

KIC 010988009

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})
010988009-01	OBS	No	0.570403	131.521106	154.0	3.471	12.9	12.8	2.09	7550	3.01	53838.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010988009-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED

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

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

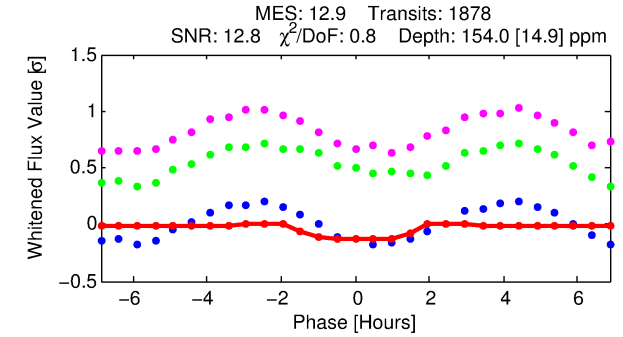
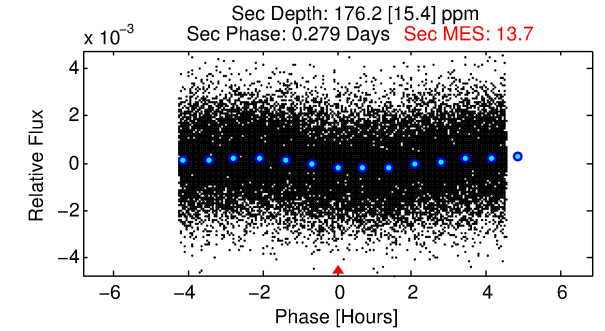
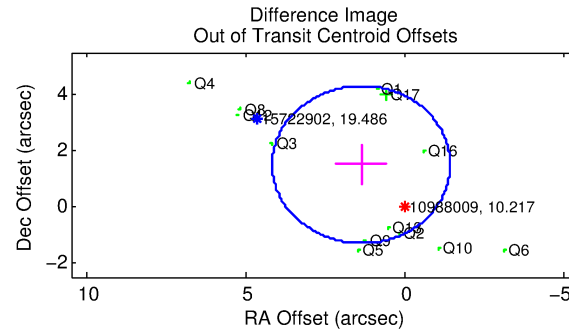
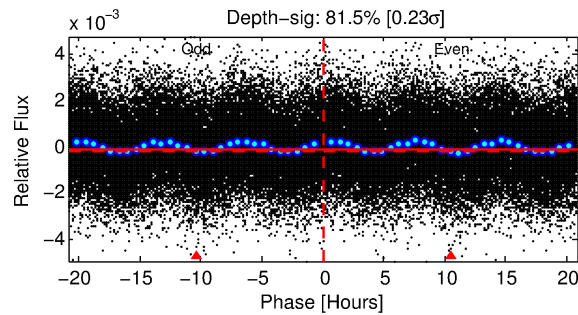
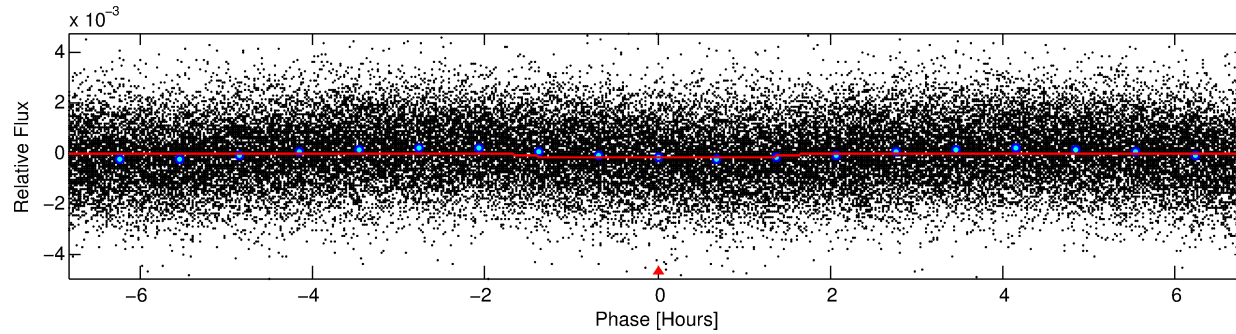
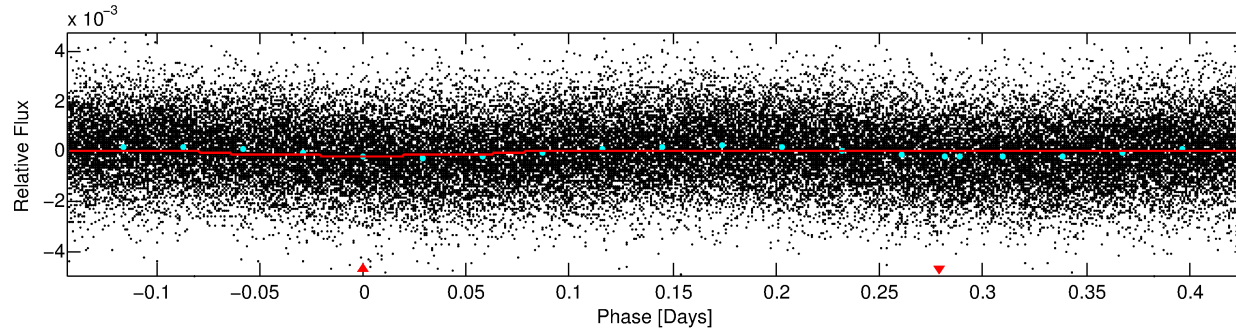
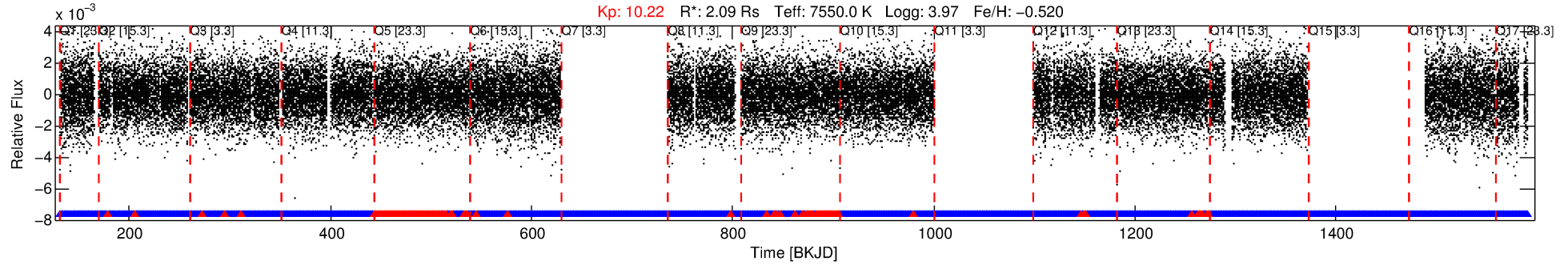
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010988009-01

No Significant Match Found

DV One-Page Summary

KIC: 10988009 Candidate: 1 of 1 Period: 0.570 d



DV Fit Results:

Period = 0.57040 [0.00001] d
Epoch = 131.5211 [0.0032] BKJD
Rp/R* = 0.0132 [0.0040]
a/R* = 1.11 [0.40]
b = 0.90 [0.41]
Seff = 53838.26 [29844.72]
Teq = 3884 [538] K
Rp = 3.01 [1.40] Re
a = 0.0154 [0.0052] AU
Ag = 2.54 [2.05] [0.75σ]
Teffp = 7582 [1196] K [2.82σ]

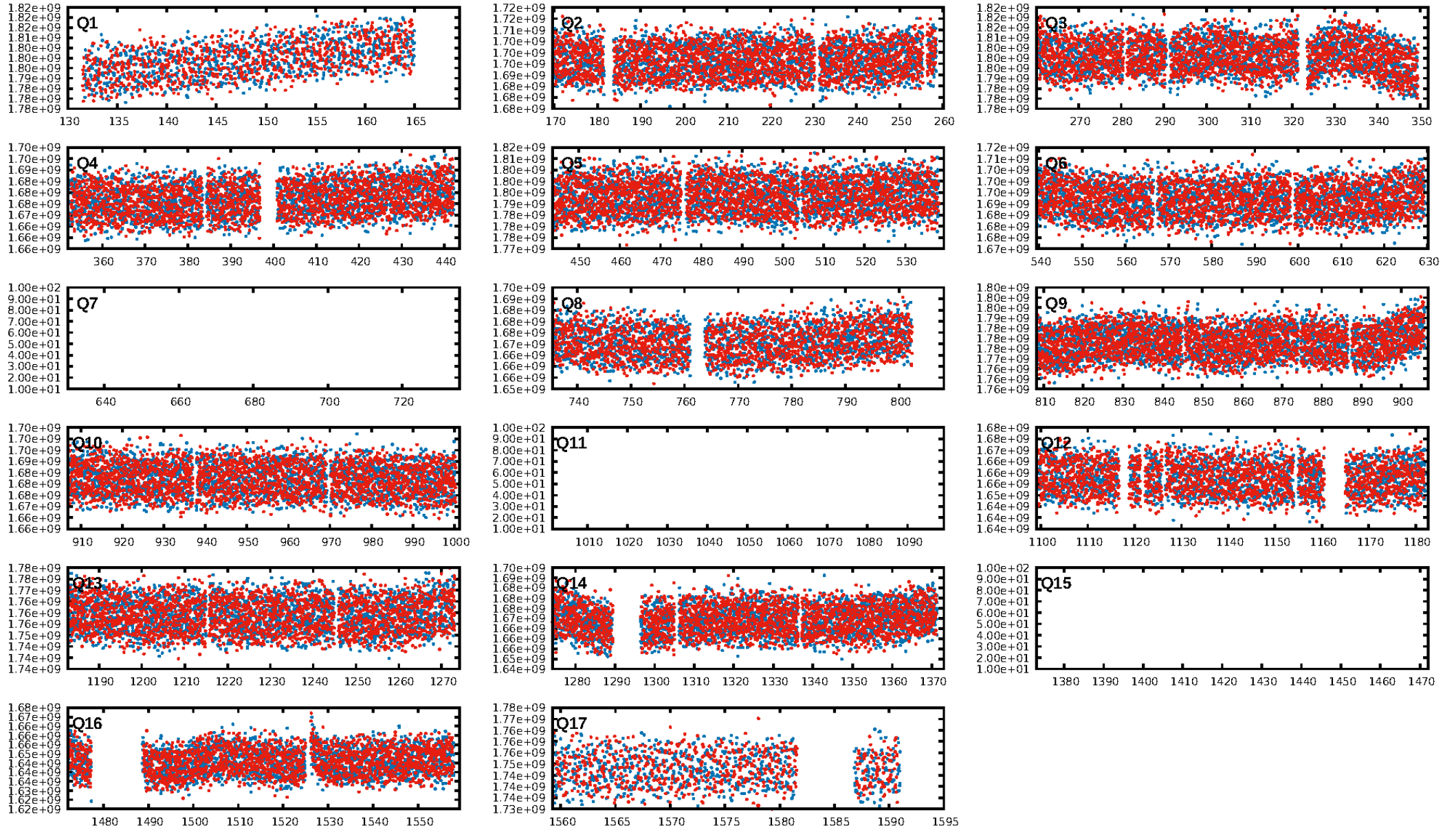
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.43e-23
RollingBand-fgt: 0.91 [1604/1772]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.2%
Centroid-so: 0.226 arcsec [1.96σ]
OotOffset-rm: 2.037 arcsec [2.18σ]
KicOffset-rm: 1.052 arcsec [1.31σ]
OotOffset-st: 3/1/4/5 [13]
KicOffset-st: 3/1/4/5 [13]
DiffImageQuality-fgm: 0.31 [4/13]
DiffImageOverlap-fno: 1.00 [14/14]

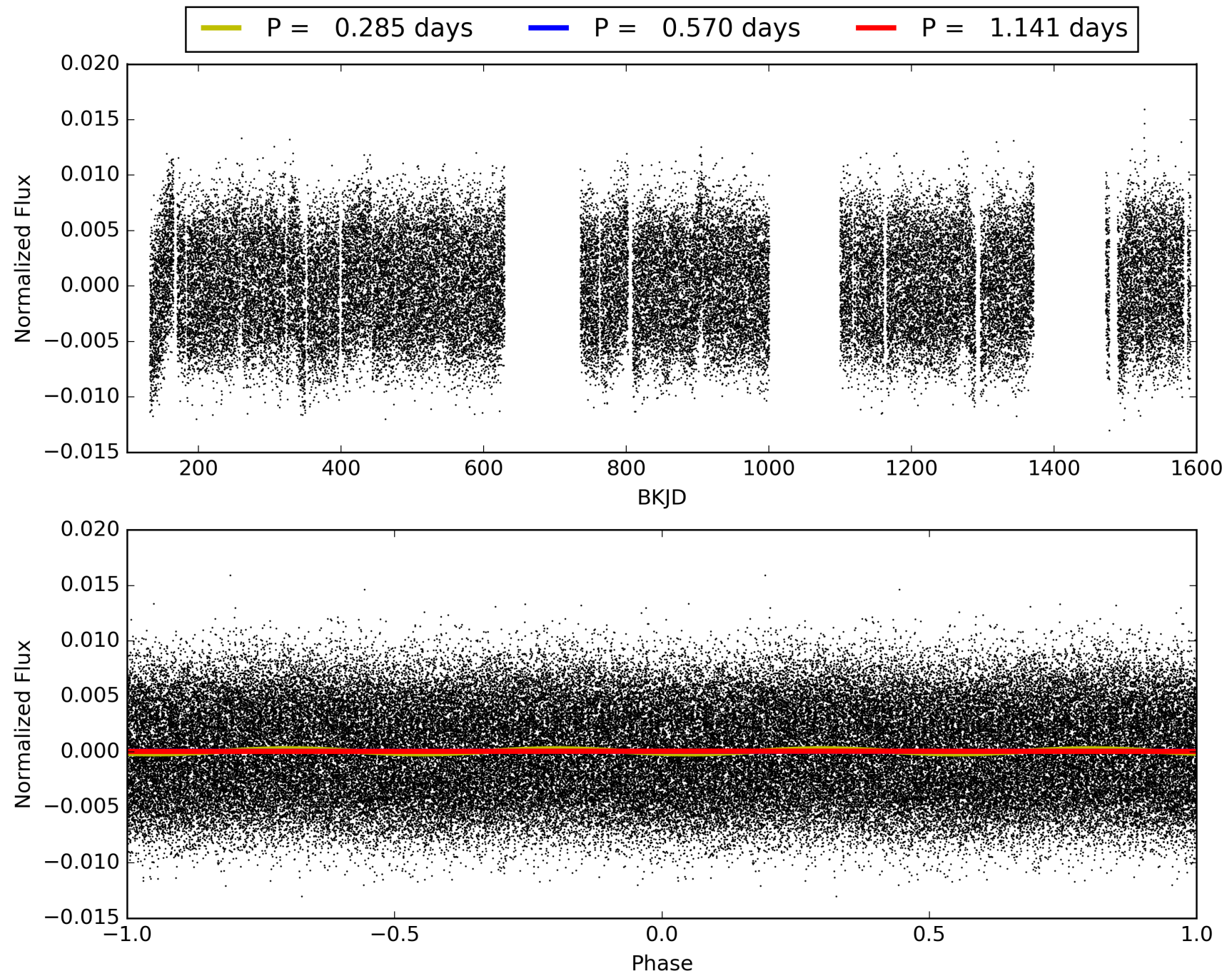
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:00:07 Z

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

TCE 010988009-01, PDC Light Curves

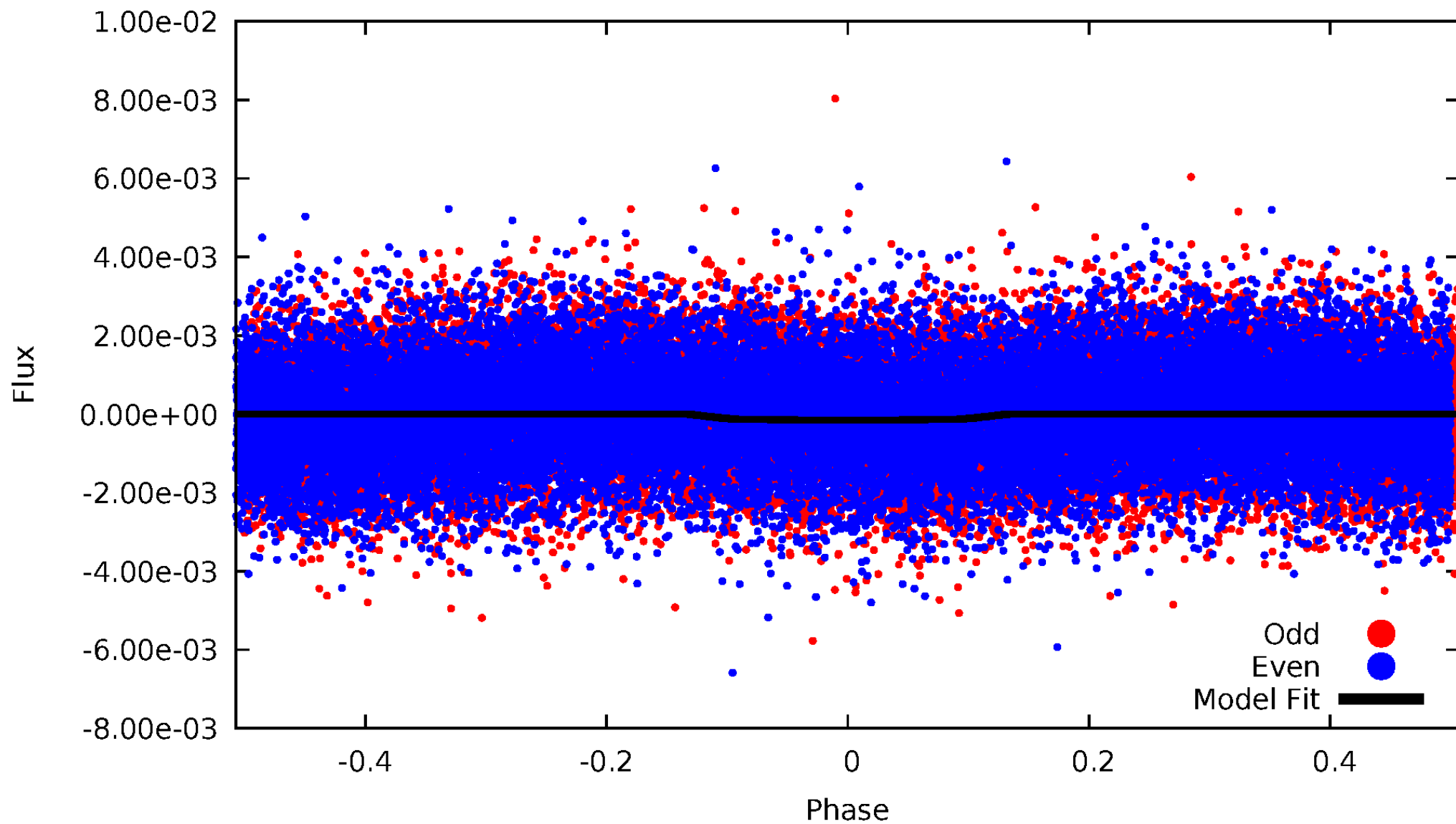


TCE 010988009-01



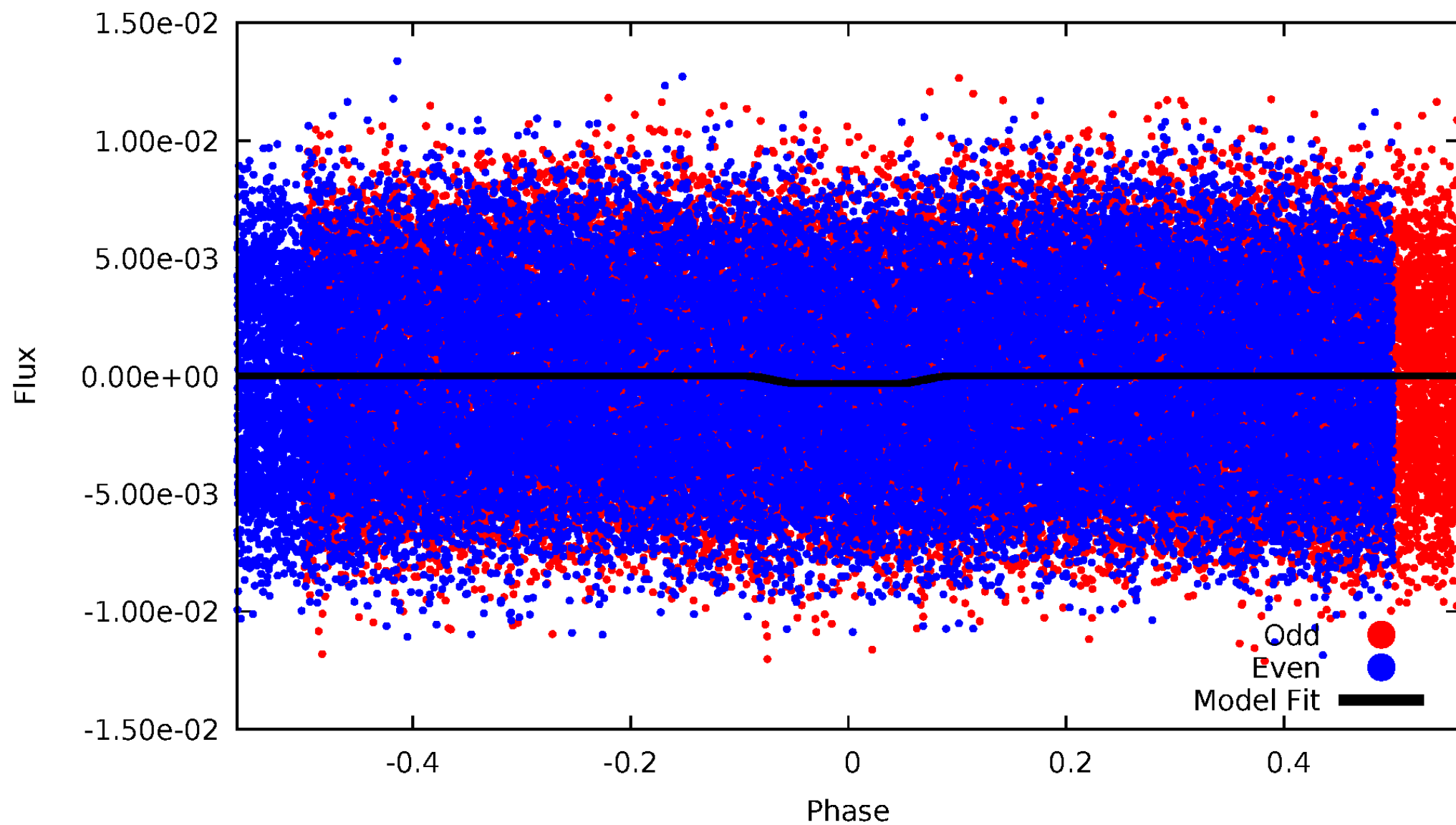
DV Odd/Even

TCE 010988009-01



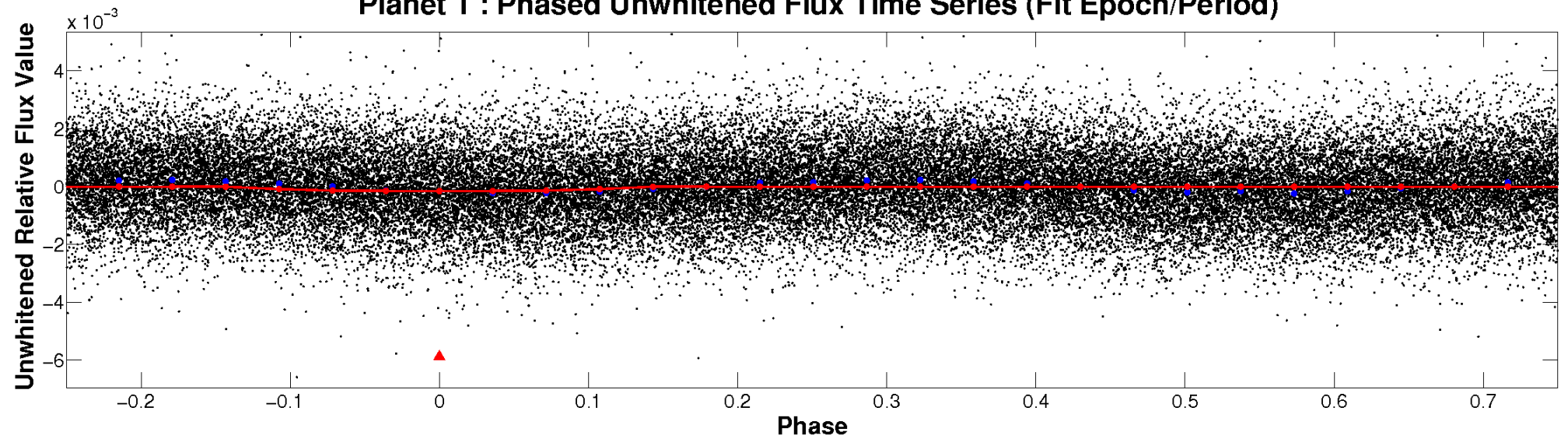
ALT Odd/Even

TCE 010988009-01

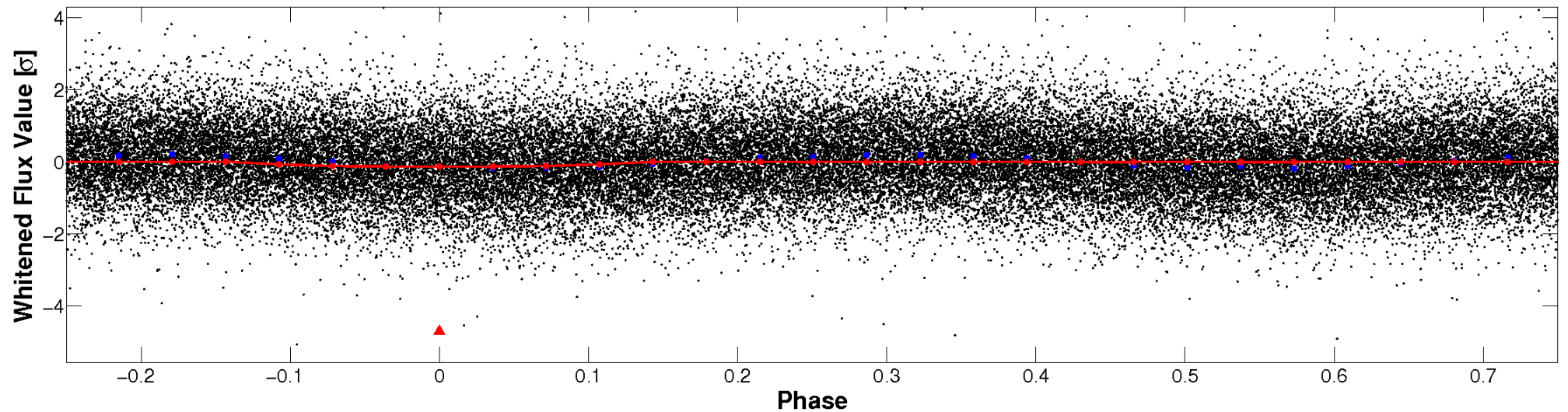


Non-Whitened Vs. Whitened Light Curve

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

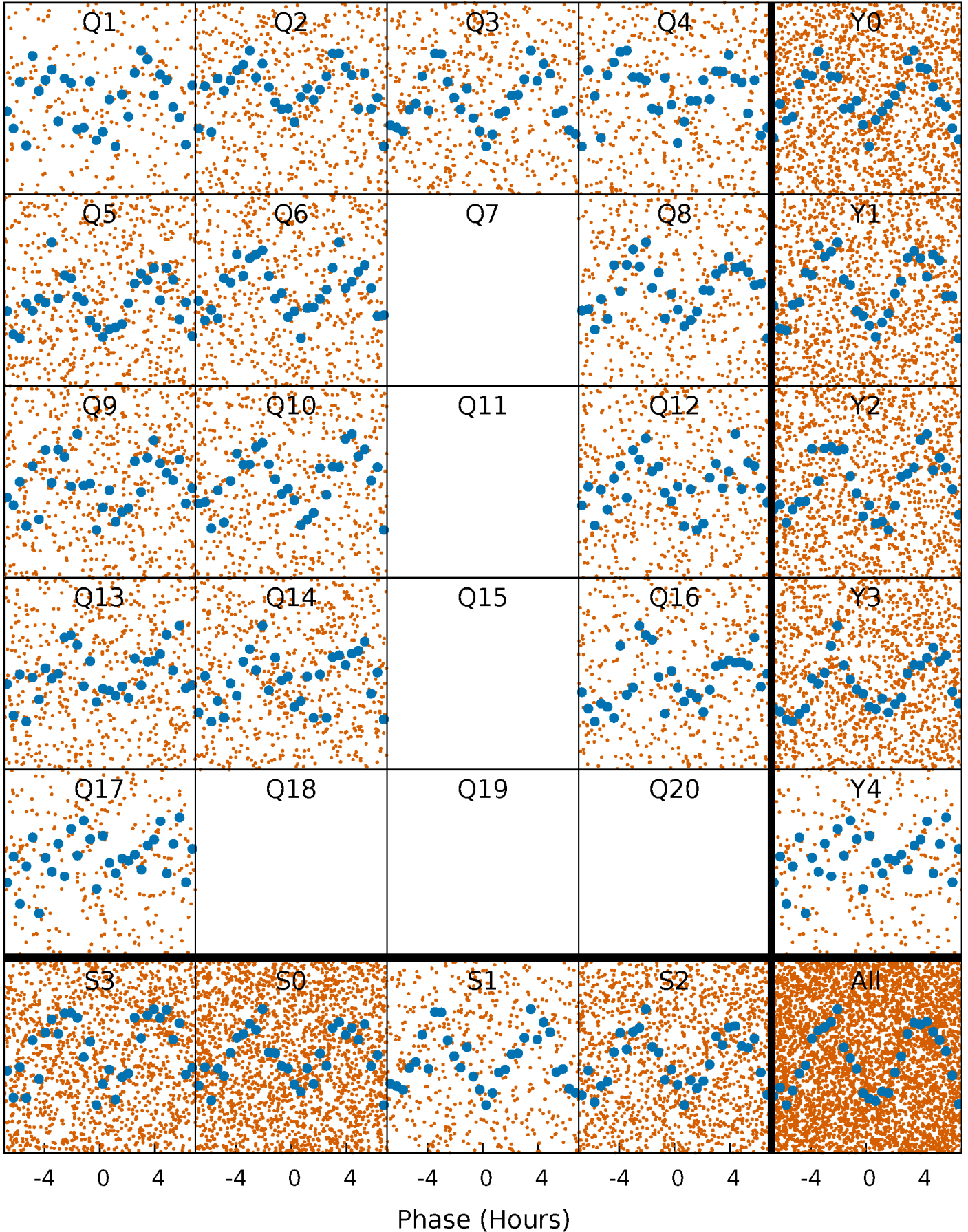


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



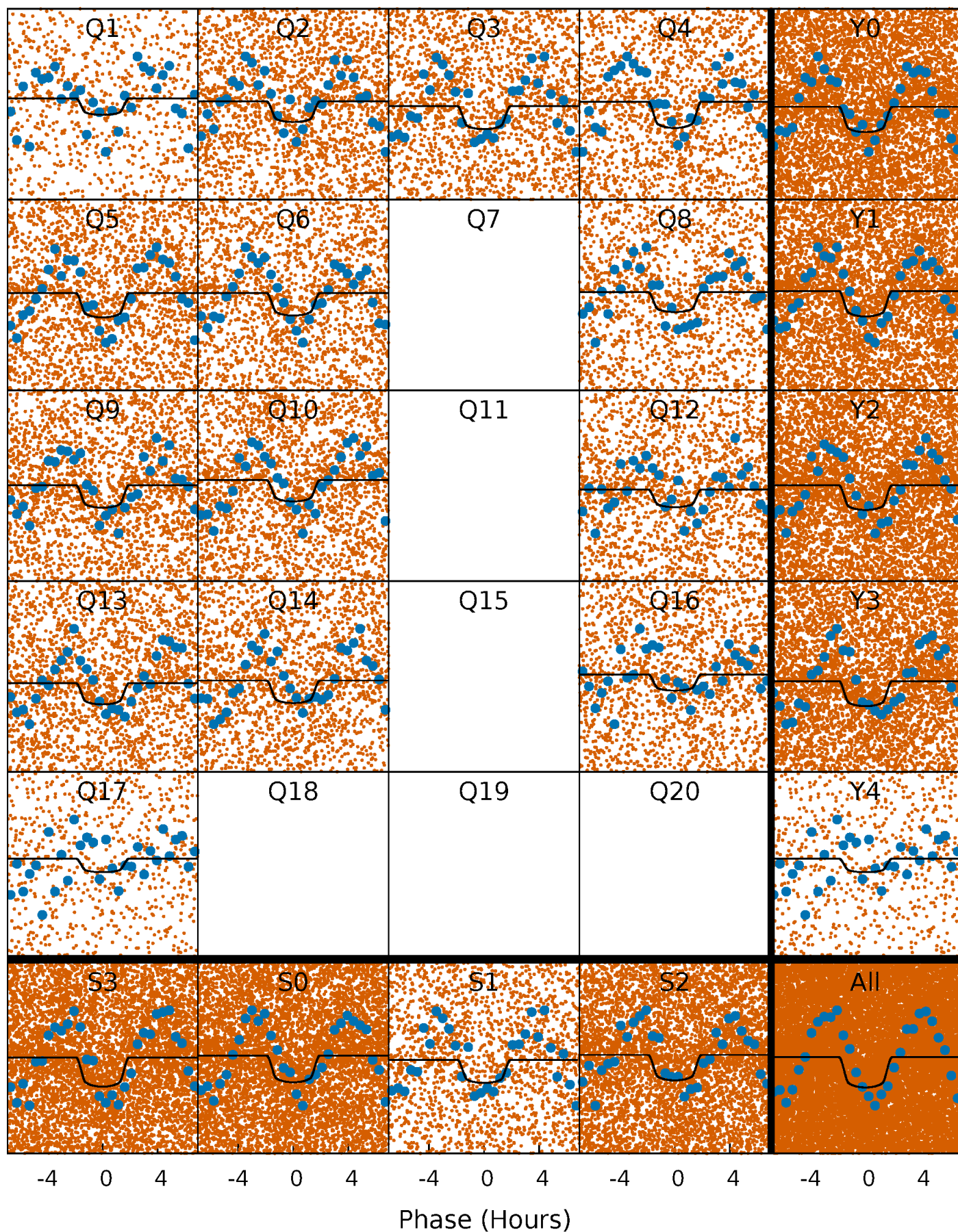
PDC Quarter-Phased Transit Curves

TCE 010988009-01 P= 0.570403 Days $T_0=131.521106$ (BKJD)



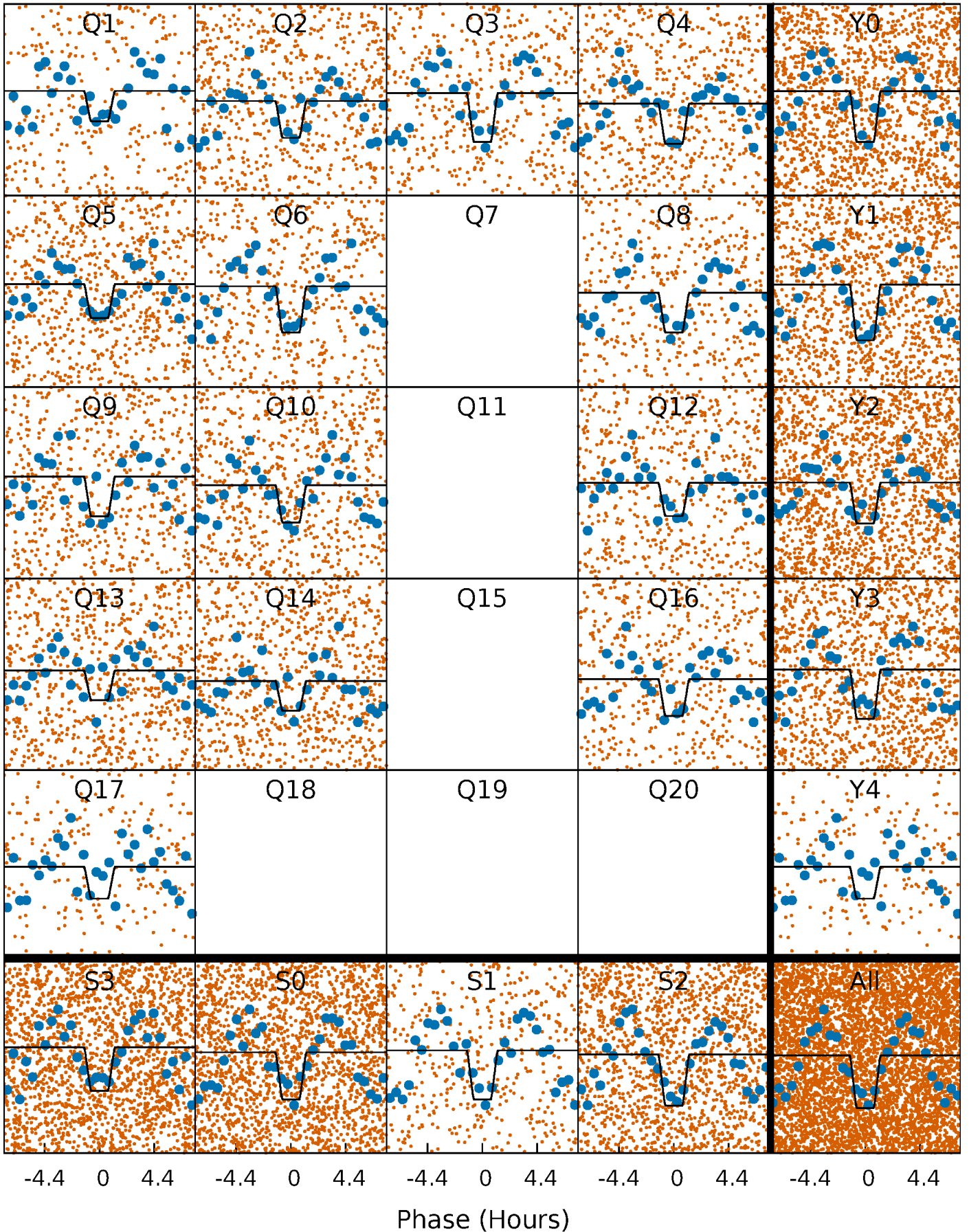
DV Quarter-Phased Transit Curves

TCE 010988009-01 P= 0.570403 Days $T_0=131.521106$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

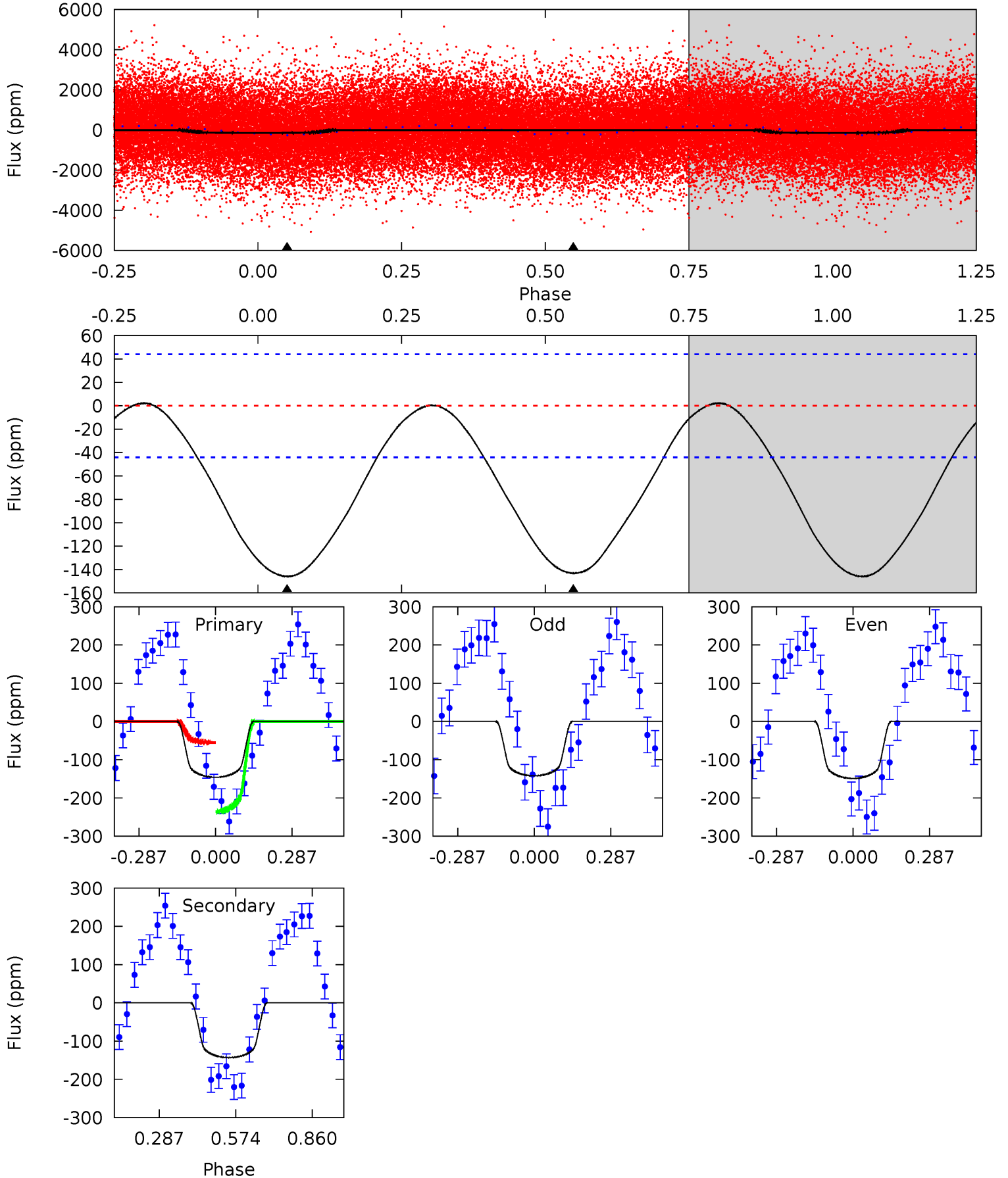
TCE 010988009-01 P= 0.570430 Days $T_0=131.521533$ (BKJD)



DV Model-Shift Uniqueness Test

010988009-01, P = 0.570403 Days, E = 130.950703 Days

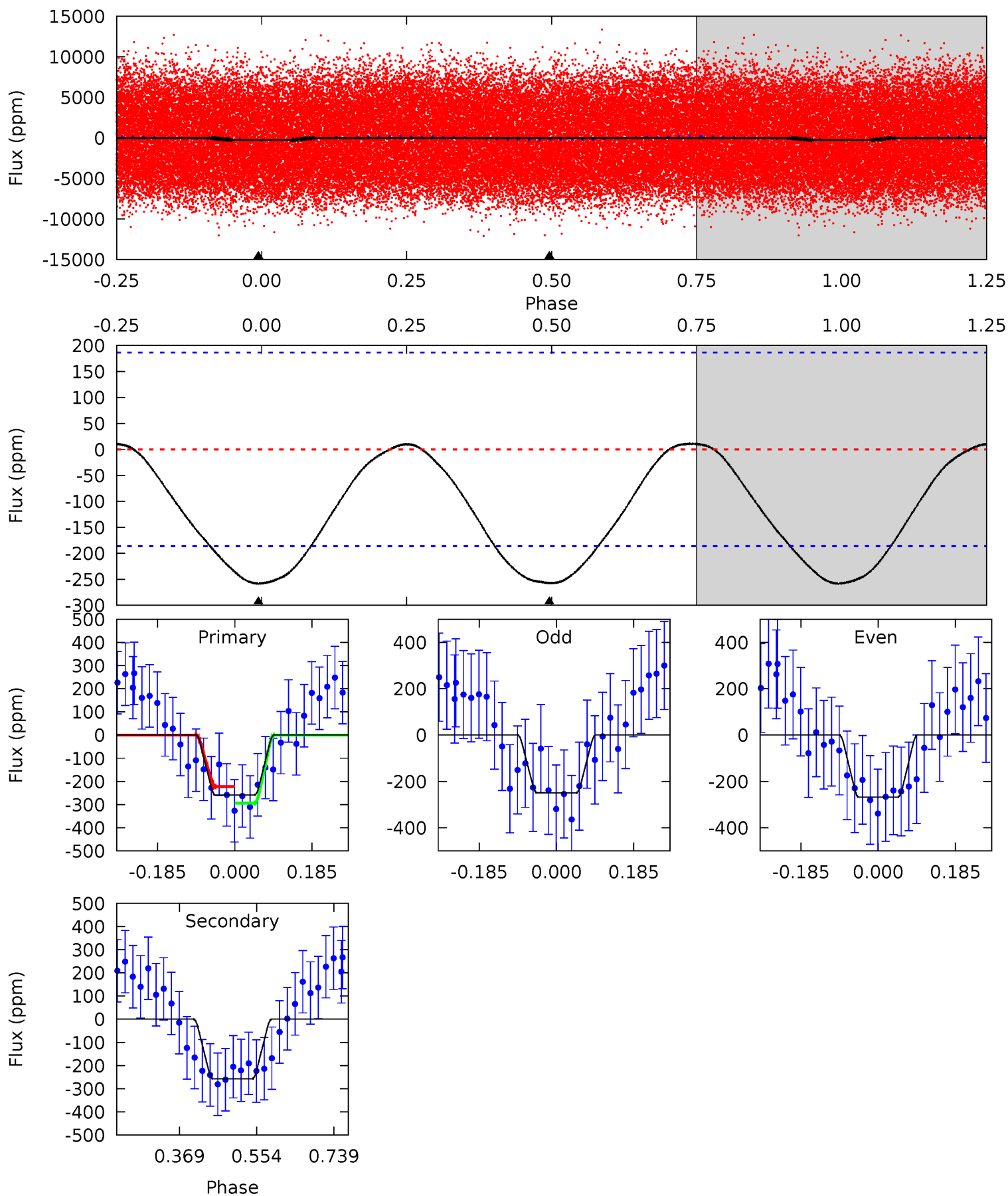
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	14.1	0	0	4.34	1.07	0.16	14.3	14.3	14.1	14.1	0.33	0.99	0.01	8.94



Alt Model-Shift Uniqueness Test

010988009-01, P = 0.570430 Days, E = 130.951103 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.15	6.13	0	0	4.43	1.33	0.31	6.15	6.15	6.13	6.13	0.21	1.00	0.04	0.85



Stellar Parameters For KIC 010988009

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7550^{+234}_{-313}	$3.971^{+0.308}_{-0.132}$	$-0.520^{+0.250}_{-0.300}$	$2.094^{+0.497}_{-0.745}$	$1.496^{+0.197}_{-0.295}$	$0.230^{+0.495}_{-0.087}$
	+3%/-4%	+8%/-3%	+48%/-58%	+24%/-36%	+13%/-20%	+216%/-38%
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 010988009-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-143 ± 10	$2.80^{+1.07}_{-0.93}$	5320^{+415}_{-530}	6902^{+1791}_{-1101}	$2.401^{+2.863}_{-1.147}$
Alt.	-258 ± 42	$3.75^{+1.35}_{-0.97}$	5321^{+399}_{-493}	6806^{+1291}_{-952}	$2.272^{+1.937}_{-1.019}$

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

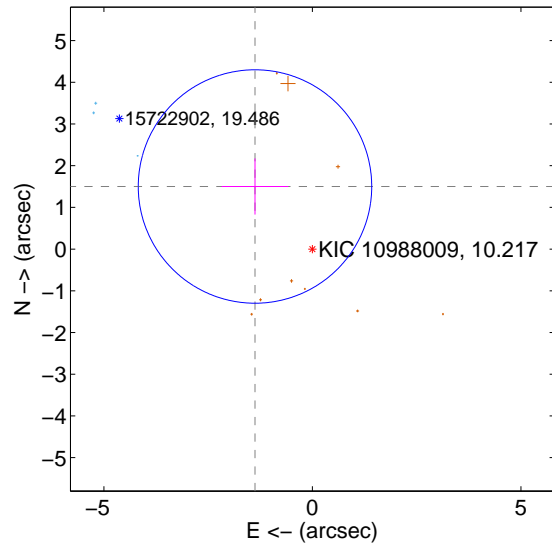
Supplemental centroid analysis for 010988009-01. **Kepler magnitude: 10.22.** Transit SNR 12.79

There are 4 quarters with good PRF difference image offsets

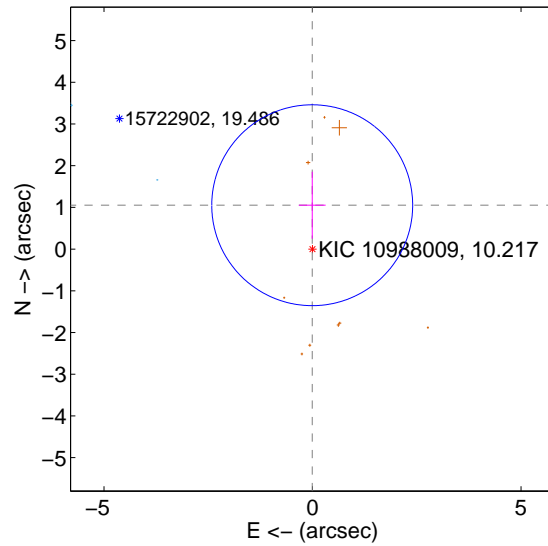
The direct PRF centroid is offset from the target star catalog position by about 1.62 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.037 ± 0.933	2.18	1.378 ± 0.799	1.501 ± 0.674
PRF-fit source offset from KIC position	1.052 ± 0.803	1.31	0.008 ± 0.322	1.052 ± 0.803
photometric centroid source offset	0.23 ± 0.11	1.96	-0.15 ± 0.13	-0.17 ± 0.10

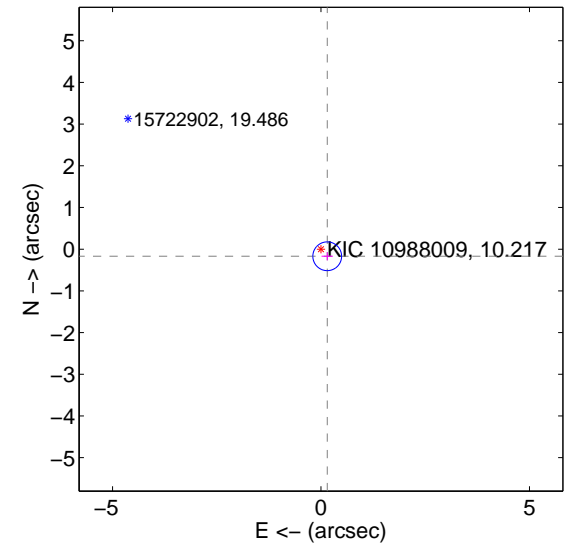
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

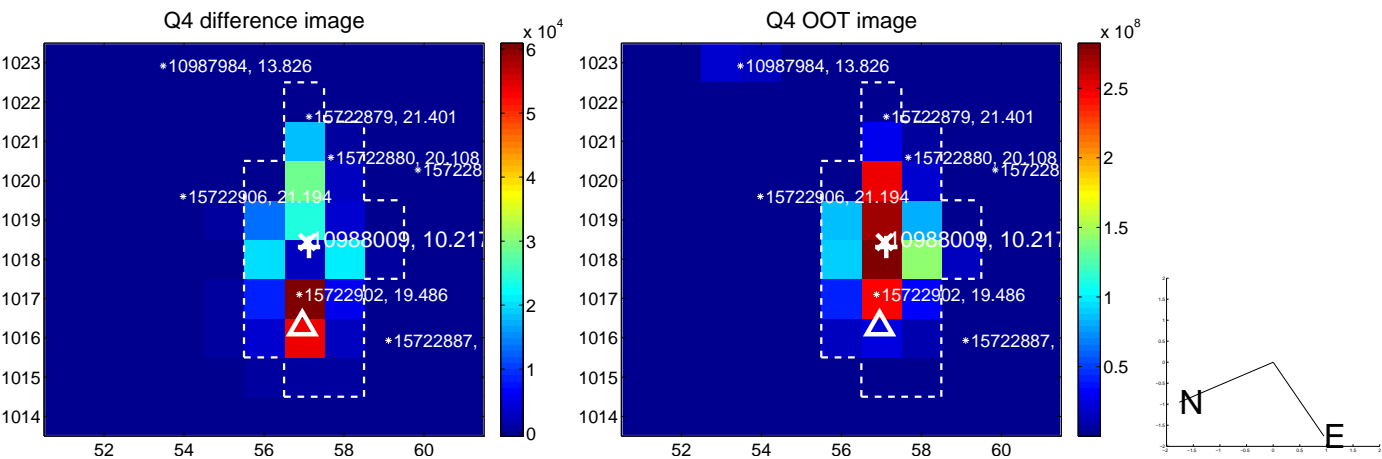
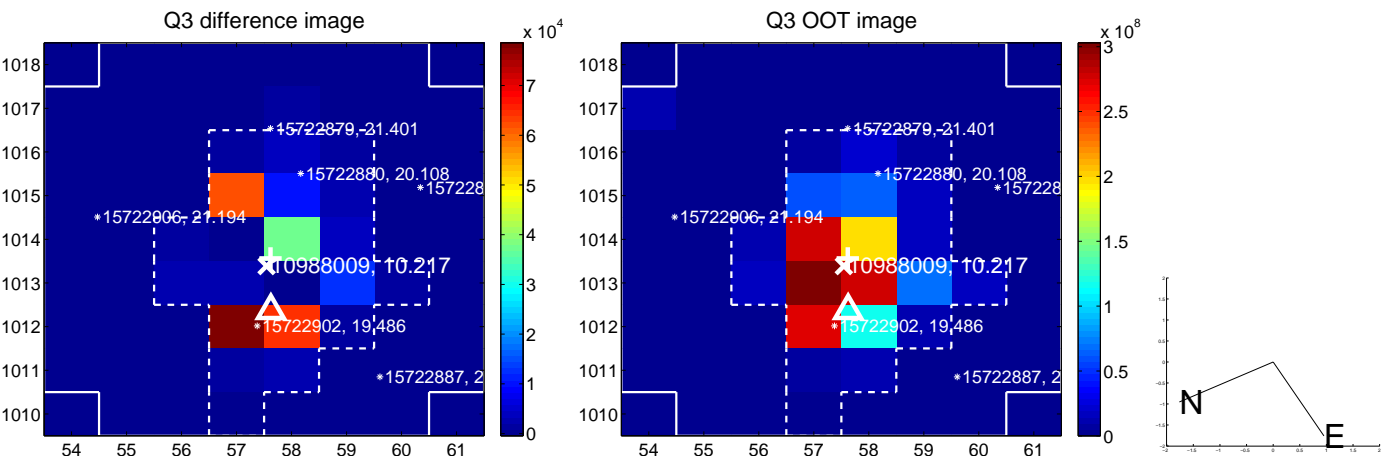
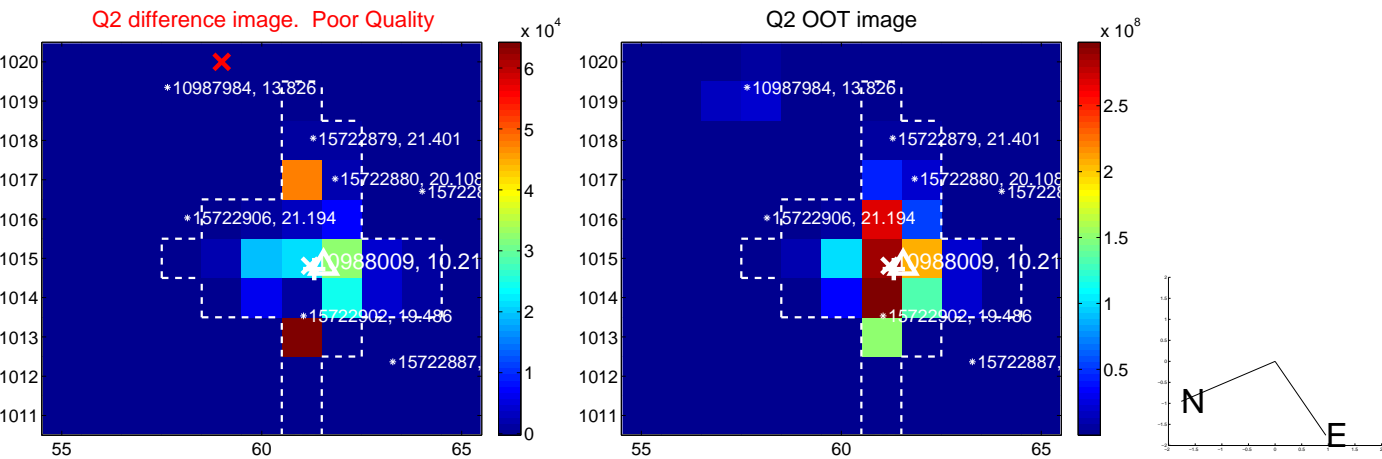
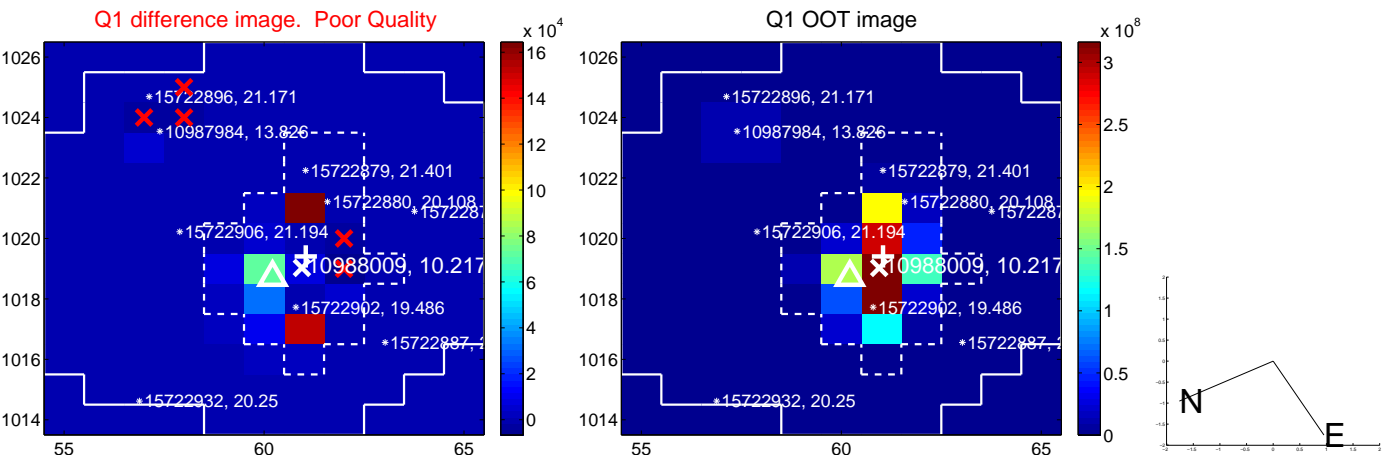


offset from photometric centroids

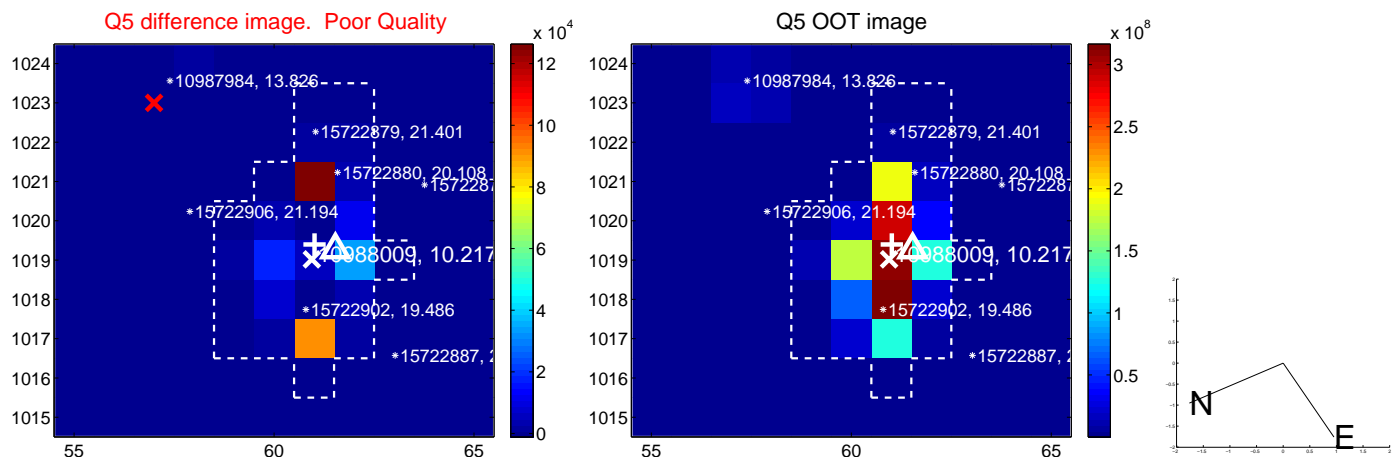


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

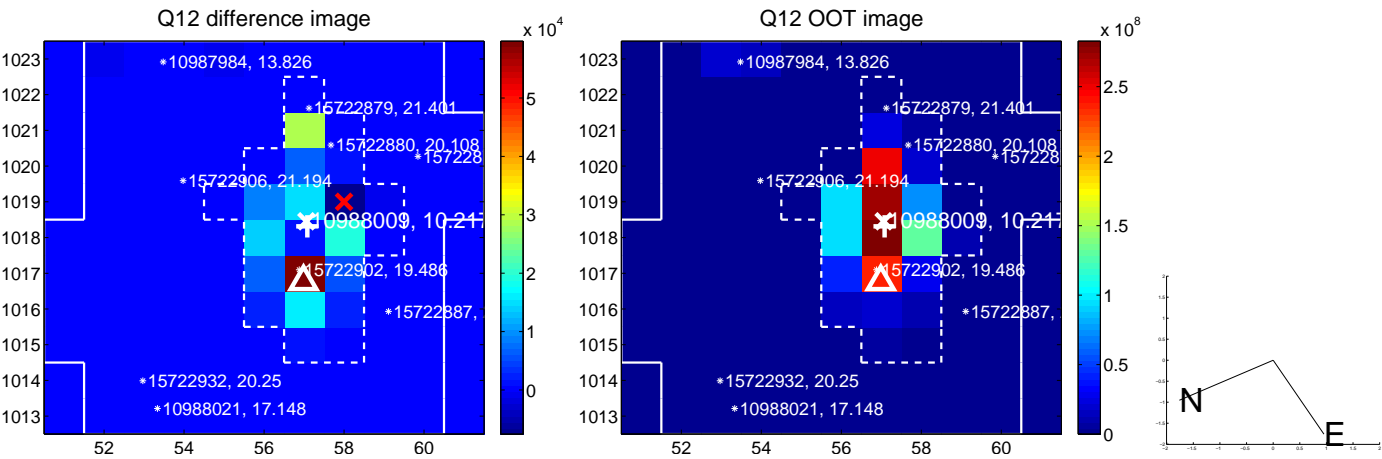
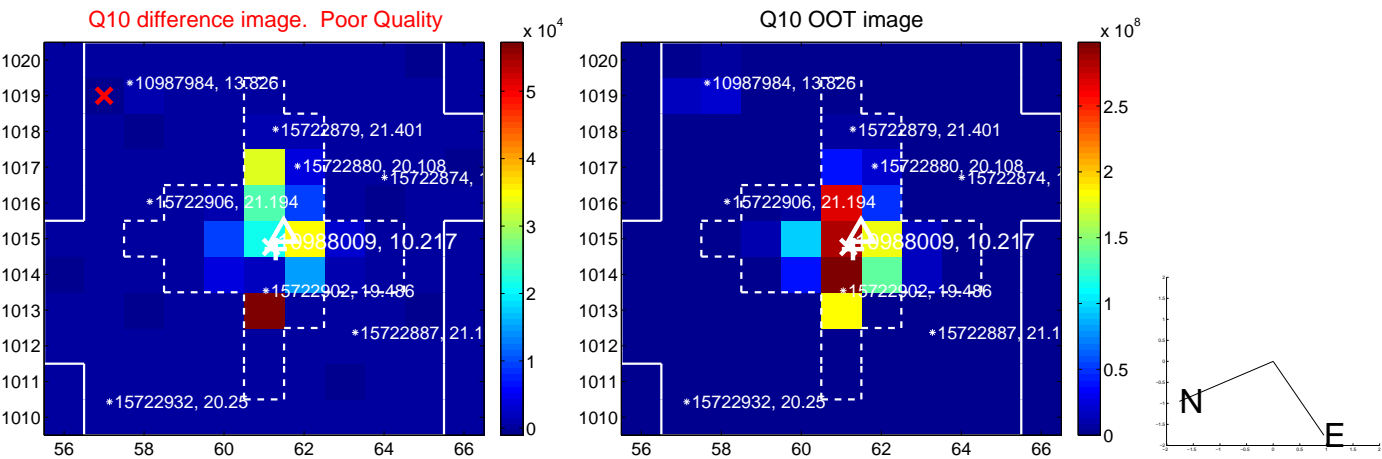
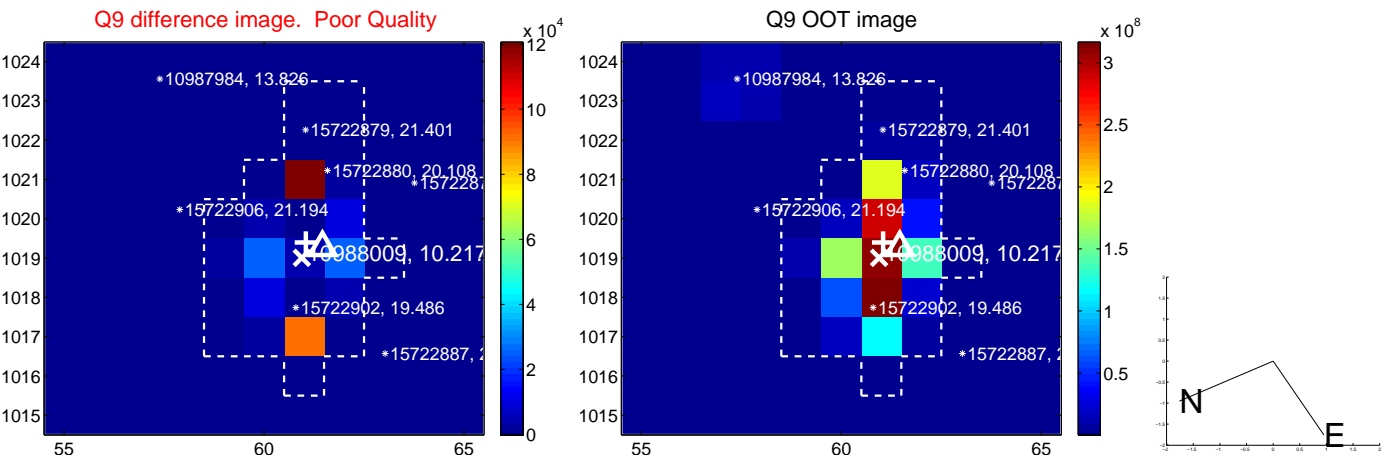
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



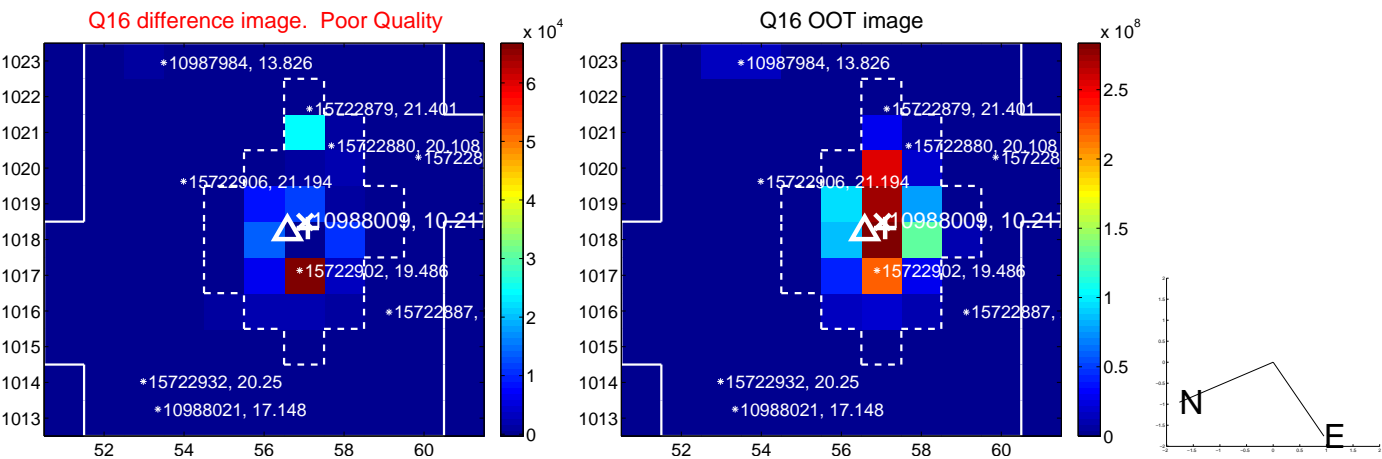
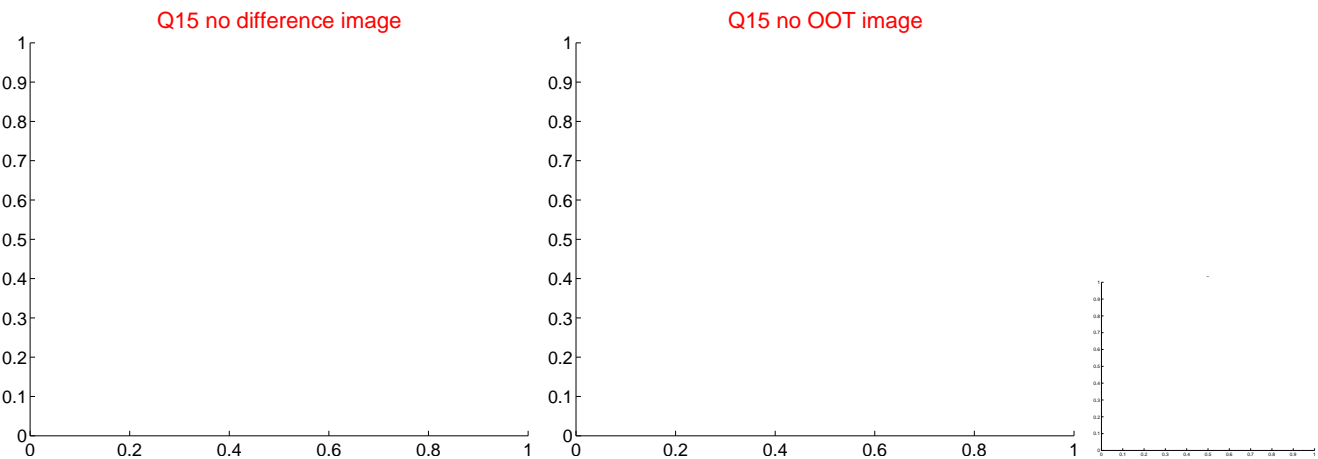
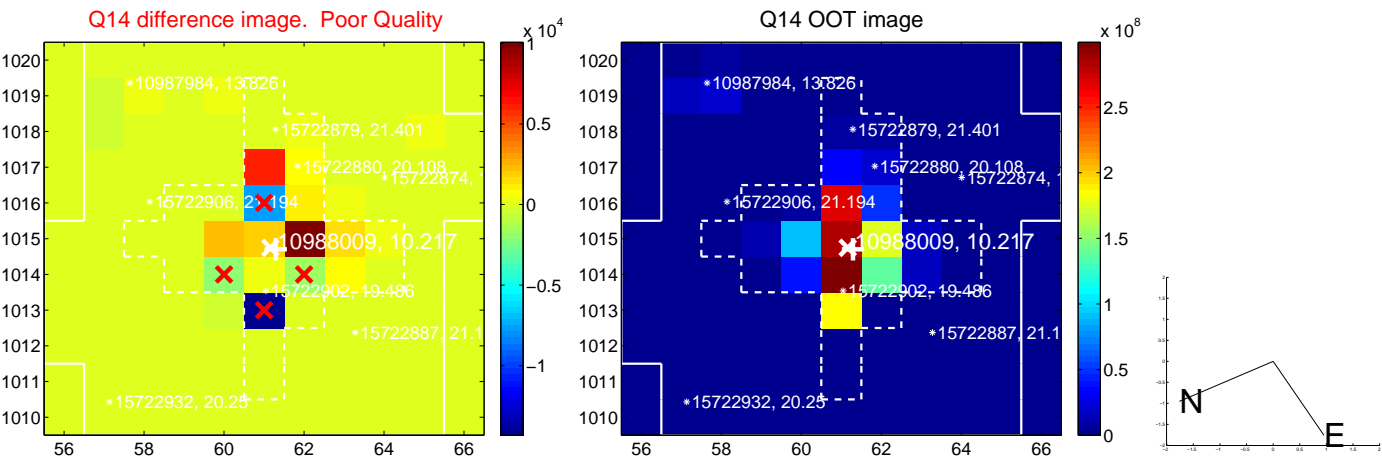
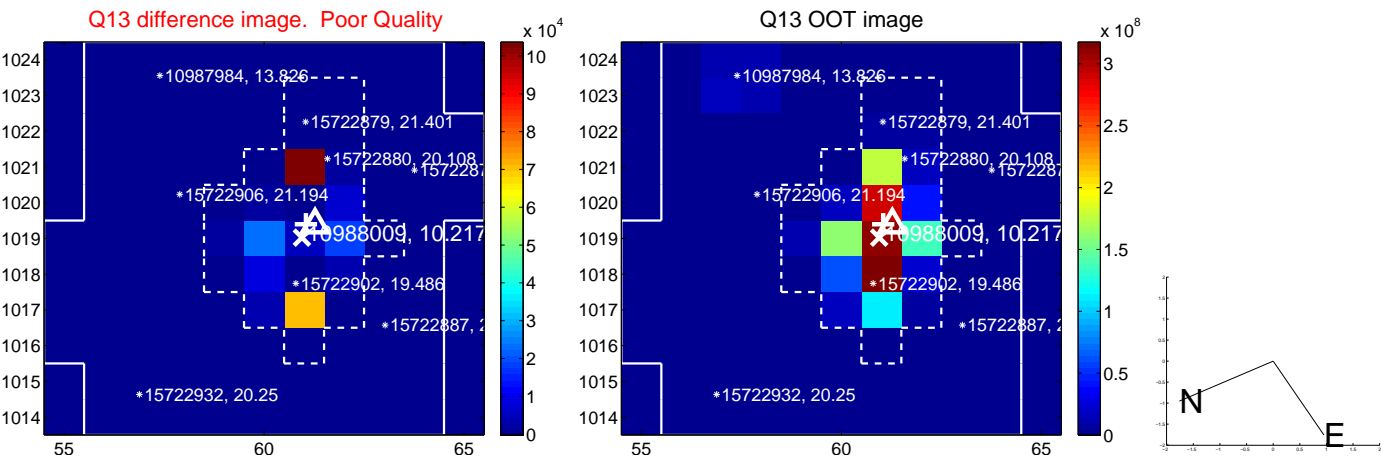
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



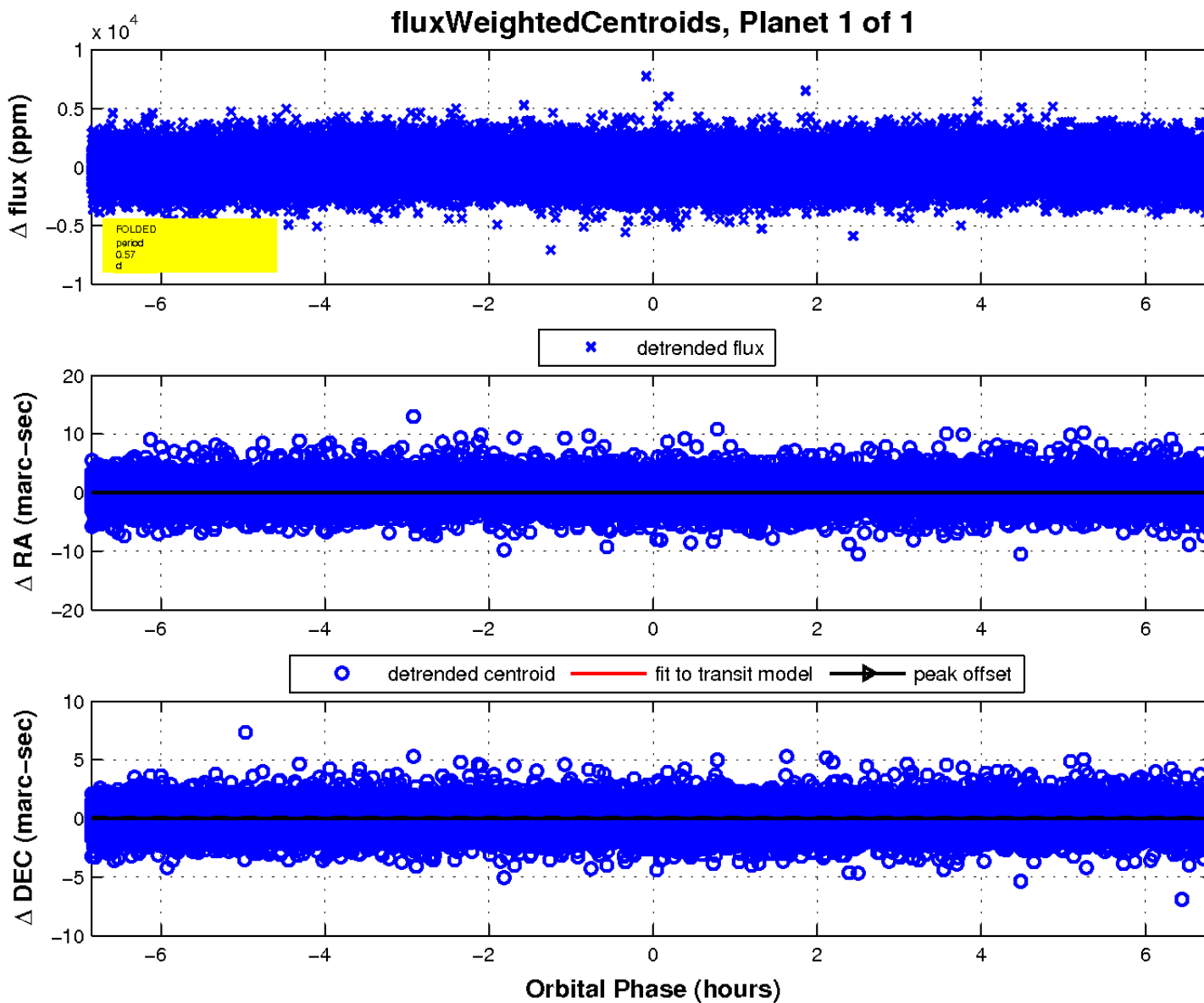
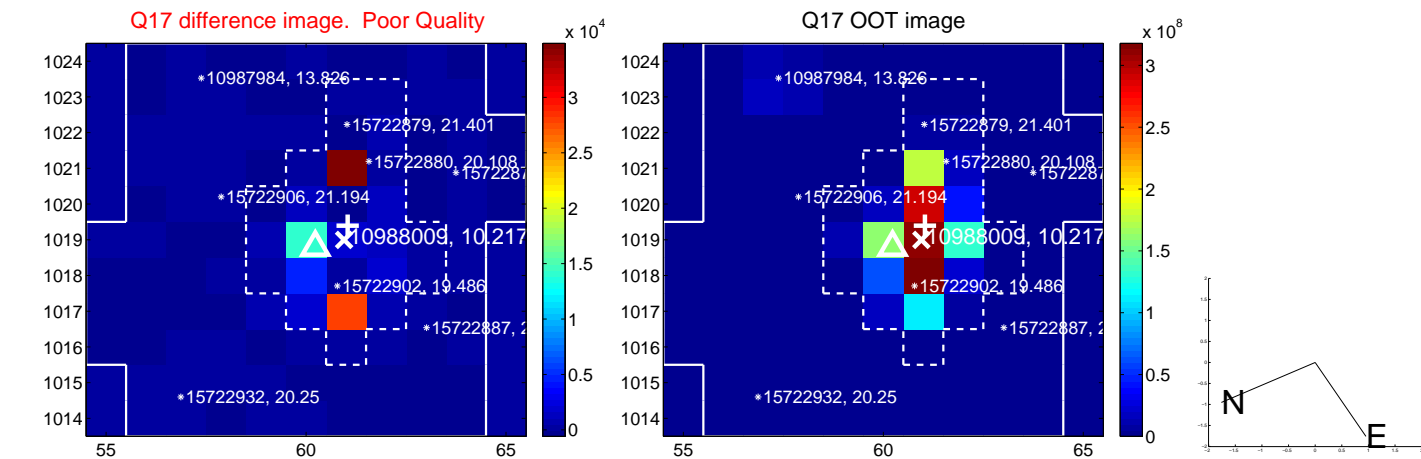
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

