

KIC 003967333

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})
003967333-01	OBS	No	0.561860	131.829649	274.0	2.057	11.9	14.0	1.46	6942	2.81	19105.88
003967333-02	OBS	No	2.088086	132.175756	527.6	7.010	10.8	13.9	1.46	6942	4.25	3319.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003967333-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003967333-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—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.

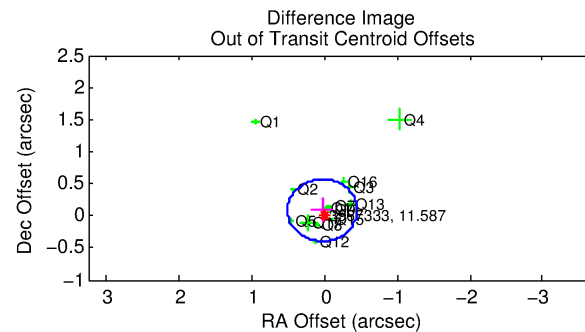
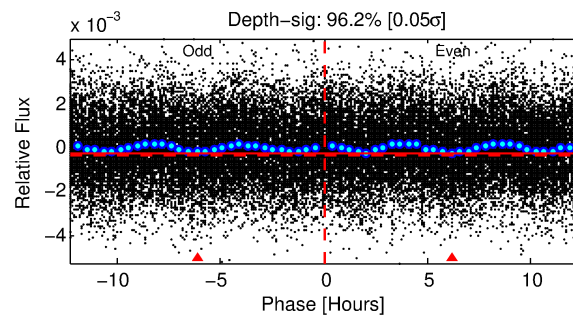
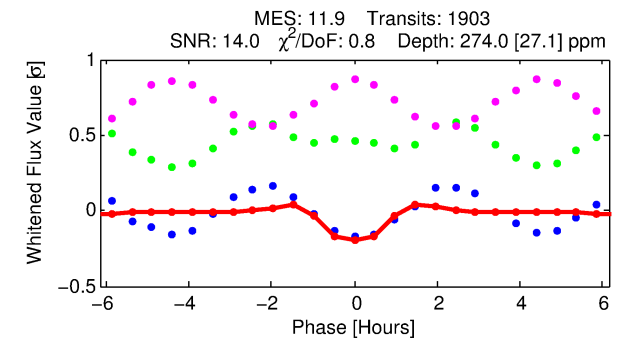
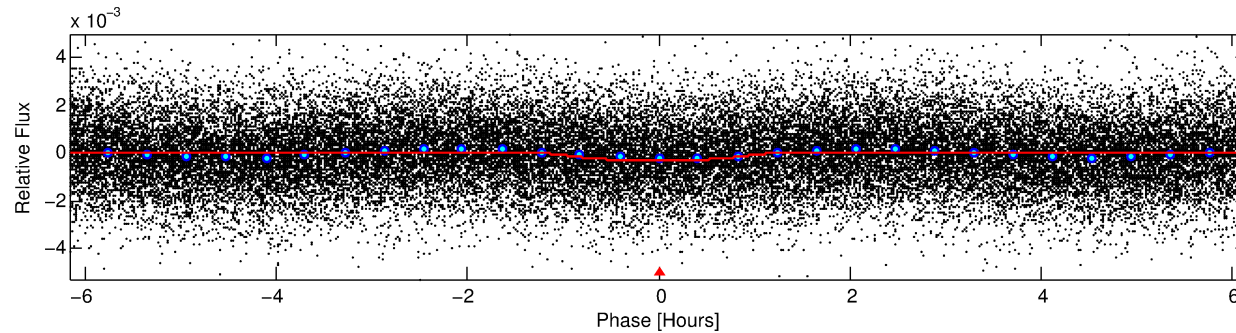
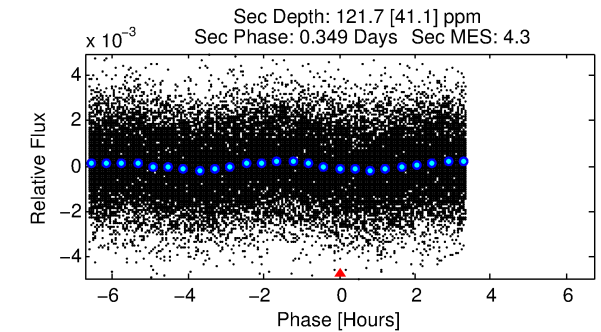
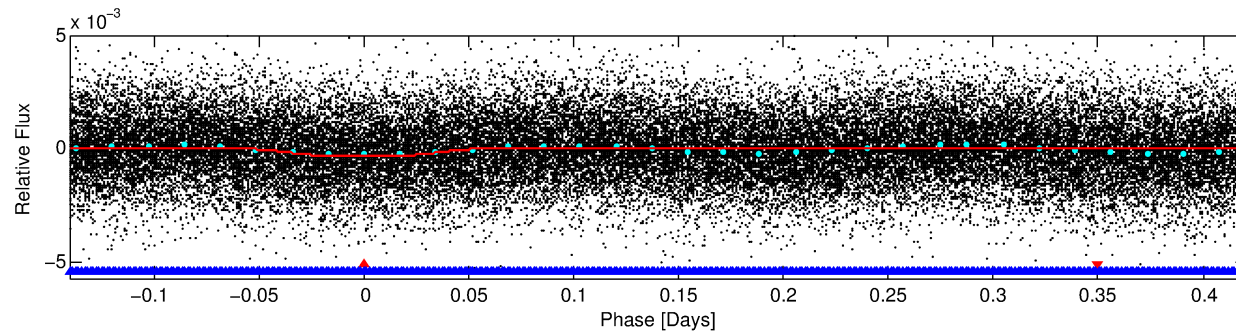
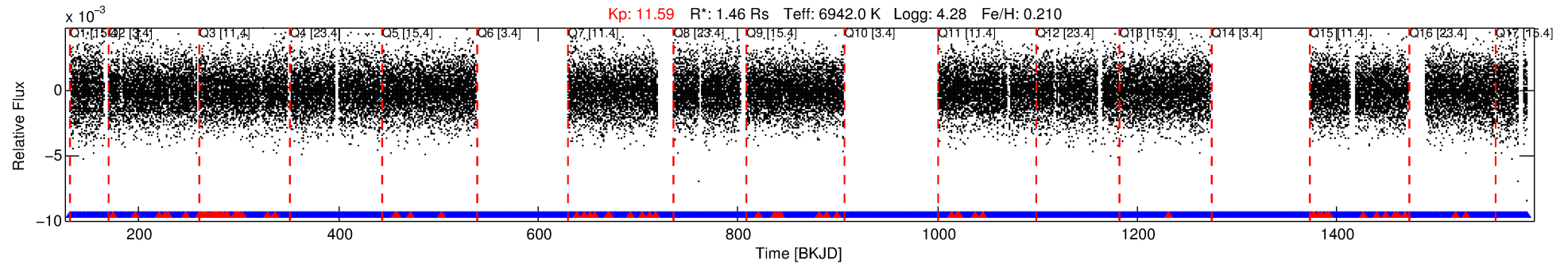
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003967333-01

No Significant Match Found

DV One-Page Summary

KIC: 3967333 Candidate: 1 of 2 Period: 0.562 d



DV Fit Results:

Period = 0.56186 [0.00001] d
Epoch = 131.8296 [0.0017] BKJD
Rp/R* = 0.0177 [0.0054]
a/R* = 1.37 [1.13]
b = 0.90 [0.38]
Seff = 19105.88 [7363.62]
Teq = 2998 [289] K
Rp = 2.81 [1.22] Re
a = 0.0152 [0.0038] AU
Ag = 1.96 [1.53] [0.63σ]
Teffp = 5483 [980] K [2.43σ]

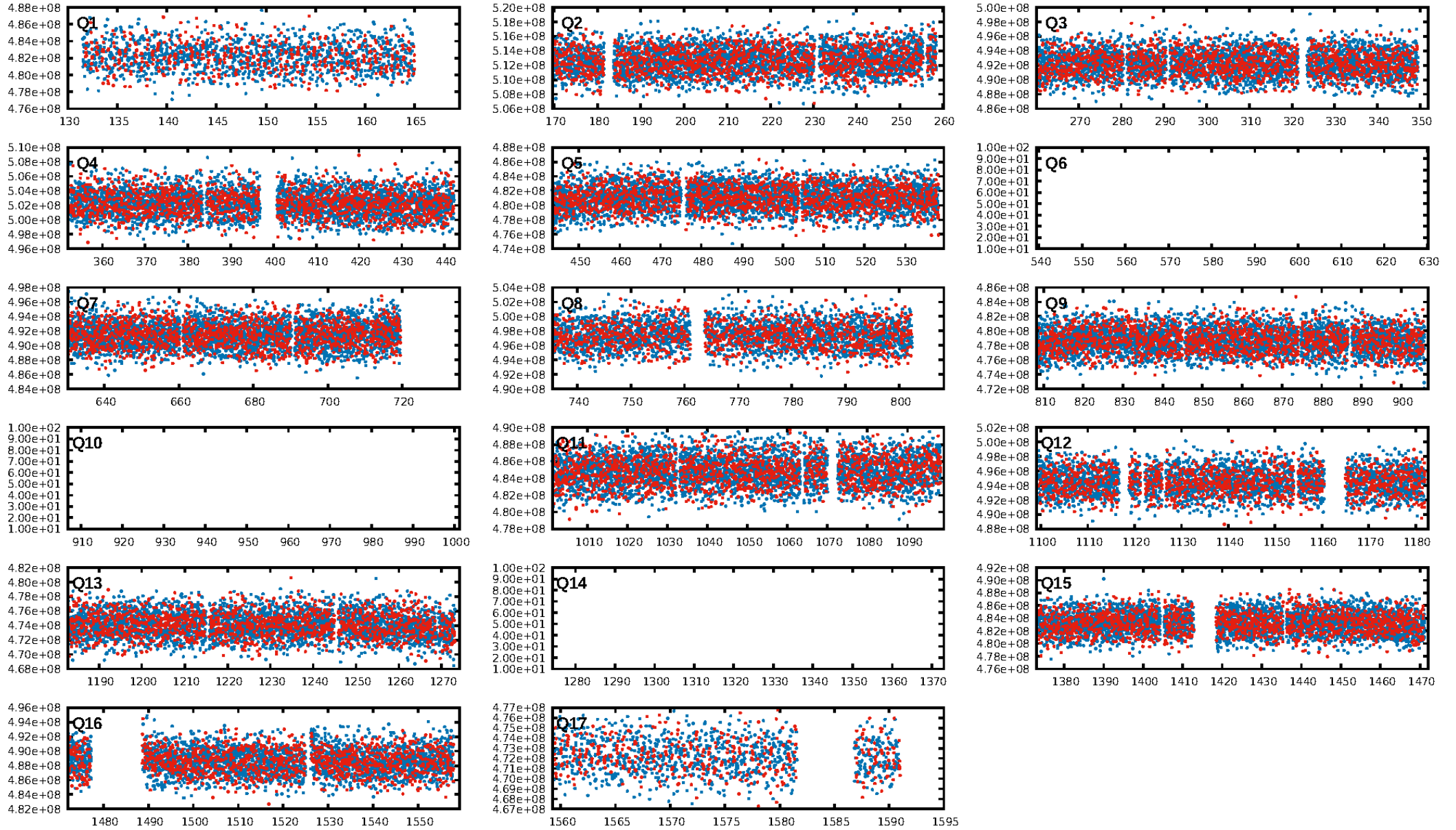
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [5.01σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.21e-35
RollingBand-fgt: 0.95 [1705/1795]
GhostDiagnostic-chr: 2.463
Centroid-sig: N/A
Centroid-so: 0.128 arcsec [2.38σ]
OotOffset-rm: 0.091 arcsec [0.57σ]
KicOffset-rm: 0.179 arcsec [1.18σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

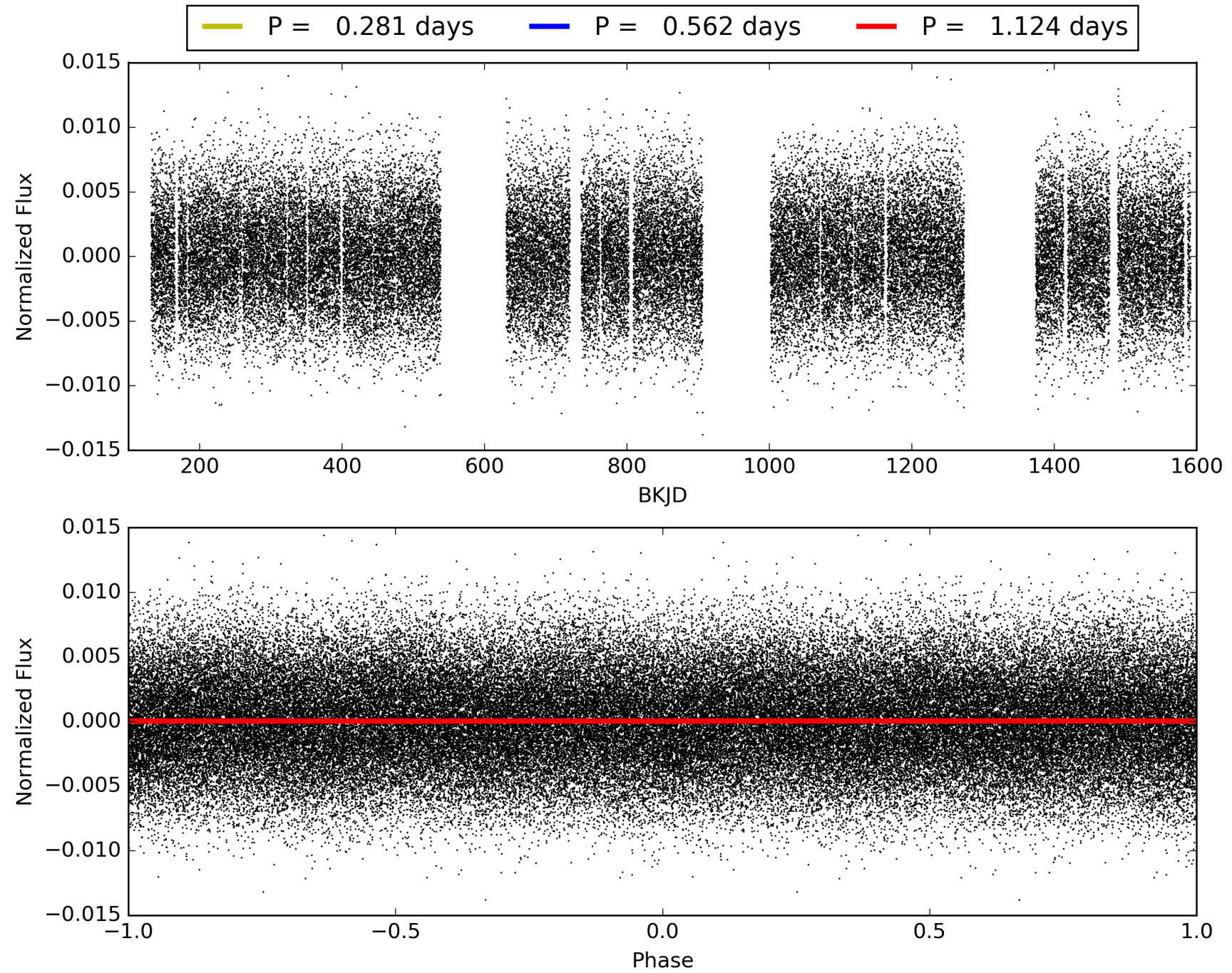
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:06:54 Z

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

TCE 003967333-01, PDC Light Curves

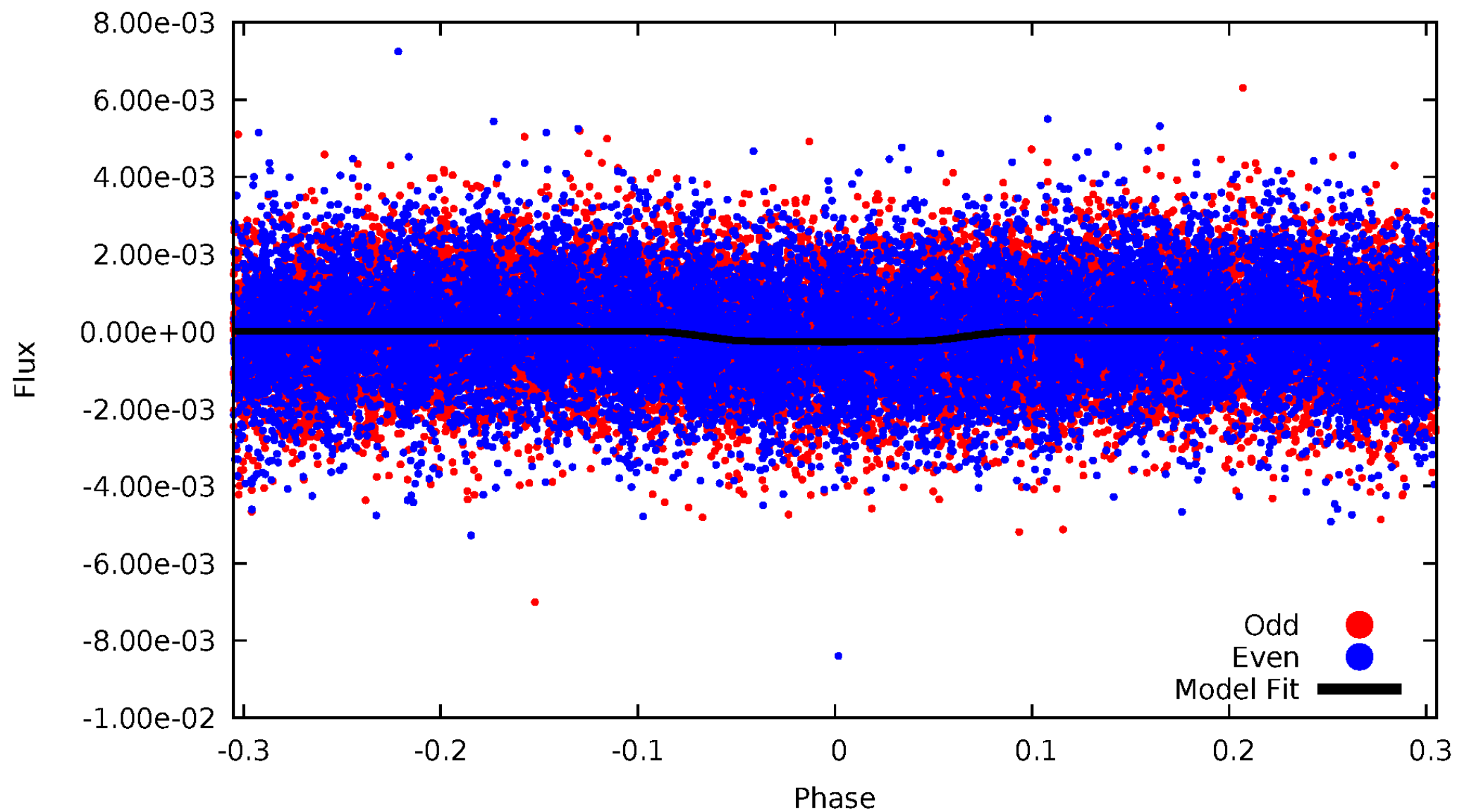


TCE 003967333-01



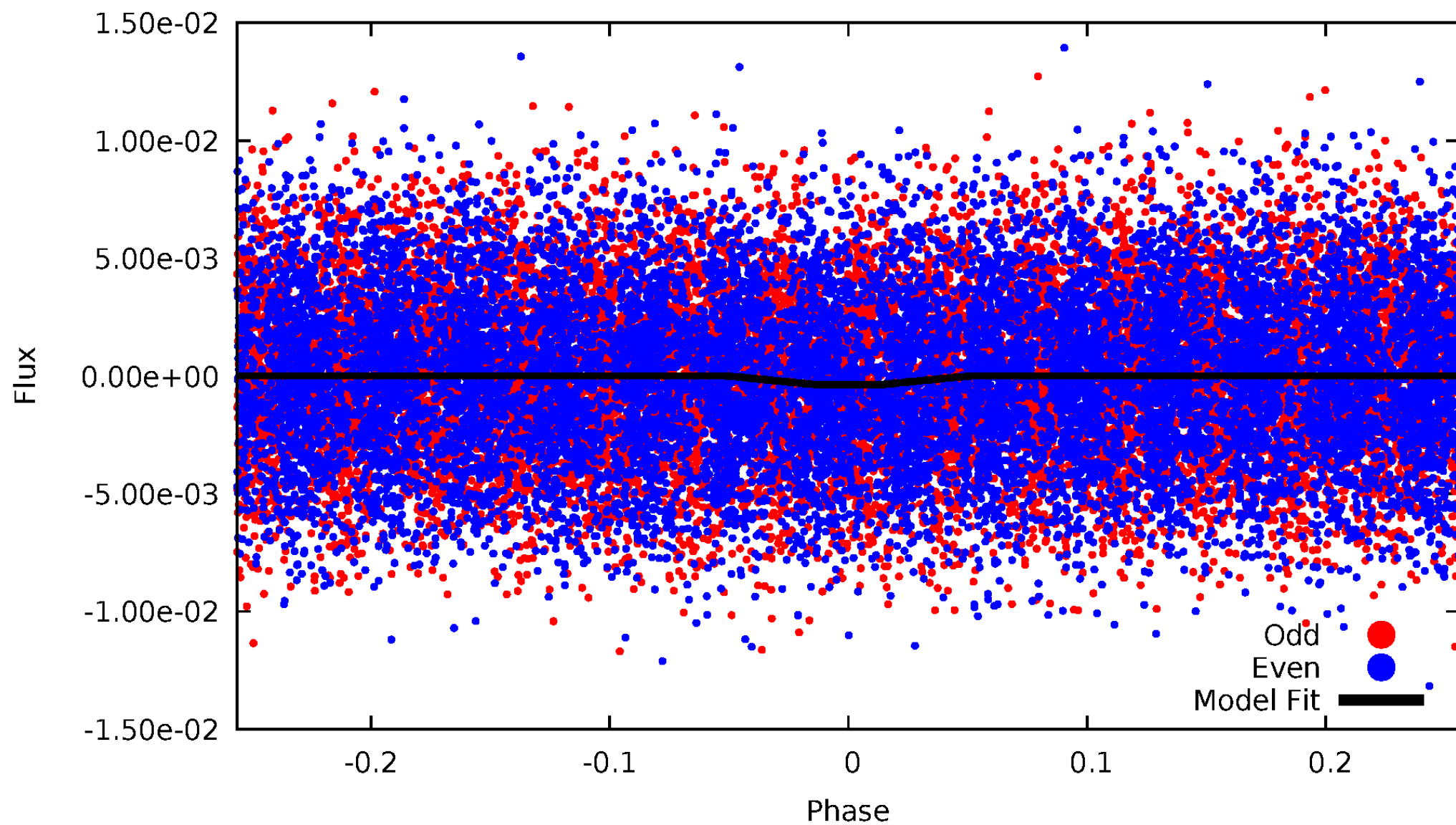
DV Odd/Even

TCE 003967333-01



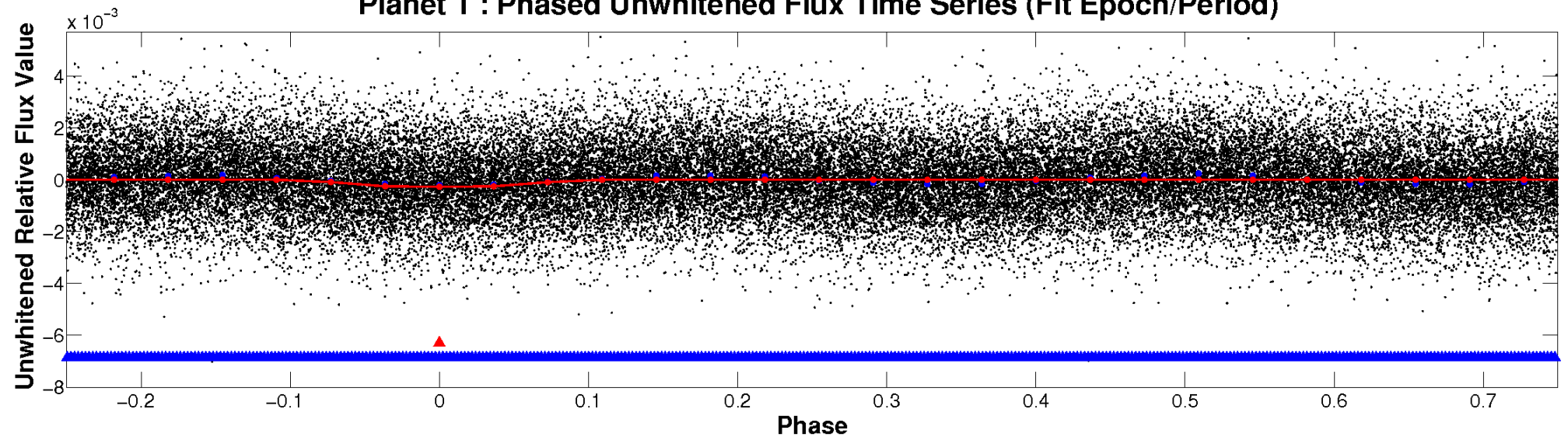
ALT Odd/Even

TCE 003967333-01

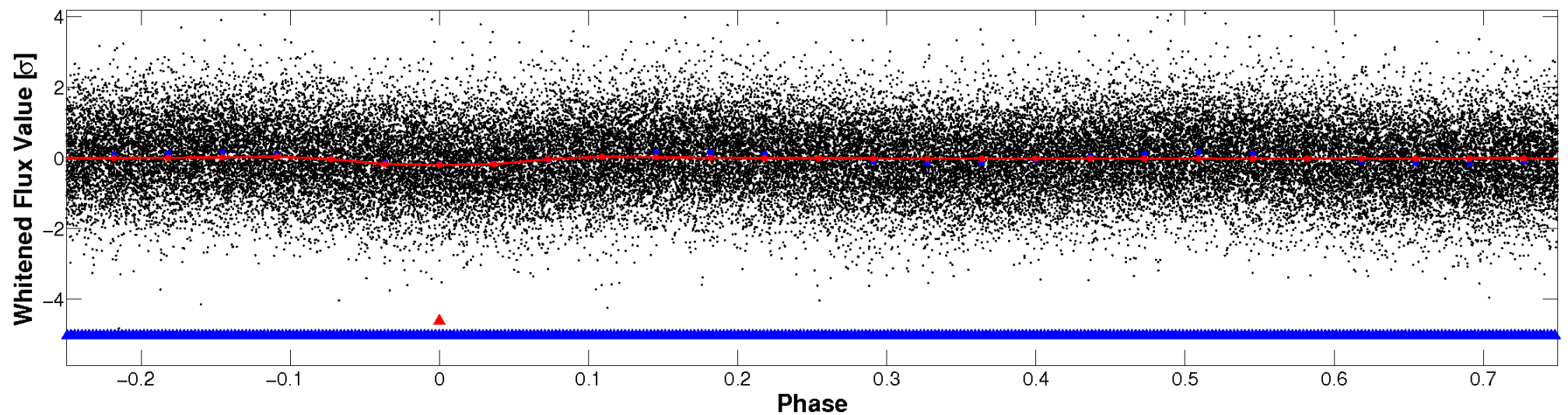


Non-Whitened Vs. Whitened Light Curve

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

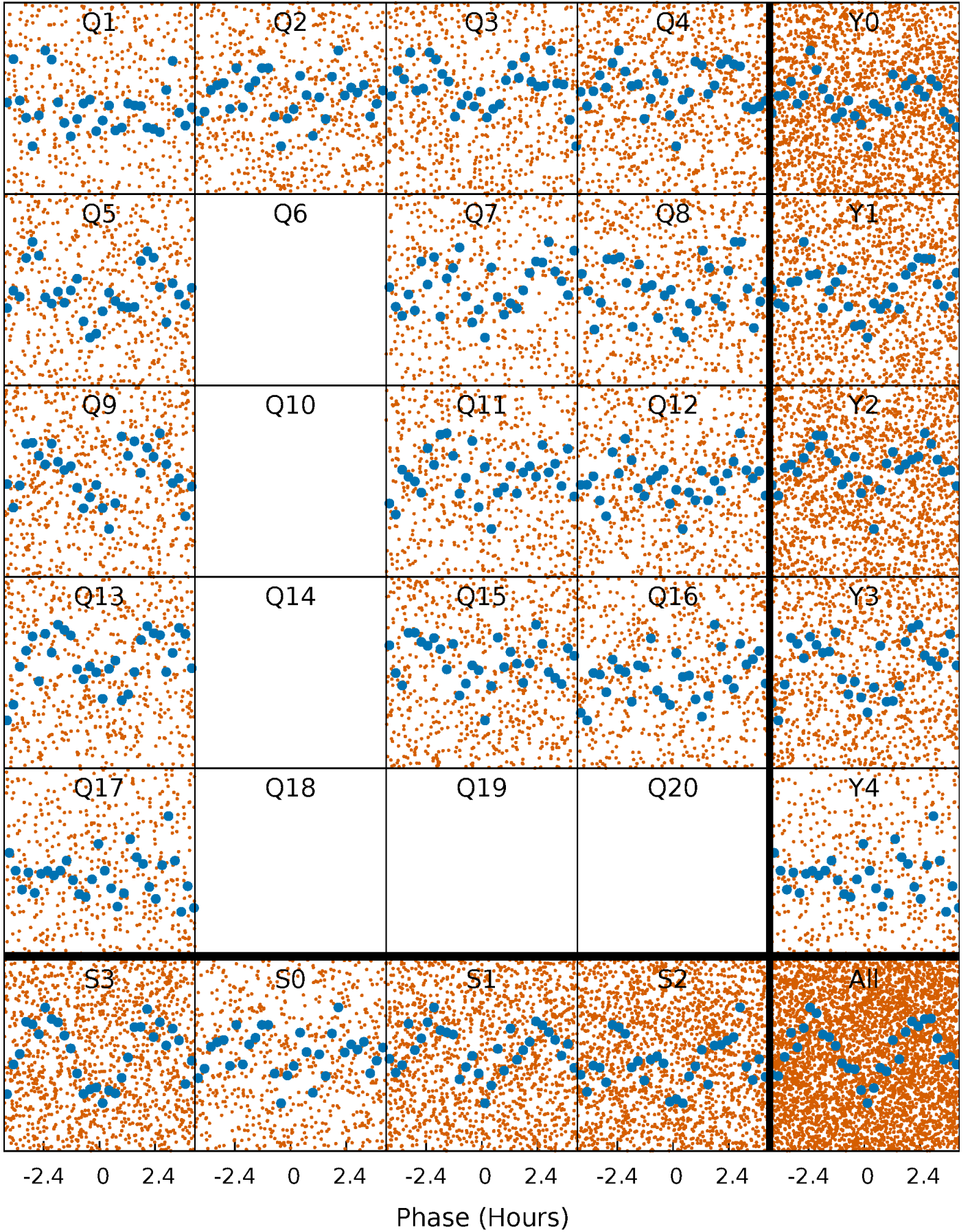


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



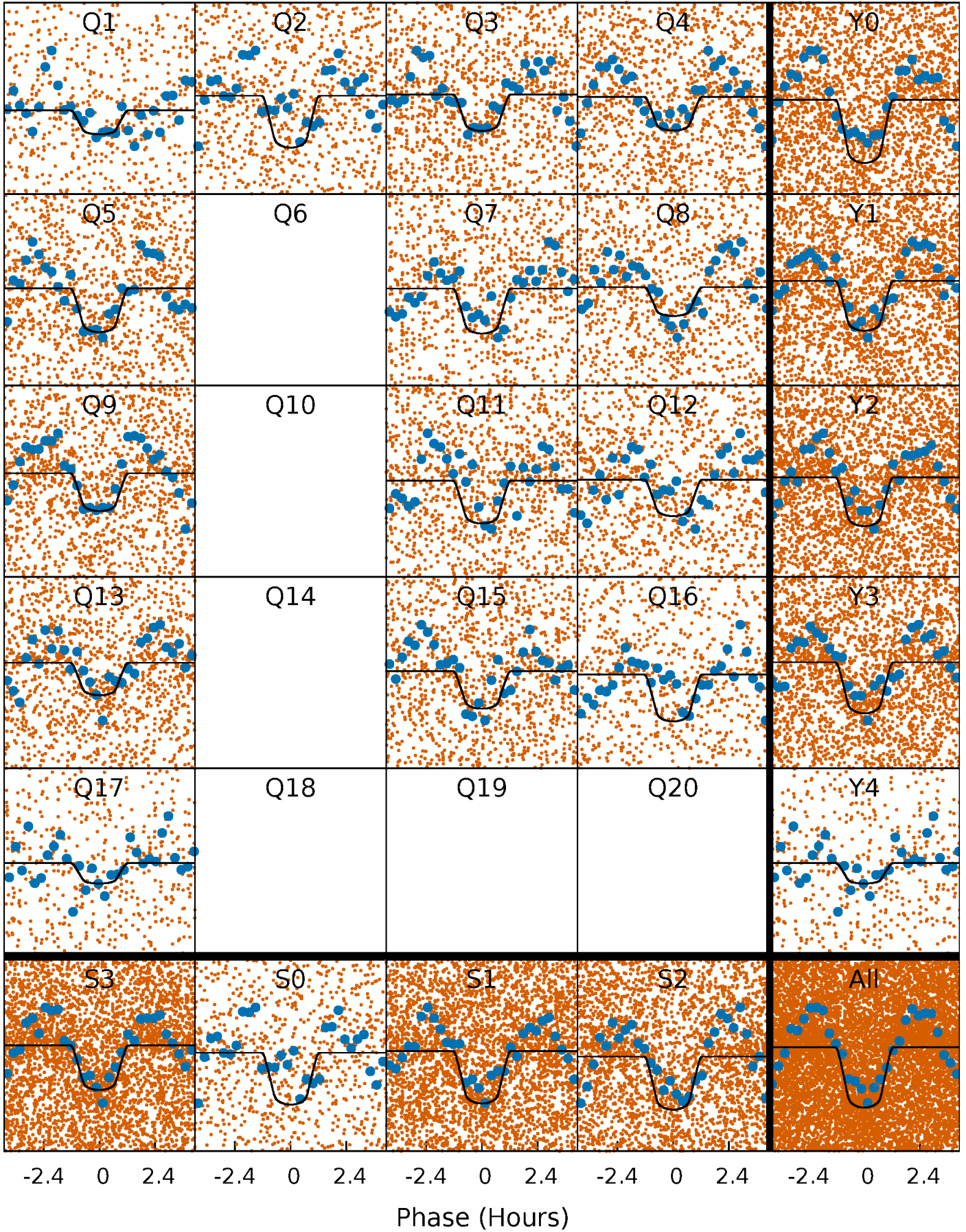
PDC Quarter-Phased Transit Curves

TCE 003967333-01 P= 0.561860 Days $T_0=131.829648$ (BKJD)



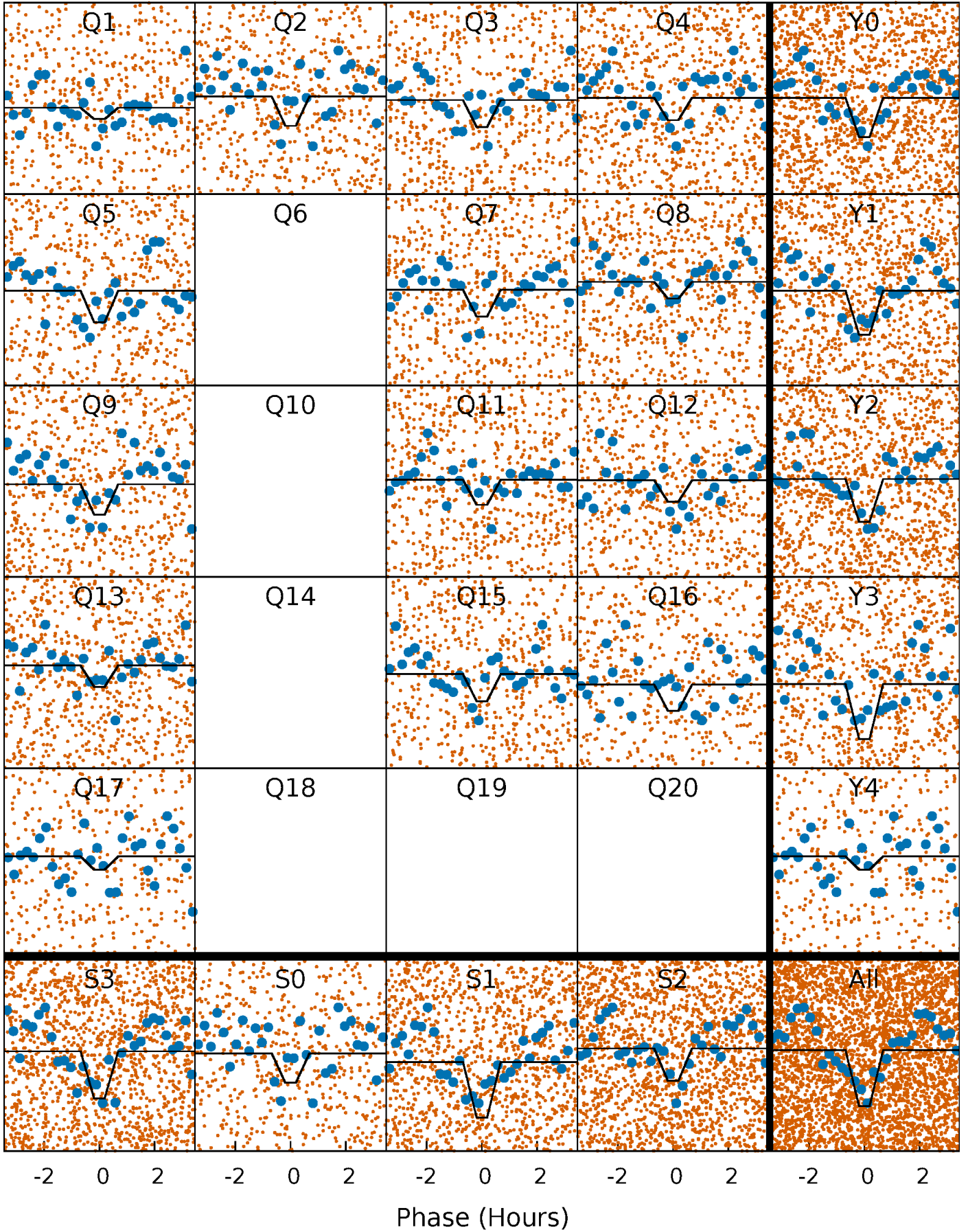
DV Quarter-Phased Transit Curves

TCE 003967333-01 P= 0.561860 Days $T_0=131.829648$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

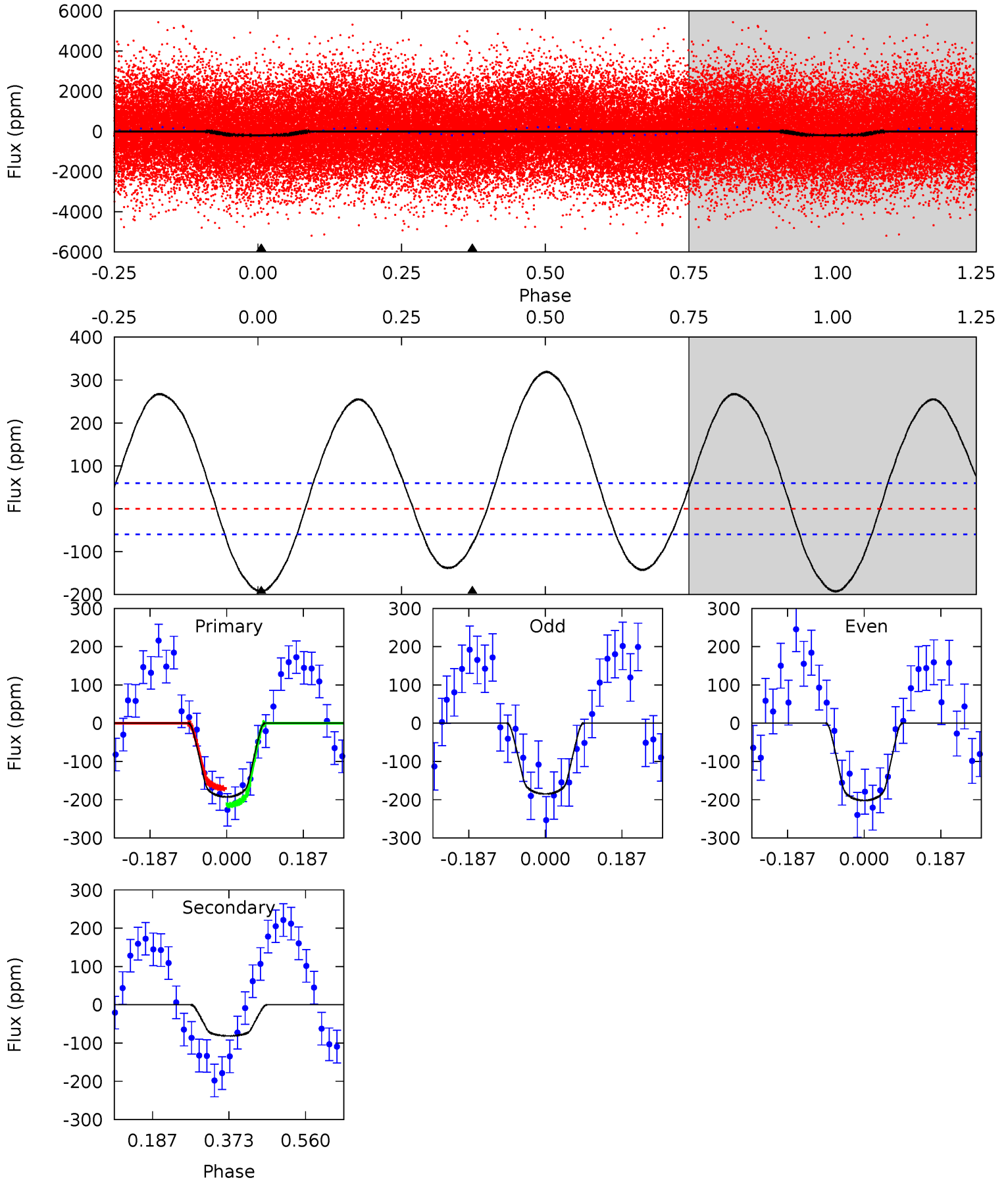
TCE 003967333-01 P= 0.561866 Days $T_0=131.830450$ (BKJD)



DV Model-Shift Uniqueness Test

003967333-01, P = 0.561860 Days, E = 131.267788 Days

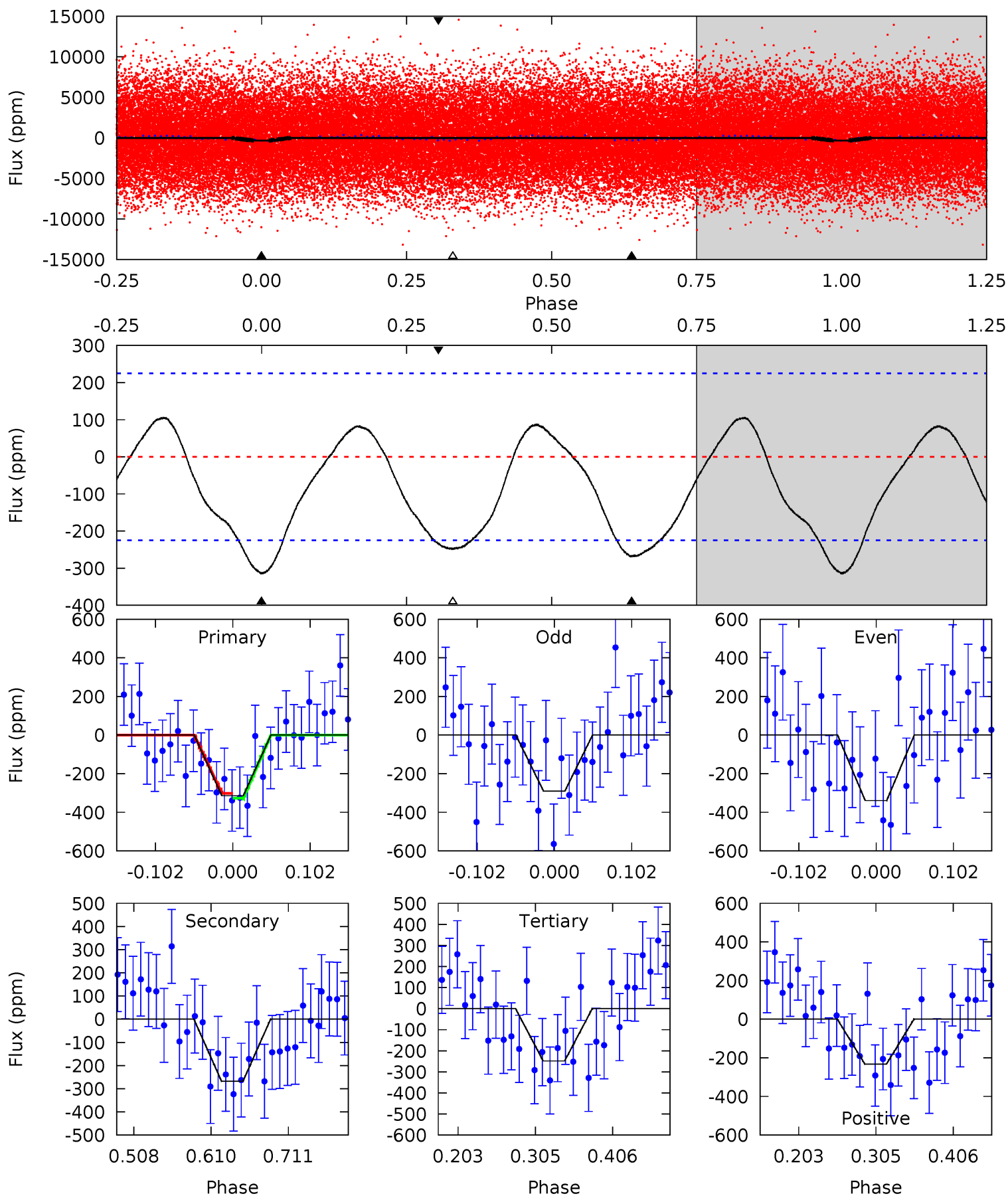
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	6.03	0	0	4.43	1.32	9.50	14.3	14.3	6.03	6.03	0.64	1.07	0.62	1.64



Alt Model-Shift Uniqueness Test

003967333-01, P = 0.561866 Days, E = 131.268584 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.37	5.44	5.04	-4.73	4.56	1.64	2.30	1.34	11.1	0.40	10.2	0.51	0.95	0.25	0.25



Stellar Parameters For KIC 003967333

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6942^{+144}_{-267}	$4.283^{+0.062}_{-0.188}$	$0.210^{+0.150}_{-0.350}$	$1.458^{+0.446}_{-0.178}$	$1.488^{+0.185}_{-0.185}$	$0.675^{+0.218}_{-0.339}$
	+2%/-4%	+1%/-4%	+71%/-167%	+31%/-12%	+12%/-12%	+32%/-50%
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 003967333-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-81 ± 13	$2.95^{+0.94}_{-0.83}$	4256^{+269}_{-206}	4694^{+937}_{-728}	$1.162^{+1.143}_{-0.511}$
Alt.	-268 ± 49	$3.17^{+1.01}_{-1.02}$	4234^{+280}_{-200}	6200^{+1494}_{-903}	$3.353^{+3.834}_{-1.455}$

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 $A_{obs} \gg 1.0$

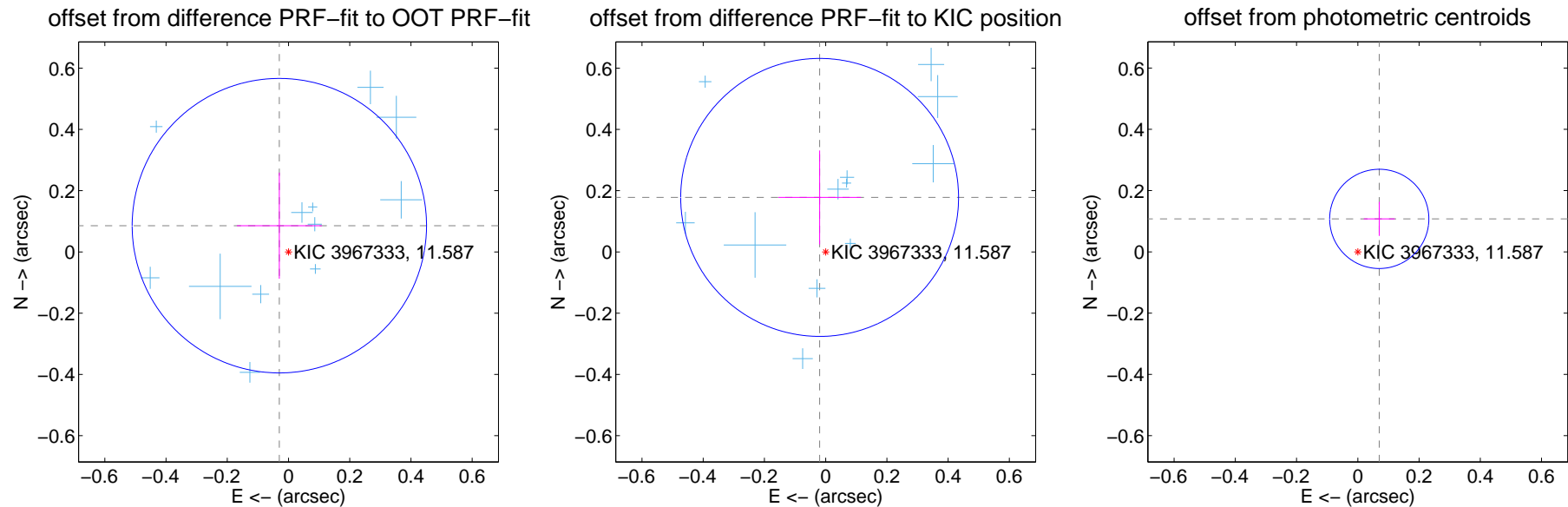
DV Centroid Data

Supplemental centroid analysis for 003967333-01. **Kepler magnitude: 11.59.** Transit SNR 14.04

There are 14 quarters with good PRF difference image offsets

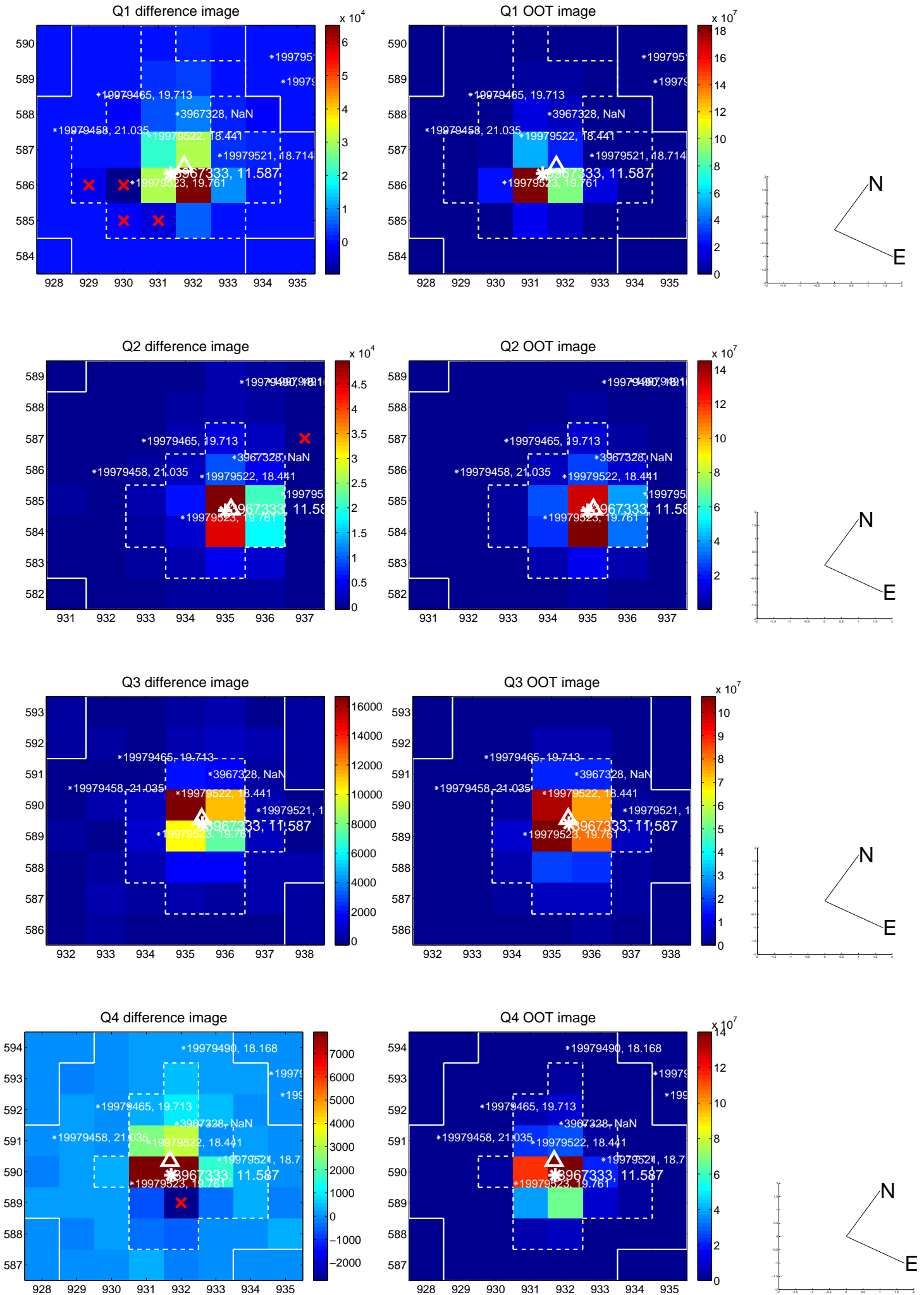
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.091 ± 0.160	0.57	0.030 ± 0.139	0.086 ± 0.173
PRF-fit source offset from KIC position	0.179 ± 0.151	1.18	0.020 ± 0.135	0.178 ± 0.153
photometric centroid source offset	0.13 ± 0.05	2.38	-0.07 ± 0.05	0.11 ± 0.06

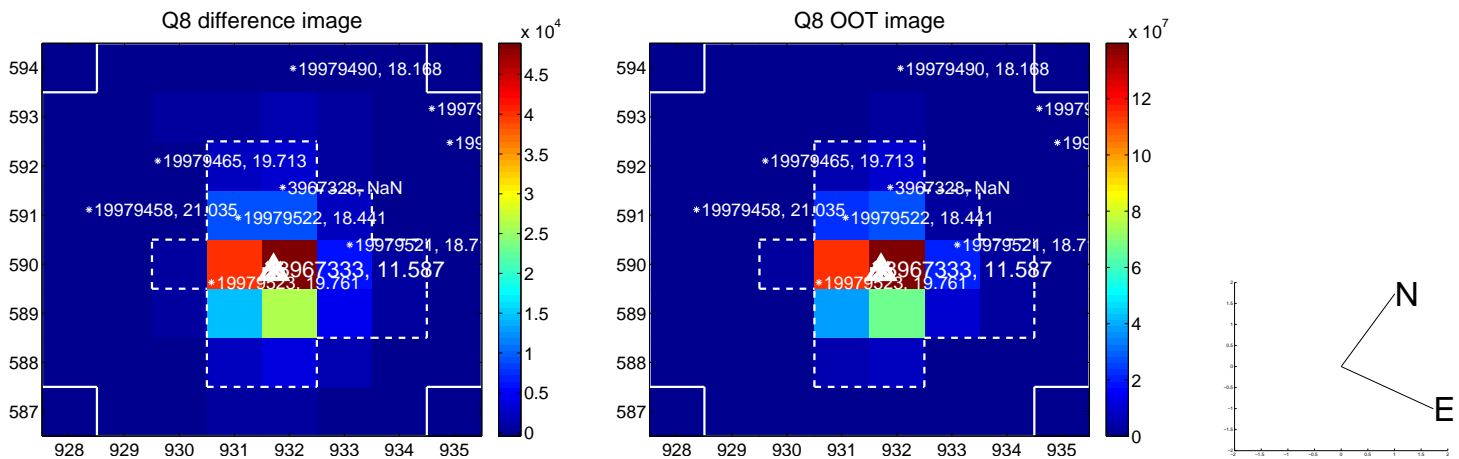
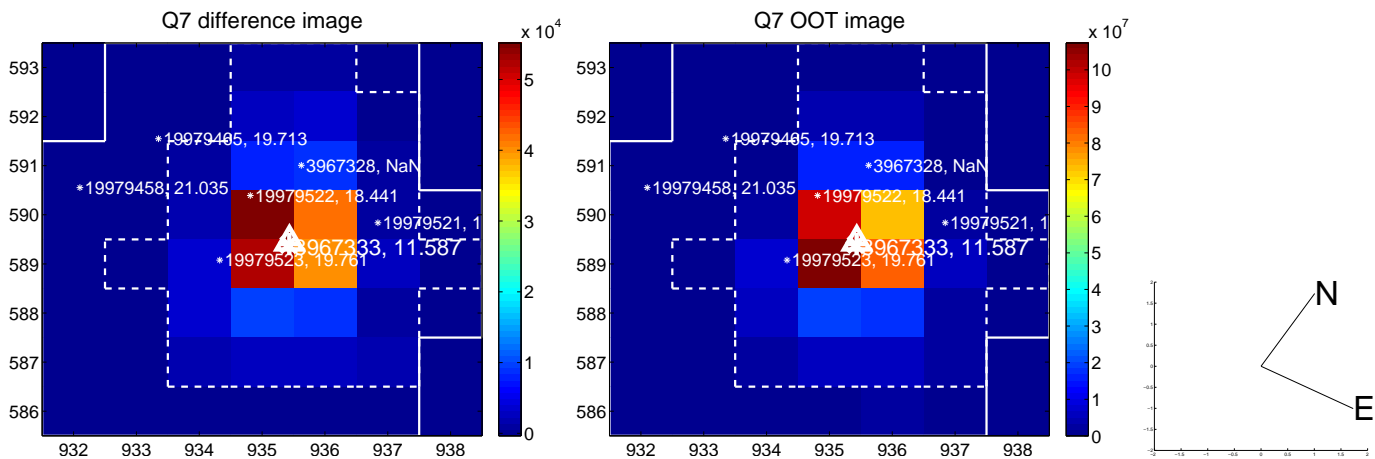
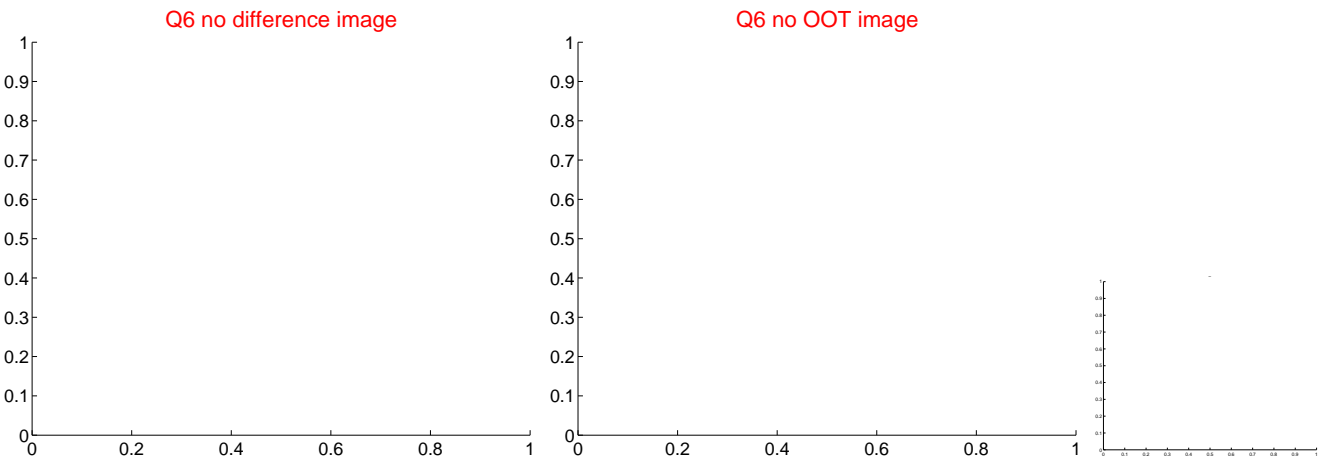
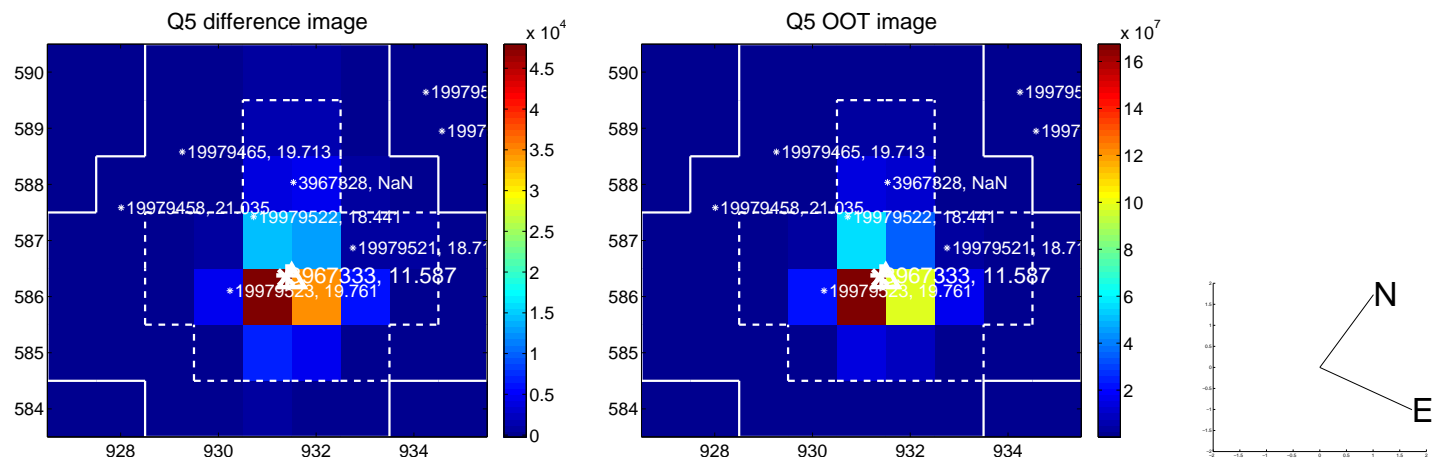


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

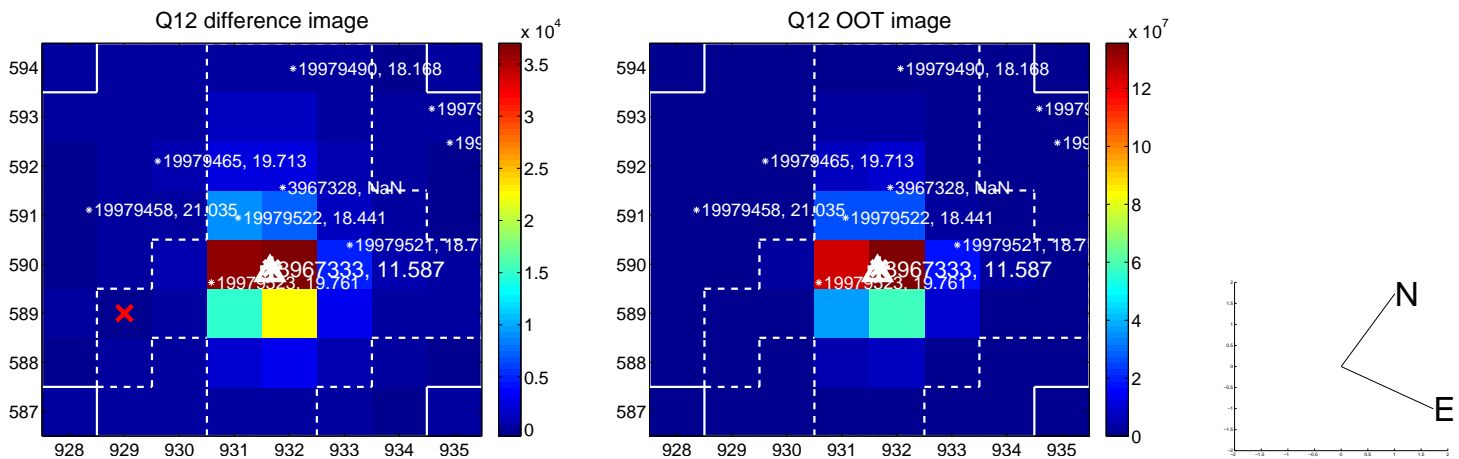
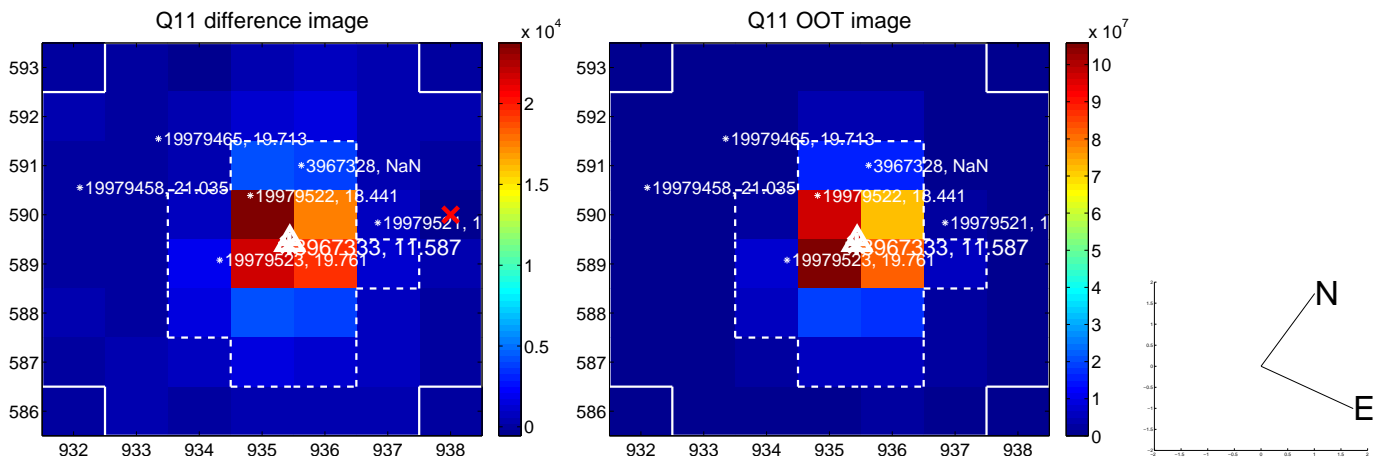
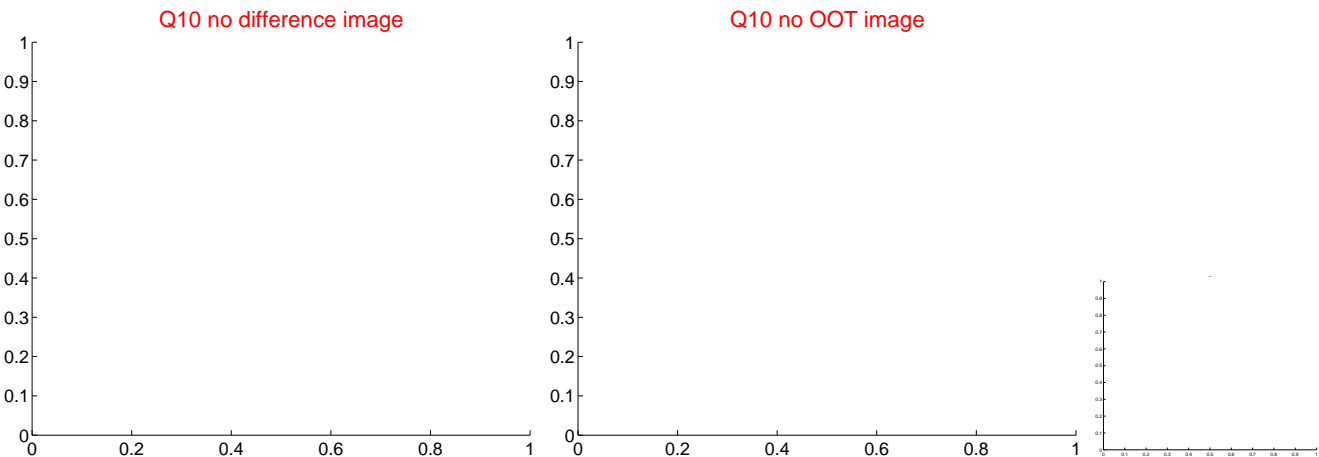
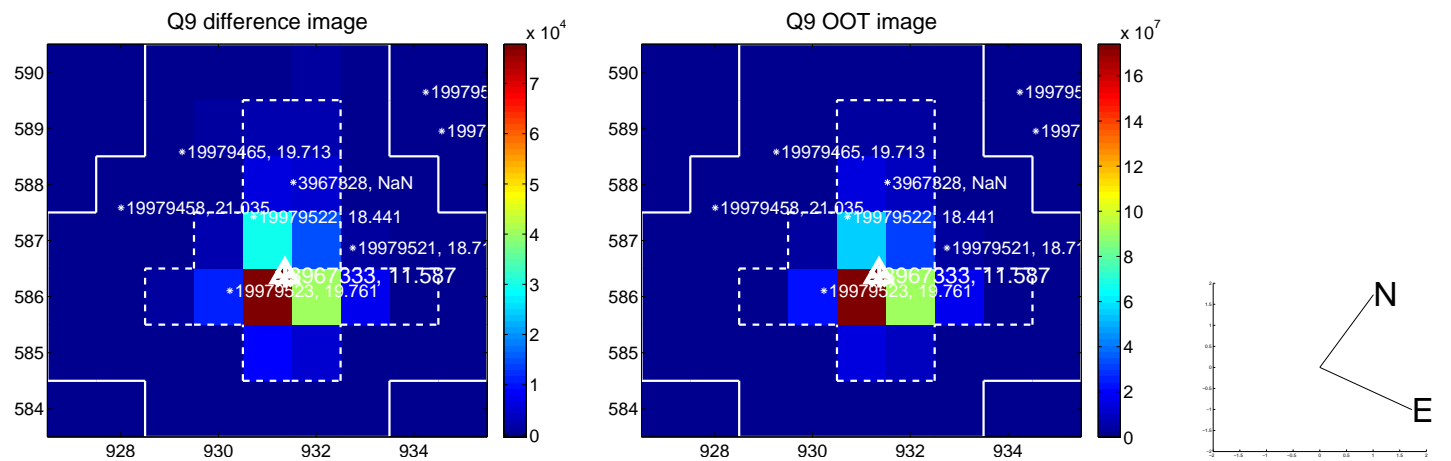
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



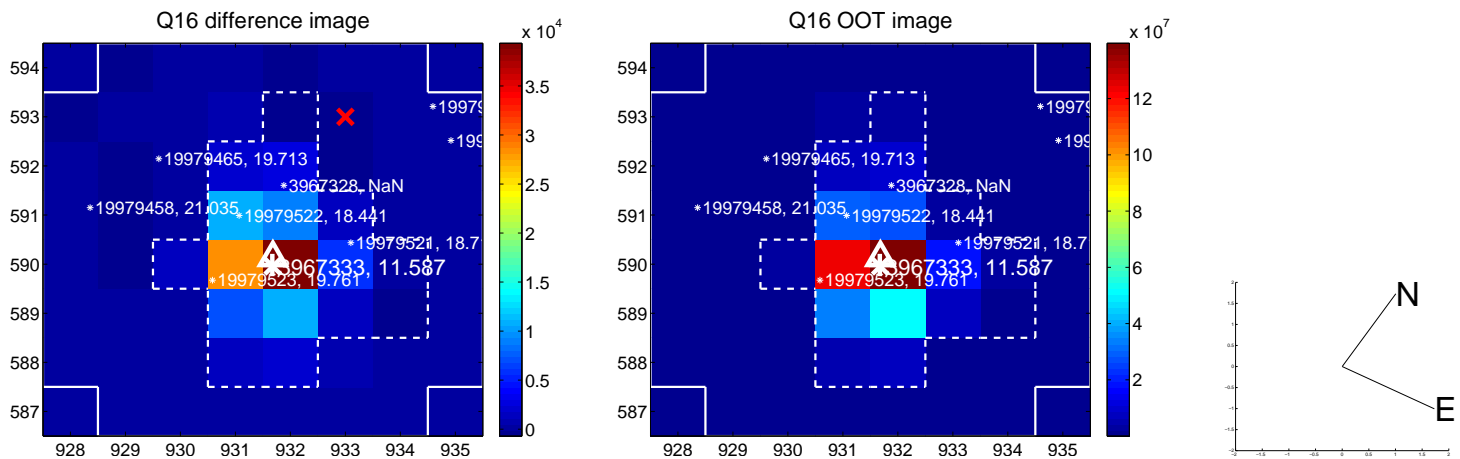
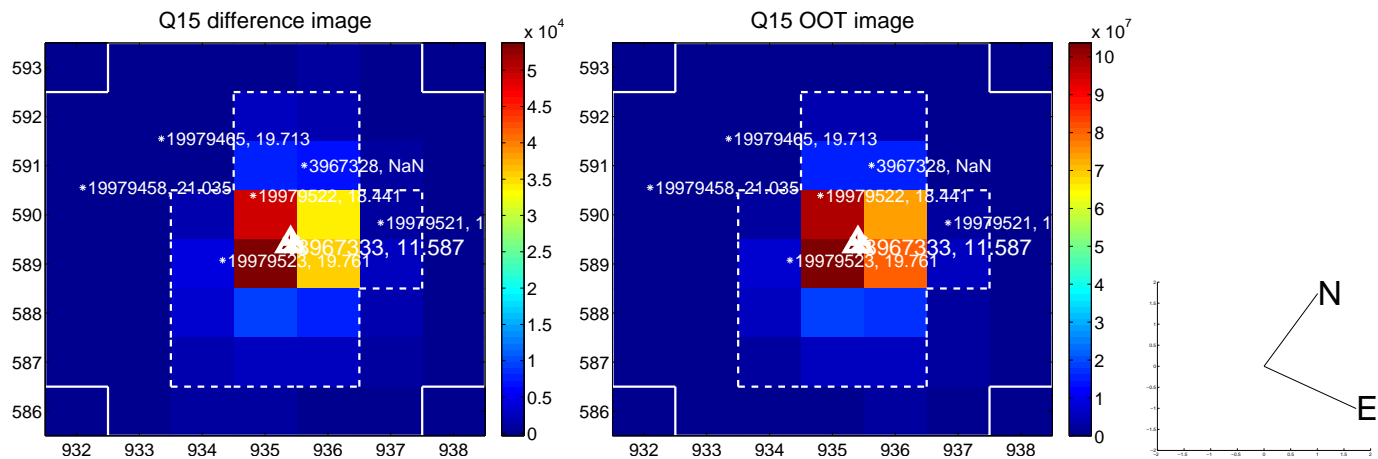
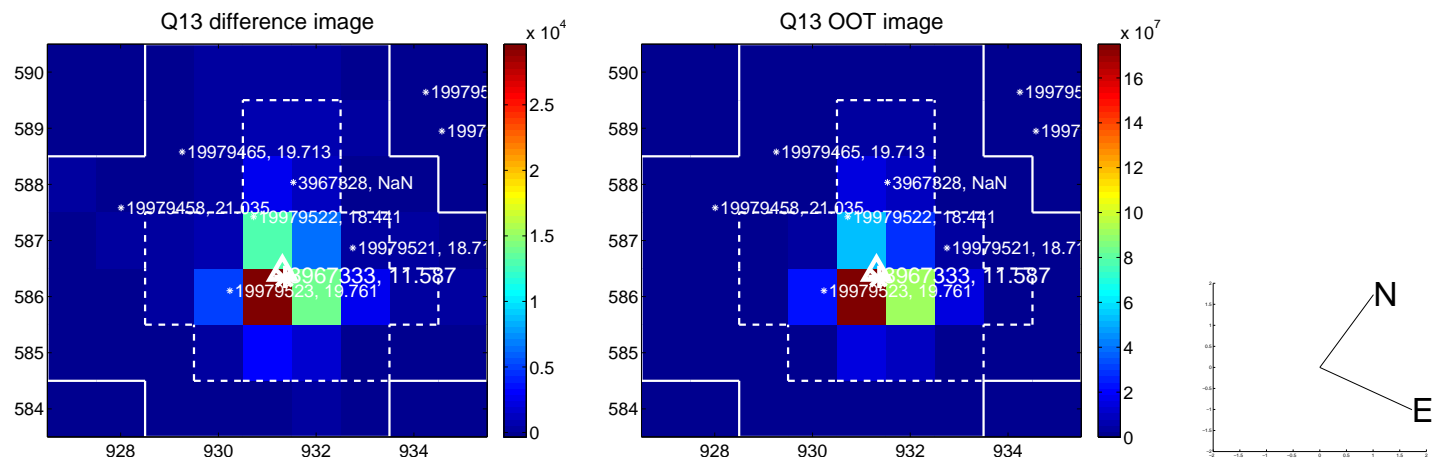
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



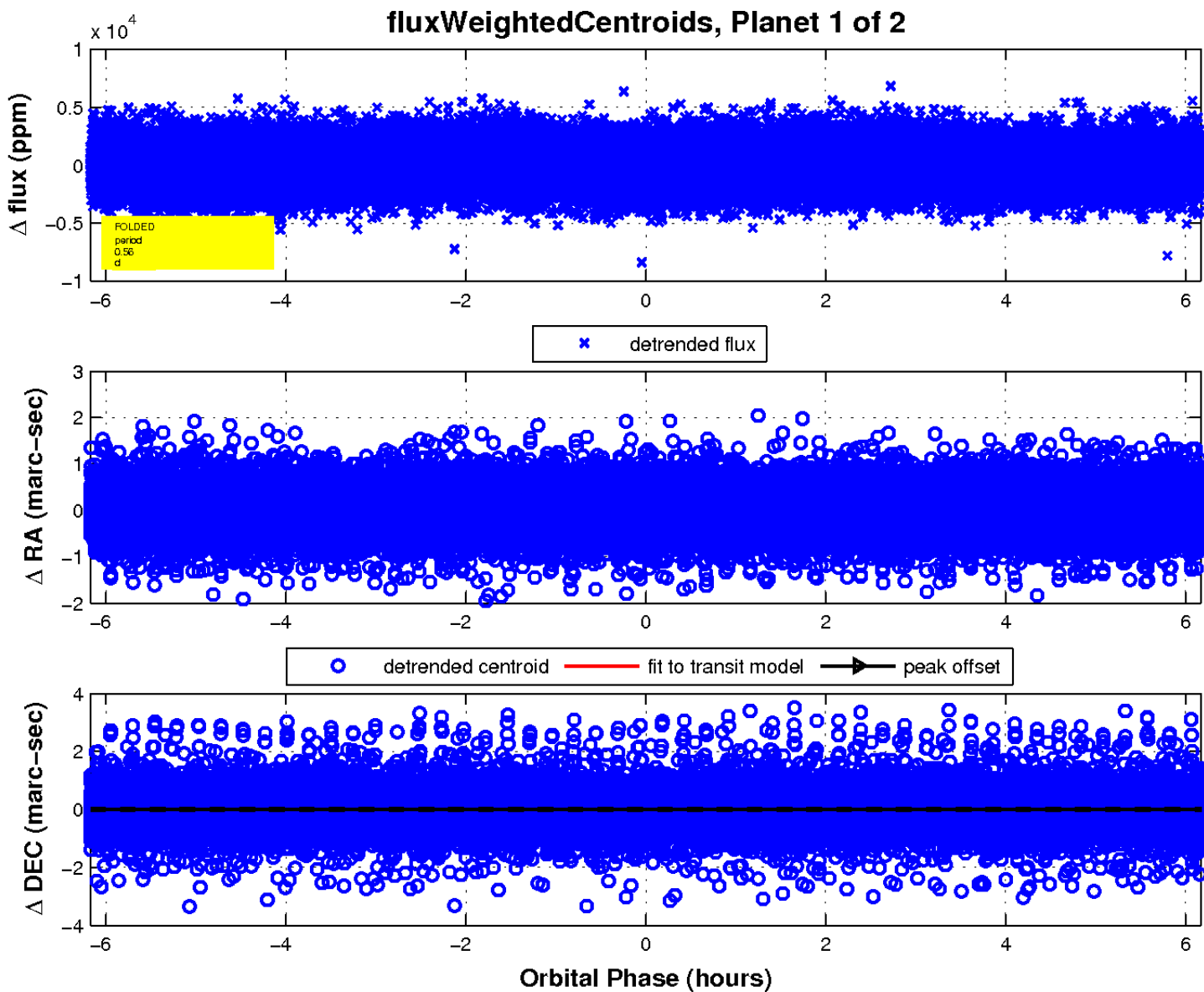
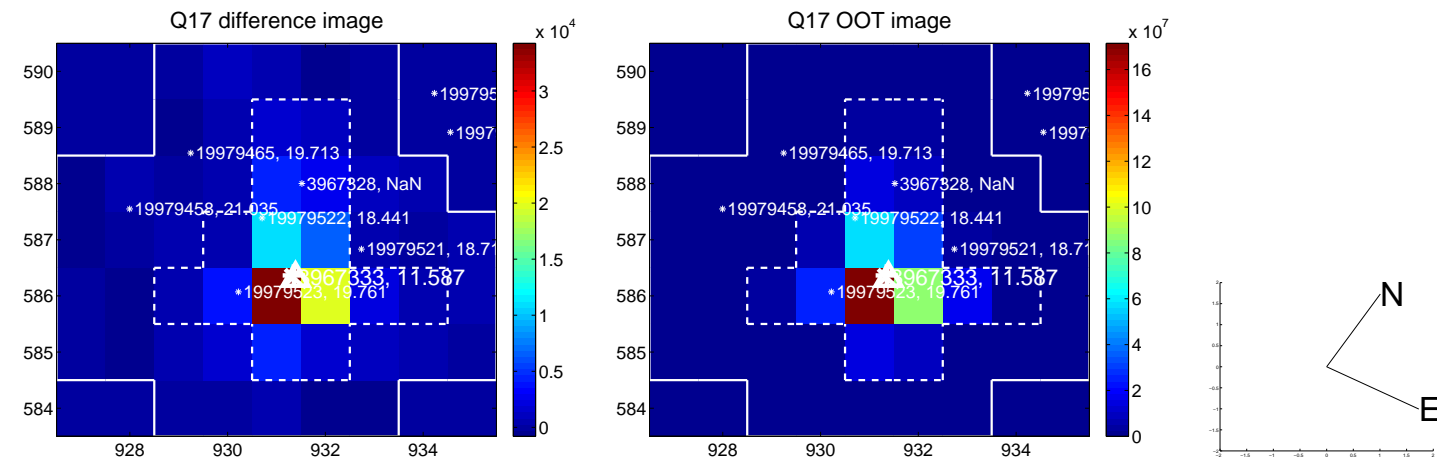
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



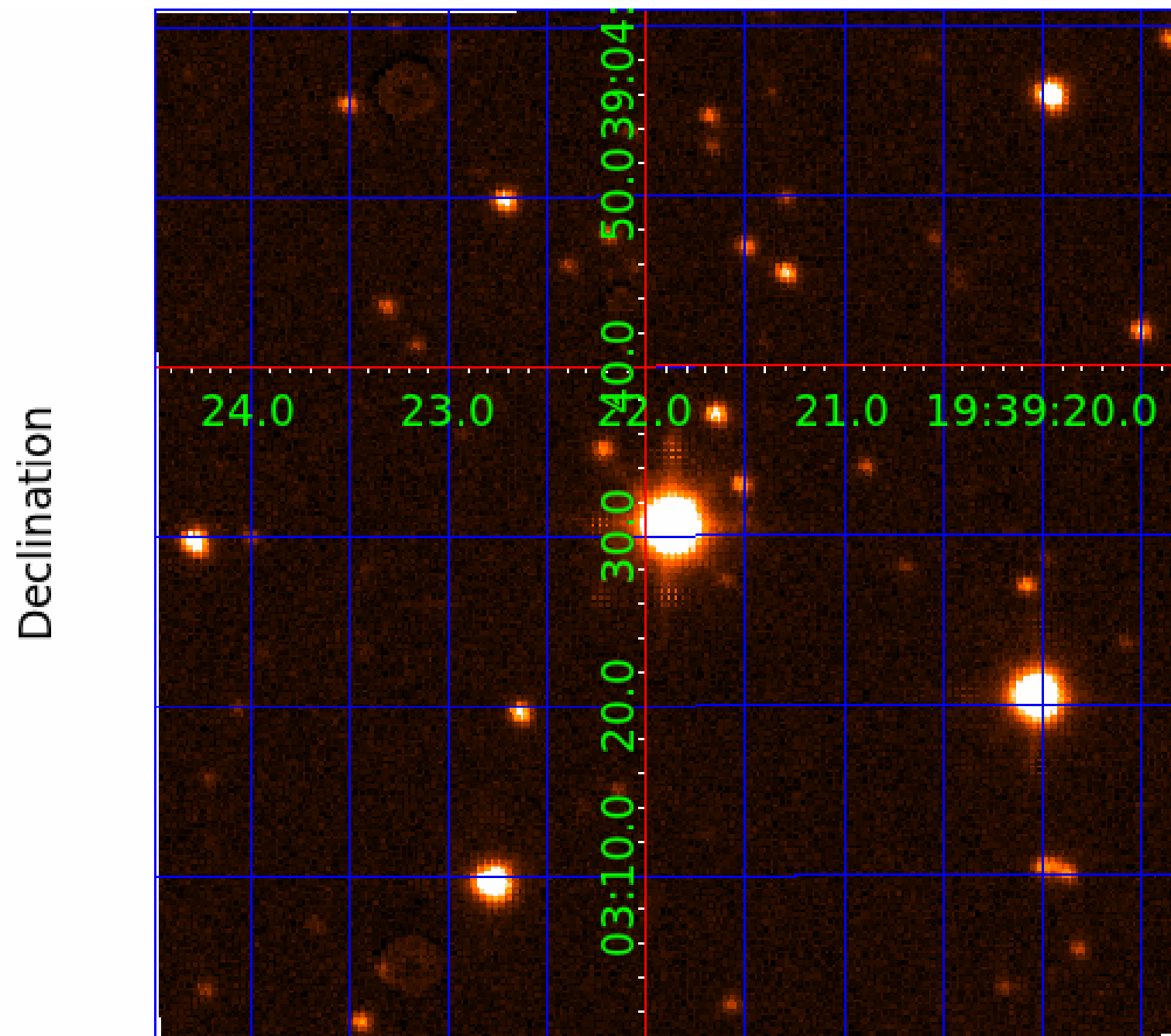
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003967333

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})
003967333-01	OBS	No	0.561860	131.829649	274.0	2.057	11.9	14.0	1.46	6942	2.81	19105.88
003967333-02	OBS	No	2.088086	132.175756	527.6	7.010	10.8	13.9	1.46	6942	4.25	3319.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003967333-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003967333-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—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.

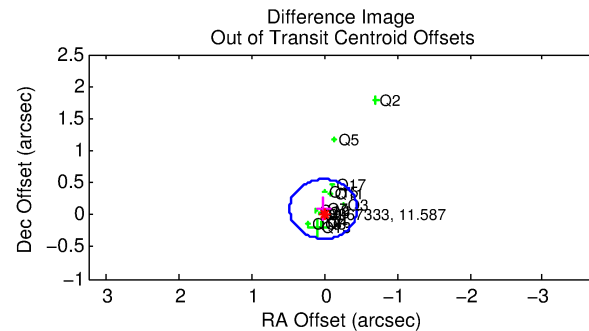
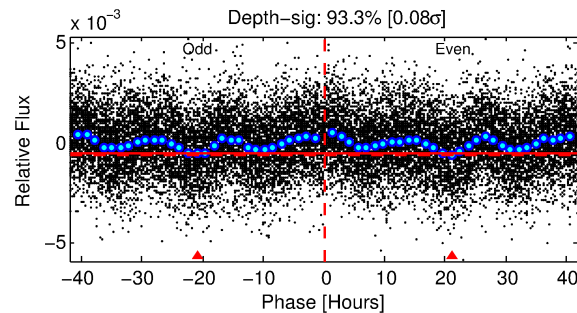
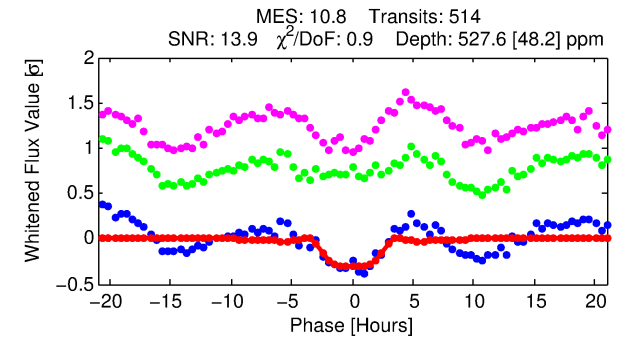
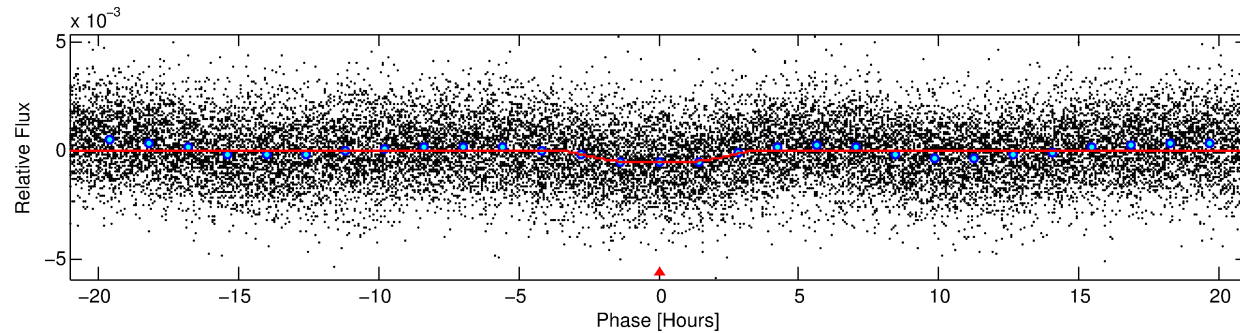
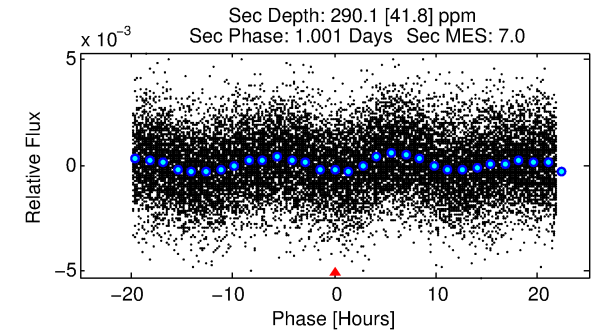
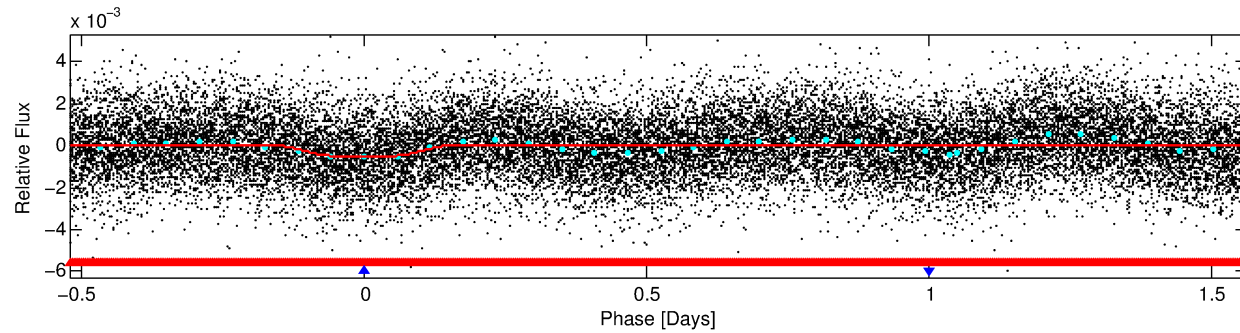
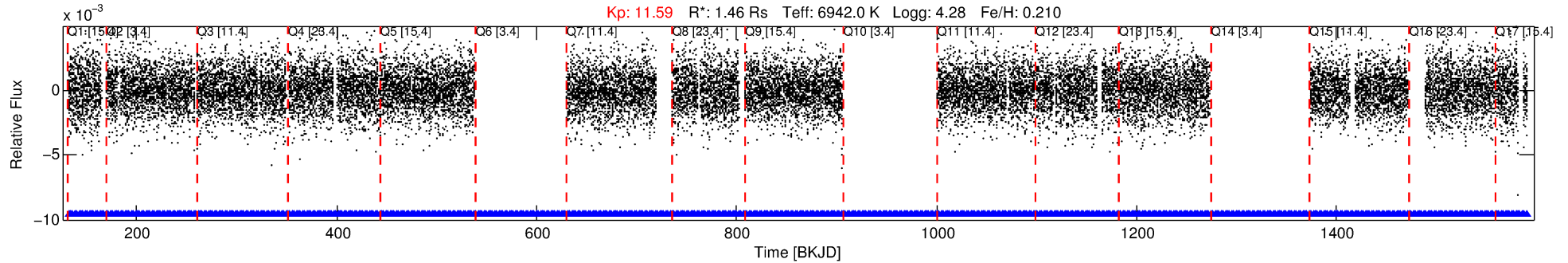
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003967333-02

No Significant Match Found

DV One-Page Summary

KIC: 3967333 Candidate: 2 of 2 Period: 2.088 d



DV Fit Results:

Period = 2.08809 [0.00003] d
Epoch = 132.1758 [0.0087] BKJD
Rp/R* = 0.0267 [0.0016]
a/R* = 1.27 [0.07]
b = 0.97 [0.01]
Seff = 3319.00 [1279.18]
Teff = 1935 [186] K
Rp = 4.25 [1.32] Re
a = 0.0365 [0.0091] AU
Ag = 11.79 [4.71] [2.29σ]
Teffp = 5545 [336] K [9.40σ]

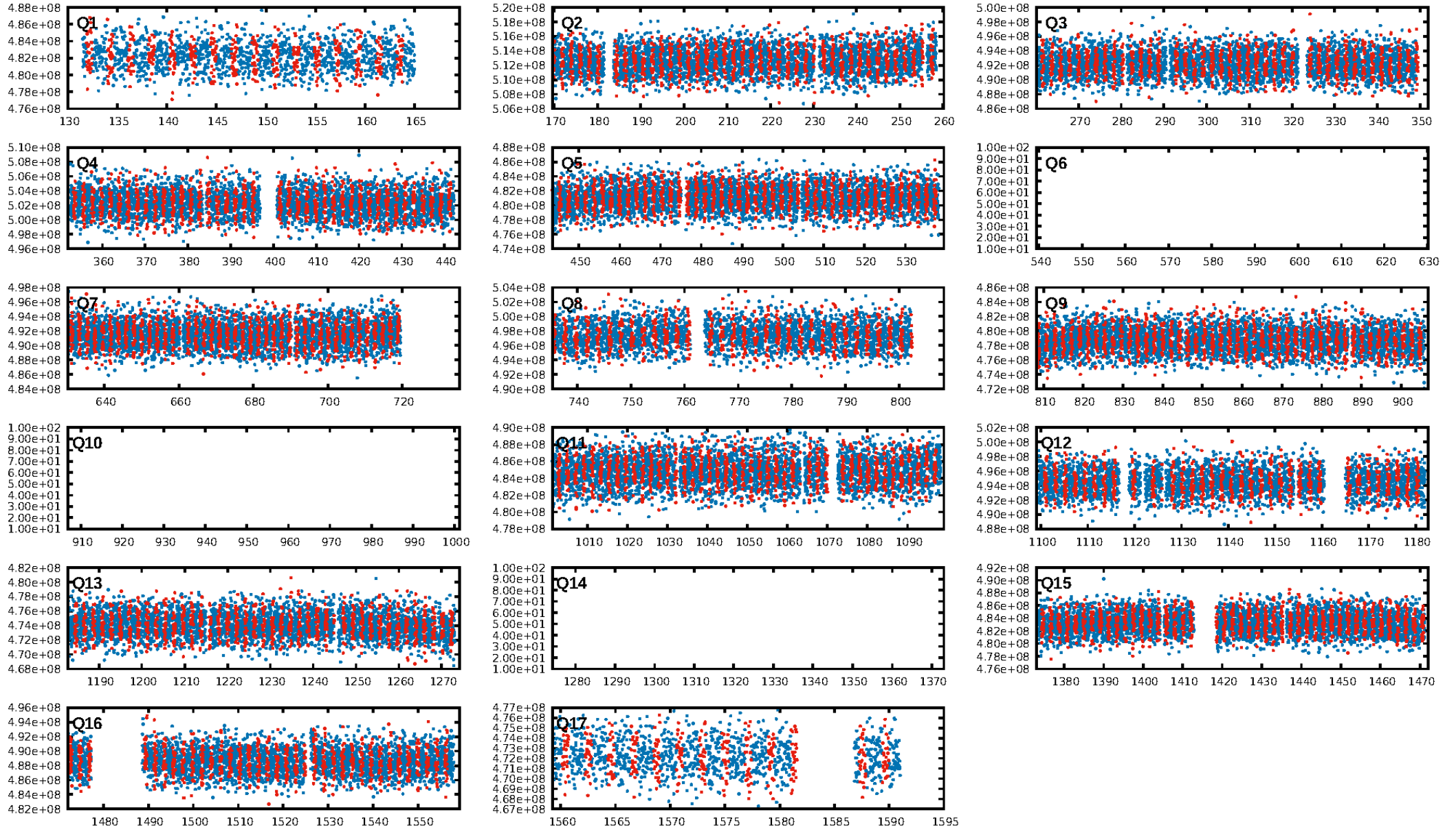
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.01σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.93e-27
RollingBand-fgt: 1.00 [485/485]
GhostDiagnostic-chr: 0.9792
Centroid-sig: N/A
Centroid-so: 0.094 arcsec [2.65σ]
OotOffset-rm: 0.092 arcsec [0.59σ]
KicOffset-rm: 0.168 arcsec [1.07σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

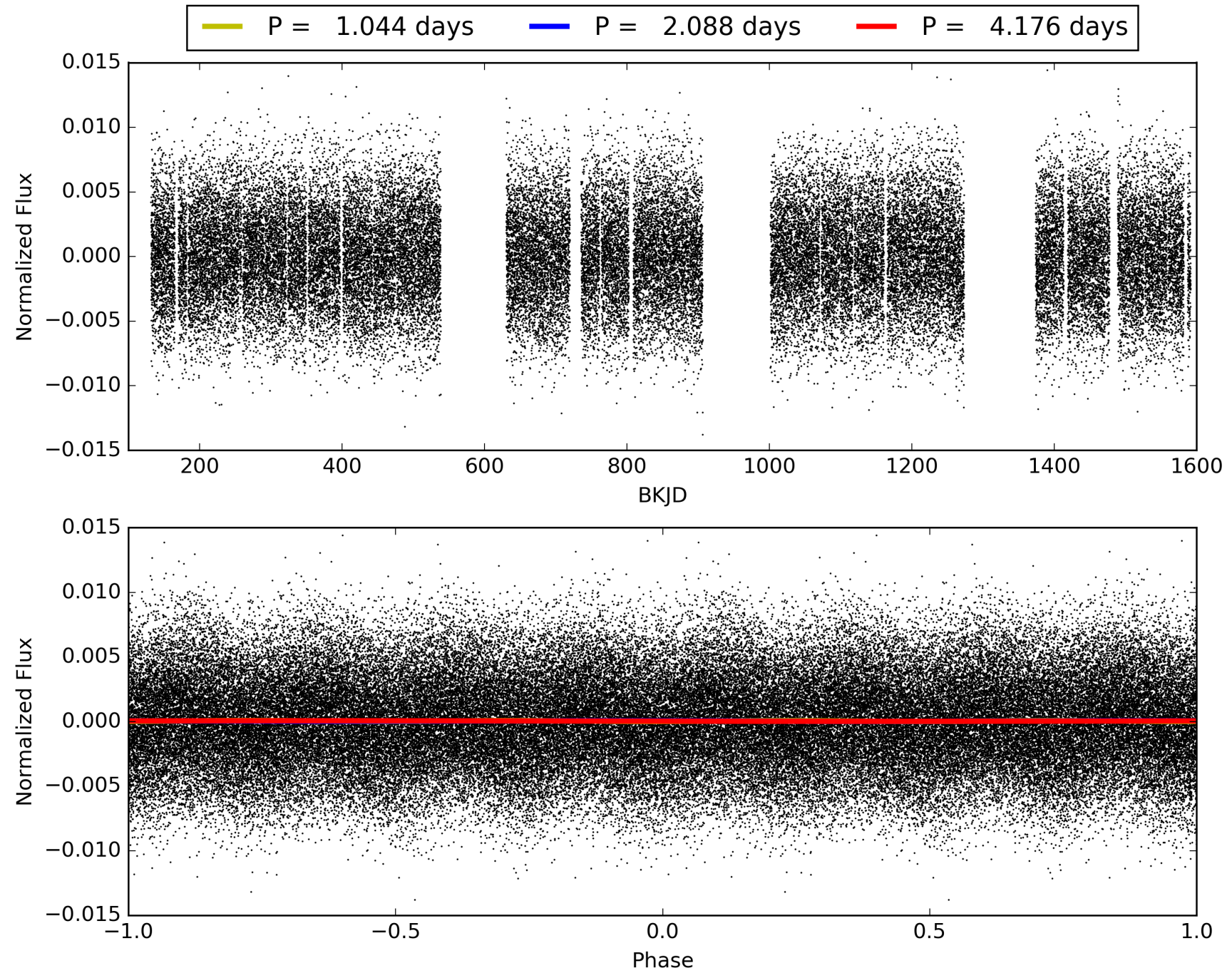
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:07:05 Z

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

TCE 003967333-02, PDC Light Curves

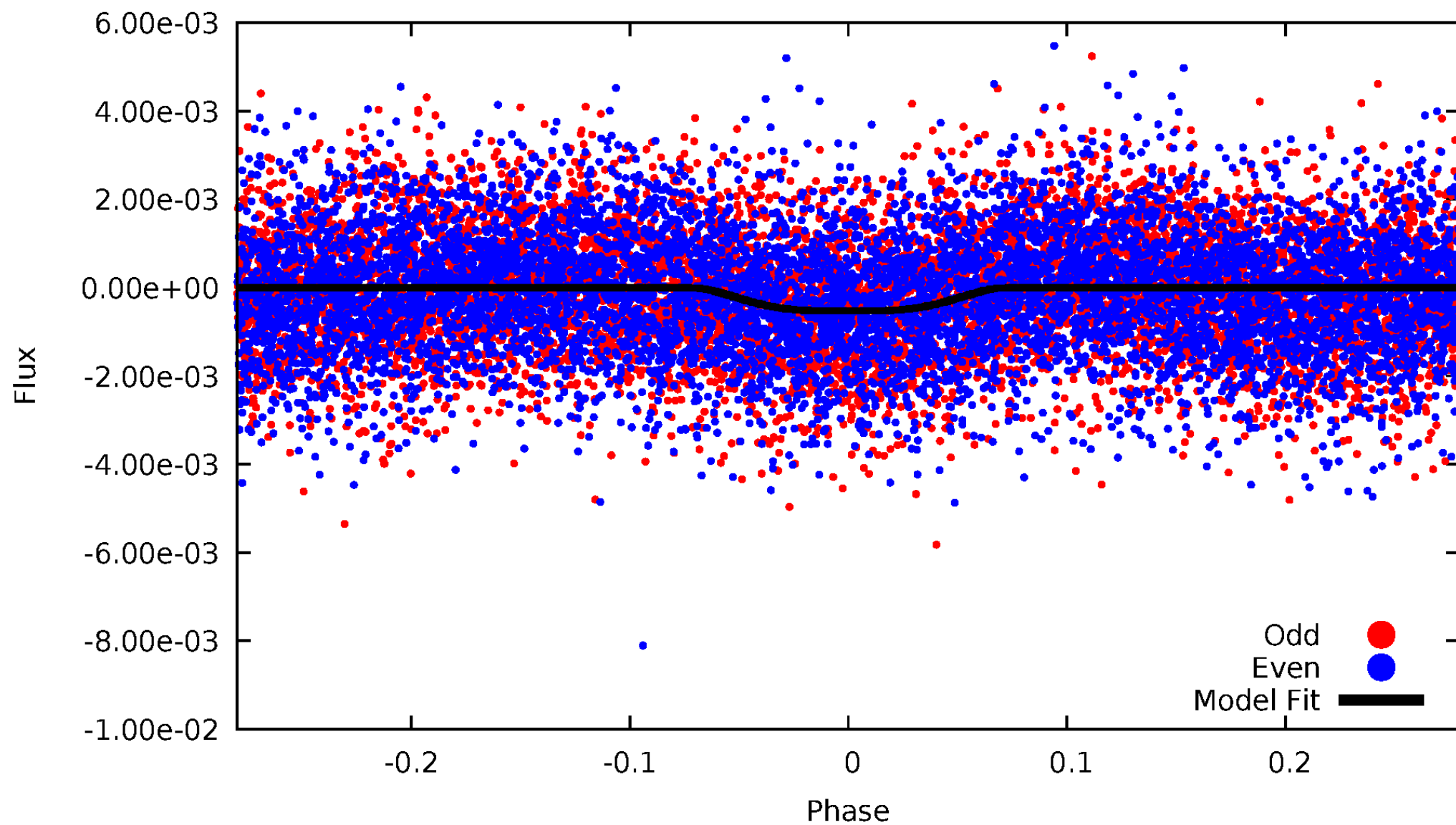


TCE 003967333-02



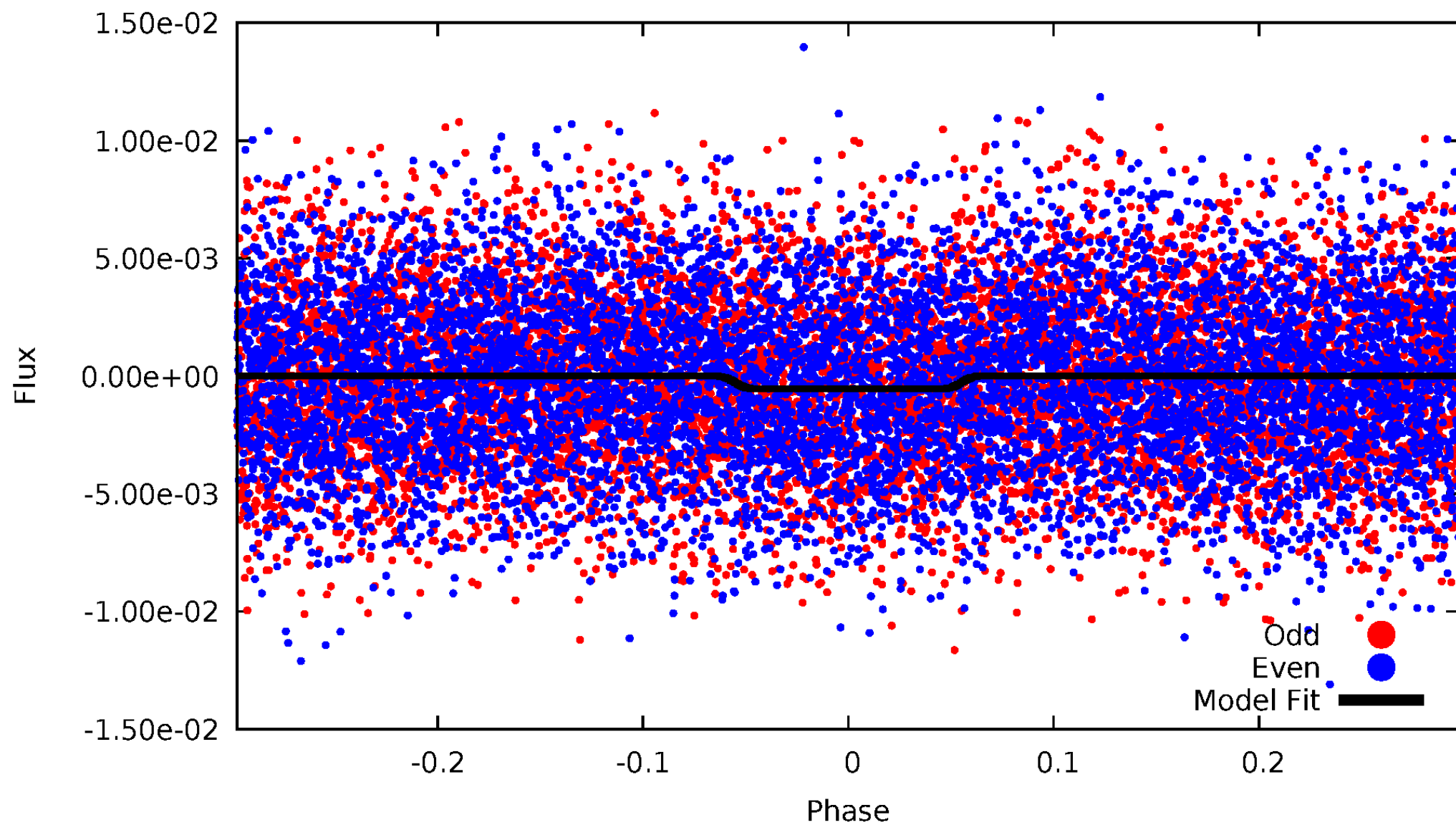
DV Odd/Even

TCE 003967333-02



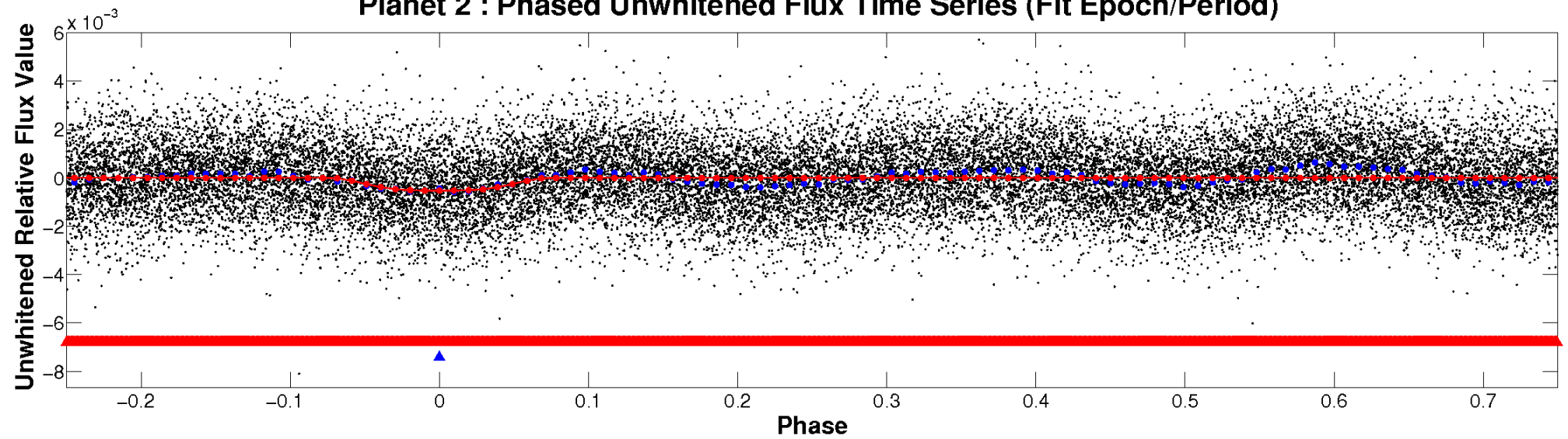
ALT Odd/Even

TCE 003967333-02

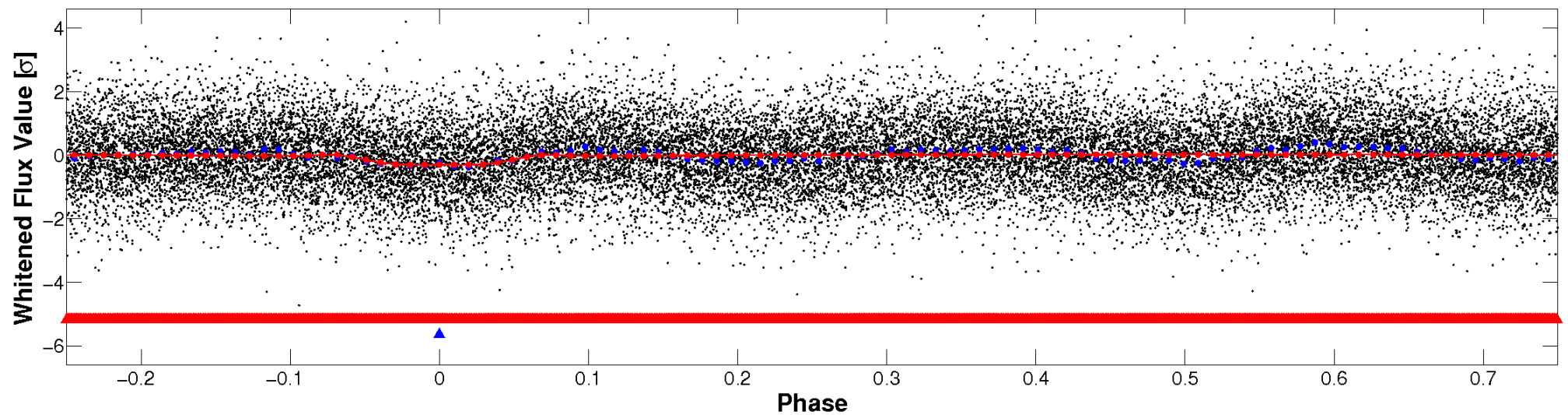


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

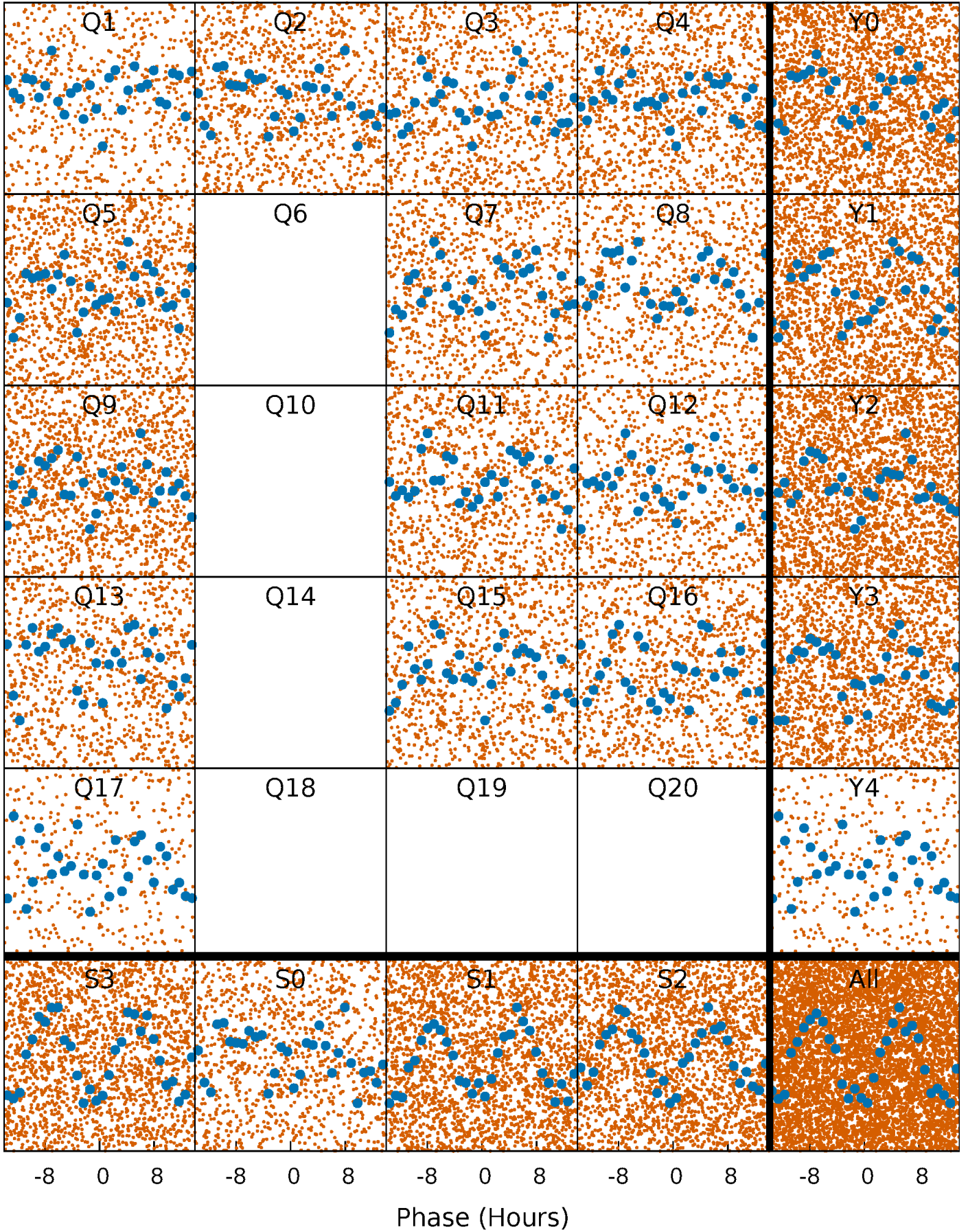


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



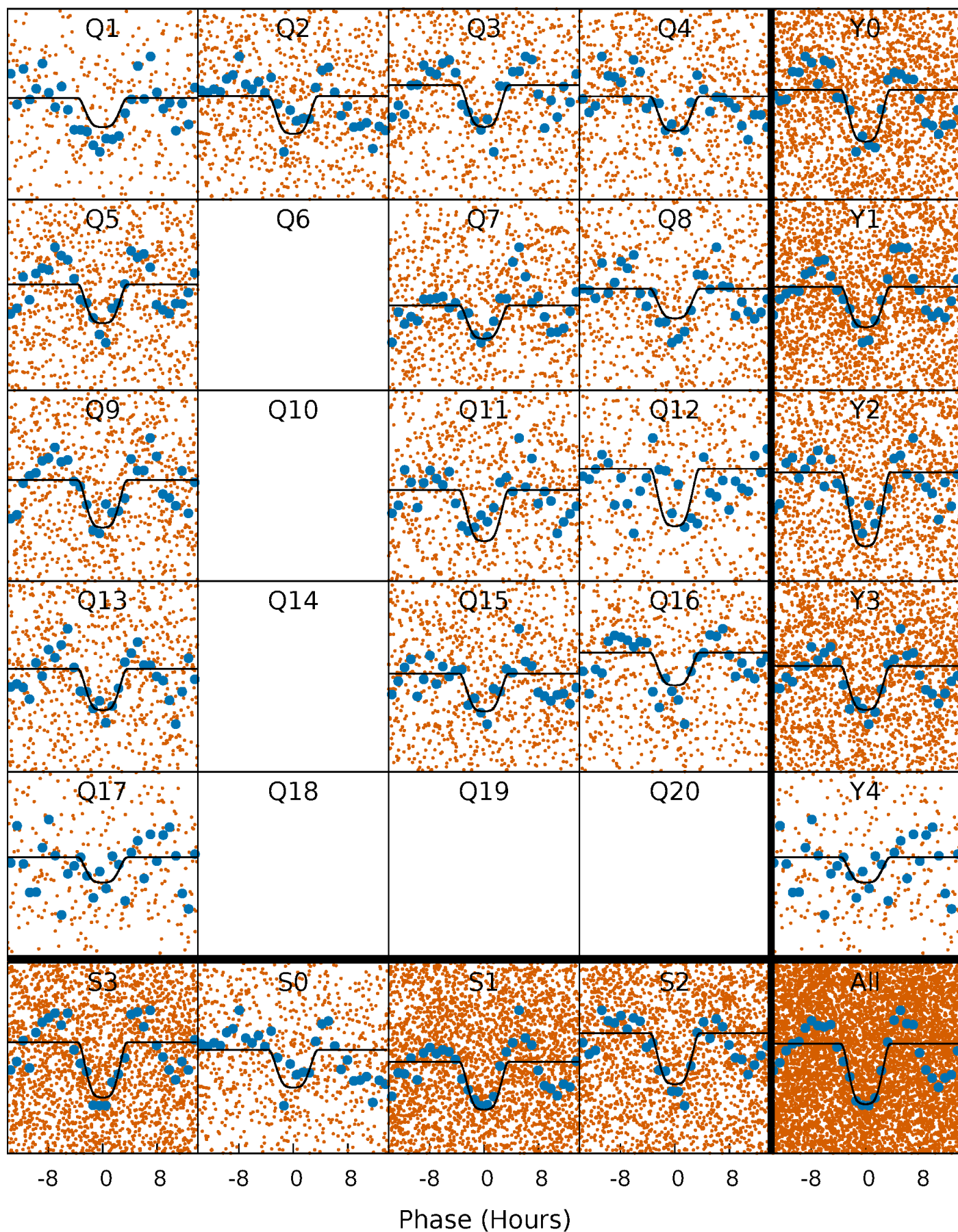
PDC Quarter-Phased Transit Curves

TCE 003967333-02 P= 2.088086 Days $T_0=132.175756$ (BKJD)



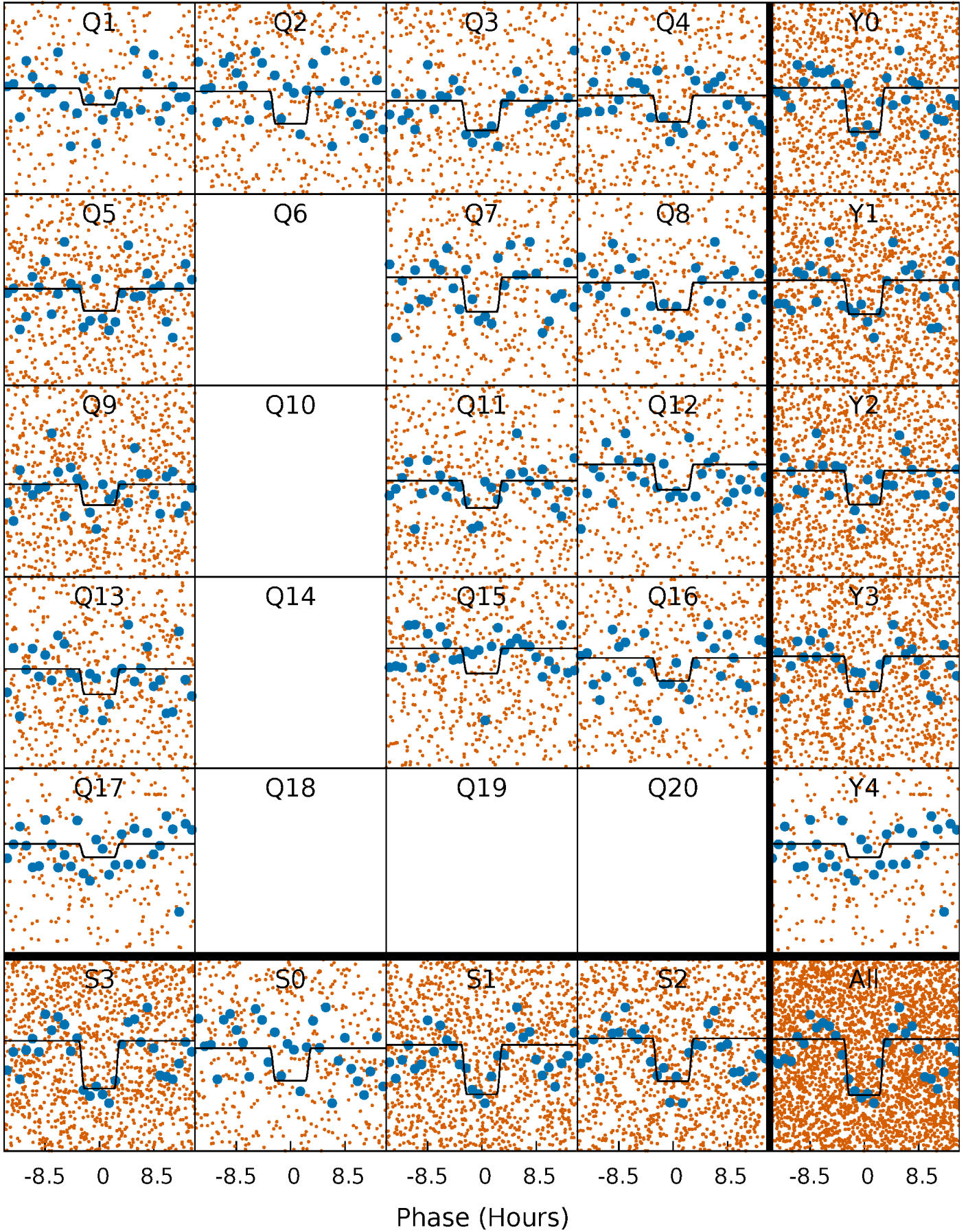
DV Quarter-Phased Transit Curves

TCE 003967333-02 P= 2.088086 Days $T_0=132.175756$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

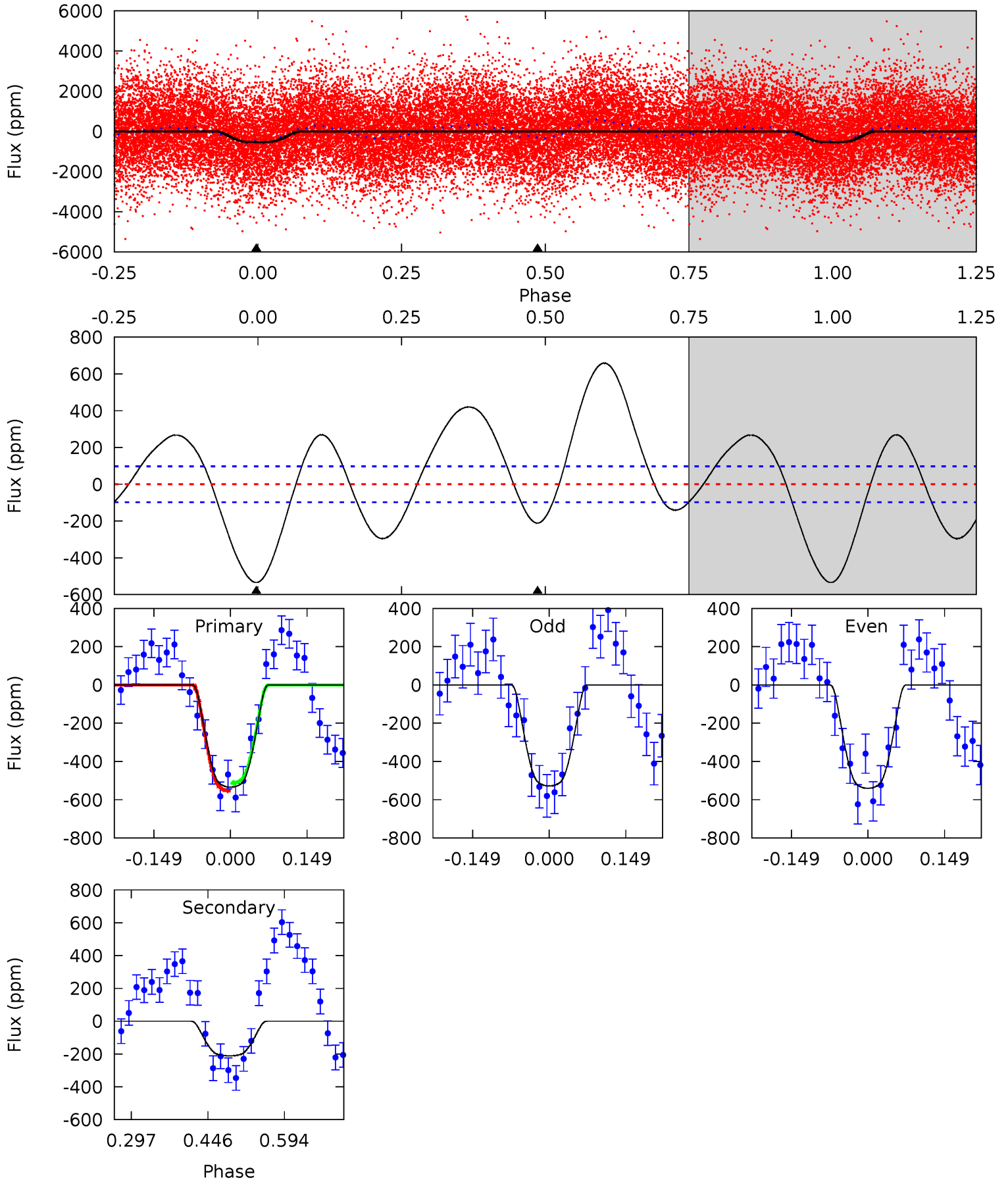
TCE 003967333-02 P= 2.088114 Days $T_0=132.159074$ (BKJD)



DV Model-Shift Uniqueness Test

003967333-02, P = 2.088086 Days, E = 130.087670 Days

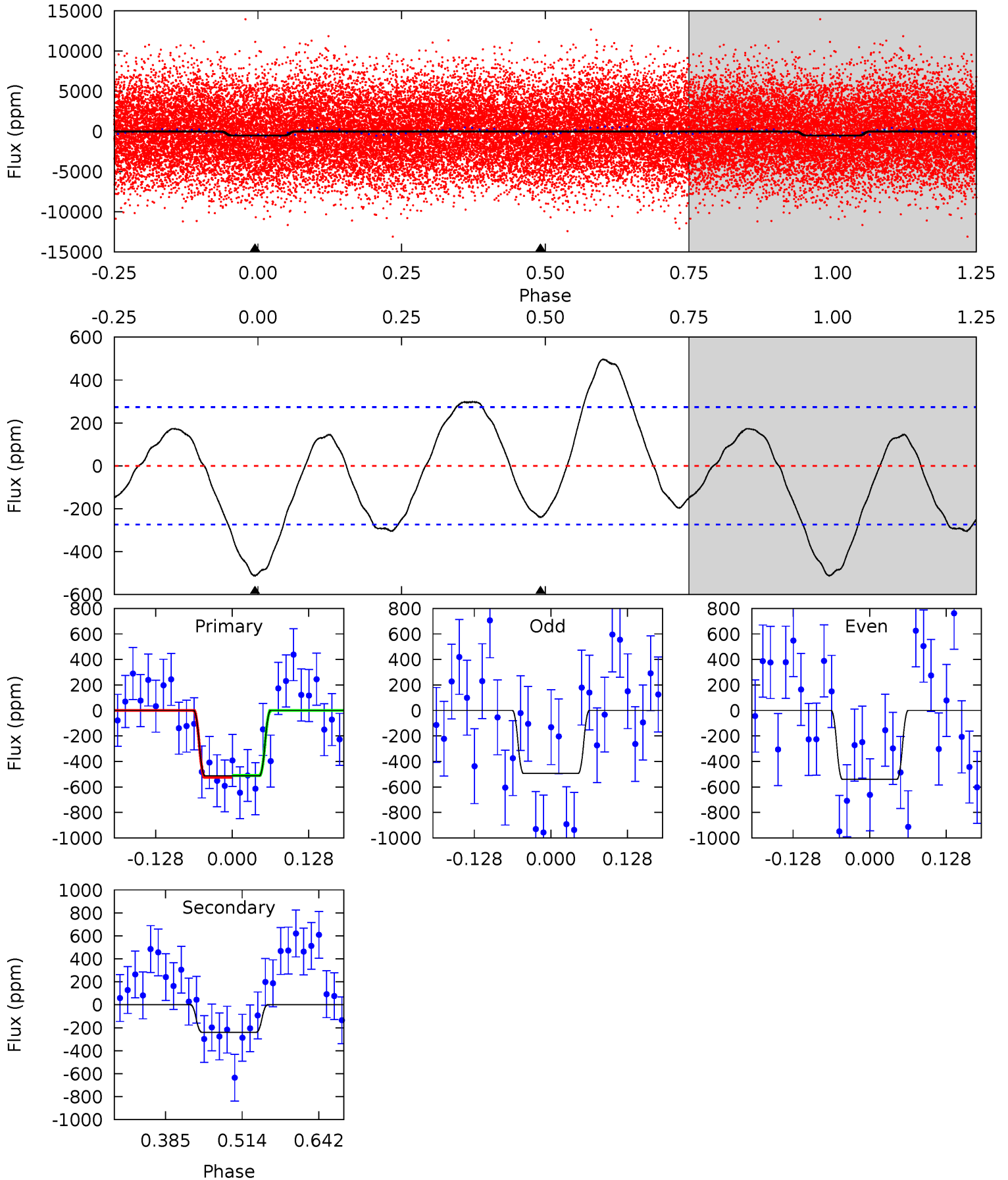
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.5	9.68	0	0	4.48	1.44	8.91	24.5	24.5	9.68	9.68	0.28	-7.18	0.55	0.92



Alt Model-Shift Uniqueness Test

003967333-02, P = 2.088114 Days, E = 130.070960 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.44	3.94	0	0	4.51	1.52	3.22	8.44	8.44	3.94	3.94	0.37	1.13	0.49	0.11



Stellar Parameters For KIC 003967333

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6942^{+144}_{-267}	$4.283^{+0.062}_{-0.188}$	$0.210^{+0.150}_{-0.350}$	$1.458^{+0.446}_{-0.178}$	$1.488^{+0.185}_{-0.185}$	$0.675^{+0.218}_{-0.339}$
	+2%/-4%	+1%/-4%	+71%/-167%	+31%/-12%	+12%/-12%	+32%/-50%
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 003967333-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-211±22	$4.37^{+0.72}_{-0.45}$	2728^{+192}_{-132}	5088^{+212}_{-218}	$8.066^{+1.857}_{-2.138}$
Alt.	-239±61	$3.86^{+0.65}_{-0.45}$	2736^{+185}_{-140}	5546^{+386}_{-401}	11^{+4}_{-4}

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

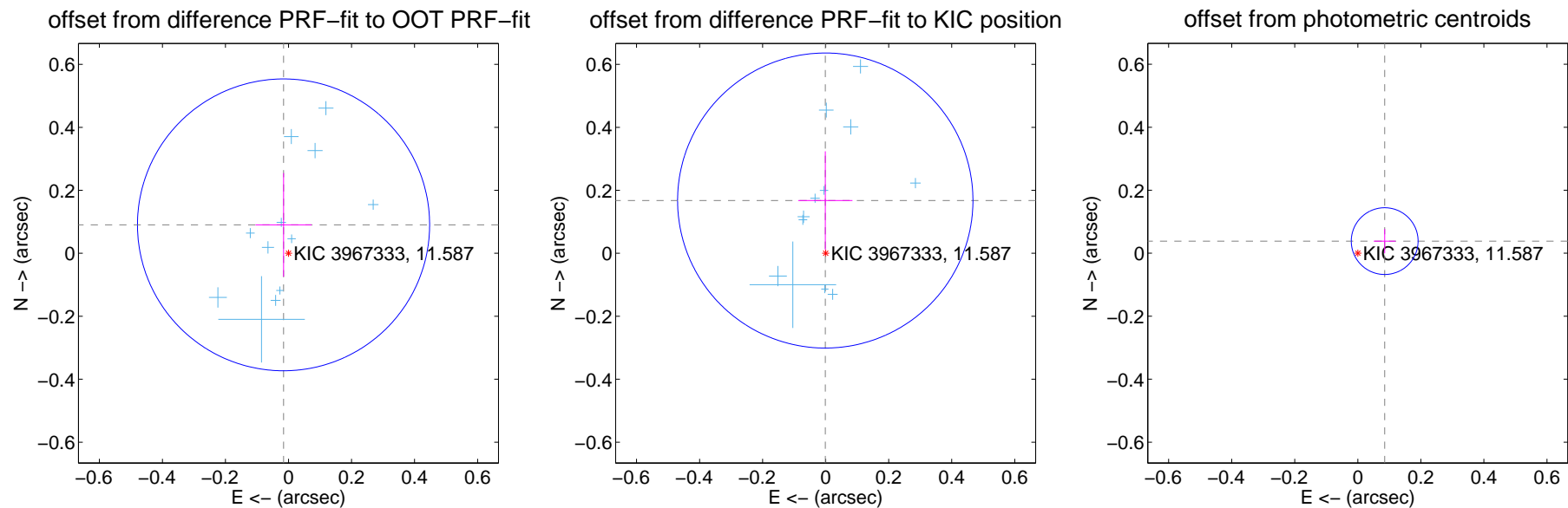
DV Centroid Data

Supplemental centroid analysis for 003967333-02. **Kepler magnitude: 11.59.** Transit SNR 13.89

There are 14 quarters with good PRF difference image offsets

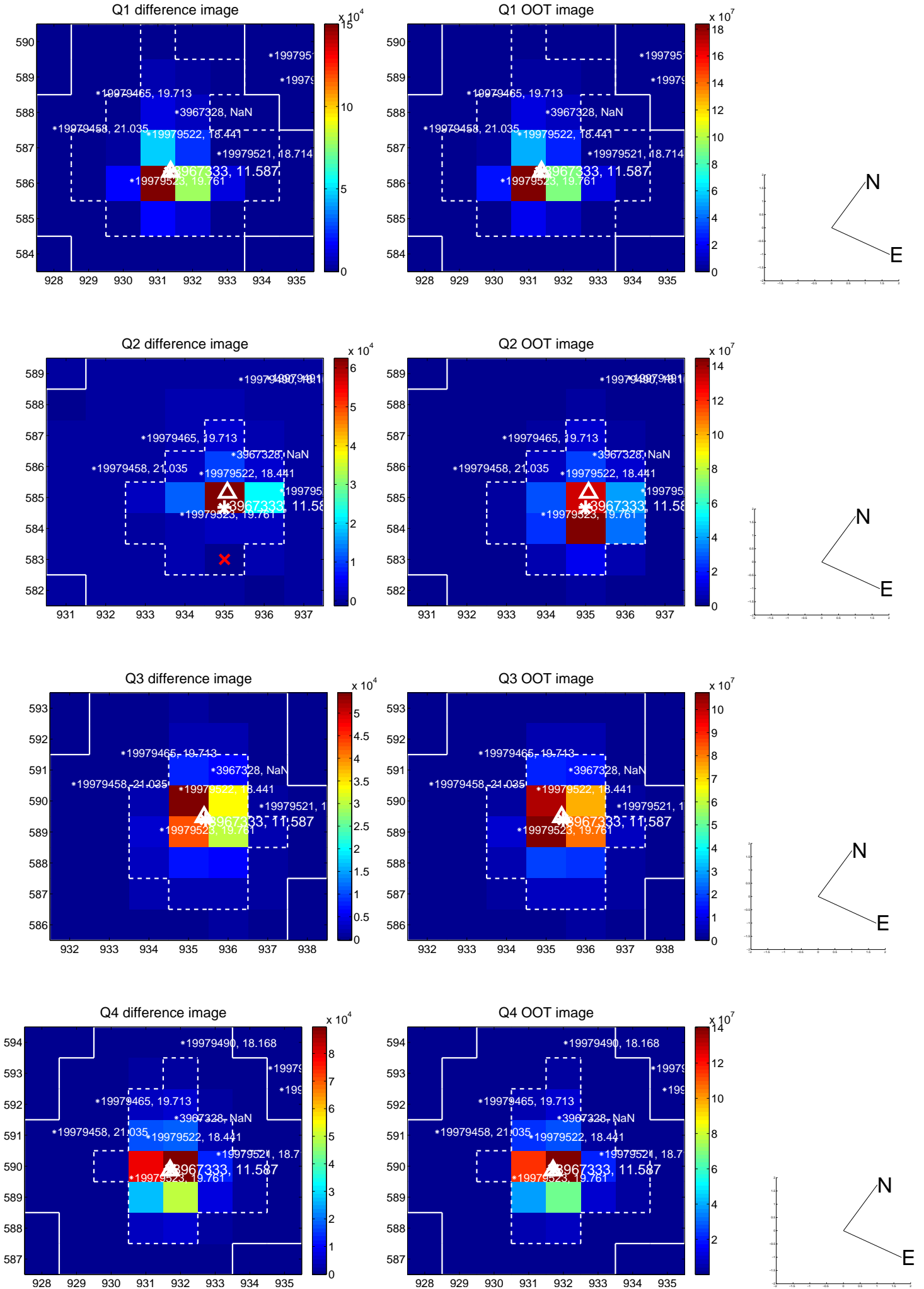
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.092 ± 0.154	0.59	0.016 ± 0.089	0.090 ± 0.164
PRF-fit source offset from KIC position	0.168 ± 0.156	1.07	0.001 ± 0.086	0.168 ± 0.156
photometric centroid source offset	0.09 ± 0.04	2.65	-0.09 ± 0.03	0.04 ± 0.04

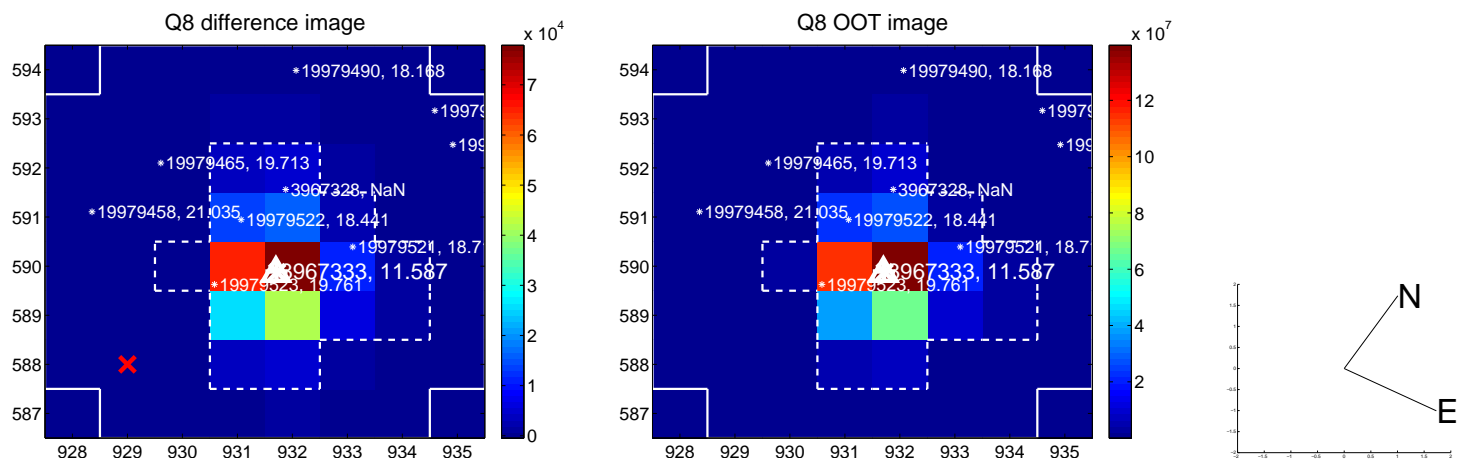
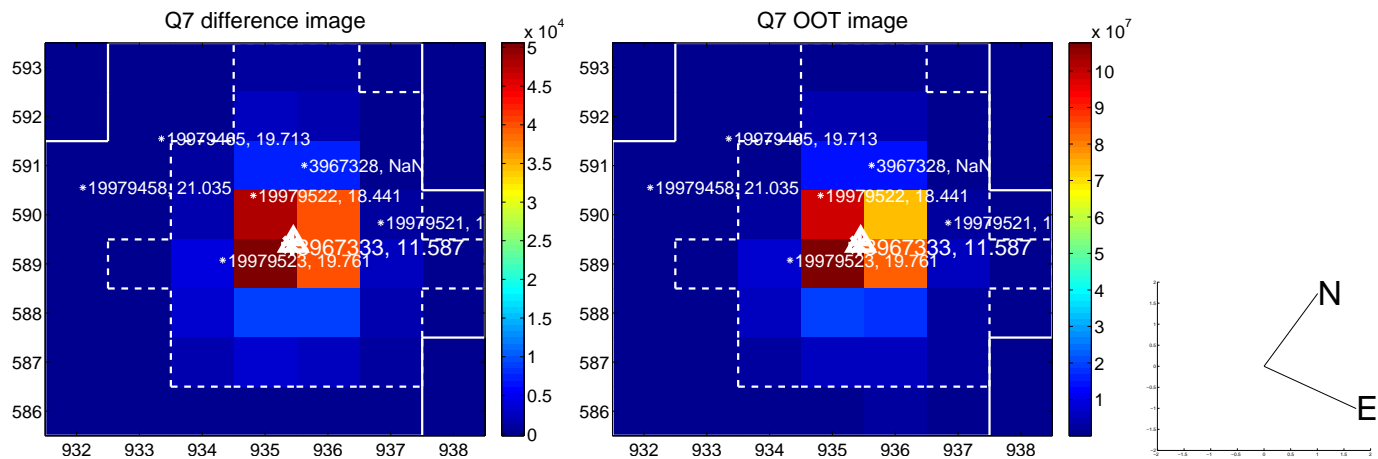
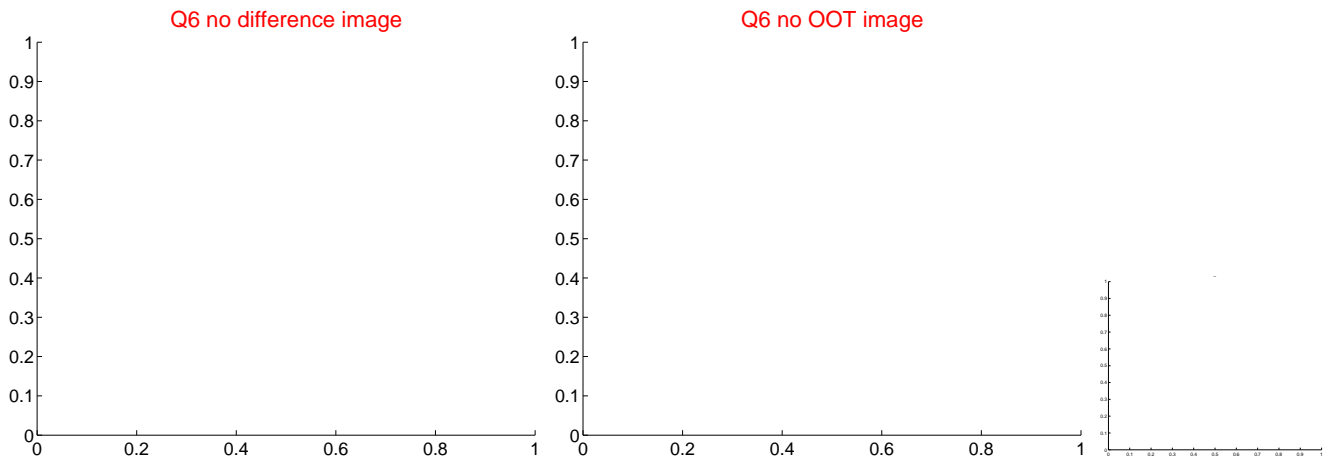
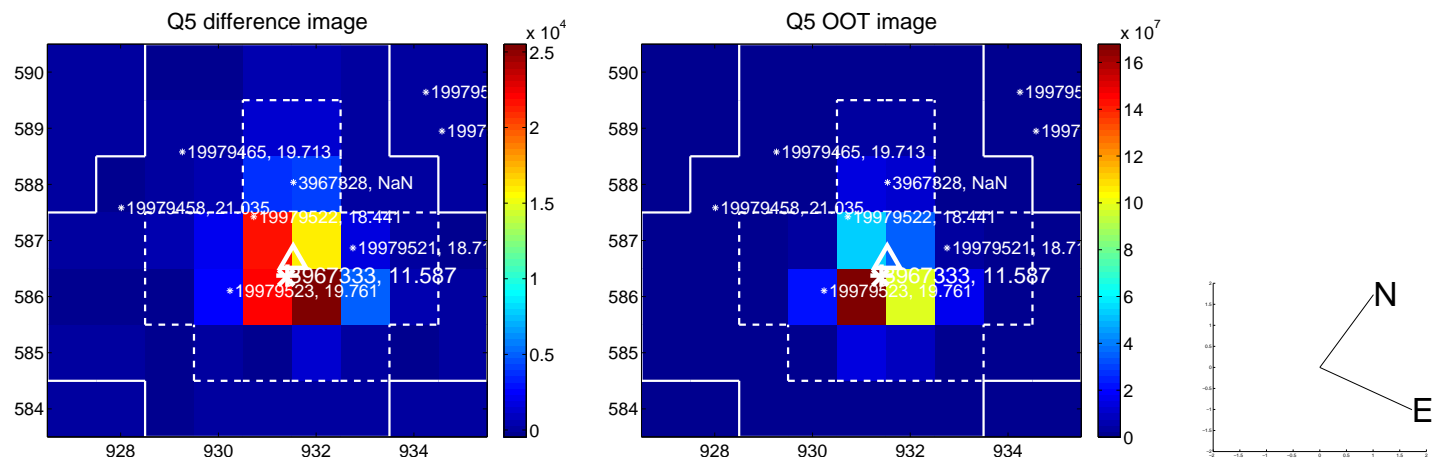


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

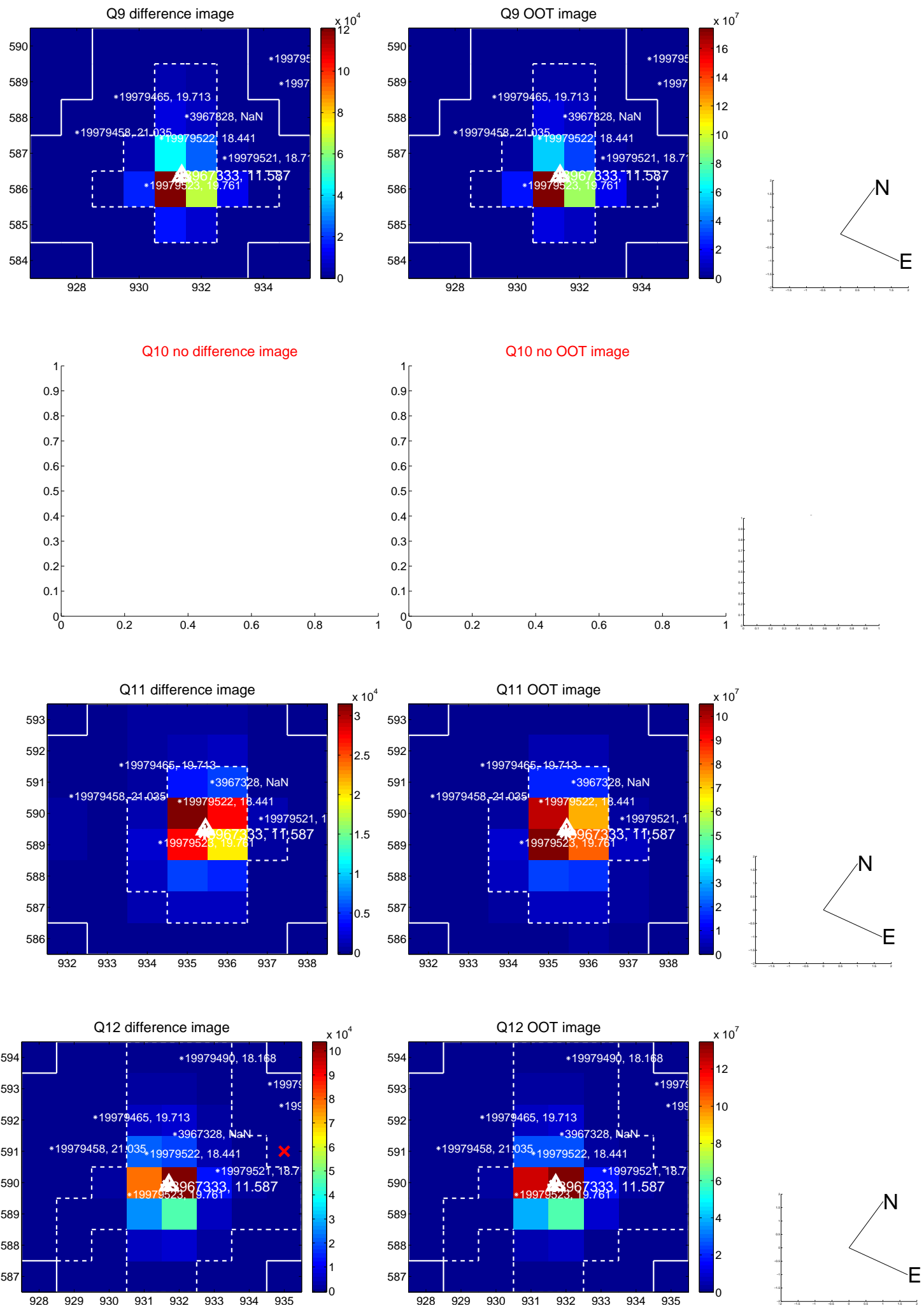
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



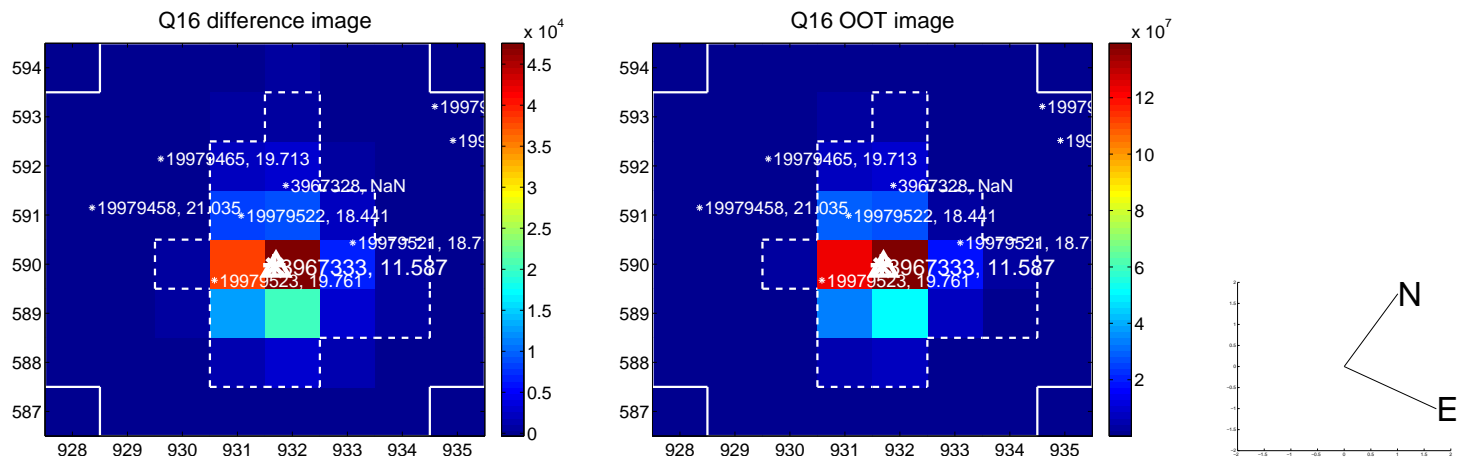
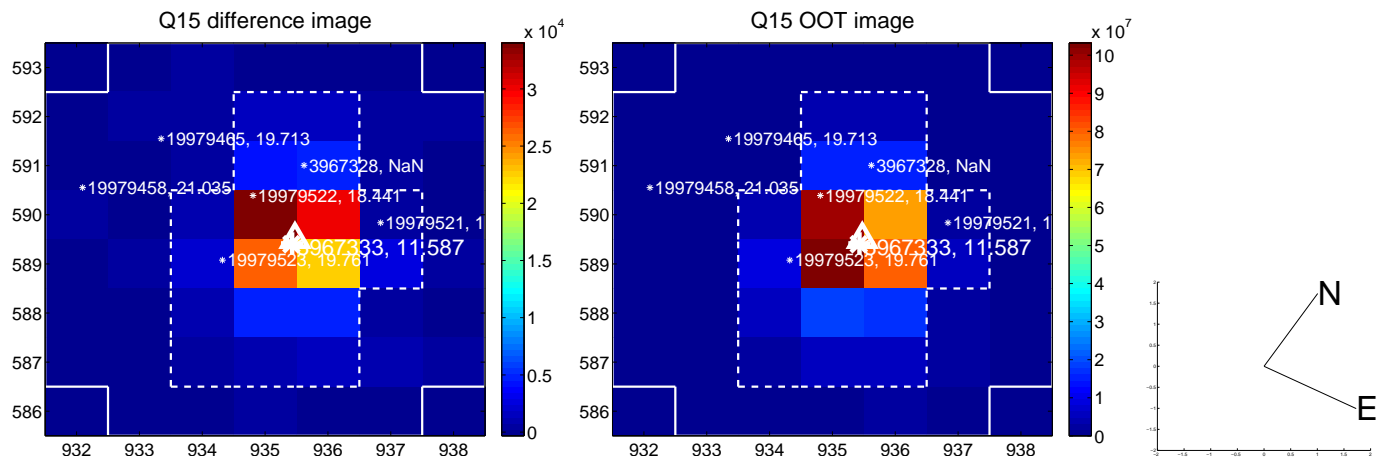
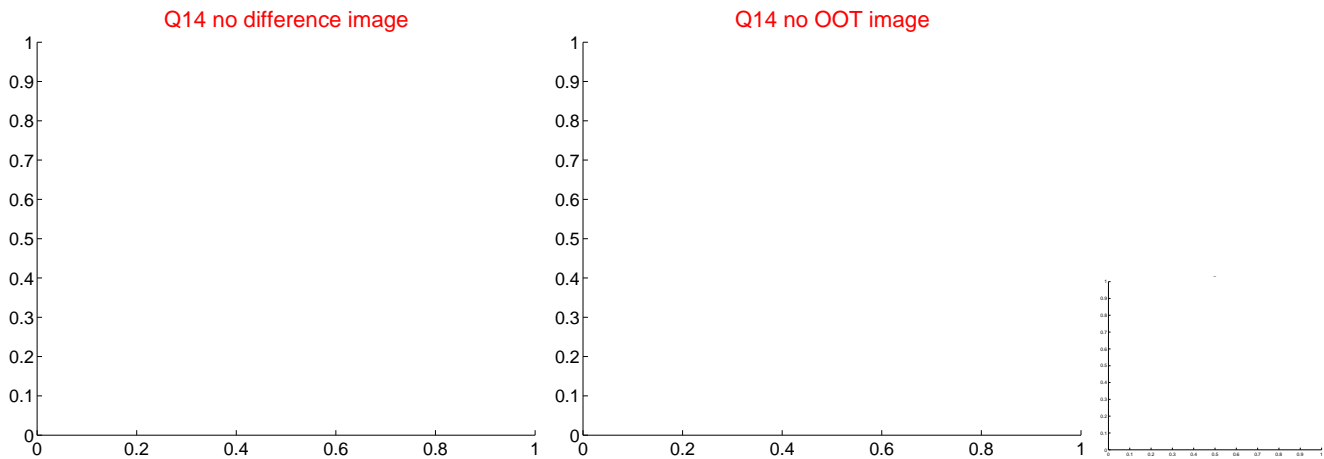
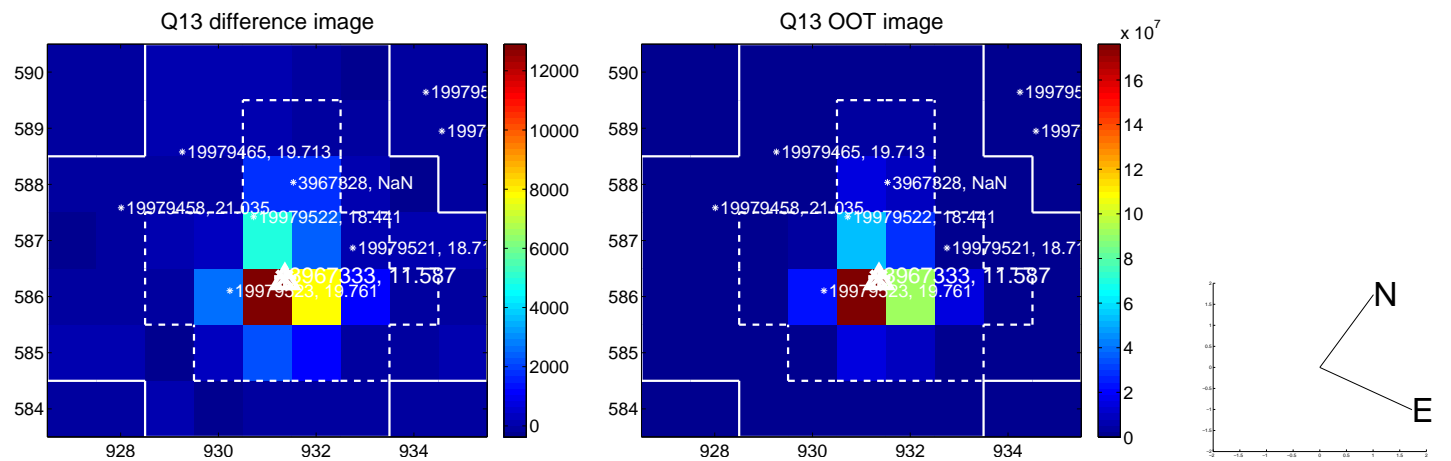
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



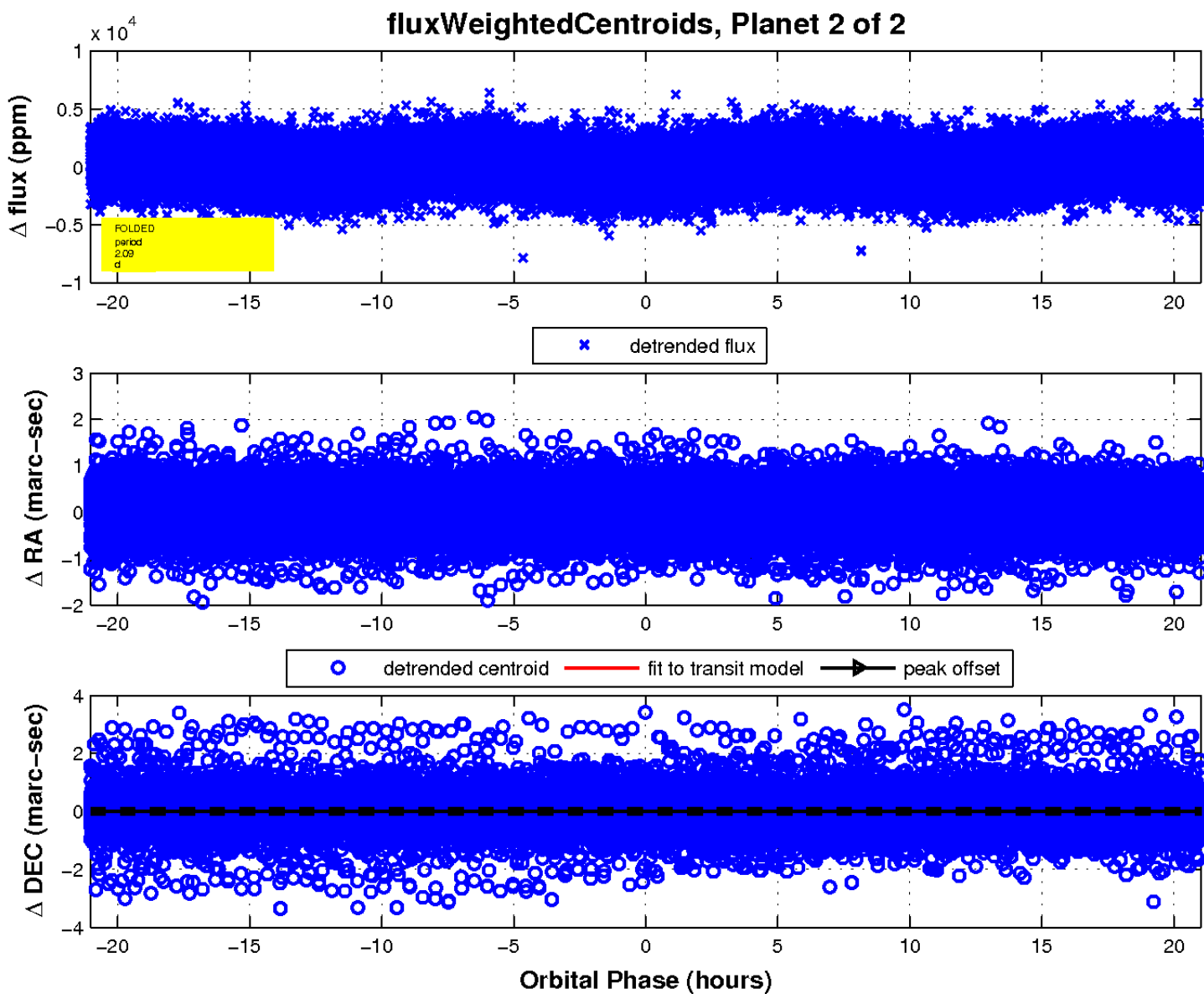
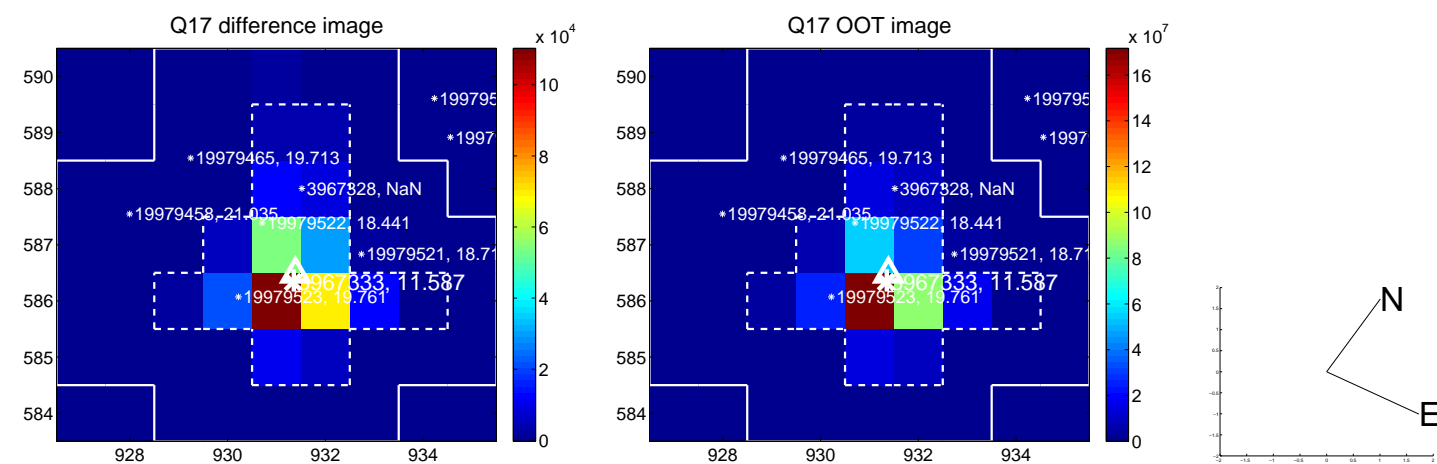
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UKIRT Image

