

KIC 011187716

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})
011187716-01	OBS	No	11.318598	137.697385	38.7	24.614	9.5	9.4	0.76	5348	0.49	54.28
011187716-02	OBS	No	11.319997	140.432563	33.1	36.482	8.4	8.4	0.76	5348	0.52	54.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011187716-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
011187716-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

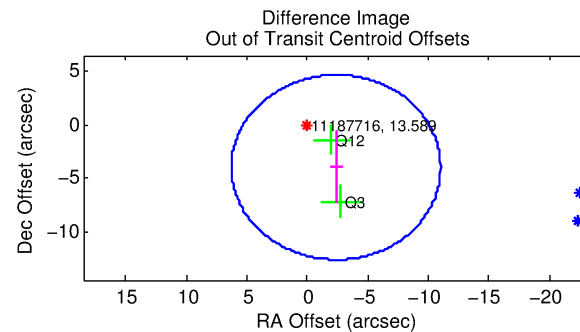
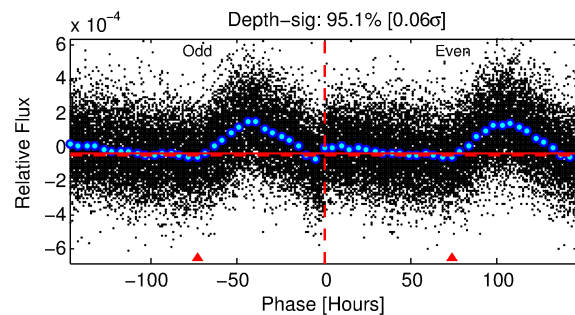
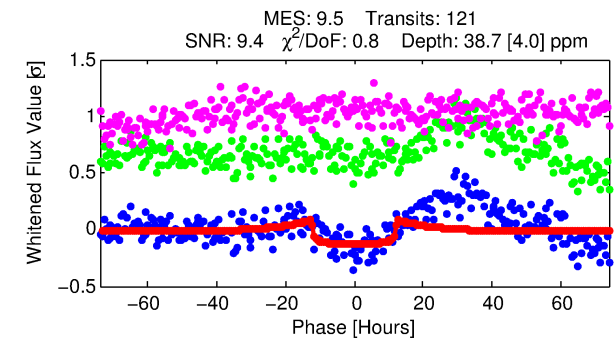
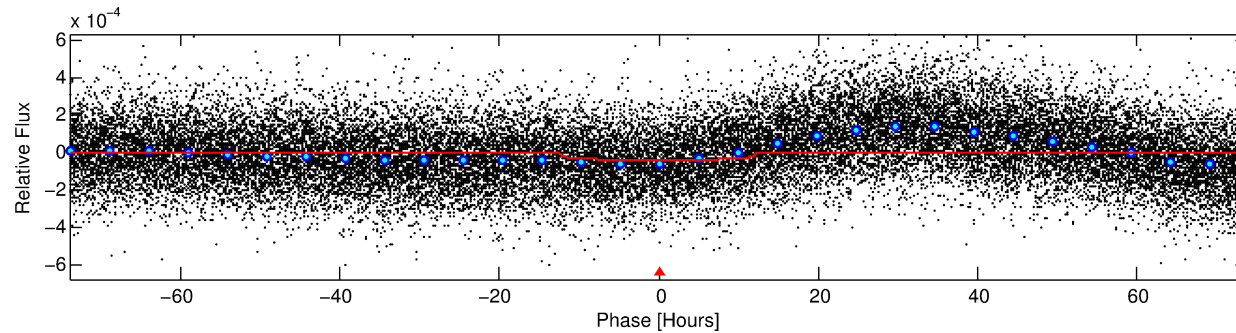
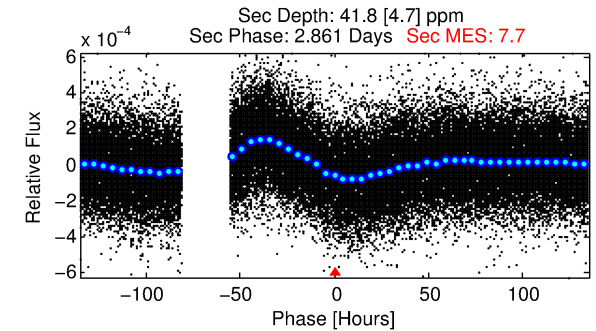
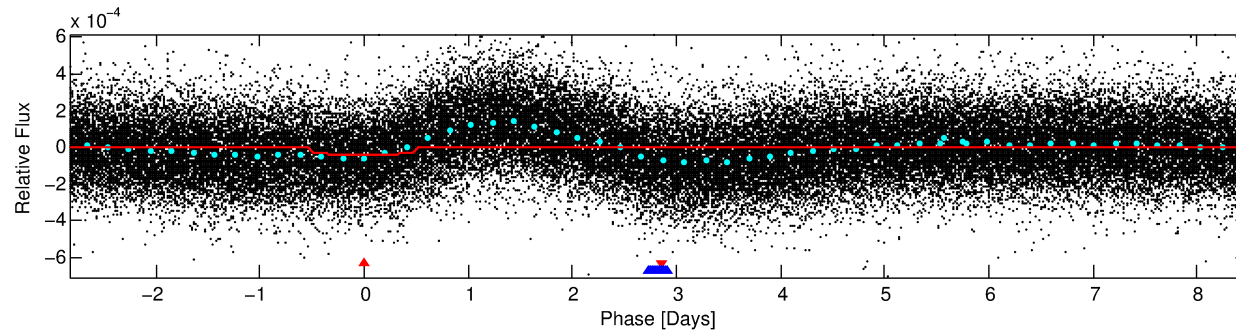
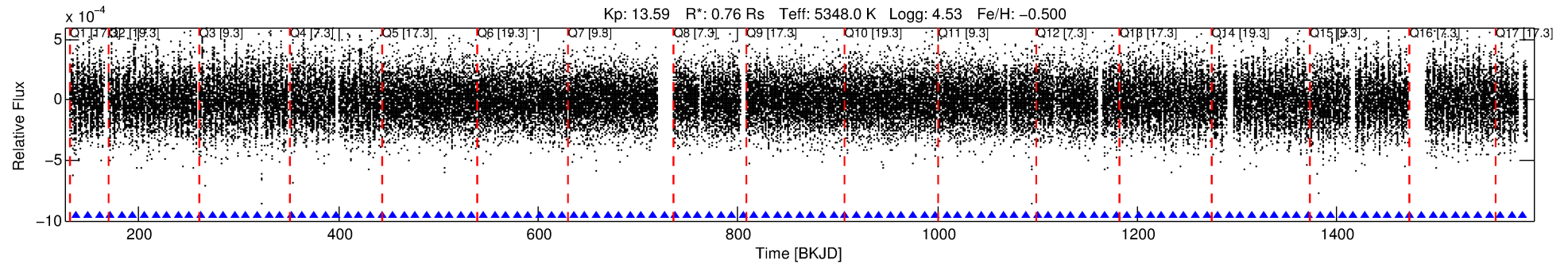
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011187716-01

No Significant Match Found

DV One-Page Summary

KIC: 11187716 Candidate: 1 of 2 Period: 11.319 d



DV Fit Results:

Period = 11.31860 [0.00027] d
Epoch = 137.6974 [0.0188] BKJD
Rp/R* = 0.0059 [0.0019]
a/R* = 2.91 [3.46]
b = 0.61 [1.39]
Self = 54.28 [11.26]
Teff = 692 [36] K
Rp = 0.49 [0.17] Re
a = 0.0880 [0.0098] AU
Ag = 742.11 [504.68] [1.47σ]
Teffp = 5585 [935] K [5.23σ]

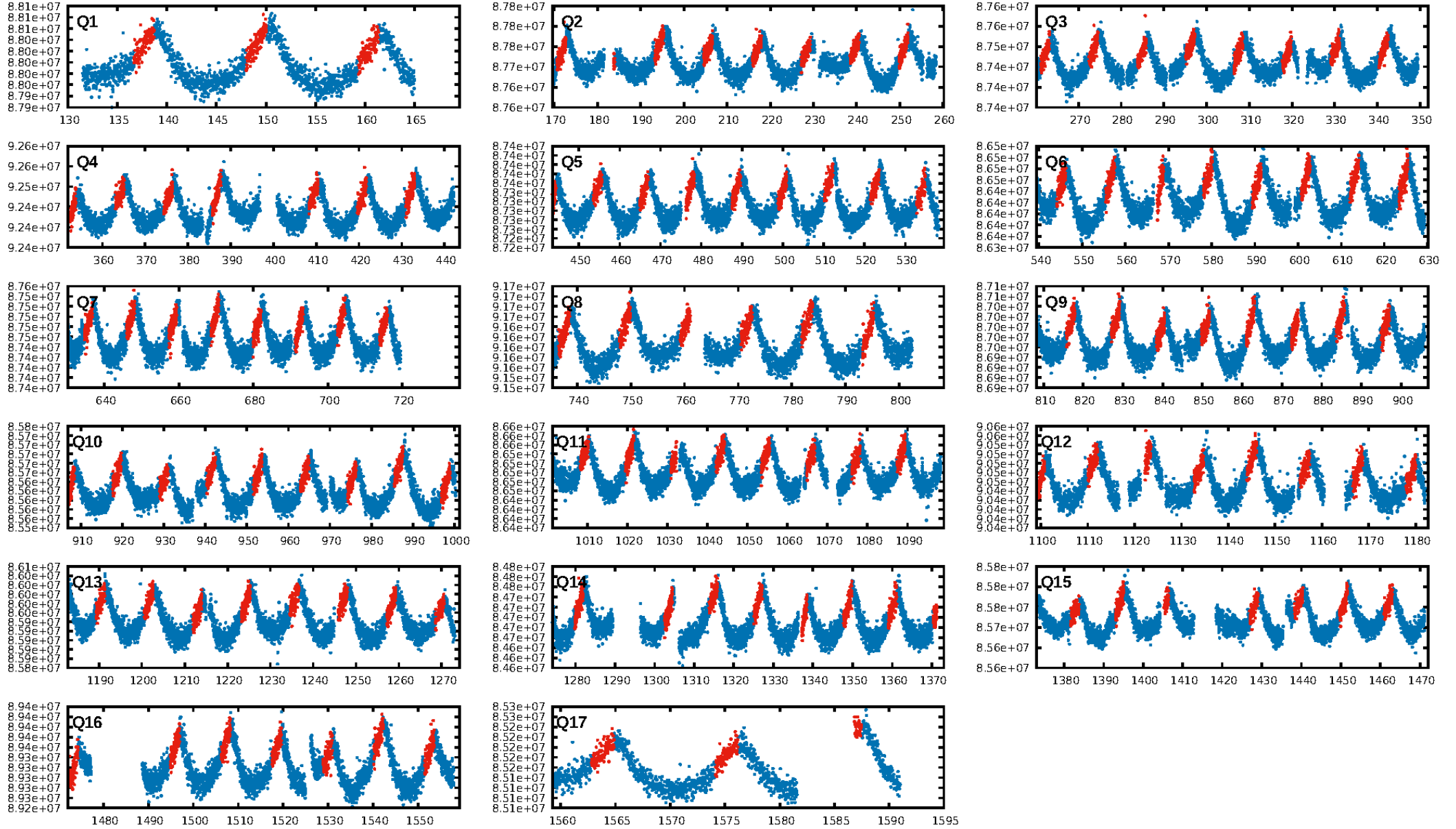
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.16e-25
RollingBand-fgt: 1.00 [115/115]
GhostDiagnostic-chr: 1.164
Centroid-sig: 23.9%
Centroid-so: 0.928 arcsec [1.21σ]
OotOffset-rm: 4.623 arcsec [1.61σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 4.750 arcsec [1.64σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [17/17]

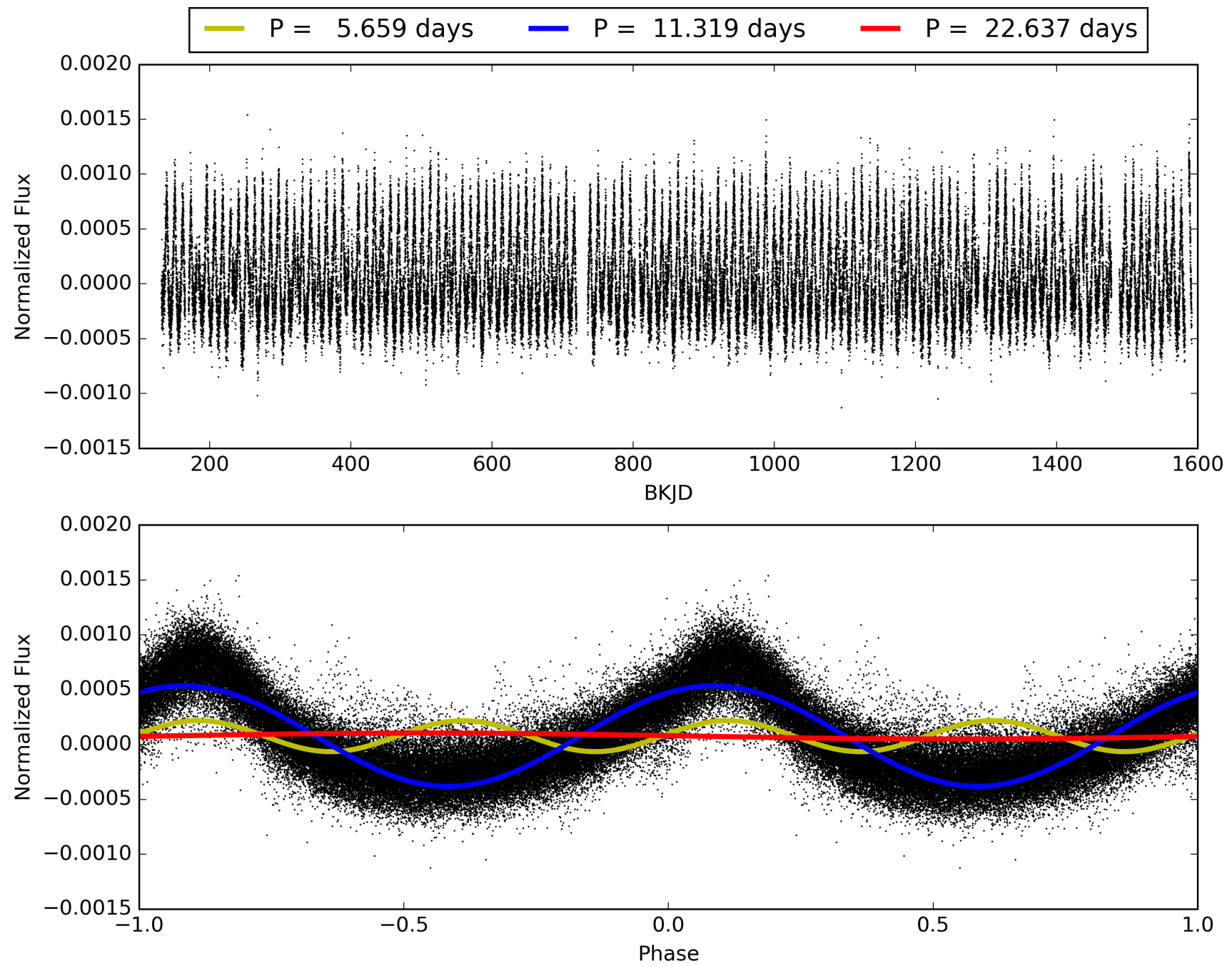
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:01:57 Z

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

TCE 011187716-01, PDC Light Curves

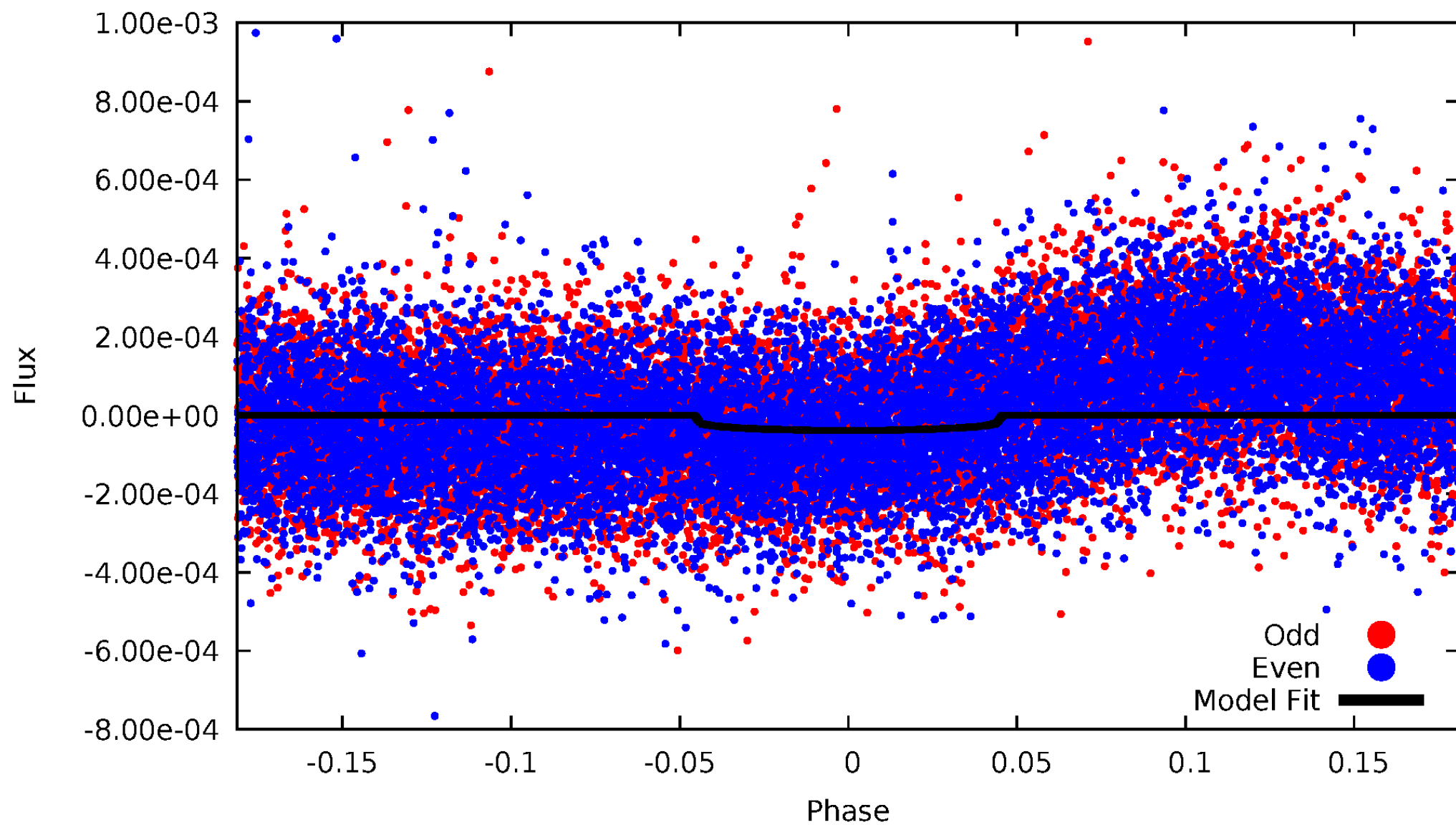


TCE 011187716-01



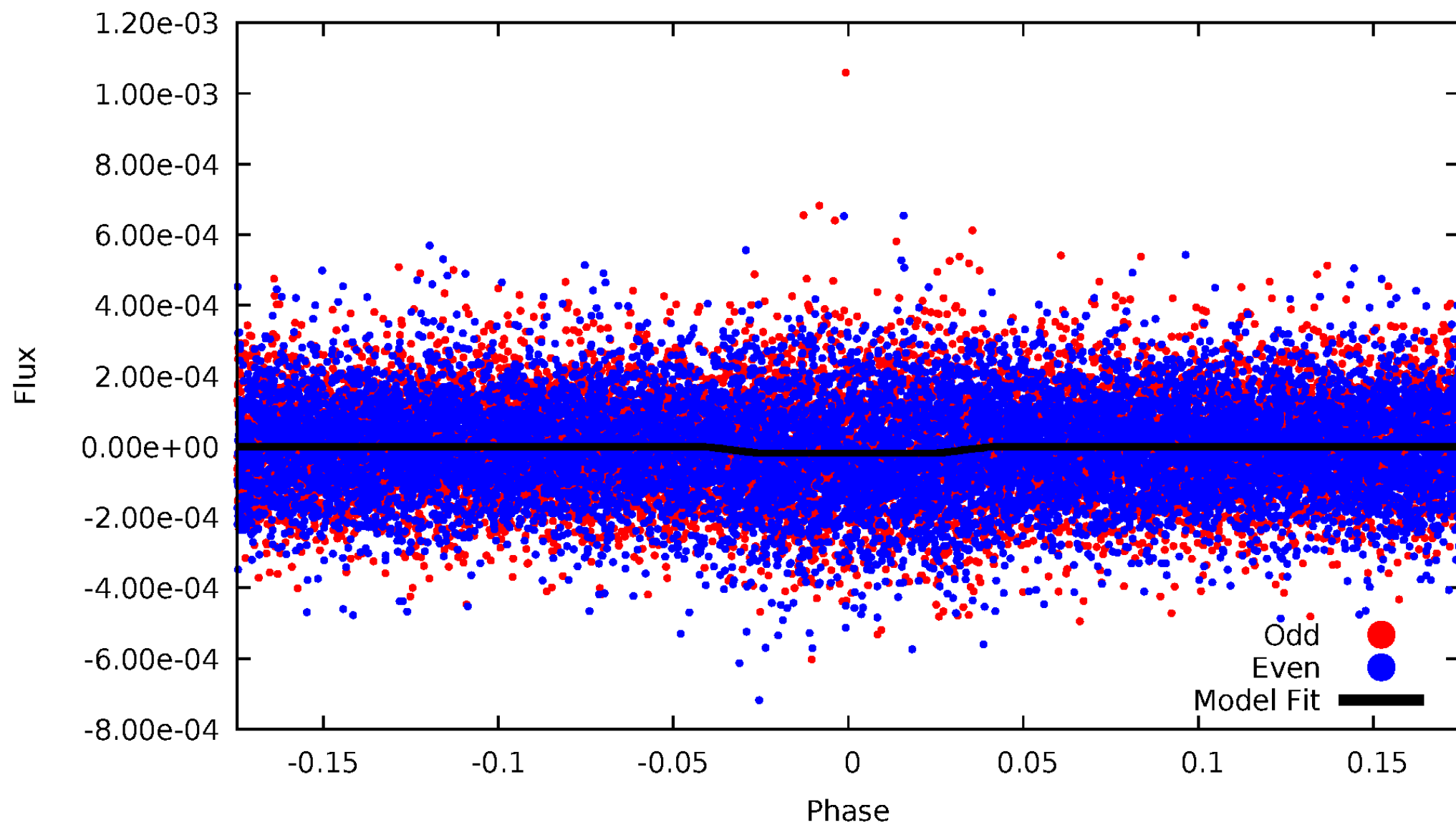
DV Odd/Even

TCE 011187716-01



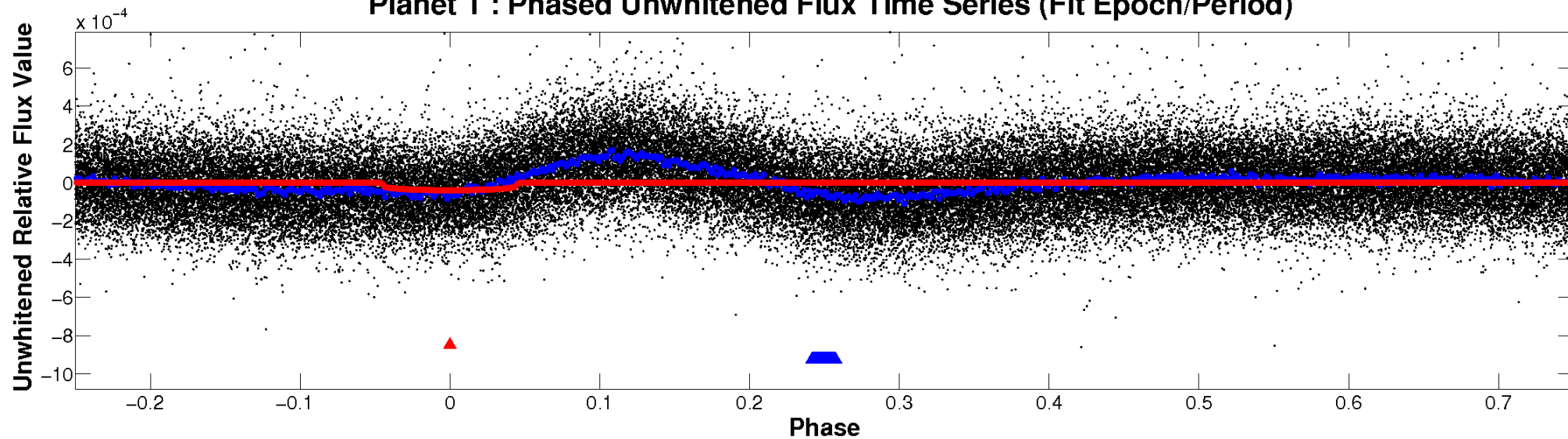
ALT Odd/Even

TCE 011187716-01

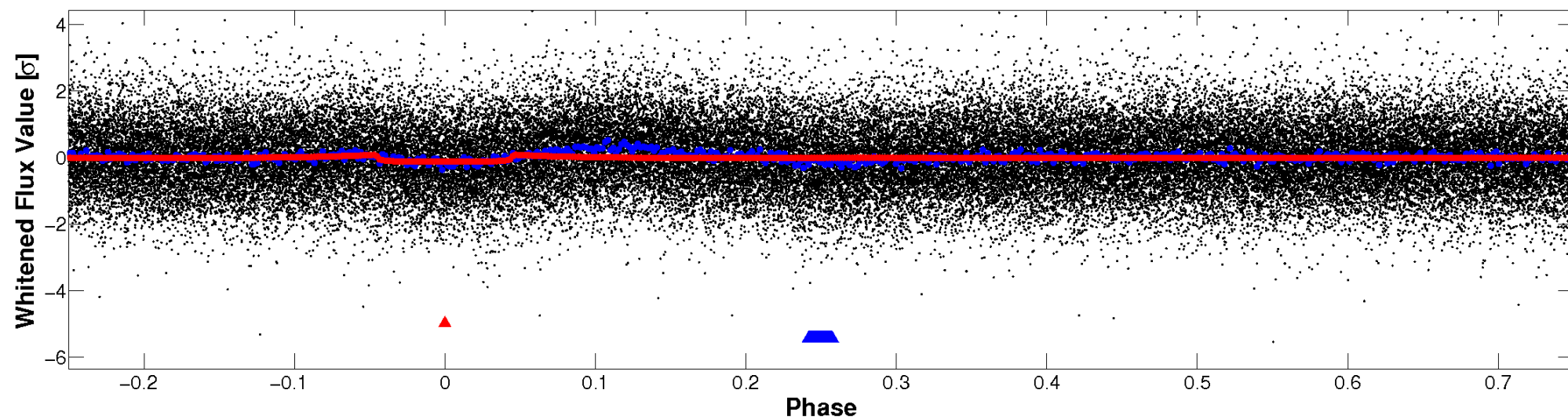


Non-Whitened Vs. Whitened Light Curve

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

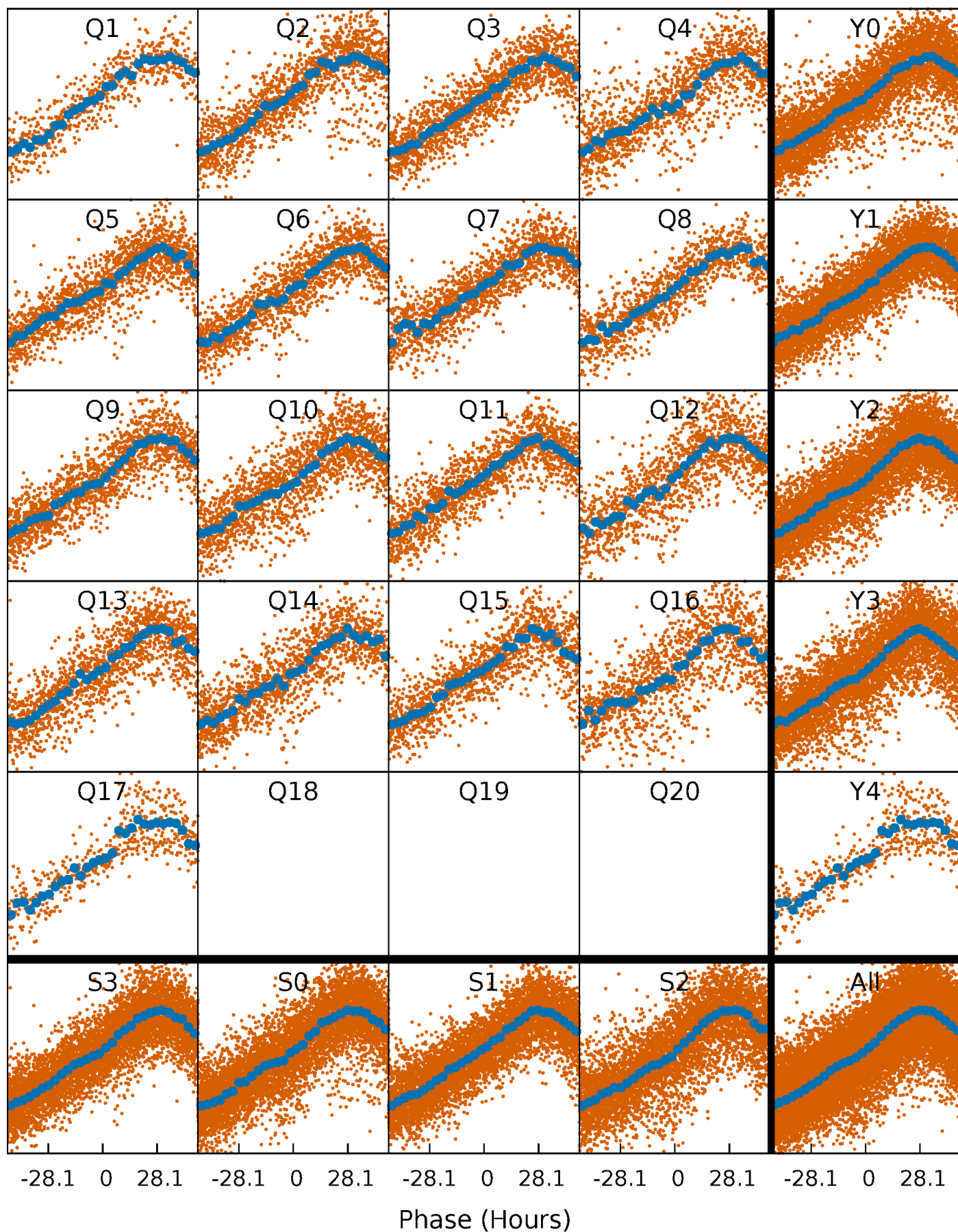


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



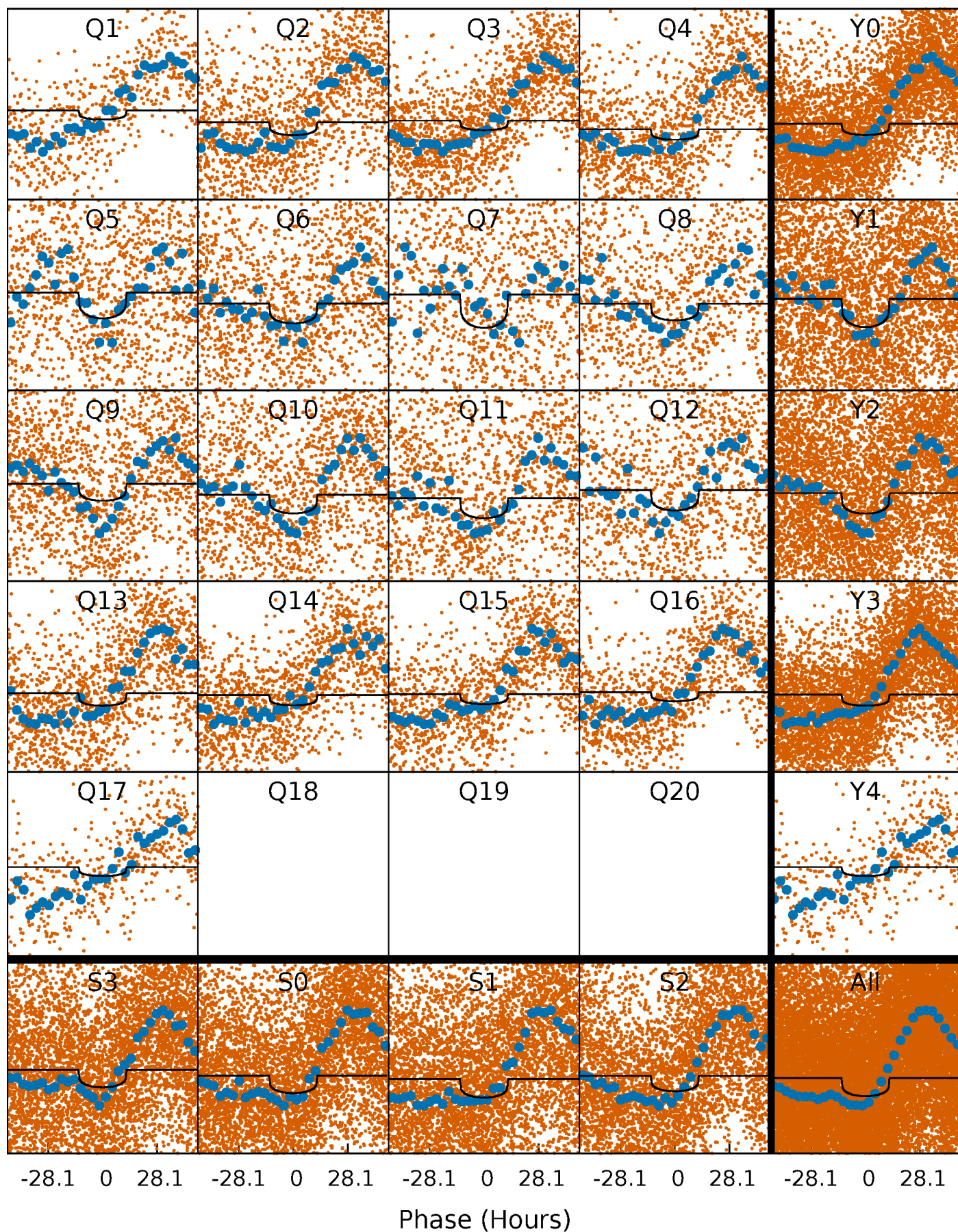
PDC Quarter-Phased Transit Curves

TCE 011187716-01 P= 11.318598 Days $T_0=137.697385$ (BKJD)



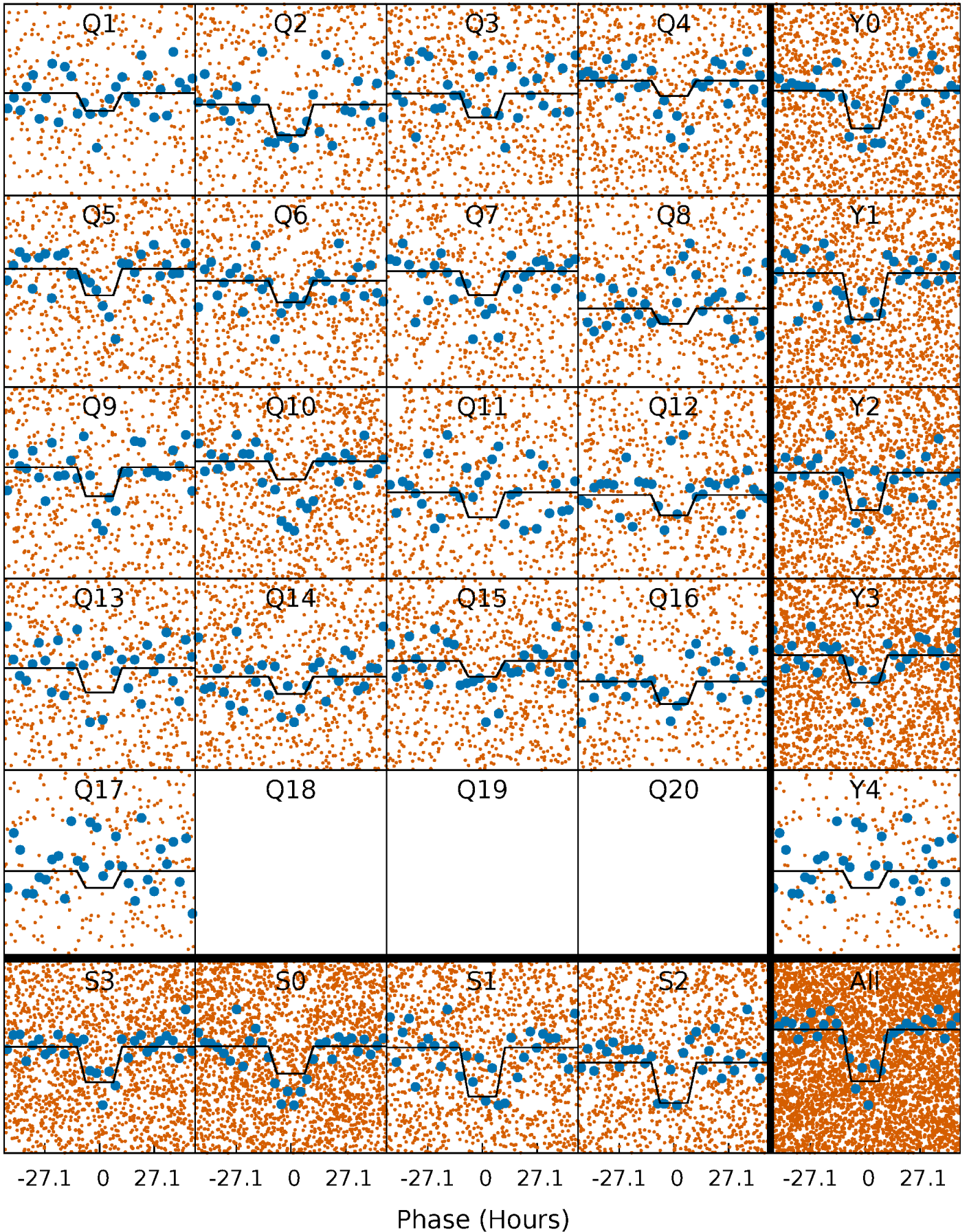
DV Quarter-Phased Transit Curves

TCE 011187716-01 P= 11.318598 Days $T_0=137.697385$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

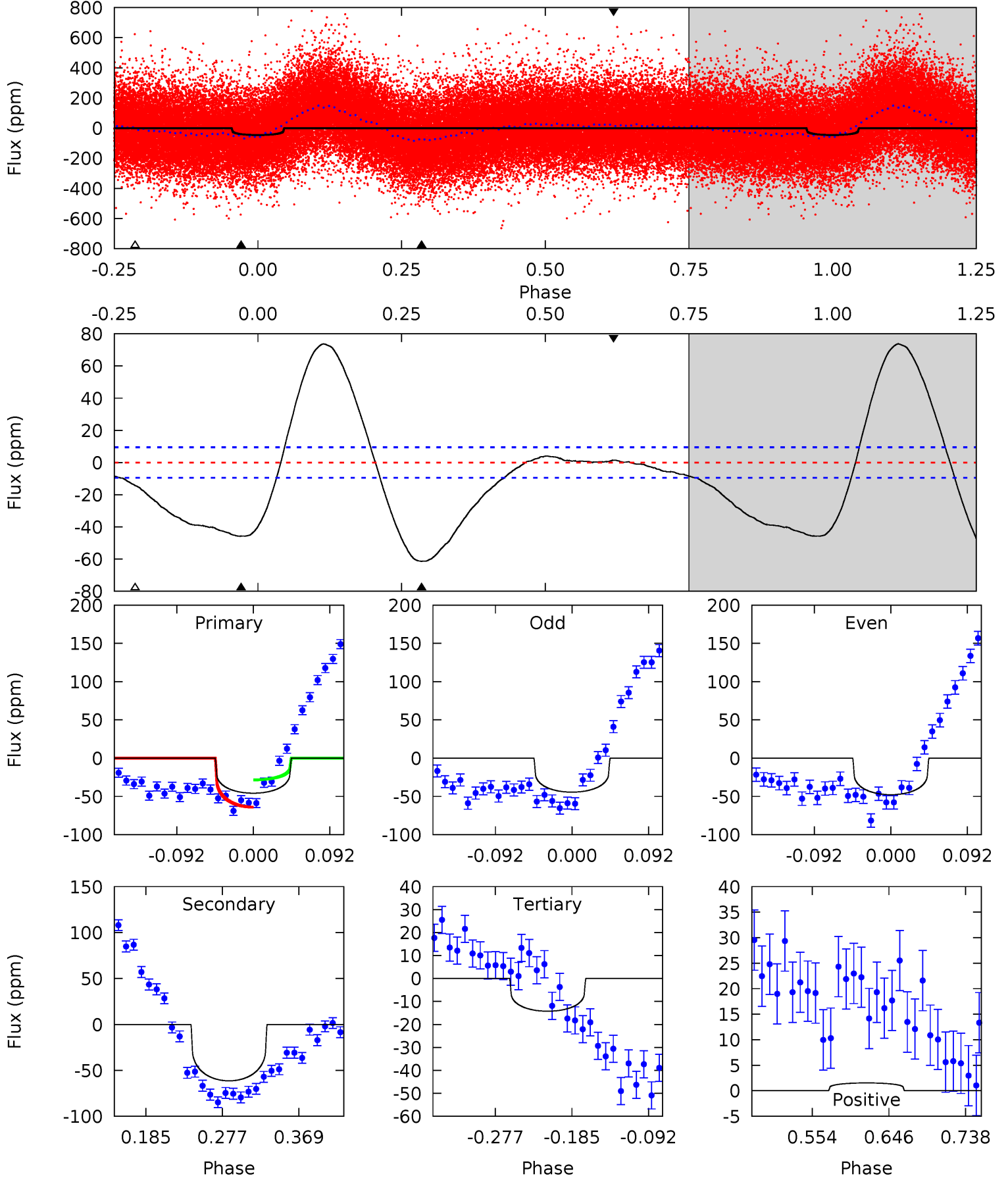
TCE 011187716-01 P= 11.318582 Days $T_0=137.667390$ (BKJD)



DV Model-Shift Uniqueness Test

011187716-01, P = 11.318598 Days, E = 126.378787 Days

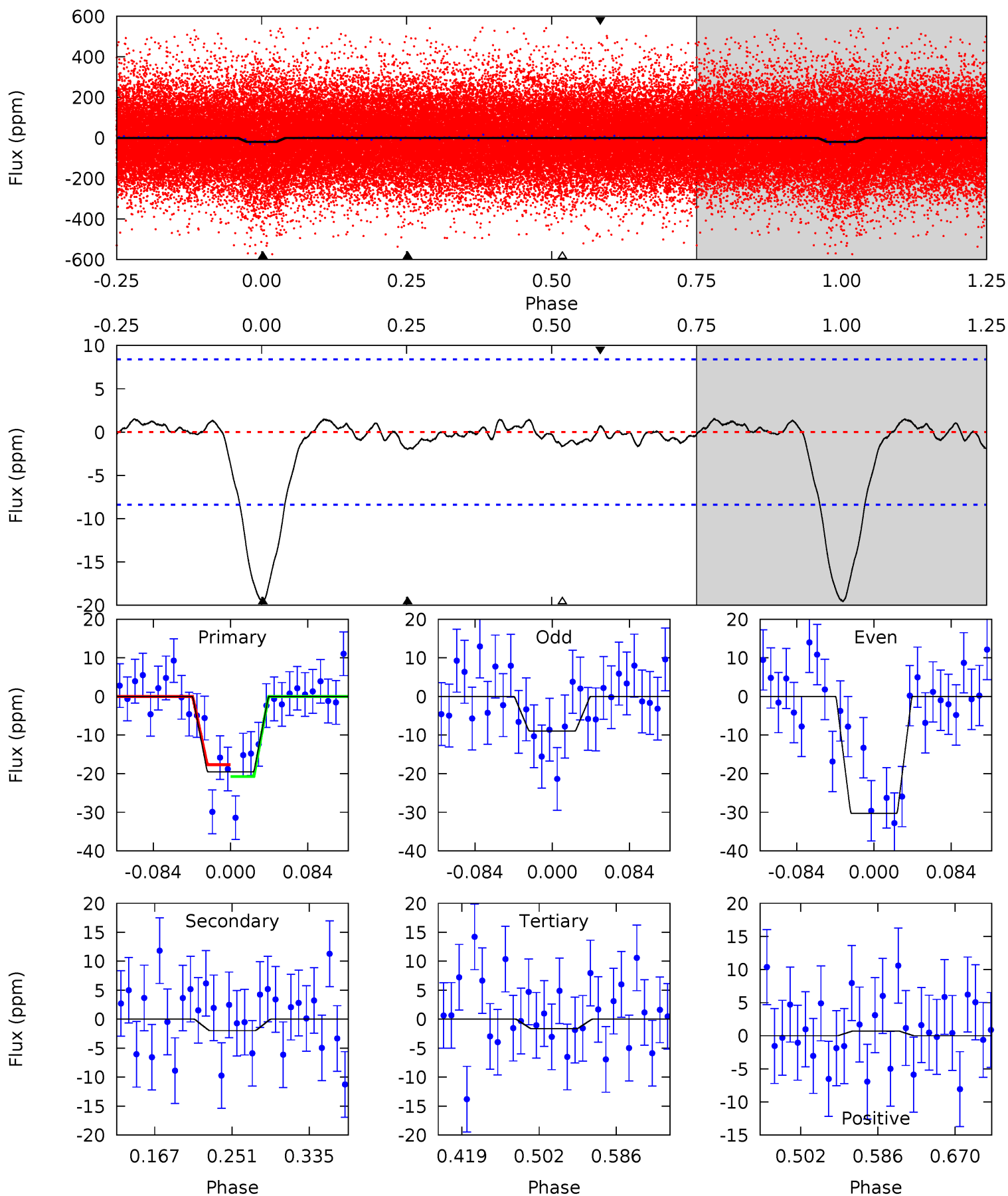
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	29.8	6.91	0.74	4.58	1.68	13.7	15.3	21.5	22.8	29.0	0.81	1.16	0.55	8.55



Alt Model-Shift Uniqueness Test

011187716-01, P = 11.318582 Days, E = 126.348808 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	1.08	0.90	0.39	4.60	1.73	0.42	9.81	10.3	0.18	0.69	5.83	0.72	0.07	0.84



Stellar Parameters For KIC 011187716

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5348^{+160}_{-144}	$4.530^{+0.096}_{-0.072}$	$-0.500^{+0.300}_{-0.300}$	$0.757^{+0.095}_{-0.085}$	$0.708^{+0.099}_{-0.038}$	$2.297^{+0.949}_{-0.568}$
	+3%/-3%	+2%/-2%	+60%/-60%	+13%/-11%	+14%/-5%	+41%/-25%
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 011187716-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-61 ± 2	$0.49^{+0.16}_{-0.15}$	967^{+38}_{-43}	6136^{+1379}_{-793}	1107^{+1217}_{-474}
Alt.	-2 ± 2	$0.35^{+0.16}_{-0.15}$	967^{+40}_{-41}	3446^{+969}_{-991}	58^{+185}_{-53}

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

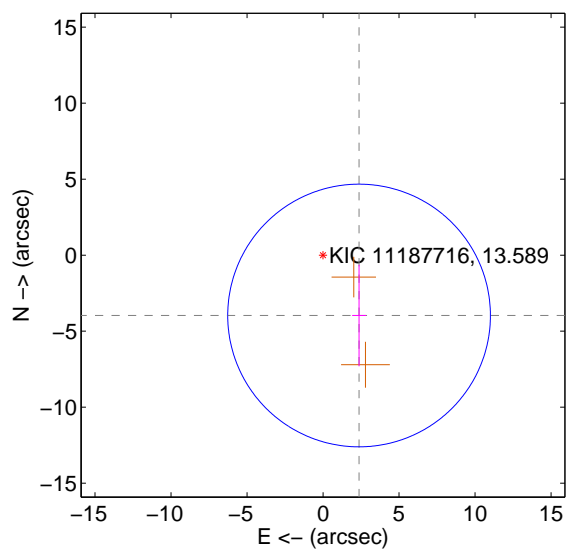
Supplemental centroid analysis for 011187716-01. Kepler magnitude: 13.59. Transit SNR 9.39

There are 0 quarters with good PRF difference image offsets

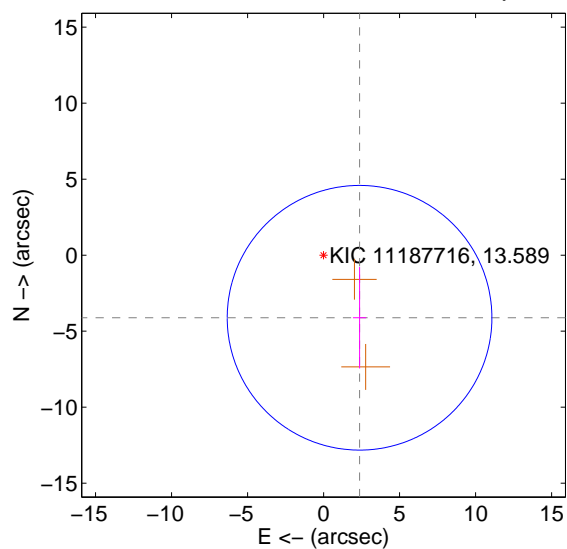
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.623 ± 2.880	1.61	-2.371 ± 0.454	-3.969 ± 3.344
PRF-fit source offset from KIC position	4.750 ± 2.902	1.64	-2.367 ± 0.434	-4.118 ± 3.338
photometric centroid source offset	0.93 ± 0.77	1.21	-0.66 ± 0.74	-0.65 ± 0.80

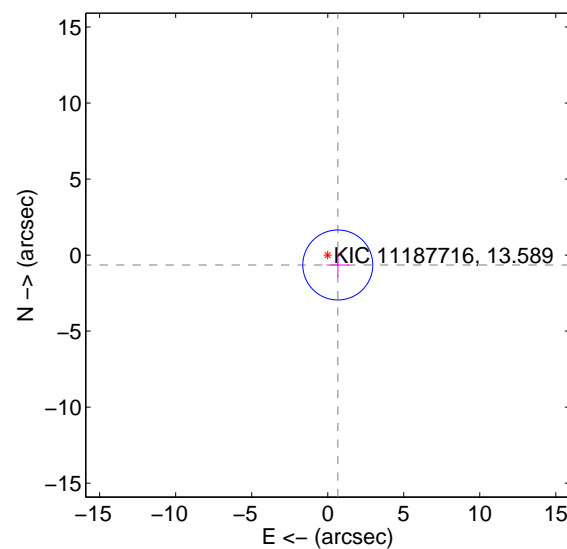
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

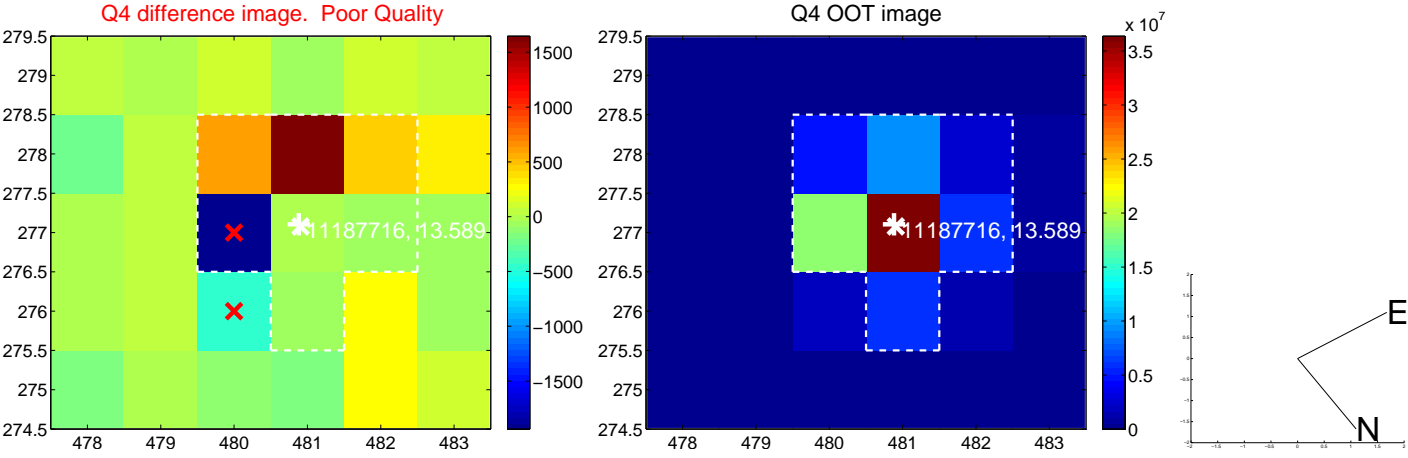
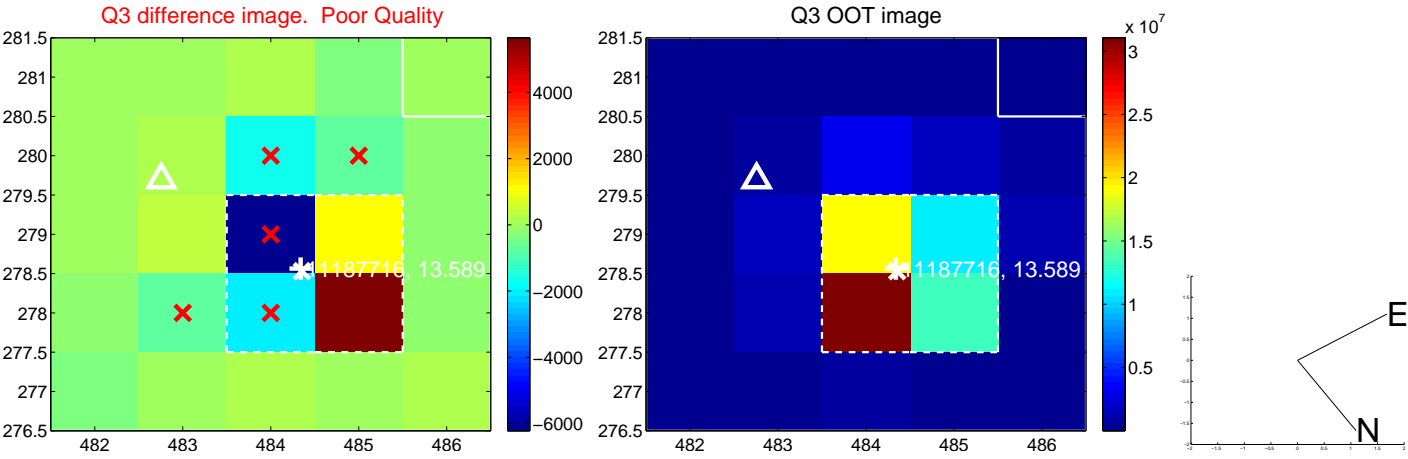
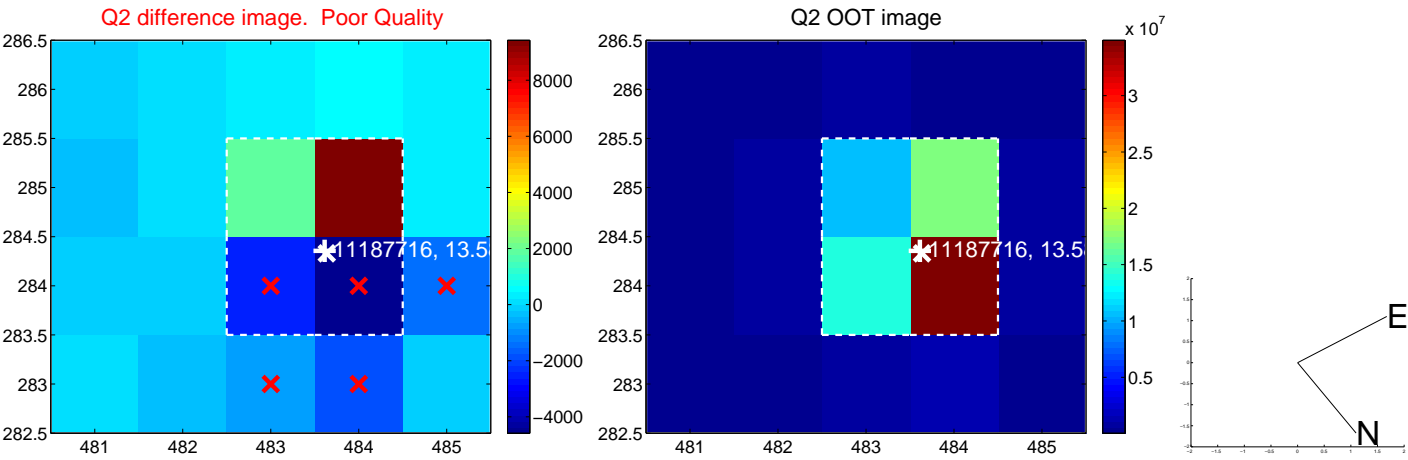
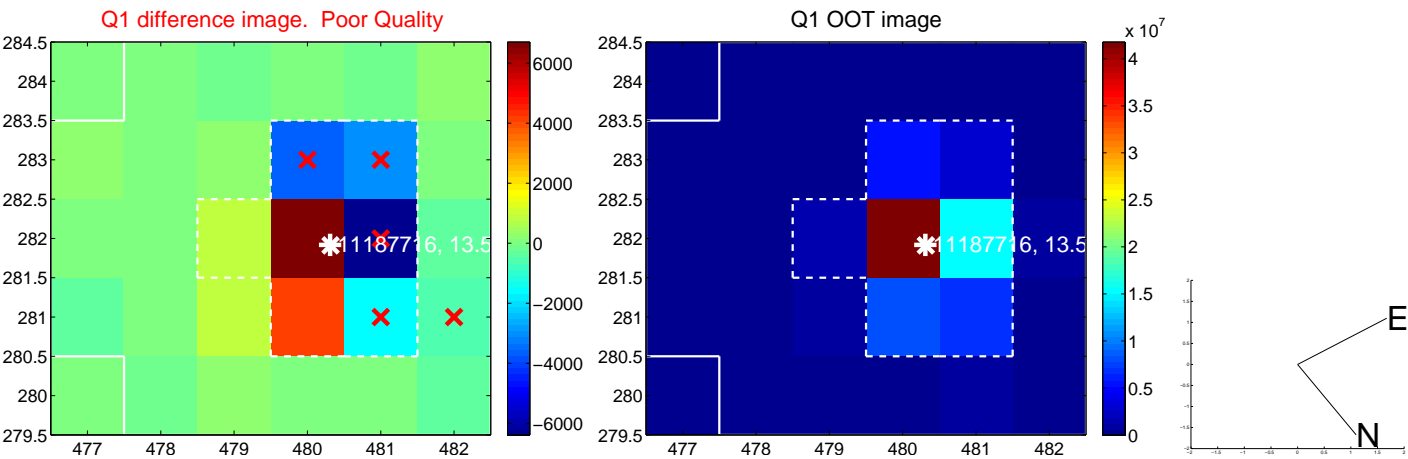


offset from photometric centroids

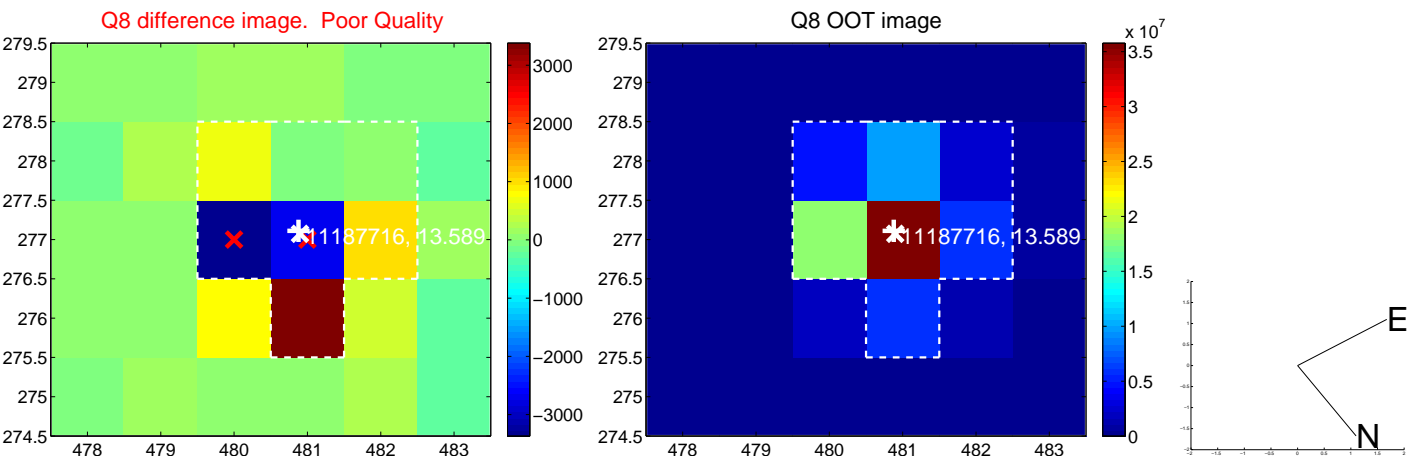
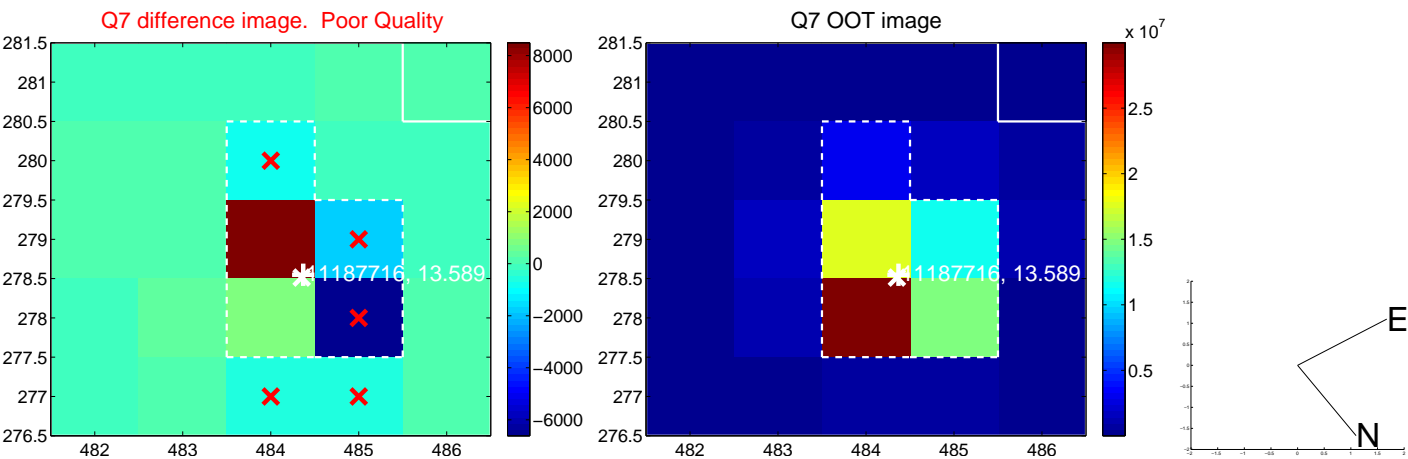
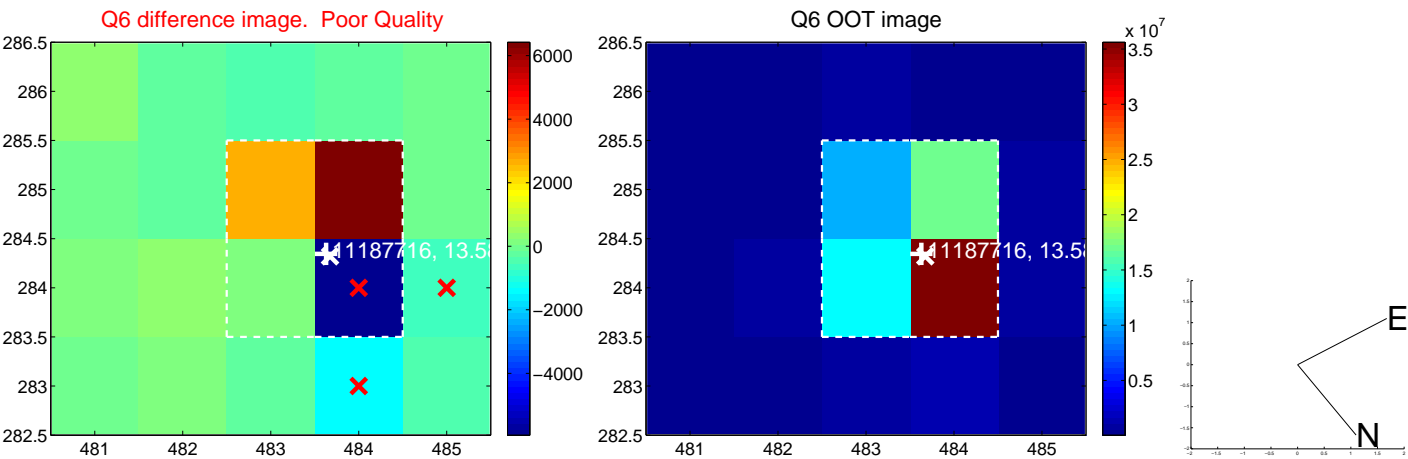
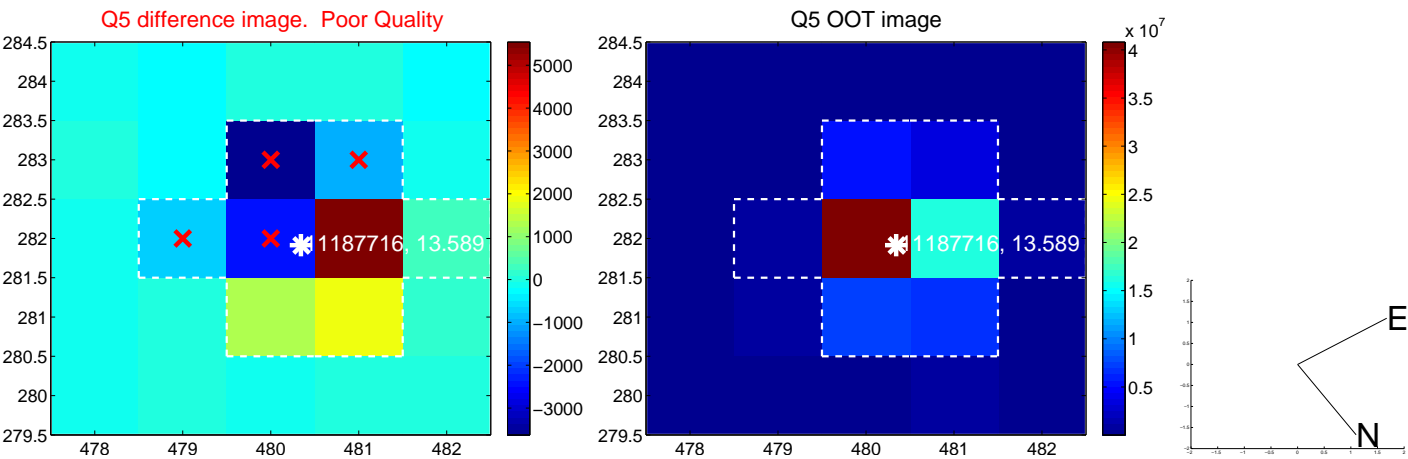


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

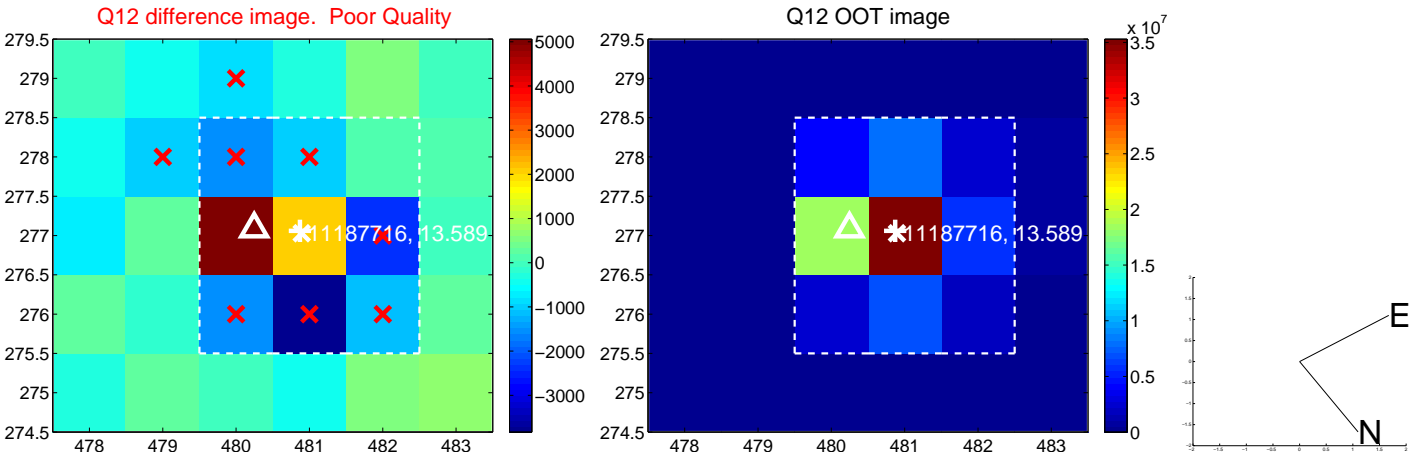
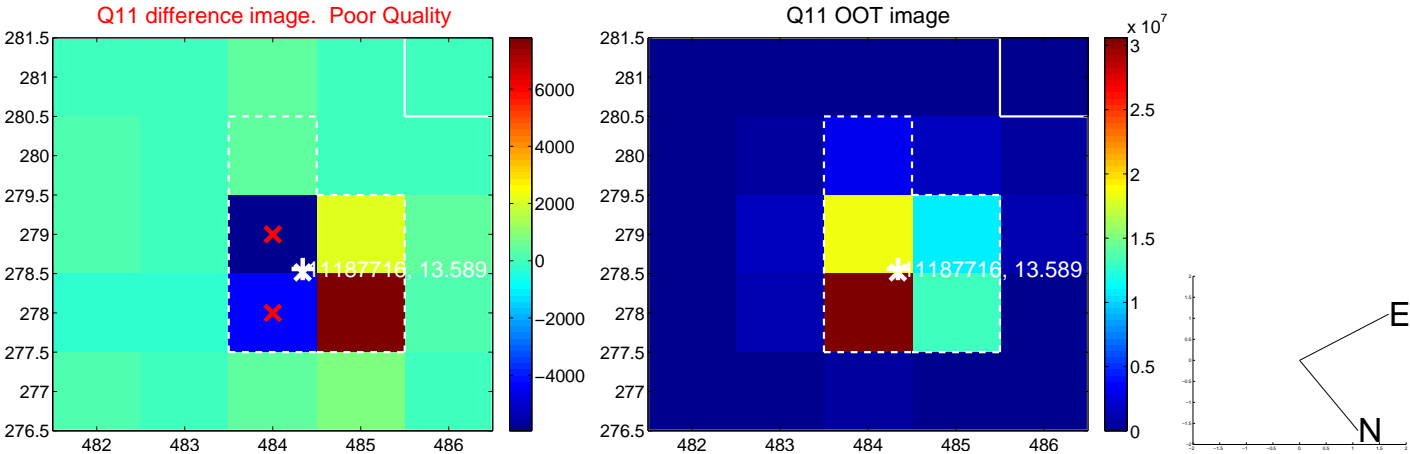
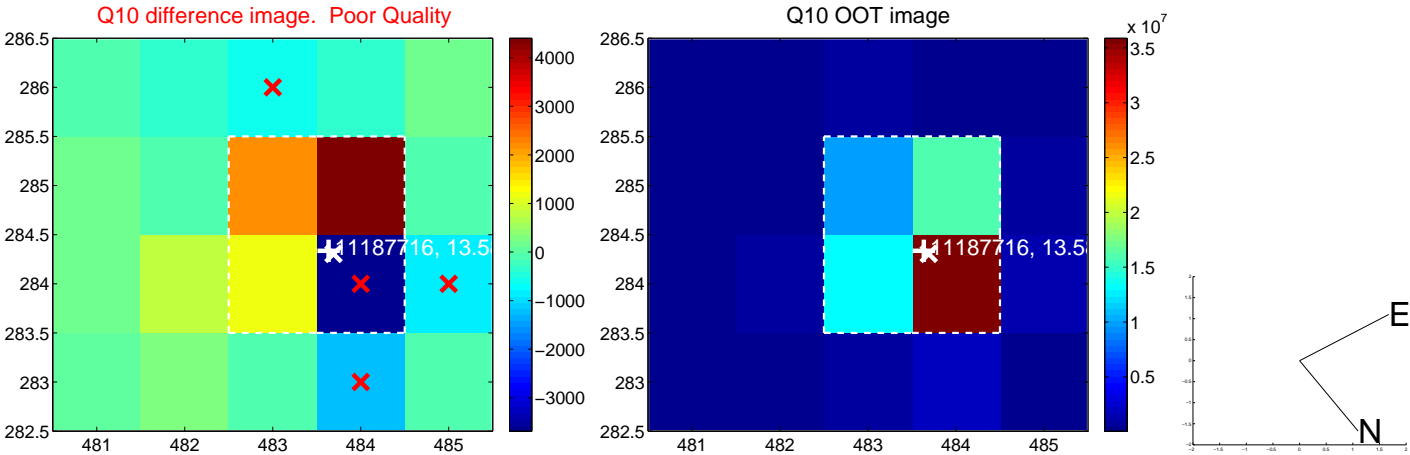
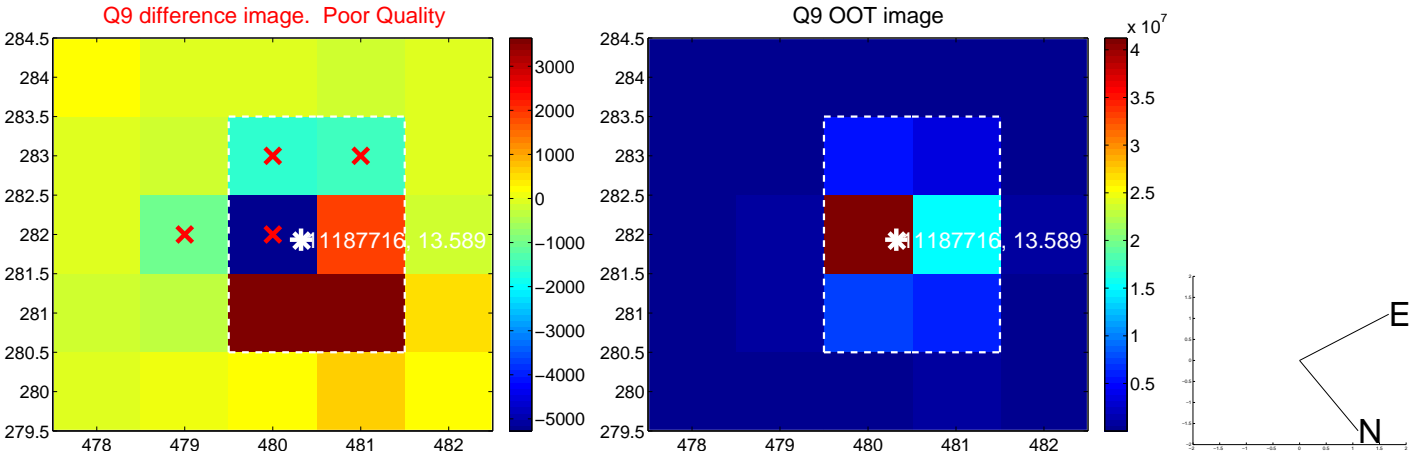
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



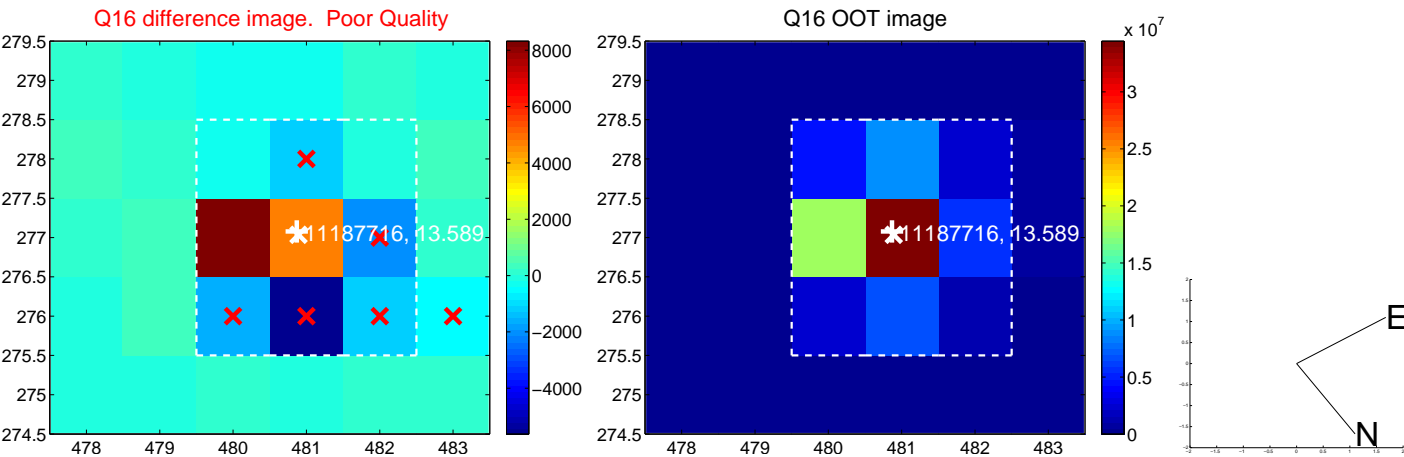
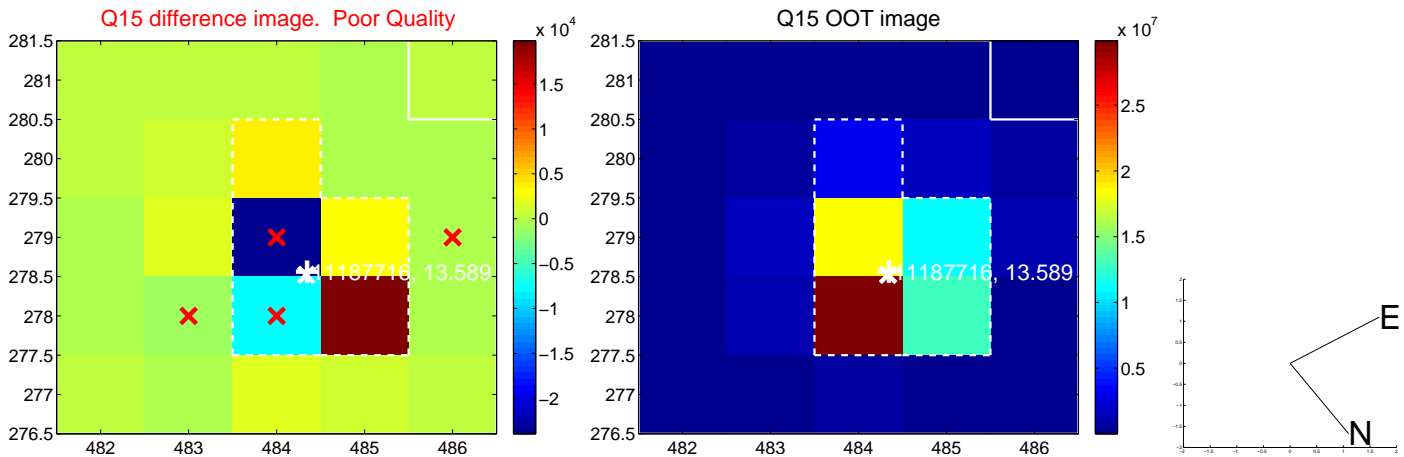
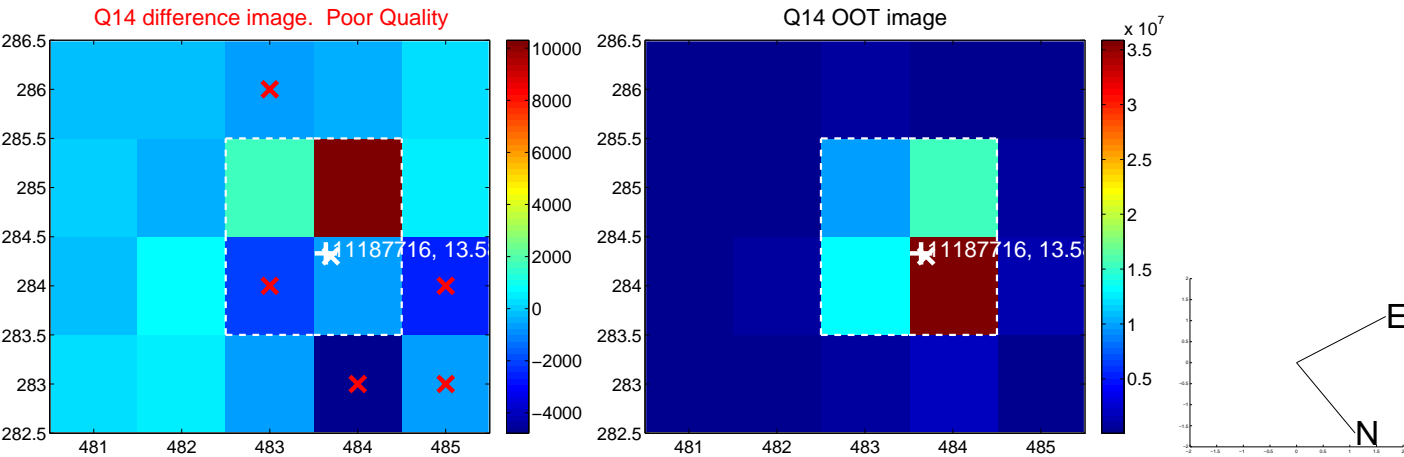
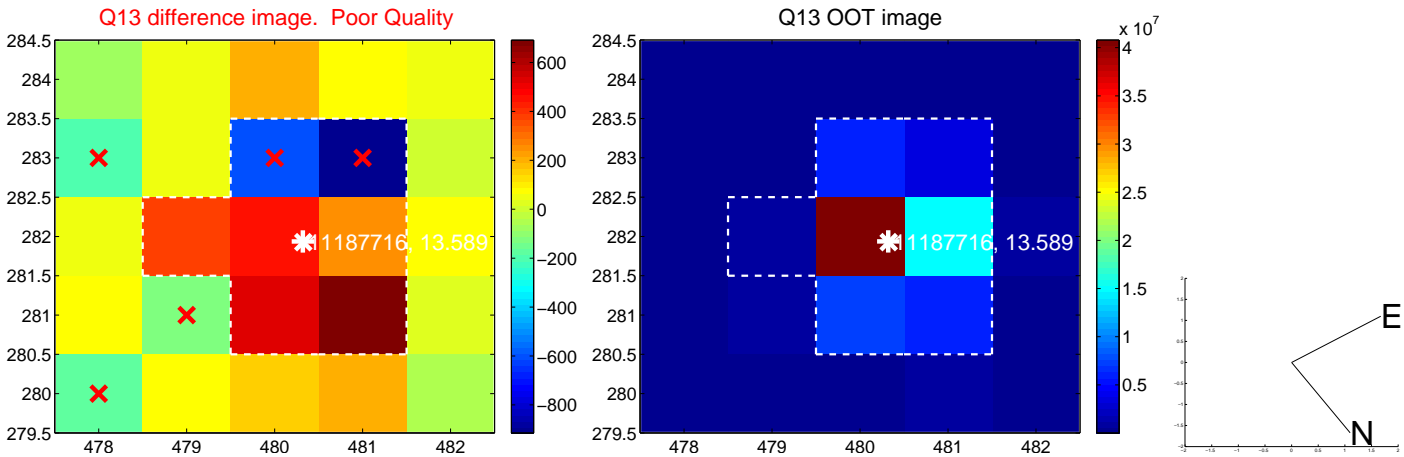
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



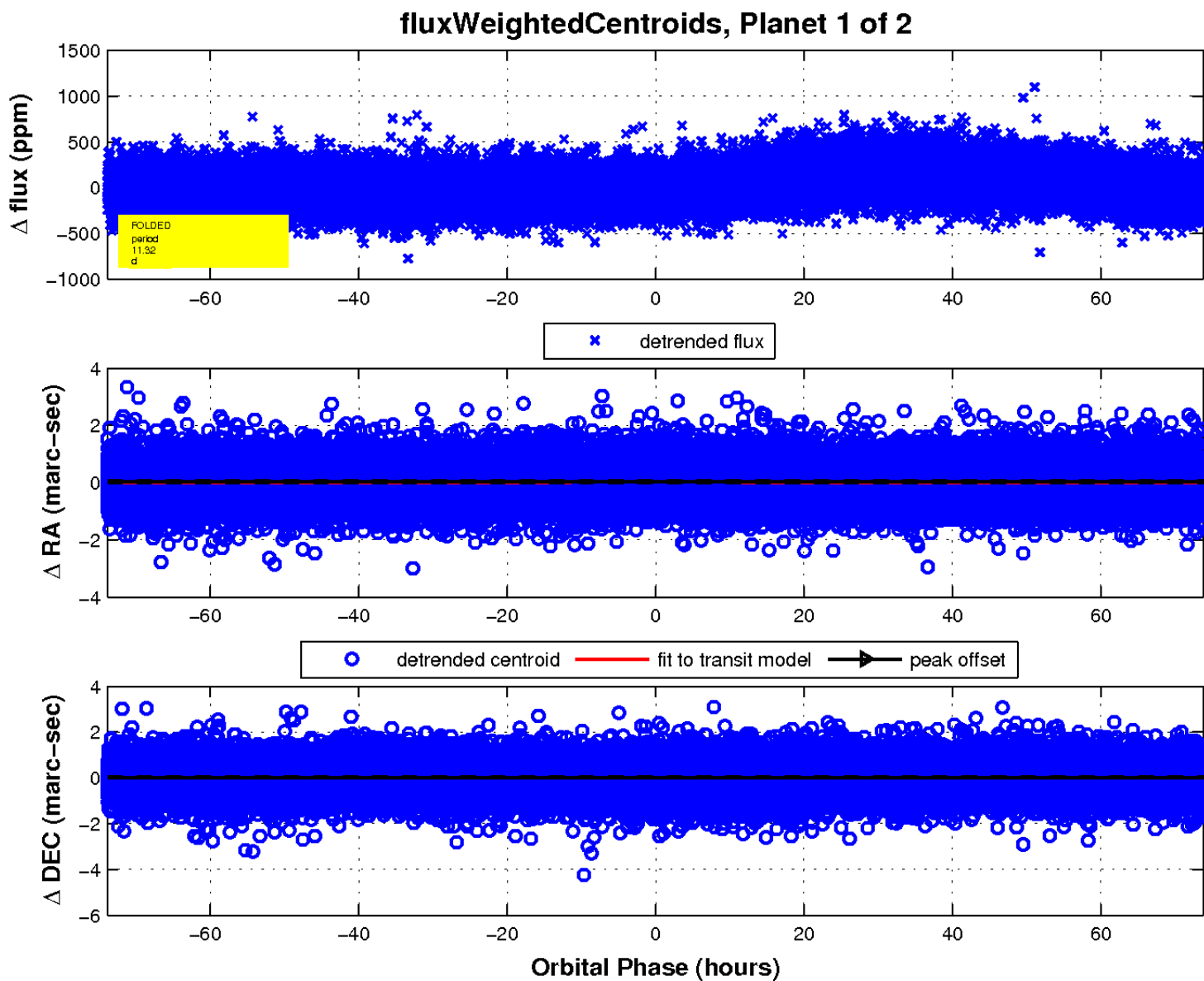
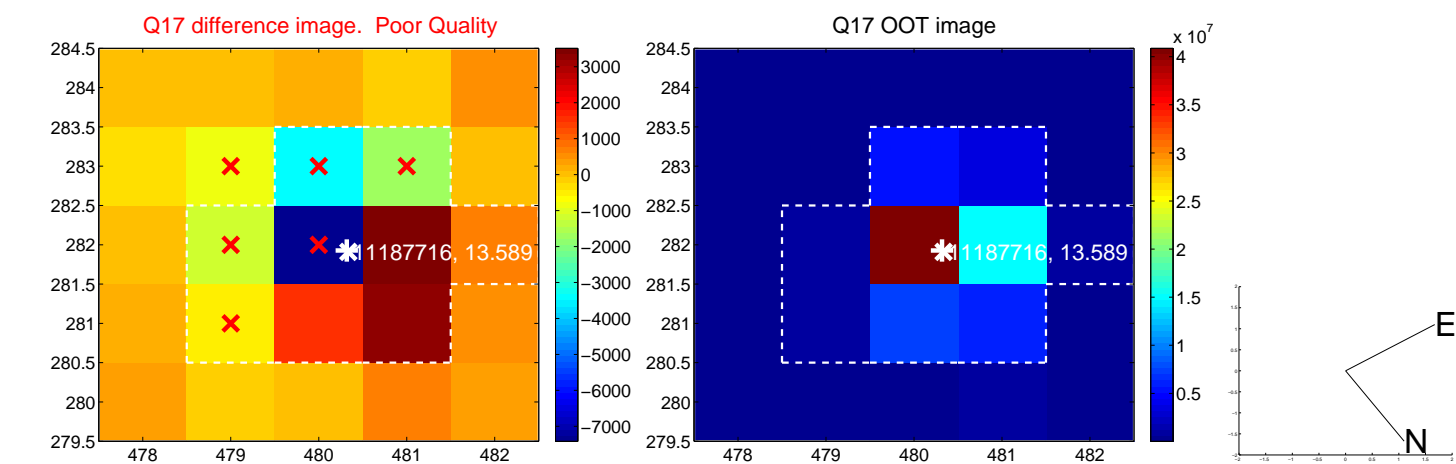
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

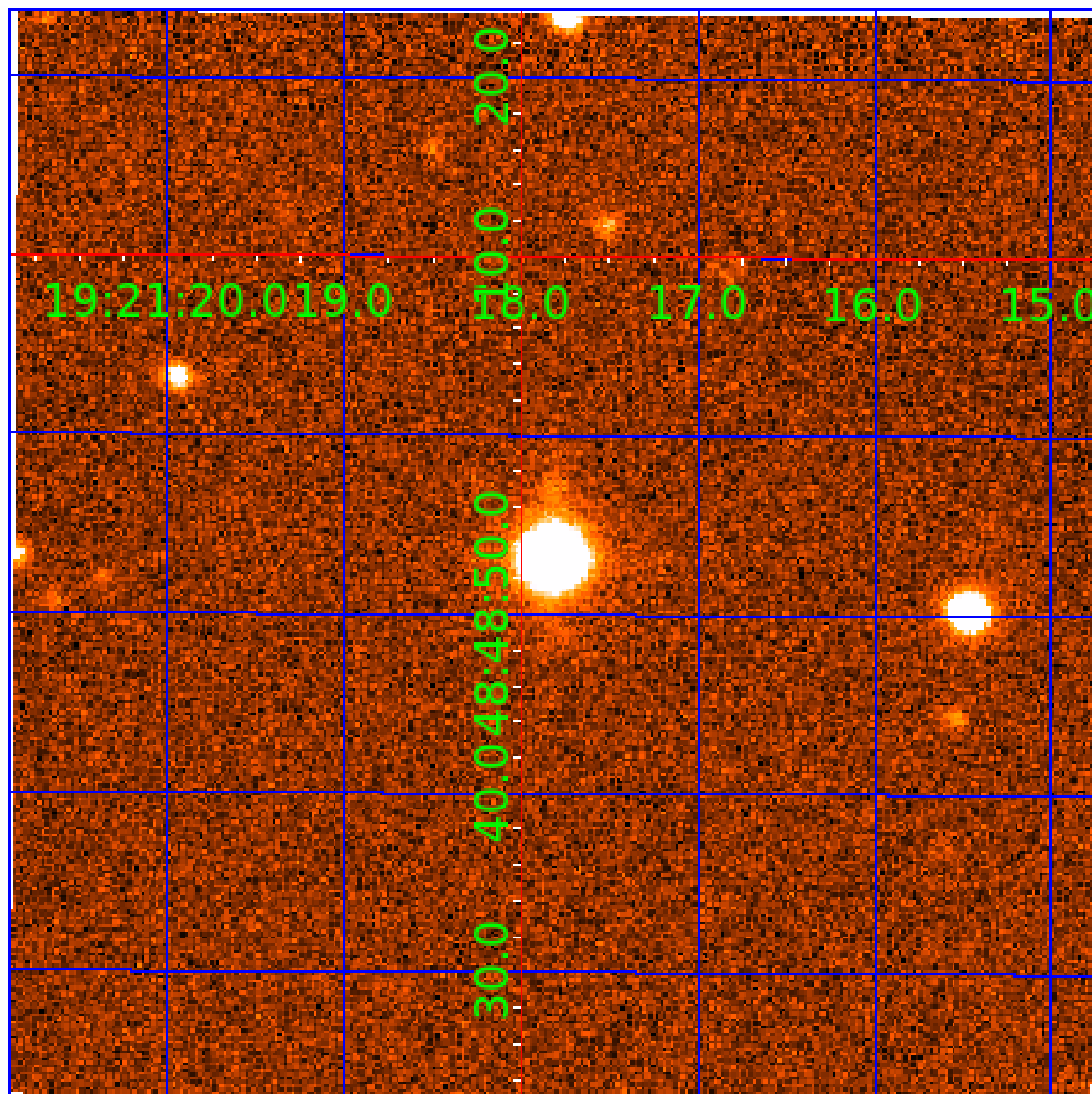


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011187716

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})
011187716-01	OBS	No	11.318598	137.697385	38.7	24.614	9.5	9.4	0.76	5348	0.49	54.28
011187716-02	OBS	No	11.319997	140.432563	33.1	36.482	8.4	8.4	0.76	5348	0.52	54.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011187716-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
011187716-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

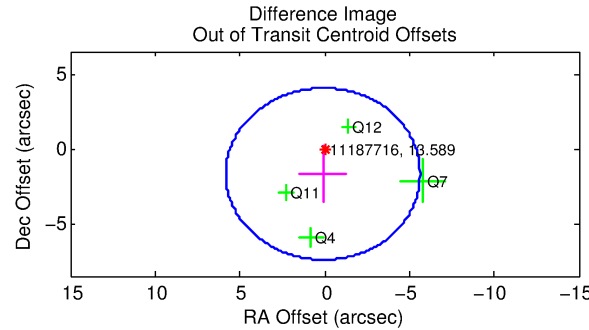
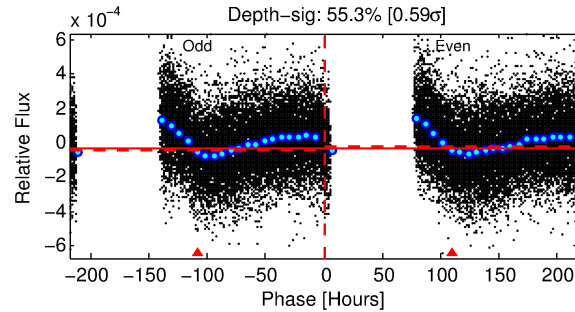
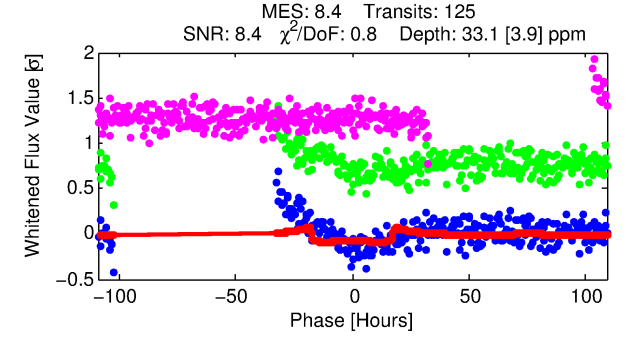
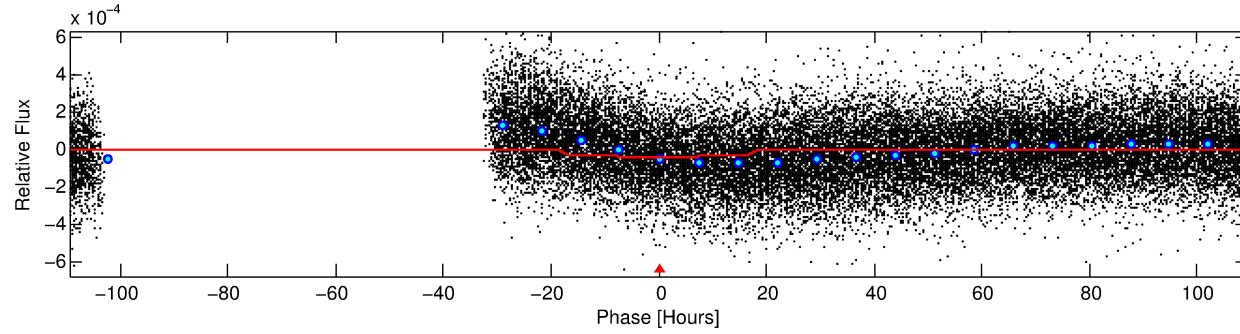
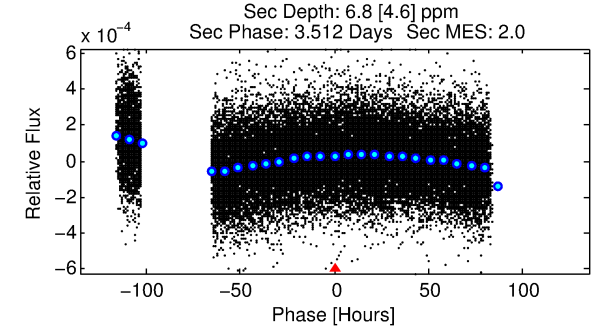
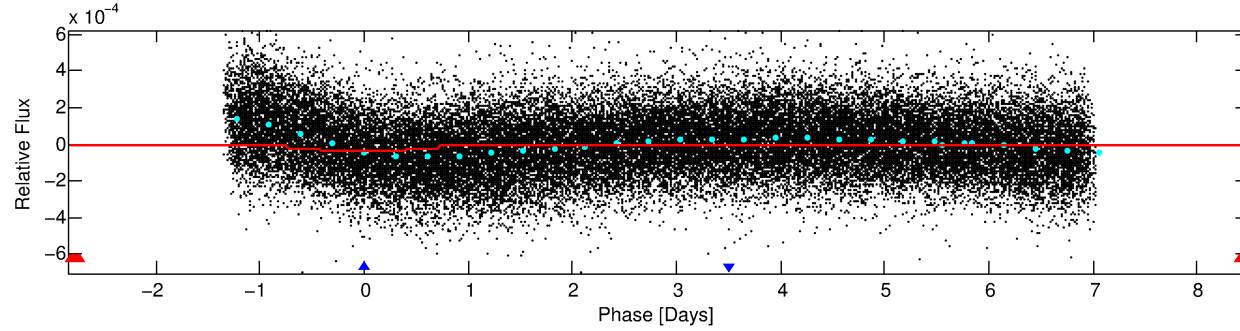
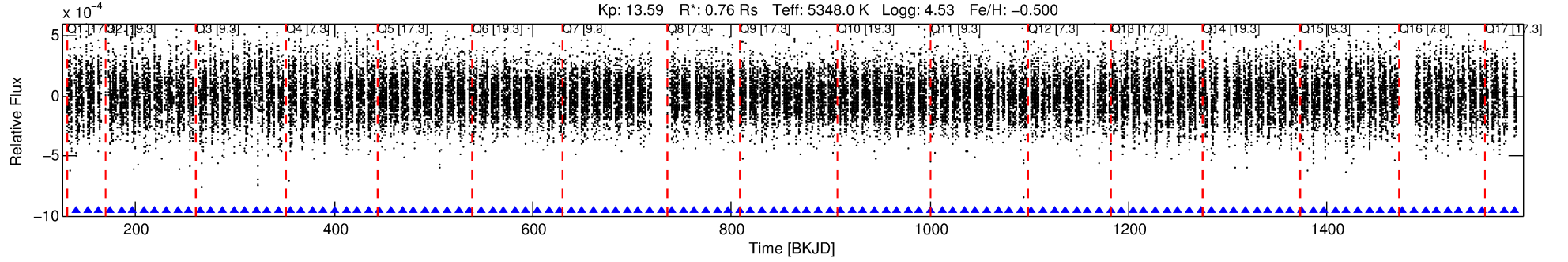
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011187716-02

No Significant Match Found

DV One-Page Summary

KIC: 11187716 Candidate: 2 of 2 Period: 11.320 d



DV Fit Results:

Period = 11.32000 [0.00040] d
Epoch = 140.4326 [0.0286] BKJD
Rp/R* = 0.0062 [0.0007]
a/R* = 1.45 [0.32]
b = 0.89 [0.10]
Seff = 54.27 [11.26]
Teq = 692 [36] K
Rp = 0.51 [0.09] Re
a = 0.0880 [0.0098] AU
Ag = 108.78 [79.17] [1.36σ]
Teffp = 3456 [620] K [4.45σ]

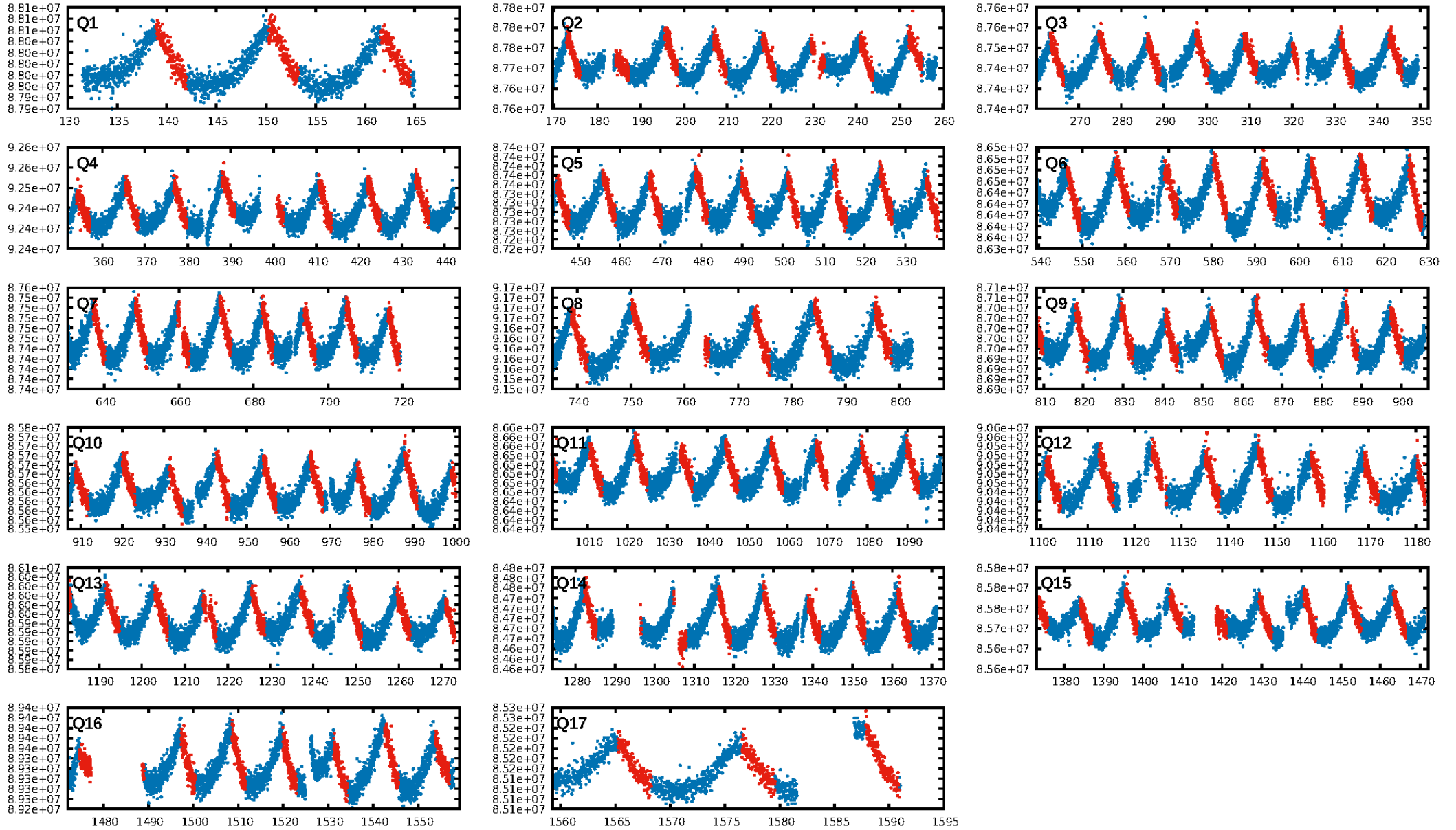
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 96.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.84e-20
RollingBand-fgt: 1.00 [119/119]
GhostDiagnostic-chr: -0.2639
Centroid-sig: 62.3%
Centroid-so: 0.482 arcsec [0.62σ]
OotOffset-rm: 1.690 arcsec [0.88σ]
KicOffset-rm: 1.830 arcsec [0.96σ]
OotOffset-st: 0/2/2/0 [4]
KicOffset-st: 0/2/2/0 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.00 [0/17]

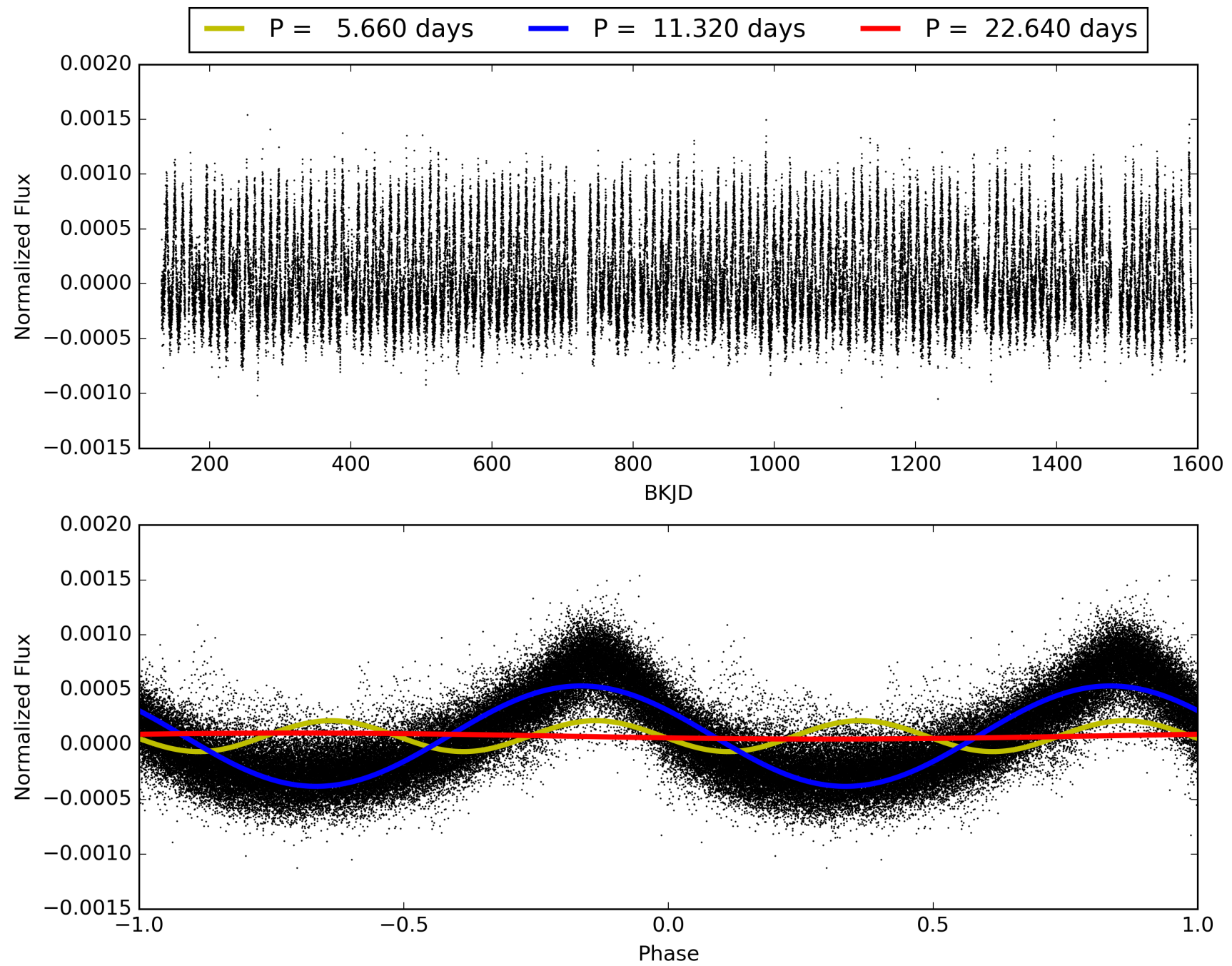
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:02:09 Z

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

TCE 011187716-02, PDC Light Curves

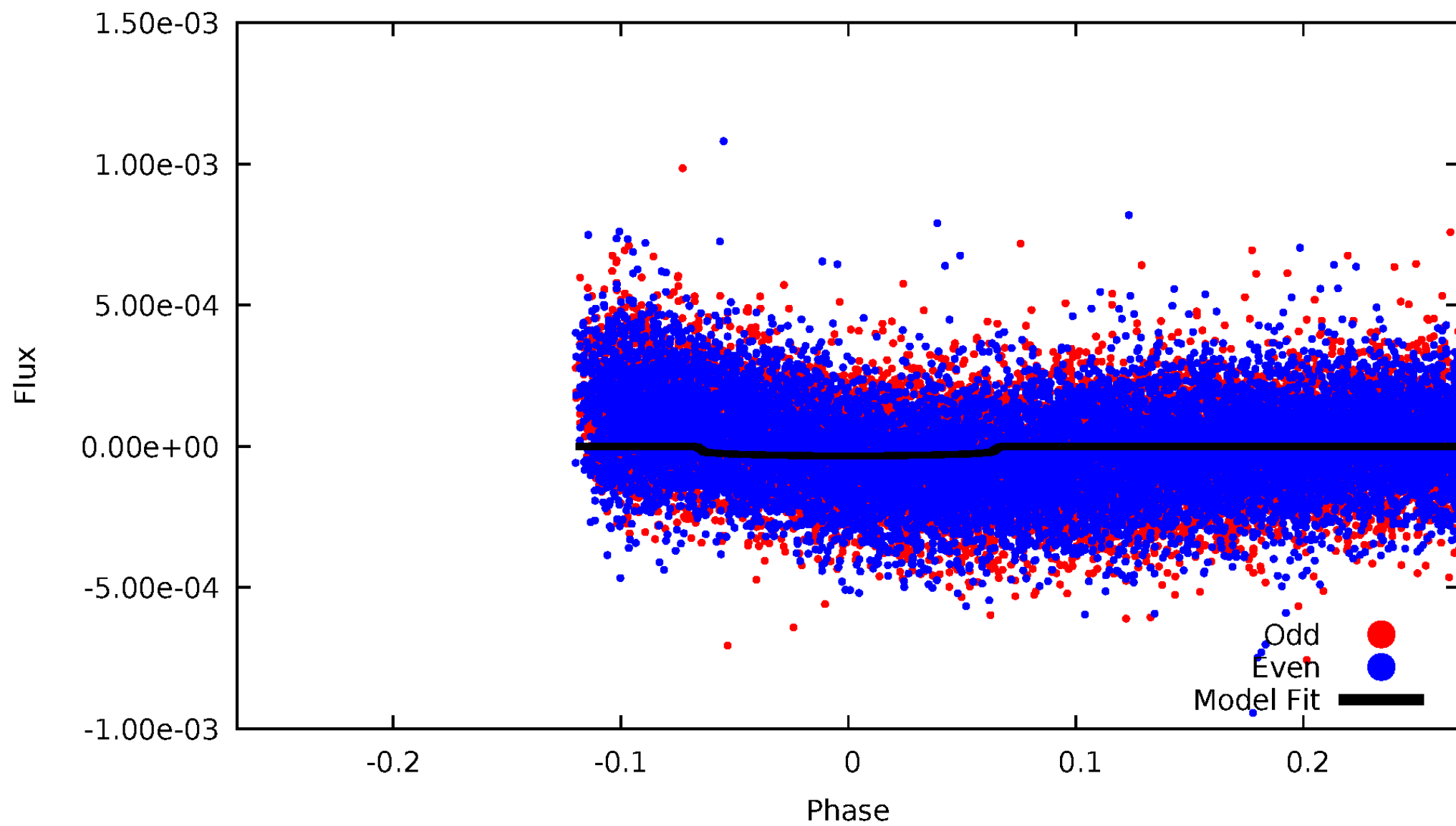


TCE 011187716-02



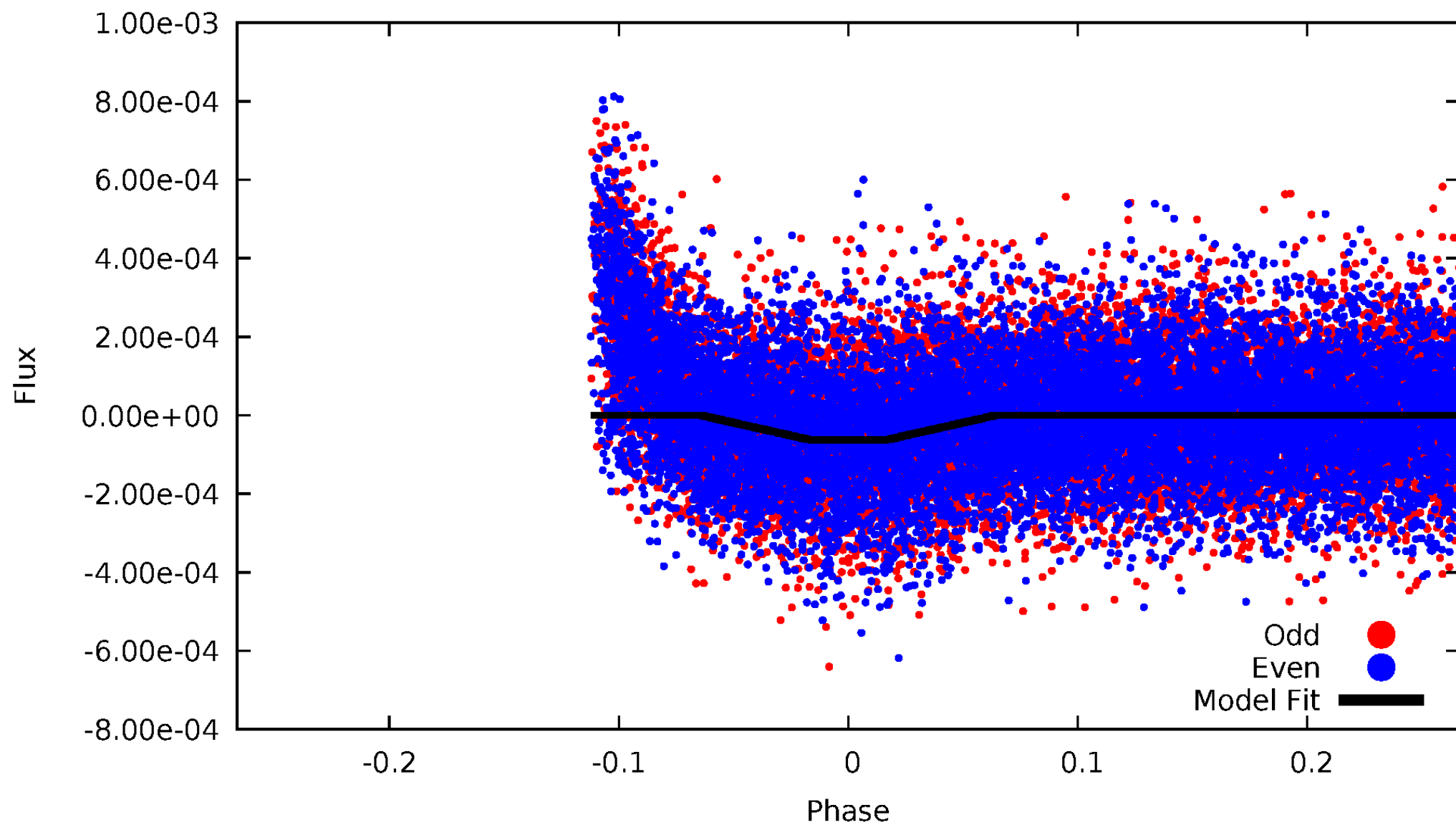
DV Odd/Even

TCE 011187716-02



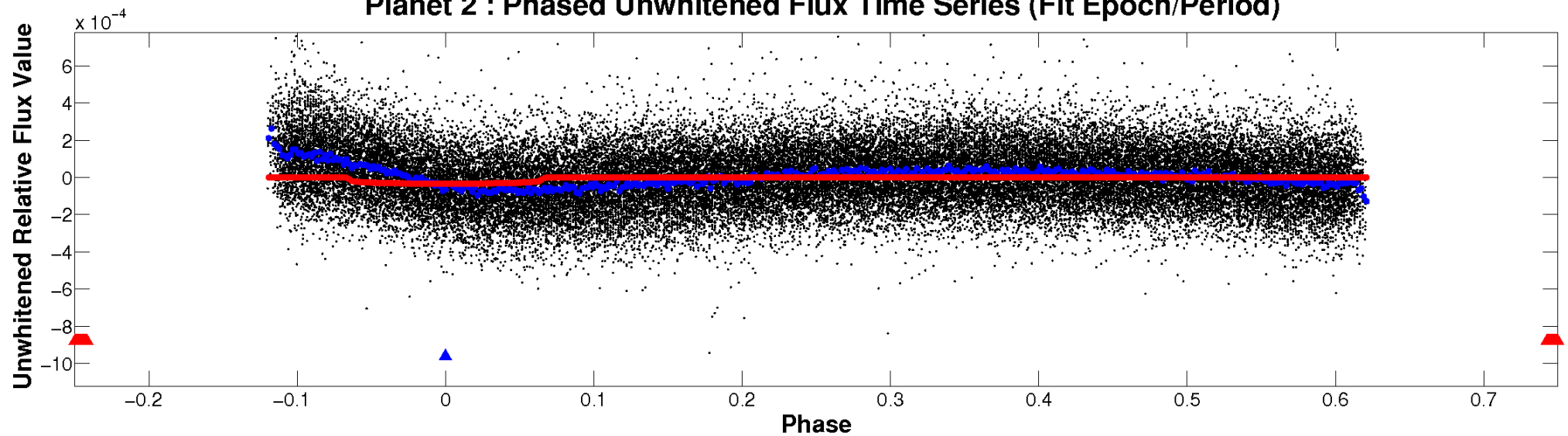
ALT Odd/Even

TCE 011187716-02

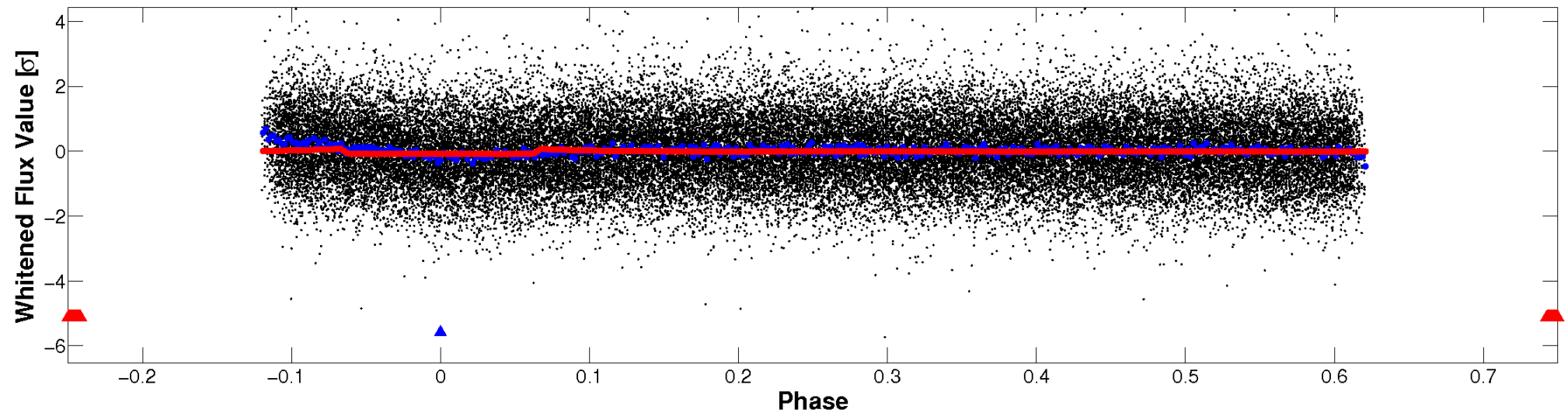


Non-Whitened Vs. Whitened Light Curve

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

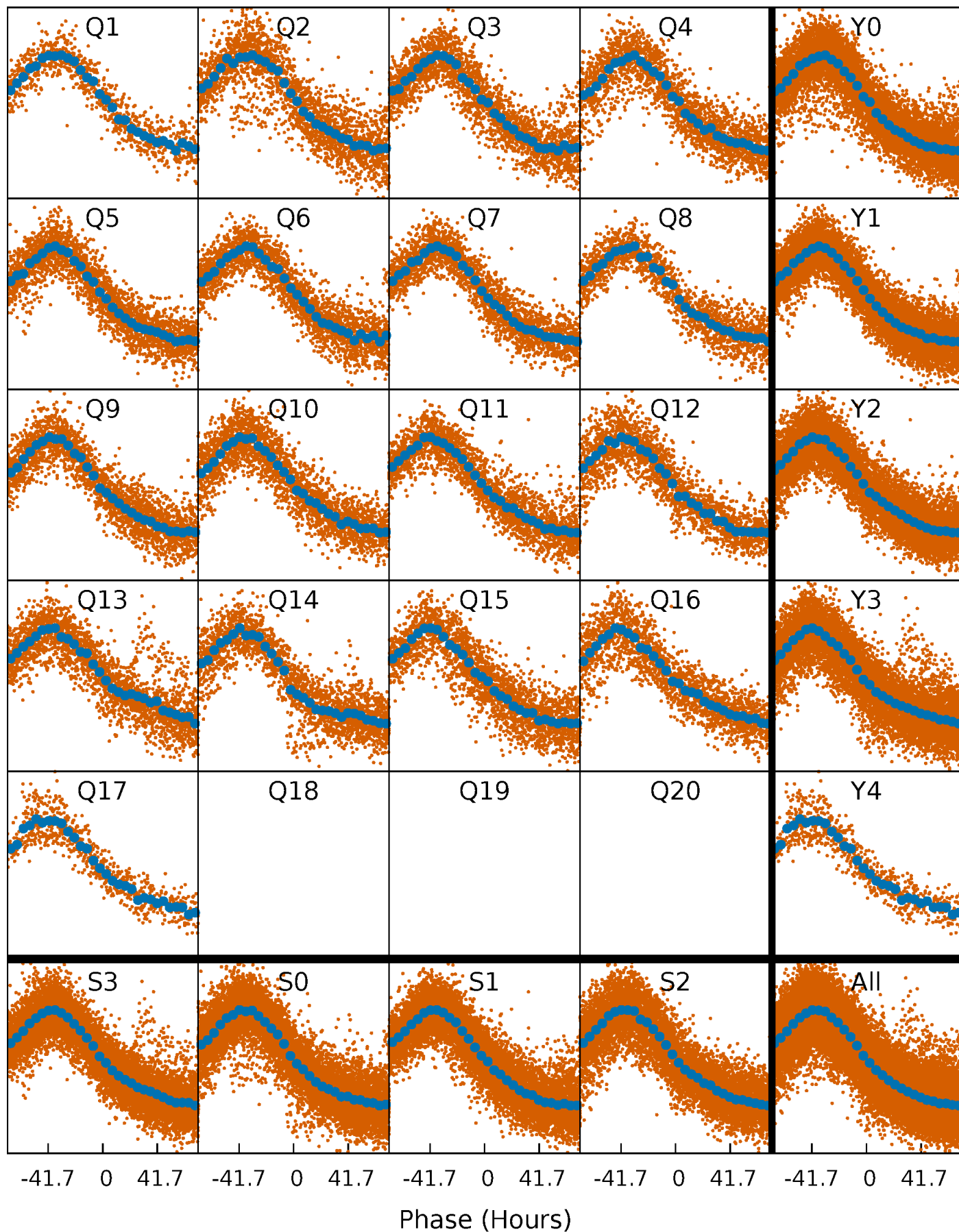


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



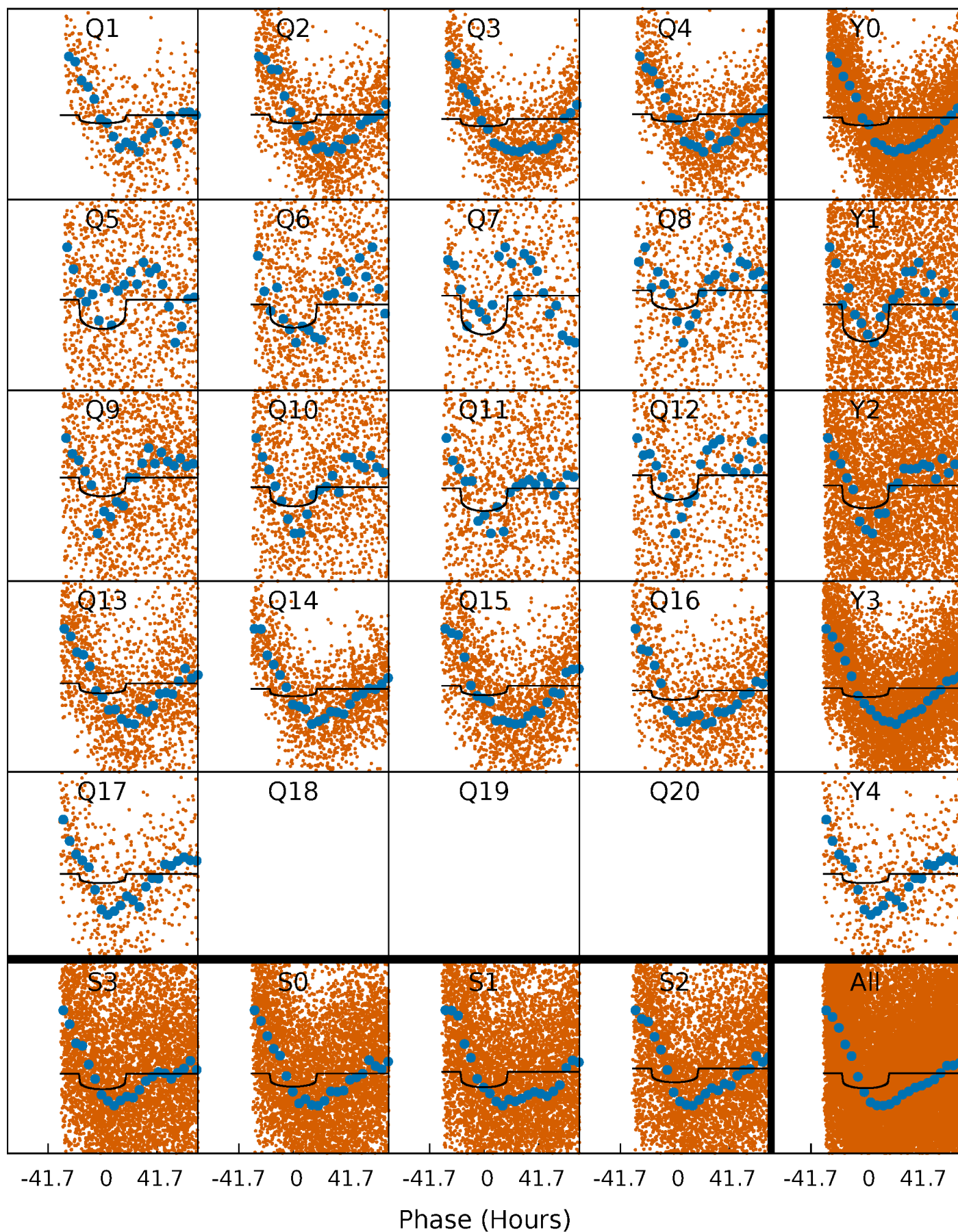
PDC Quarter-Phased Transit Curves

TCE 011187716-02 P= 11.319997 Days $T_0=140.432563$ (BKJD)



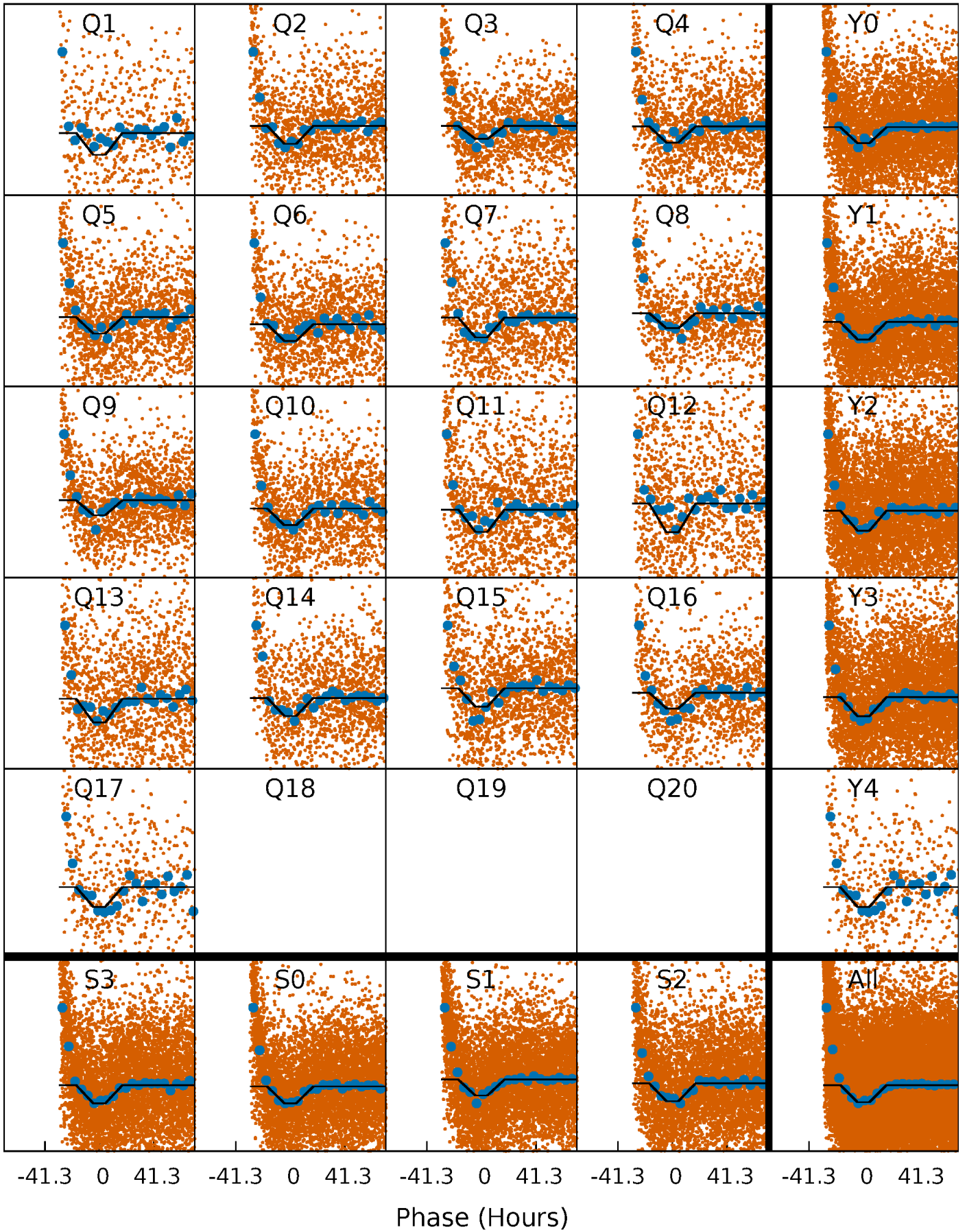
DV Quarter-Phased Transit Curves

TCE 011187716-02 P= 11.319997 Days $T_0=140.432563$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

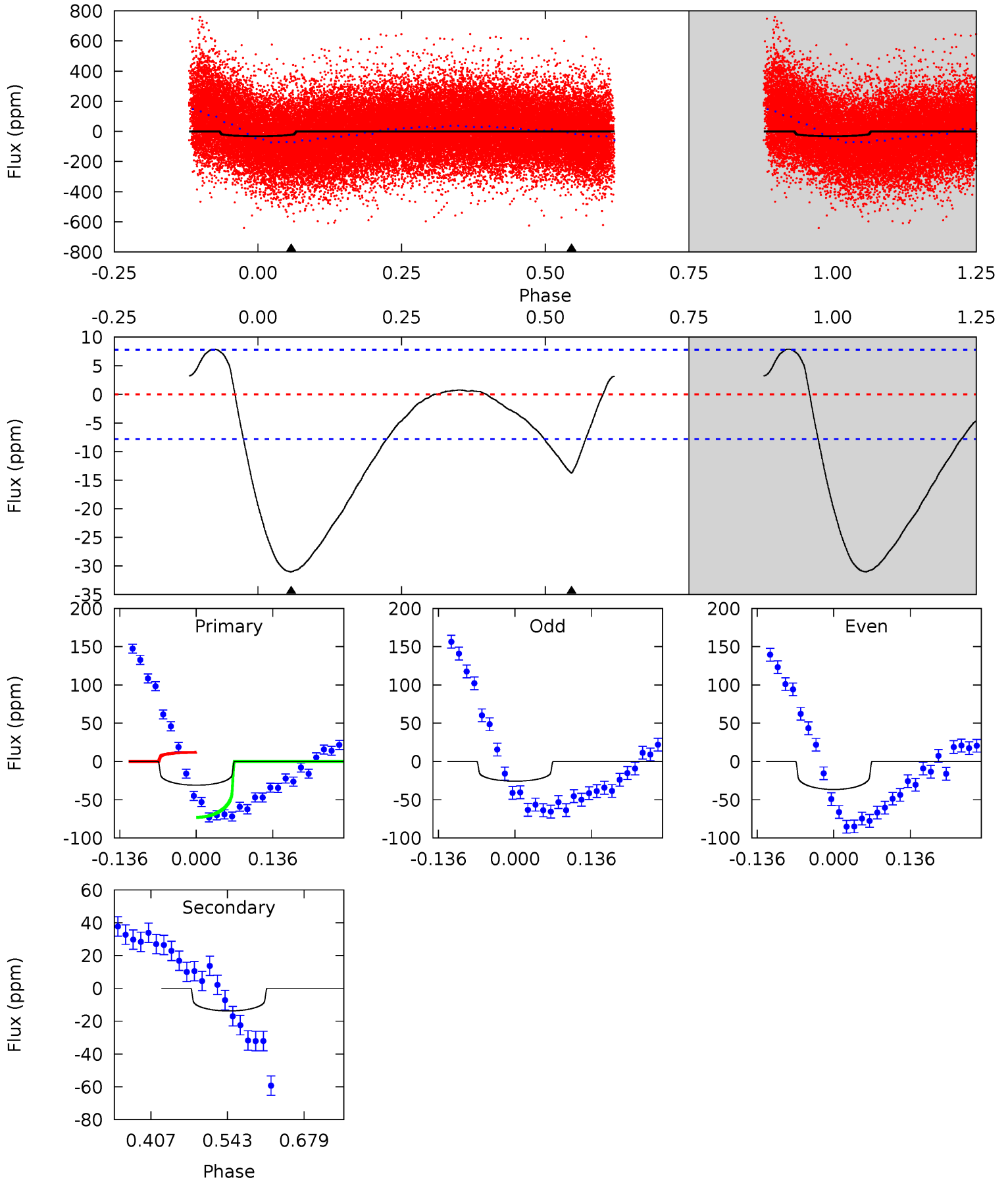
TCE 011187716-02 P= 11.317613 Days $T_0=140.523702$ (BKJD)



DV Model-Shift Uniqueness Test

011187716-02, P = 11.319997 Days, E = 129.112566 Days

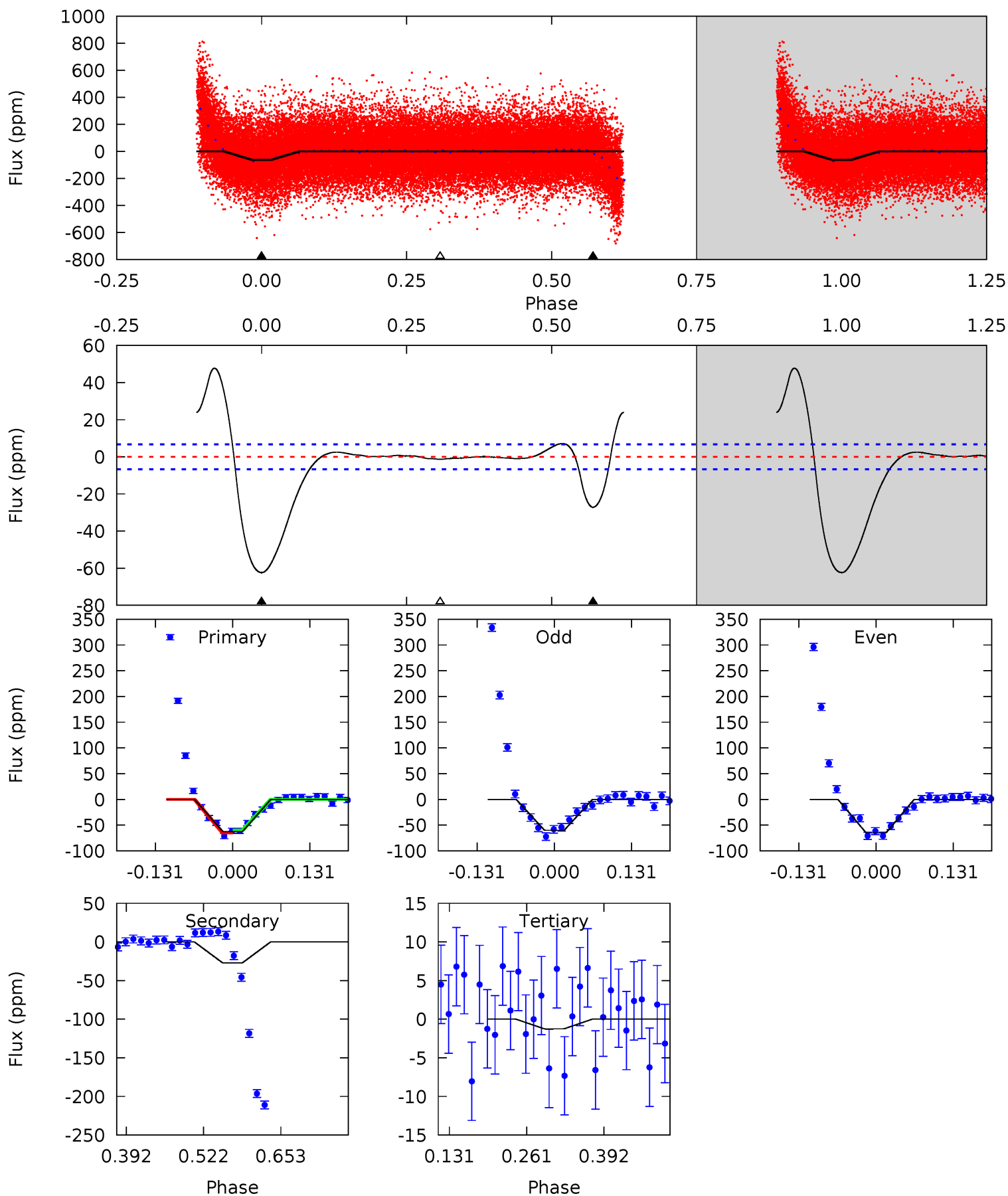
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	7.91	0	0	4.50	1.49	2.70	17.8	17.8	7.91	7.91	3.11	1.07	0.20	18.4



Alt Model-Shift Uniqueness Test

011187716-02, P = 11.317613 Days, E = 129.206089 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.9	18.2	0.84	0	4.51	1.51	0.58	41.1	41.9	17.4	18.2	1.76	0.89	0.43	1.87



Stellar Parameters For KIC 011187716

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5348^{+160}_{-144}	$4.530^{+0.096}_{-0.072}$	$-0.500^{+0.300}_{-0.300}$	$0.757^{+0.095}_{-0.085}$	$0.708^{+0.099}_{-0.038}$	$2.297^{+0.949}_{-0.568}$
	+3%/-3%	+2%/-2%	+60%/-60%	+13%/-11%	+14%/-5%	+41%/-25%
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 011187716-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-14 ± 2	$0.51^{+0.06}_{-0.06}$	964^{+40}_{-41}	4324^{+250}_{-212}	227^{+72}_{-55}
Alt.	-27 ± 1	$0.66^{+0.08}_{-0.08}$	966^{+40}_{-40}	4509^{+192}_{-190}	274^{+71}_{-55}

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

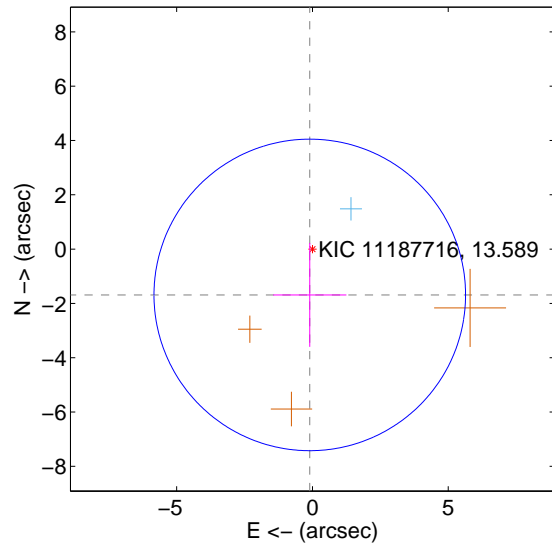
Supplemental centroid analysis for 011187716-02. Kepler magnitude: 13.59. Transit SNR 8.35

There are 1 quarters with good PRF difference image offsets

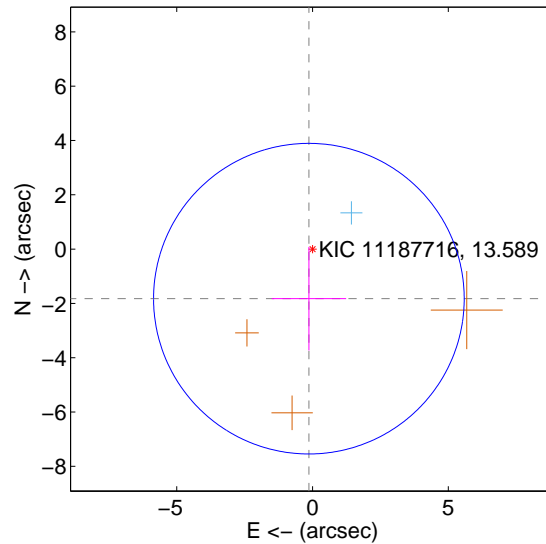
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.690 ± 1.912	0.88	0.098 ± 1.348	-1.687 ± 1.914
PRF-fit source offset from KIC position	1.830 ± 1.906	0.96	0.134 ± 1.371	-1.825 ± 1.909
photometric centroid source offset	0.48 ± 0.78	0.62	0.15 ± 0.73	-0.46 ± 0.78

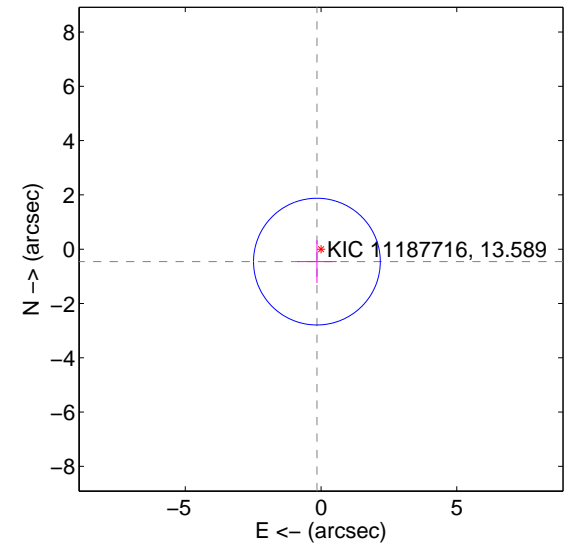
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

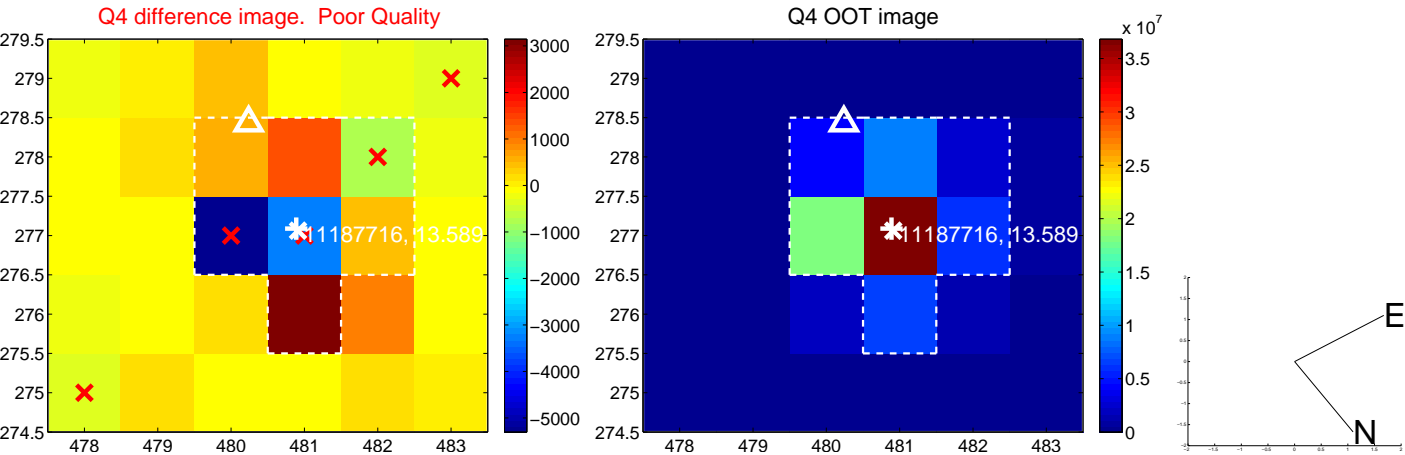
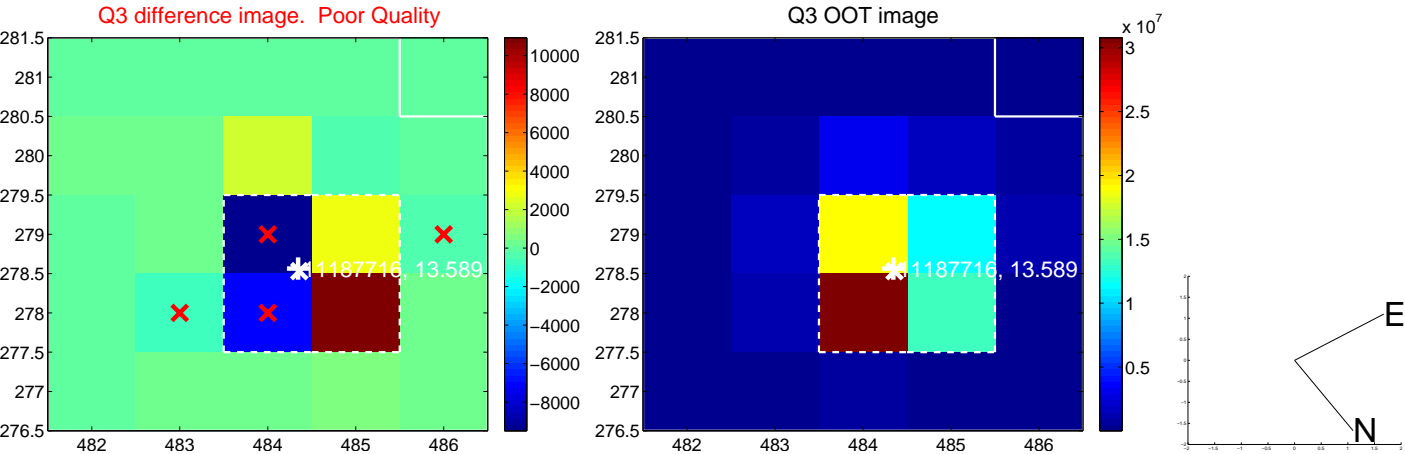
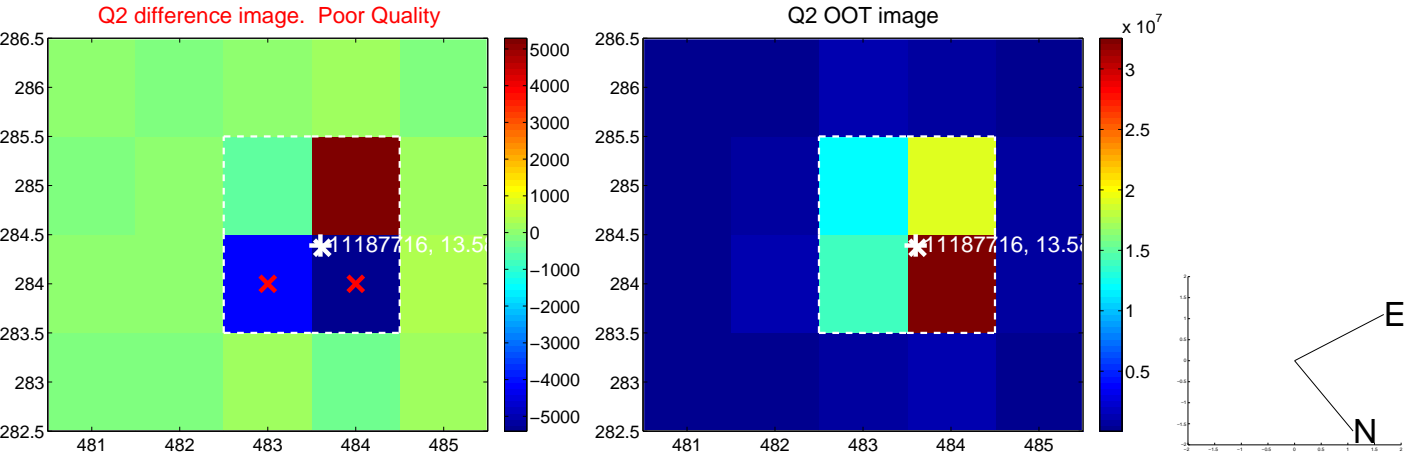
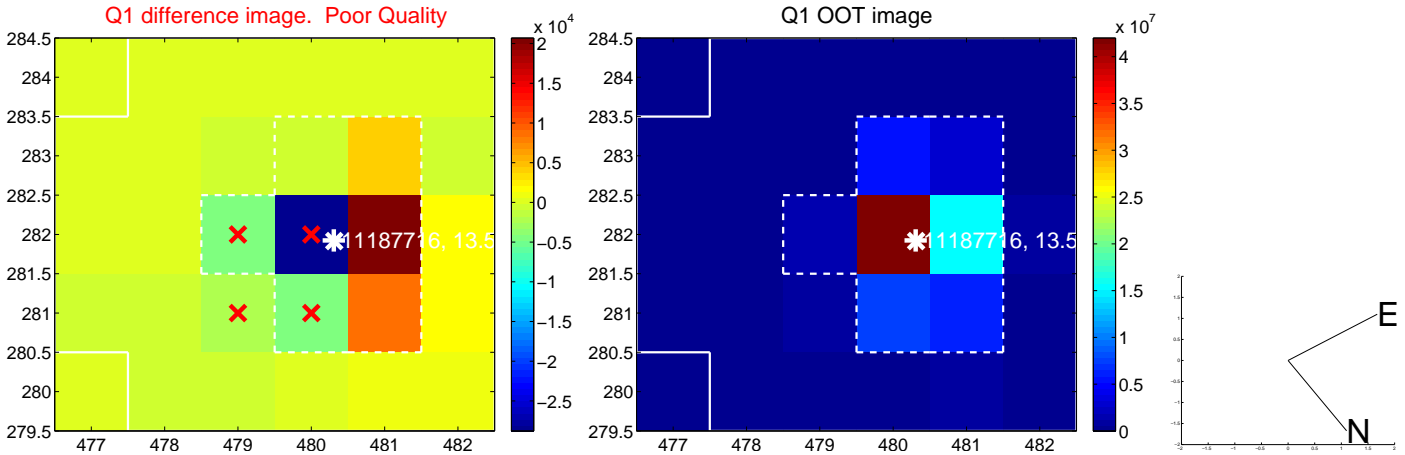


offset from photometric centroids

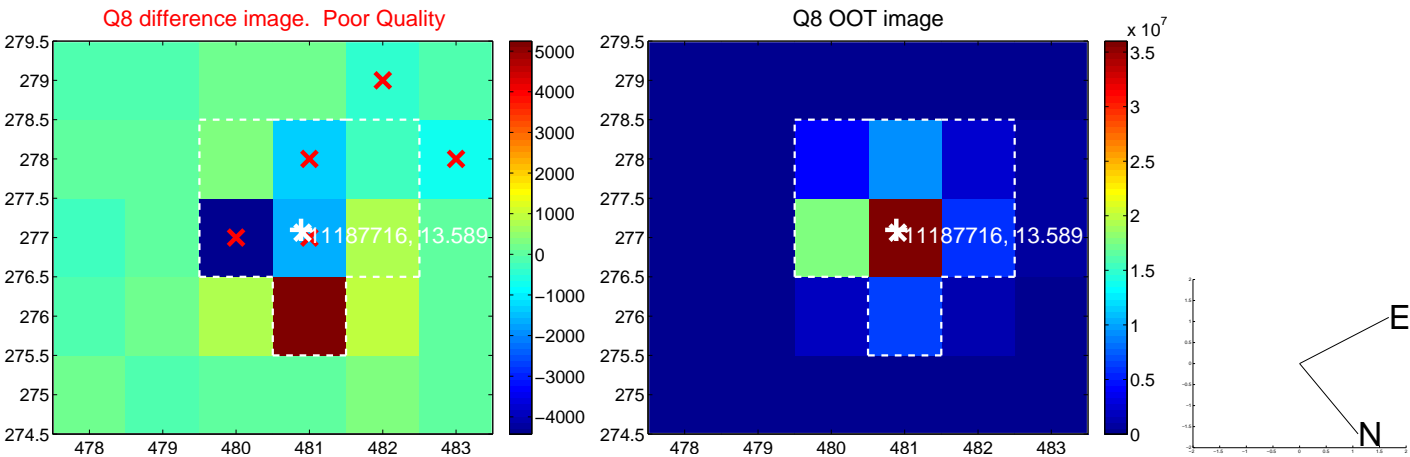
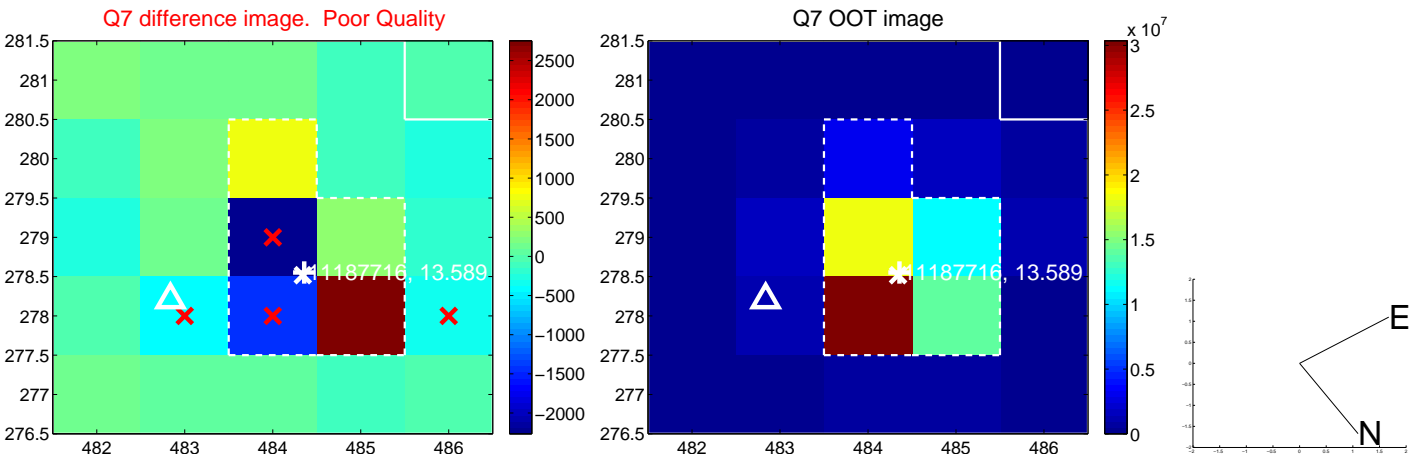
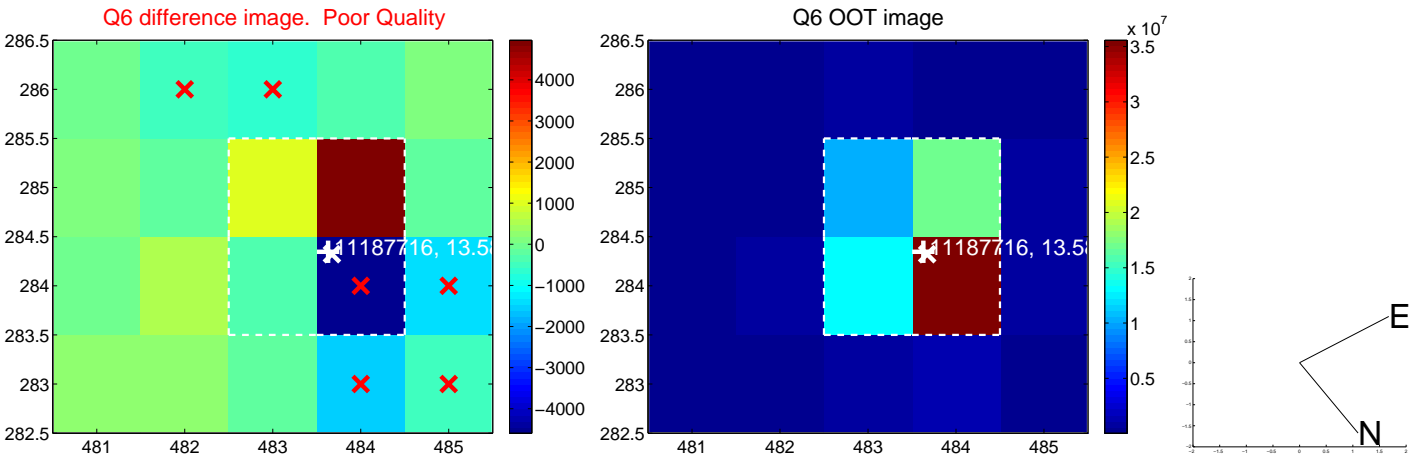
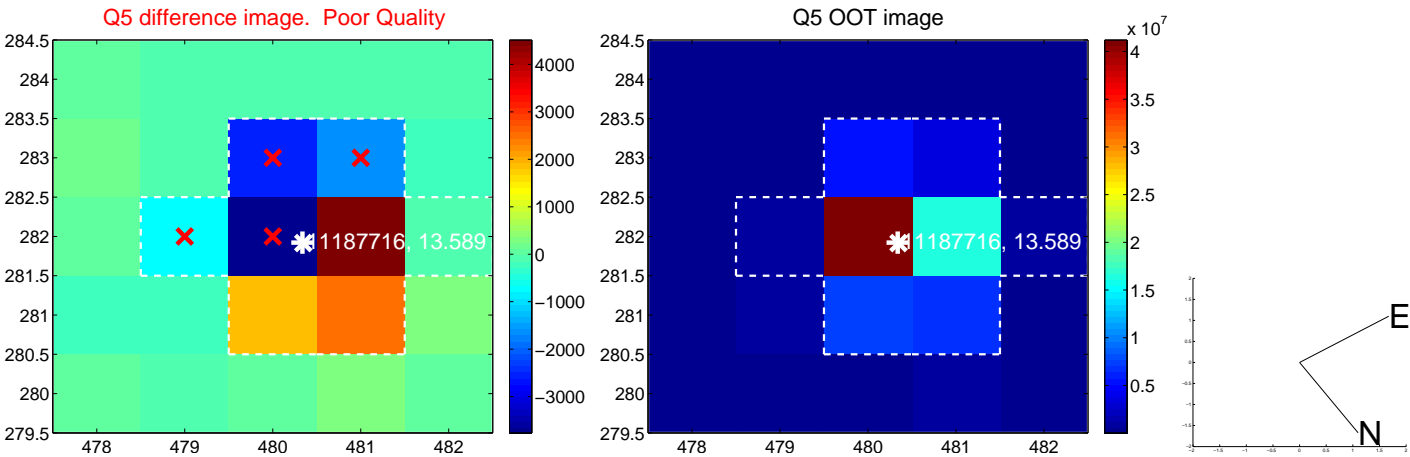


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

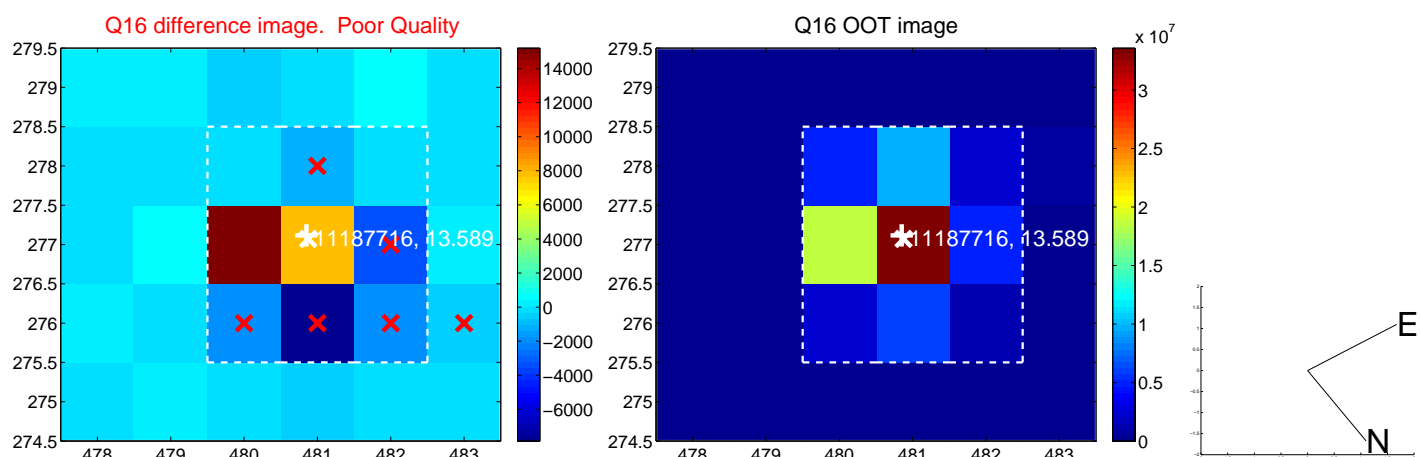
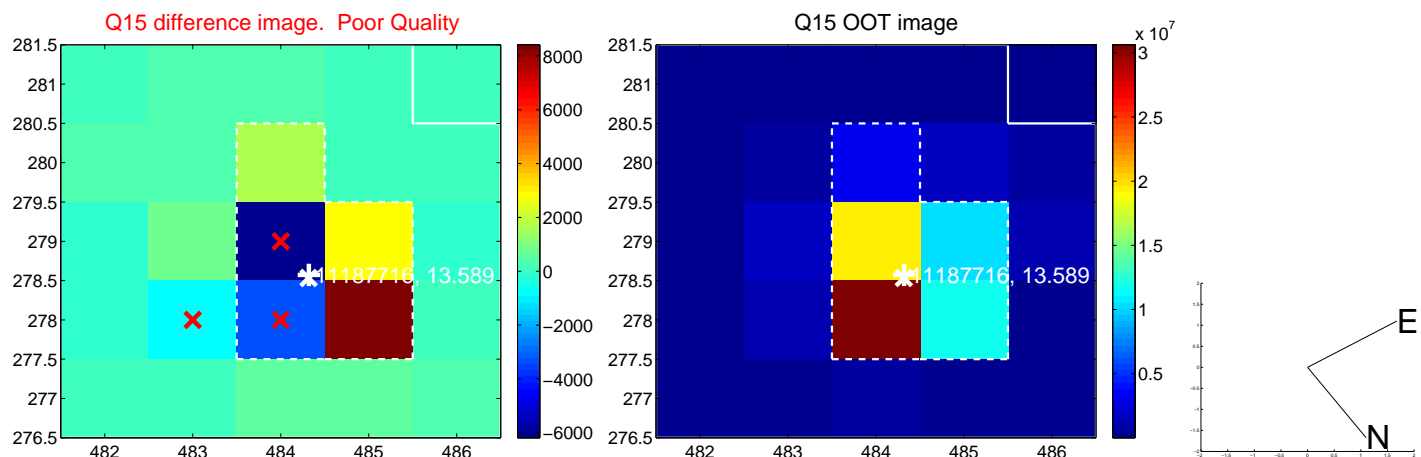
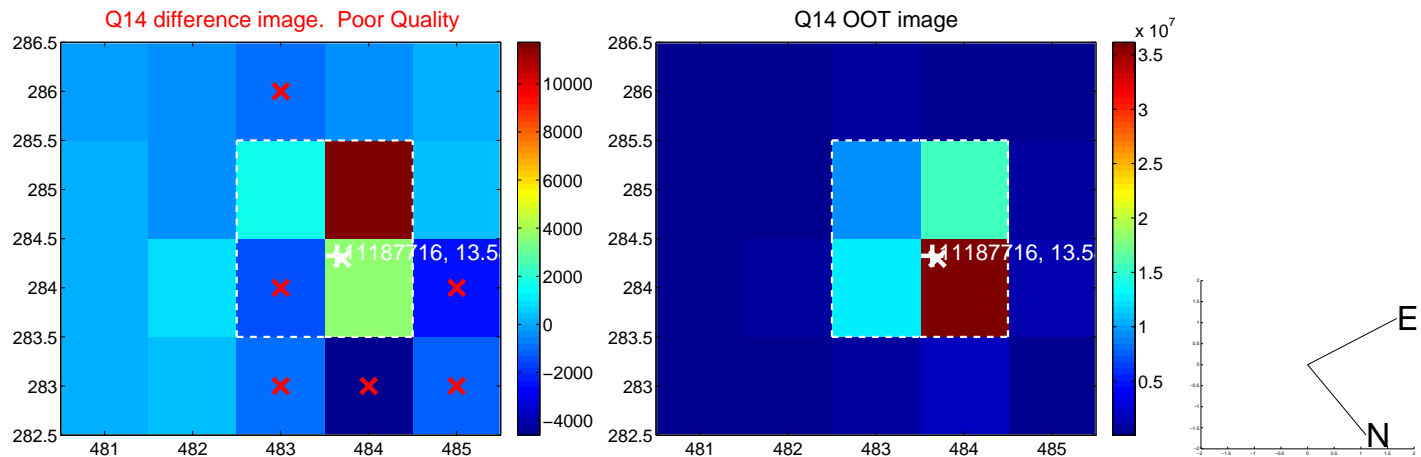
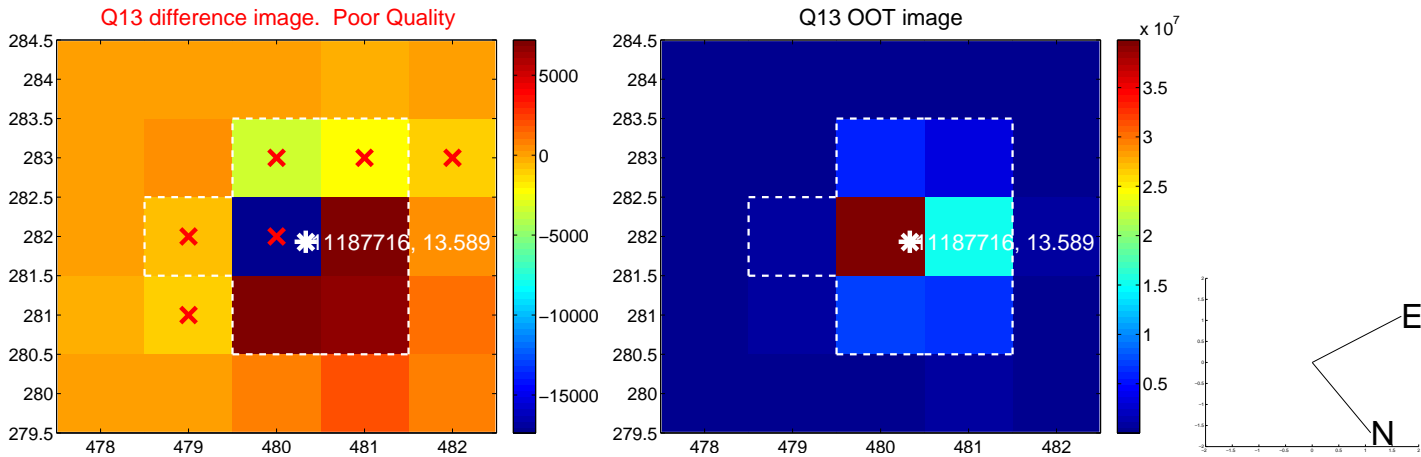
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



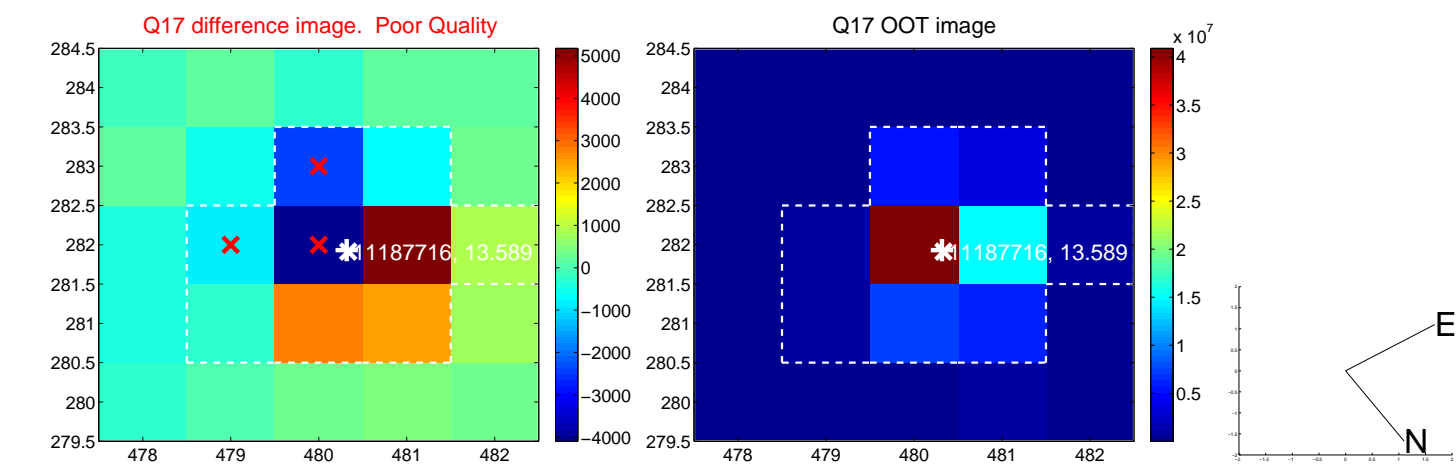
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



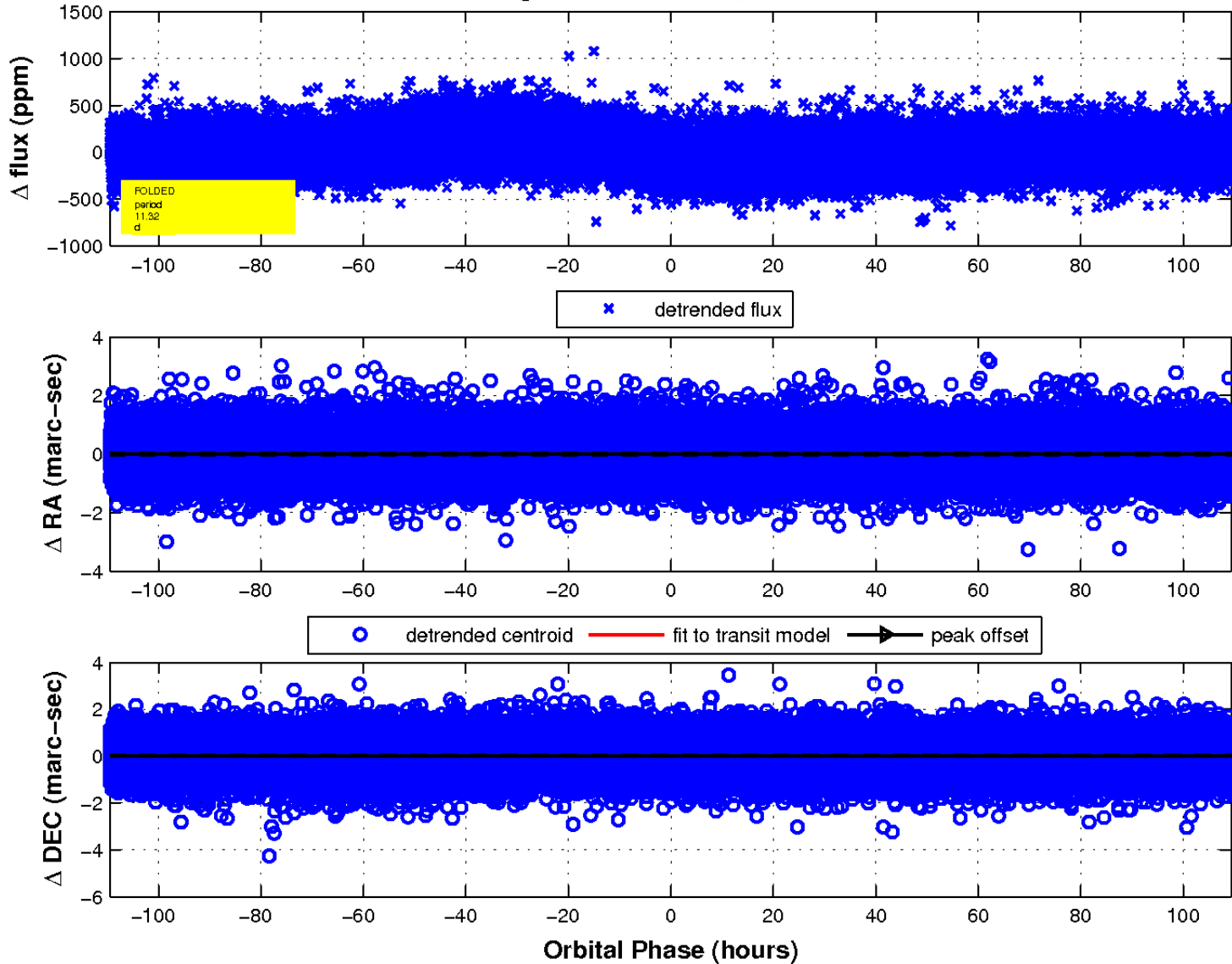
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

