

KIC 005896439

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})
005896439-01	OBS	No	0.971232	132.166123	11.7	3.321	10.1	4.2	1.06	6364	0.37	4234.16
005896439-02	OBS	No	1.457438	132.141921	36.0	5.456	9.6	9.9	1.06	6364	0.82	2464.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005896439-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005896439-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—SWEET_NTL—LPP_DV—LPP_ALT—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.

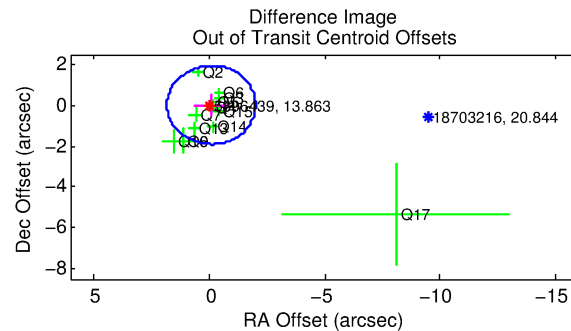
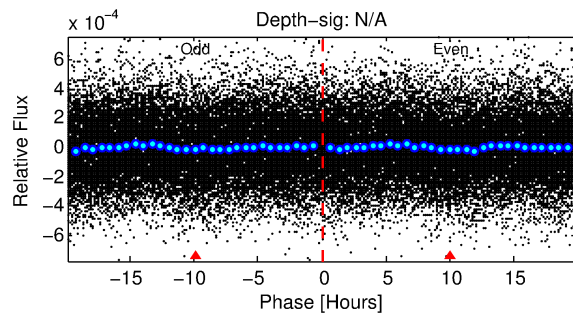
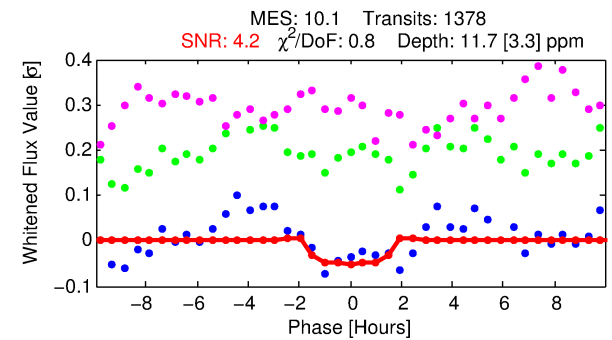
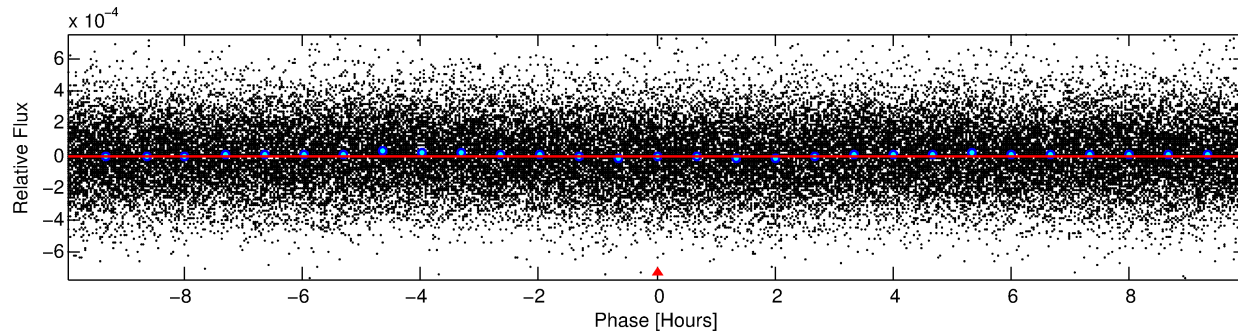
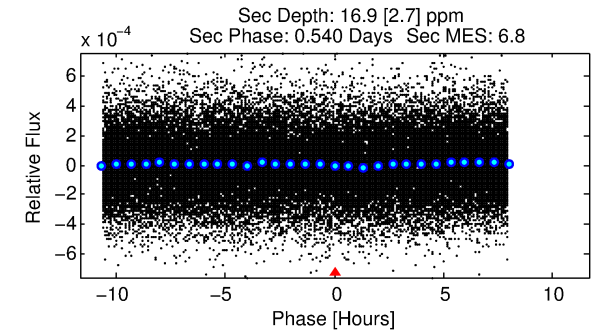
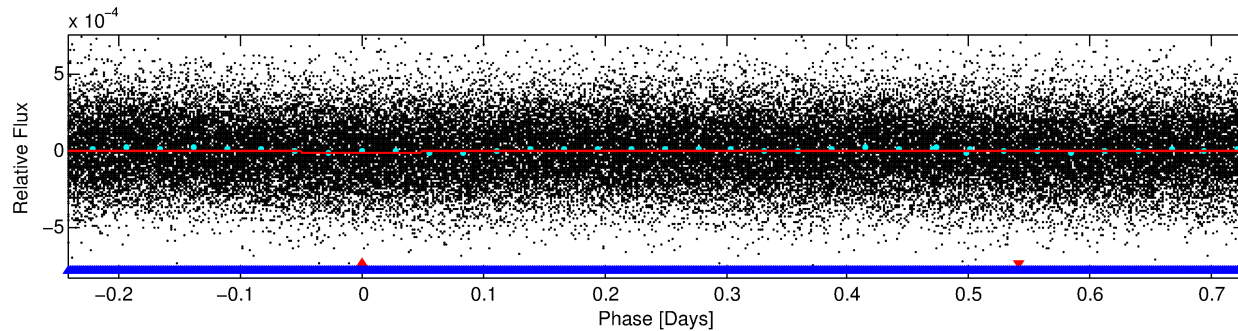
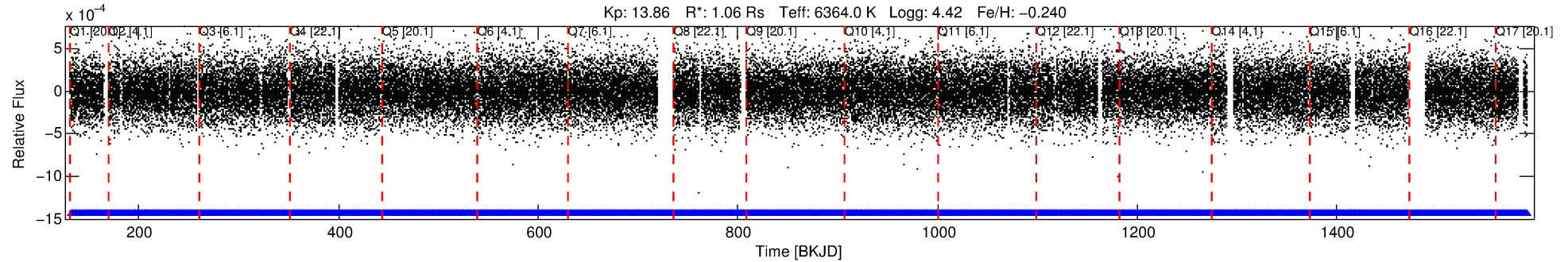
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005896439-01

No Significant Match Found

DV One-Page Summary

KIC: 5896439 Candidate: 1 of 2 Period: 0.971 d



DV Fit Results:

Period = 0.97123 [0.00003] d
Epoch = 132.1661 [0.0089] BKJD
Rp/R* = 0.0032 [0.0018]
a/R* = 2.11 [4.65]
b = 0.46 [4.84]
Seff = 4234.16 [1742.18]
Teq = 2057 [212] K
Rp = 0.37 [0.24] Re
a = 0.0197 [0.0054] AU
Ag = 26.12 [31.05] [0.81σ]
Teffp = 7190 [2031] K [2.51σ]

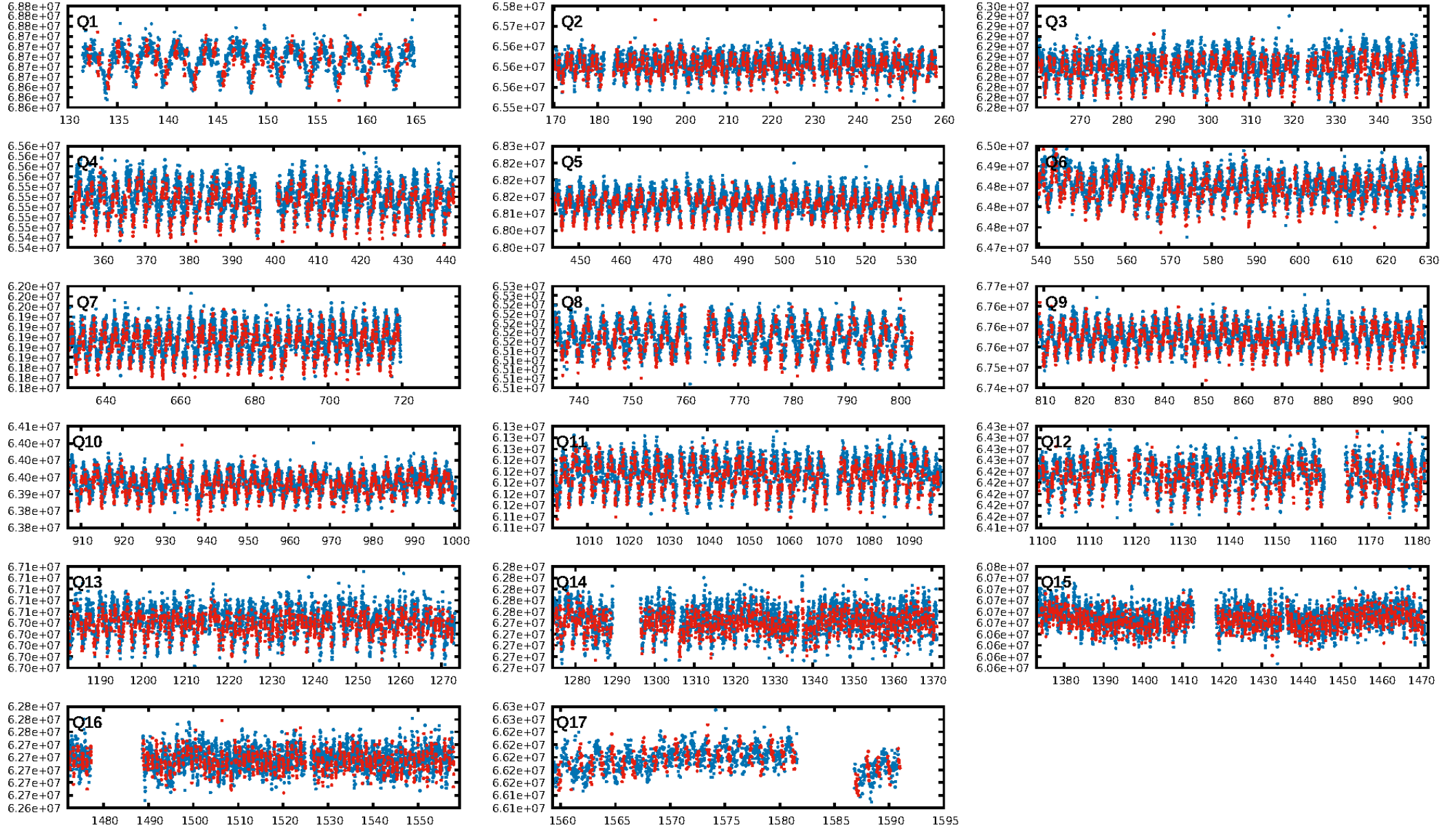
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 93.2% [1.83σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.26e-19
RollingBand-fgt: 1.00 [1316/1316]
GhostDiagnostic-chr: 0.6462
Centroid-sig: N/A
Centroid-so: 1.973 arcsec [0.95σ]
OotOffset-rm: 0.100 arcsec [0.16σ]
KicOffset-rm: 0.173 arcsec [0.32σ]
OotOffset-st: 3/3/2/4 [12]
KicOffset-st: 3/3/2/4 [12]
DiffImageQuality-fgm: 0.92 [11/12]
DiffImageOverlap-fno: 1.00 [17/17]

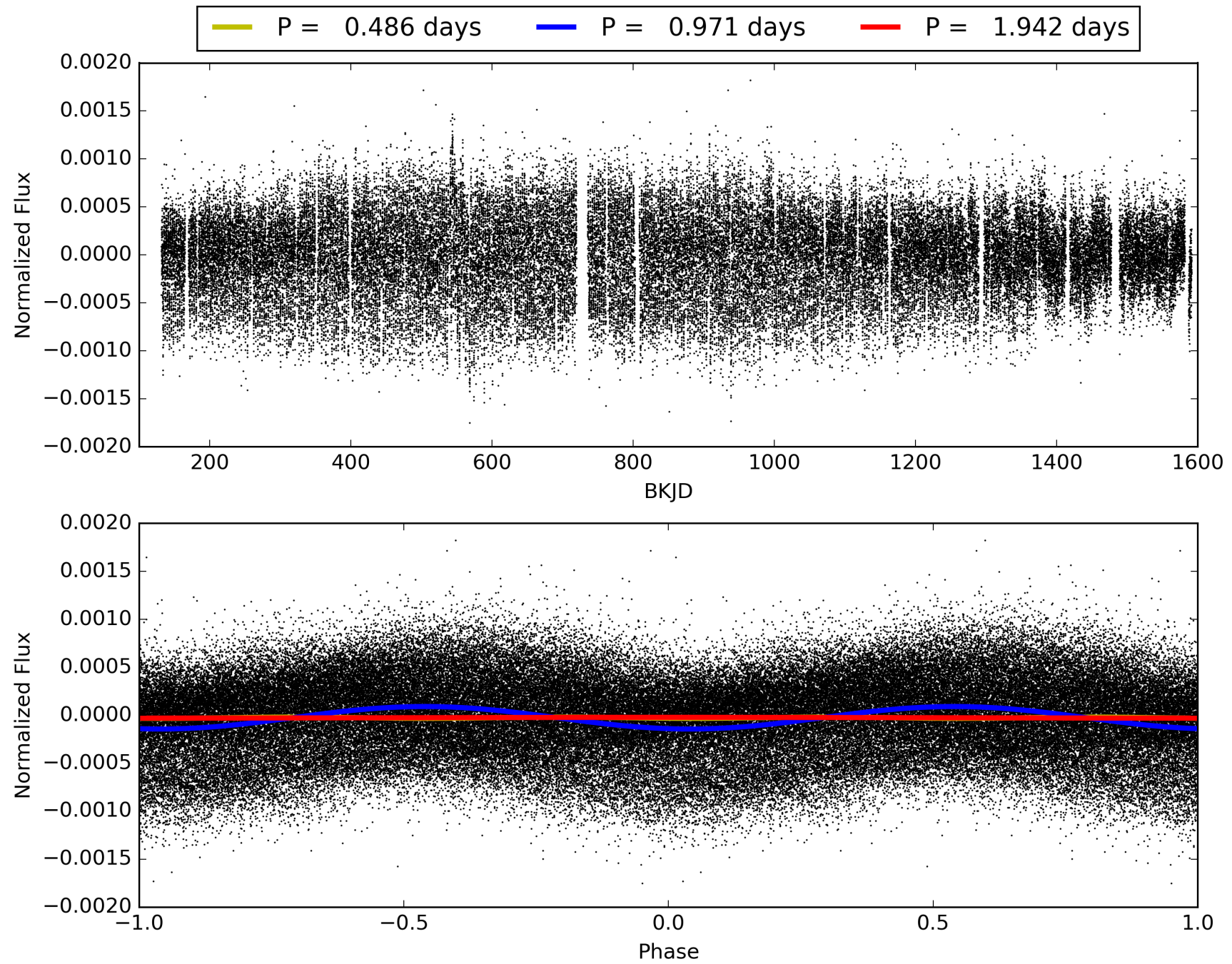
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:19:48 Z

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

TCE 005896439-01, PDC Light Curves

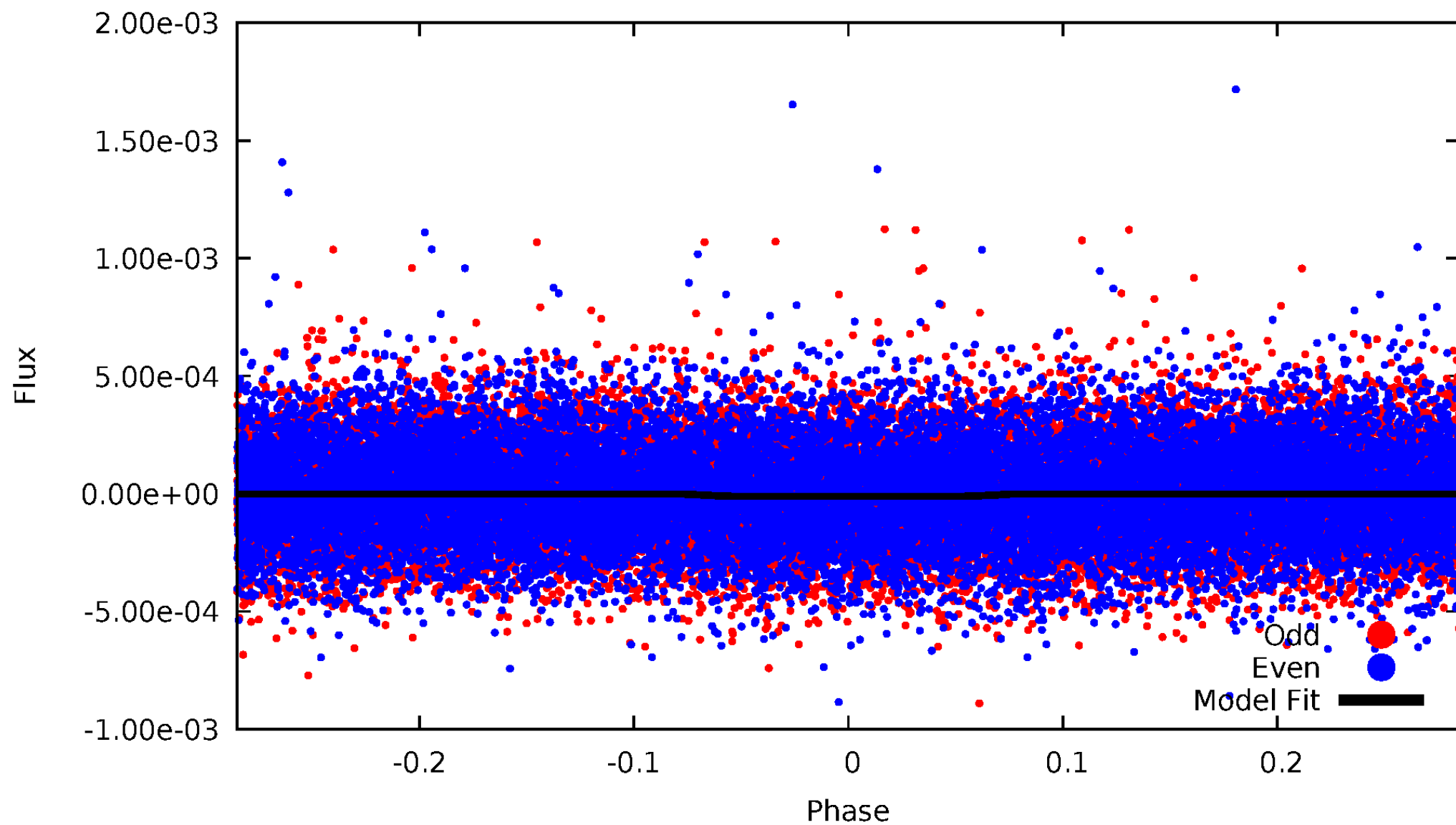


TCE 005896439-01



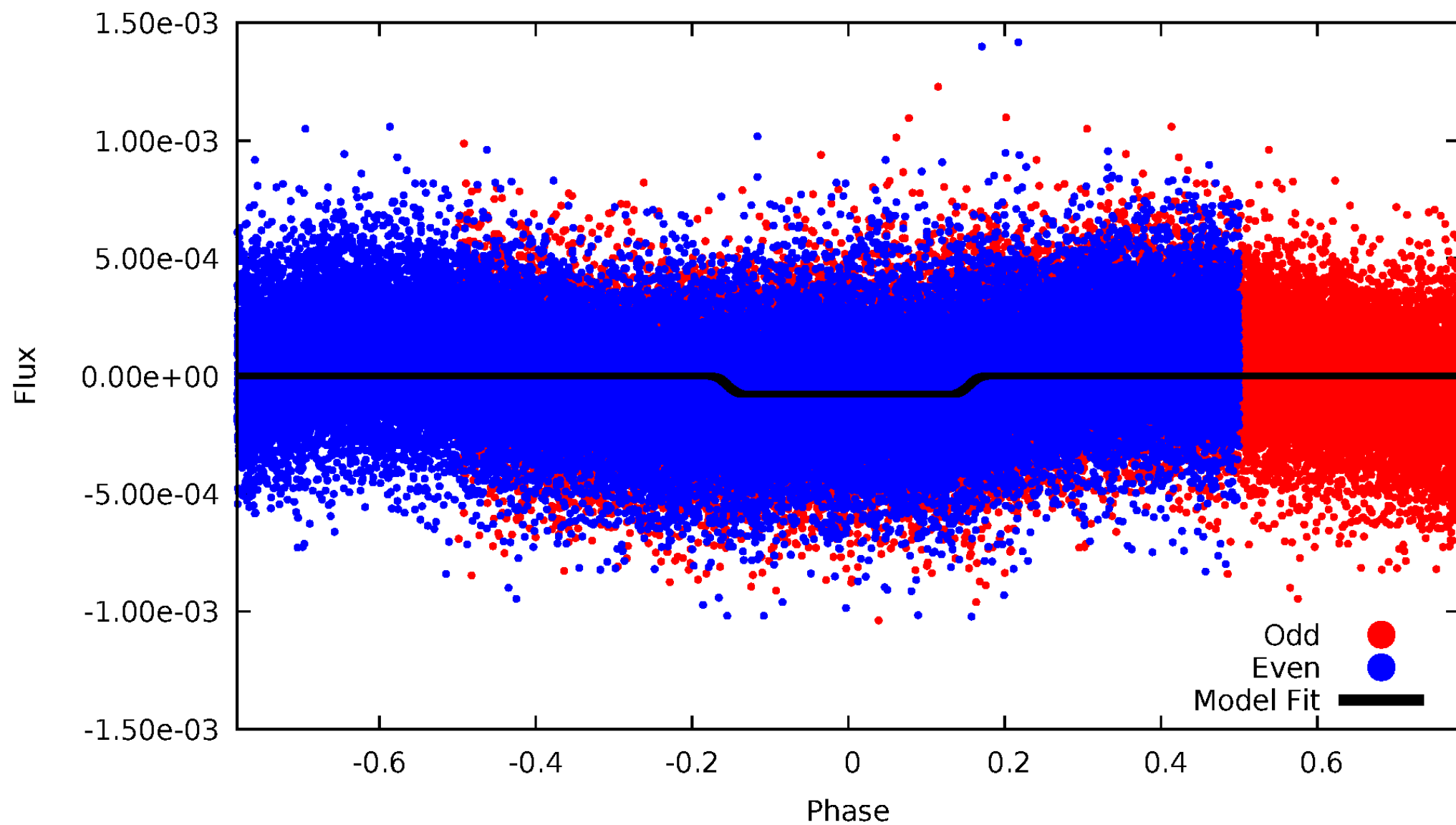
DV Odd/Even

TCE 005896439-01



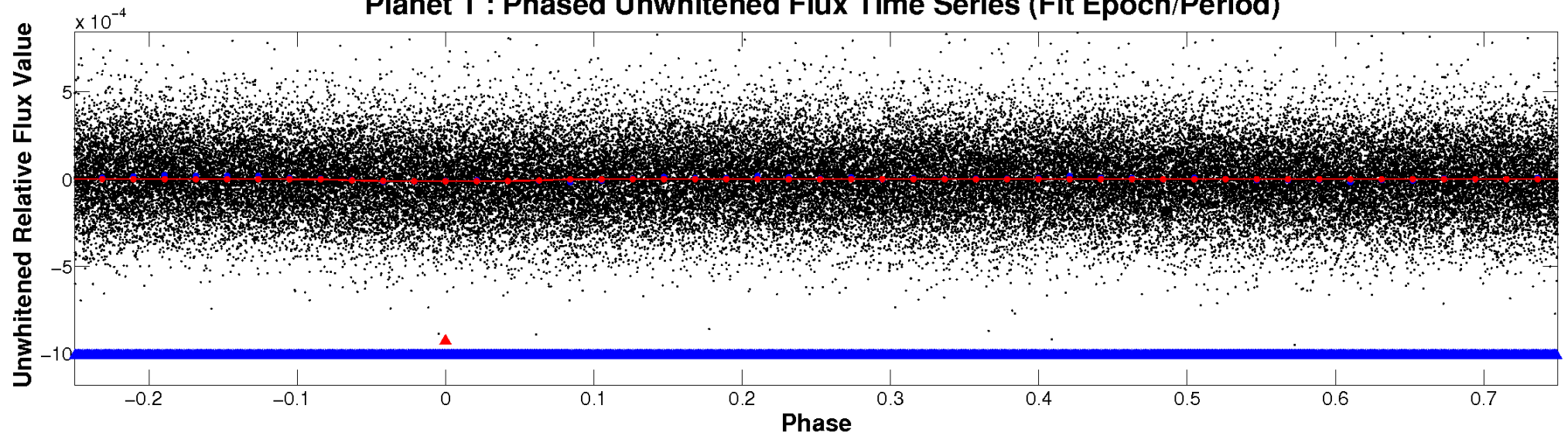
ALT Odd/Even

TCE 005896439-01

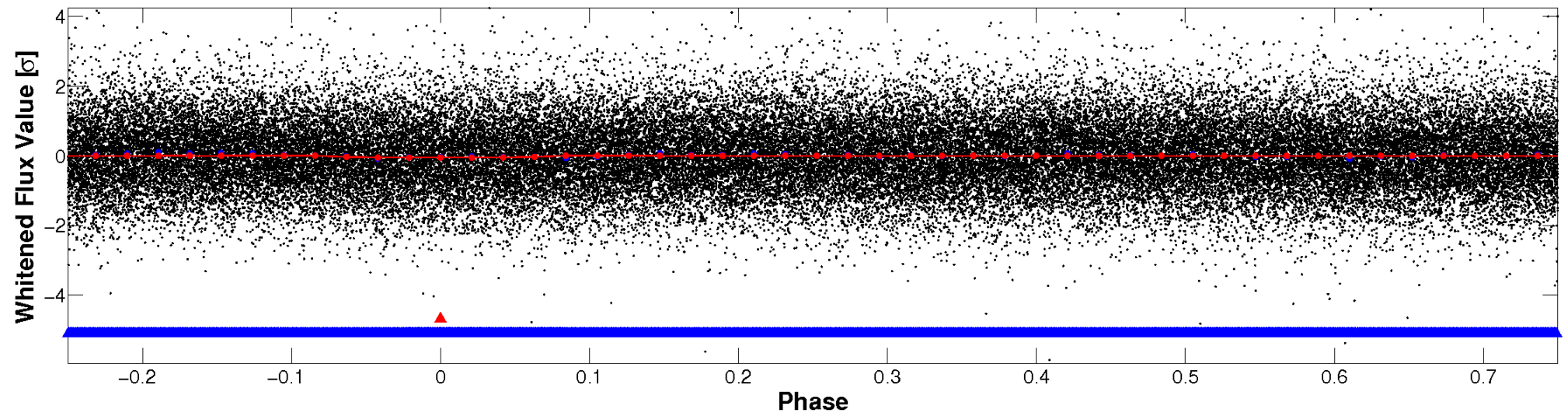


Non-Whitened Vs. Whitened Light Curve

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

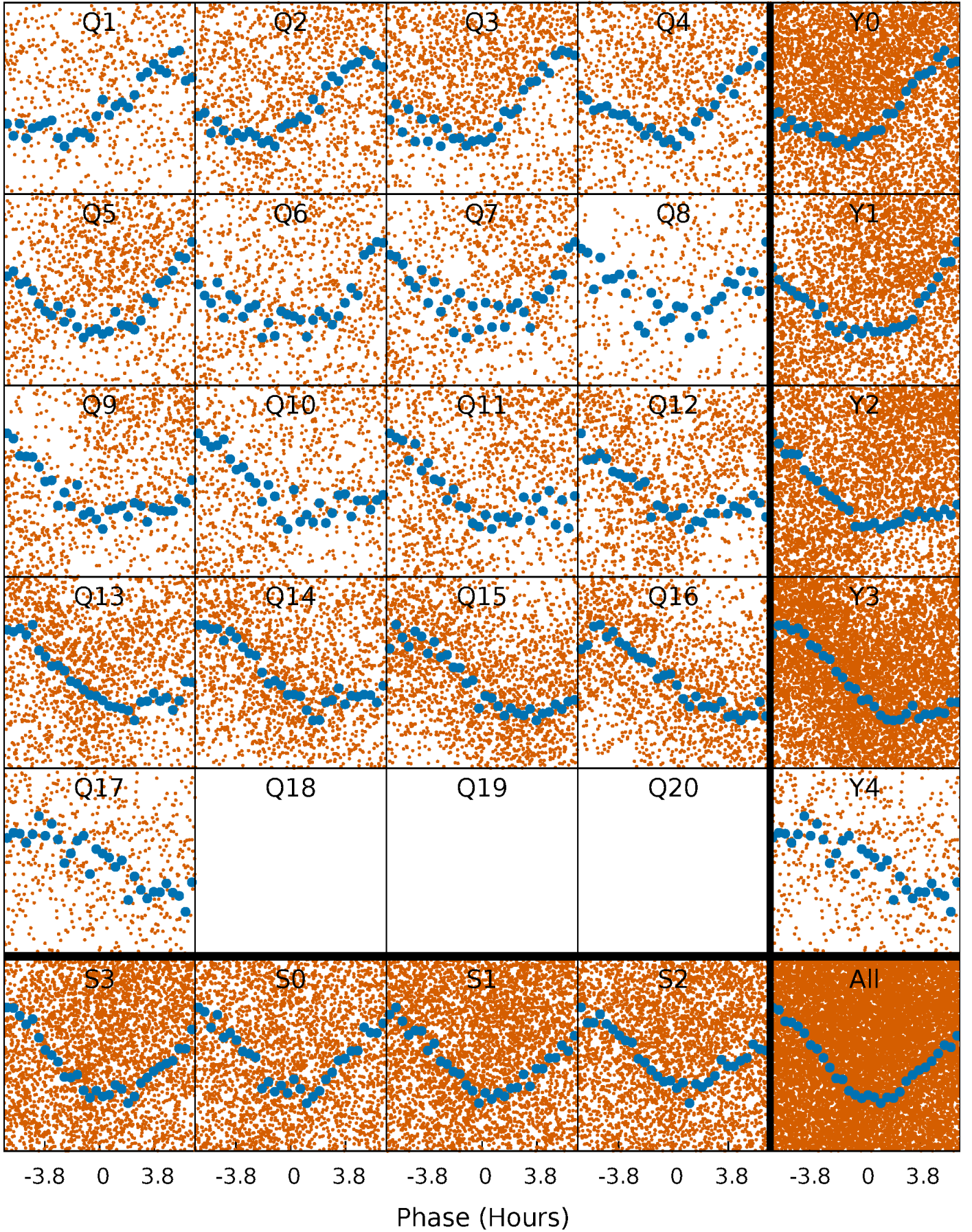


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



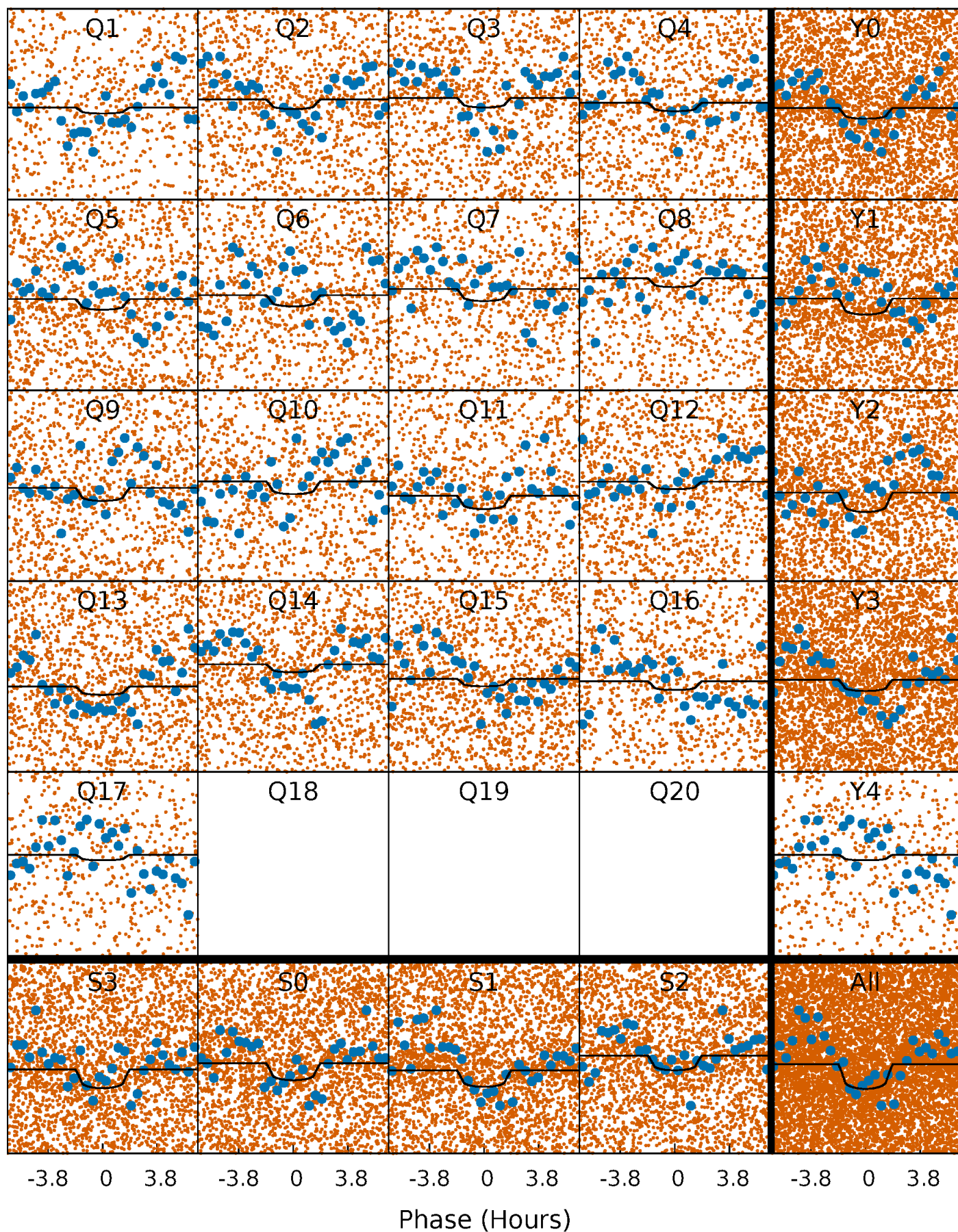
PDC Quarter-Phased Transit Curves

TCE 005896439-01 P= 0.971232 Days $T_0=132.166123$ (BKJD)



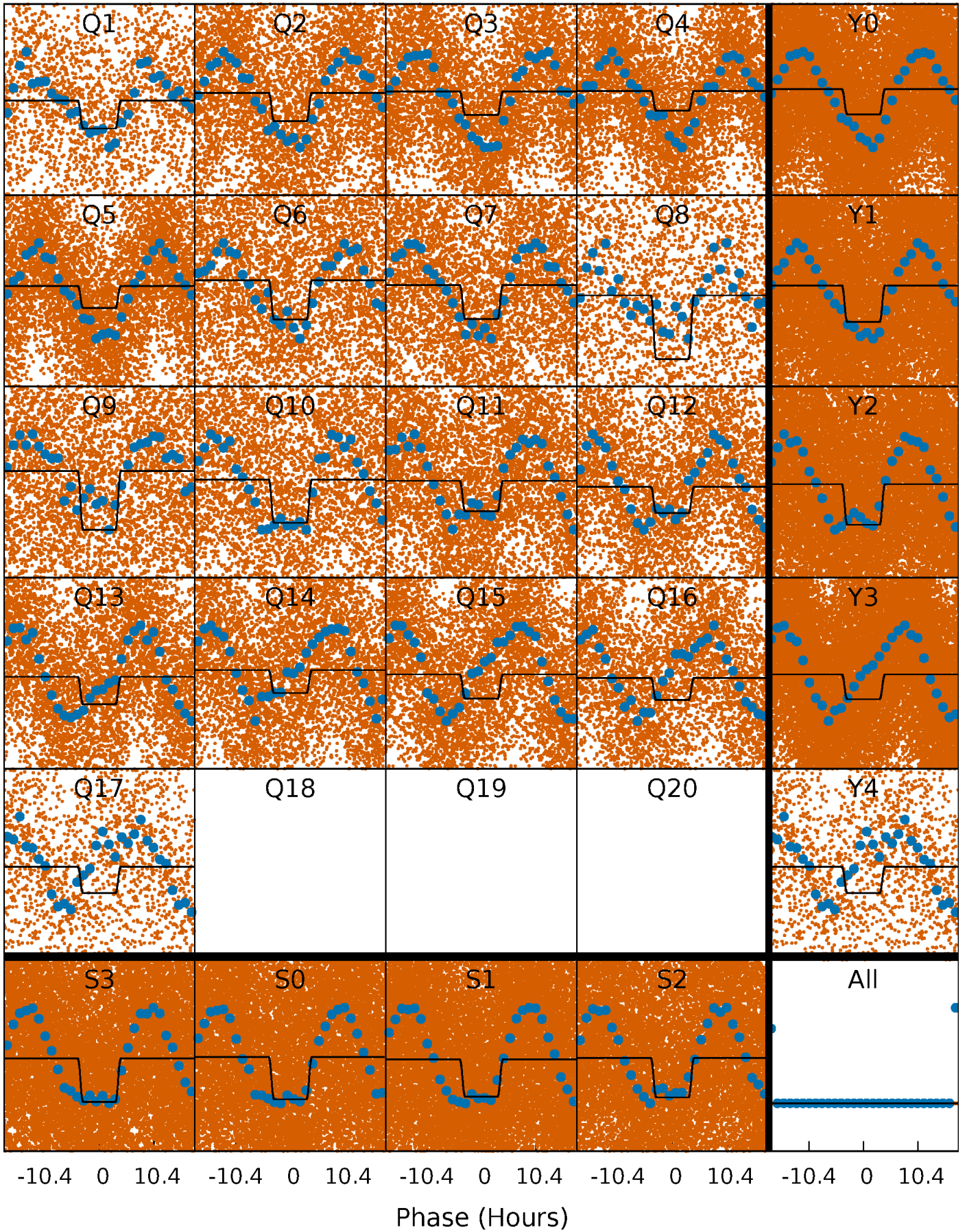
DV Quarter-Phased Transit Curves

TCE 005896439-01 P= 0.971232 Days $T_0=132.166123$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

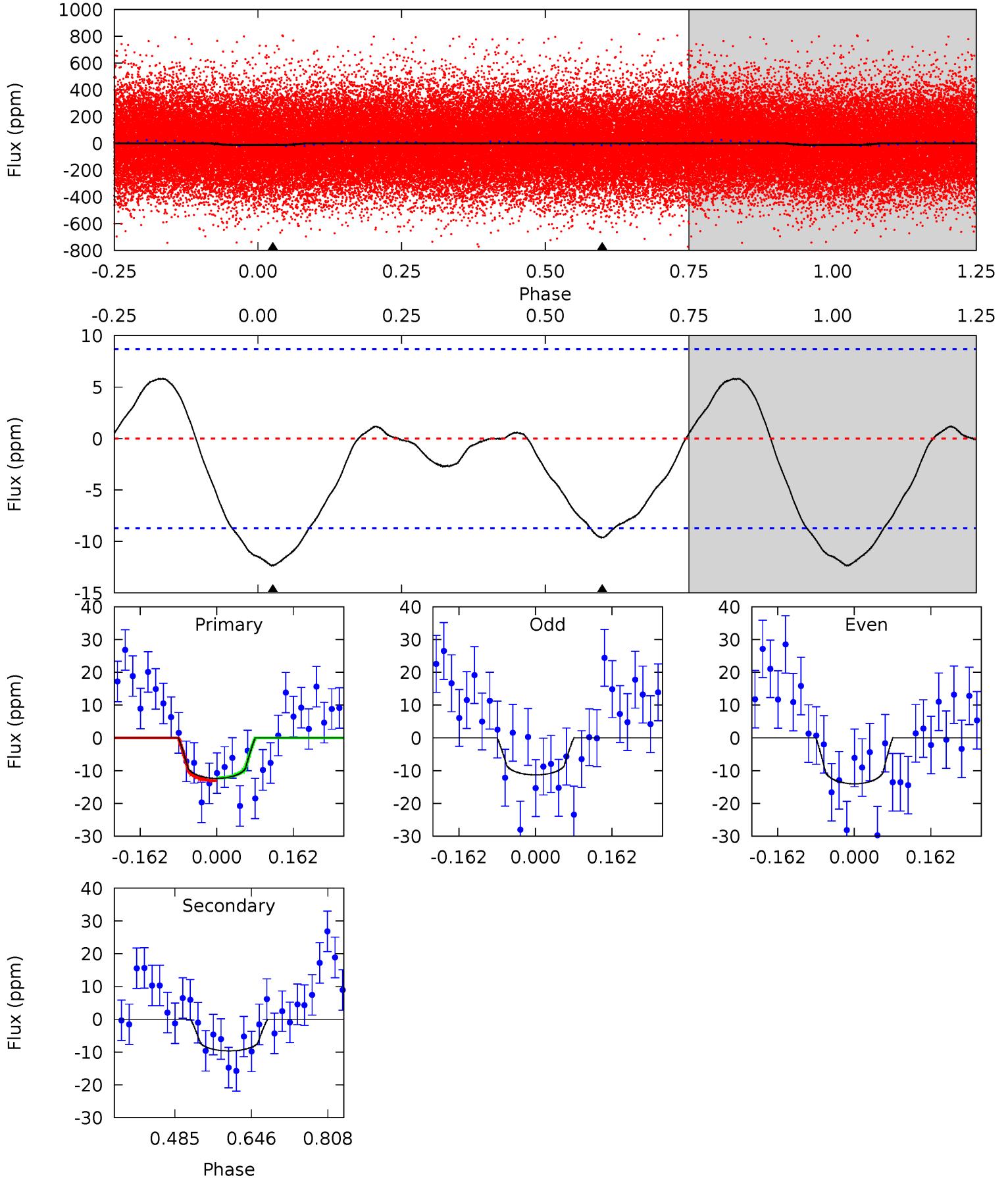
TCE 005896439-01 P= 0.971672 Days $T_0=131.985528$ (BKJD)



DV Model-Shift Uniqueness Test

005896439-01, P = 0.971232 Days, E = 131.194891 Days

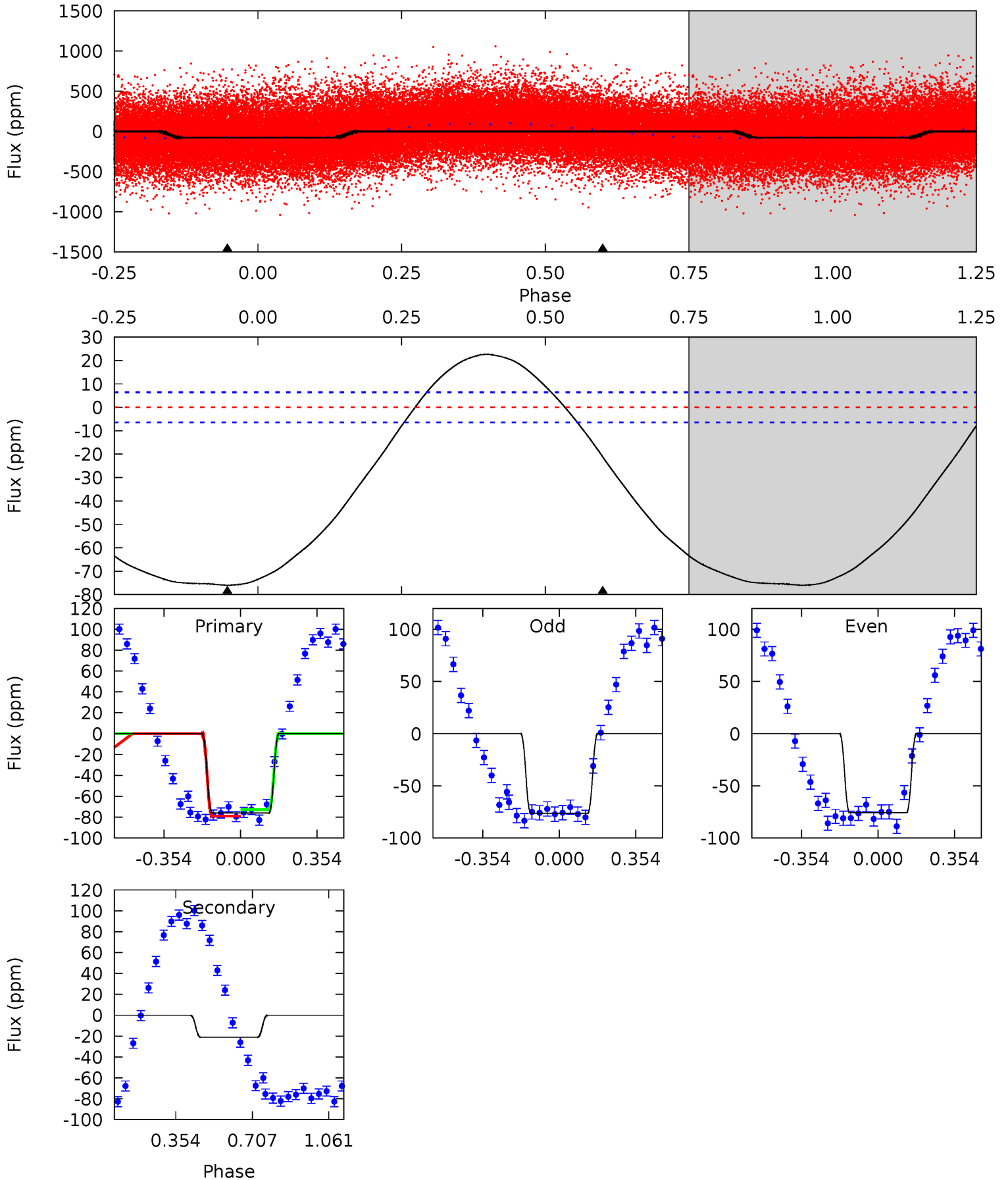
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.34	4.94	0	0	4.46	1.40	1.35	6.34	6.34	4.94	4.94	0.70	0.99	0.32	0.22



Alt Model-Shift Uniqueness Test

005896439-01, P = 0.971672 Days, E = 131.013856 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.5	14.0	0	0	4.29	0.93	6.23	50.5	50.5	14.0	14.0	0.21	0.87	0.23	2.02



Stellar Parameters For KIC 005896439

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6364^{+150}_{-207}	$4.423^{+0.070}_{-0.210}$	$-0.240^{+0.250}_{-0.300}$	$1.057^{+0.349}_{-0.116}$	$1.075^{+0.158}_{-0.129}$	$1.280^{+0.381}_{-0.696}$
	+2%/-3%	+2%/-5%	+104%/-125%	+33%/-11%	+15%/-12%	+30%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005896439-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10 ± 2	$0.40^{+0.24}_{-0.20}$	2914^{+235}_{-132}	6006^{+2911}_{-1163}	12^{+34}_{-8}
Alt.	-21 ± 2	$1.06^{+0.27}_{-0.24}$	2905^{+226}_{-135}	4630^{+531}_{-376}	$3.960^{+2.619}_{-1.420}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

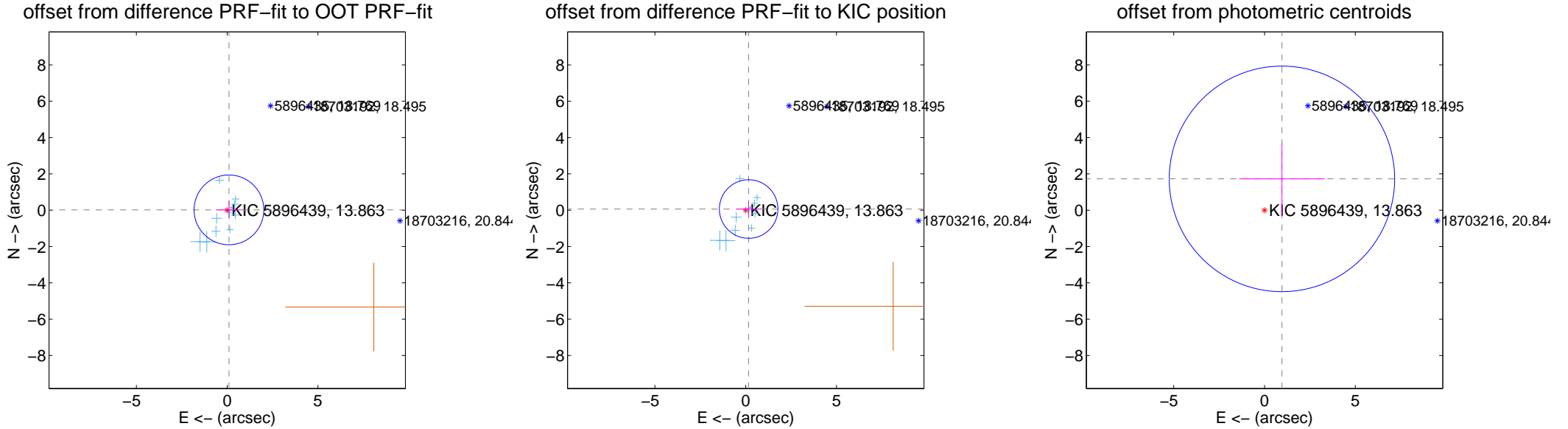
DV Centroid Data

Supplemental centroid analysis for 005896439-01. Kepler magnitude: 13.86. Transit SNR 4.23

There are 11 quarters with good PRF difference image offsets

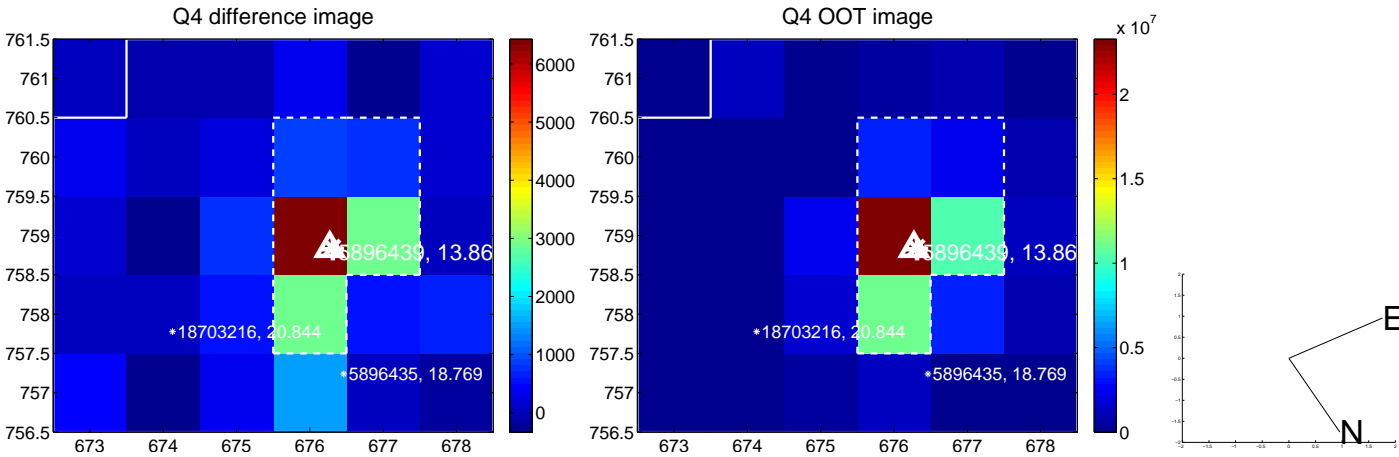
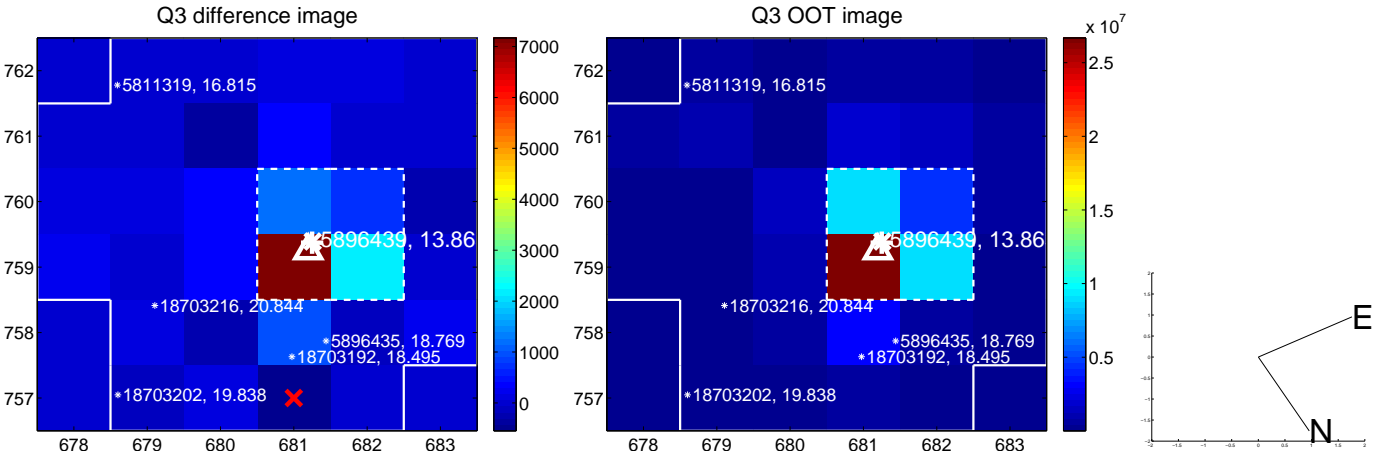
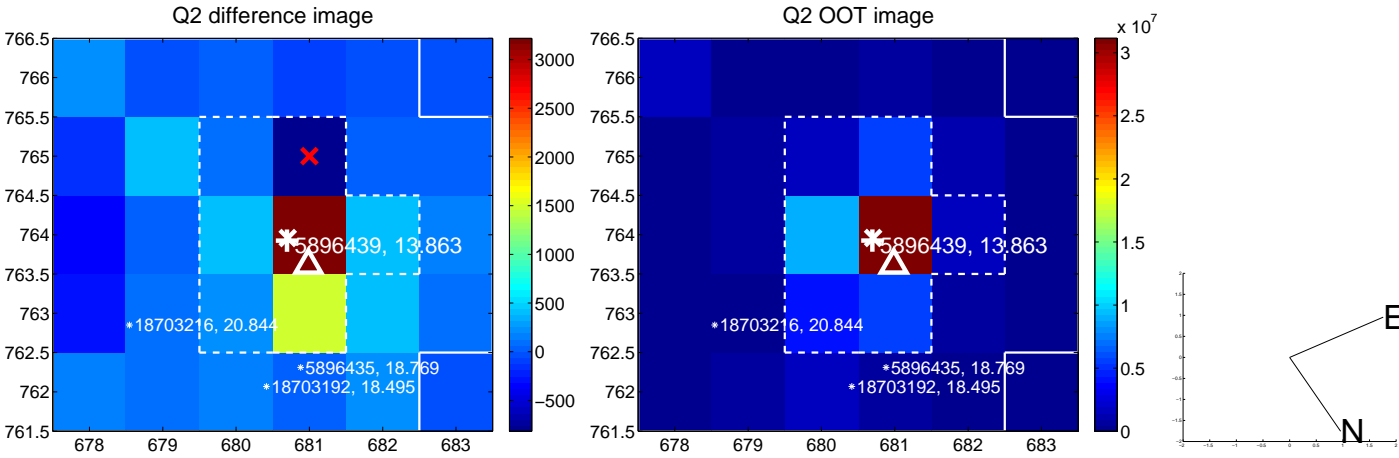
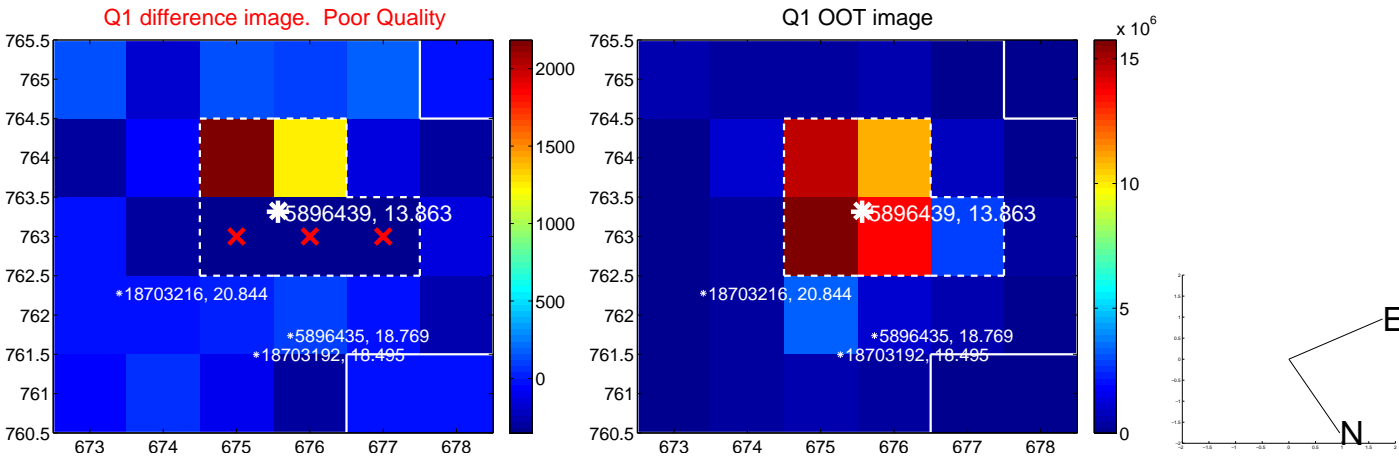
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.100 ± 0.640	0.16	-0.098 ± 0.710	0.018 ± 0.478
PRF-fit source offset from KIC position	0.173 ± 0.537	0.32	-0.160 ± 0.670	0.065 ± 0.443
photometric centroid source offset	1.97 ± 2.07	0.95	-0.96 ± 2.35	1.72 ± 1.97

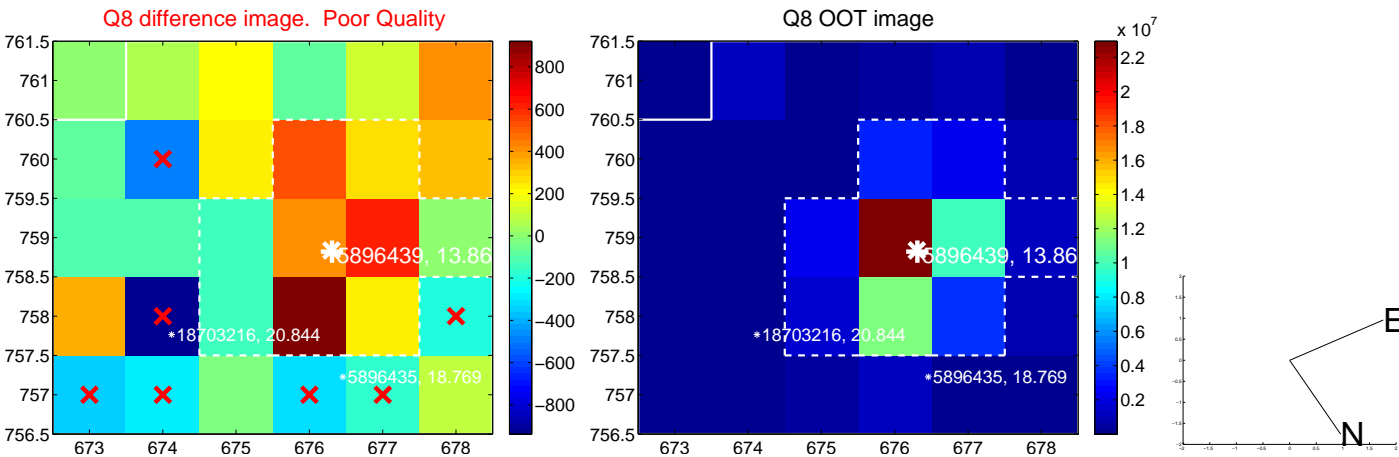
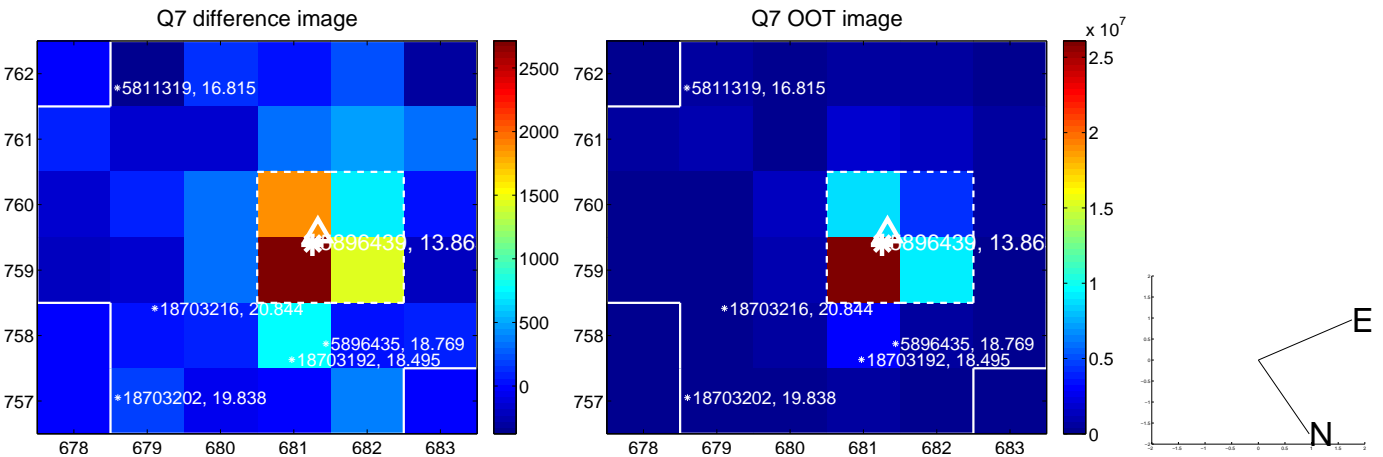
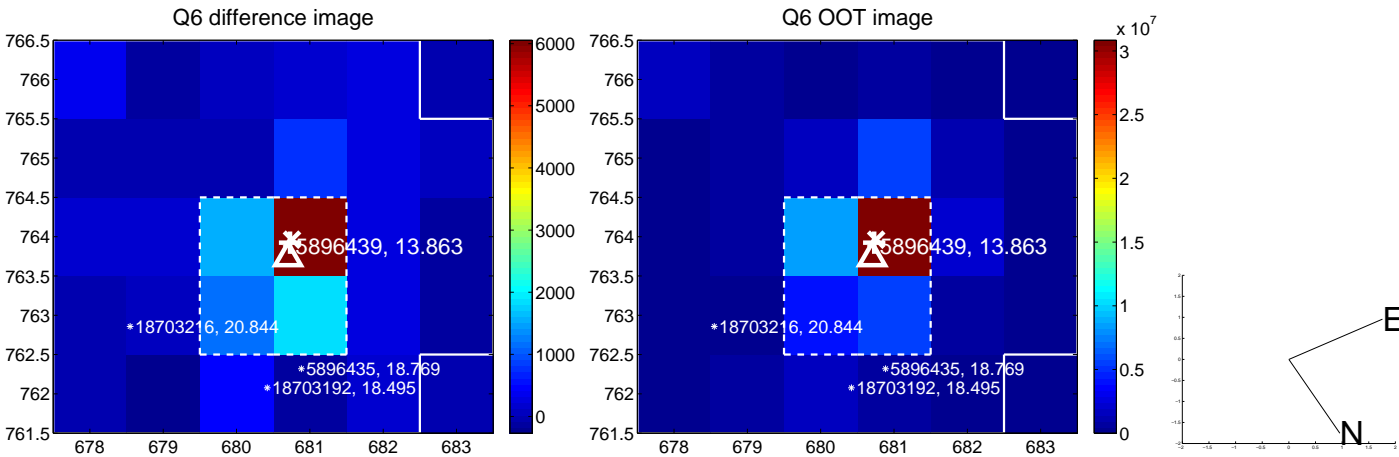
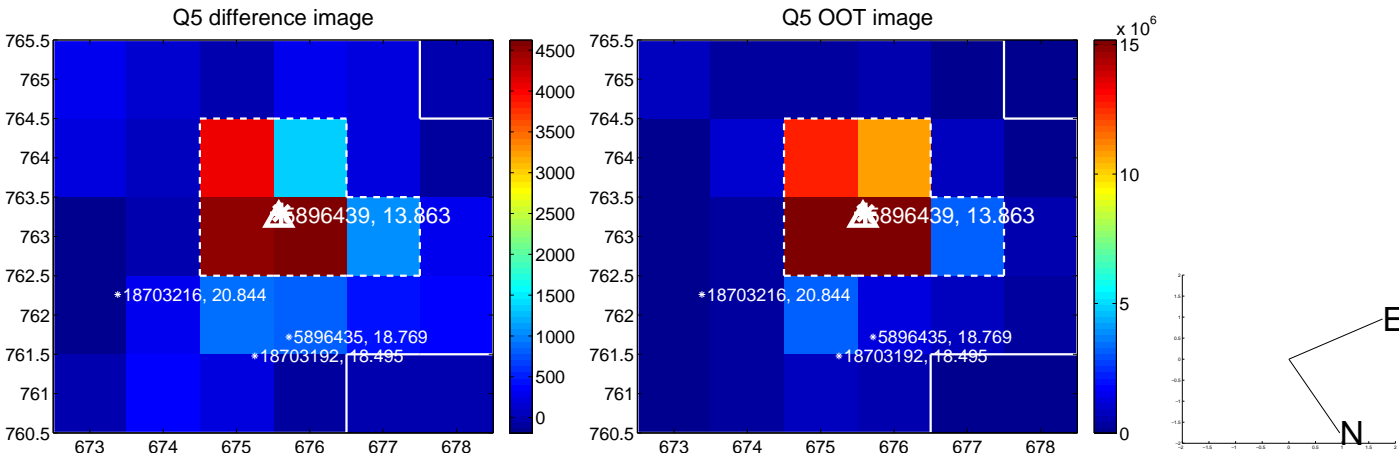


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

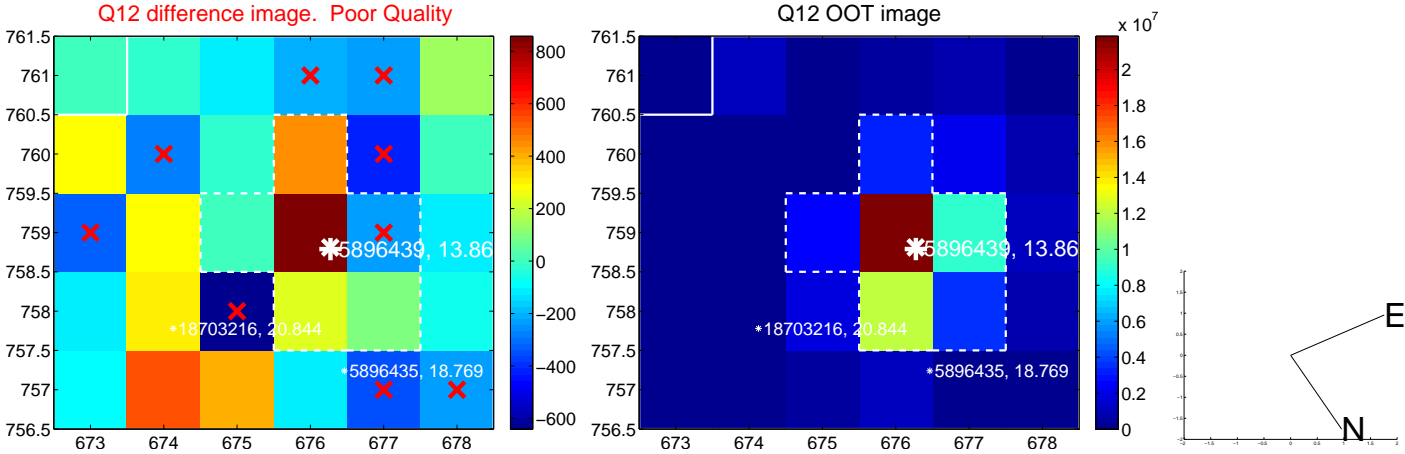
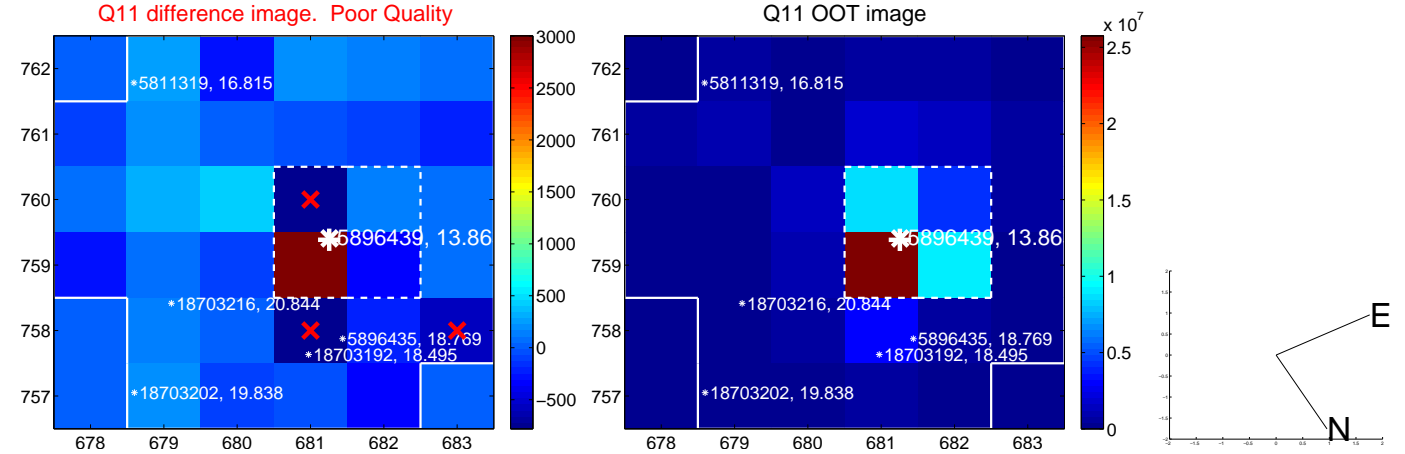
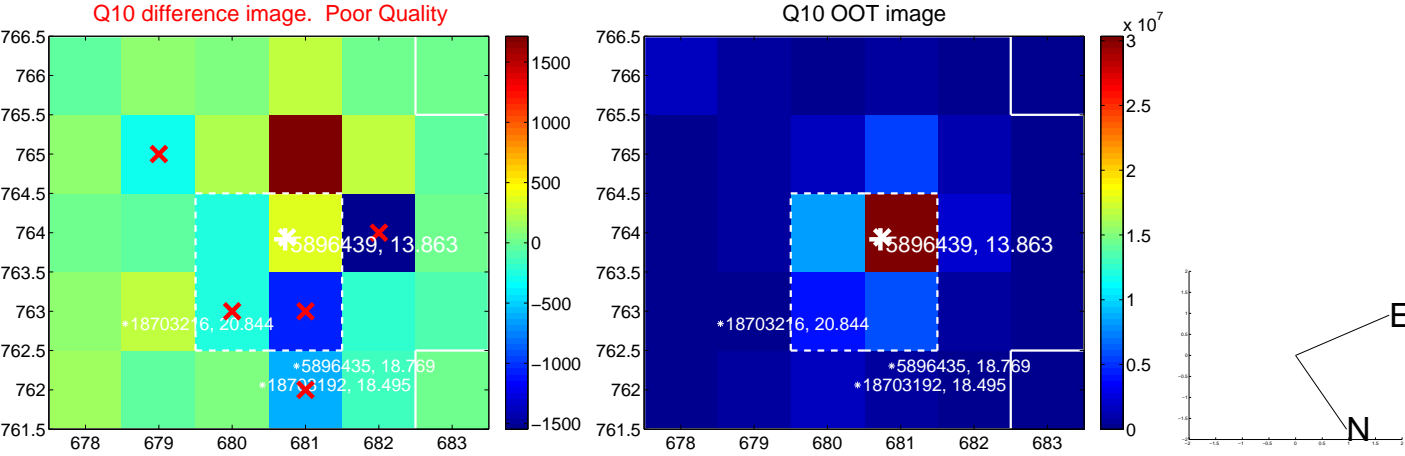
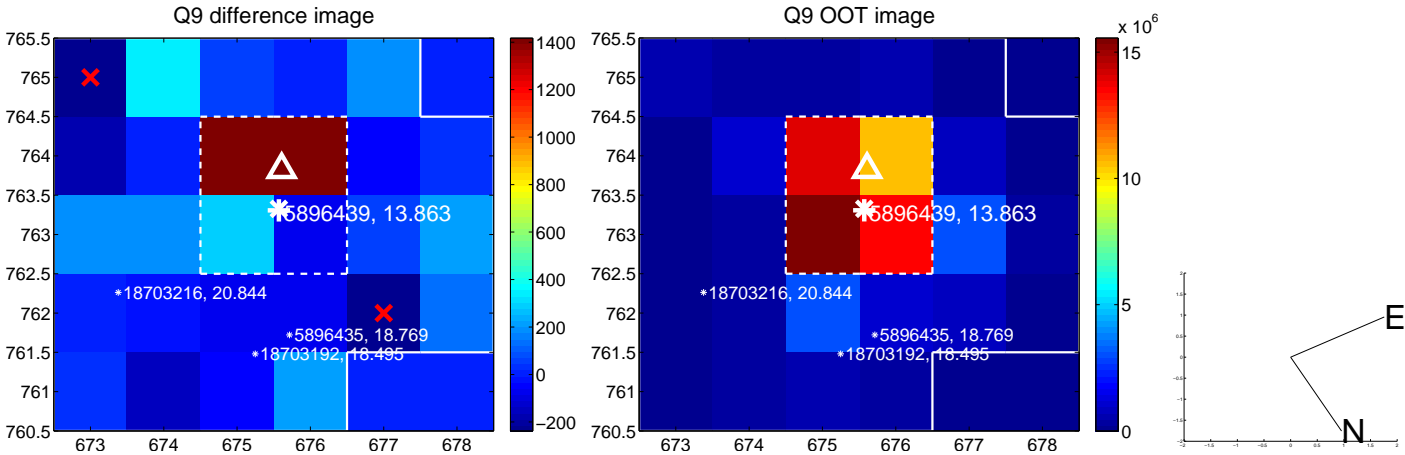
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



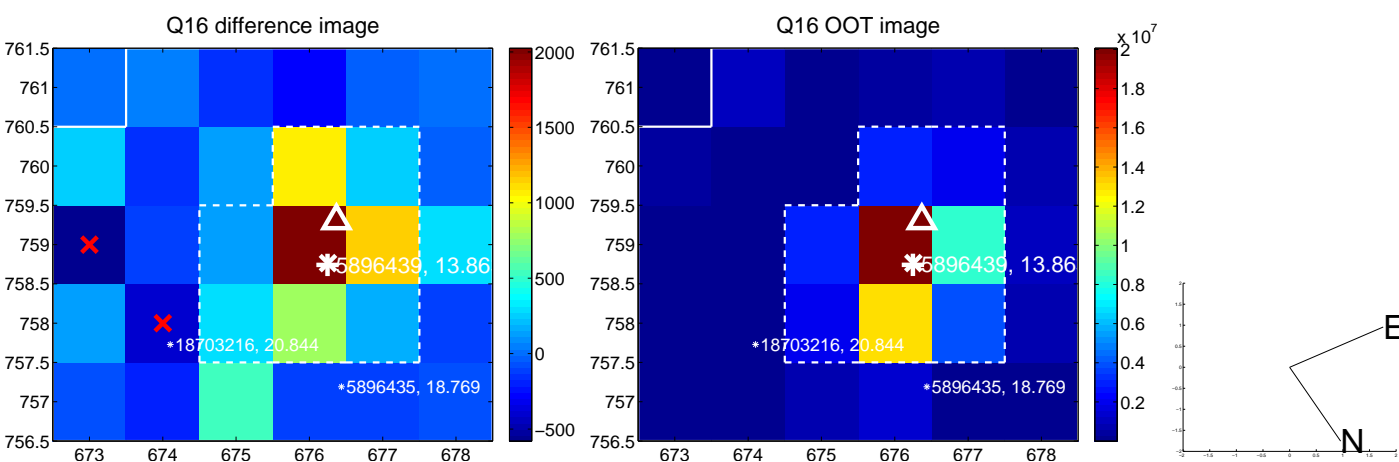
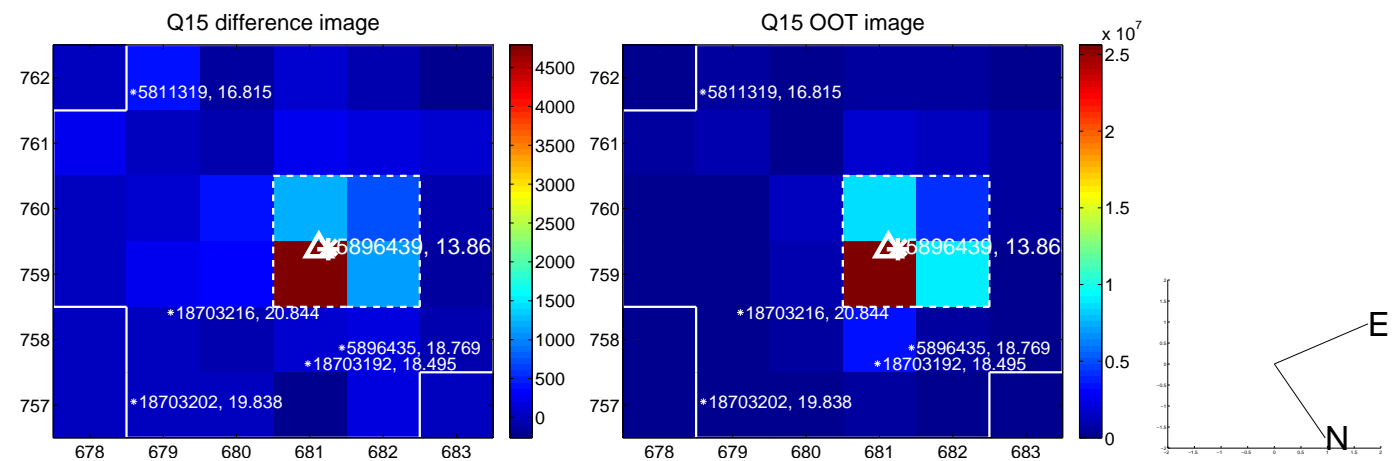
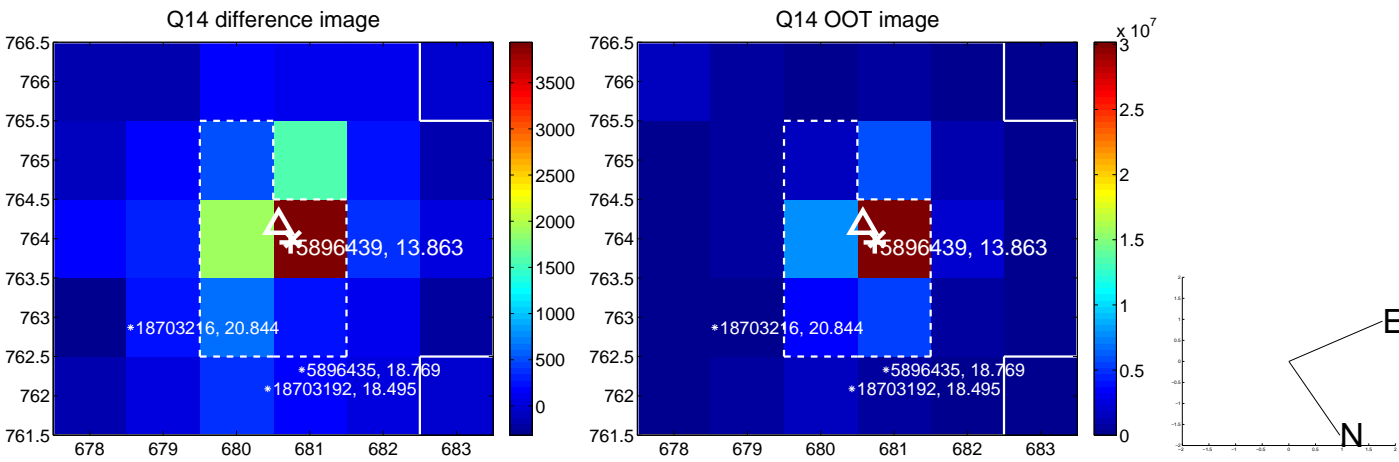
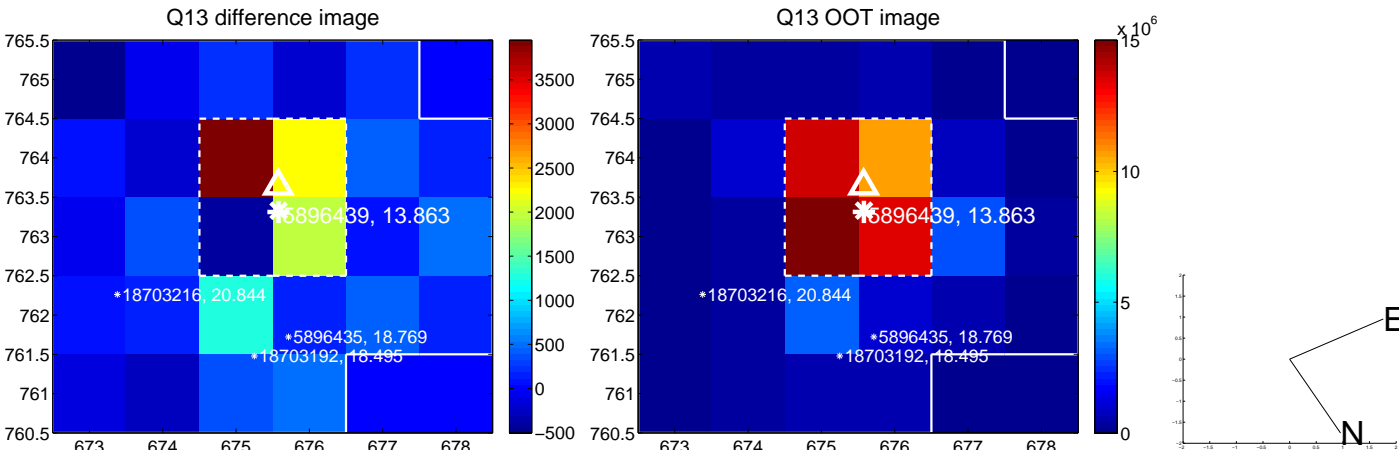
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



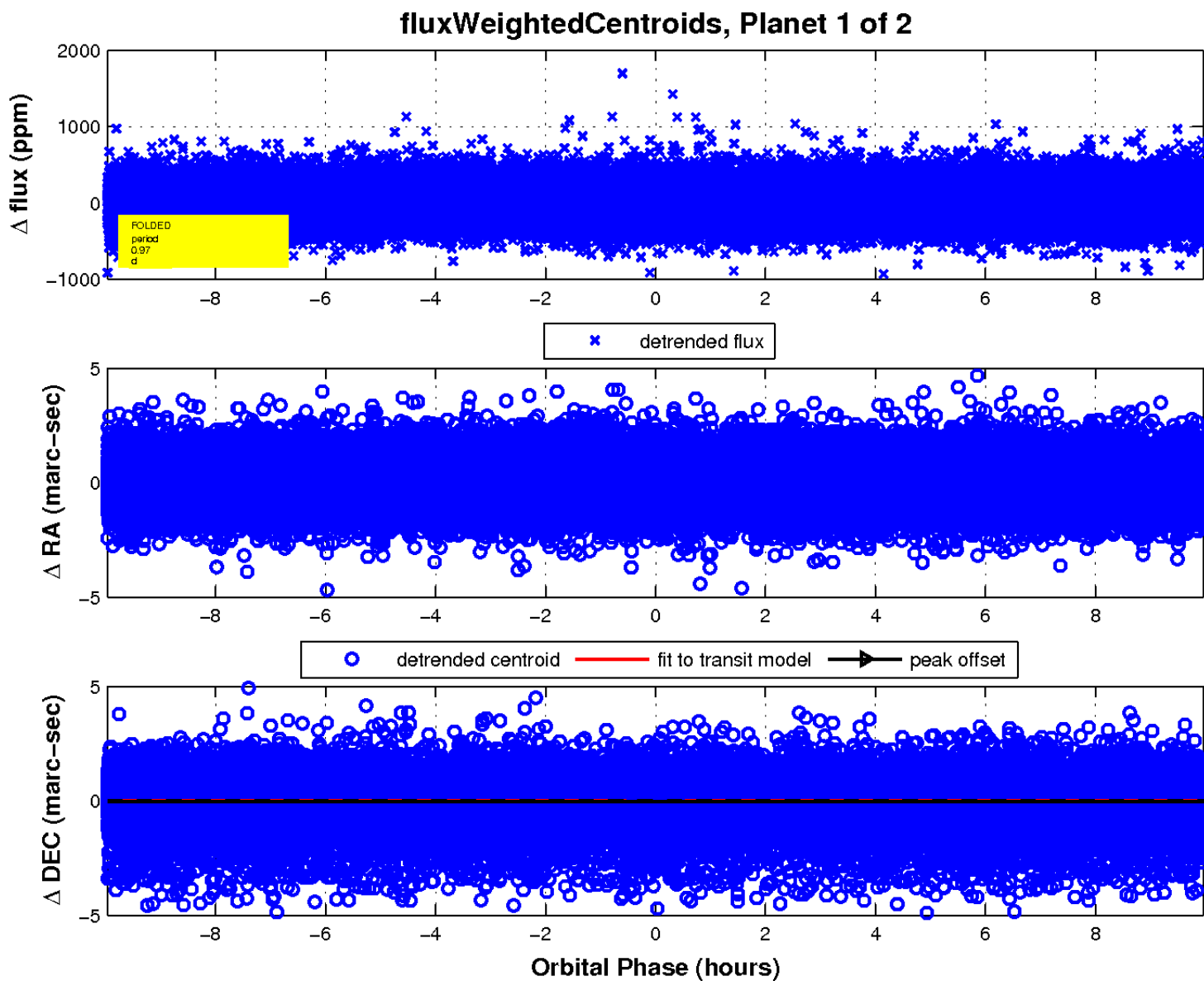
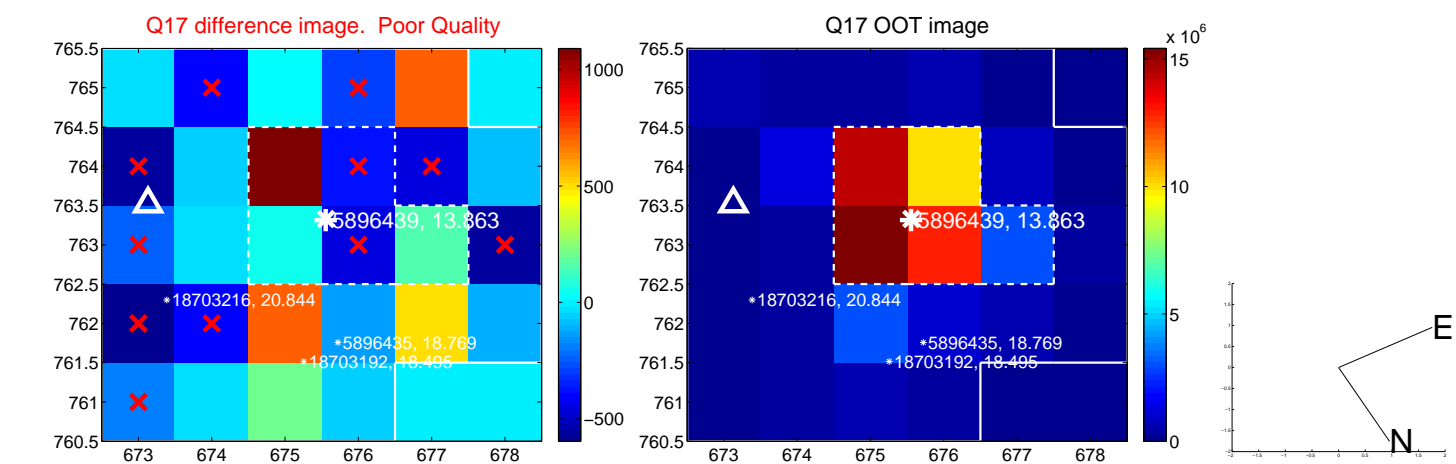
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

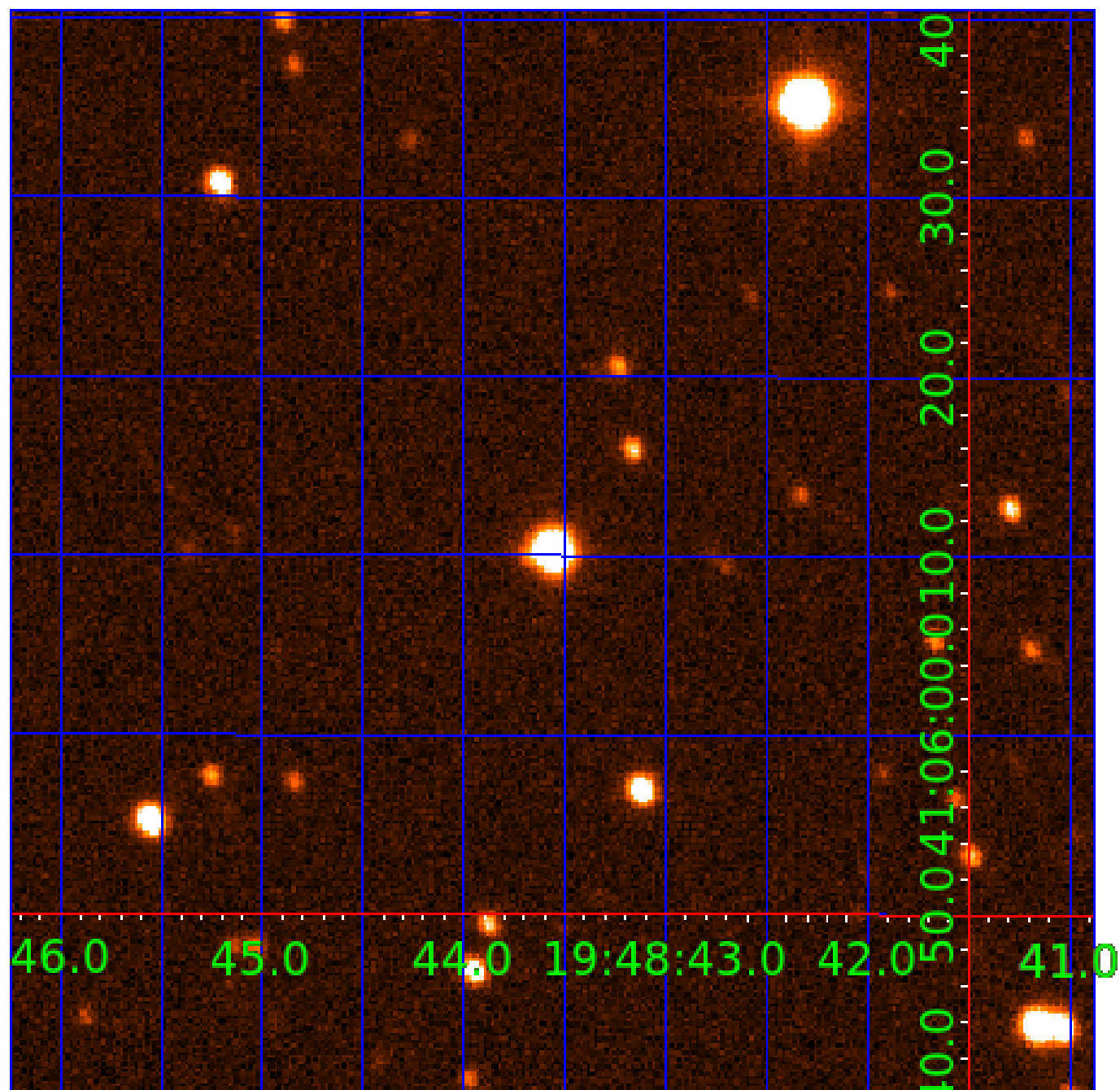


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005896439

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})
005896439-01	OBS	No	0.971232	132.166123	11.7	3.321	10.1	4.2	1.06	6364	0.37	4234.16
005896439-02	OBS	No	1.457438	132.141921	36.0	5.456	9.6	9.9	1.06	6364	0.82	2464.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005896439-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005896439-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—SWEET_NTL—LPP_DV—LPP_ALT—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.

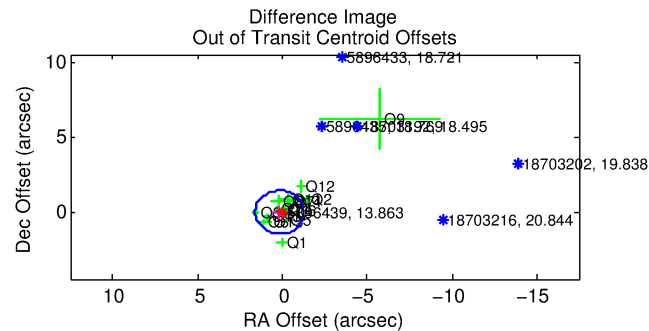
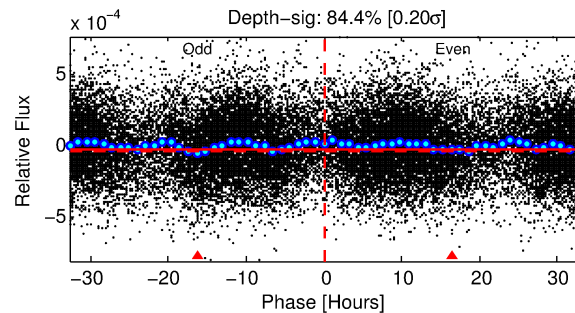
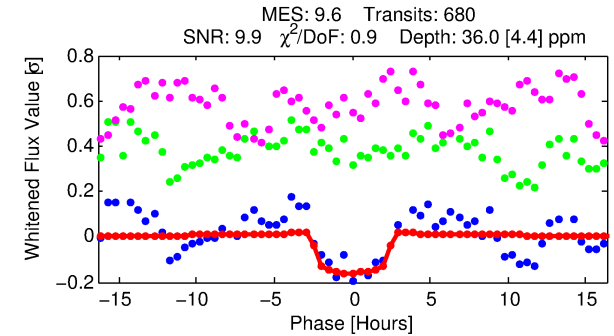
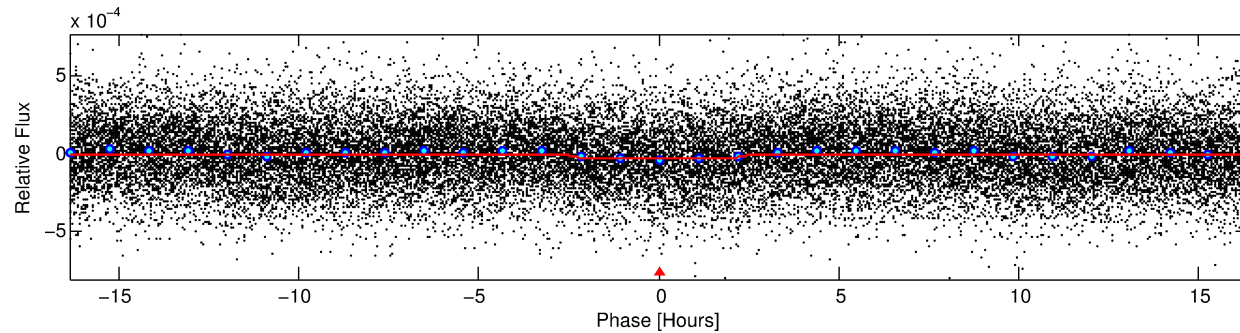
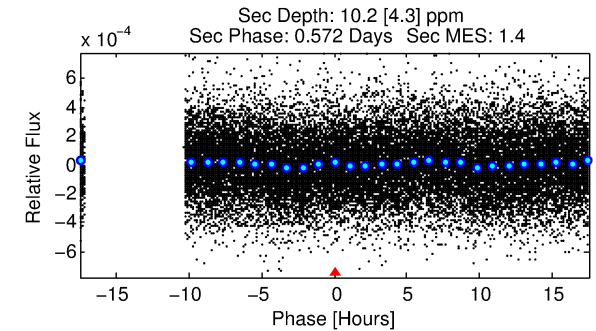
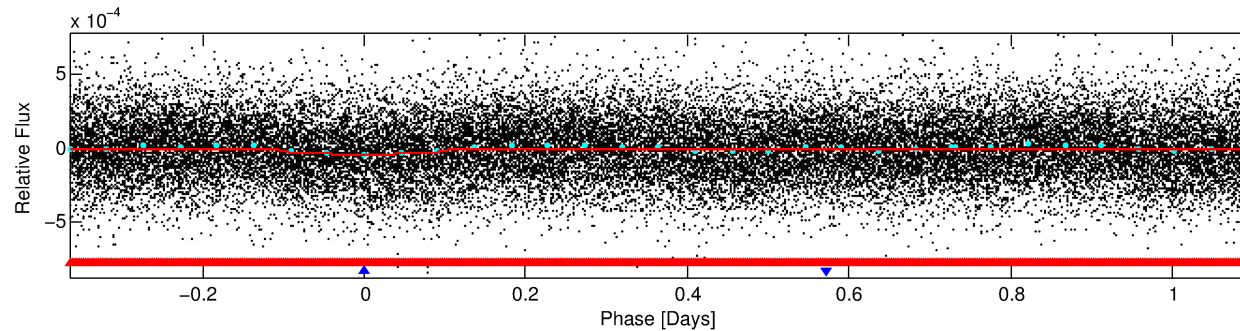
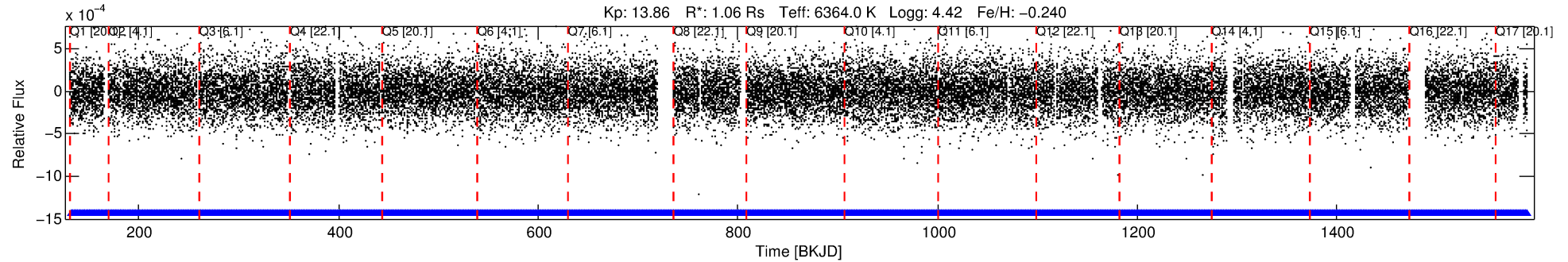
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005896439-02

No Significant Match Found

DV One-Page Summary

KIC: 5896439 Candidate: 2 of 2 Period: 1.457 d



DV Fit Results:

Period = 1.45744 [0.00002] d
Epoch = 132.1419 [0.0064] BKJD
Rp/R* = 0.0071 [0.0009]
a/R* = 1.12 [0.15]
b = 0.97 [0.04]
Seff = 2464.59 [1014.08]
Teq = 1797 [185] K
Rp = 0.82 [0.29] Re
a = 0.0258 [0.0070] AU
Ag = 5.59 [3.50] [1.31σ]
Teffp = 4272 [540] K [4.33σ]

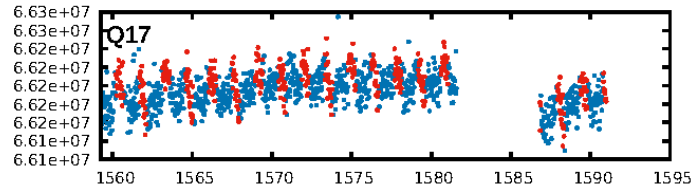
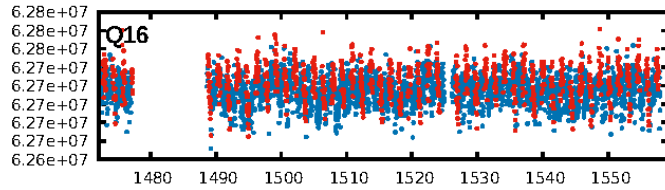
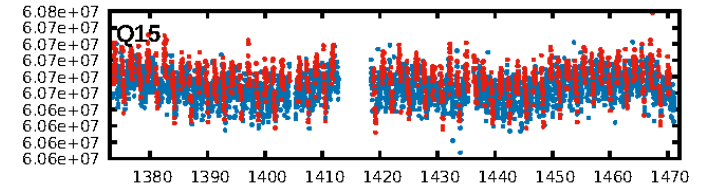
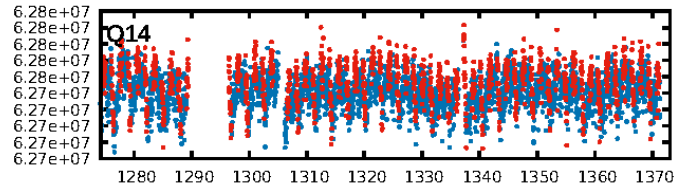
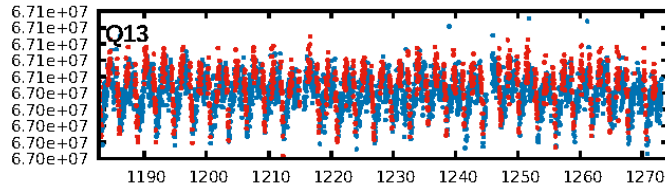
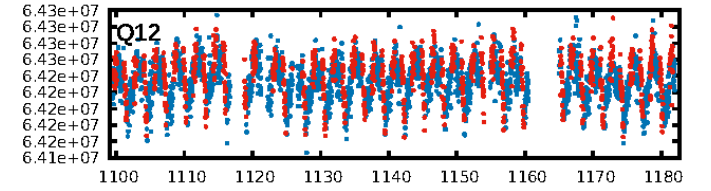
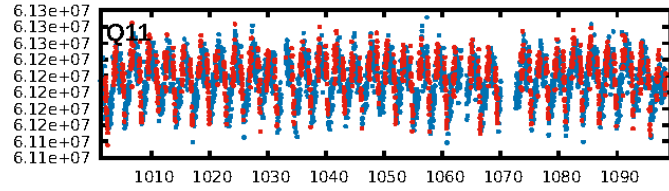
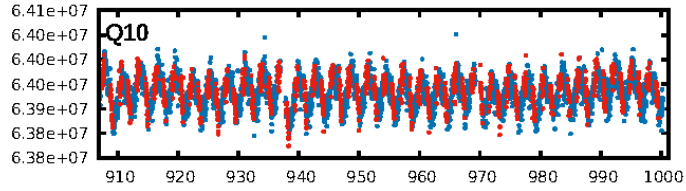
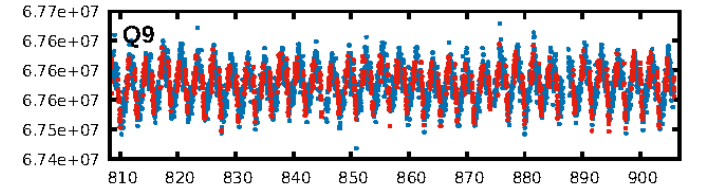
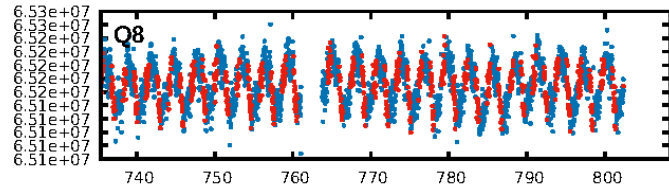
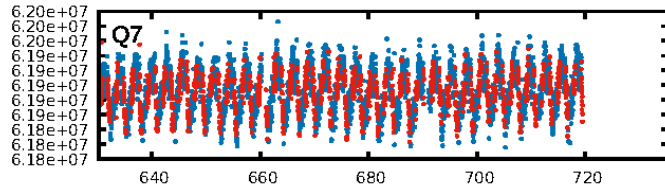
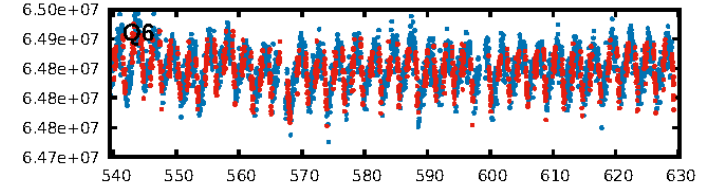
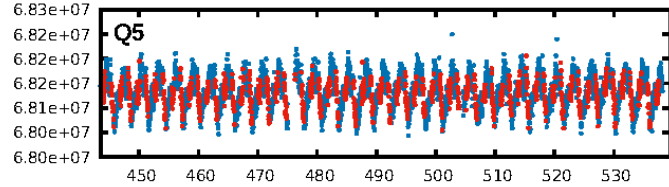
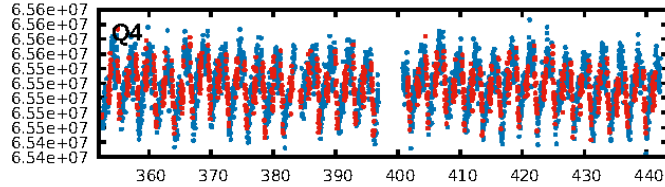
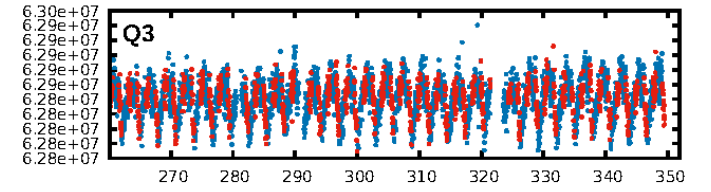
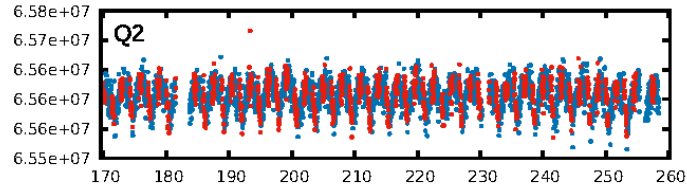
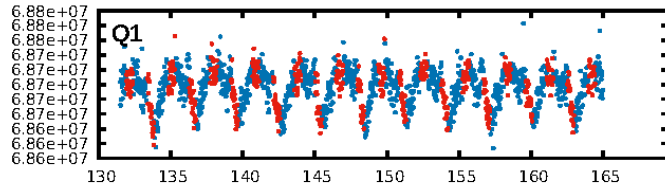
DV Diagnostic Results:

ShortPeriod-sig: 93.2% [1.83σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.44e-15
RollingBand-fgt: 1.00 [660/660]
GhostDiagnostic-chr: 2.655
Centroid-sig: N/A
Centroid-so: 0.843 arcsec [1.31σ]
OotOffset-rm: 0.163 arcsec [0.34σ]
KicOffset-rm: 0.086 arcsec [0.28σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 0.00 [0/17]

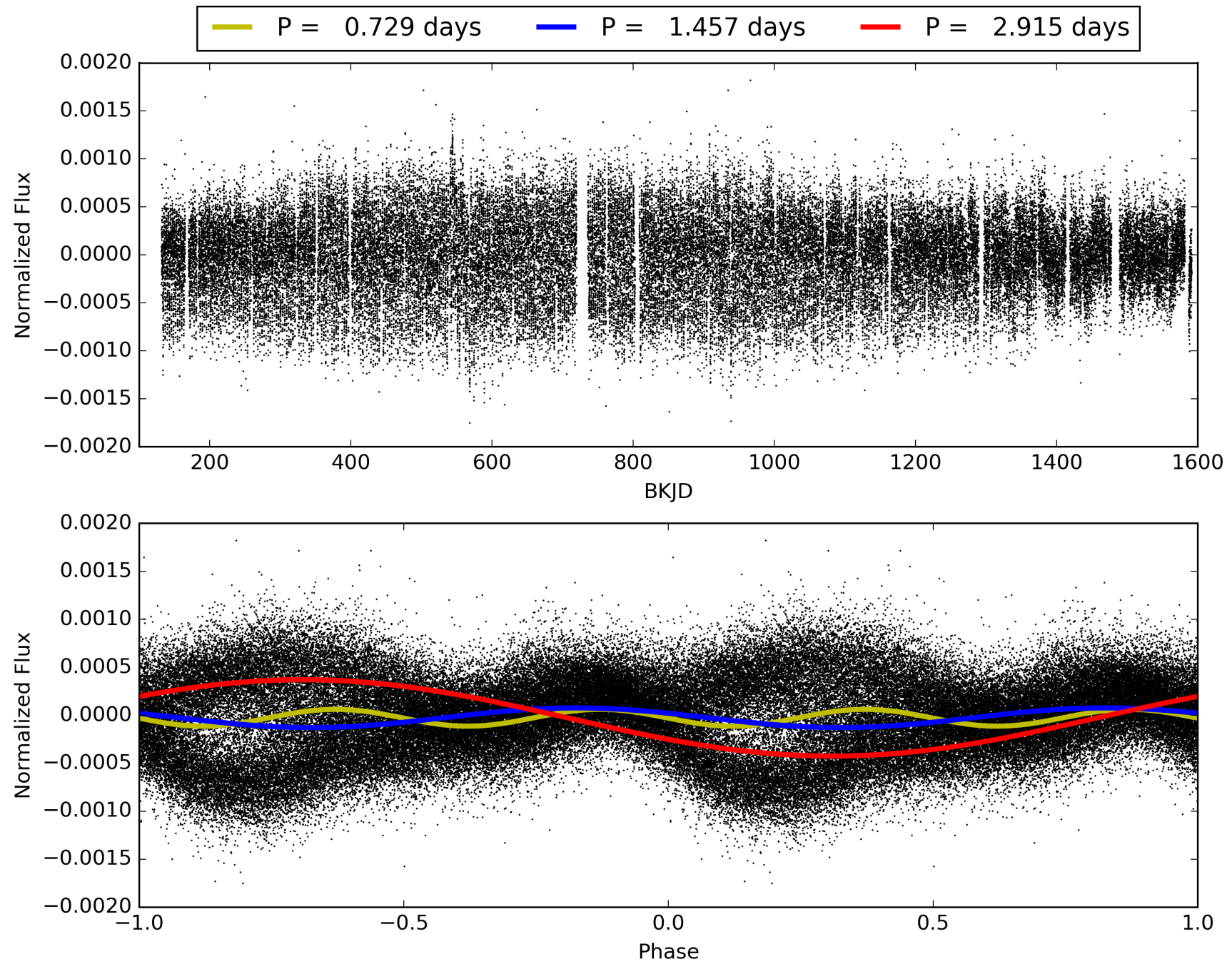
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:20:00 Z

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

TCE 005896439-02, PDC Light Curves

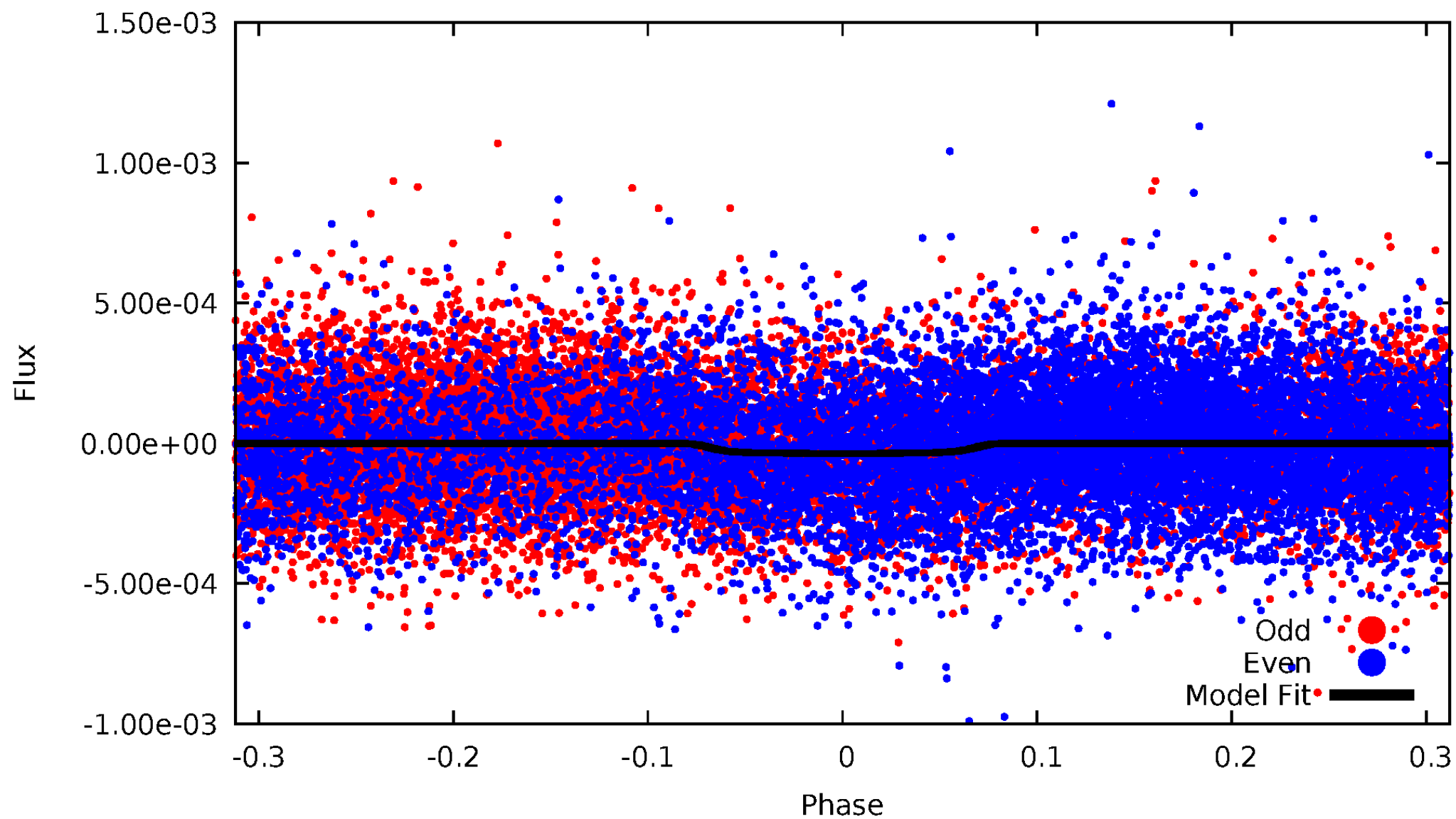


TCE 005896439-02



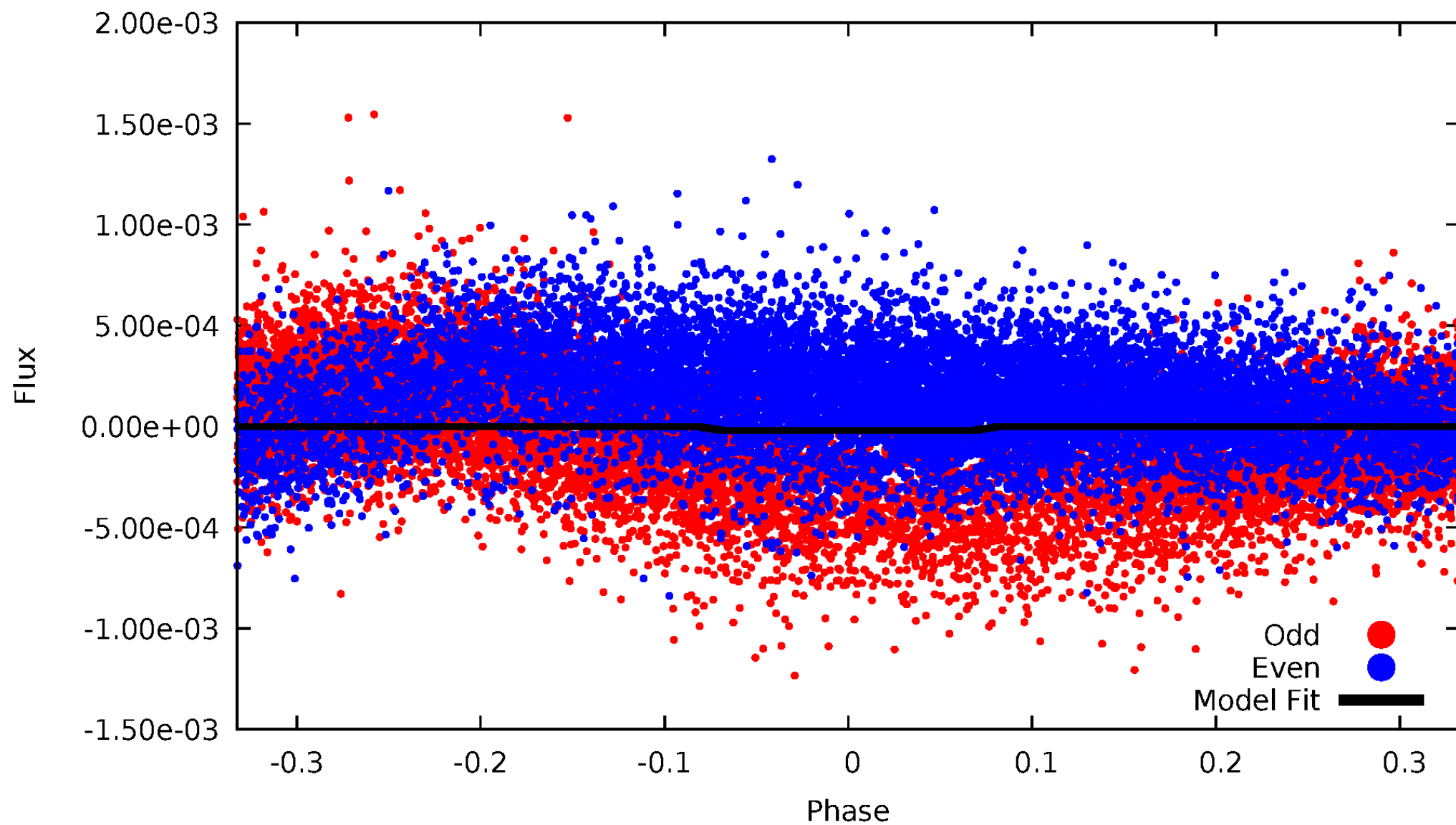
DV Odd/Even

TCE 005896439-02



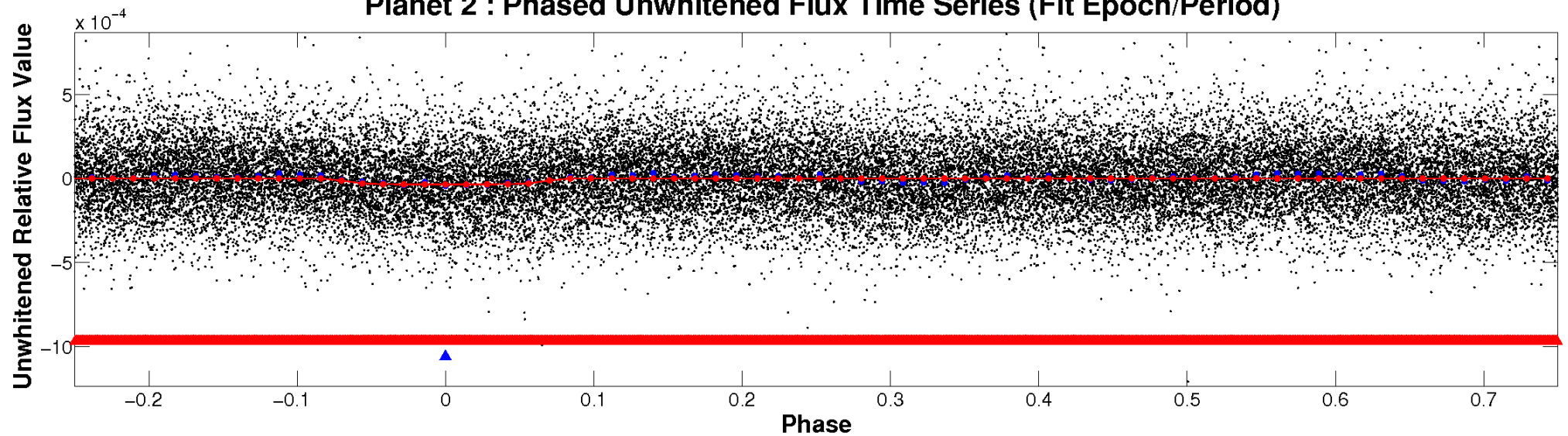
ALT Odd/Even

TCE 005896439-02

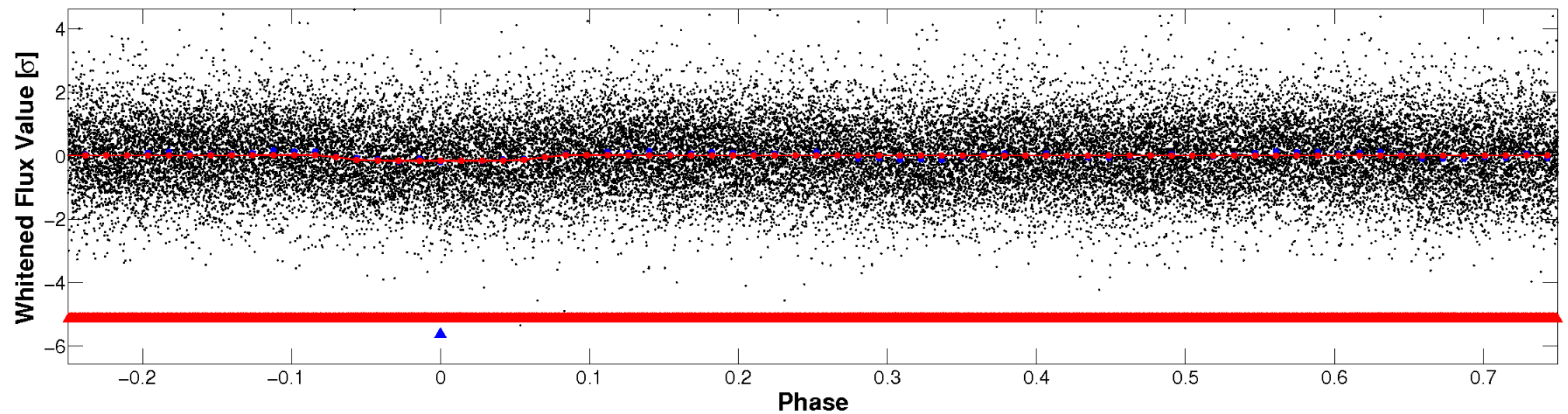


Non-Whitened Vs. Whitened Light Curve

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

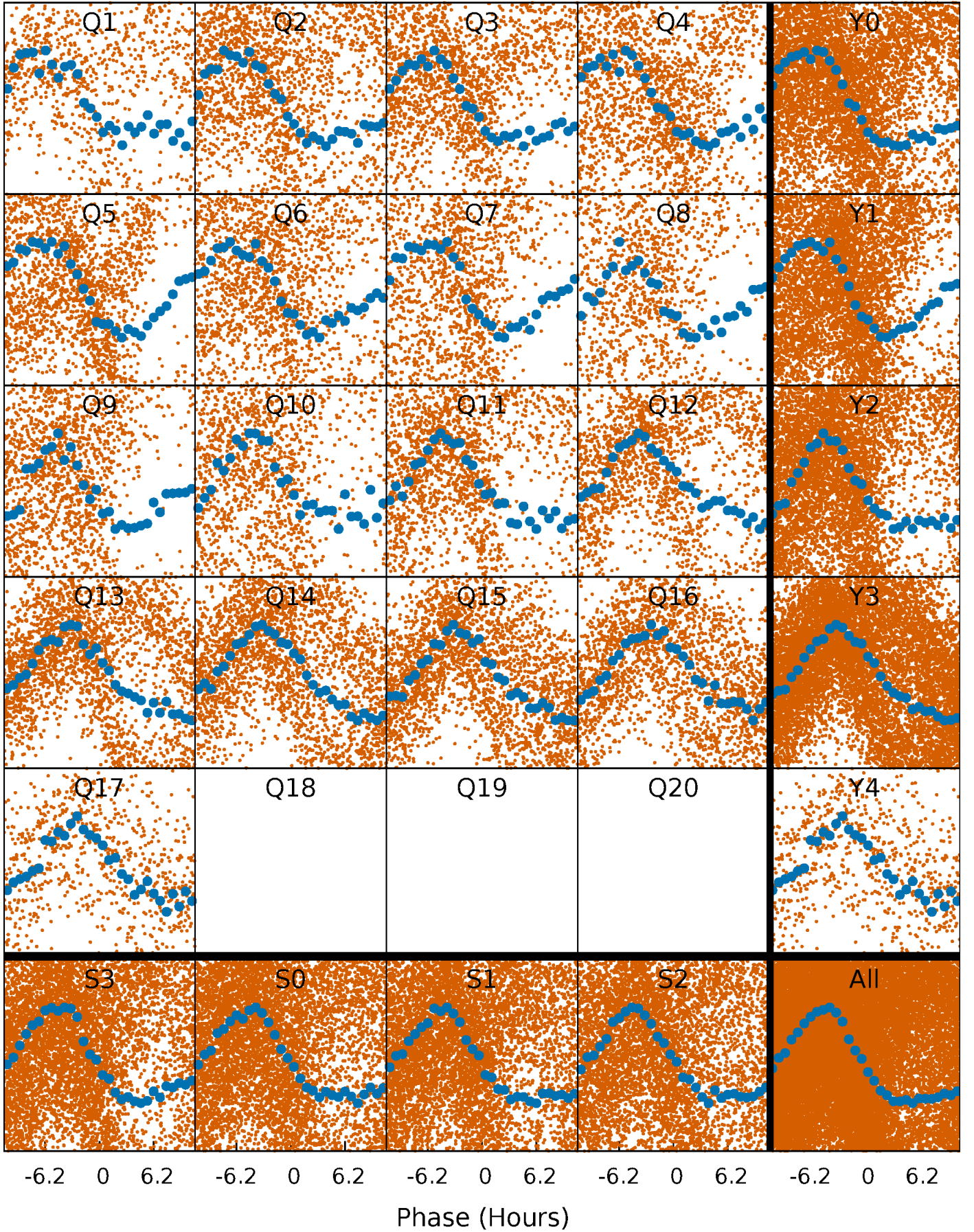


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



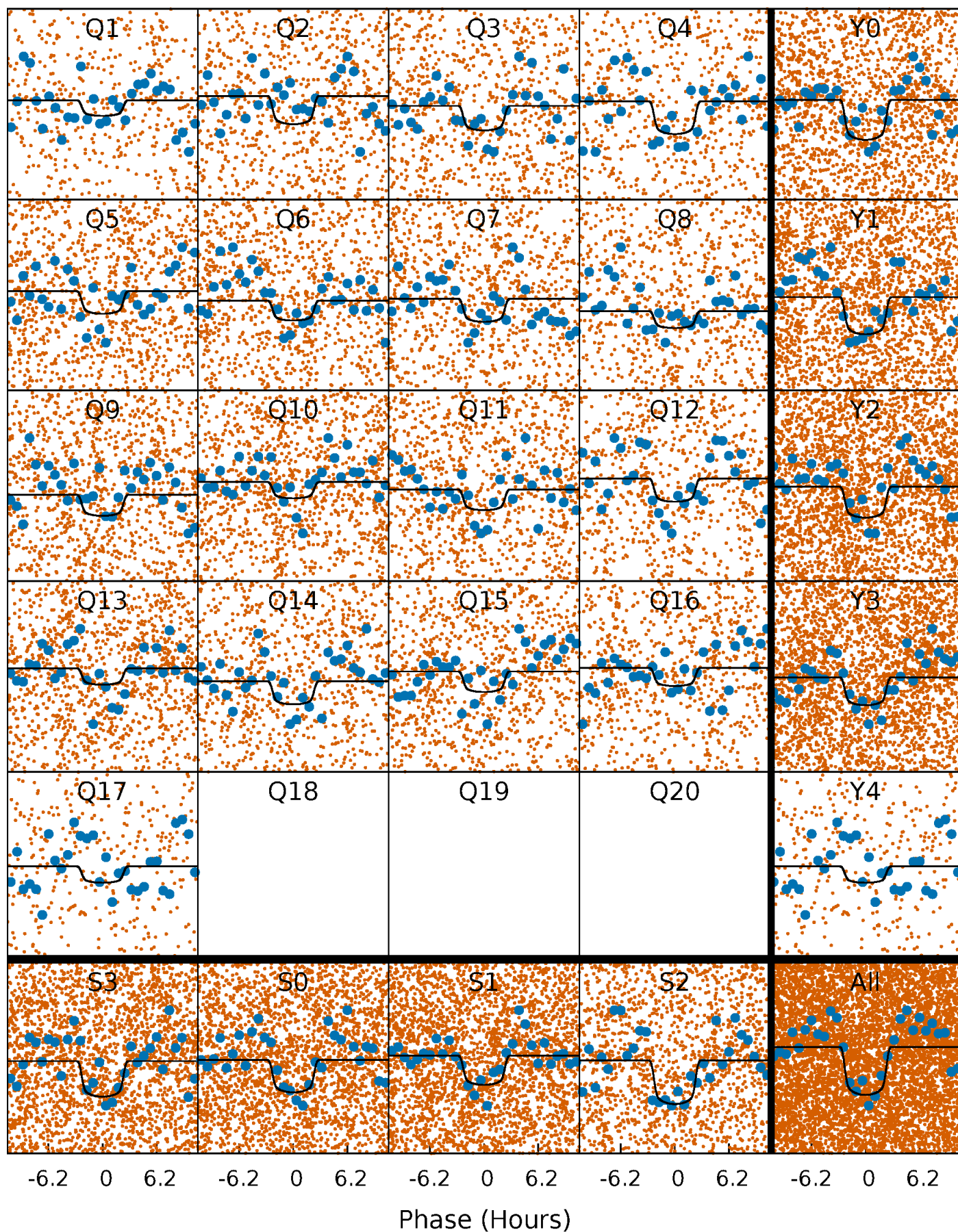
PDC Quarter-Phased Transit Curves

TCE 005896439-02 P= 1.457438 Days $T_0=132.141921$ (BKJD)



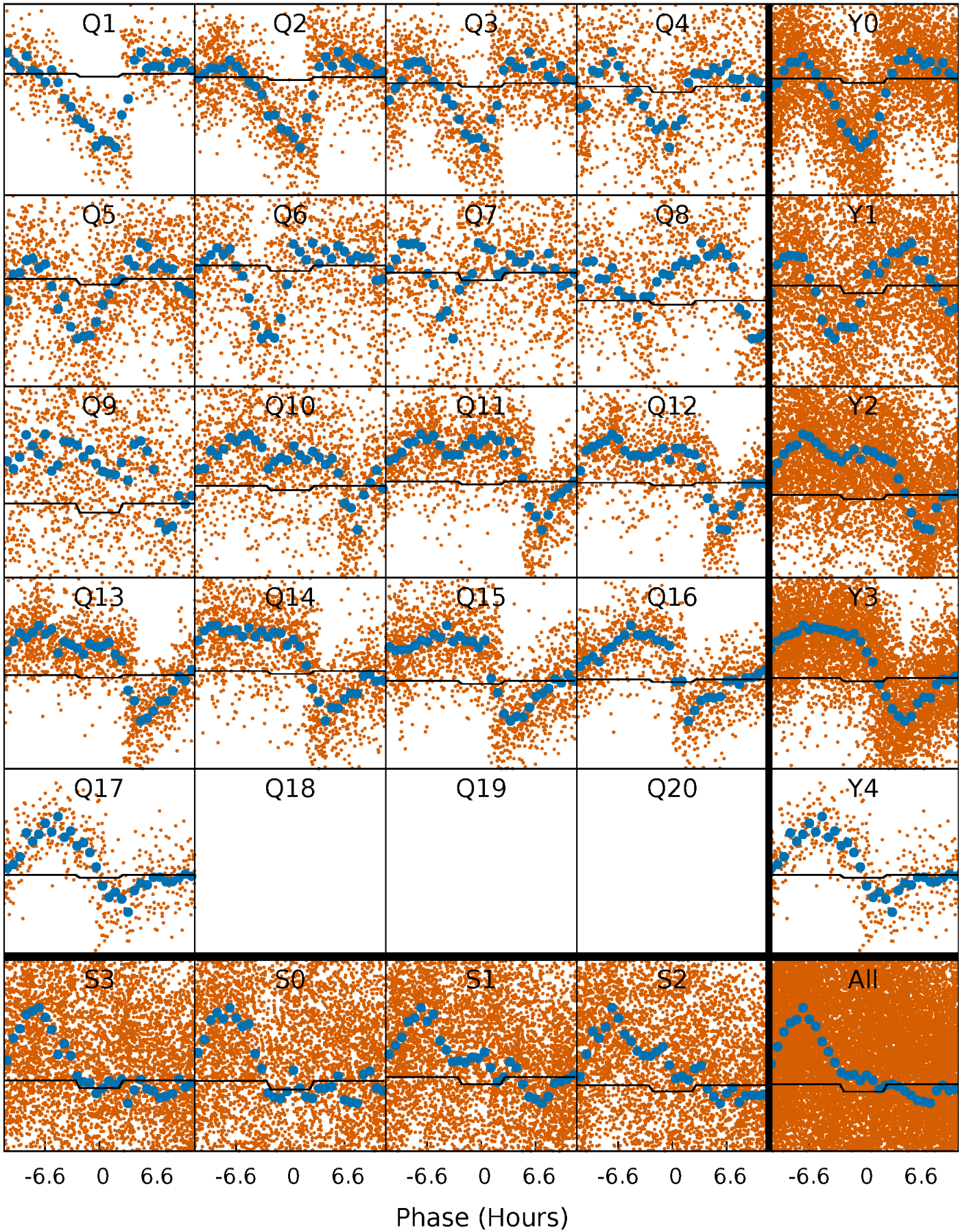
DV Quarter-Phased Transit Curves

TCE 005896439-02 P= 1.457438 Days $T_0=132.141921$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

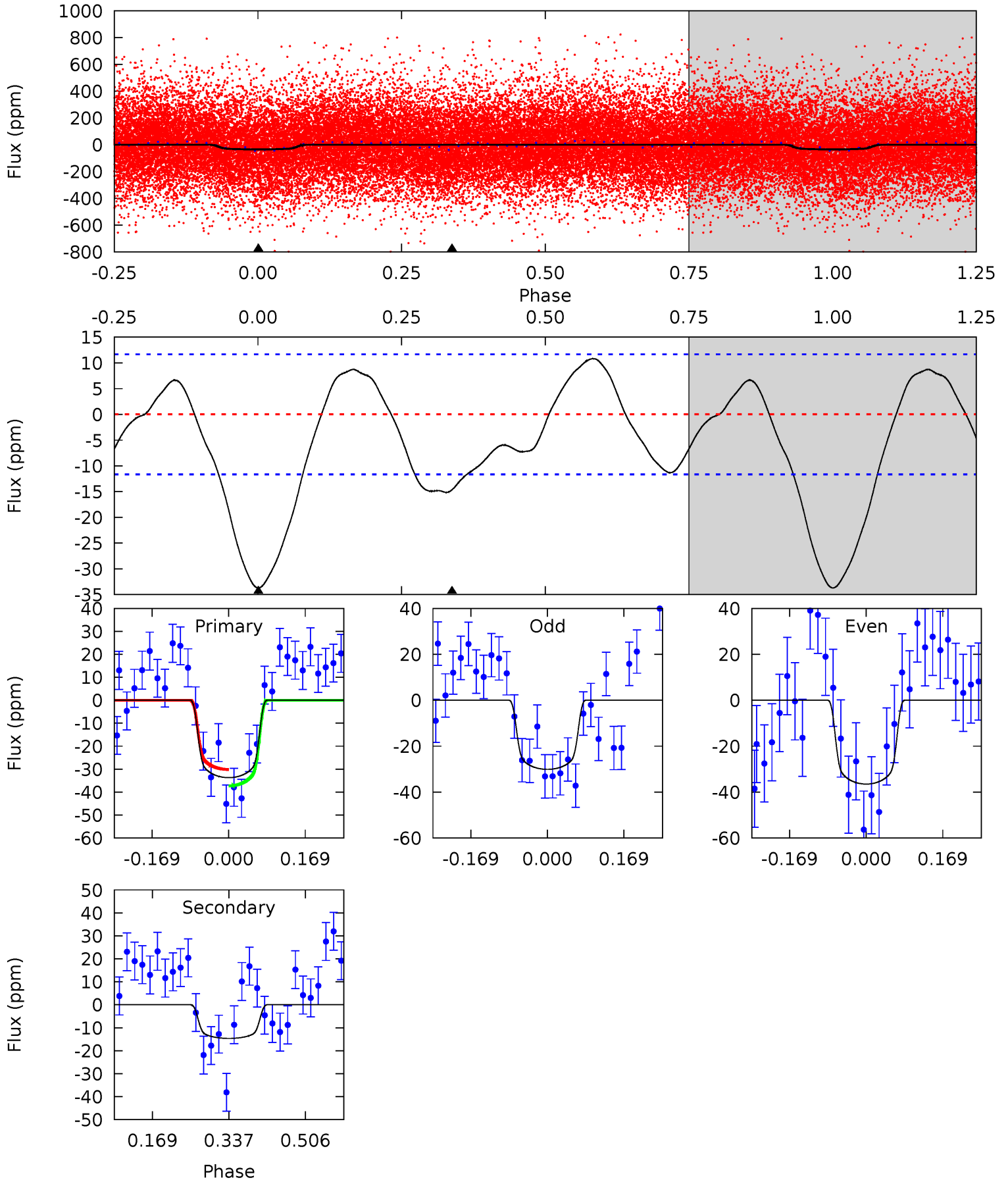
TCE 005896439-02 P= 1.457475 Days $T_0=132.263334$ (BKJD)



DV Model-Shift Uniqueness Test

005896439-02, P = 1.457438 Days, E = 130.684483 Days

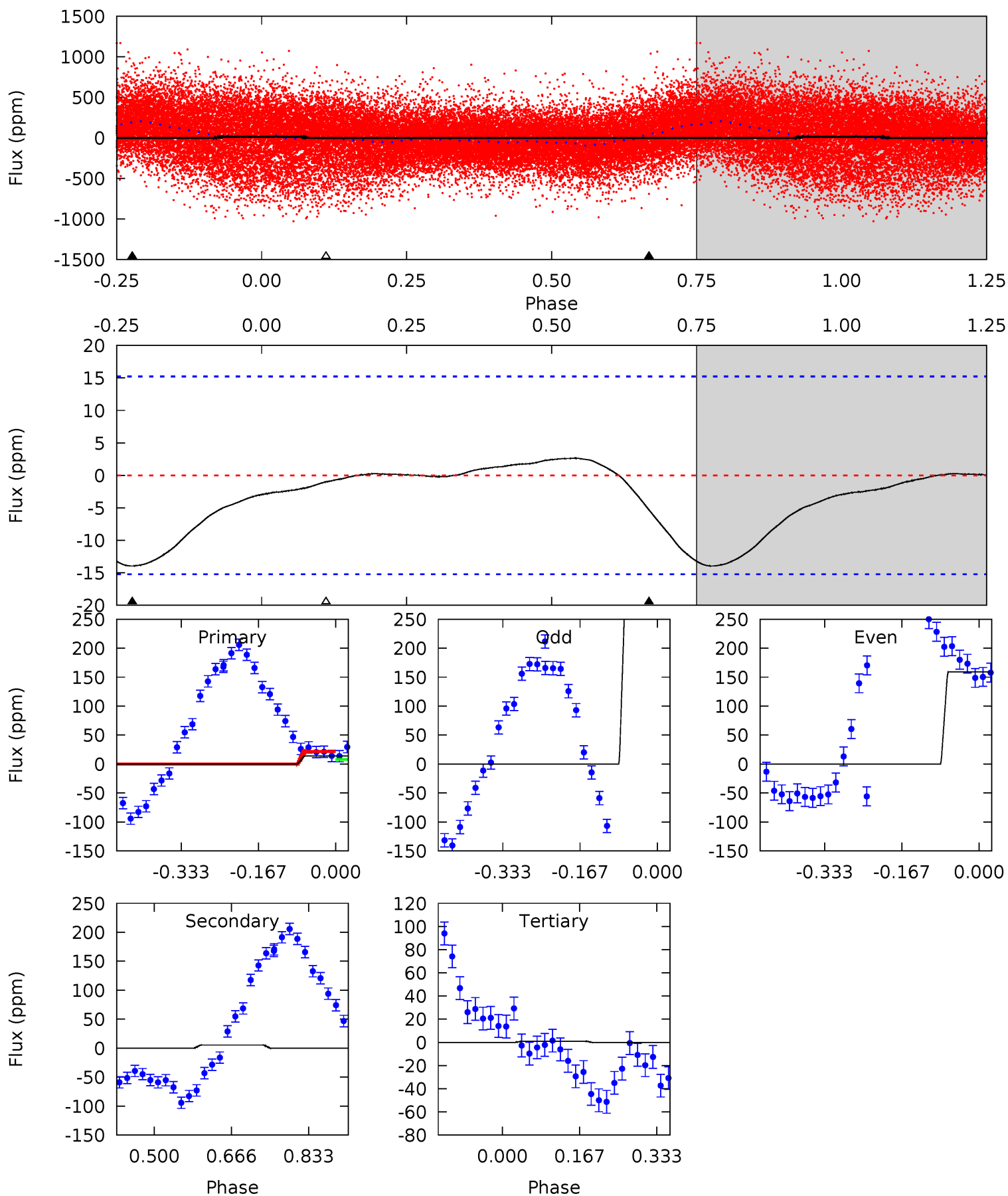
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	5.59	0	0	4.45	1.38	2.63	12.9	12.9	5.59	5.59	1.22	0.63	0.24	1.36



Alt Model-Shift Uniqueness Test

005896439-02, P = 1.457475 Days, E = 130.805859 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.09	1.55	0.29	0	4.46	1.38	0.50	3.80	4.09	1.26	1.55	25.9	-0.74	0.16	2.04



Stellar Parameters For KIC 005896439

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6364^{+150}_{-207}	$4.423^{+0.070}_{-0.210}$	$-0.240^{+0.250}_{-0.300}$	$1.057^{+0.349}_{-0.116}$	$1.075^{+0.158}_{-0.129}$	$1.280^{+0.381}_{-0.696}$
	+2%/-3%	+2%/-5%	+104%/-125%	+33%/-11%	+15%/-12%	+30%/-54%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005896439-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-15 ± 3	$0.85^{+0.16}_{-0.13}$	2553^{+162}_{-133}	4737^{+367}_{-307}	$7.475^{+2.926}_{-2.407}$
Alt.	-5 ± 3	$0.55^{+0.12}_{-0.11}$	2548^{+186}_{-125}	4564^{+651}_{-838}	$6.127^{+5.509}_{-4.015}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

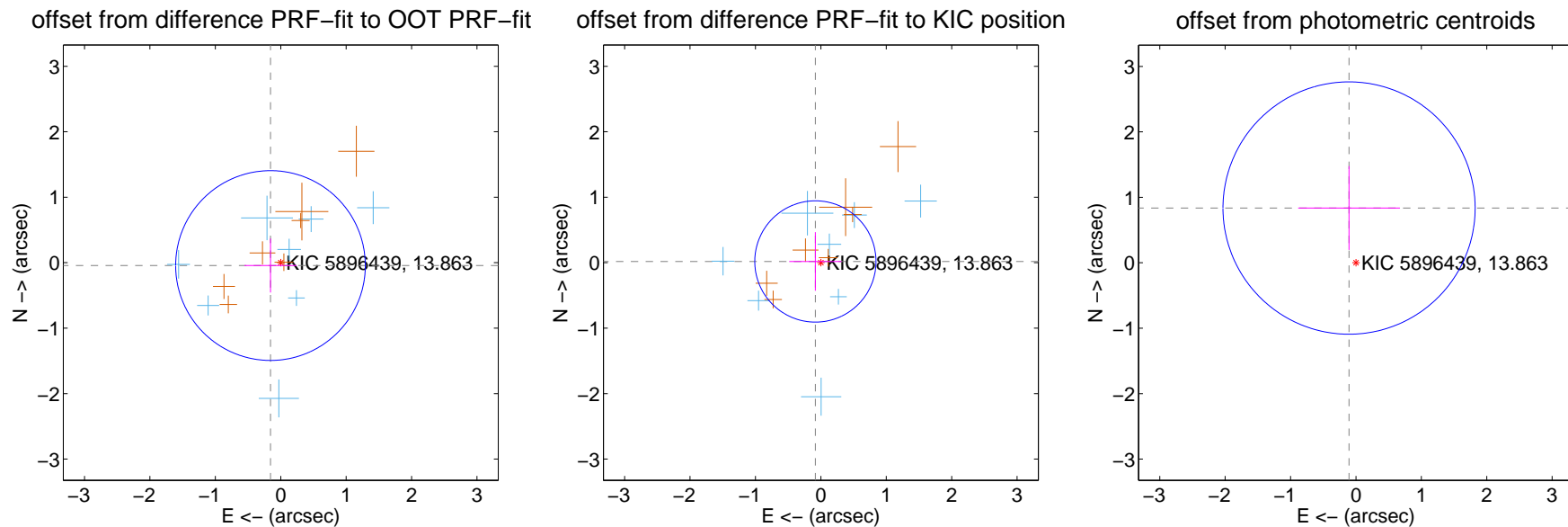
DV Centroid Data

Supplemental centroid analysis for 005896439-02. Kepler magnitude: 13.86. Transit SNR 9.87

There are 8 quarters with good PRF difference image offsets

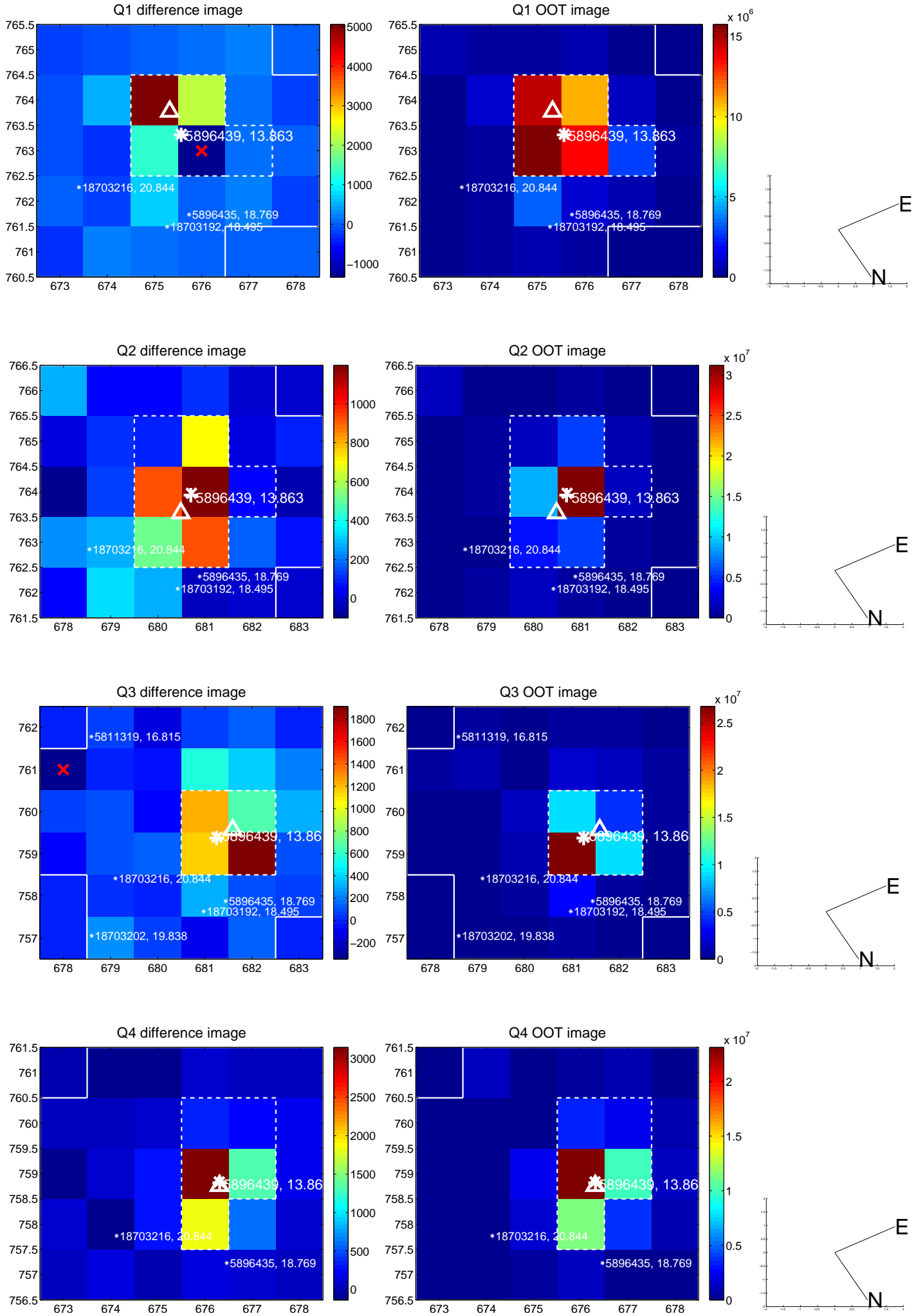
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.163 ± 0.483	0.34	0.157 ± 0.398	-0.044 ± 0.412
PRF-fit source offset from KIC position	0.086 ± 0.309	0.28	0.084 ± 0.400	0.019 ± 0.448
photometric centroid source offset	0.84 ± 0.64	1.31	0.11 ± 0.78	0.84 ± 0.64

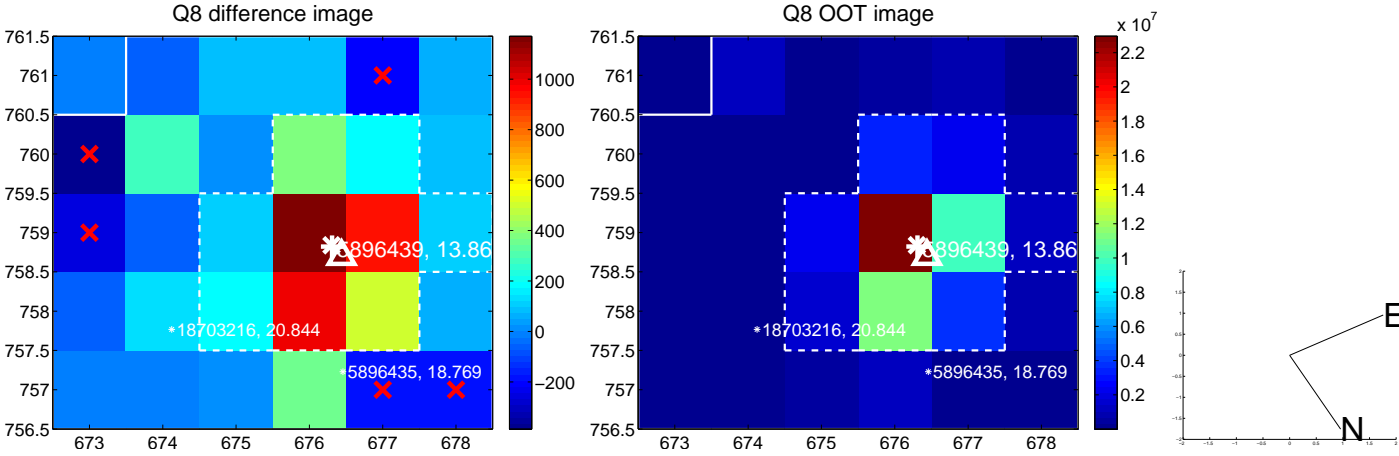
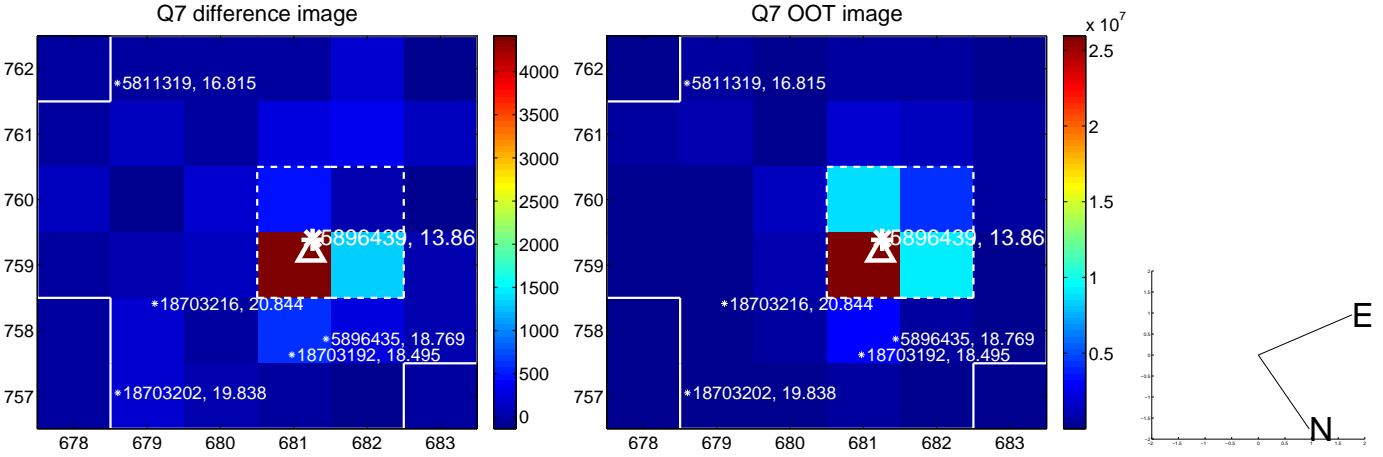
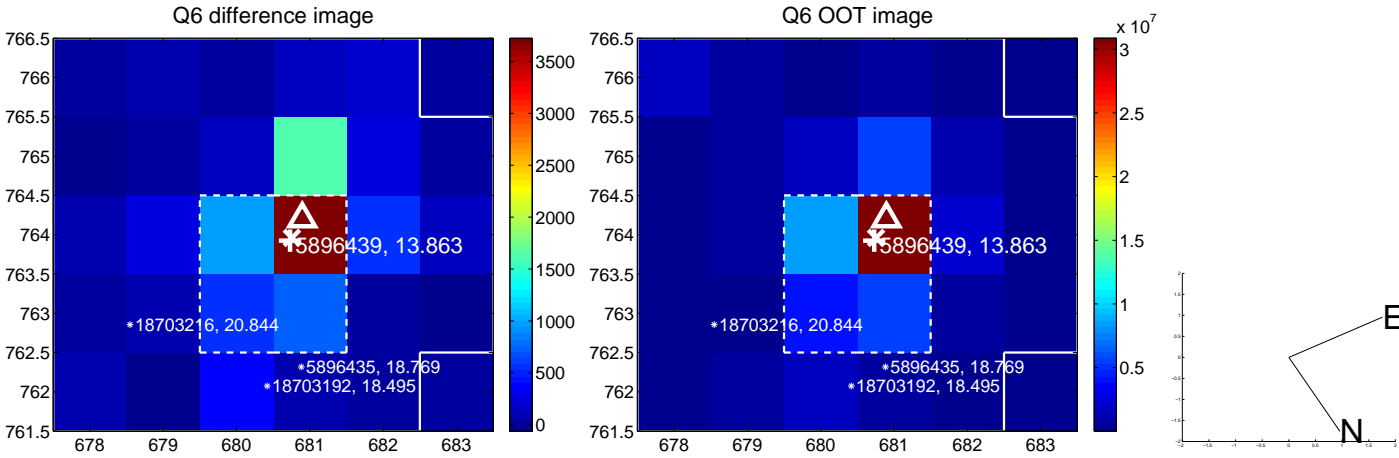
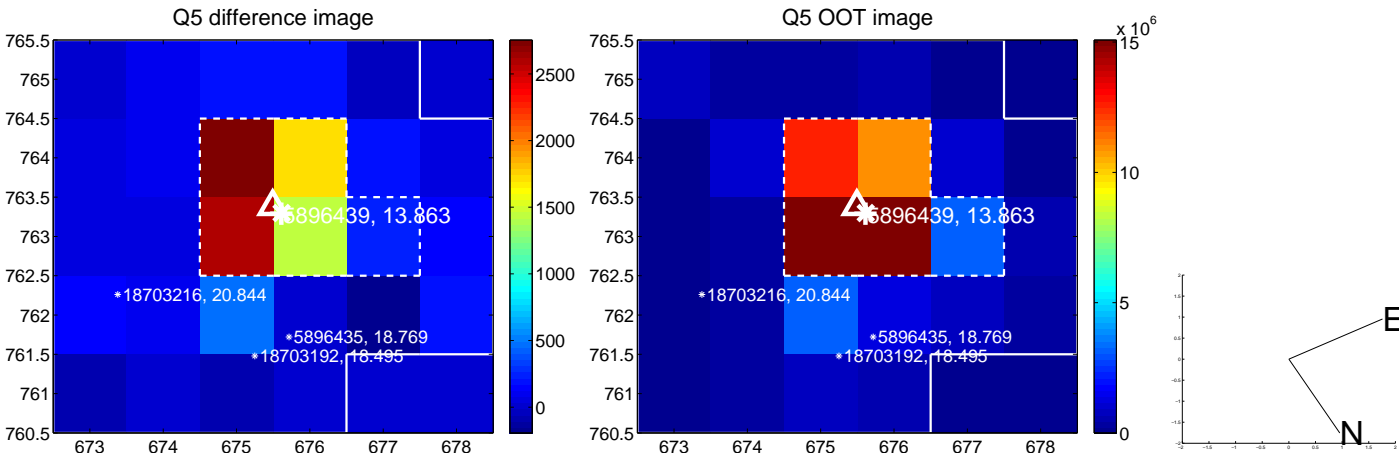


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

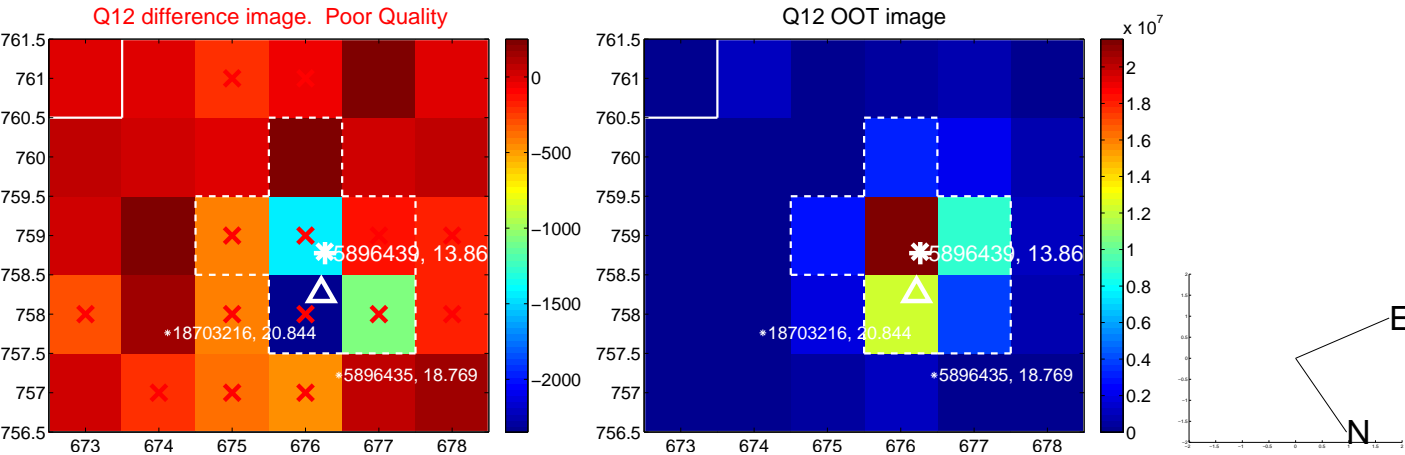
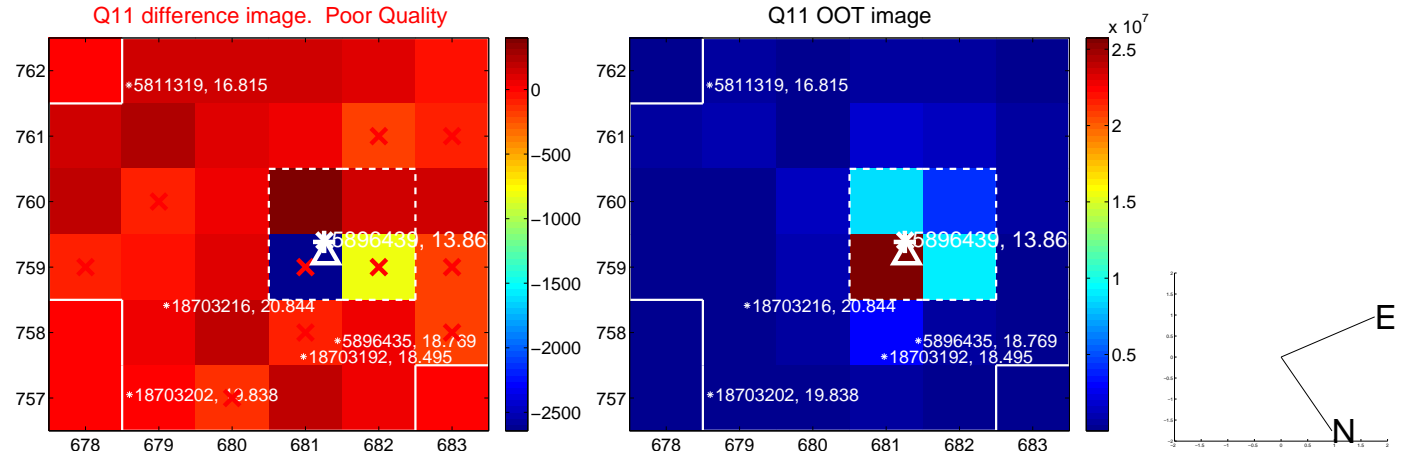
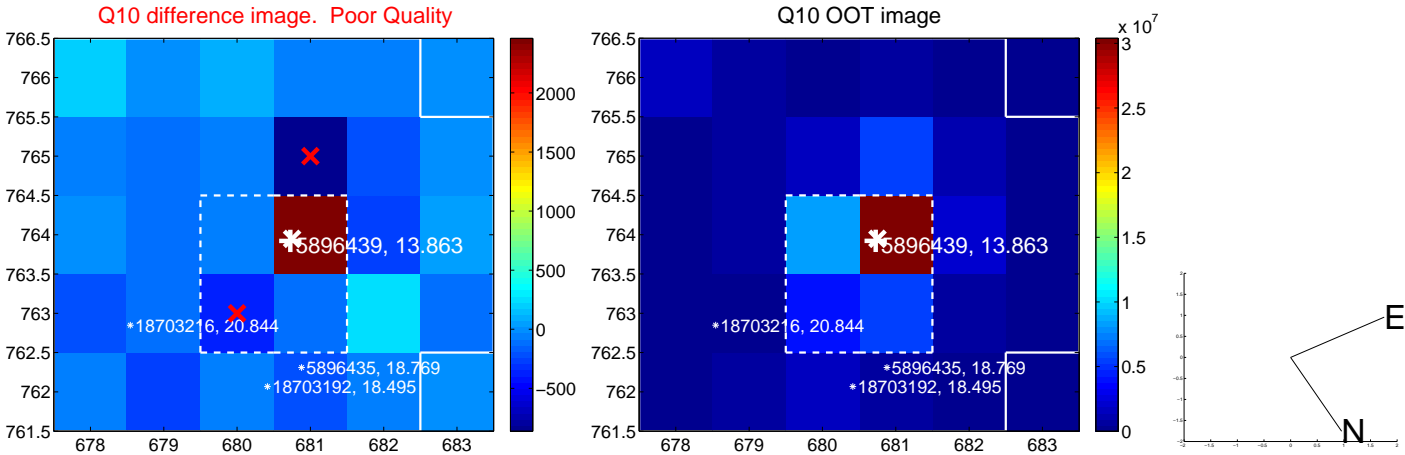
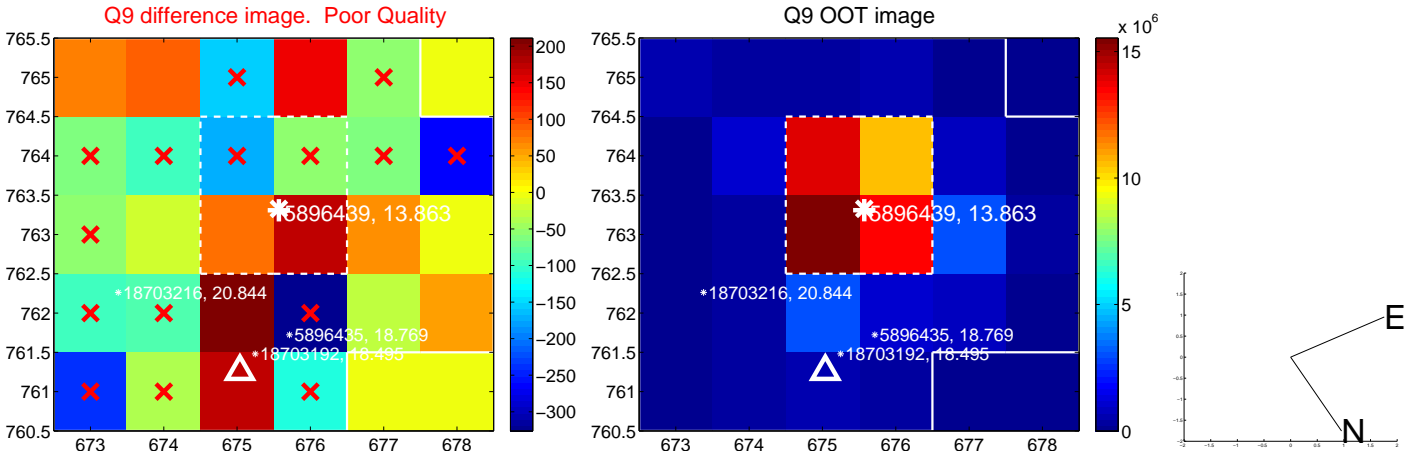
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



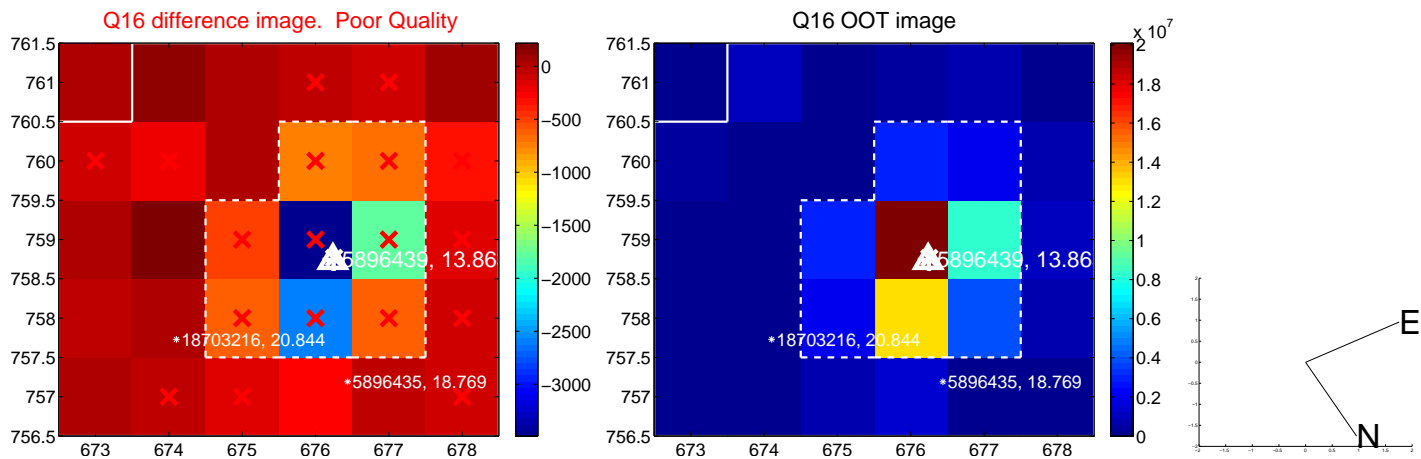
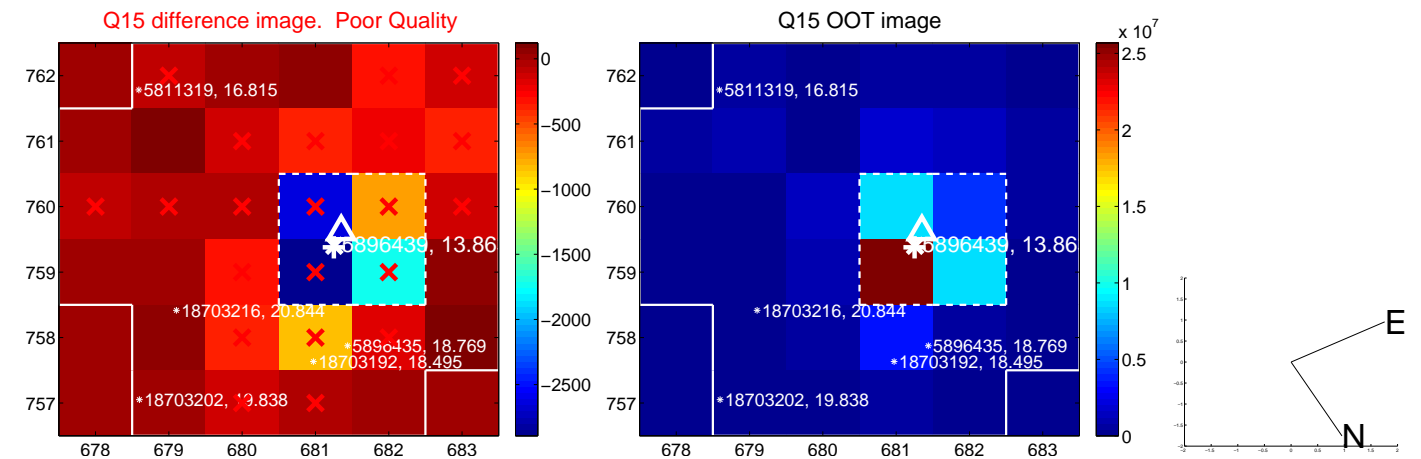
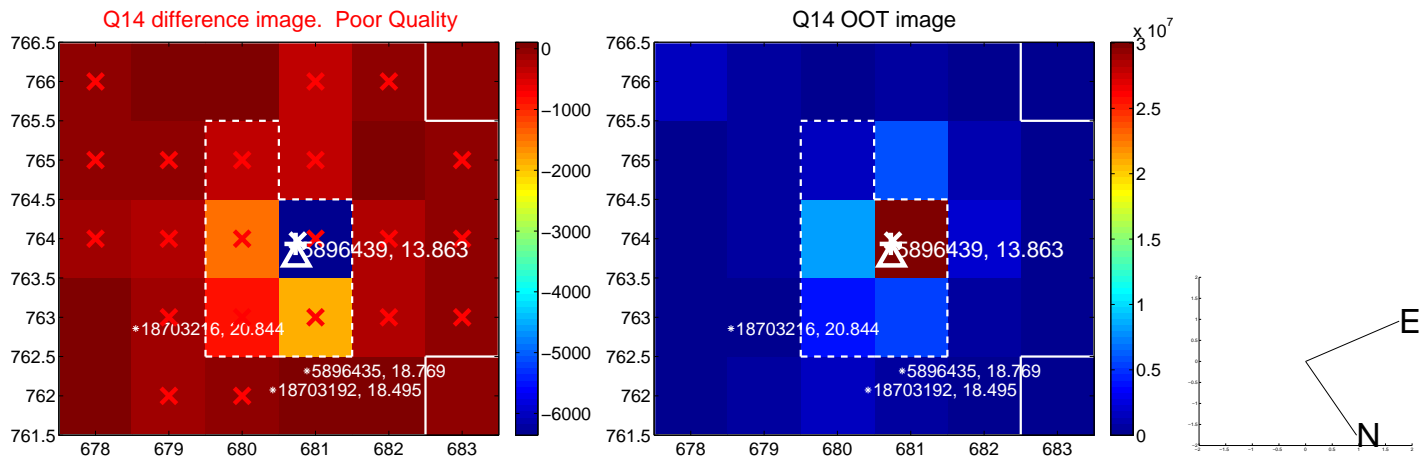
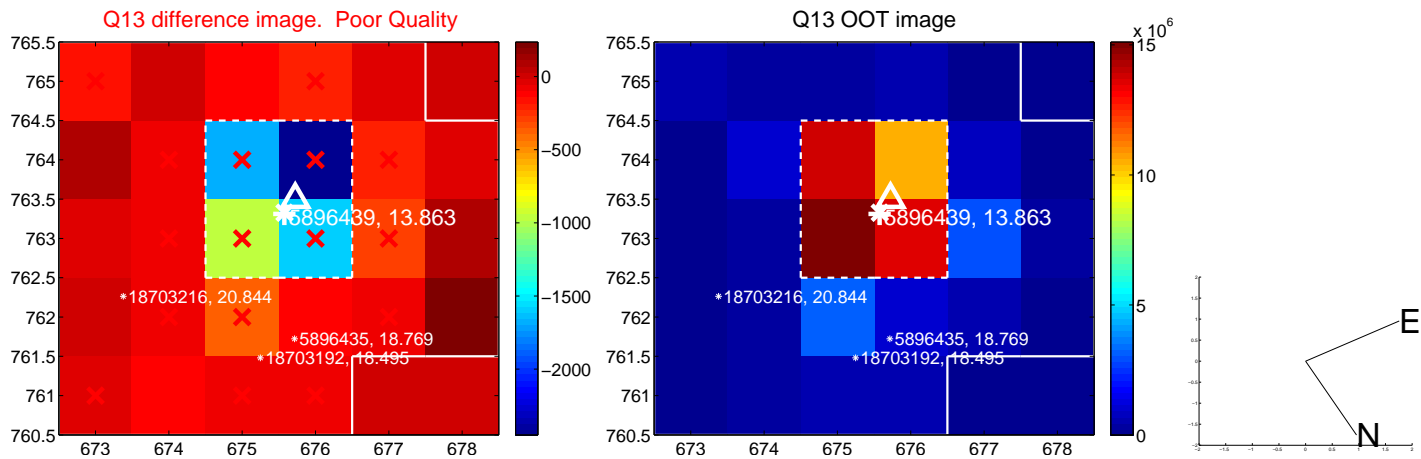
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

