

KIC 006356627

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})
006356627-01	OBS	No	4.208754	132.883898	26.7	15.813	13.0	7.2	1.84	6624	1.13	1856.51
006356627-02	OBS	No	4.209446	131.932178	118.3	34.971	13.1	15.6	1.84	6624	2.61	1856.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006356627-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
006356627-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET

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

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

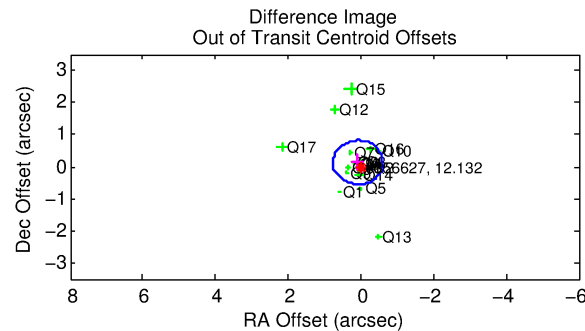
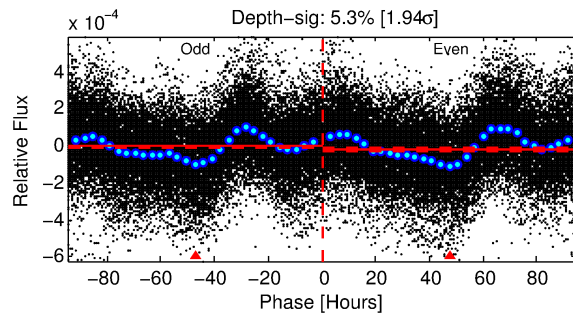
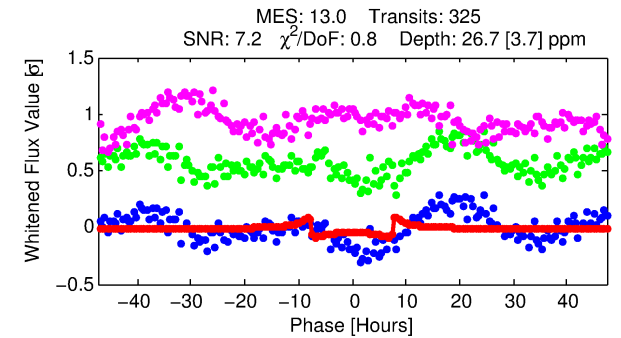
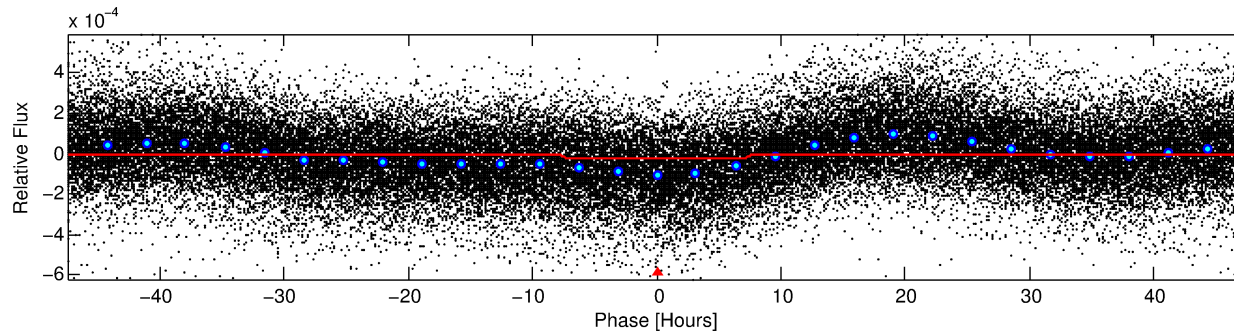
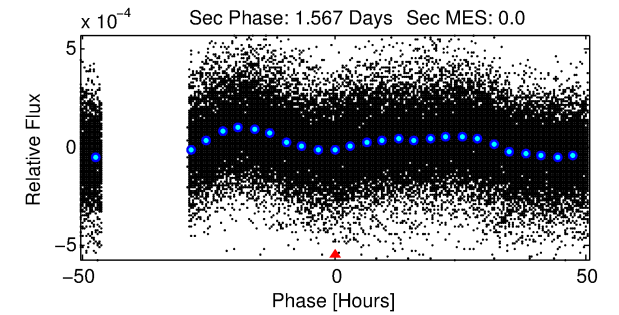
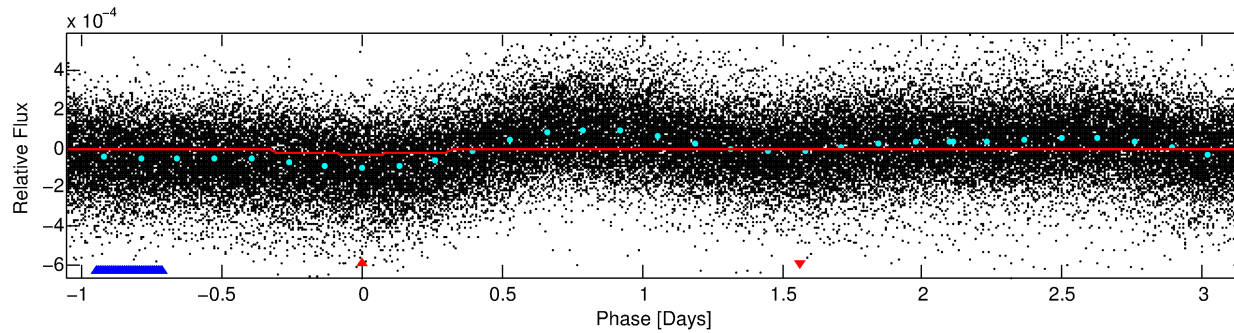
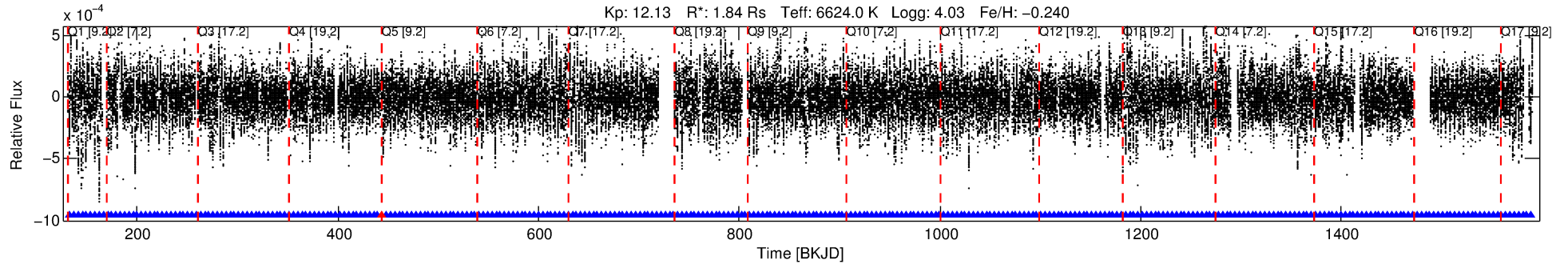
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006356627-01

No Significant Match Found

DV One-Page Summary

KIC: 6356627 Candidate: 1 of 2 Period: 4.209 d



DV Fit Results:

Period = 4.20875 [0.00005] d
Epoch = 132.8839 [0.0070] BKJD
Rp/R* = 0.0056 [0.0005]
a/R* = 1.25 [0.16]
b = 0.92 [0.06]
Seff = 1856.51 [772.35]
Teff = 1674 [174] K
Rp = 1.13 [0.32] Re
a = 0.0561 [0.0142] AU
Ag = N/A
Teffp = N/A

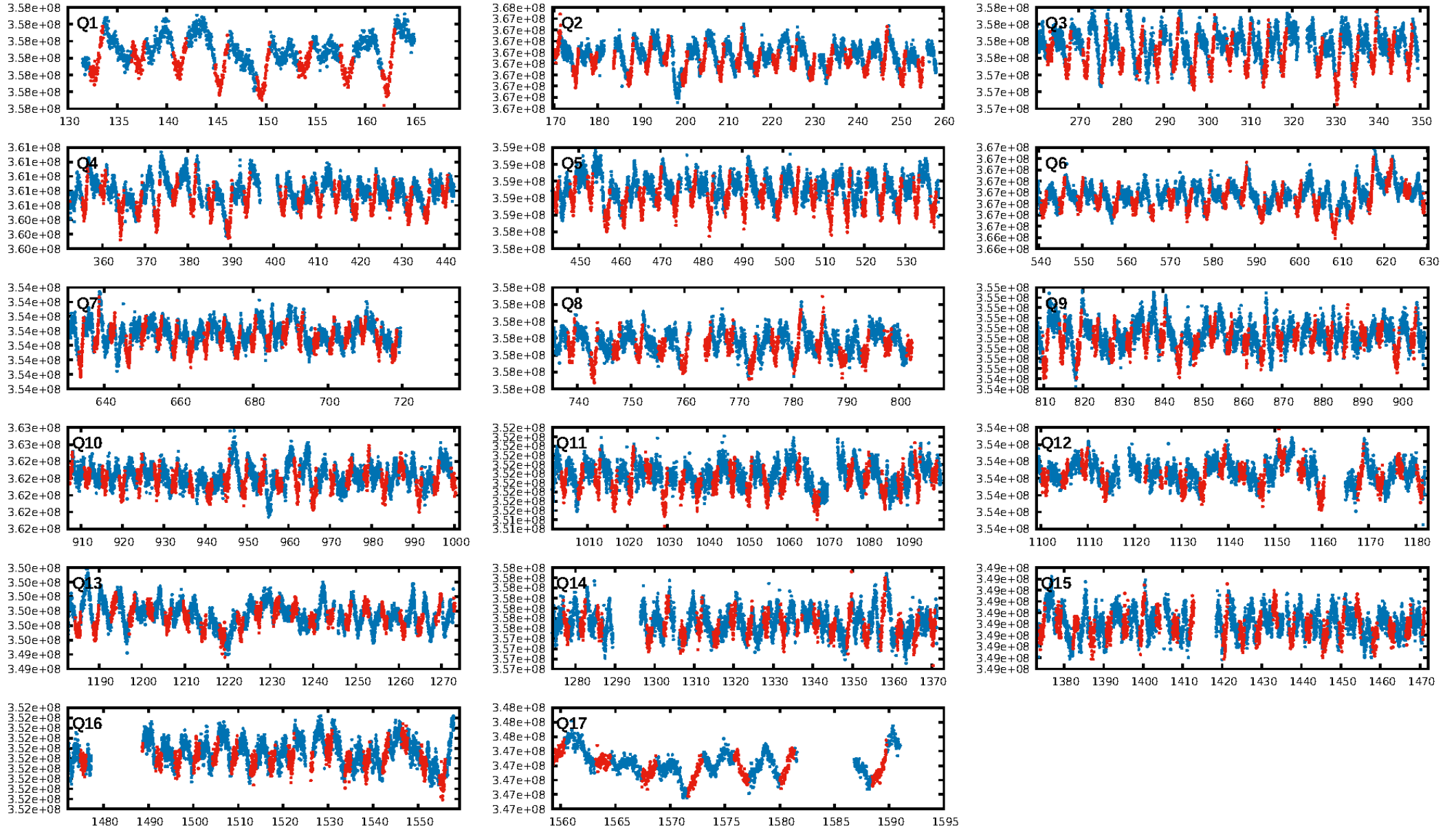
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [309/310]
GhostDiagnostic-chr: 2.892
Centroid-sig: 14.5%
Centroid-so: 0.487 arcsec [1.05σ]
OotOffset-rm: 0.161 arcsec [0.70σ]
KicOffset-rm: 0.078 arcsec [0.32σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.00 [0/17]

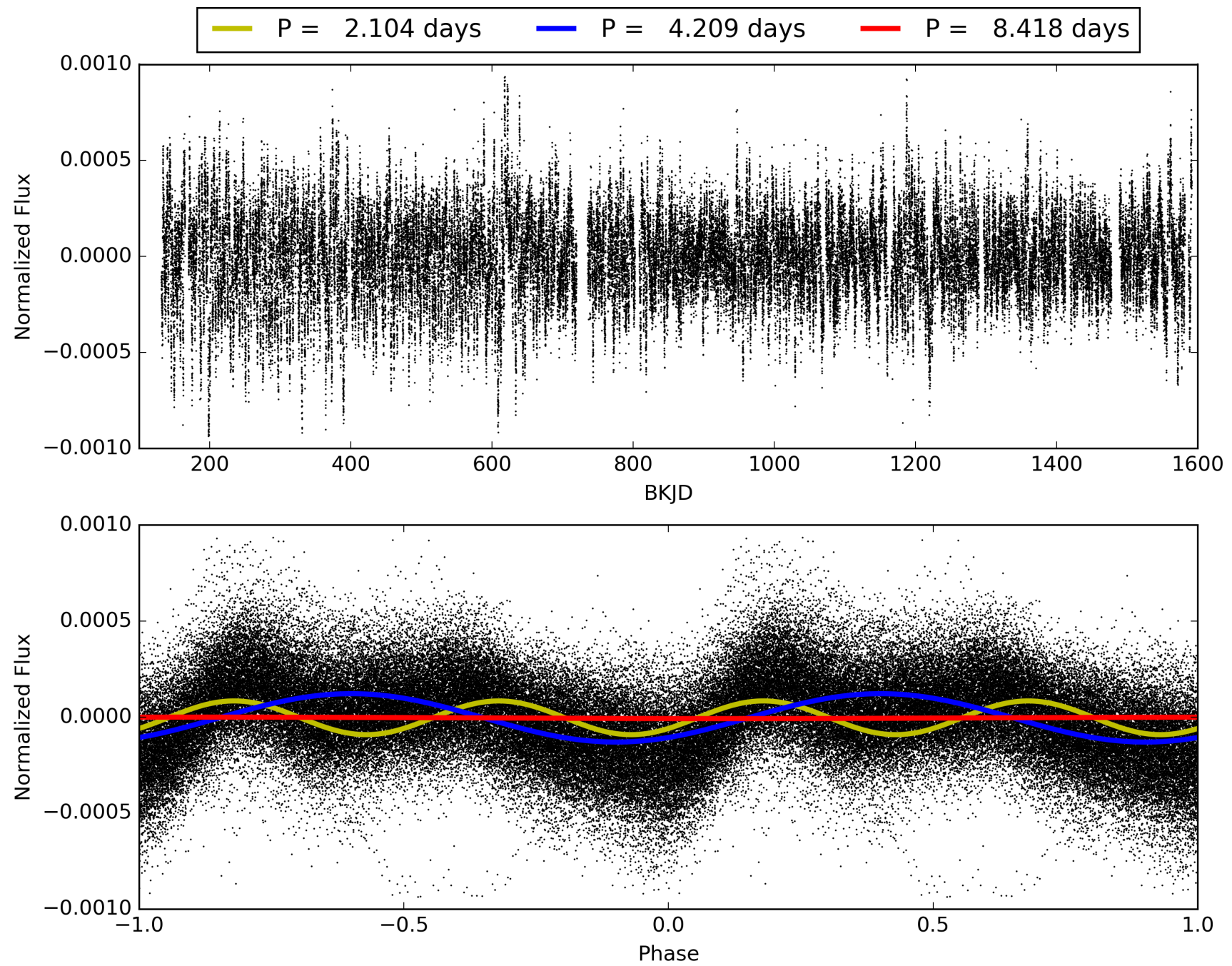
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:55:07 Z

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

TCE 006356627-01, PDC Light Curves

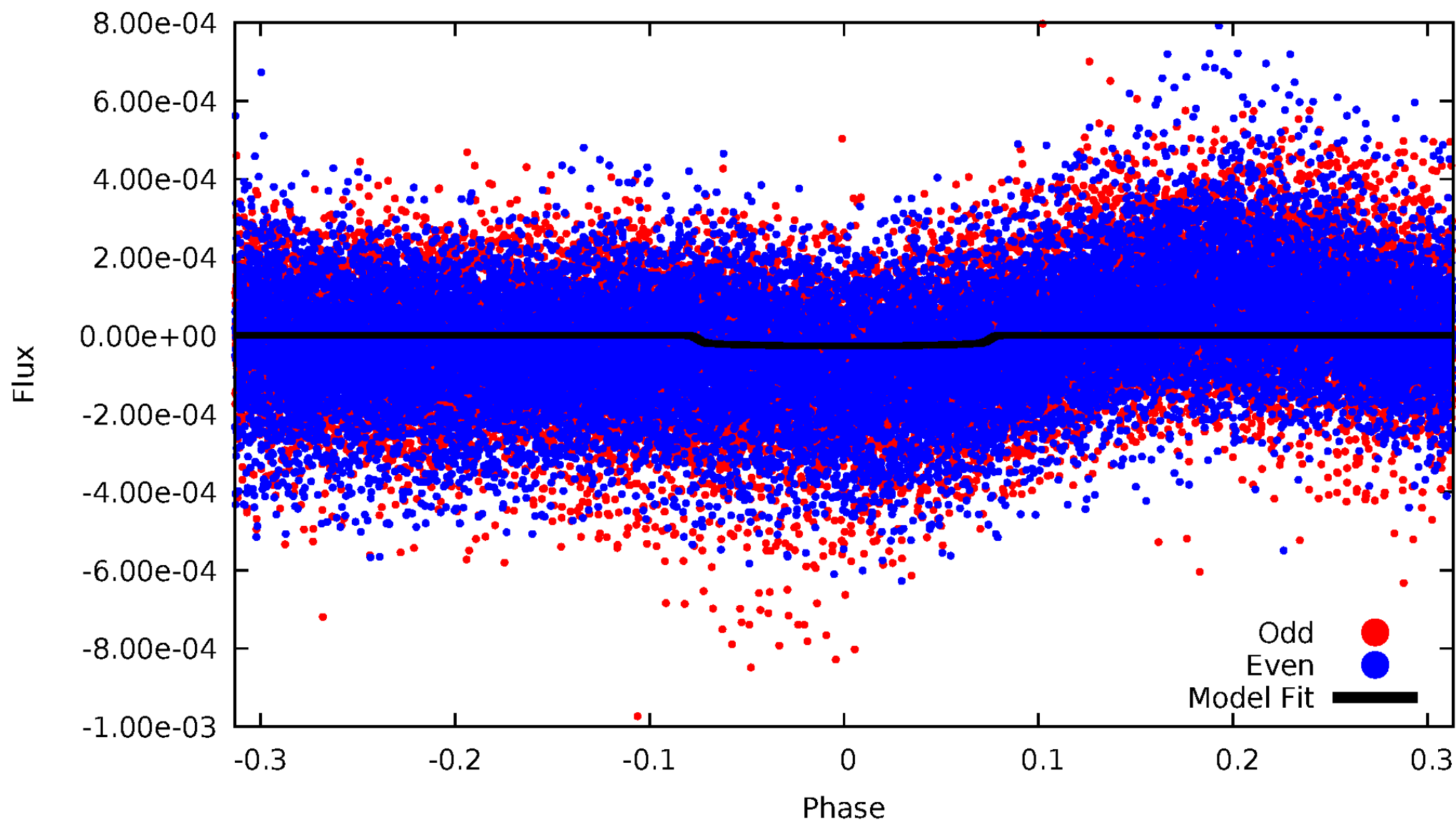


TCE 006356627-01



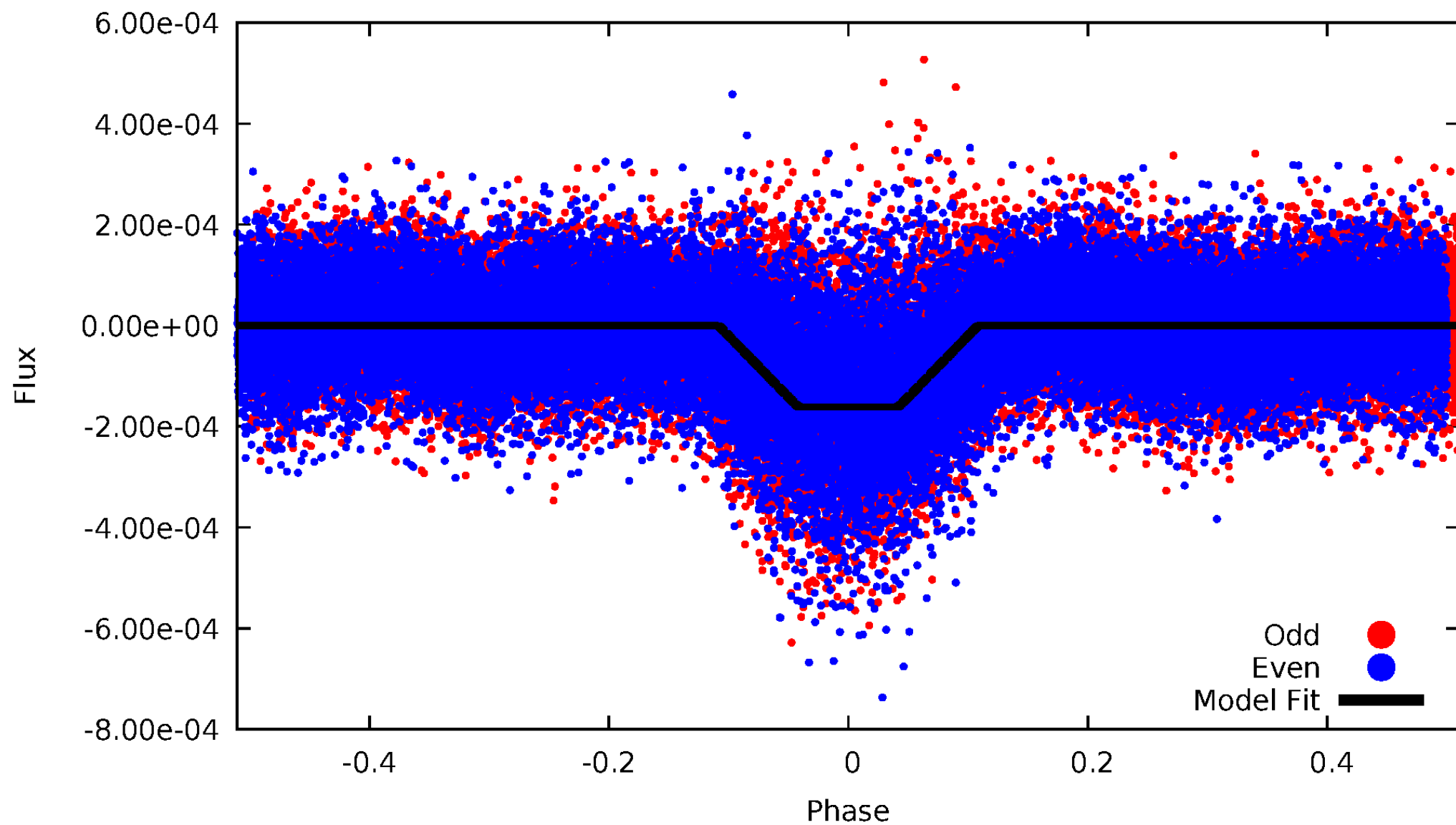
DV Odd/Even

TCE 006356627-01



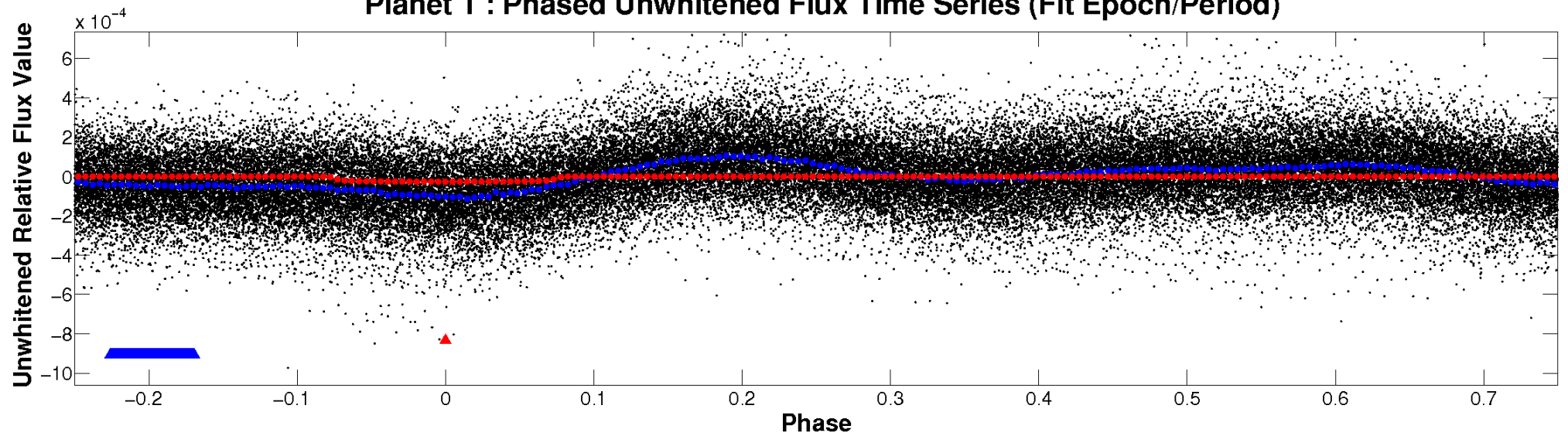
ALT Odd/Even

TCE 006356627-01

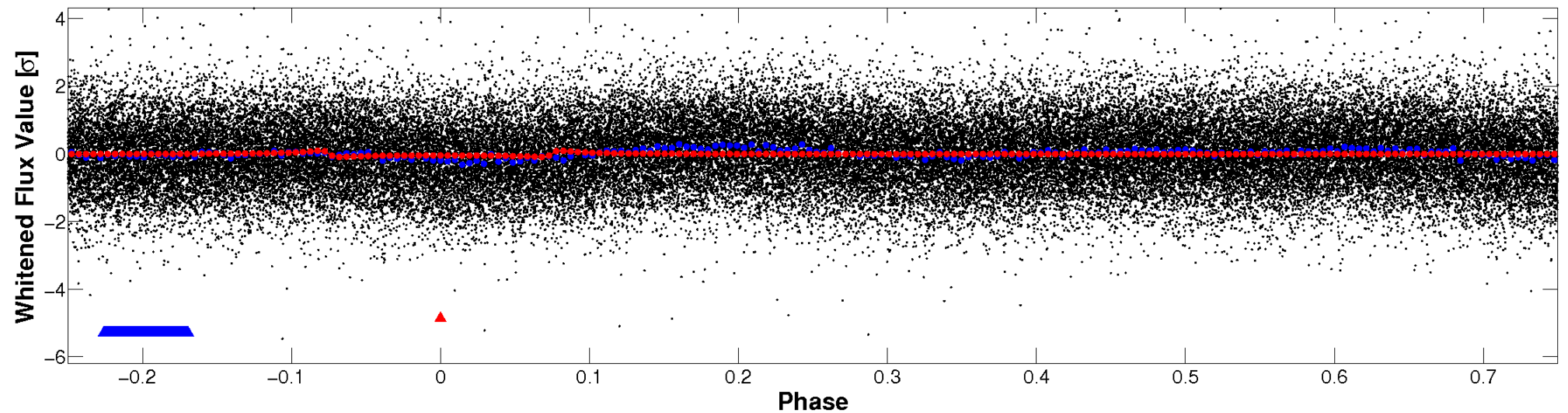


Non-Whitened Vs. Whitened Light Curve

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

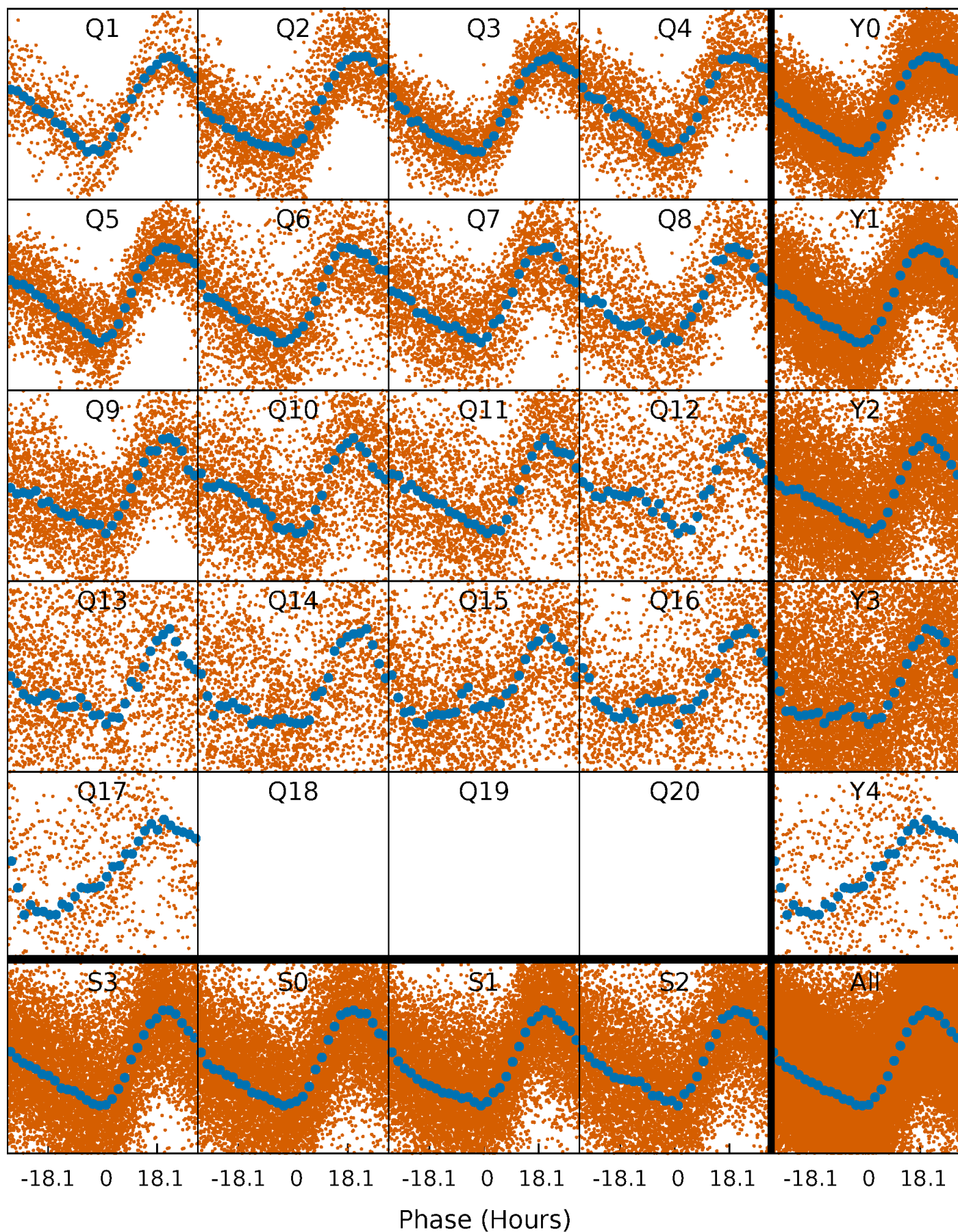


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



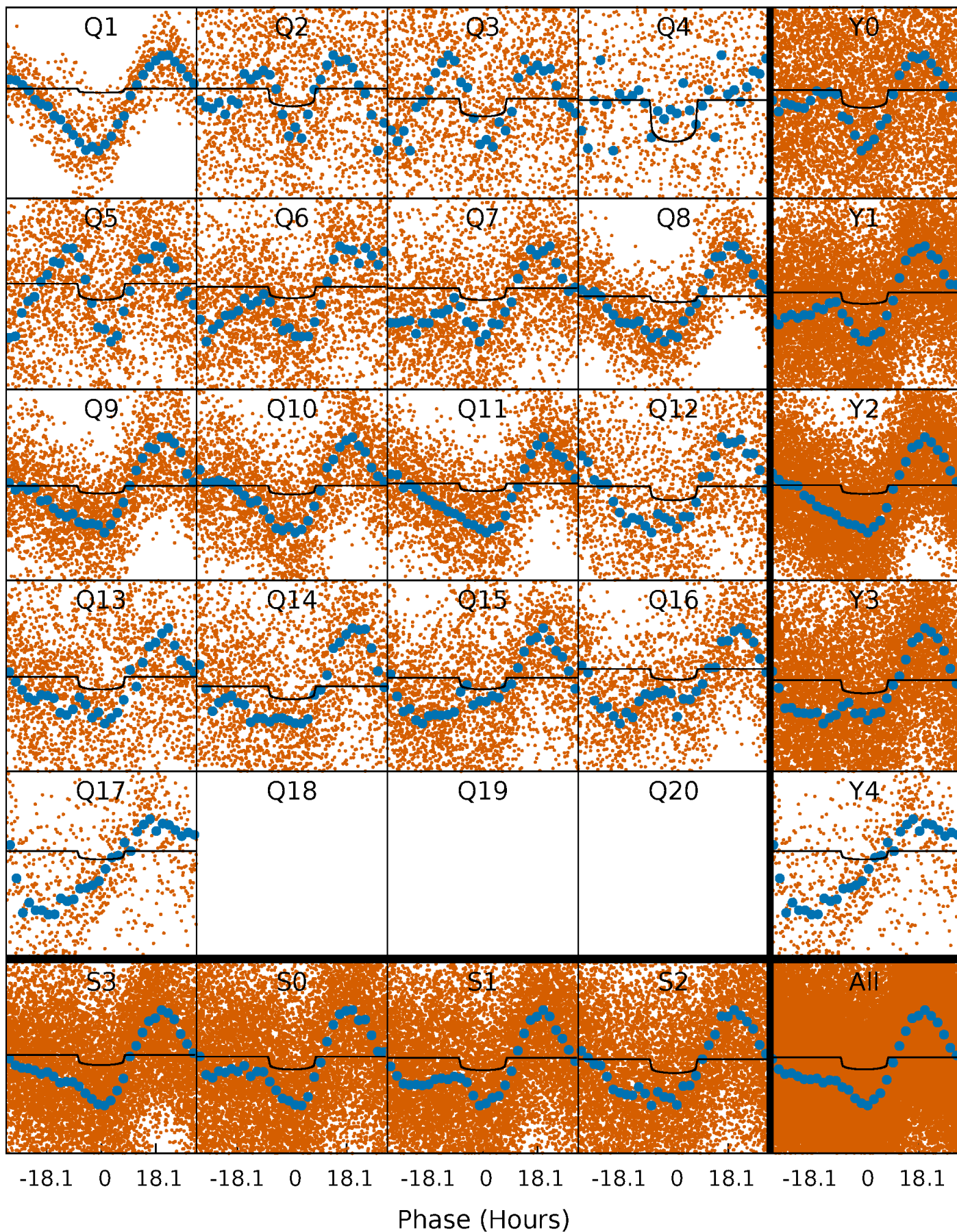
PDC Quarter-Phased Transit Curves

TCE 006356627-01 P= 4.208754 Days $T_0=132.883898$ (BKJD)



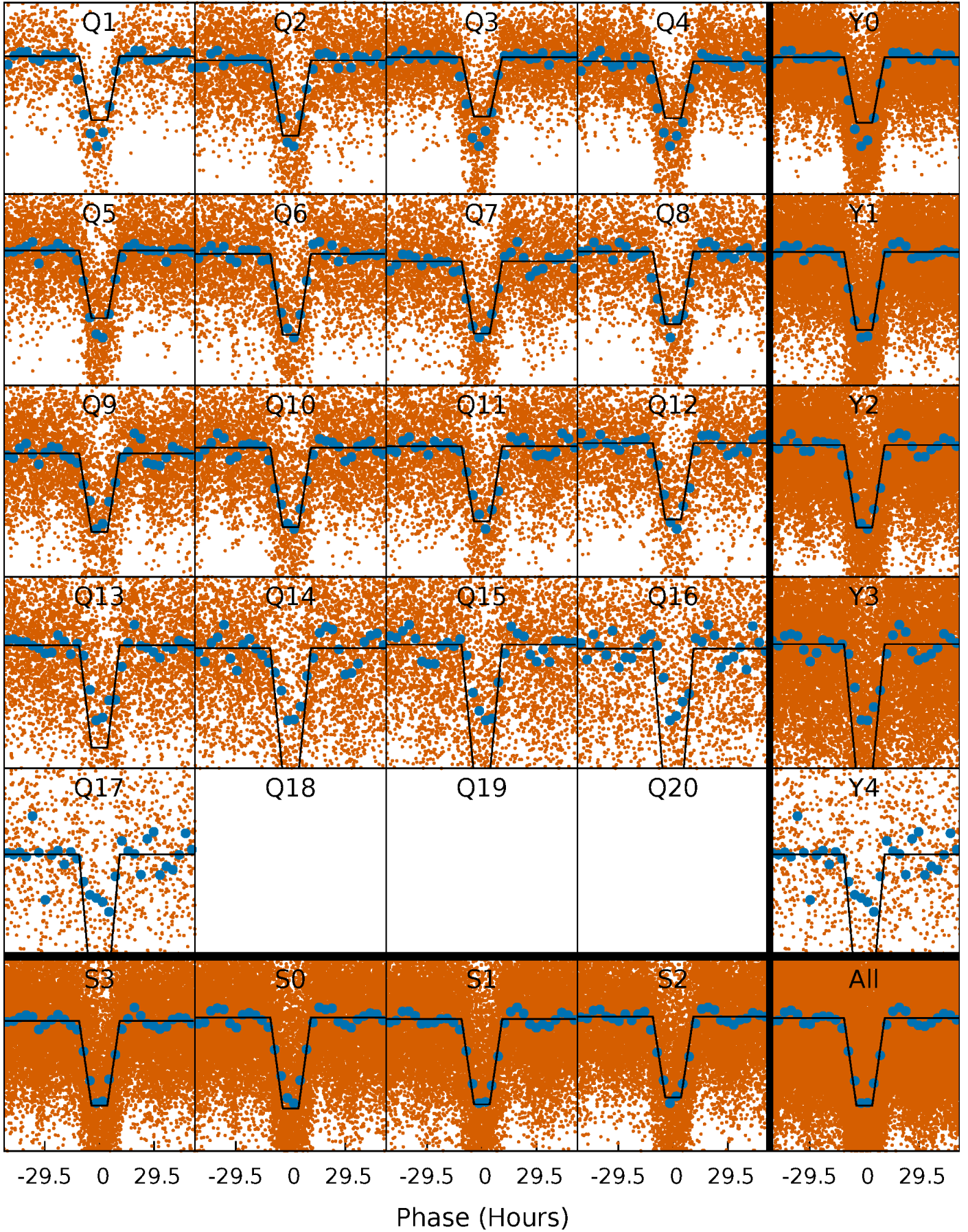
DV Quarter-Phased Transit Curves

TCE 006356627-01 P= 4.208754 Days $T_0=132.883898$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

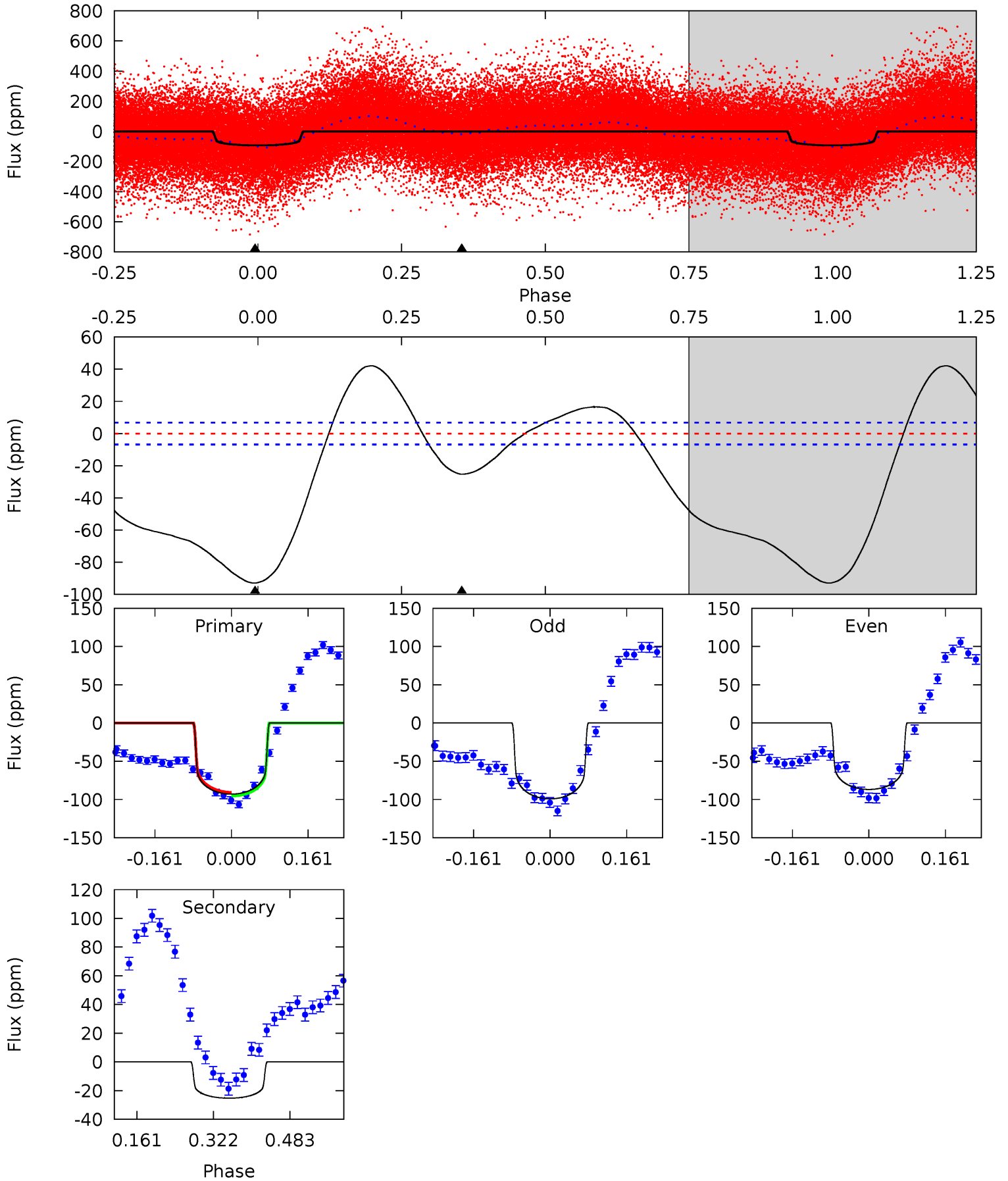
TCE 006356627-01 P= 4.209058 Days $T_0=132.949150$ (BKJD)



DV Model-Shift Uniqueness Test

006356627-01, P = 4.208754 Days, E = 128.675144 Days

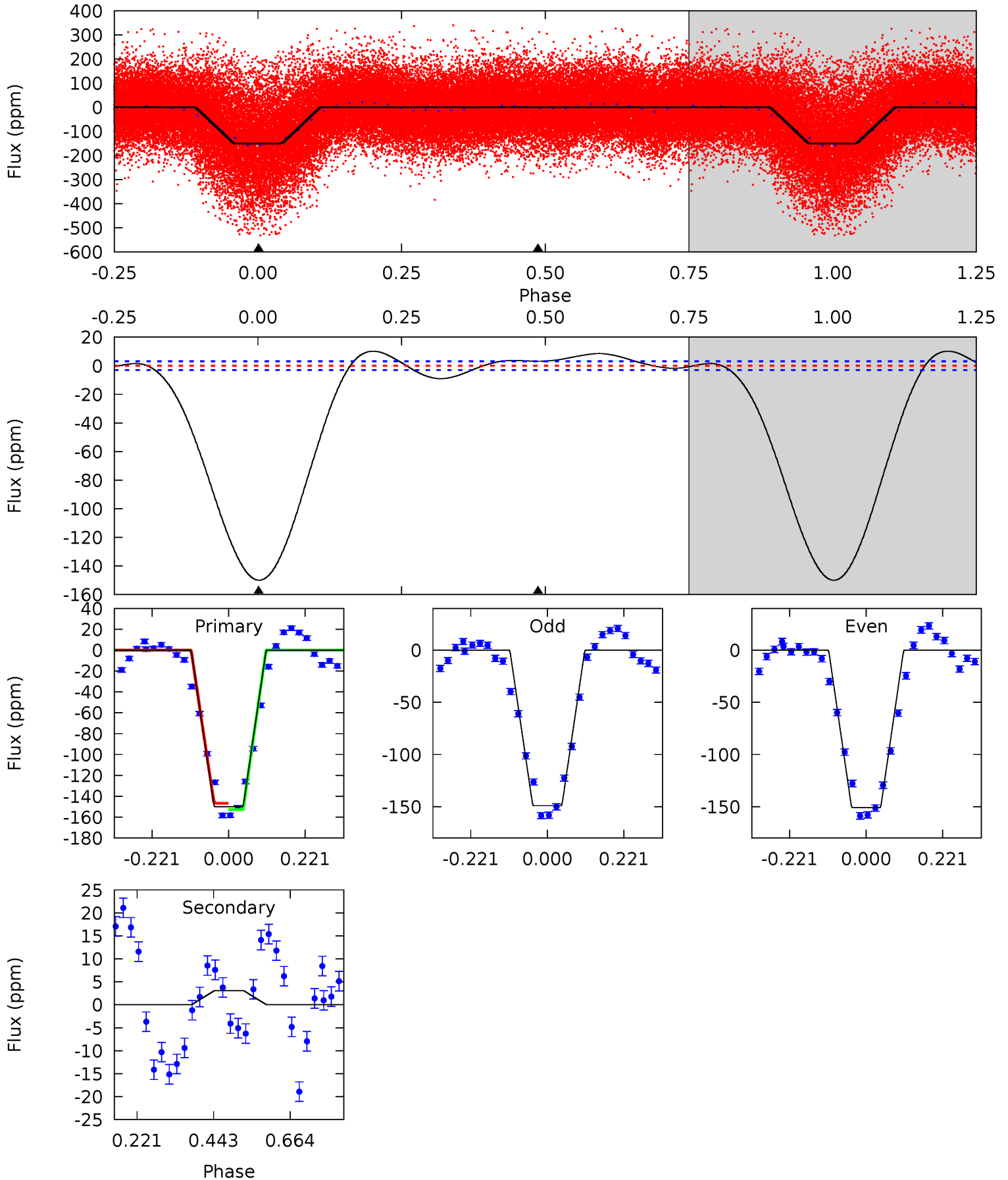
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.8	16.6	0	0	4.46	1.40	21.5	60.8	60.8	16.6	16.6	4.03	1.02	0.31	1.45



Alt Model-Shift Uniqueness Test

006356627-01, P = 4.209058 Days, E = 128.740092 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
213.5	-4.41	0	0	4.40	1.22	3.92	213.5	213.5	-4.41	-4.41	1.34	1.01	0.06	4.19



Stellar Parameters For KIC 006356627

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6624^{+150}_{-183}	$4.032^{+0.234}_{-0.126}$	$-0.240^{+0.250}_{-0.250}$	$1.842^{+0.404}_{-0.493}$	$1.336^{+0.165}_{-0.248}$	$0.301^{+0.422}_{-0.113}$
	+2%/-3%	+6%/-3%	+104%/-104%	+22%/-27%	+12%/-19%	+140%/-37%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 006356627-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-25 ± 2	$1.11^{+0.18}_{-0.19}$	2312^{+142}_{-166}	6216^{+386}_{-321}	36^{+15}_{-9}
Alt.	3 ± 1	$2.49^{+0.34}_{-0.38}$	2298^{+146}_{-167}	-3226^{+115}_{-101}	$-0.850^{+0.260}_{-0.377}$

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

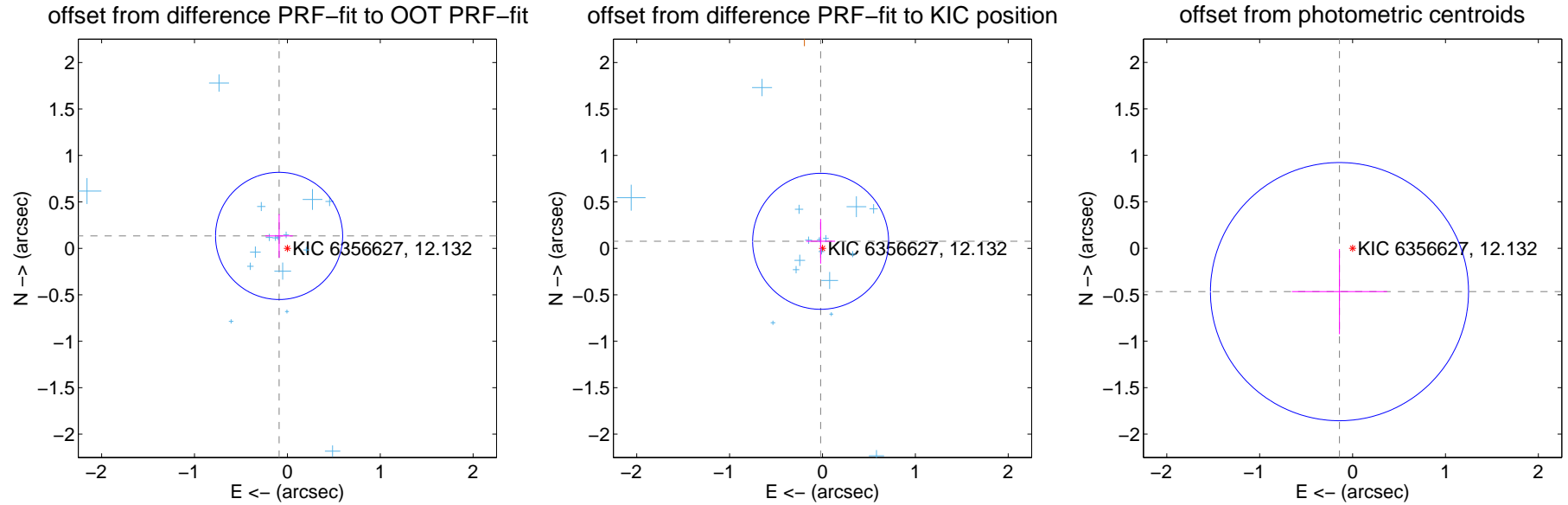
DV Centroid Data

Supplemental centroid analysis for 006356627-01. Kepler magnitude: 12.13. Transit SNR 7.21

There are 16 quarters with good PRF difference image offsets

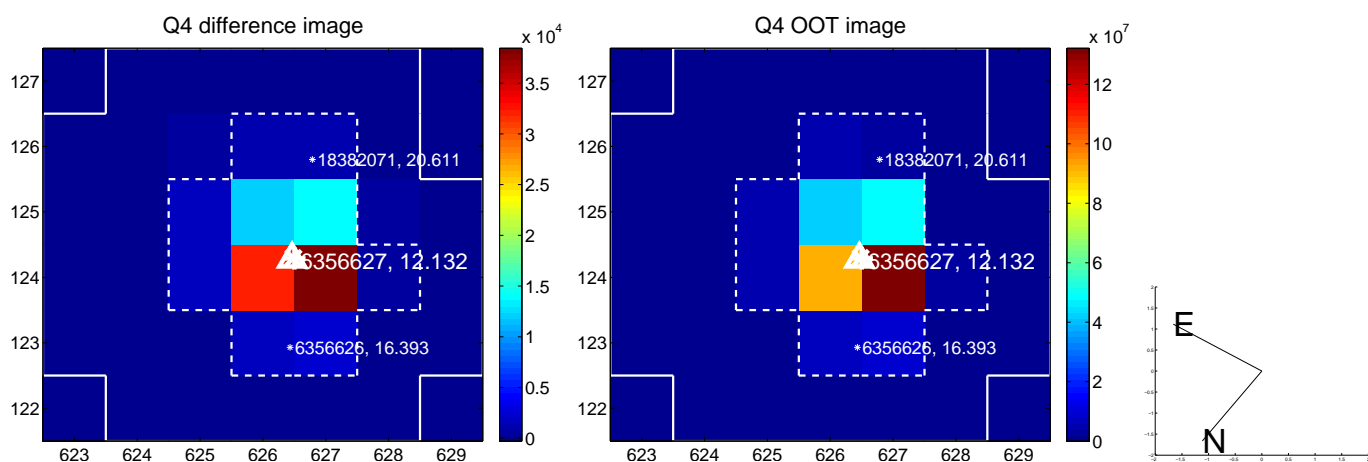
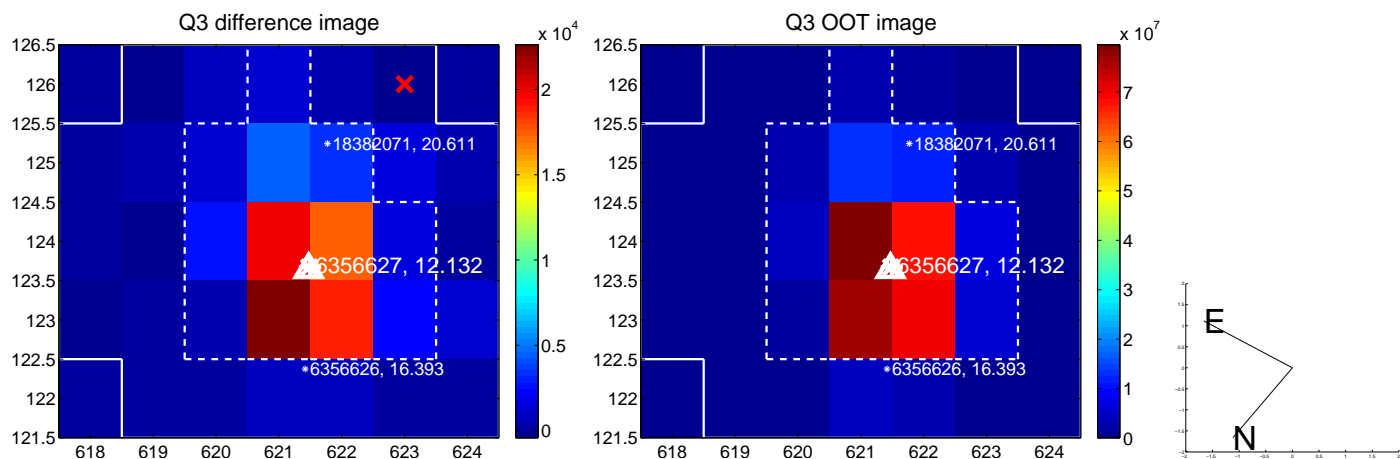
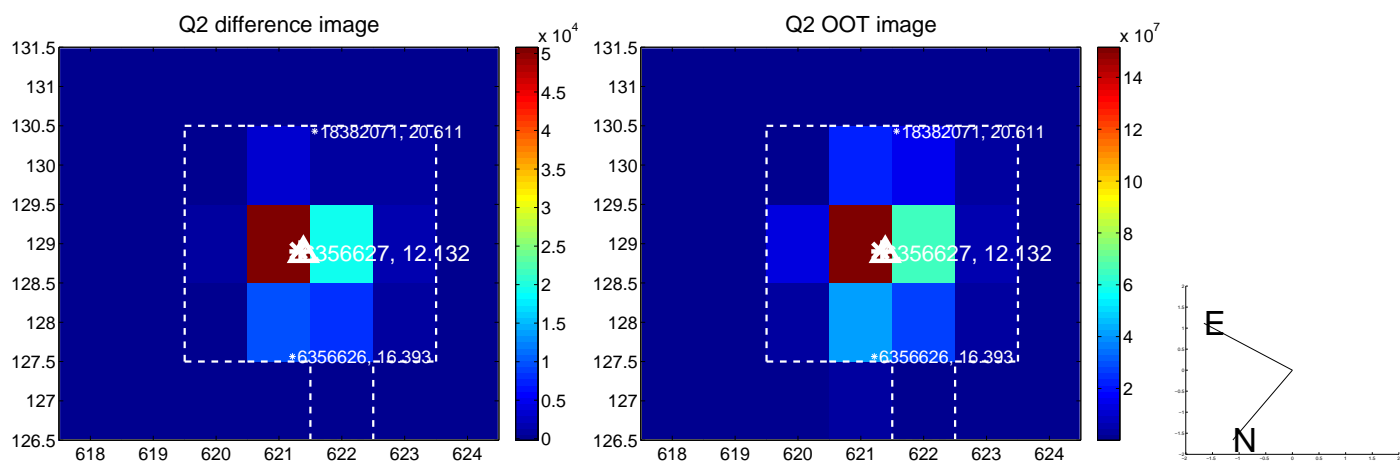
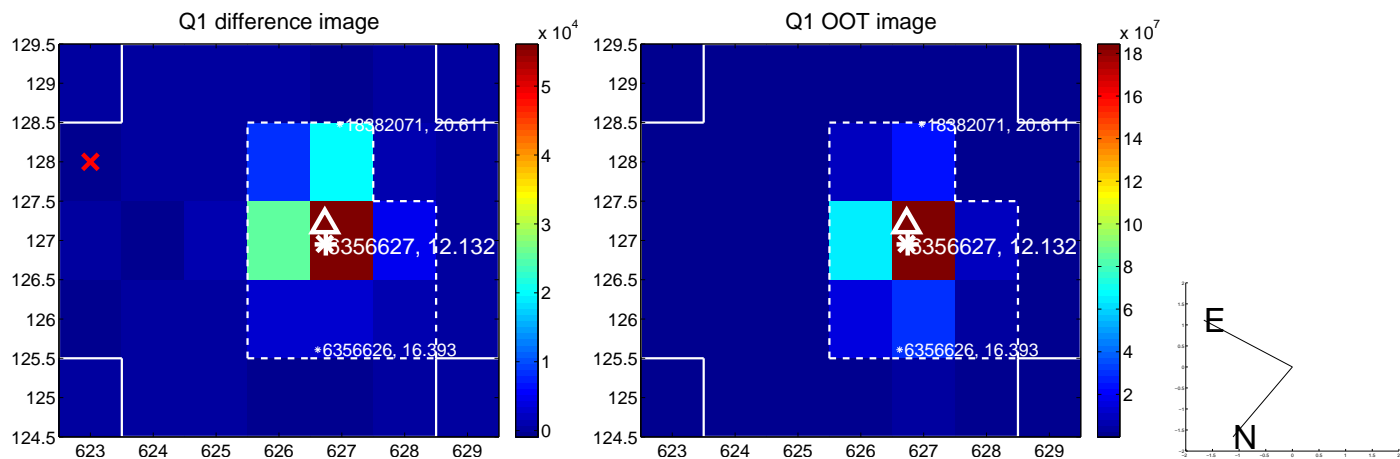
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.161 ± 0.228	0.70	0.089 ± 0.148	0.133 ± 0.235
PRF-fit source offset from KIC position	0.078 ± 0.244	0.32	0.020 ± 0.156	0.076 ± 0.240
photometric centroid source offset	0.49 ± 0.46	1.05	0.14 ± 0.51	-0.47 ± 0.46

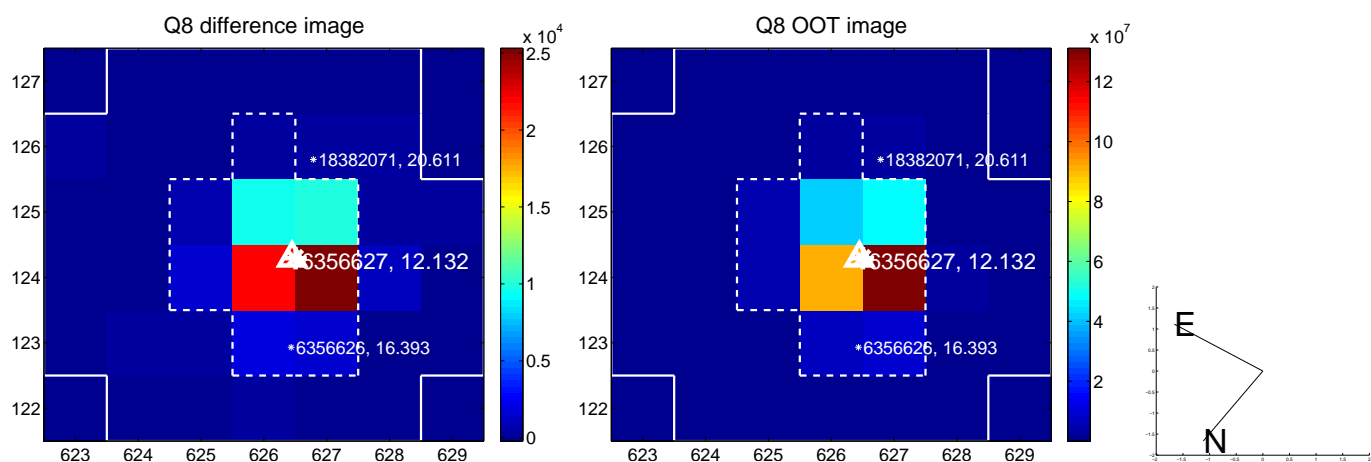
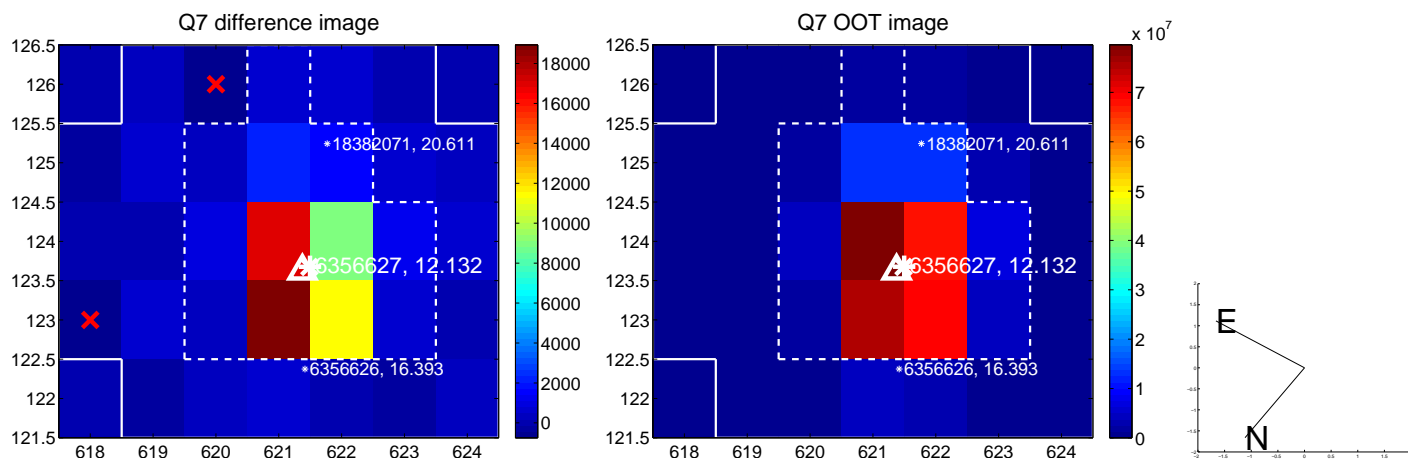
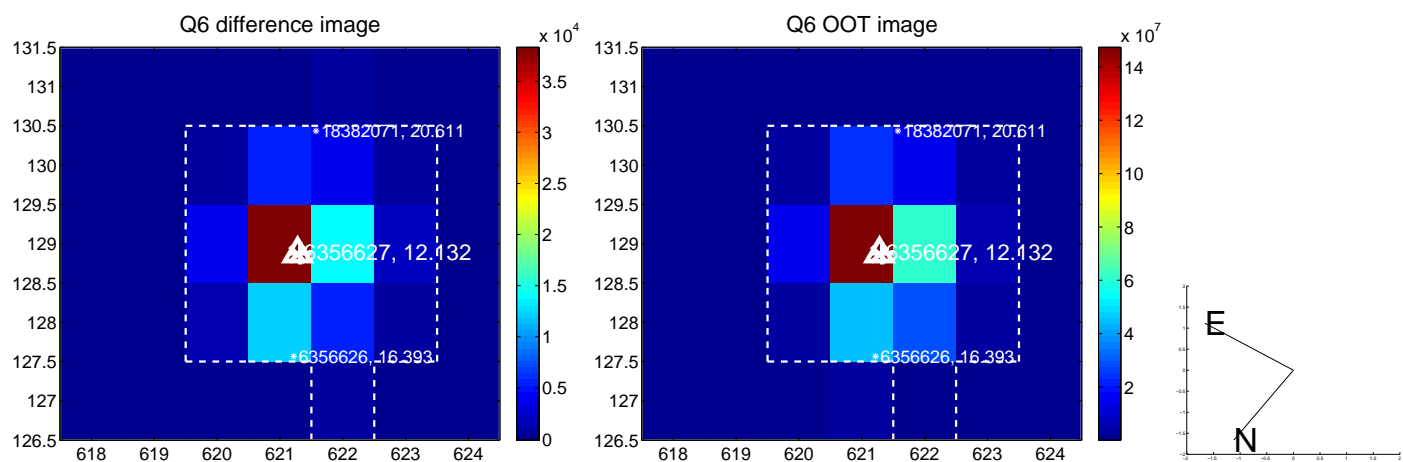
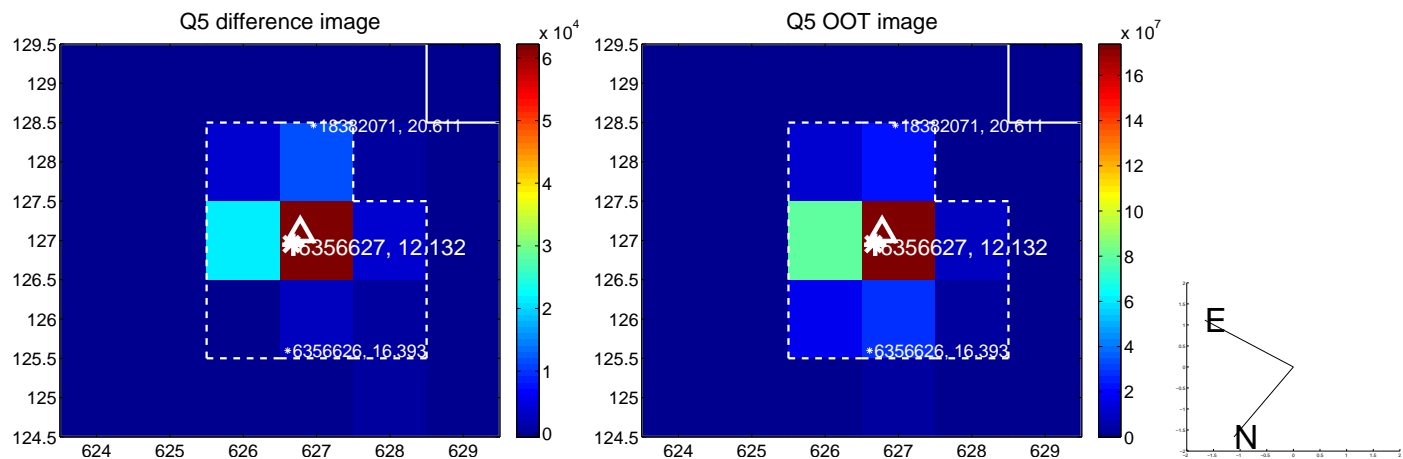


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

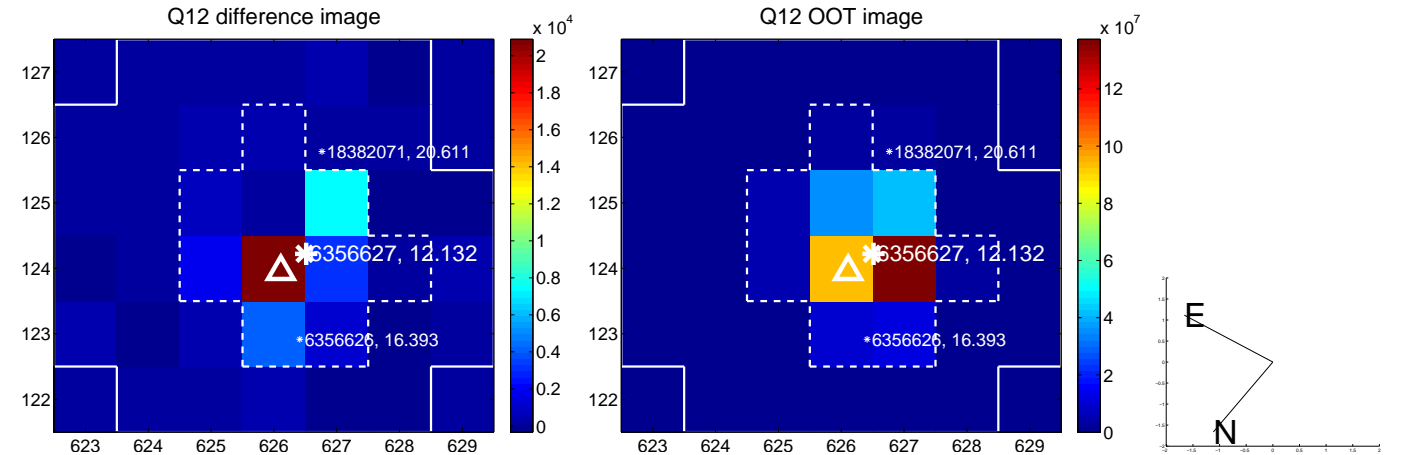
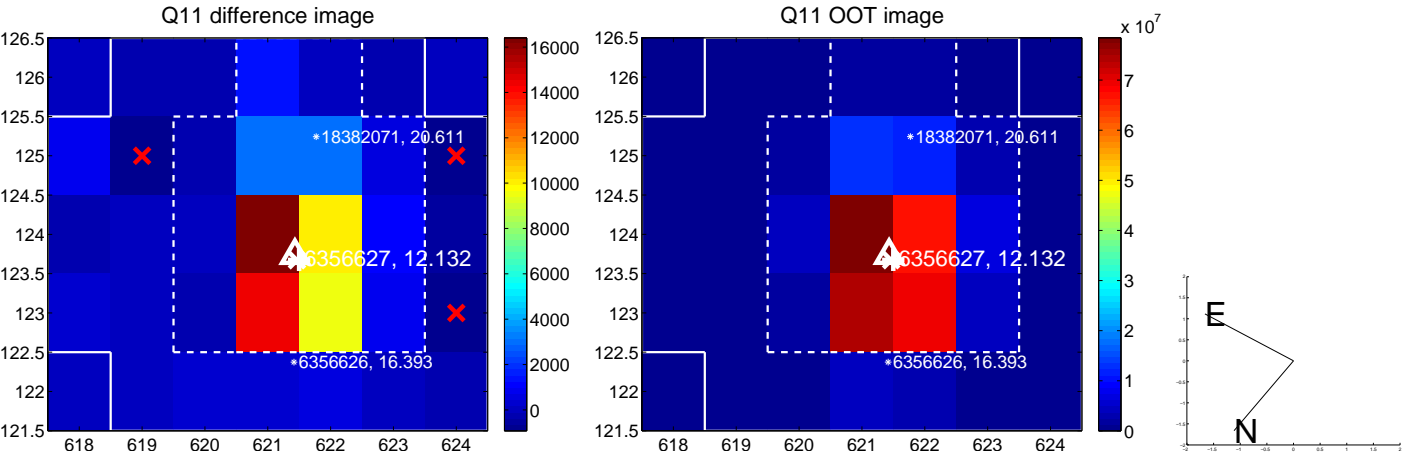
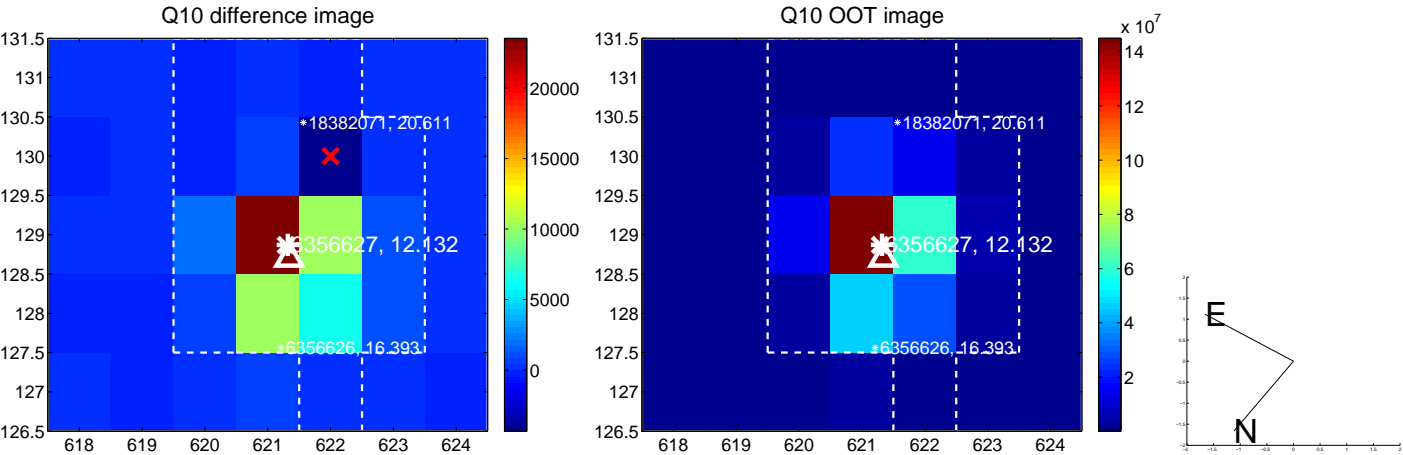
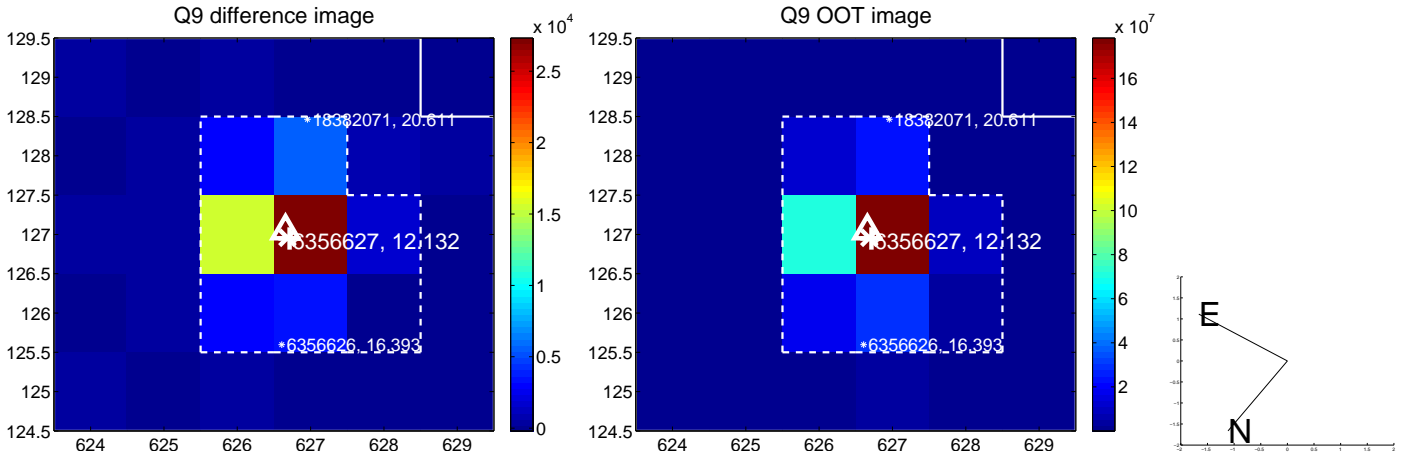
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



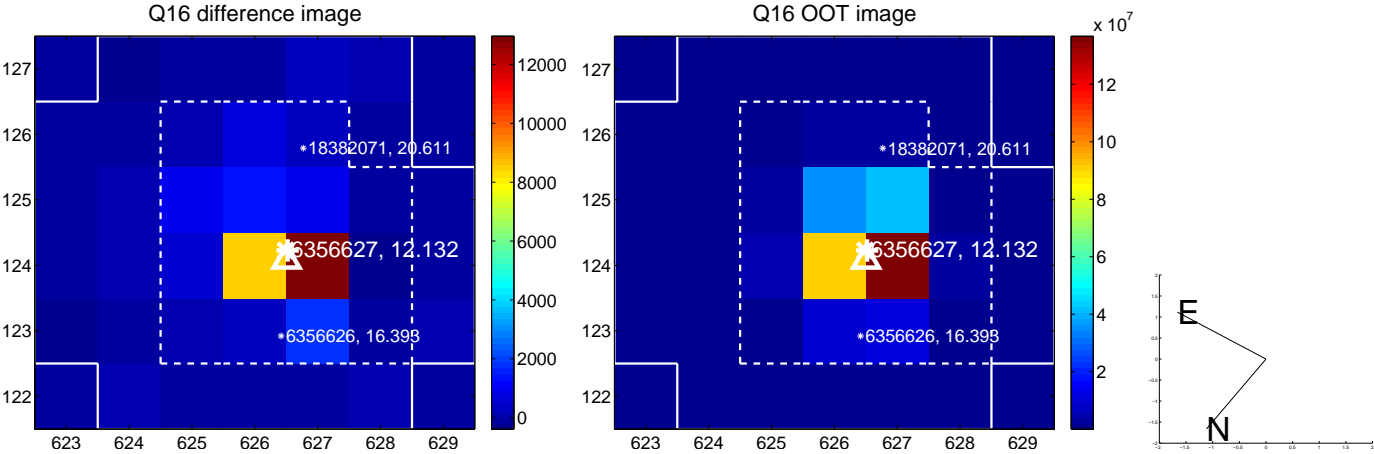
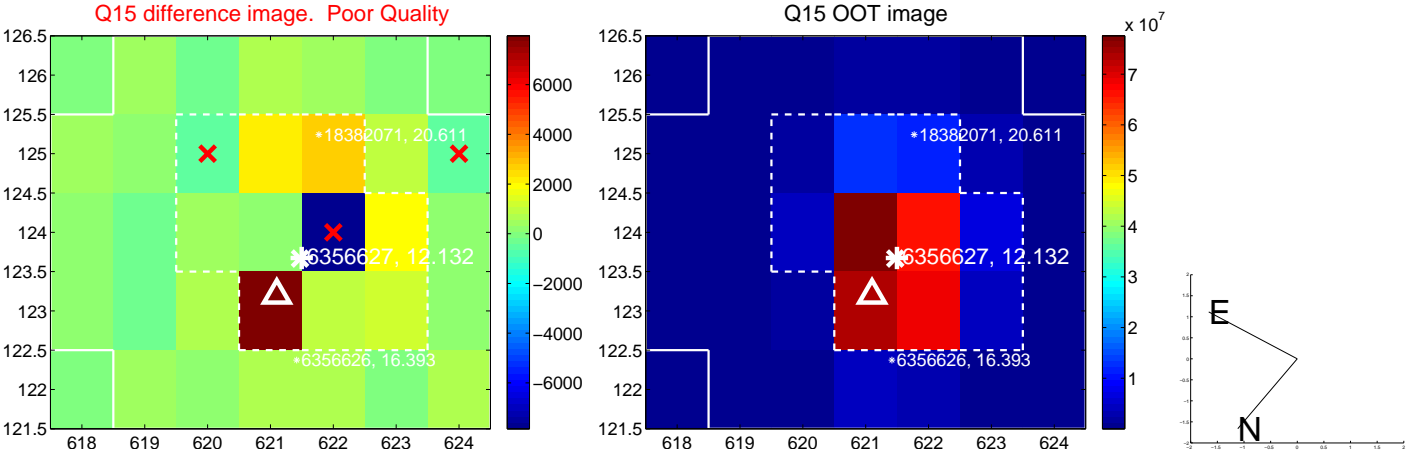
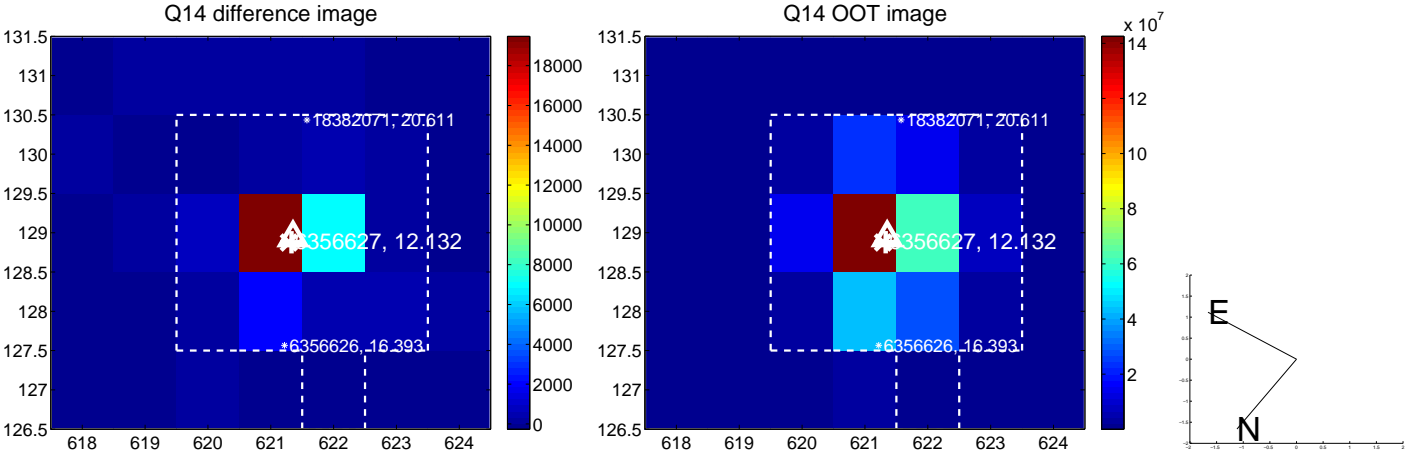
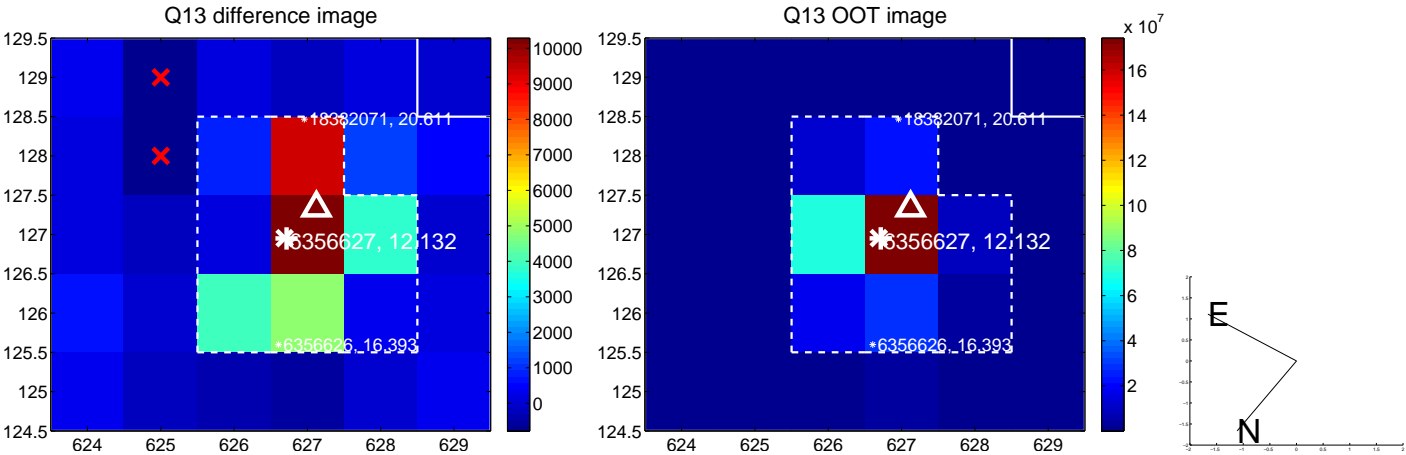
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



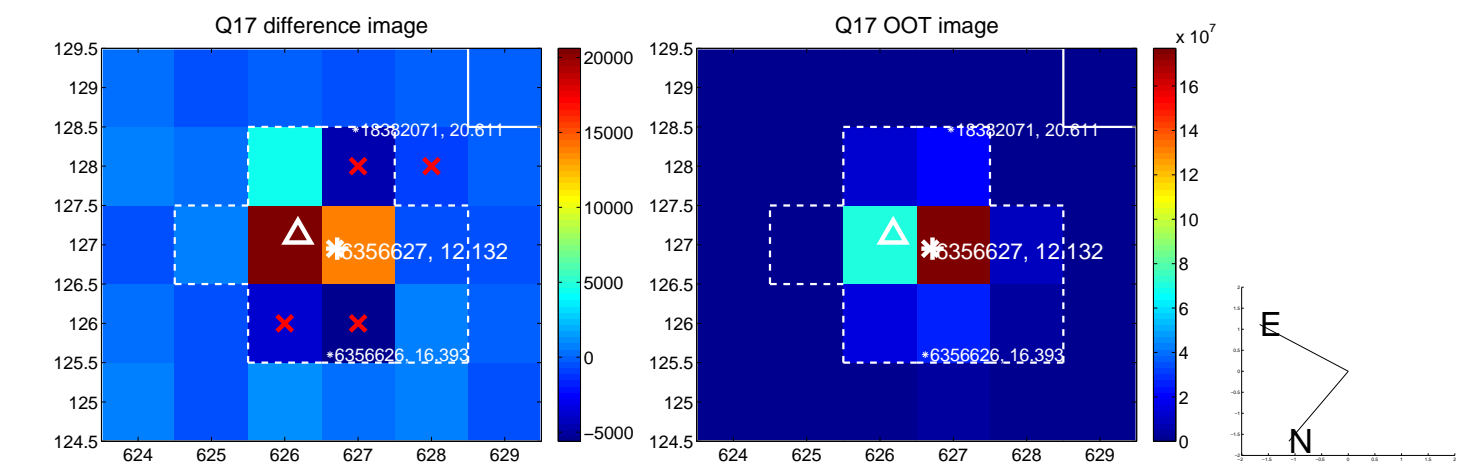
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



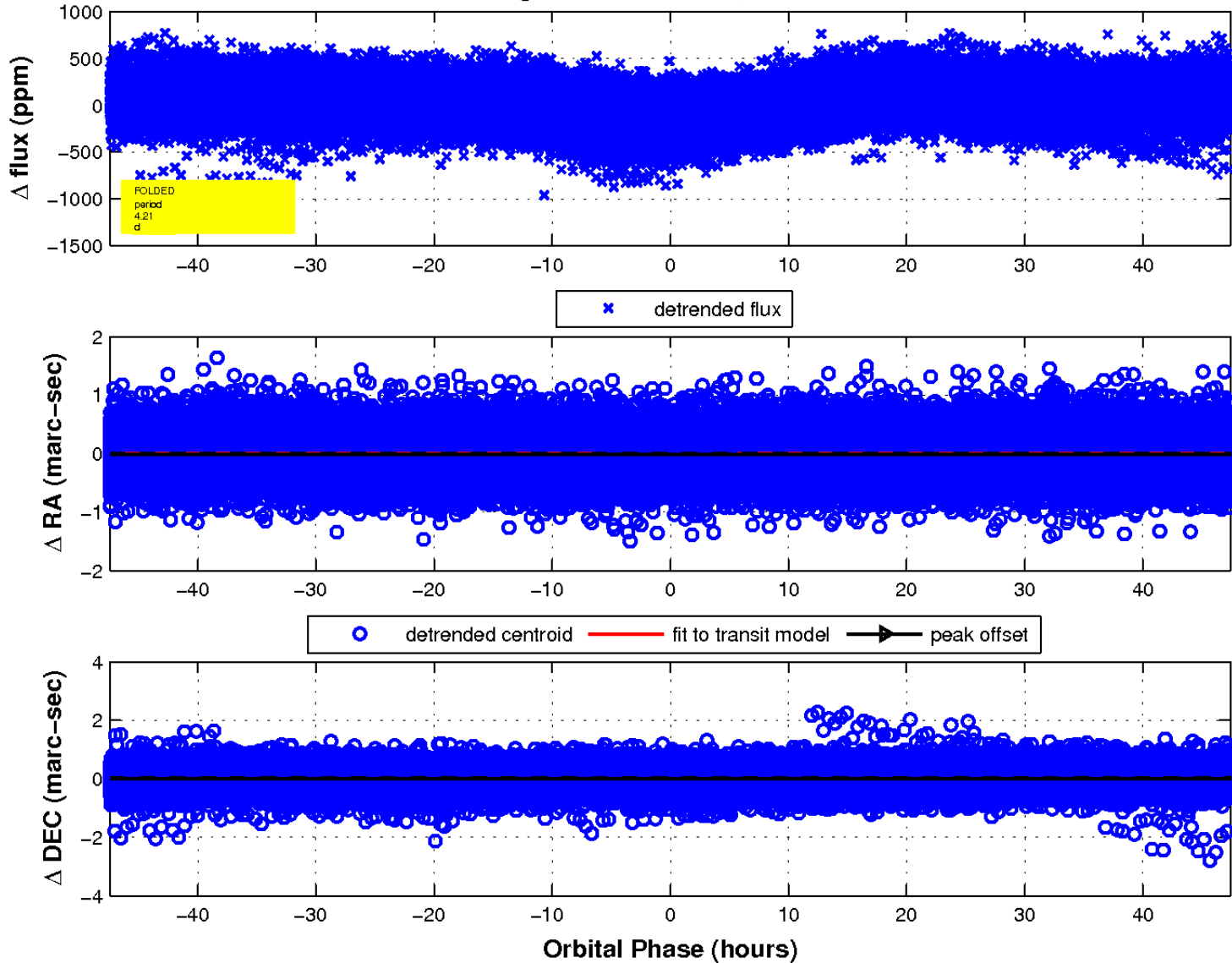
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

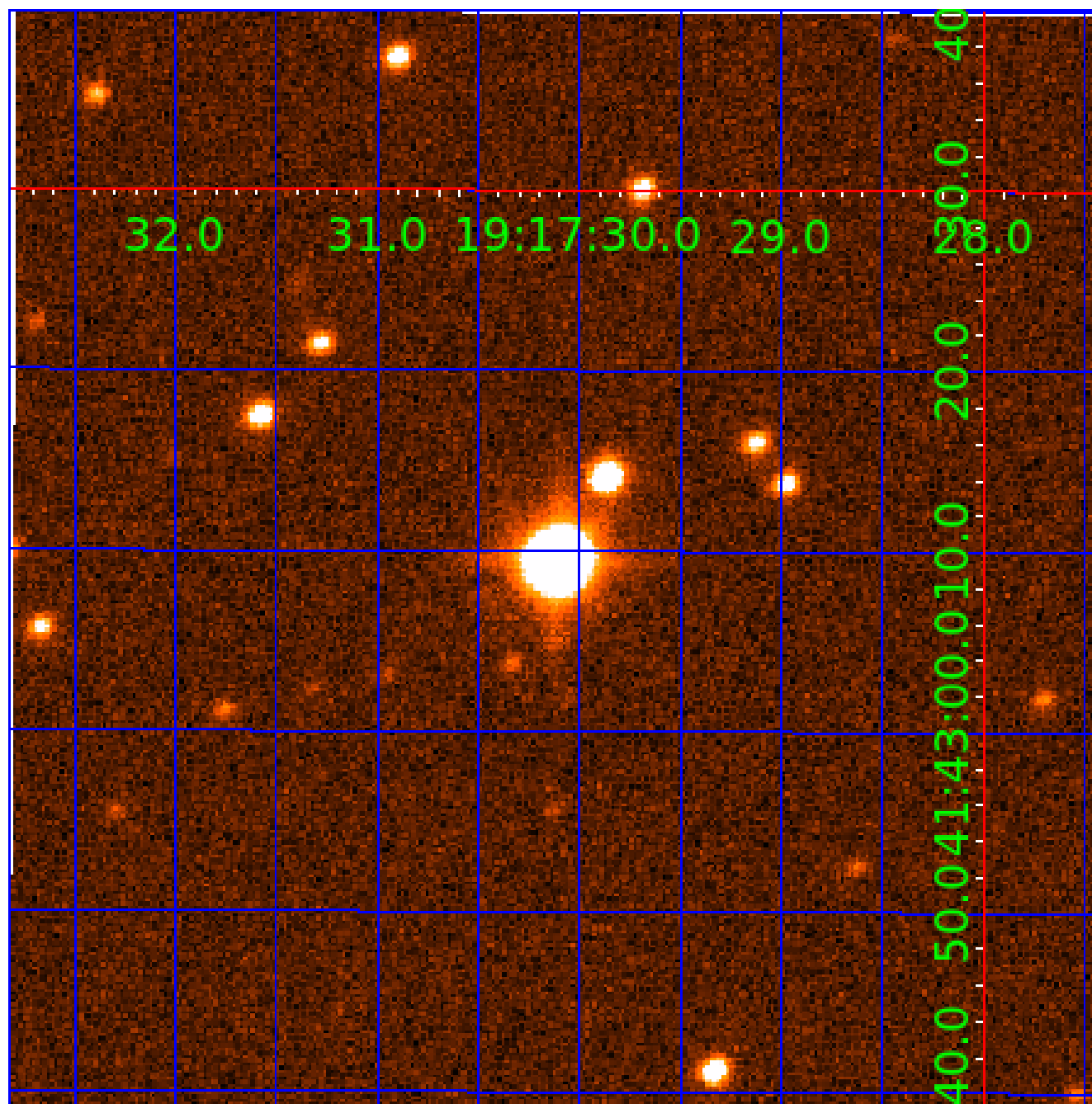


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 006356627

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})
006356627-01	OBS	No	4.208754	132.883898	26.7	15.813	13.0	7.2	1.84	6624	1.13	1856.51
006356627-02	OBS	No	4.209446	131.932178	118.3	34.971	13.1	15.6	1.84	6624	2.61	1856.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006356627-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
006356627-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_UNRESOLVED_OFFSET

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

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

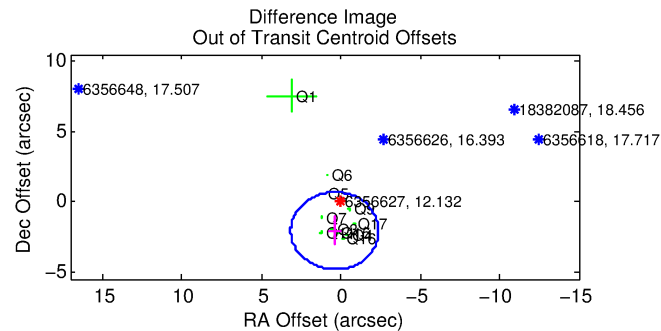
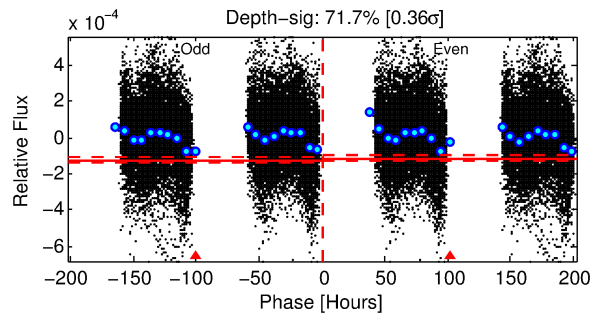
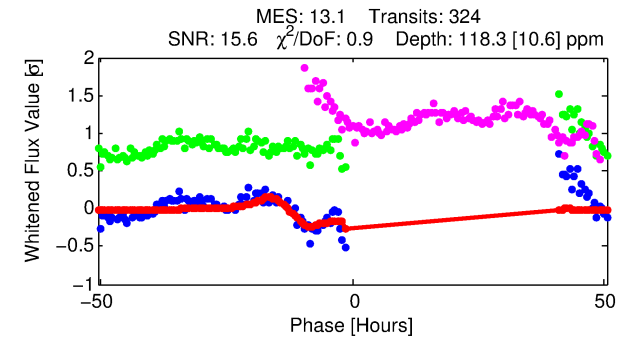
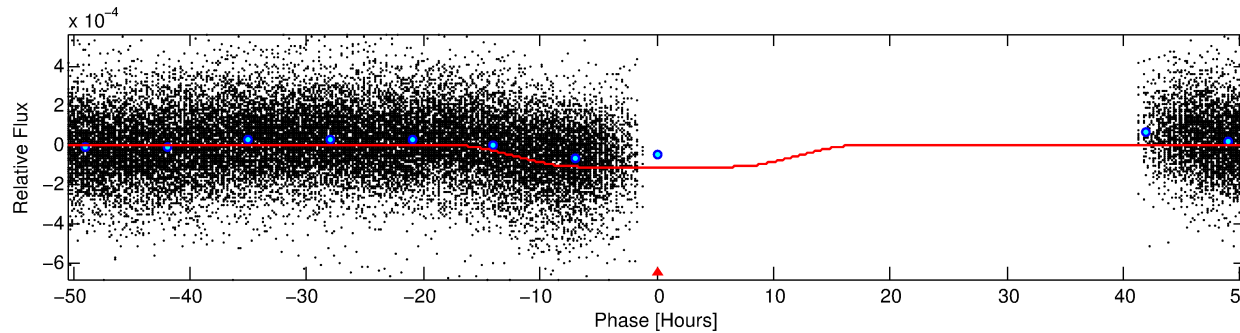
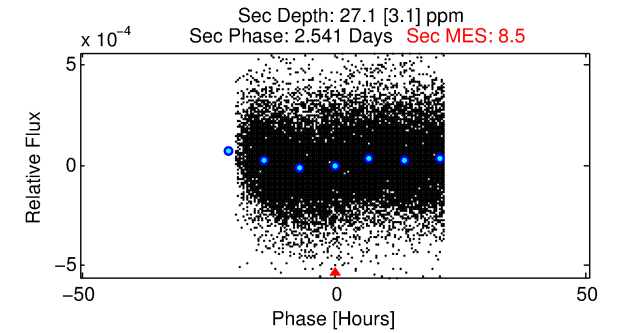
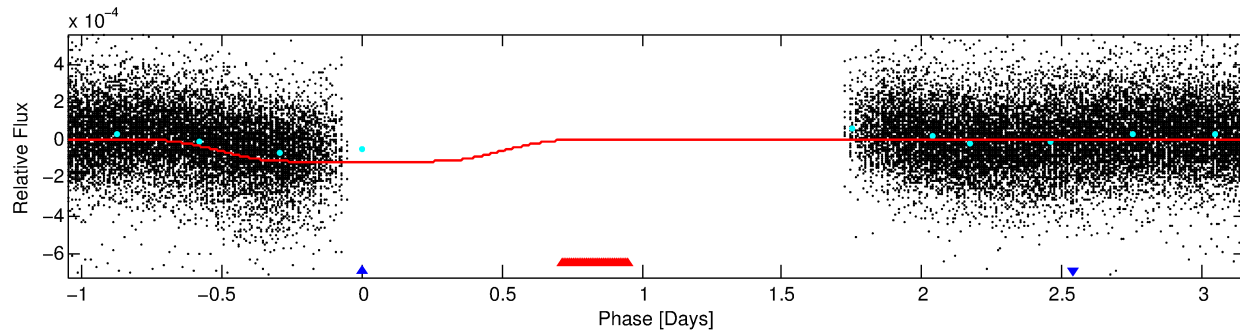
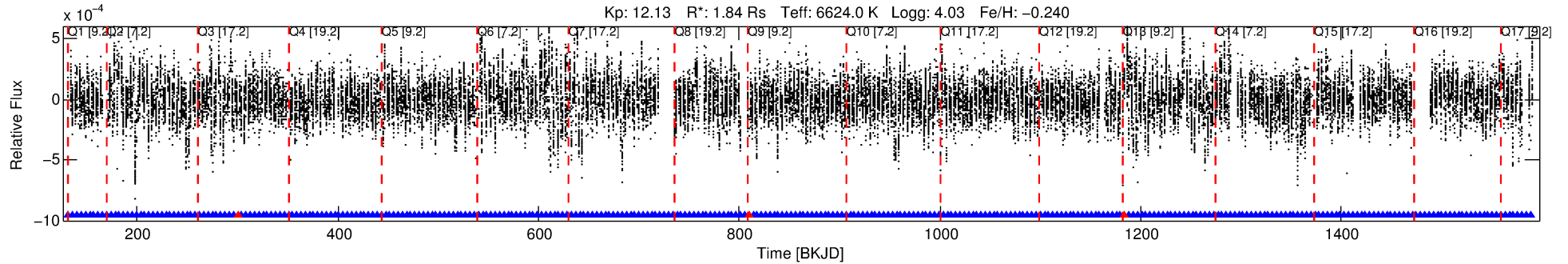
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006356627-02

No Significant Match Found

DV One-Page Summary

KIC: 6356627 Candidate: 2 of 2 Period: 4.209 d



DV Fit Results:

Period = 4.20945 [0.00011] d
Epoch = 131.9322 [0.0857] BKJD
Rp/R* = 0.0130 [0.0005]
a/R* = 1.02 [0.01]
b = 0.98 [0.01]
Seff = 1856.10 [772.18]
Teq = 1674 [174] K
Rp = 2.61 [0.71] Re
a = 0.0562 [0.0142] AU
Ag = 6.89 [2.93] [2.01σ]
Teffp = 4193 [187] K [9.88σ]

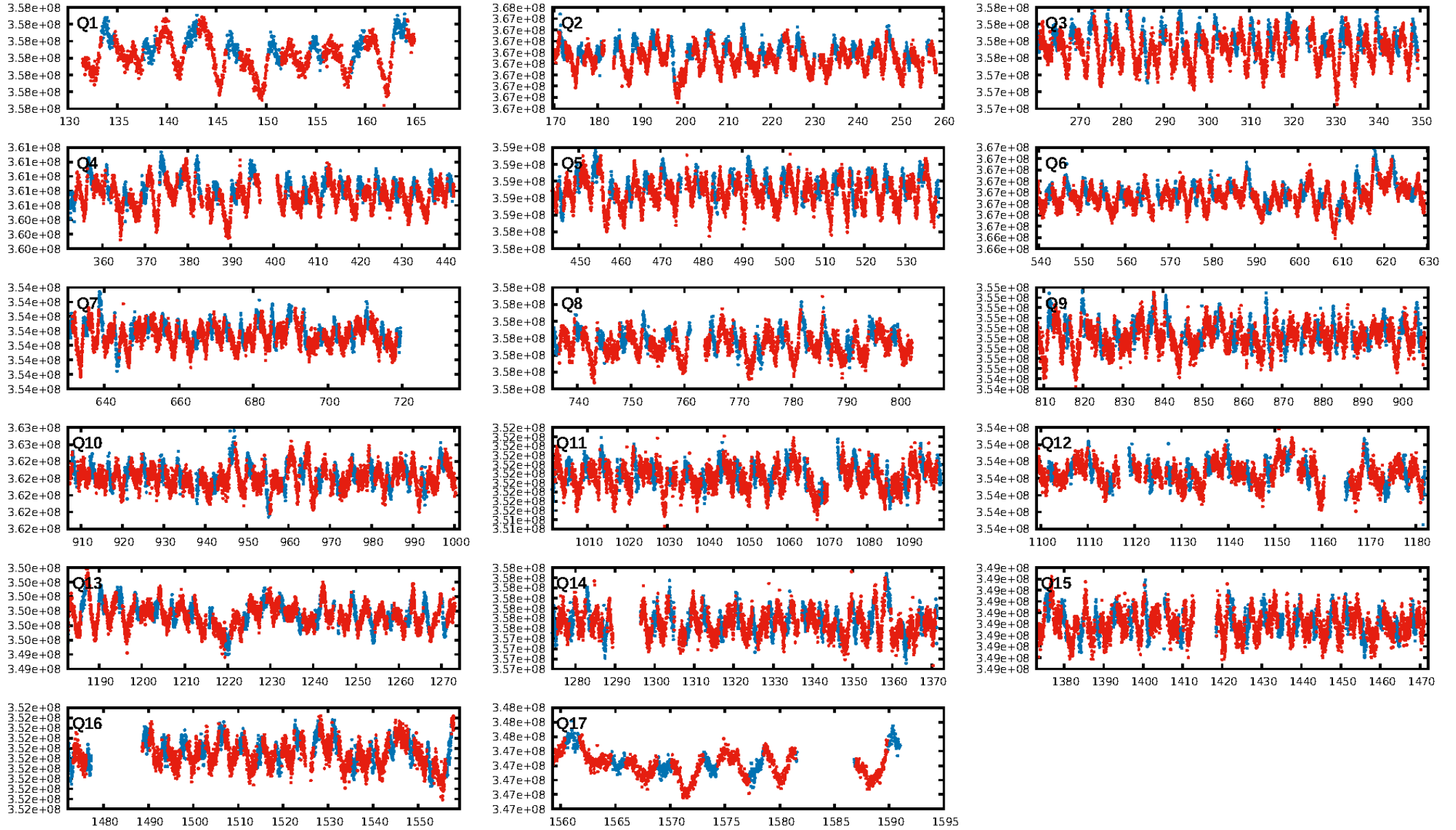
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [306/309]
GhostDiagnostic-chr: 3.216
Centroid-sig: 0.1%
Centroid-so: 0.180 arcsec [1.98σ]
OotOffset-rm: 2.109 arcsec [2.30σ]
KicOffset-rm: 2.138 arcsec [2.39σ]
OotOffset-st: 1/4/2/4 [11]
KicOffset-st: 1/4/2/4 [11]
DiffImageQuality-fgm: 0.82 [9/11]
DiffImageOverlap-fno: 0.00 [0/17]

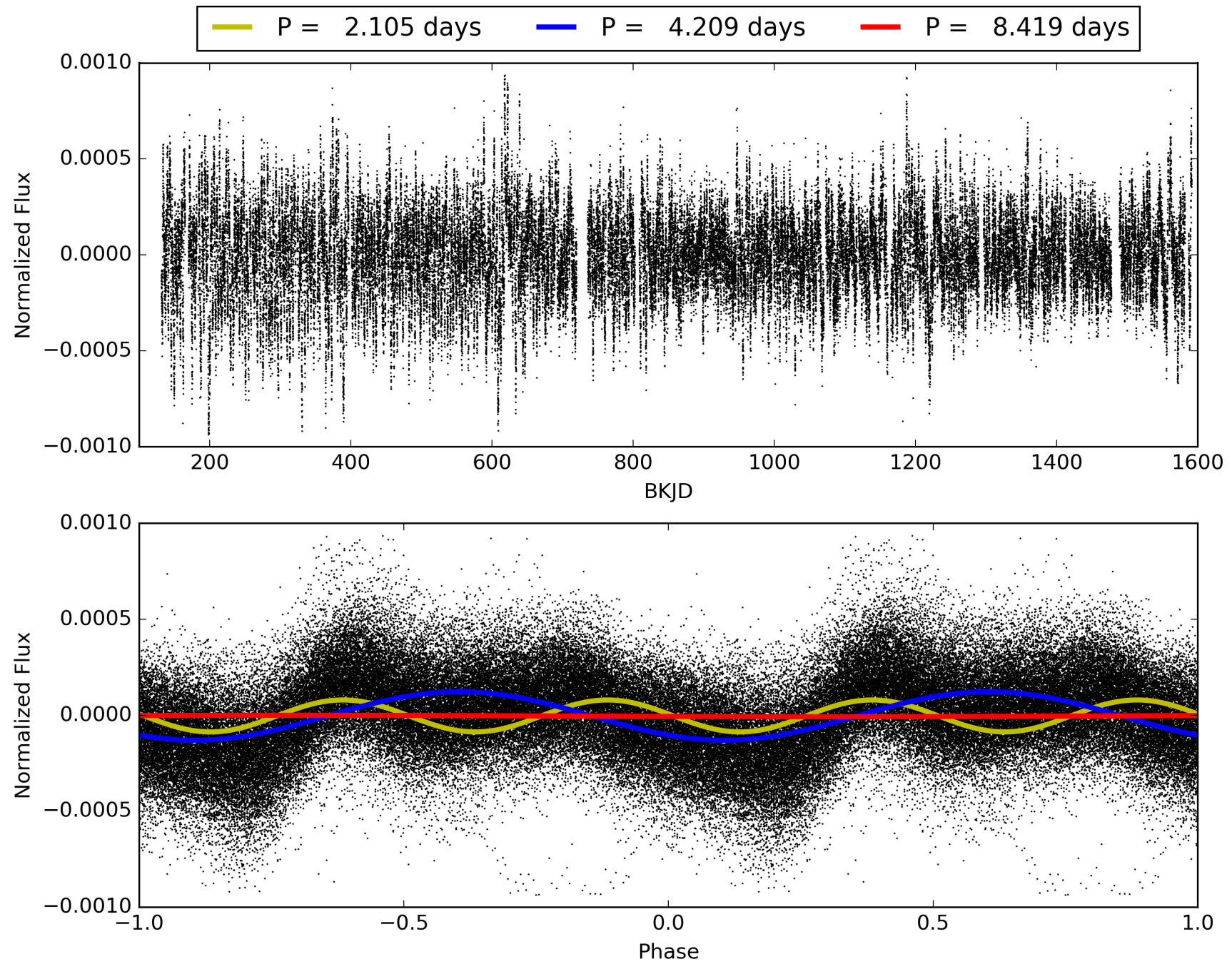
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:55:23 Z

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

TCE 006356627-02, PDC Light Curves

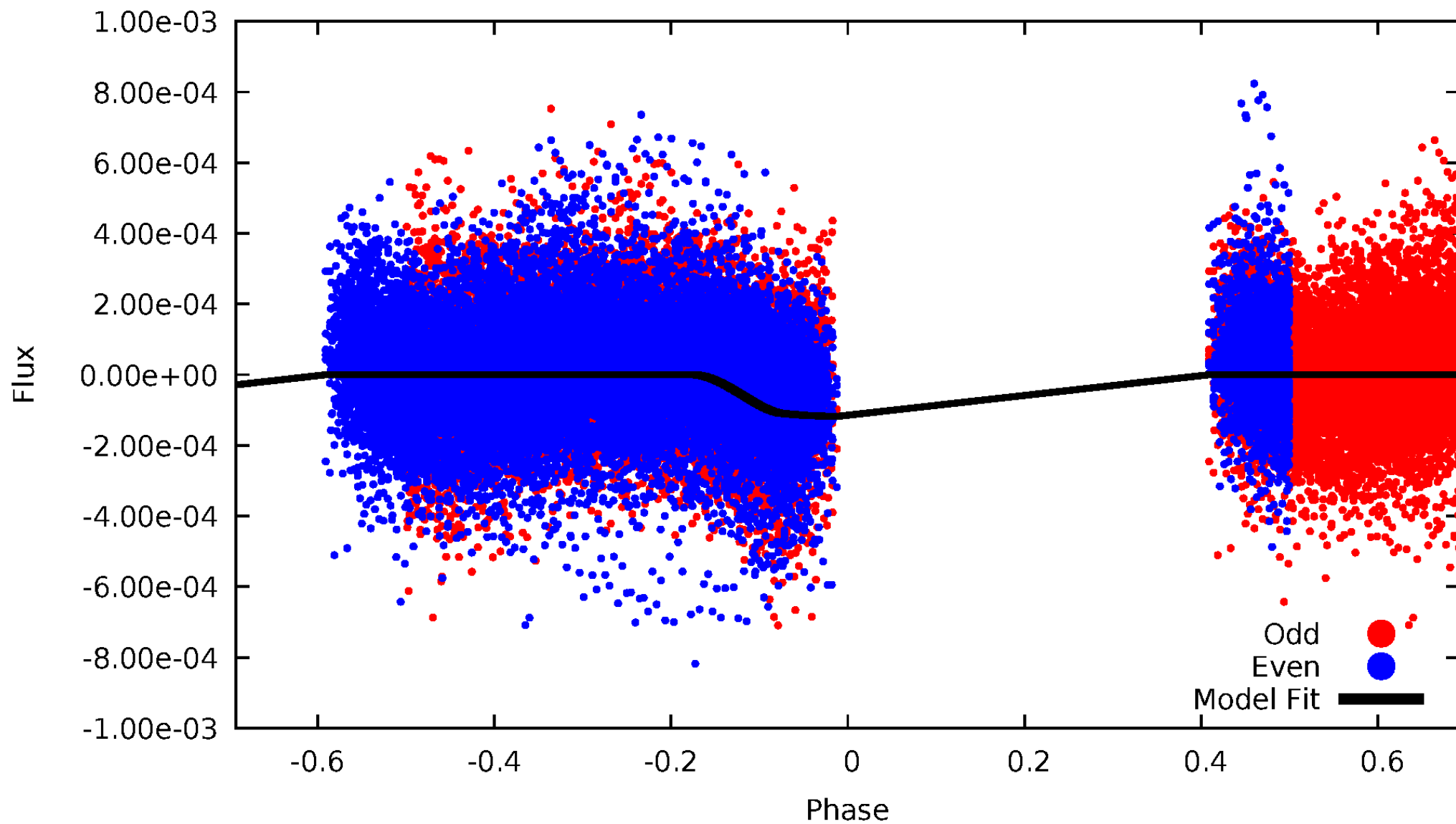


TCE 006356627-02



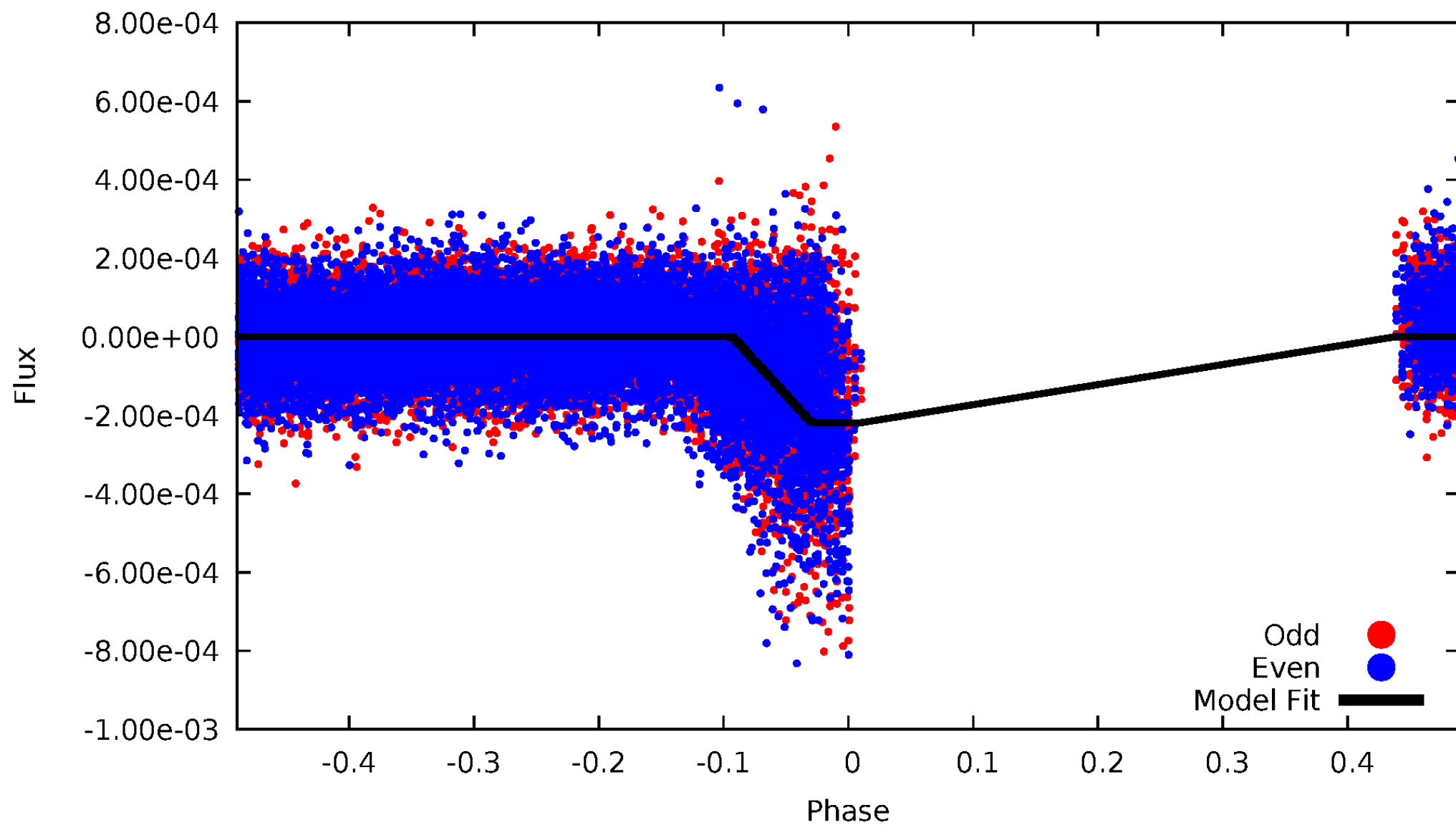
DV Odd/Even

TCE 006356627-02



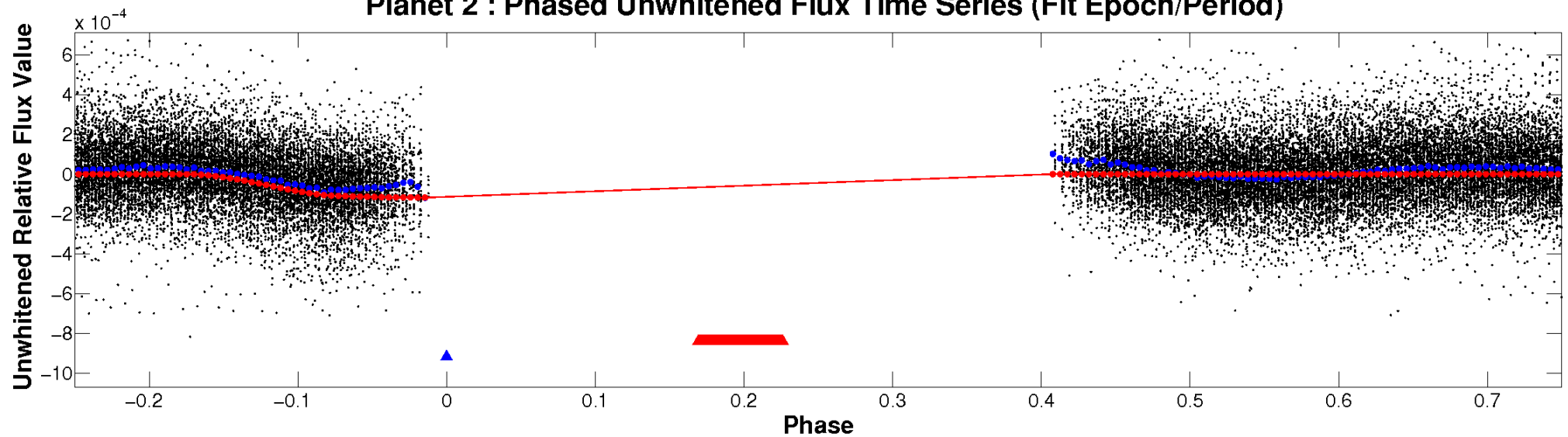
ALT Odd/Even

TCE 006356627-02

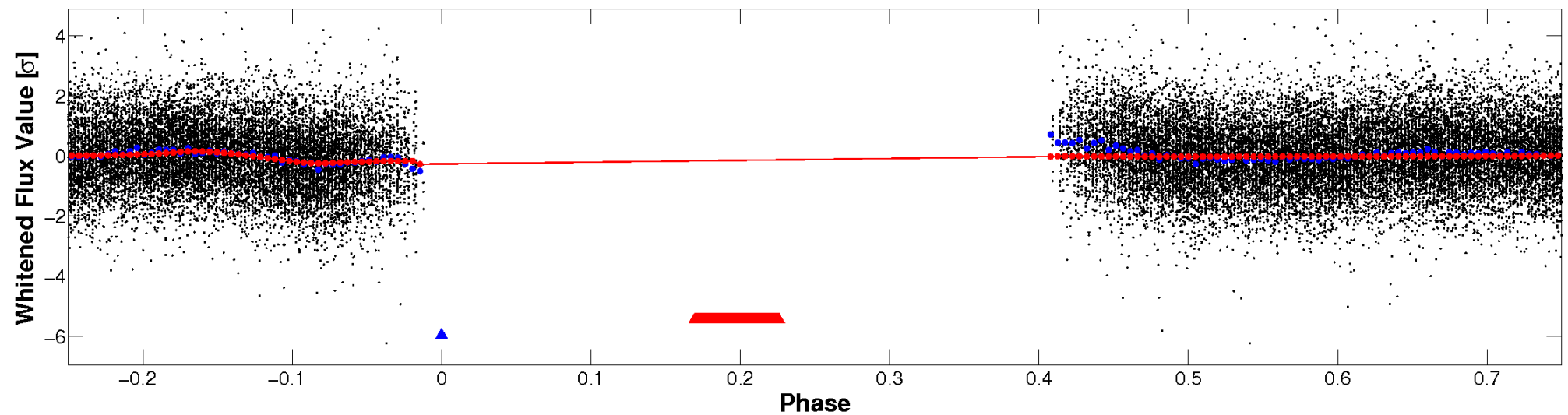


Non-Whitened Vs. Whitened Light Curve

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

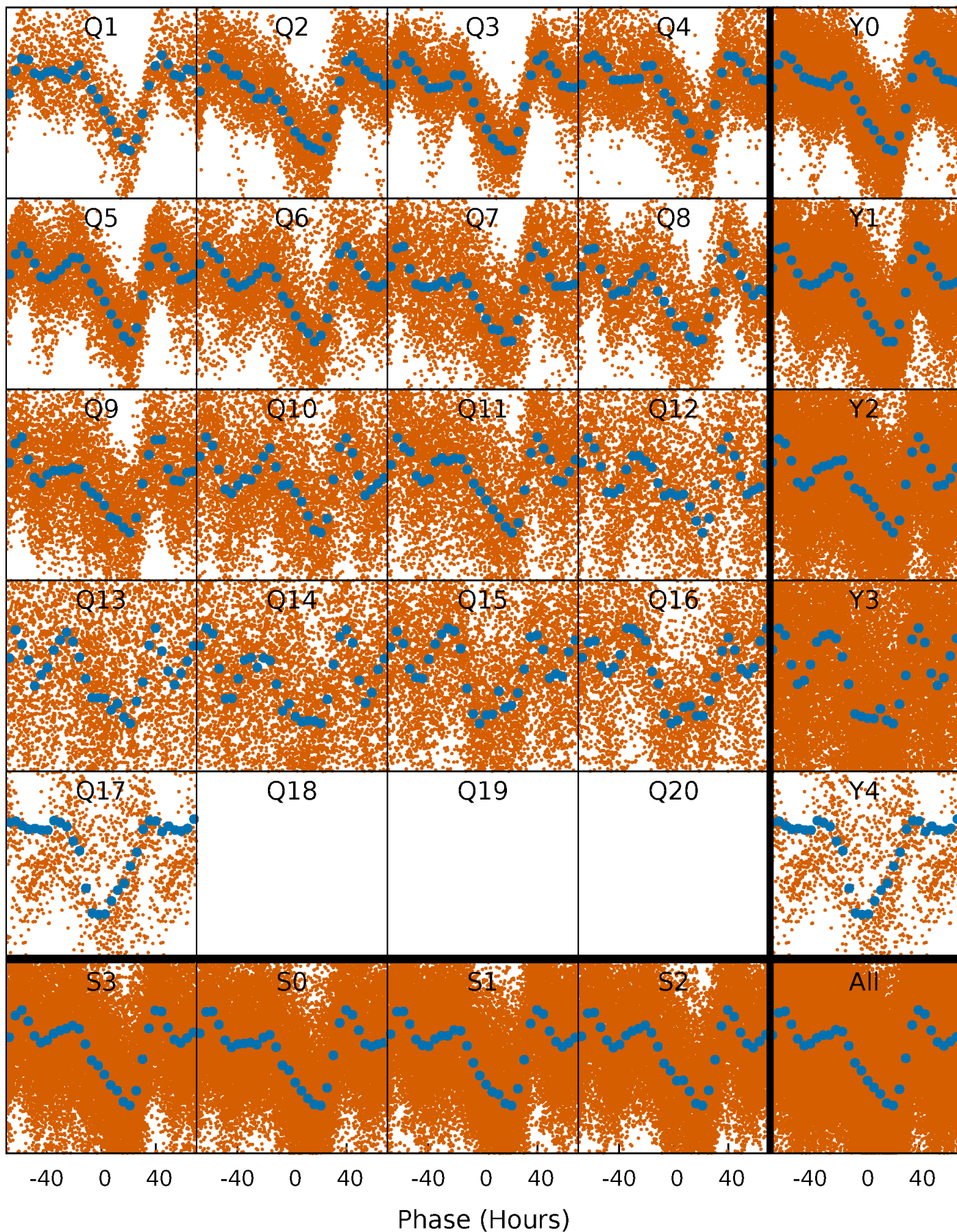


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



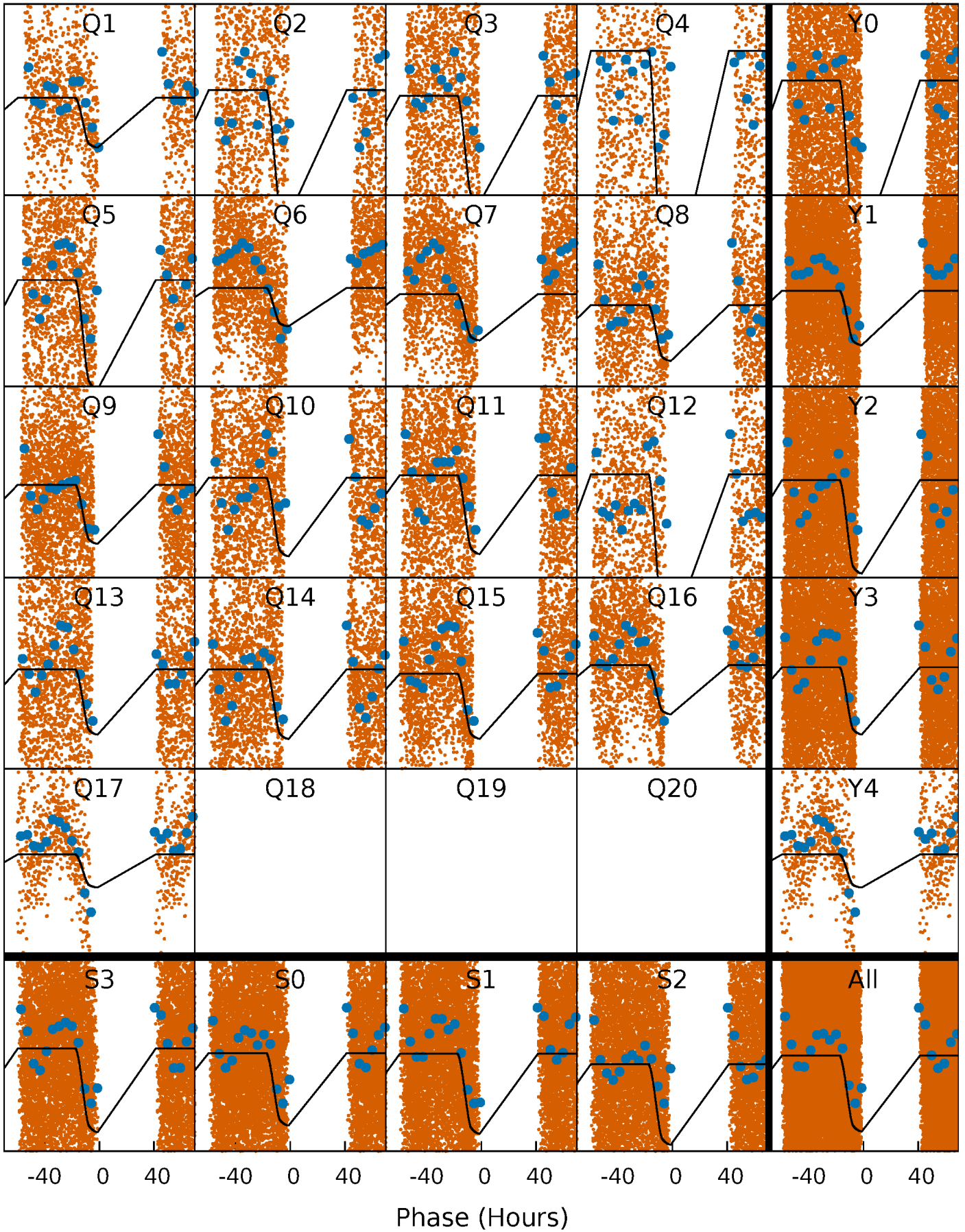
PDC Quarter-Phased Transit Curves

TCE 006356627-02 P= 4.209446 Days $T_0=131.932178$ (BKJD)



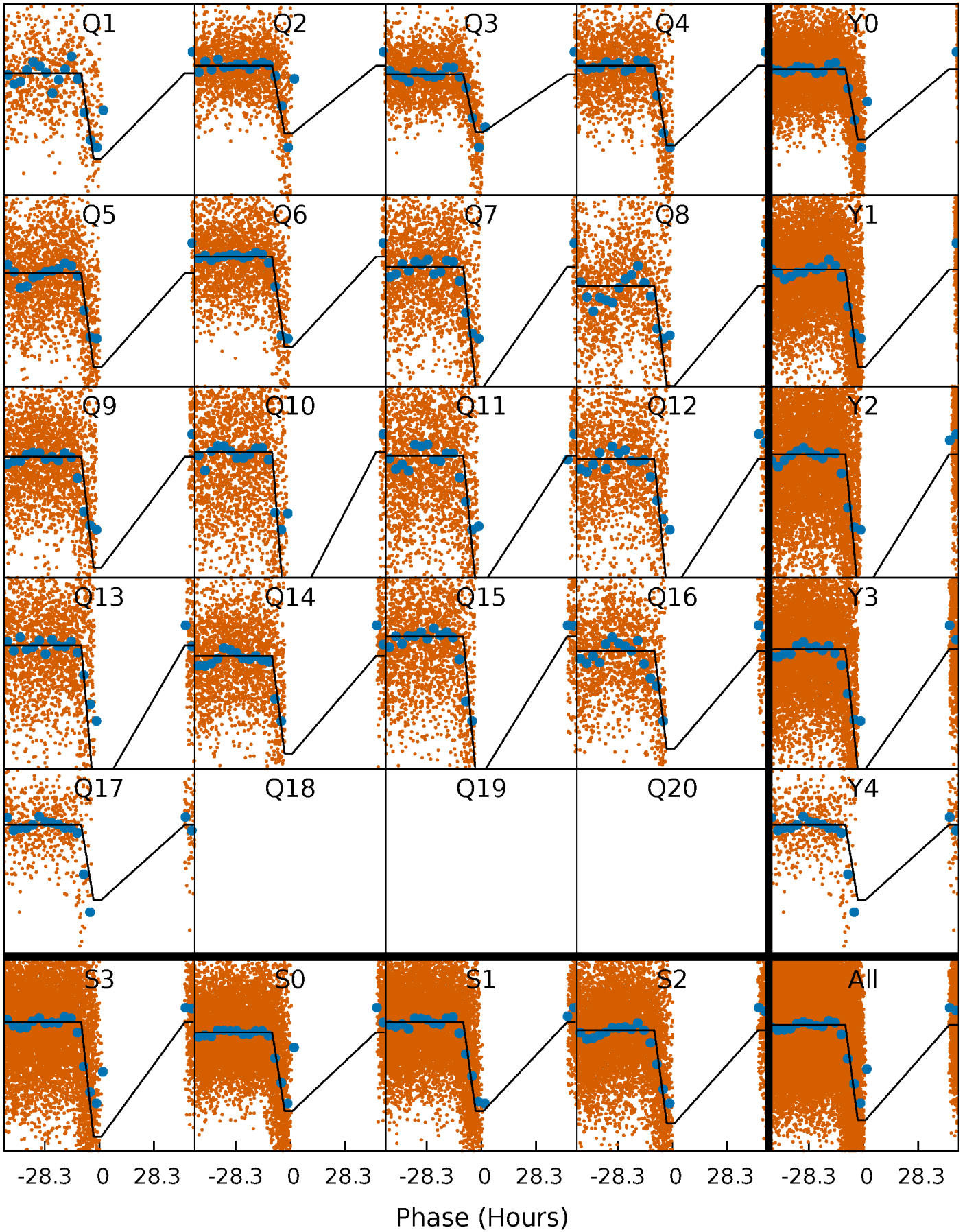
DV Quarter-Phased Transit Curves

TCE 006356627-02 P= 4.209446 Days $T_0=131.932178$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

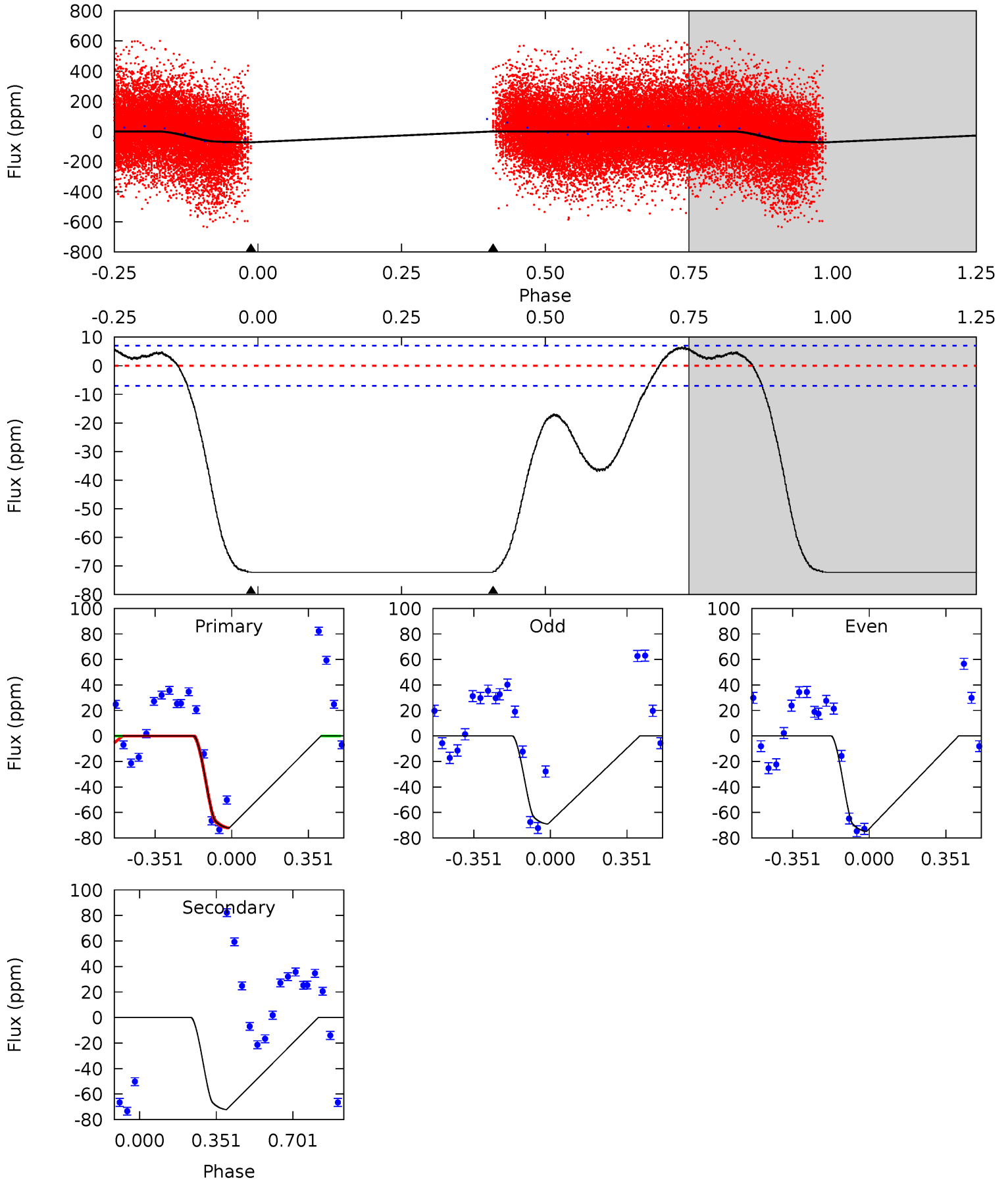
TCE 006356627-02 P= 4.209352 Days $T_0=131.838112$ (BKJD)



DV Model-Shift Uniqueness Test

006356627-02, P = 4.209446 Days, E = 127.722732 Days

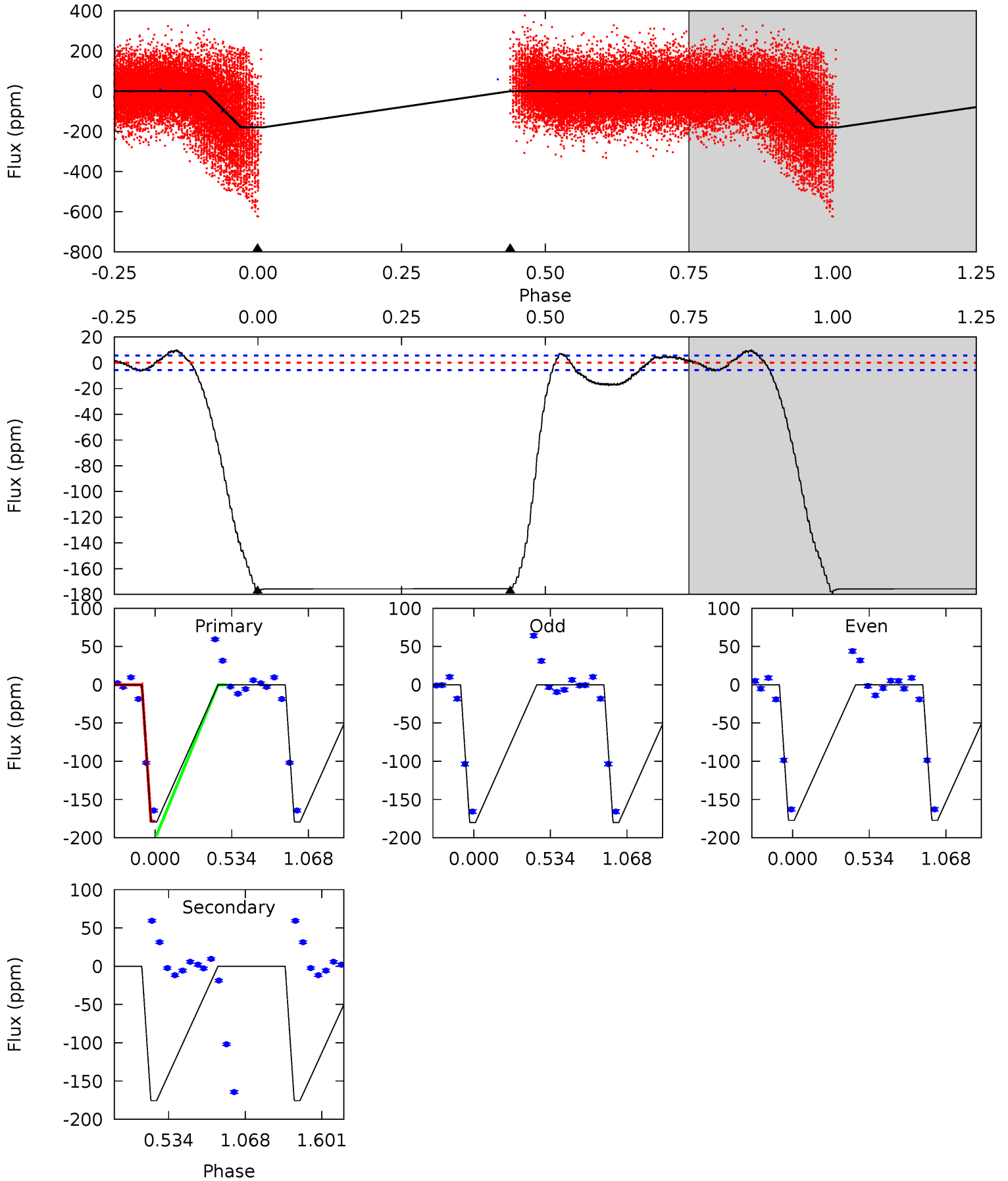
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.2	44.2	0	0	4.29	0.93	2.92	44.2	44.2	44.2	44.2	1.78	0	0.08	0



Alt Model-Shift Uniqueness Test

006356627-02, P = 4.209352 Days, E = 127.628760 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
132.9	130.2	0	0	4.20	0.62	8.08	132.9	132.9	130.2	130.2	1.11	0.98	0.05	1.21



Stellar Parameters For KIC 006356627

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6624^{+150}_{-183}	$4.032^{+0.234}_{-0.126}$	$-0.240^{+0.250}_{-0.250}$	$1.842^{+0.404}_{-0.493}$	$1.336^{+0.165}_{-0.248}$	$0.301^{+0.422}_{-0.113}$
	+2%/-3%	+6%/-3%	+104%/-104%	+22%/-27%	+12%/-19%	+140%/-37%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 006356627-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-72 ± 2	$2.59^{+0.32}_{-0.39}$	2325^{+132}_{-168}	5363^{+154}_{-158}	19^{+6}_{-4}
Alt.	-176 ± 1	$2.93^{+0.39}_{-0.43}$	2321^{+146}_{-162}	6244^{+173}_{-192}	35^{+11}_{-7}

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

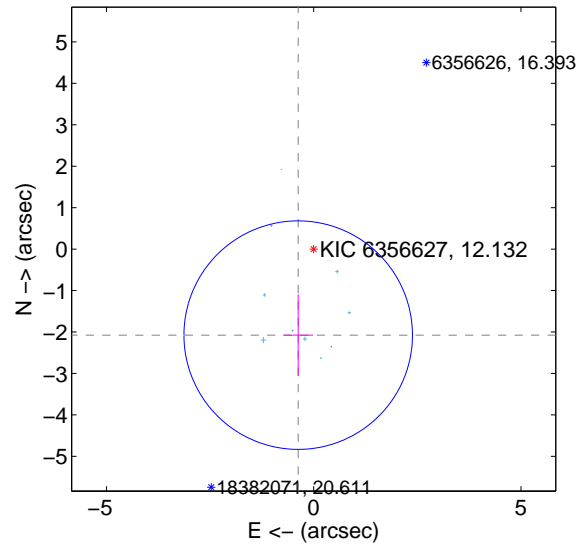
Supplemental centroid analysis for 006356627-02. Kepler magnitude: 12.13. Transit SNR 15.62

There are 9 quarters with good PRF difference image offsets

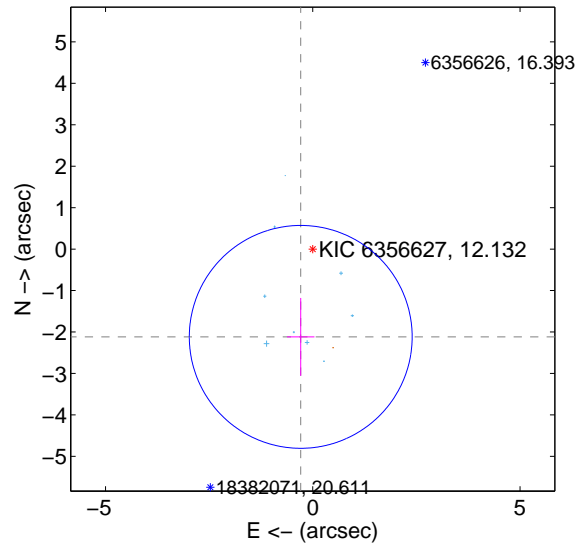
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.109 ± 0.919	2.30	0.374 ± 0.357	-2.076 ± 0.985
PRF-fit source offset from KIC position	2.138 ± 0.896	2.39	0.291 ± 0.331	-2.118 ± 0.939
photometric centroid source offset	0.18 ± 0.09	1.98	-0.03 ± 0.10	-0.18 ± 0.09

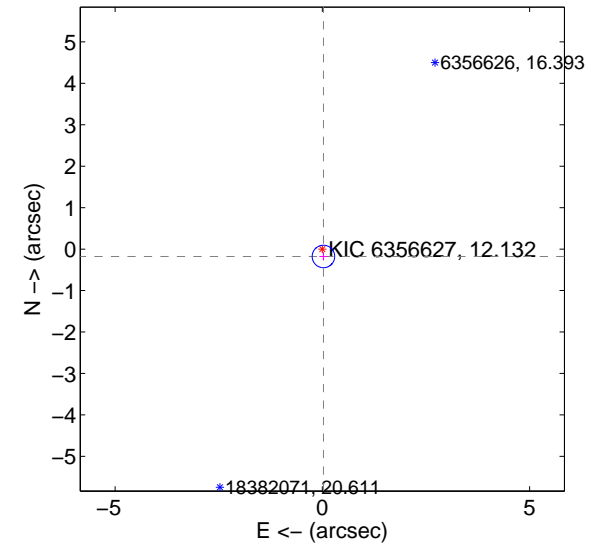
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

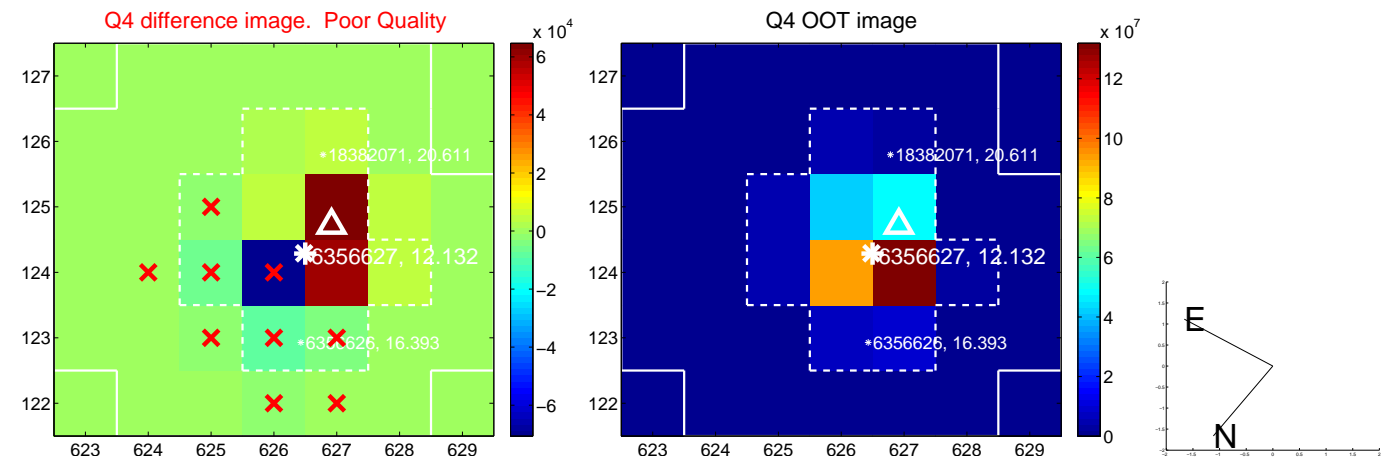
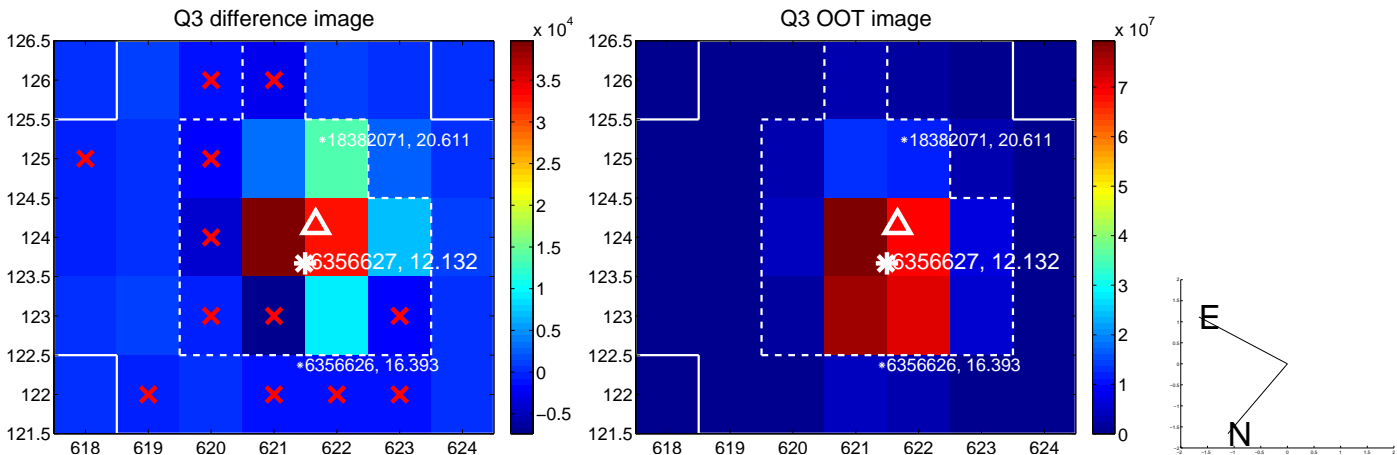
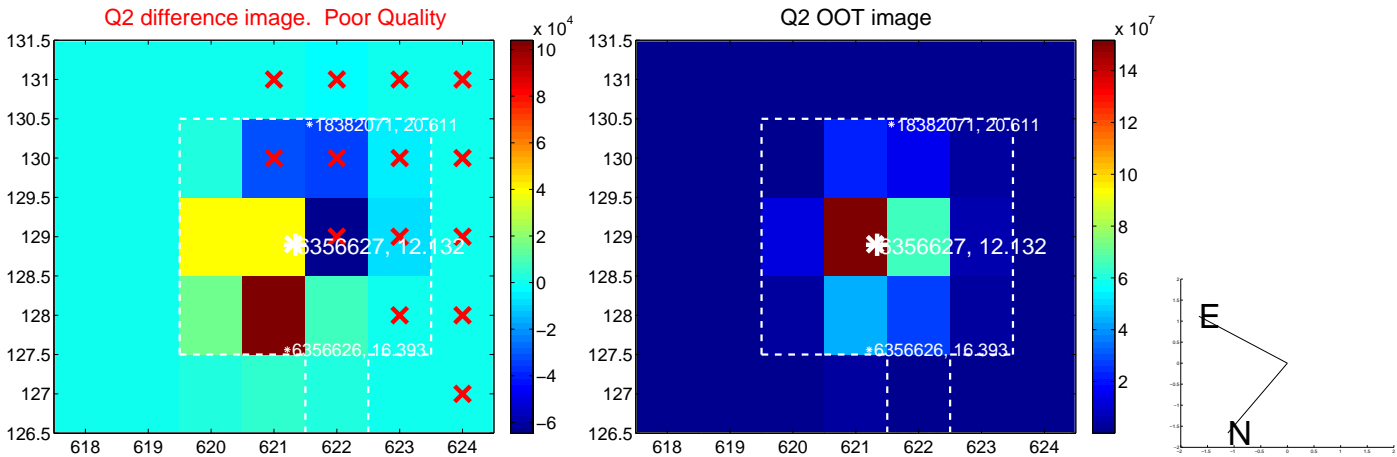
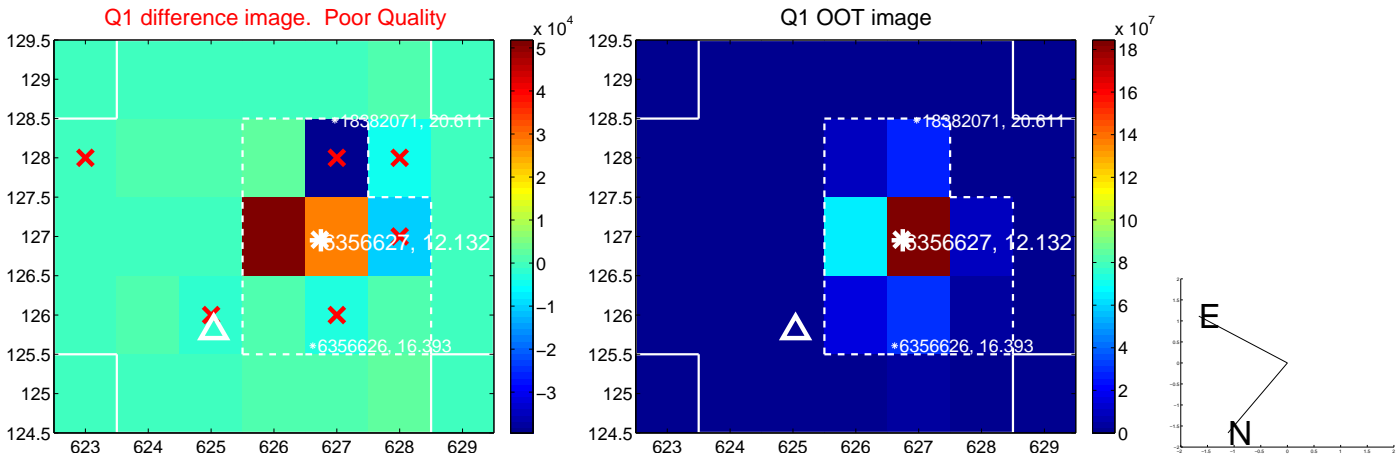


offset from photometric centroids

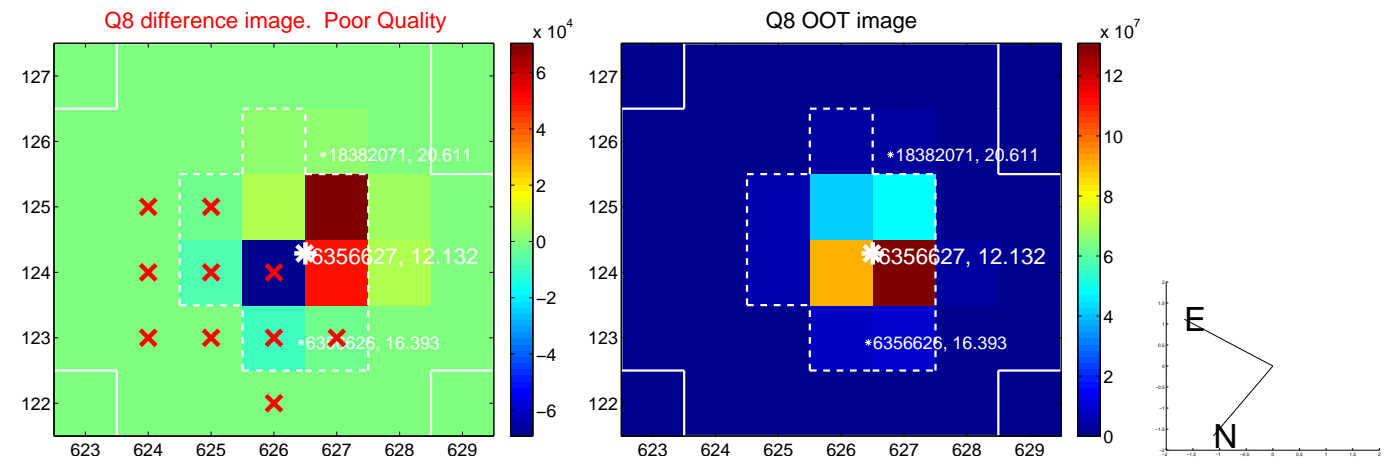
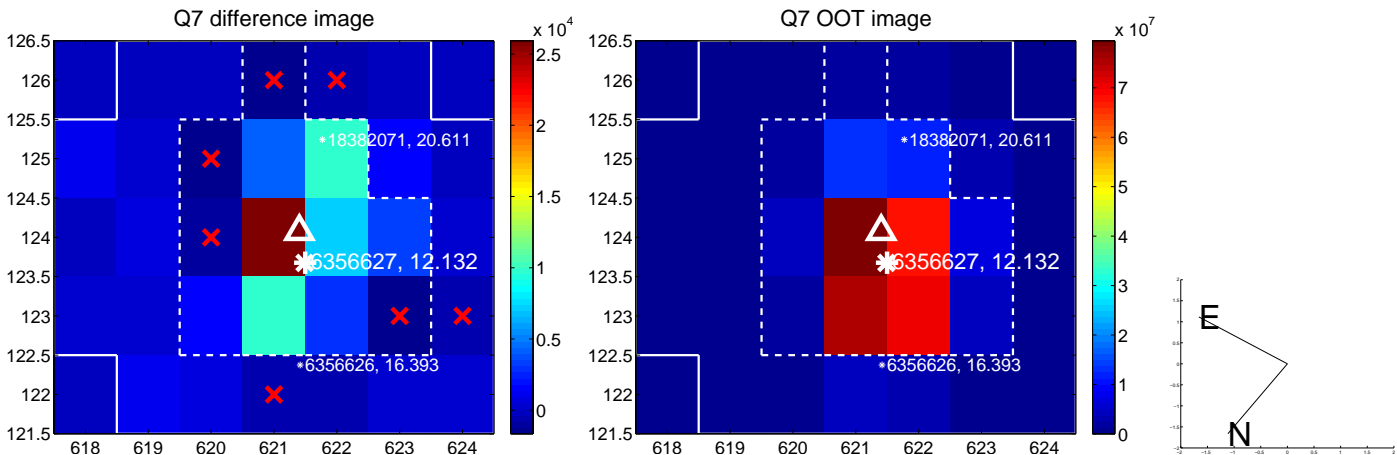
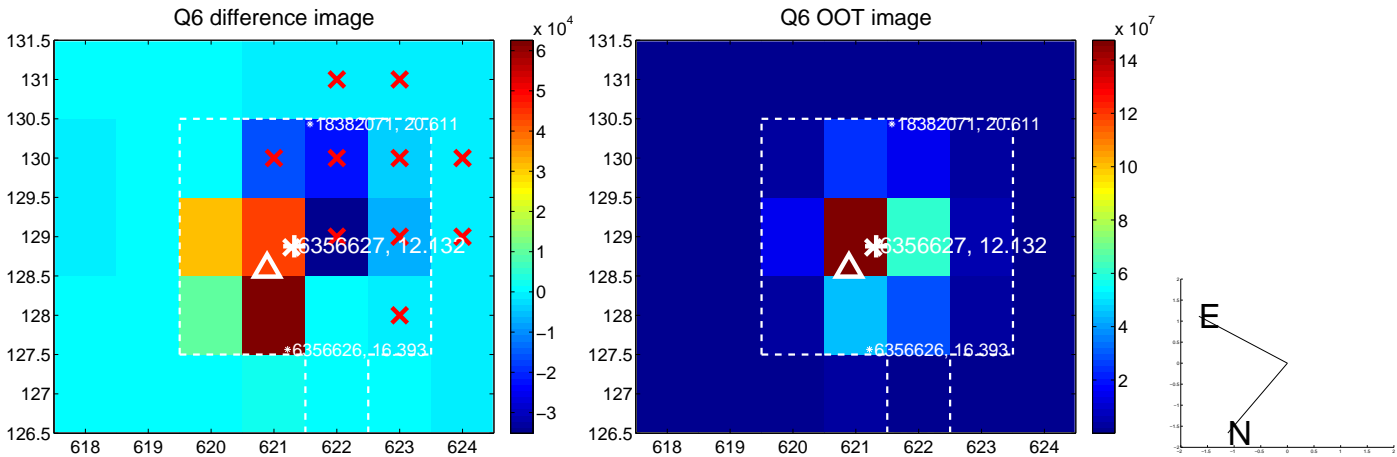
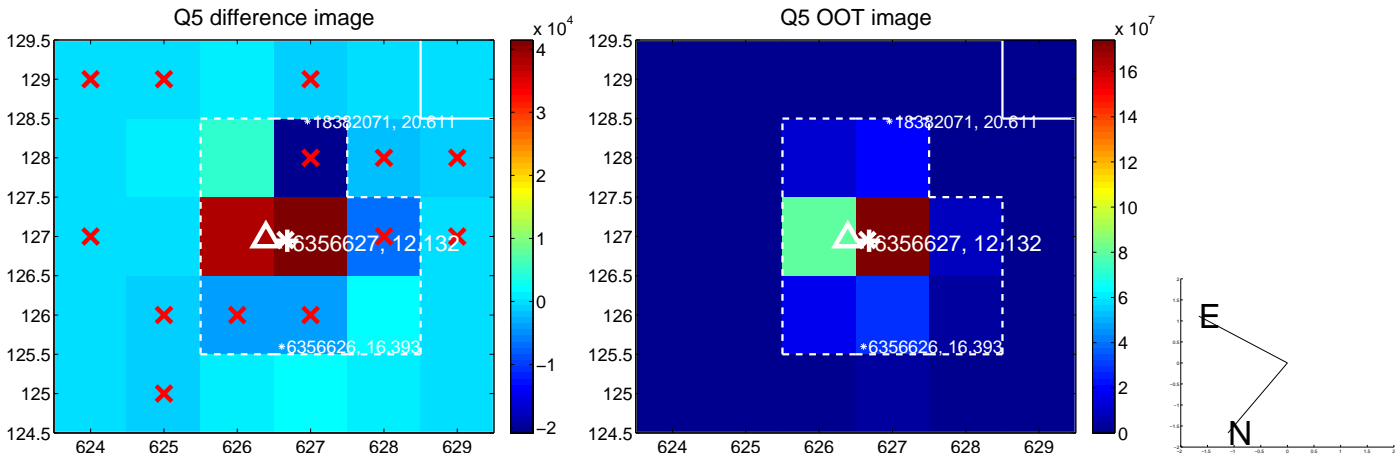


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

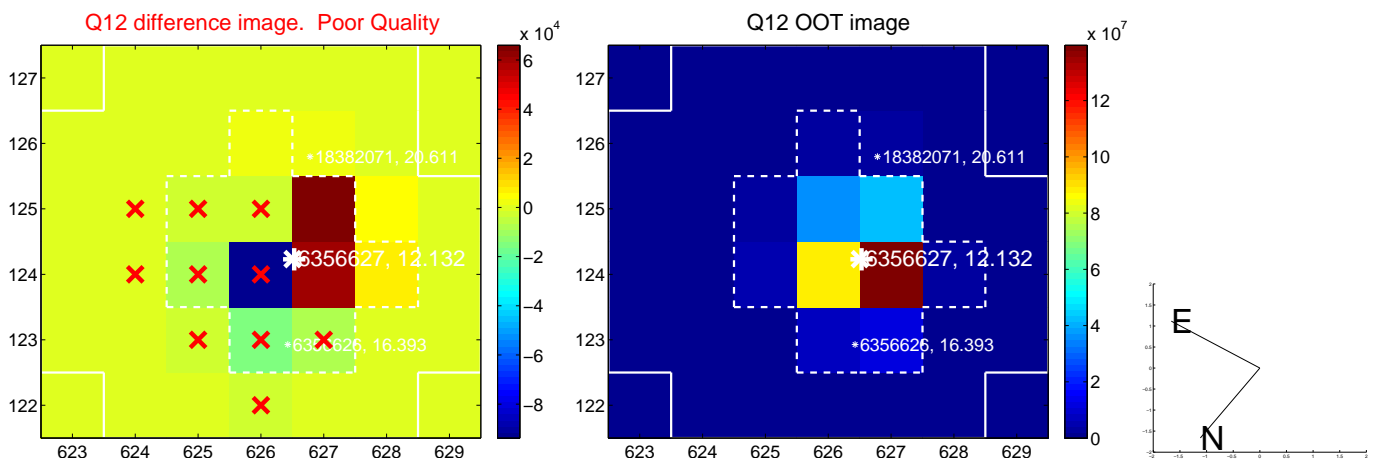
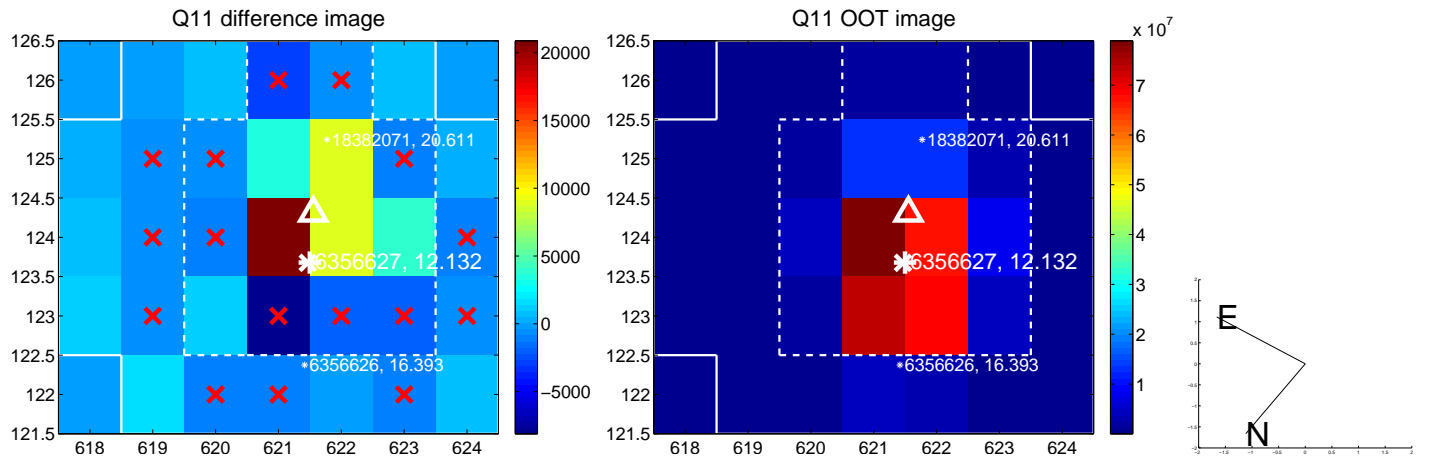
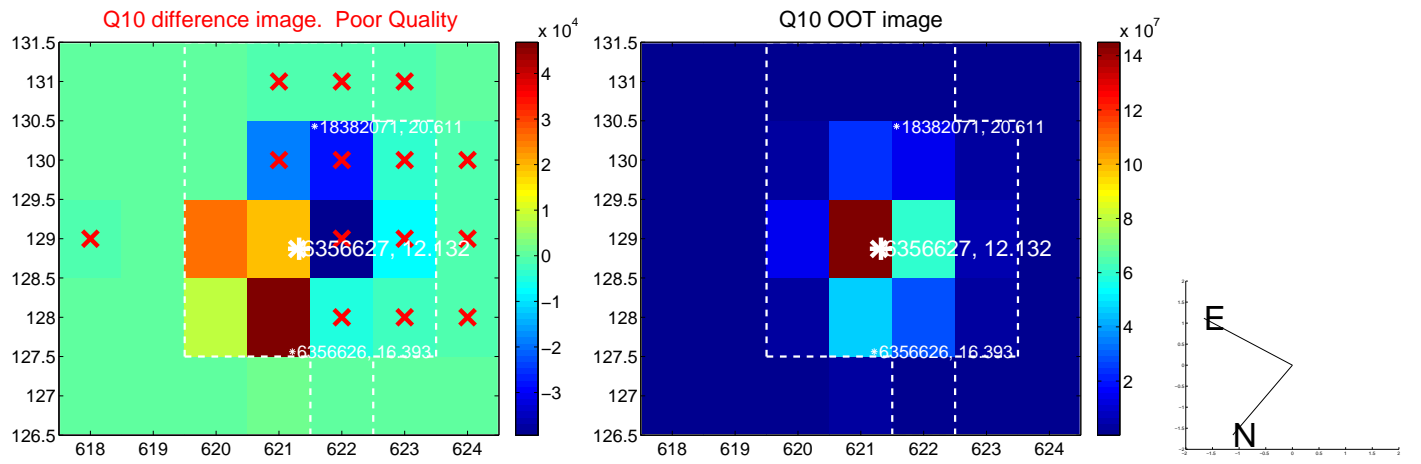
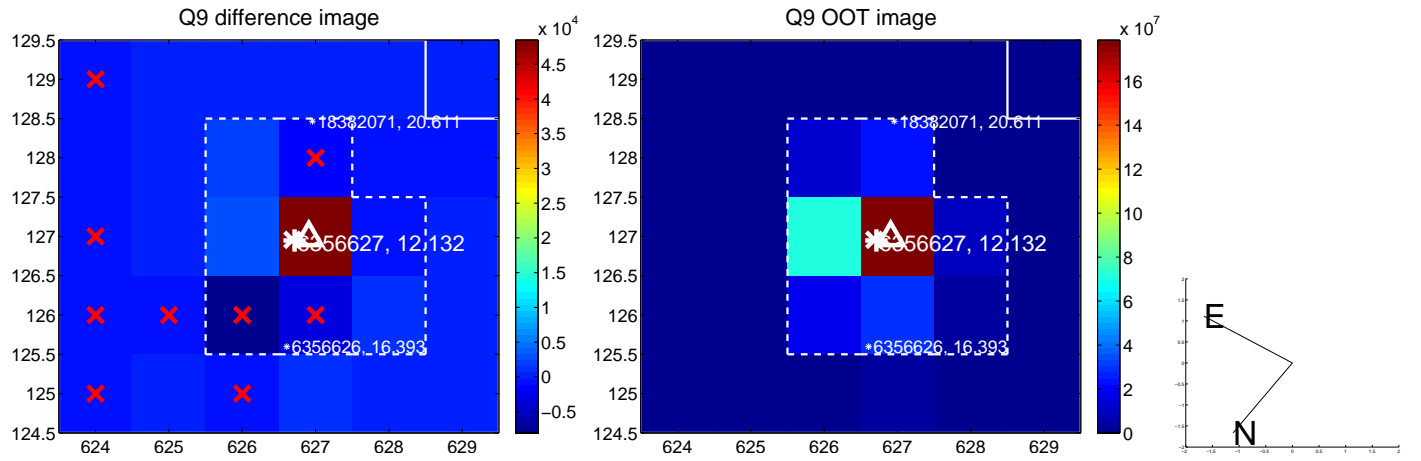
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



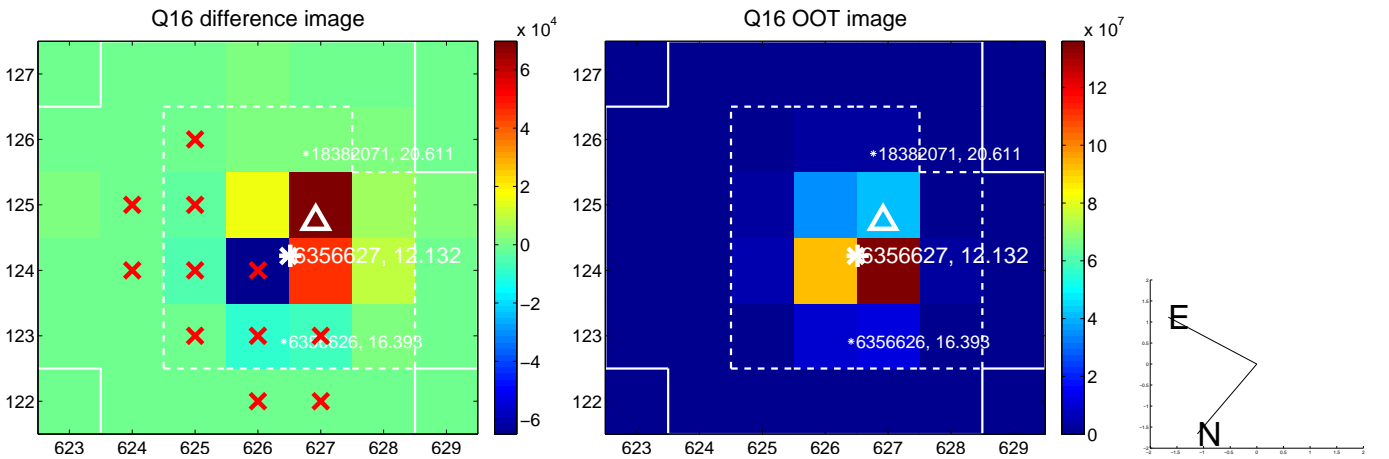
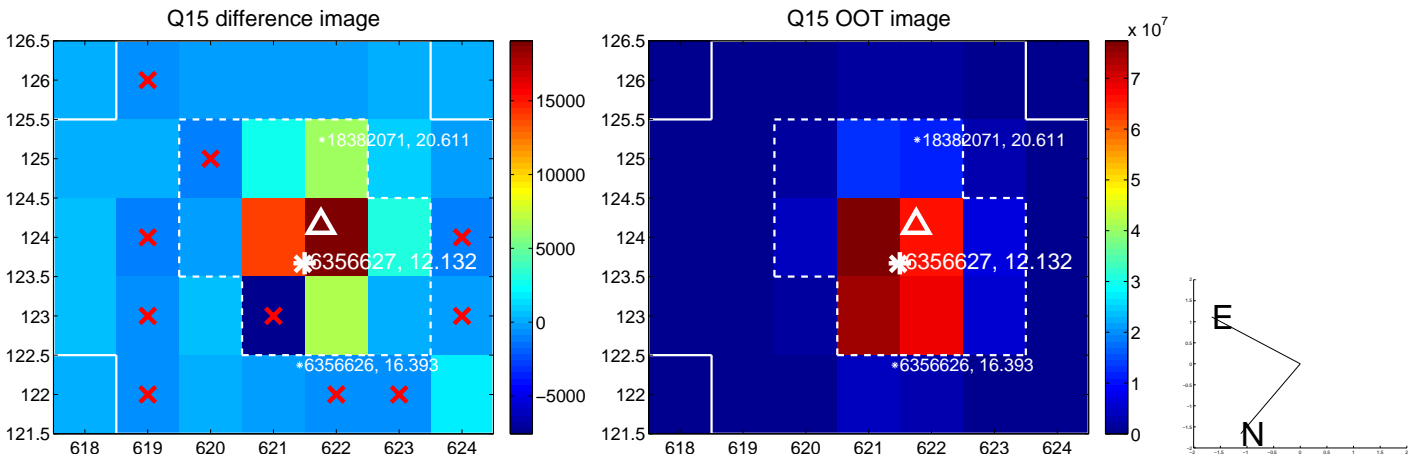
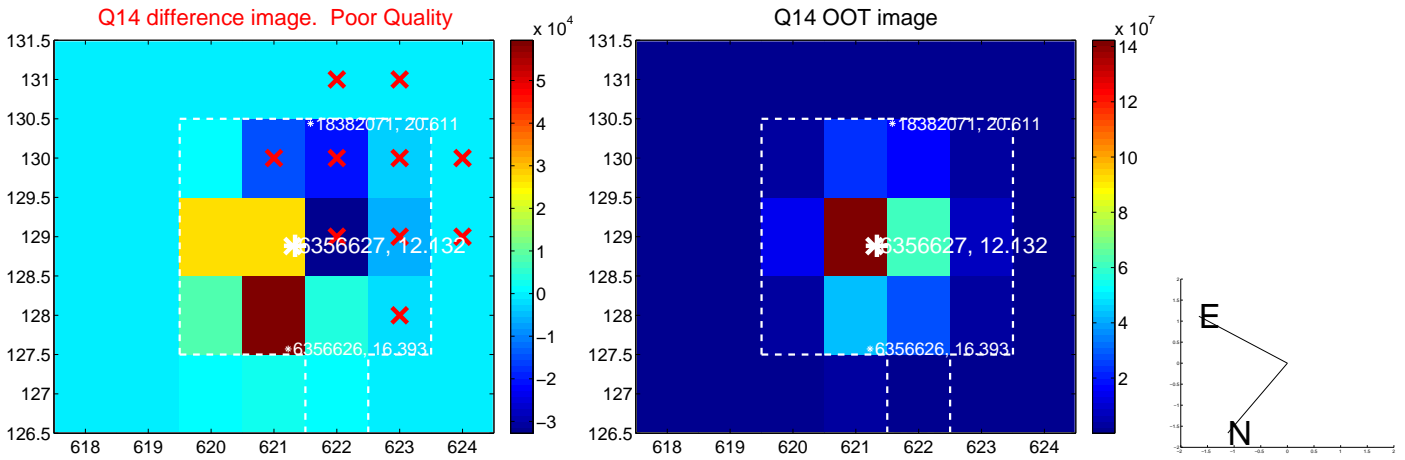
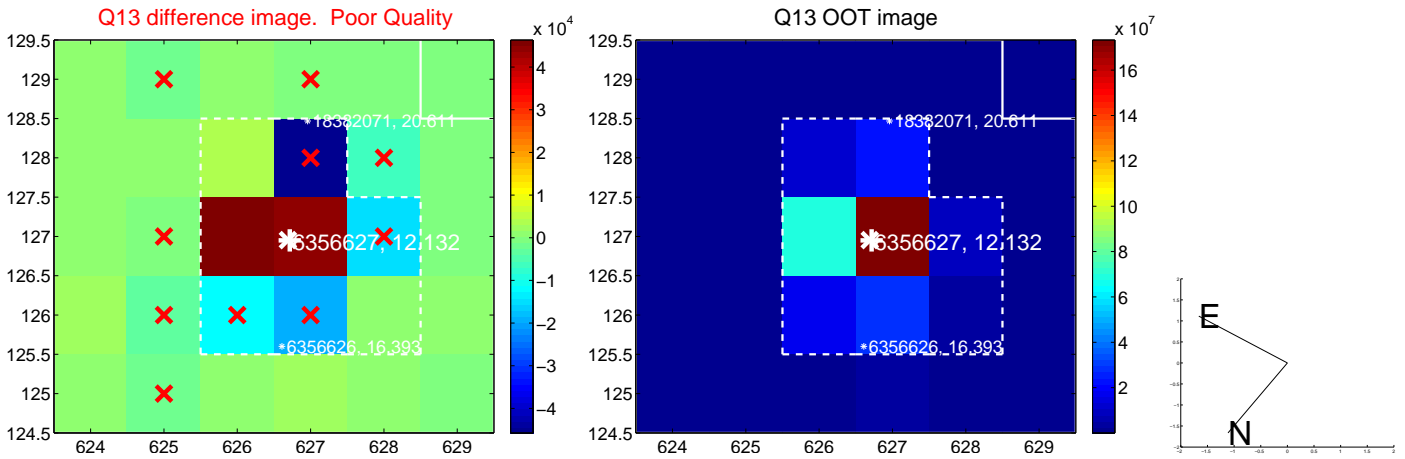
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

