

KIC 006531617

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
006531617-01	OBS	7785.01	433.222564	271.041159	668.4	2.769	7.6	7.6	0.78	5232	2.29	0.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006531617-01	OBS	PC	0.32	0	0	0	0	NO_COMMENT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

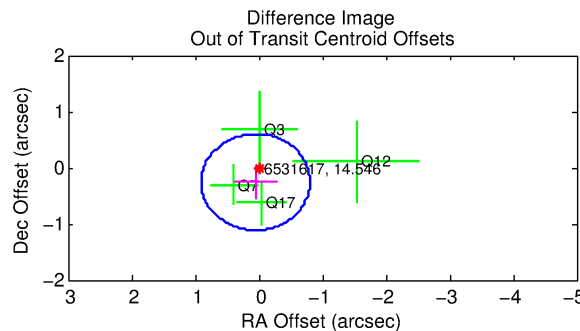
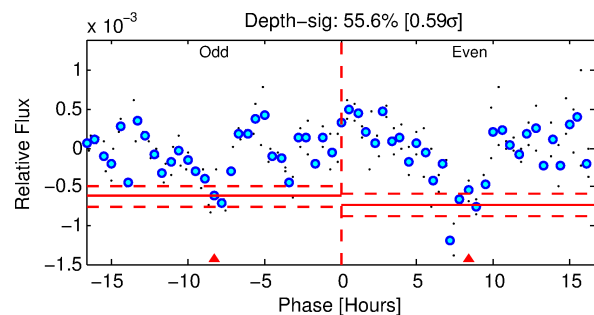
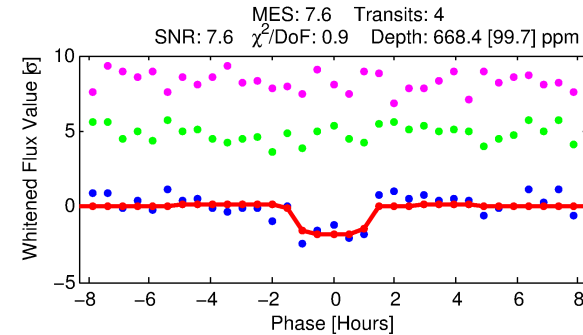
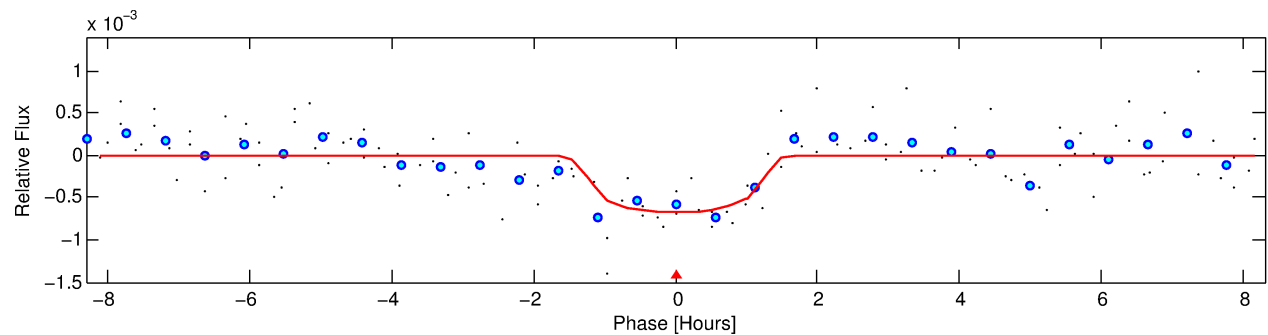
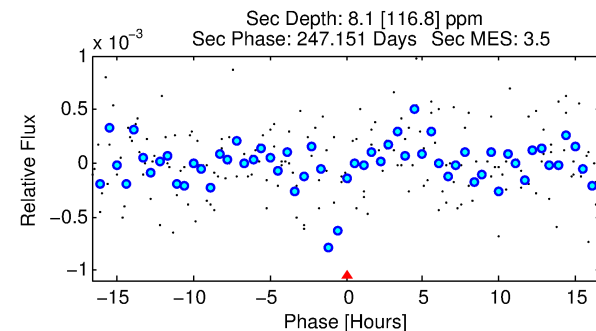
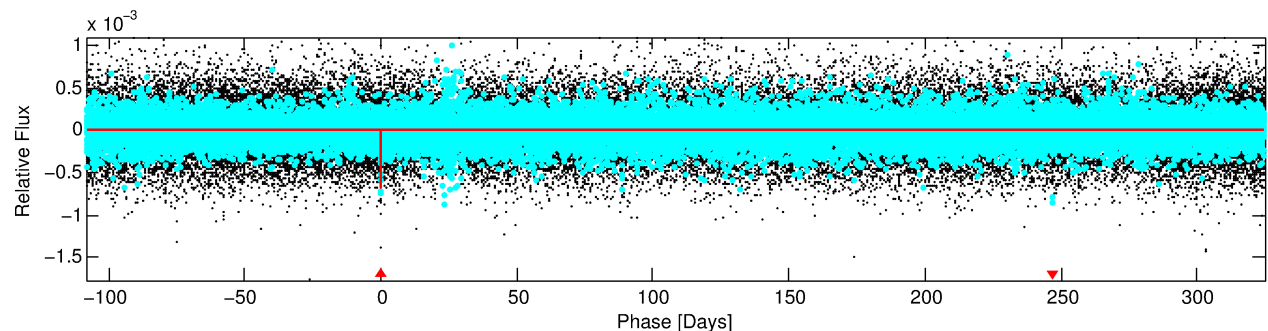
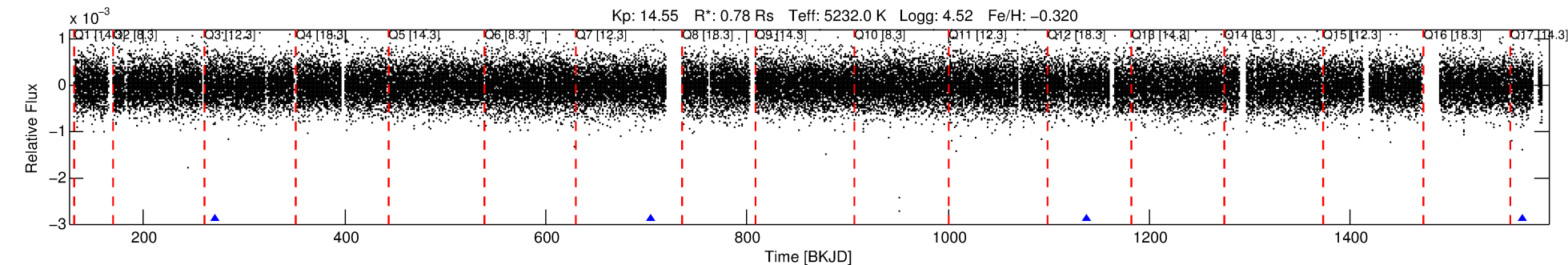
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006531617-01

No Significant Match Found

DV One-Page Summary

KIC: 6531617 Candidate: 1 of 1 Period: 433.223 d



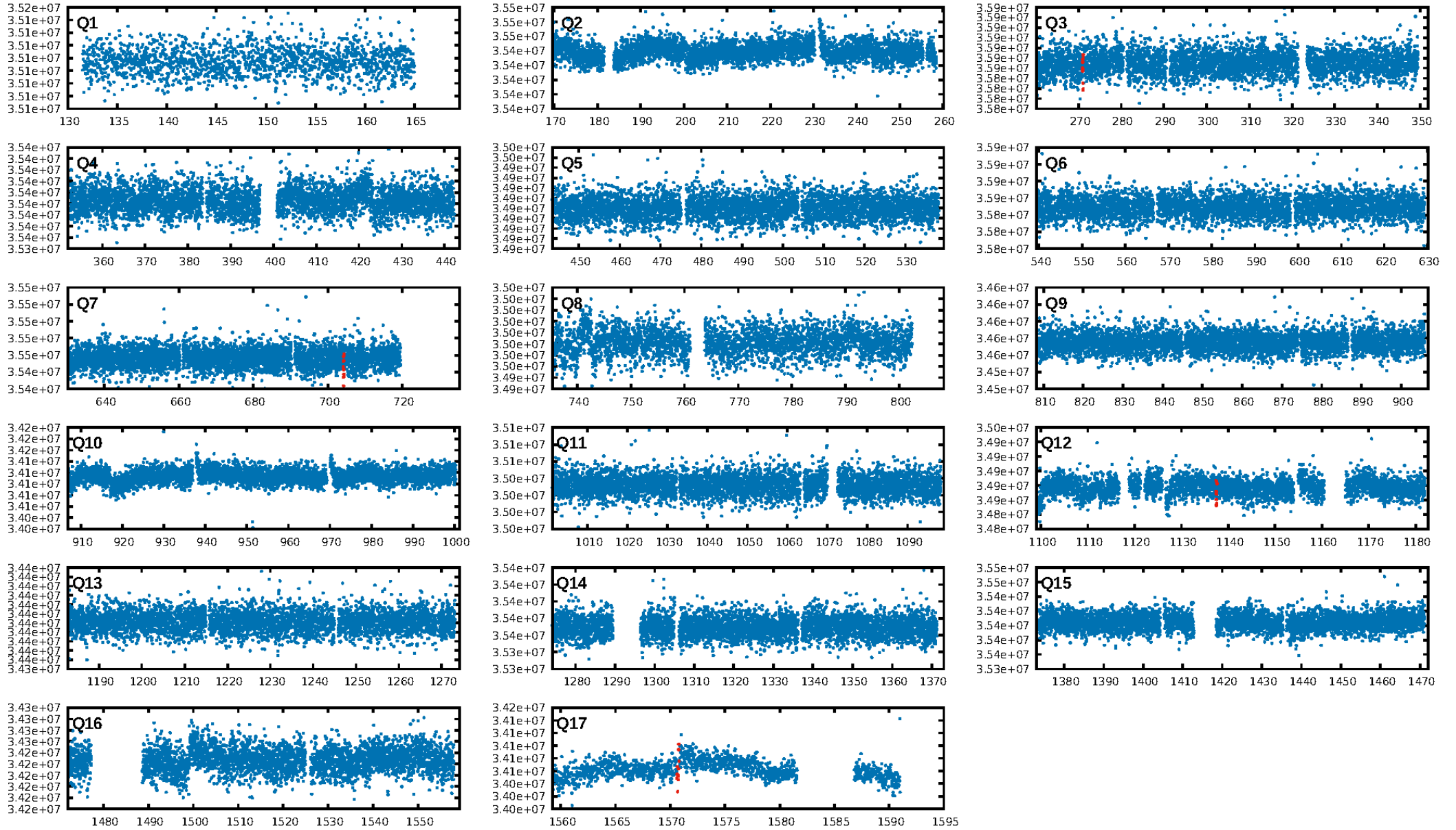
DV Fit Results:

Period = 433.22256 [0.00470] d
Epoch = 271.0412 [0.0078] BKJD
Rp/R* = 0.0270 [0.0203]
a/R* = 716.67 [2102.84]
b = 0.83 [1.11]
Seff = 0.40 [0.12]
Teff = 203 [15] K
Rp = 2.29 [1.76] Re
a = 1.0080 [0.1696] AU
Ag = 869.58 [12542.98] [0.07 σ]
Teffp = 1701 [6135] K [0.24 σ]

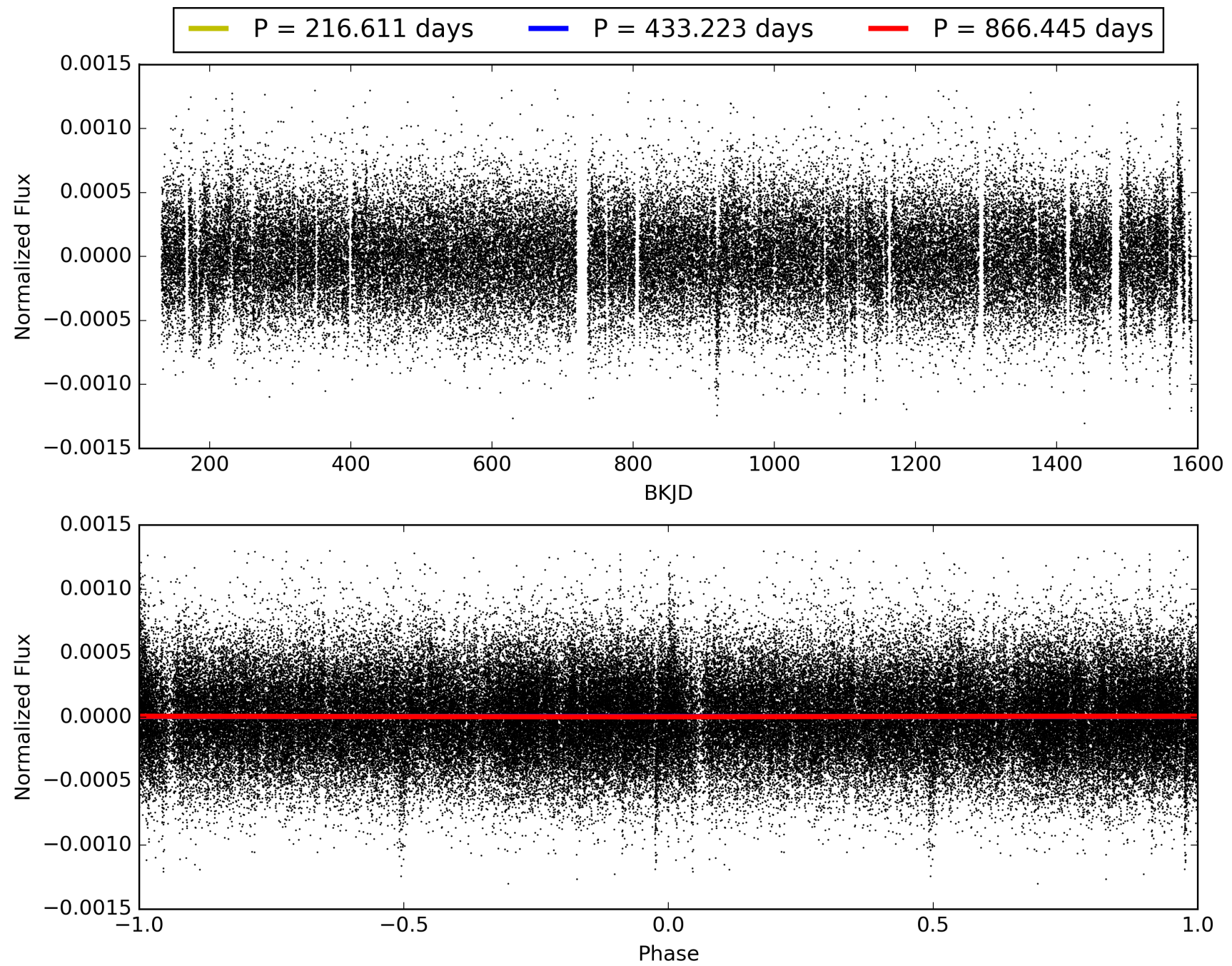
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.6%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 1.47e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.702
Centroid-sig: 39.0%
Centroid-so: 1.182 arcsec [0.83 σ]
OotOffset-rm: 0.263 arcsec [0.92 σ]
KicOffset-rm: 0.206 arcsec [0.73 σ]
OotOffset-st: 0/2/1/1 [4]
KicOffset-st: 0/2/1/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 006531617-01, PDC Light Curves

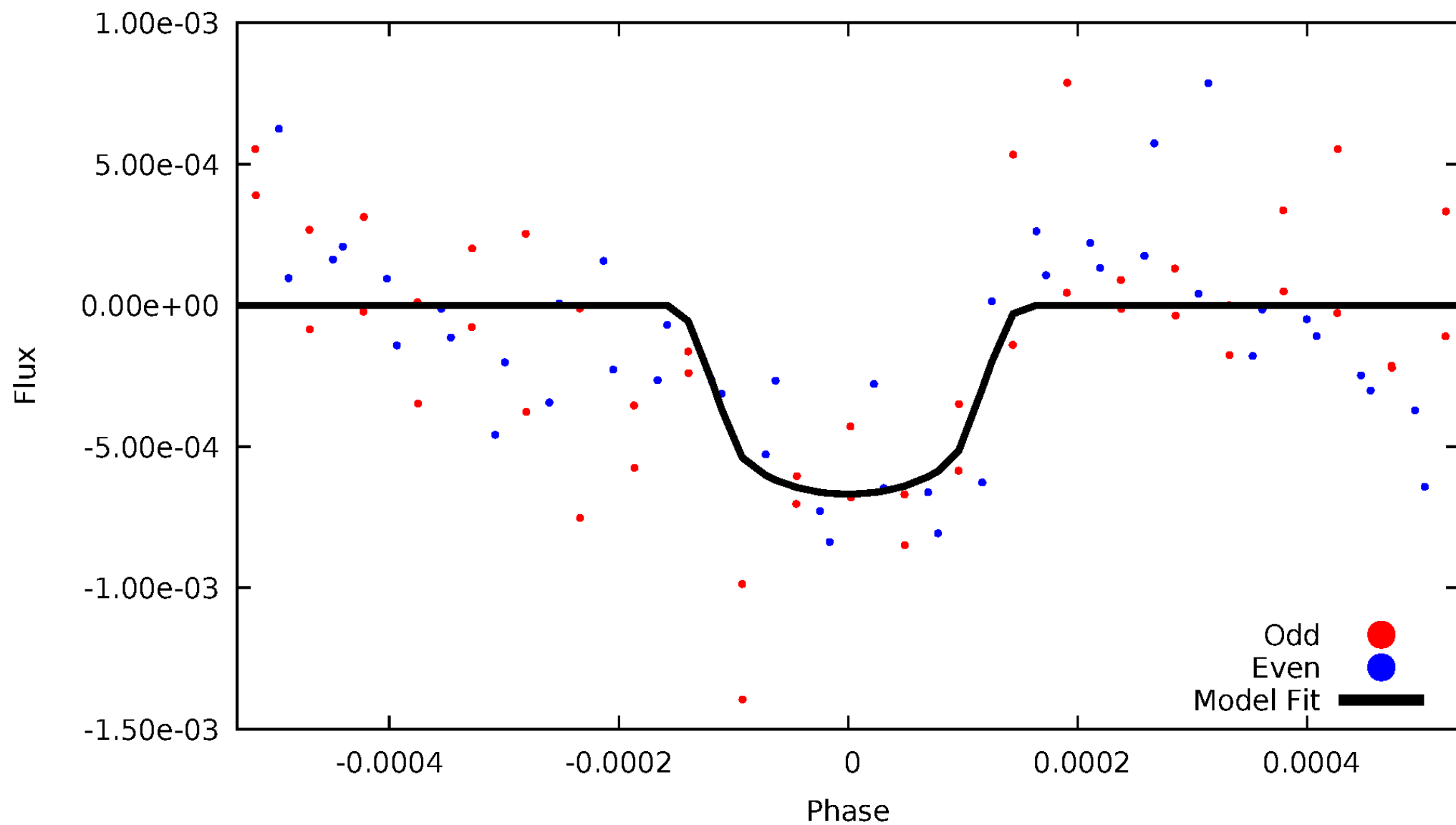


TCE 006531617-01



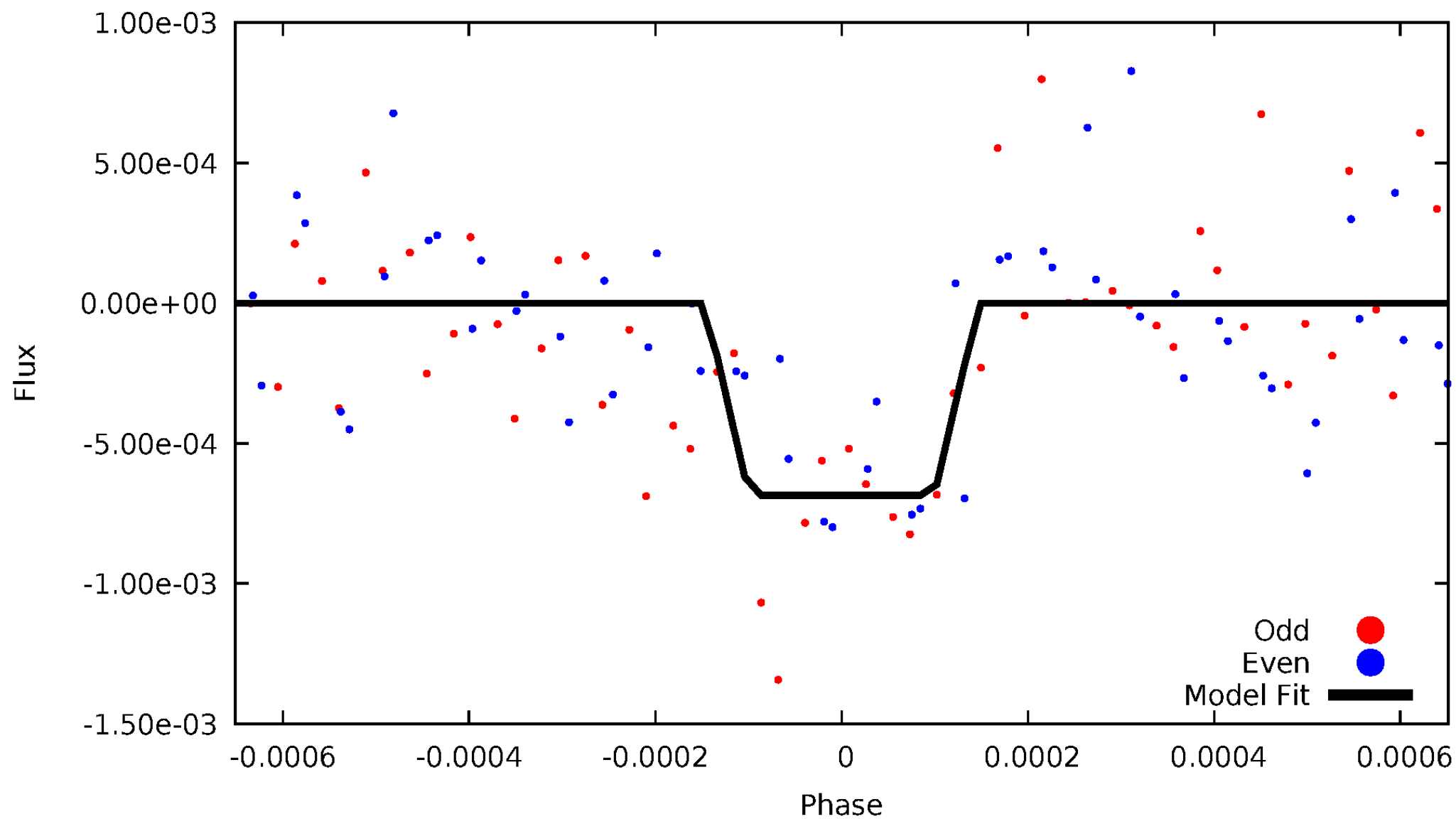
DV Odd/Even

TCE 006531617-01



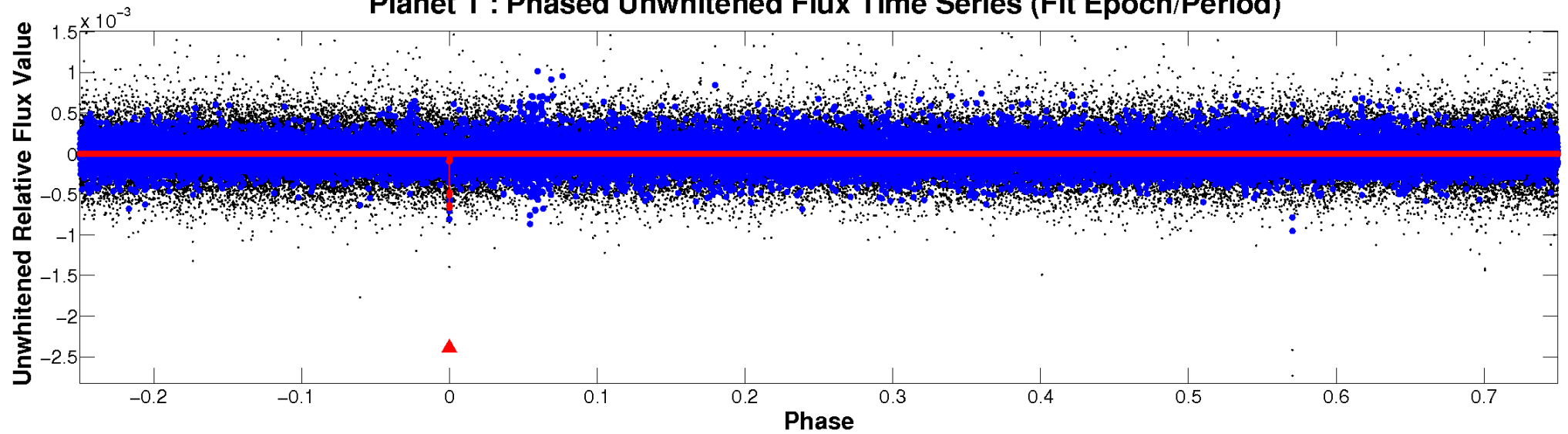
ALT Odd/Even

TCE 006531617-01

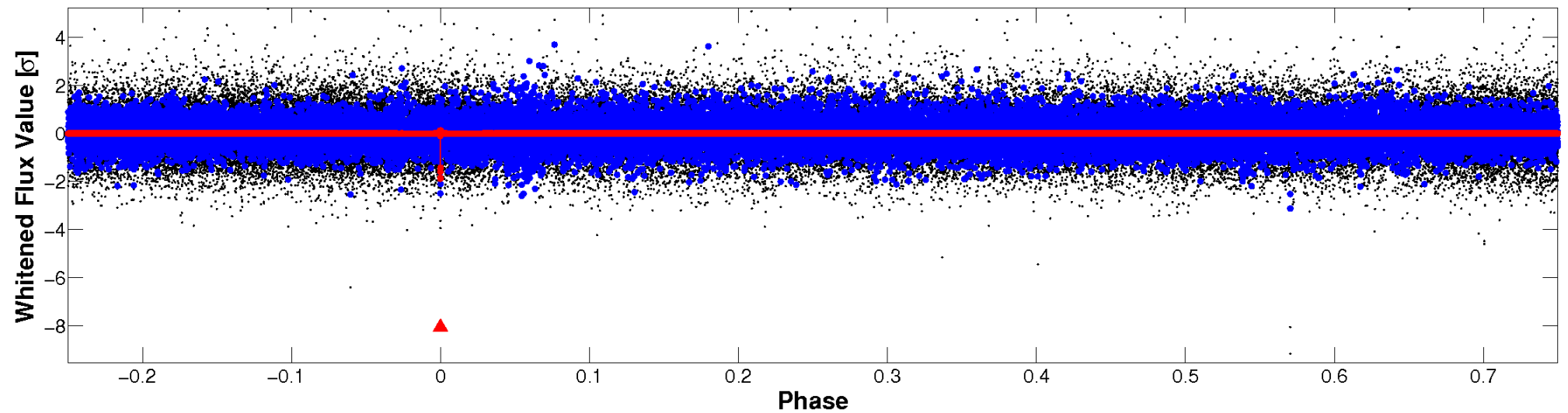


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

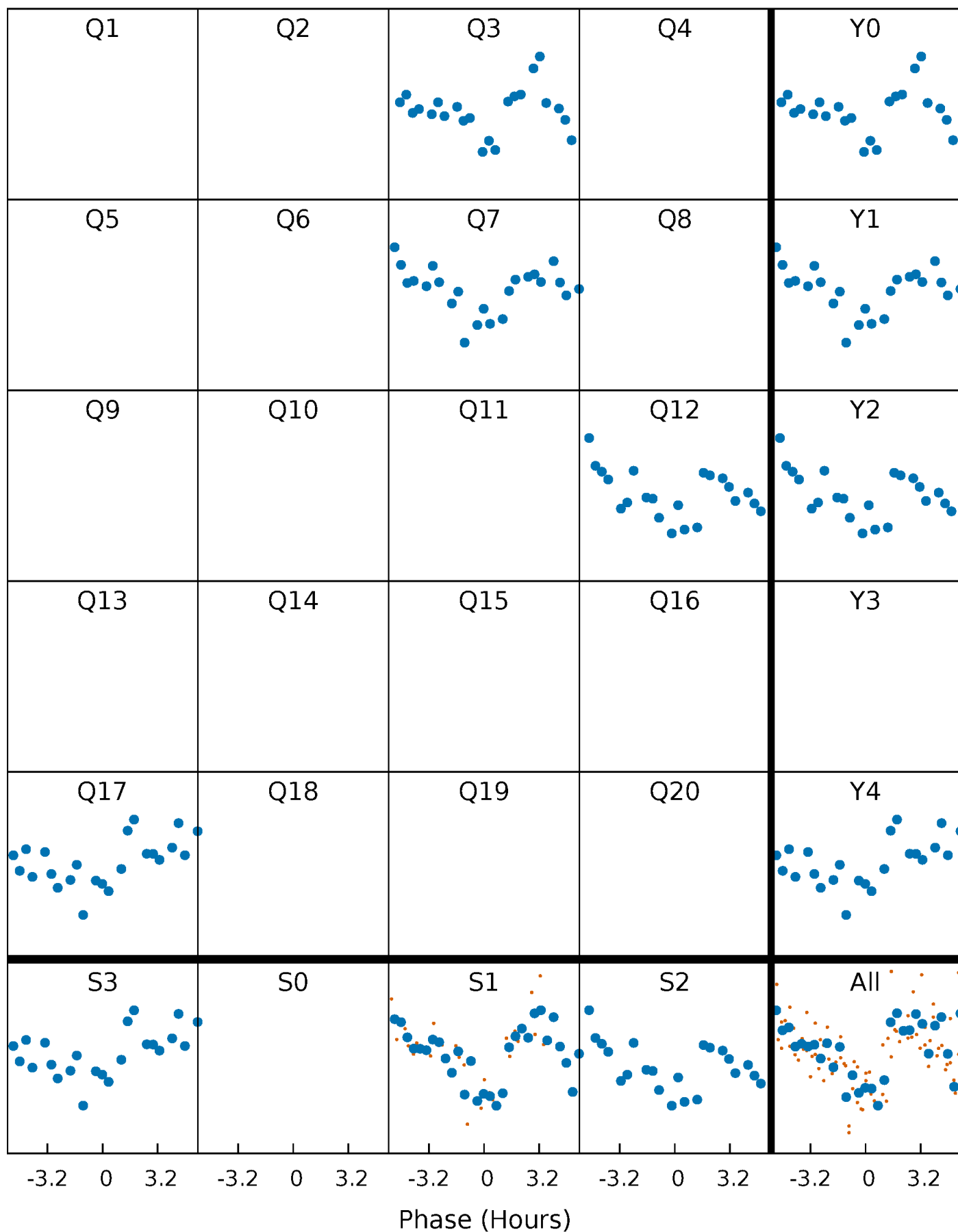


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



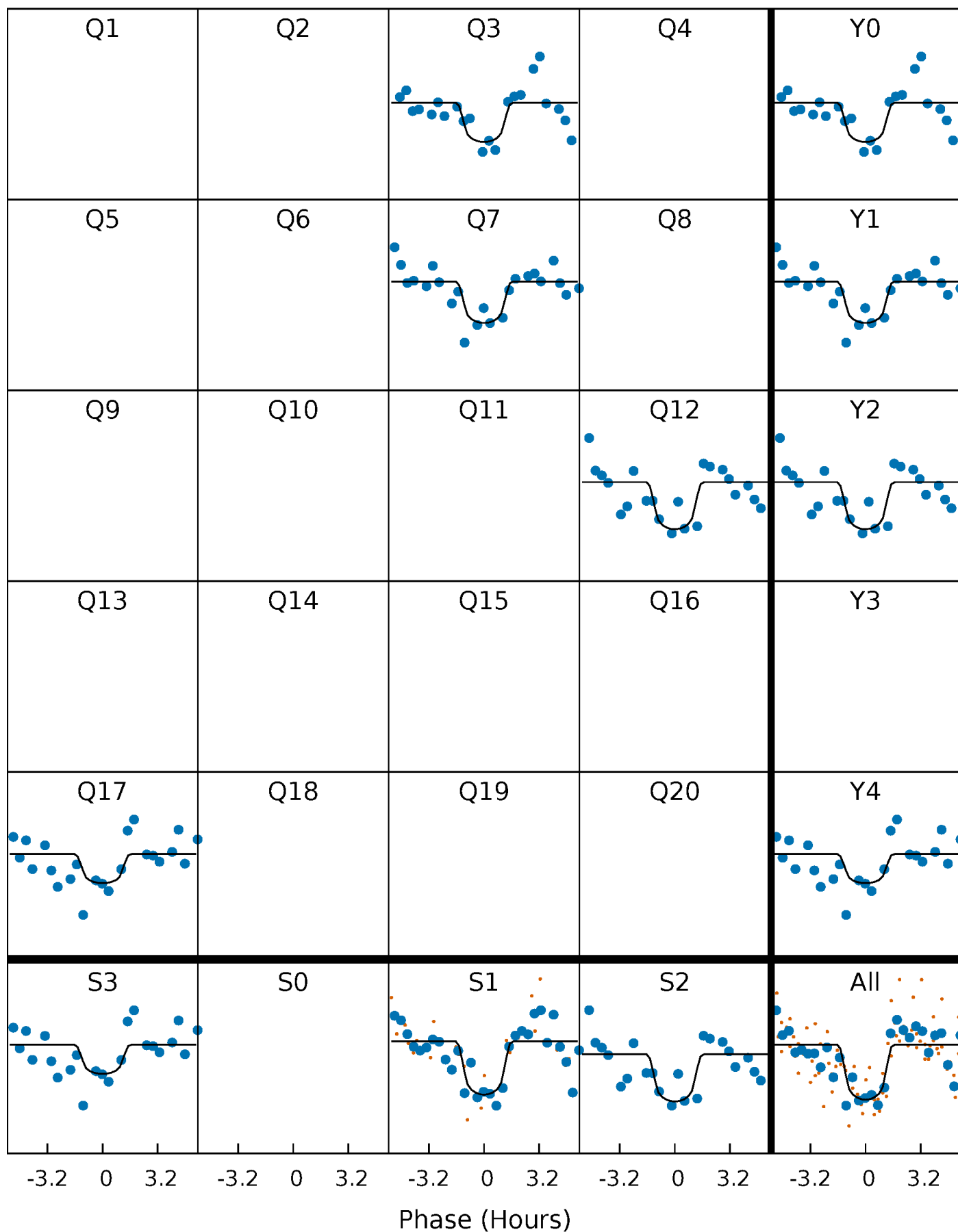
PDC Quarter-Phased Transit Curves

TCE 006531617-01 P=433.222564 Days $T_0=271.041159$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 006531617-01 P=433.222564 Days $T_0=271.041159$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

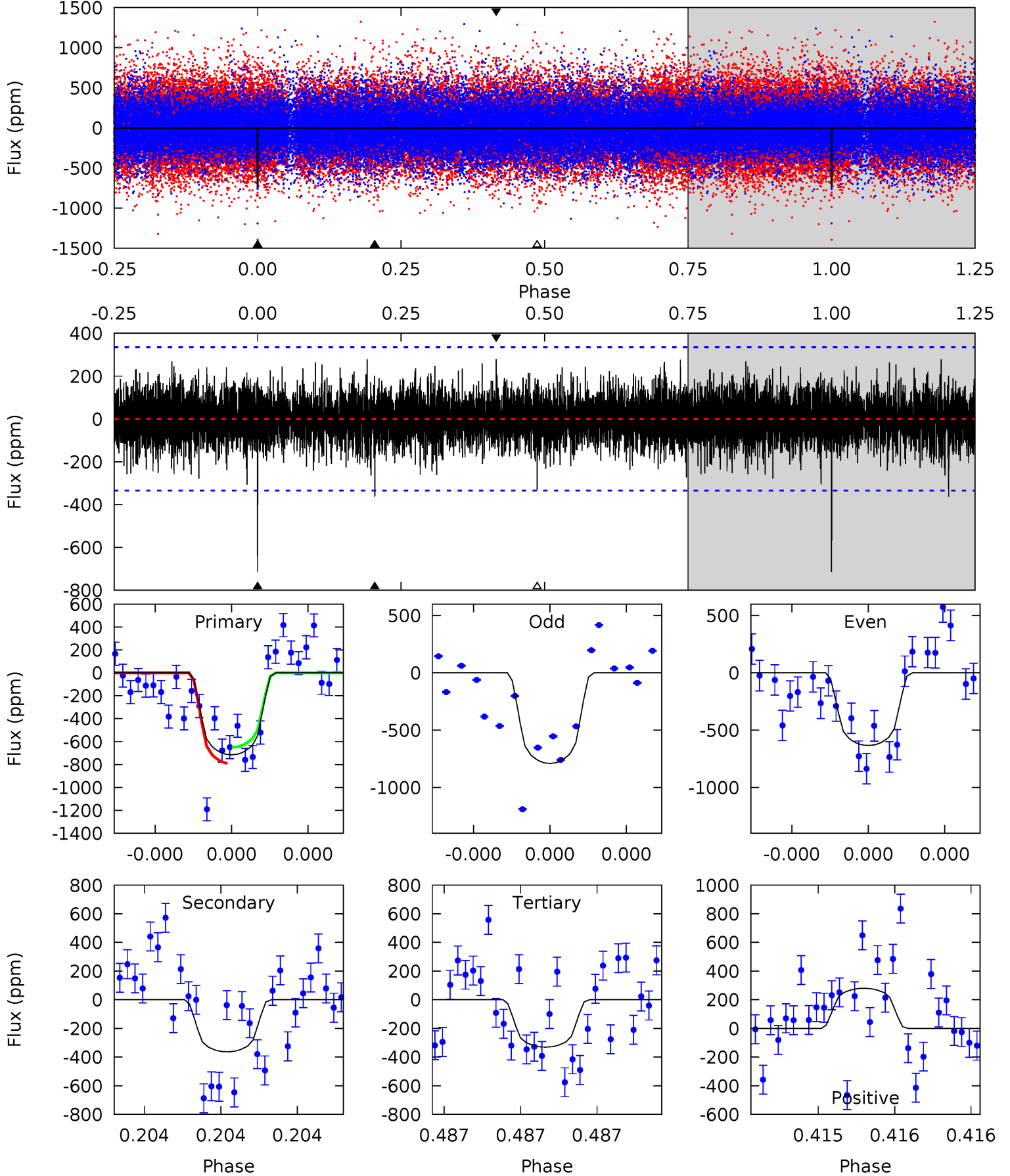
TCE 006531617-01 P=433.218717 Days $T_0=271.042379$ (BKJD)



DV Model-Shift Uniqueness Test

006531617-01, P = 433.222564 Days, E = 271.041159 Days

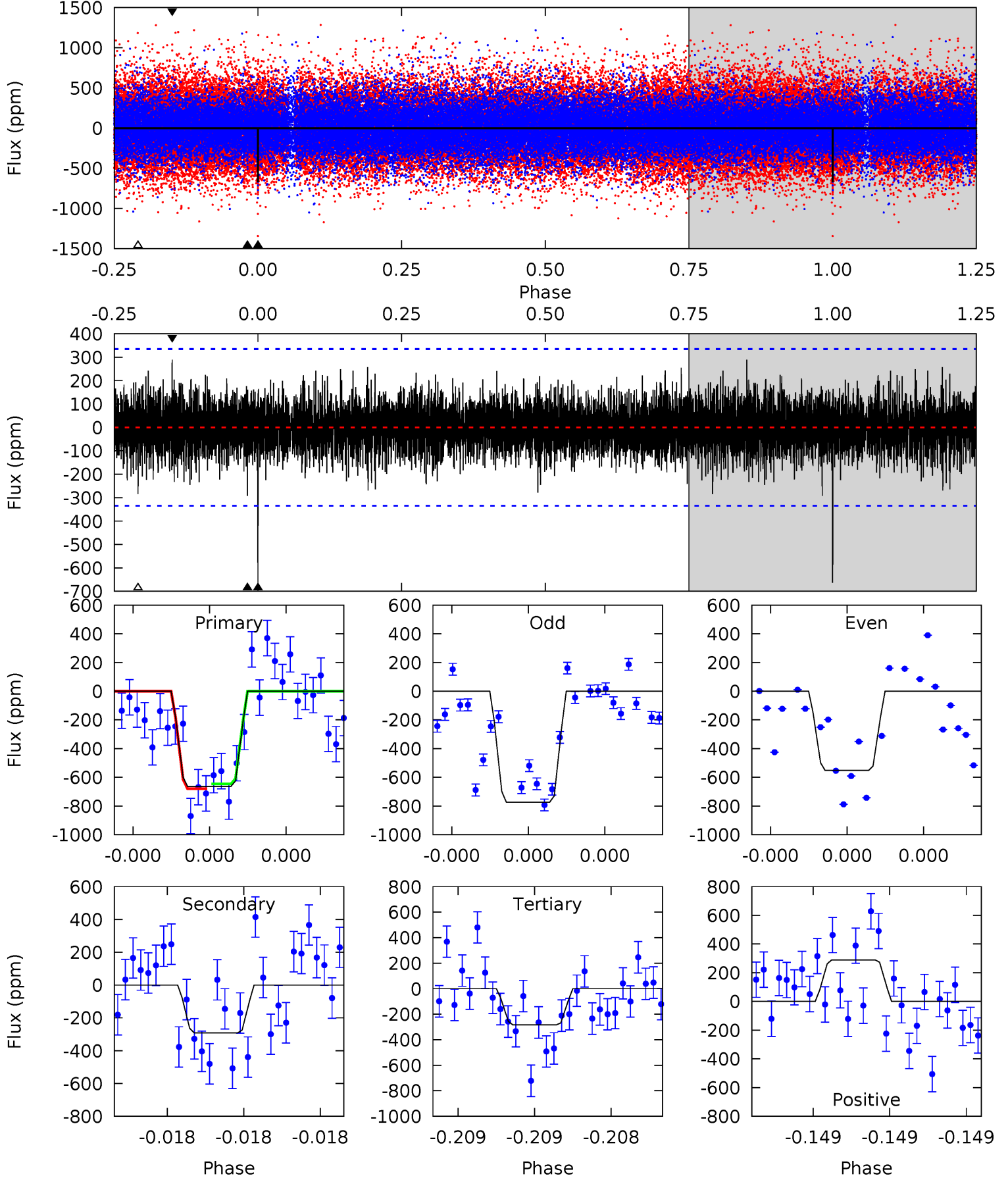
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	6.17	5.61	4.75	5.67	3.63	1.33	6.52	7.38	0.56	1.42	1.33	1.03	0.28	1.18



Alt Model-Shift Uniqueness Test

006531617-01, P = 433.218717 Days, E = 271.042379 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	4.93	4.80	4.90	5.66	3.61	1.25	6.41	6.31	0.13	0.03	1.87	0.97	0.30	0.27



Stellar Parameters For KIC 006531617

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5232^{+156}_{-156}	$4.519^{+0.096}_{-0.168}$	$-0.320^{+0.350}_{-0.300}$	$0.777^{+0.126}_{-0.094}$	$0.727^{+0.116}_{-0.050}$	$2.186^{+0.877}_{-0.788}$
	+3%/-3%	+2%/-4%	+109%/-94%	+16%/-12%	+16%/-7%	+40%/-36%
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 006531617-01 / KOI 7785.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-364 ± 59	$2.60^{+1.60}_{-1.51}$	286^{+16}_{-14}	4377^{+2036}_{-731}	$31225^{+140090}_{-20012}$
Alt.	-292 ± 59	$2.58^{+1.66}_{-1.50}$	286^{+15}_{-13}	4169^{+1786}_{-650}	$24366^{+111331}_{-15807}$

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

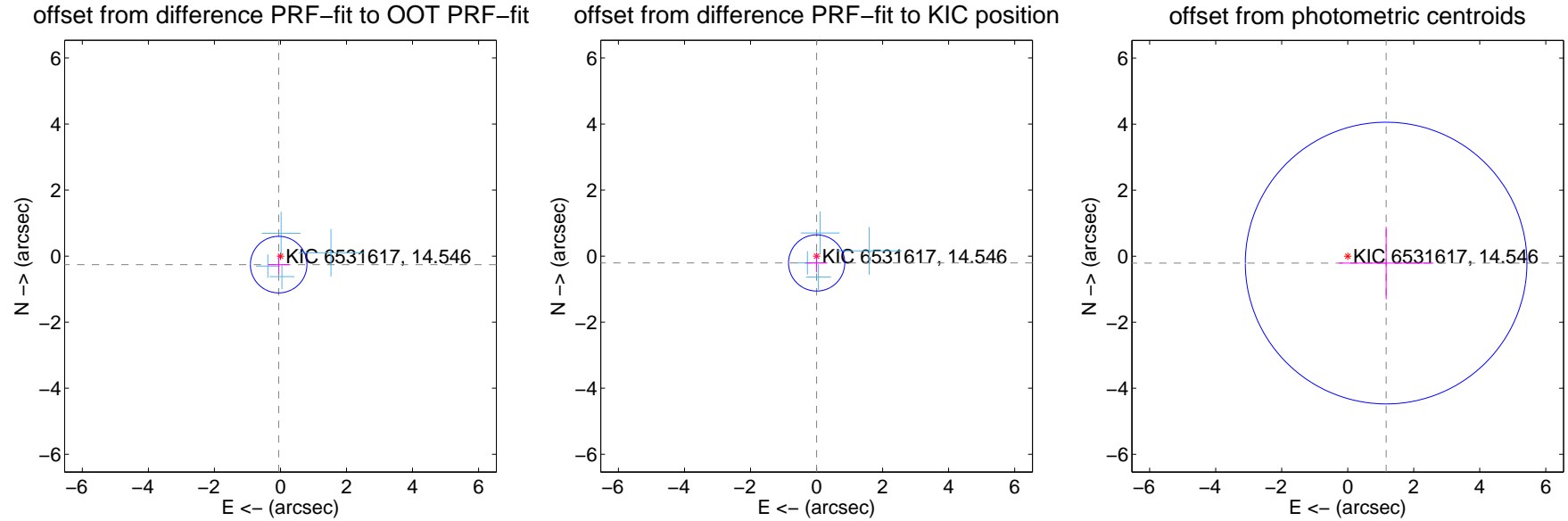
DV Centroid Data

Supplemental centroid analysis for 006531617-01. Kepler magnitude: 14.55. Transit SNR 7.57

There are 4 quarters with good PRF difference image offsets

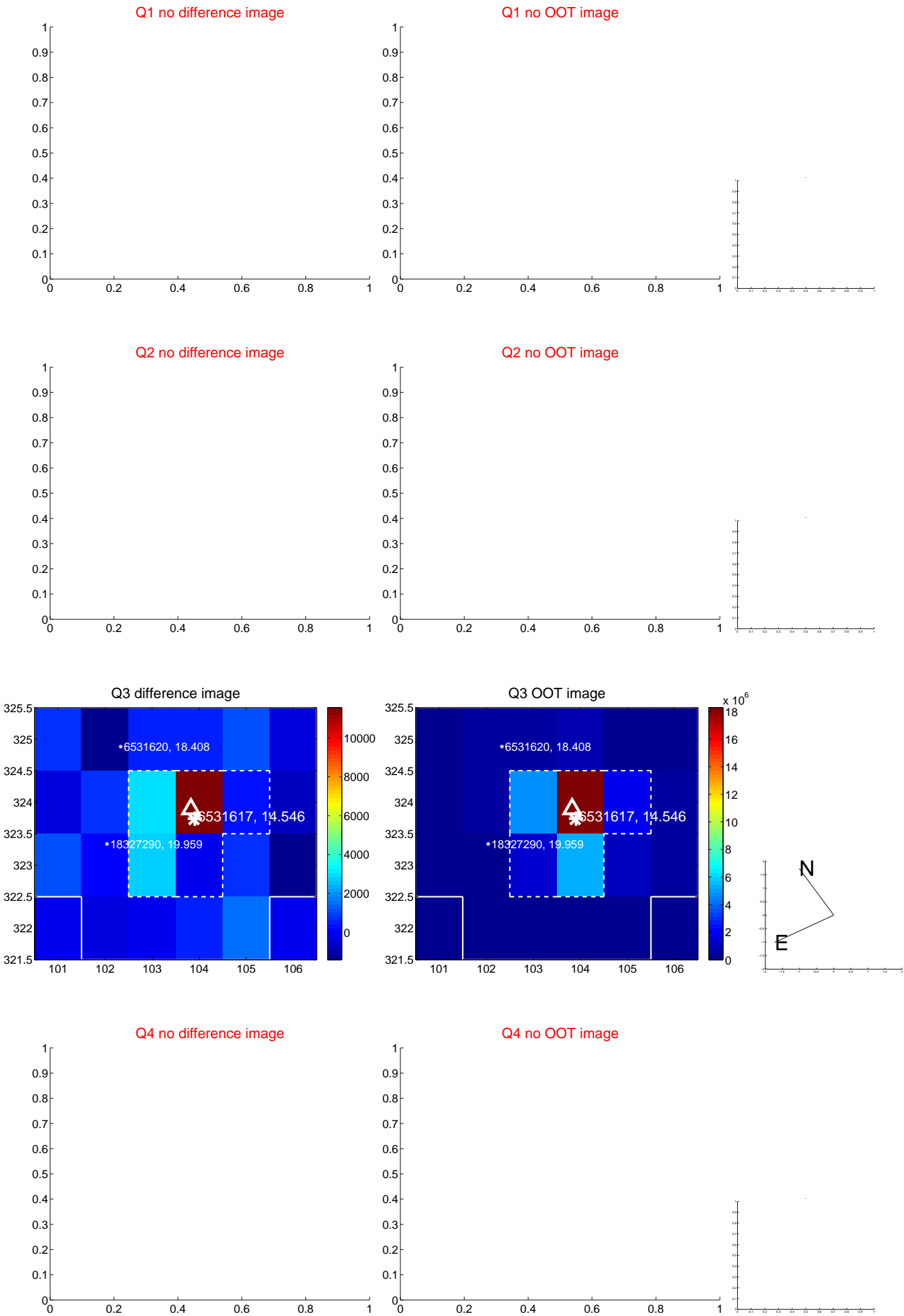
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.263 ± 0.285	0.92	0.054 ± 0.321	-0.257 ± 0.284
PRF-fit source offset from KIC position	0.206 ± 0.284	0.73	-0.002 ± 0.321	-0.206 ± 0.284
photometric centroid source offset	1.18 ± 1.42	0.83	-1.16 ± 1.43	-0.21 ± 1.10

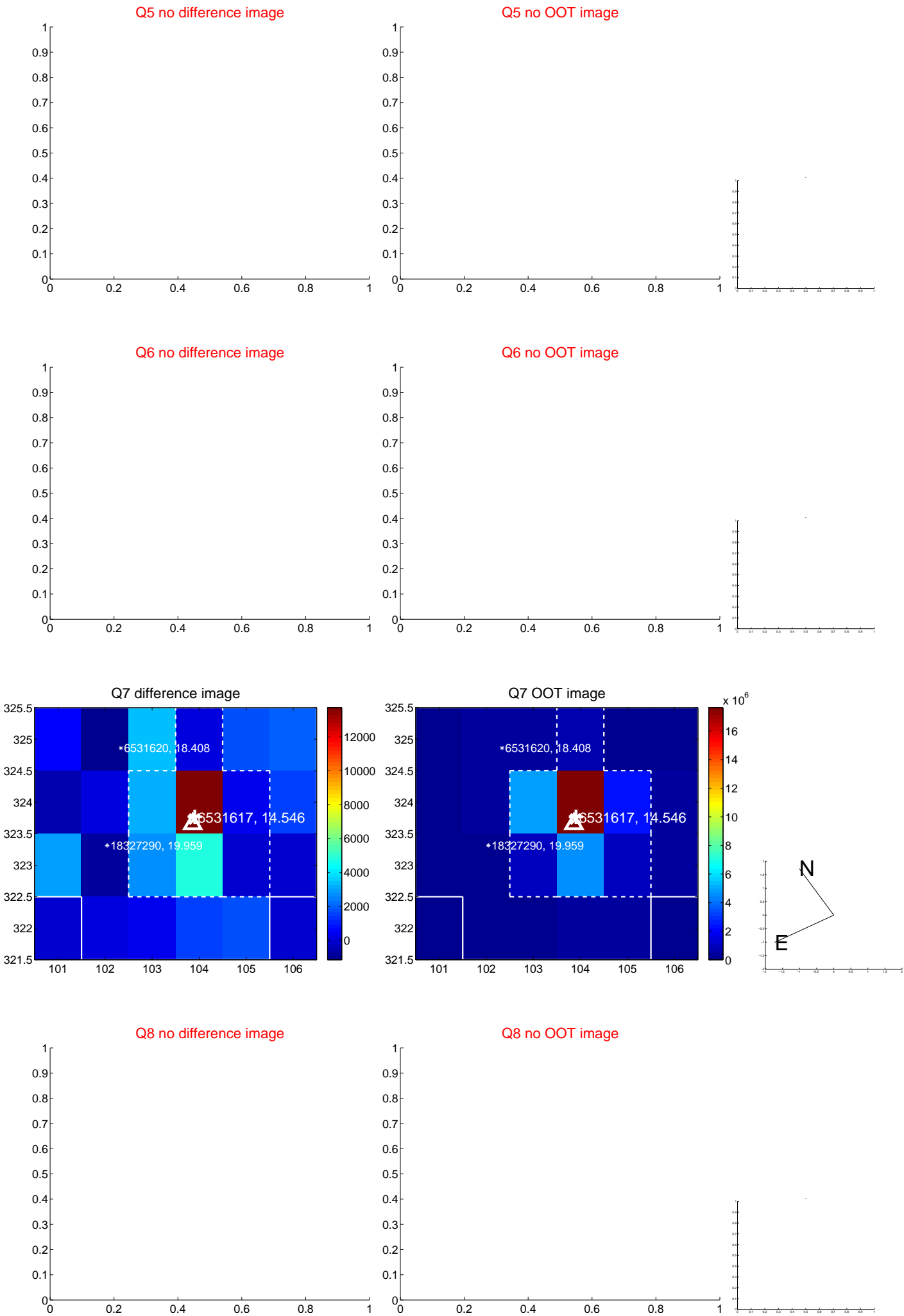


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

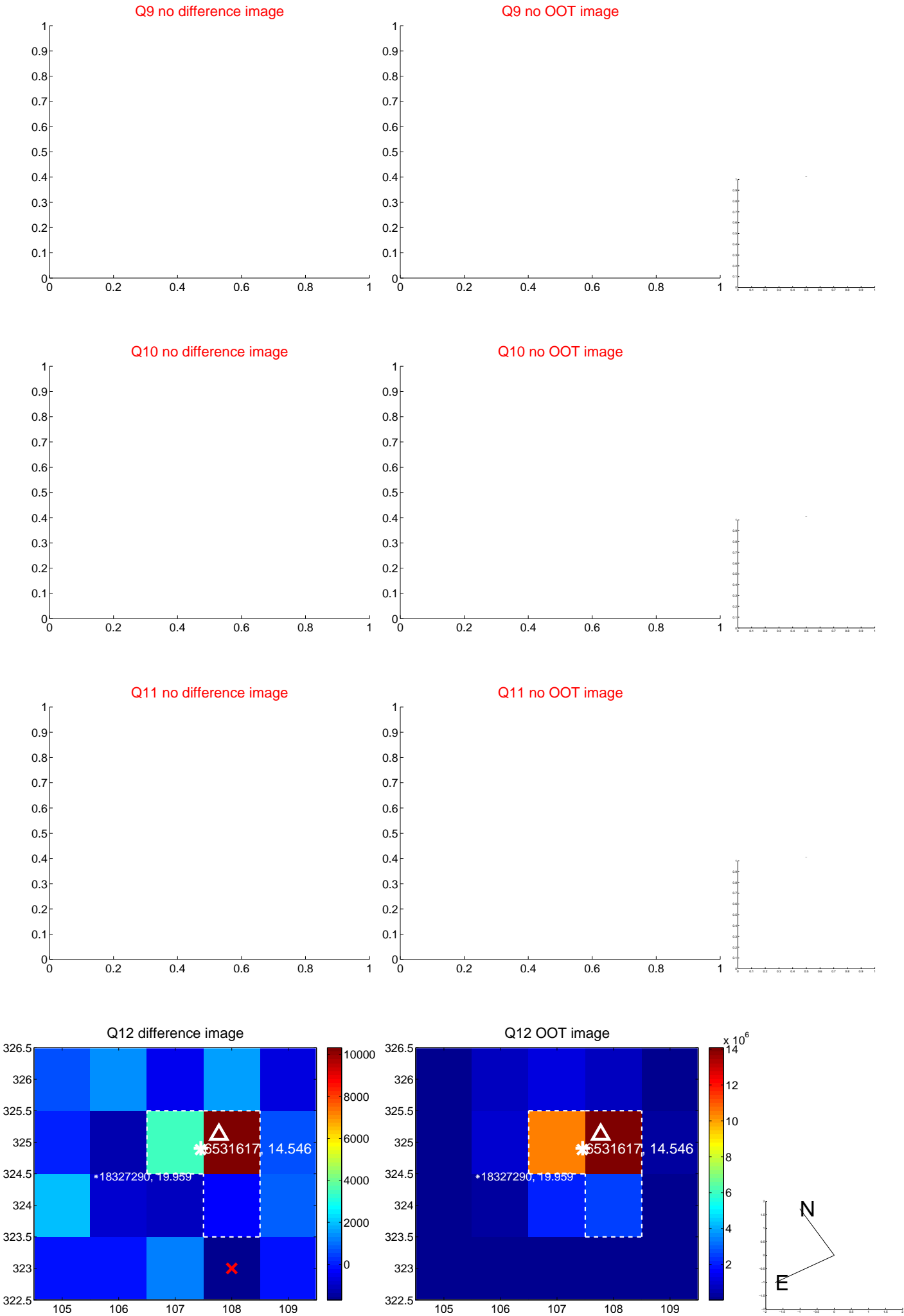
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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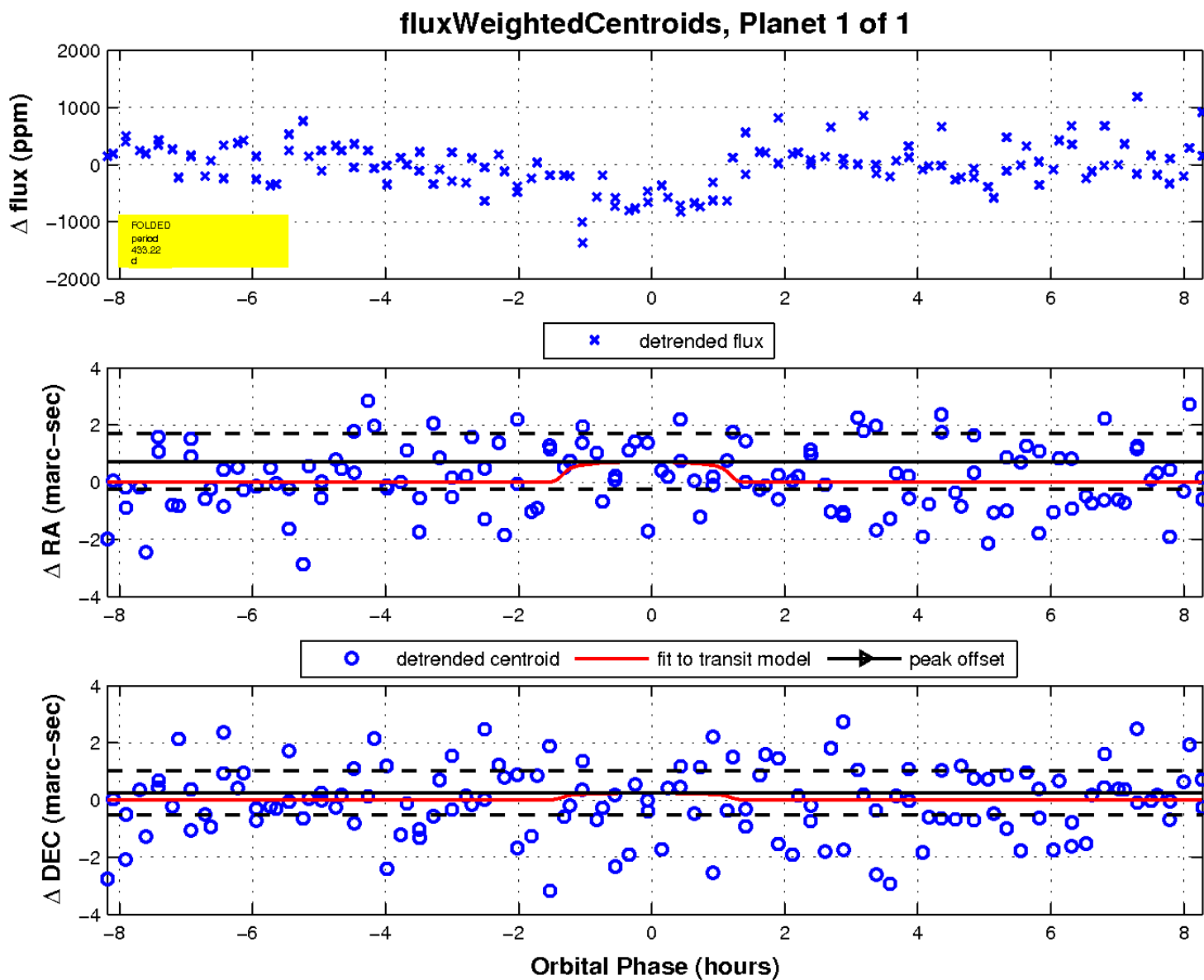
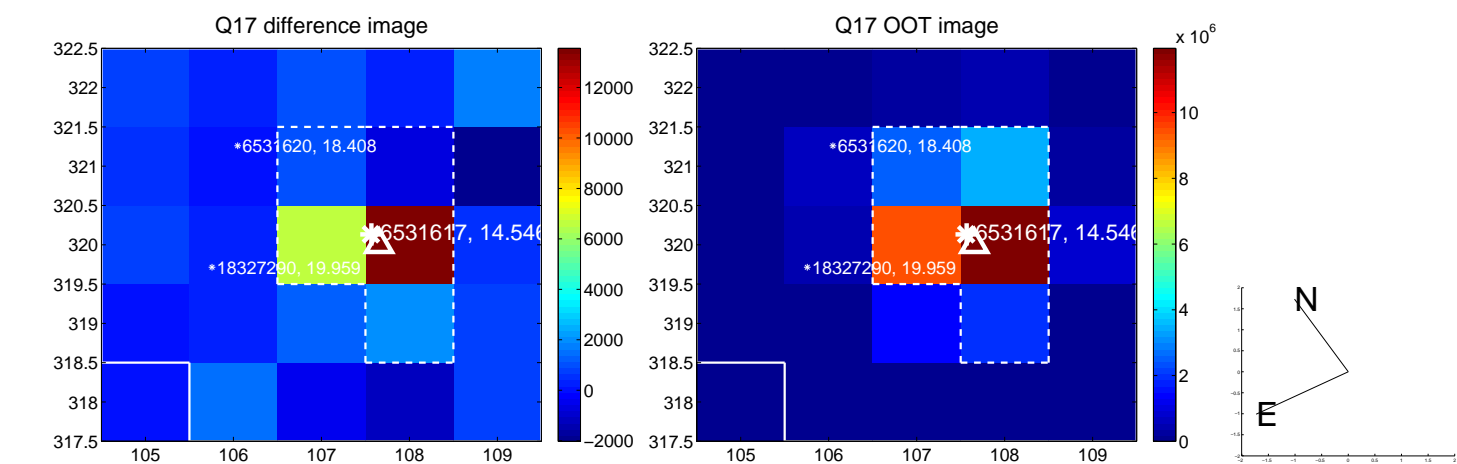
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UKIRT Image

Declination

