

KIC 005019567

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})
005019567-01	OBS	No	0.685607	131.903272	27.4	1.089	9.0	9.9	2.15	7537	1.30	40229.04
005019567-02	OBS	No	0.565050	131.583336	17.3	1.887	9.3	6.6	2.15	7537	1.03	52062.36
005019567-03	OBS	No	95.848860	132.143165	245.9	6.742	7.9	7.0	2.15	7537	3.56	55.44
005019567-04	OBS	No	62.407135	172.737307	239.5	2.204	7.6	6.7	2.15	7537	3.40	98.25
005019567-05	OBS	No	159.029943	266.969299	389.4	2.340	7.8	8.2	2.15	7537	4.90	28.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005019567-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005019567-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005019567-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005019567-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
005019567-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—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 005019567-01

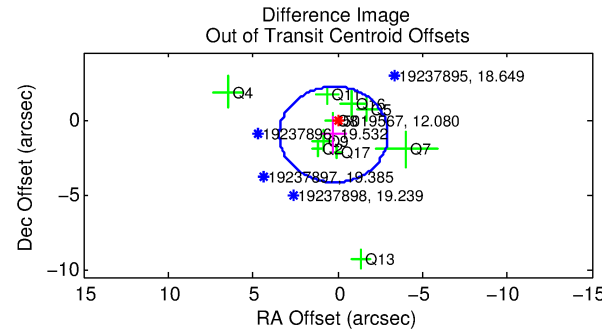
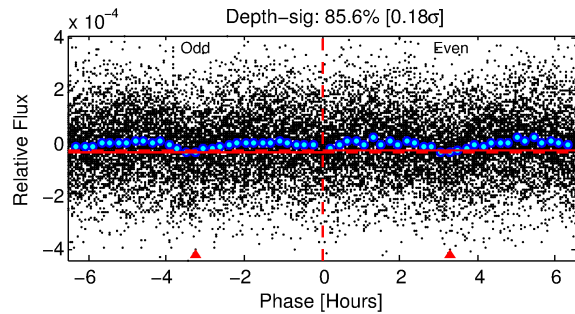
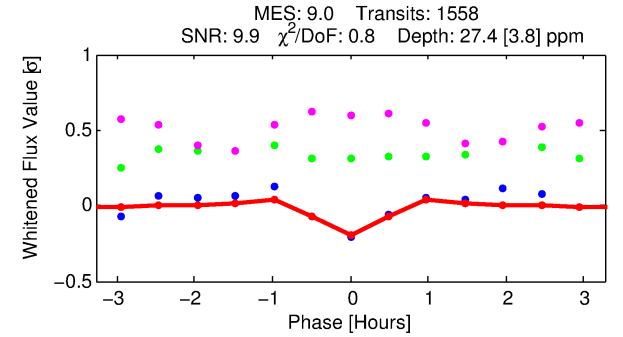
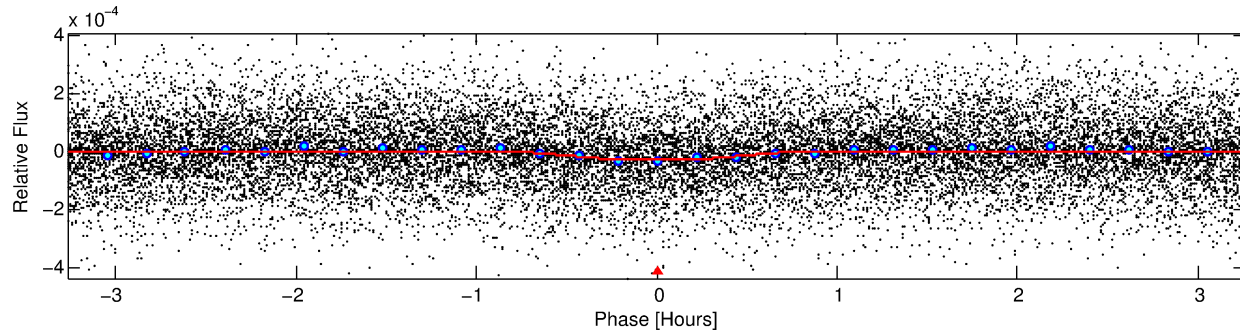
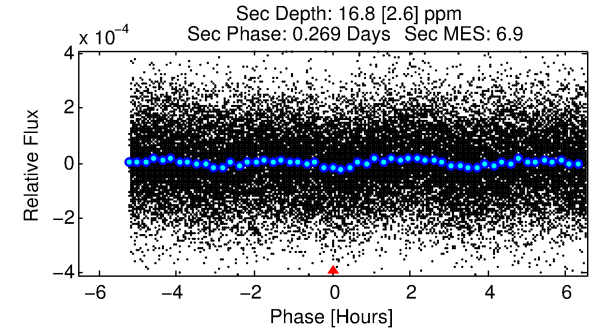
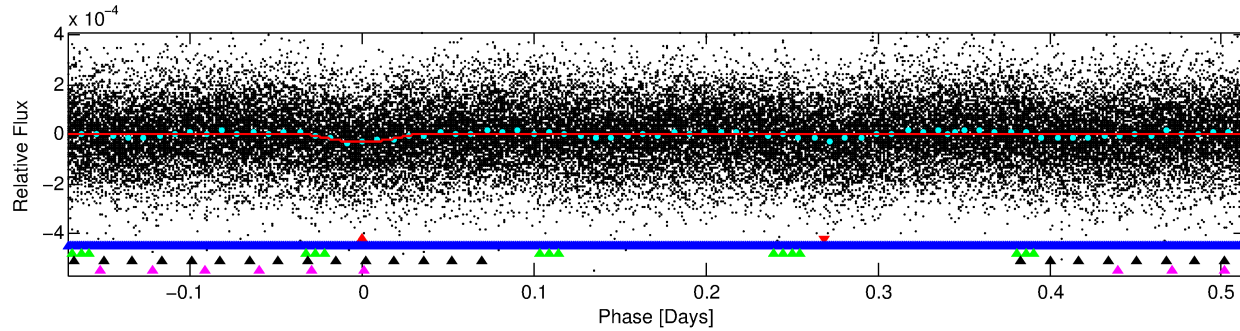
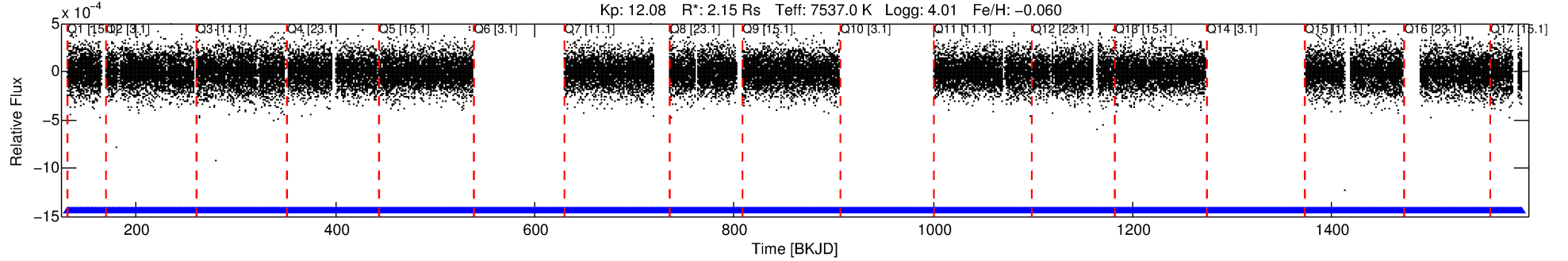
No Significant Match Found

DV One-Page Summary

KIC: 5019567 Candidate: 1 of 5 Period: 0.686 d

KOI: K06488 Corr: No Ephemeris Match

Kp: 12.08 R*: 2.15 Rs Teff: 7537.0 K Logg: 4.01 Fe/H: -0.060



DV Fit Results:

Period = 0.68561 [0.00001] d
Epoch = 131.9033 [0.0014] BKJD
Rp/R* = 0.0056 [0.0009]
a/R* = 2.36 [1.98]
b = 0.90 [0.22]
Seff = 40229.04 [16779.37]
Teq = 3611 [377] K
Rp = 1.30 [0.44] Re
a = 0.0182 [0.0046] AU
Ag = 1.80 [0.95] [0.84σ]
Teffp = 6468 [667] K [3.73σ]

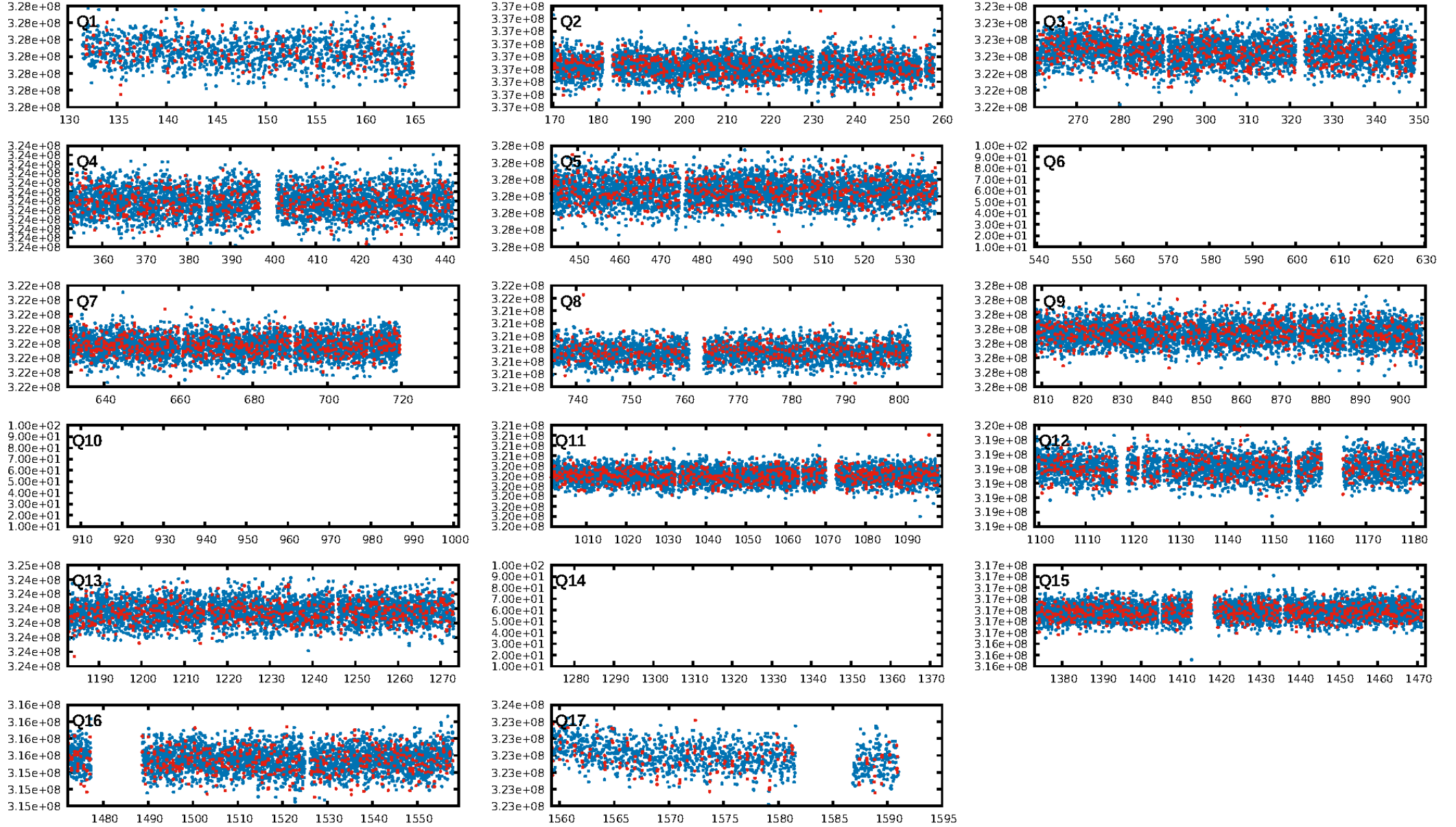
DV Diagnostic Results:

ShortPeriod-sig: 81.6% [1.33σ]
LongPeriod-sig: 100.0% [602.48σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.16e-14
RollingBand-fgt: 1.00 [1470/1470]
GhostDiagnostic-chr: 3.329
Centroid-sig: 38.9%
Centroid-so: 0.615 arcsec [1.01σ]
OotOffset-rm: 1.015 arcsec [0.95σ]
KicOffset-rm: 1.027 arcsec [1.23σ]
OotOffset-st: 1/2/3/4 [10]
KicOffset-st: 1/2/3/4 [10]
DiffImageQuality-fgm: 0.30 [3/10]
DiffImageOverlap-fno: 0.93 [13/14]

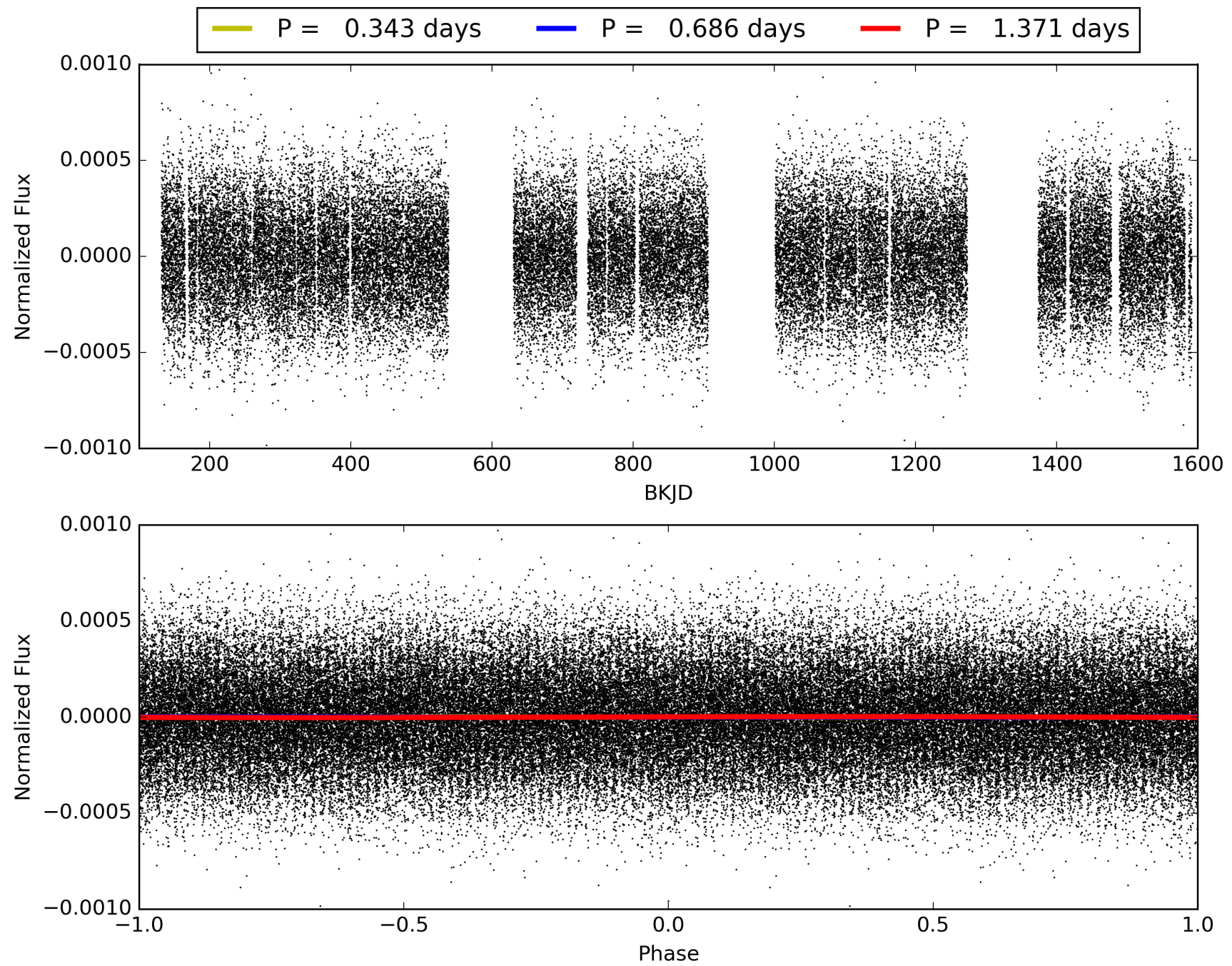
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005019567-01, PDC Light Curves

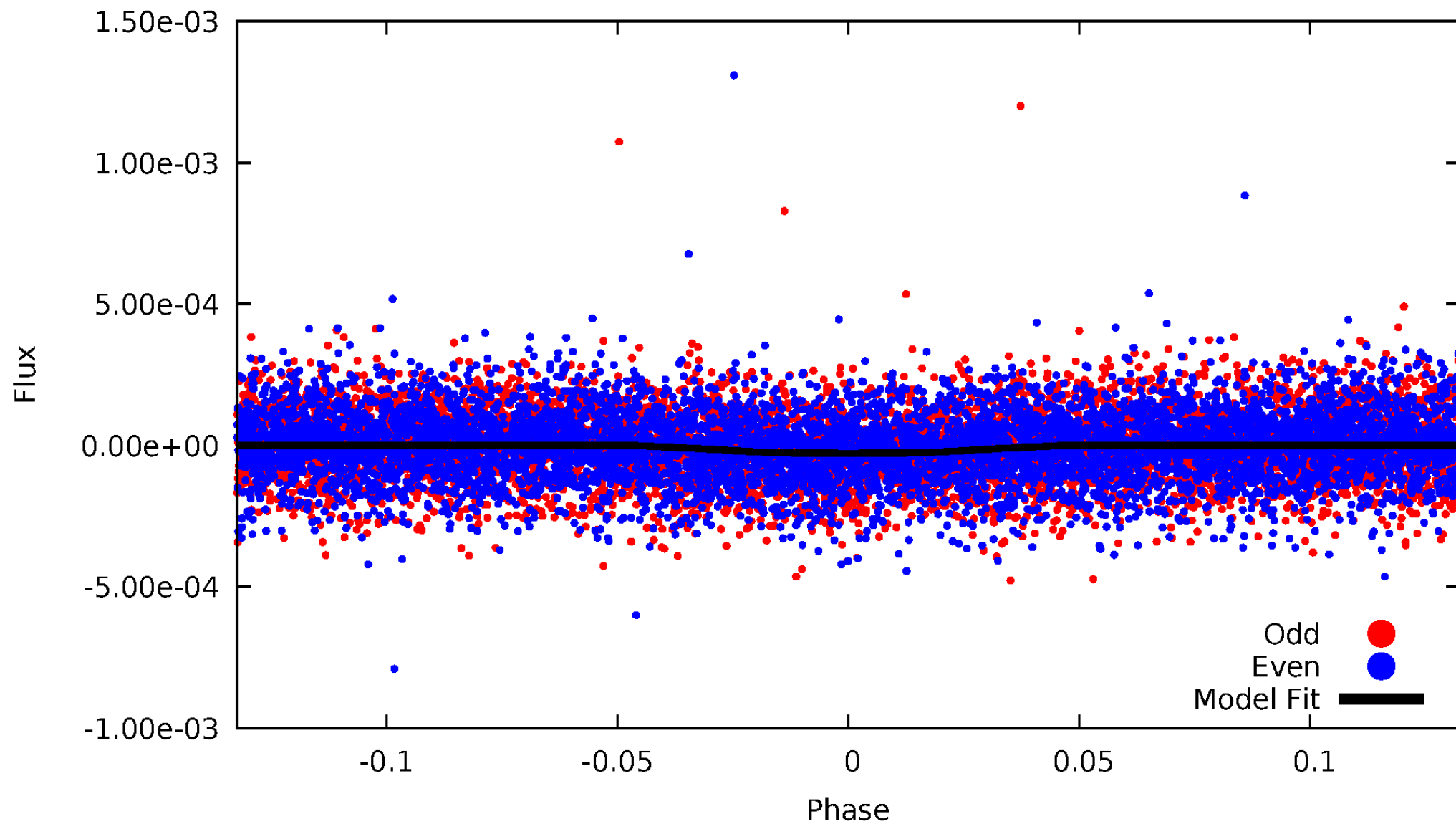


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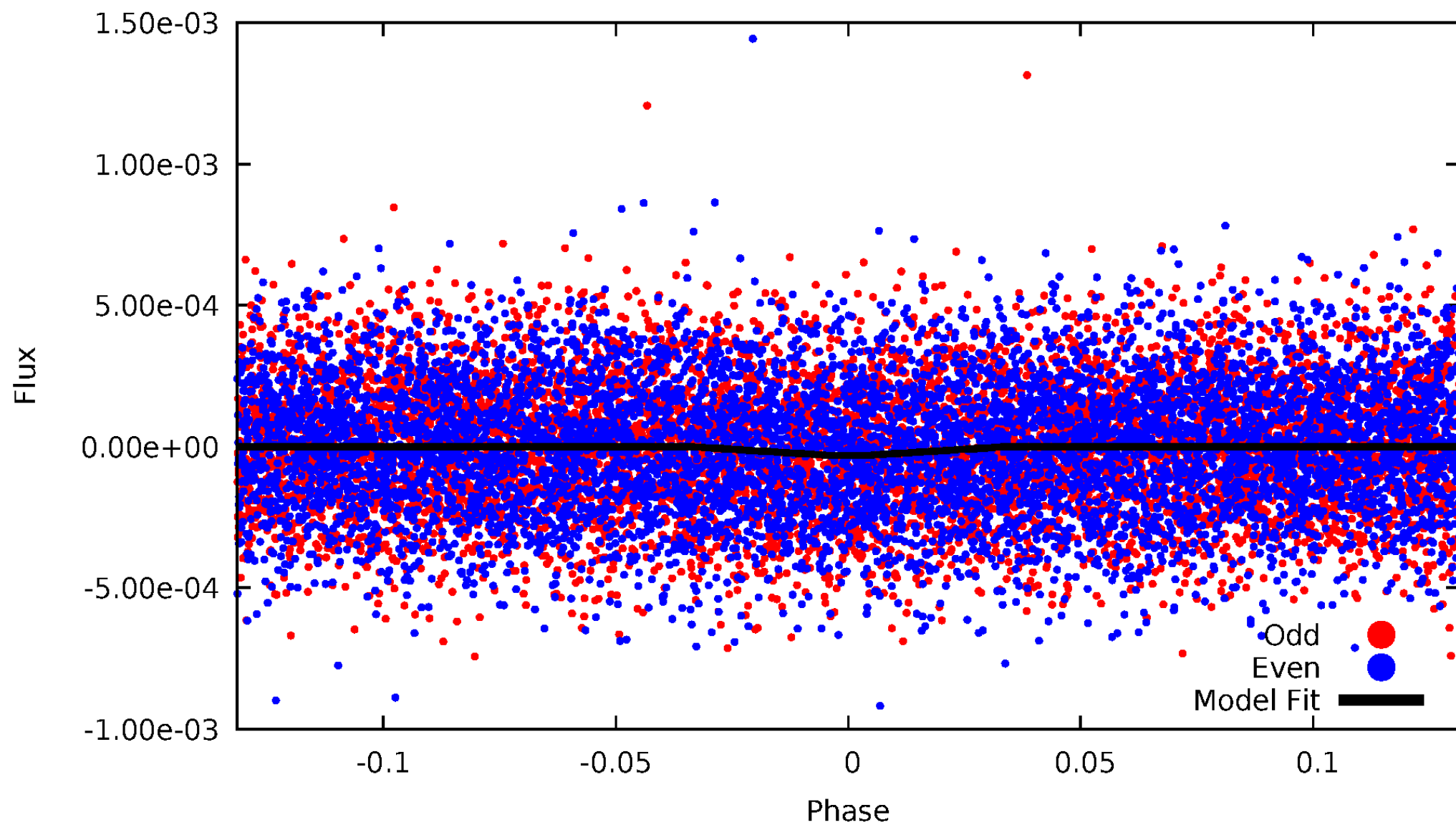
DV Odd/Even

TCE 005019567-01



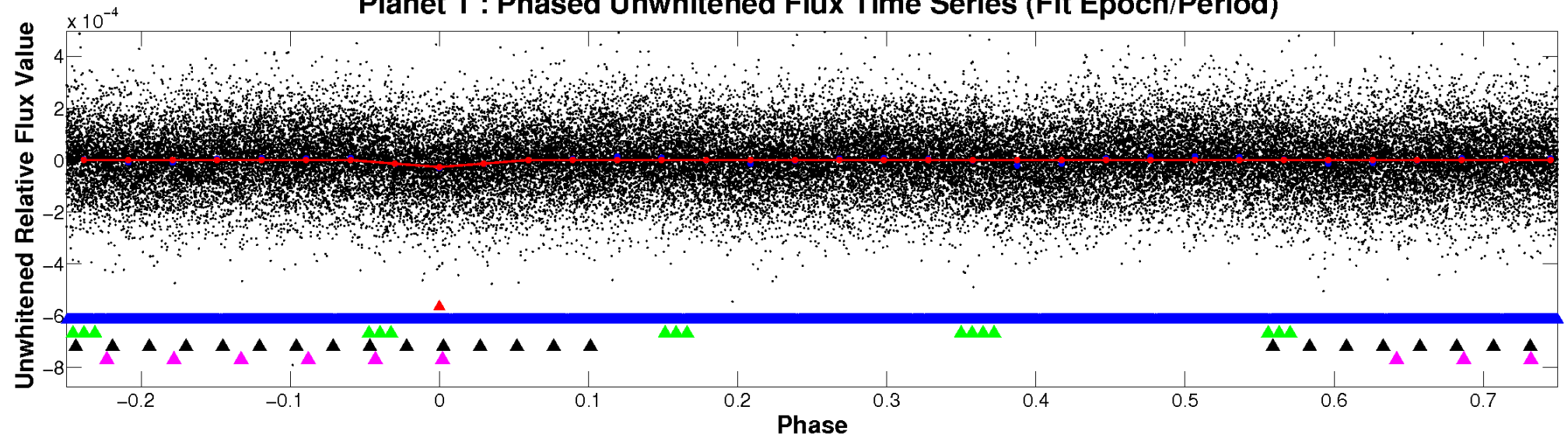
ALT Odd/Even

TCE 005019567-01

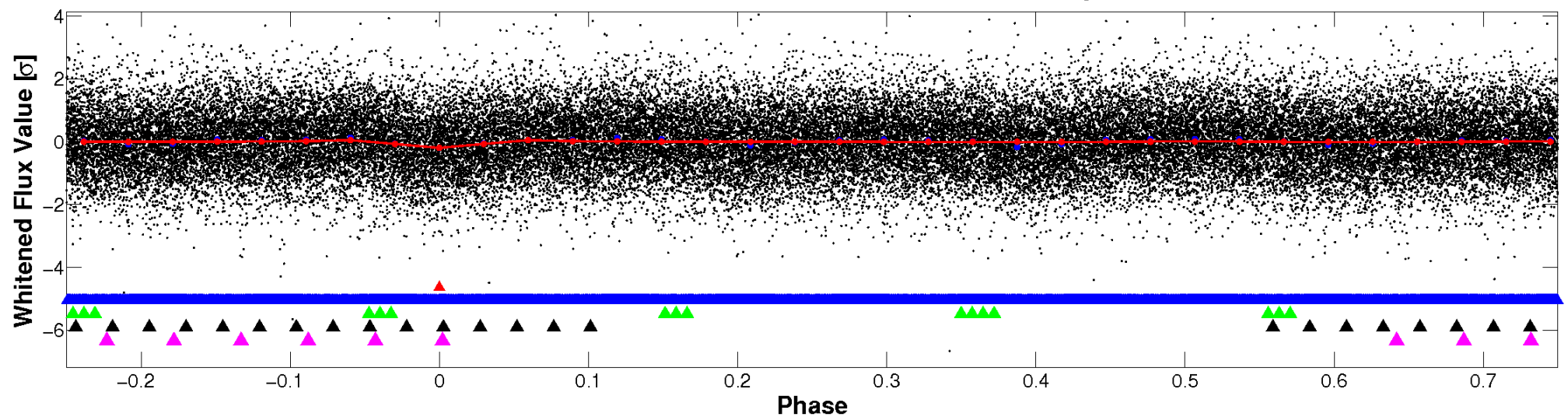


Non-Whitened Vs. Whitened Light Curve

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

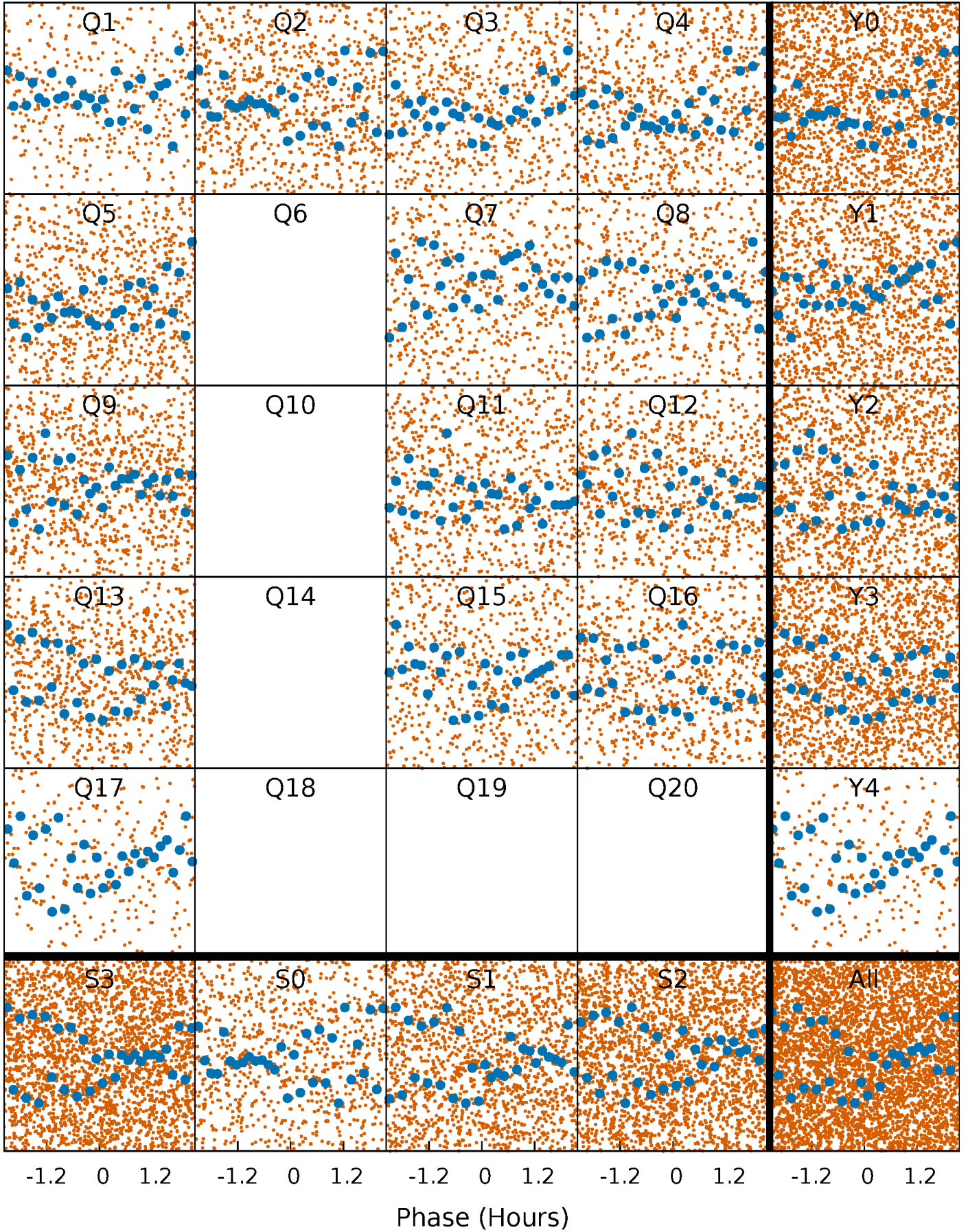


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



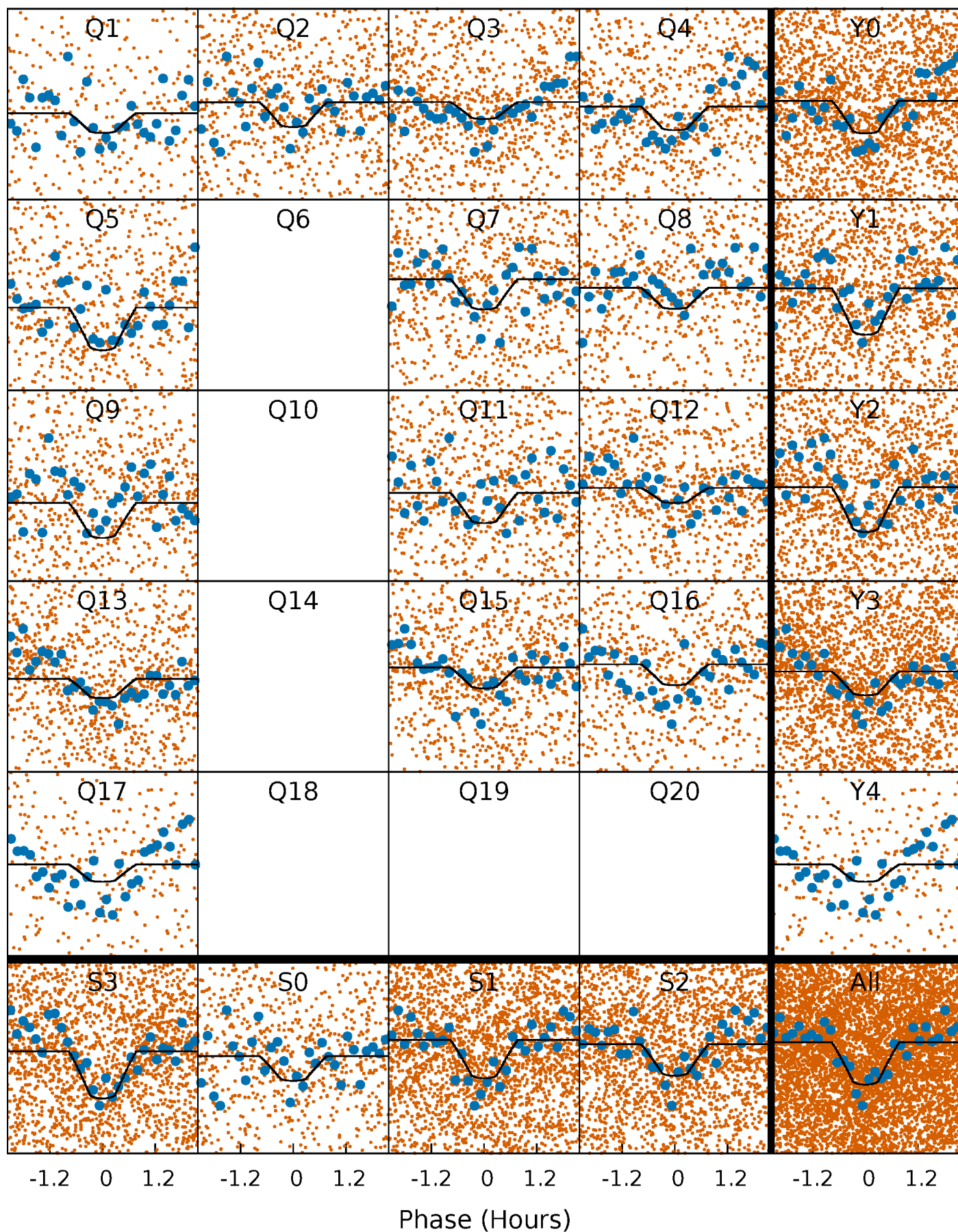
PDC Quarter-Phased Transit Curves

TCE 005019567-01 P= 0.685607 Days $T_0=131.903272$ (BKJD)



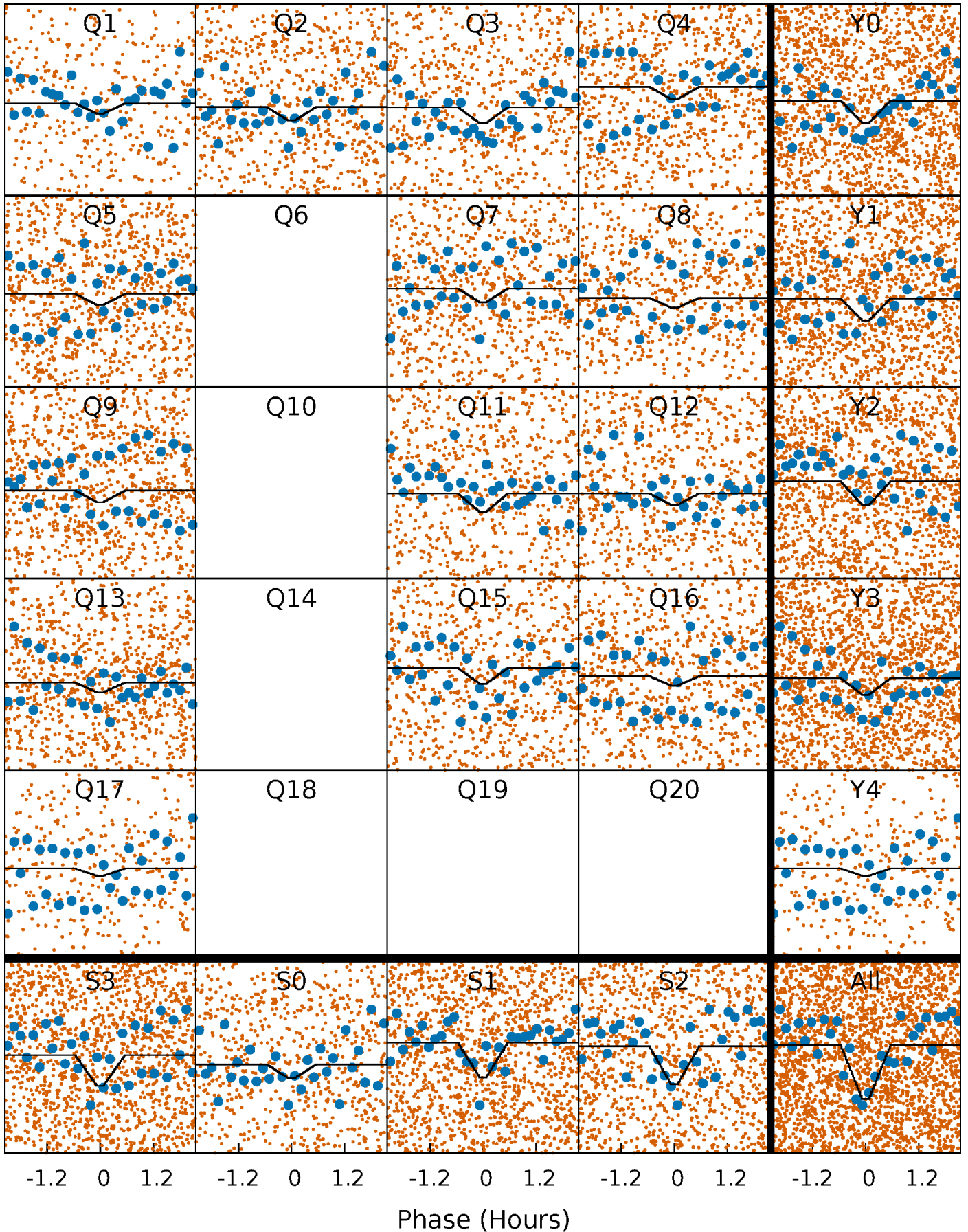
DV Quarter-Phased Transit Curves

TCE 005019567-01 P= 0.685607 Days $T_0=131.903272$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

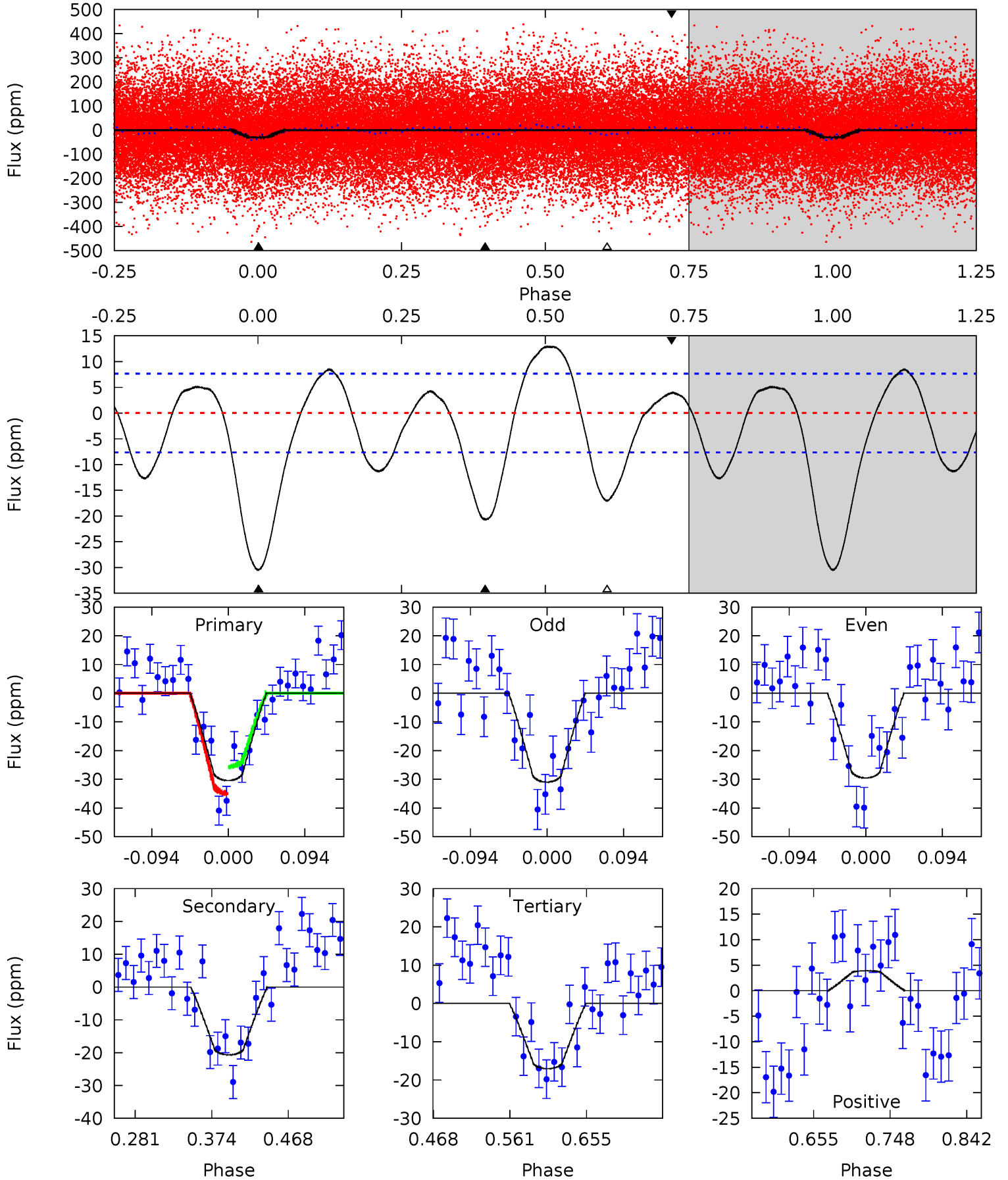
TCE 005019567-01 P= 0.685604 Days $T_0=131.902882$ (BKJD)



DV Model-Shift Uniqueness Test

005019567-01, P = 0.685607 Days, E = 131.217665 Days

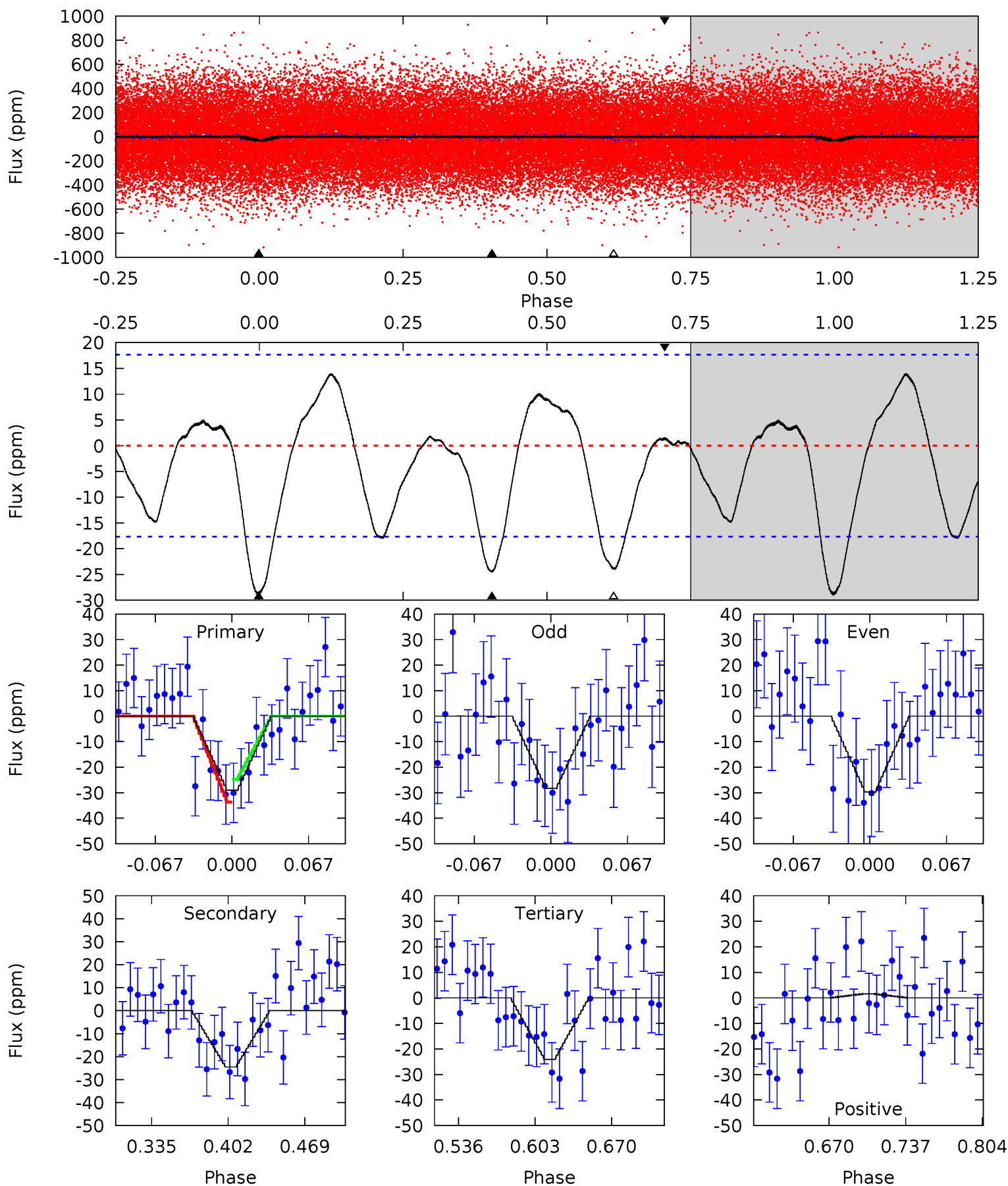
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	12.4	10.2	2.34	4.58	1.68	4.75	8.04	15.9	2.18	10.1	0.44	1.22	0.30	2.83



Alt Model-Shift Uniqueness Test

005019567-01, P = 0.685604 Days, E = 131.217278 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.63	6.45	6.33	0.42	4.65	1.83	2.42	1.30	7.21	0.12	6.03	0.18	1.11	0.33	1.18



Stellar Parameters For KIC 005019567

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7537^{+209}_{-340}	$4.007^{+0.210}_{-0.158}$	$-0.060^{+0.200}_{-0.350}$	$2.145^{+0.510}_{-0.623}$	$1.703^{+0.200}_{-0.325}$	$0.243^{+0.301}_{-0.100}$
	+3%/-5%	+5%/-4%	+333%/-583%	+24%/-29%	+12%/-19%	+124%/-41%
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 005019567-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-21 ± 2	$1.30^{+0.29}_{-0.28}$	5025^{+338}_{-412}	6396^{+792}_{-626}	$2.208^{+1.313}_{-0.740}$
Alt.	-25 ± 4	$1.26^{+0.30}_{-0.28}$	5000^{+374}_{-379}	6744^{+998}_{-686}	$2.730^{+1.710}_{-0.975}$

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

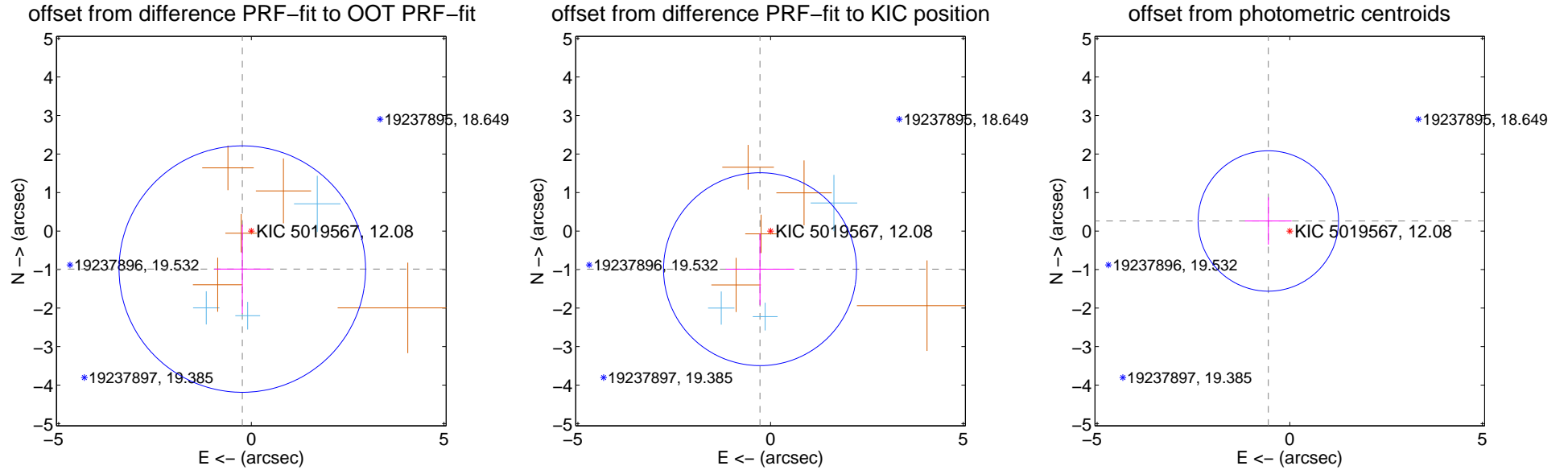
DV Centroid Data

Supplemental centroid analysis for 005019567-01. Kepler magnitude: 12.08. Transit SNR 9.90

There are 3 quarters with good PRF difference image offsets

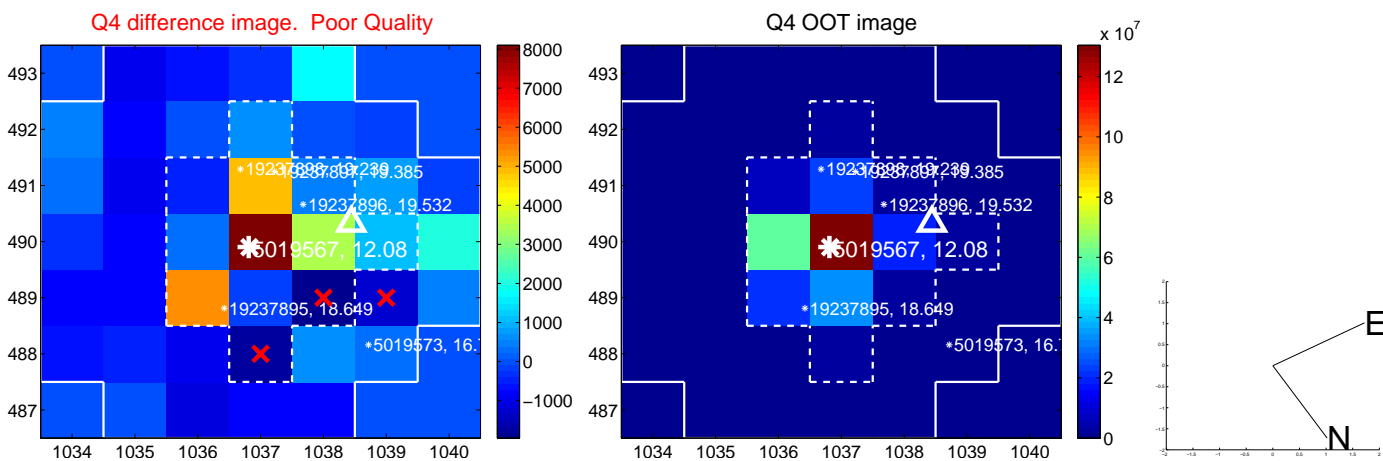
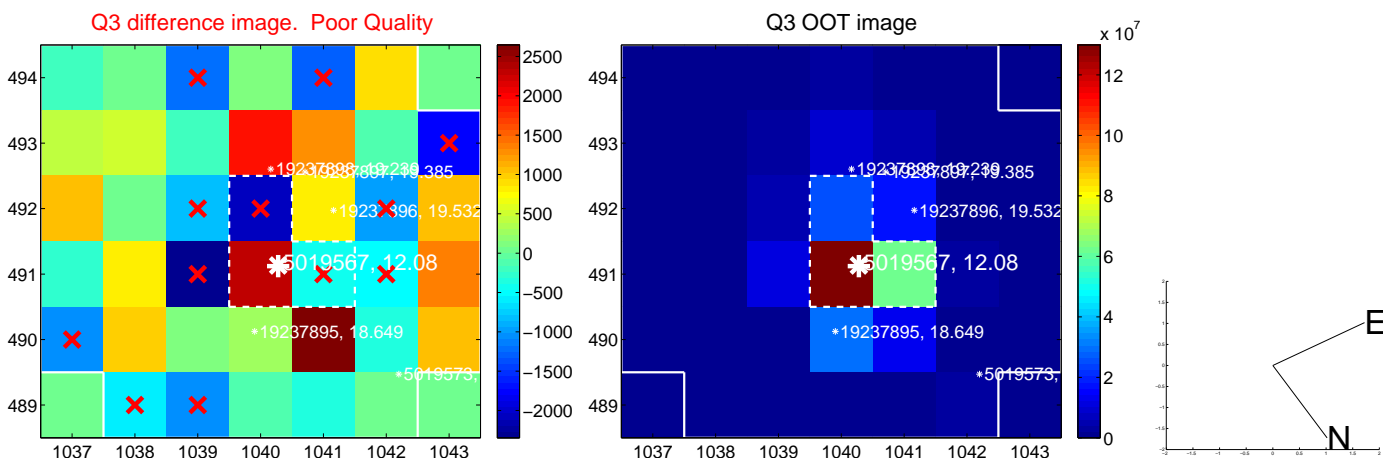
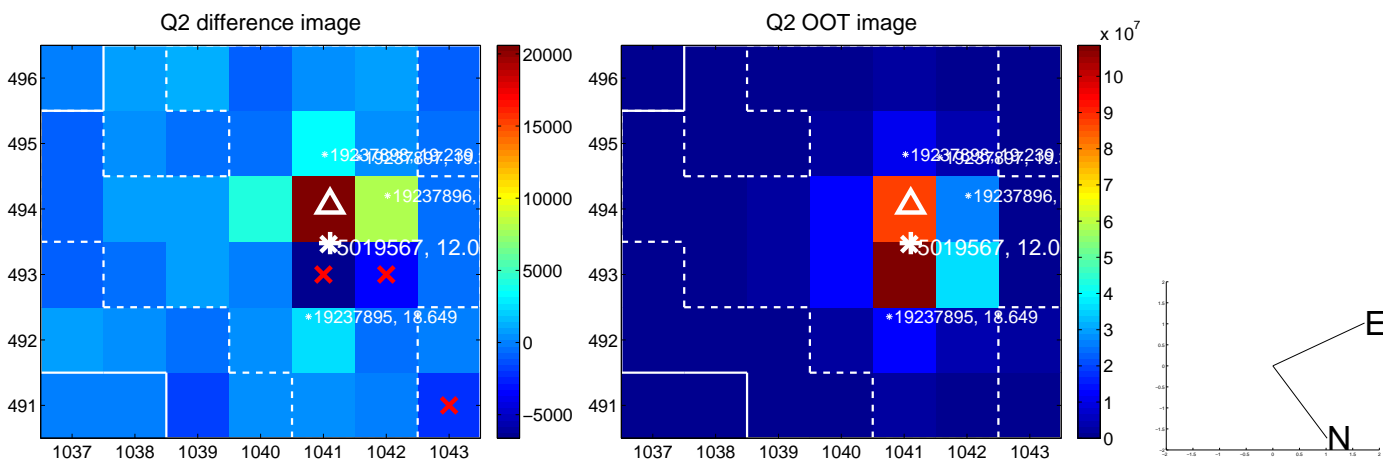
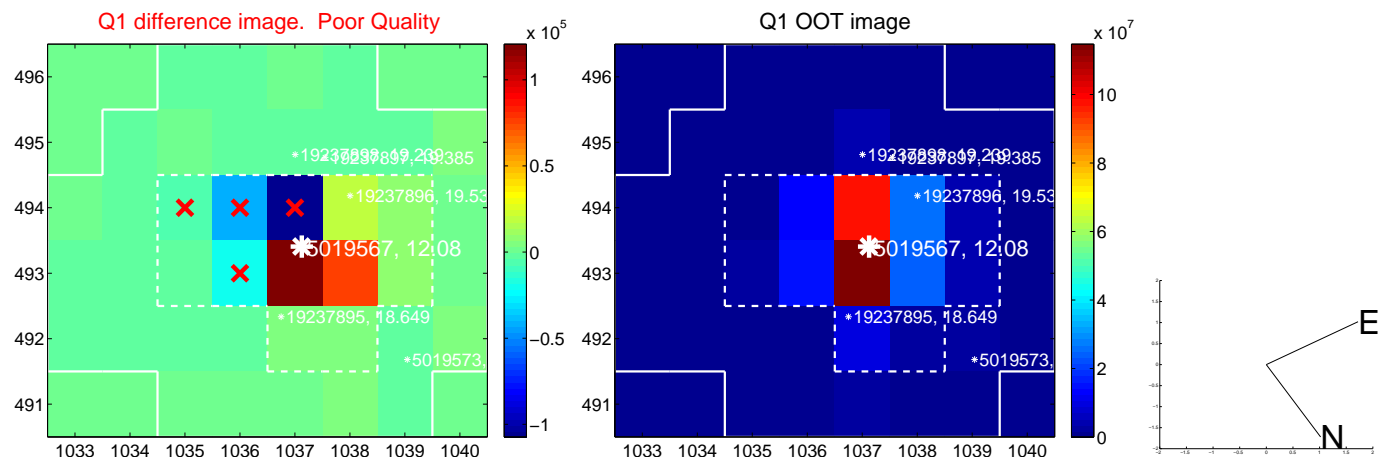
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.015 ± 1.067	0.95	0.234 ± 0.727	-0.987 ± 1.154
PRF-fit source offset from KIC position	1.027 ± 0.835	1.23	0.273 ± 0.890	-0.990 ± 0.932
photometric centroid source offset	0.62 ± 0.61	1.01	0.56 ± 0.61	0.26 ± 0.61

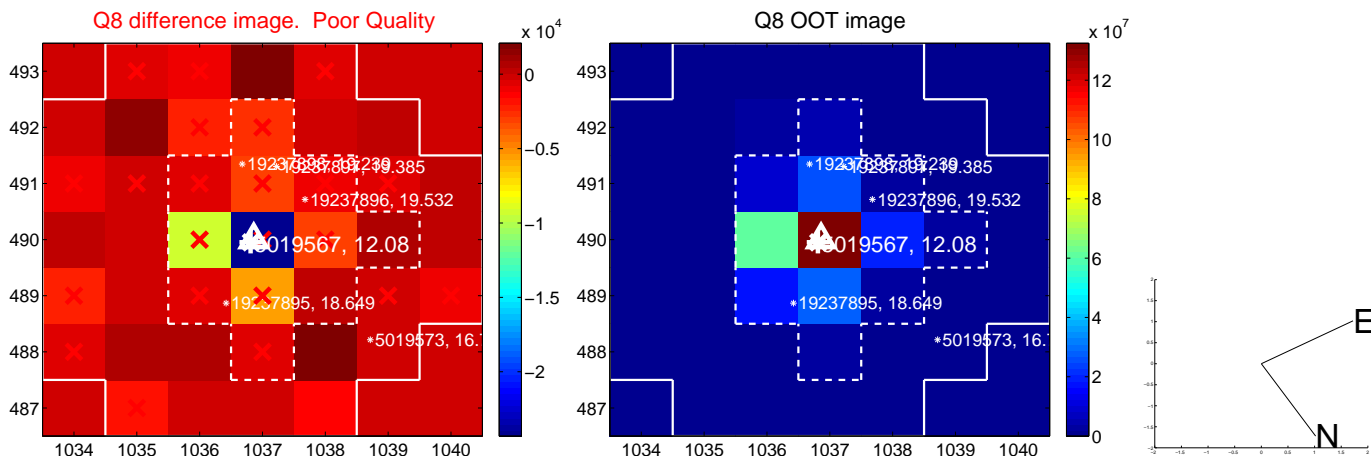
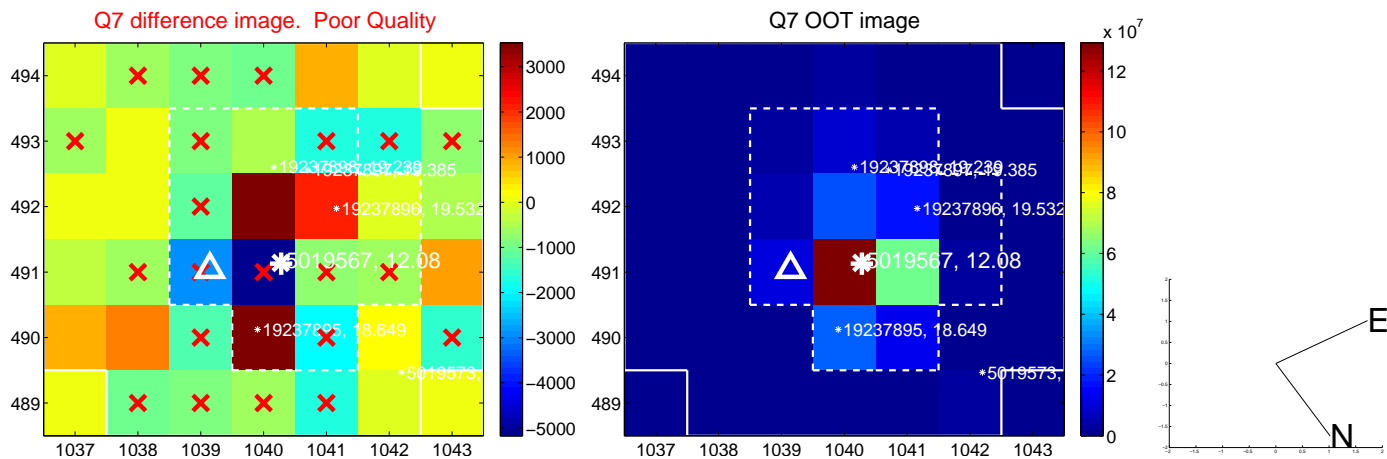
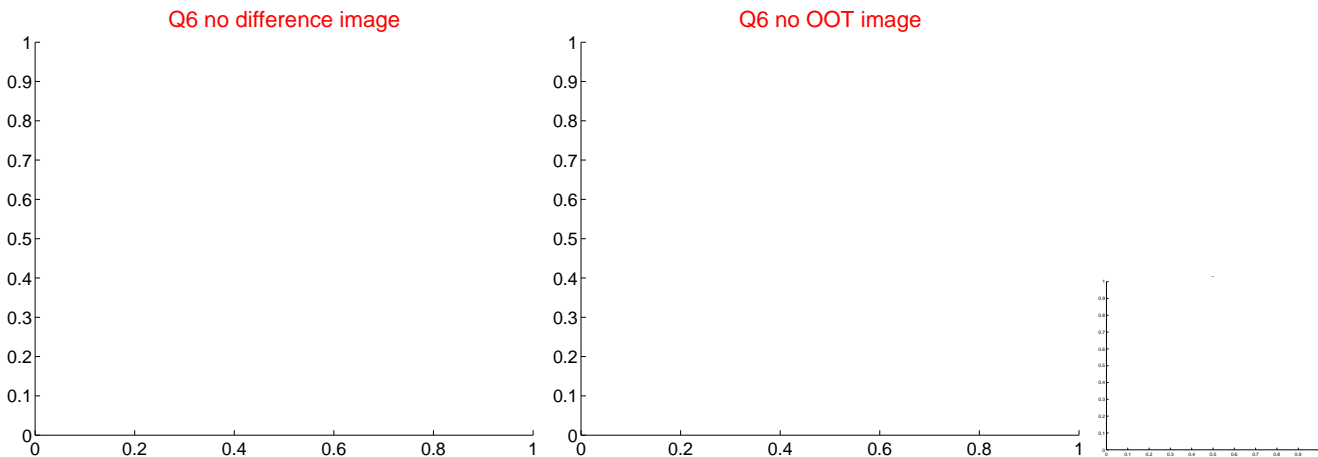
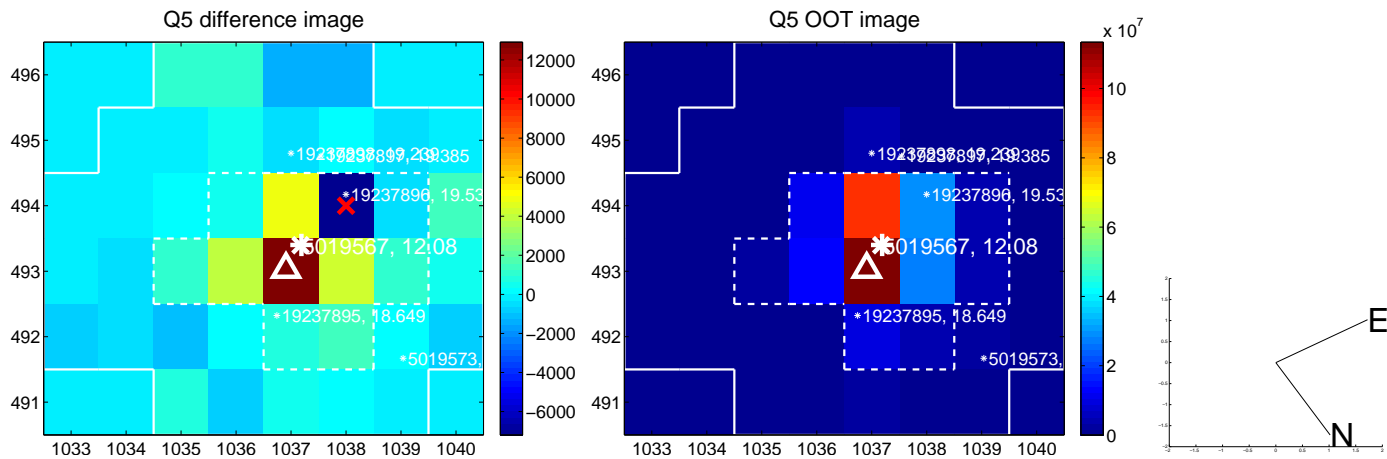


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

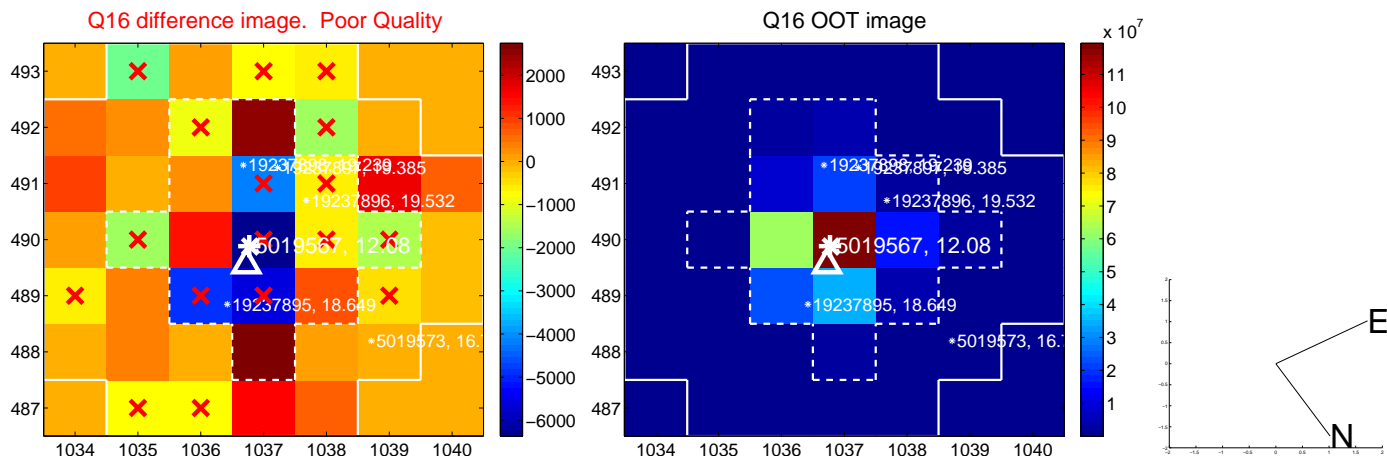
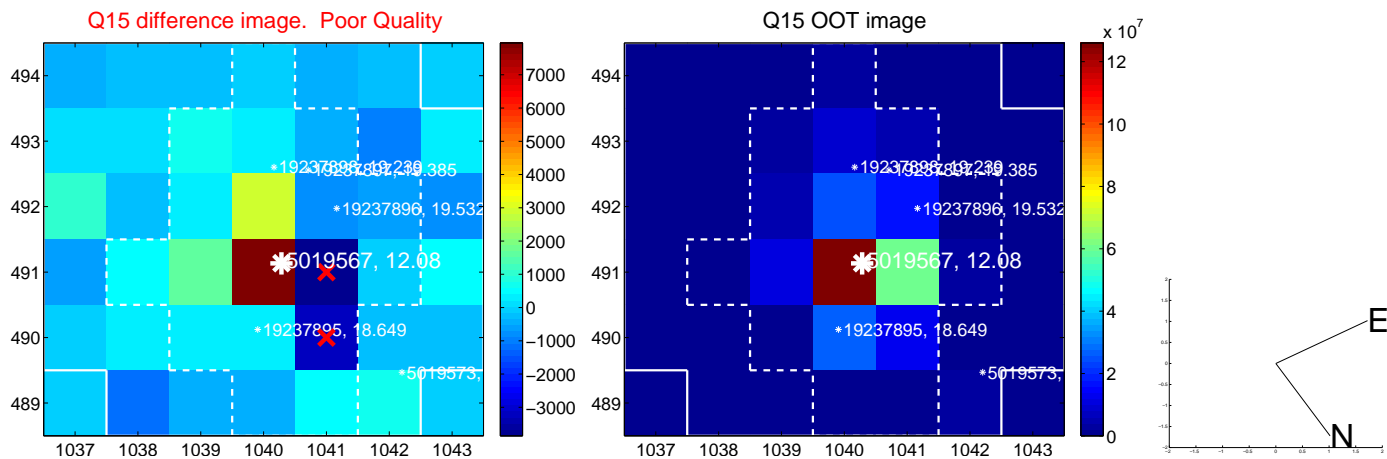
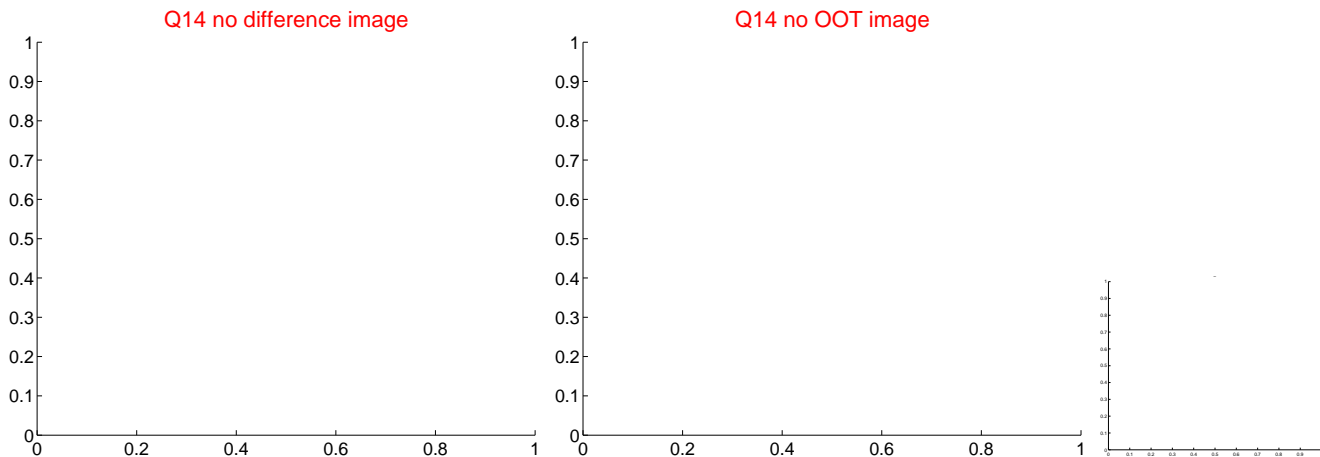
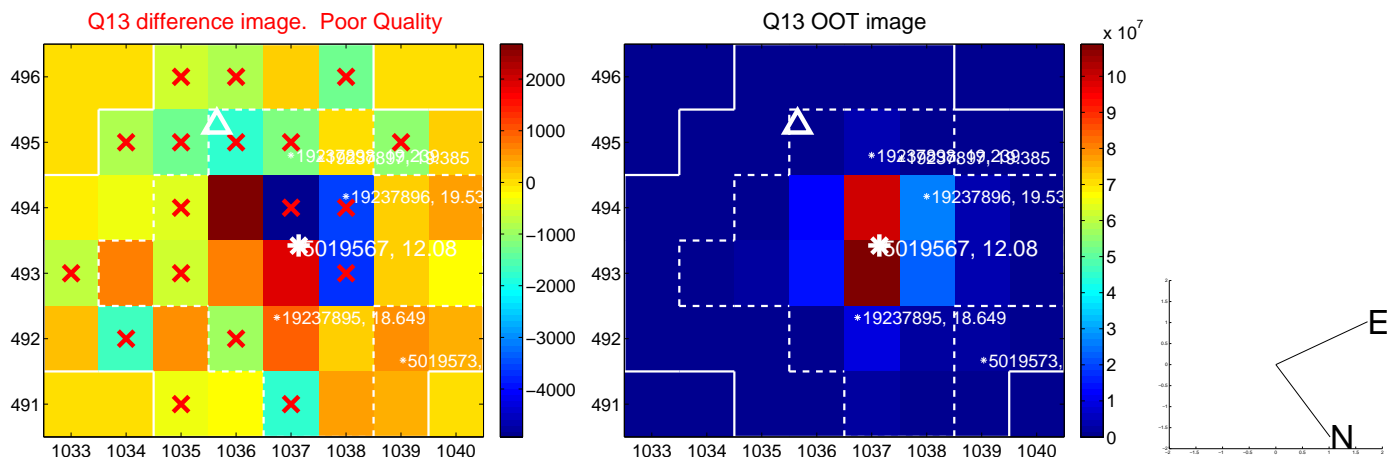
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



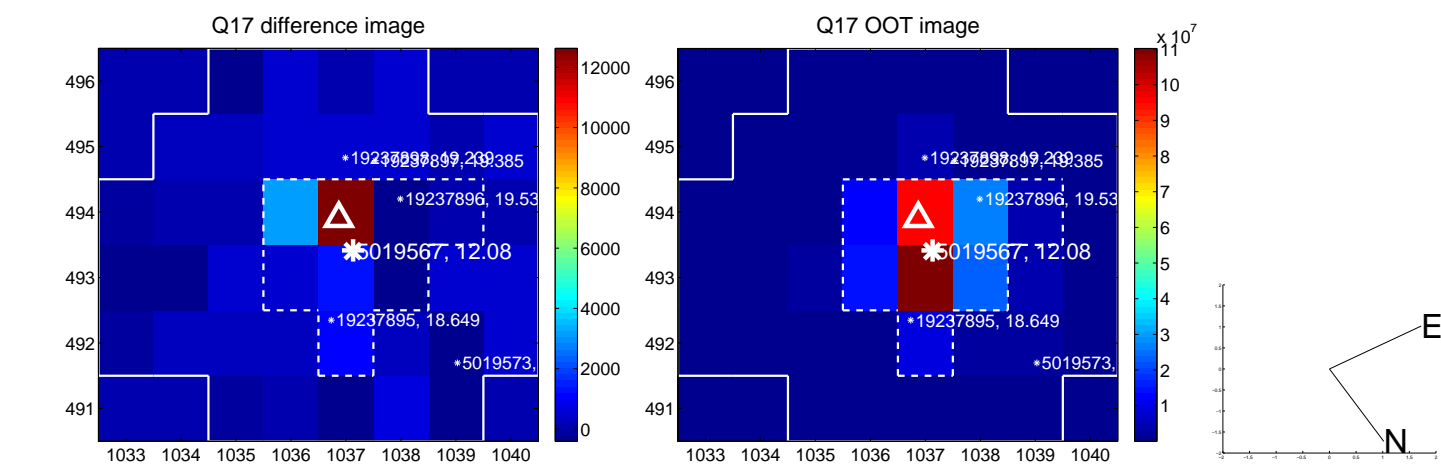
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



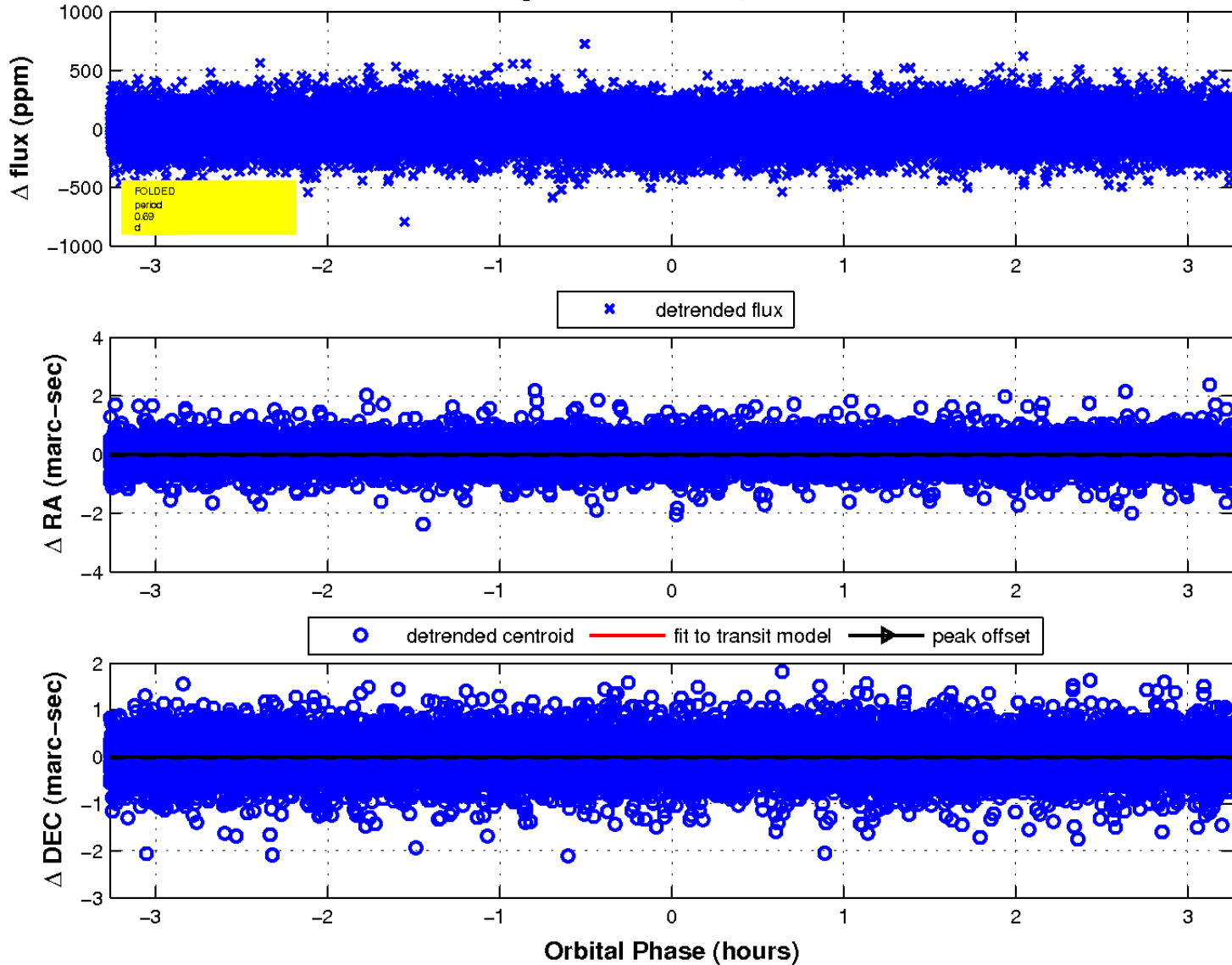
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

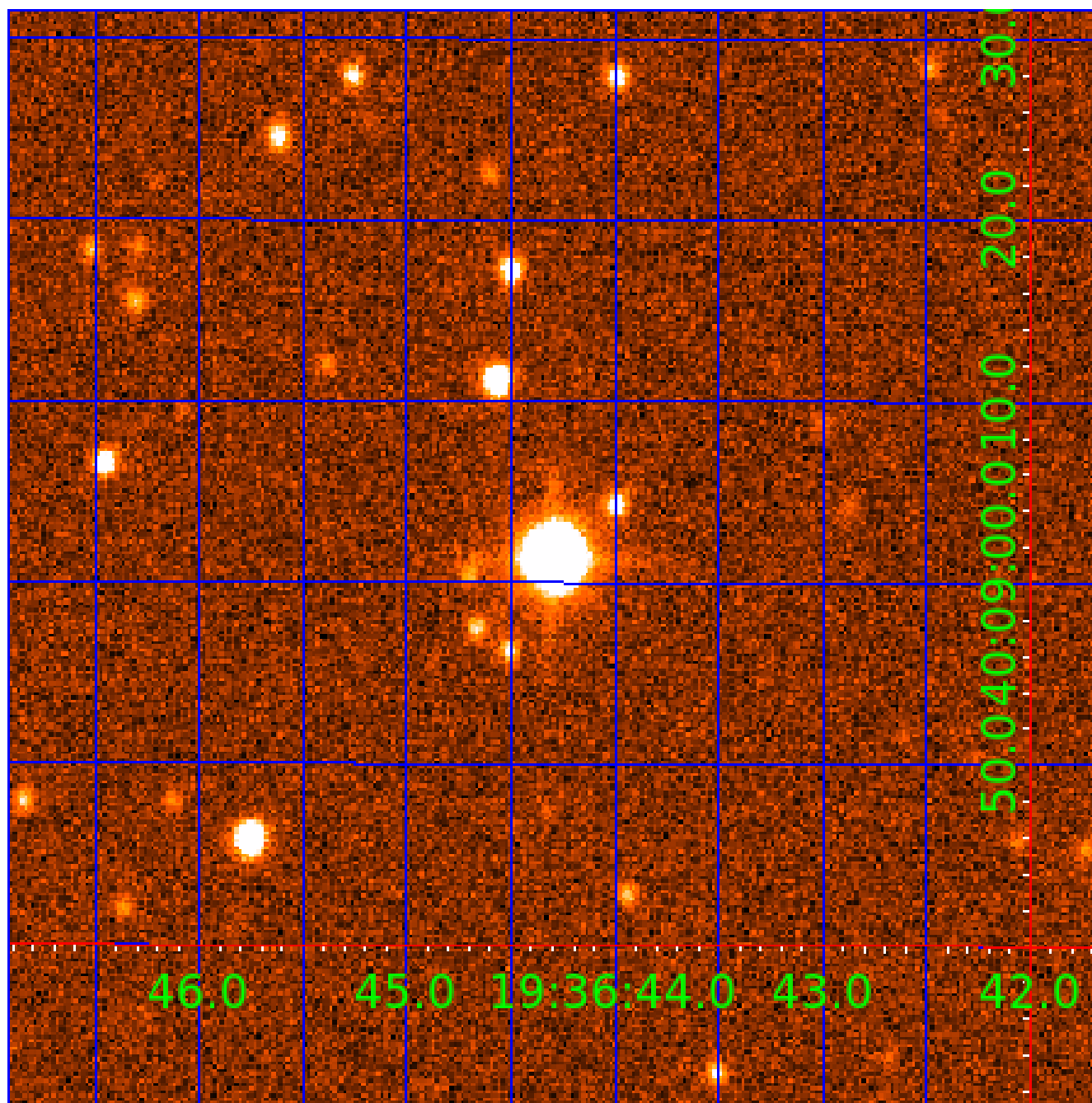


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 005019567

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})
005019567-01	OBS	No	0.685607	131.903272	27.4	1.089	9.0	9.9	2.15	7537	1.30	40229.04
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005019567-04	OBS	No	62.407135	172.737307	239.5	2.204	7.6	6.7	2.15	7537	3.40	98.25
005019567-05	OBS	No	159.029943	266.969299	389.4	2.340	7.8	8.2	2.15	7537	4.90	28.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005019567-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005019567-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005019567-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005019567-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
005019567-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—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.

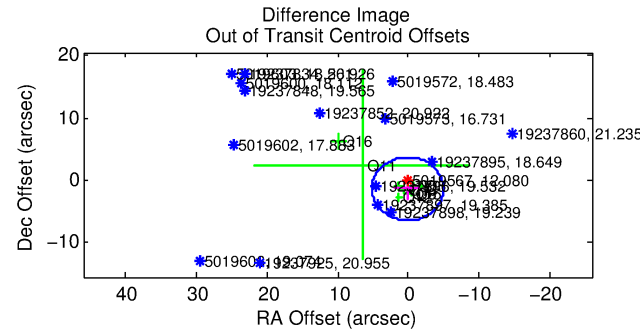
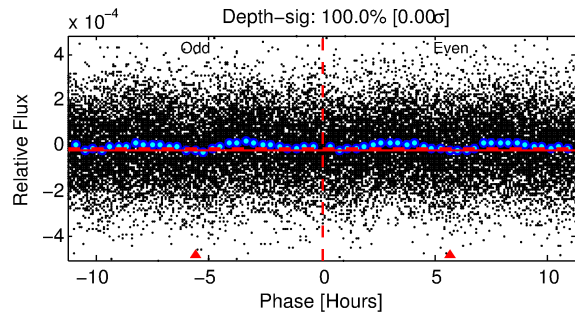
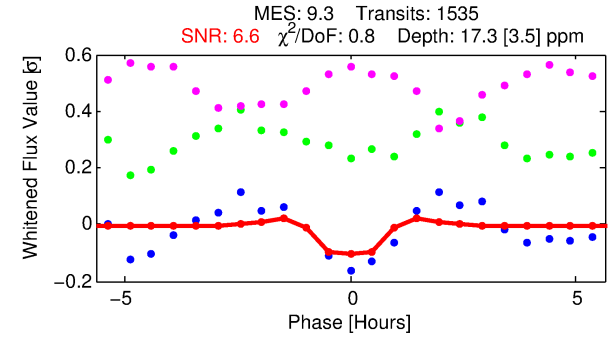
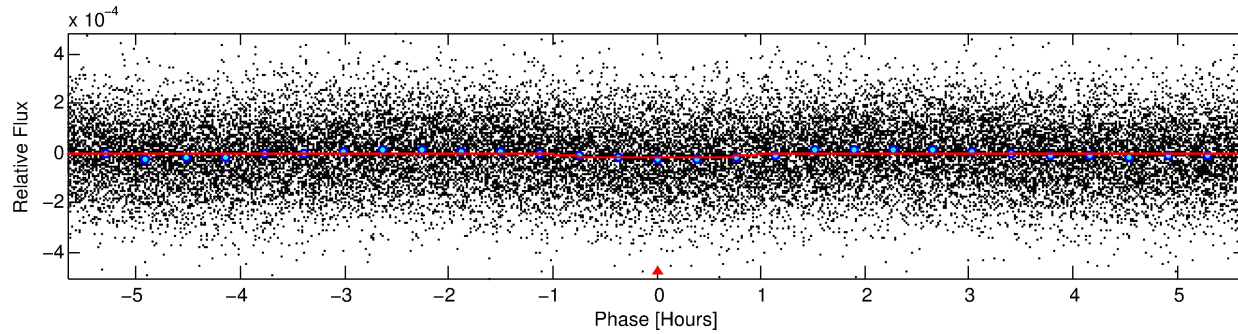
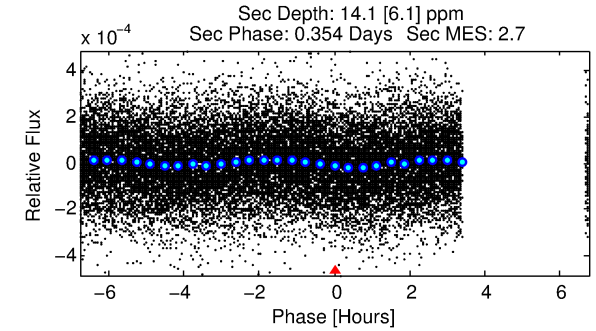
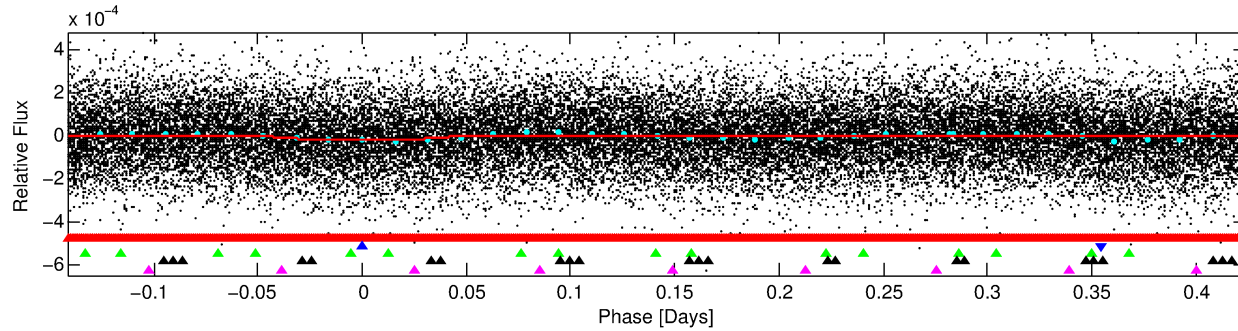
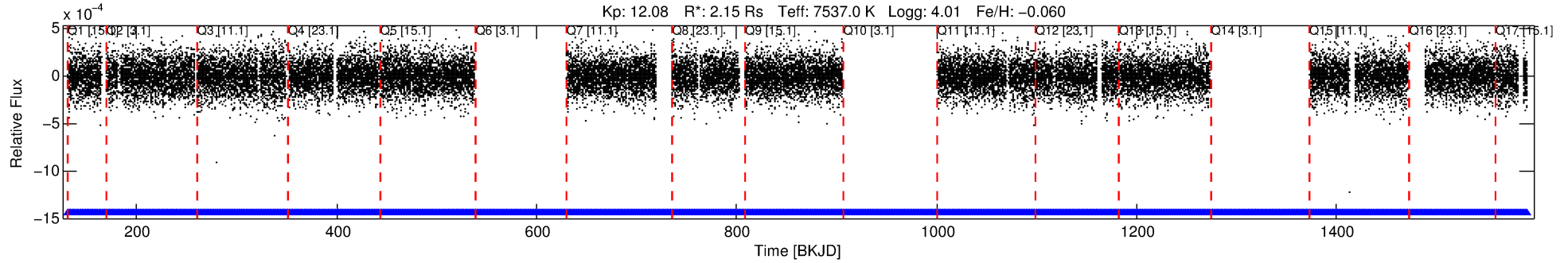
Ephemeris Match Information For 005019567-02

No Significant Match Found

DV One-Page Summary

KIC: 5019567 Candidate: 2 of 5 Period: 0.565 d
KOI: K06488 Corr: No Ephemeris Match

Kp: 12.08 R*: 2.15 Rs Teff: 7537.0 K Logg: 4.01 Fe/H: -0.060



DV Fit Results:

Period = 0.56505 [0.00002] d
Epoch = 131.5833 [0.0030] BKJD
Rp/R* = 0.0044 [0.0012]
a/R* = 1.39 [1.15]
b = 0.90 [0.37]
Seff = 52062.37 [21715.00]
Teq = 3852 [402] K
Rp = 1.03 [0.42] Re
a = 0.0160 [0.0040] AU
Ag = 1.85 [1.48] [0.58σ]
Teff = 6948 [1267] K [2.33σ]

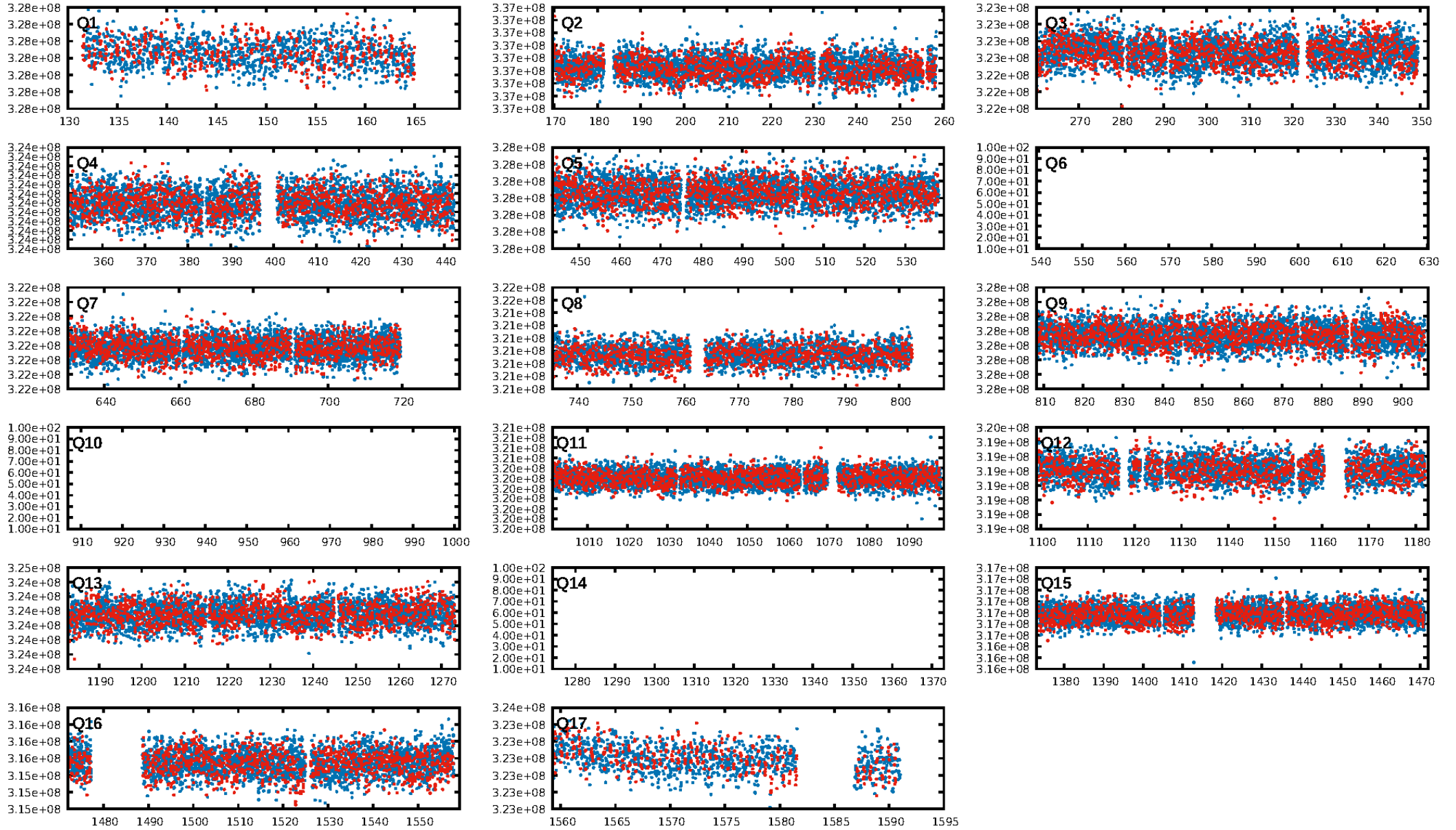
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 81.6% [1.33σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.53e-14
RollingBand-fgt: 1.00 [1445/1445]
GhostDiagnostic-chr: 3.619
Centroid-sig: 4.2%
Centroid-so: 1.226 arcsec [1.88σ]
OotOffset-rm: 1.378 arcsec [0.82σ]
KicOffset-rm: 1.360 arcsec [0.81σ]
OotOffset-st: 0/3/3/3 [9]
KicOffset-st: 0/3/3/3 [9]
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DiffImageOverlap-fno: 1.00 [14/14]

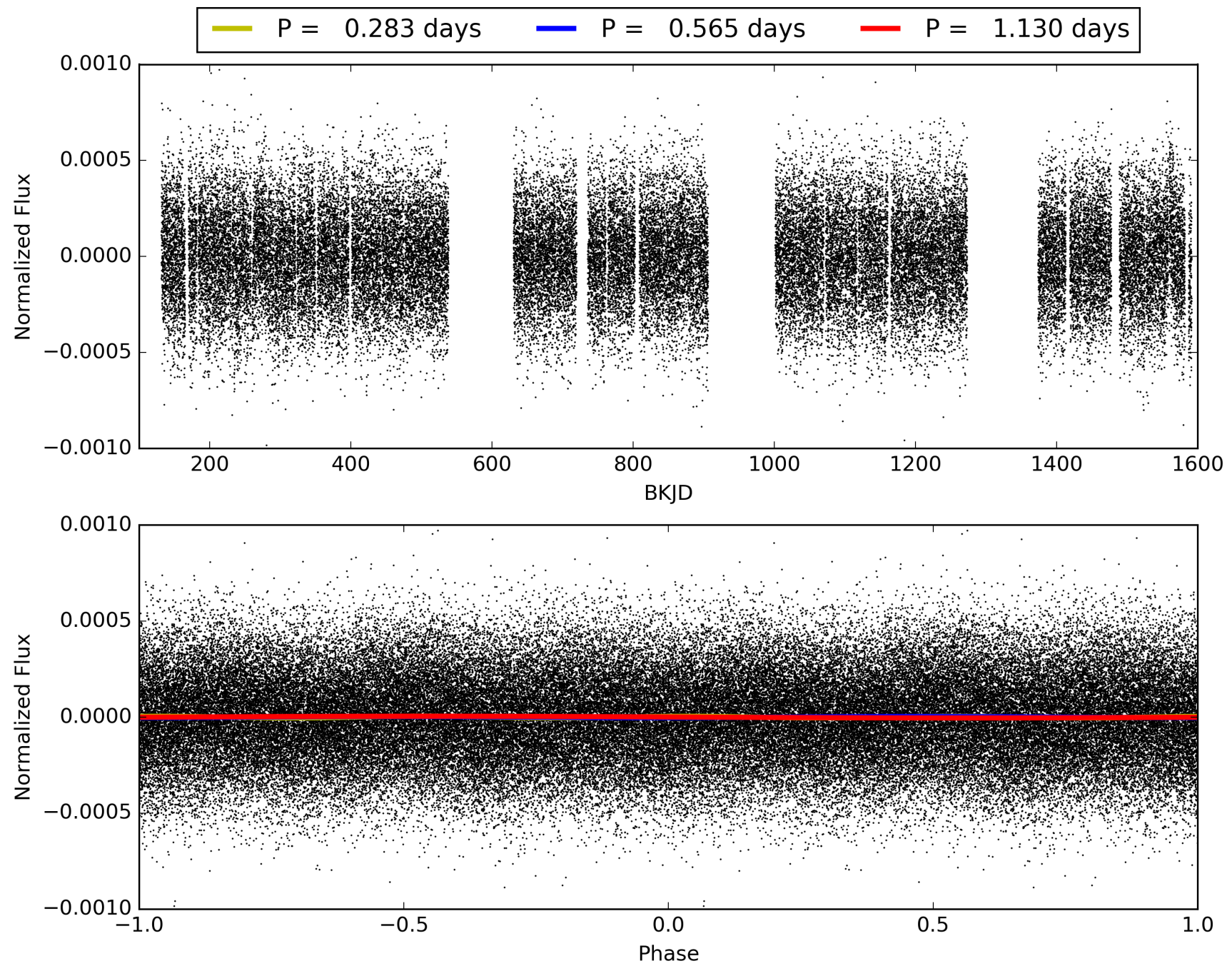
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:30:33 Z

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

TCE 005019567-02, PDC Light Curves

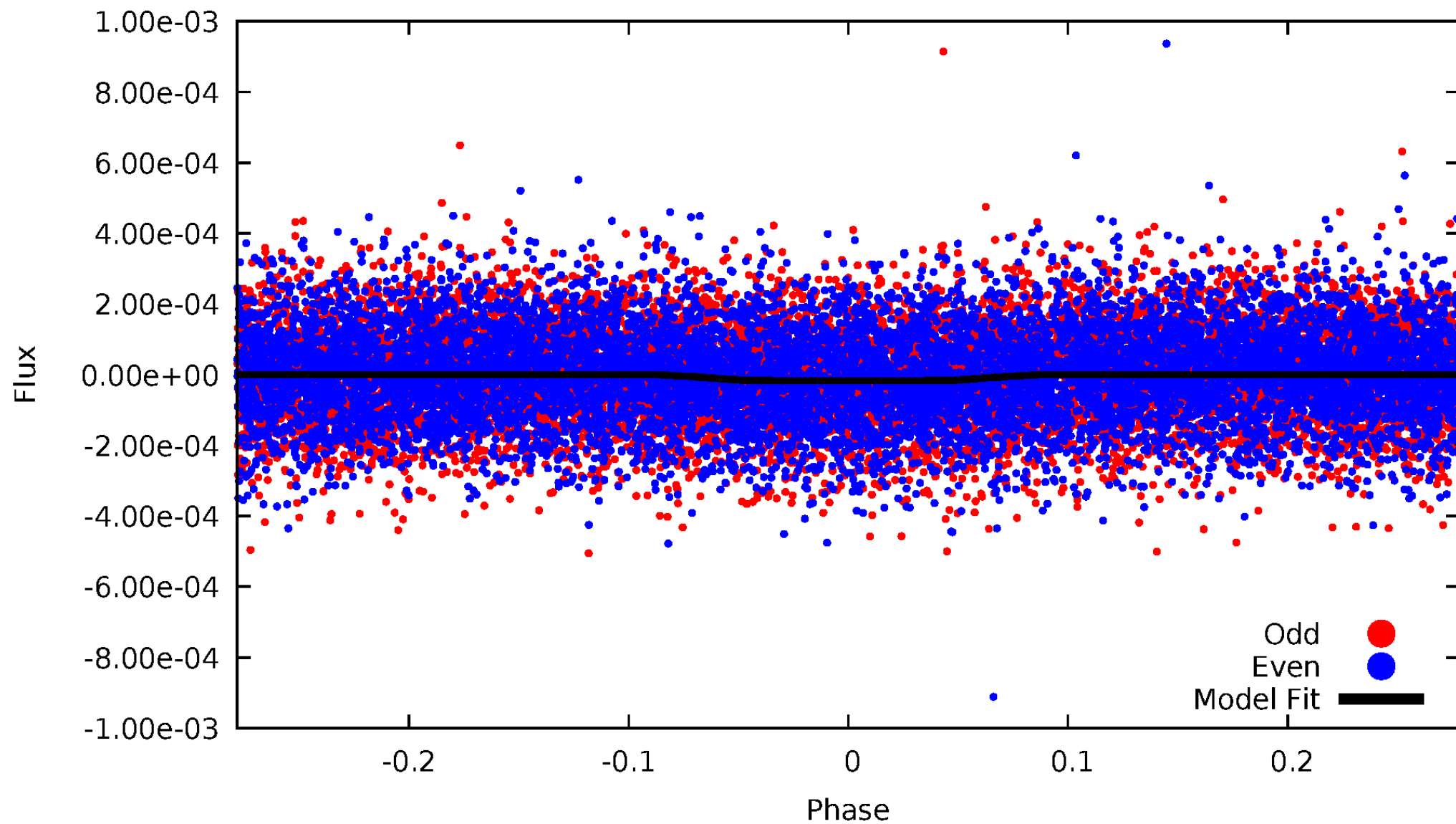


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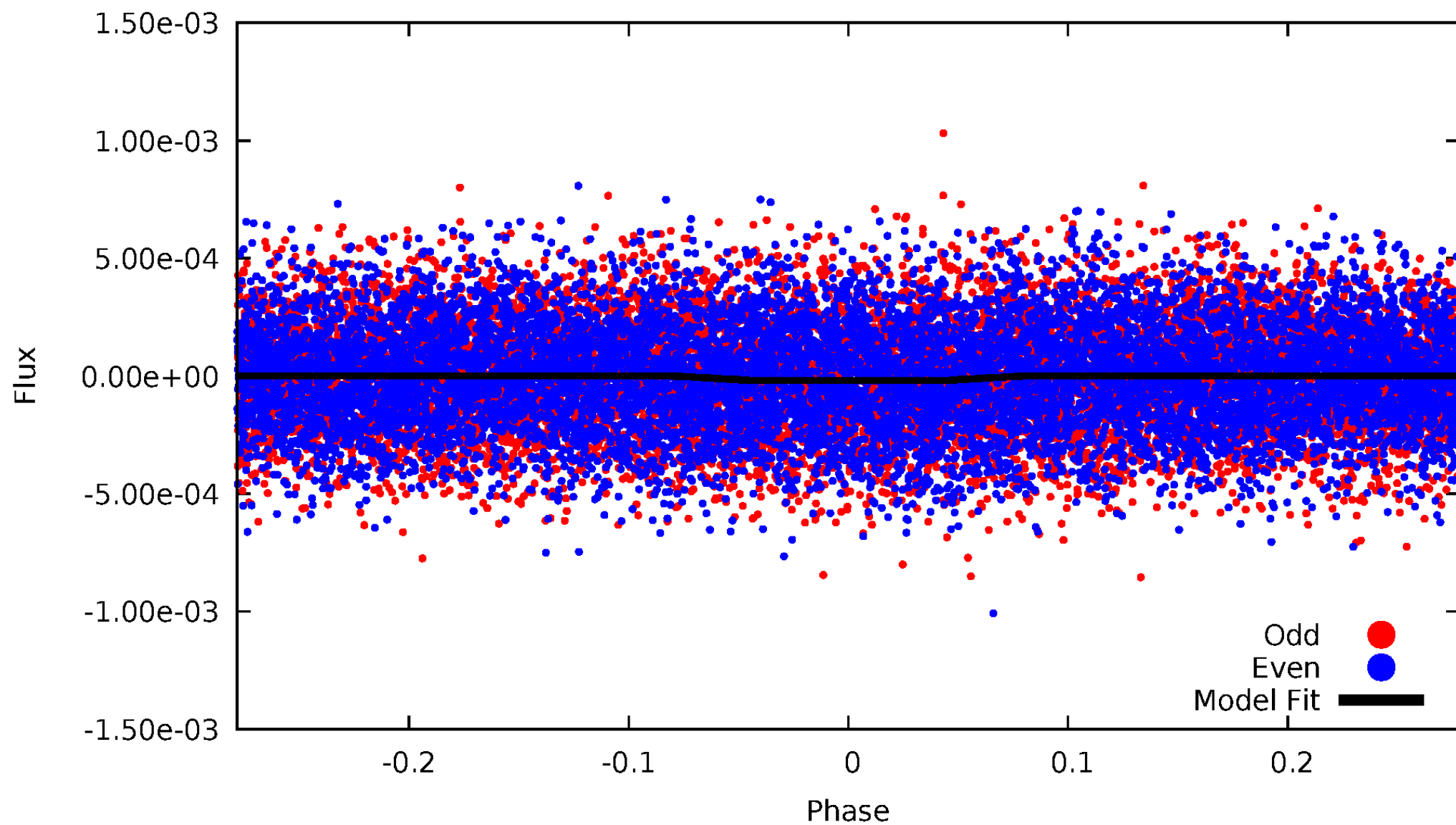
DV Odd/Even

TCE 005019567-02



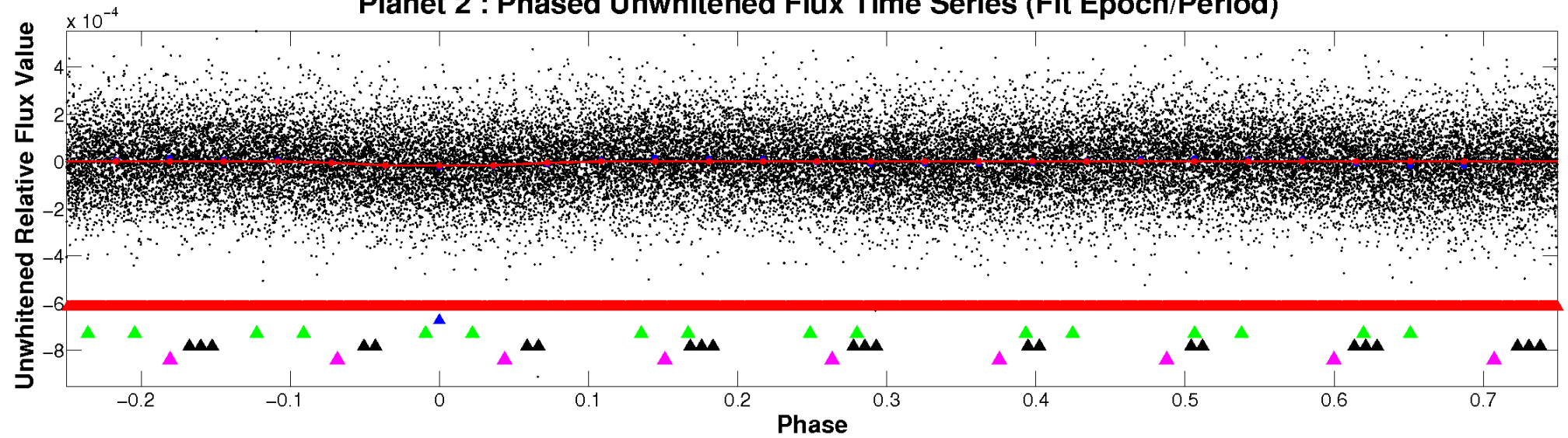
ALT Odd/Even

TCE 005019567-02

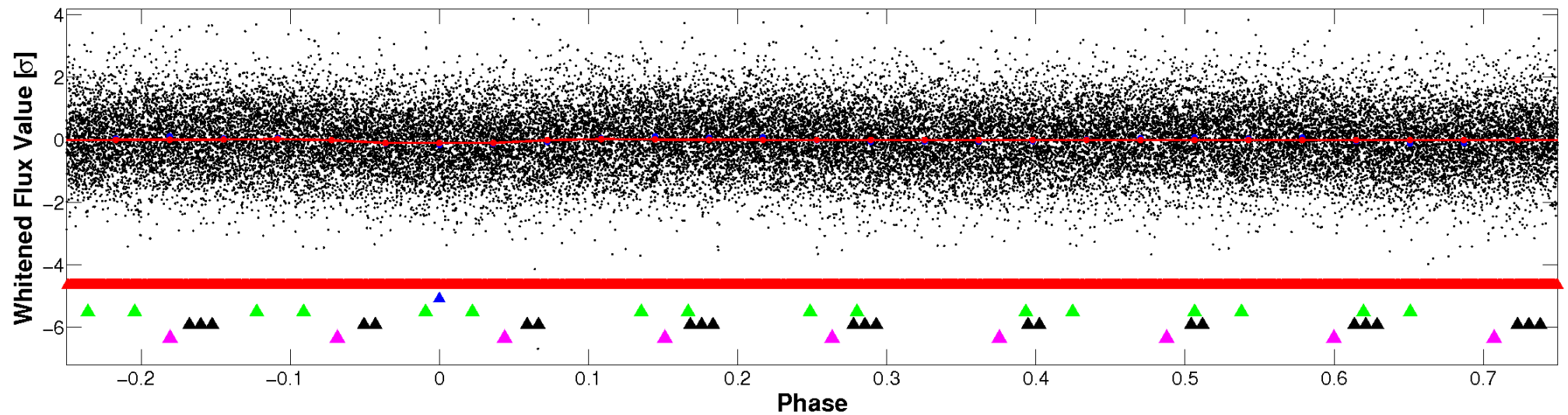


Non-Whitened Vs. Whitened Light Curve

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

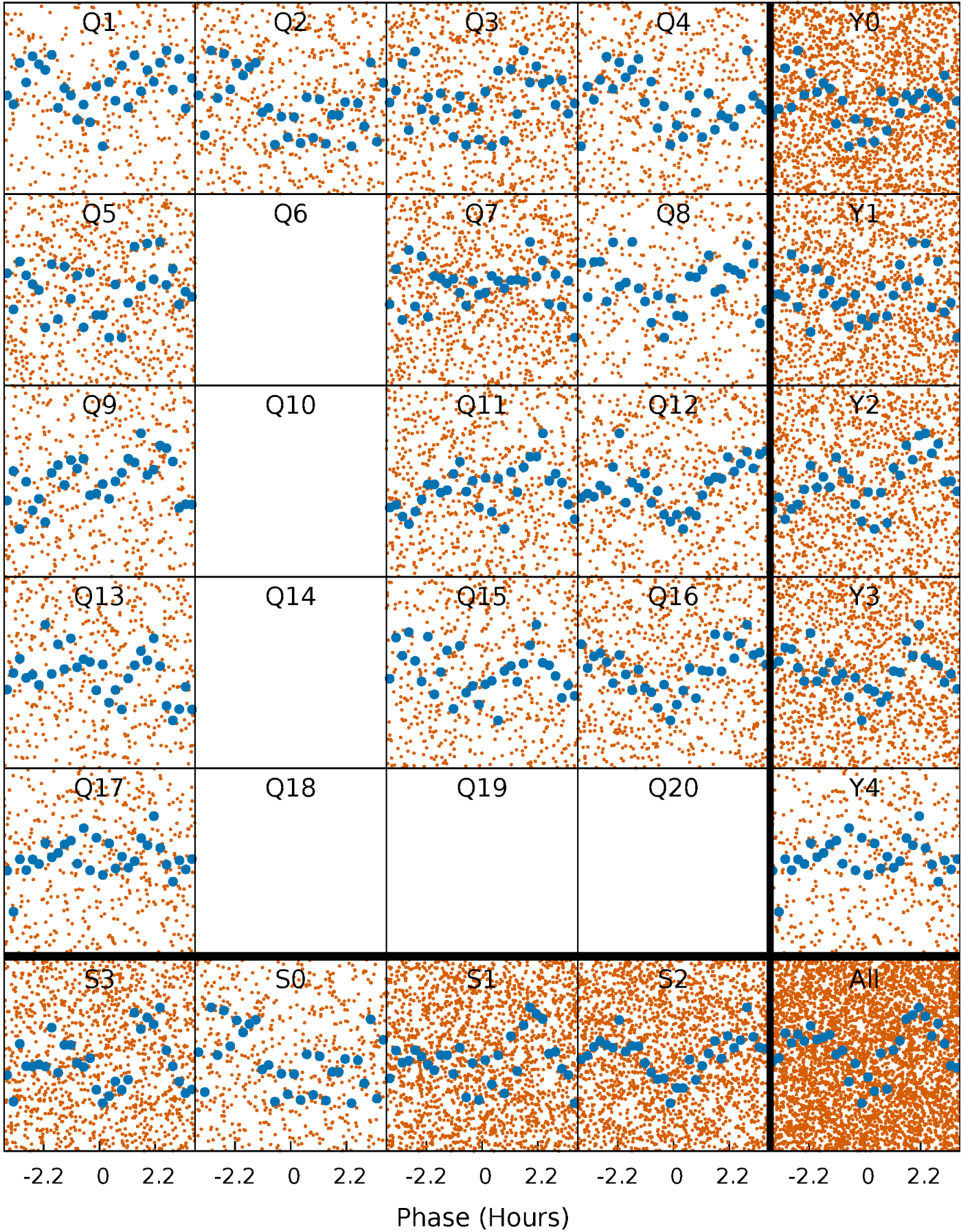


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



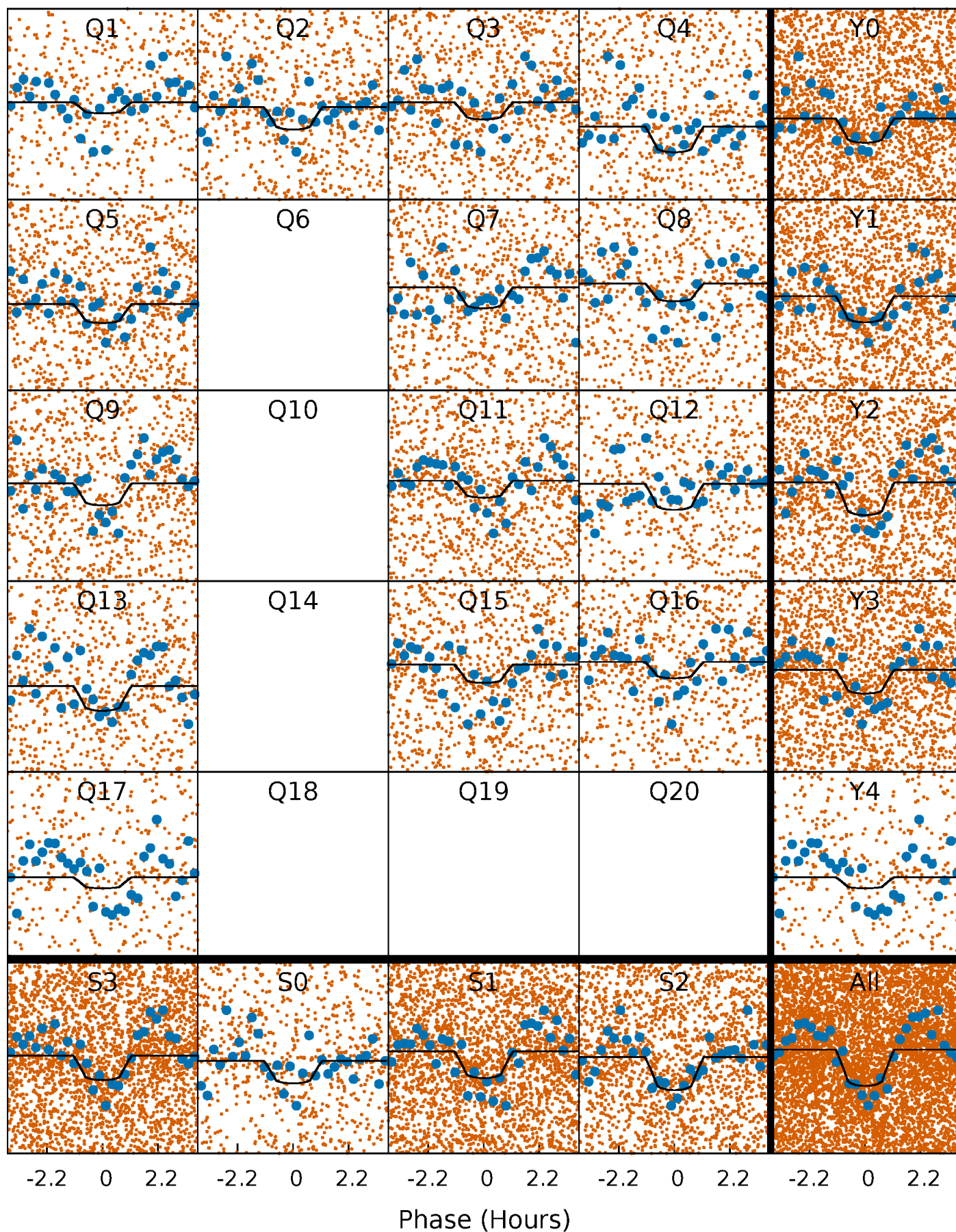
PDC Quarter-Phased Transit Curves

TCE 005019567-02 P= 0.565050 Days $T_0=131.583337$ (BKJD)



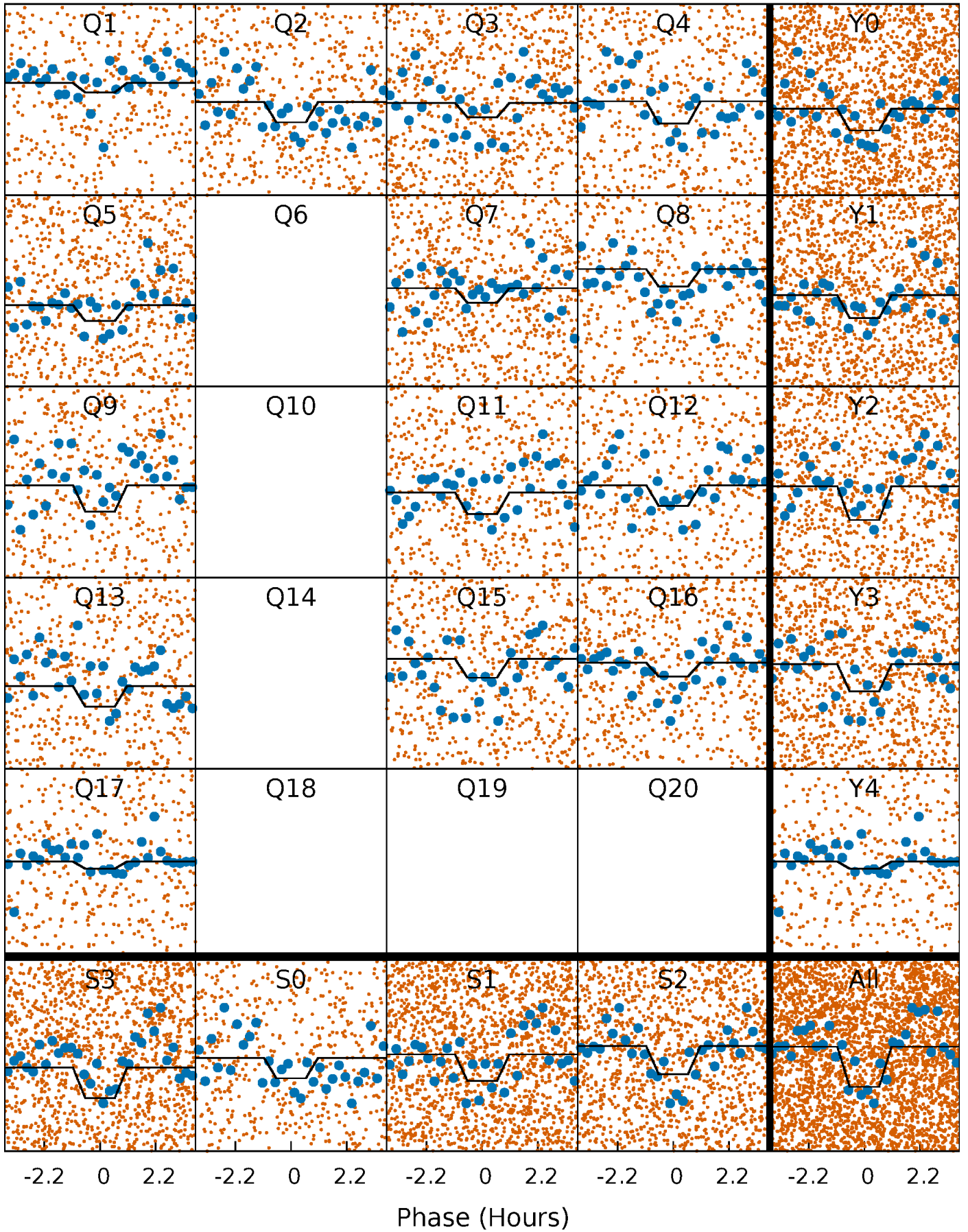
DV Quarter-Phased Transit Curves

TCE 005019567-02 P= 0.565050 Days $T_0=131.583337$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

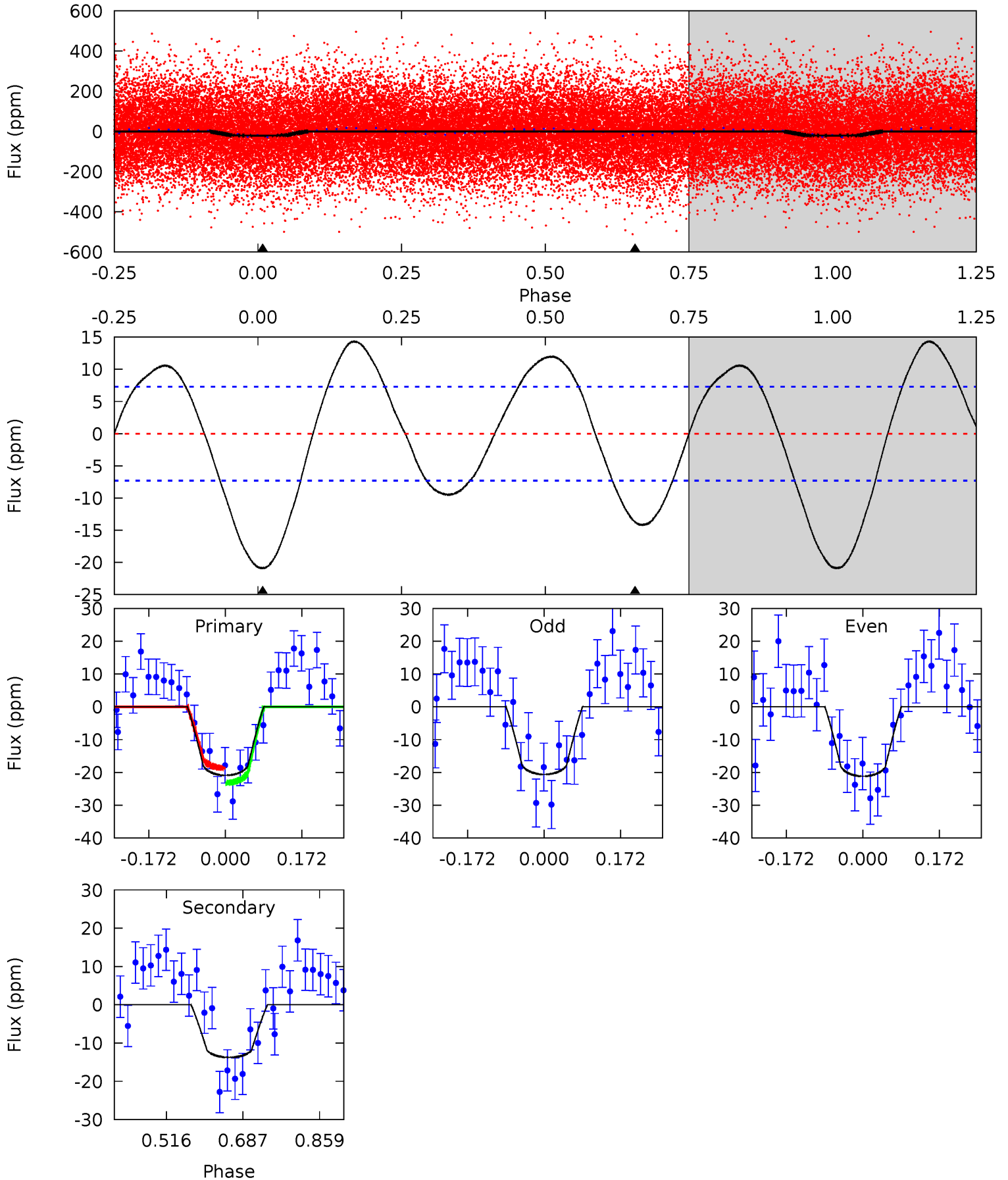
TCE 005019567-02 P= 0.565050 Days $T_0=131.583337$ (BKJD)



DV Model-Shift Uniqueness Test

005019567-02, P = 0.565050 Days, E = 131.018287 Days

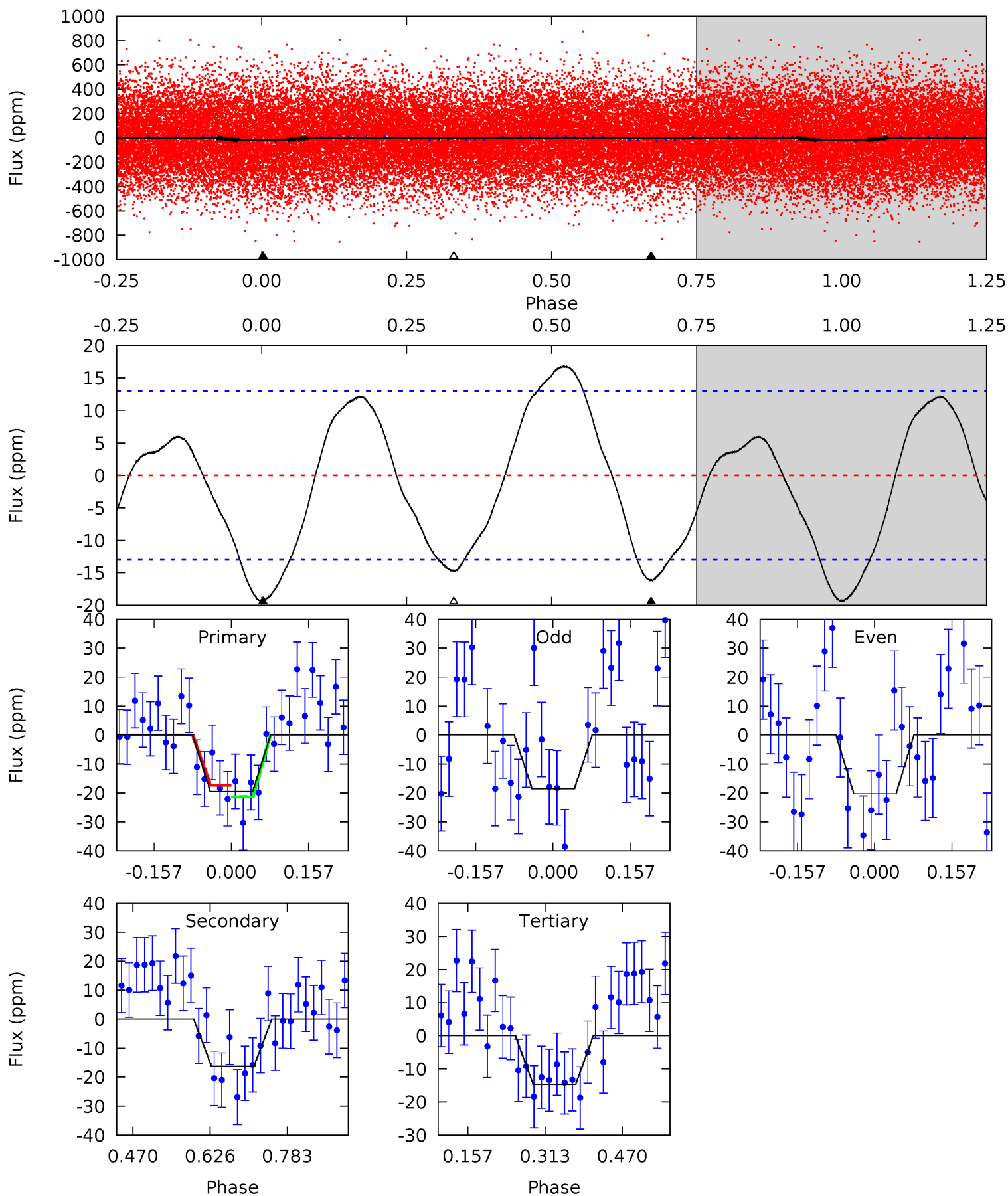
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	8.39	0	0	4.45	1.37	4.57	12.8	12.8	8.39	8.39	0.17	1.04	0.41	1.37



Alt Model-Shift Uniqueness Test

005019567-02, P = 0.565050 Days, E = 131.018287 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.66	5.59	5.07	0	4.47	1.42	3.46	1.59	6.66	0.52	5.59	0.29	1.13	0.46	0.67



Stellar Parameters For KIC 005019567

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7537^{+209}_{-340}	$4.007^{+0.210}_{-0.158}$	$-0.060^{+0.200}_{-0.350}$	$2.145^{+0.510}_{-0.623}$	$1.703^{+0.200}_{-0.325}$	$0.243^{+0.301}_{-0.100}$
	+3%/-5%	+5%/-4%	+333%/-583%	+24%/-29%	+12%/-19%	+124%/-41%
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 005019567-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-14 ± 2	$1.01^{+0.32}_{-0.30}$	5332^{+386}_{-371}	6474^{+1490}_{-989}	$1.848^{+1.891}_{-0.774}$
Alt.	-16 ± 3	$0.99^{+0.38}_{-0.30}$	5346^{+391}_{-424}	6846^{+1779}_{-1104}	$2.240^{+2.578}_{-1.061}$

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

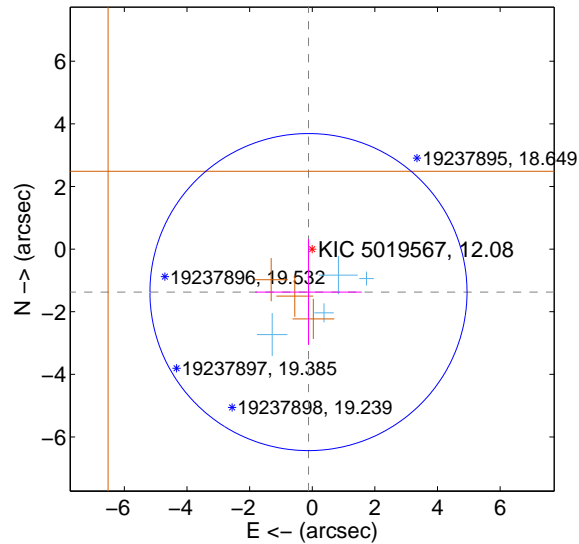
Supplemental centroid analysis for 005019567-02. Kepler magnitude: 12.08. Transit SNR 6.58

There are 4 quarters with good PRF difference image offsets

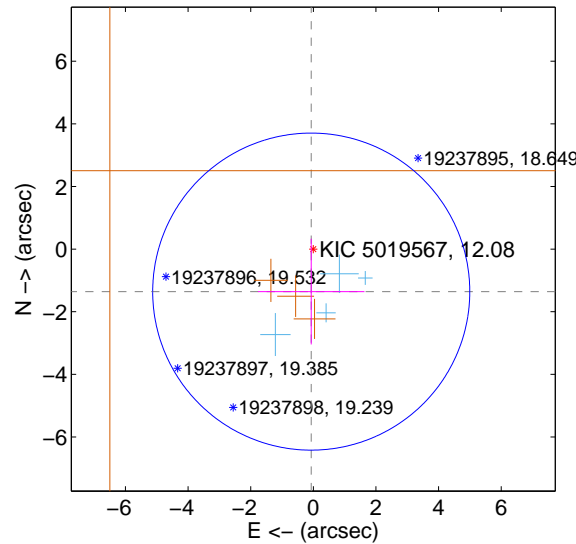
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.378 ± 1.688	0.82	0.120 ± 1.700	-1.373 ± 1.688
PRF-fit source offset from KIC position	1.360 ± 1.688	0.81	0.067 ± 1.700	-1.358 ± 1.688
photometric centroid source offset	1.23 ± 0.65	1.88	1.21 ± 0.65	-0.21 ± 0.66

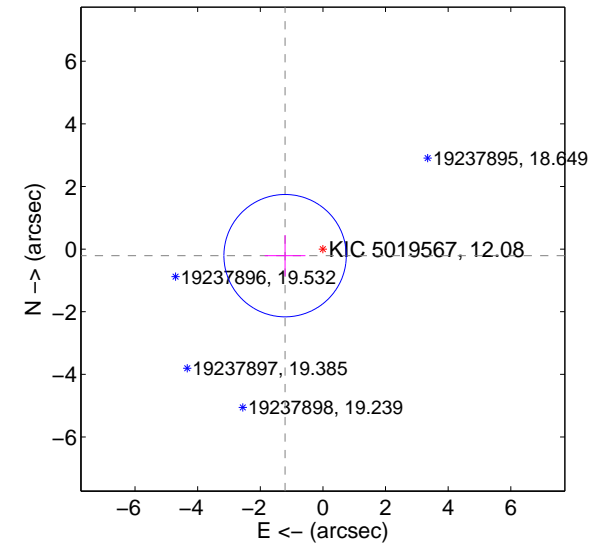
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

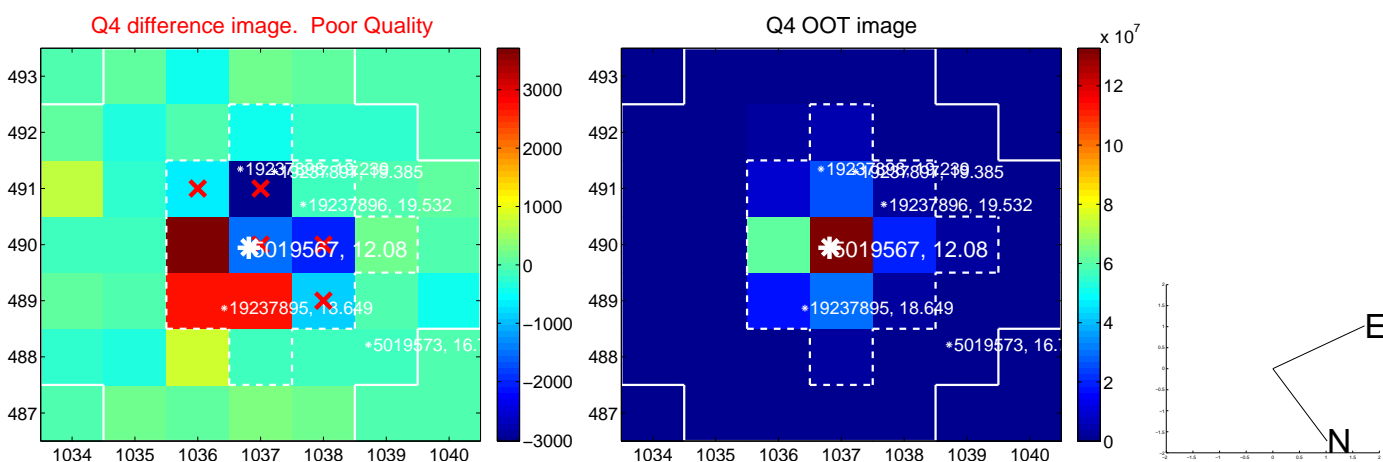
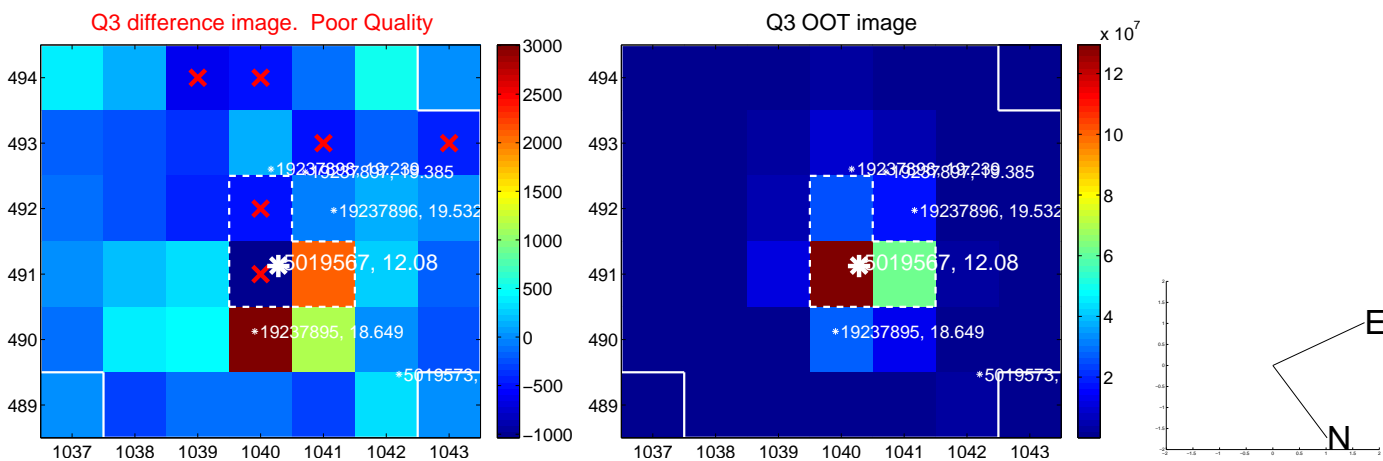
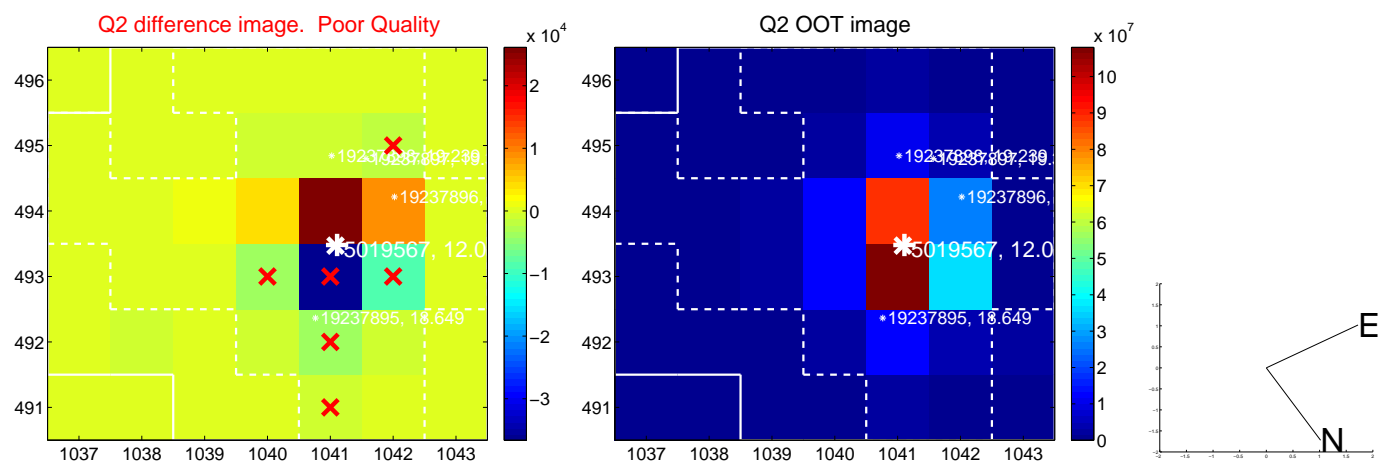
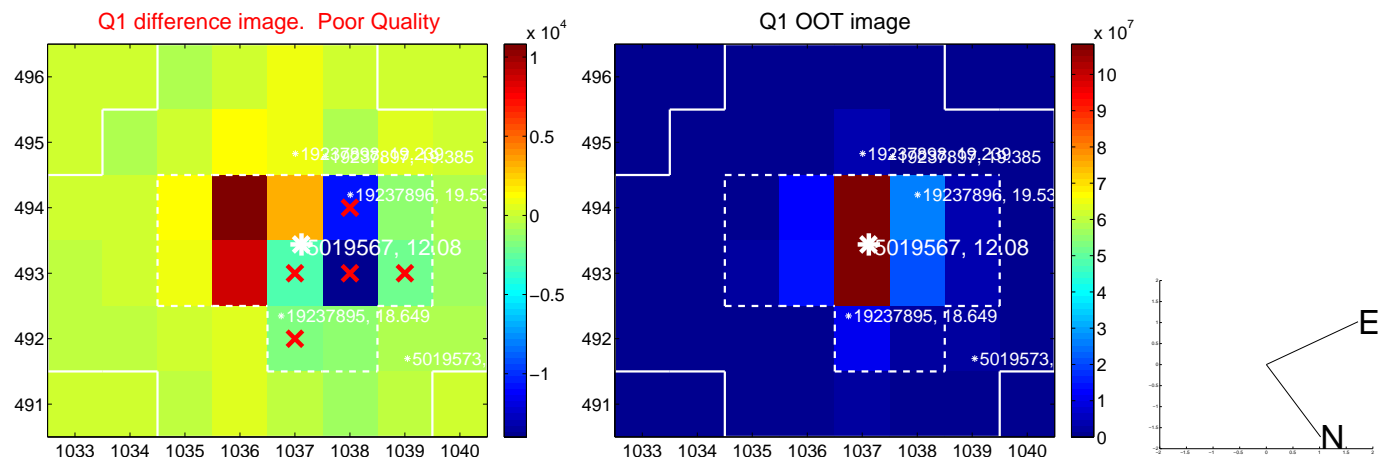


offset from photometric centroids

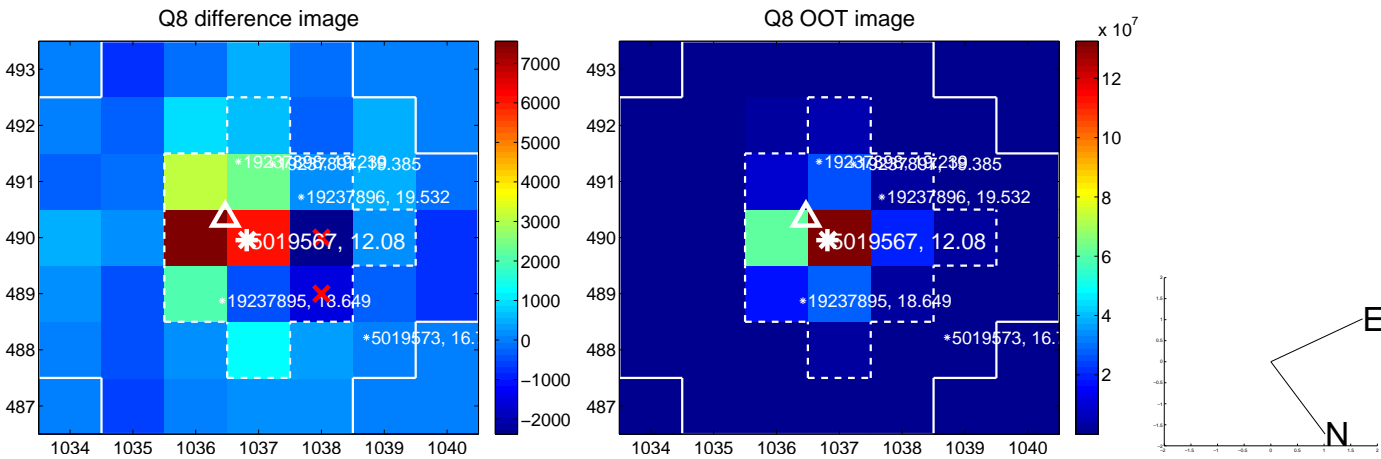
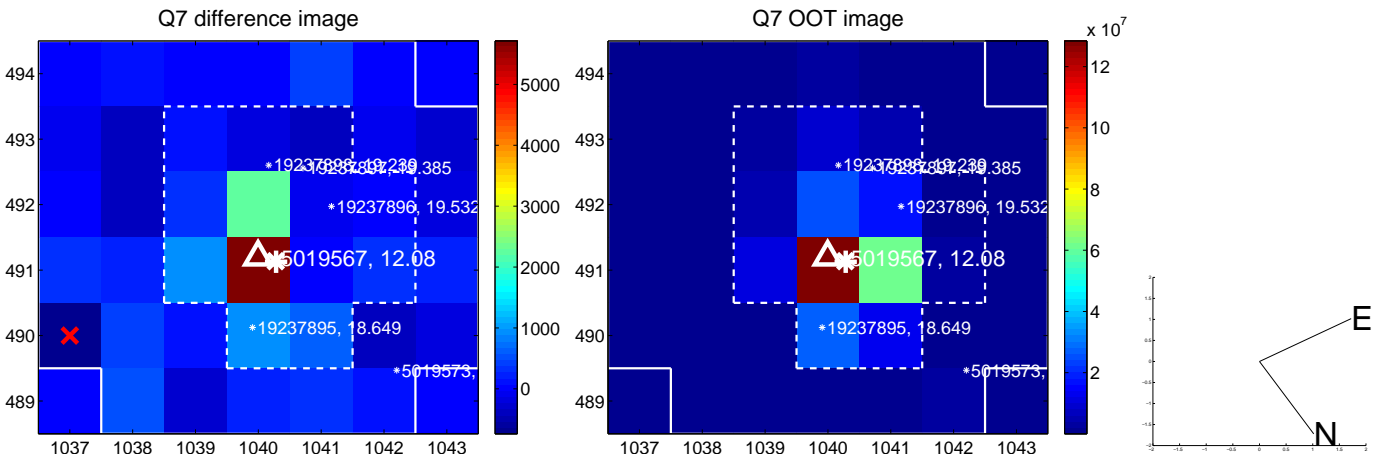
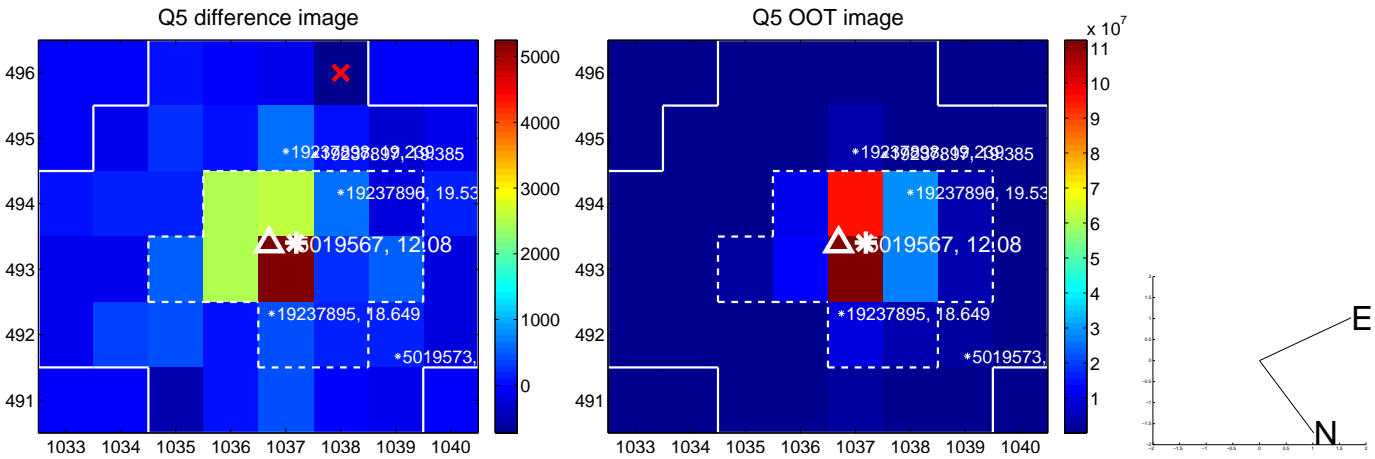


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

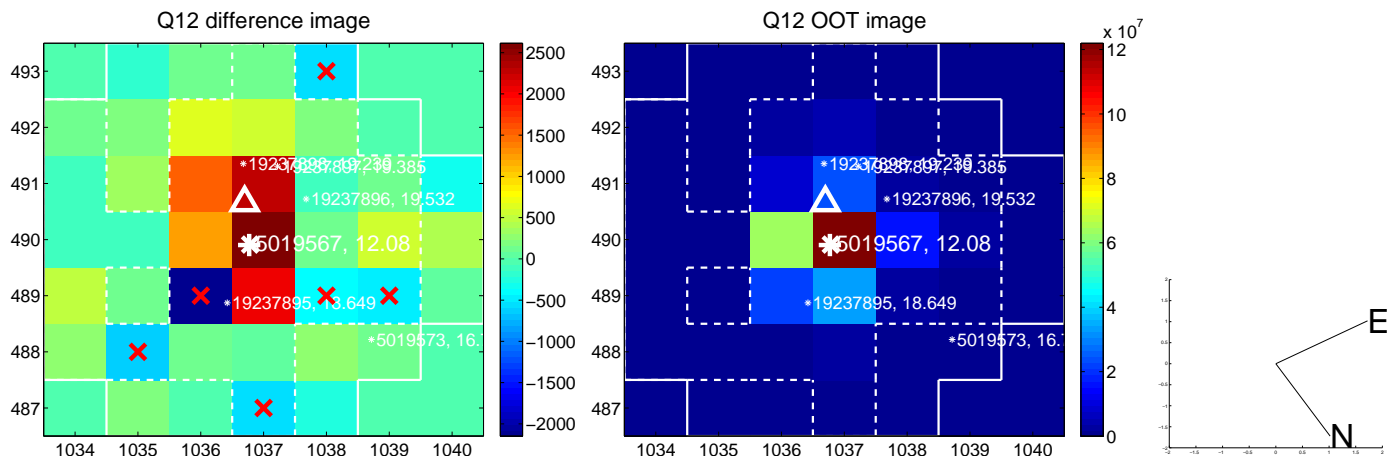
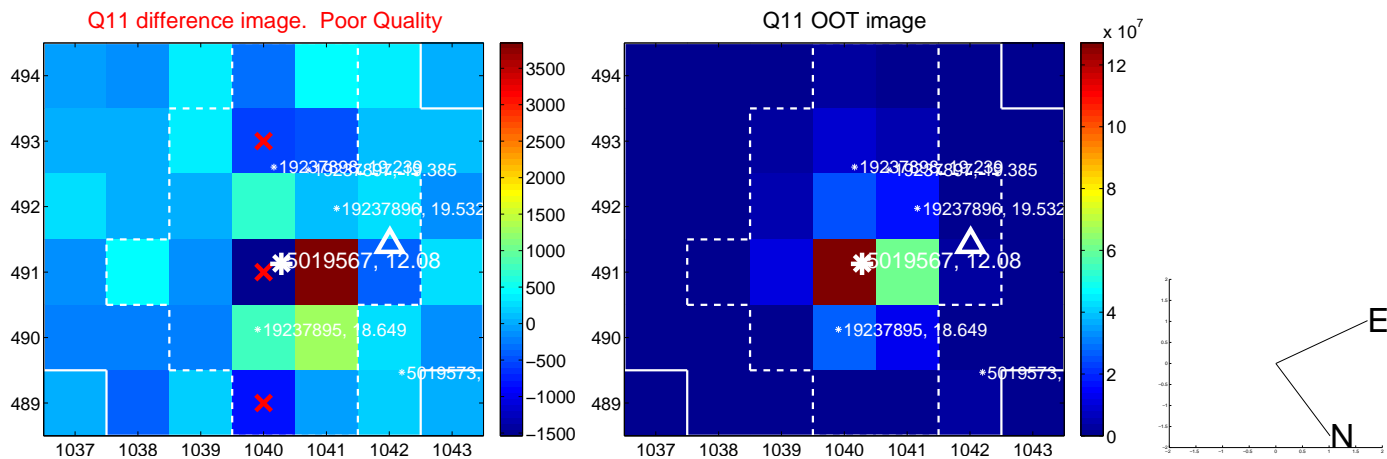
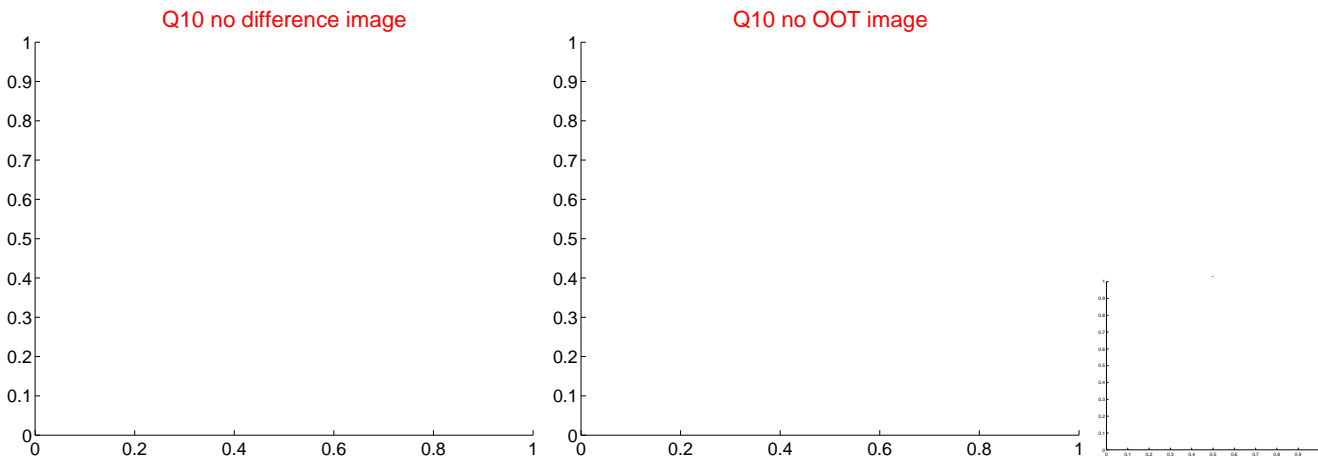
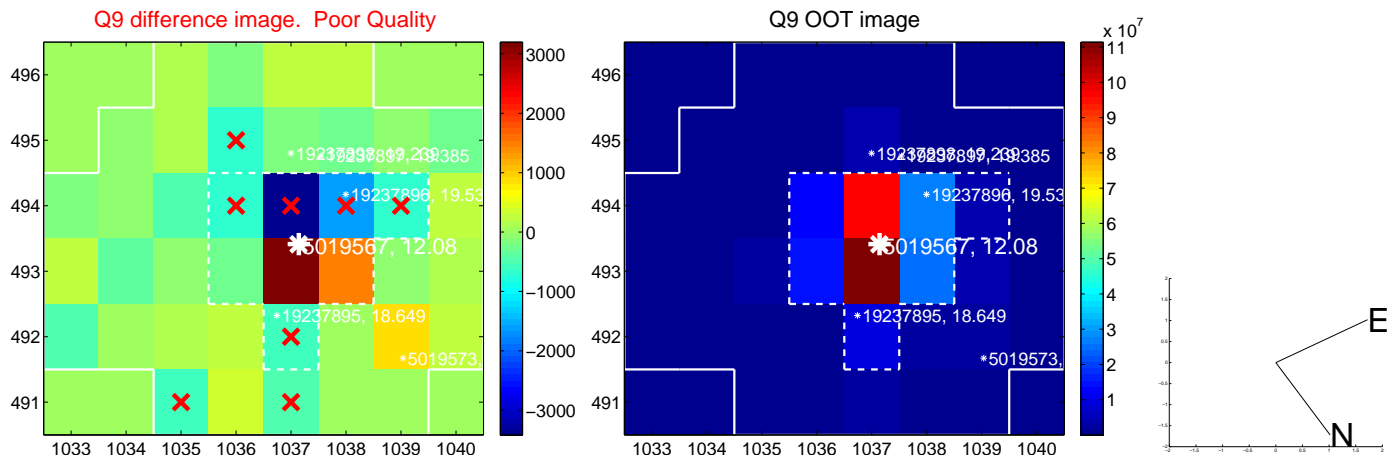
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



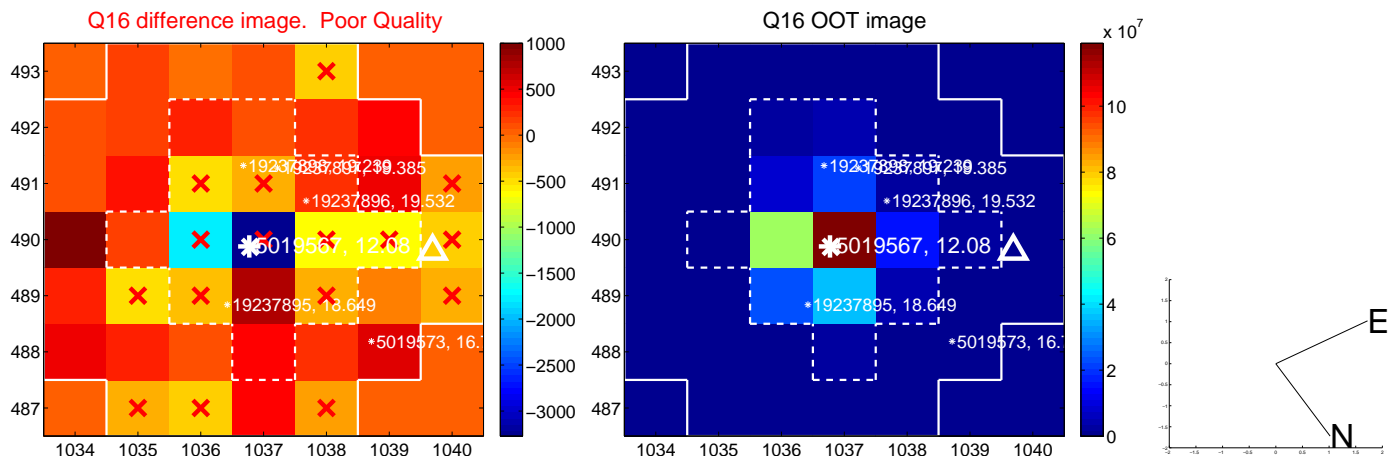
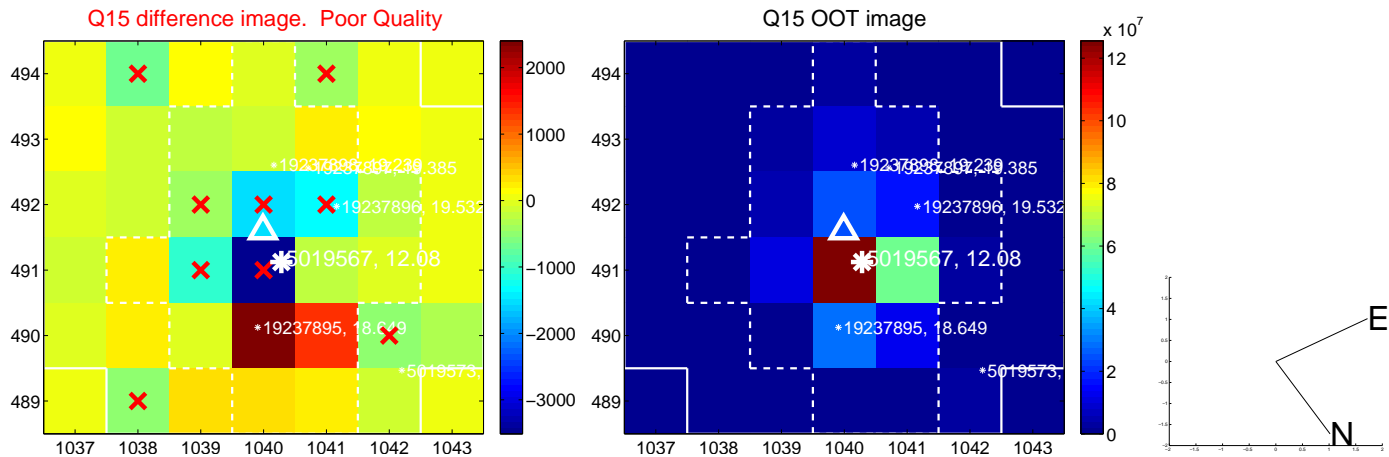
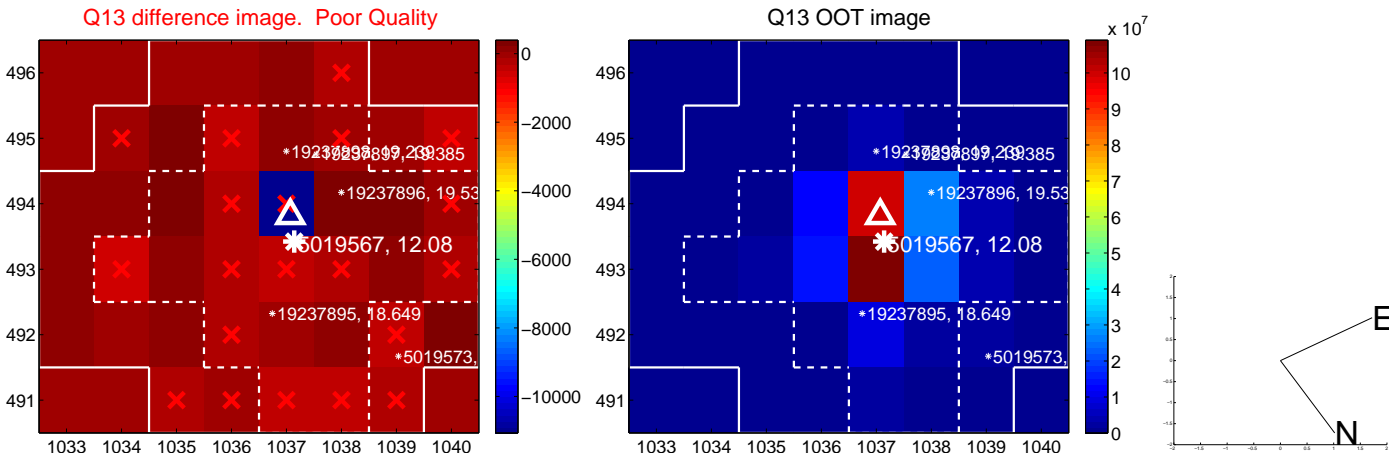
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



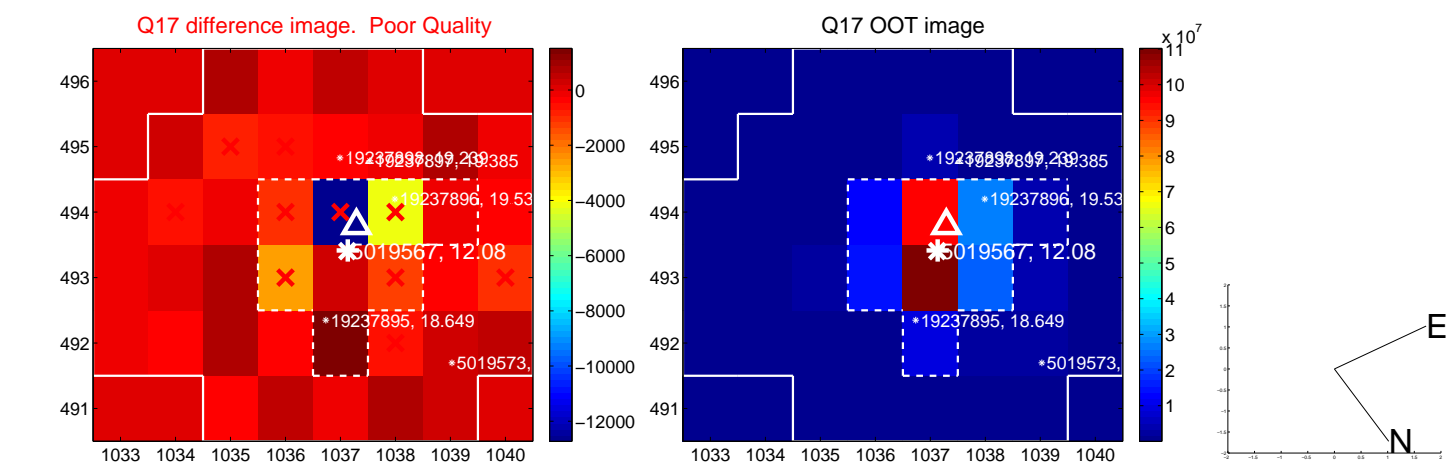
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



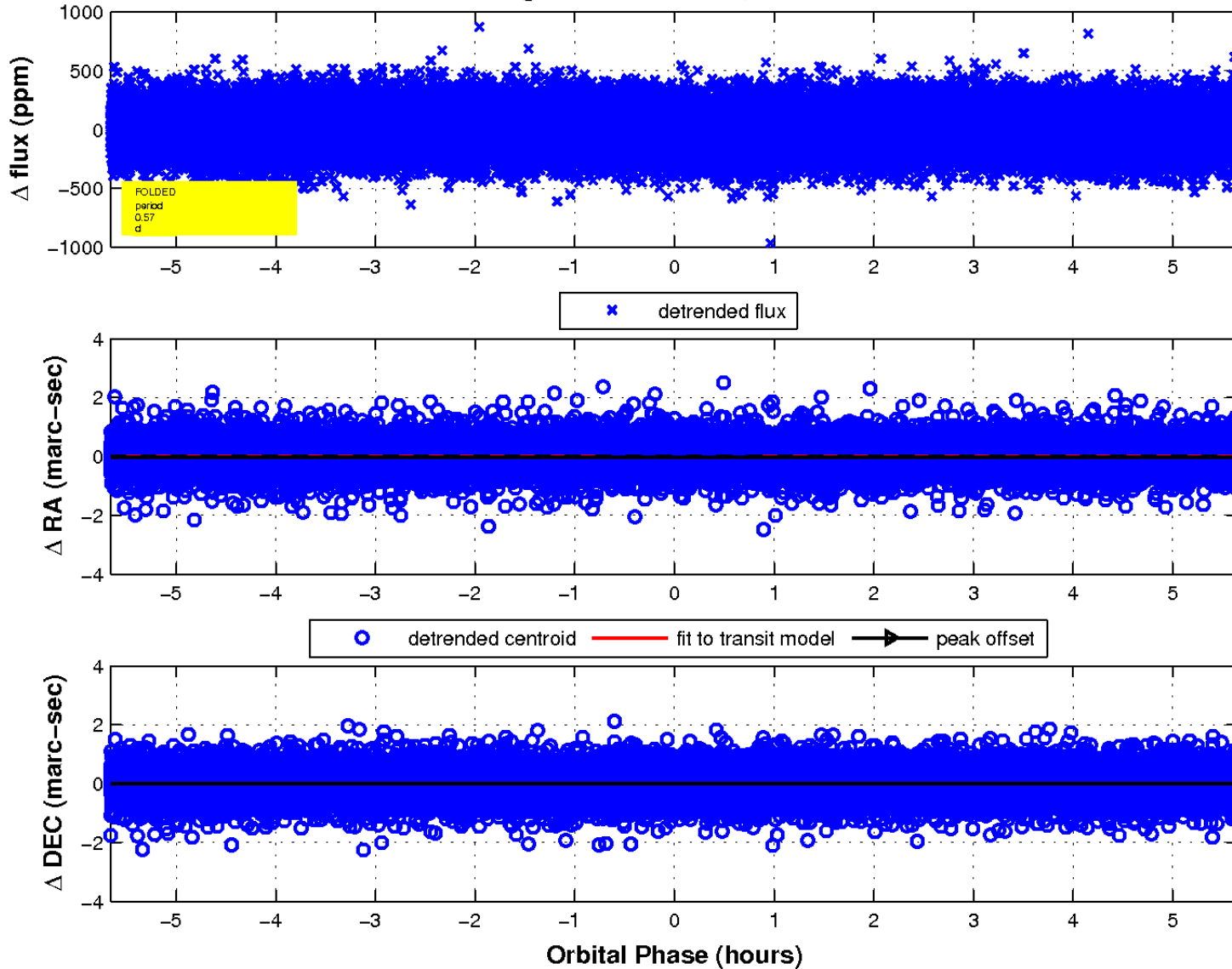
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

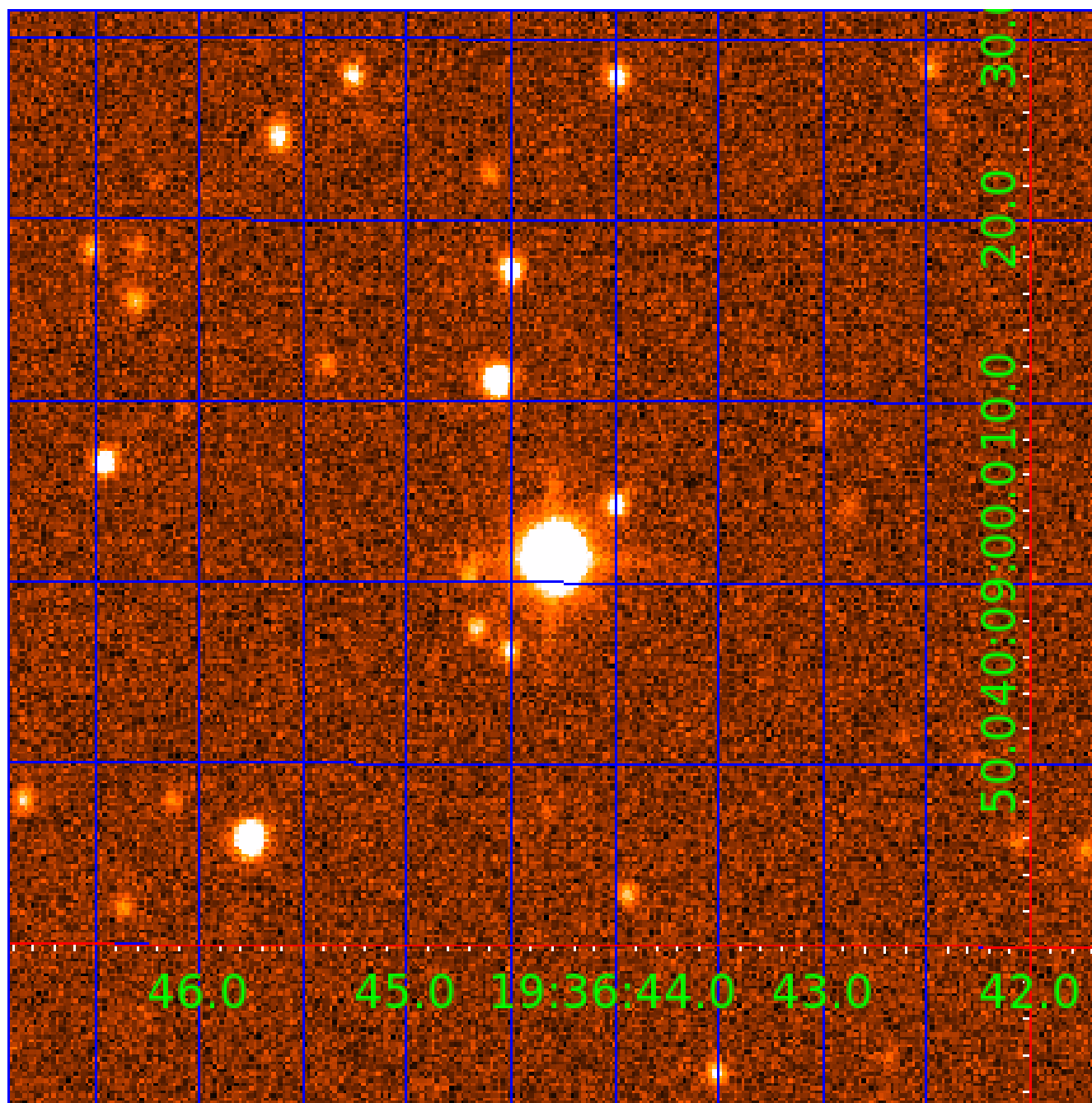


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 005019567

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})
005019567-01	OBS	No	0.685607	131.903272	27.4	1.089	9.0	9.9	2.15	7537	1.30	40229.04
005019567-02	OBS	No	0.565050	131.583336	17.3	1.887	9.3	6.6	2.15	7537	1.03	52062.36
005019567-03	OBS	No	95.848860	132.143165	245.9	6.742	7.9	7.0	2.15	7537	3.56	55.44
005019567-04	OBS	No	62.407135	172.737307	239.5	2.204	7.6	6.7	2.15	7537	3.40	98.25
005019567-05	OBS	No	159.029943	266.969299	389.4	2.340	7.8	8.2	2.15	7537	4.90	28.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005019567-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005019567-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005019567-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005019567-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
005019567-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—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 005019567-03

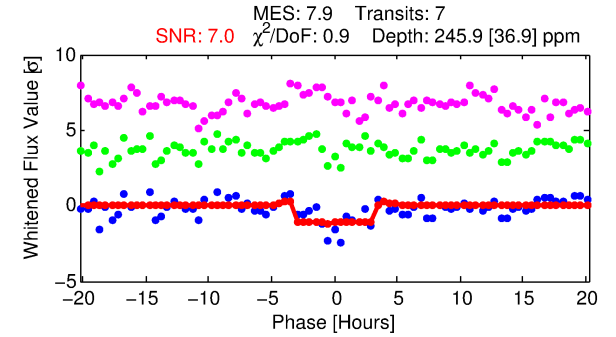
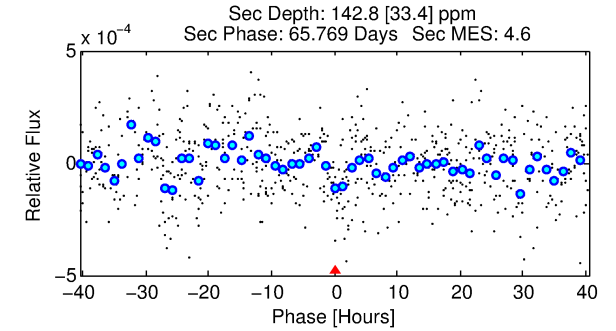
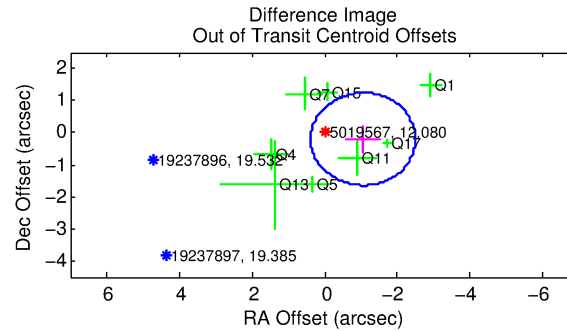
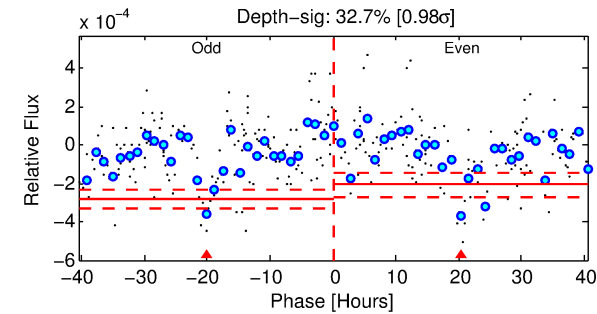
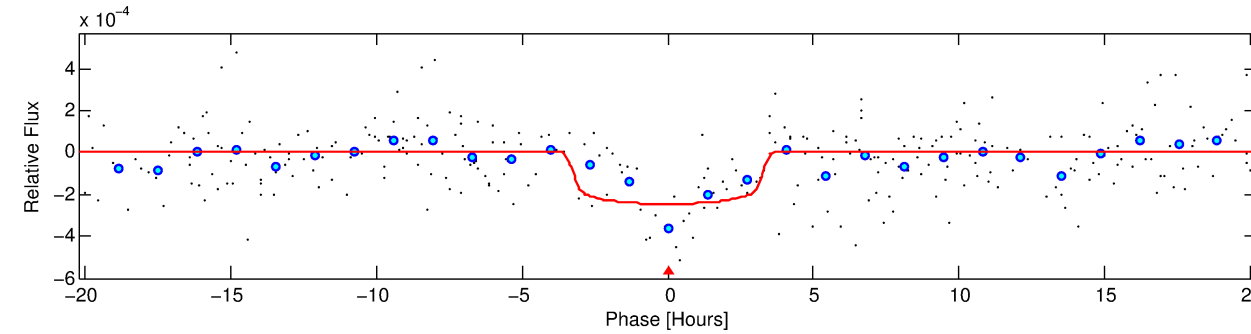
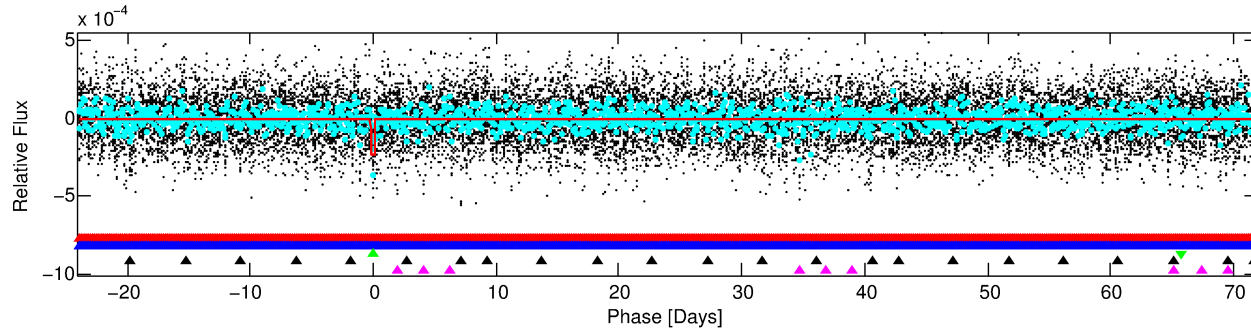
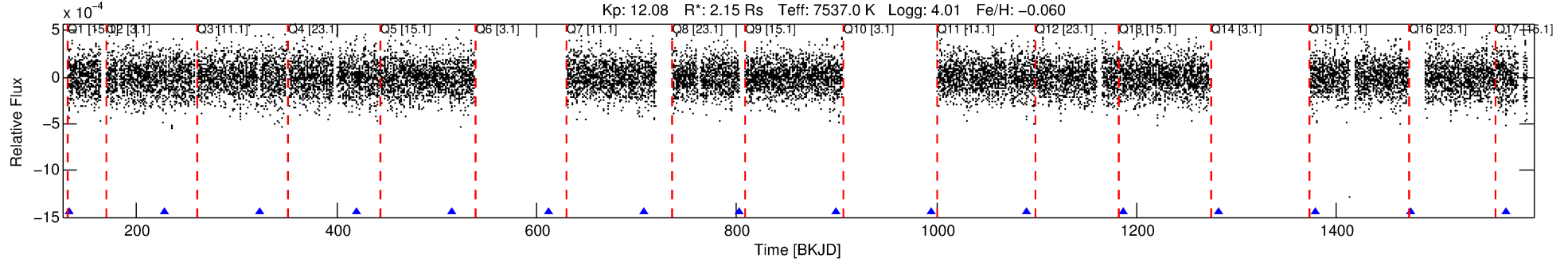
No Significant Match Found

DV One-Page Summary

KIC: 5019567 Candidate: 3 of 5 Period: 95.849 d

KOI: K06488 Corr: No Ephemeris Match

Kp: 12.08 R*: 2.15 Rs Teff: 7537.0 K Logg: 4.01 Fe/H: -0.060



DV Fit Results:

Period = 95.84886 [0.00186] d
Epoch = 132.1432 [0.0145] BKJD
Rp/R* = 0.0152 [0.0115]
a/R* = 86.51 [409.38]
b = 0.63 [4.56]
Seff = 55.44 [23.13]
Teq = 696 [73] K
Rp = 3.56 [2.89] Re
a = 0.4898 [0.1234] AU
Ag = 1489.01 [2356.64] [0.63σ]
Teffp = 6683 [2586] K [2.31σ]

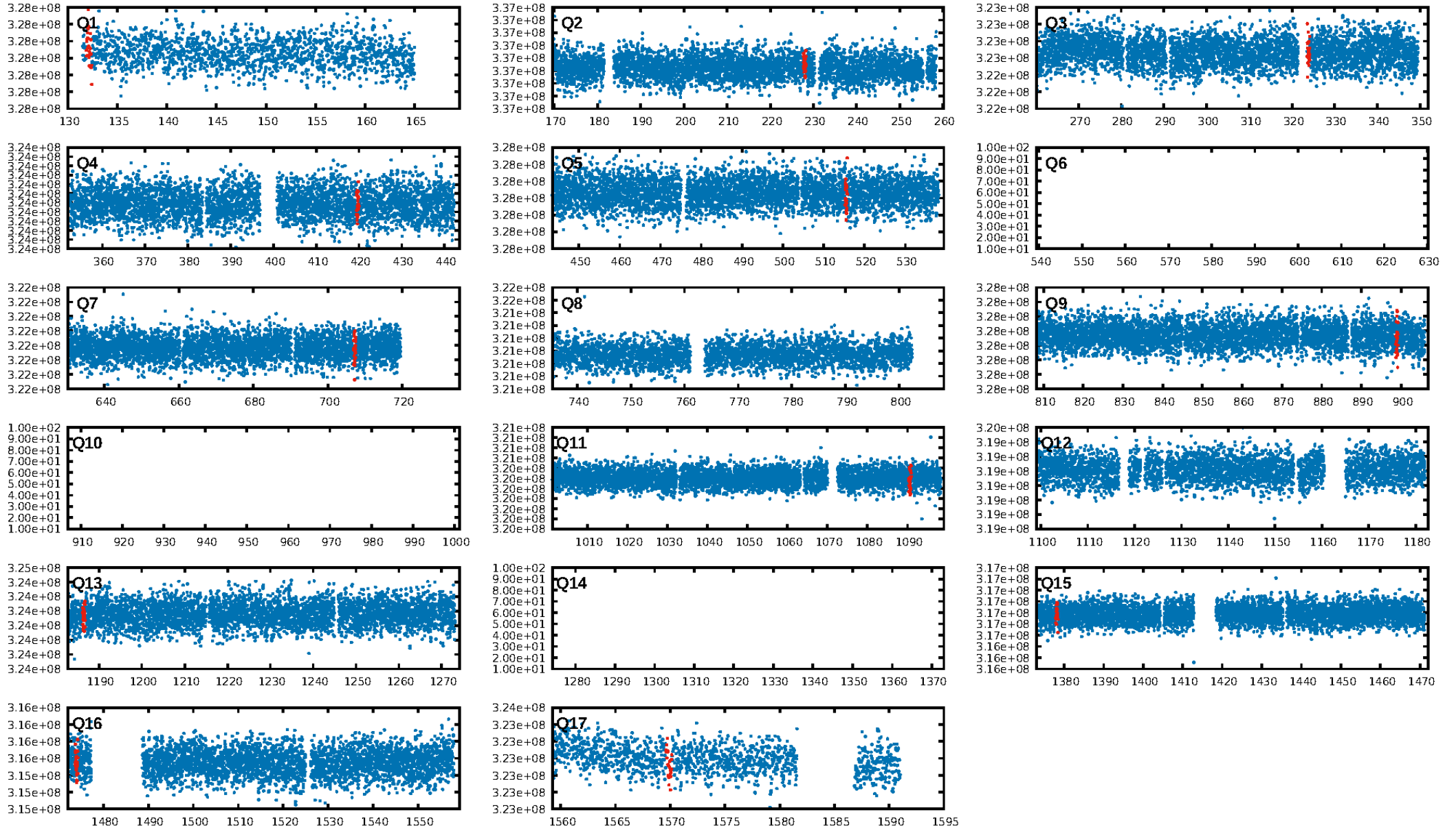
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [113.15σ]
LongPeriod-sig: 100.0% [212.49σ]
ModelChiSquare2-sig: 91.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.29e-11
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -3.882
Centroid-sig: 90.9%
Centroid-so: 0.172 arcsec [0.50σ]
OotOffset-rm: 1.076 arcsec [2.24σ]
KicOffset-rm: 1.044 arcsec [2.02σ]
OotOffset-st: 0/3/1/4 [8]
KicOffset-st: 0/3/1/4 [8]
DiffImageQuality-fgm: 0.75 [6/8]
DiffImageOverlap-fno: 0.00 [0/10]

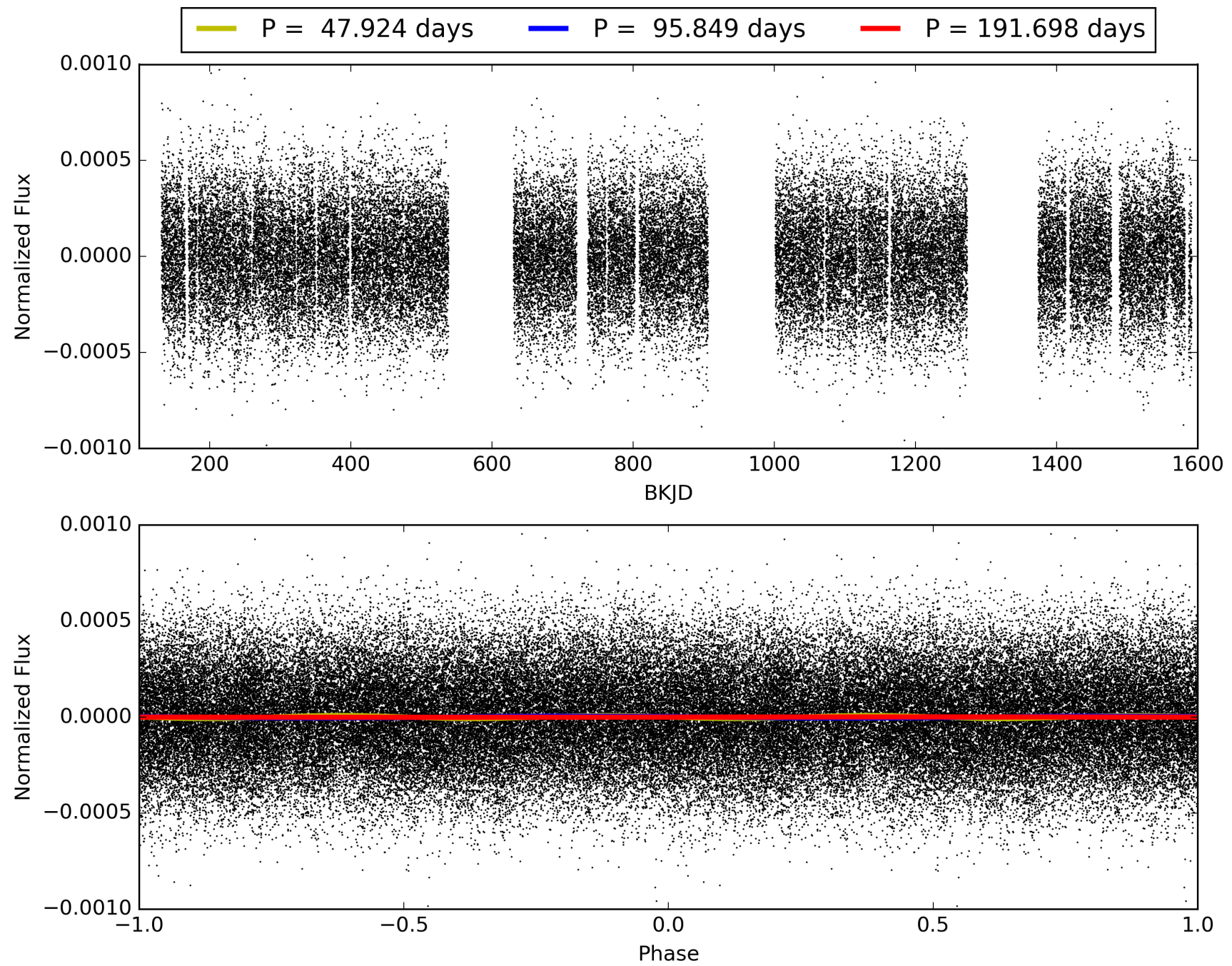
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:30:41 Z

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

TCE 005019567-03, PDC Light Curves

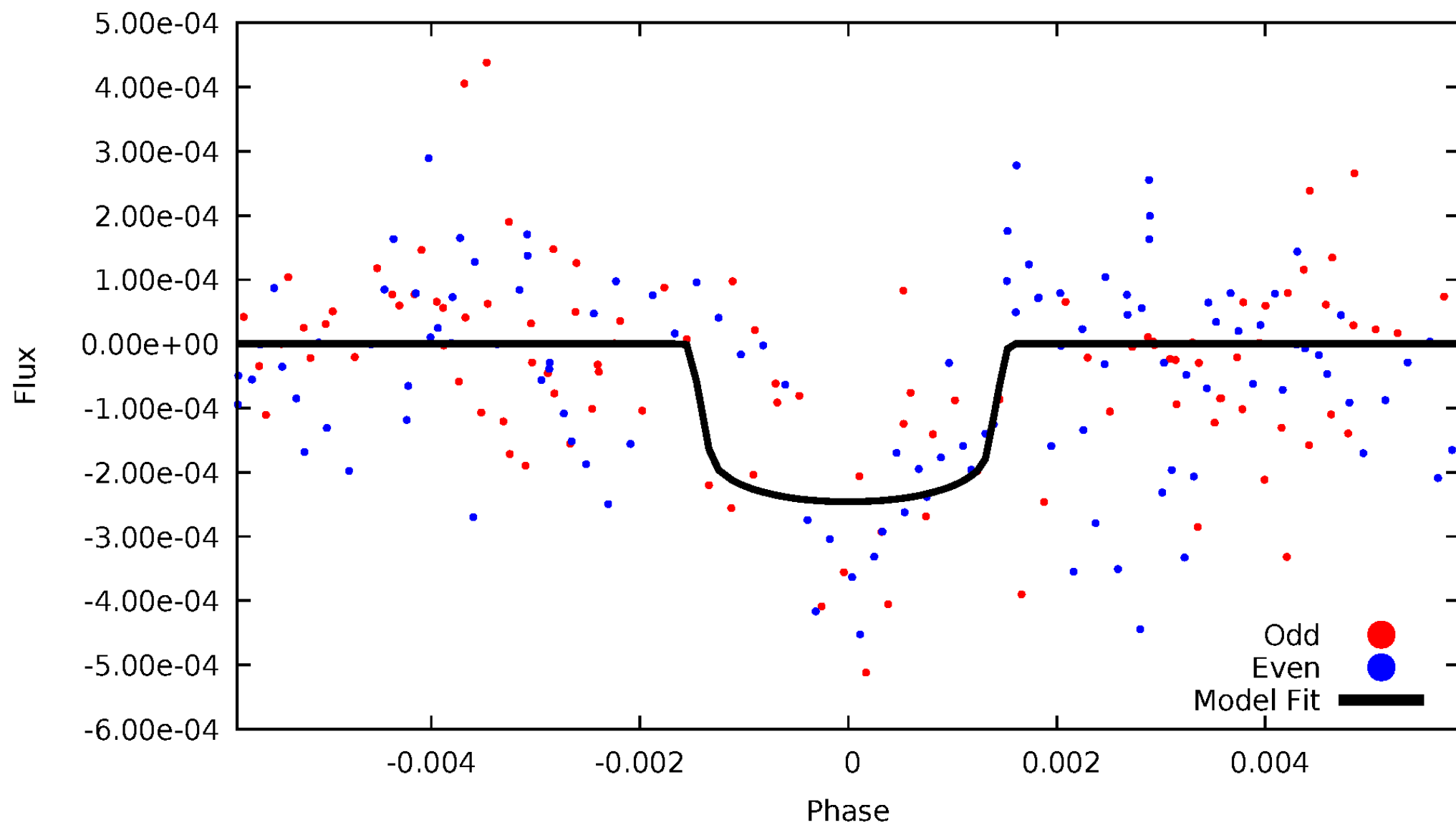


TCE 005019567-03



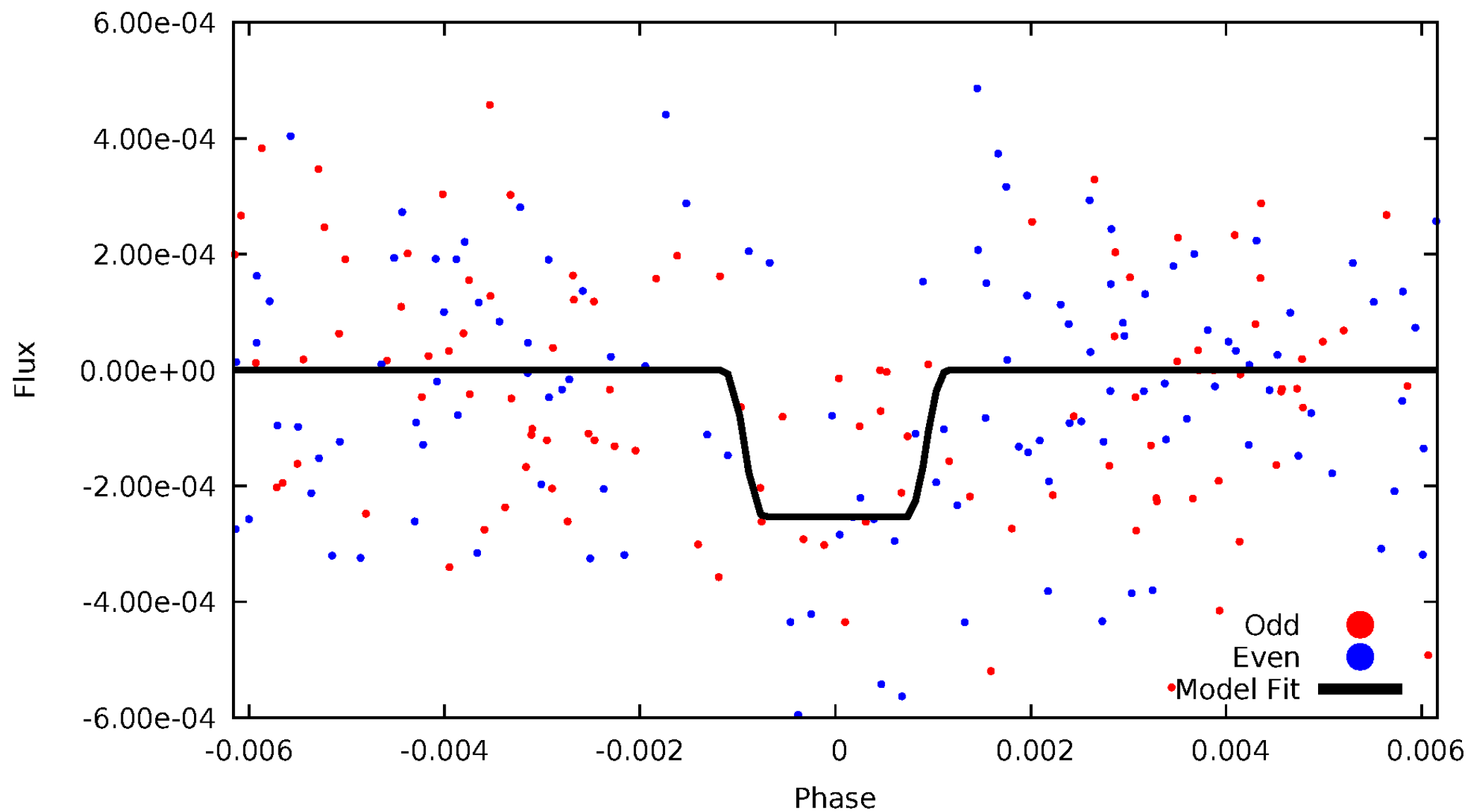
DV Odd/Even

TCE 005019567-03

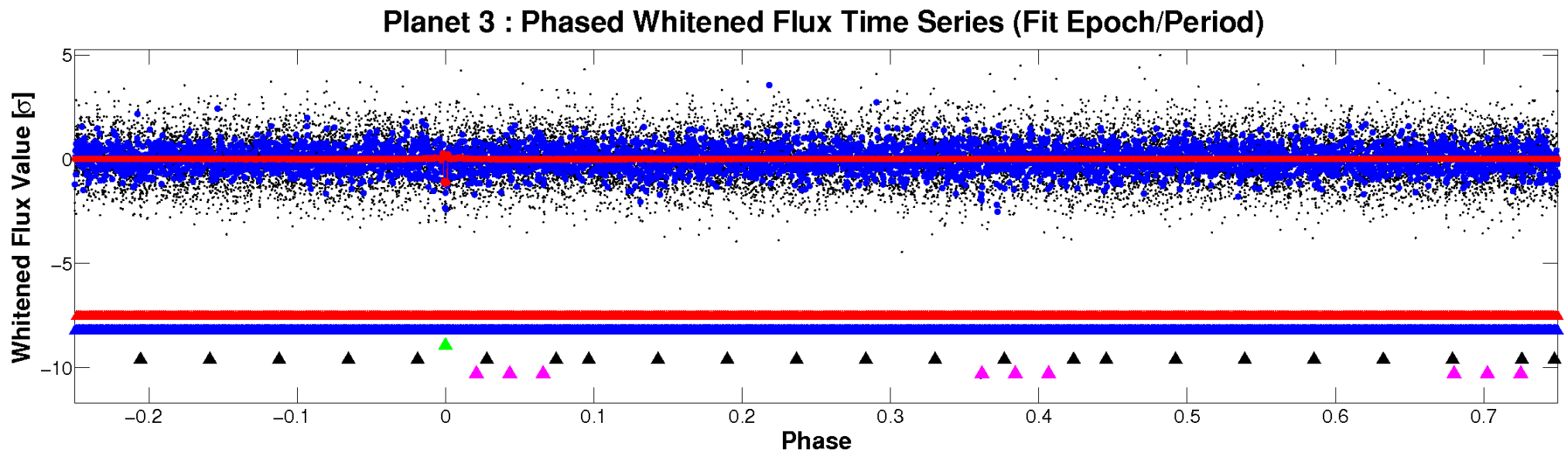
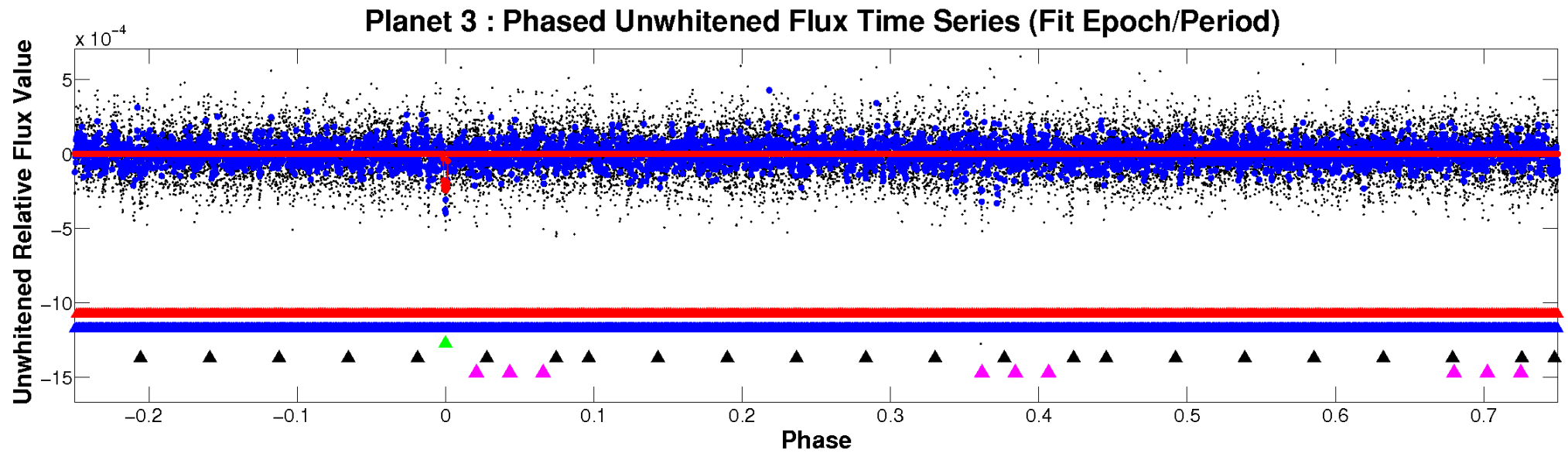


ALT Odd/Even

TCE 005019567-03

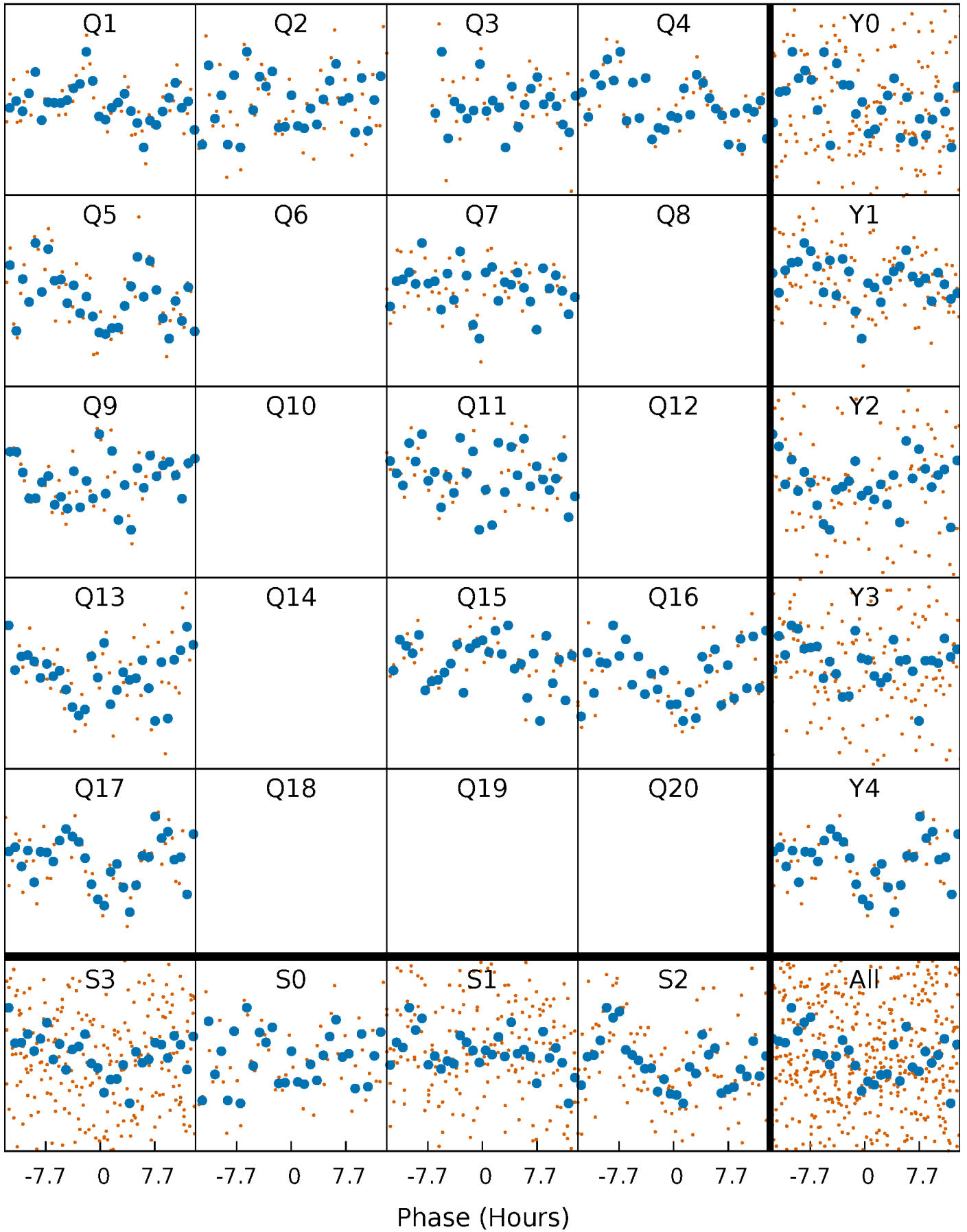


Non-Whitened Vs. Whitened Light Curve



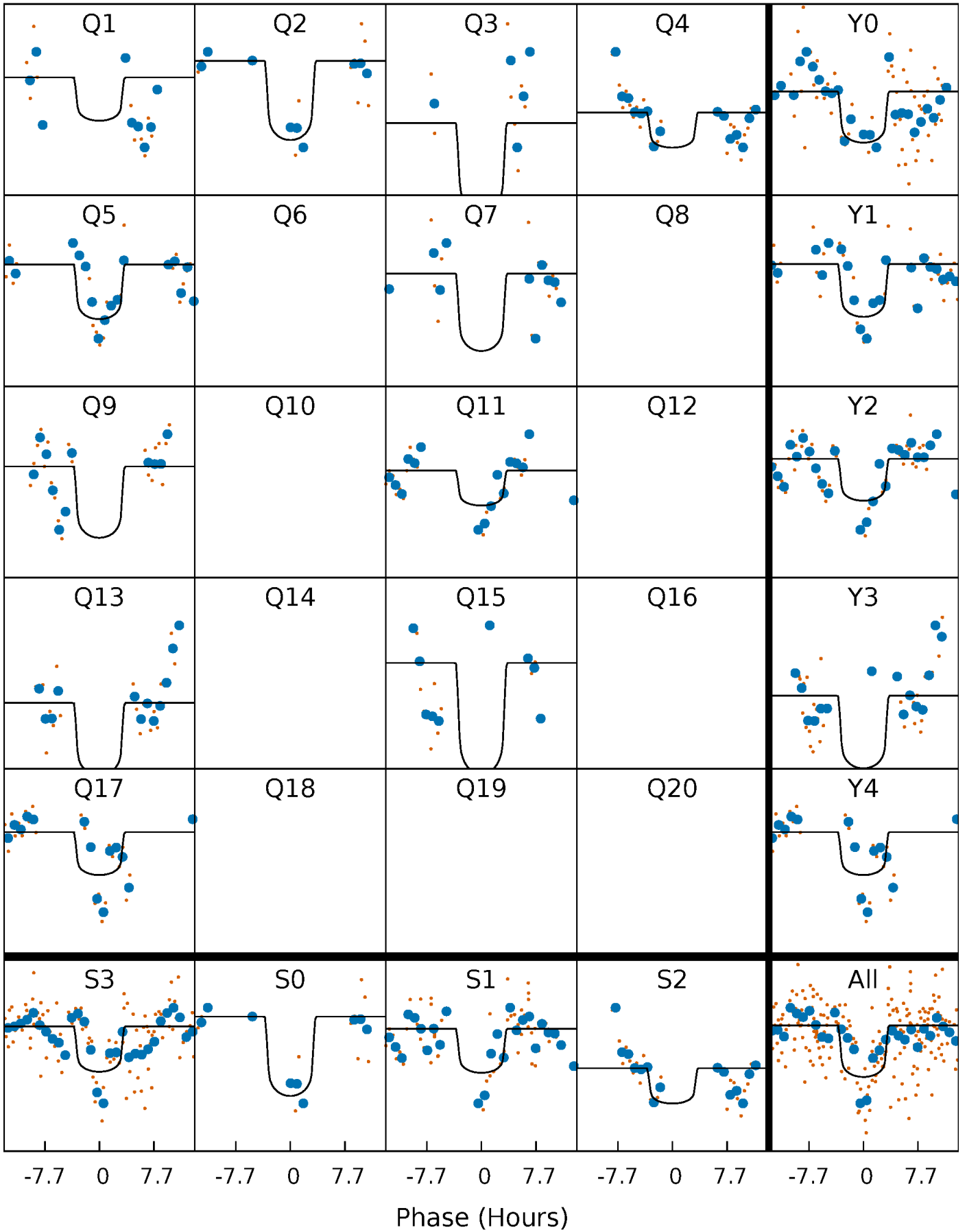
PDC Quarter-Phased Transit Curves

TCE 005019567-03 P= 95.848860 Days $T_0=132.143166$ (BKJD)



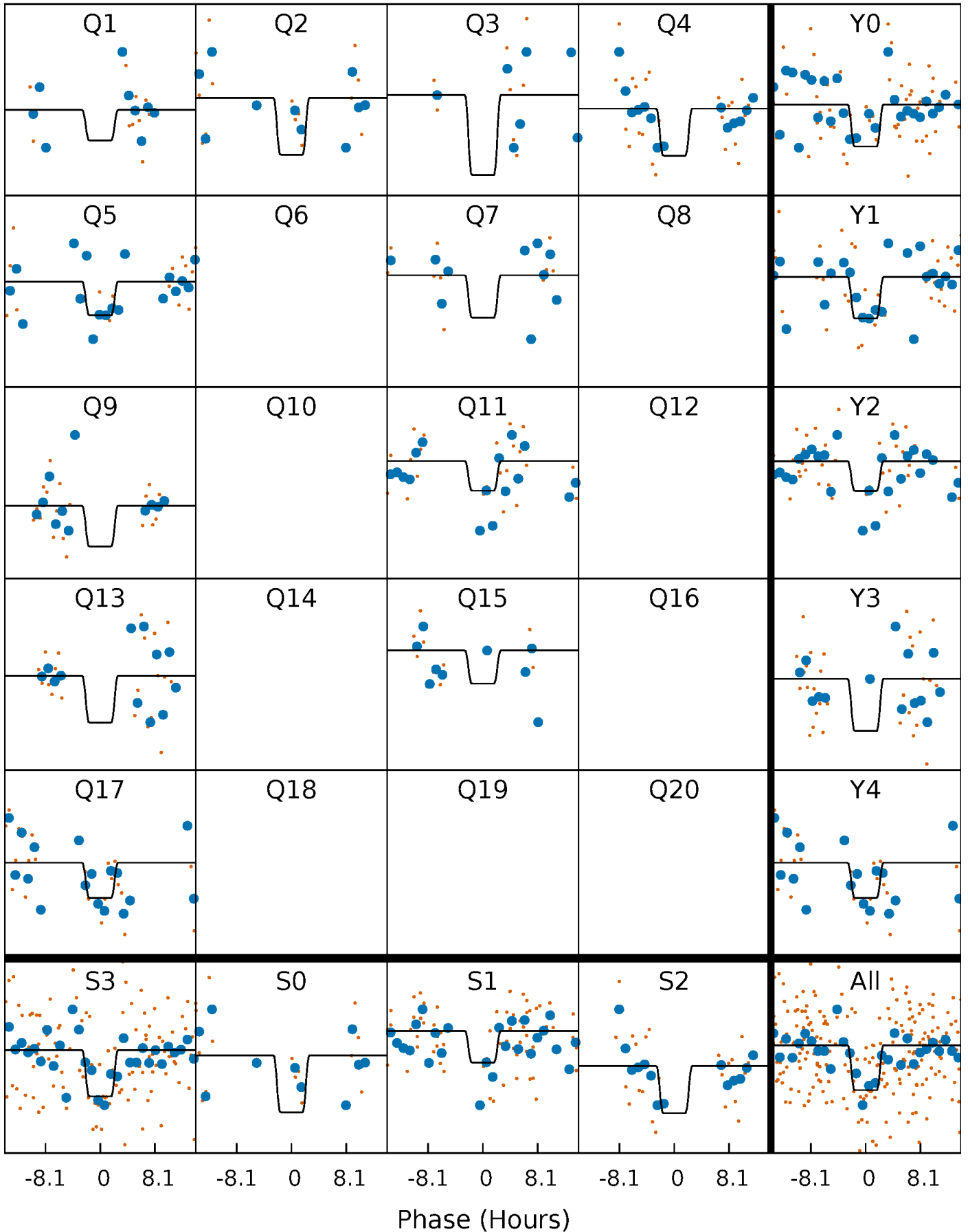
DV Quarter-Phased Transit Curves

TCE 005019567-03 P= 95.848860 Days $T_0=132.143166$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

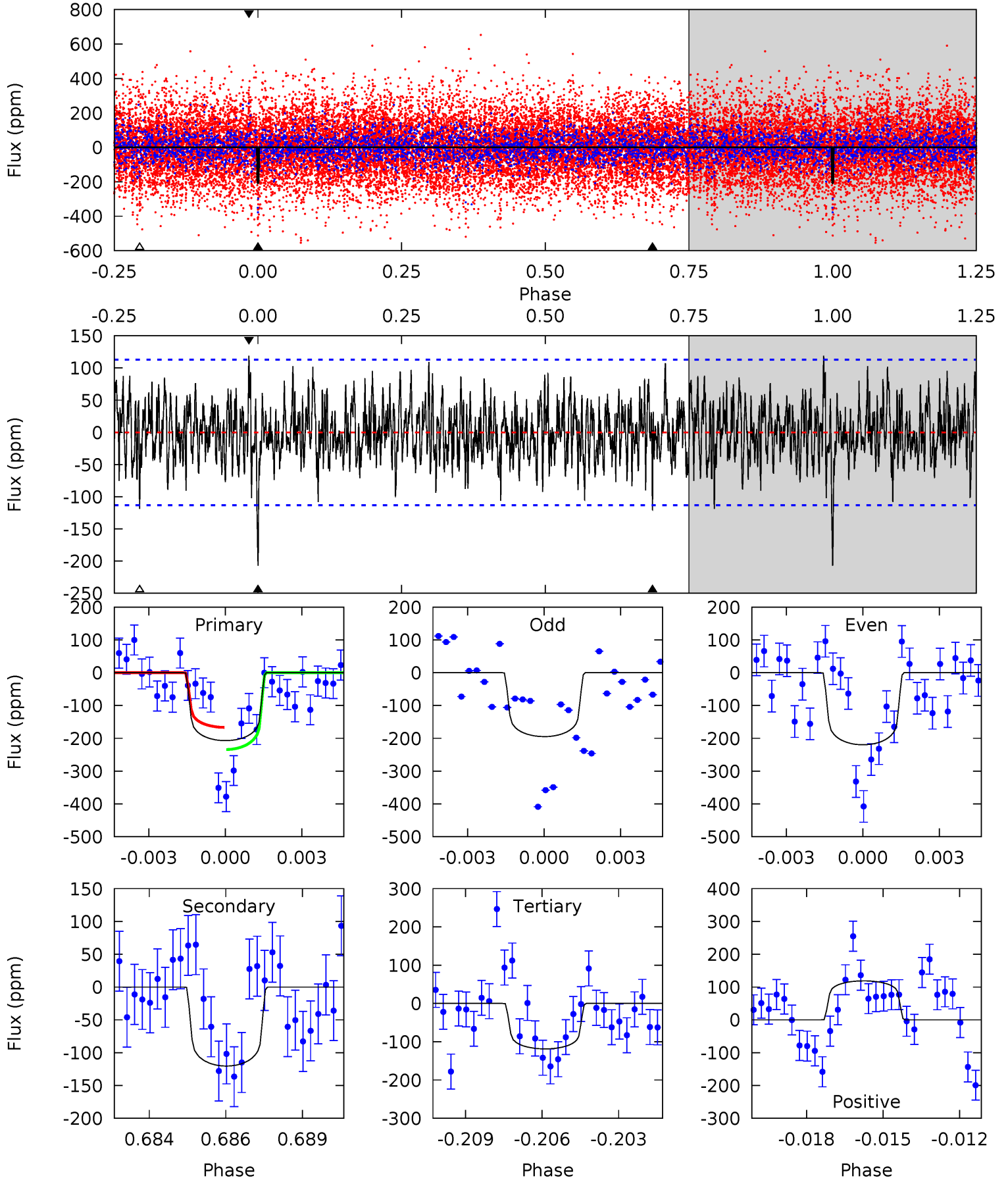
TCE 005019567-03 P= 95.848882 Days $T_0=132.149642$ (BKJD)



DV Model-Shift Uniqueness Test

005019567-03, P = 95.848860 Days, E = 36.294306 Days

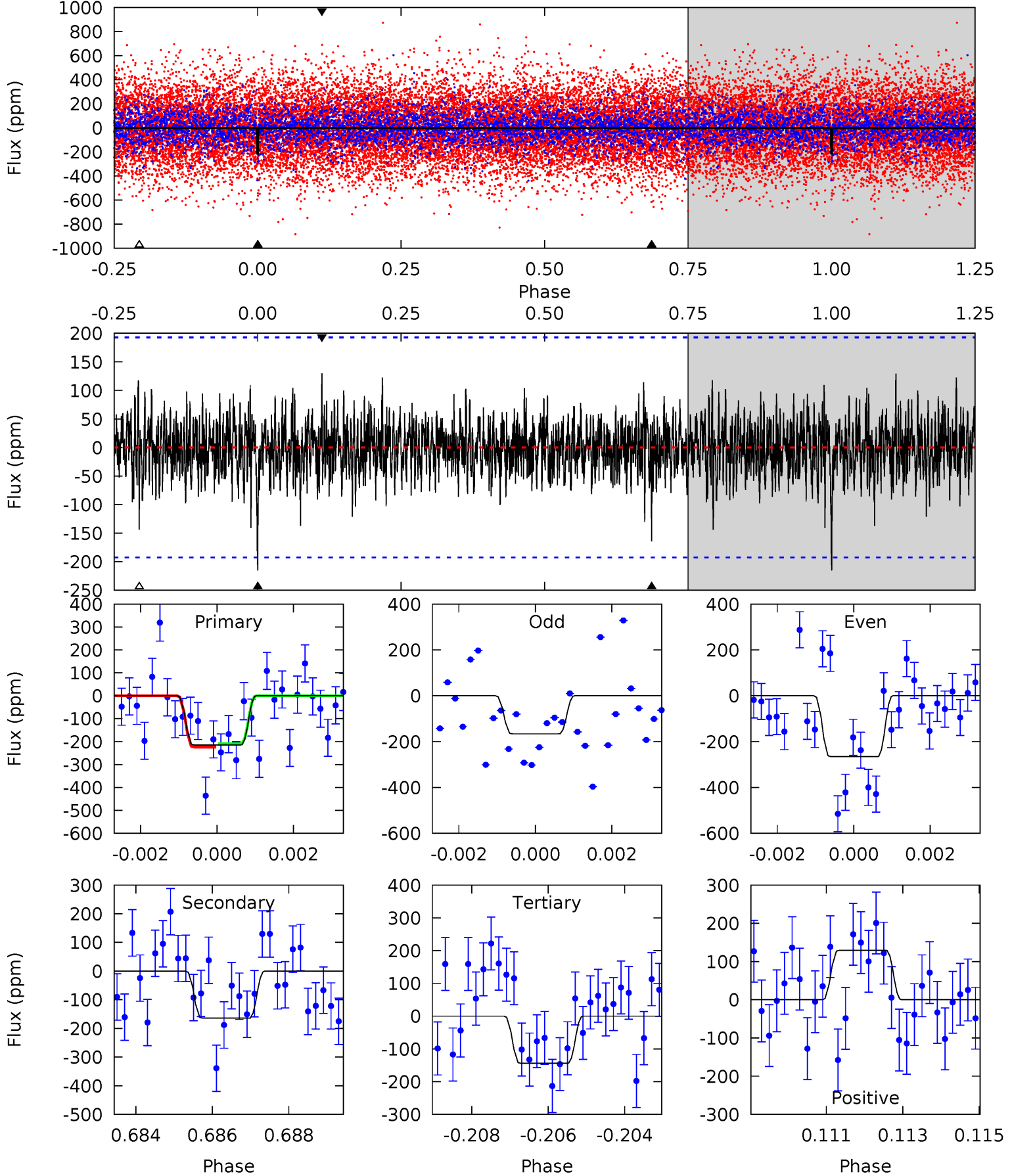
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.62	5.60	5.52	5.52	5.25	2.97	1.73	4.11	4.10	0.08	0.07	0.59	1.06	0.36	1.54



Alt Model-Shift Uniqueness Test

005019567-03, P = 95.848882 Days, E = 36.300760 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.92	4.52	3.96	3.56	5.30	3.05	1.02	1.95	2.35	0.56	0.96	1.37	1.05	0.38	0.19



Stellar Parameters For KIC 005019567

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7537^{+209}_{-340}	$4.007^{+0.210}_{-0.158}$	$-0.060^{+0.200}_{-0.350}$	$2.145^{+0.510}_{-0.623}$	$1.703^{+0.200}_{-0.325}$	$0.243^{+0.301}_{-0.100}$
	+3%/-5%	+5%/-4%	+333%/-583%	+24%/-29%	+12%/-19%	+124%/-41%
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 005019567-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-120 ± 22	$3.93^{+2.67}_{-2.24}$	965^{+74}_{-76}	5948^{+3677}_{-1159}	1007^{+4377}_{-641}
Alt.	-164 ± 36	$4.11^{+2.67}_{-2.39}$	966^{+71}_{-68}	6184^{+4016}_{-1187}	1197^{+5305}_{-742}

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

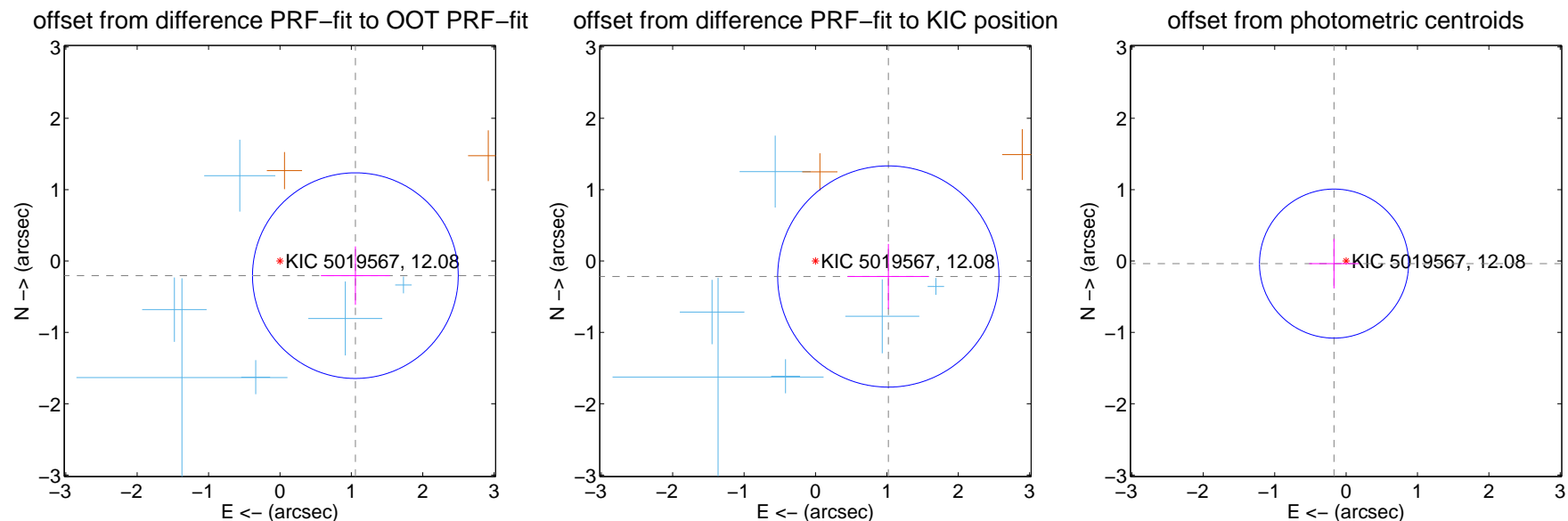
DV Centroid Data

Supplemental centroid analysis for 005019567-03. Kepler magnitude: 12.08. Transit SNR 6.98

There are 6 quarters with good PRF difference image offsets

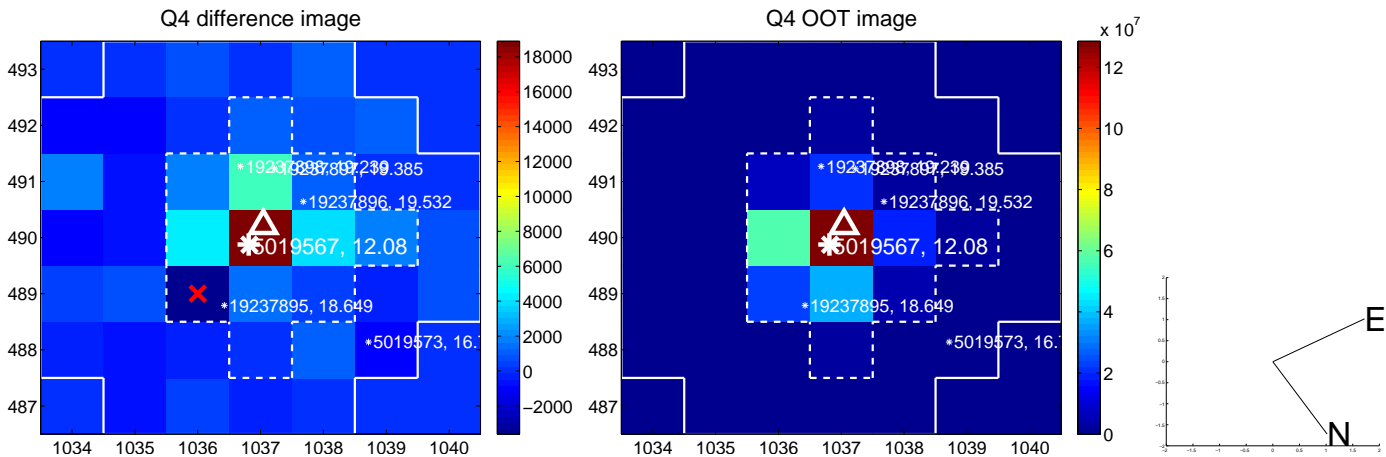
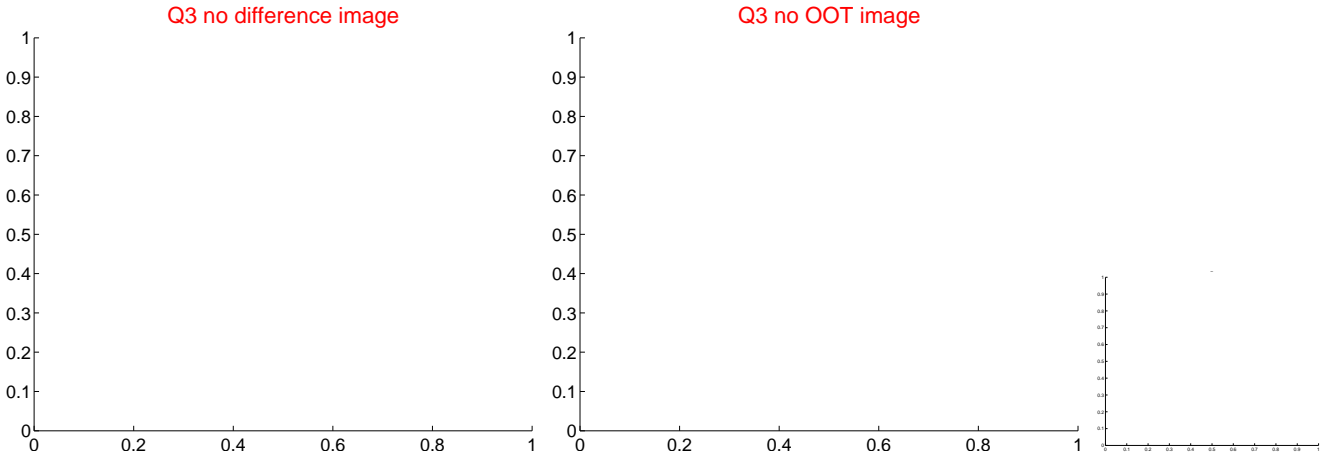
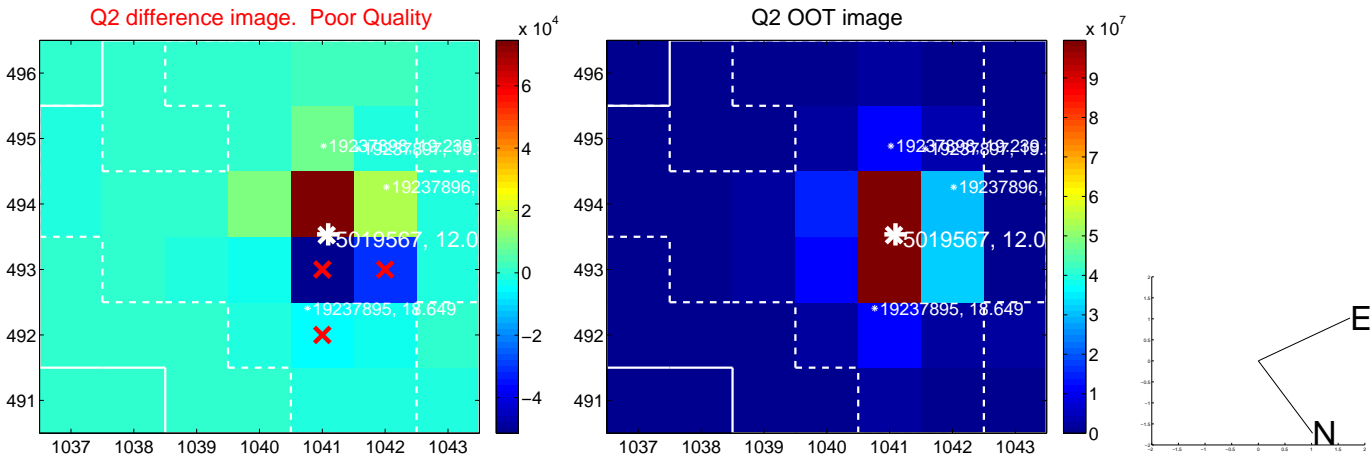
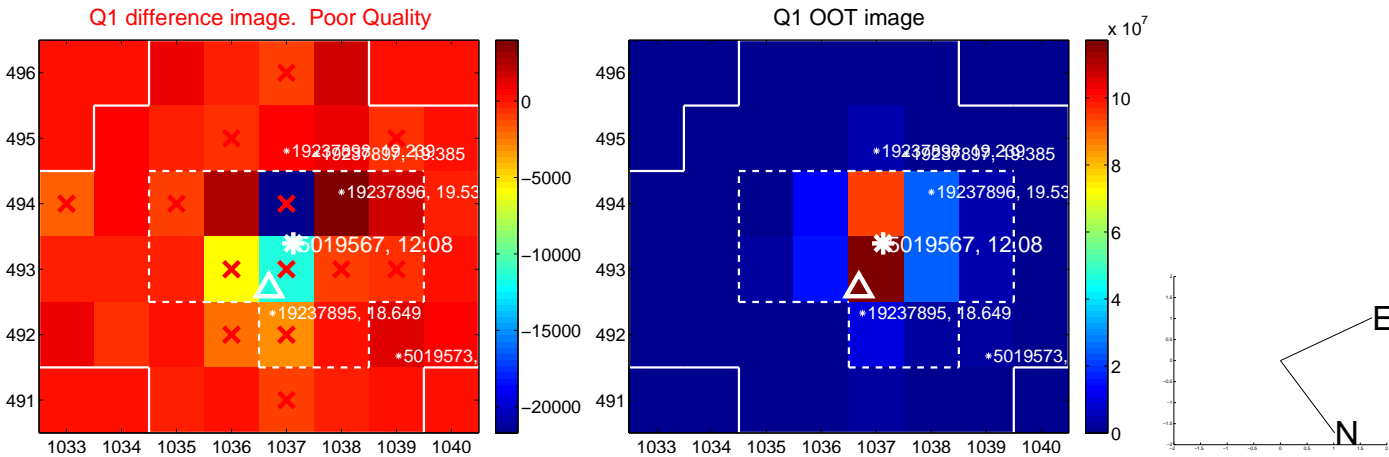
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.076 ± 0.480	2.24	-1.056 ± 0.483	-0.205 ± 0.409
PRF-fit source offset from KIC position	1.044 ± 0.517	2.02	-1.021 ± 0.570	-0.217 ± 0.456
photometric centroid source offset	0.17 ± 0.35	0.50	0.17 ± 0.35	-0.04 ± 0.35

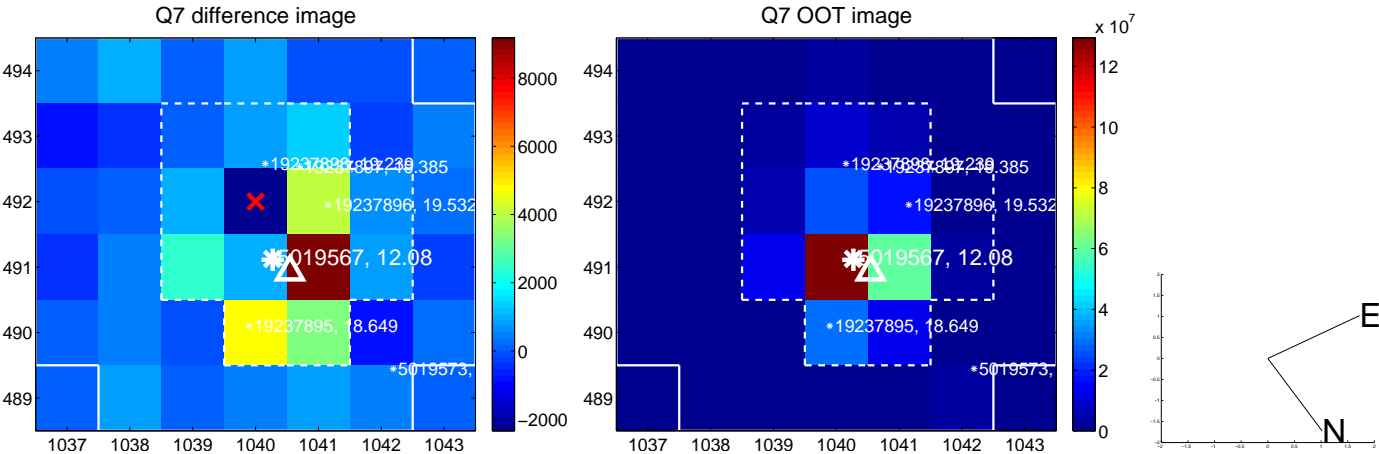
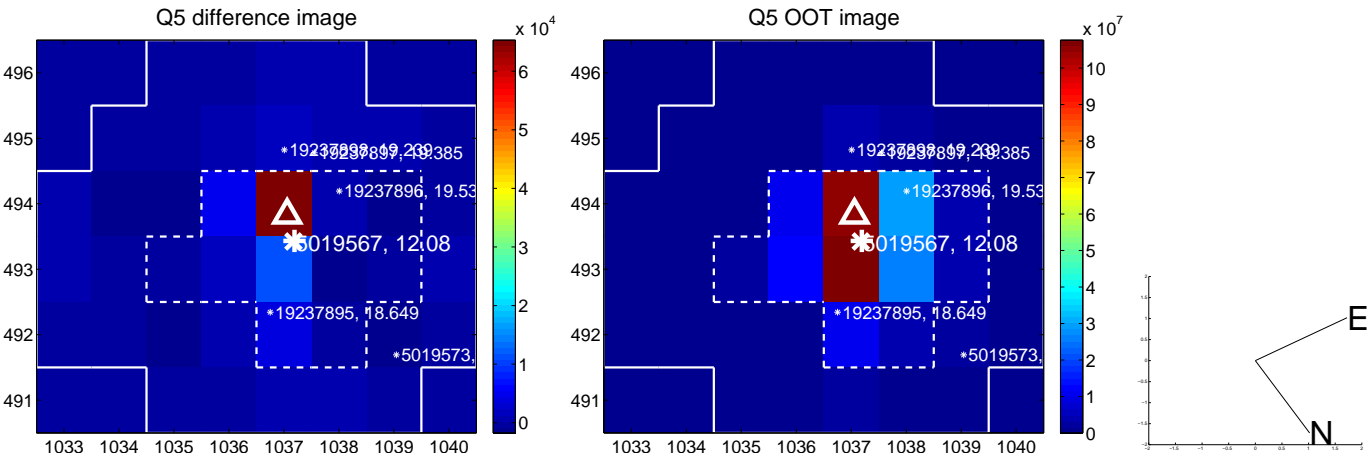


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

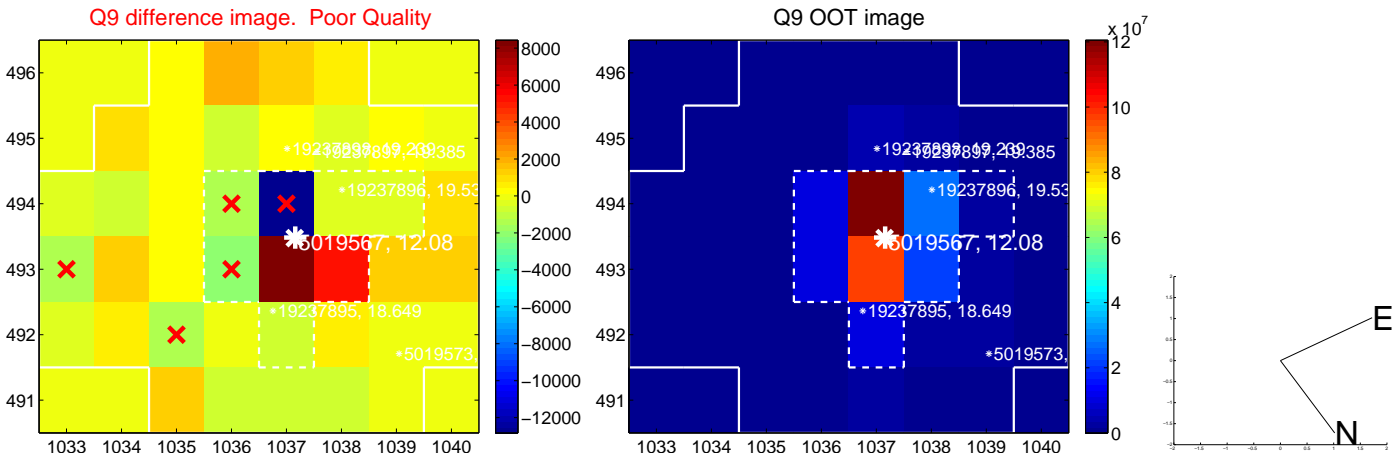
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



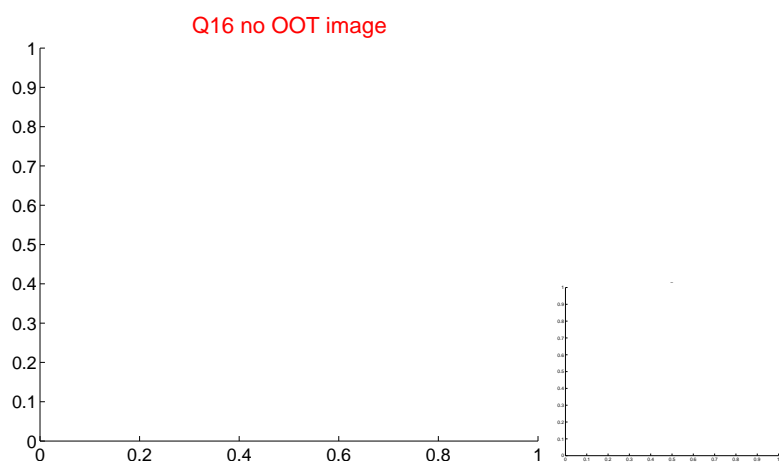
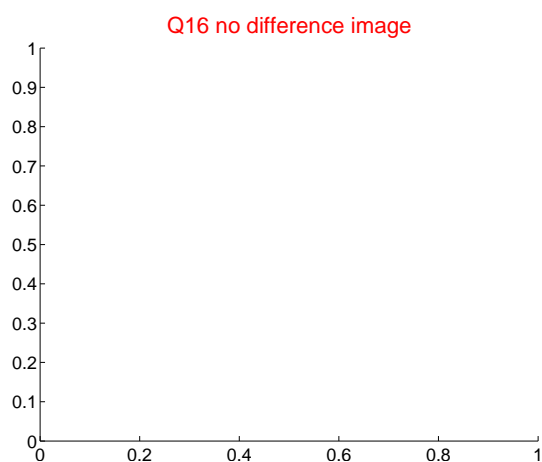
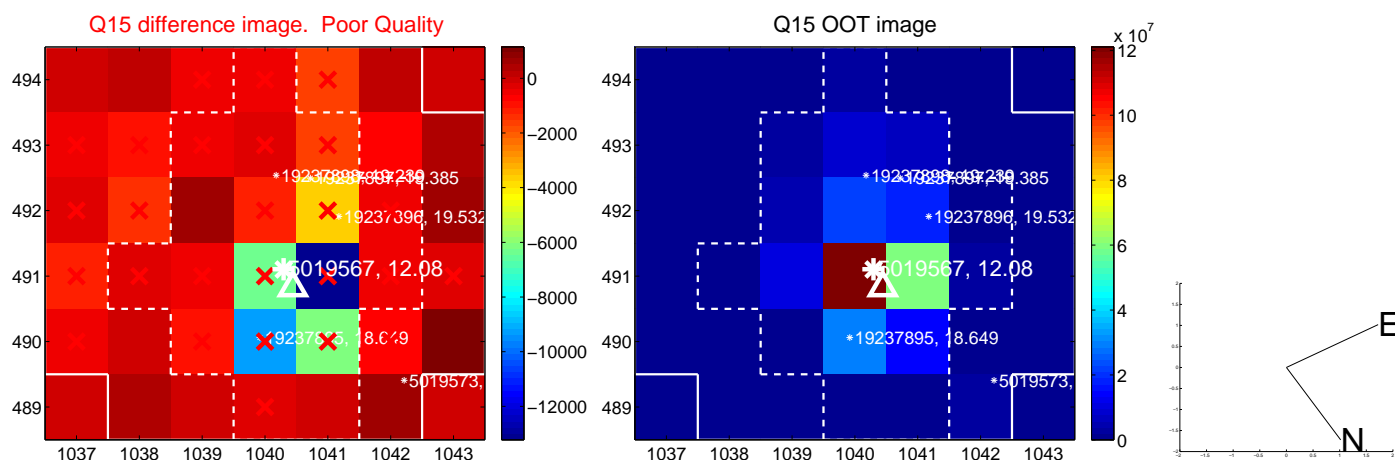
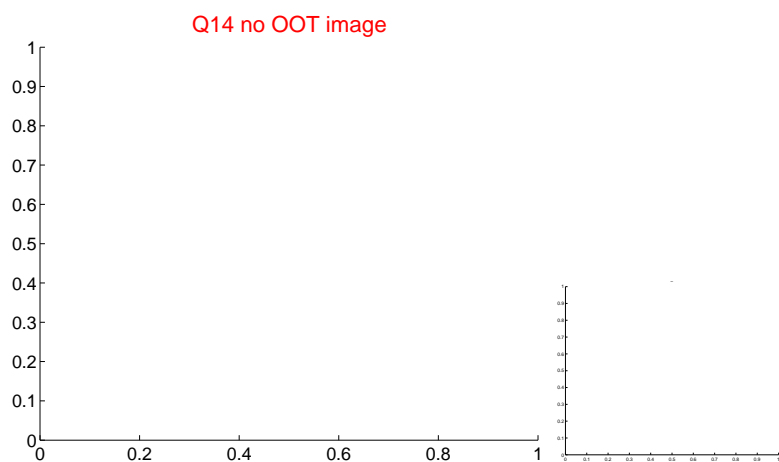
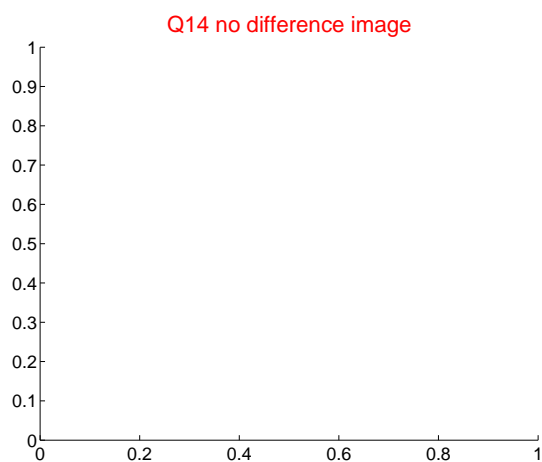
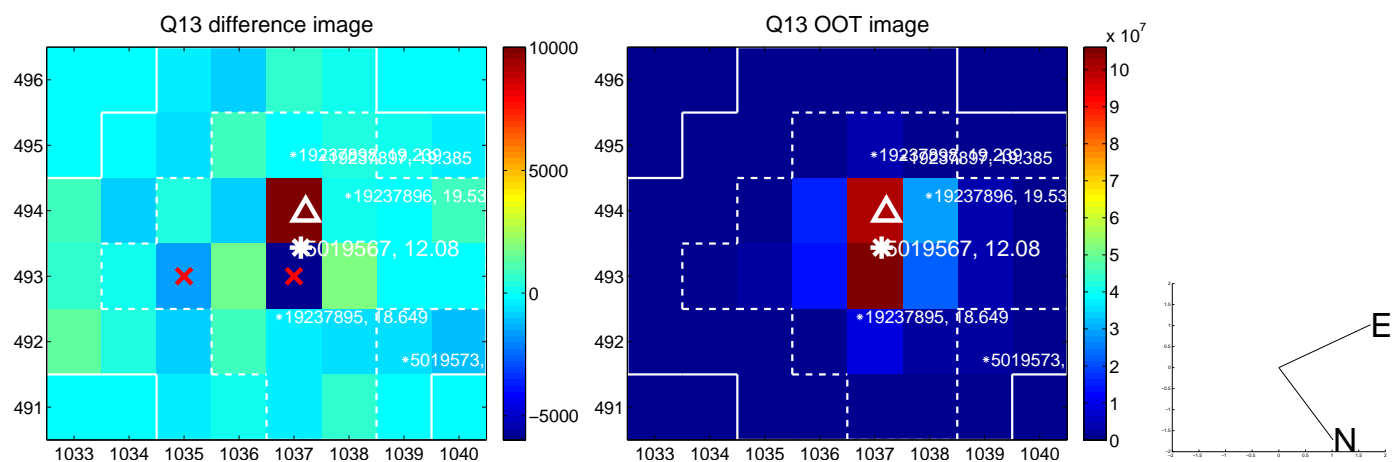
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



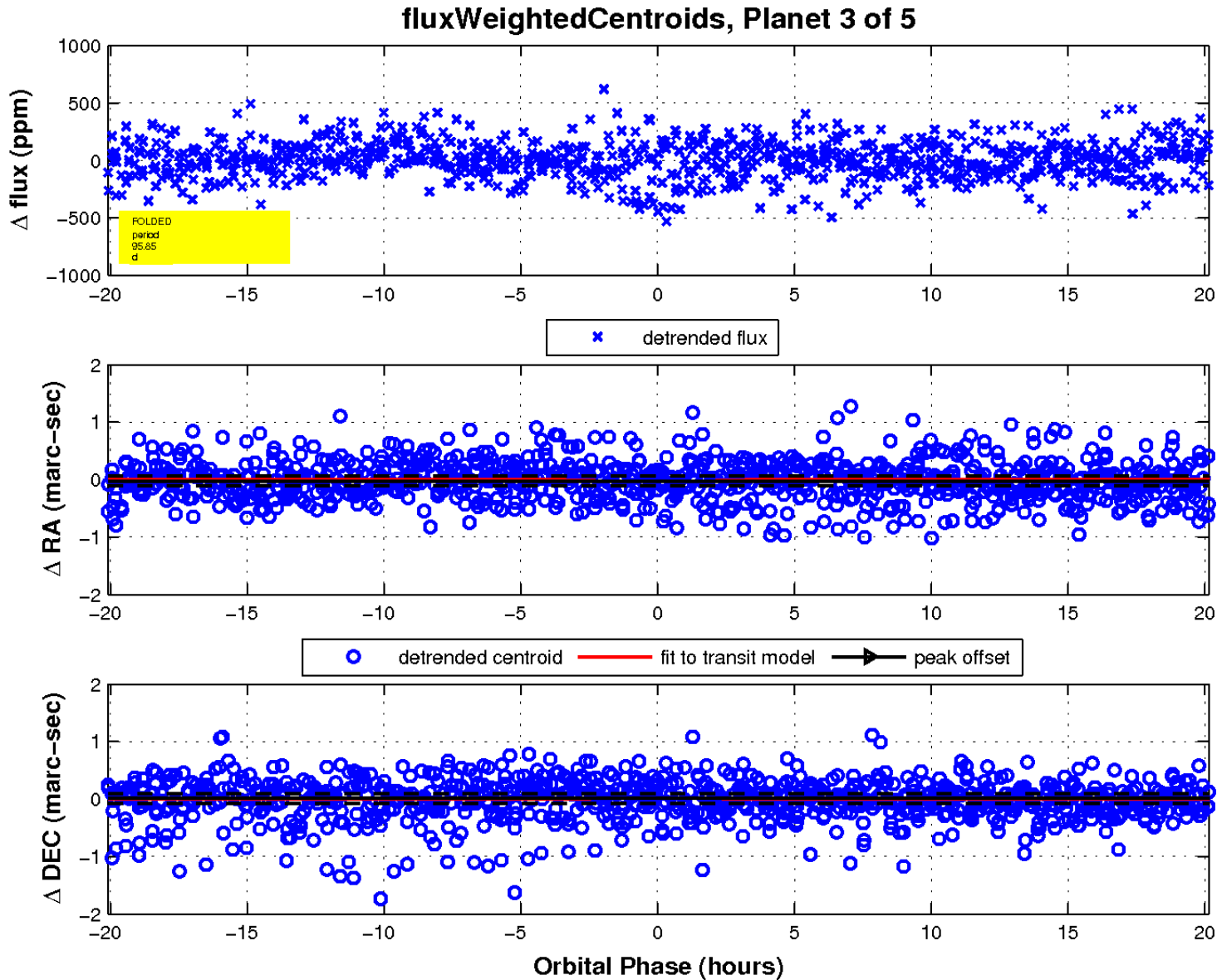
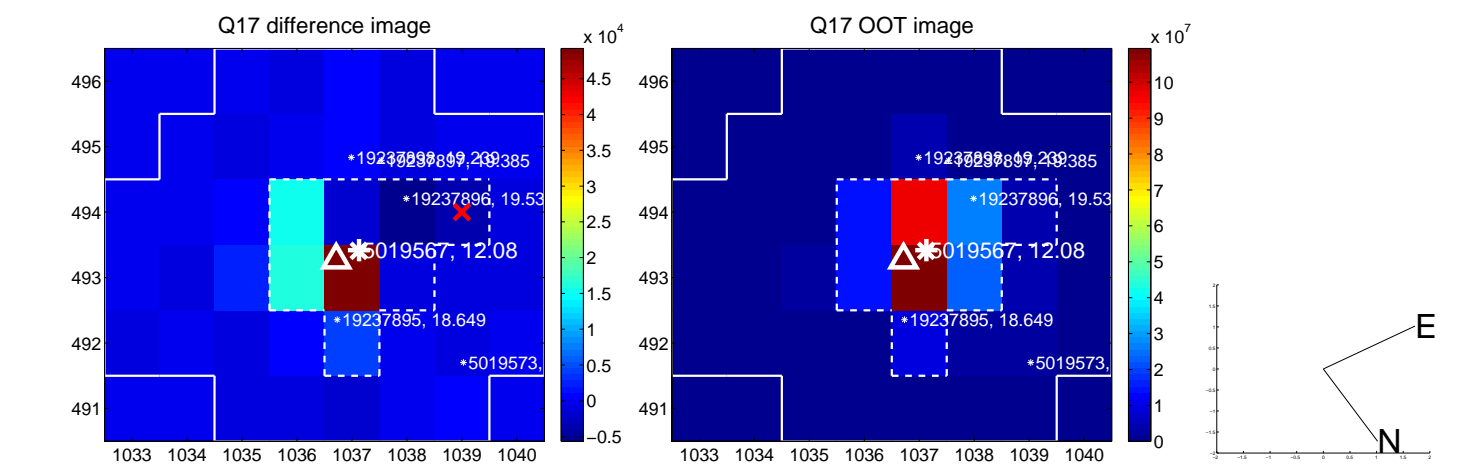
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

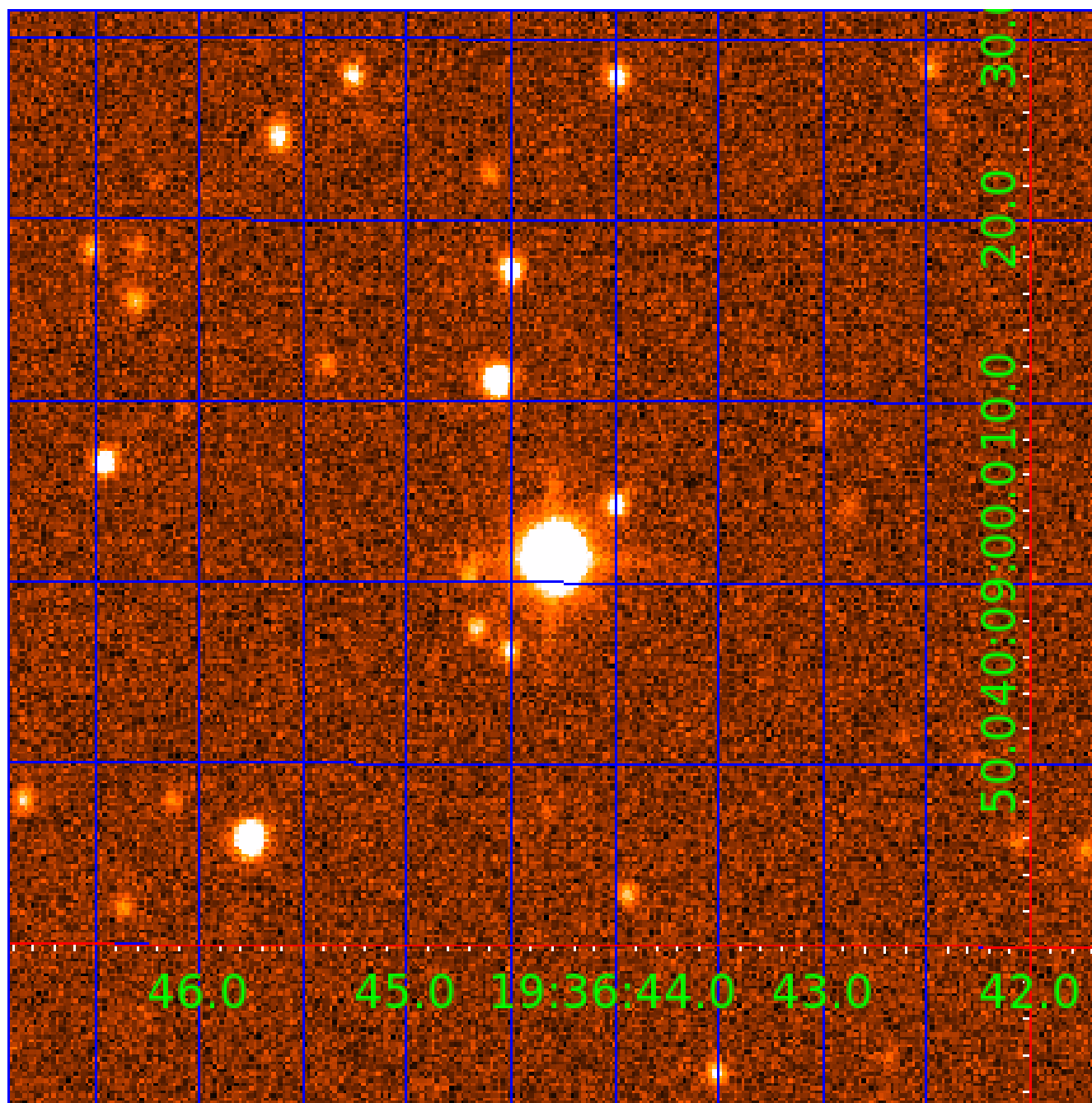


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005019567

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})
005019567-01	OBS	No	0.685607	131.903272	27.4	1.089	9.0	9.9	2.15	7537	1.30	40229.04
005019567-02	OBS	No	0.565050	131.583336	17.3	1.887	9.3	6.6	2.15	7537	1.03	52062.36
005019567-03	OBS	No	95.848860	132.143165	245.9	6.742	7.9	7.0	2.15	7537	3.56	55.44
005019567-04	OBS	No	62.407135	172.737307	239.5	2.204	7.6	6.7	2.15	7537	3.40	98.25
005019567-05	OBS	No	159.029943	266.969299	389.4	2.340	7.8	8.2	2.15	7537	4.90	28.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005019567-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005019567-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005019567-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005019567-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
005019567-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—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.

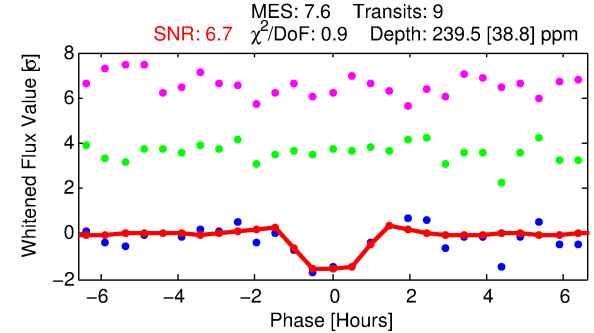
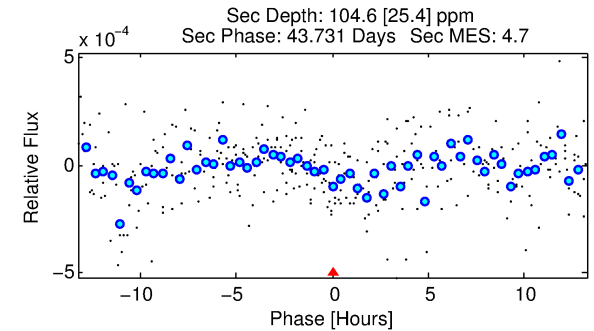
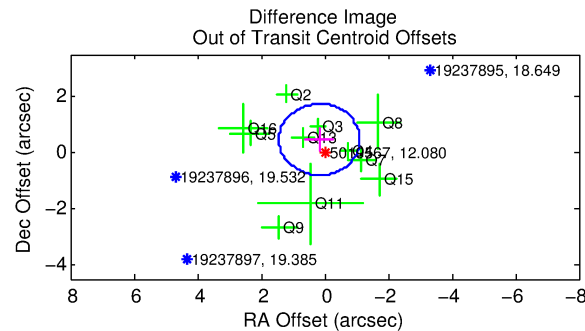
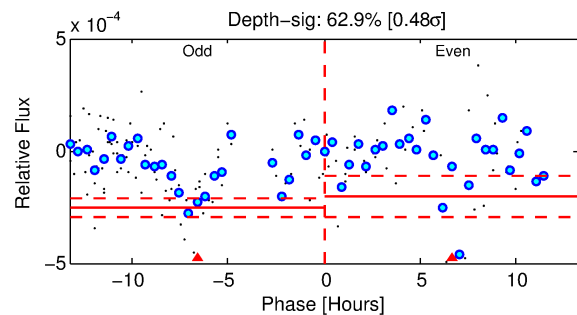
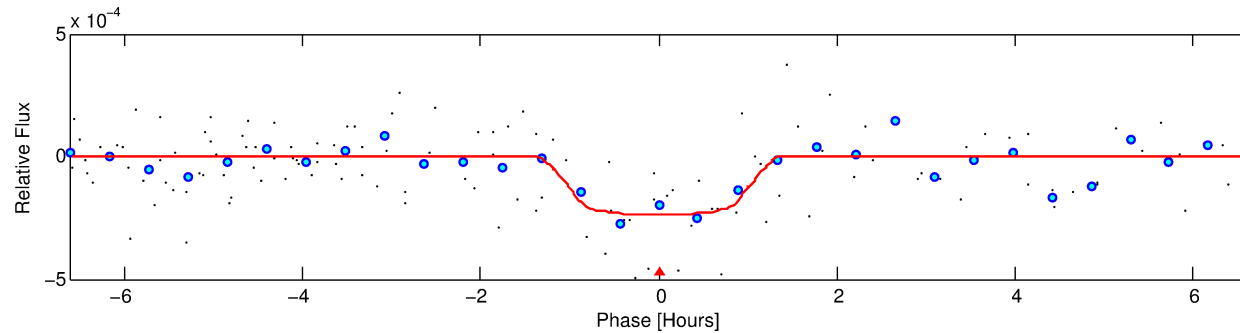
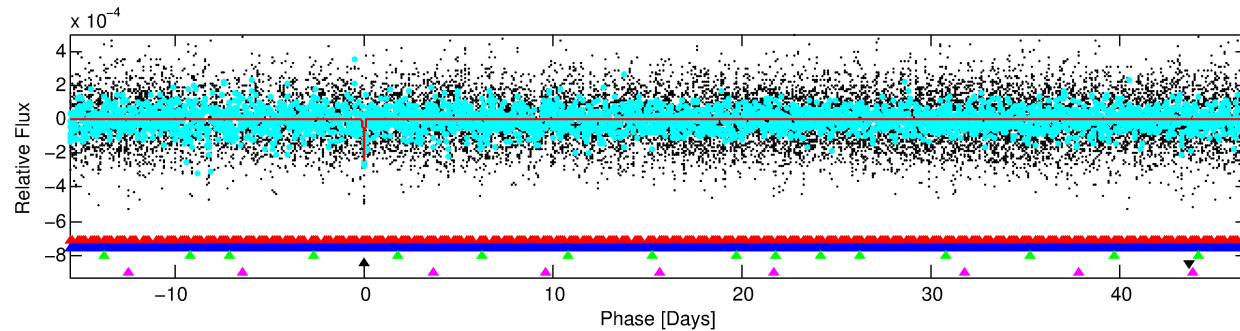
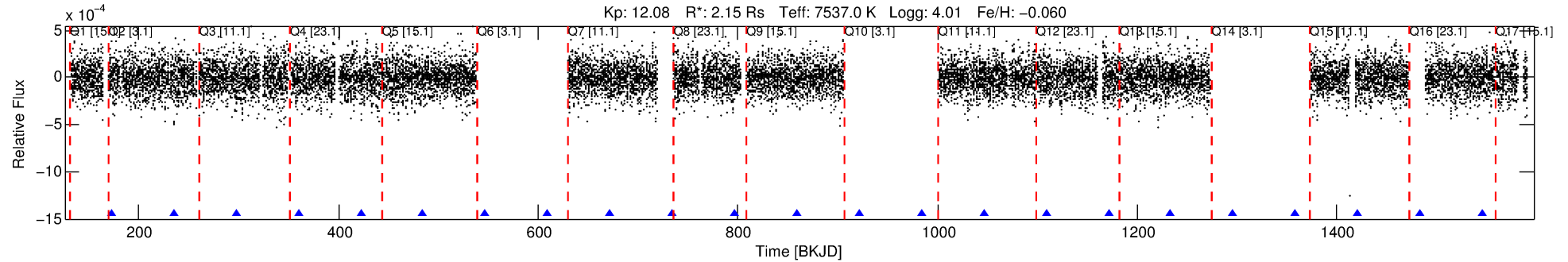
Ephemeris Match Information For 005019567-04

No Significant Match Found

DV One-Page Summary

KIC: 5019567 Candidate: 4 of 5 Period: 62.407 d
KOI: K06488 Corr: No Ephemeris Match

Kp: 12.08 R*: 2.15 Rs Teff: 7537.0 K Logg: 4.01 Fe/H: -0.060



DV Fit Results:

Period = 62.40713 [0.00064] d
Epoch = 172.7373 [0.0071] BKJD
Rp/R* = 0.0145 [0.0197]
a/R* = 209.53 [1720.65]
b = 0.30 [24.94]
Seff = 98.25 [40.98]
Teq = 803 [84] K
Rp = 3.40 [4.71] Re
a = 0.3680 [0.0927] AU
Ag = 674.30 [1850.84] [0.36σ]
Teffp = 6325 [4309] K [1.28σ]

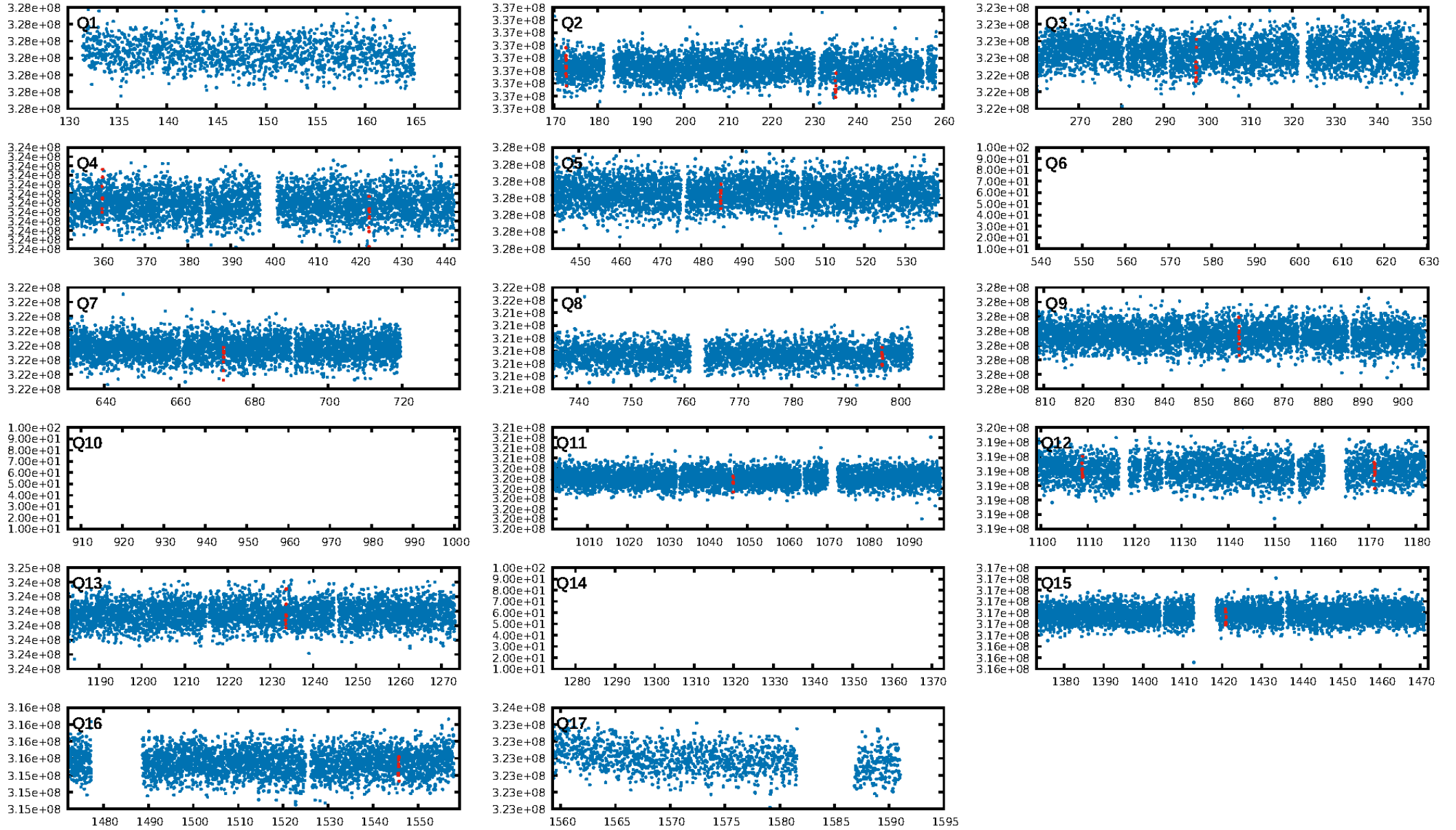
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [602.48σ]
LongPeriod-sig: 100.0% [113.15σ]
ModelChiSquare2-sig: 33.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.58e-10
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 0.7253
Centroid-sig: 91.2%
Centroid-so: 0.106 arcsec [0.20σ]
OotOffset-rm: 0.495 arcsec [1.17σ]
KicOffset-rm: 0.498 arcsec [1.26σ]
OotOffset-st: 1/4/3/3 [11]
KicOffset-st: 1/4/3/3 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 0.00 [0/12]

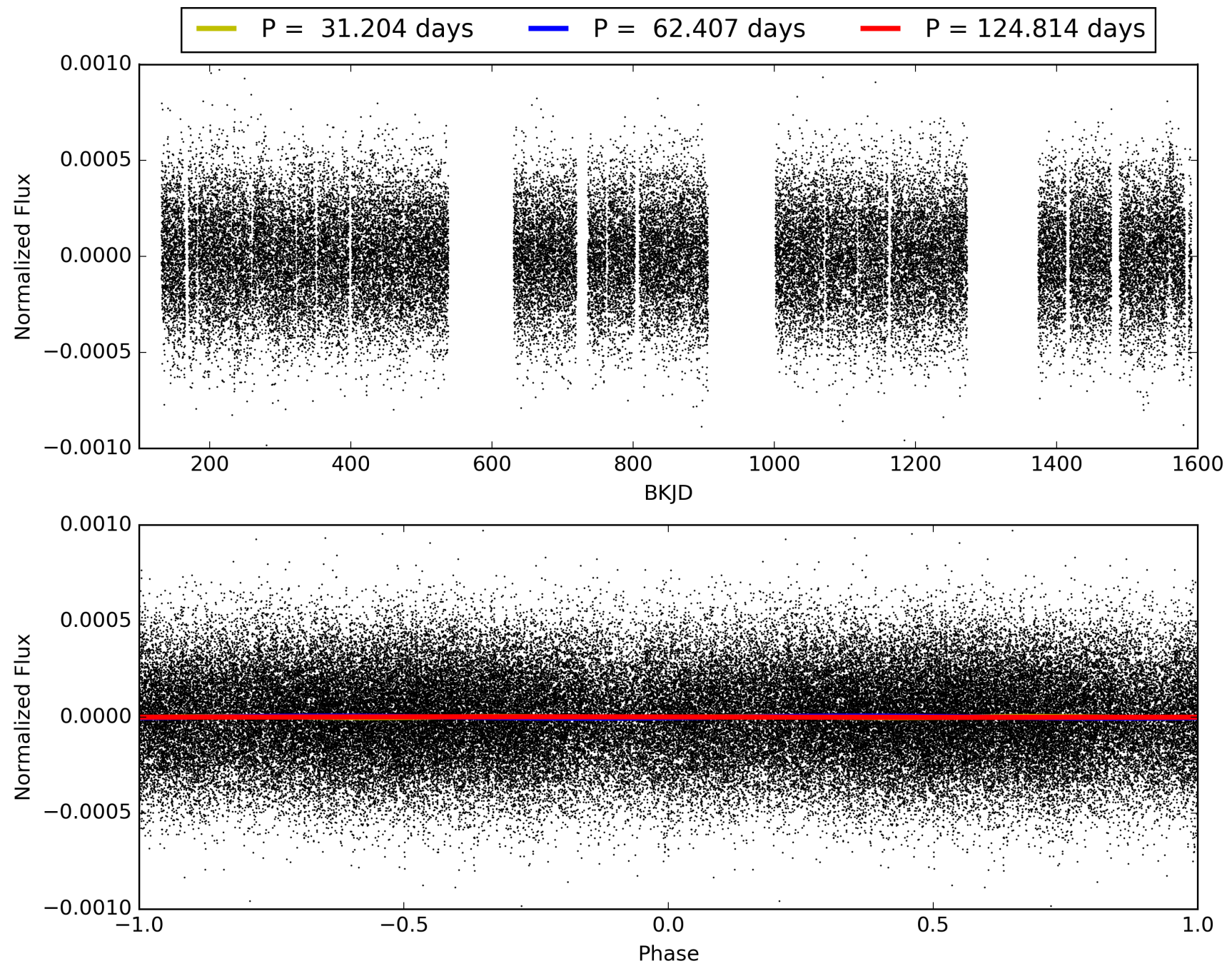
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:30:46 Z

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

TCE 005019567-04, PDC Light Curves

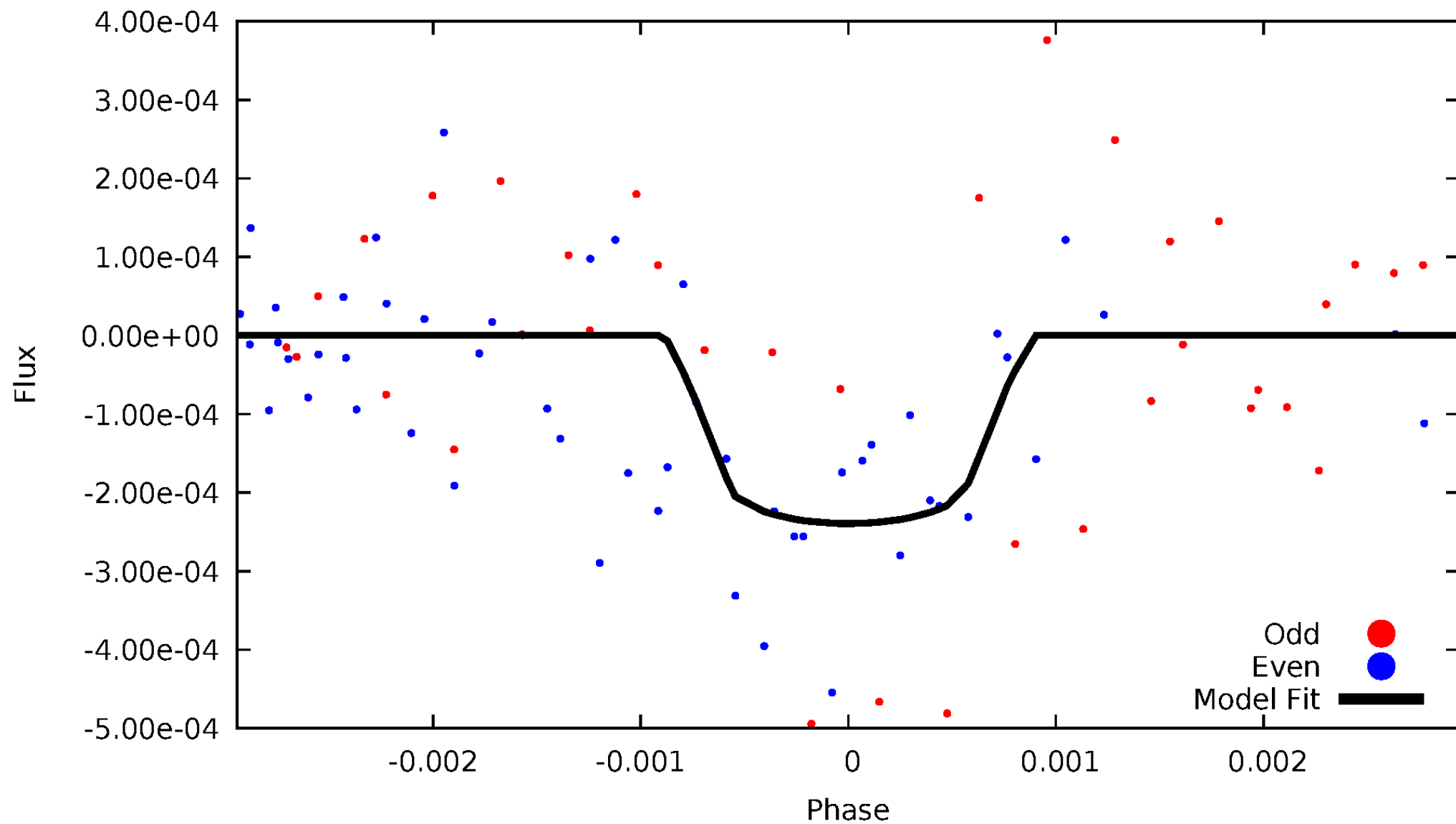


TCE 005019567-04



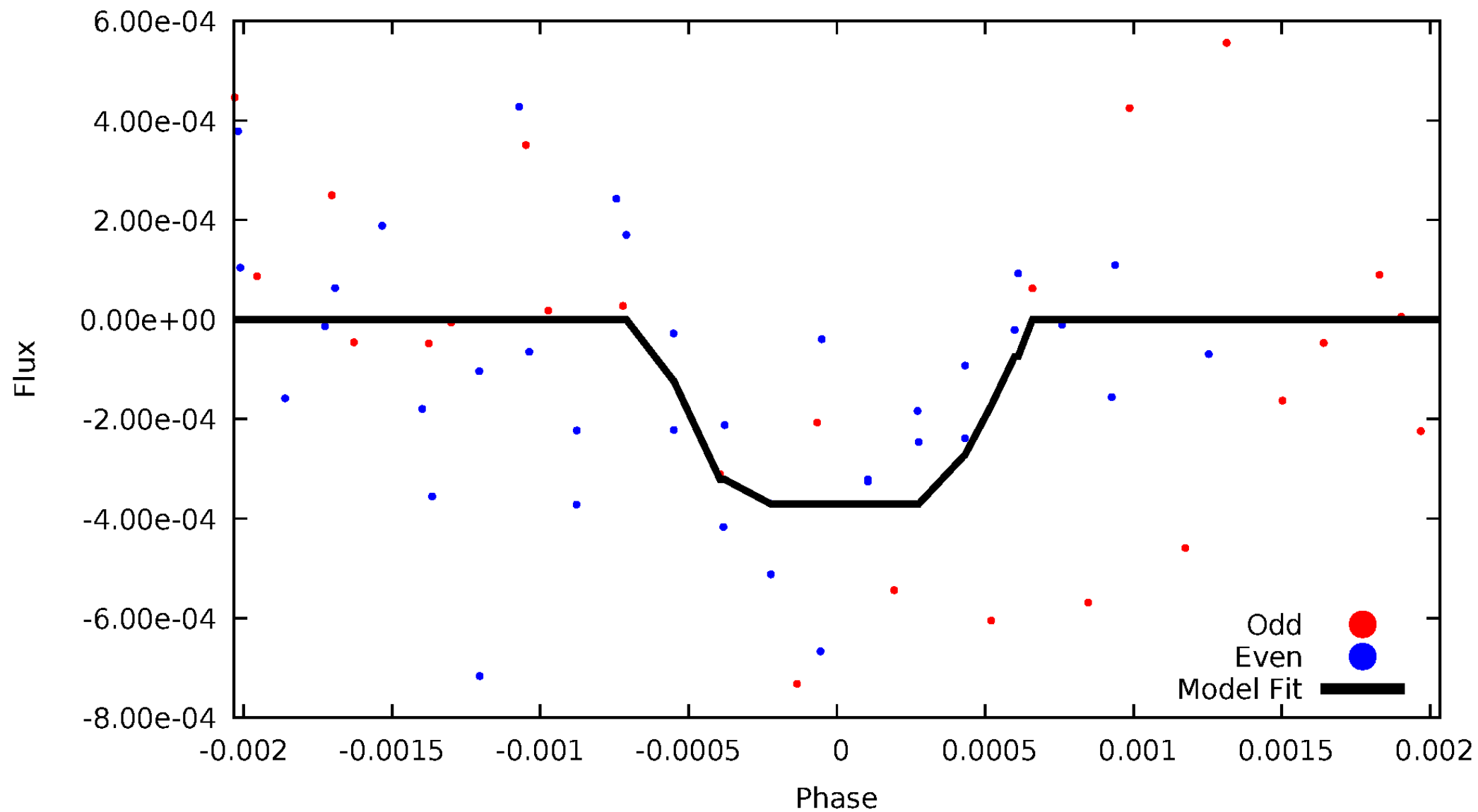
DV Odd/Even

TCE 005019567-04



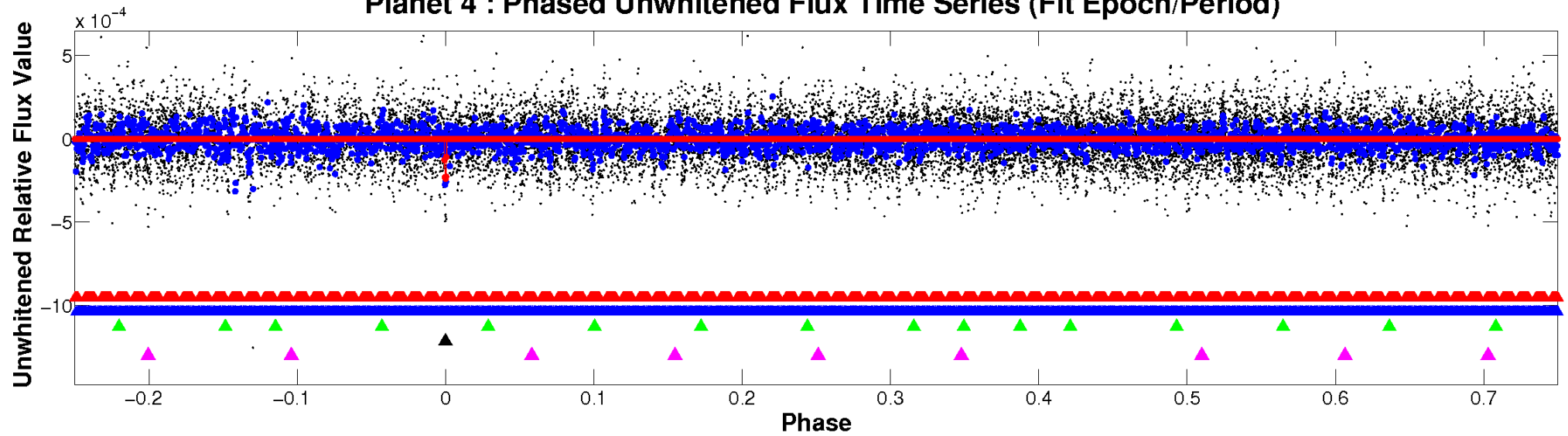
ALT Odd/Even

TCE 005019567-04

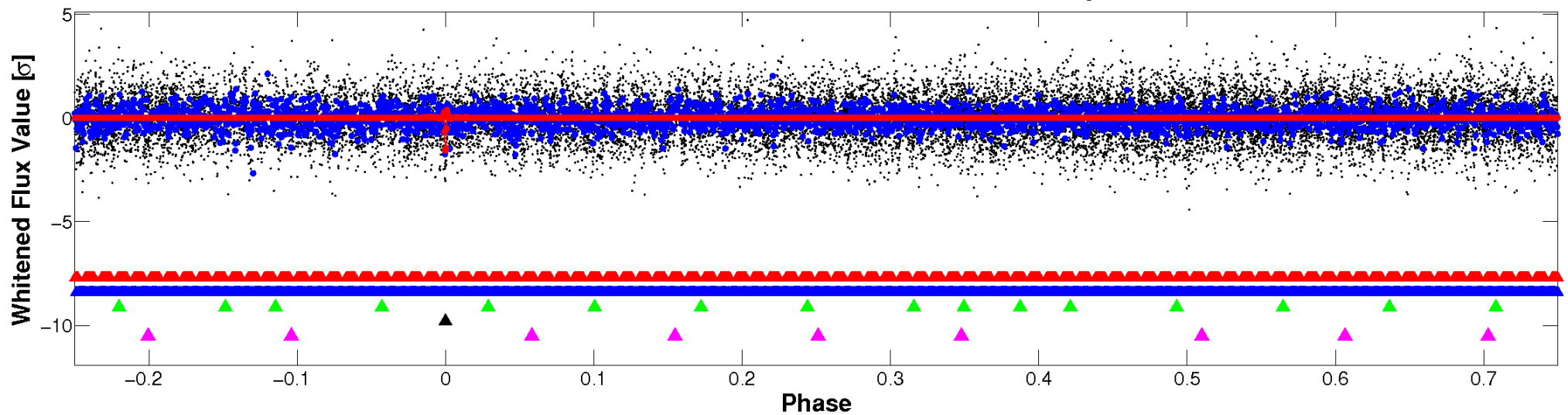


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

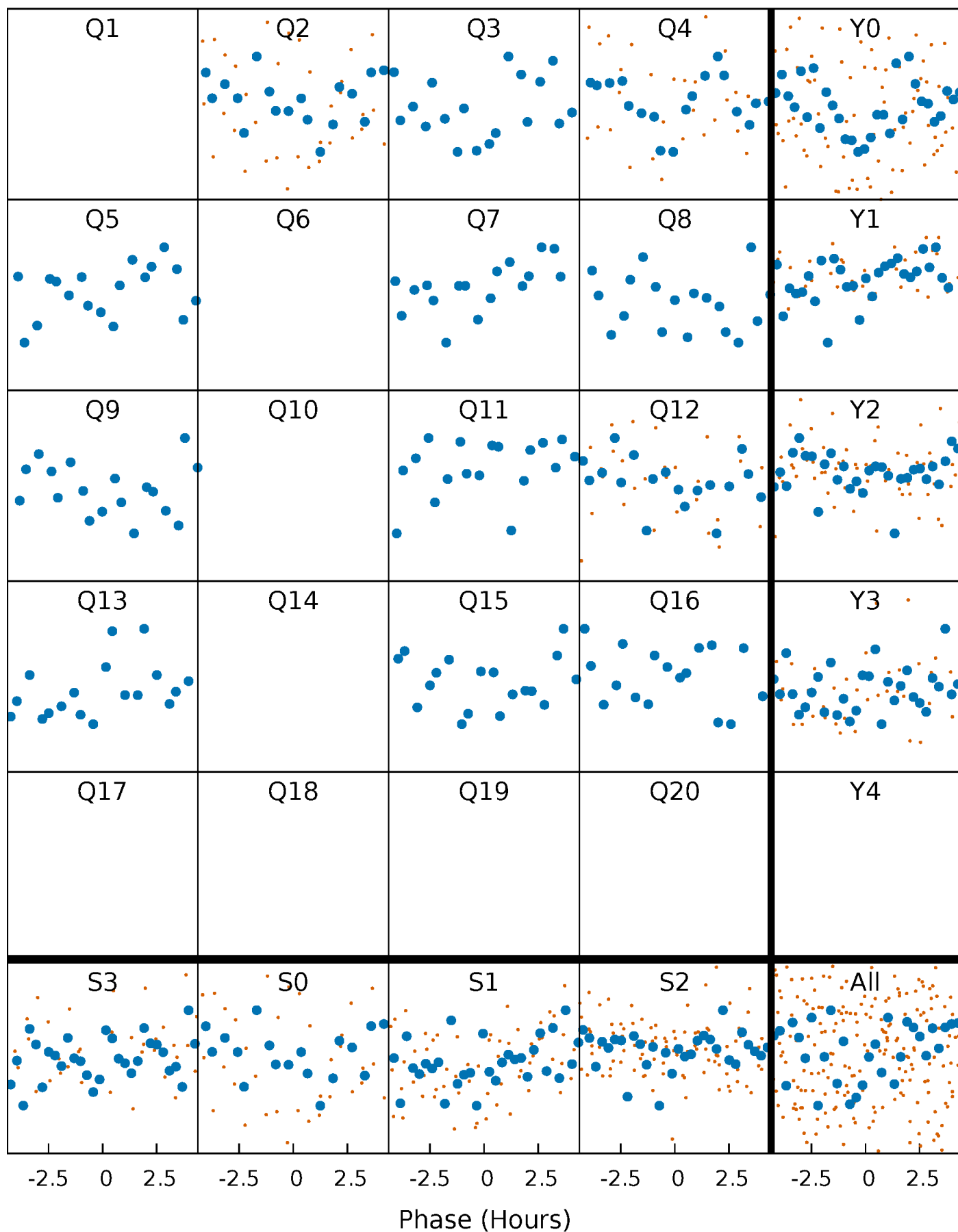


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



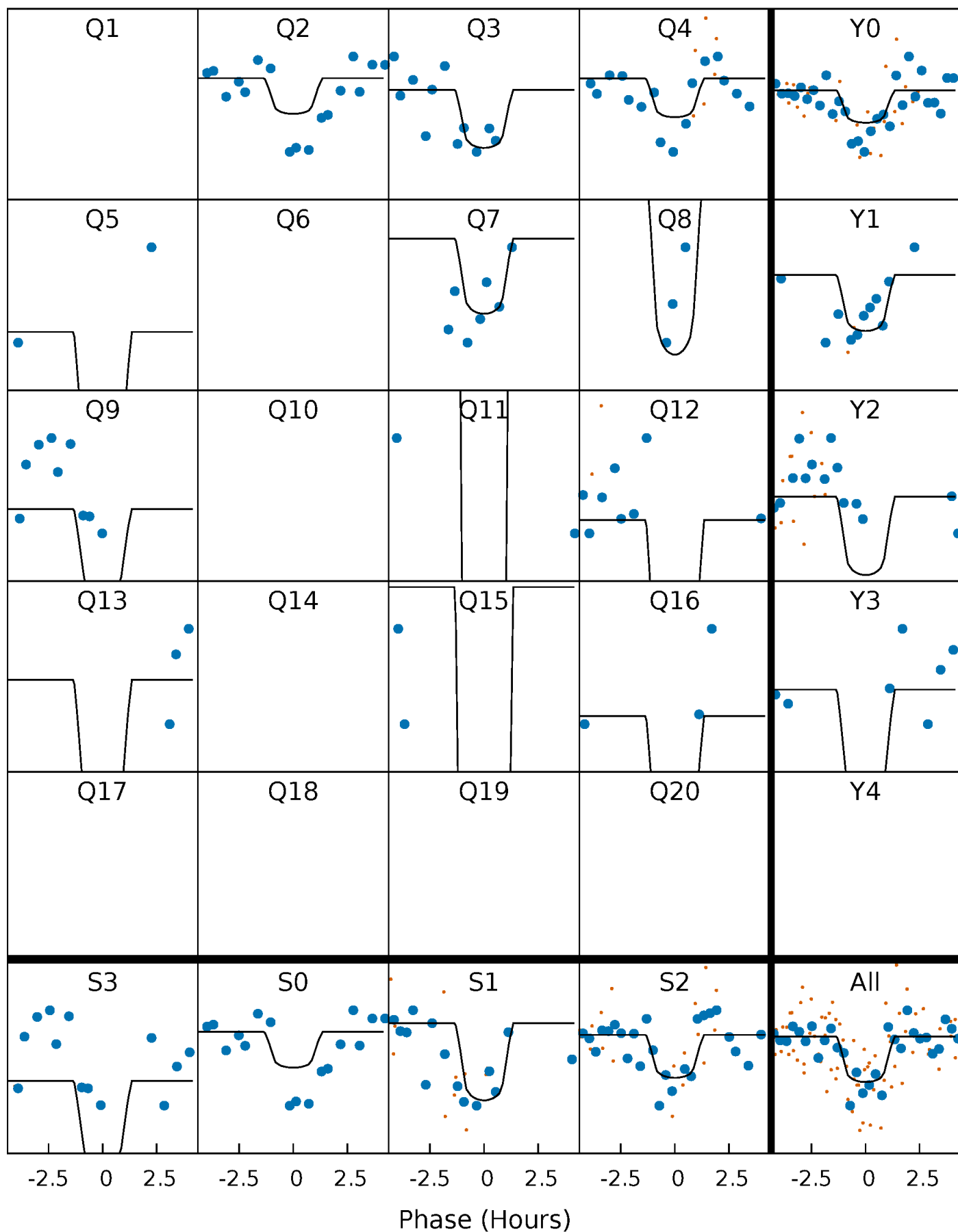
PDC Quarter-Phased Transit Curves

TCE 005019567-04 P= 62.407135 Days $T_0=172.737307$ (BKJD)



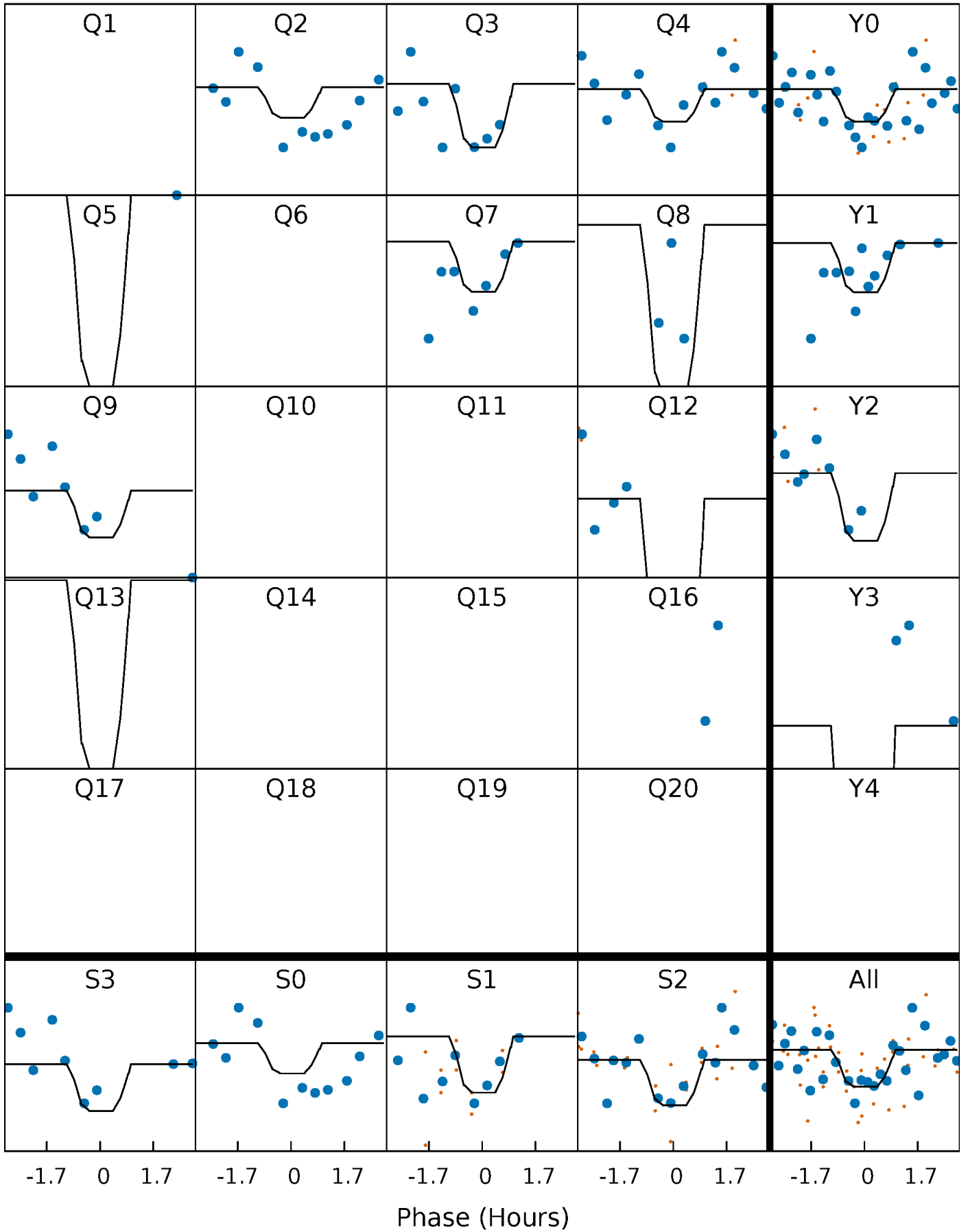
DV Quarter-Phased Transit Curves

TCE 005019567-04 P= 62.407135 Days $T_0=172.737307$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

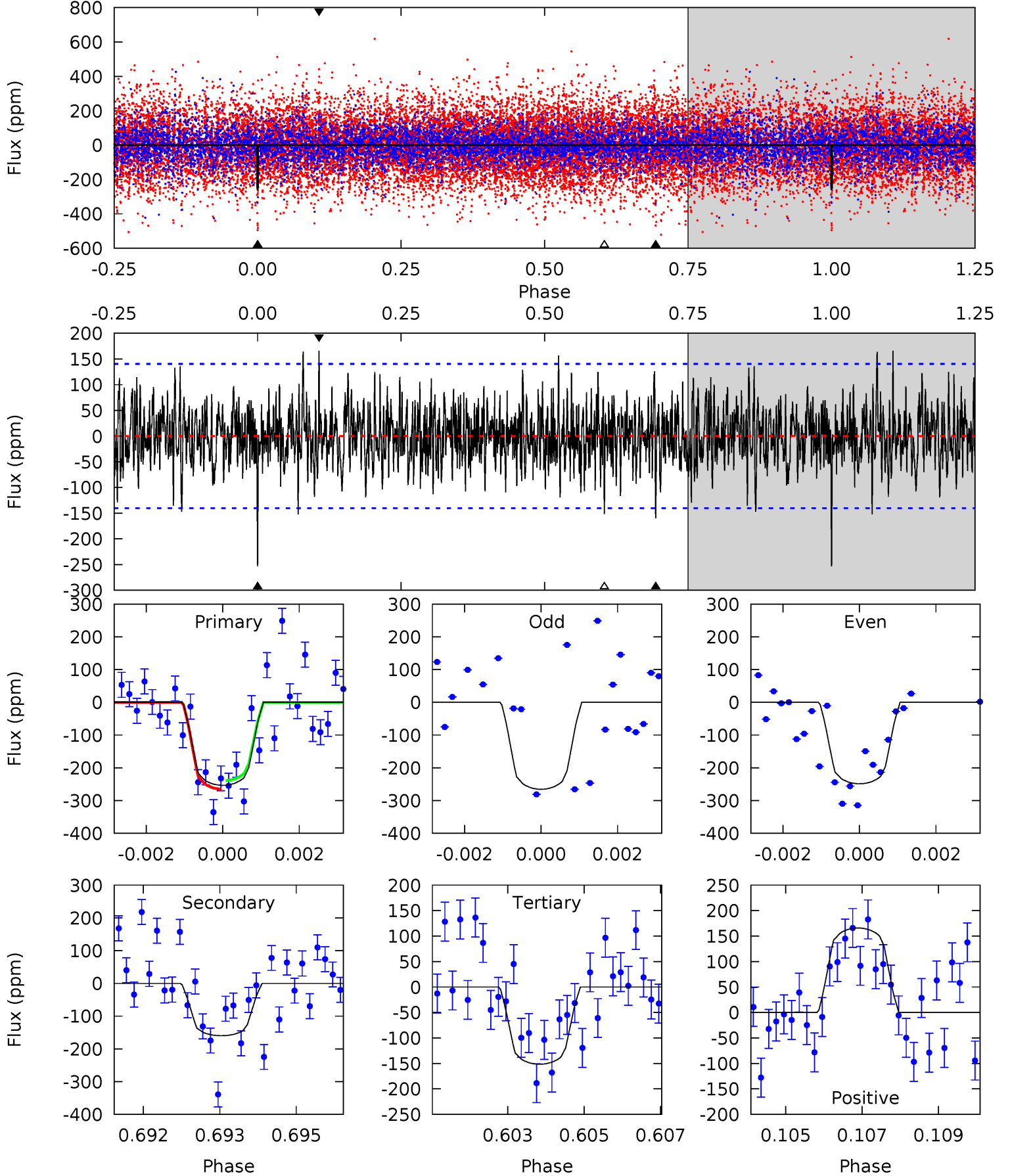
TCE 005019567-04 $P = 62.407584$ Days $T_0 = 172.734097$ (BKJD)



DV Model-Shift Uniqueness Test

005019567-04, P = 62.407135 Days, E = 110.330172 Days

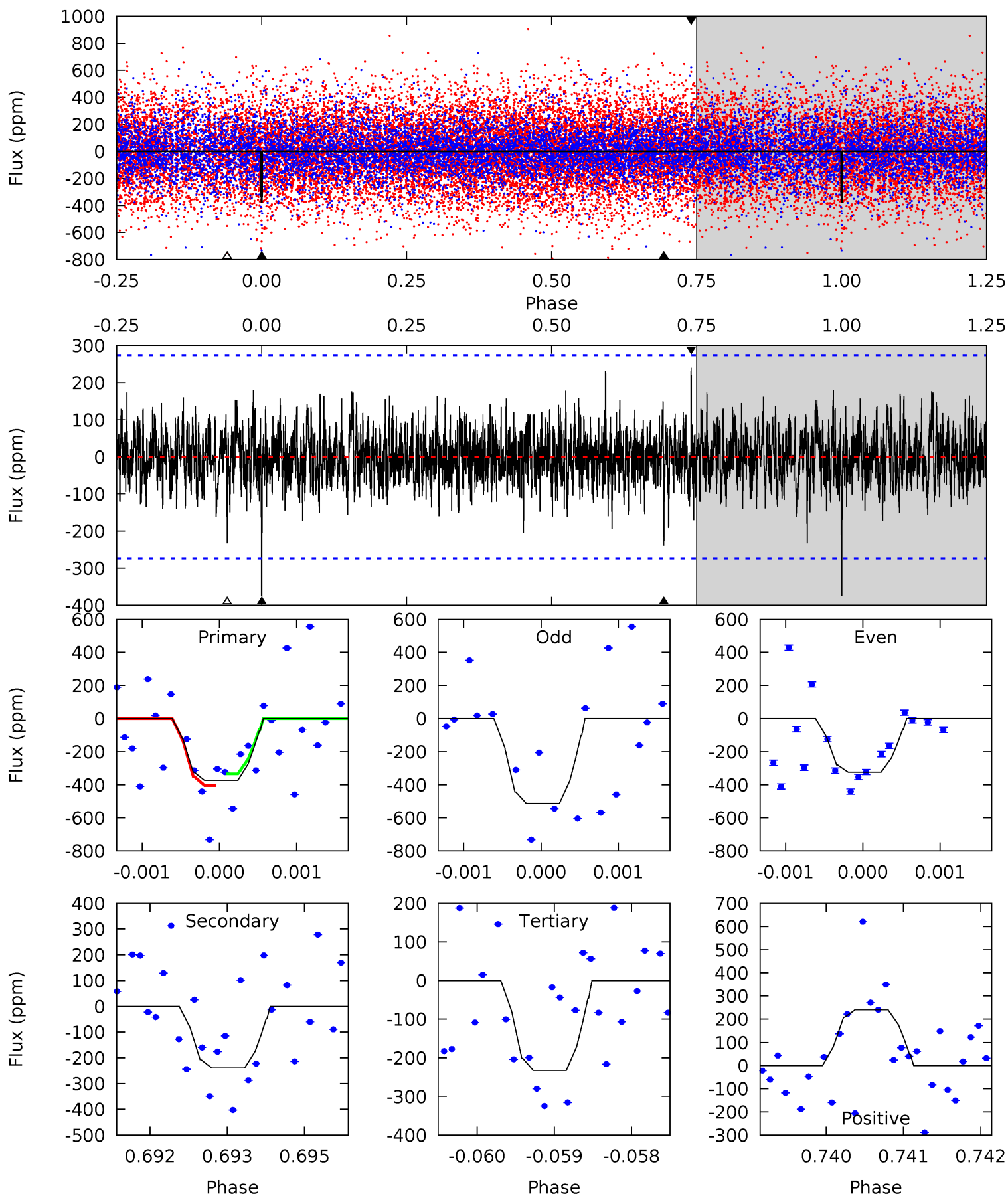
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.67	6.10	5.78	6.33	5.36	3.14	1.72	3.90	3.35	0.32	-0.23	0.30	1.13	0.40	0.50



Alt Model-Shift Uniqueness Test

005019567-04, P = 62.407584 Days, E = 110.326513 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.41	4.74	4.60	4.75	5.42	3.25	1.13	2.81	2.66	0.13	-0.01	1.68	1.09	0.39	0.69



Stellar Parameters For KIC 005019567

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7537^{+209}_{-340}	$4.007^{+0.210}_{-0.158}$	$-0.060^{+0.200}_{-0.350}$	$2.145^{+0.510}_{-0.623}$	$1.703^{+0.200}_{-0.325}$	$0.243^{+0.301}_{-0.100}$
	+3%/-5%	+5%/-4%	+333%/-583%	+24%/-29%	+12%/-19%	+124%/-41%
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 005019567-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-160 ± 26	$4.87^{+4.22}_{-3.42}$	1111^{+85}_{-88}	5741^{+6295}_{-1309}	515^{+4525}_{-369}
Alt.	-239 ± 51	$5.19^{+4.88}_{-3.37}$	1112^{+85}_{-83}	5988^{+5408}_{-1355}	610^{+4485}_{-430}

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

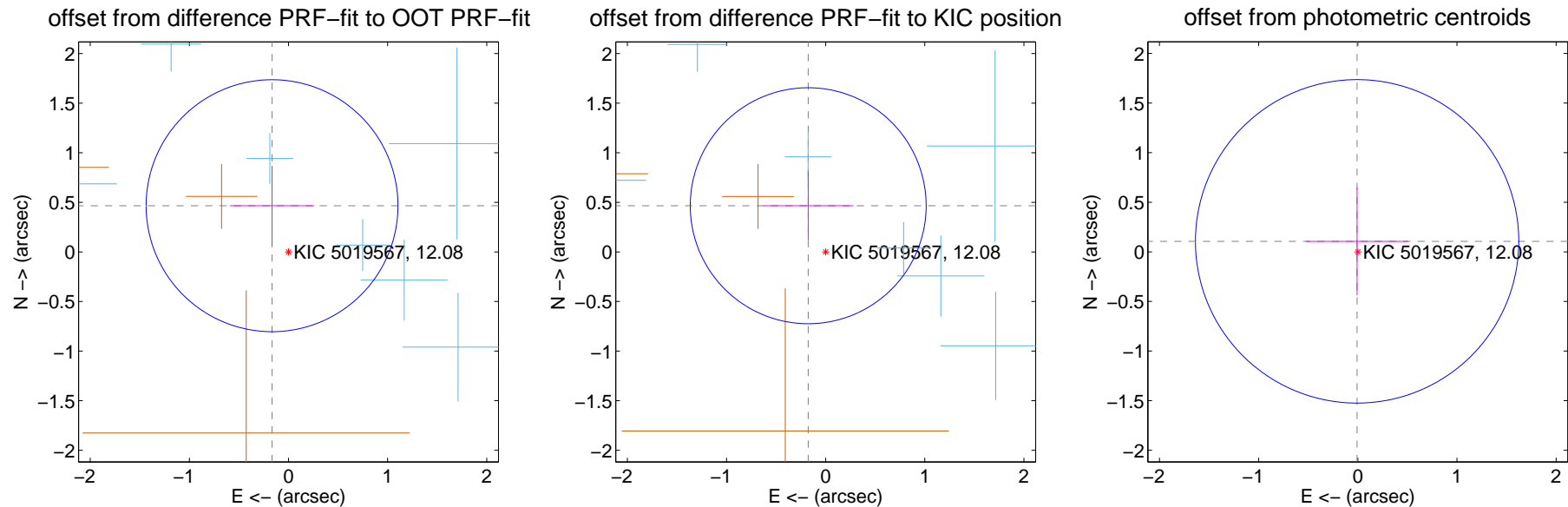
DV Centroid Data

Supplemental centroid analysis for 005019567-04. Kepler magnitude: 12.08. Transit SNR 6.66

There are 8 quarters with good PRF difference image offsets

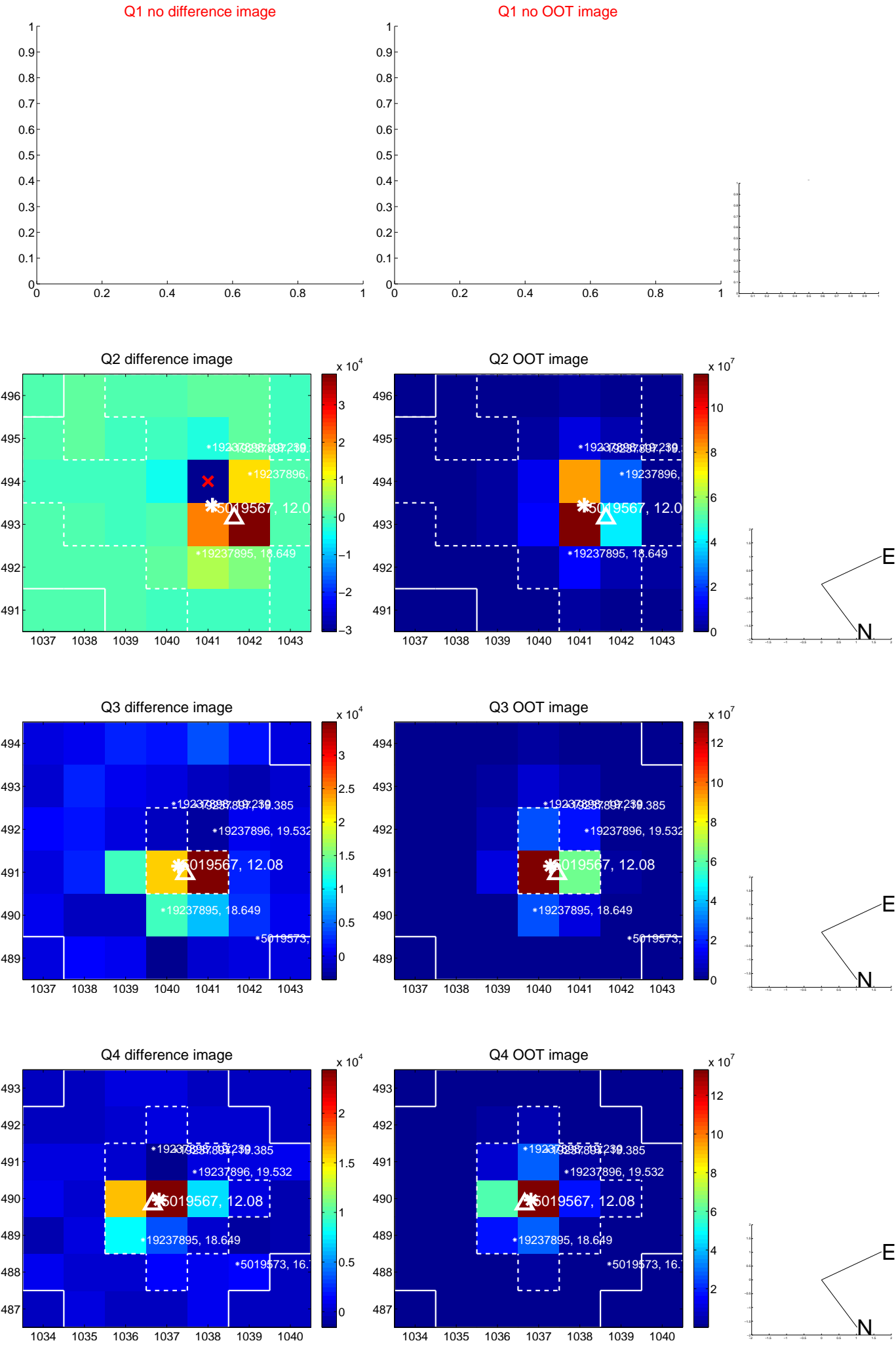
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.495 ± 0.423	1.17	0.166 ± 0.424	0.466 ± 0.402
PRF-fit source offset from KIC position	0.498 ± 0.397	1.26	0.176 ± 0.456	0.466 ± 0.346
photometric centroid source offset	0.11 ± 0.54	0.20	0.01 ± 0.52	0.11 ± 0.54

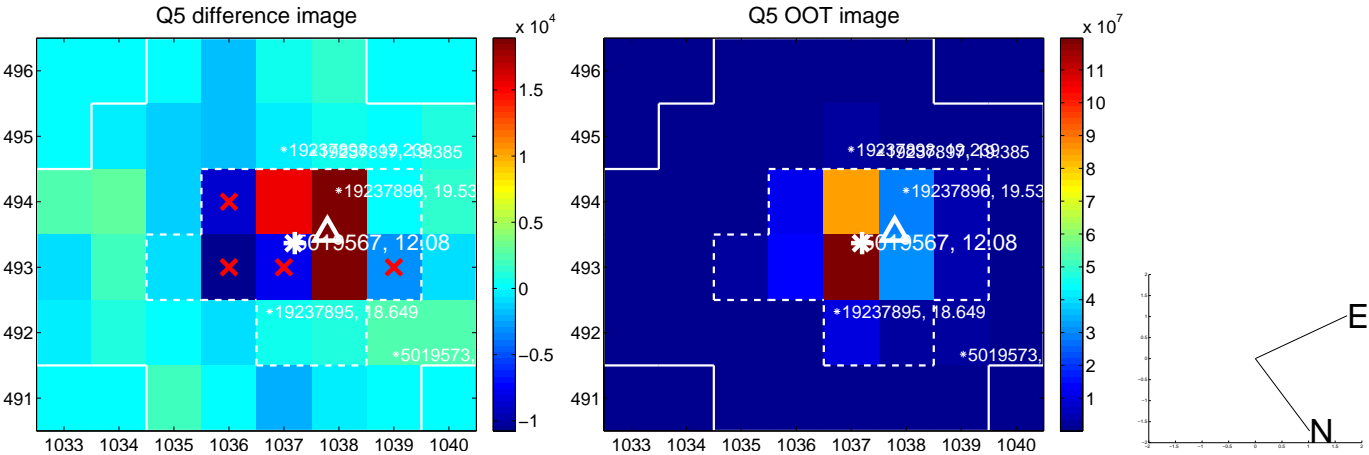


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

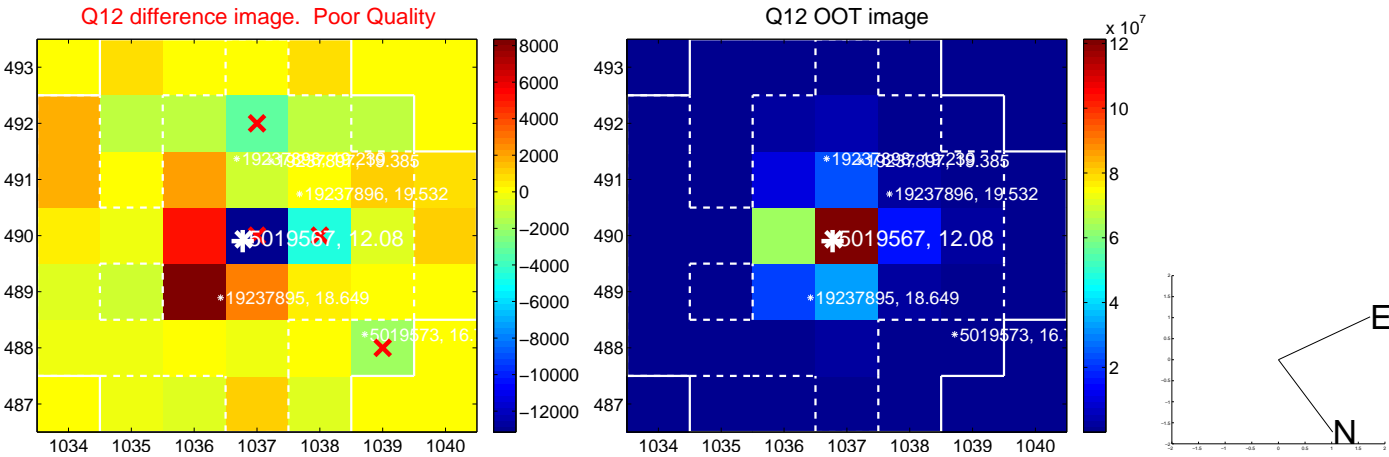
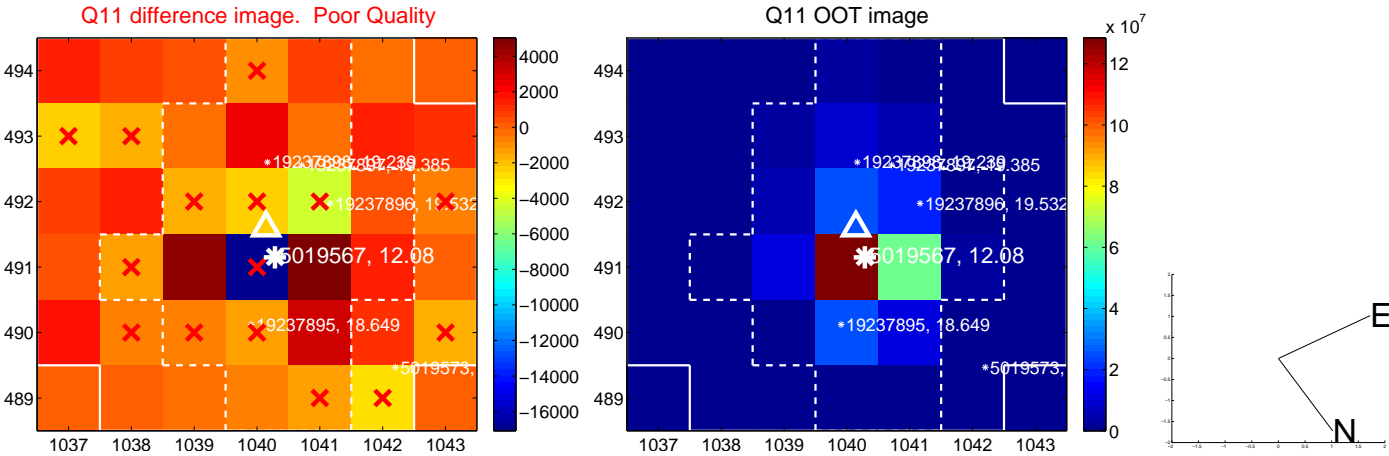
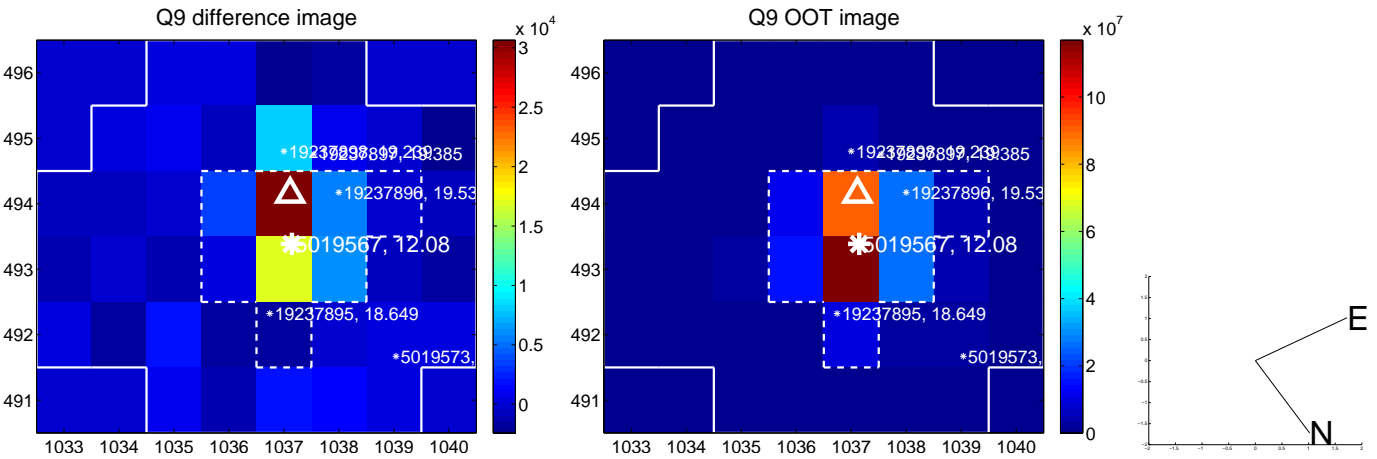
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



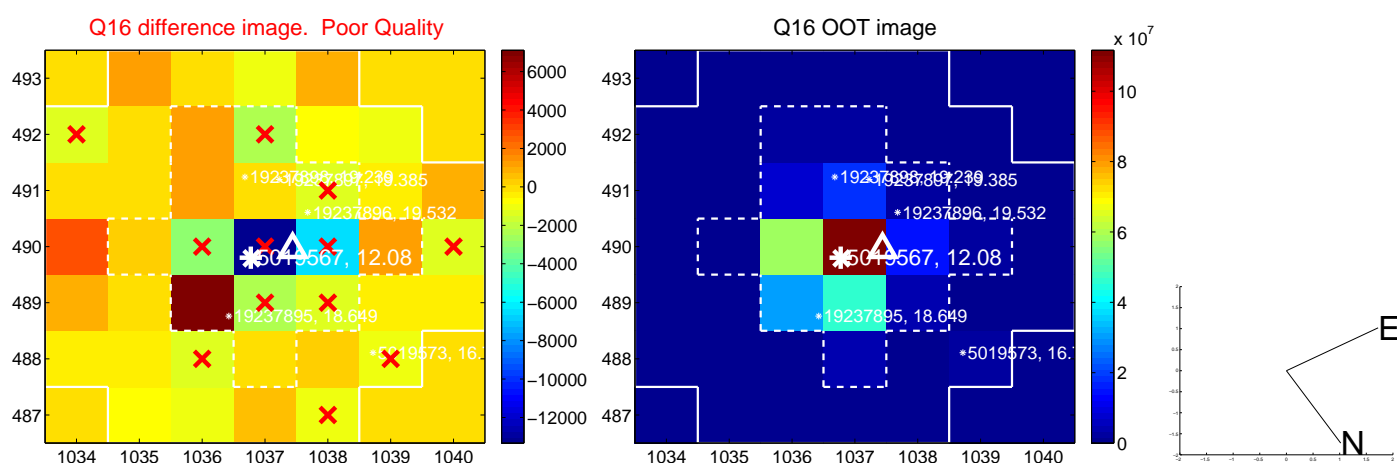
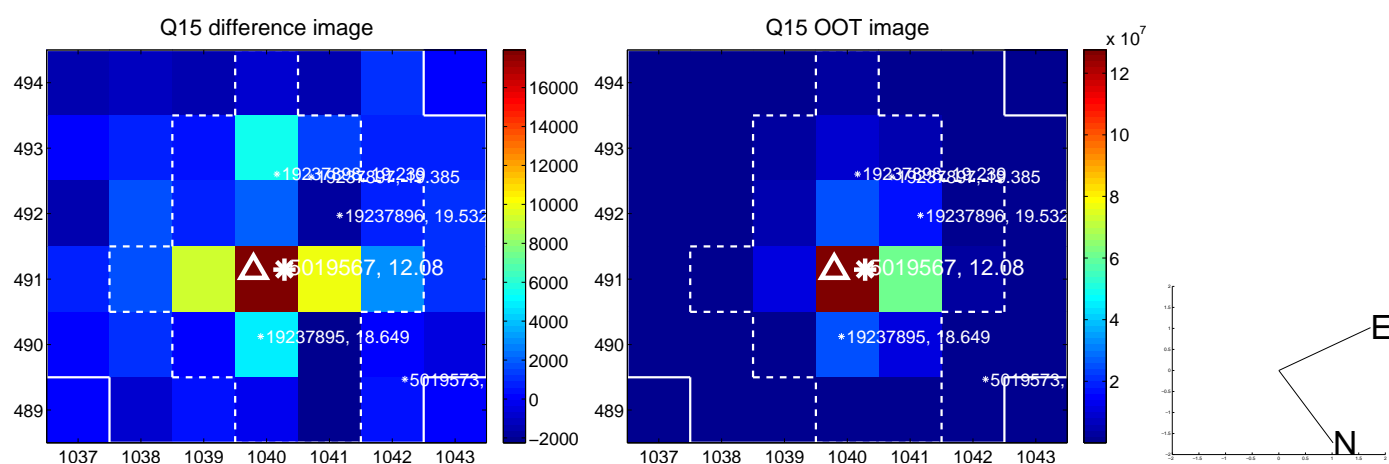
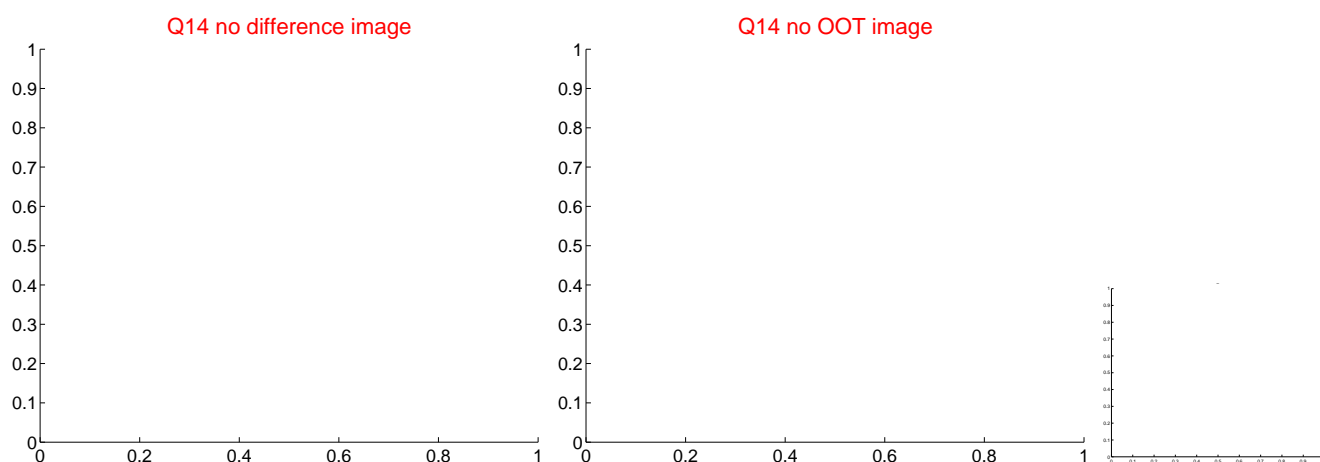
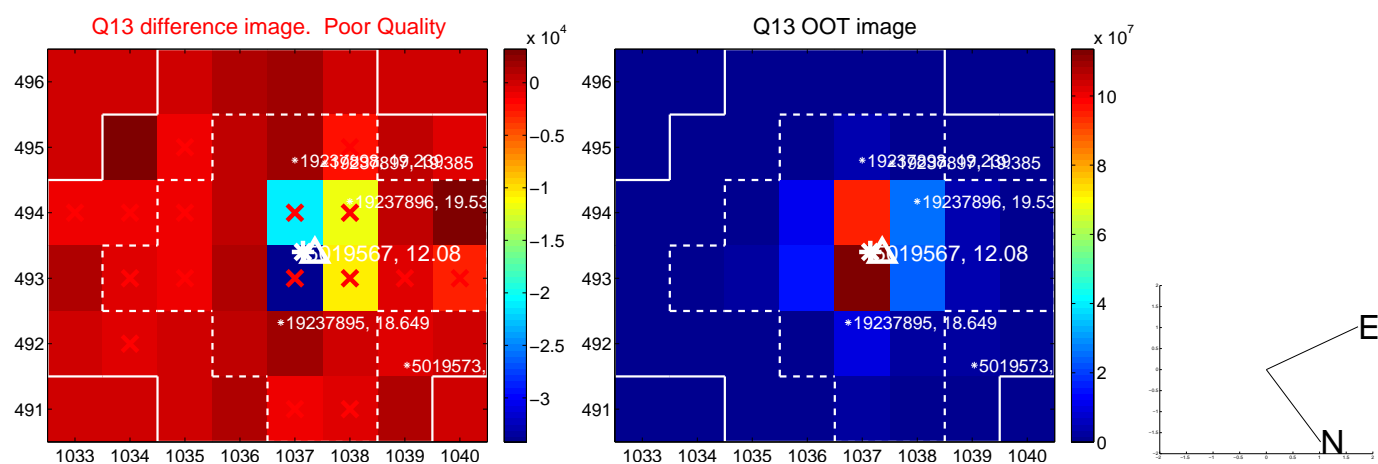
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



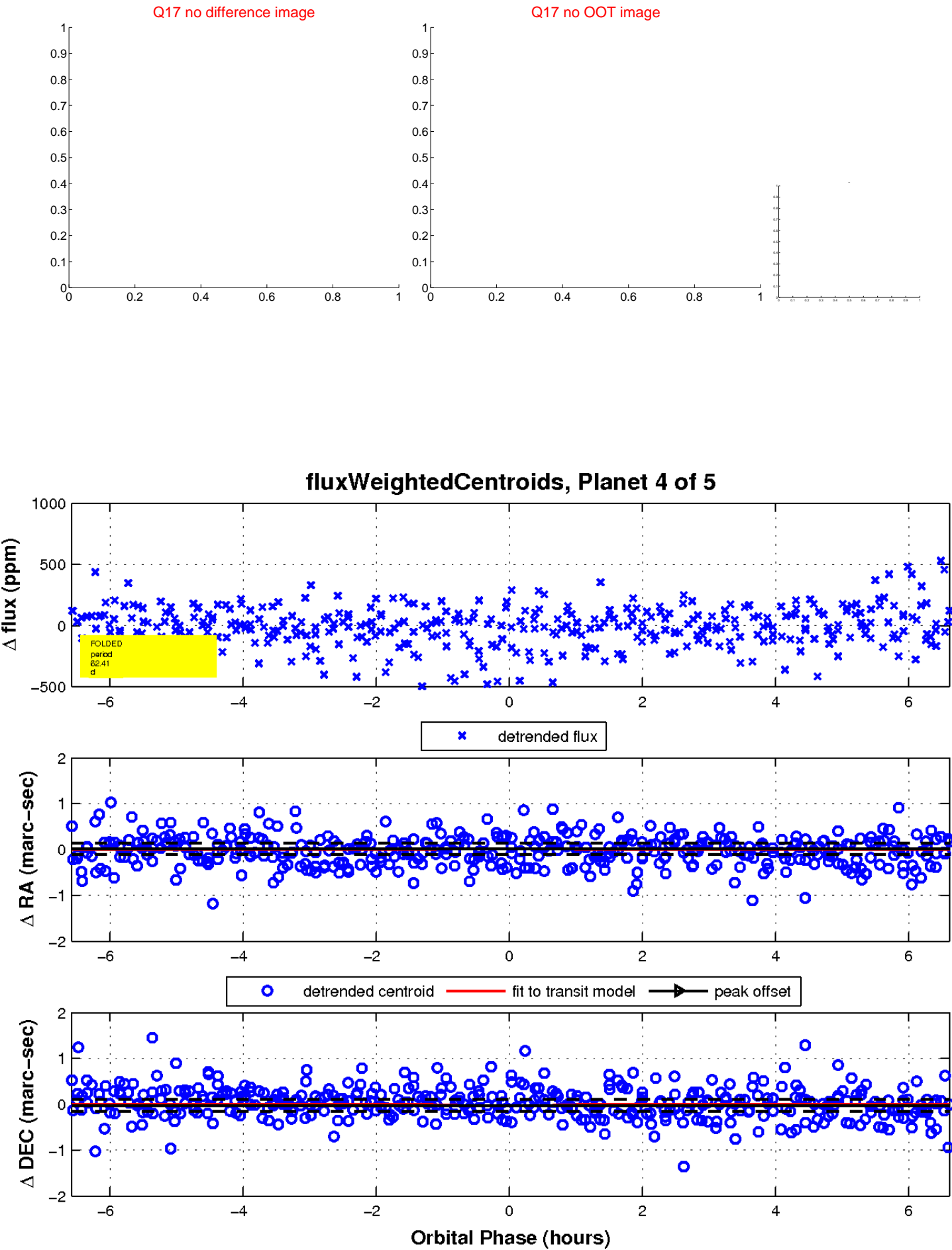
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

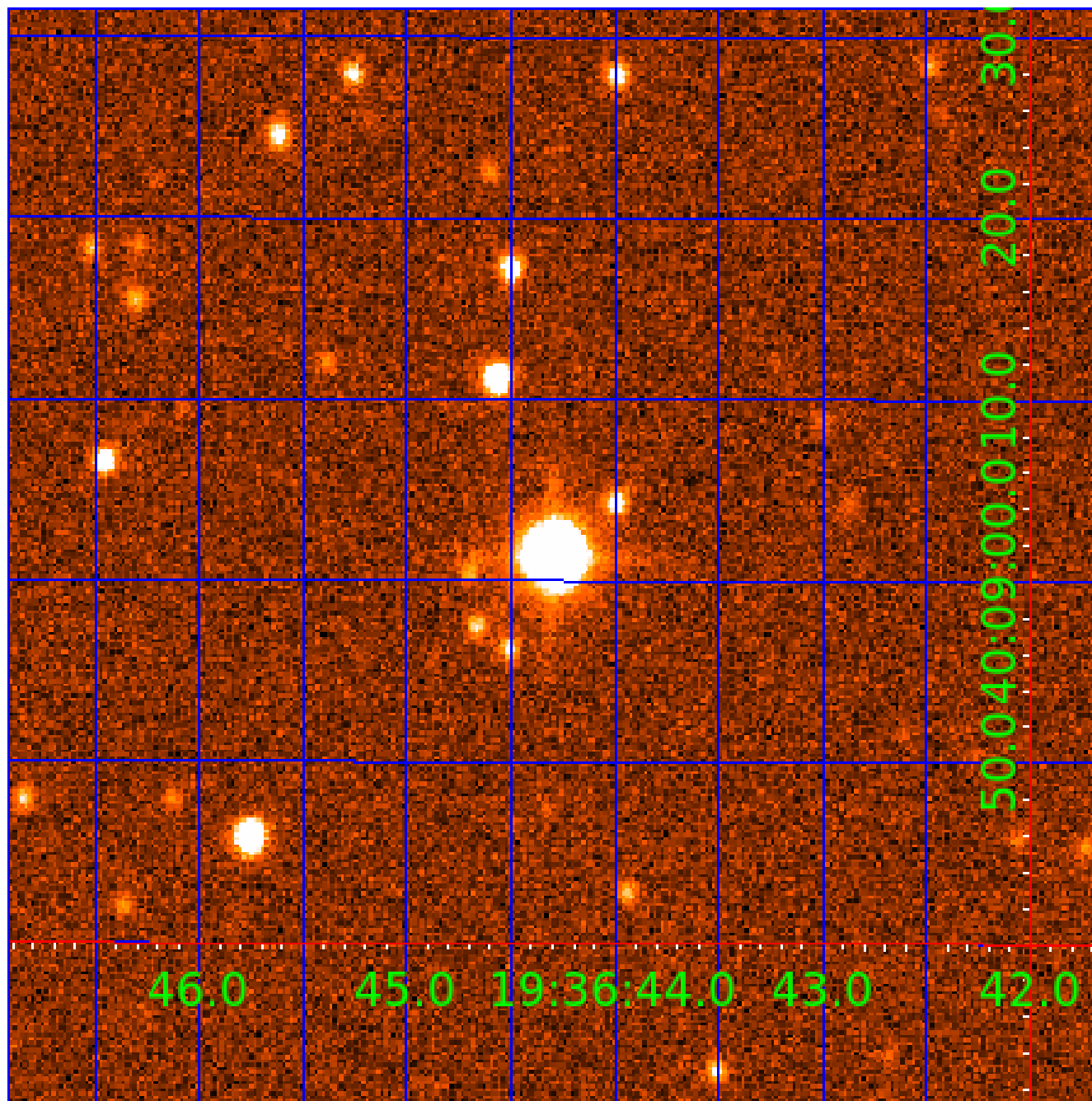


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005019567

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})
005019567-01	OBS	No	0.685607	131.903272	27.4	1.089	9.0	9.9	2.15	7537	1.30	40229.04
005019567-02	OBS	No	0.565050	131.583336	17.3	1.887	9.3	6.6	2.15	7537	1.03	52062.36
005019567-03	OBS	No	95.848860	132.143165	245.9	6.742	7.9	7.0	2.15	7537	3.56	55.44
005019567-04	OBS	No	62.407135	172.737307	239.5	2.204	7.6	6.7	2.15	7537	3.40	98.25
005019567-05	OBS	No	159.029943	266.969299	389.4	2.340	7.8	8.2	2.15	7537	4.90	28.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005019567-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005019567-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005019567-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005019567-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_ALT
005019567-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—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.

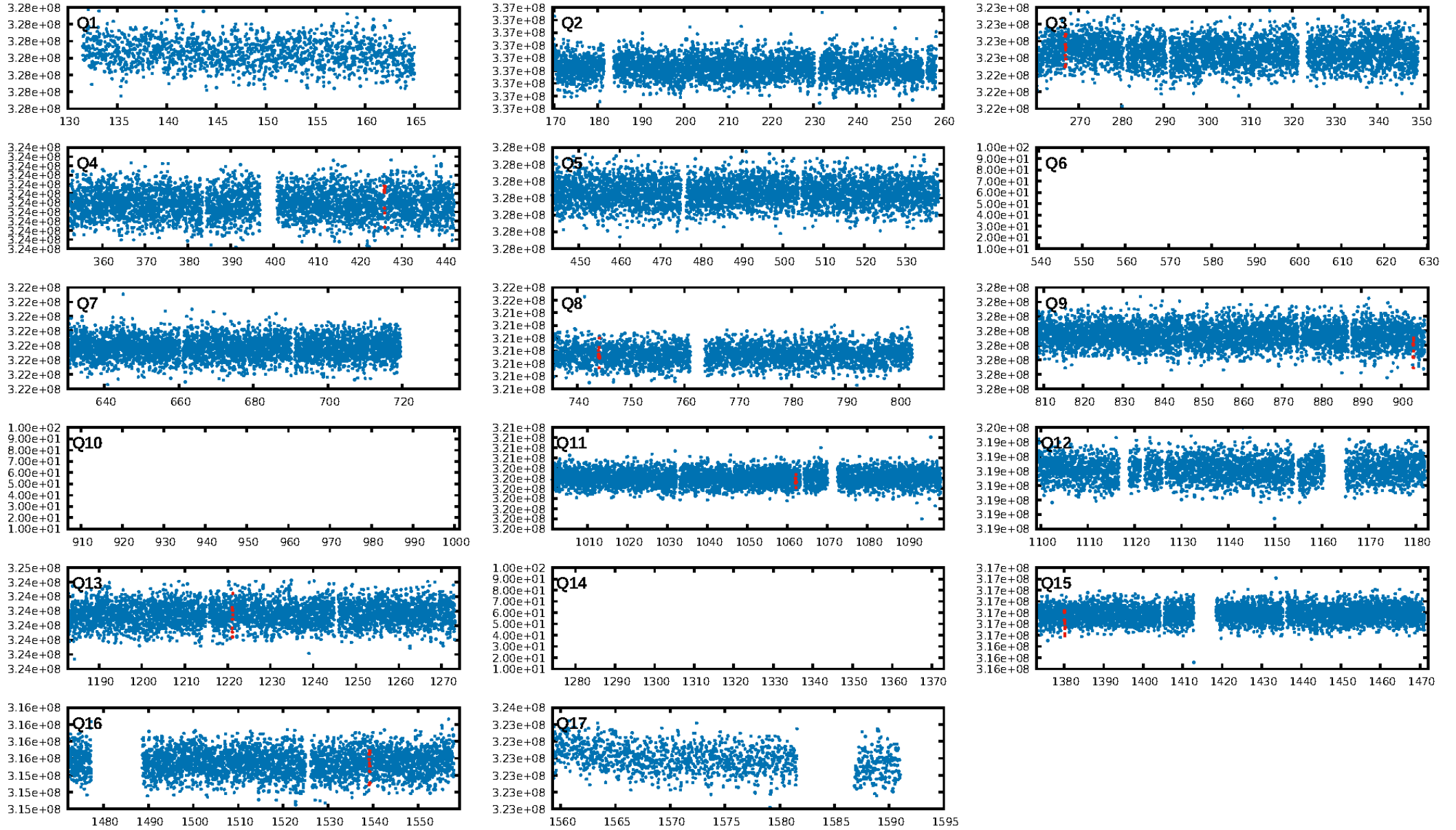
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005019567-05

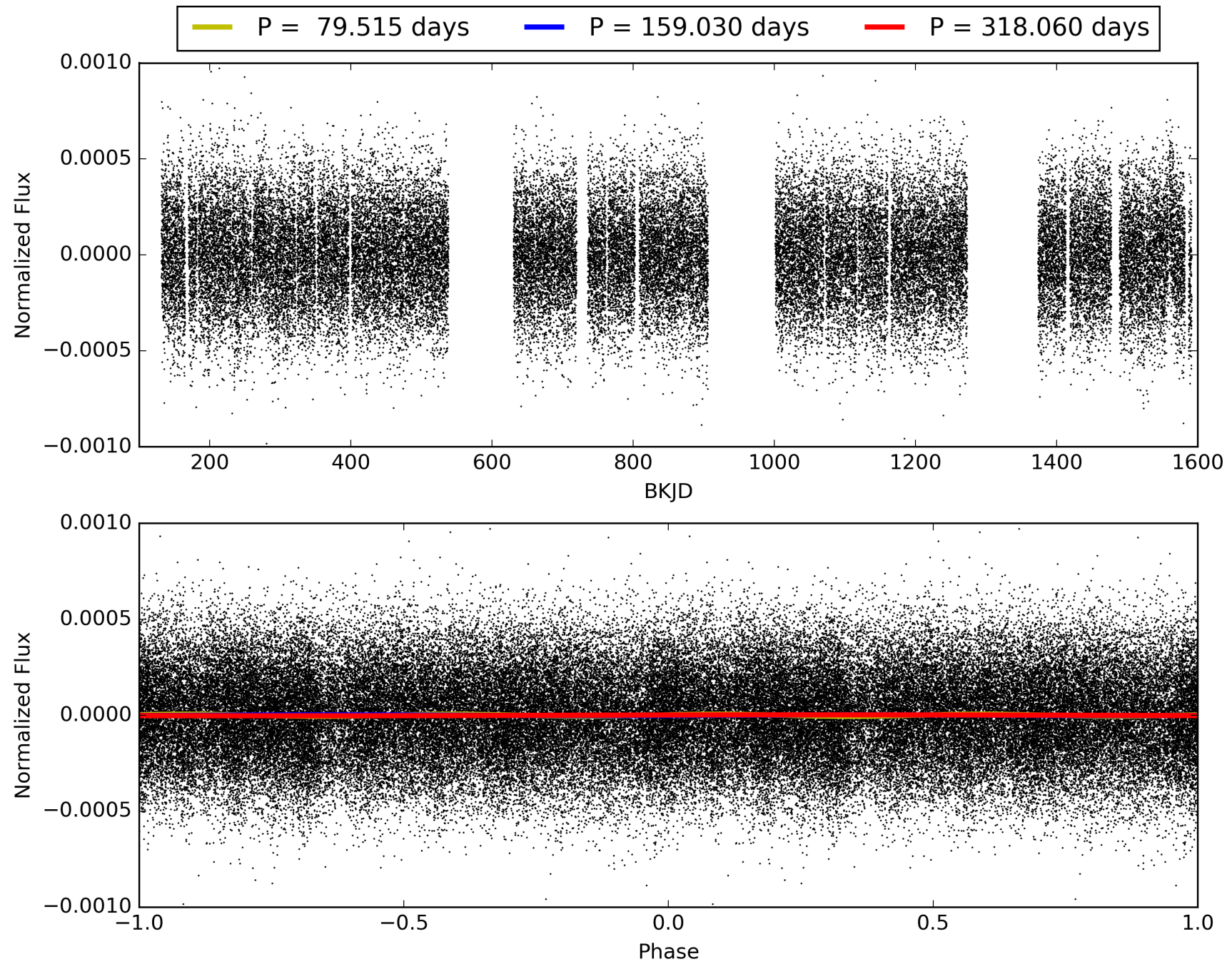
No Significant Match Found

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

TCE 005019567-05, PDC Light Curves

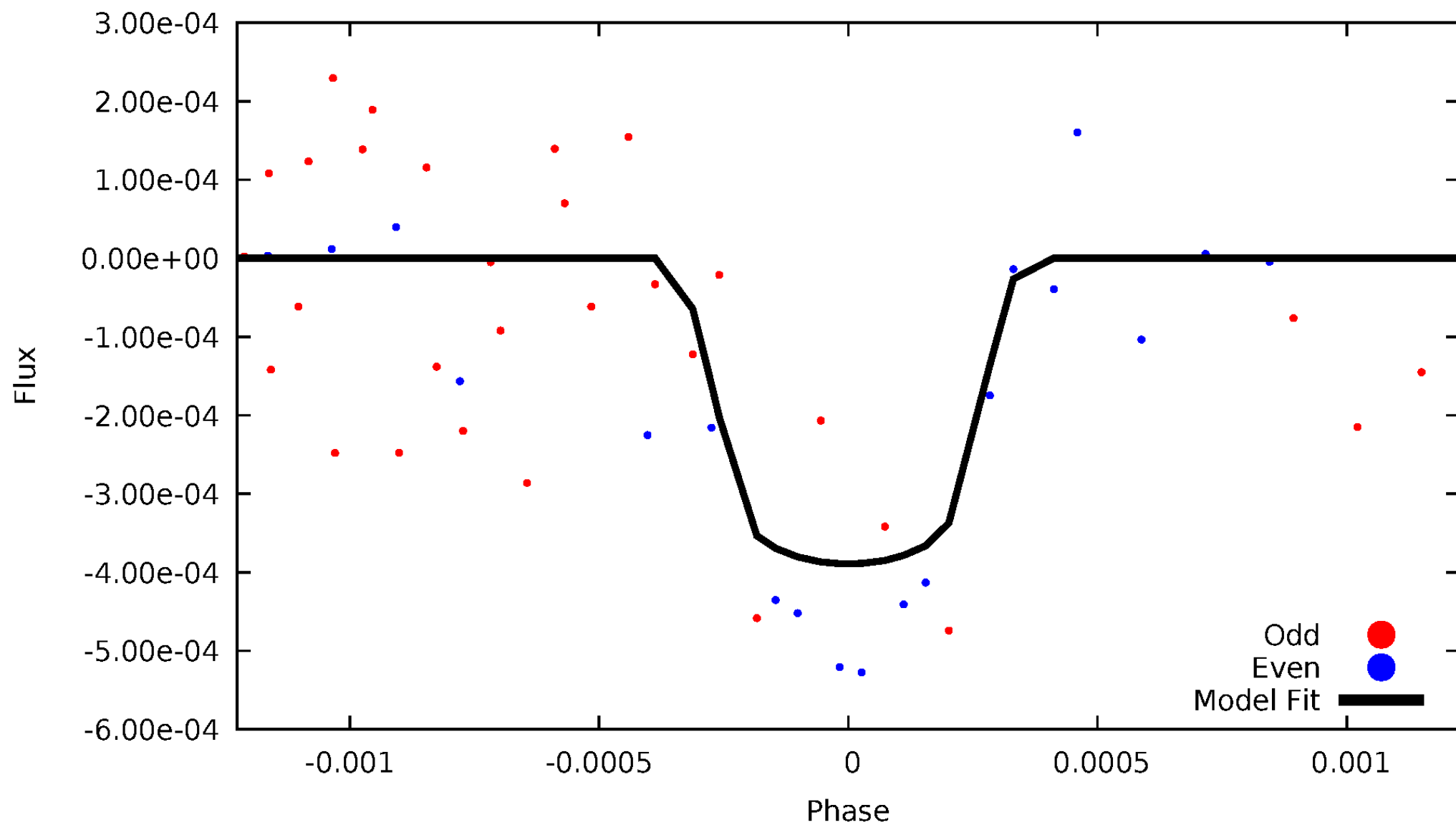


TCE 005019567-05



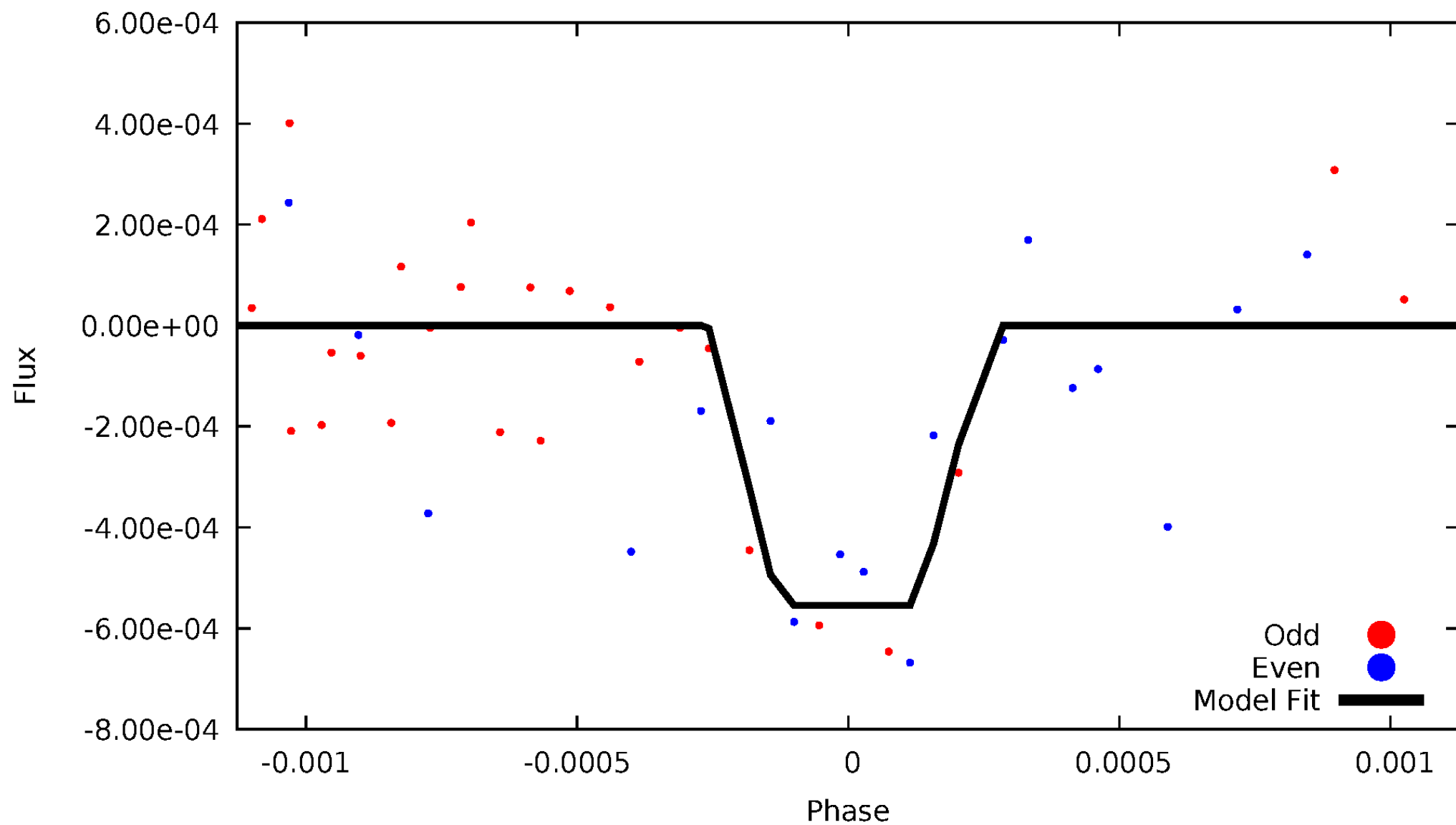
DV Odd/Even

TCE 005019567-05



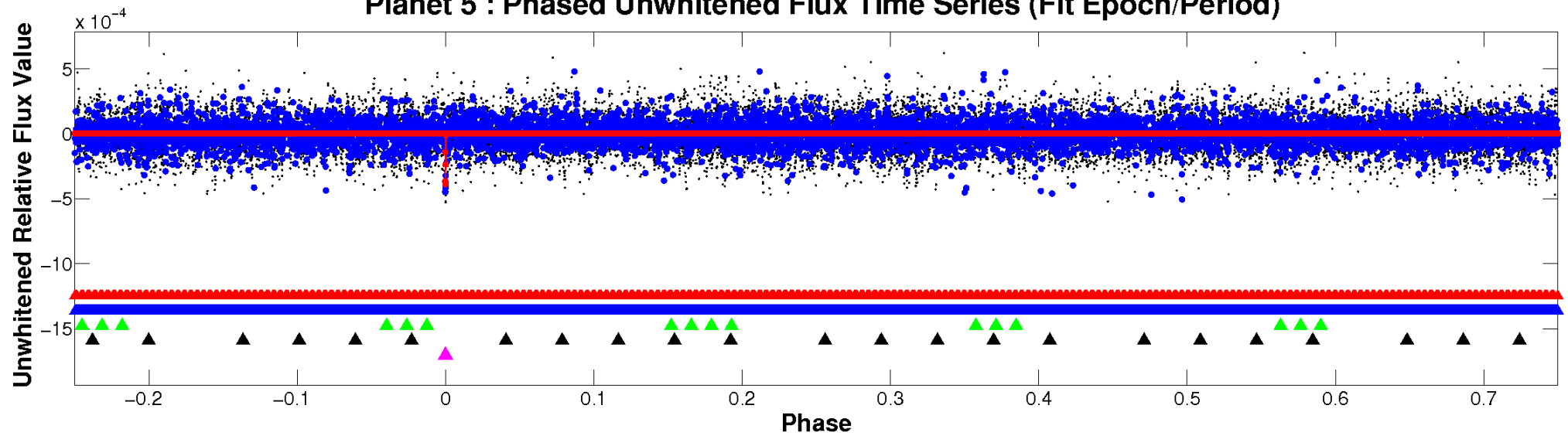
ALT Odd/Even

TCE 005019567-05

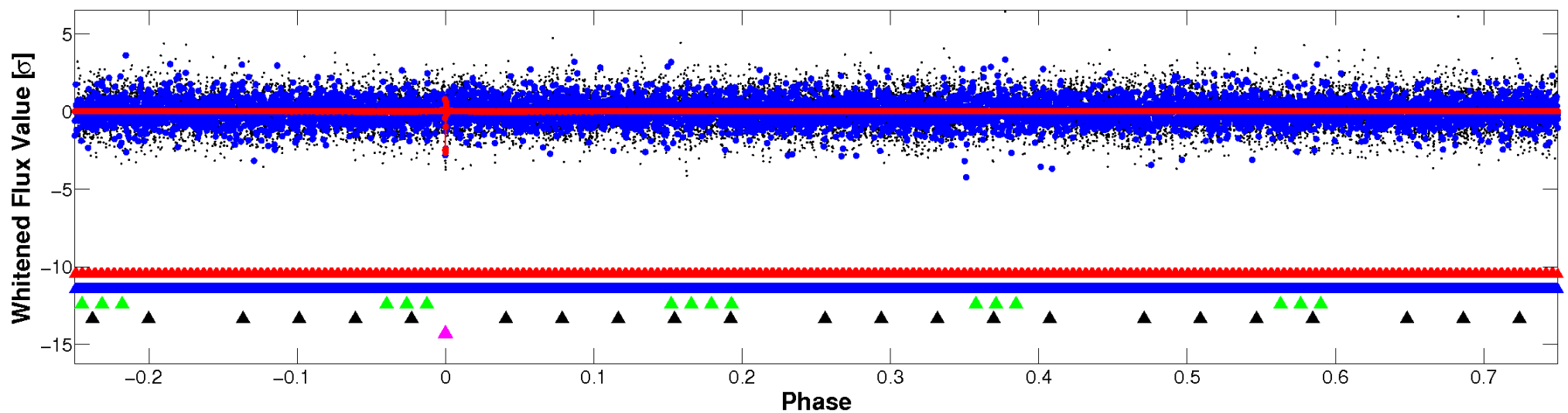


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

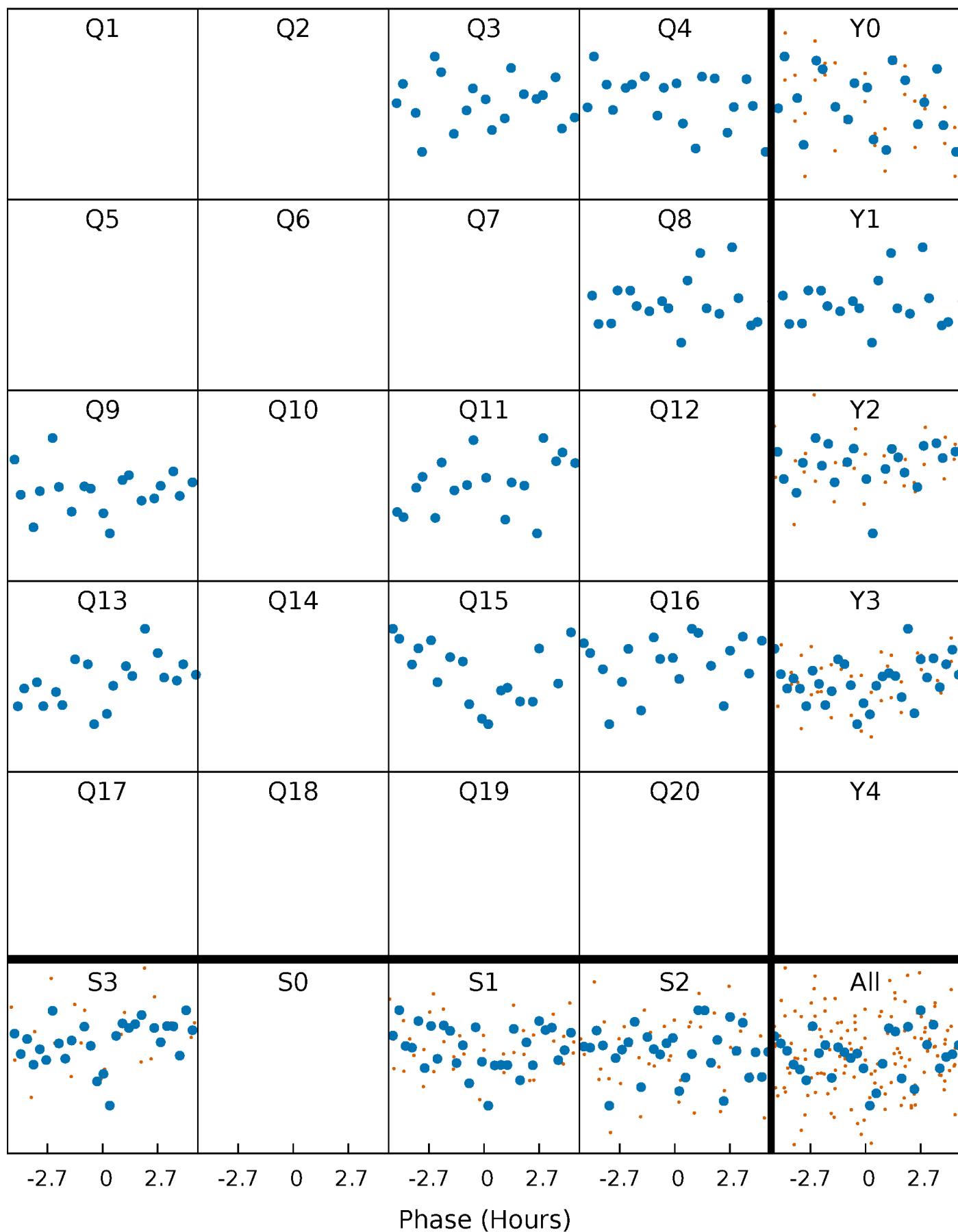


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



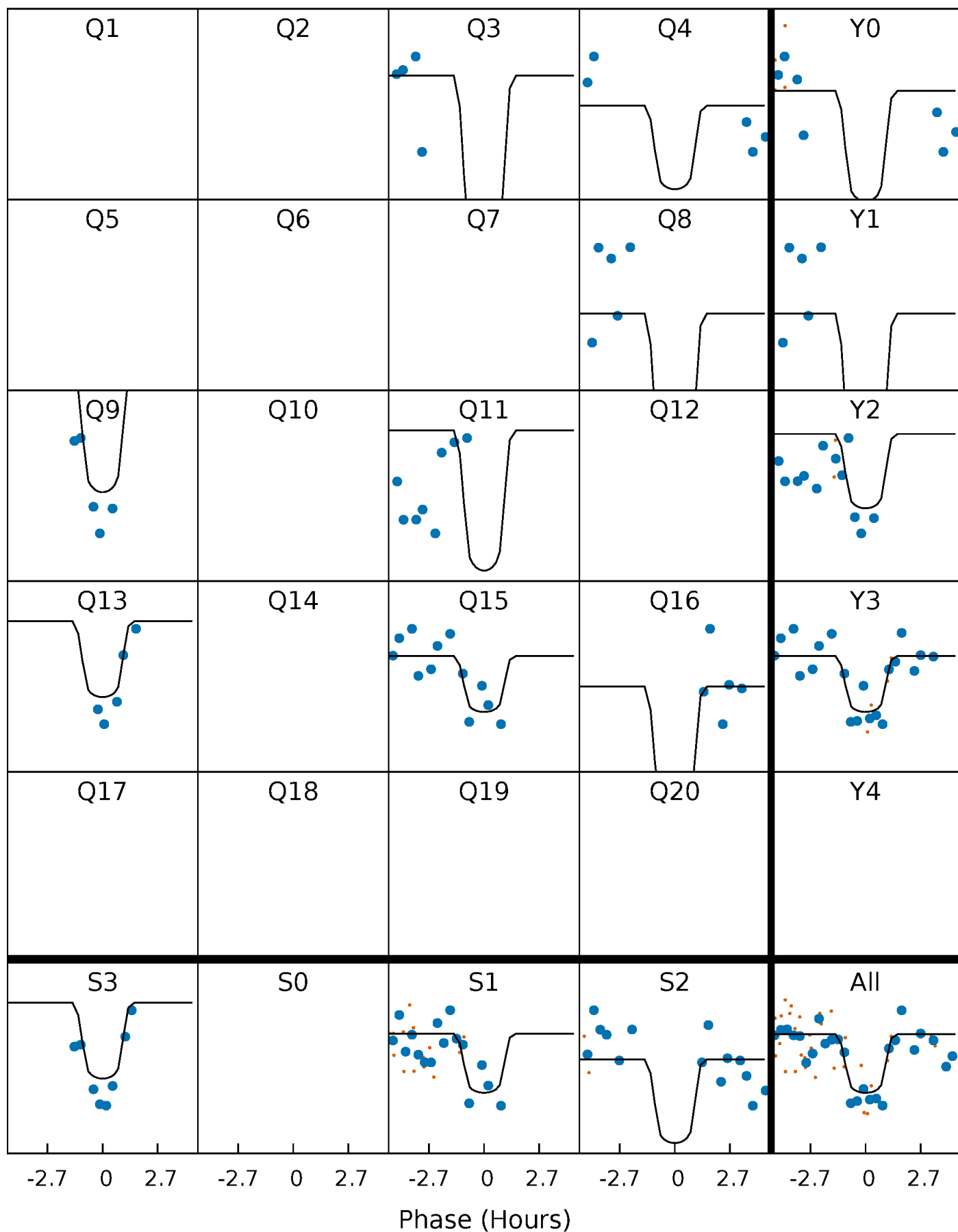
PDC Quarter-Phased Transit Curves

TCE 005019567-05 $P=159.029943$ Days $T_0=266.969299$ (BKJD)



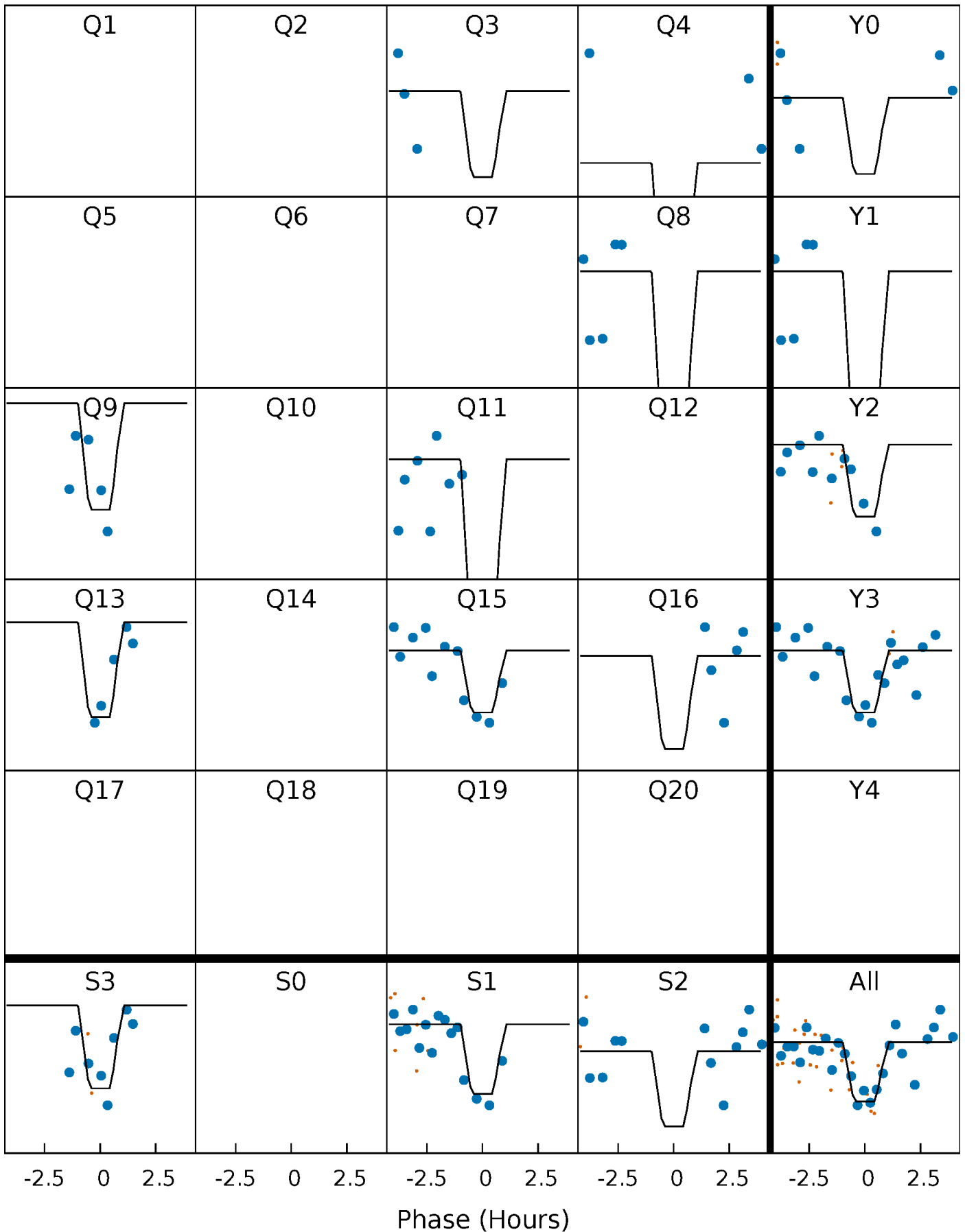
DV Quarter-Phased Transit Curves

TCE 005019567-05 $P=159.029943$ Days $T_0=266.969299$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

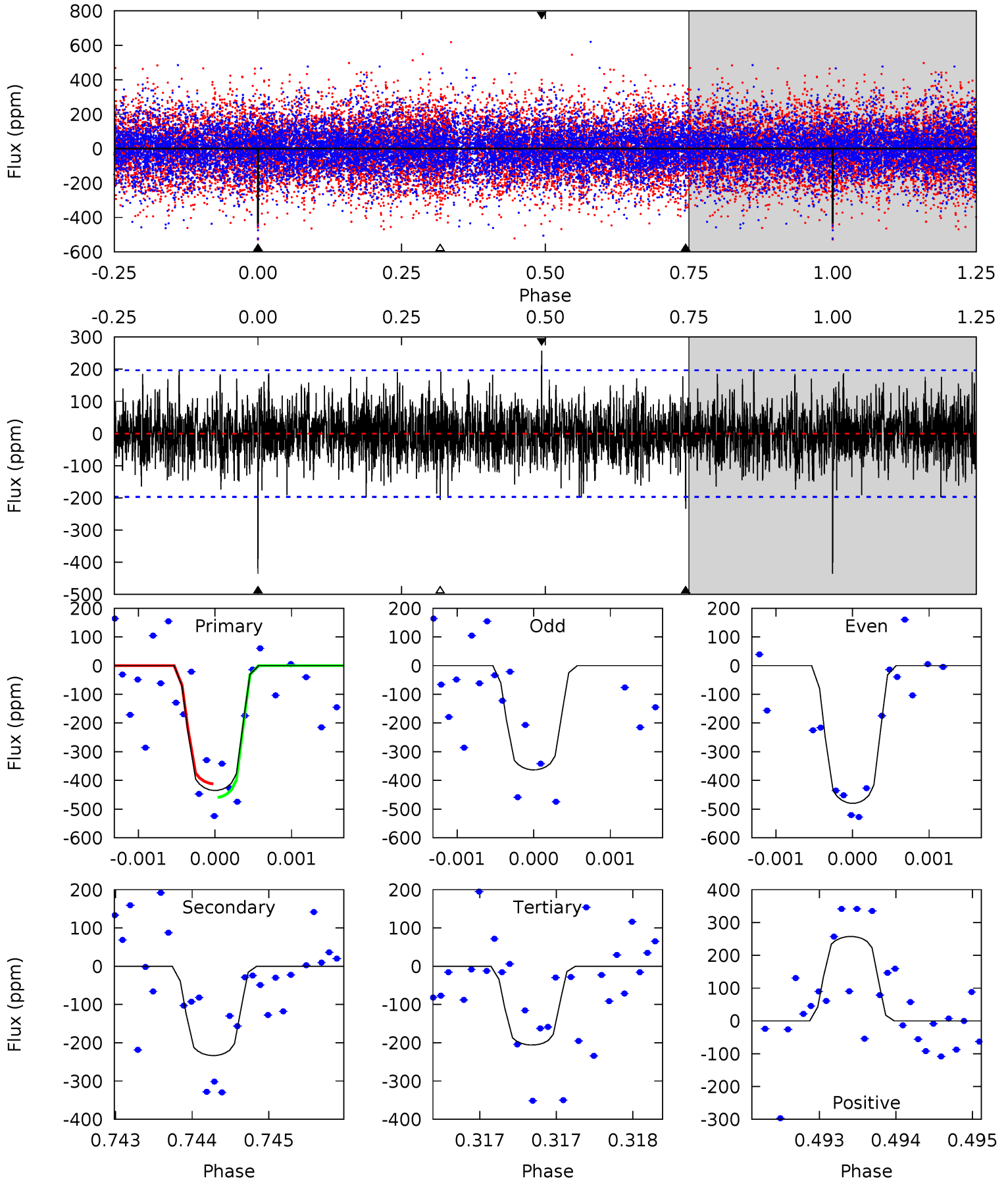
TCE 005019567-05 $P=159.030003$ Days $T_0=266.968672$ (BKJD)



DV Model-Shift Uniqueness Test

005019567-05, P = 159.029943 Days, E = 107.939356 Days

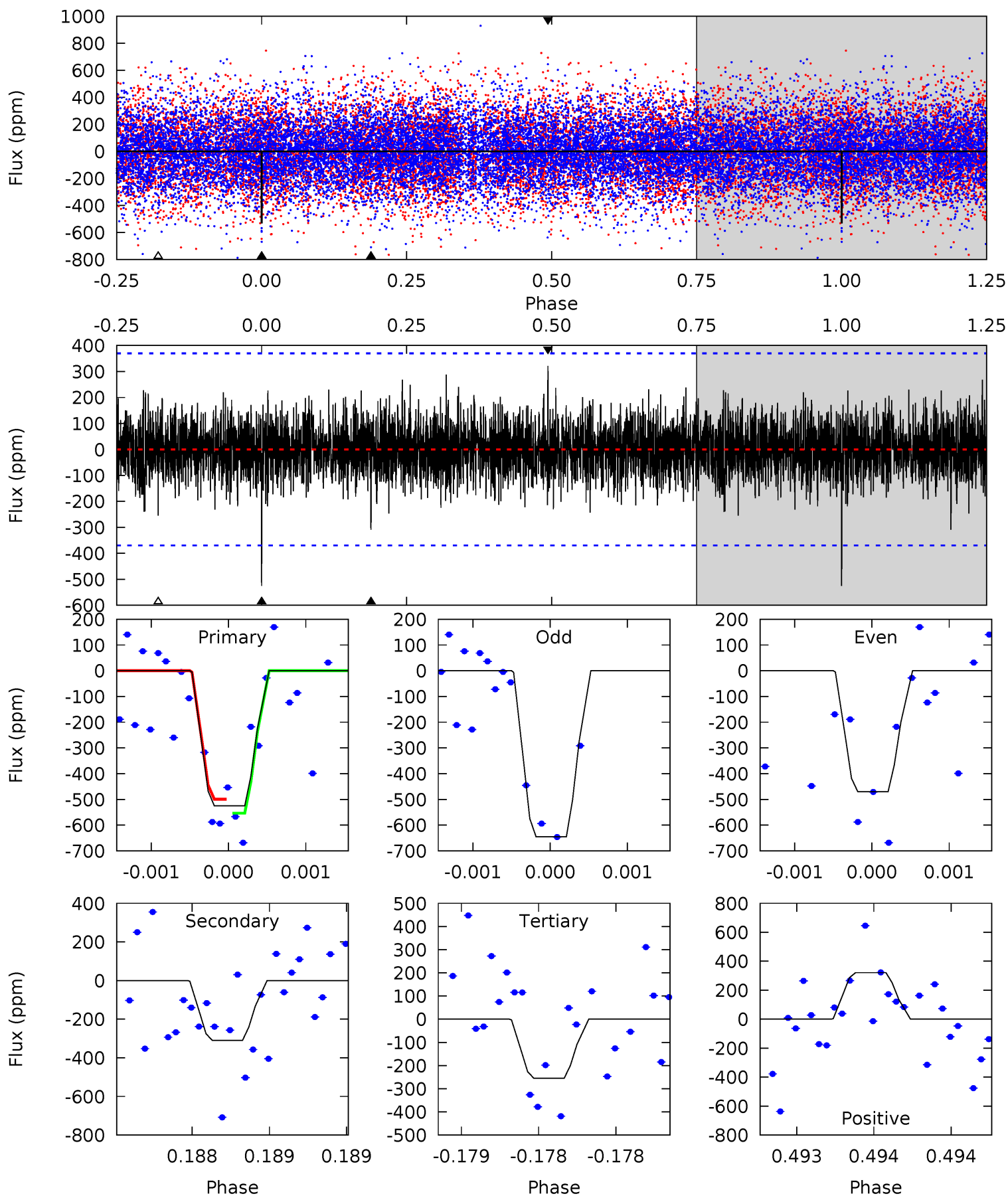
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	6.54	5.77	7.21	5.51	3.38	1.62	6.42	4.98	0.77	-0.67	1.58	0.94	0.37	0.67



Alt Model-Shift Uniqueness Test

005019567-05, P = 159.030003 Days, E = 107.938669 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.90	4.65	3.83	4.83	5.56	3.46	1.11	4.07	3.07	0.82	-0.18	1.29	1.11	0.38	0.41



Stellar Parameters For KIC 005019567

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7537^{+209}_{-340}	$4.007^{+0.210}_{-0.158}$	$-0.060^{+0.200}_{-0.350}$	$2.145^{+0.510}_{-0.623}$	$1.703^{+0.200}_{-0.325}$	$0.243^{+0.301}_{-0.100}$
	+3%/-5%	+5%/-4%	+333%/-583%	+24%/-29%	+12%/-19%	+124%/-41%
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 005019567-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-233 ± 36	$4.80^{+2.58}_{-2.33}$	813^{+62}_{-56}	6267^{+2923}_{-1022}	2598^{+7391}_{-1511}
Alt.	-309 ± 66	$5.45^{+2.51}_{-2.36}$	818^{+58}_{-59}	6397^{+2361}_{-1111}	2718^{+5370}_{-1525}

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

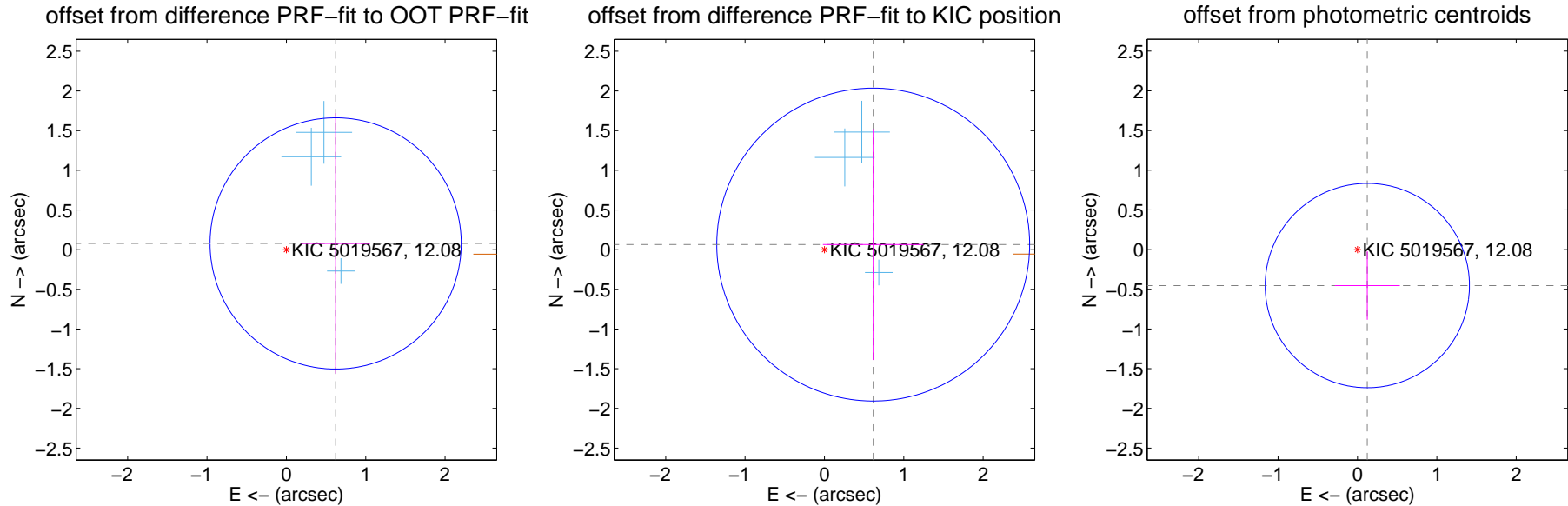
DV Centroid Data

Supplemental centroid analysis for 005019567-05. Kepler magnitude: 12.08. Transit SNR 8.17

There are 3 quarters with good PRF difference image offsets

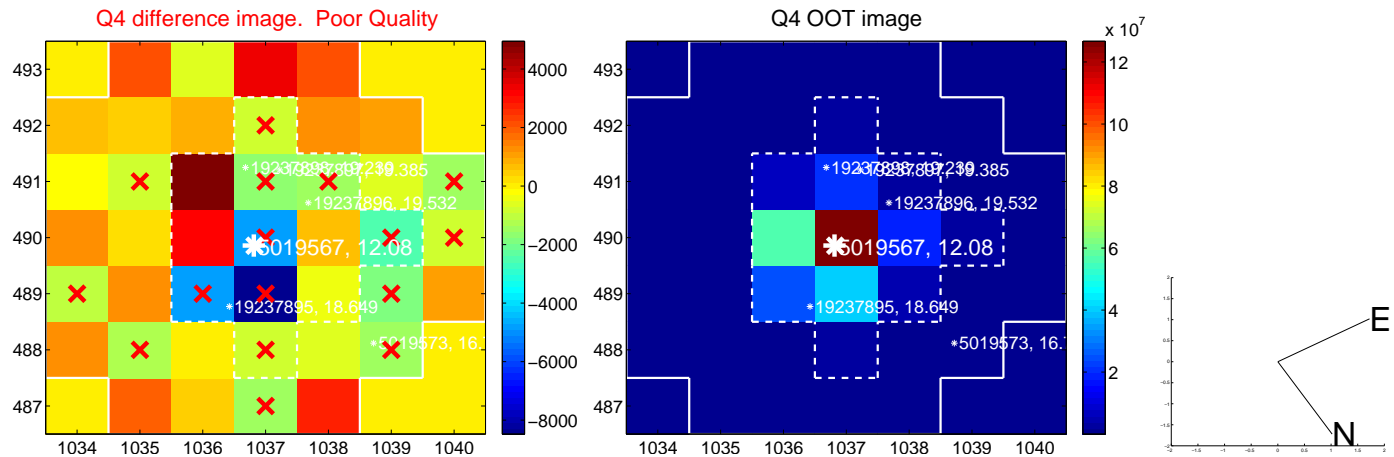
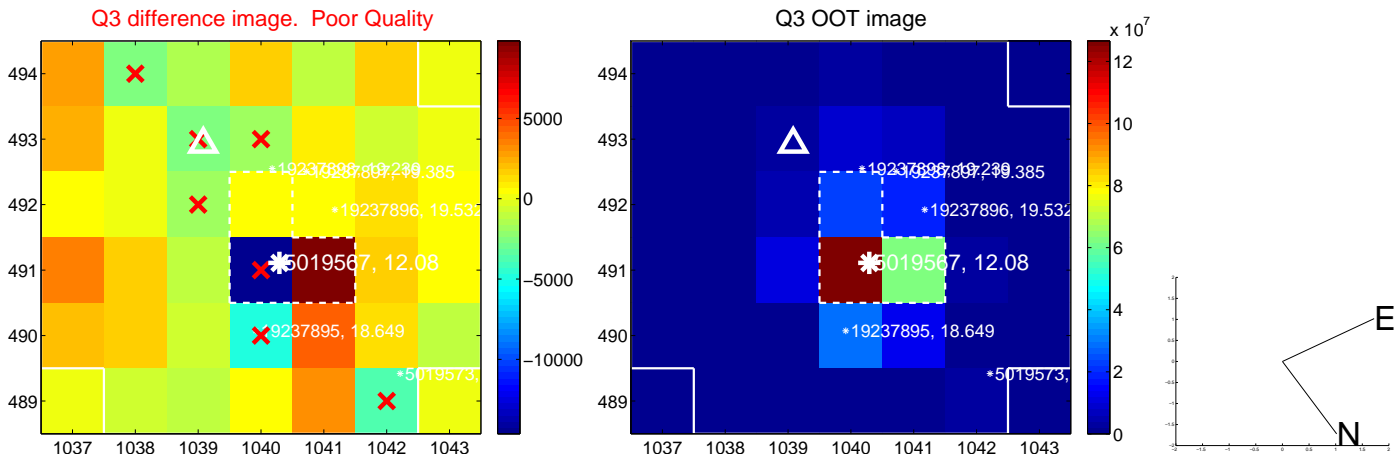
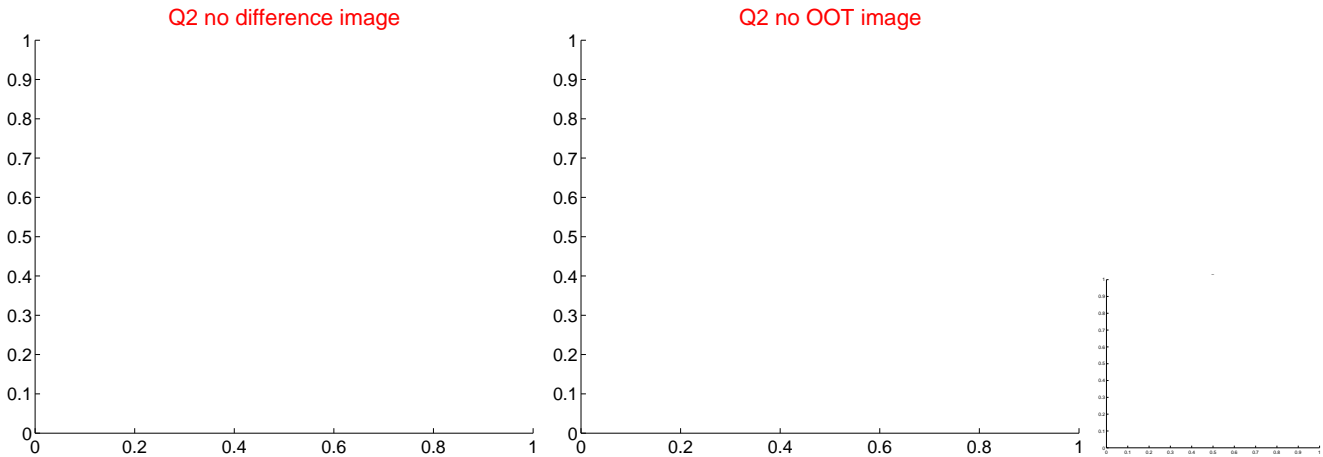
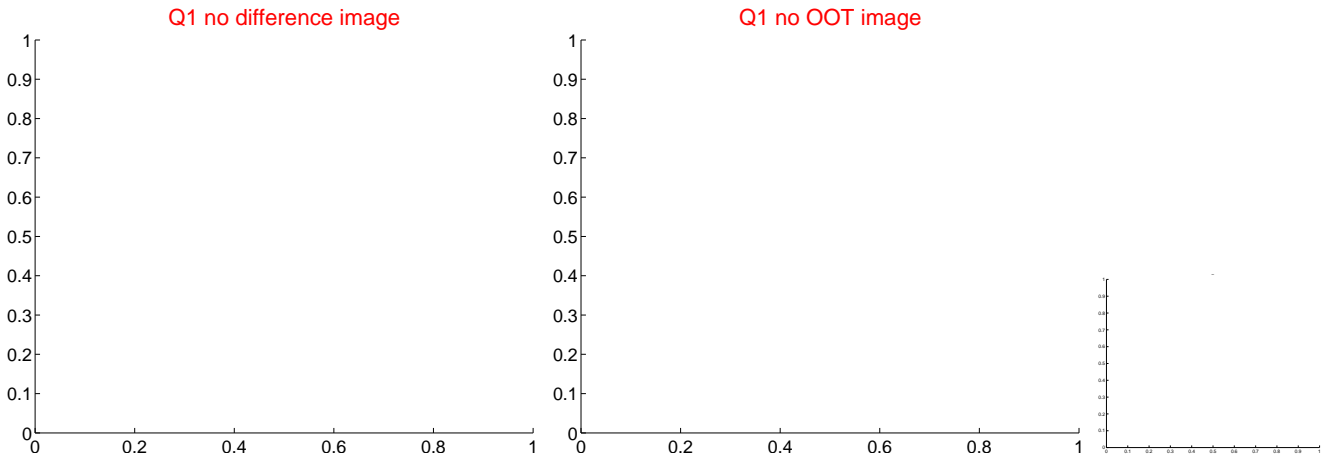
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.626 ± 0.528	1.19	-0.621 ± 0.436	0.079 ± 1.641
PRF-fit source offset from KIC position	0.618 ± 0.657	0.94	-0.615 ± 0.634	0.064 ± 1.455
photometric centroid source offset	0.47 ± 0.43	1.09	-0.12 ± 0.41	-0.45 ± 0.43



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.

Q5 no difference image



Q5 no OOT image



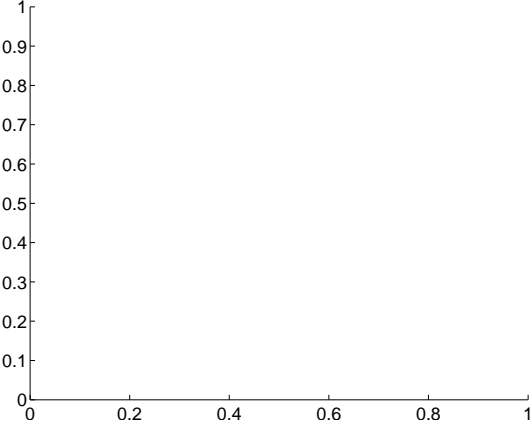
Q6 no difference image



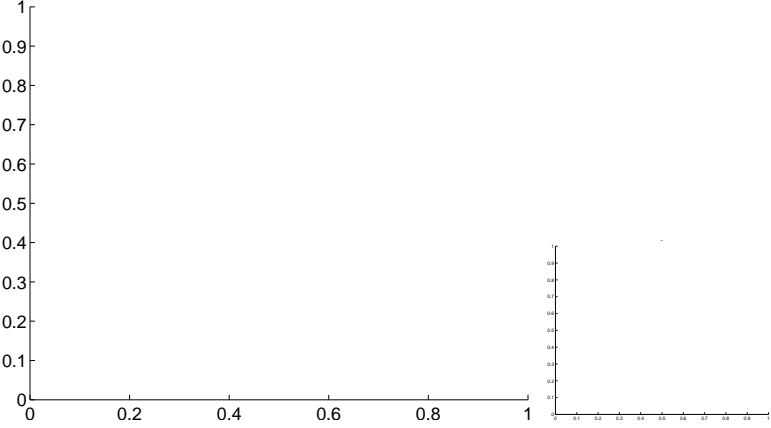
Q6 no OOT image



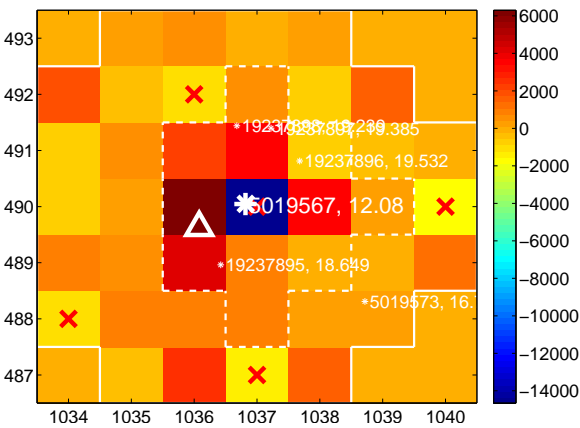
Q7 no difference image



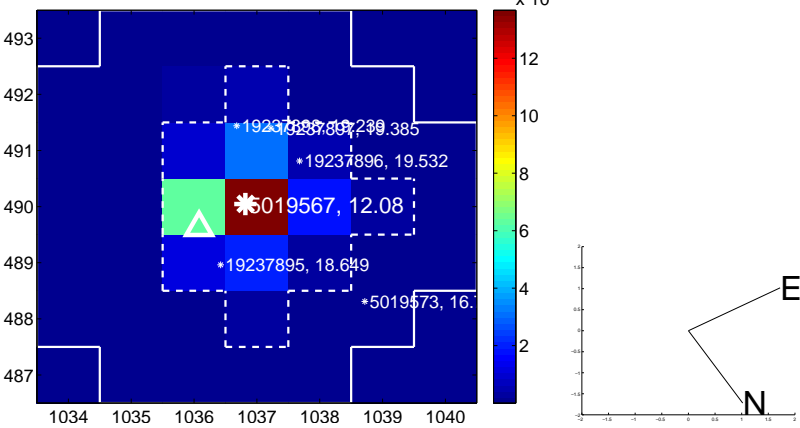
Q7 no OOT image



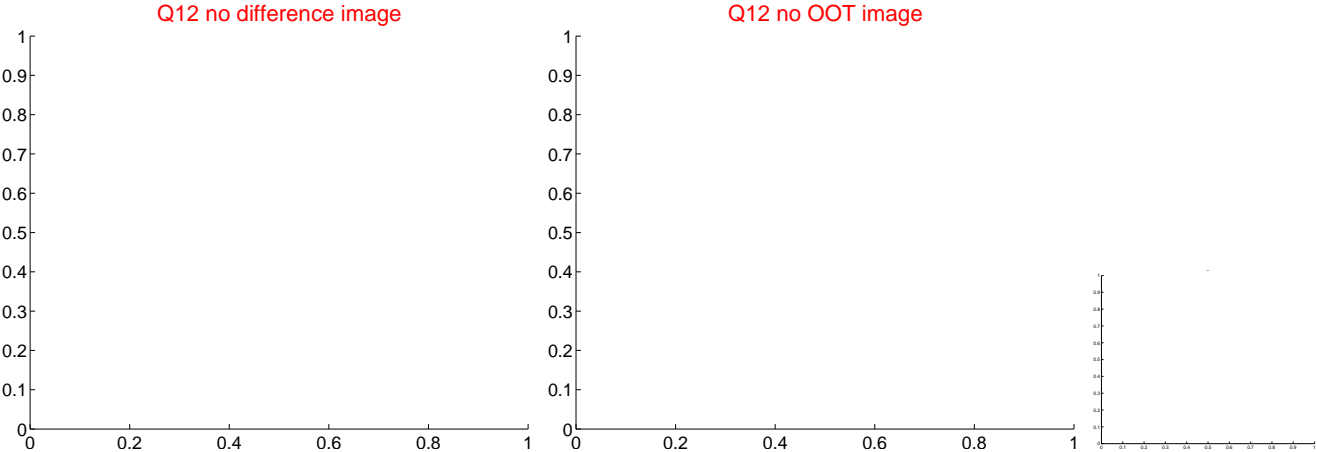
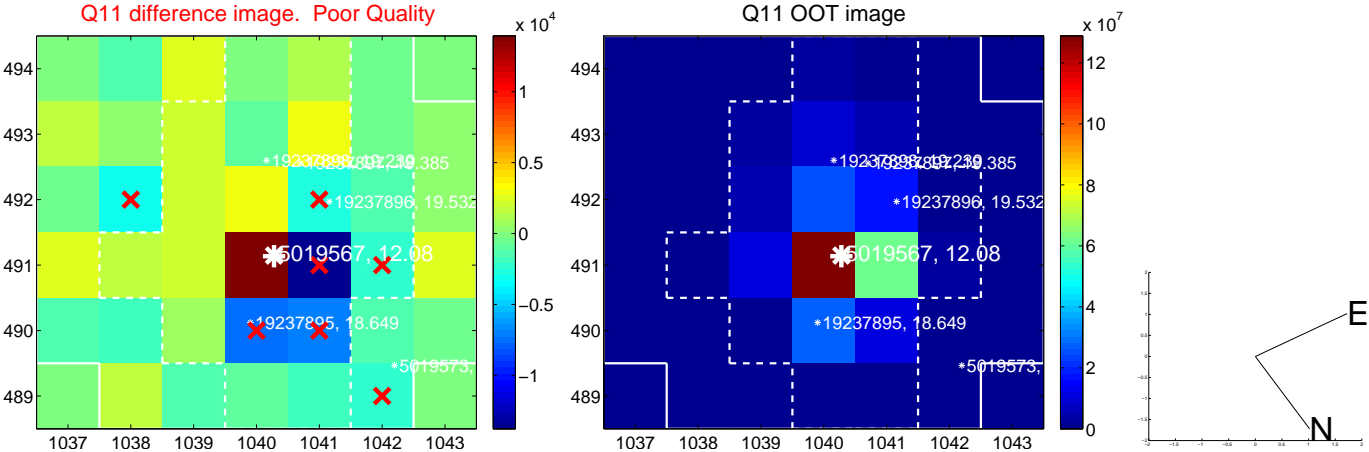
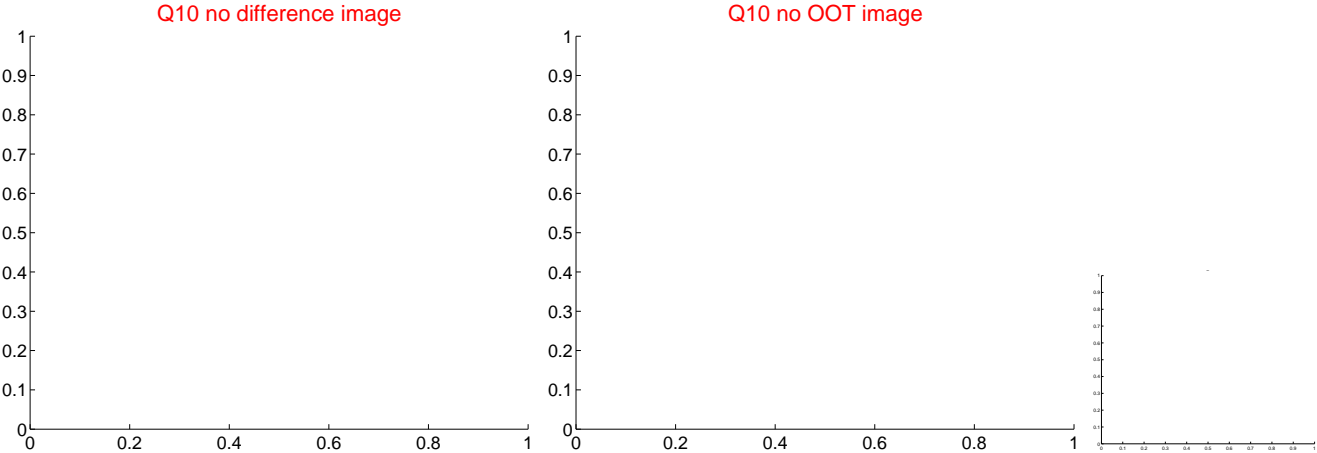
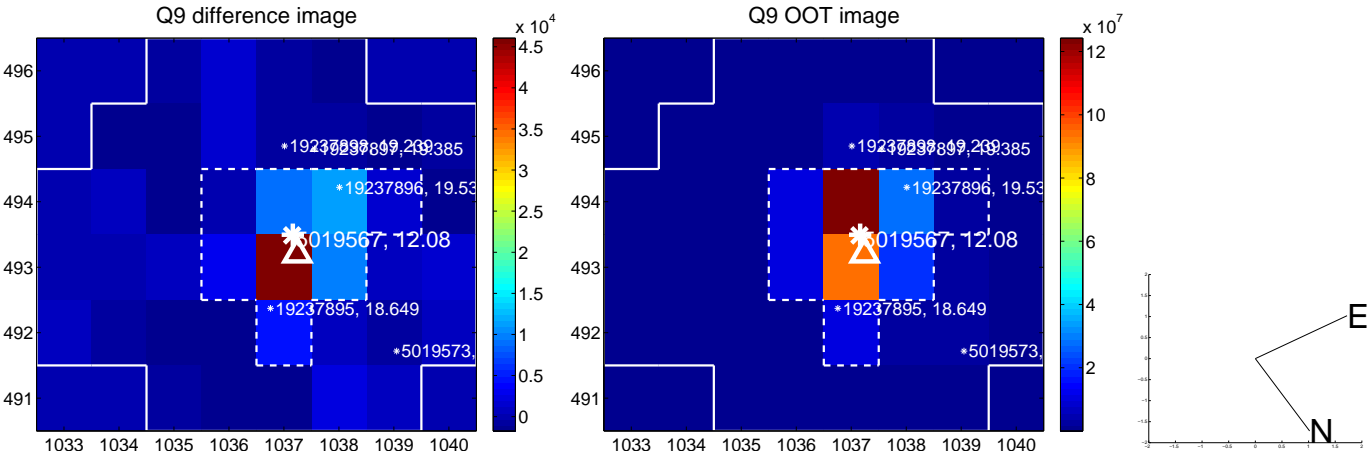
Q8 difference image. Poor Quality



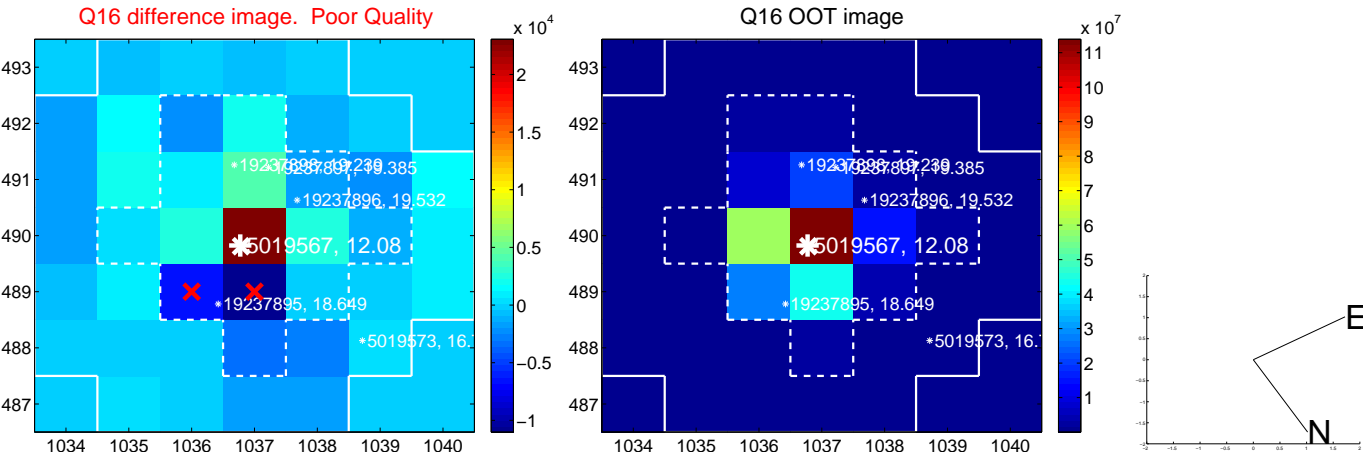
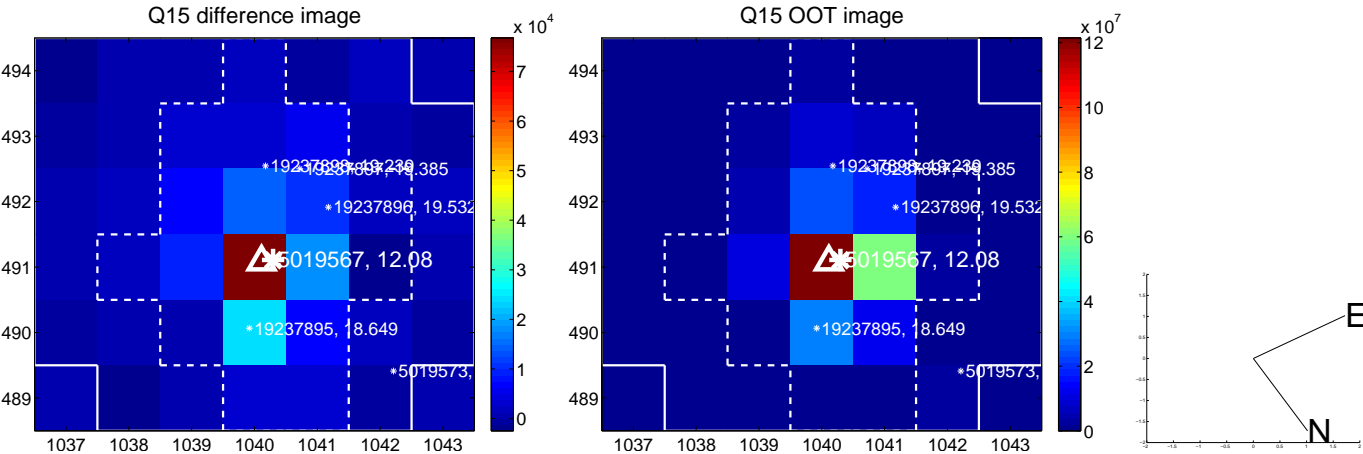
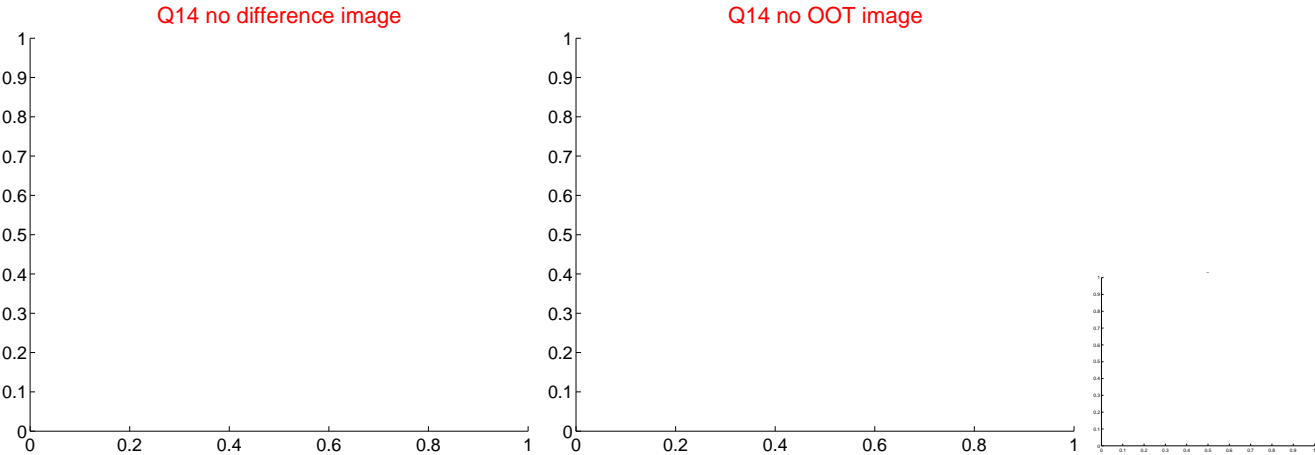
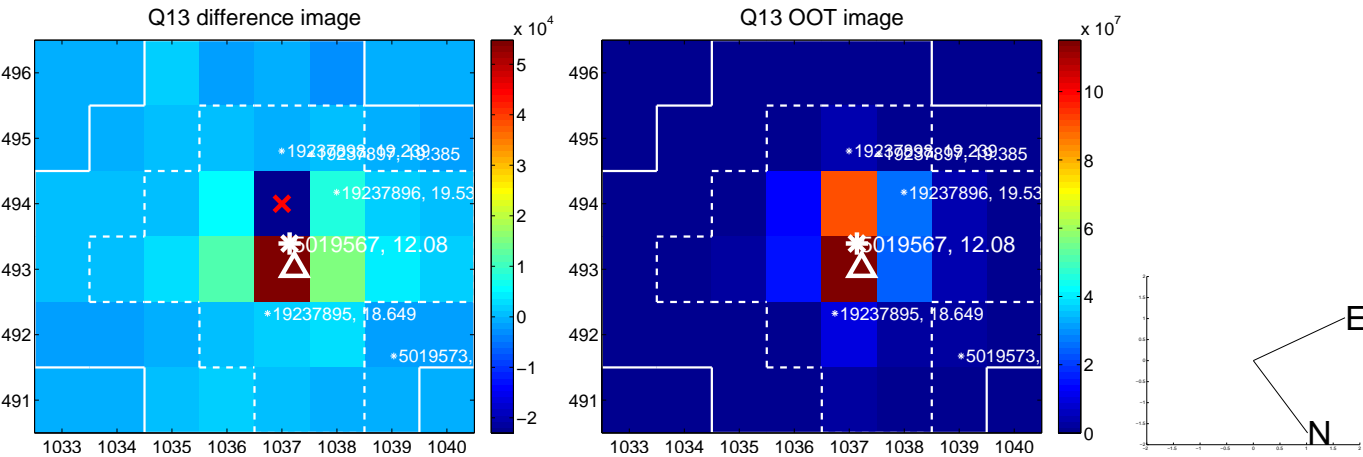
Q8 OOT image



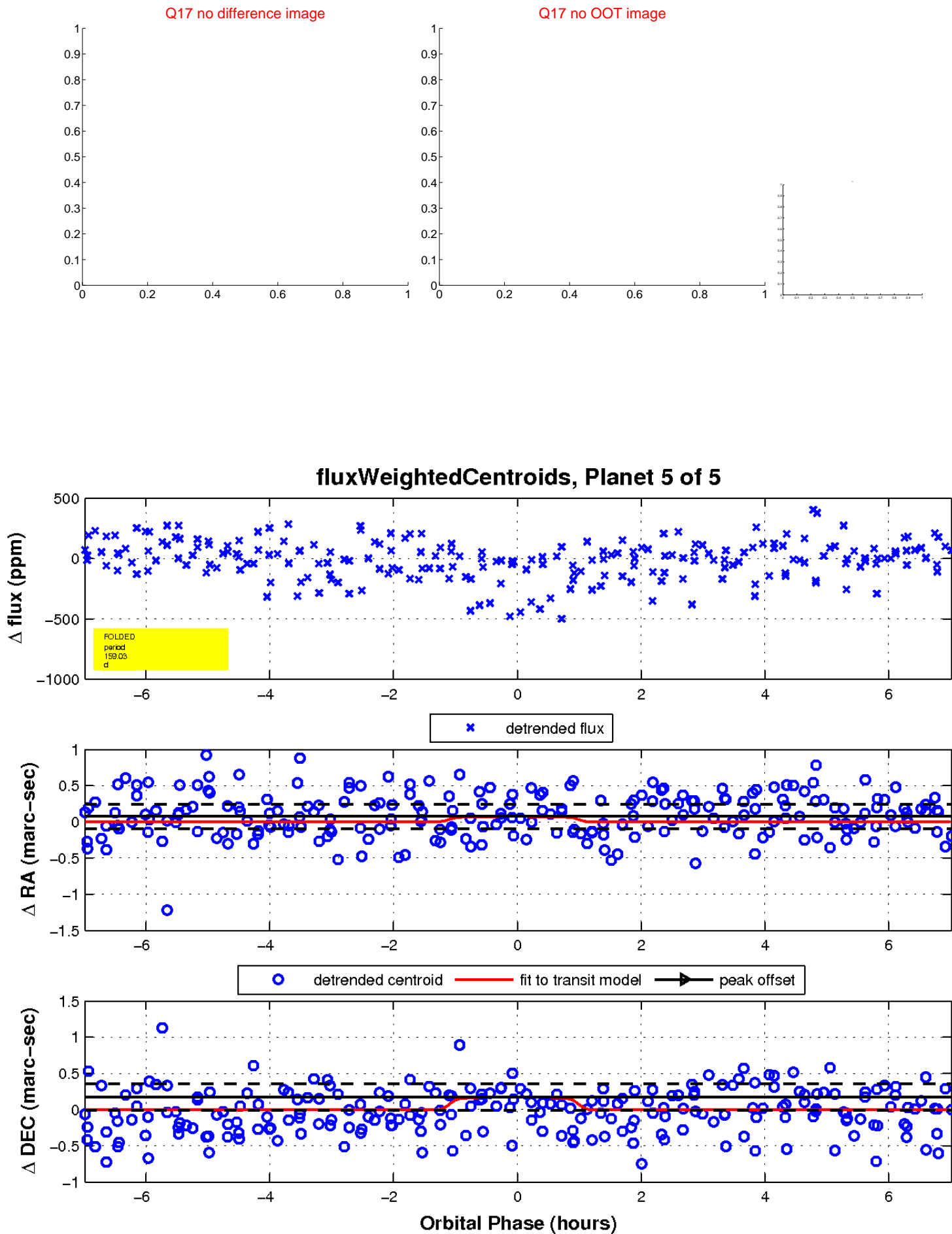
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

