

KIC 009959545

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 _⊕)
009959545-01	OBS	4195.01	1.332504	132.080496	43.3	3.974	17.0	17.1	0.79	5687	0.62	1142.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009959545-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—CENT_CROWDED—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.

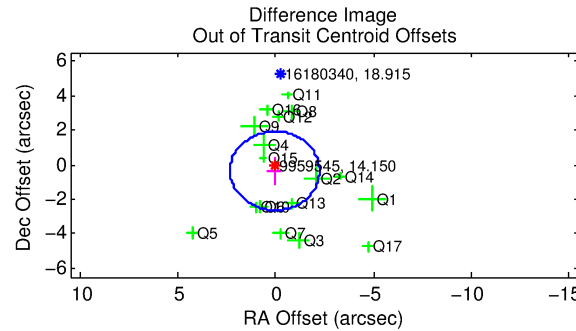
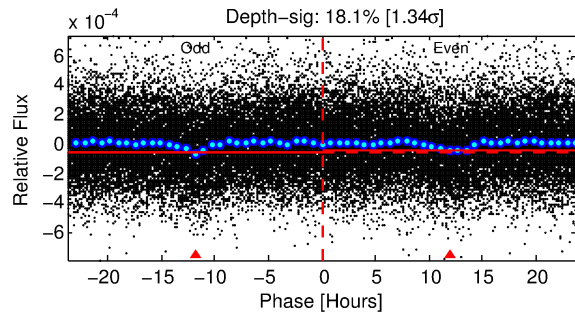
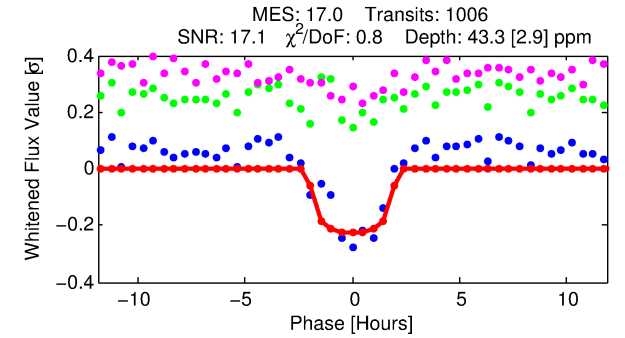
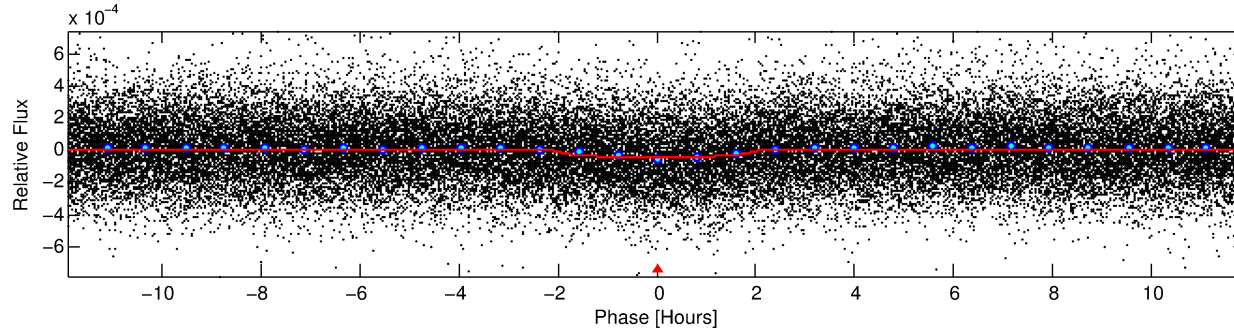
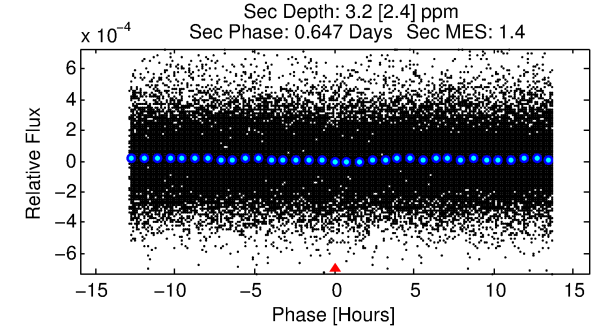
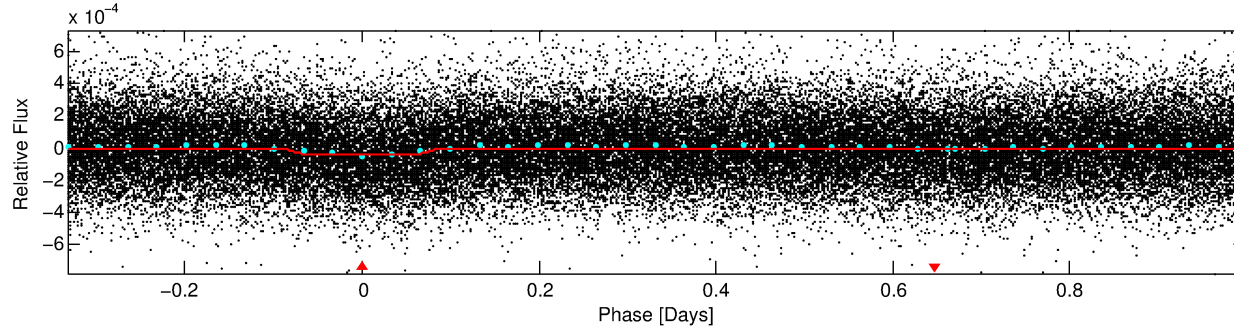
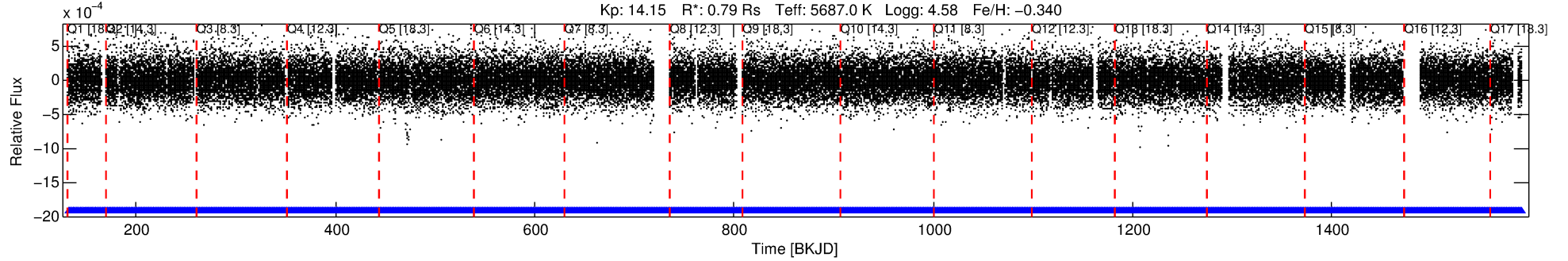
Ephemeris Match Information For 009959545-01

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
009959545-01	9959545	BR-Cyg-pri	9899416	1:1	141.5	-14	-33	10.03	14.15	15555.00	Direct-PRF	0	3.74	2.21

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided 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 σ_P < 5.0 and σ_T < 5.0. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 9959545 Candidate: 1 of 1 Period: 1.333 d
KOI: K04195.01 Corr: 0.893



DV Fit Results:

Period = 1.33250 [0.00001] d
Epoch = 132.0805 [0.0031] BKJD
Rp/R* = 0.0072 [0.0027]
a/R* = 1.48 [1.52]
b = 0.90 [0.39]
Seff = 1142.76 [324.49]
Teq = 1483 [105] K
Rp = 0.62 [0.27] Re
a = 0.0226 [0.0041] AU
Ag = 2.35 [2.59] [0.52σ]
Teffp = 2839 [761] K [1.77σ]

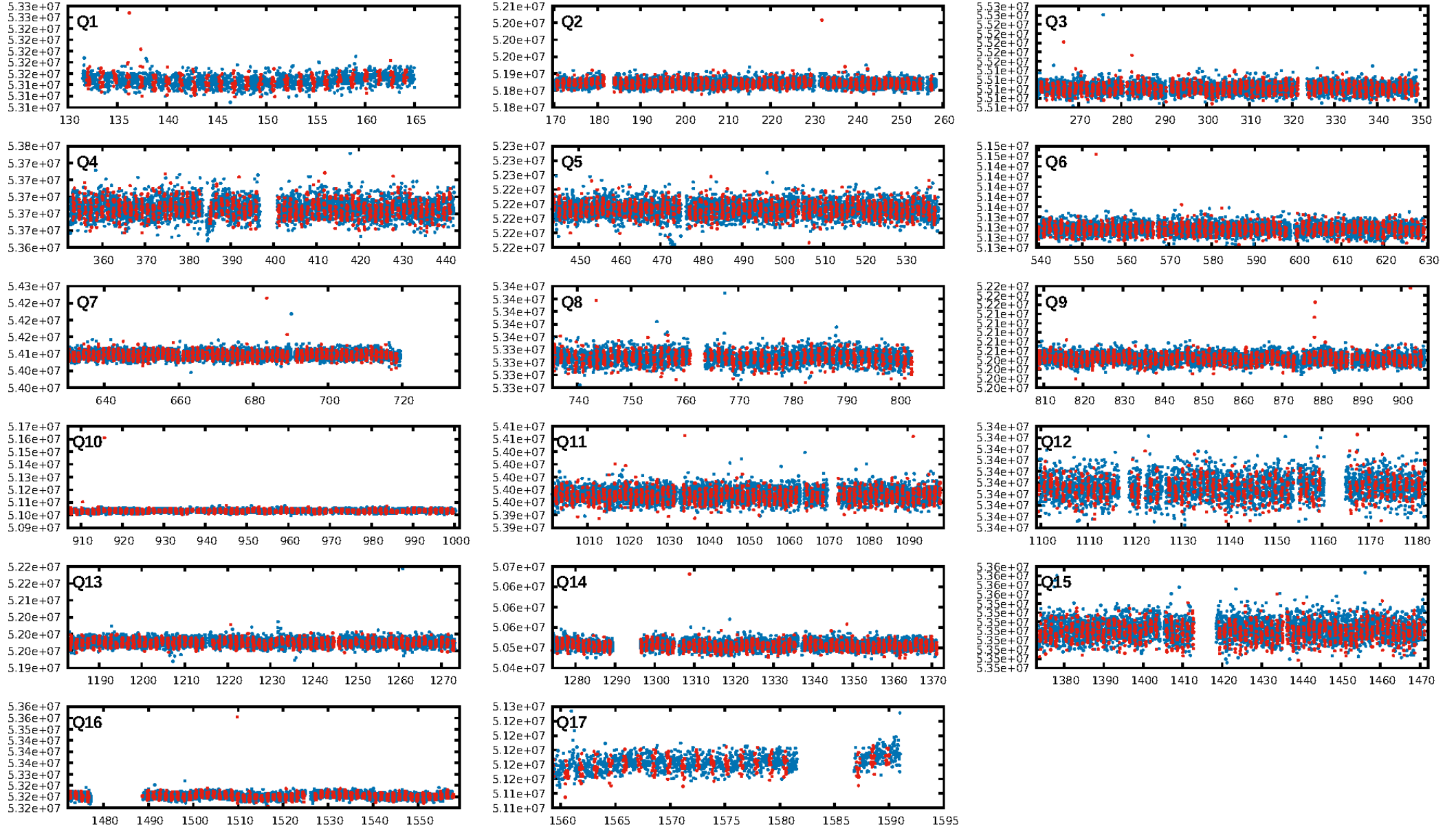
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.50e-63
RollingBand-fgt: 1.00 [961/961]
GhostDiagnostic-chr: -0.117
Centroid-sig: 3.2%
Centroid-so: 1.445 arcsec [1.81σ]
OotOffset-rm: 0.367 arcsec [0.48σ]
KicOffset-rm: 0.549 arcsec [0.72σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.12 [2/17]
DiffImageOverlap-fno: 1.00 [17/17]

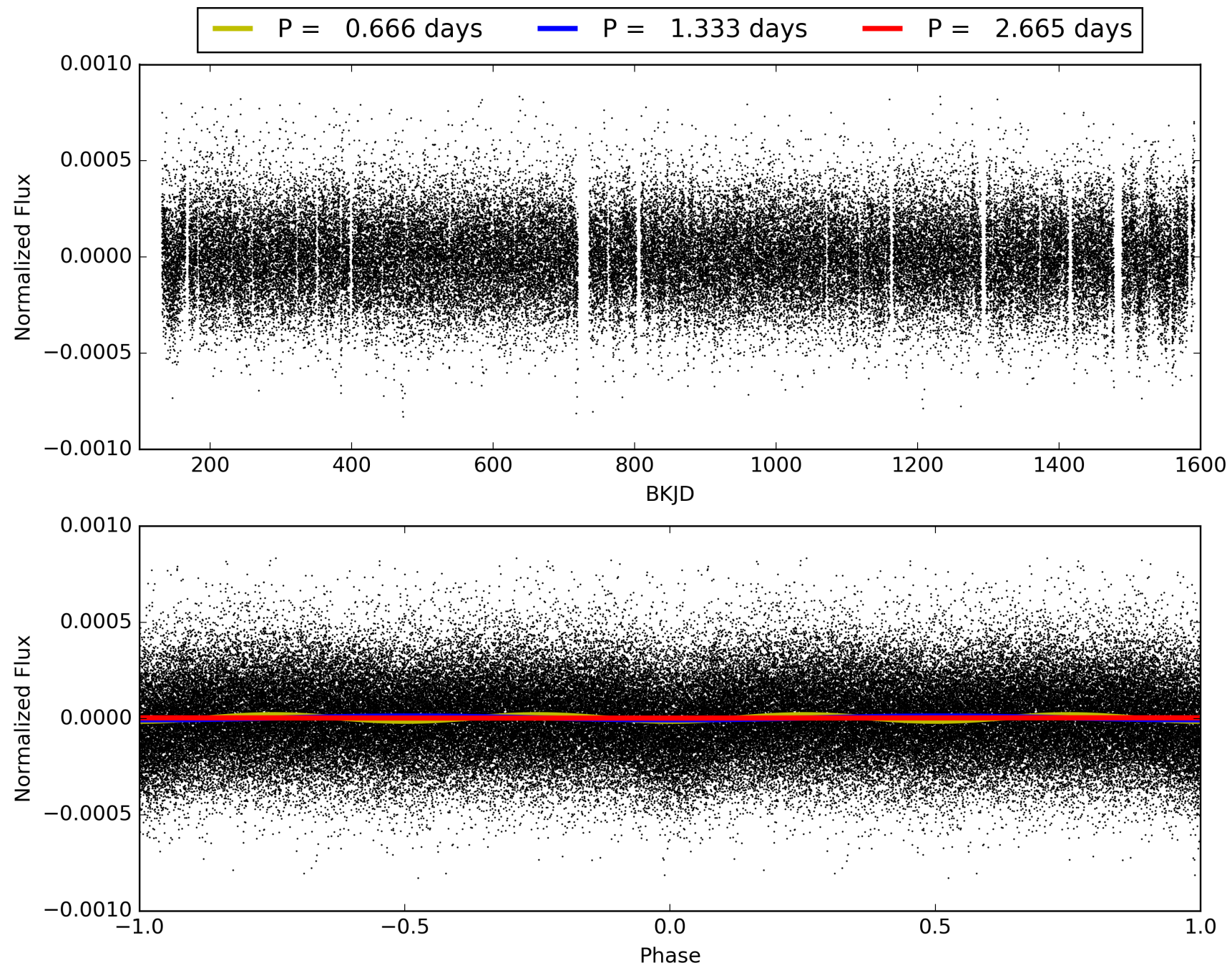
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:10:06 Z

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

TCE 009959545-01, PDC Light Curves

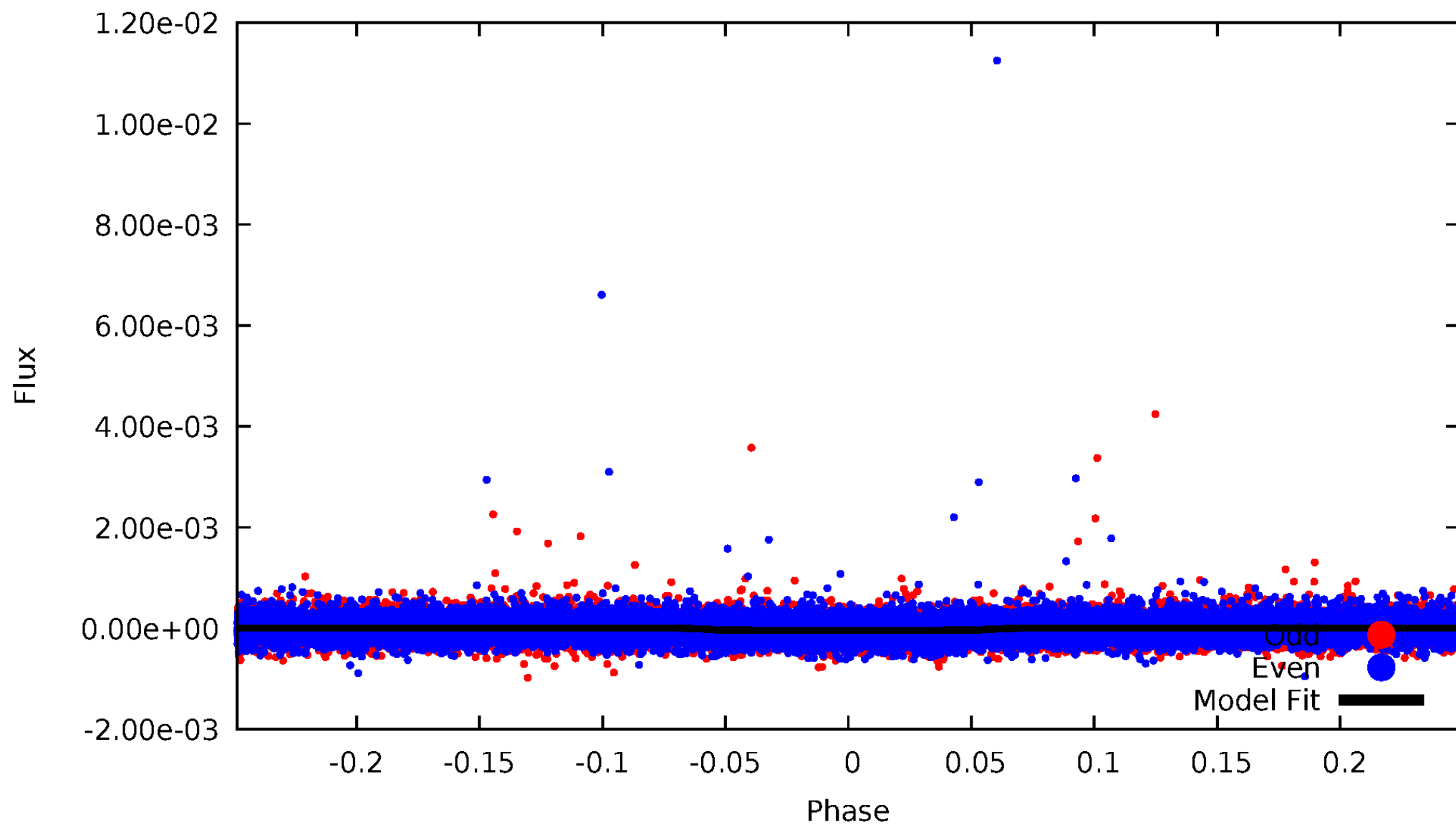


TCE 009959545-01



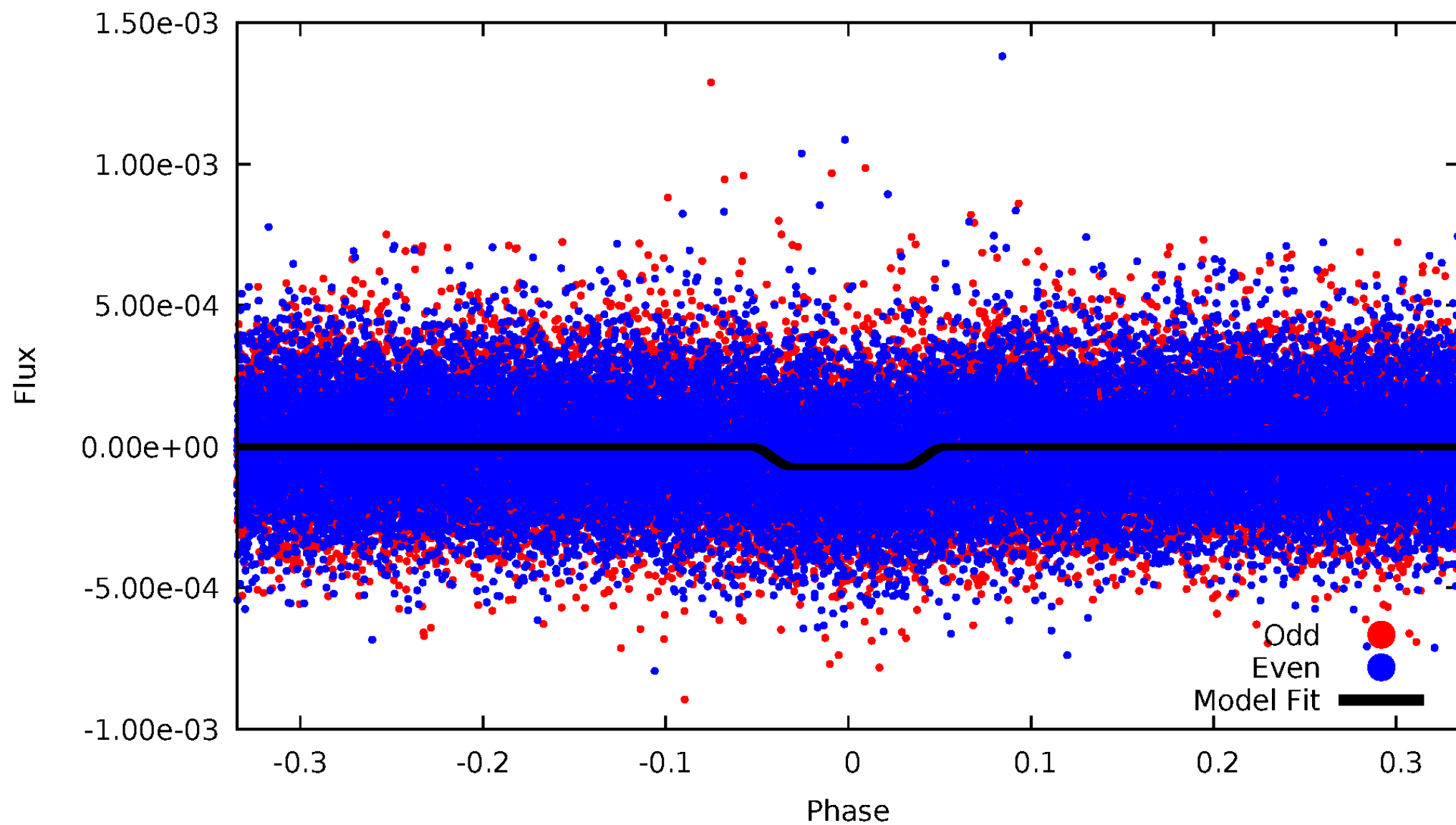
DV Odd/Even

TCE 009959545-01

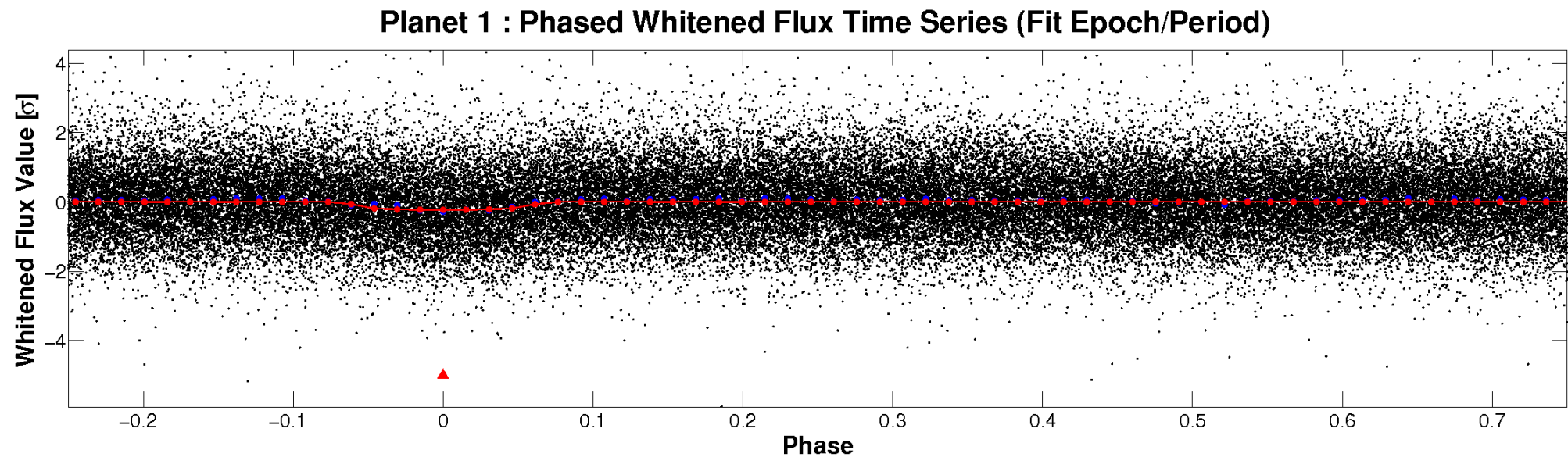
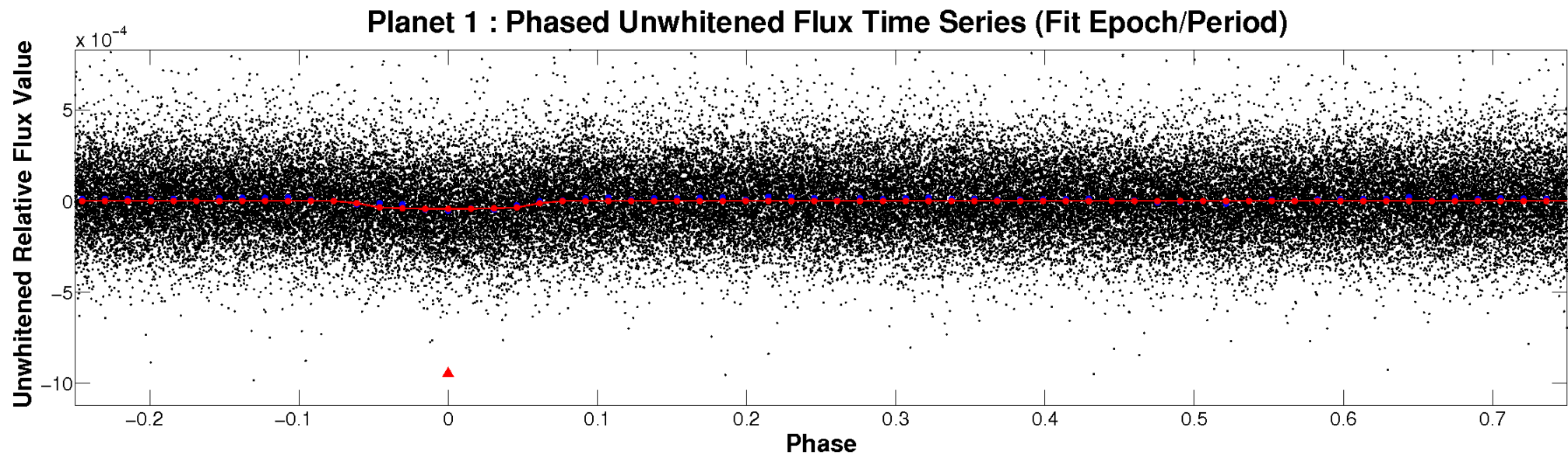


ALT Odd/Even

TCE 009959545-01

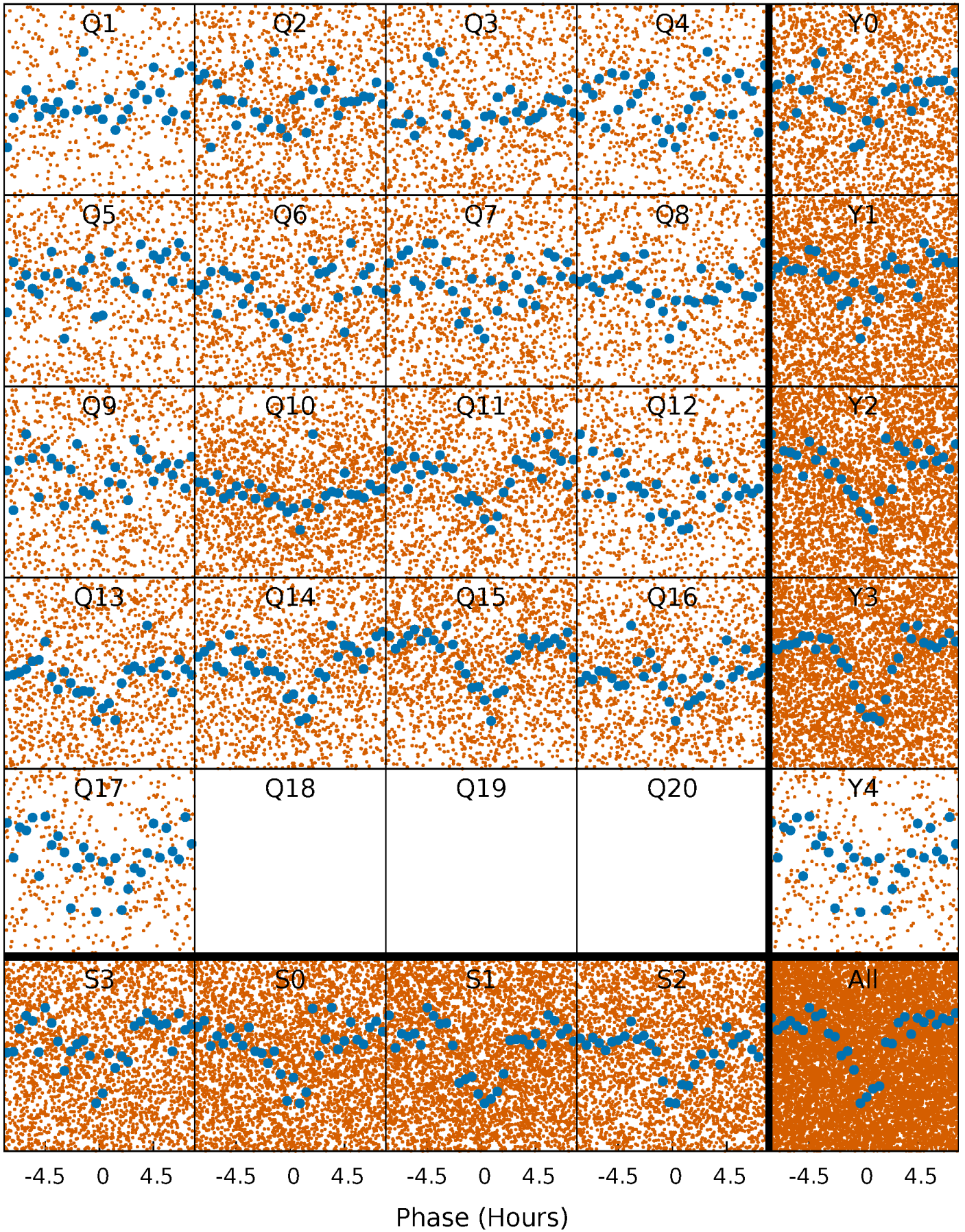


Non-Whitened Vs. Whitened Light Curve



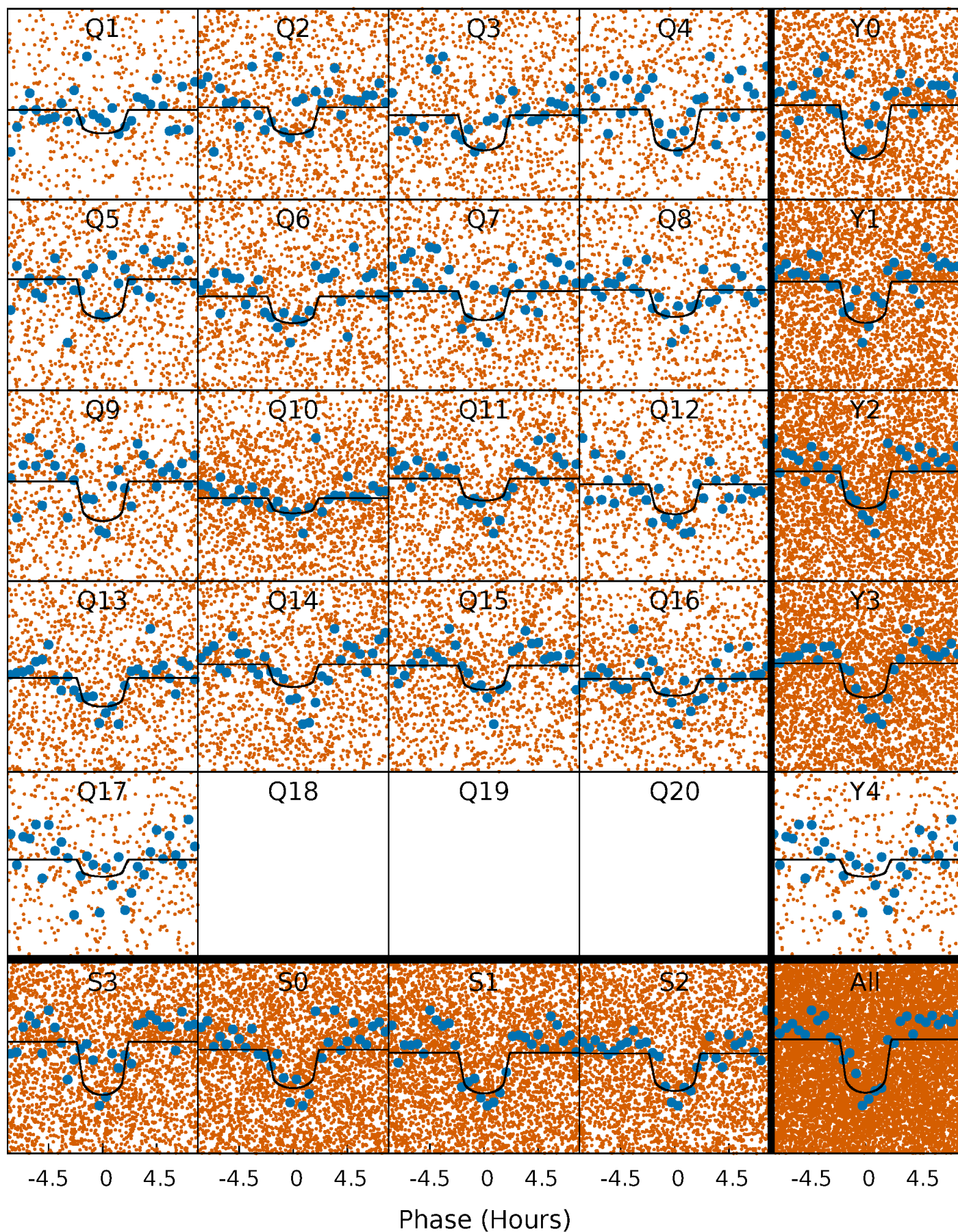
PDC Quarter-Phased Transit Curves

TCE 009959545-01 P= 1.332504 Days $T_0=132.080496$ (BKJD)



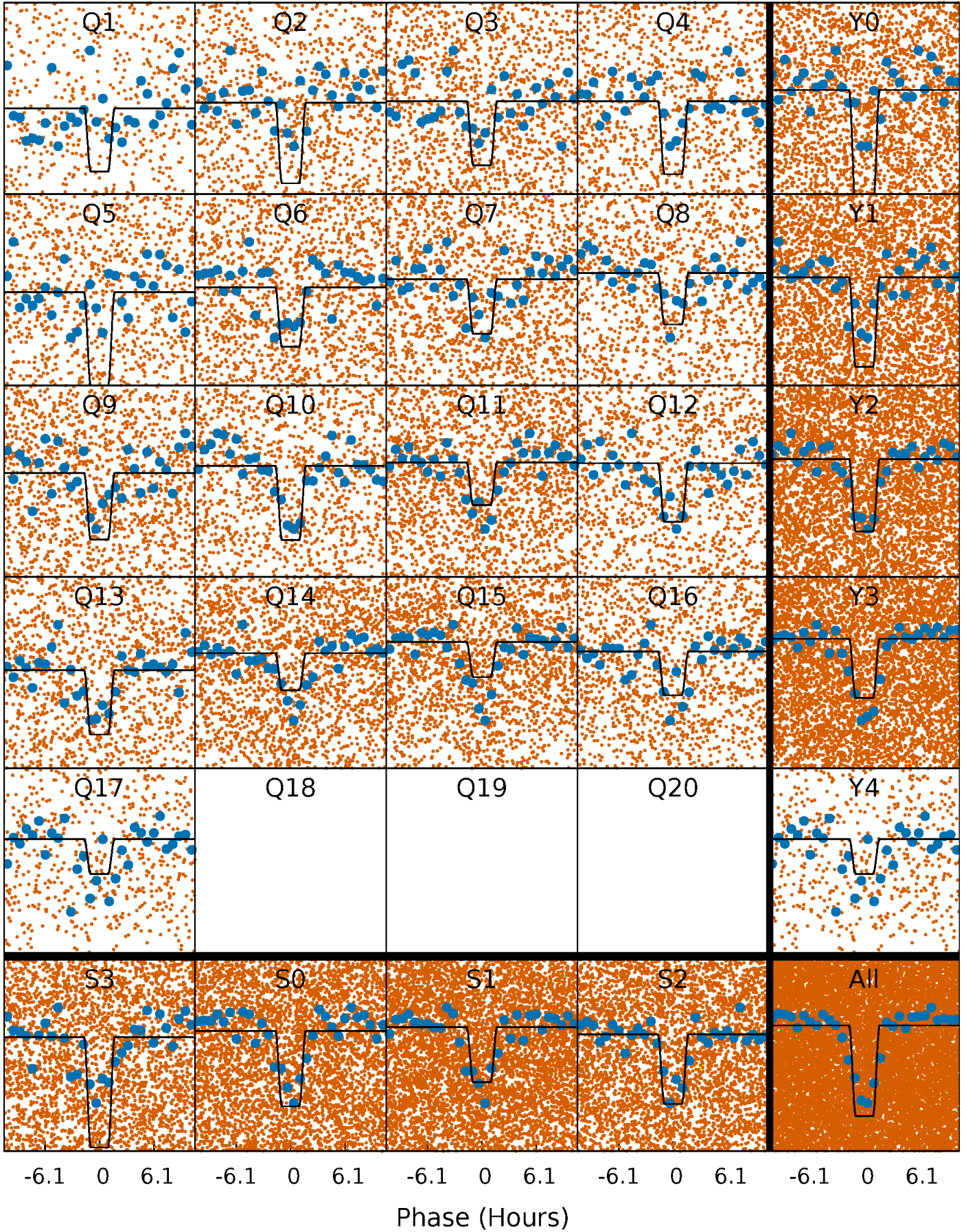
DV Quarter-Phased Transit Curves

TCE 009959545-01 P= 1.332504 Days $T_0=132.080496$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

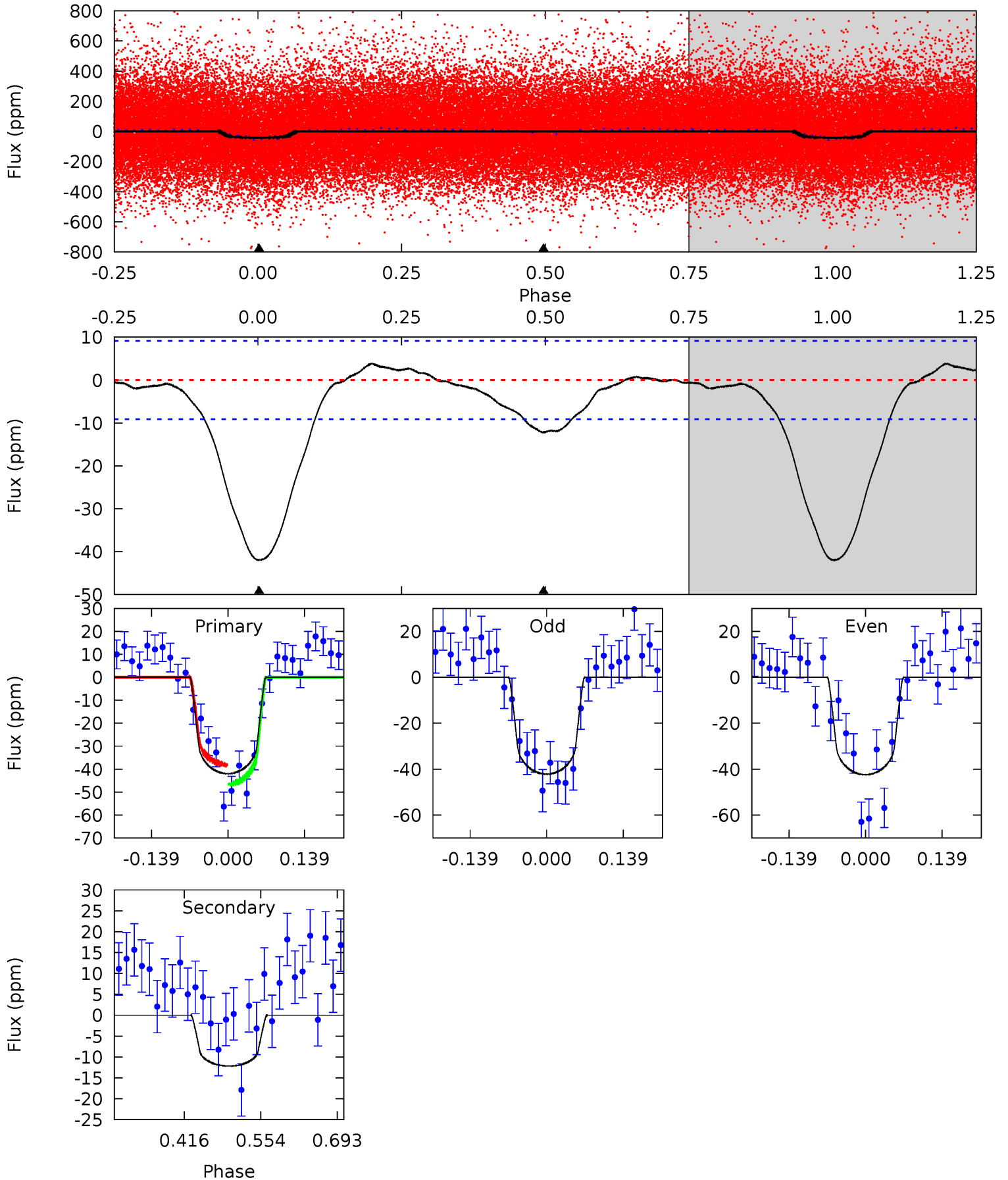
TCE 009959545-01 P= 1.332549 Days $T_0=132.059984$ (BKJD)



DV Model-Shift Uniqueness Test

009959545-01, P = 1.332504 Days, E = 130.747992 Days

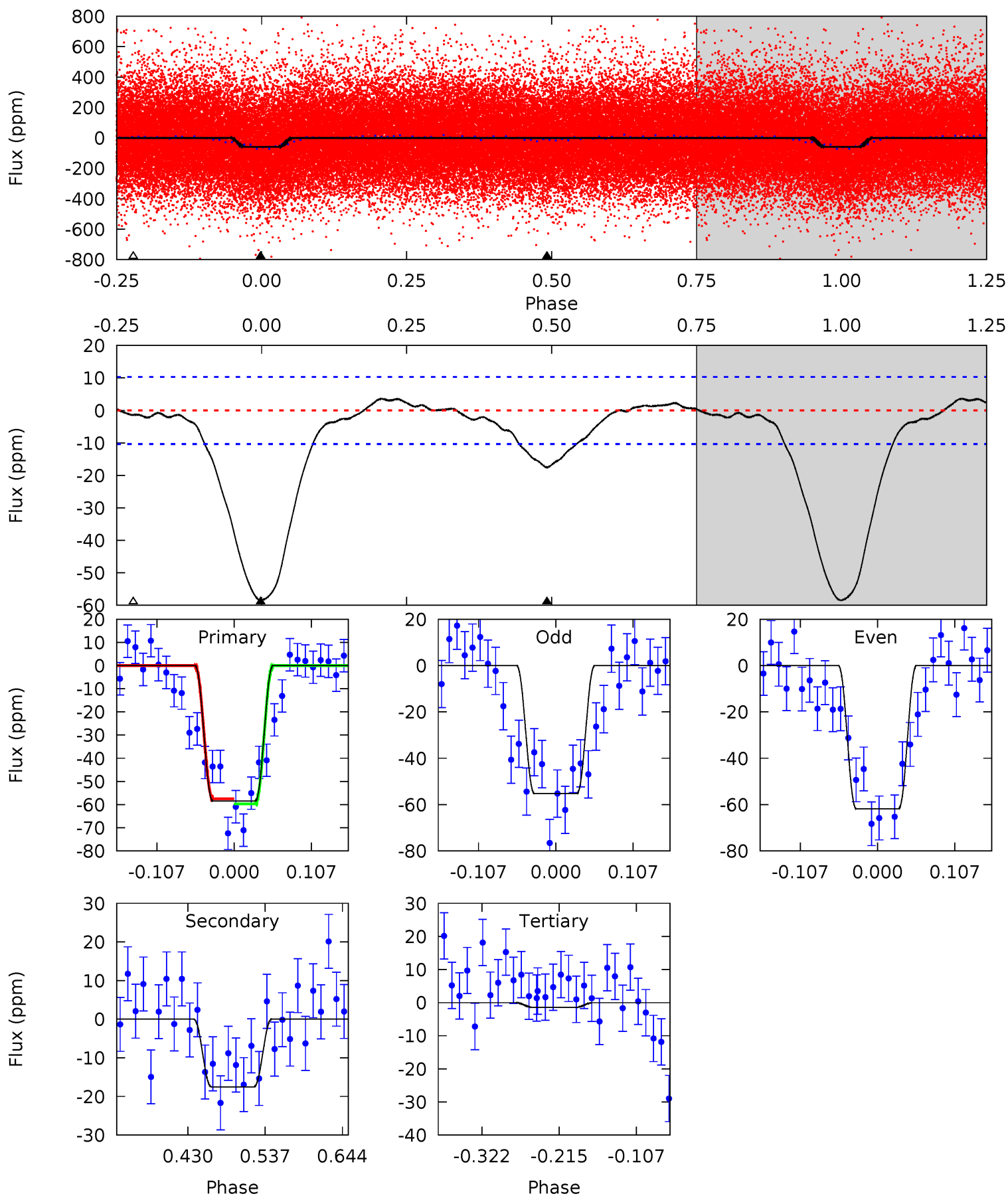
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	6.01	0	0	4.50	1.48	0.77	20.7	20.7	6.01	6.01	0.06	0.90	0.08	2.09



Alt Model-Shift Uniqueness Test

009959545-01, P = 1.332549 Days, E = 130.727435 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.7	7.70	0.62	0	4.55	1.61	0.88	25.1	25.7	7.08	7.70	1.44	0.93	0.06	0.47



Stellar Parameters For KIC 009959545

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5687^{+152}_{-152}	$4.582^{+0.036}_{-0.144}$	$-0.340^{+0.300}_{-0.300}$	$0.790^{+0.169}_{-0.061}$	$0.882^{+0.088}_{-0.107}$	$2.516^{+0.471}_{-1.010}$
	+3%/-3%	+1%/-3%	+88%/-88%	+21%/-8%	+10%/-12%	+19%/-40%
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 009959545-01 / KOI 4195.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-12 ± 2	$0.65^{+0.24}_{-0.25}$	2111^{+111}_{-84}	4180^{+956}_{-457}	$8.105^{+14.774}_{-4.012}$
Alt.	-18 ± 2	$0.75^{+0.27}_{-0.24}$	2108^{+107}_{-82}	4231^{+661}_{-475}	$8.674^{+9.385}_{-4.155}$

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 $A_{\text{obs}} \gg 1.0$

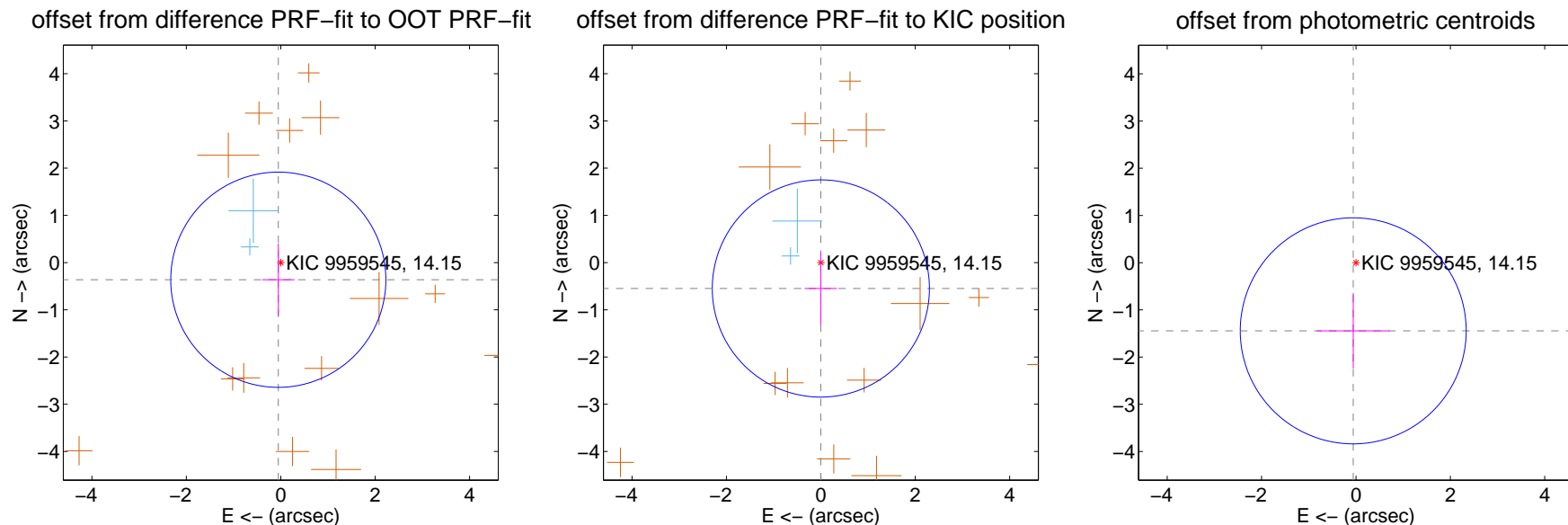
DV Centroid Data

Supplemental centroid analysis for 009959545-01. Kepler magnitude: 14.15. Transit SNR 17.12

There are 2 quarters with good PRF difference image offsets

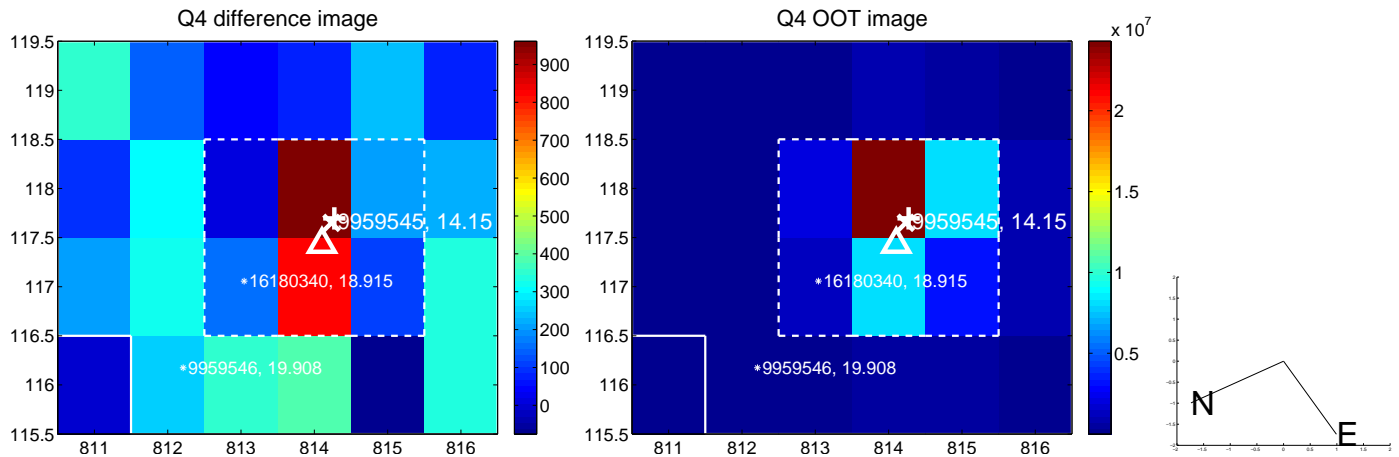
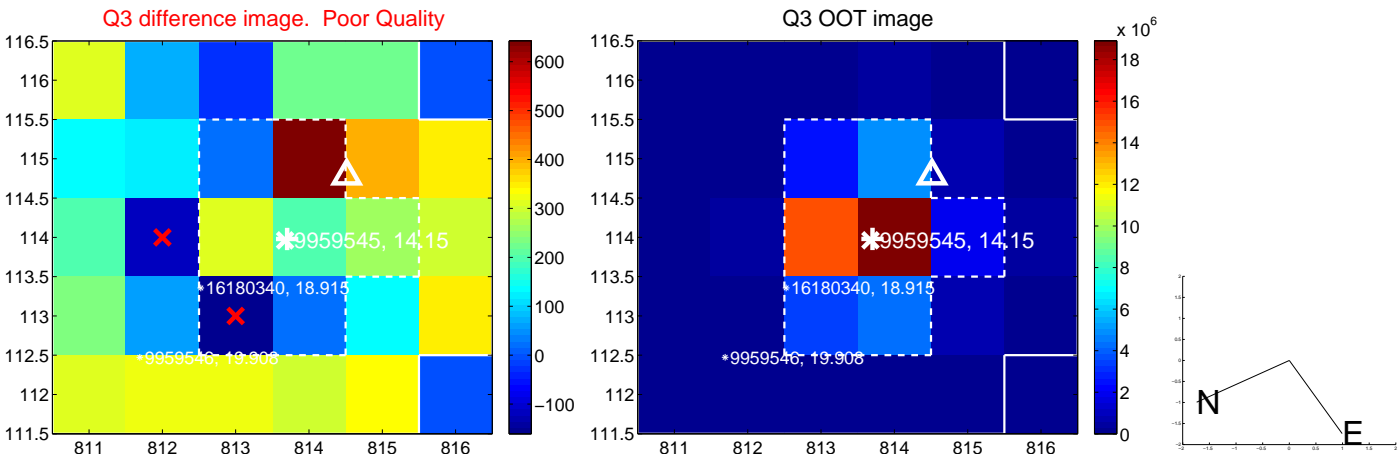
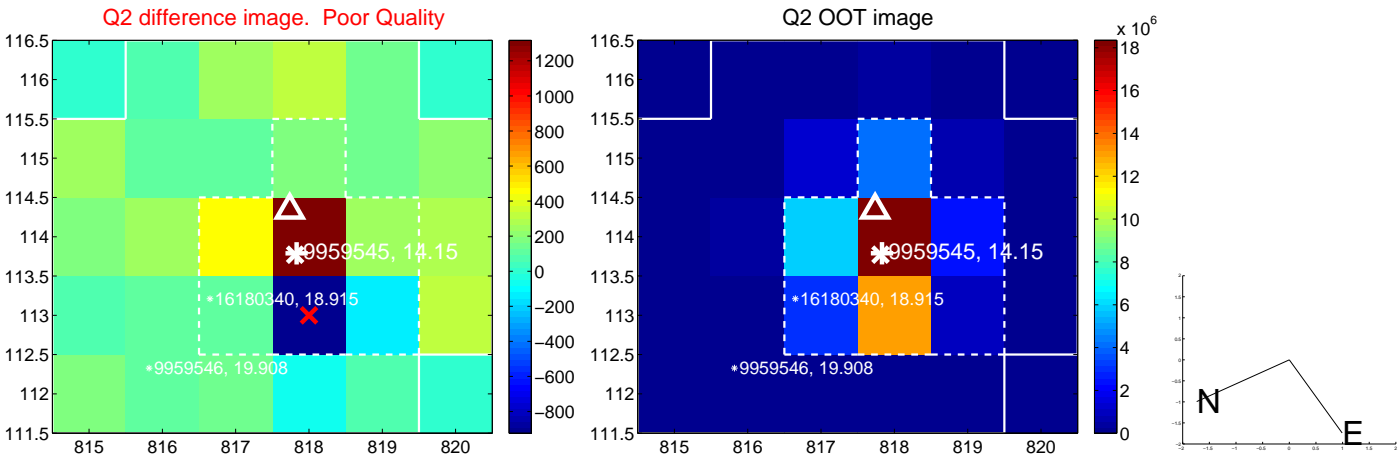
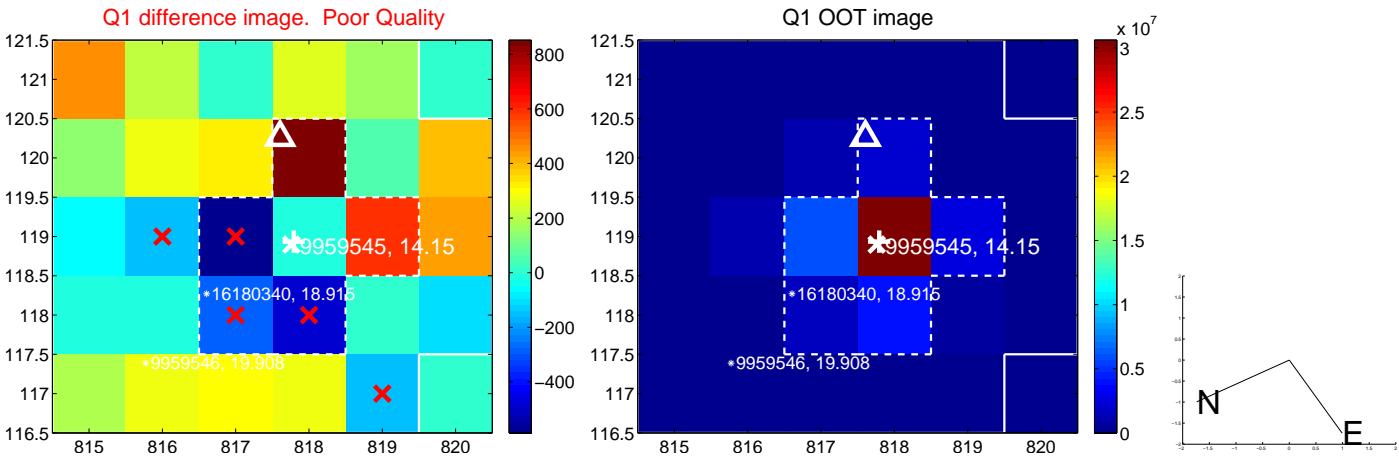
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.367 ± 0.760	0.48	0.052 ± 0.342	-0.363 ± 0.766
PRF-fit source offset from KIC position	0.549 ± 0.767	0.72	0.000 ± 0.340	-0.549 ± 0.767
photometric centroid source offset	1.45 ± 0.80	1.81	0.06 ± 0.77	-1.44 ± 0.80

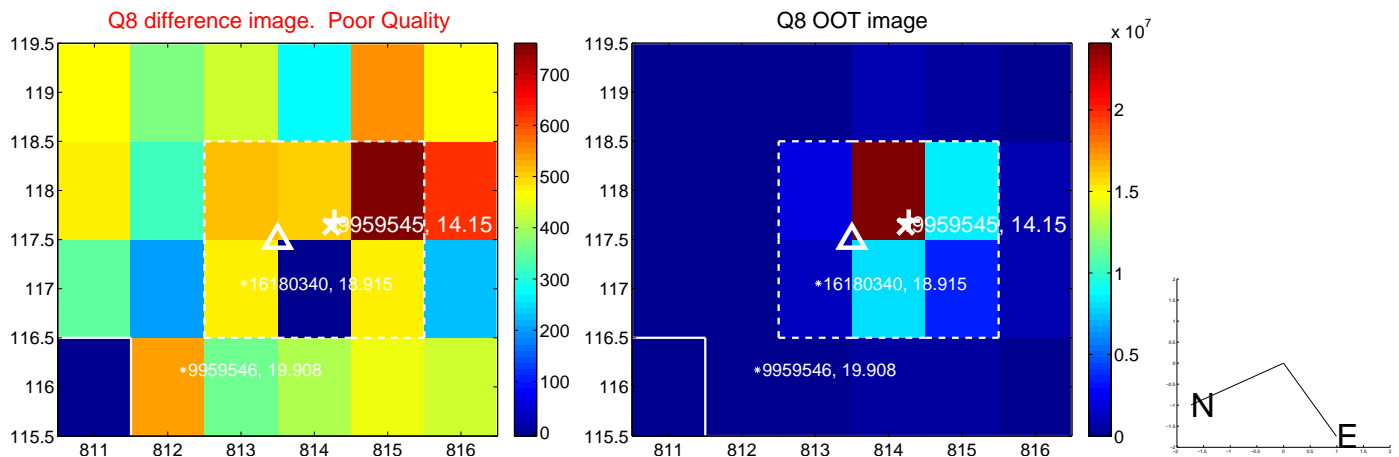
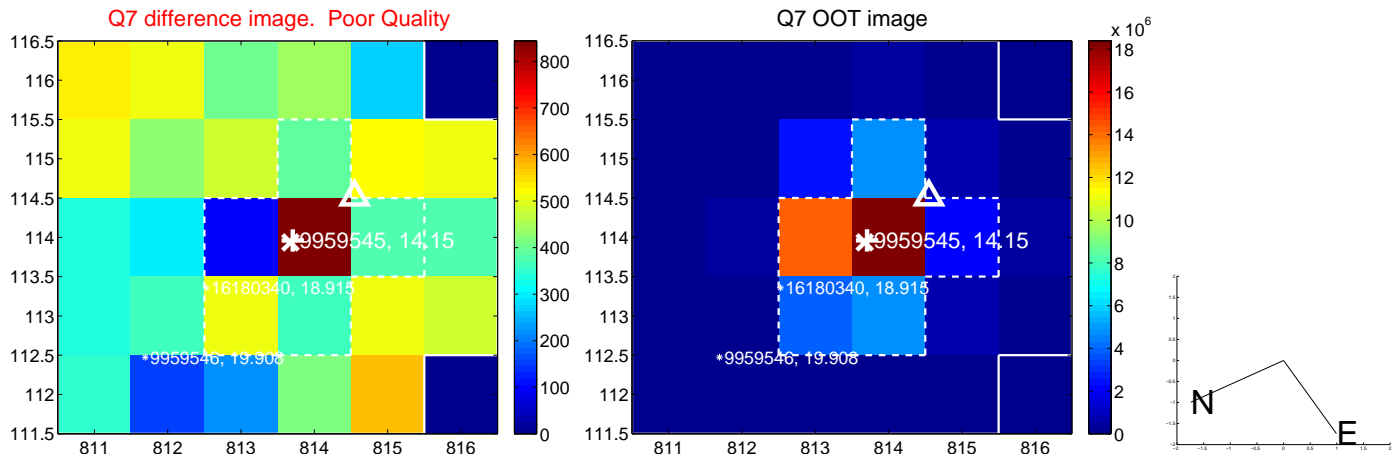
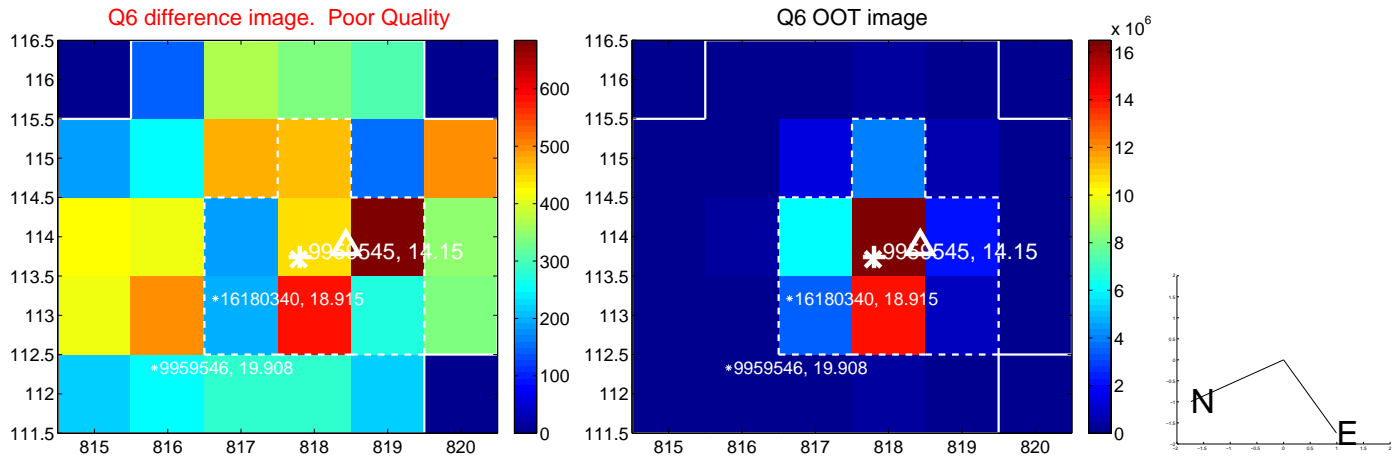
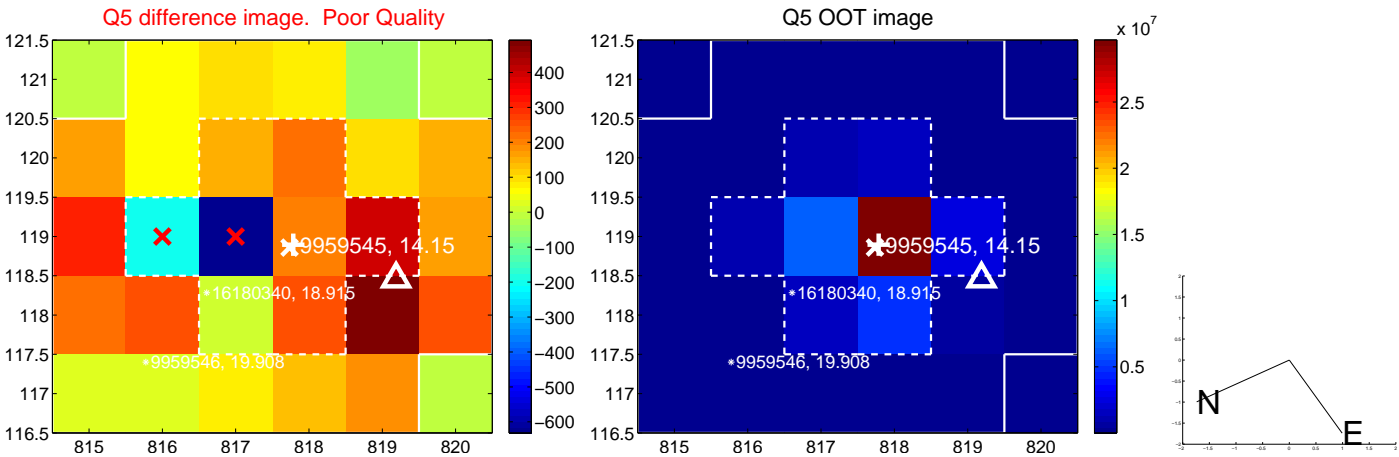


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

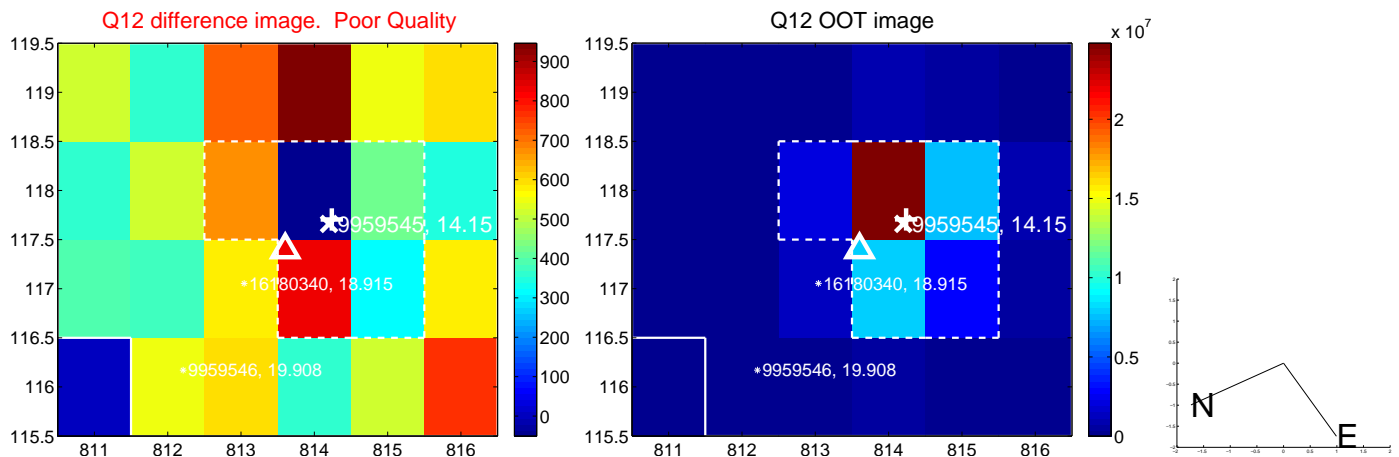
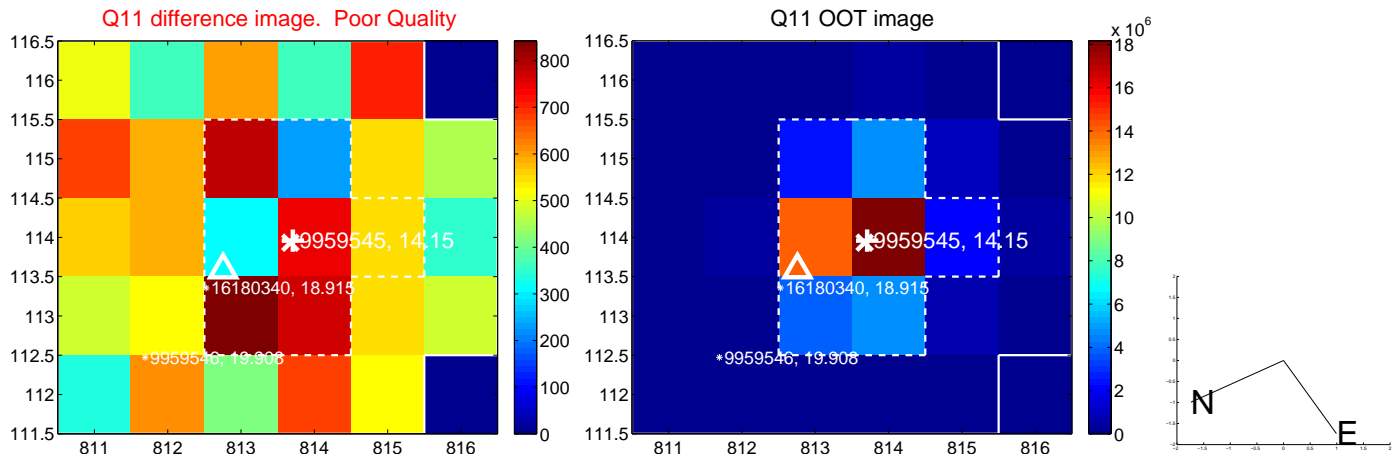
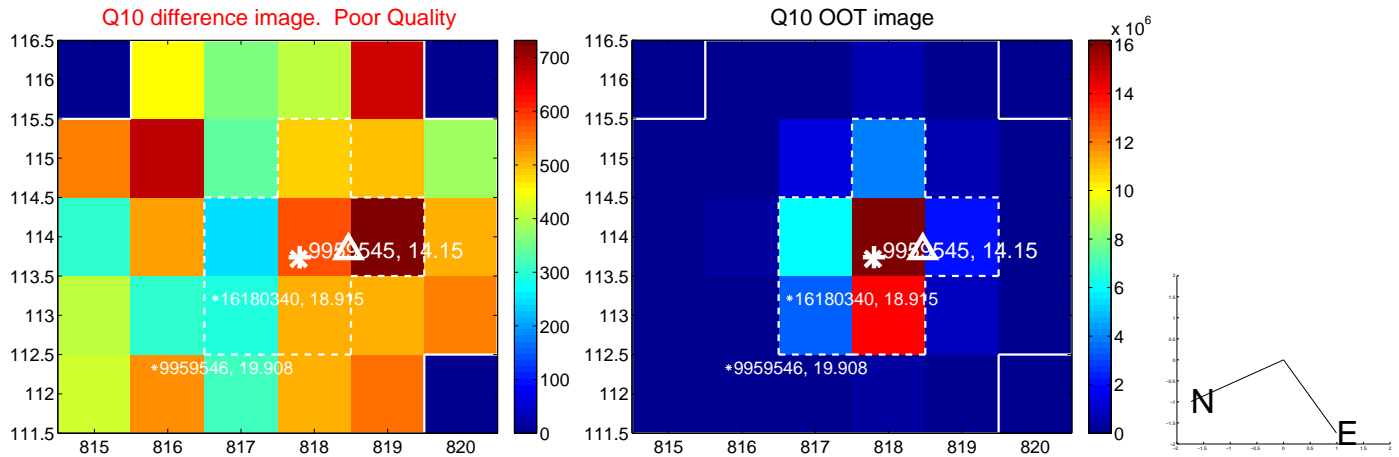
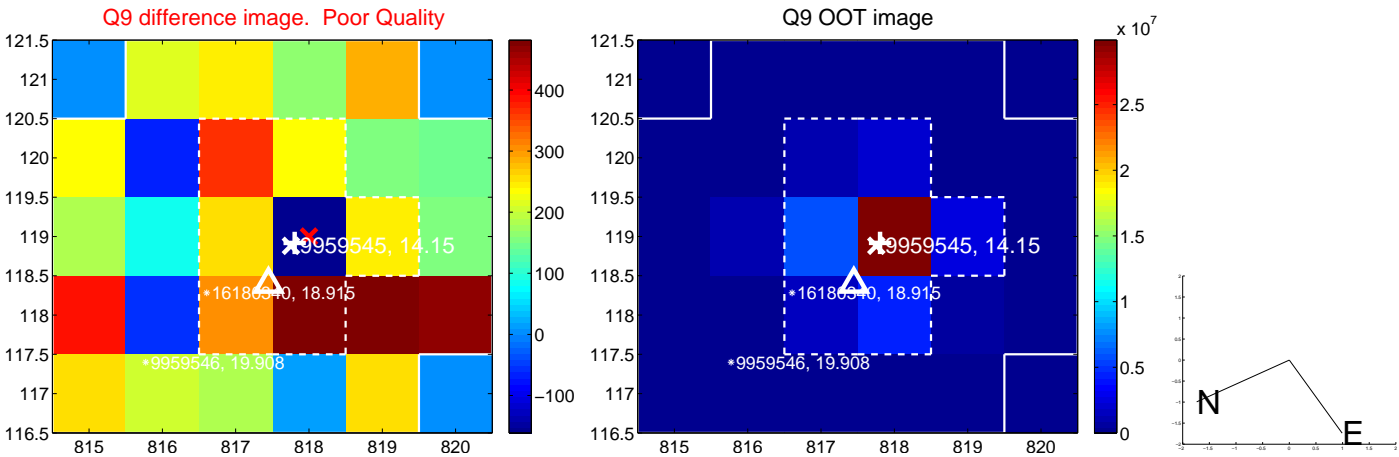
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



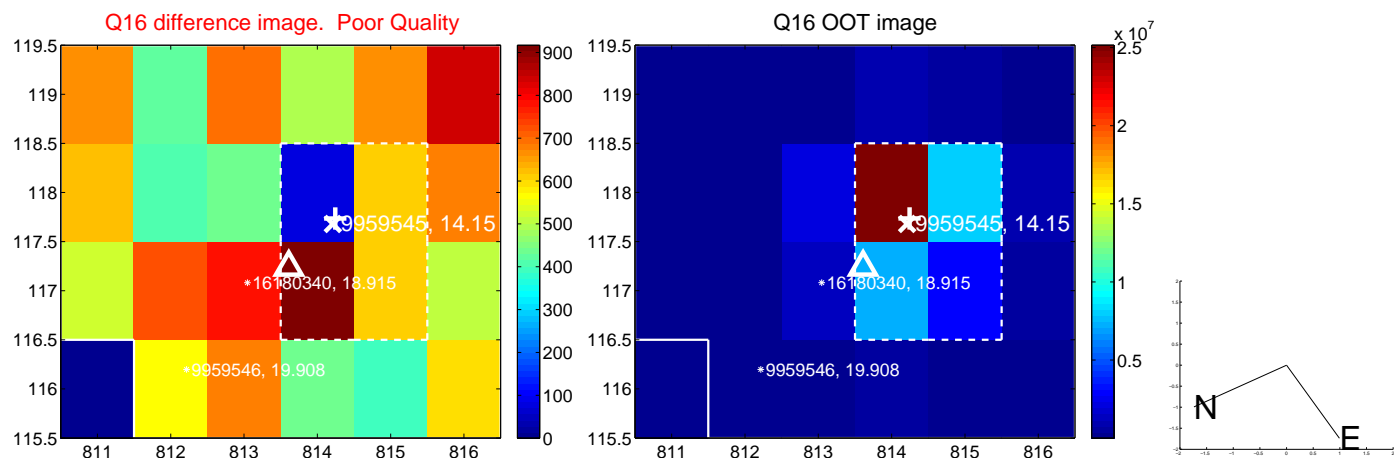
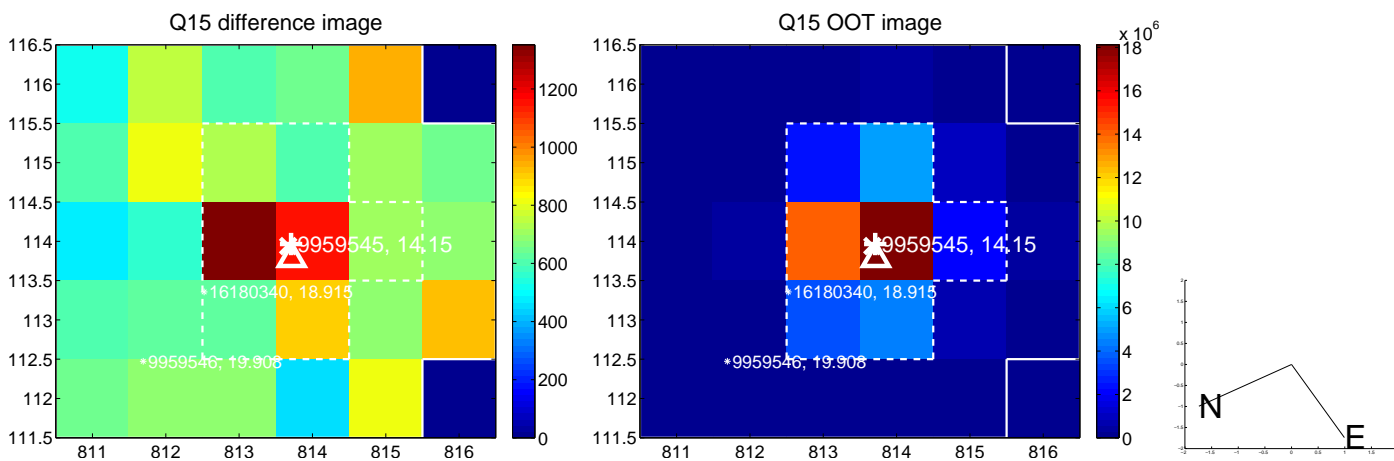
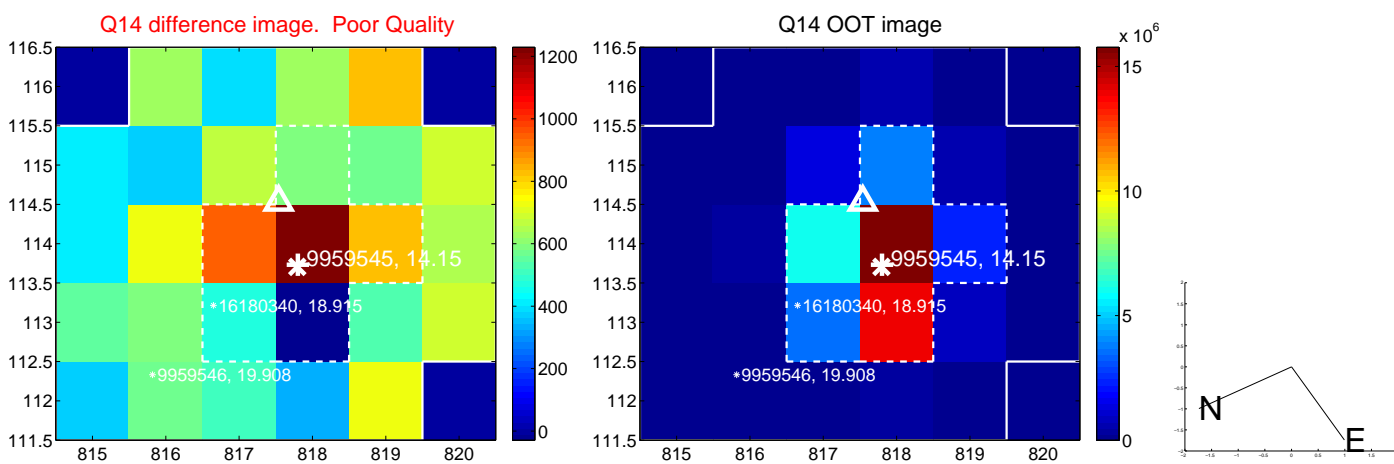
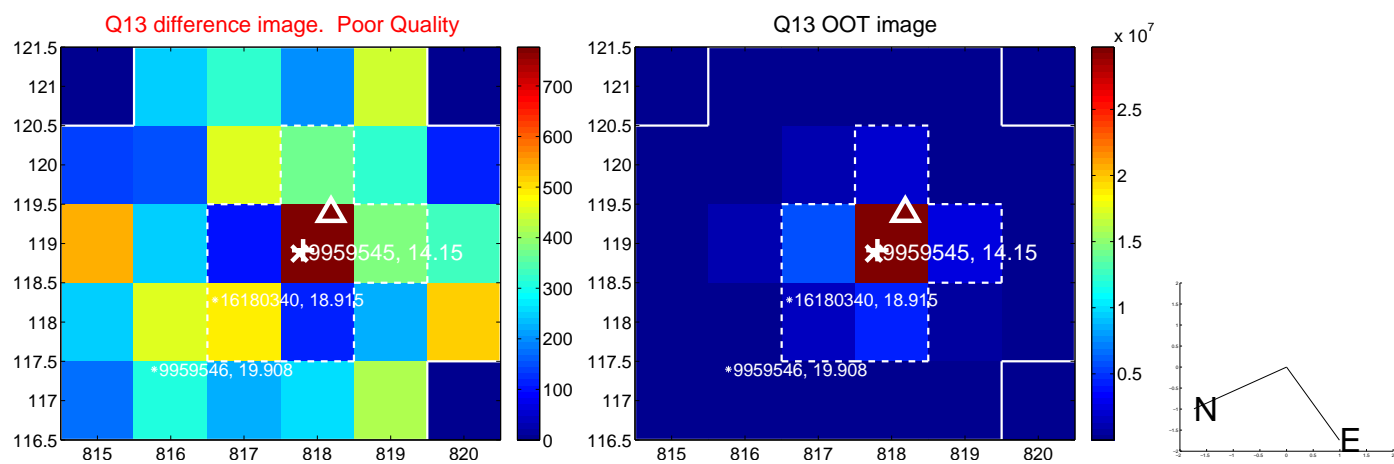
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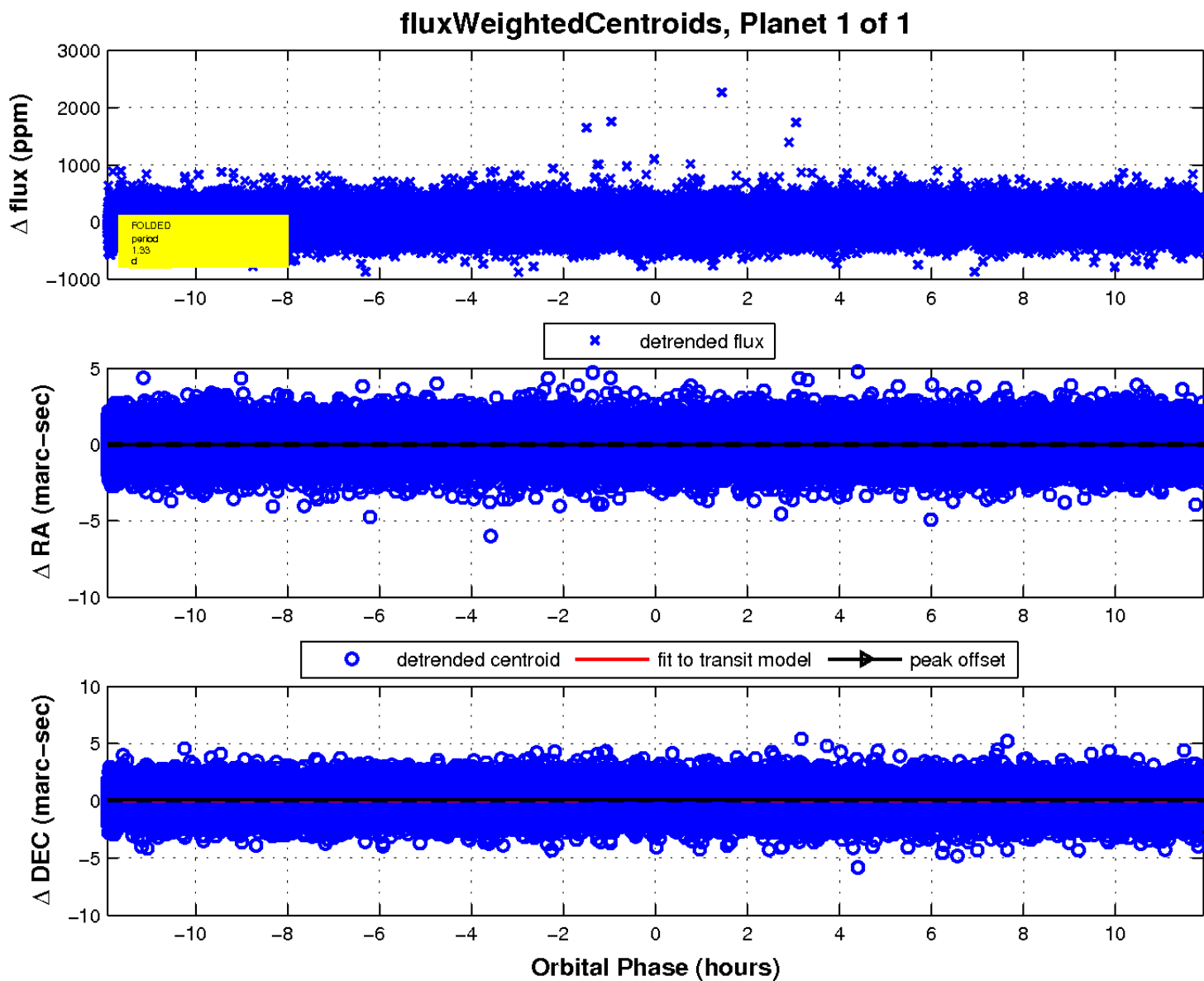
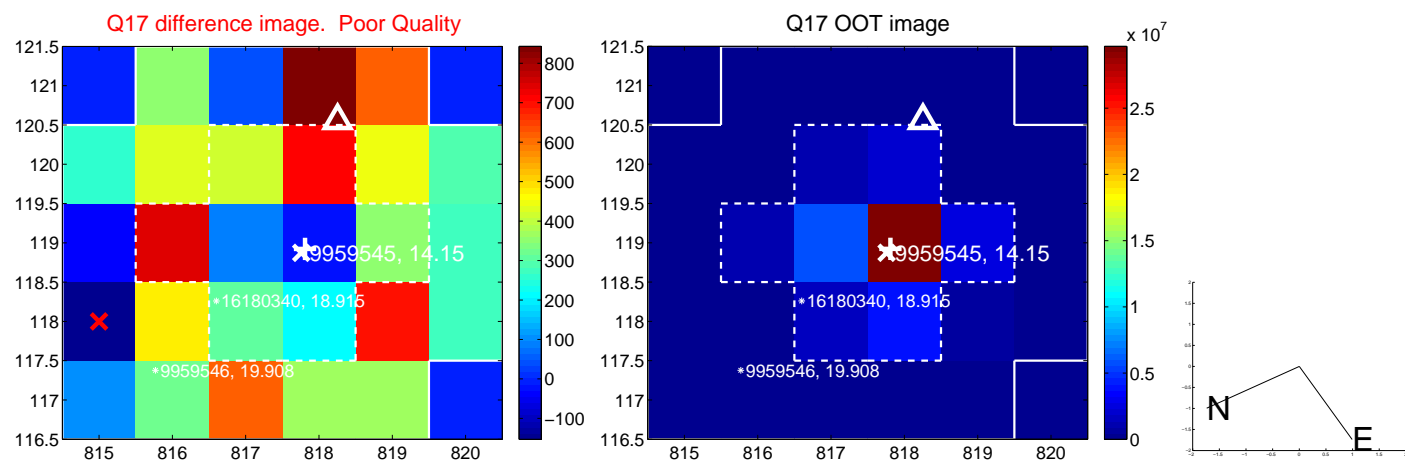
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UKIRT Image

Declination

