

KIC 011515221

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})
011515221-01	OBS	No	1.591081	132.706638	18.9	4.827	8.0	6.7	4.18	6666	2.05	28284.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011515221-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

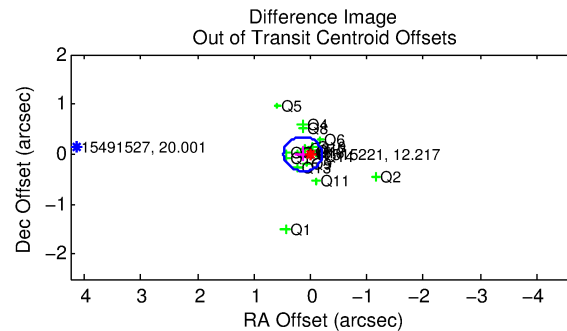
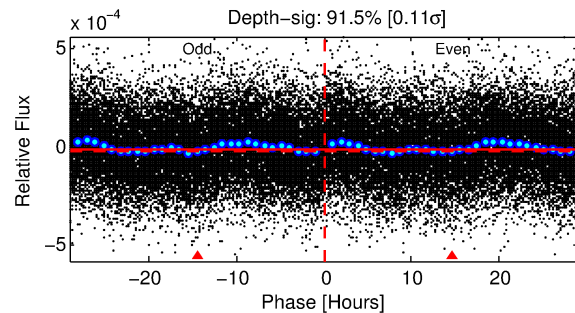
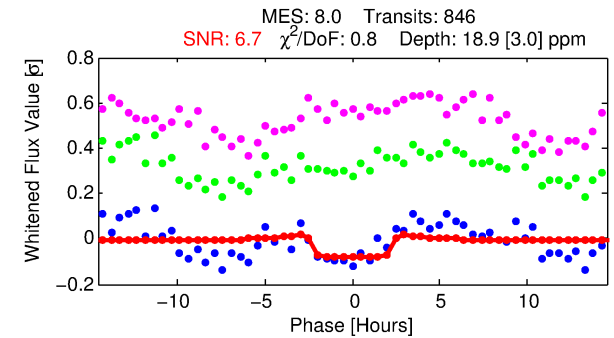
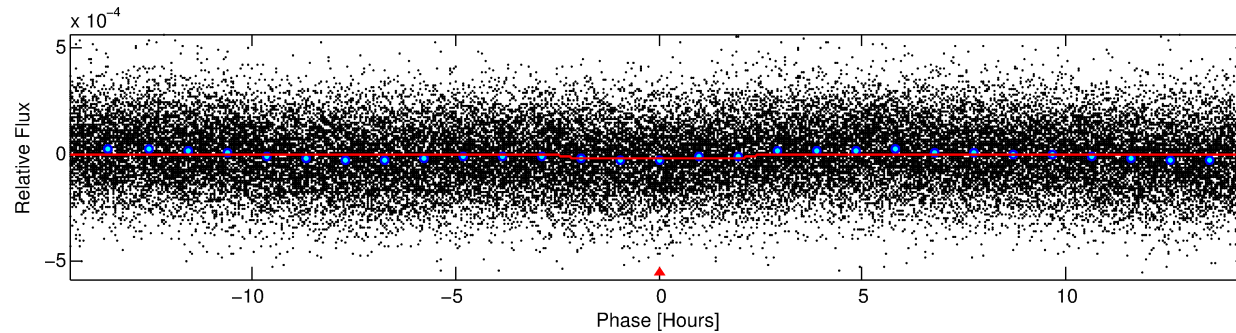
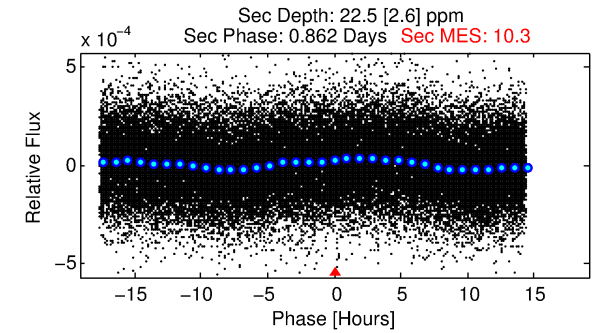
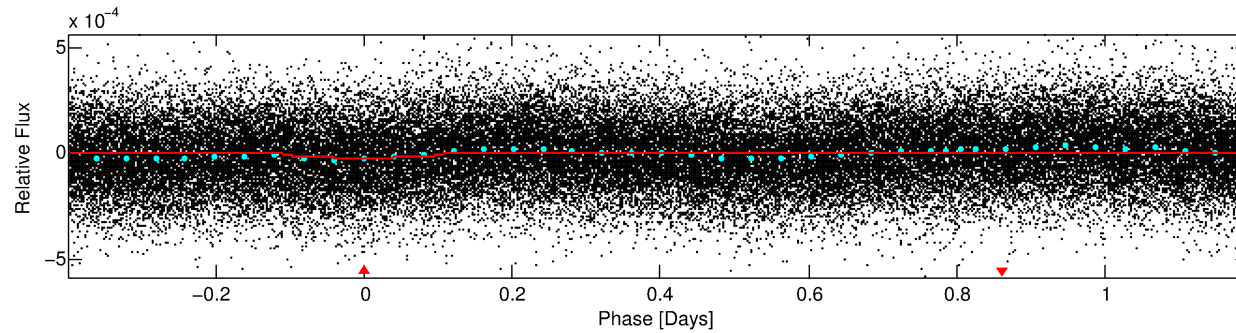
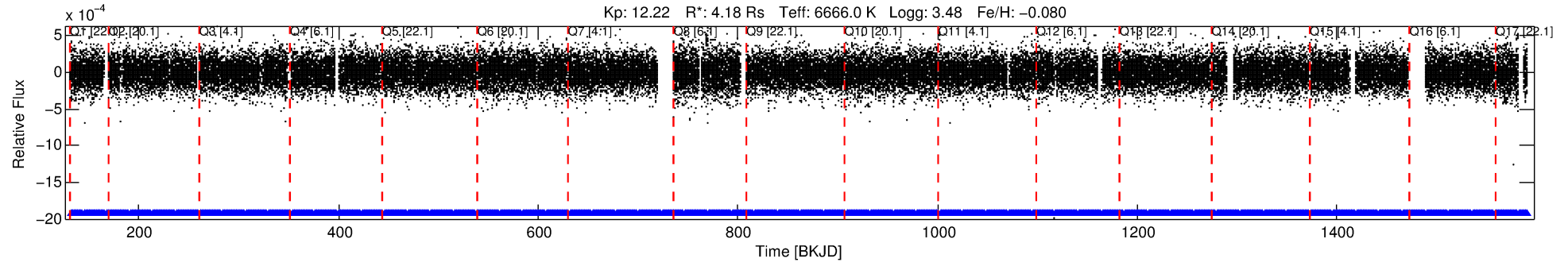
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011515221-01

No Significant Match Found

DV One-Page Summary

KIC: 11515221 Candidate: 1 of 1 Period: 1.591 d



DV Fit Results:

Period = 1.59108 [0.00002] d
Epoch = 132.7066 [0.0051] BKJD
Rp/R* = 0.0045 [0.0011]
a/R* = 1.64 [1.45]
b = 0.85 [0.48]
Seff = 28284.60 [16609.04]
Teq = 3307 [485] K
Rp = 2.05 [0.95] Re
a = 0.0331 [0.0121] AU
Ag = 3.23 [2.50] [0.89σ]
Teffp = 6856 [904] K [3.46σ]

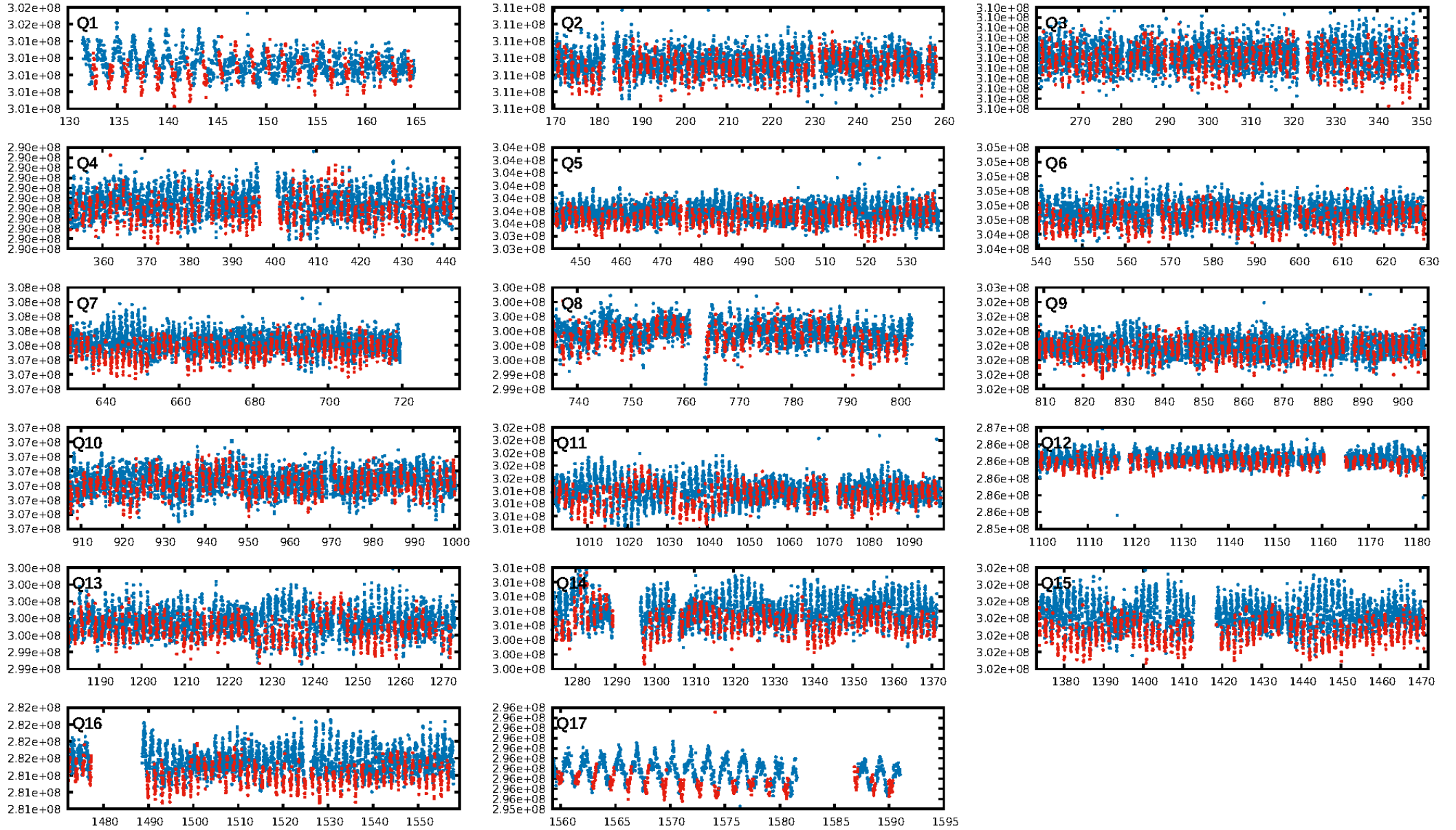
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.36e-12
RollingBand-fgt: 1.00 [808/808]
GhostDiagnostic-chr: 0.5404
Centroid-sig: 0.0%
Centroid-so: 1.568 arcsec [2.29σ]
OotOffset-rm: 0.138 arcsec [1.20σ]
KicOffset-rm: 0.122 arcsec [0.88σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

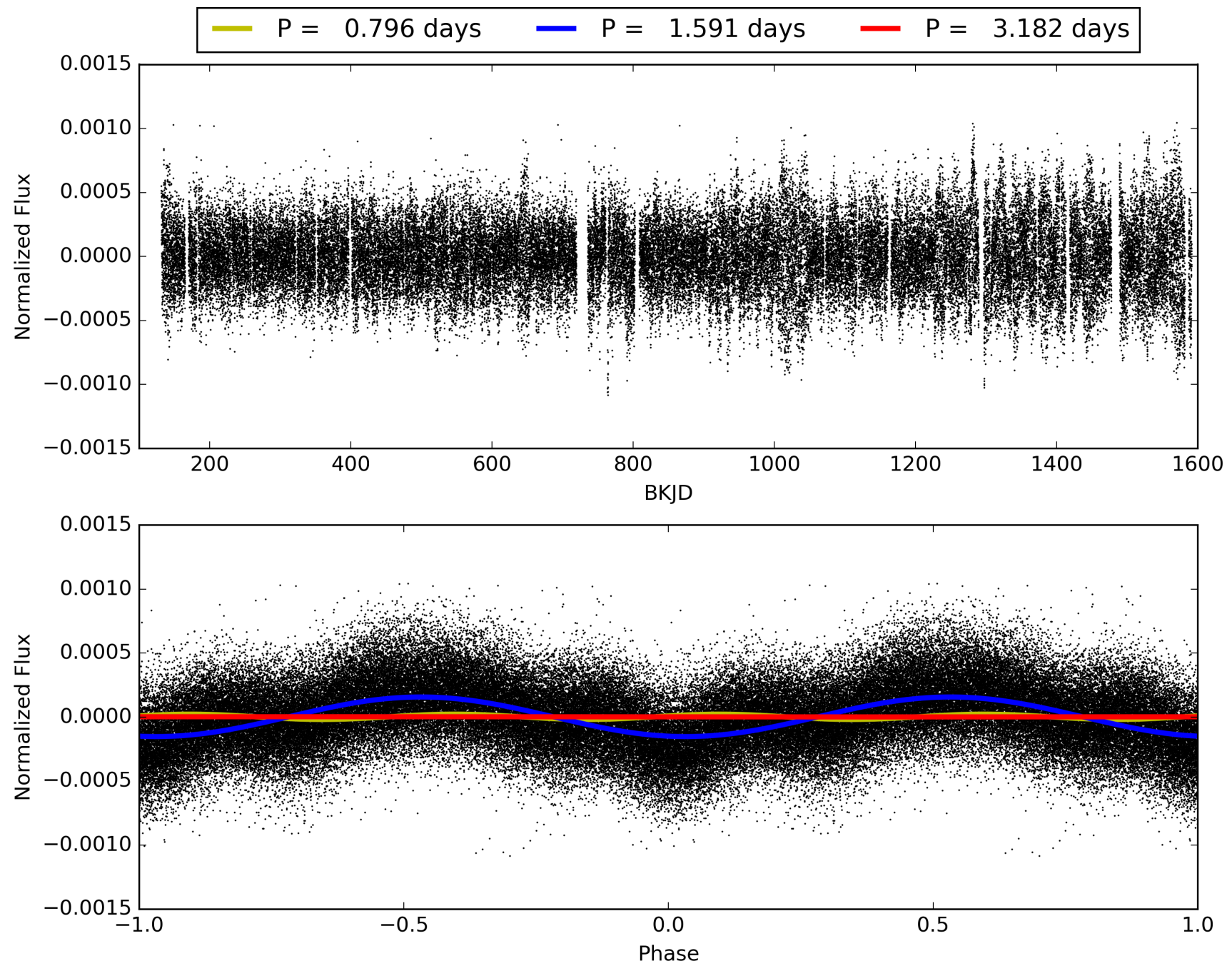
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:32:36 Z

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

TCE 011515221-01, PDC Light Curves

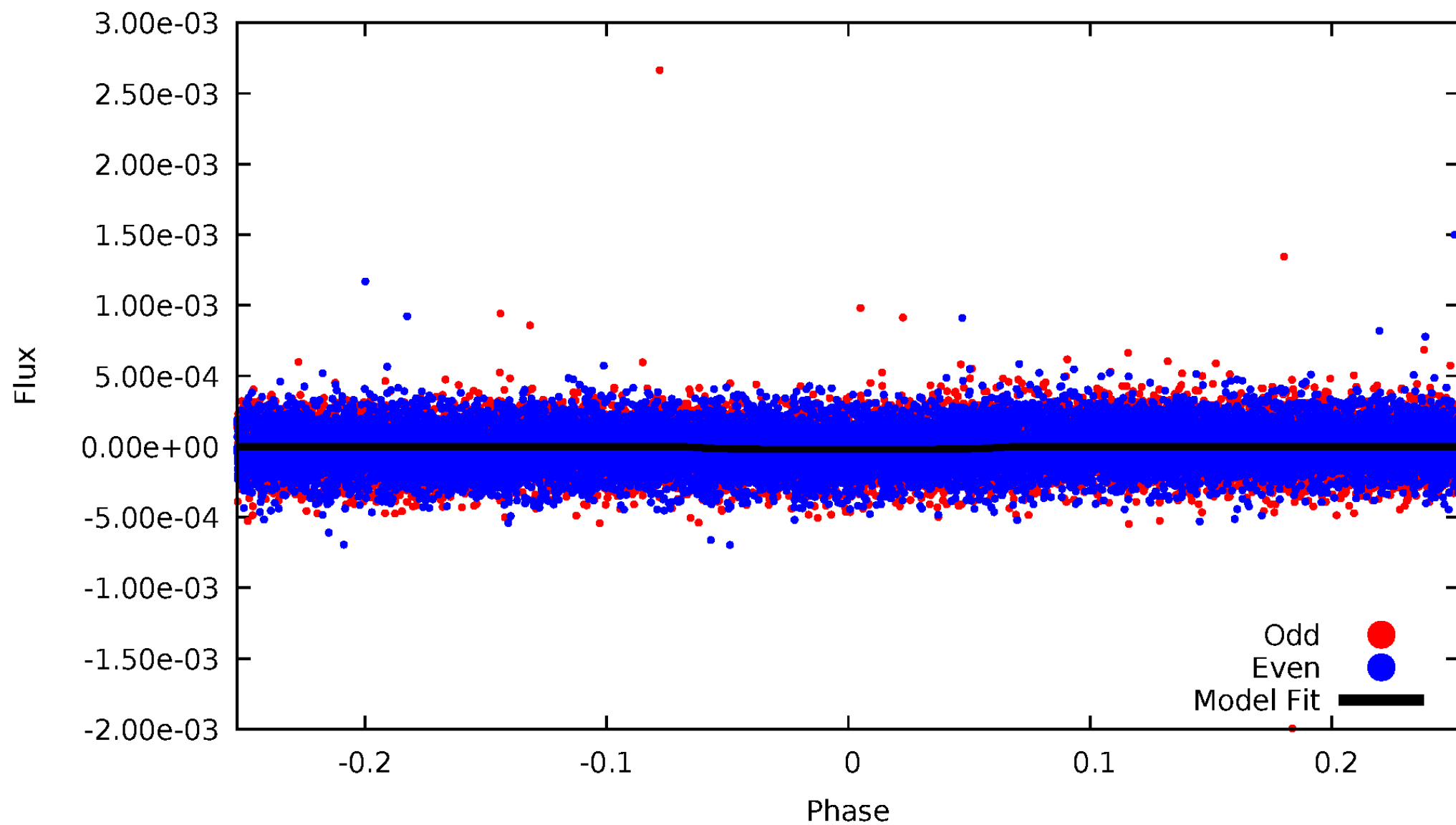


TCE 011515221-01



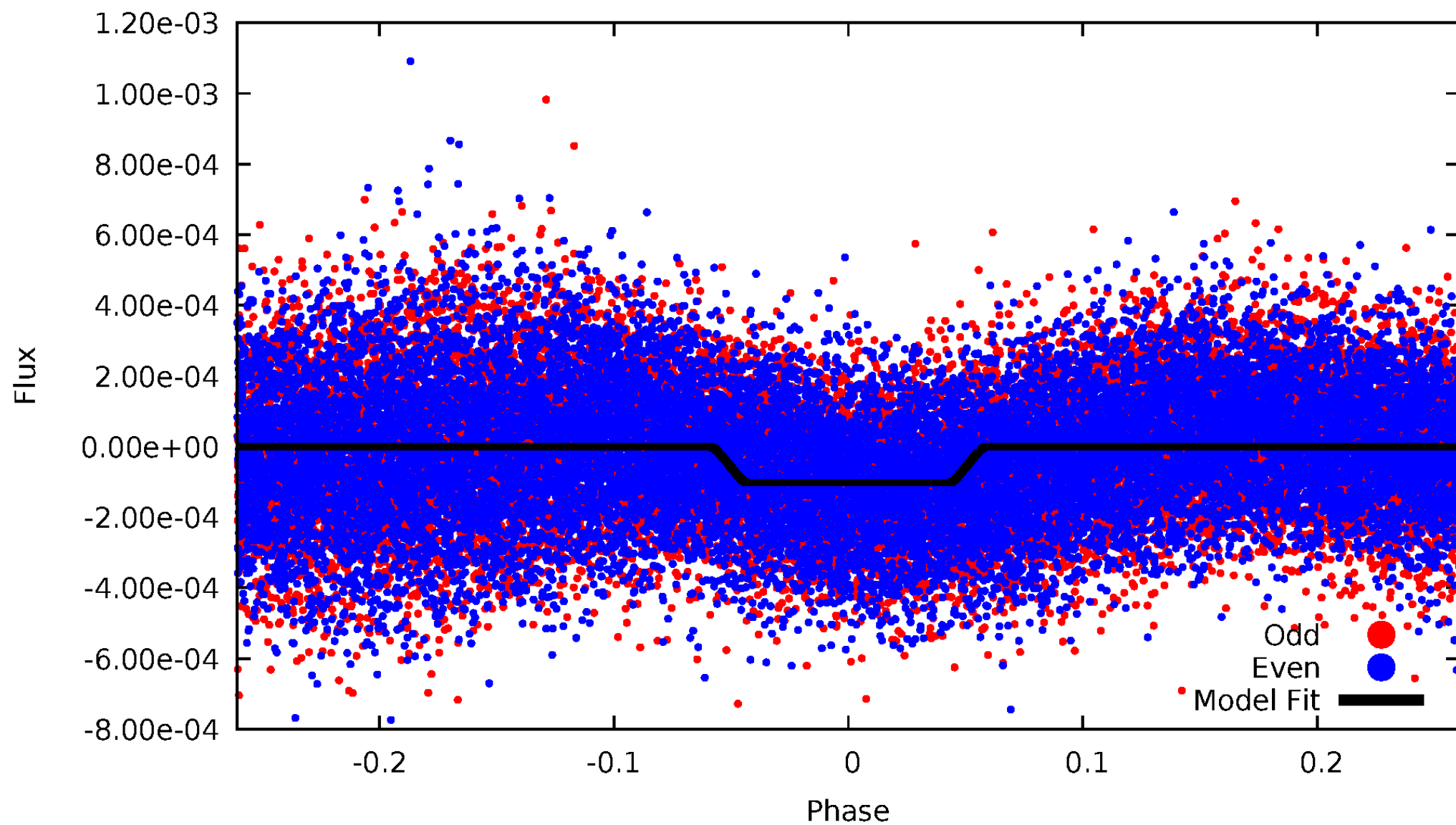
DV Odd/Even

TCE 011515221-01



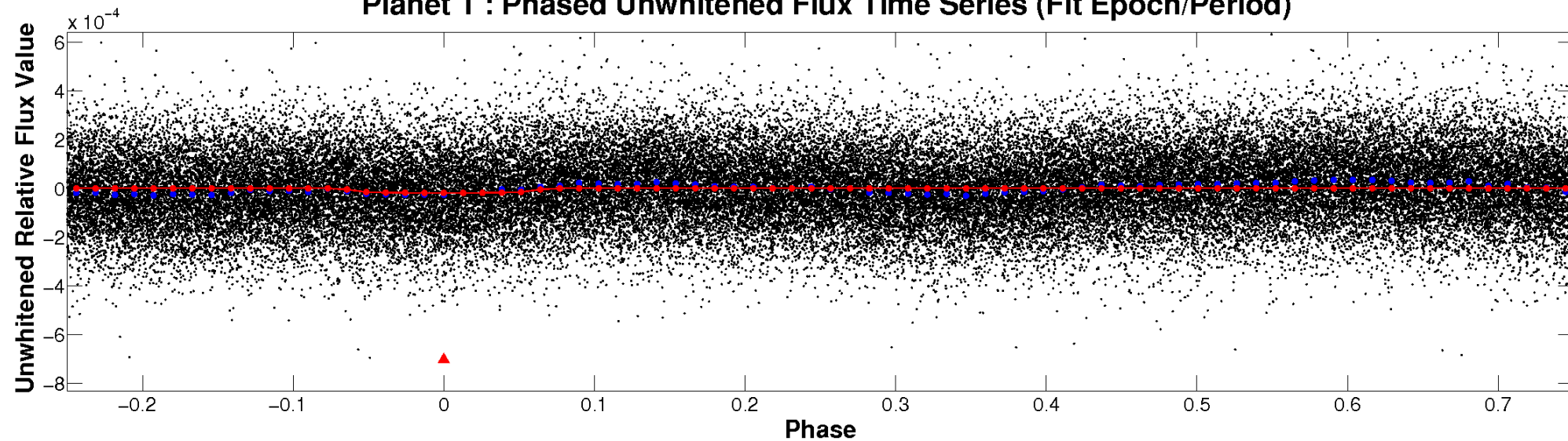
ALT Odd/Even

TCE 011515221-01

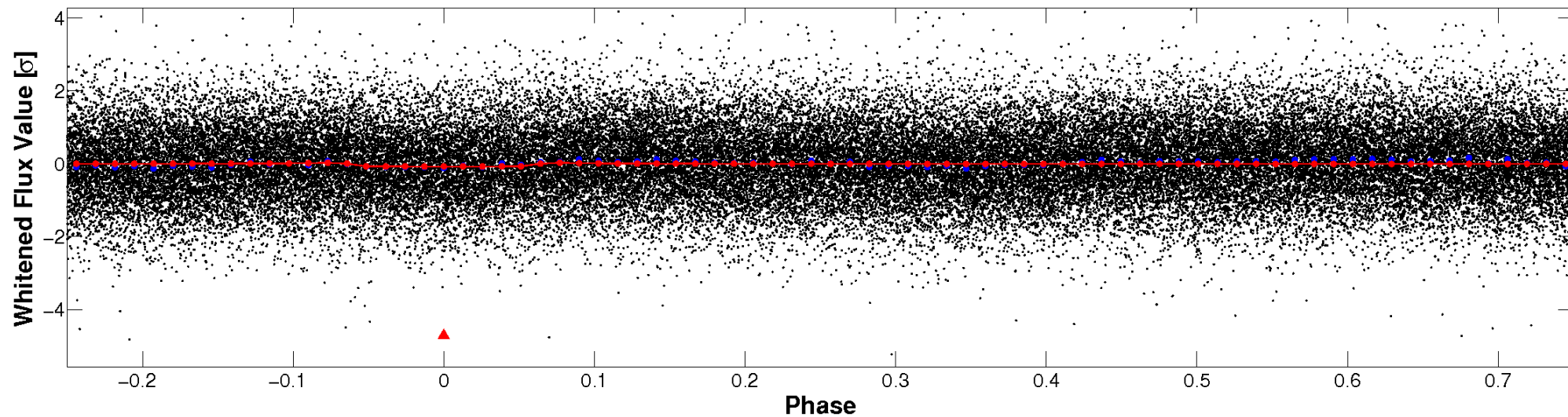


Non-Whitened Vs. Whitened Light Curve

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

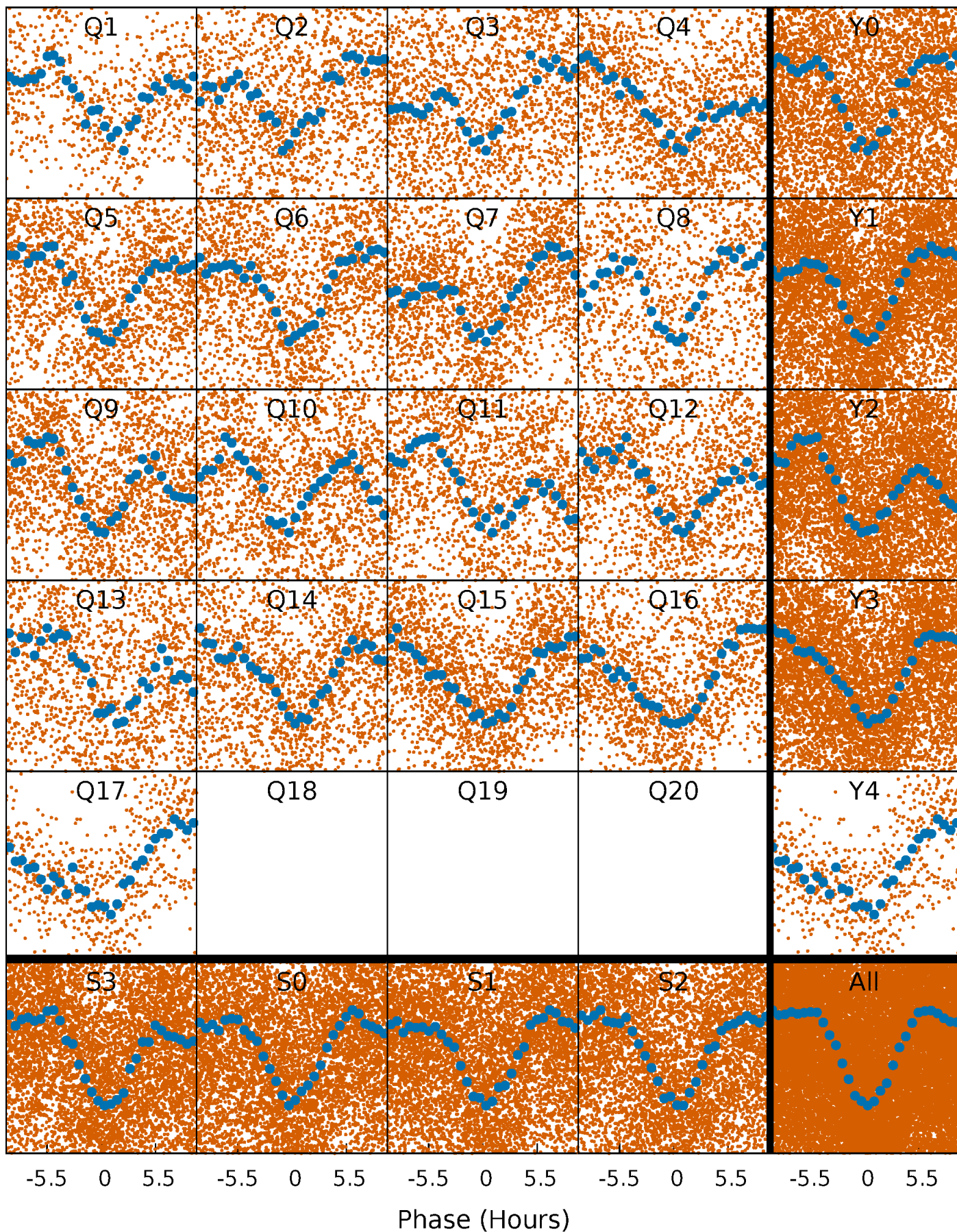


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



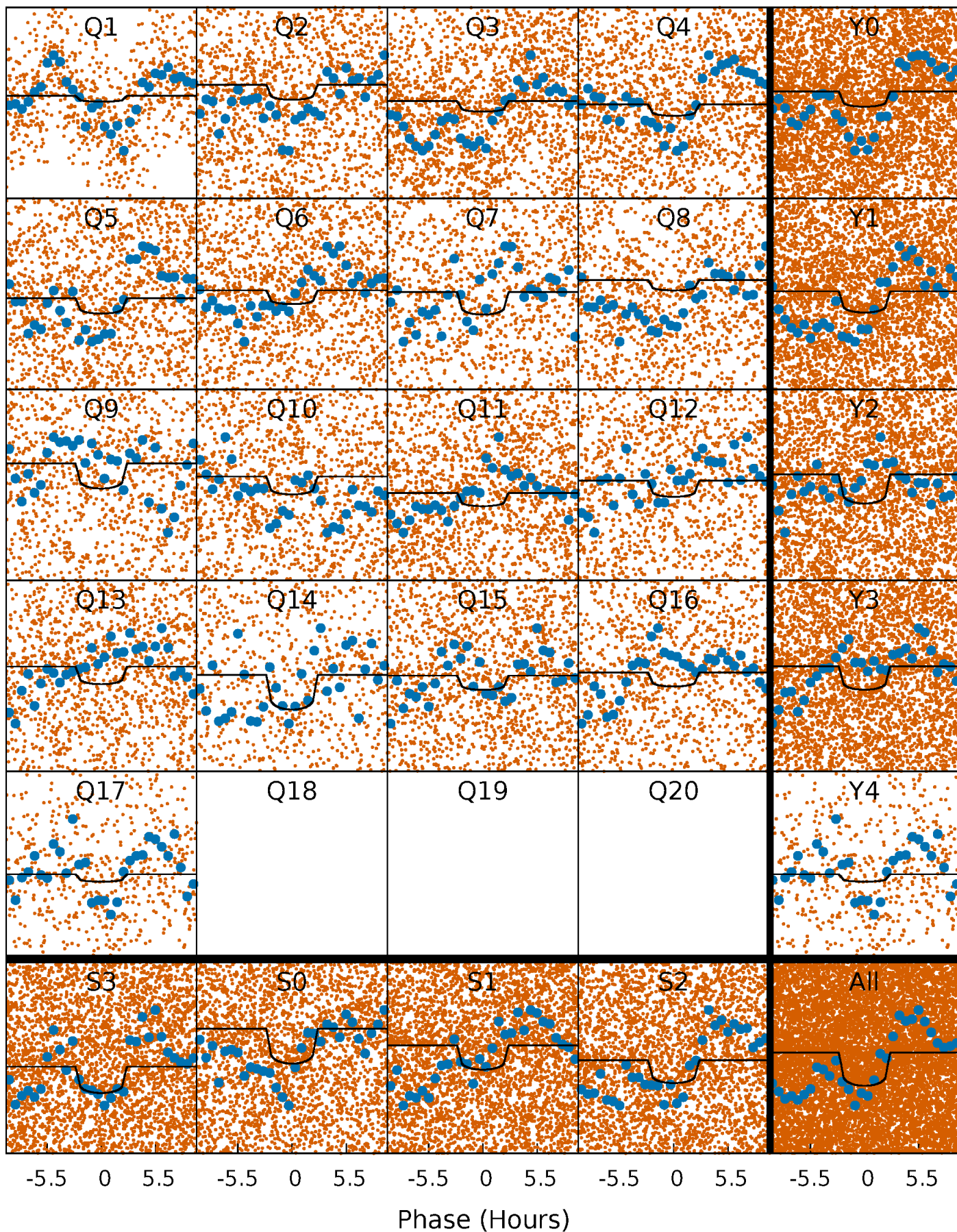
PDC Quarter-Phased Transit Curves

TCE 011515221-01 P= 1.591081 Days $T_0=132.706638$ (BKJD)



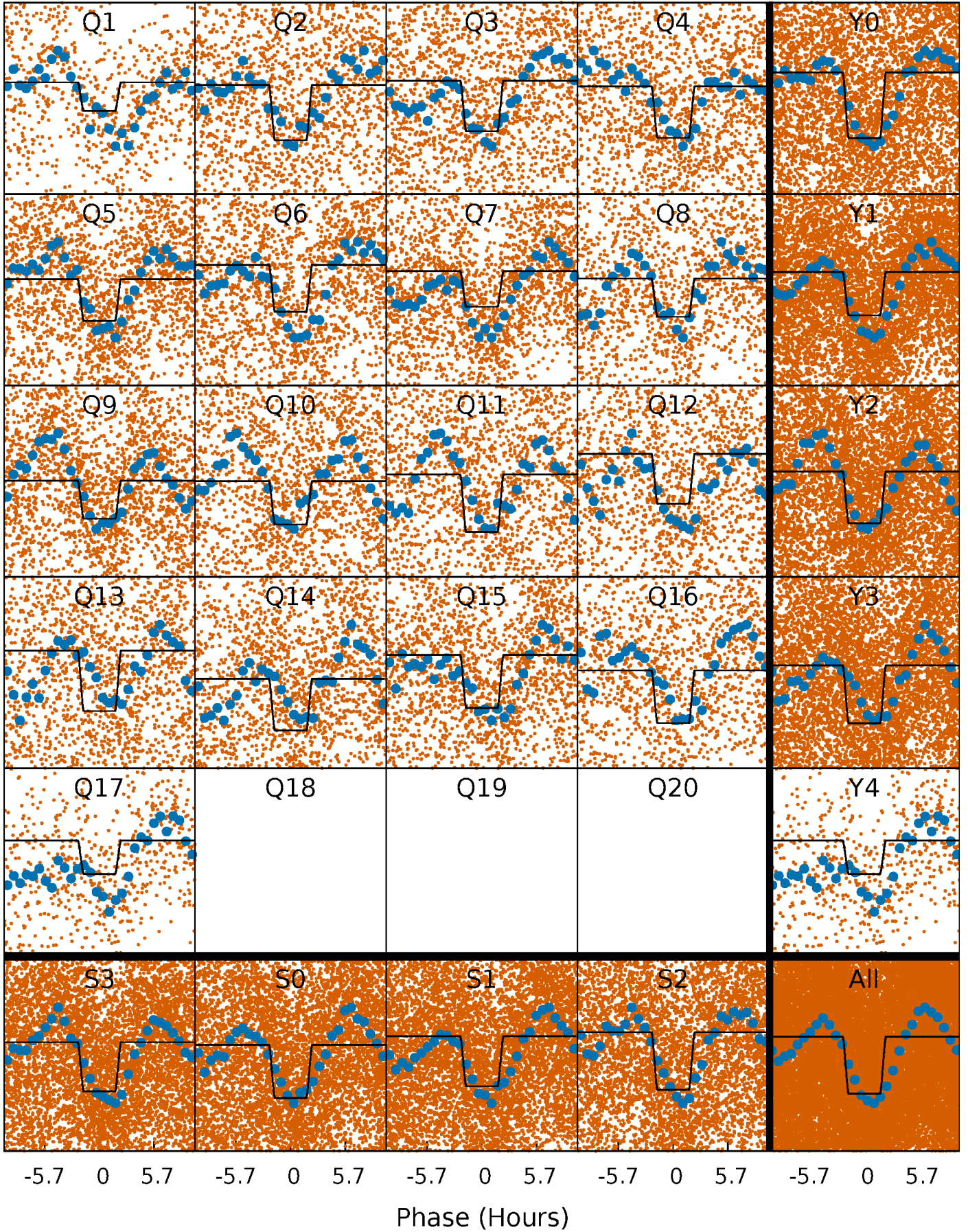
DV Quarter-Phased Transit Curves

TCE 011515221-01 P= 1.591081 Days $T_0=132.706638$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

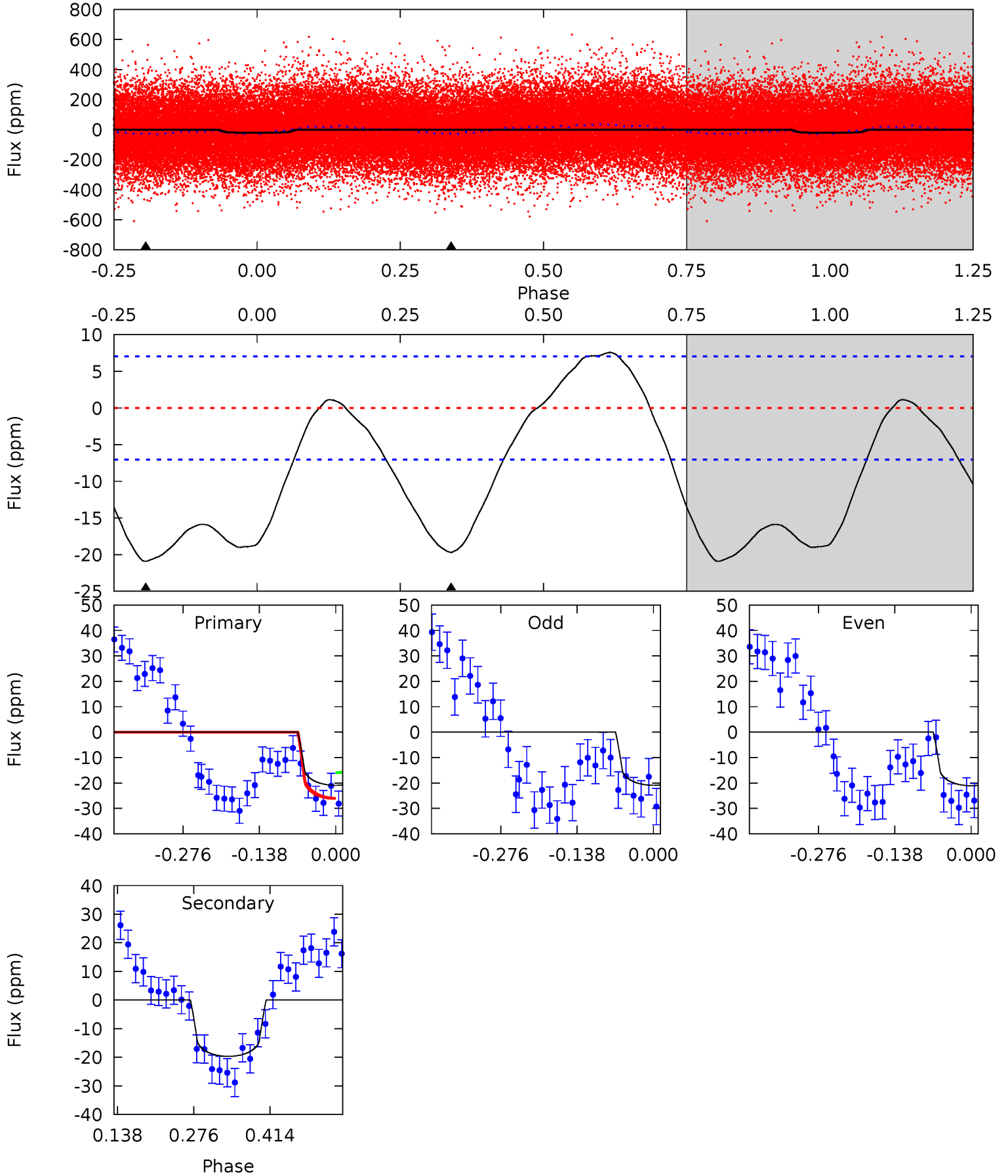
TCE 011515221-01 P= 1.591085 Days $T_0=132.682530$ (BKJD)



DV Model-Shift Uniqueness Test

011515221-01, P = 1.591081 Days, E = 131.115557 Days

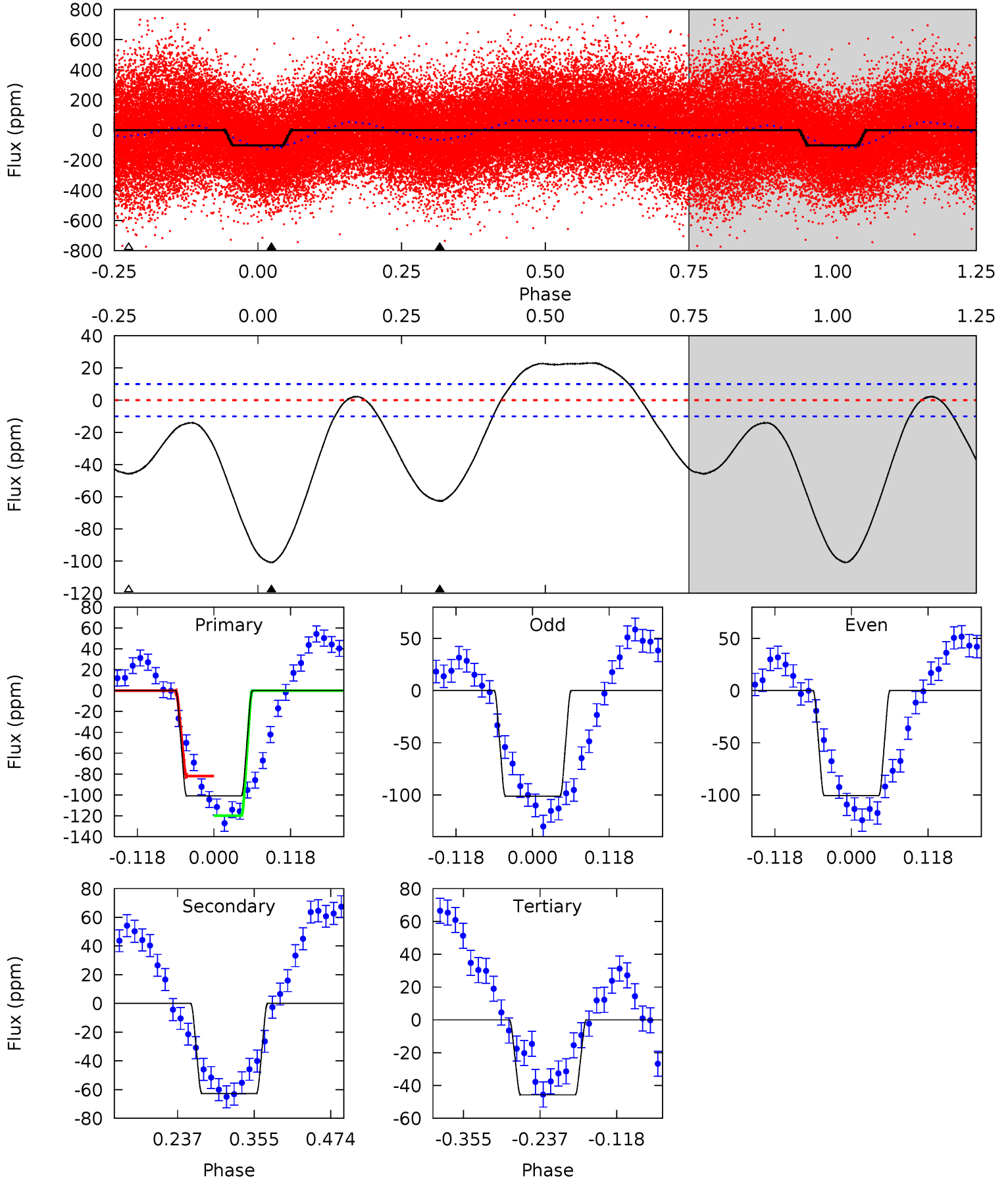
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	12.6	0	0	4.50	1.48	5.66	13.4	13.4	12.6	12.6	0.06	1.14	0.27	3.27



Alt Model-Shift Uniqueness Test

011515221-01, P = 1.591085 Days, E = 131.091445 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.6	28.3	20.7	0	4.53	1.56	10.8	24.9	45.6	7.63	28.3	0.12	0.99	0.19	8.75



Stellar Parameters For KIC 011515221

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6666^{+159}_{-179}	$3.475^{+0.336}_{-0.084}$	$-0.080^{+0.300}_{-0.250}$	$4.180^{+0.508}_{-1.626}$	$1.900^{+0.187}_{-0.348}$	$0.037^{+0.092}_{-0.010}$
	+2%/-3%	+10%/-2%	+375%/-312%	+12%/-39%	+10%/-18%	+250%/-27%
Source	PHO1	FLK73	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 011515221-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-20 ± 2	$1.94^{+0.60}_{-0.60}$	4549^{+227}_{-433}	6436^{+1242}_{-811}	$3.179^{+3.203}_{-1.320}$
Alt.	-63 ± 2	$4.40^{+0.75}_{-0.91}$	4543^{+239}_{-430}	5659^{+403}_{-350}	$1.960^{+1.098}_{-0.522}$

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

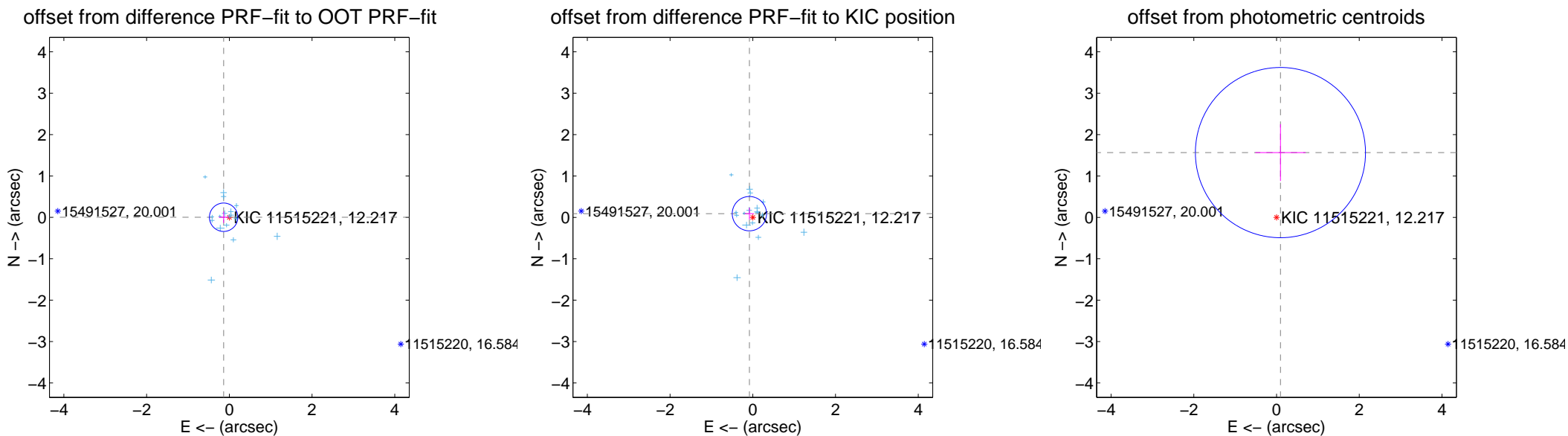
DV Centroid Data

Supplemental centroid analysis for 011515221-01. Kepler magnitude: 12.22. Transit SNR 6.72

There are 17 quarters with good PRF difference image offsets

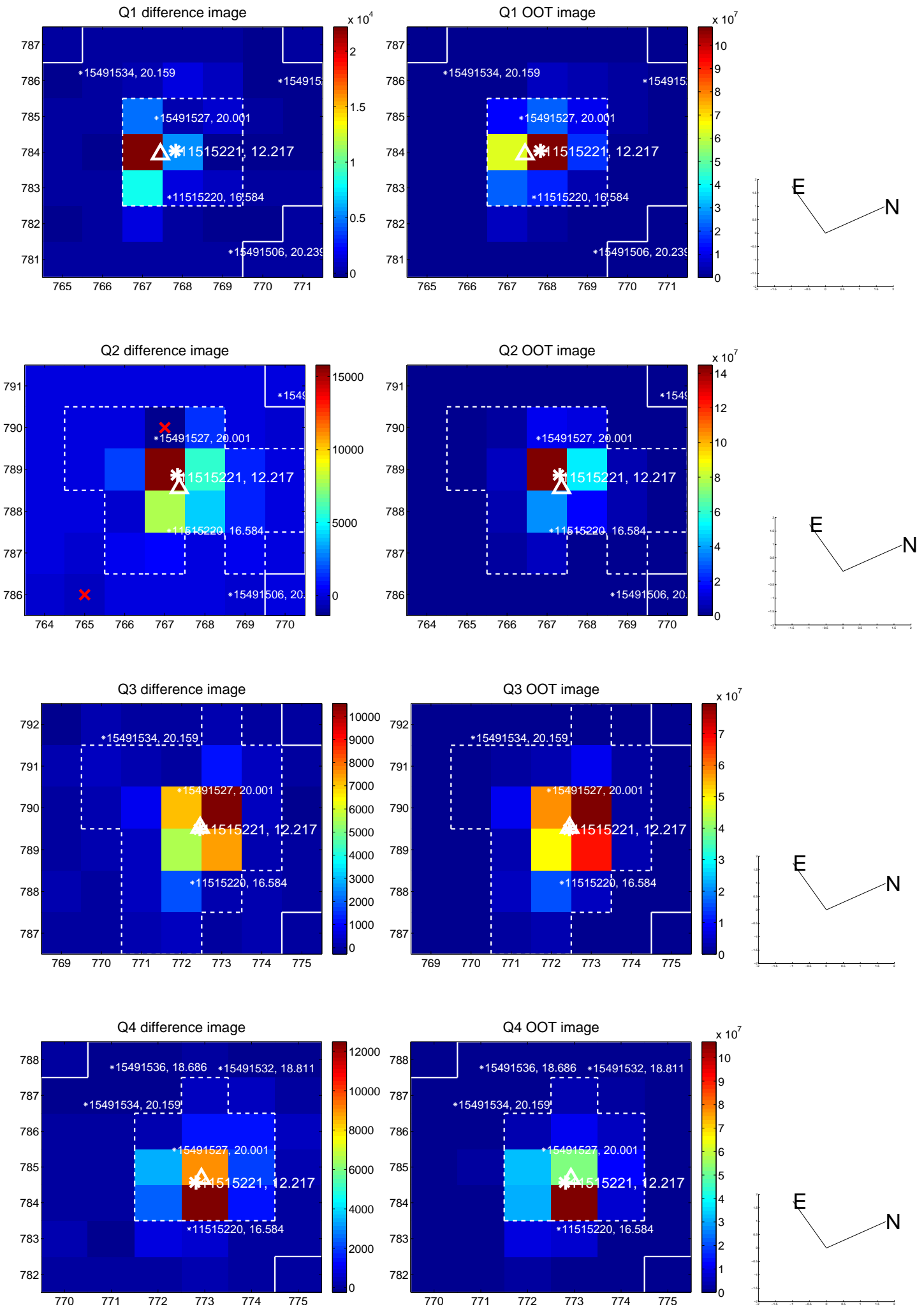
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.138 ± 0.114	1.20	0.137 ± 0.114	0.003 ± 0.139
PRF-fit source offset from KIC position	0.122 ± 0.138	0.88	0.082 ± 0.112	0.090 ± 0.140
photometric centroid source offset	1.57 ± 0.69	2.29	-0.09 ± 0.61	1.56 ± 0.69

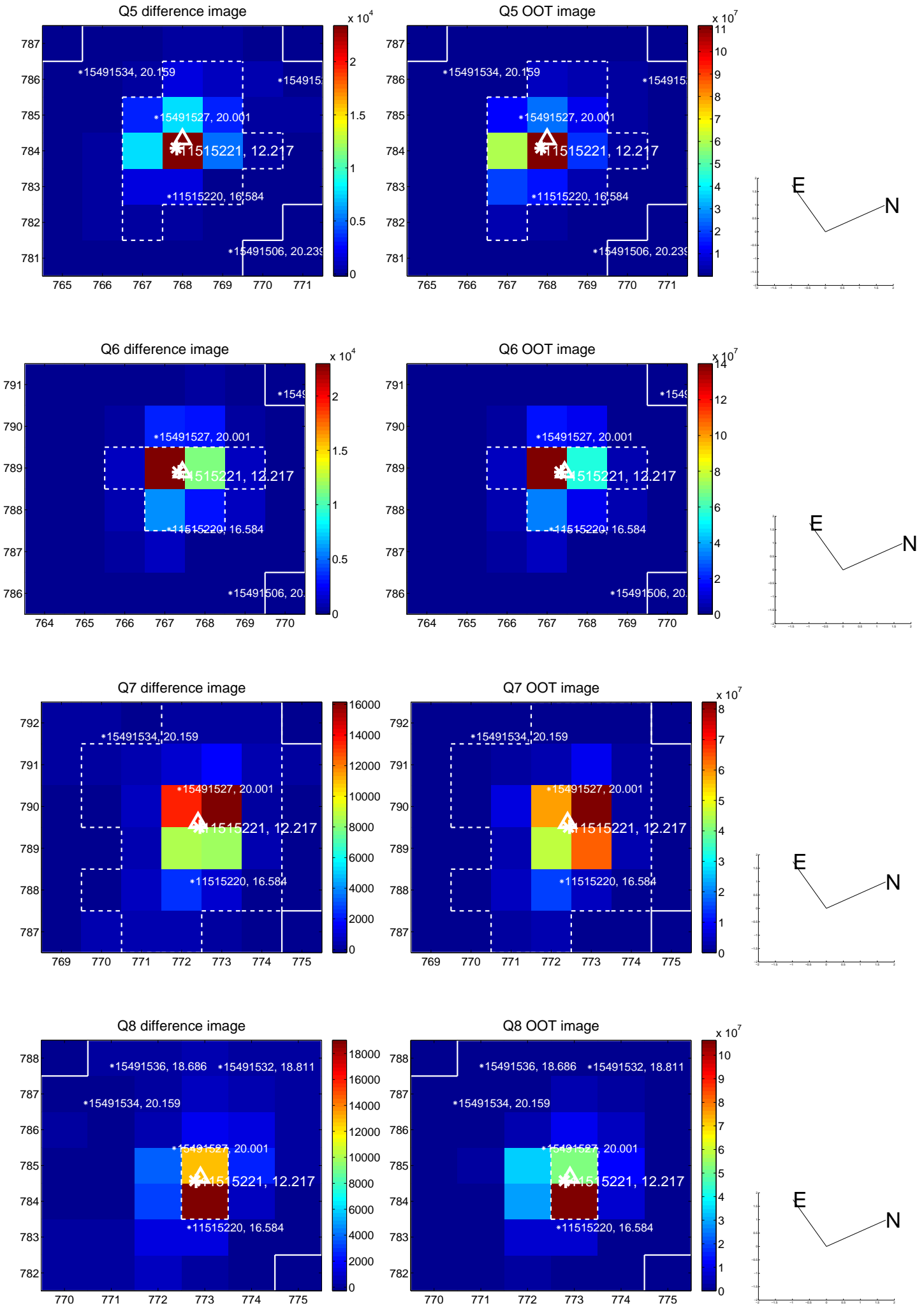


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

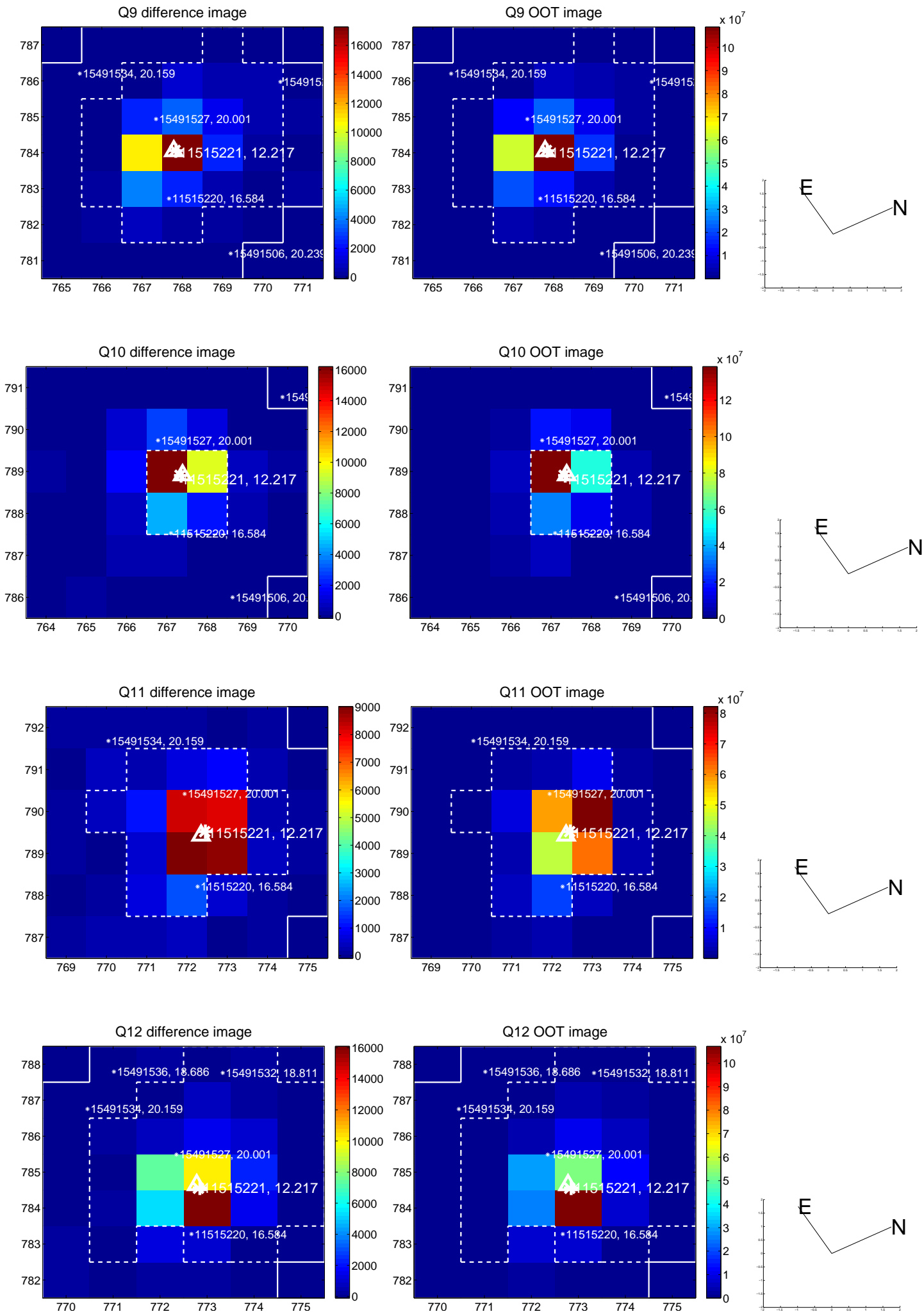
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



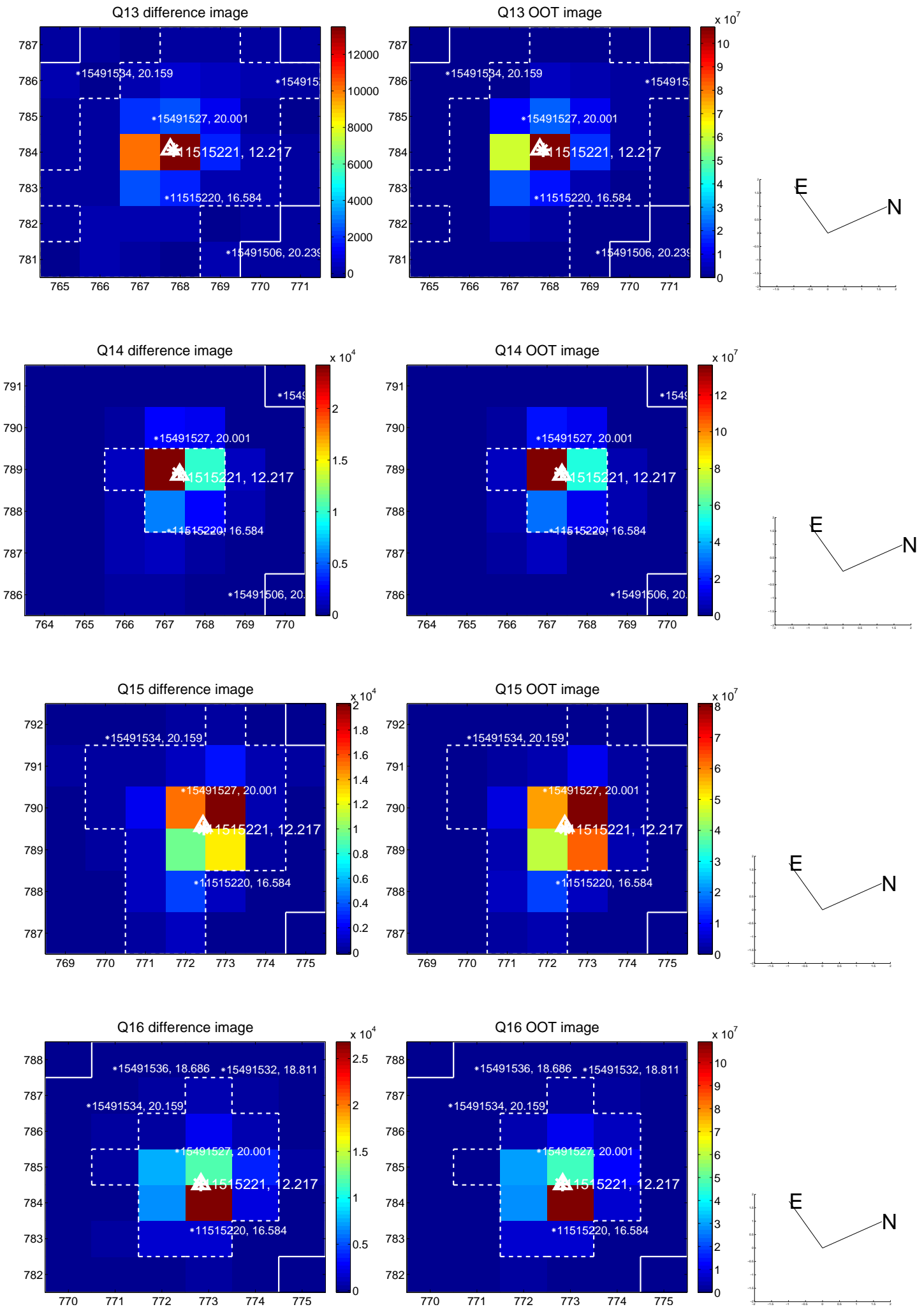
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



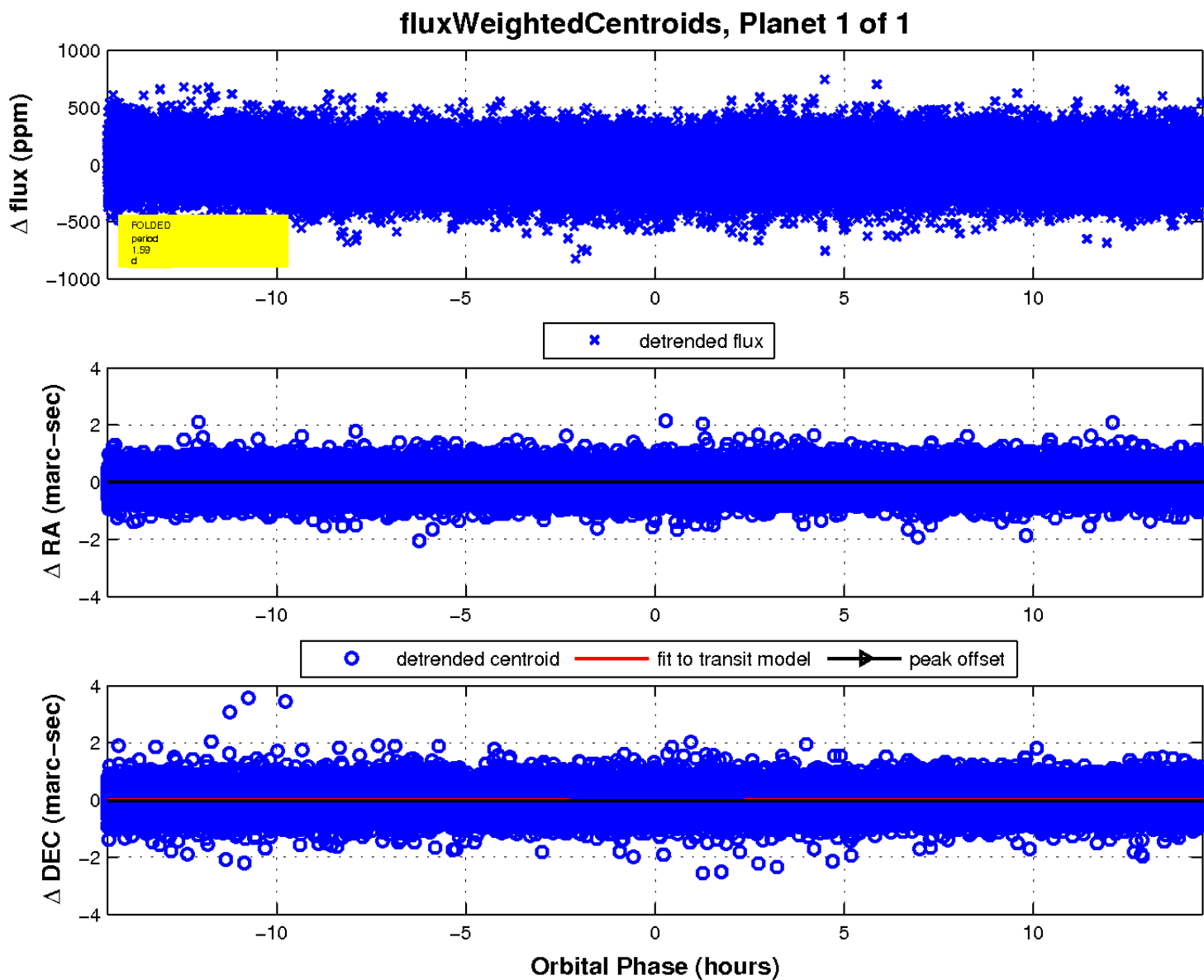
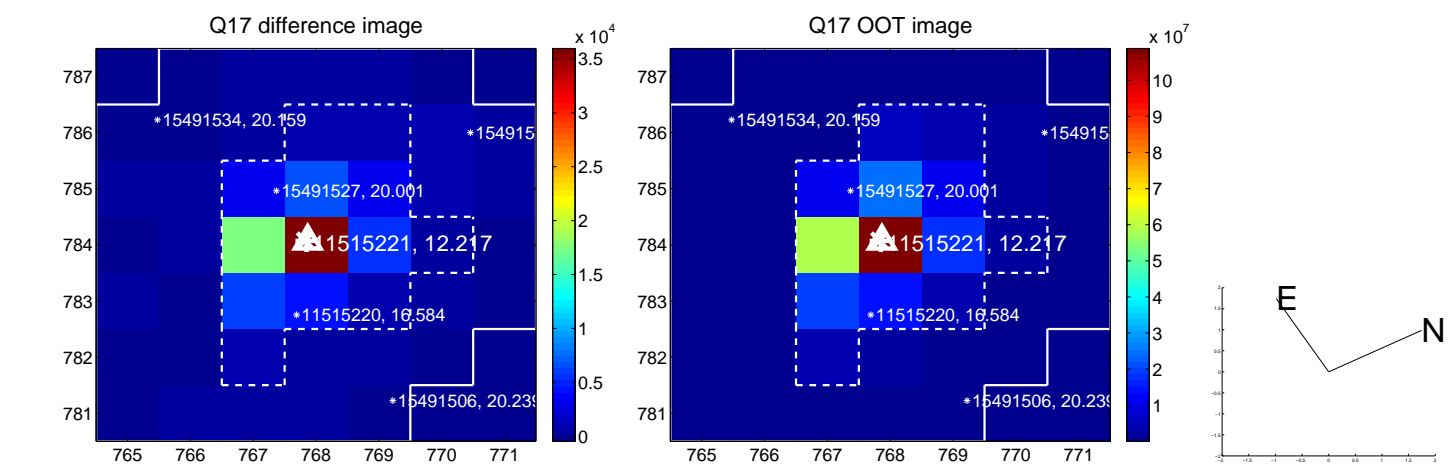
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[illegible]