

KIC 011081512

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})
011081512-01	OBS	3364.01	15.739439	132.814665	280.3	3.340	9.3	9.4	0.72	4733	1.49	19.60
011081512-02	OBS	No	1.483650	132.148685	90.4	11.906	8.3	11.3	0.72	4733	0.78	456.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011081512-01	OBS	FP	0.13	0	0	1	0	CENT_RESOLVED_OFFSET
011081512-02	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS

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 011081512-01

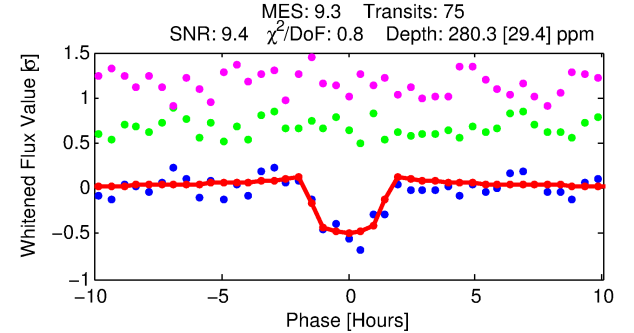
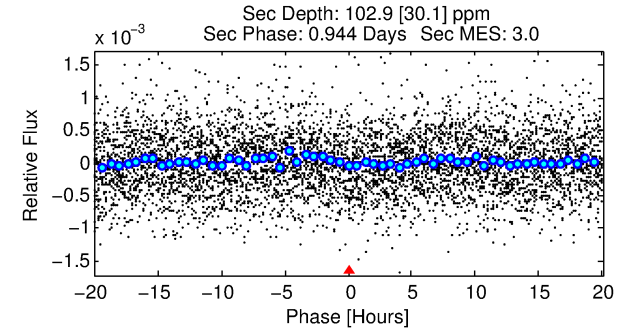
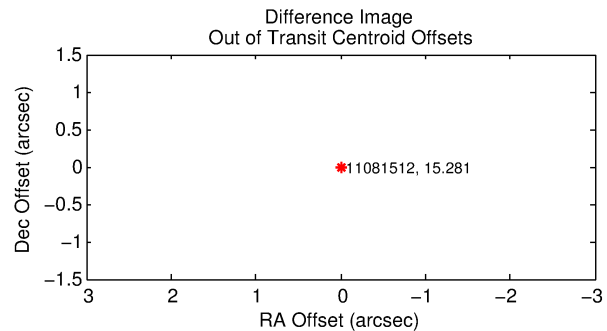
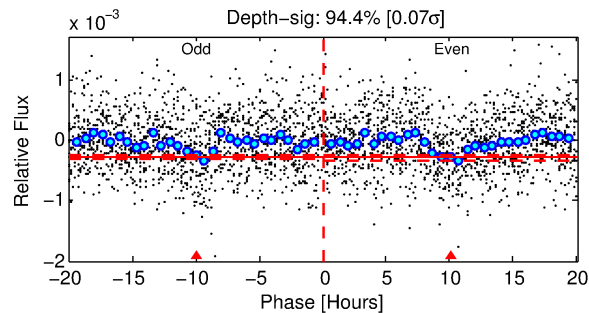
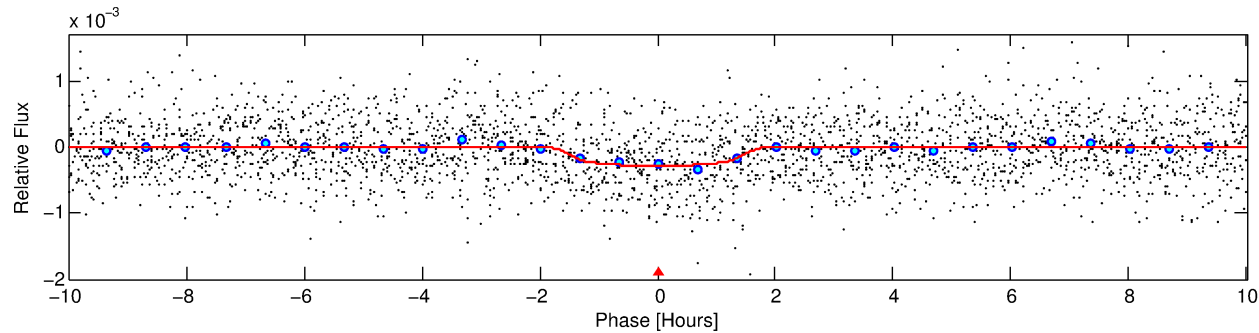
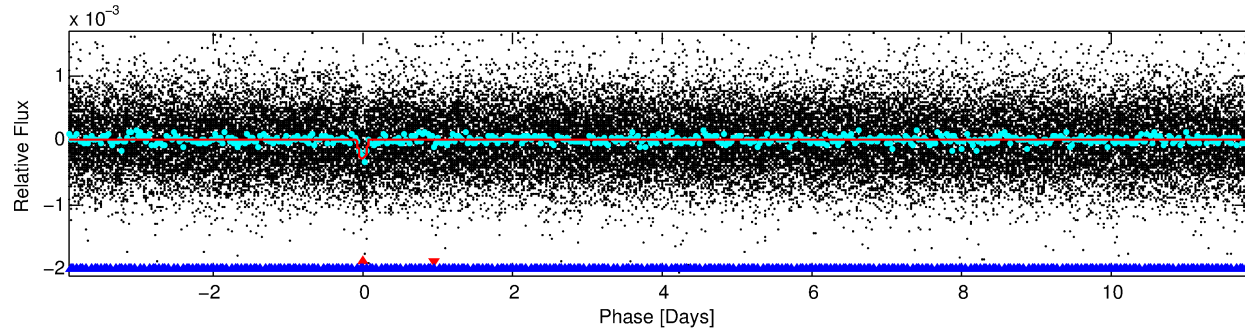
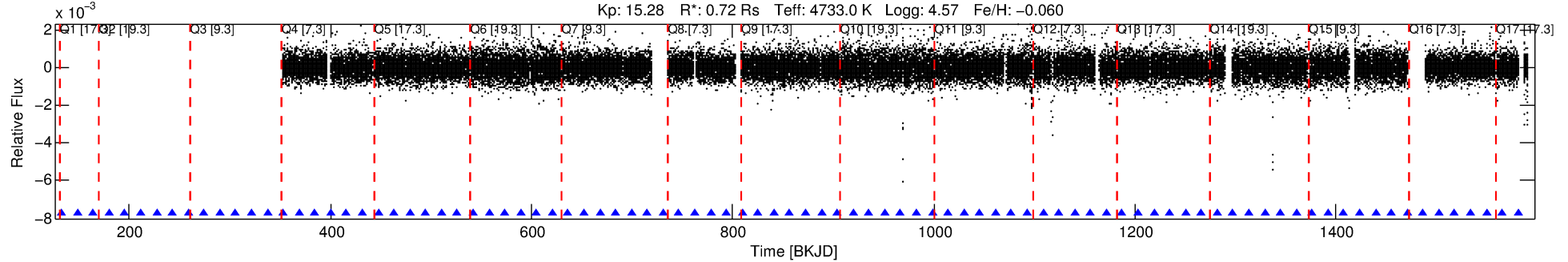
No Significant Match Found

DV One-Page Summary

KIC: 11081512 Candidate: 1 of 2 Period: 15.739 d

KOI: K03364.01 Corr: 0.910

Kp: 15.28 R*: 0.72 Rs Teff: 4733.0 K Logg: 4.57 Fe/H: -0.060



DV Fit Results:

Period = 15.73944 [0.00015] d
Epoch = 132.8147 [0.0084] BKJD
Rp/R* = 0.0189 [0.0090]
a/R* = 17.13 [30.76]
b = 0.90 [0.39]
Seff = 19.60 [3.60]
Teff = 537 [25] K
Rp = 1.49 [0.73] Re
a = 0.1095 [0.0090] AU
Ag = 306.40 [308.05] [0.99σ]
Teffp = 3470 [875] K [3.35σ]

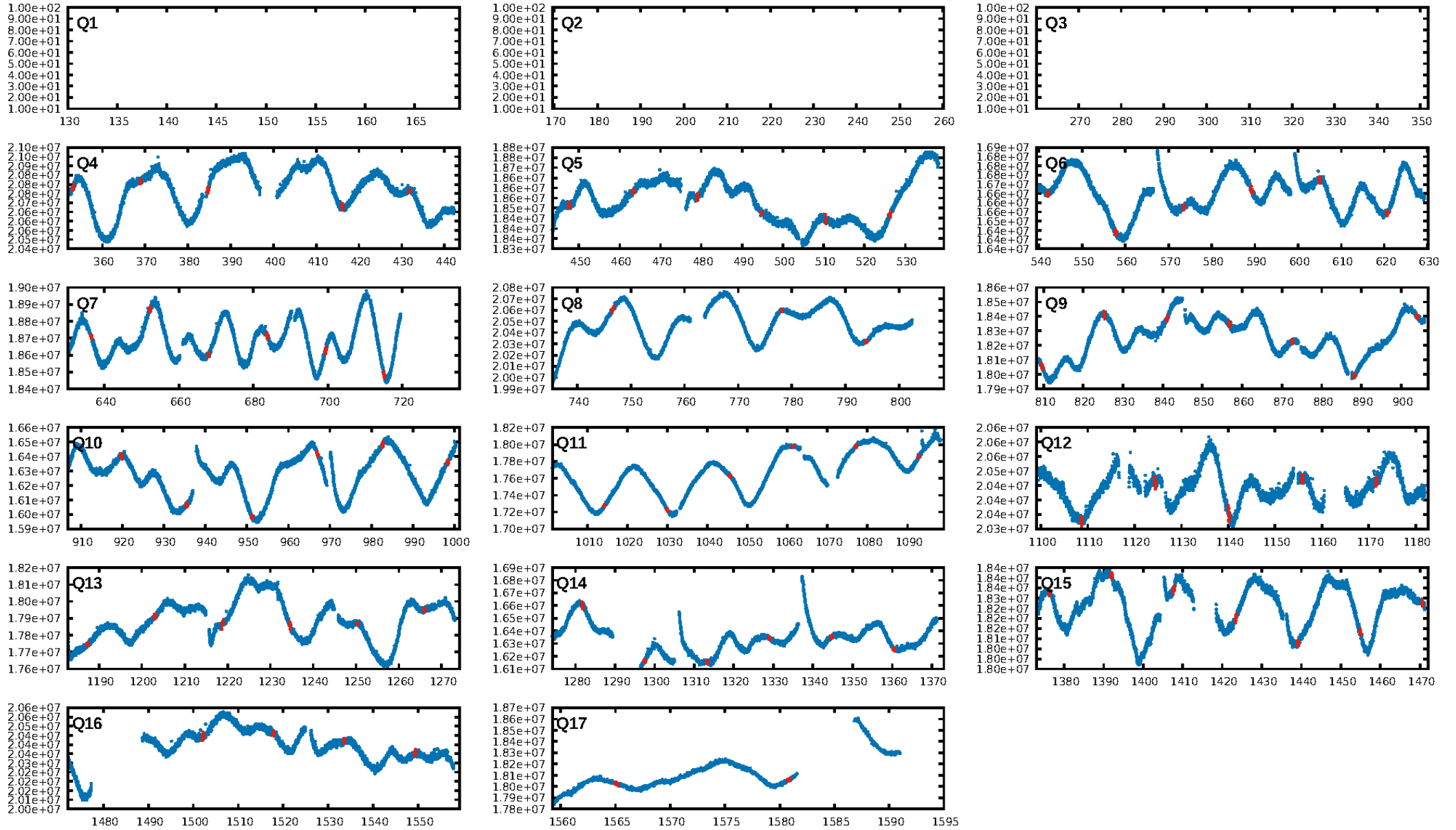
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [27.67σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [73/73]
GhostDiagnostic-chr: 1.131
Centroid-sig: N/A
Centroid-so: 5.218 arcsec [7.64σ]
OotOffset-rm: N/A
KicOffset-rm: 7.518 arcsec [8.79σ]
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.93 [13/14]

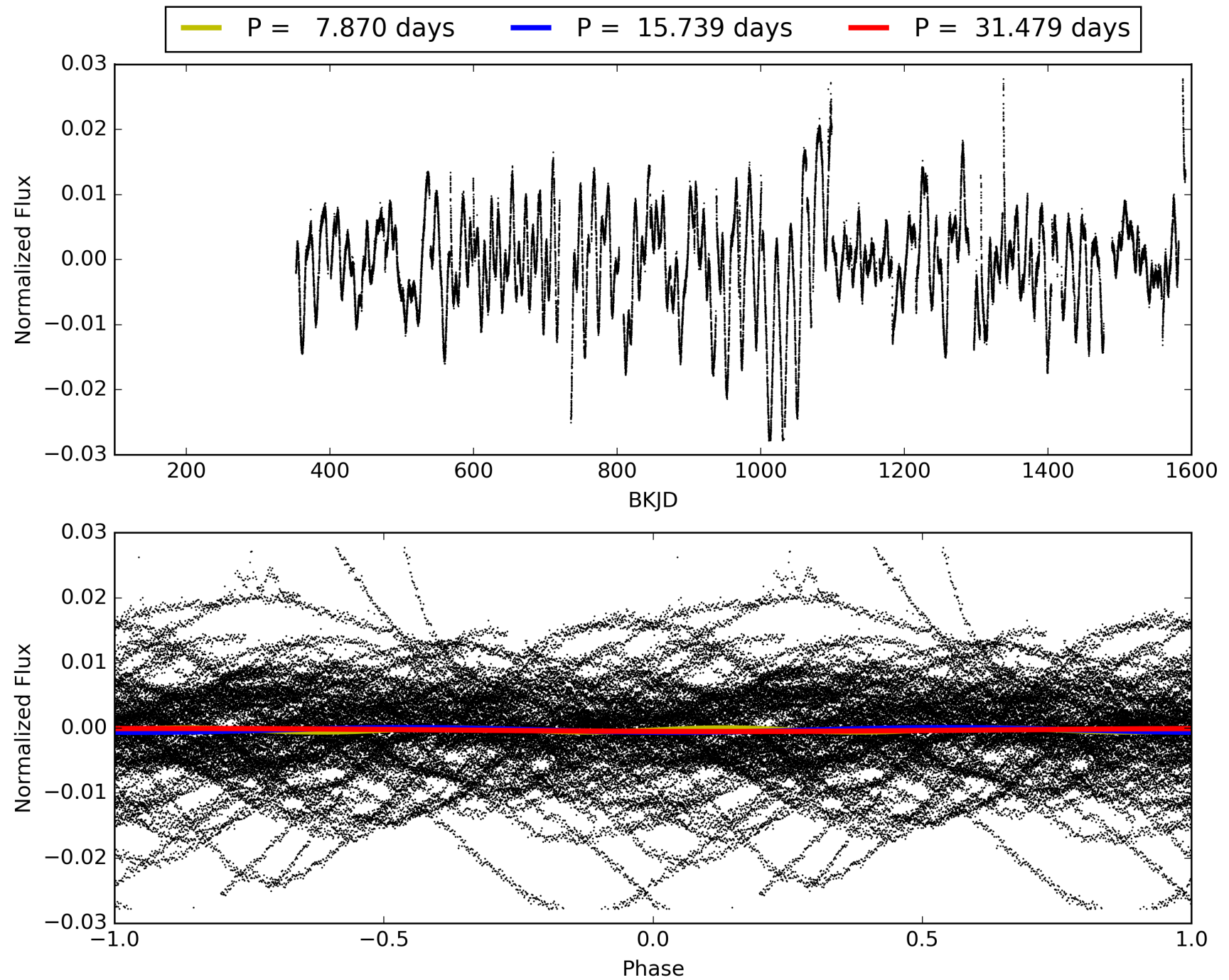
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:38:09 Z

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

TCE 011081512-01, PDC Light Curves

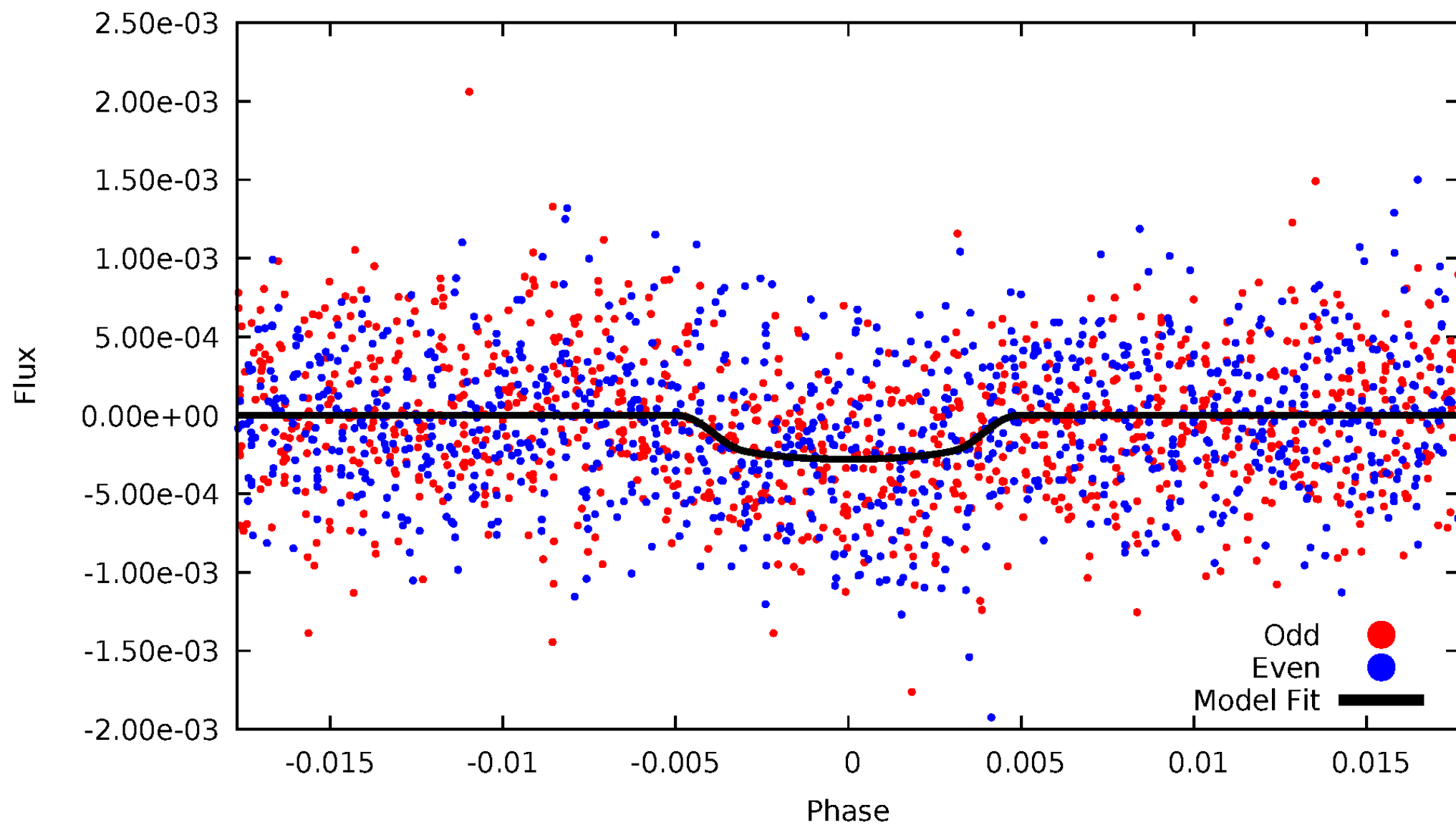


TCE 011081512-01



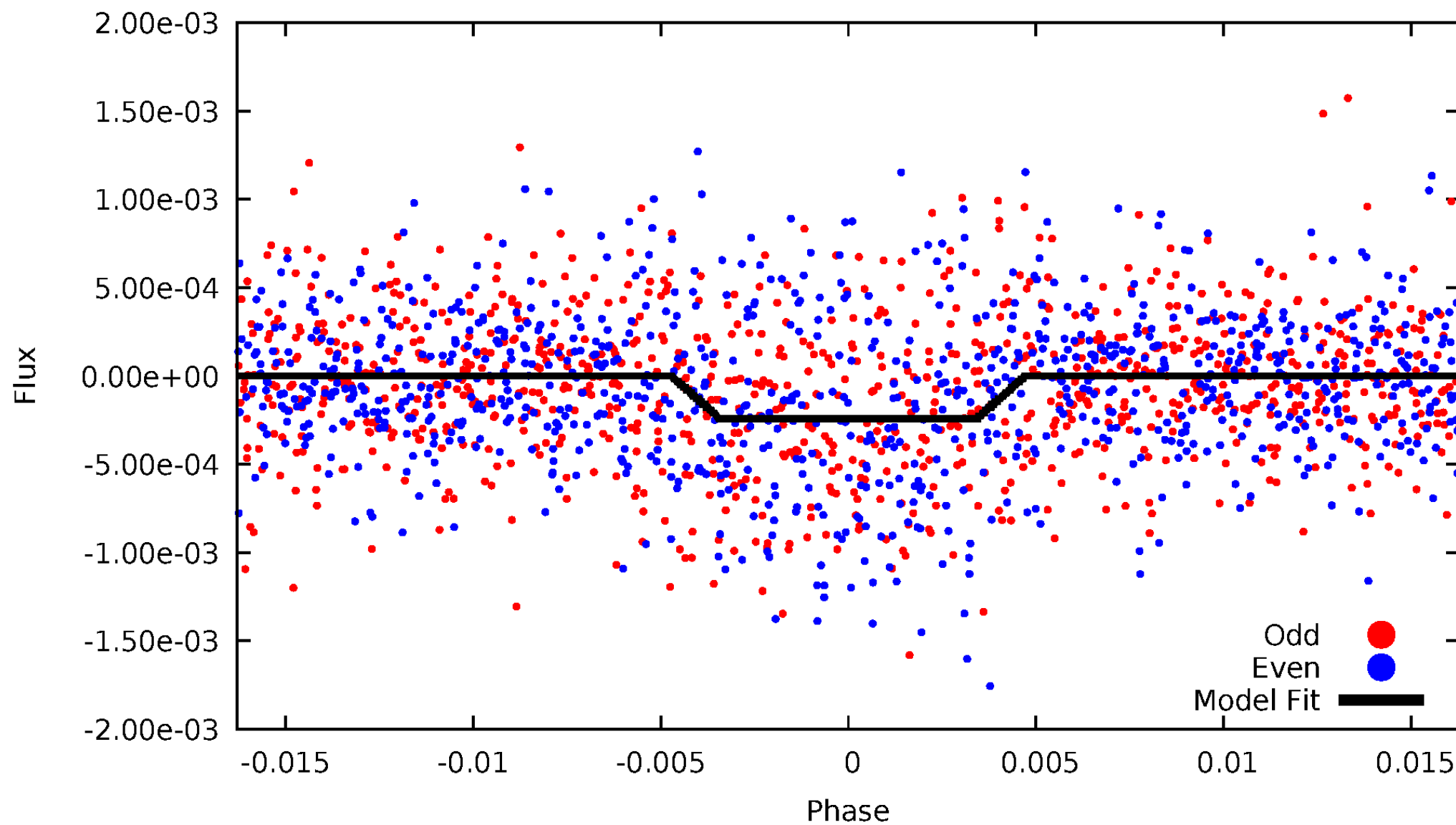
DV Odd/Even

TCE 011081512-01



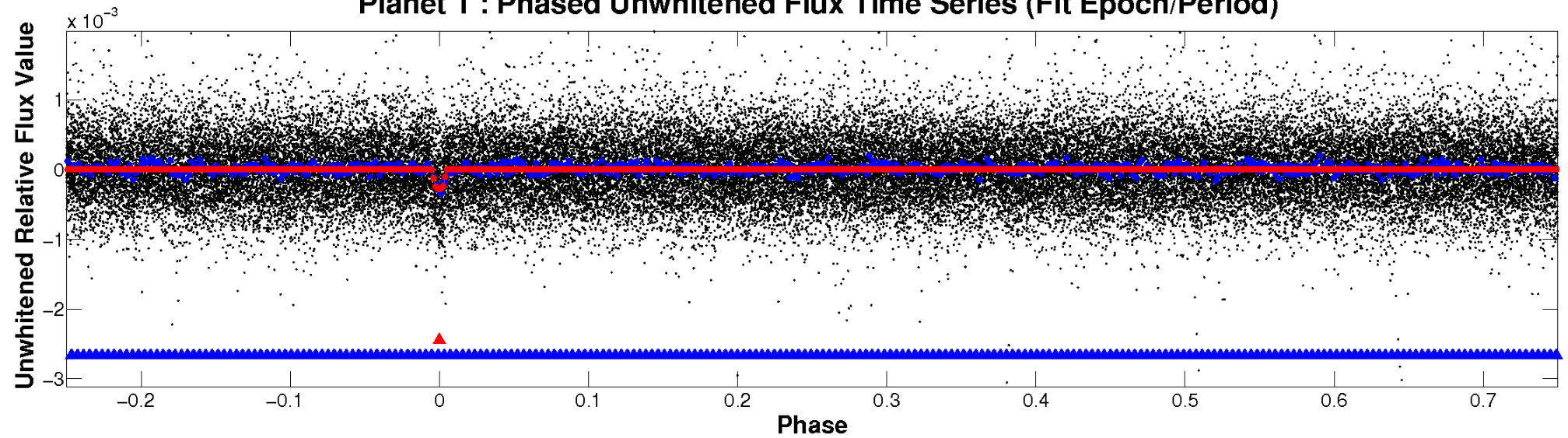
ALT Odd/Even

TCE 011081512-01

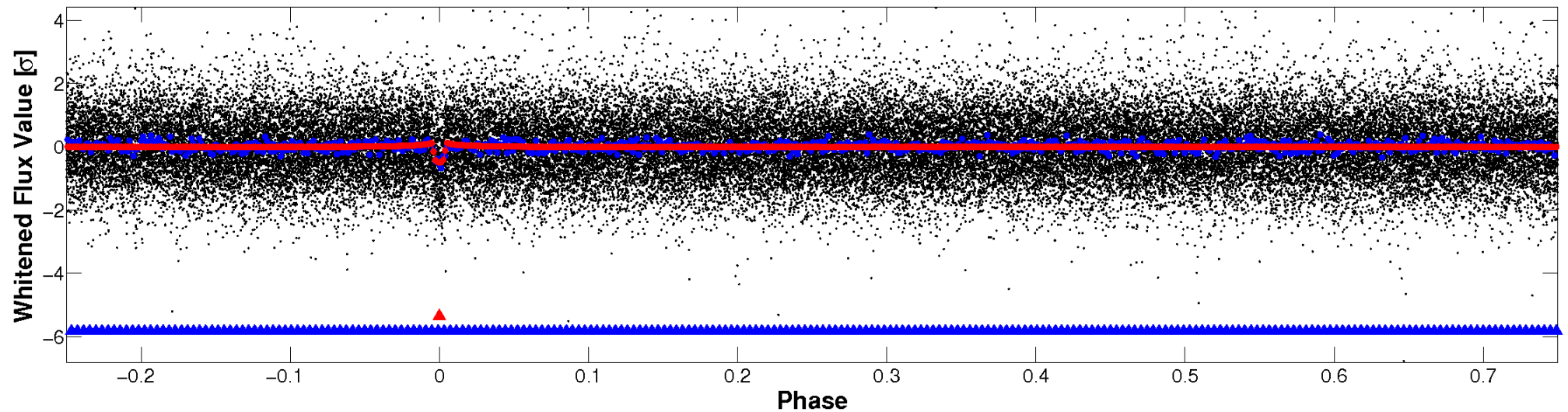


Non-Whitened Vs. Whitened Light Curve

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

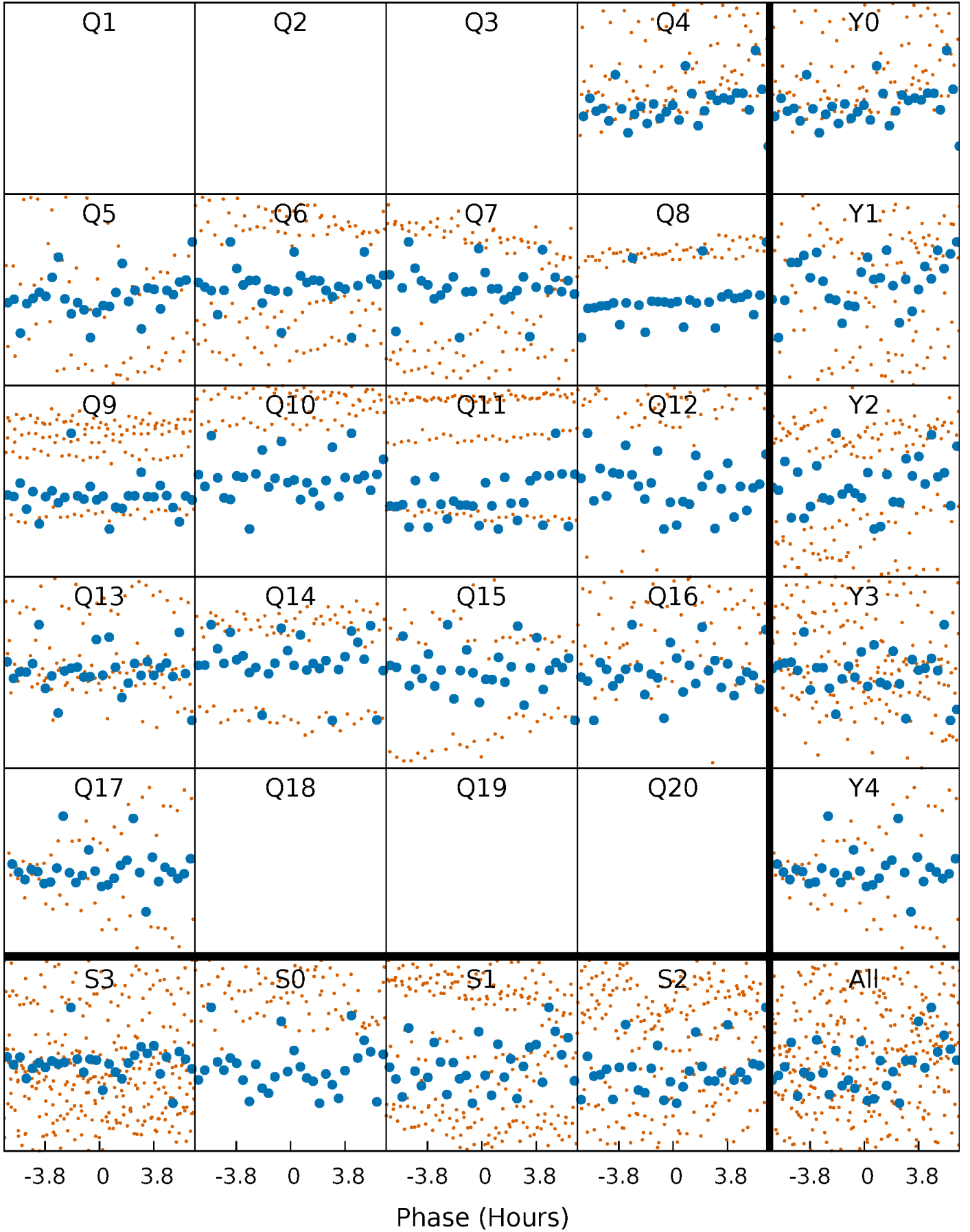


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



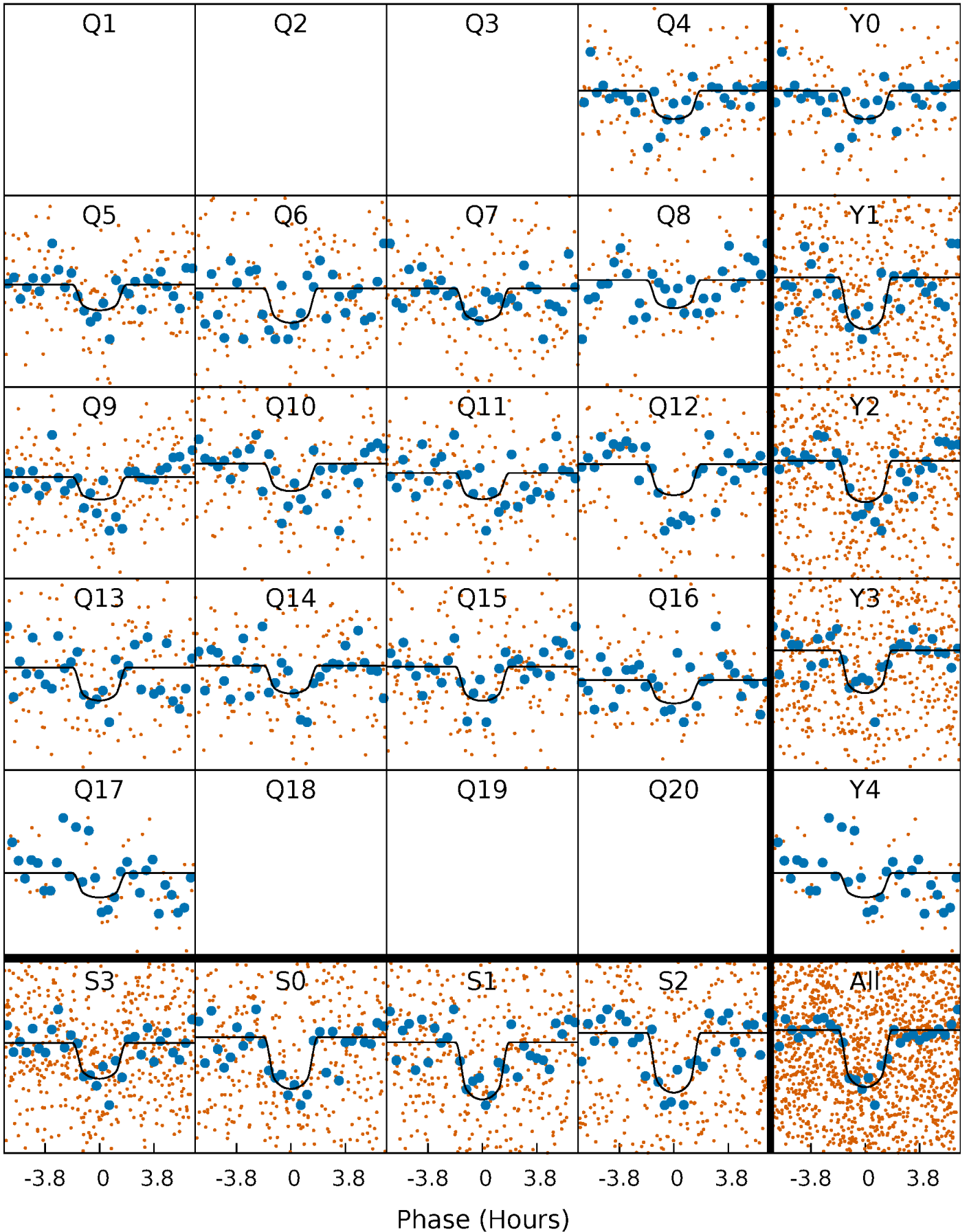
PDC Quarter-Phased Transit Curves

TCE 011081512-01 P= 15.739439 Days $T_0=132.814665$ (BKJD)



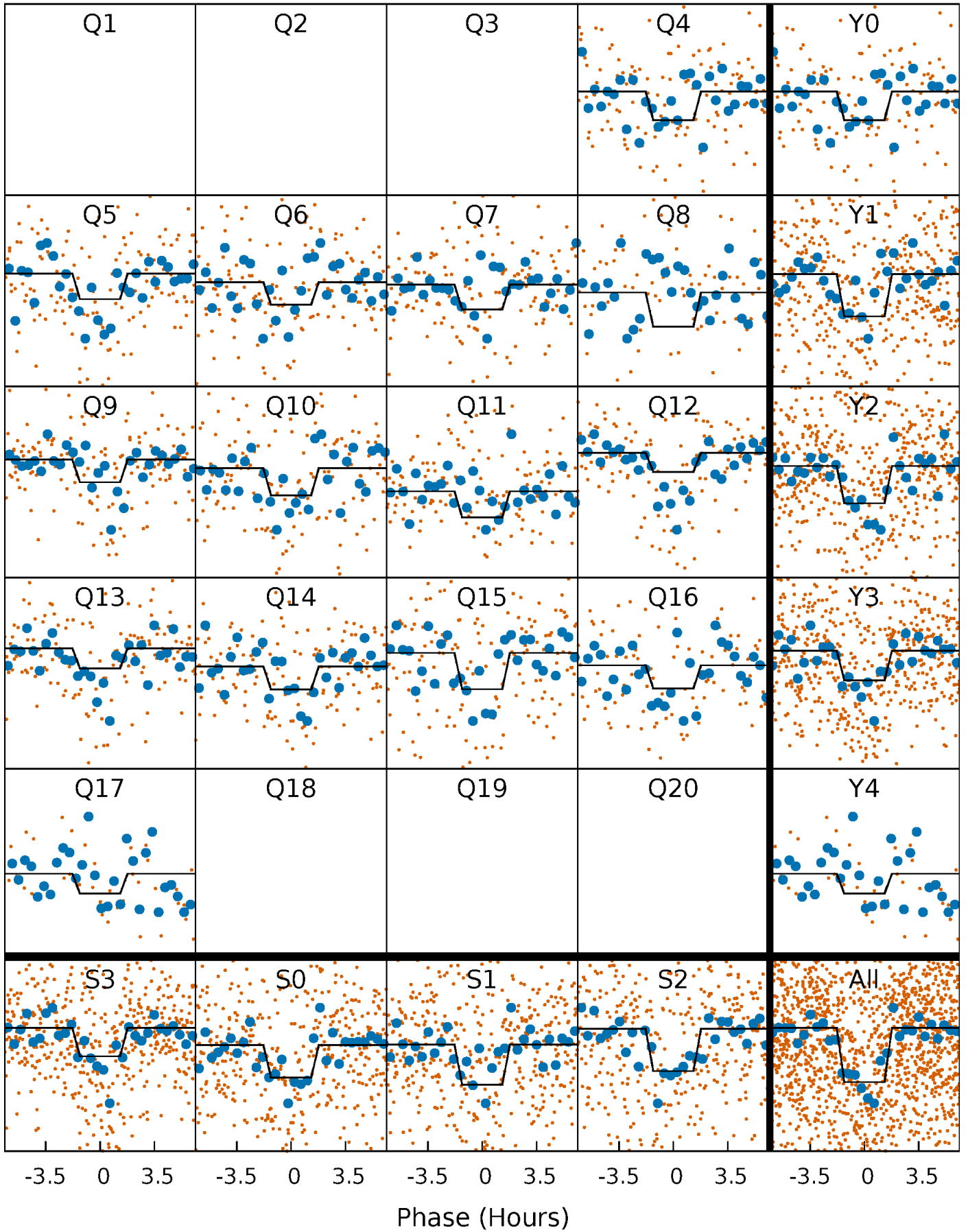
DV Quarter-Phased Transit Curves

TCE 011081512-01 P= 15.739439 Days $T_0=132.814665$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

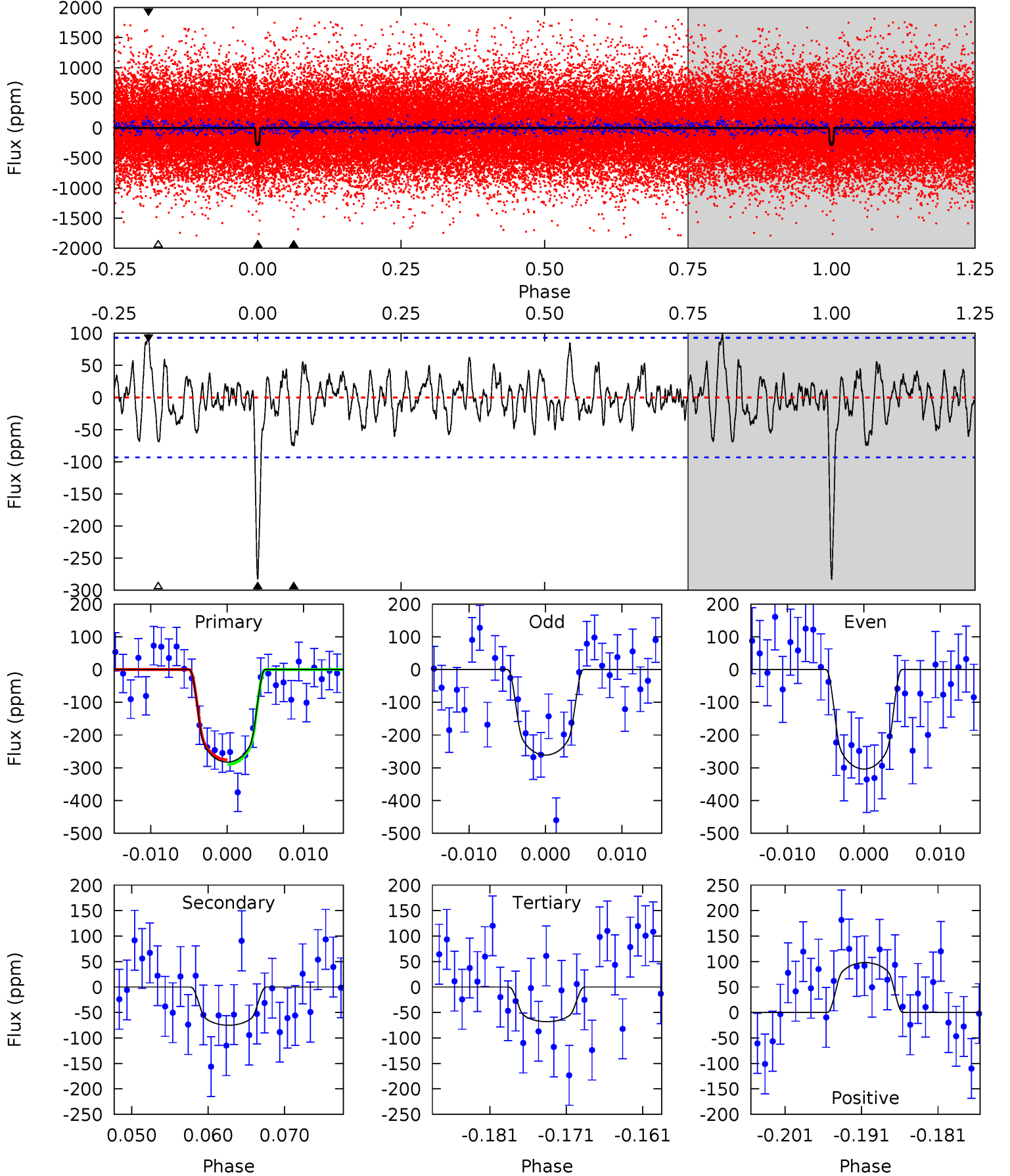
TCE 011081512-01 P= 15.739353 Days $T_0=132.824170$ (BKJD)



DV Model-Shift Uniqueness Test

011081512-01, $P = 15.739439$ Days, $E = 132.814665$ Days

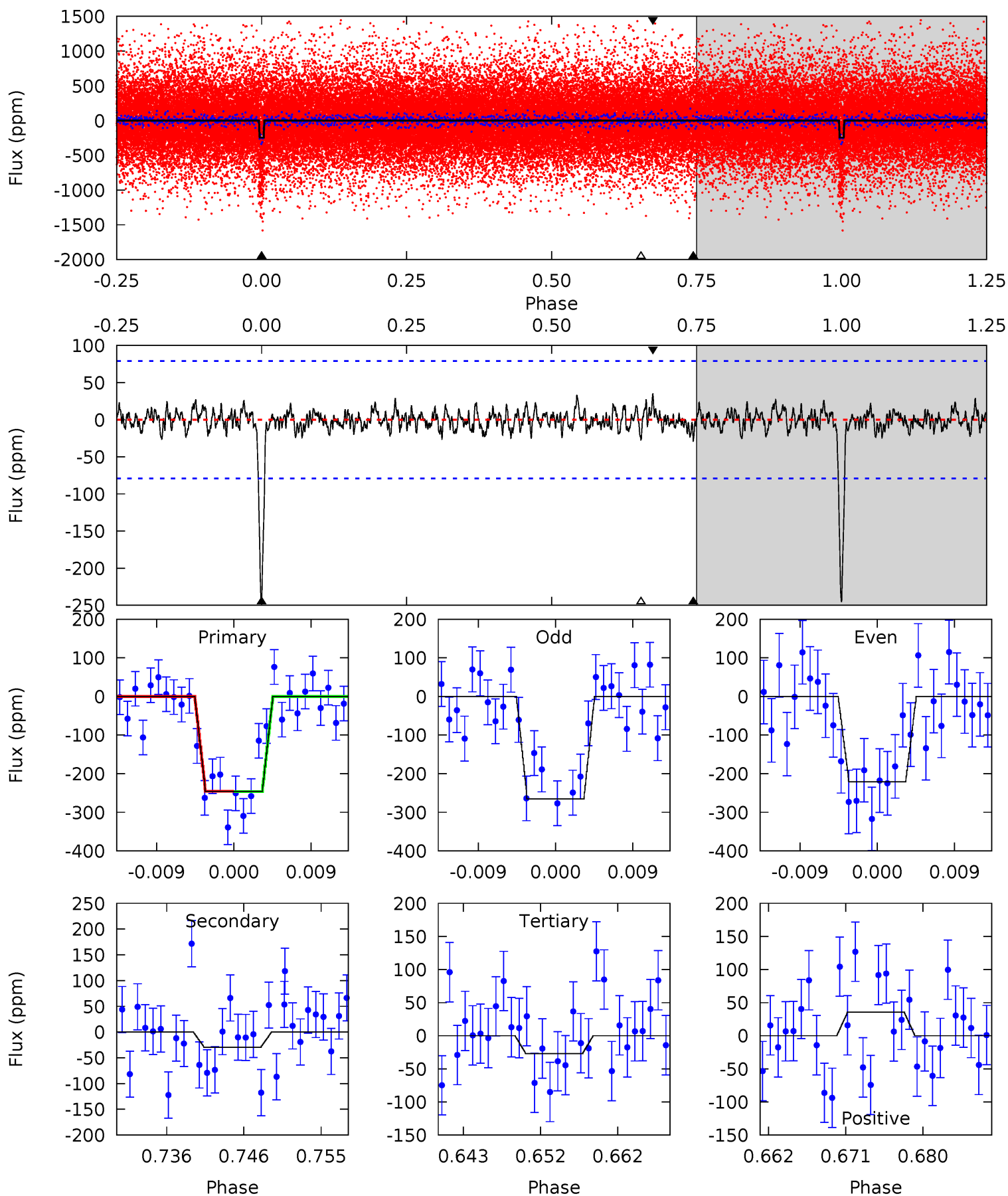
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	4.05	3.67	5.29	5.03	2.57	1.45	11.6	9.97	0.38	-1.24	1.15	0.95	0.26	0.39



Alt Model-Shift Uniqueness Test

011081512-01, $P = 15.739353$ Days, $E = 132.824170$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	1.87	1.72	2.26	5.04	2.60	0.66	13.9	13.4	0.15	-0.39	1.42	1.04	0.13	0.02



Stellar Parameters For KIC 011081512

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4733^{+167}_{-167}	$4.569^{+0.063}_{-0.031}$	$-0.060^{+0.300}_{-0.300}$	$0.723^{+0.052}_{-0.072}$	$0.706^{+0.077}_{-0.058}$	$2.632^{+0.714}_{-0.319}$
	+4%/-4%	+1%/-1%	+500%/-500%	+7%/-10%	+11%/-8%	+27%/-12%
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 011081512-01 / KOI 3364.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-75 ± 19	$1.48^{+0.74}_{-0.69}$	744^{+28}_{-29}	3568^{+860}_{-469}	228^{+535}_{-133}
Alt.	-29 ± 16	$1.30^{+0.66}_{-0.68}$	745^{+30}_{-31}	3195^{+878}_{-468}	109^{+372}_{-71}

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

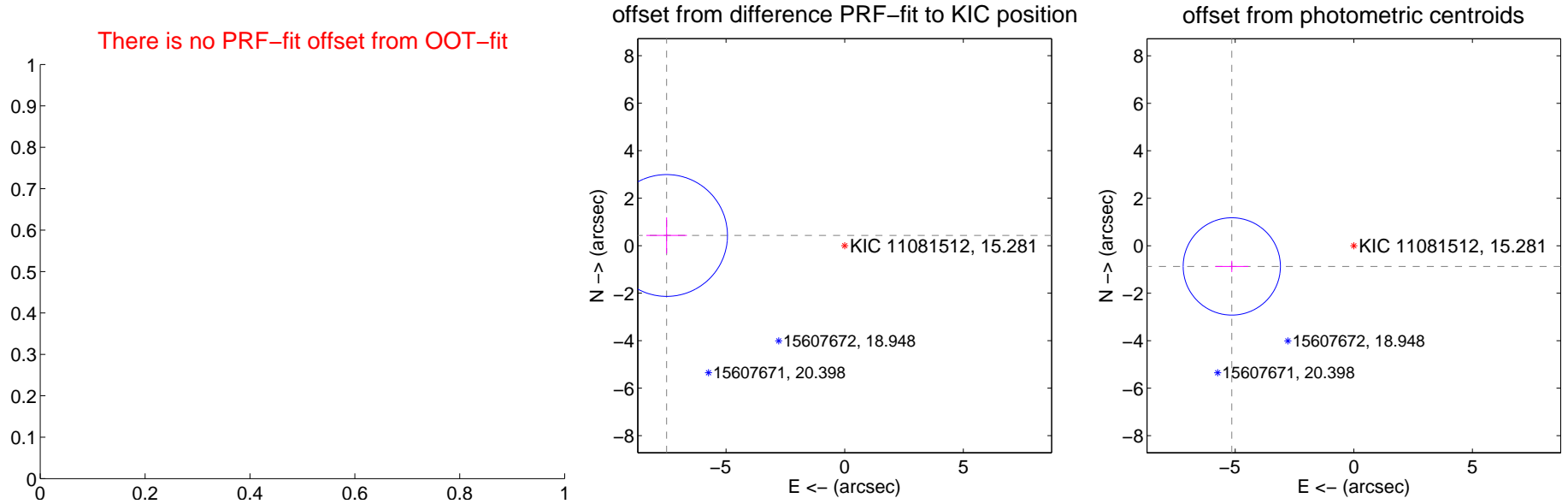
DV Centroid Data

Supplemental centroid analysis for 011081512-01. Kepler magnitude: 15.28. Transit SNR 9.38

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	7.518 ± 0.855	8.79	7.506 ± 0.855	0.429 ± 0.763
photometric centroid source offset	5.22 ± 0.68	7.64	5.15 ± 0.69	-0.87 ± 0.24



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.

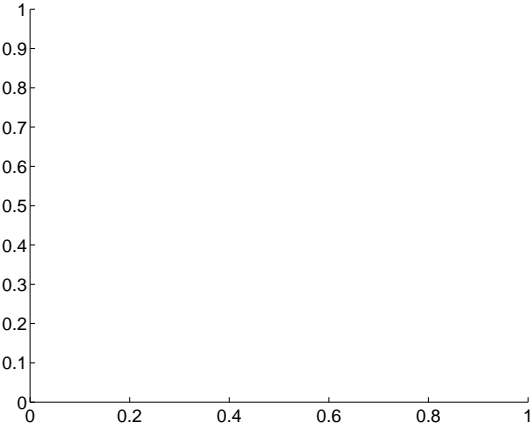
Q1 no difference image



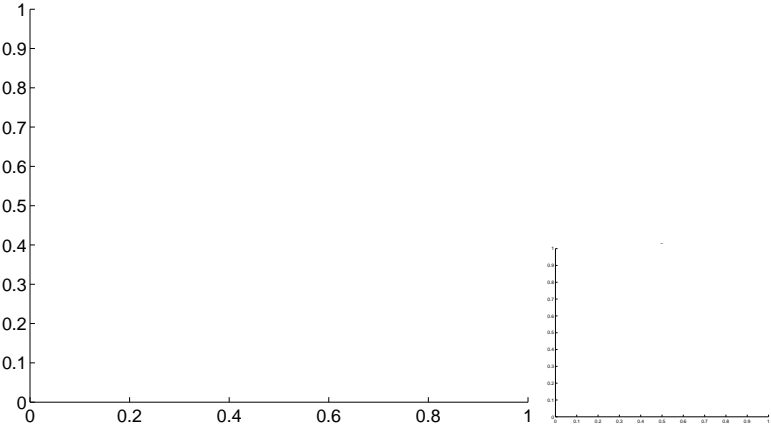
Q1 no OOT image



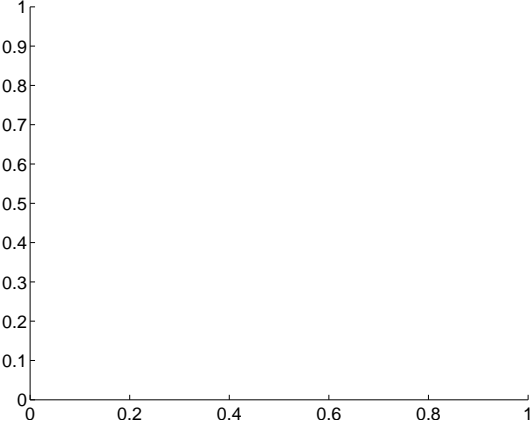
Q2 no difference image



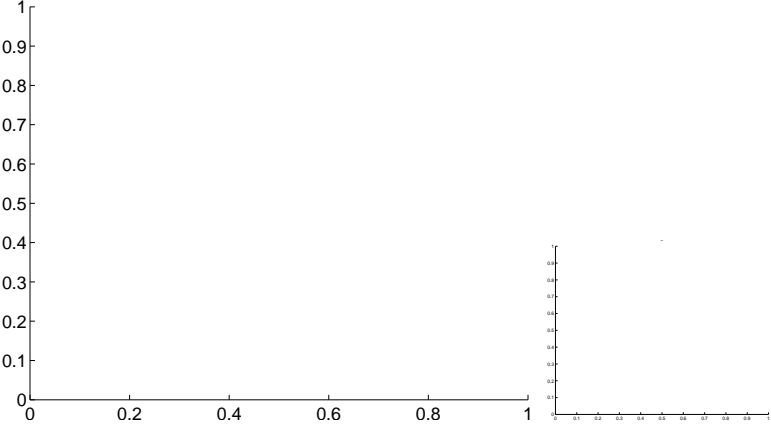
Q2 no OOT image



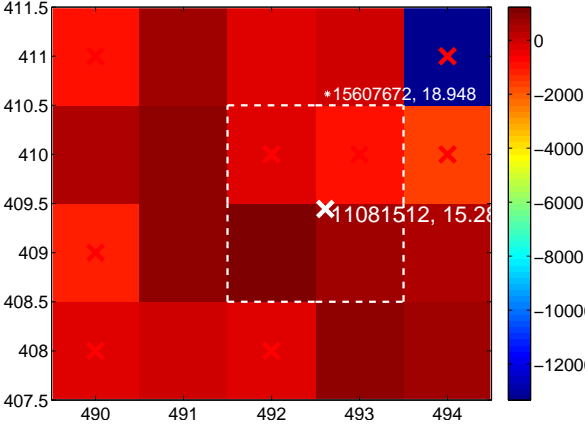
Q3 no difference image



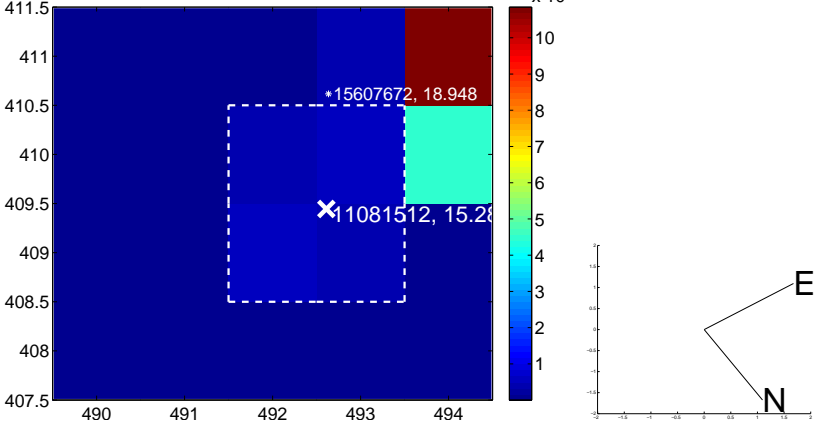
Q3 no OOT image



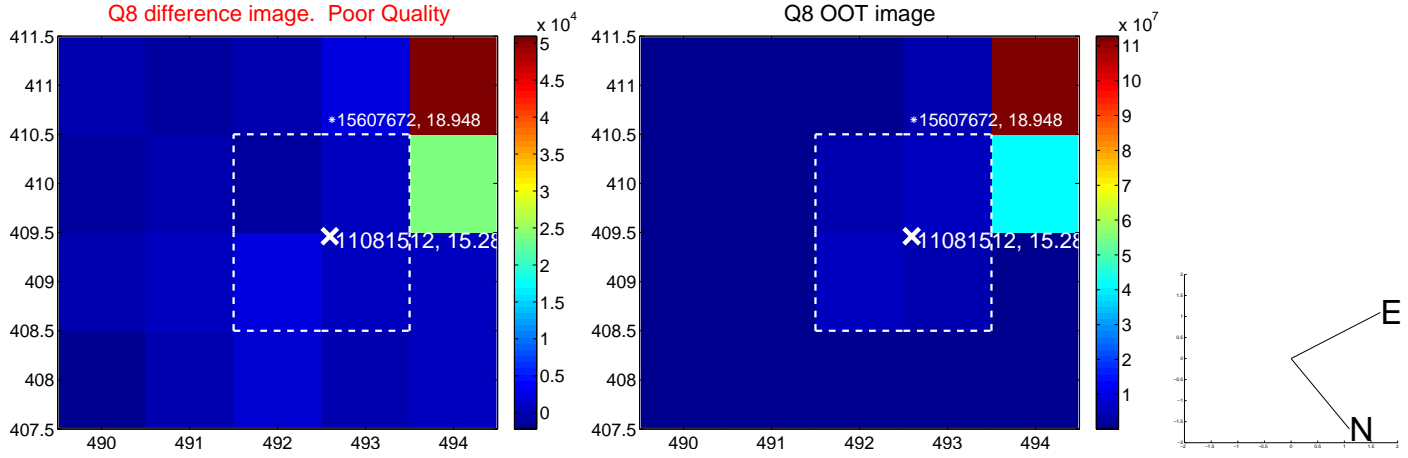
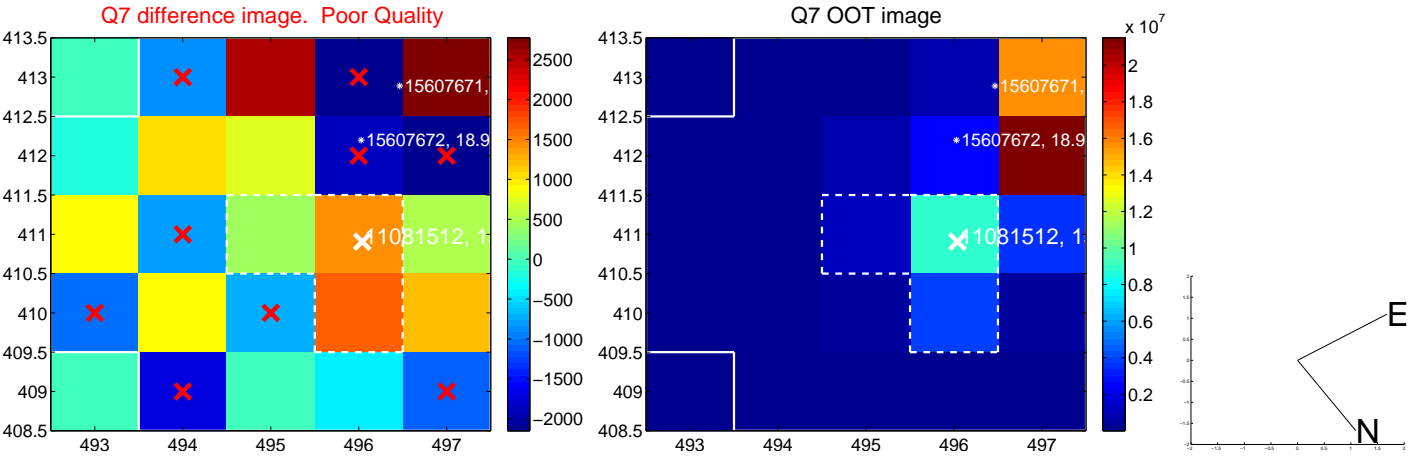
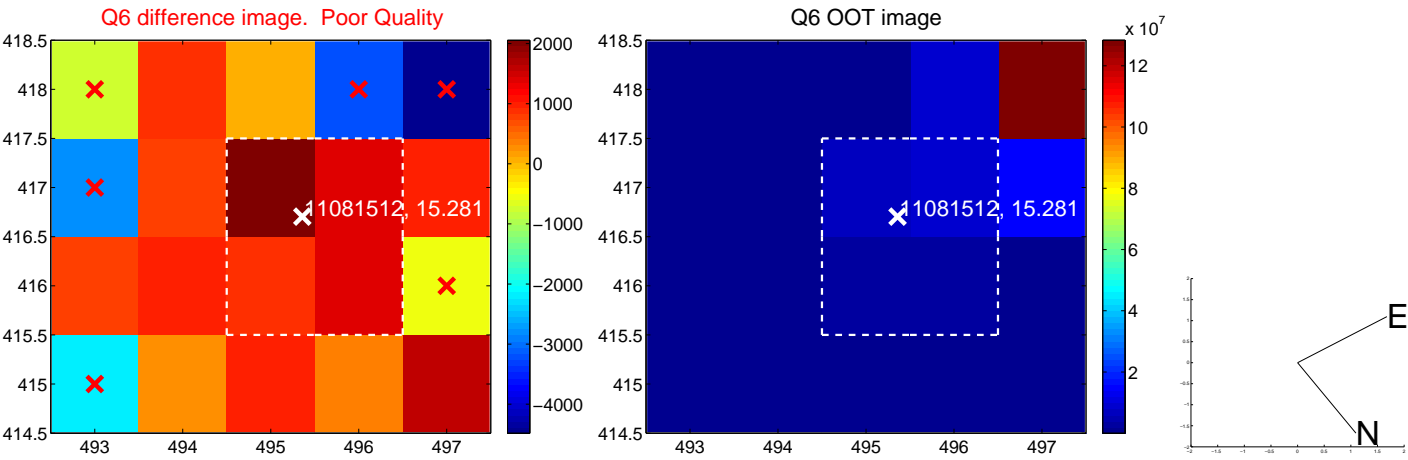
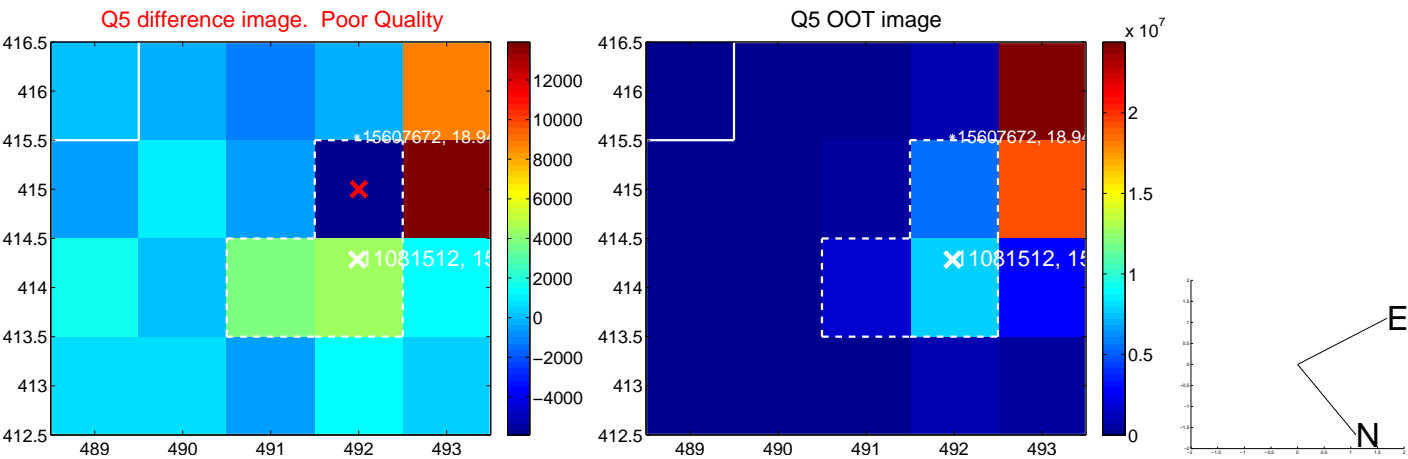
Q4 difference image. Poor Quality



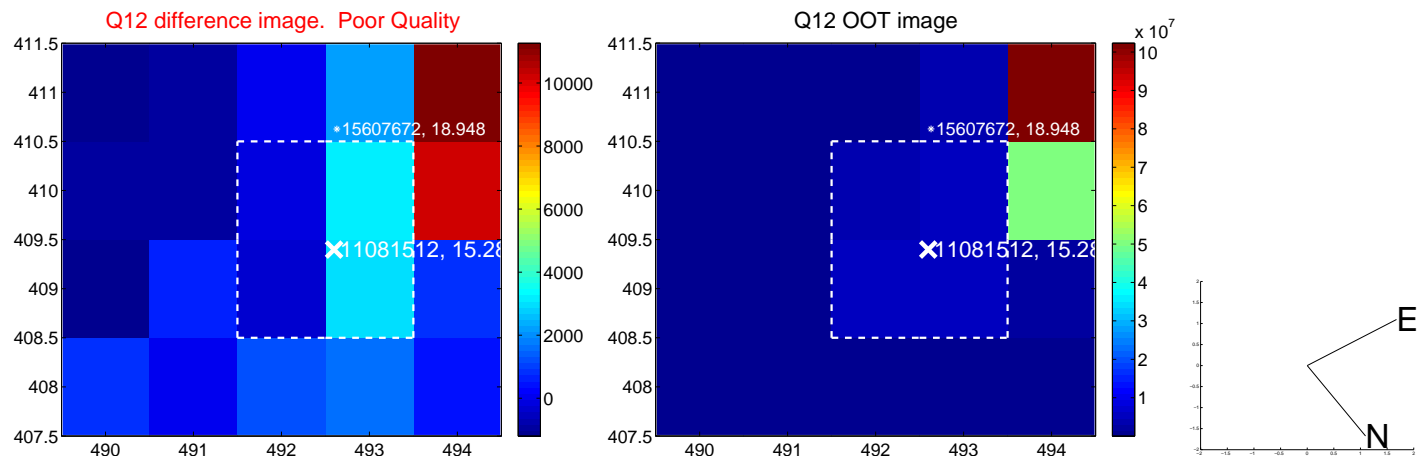
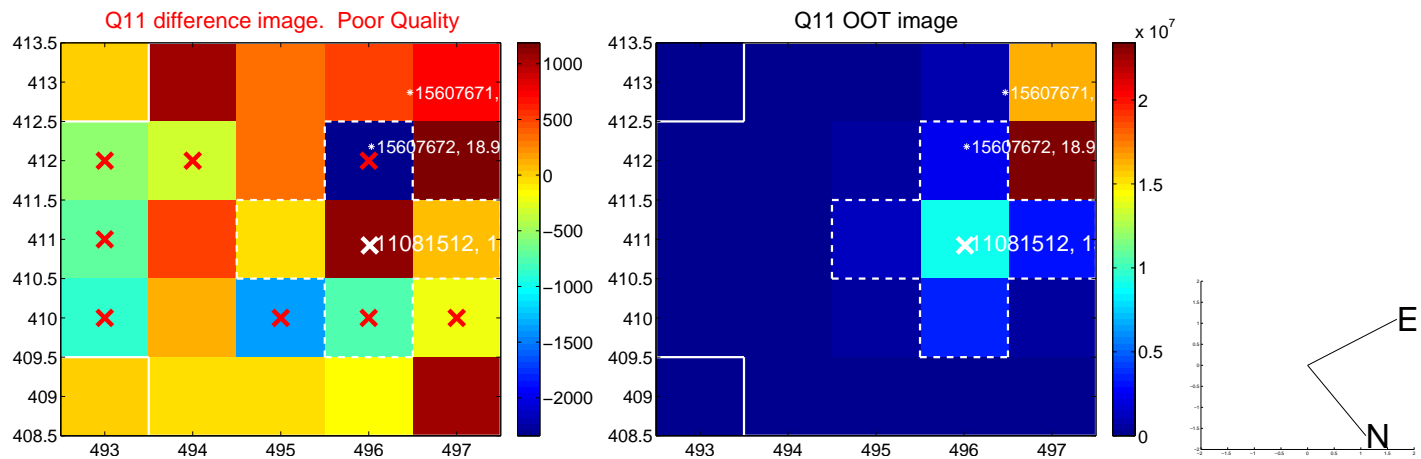
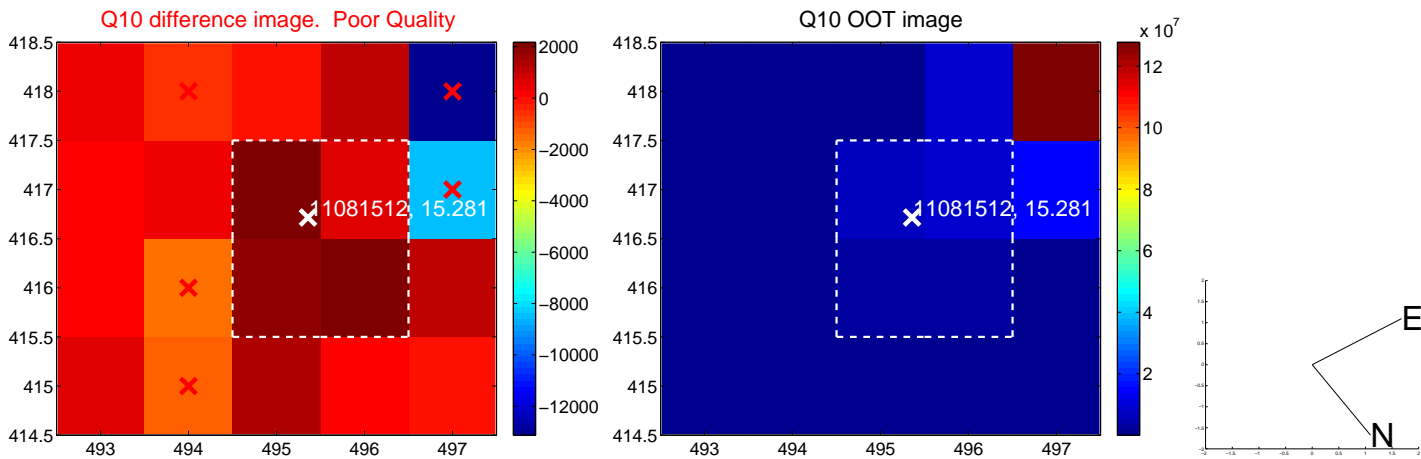
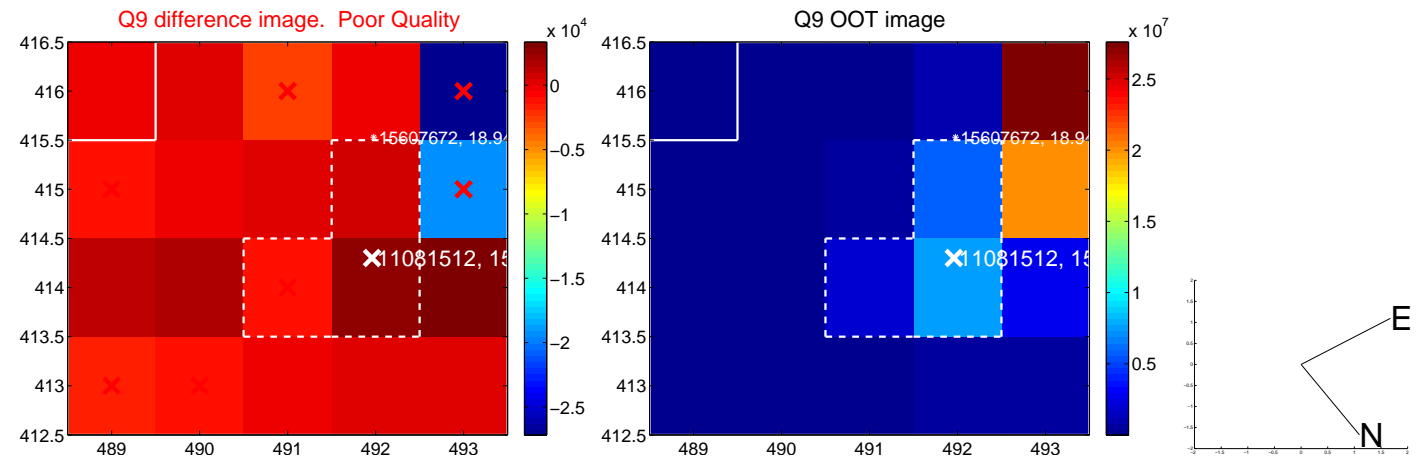
Q4 OOT image



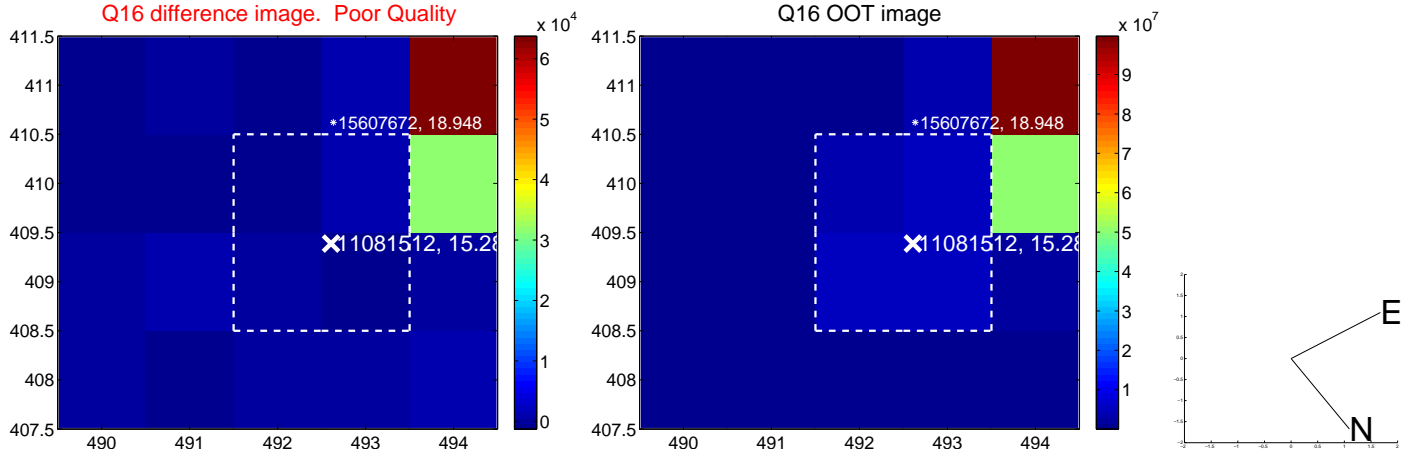
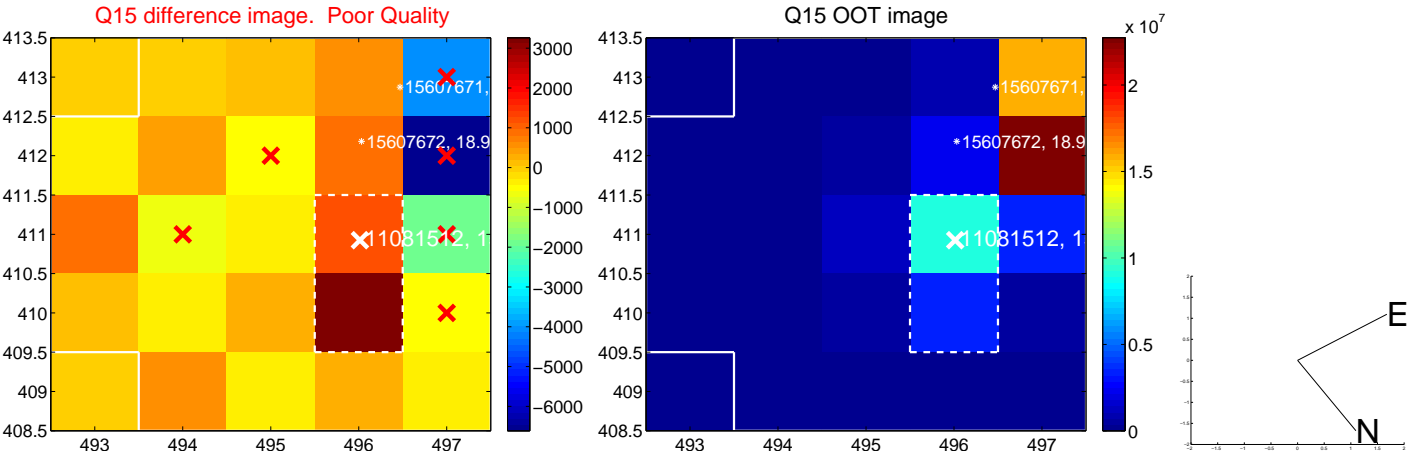
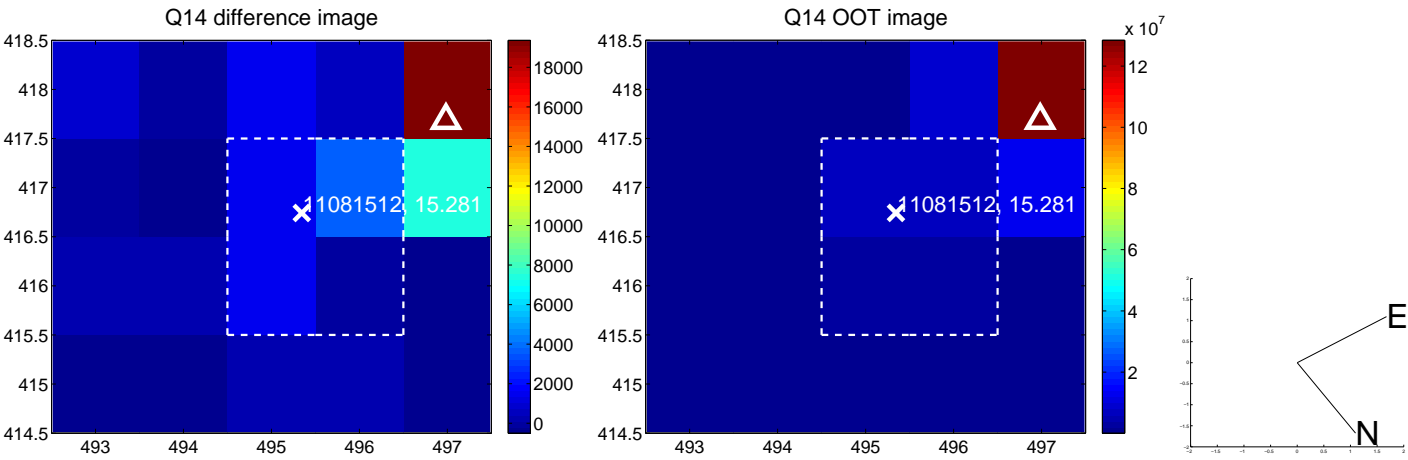
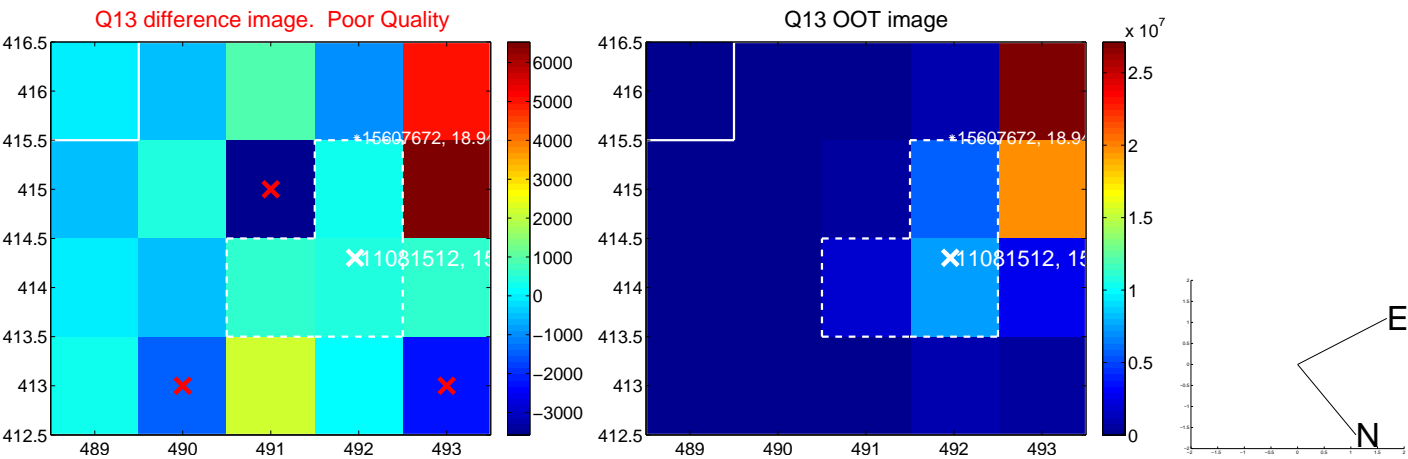
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



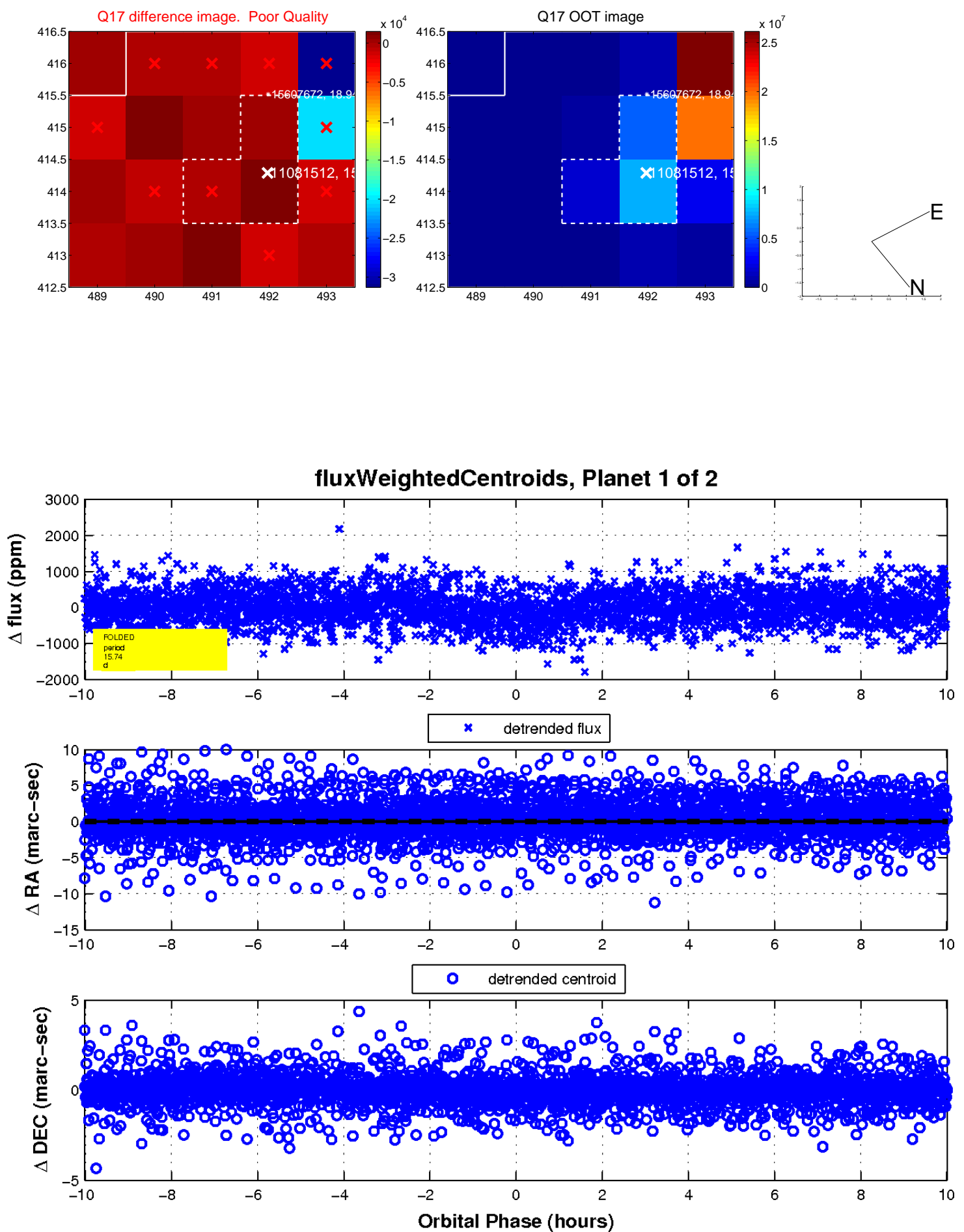
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

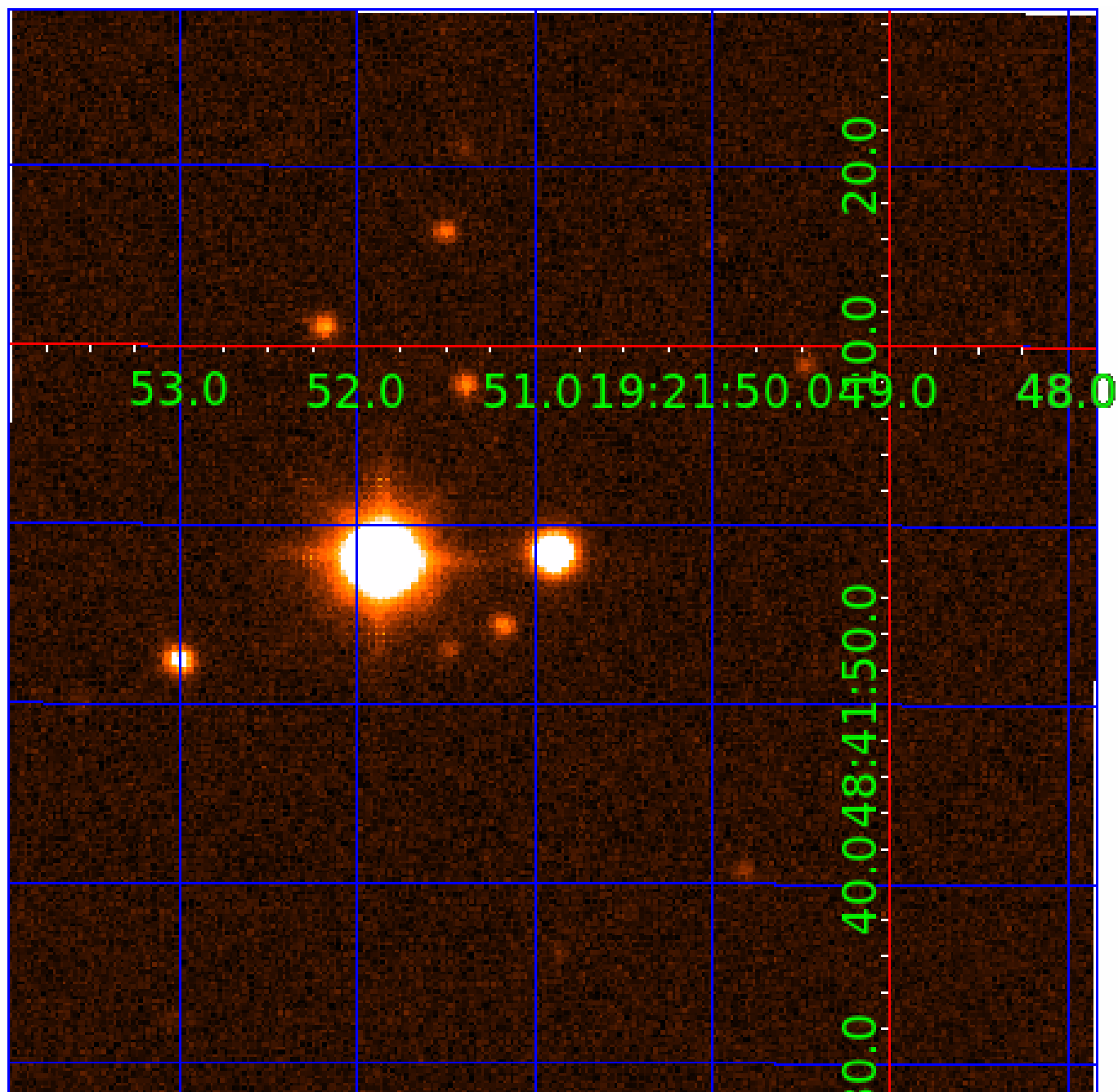


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011081512

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})
011081512-01	OBS	3364.01	15.739439	132.814665	280.3	3.340	9.3	9.4	0.72	4733	1.49	19.60
011081512-02	OBS	No	1.483650	132.148685	90.4	11.906	8.3	11.3	0.72	4733	0.78	456.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011081512-01	OBS	FP	0.13	0	0	1	0	CENT_RESOLVED_OFFSET
011081512-02	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS

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 011081512-02

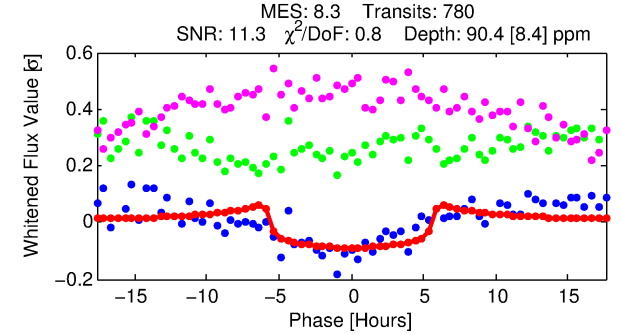
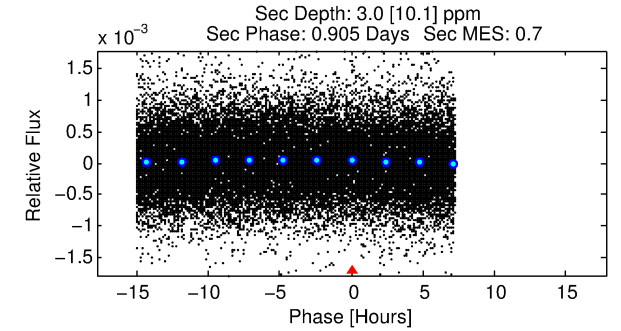
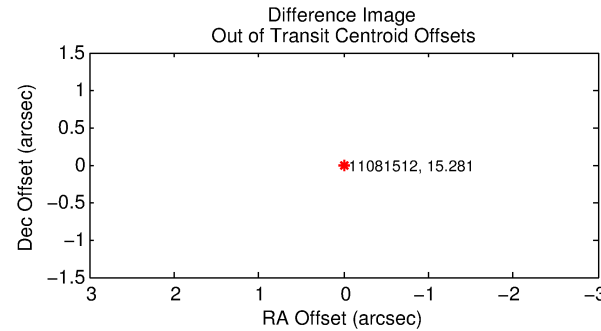
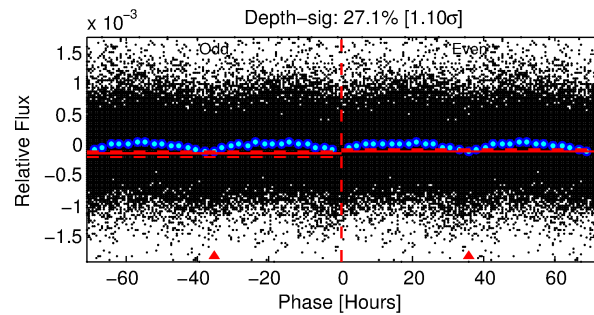
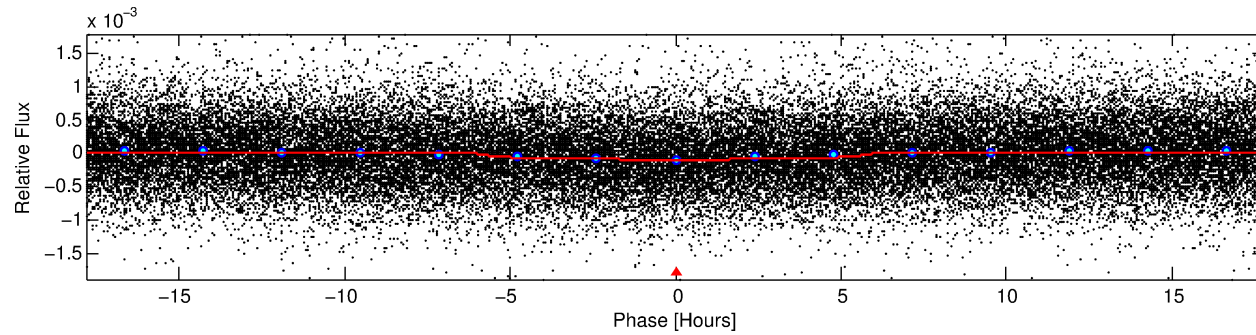
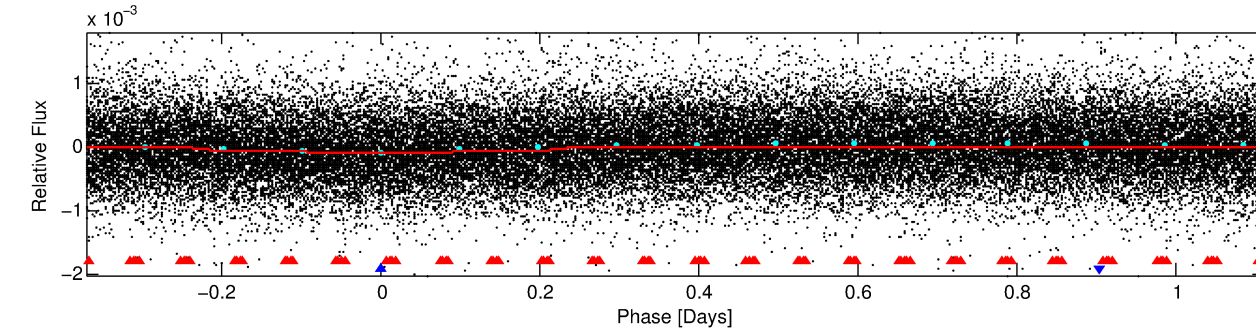
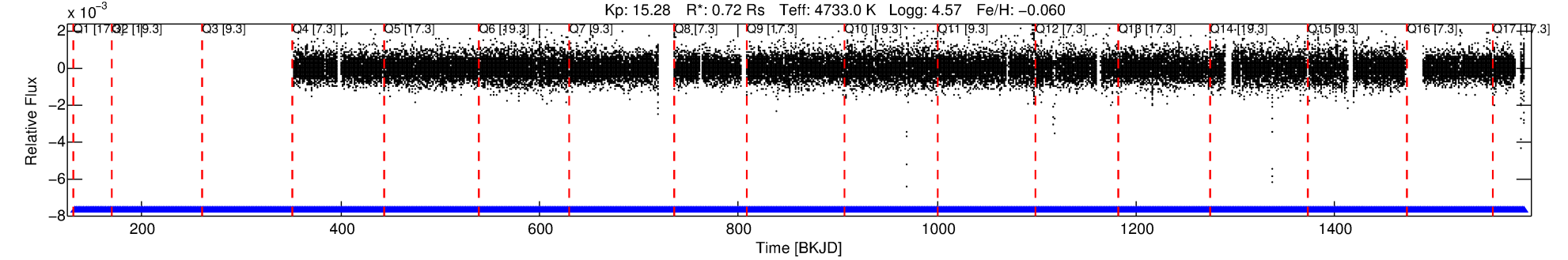
No Significant Match Found

DV One-Page Summary

KIC: 11081512 Candidate: 2 of 2 Period: 1.484 d

KOI: K03364 Corr: No Ephemeris Match

Kp: 15.28 R*: 0.72 Rs Teff: 4733.0 K Logg: 4.57 Fe/H: -0.060



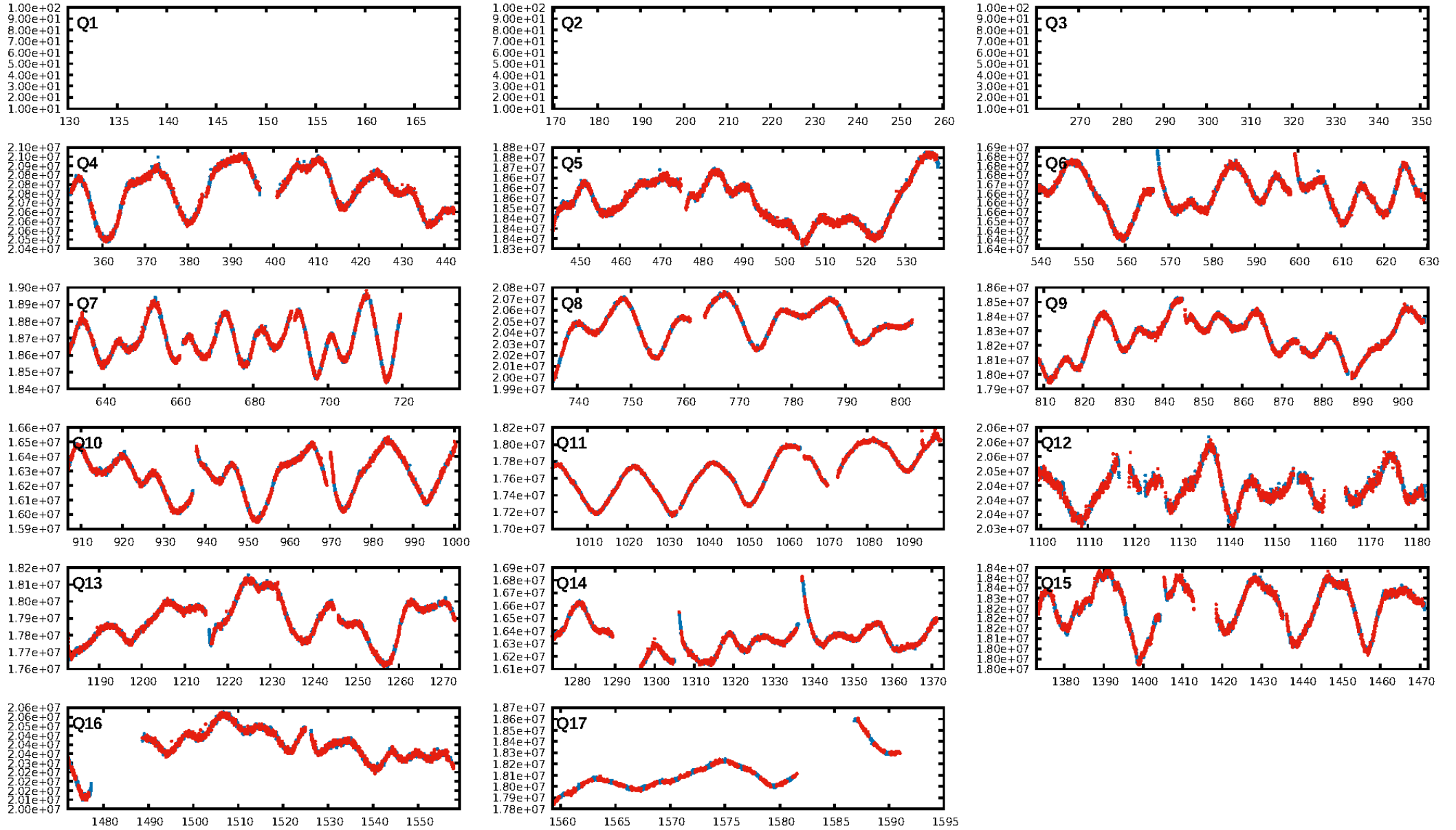
DV Fit Results:

Period = 1.48365 [0.00002] d
Epoch = 132.1487 [0.0065] BKJD
Rp/R* = 0.0098 [0.0025]
a/R* = 1.07 [0.12]
b = 0.81 [0.40]
Seff = 456.83 [83.84]
Teff = 1179 [54] K
Rp = 0.78 [0.21] Re
a = 0.0227 [0.0019] AU
Ag = 1.39 [4.83] [0.08σ]
Teffp = 1980 [1718] K [0.47σ]

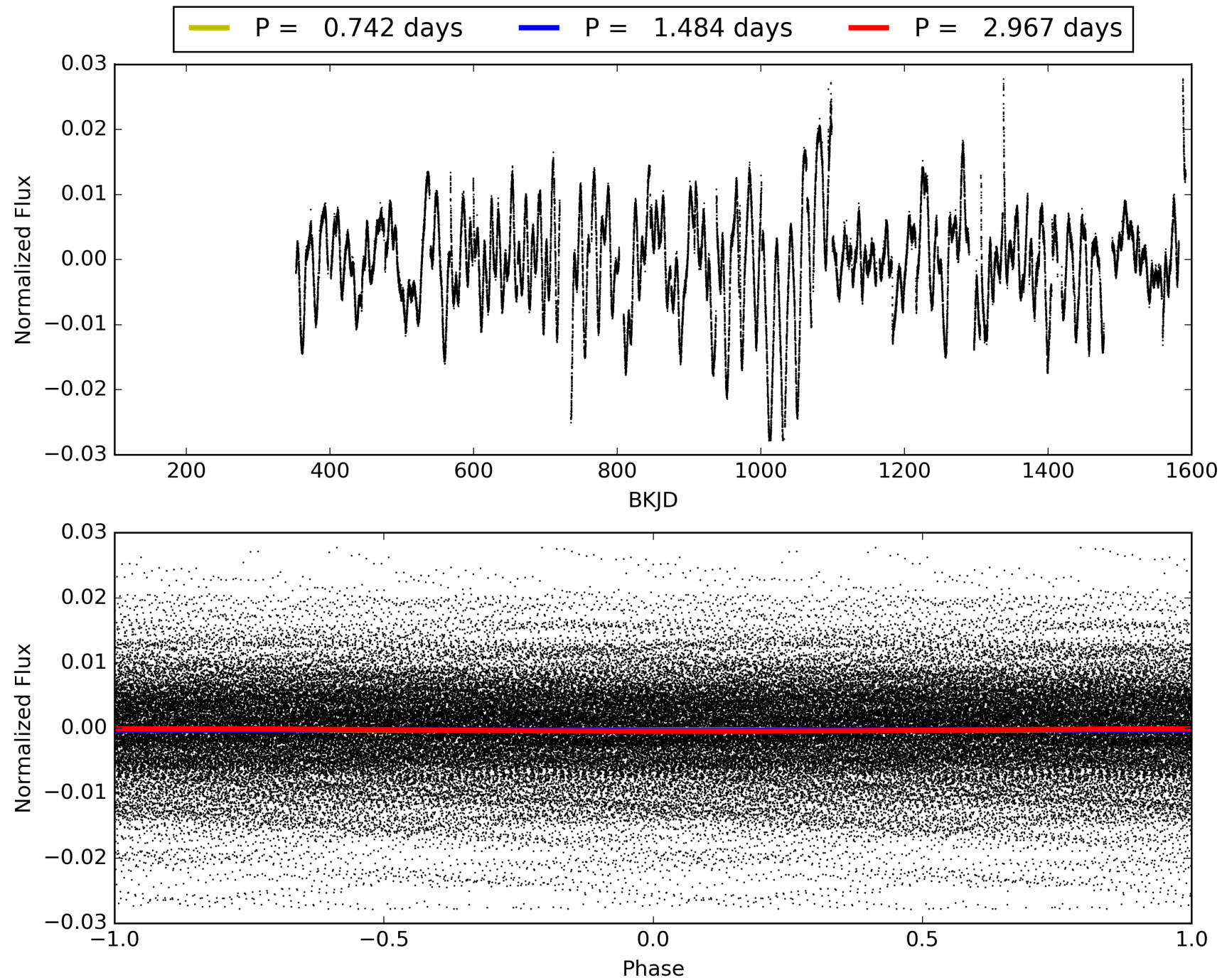
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [27.67σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [761/761]
GhostDiagnostic-chr: 2.014
Centroid-sig: N/A
Centroid-so: 3.681 arcsec [5.85σ]
OotOffset-rm: N/A
KicOffset-rm: 5.938 arcsec [3.93σ]
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 011081512-02, PDC Light Curves

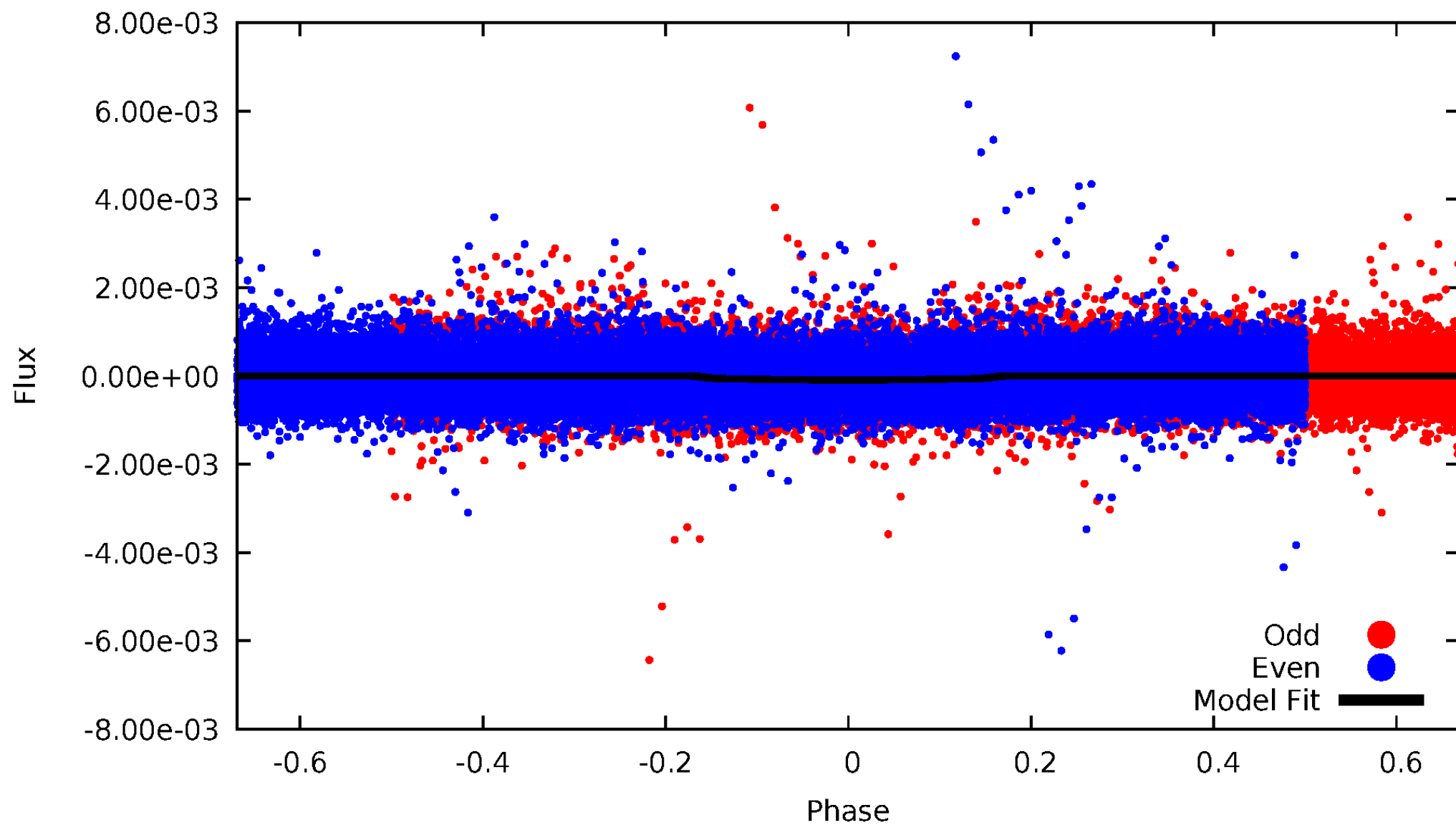


TCE 011081512-02



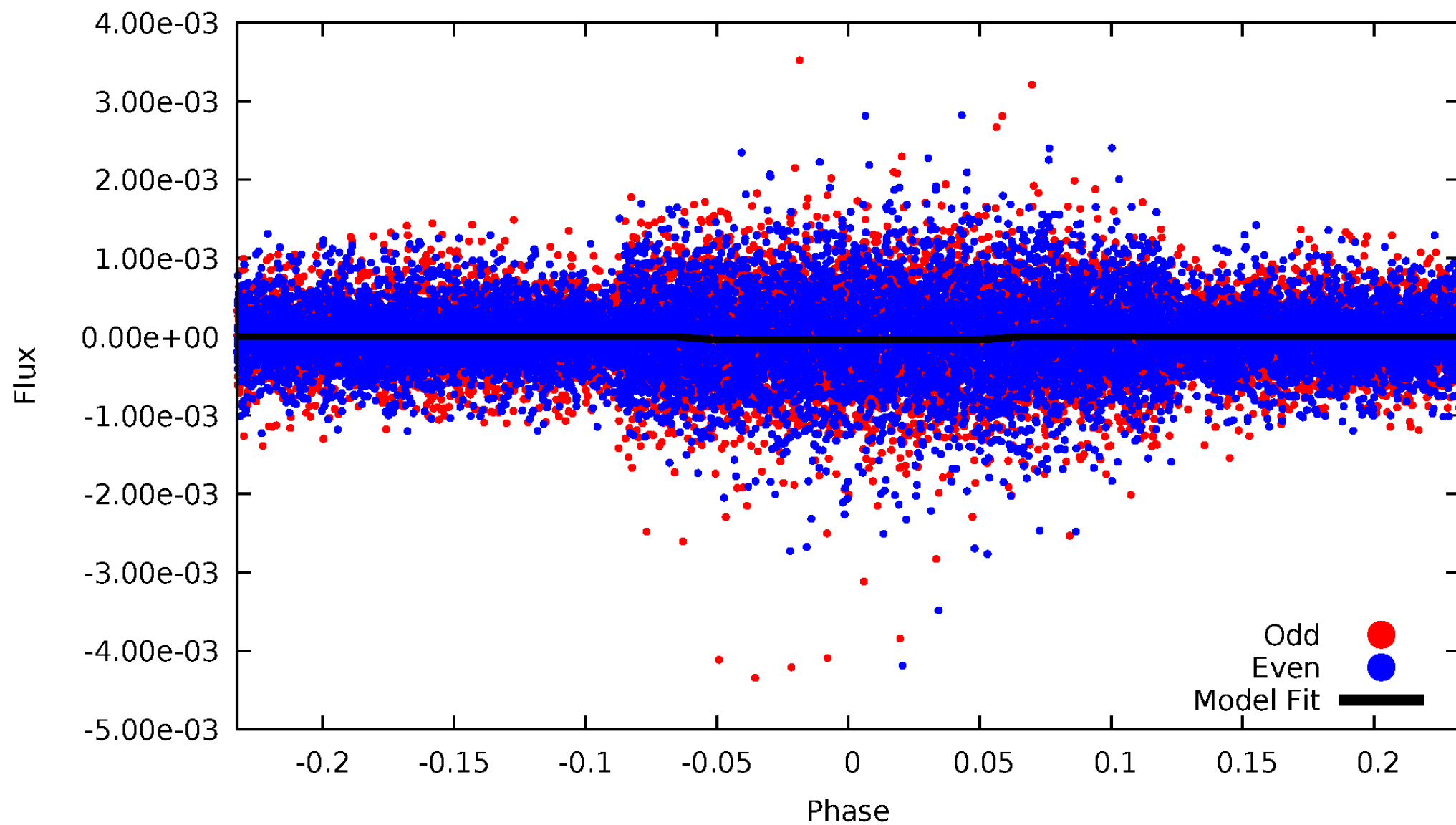
DV Odd/Even

TCE 011081512-02



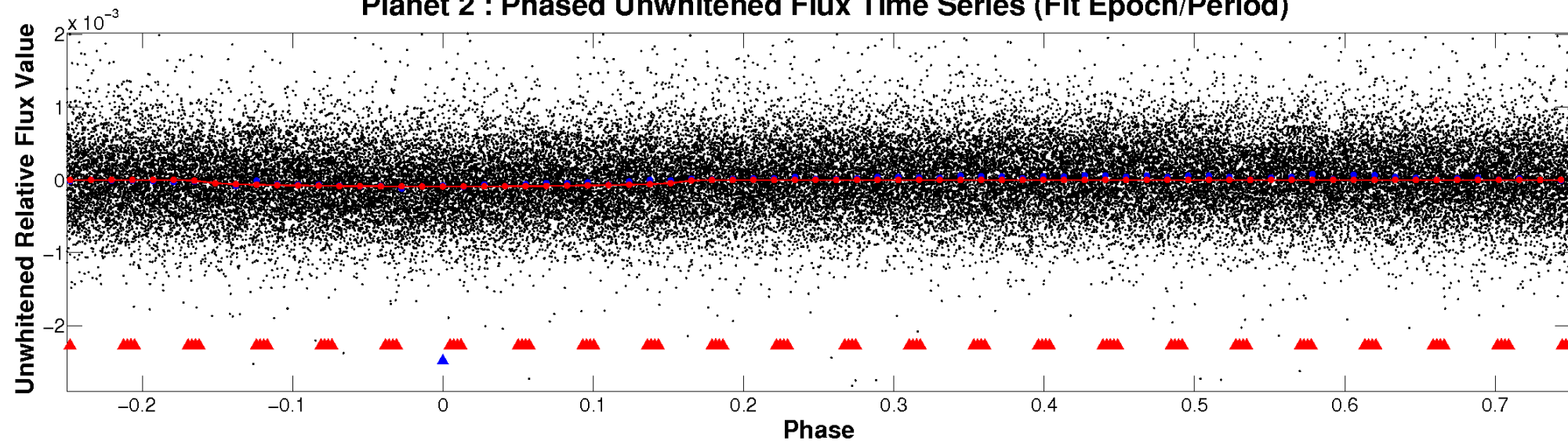
ALT Odd/Even

TCE 011081512-02

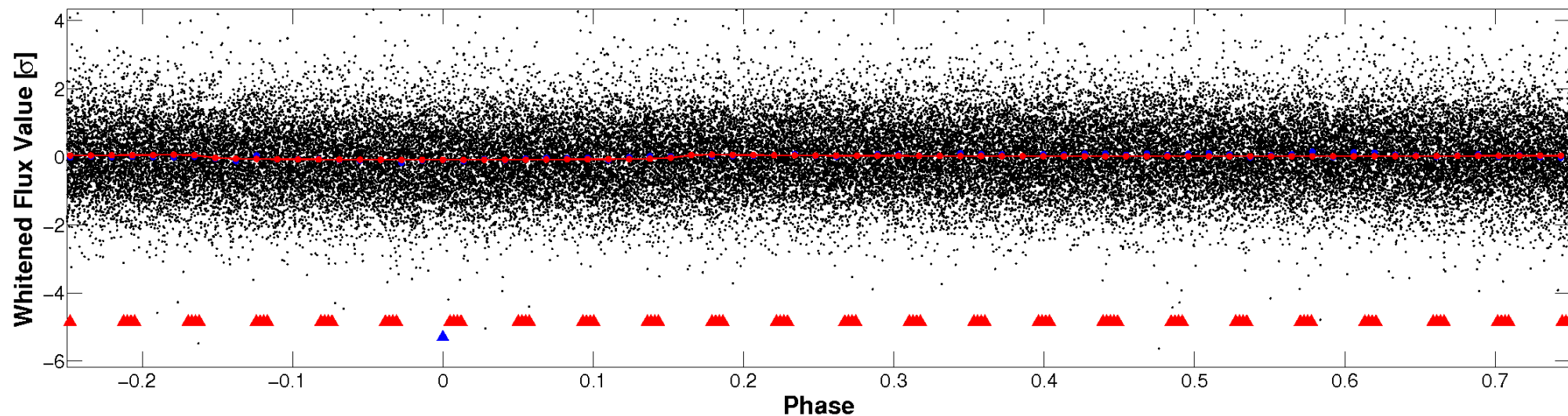


Non-Whitened Vs. Whitened Light Curve

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

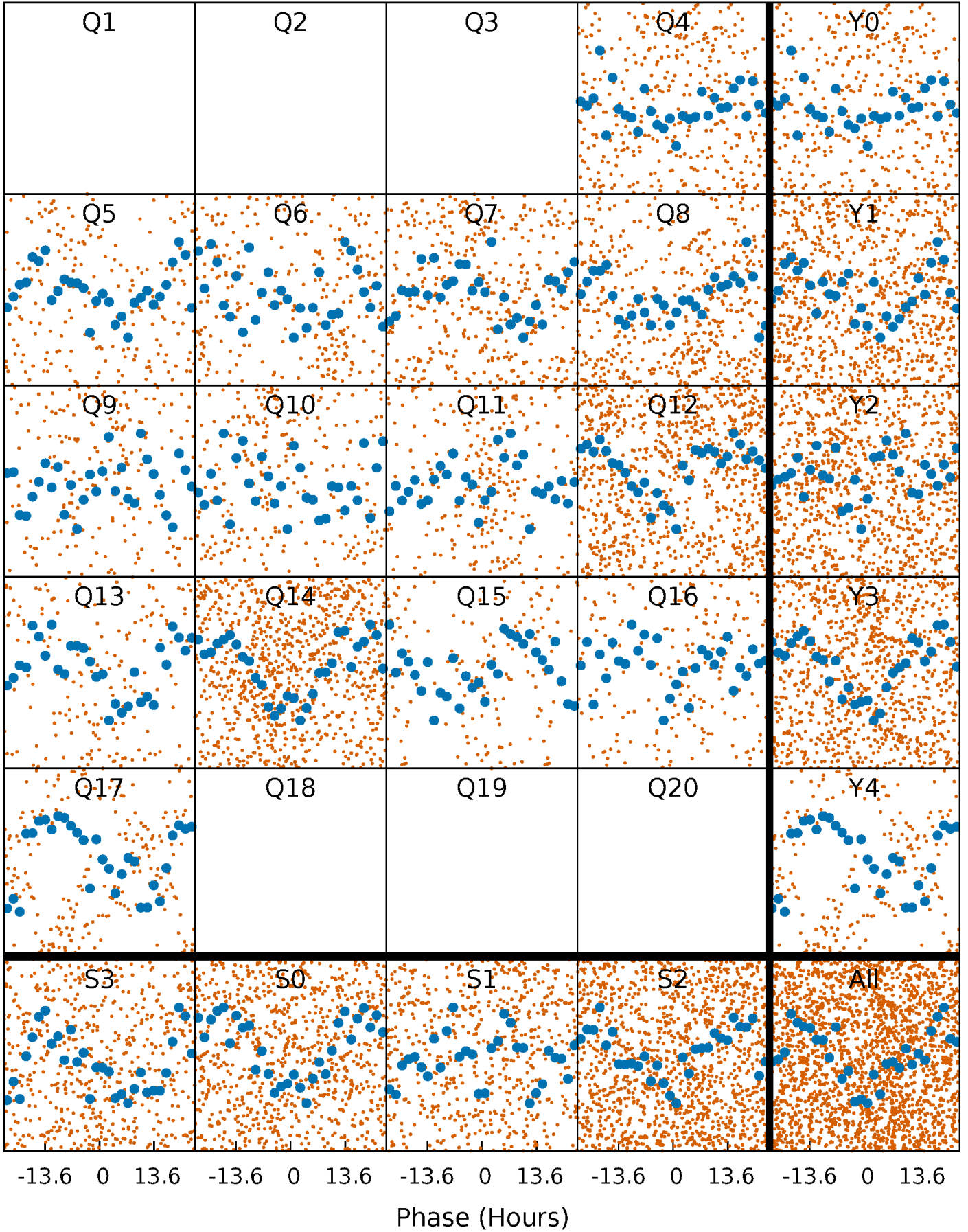


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



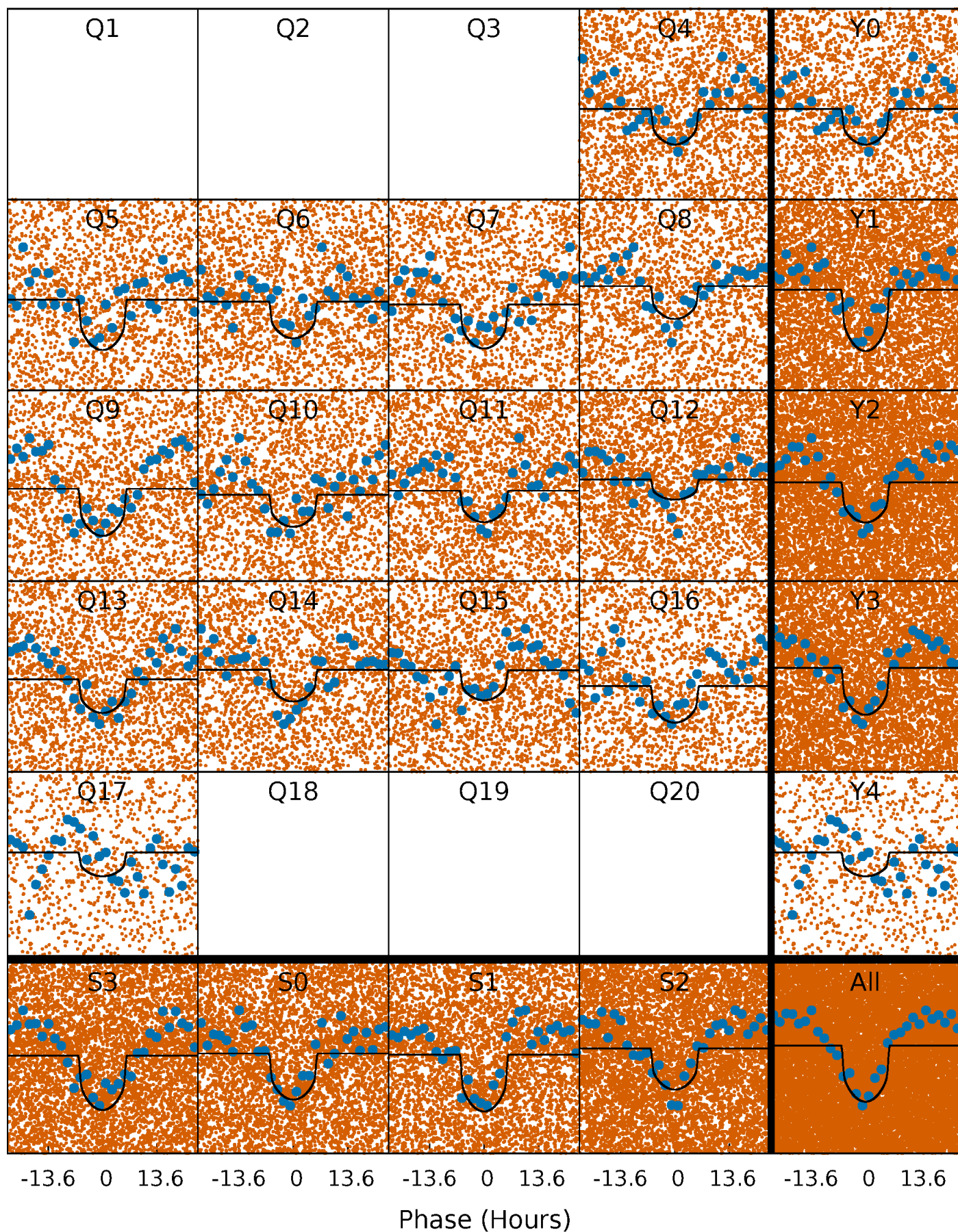
PDC Quarter-Phased Transit Curves

TCE 011081512-02 P= 1.483650 Days $T_0=132.148685$ (BKJD)



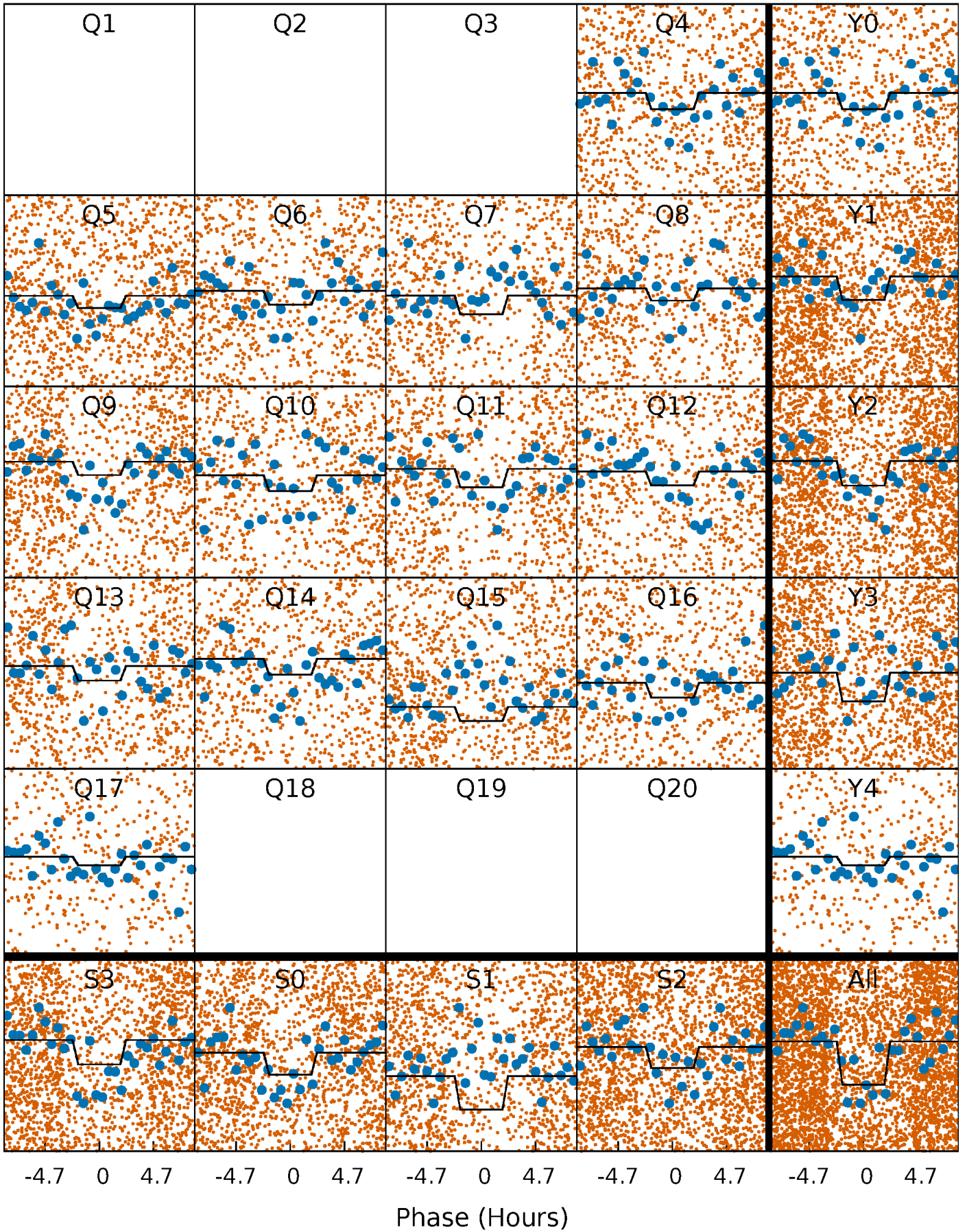
DV Quarter-Phased Transit Curves

TCE 011081512-02 P= 1.483650 Days $T_0=132.148685$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

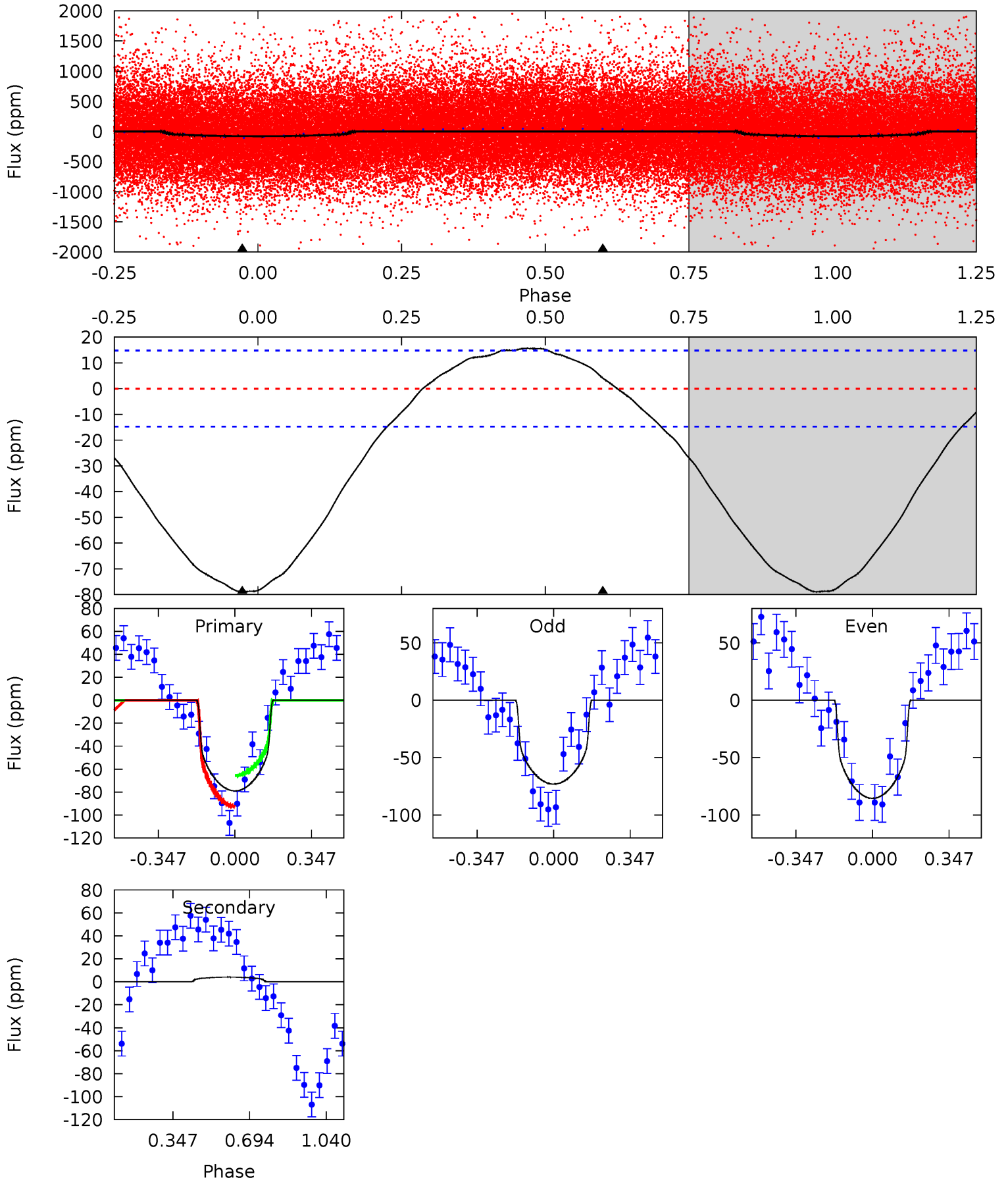
TCE 011081512-02 P= 1.483573 Days $T_0=132.139622$ (BKJD)



DV Model-Shift Uniqueness Test

011081512-02, P = 1.483650 Days, E = 132.148685 Days

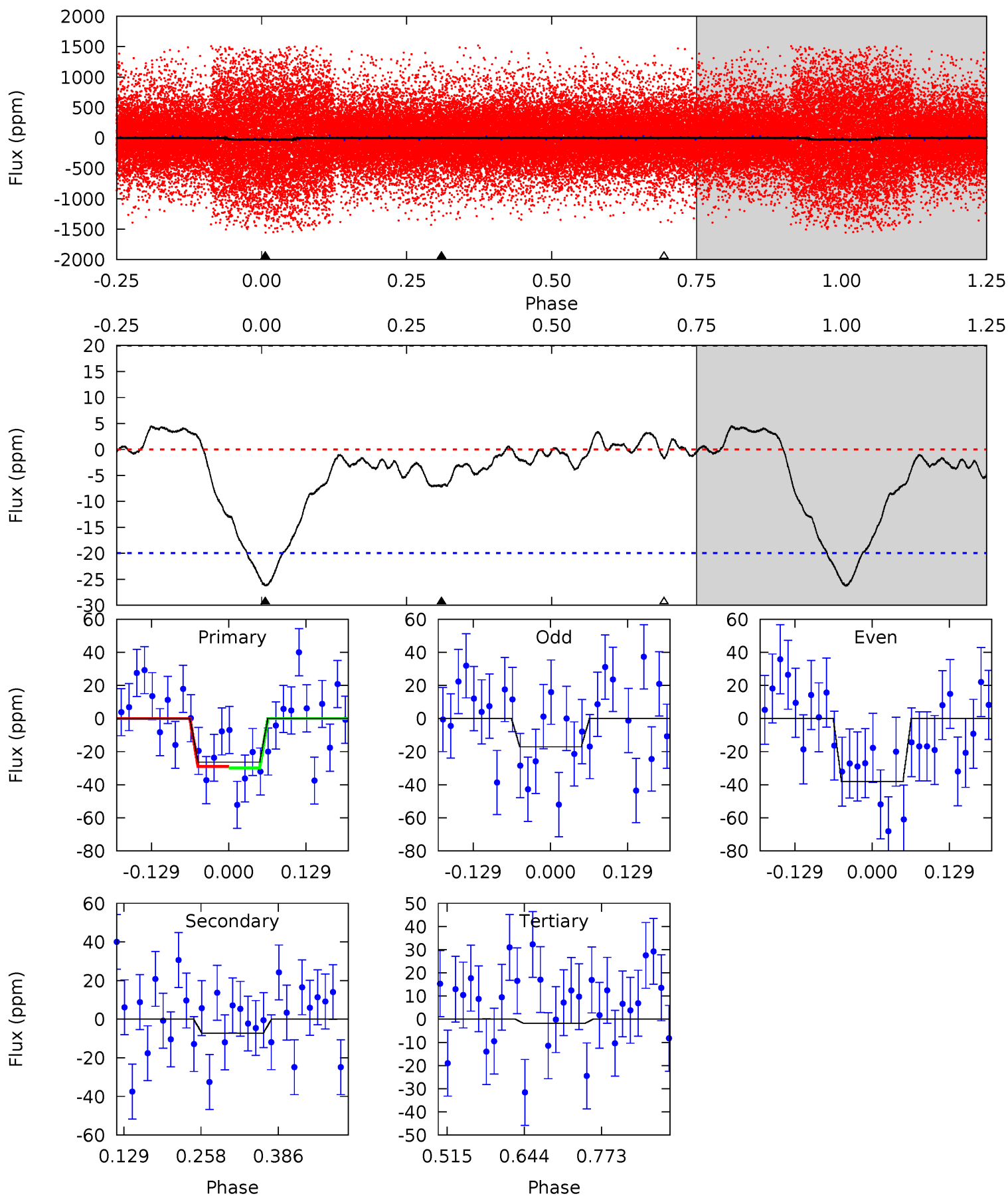
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.0	-1.19	0	0	4.30	0.94	1.79	23.0	23.0	-1.19	-1.19	1.81	0.84	0.17	3.92



Alt Model-Shift Uniqueness Test

011081512-02, P = 1.483573 Days, E = 132.139622 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.95	1.63	0.41	0	4.51	1.52	0.49	5.55	5.95	1.22	1.63	2.37	2.93	0.14	0.10



Stellar Parameters For KIC 011081512

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4733^{+167}_{-167}	$4.569^{+0.063}_{-0.031}$	$-0.060^{+0.300}_{-0.300}$	$0.723^{+0.052}_{-0.072}$	$0.706^{+0.077}_{-0.058}$	$2.632^{+0.714}_{-0.319}$
	+4%/-4%	+1%/-1%	+500%/-500%	+7%/-10%	+11%/-8%	+27%/-12%
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 011081512-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	4 ± 3	$0.77^{+0.18}_{-0.20}$	1634^{+60}_{-65}	-2841^{+439}_{-347}	$-1.859^{+1.590}_{-2.661}$
Alt.	-7 ± 4	$0.47^{+0.21}_{-0.21}$	1636^{+66}_{-66}	3471^{+827}_{-618}	$8.479^{+20.761}_{-6.013}$

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

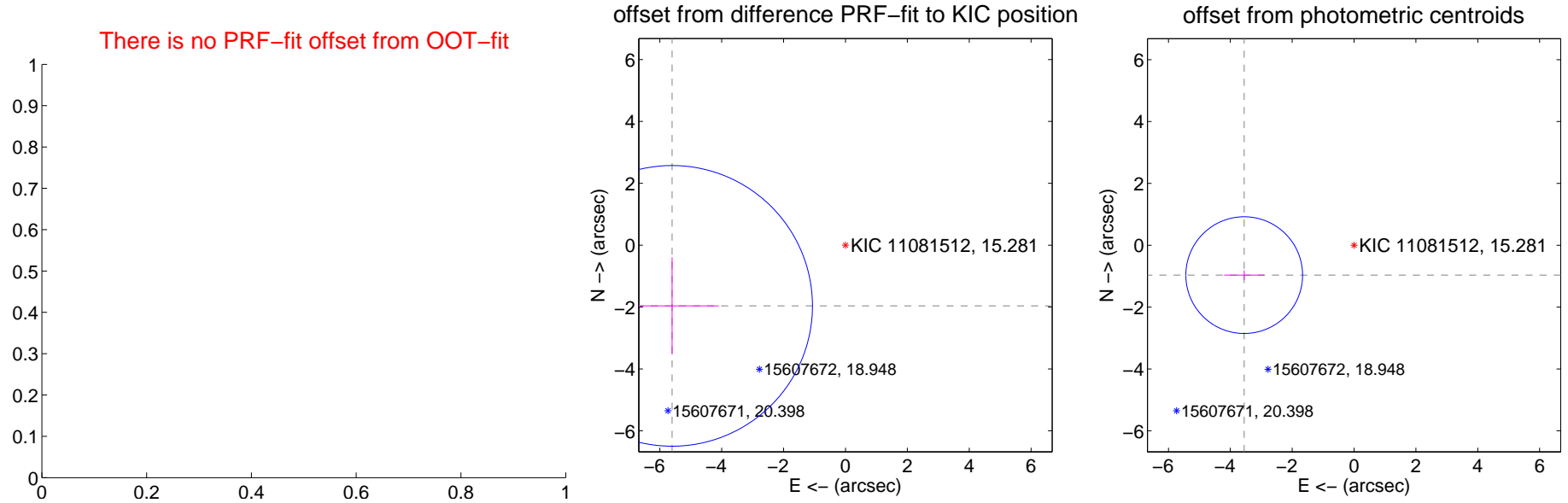
DV Centroid Data

Supplemental centroid analysis for 011081512-02. Kepler magnitude: 15.28. Transit SNR 11.29

There are 0 quarters with good PRF difference image offsets

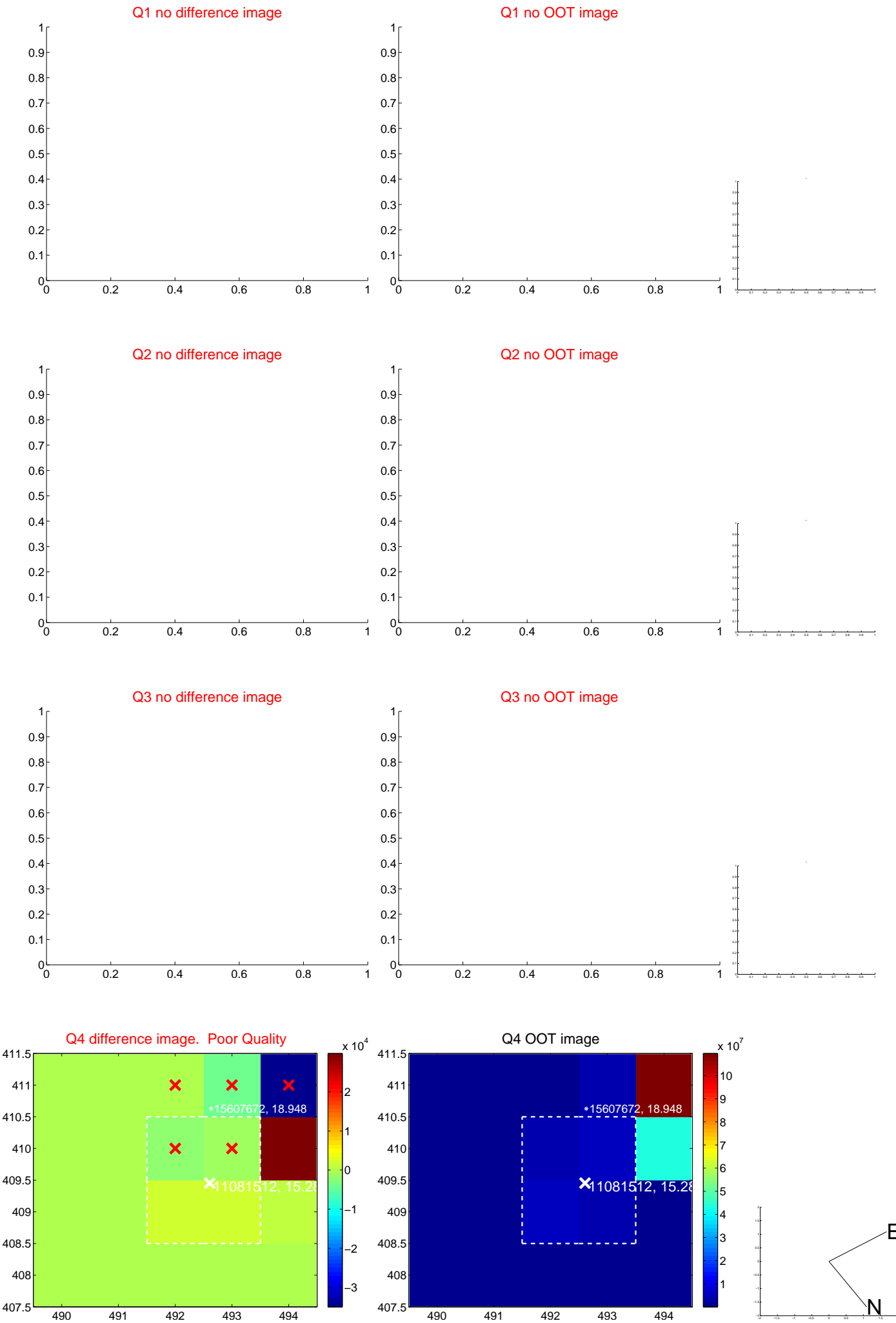
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	5.938 ± 1.512	3.93	5.604 ± 1.505	-1.962 ± 1.570
photometric centroid source offset	3.68 ± 0.63	5.85	3.55 ± 0.65	-0.97 ± 0.16

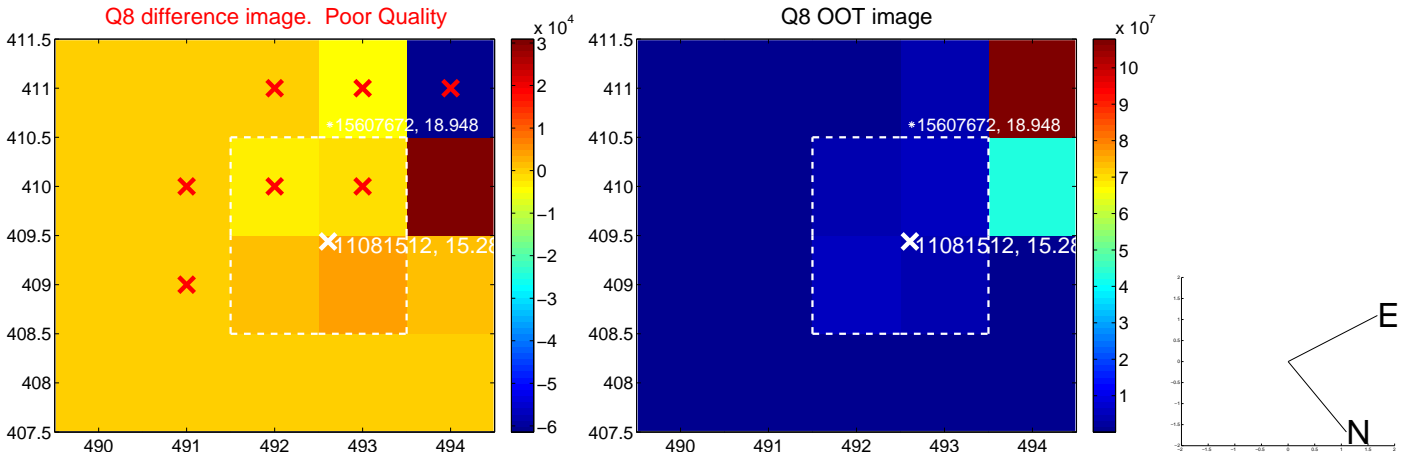
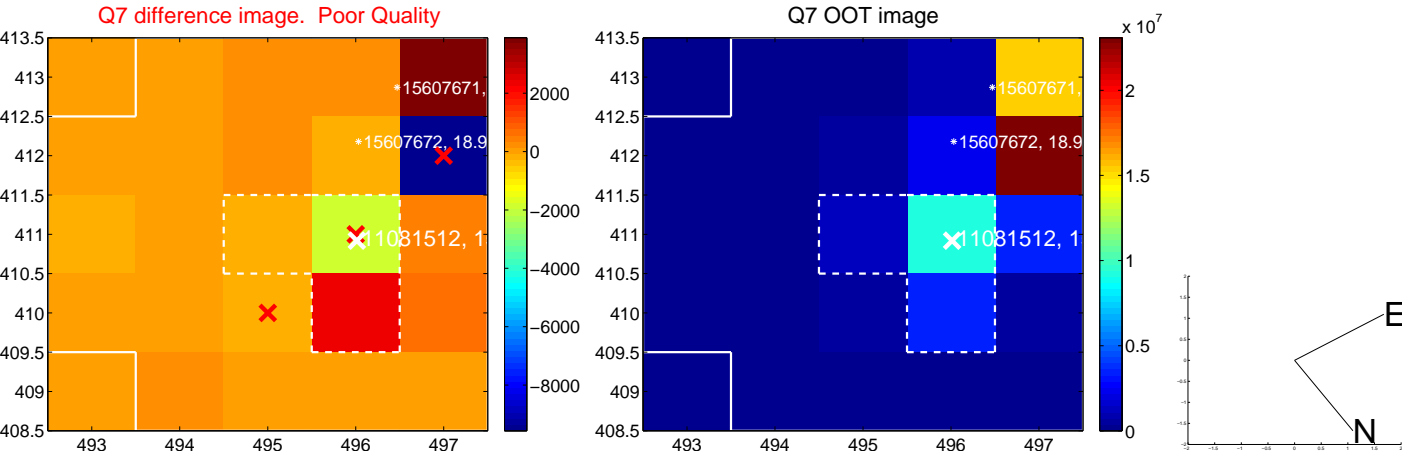
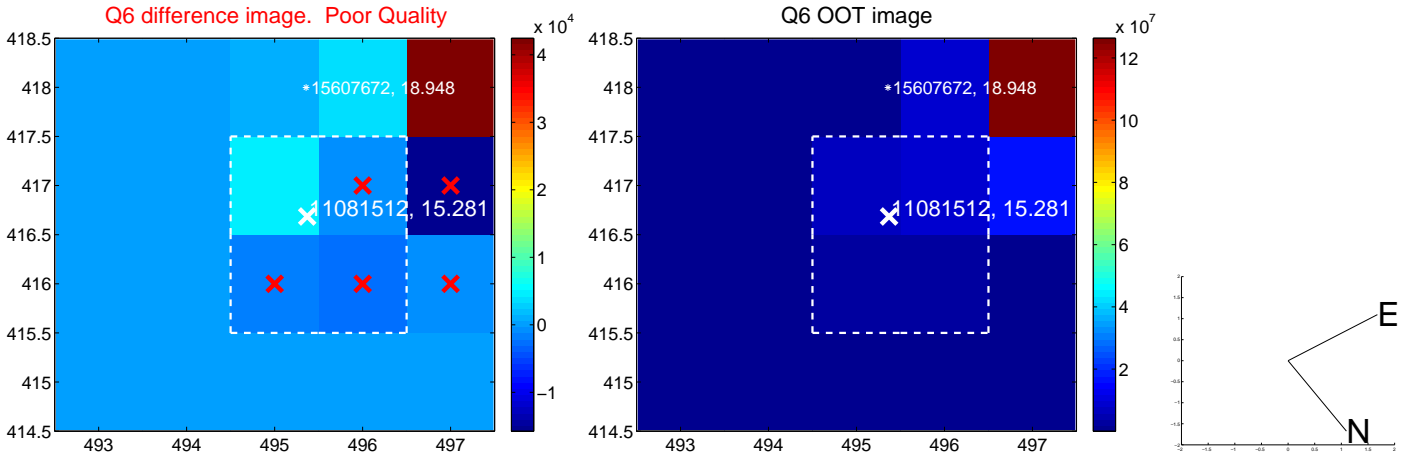
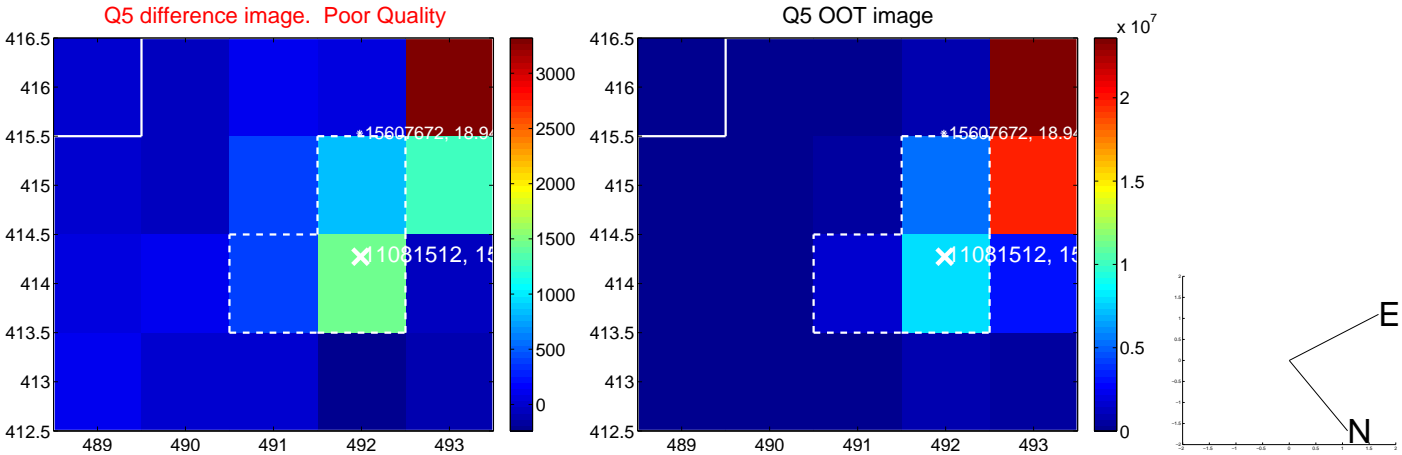


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

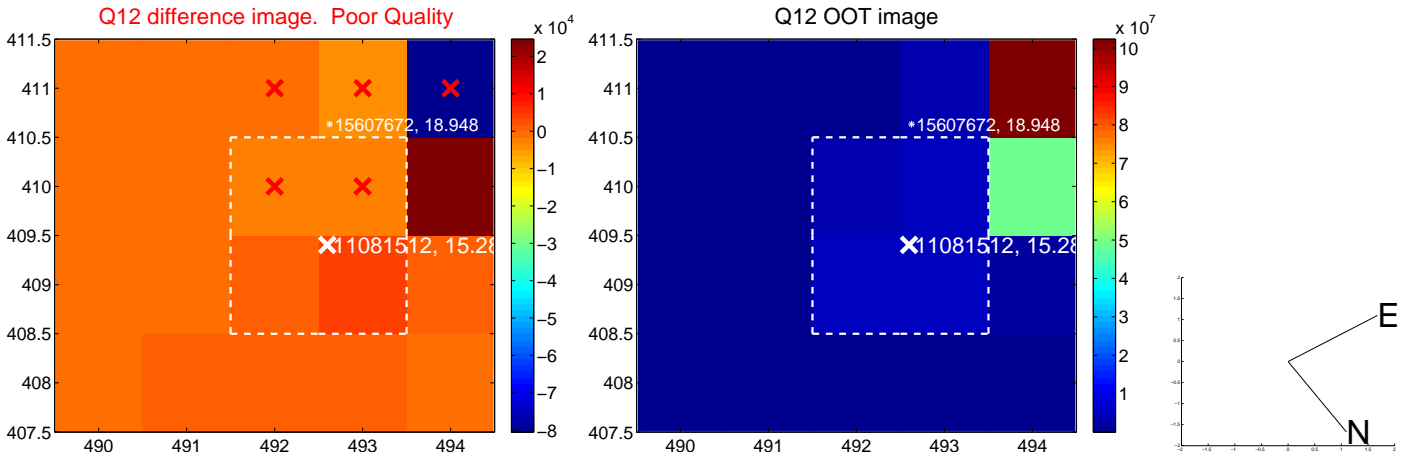
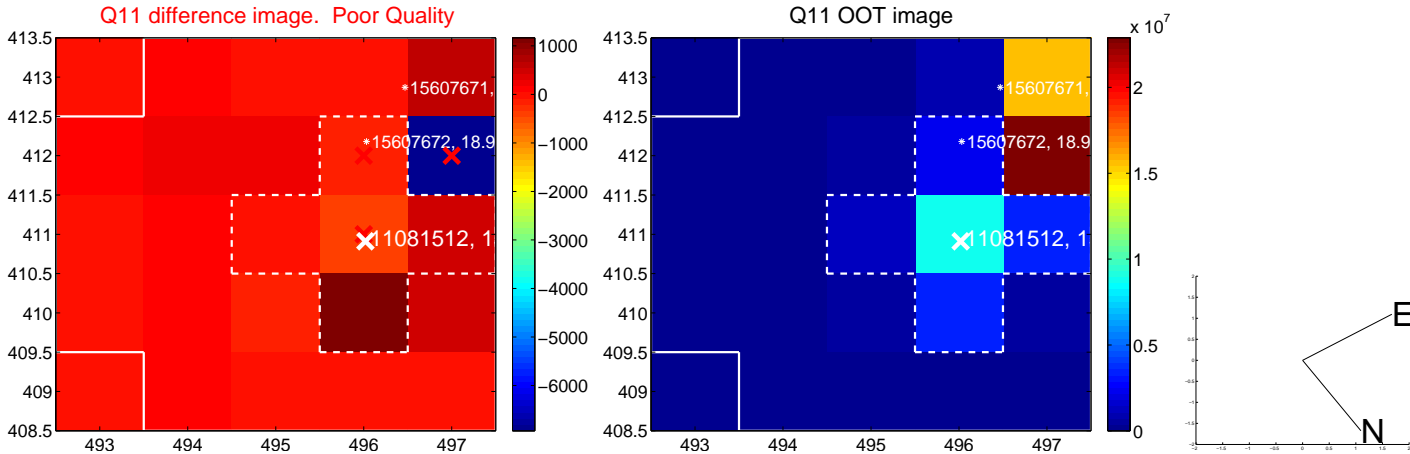
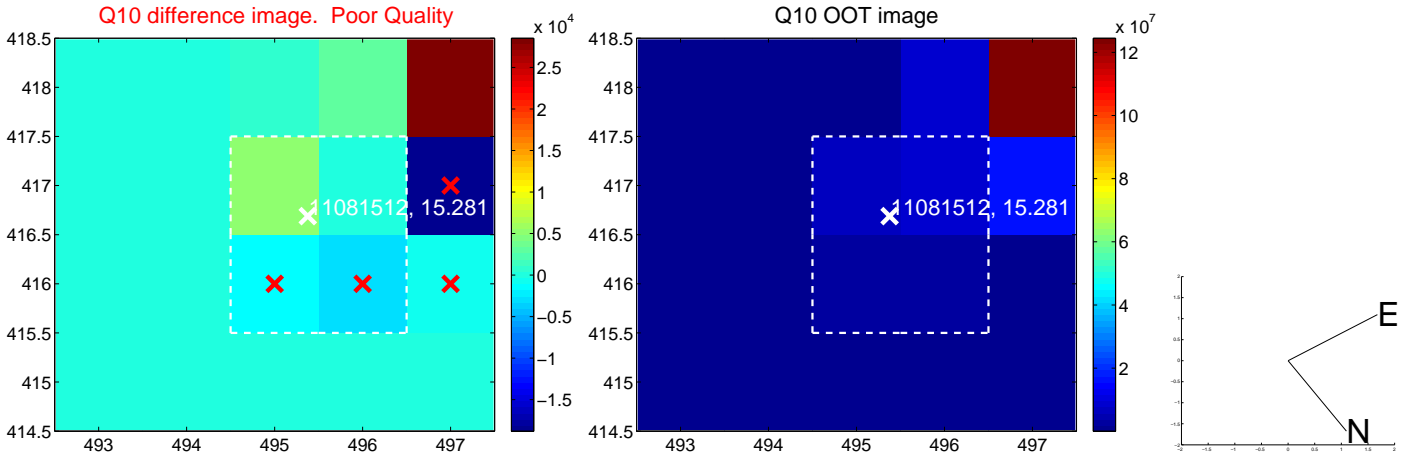
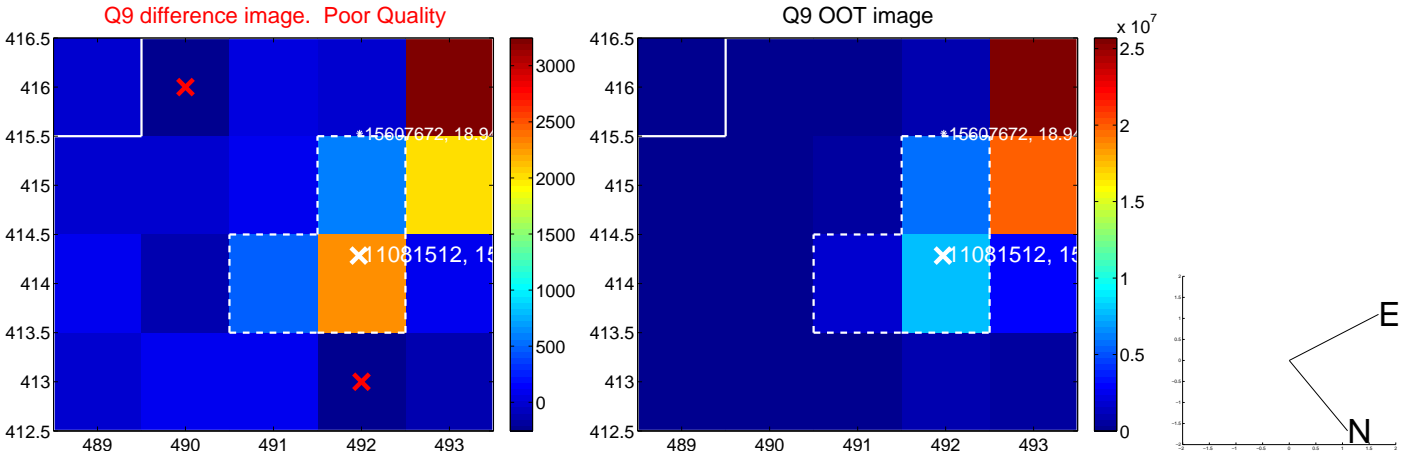
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



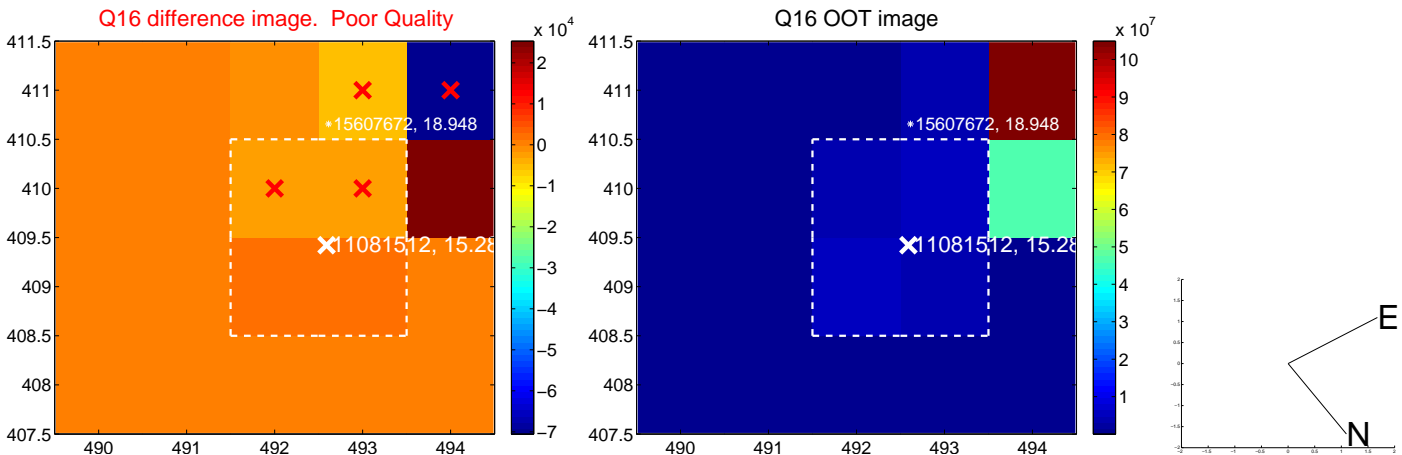
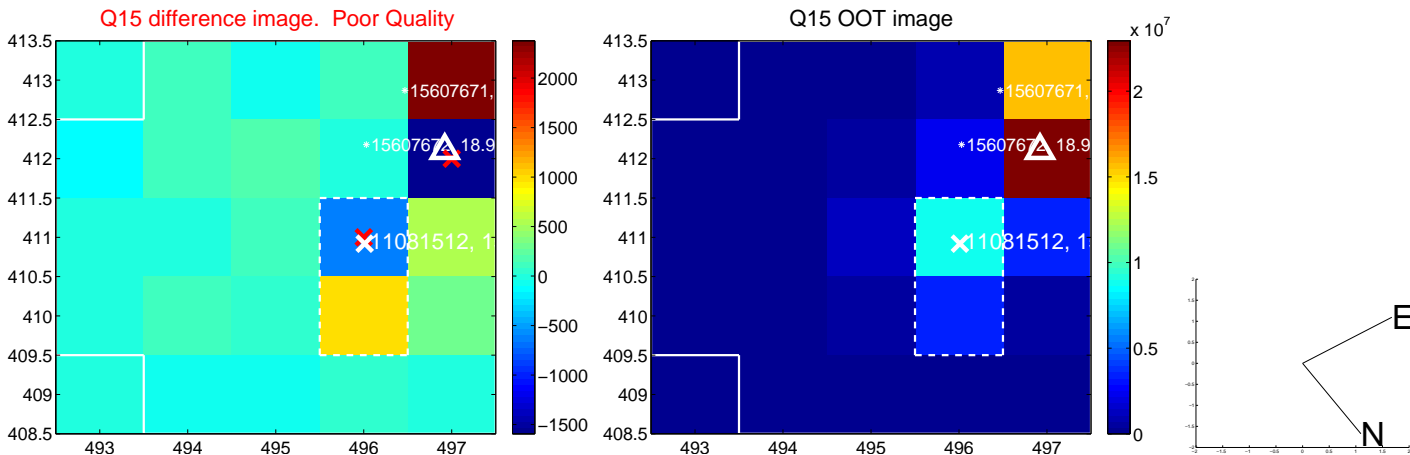
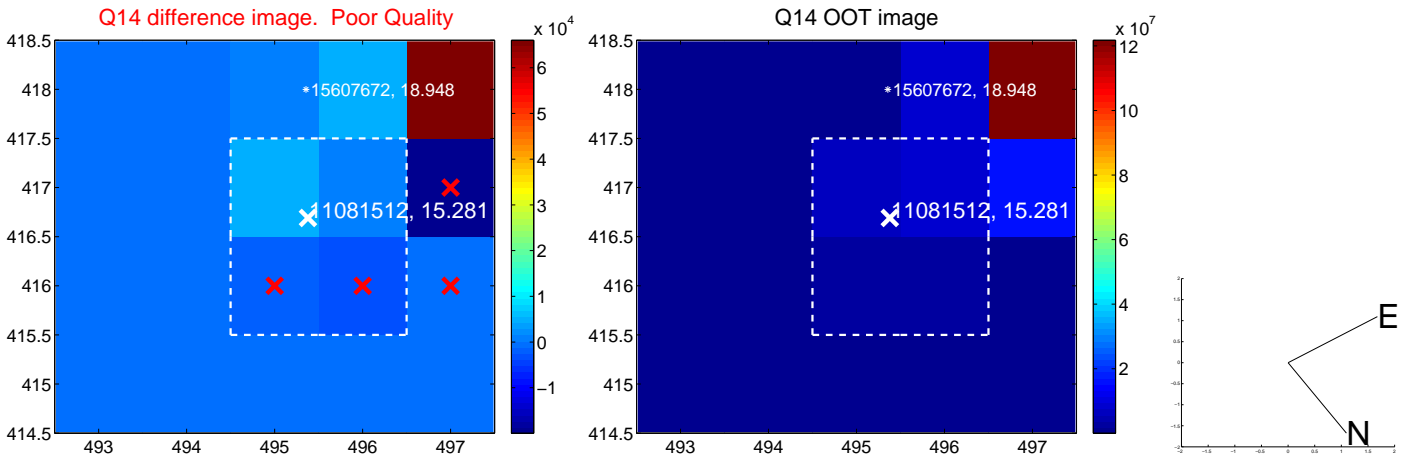
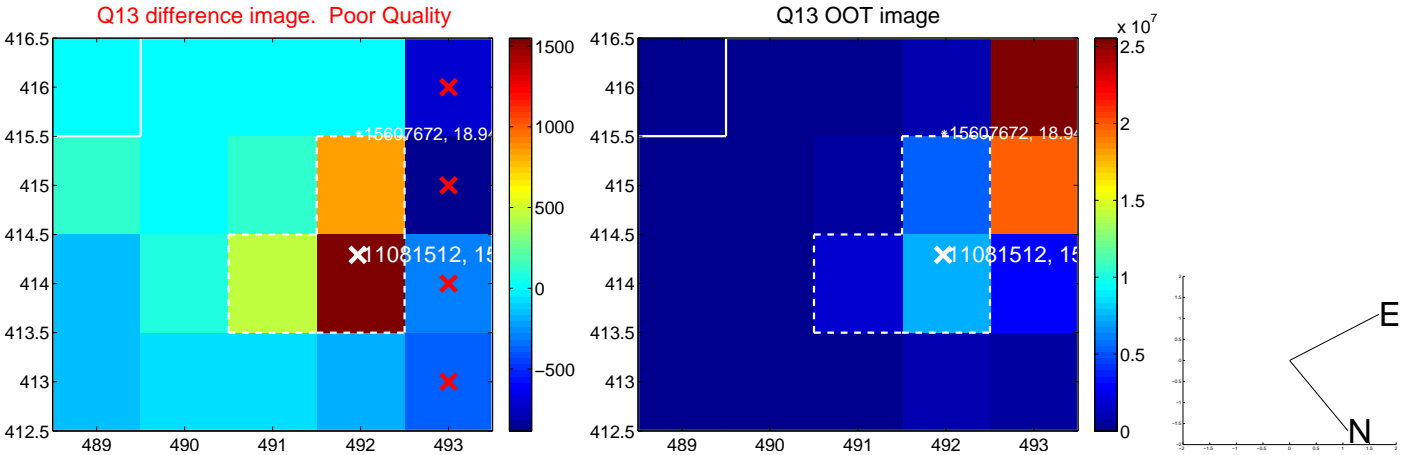
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



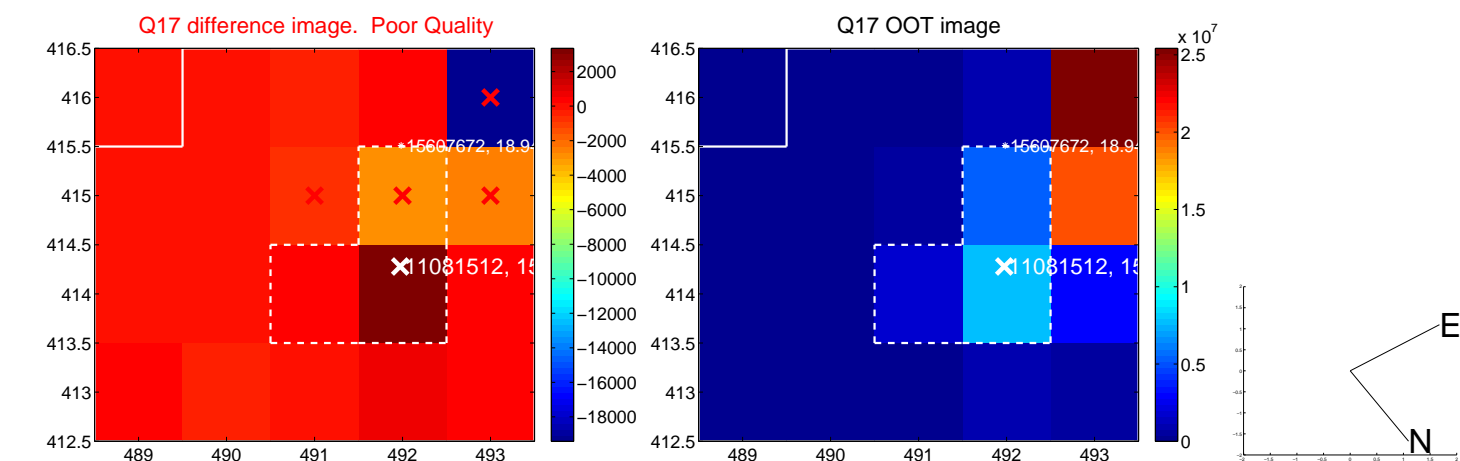
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



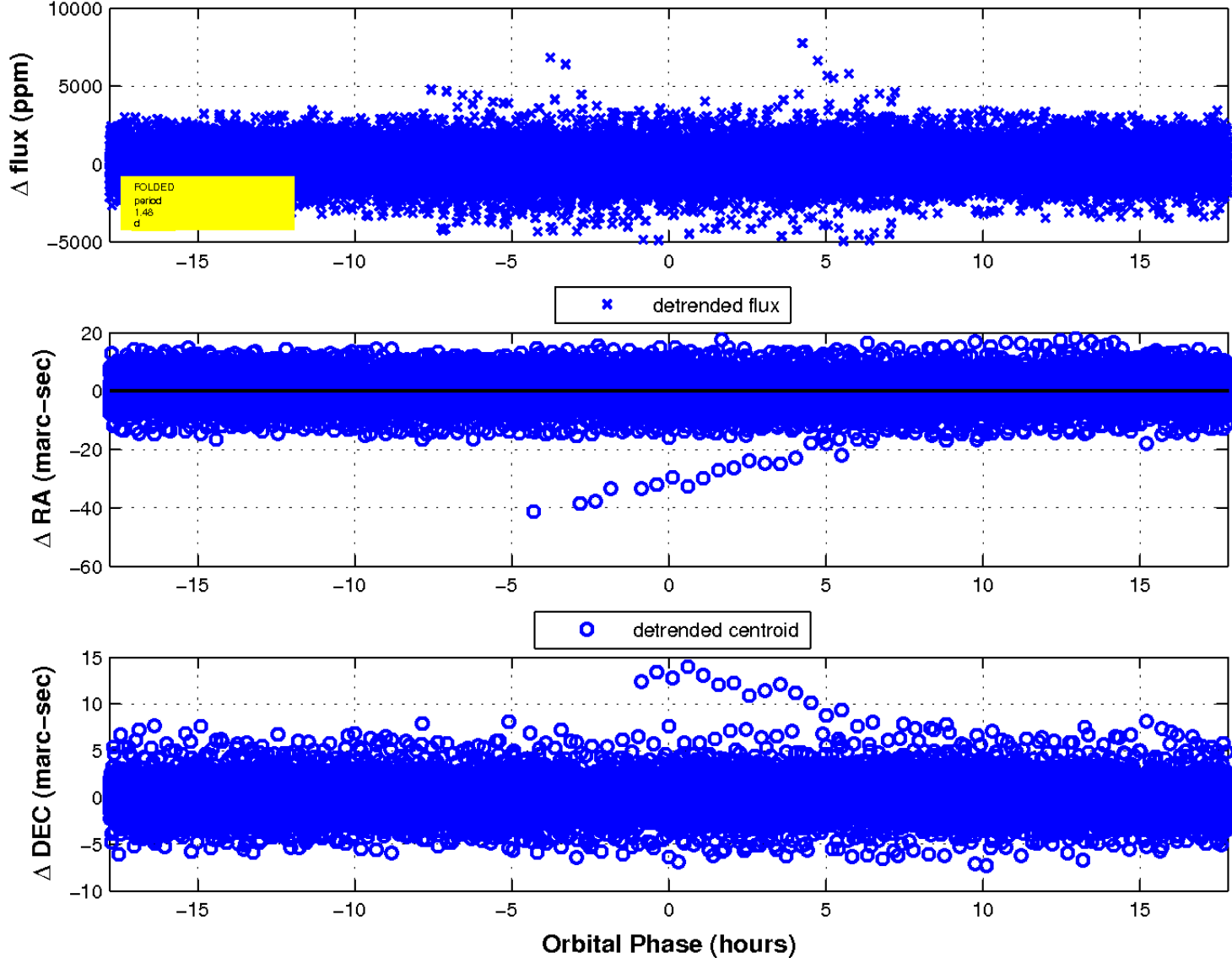
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fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

