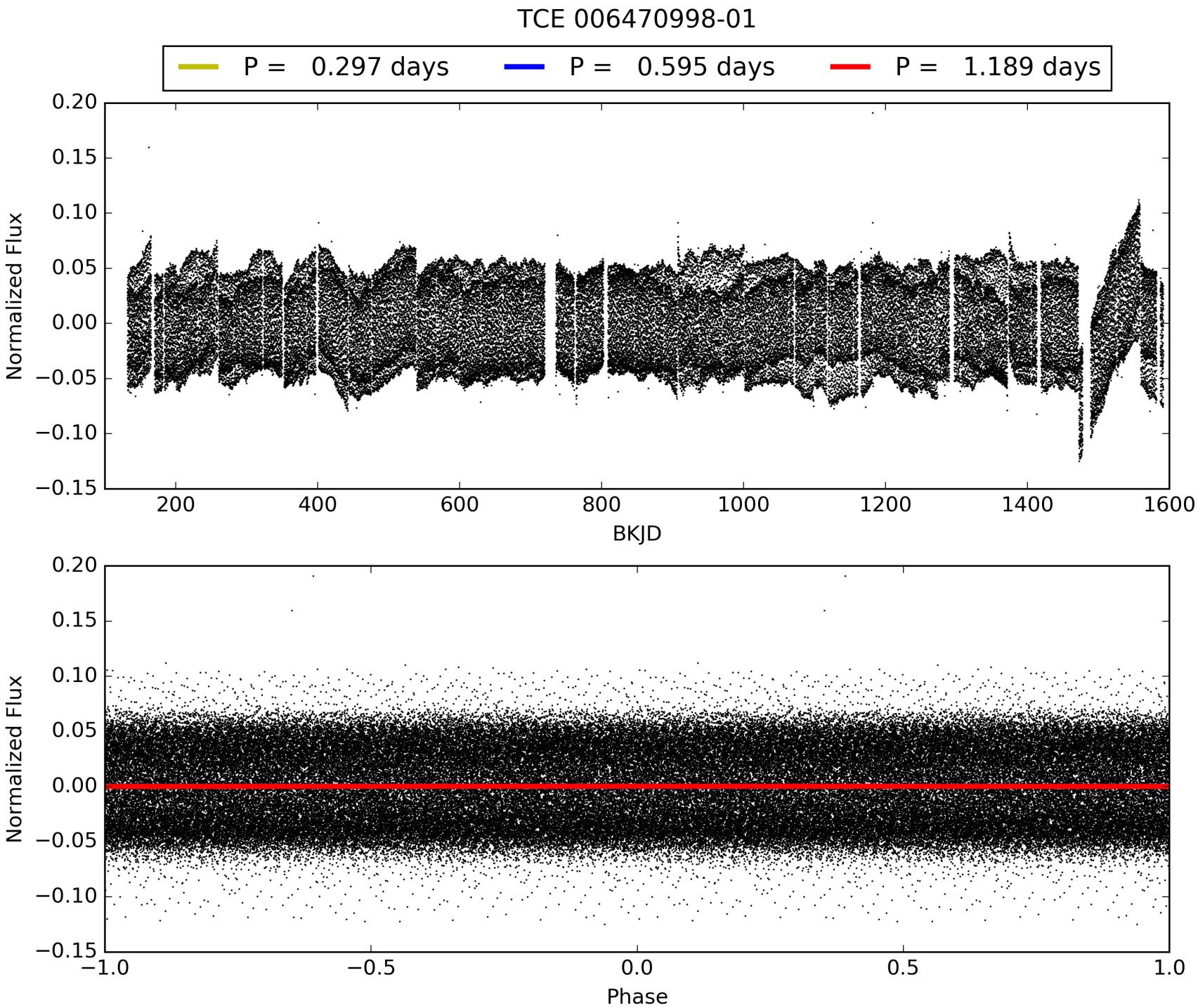
Centroid−sig: 0.3%
Centroid−so: 1.642 arcsec [1.72σ]
OotOffset−rm: 10.428 arcsec [35.42σ]
KicOffset−rm: 10.505 arcsec [34.82σ]
OotOffset−st: 4/0/2/5 [11]
KicOffset−st: 4/0/2/5 [11]
DiffImageQuality−fgm: 0.55 [6/11]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30−Jan−2016 07:27:28 Z

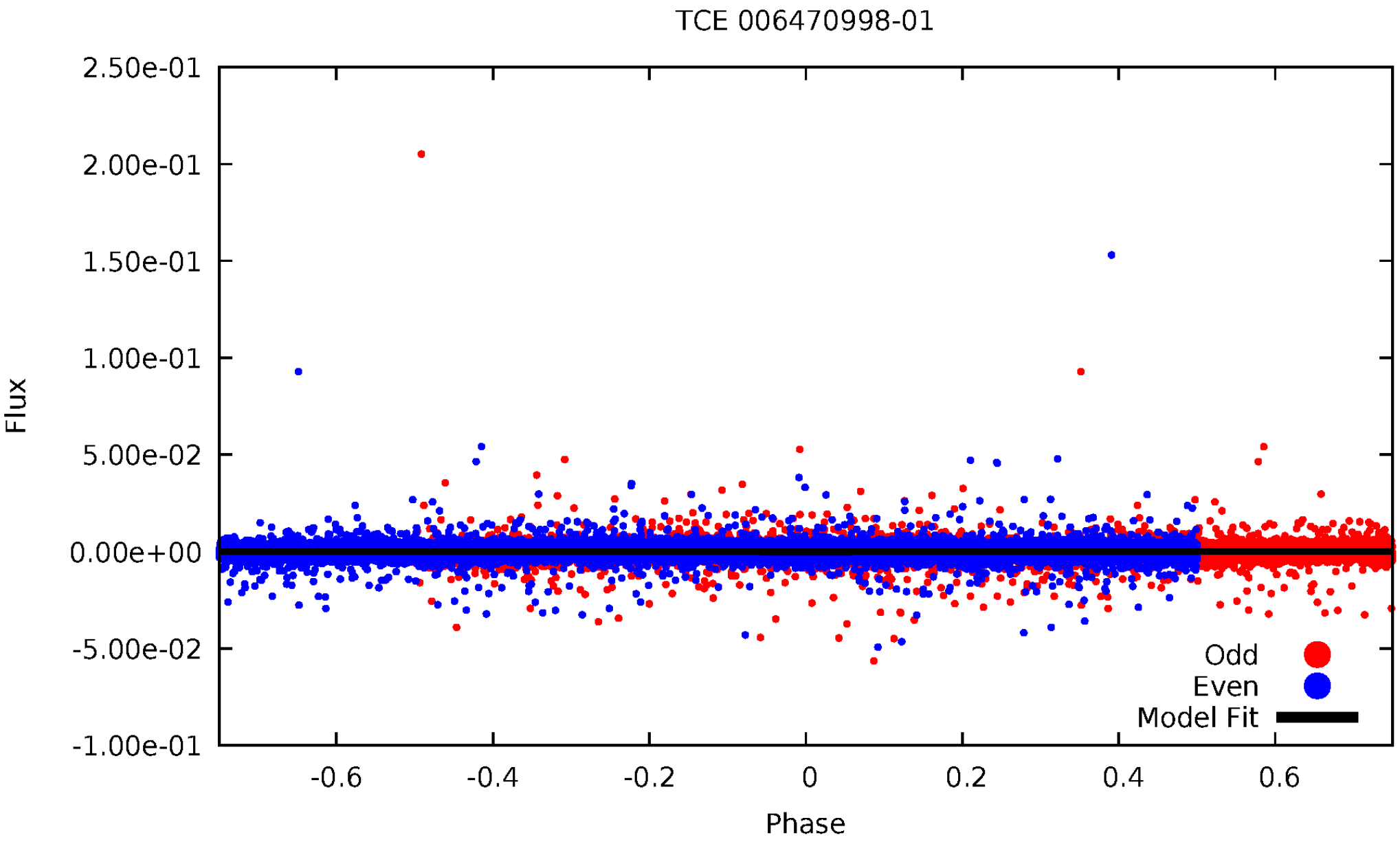
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006470998-01, PDC Light Curves

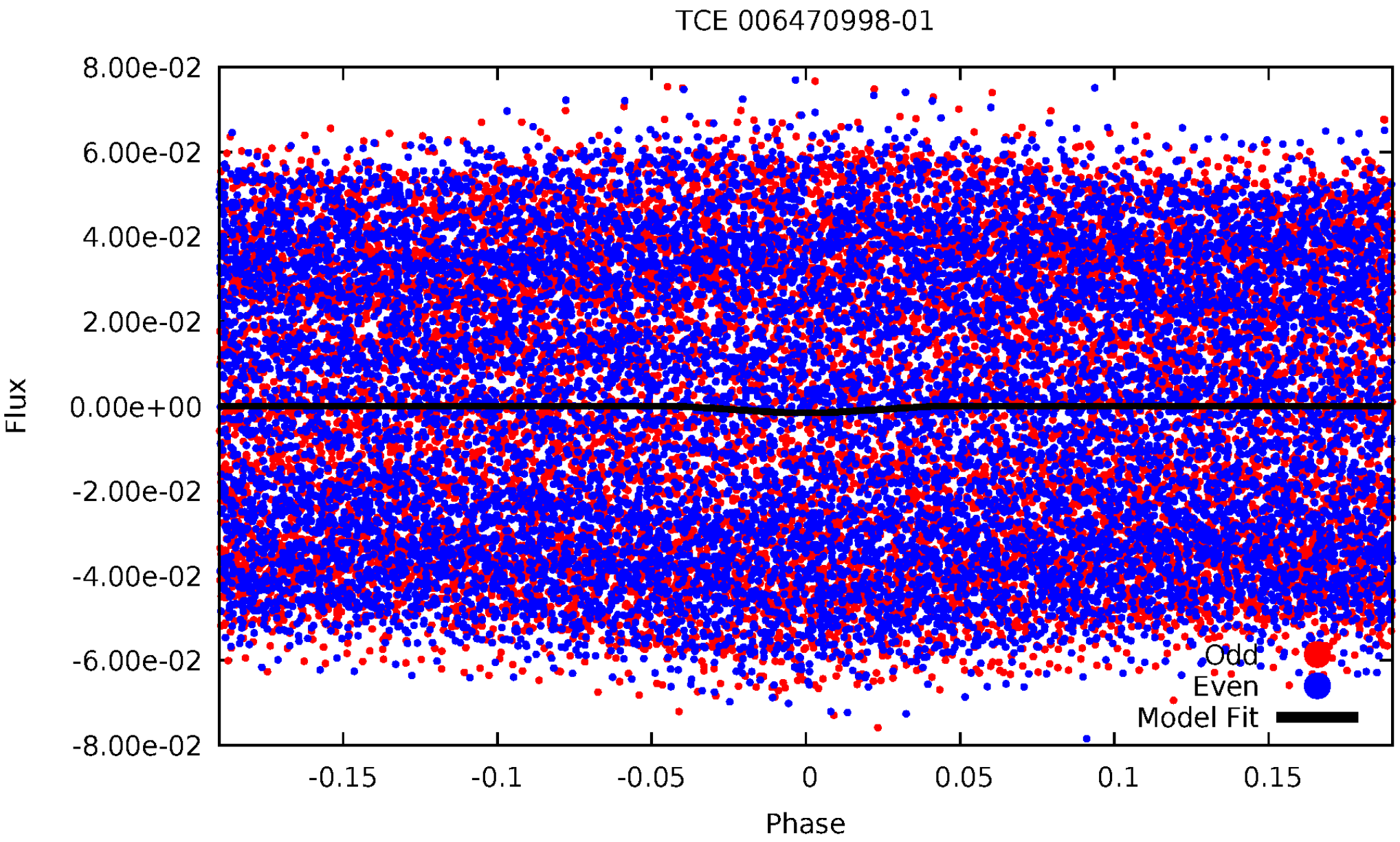



TCE 006470998-01
P = 0.297 days
P = 0.595 days
P = 1.189 days
Normalized Flux
BKJD
Normalized Flux
Phase

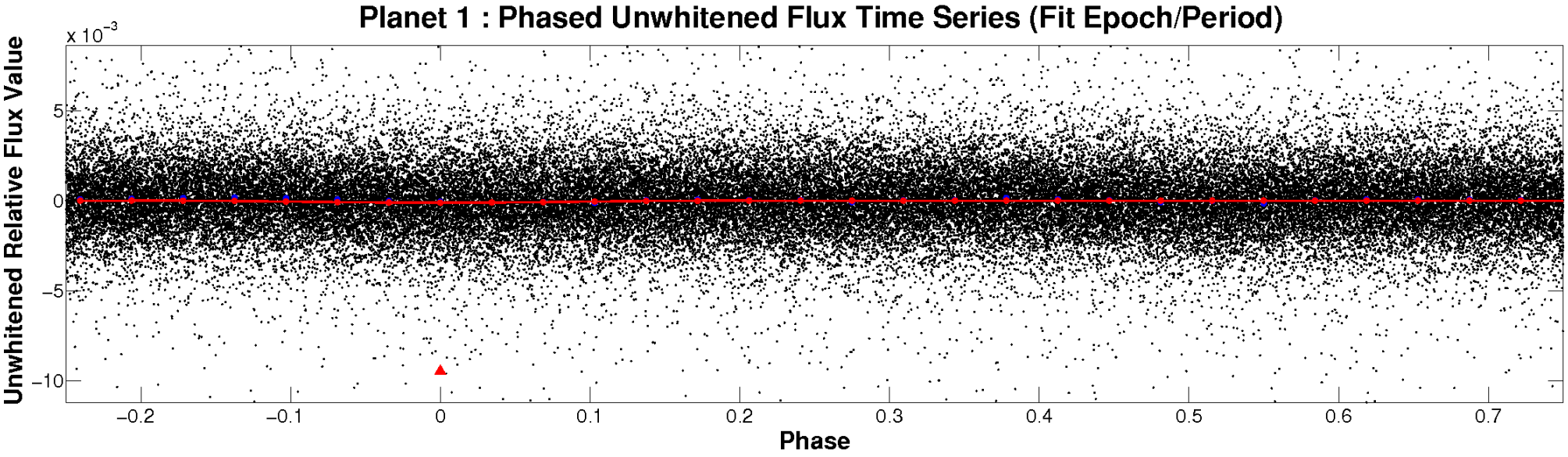
DV Odd/Even

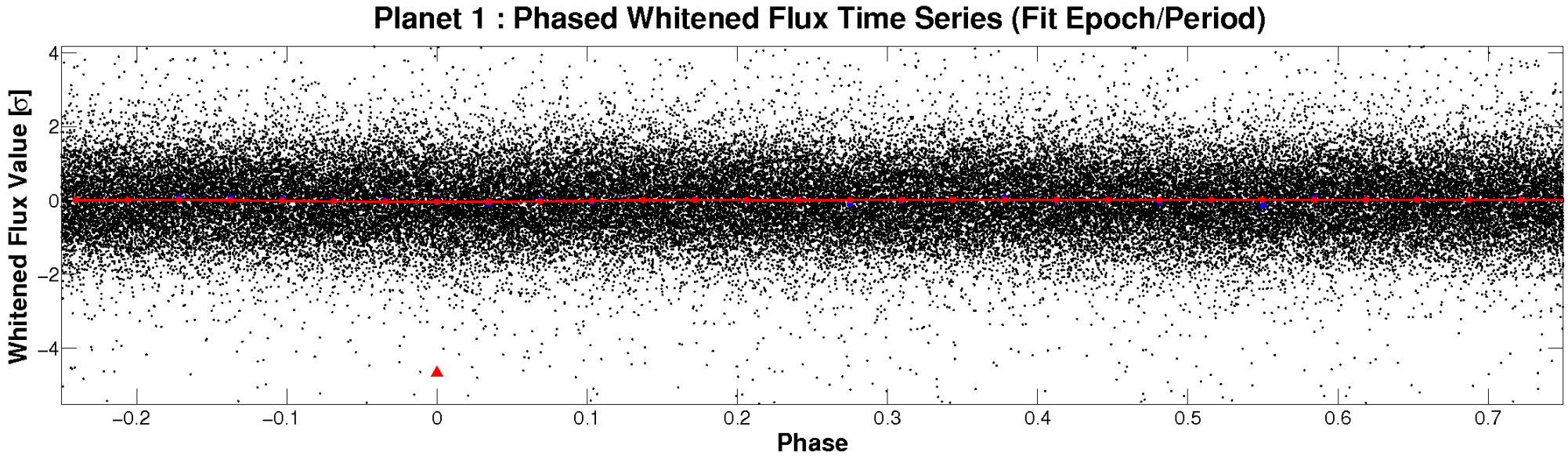

TCE 006470998-01
2.50e-01
2.00e-01
1.50e-01
1.00e-01
5.00e-02
0.00e+00
-5.00e-02
-1.00e-01
Flux
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 006470998-01
8.00e-02
6.00e-02
4.00e-02
2.00e-02
0.00e+00
-2.00e-02
-4.00e-02
-6.00e-02
-8.00e-02
Flux
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
Phase
Odd
Even
Model Fit

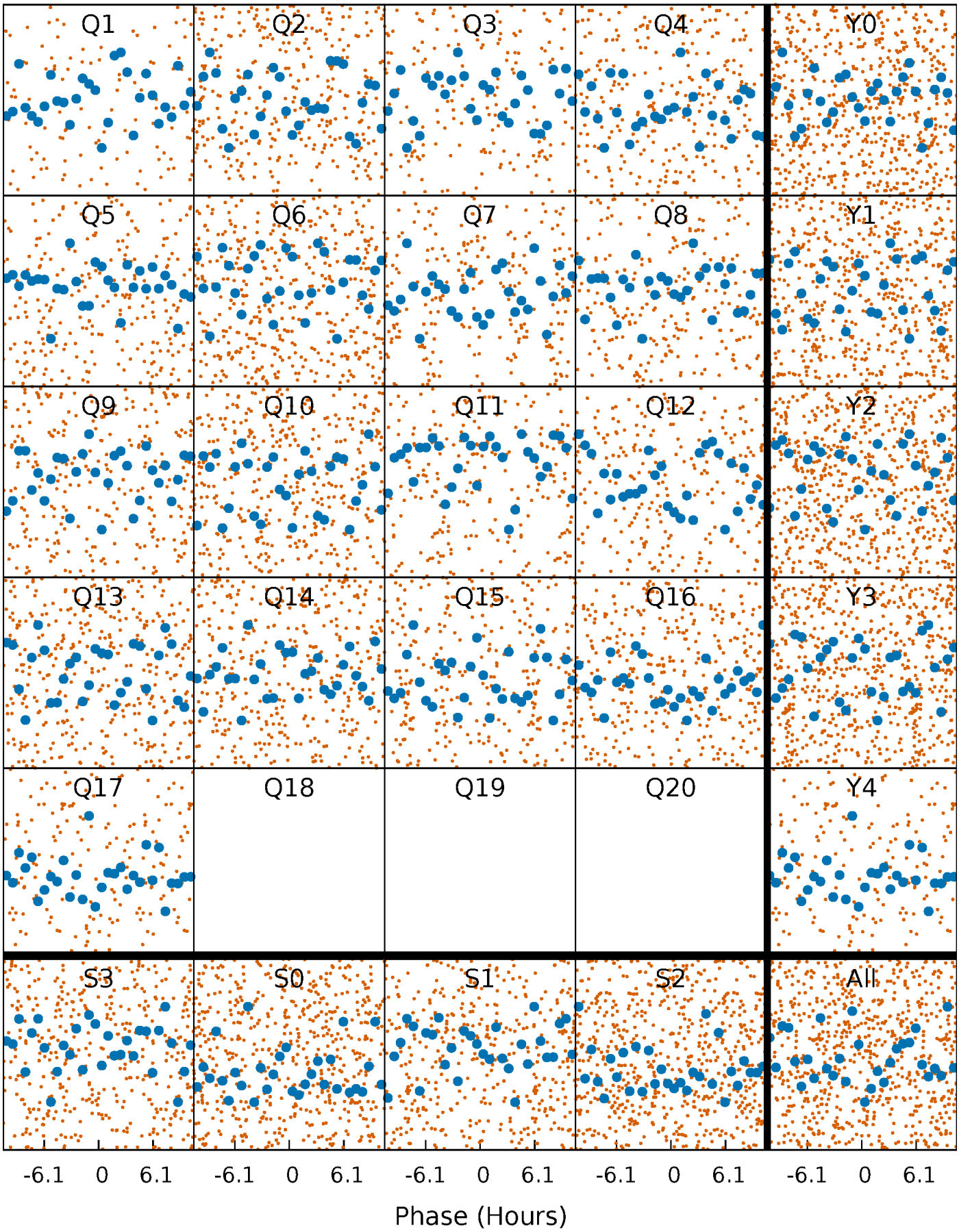
Non-Whitened Vs. Whitened Light Curve





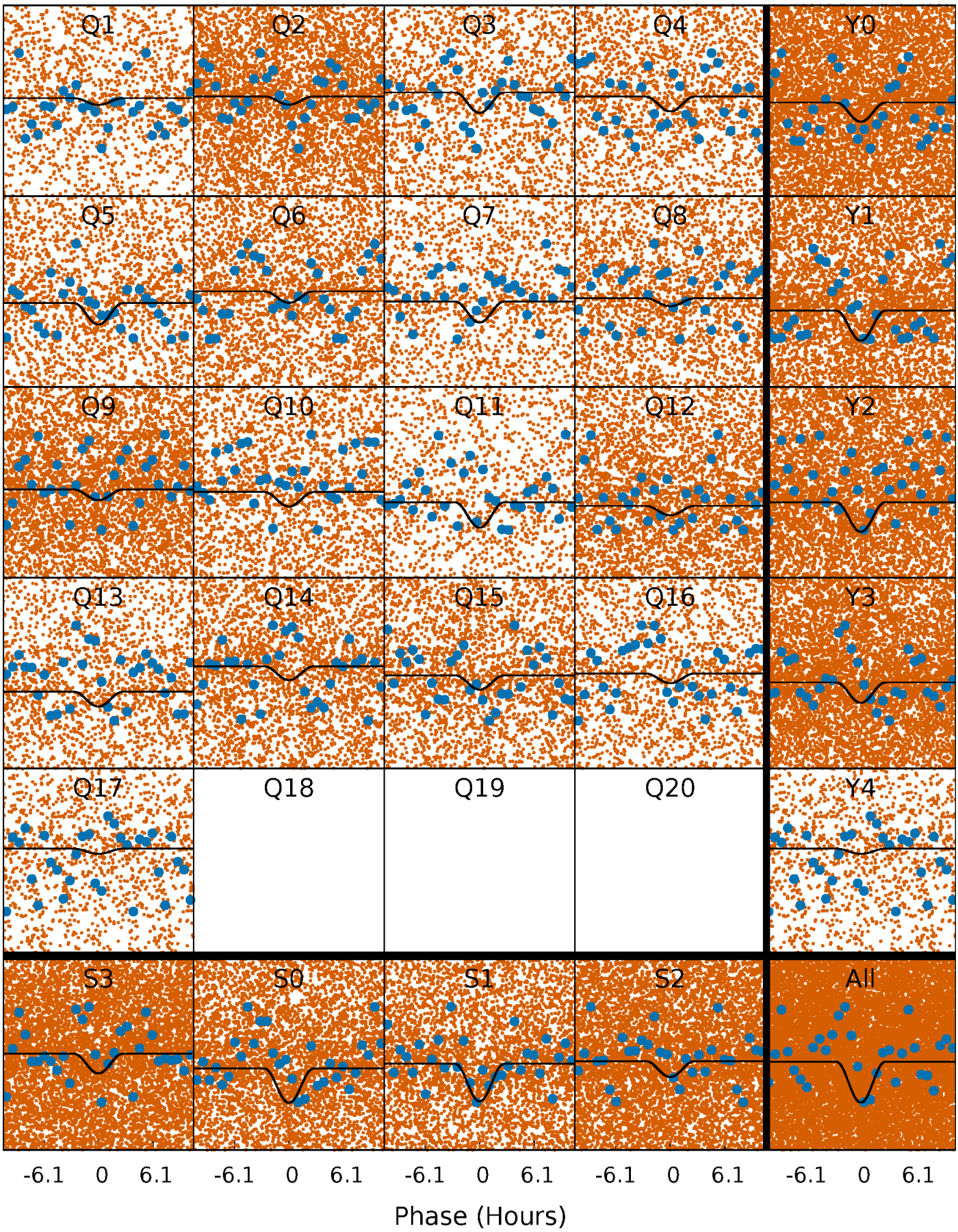
PDC Quarter-Phased Transit Curves

TCE 006470998-01 P= 0.594584 Days T_0=131.959936 (BKJD)



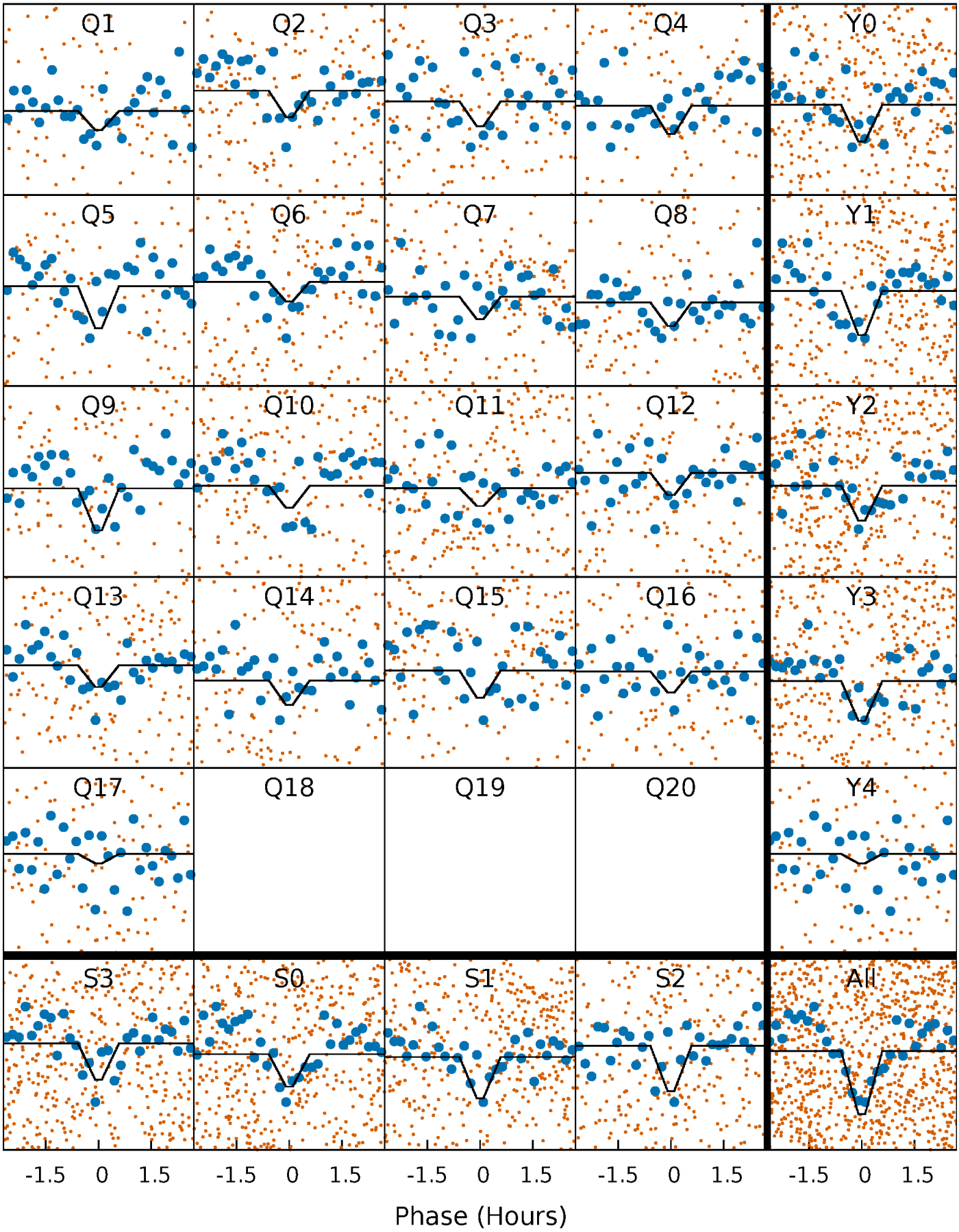
DV Quarter-Phased Transit Curves

TCE 006470998-01 P= 0.594584 Days T_0=131.959936 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

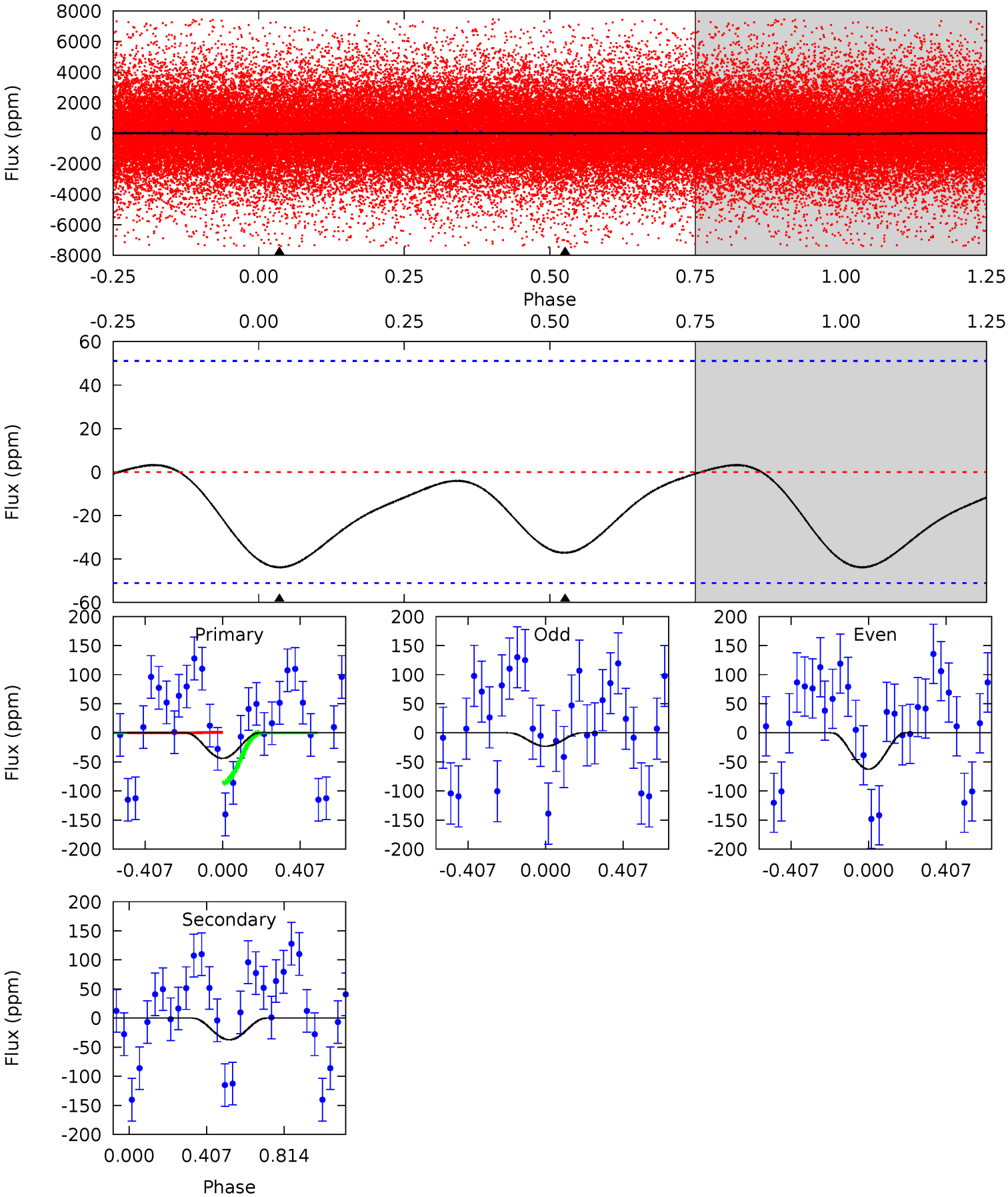
TCE 006470998-01 P= 0.594456 Days T_0=131.983899 (BKJD)



DV Model-Shift Uniqueness Test

006470998-01, P = 0.594584 Days, E = 131.365352 Days

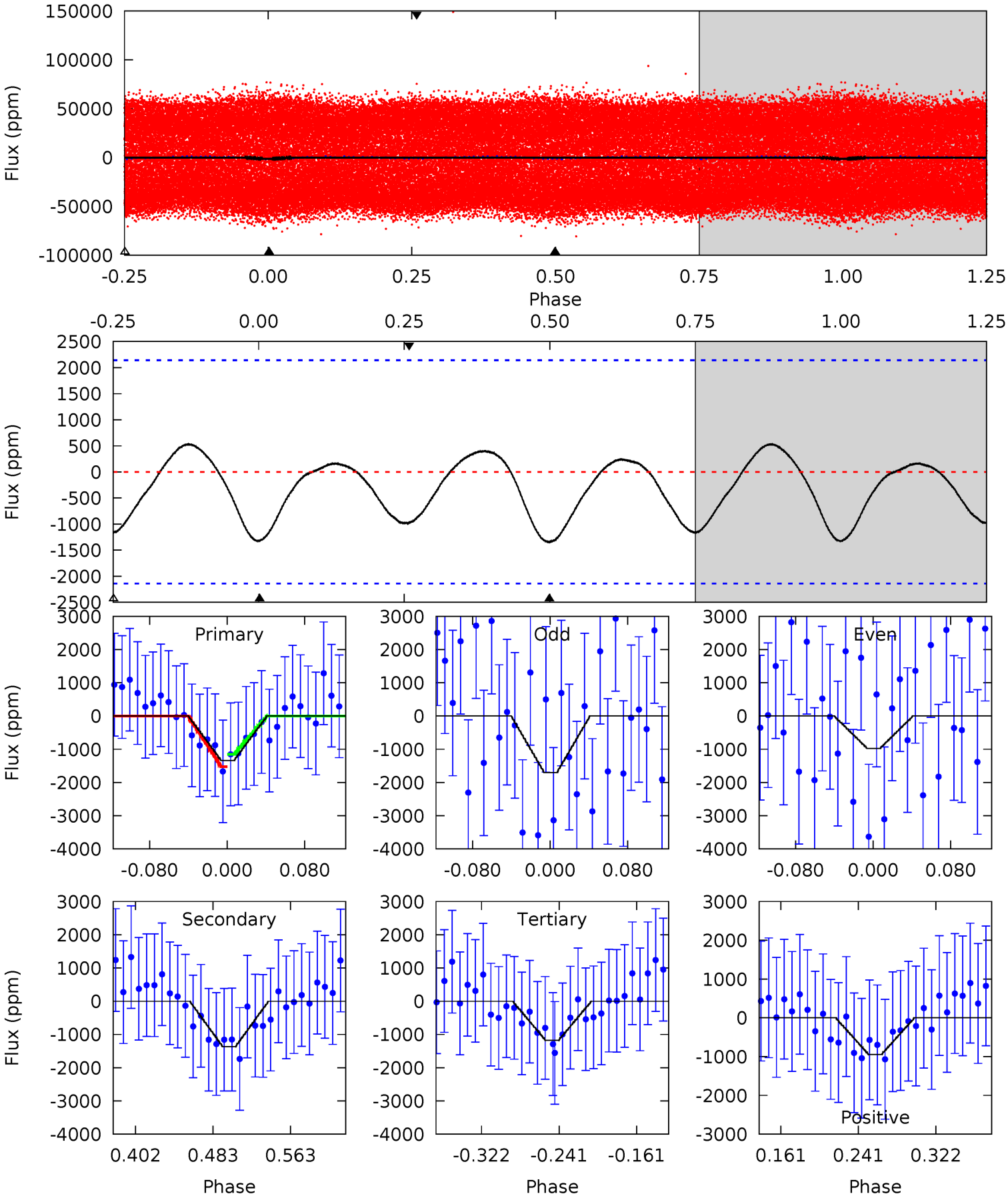
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.65	3.10	0	0	4.26	0.83	0.41	3.65	3.65	3.10	3.10	1.65	8.43	0.07	3.58



Alt Model-Shift Uniqueness Test

006470998-01, P = 0.594456 Days, E = 131.389443 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.88	2.94	2.54	-2.04	4.61	1.75	1.06	0.34	4.92	0.40	4.98	0.78	0.78	0.29	0.40



Stellar Parameters For KIC 006470998

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5737^{+172}_{-172}	$4.500^{+0.062}_{-0.175}$	$-0.240^{+0.300}_{-0.300}$	$0.877^{+0.232}_{-0.100}$	$0.888^{+0.110}_{-0.090}$	$1.854^{+0.589}_{-0.879}$
	+3%/-3%	+1%/-4%	+125%/-125%	+26%/-11%	+12%/-10%	+32%/-47%
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 006470998-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-37±12	$3.72^{+3.56}_{-2.37}$	2916^{+196}_{-129}	-2330^{+6322}_{-634}	$0.265^{+1.730}_{-0.205}$
Alt.	-1367±464	$4.69^{+3.75}_{-3.02}$	2921^{+181}_{-134}	5052^{+3574}_{-1195}	$5.783^{+34.391}_{-4.154}$

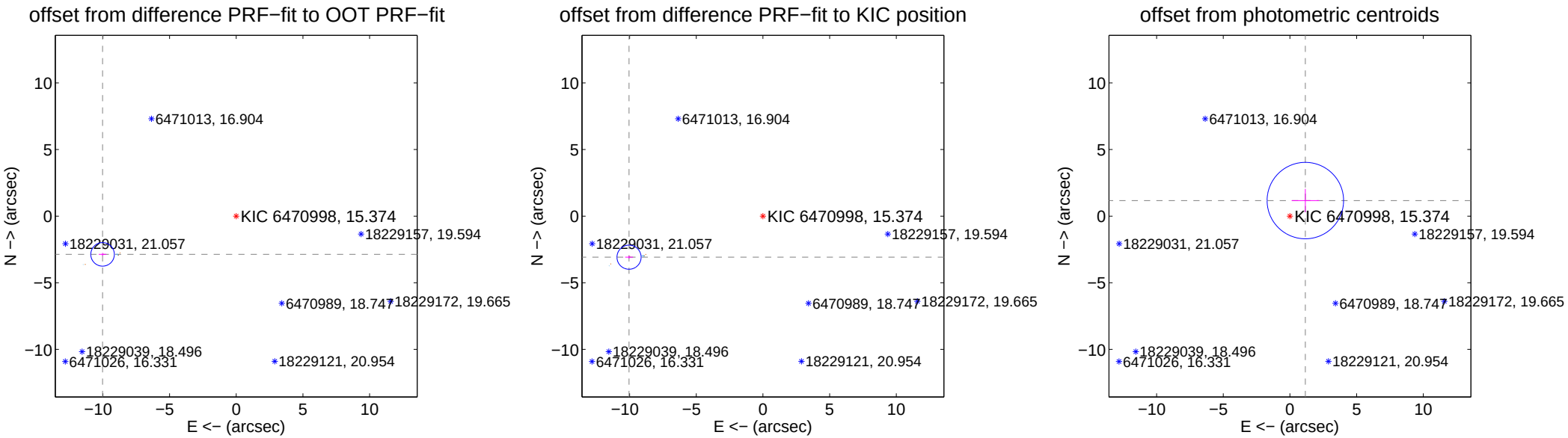
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

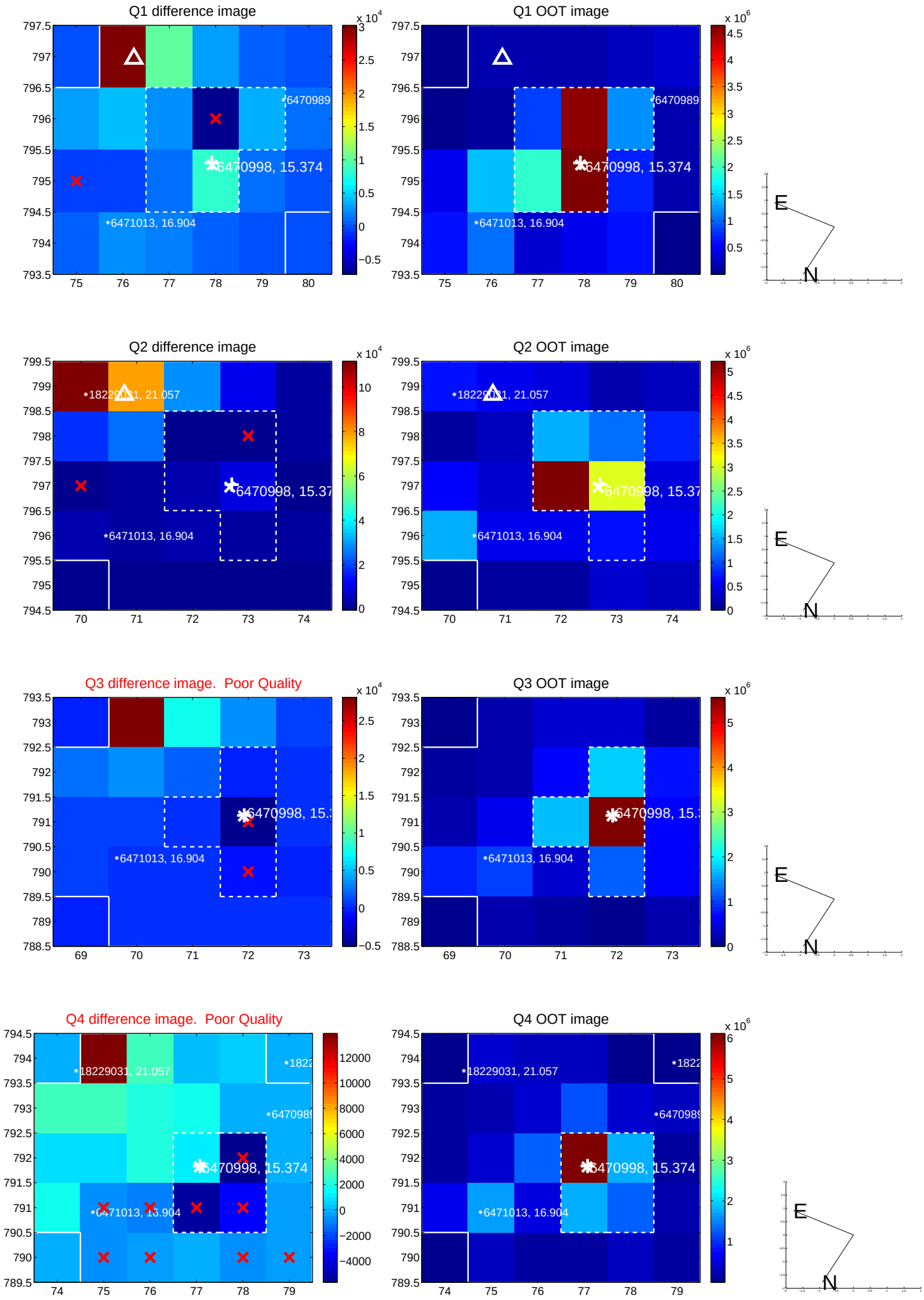
Supplemental centroid analysis for 006470998-01. Kepler magnitude: 15.37. Transit SNR 3.82
There are 6 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.428 ± 0.294	35.42	10.025 ± 0.285	-2.870 ± 0.109
PRF-fit source offset from KIC position	10.505 ± 0.302	34.82	10.043 ± 0.292	-3.082 ± 0.104
photometric centroid source offset	1.64 ± 0.96	1.72	-1.15 ± 1.03	1.17 ± 0.88

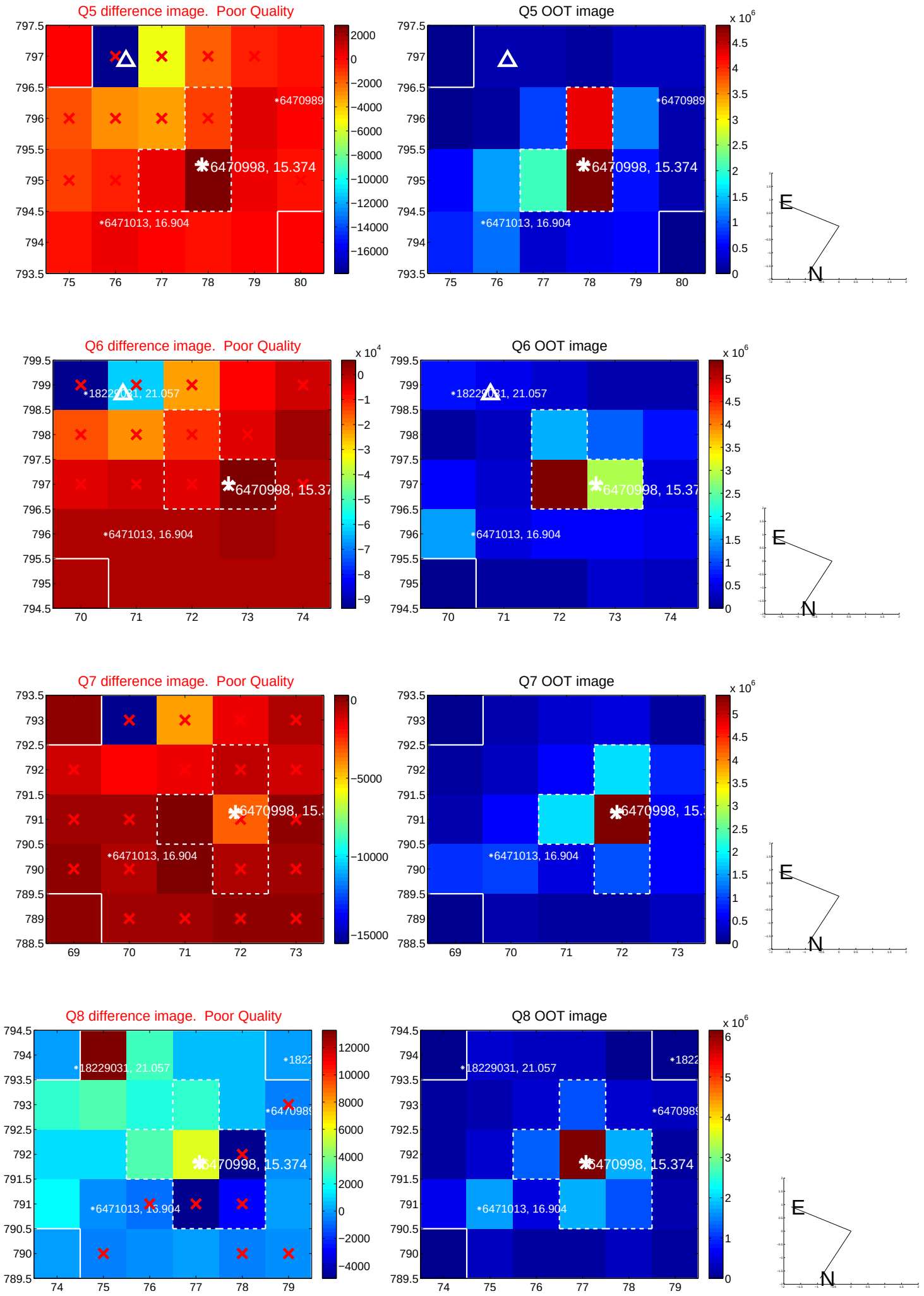


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

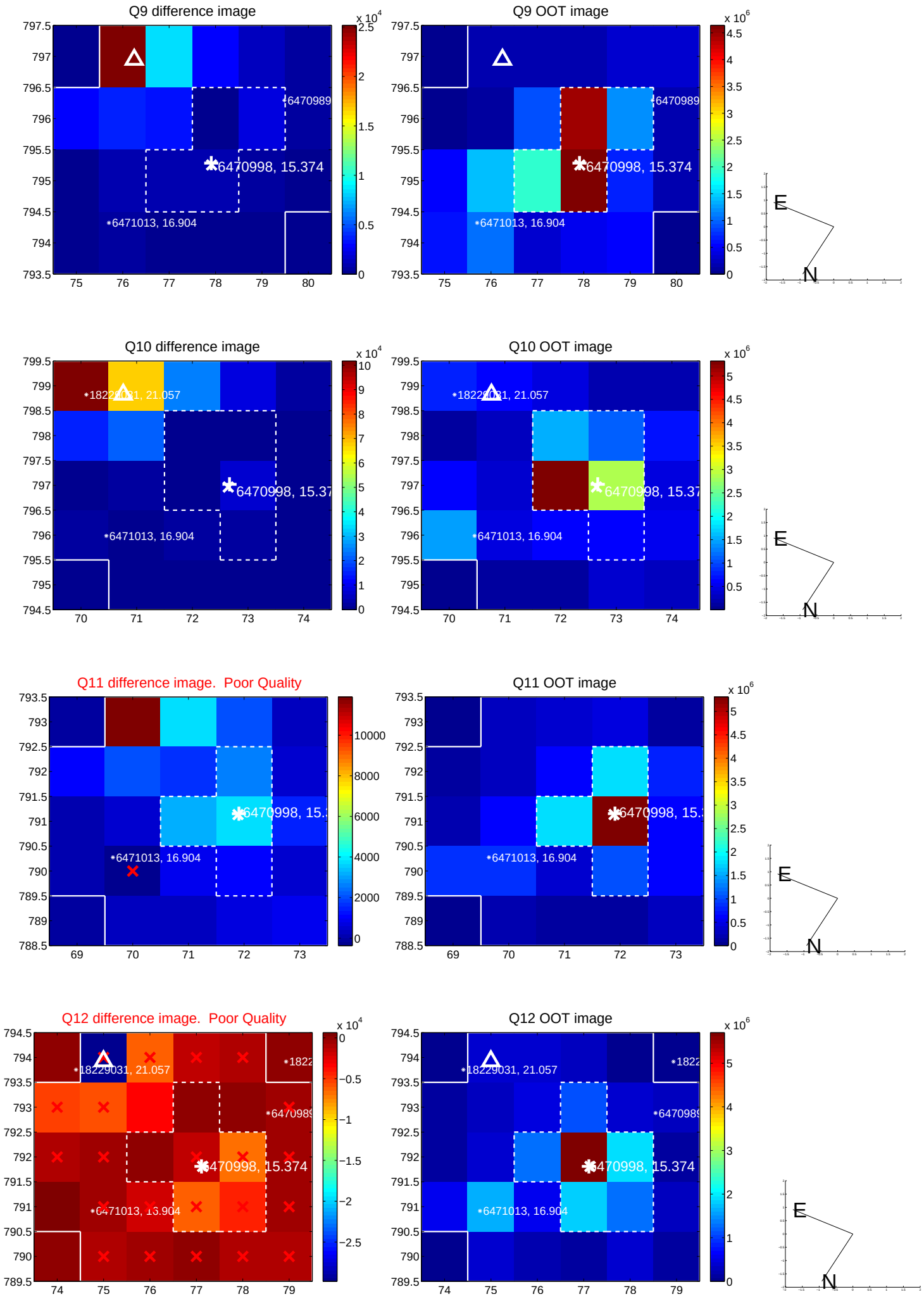
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



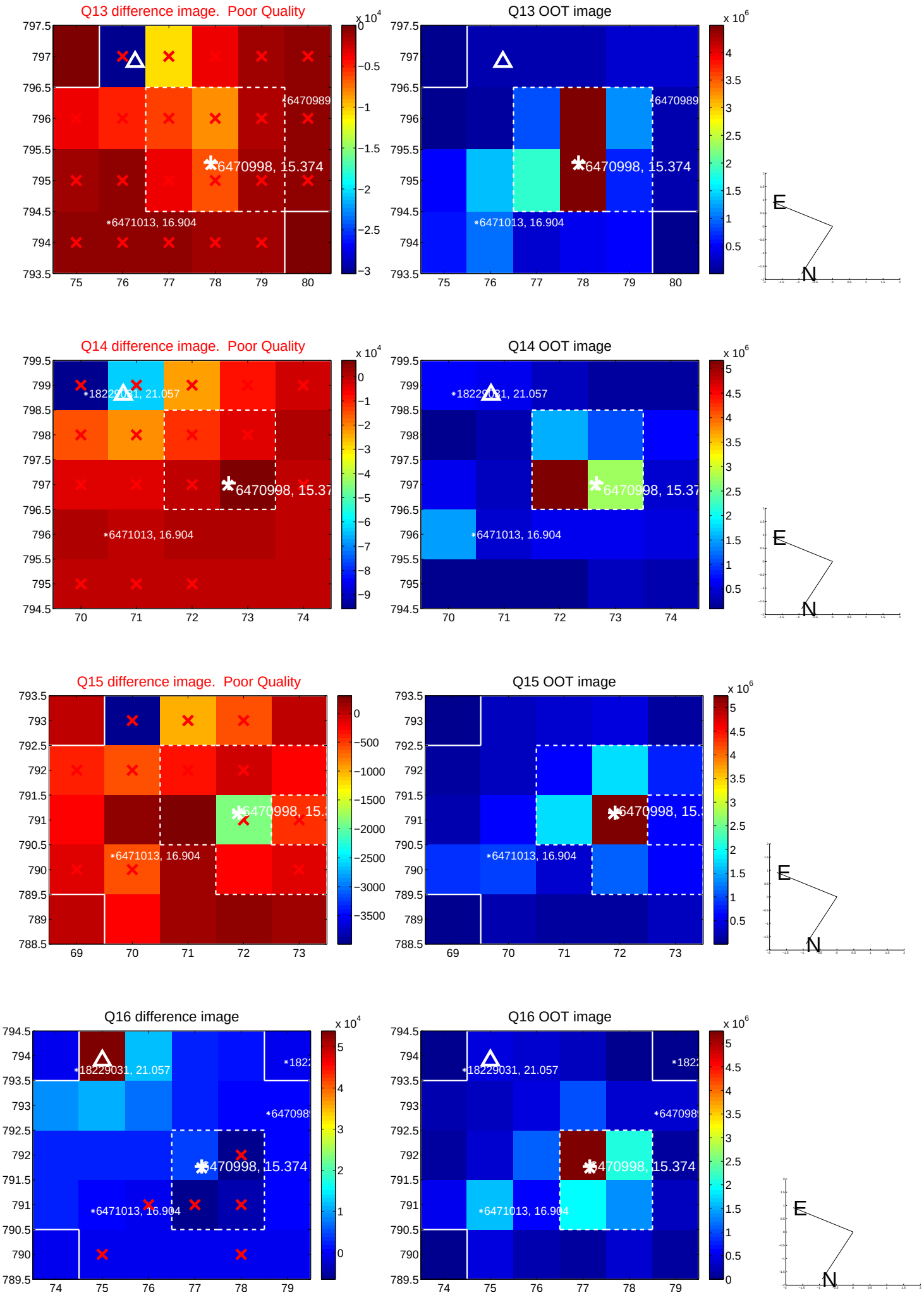
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



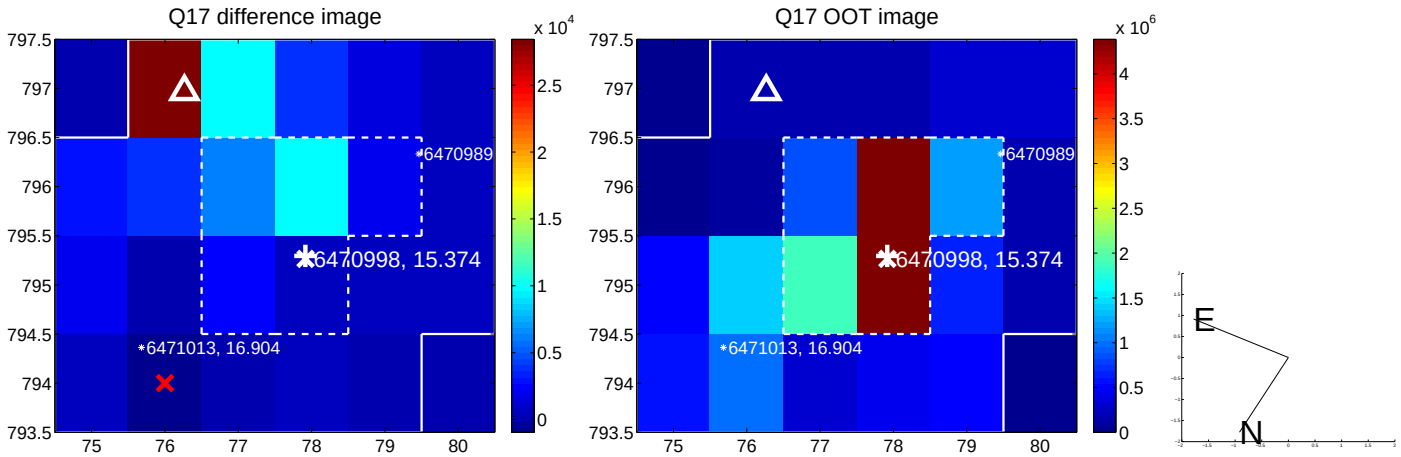
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

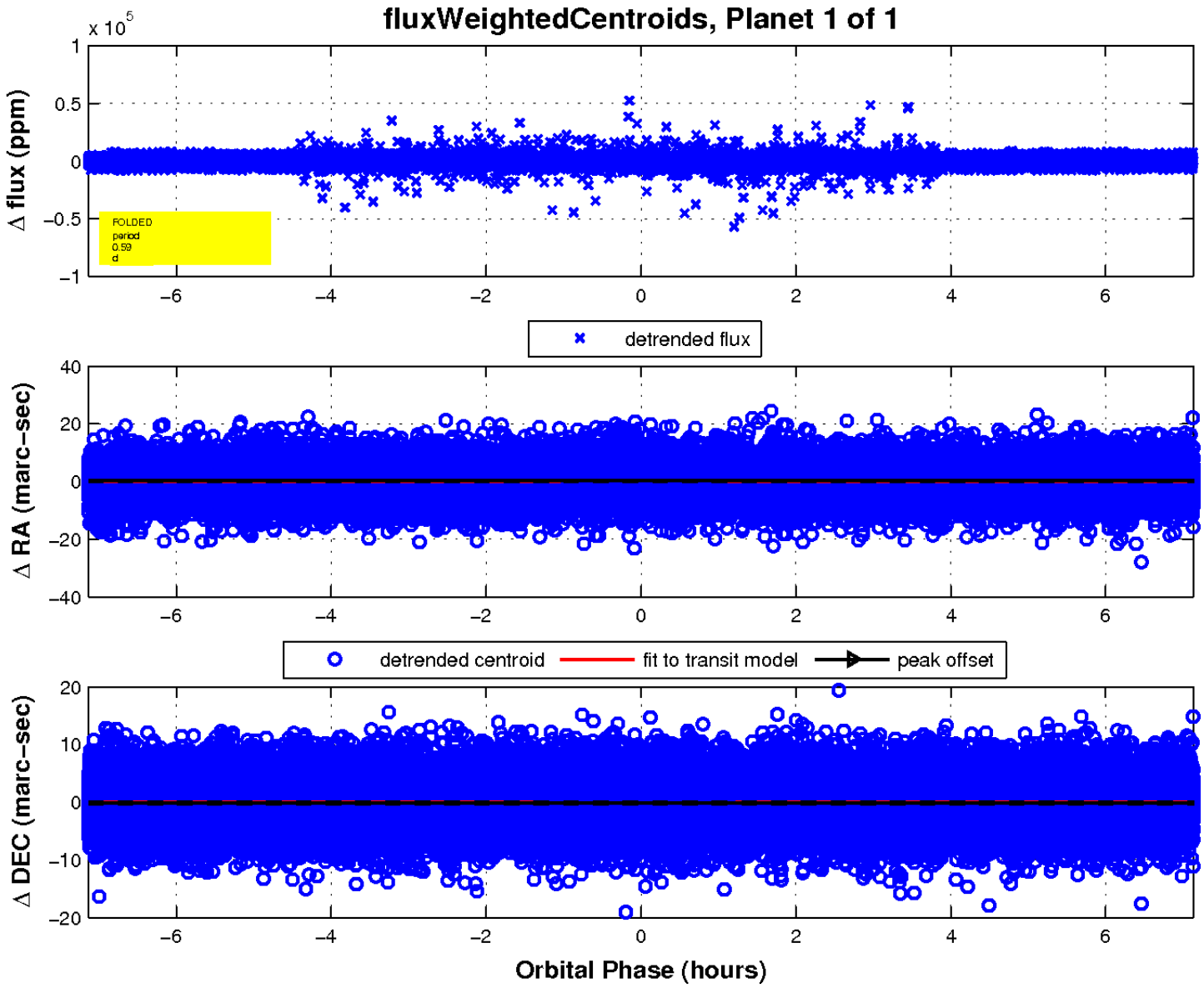


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

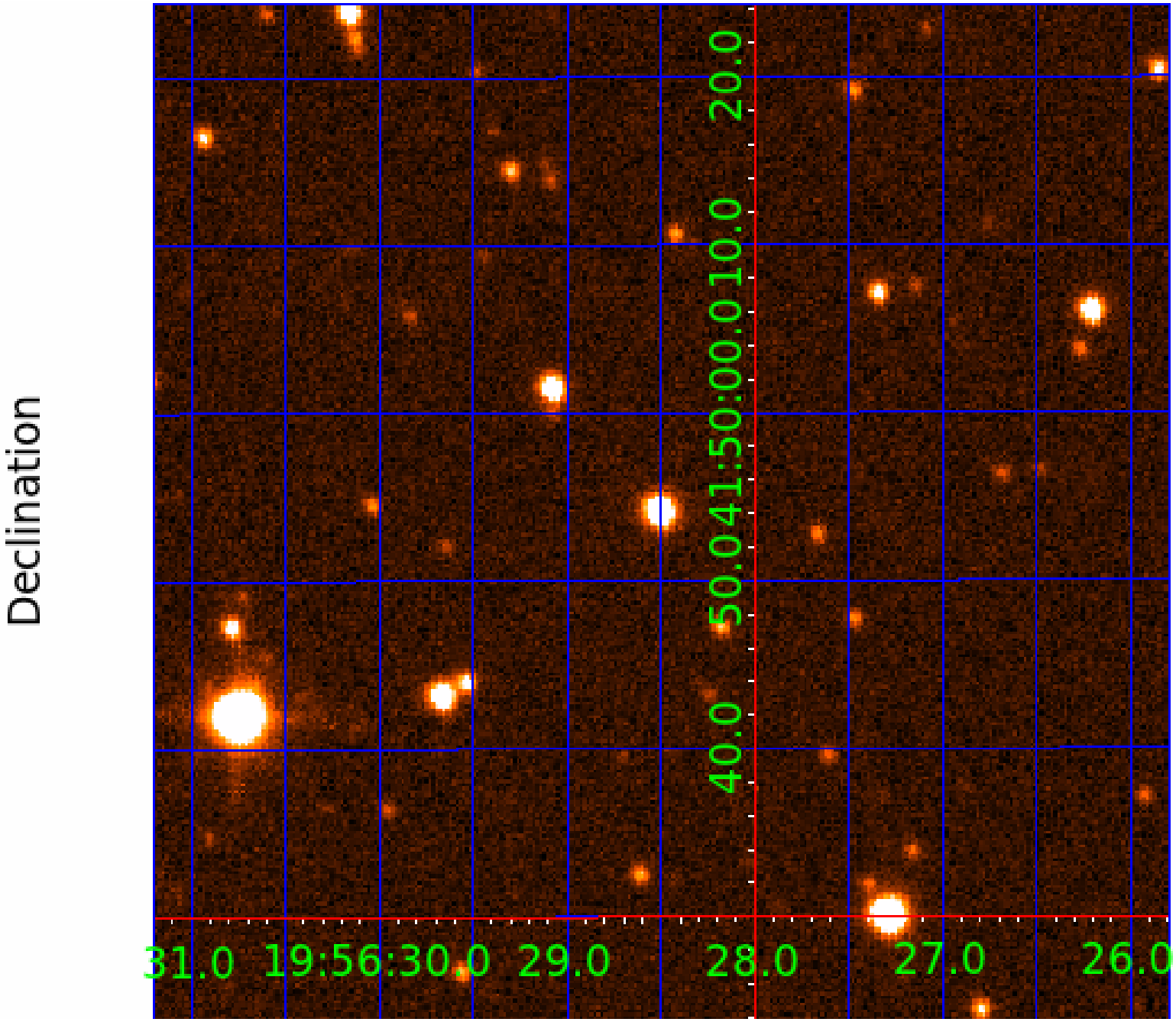


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
20.0
10.0
41:50:00.0
50.0
40.0
31.0
19:56:30.0
29.0
28.0
27.0
26.0