

KIC 002445298

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})
002445298-01	OBS	No	1.616605	131.755685	11.9	1.825	7.3	1.7	1.19	6634	0.41	2994.23
002445298-02	OBS	No	1.619786	132.462227	0.0	1.674	7.5	0.0	1.19	6634	0.00	2986.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002445298-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_FEW_MEAS
002445298-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—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.

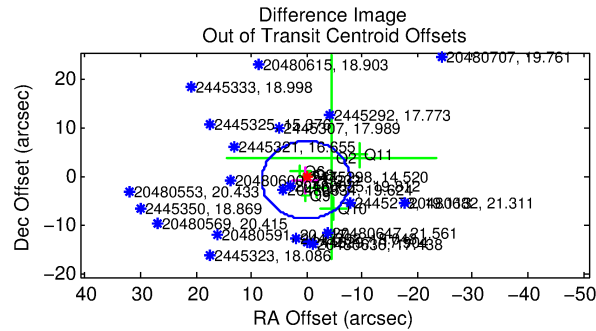
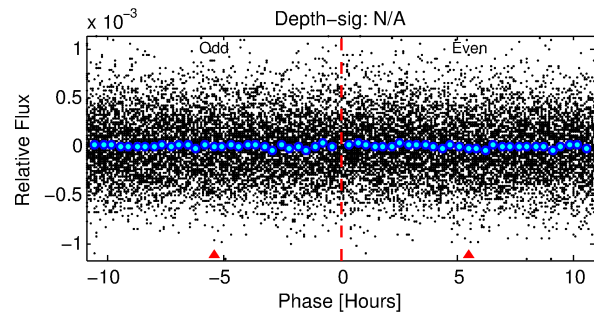
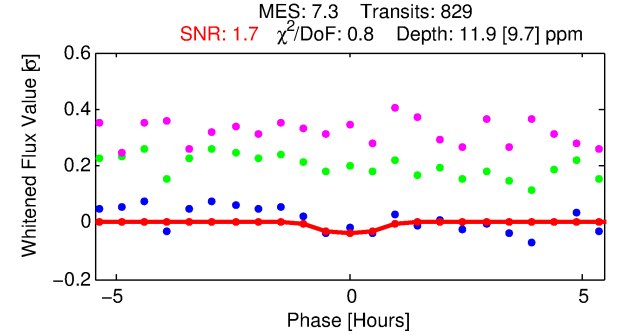
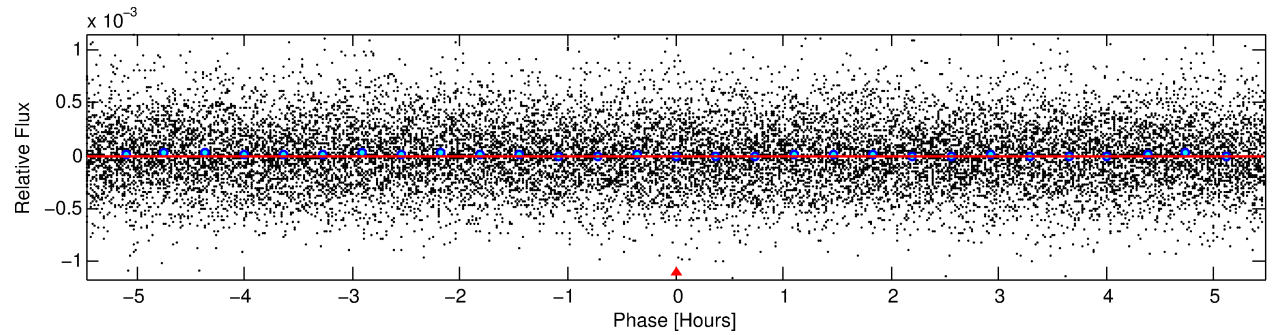
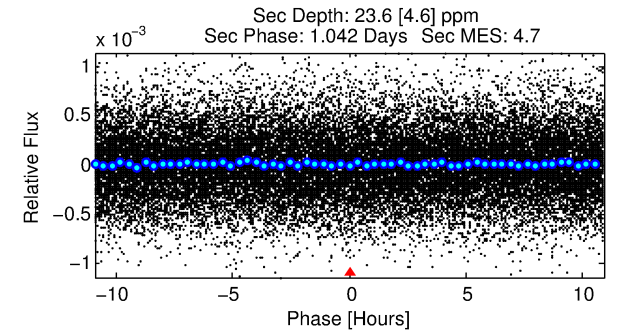
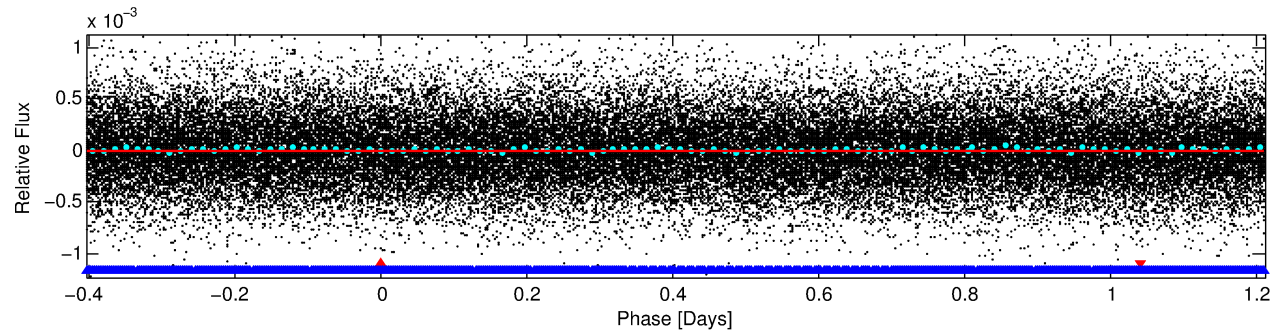
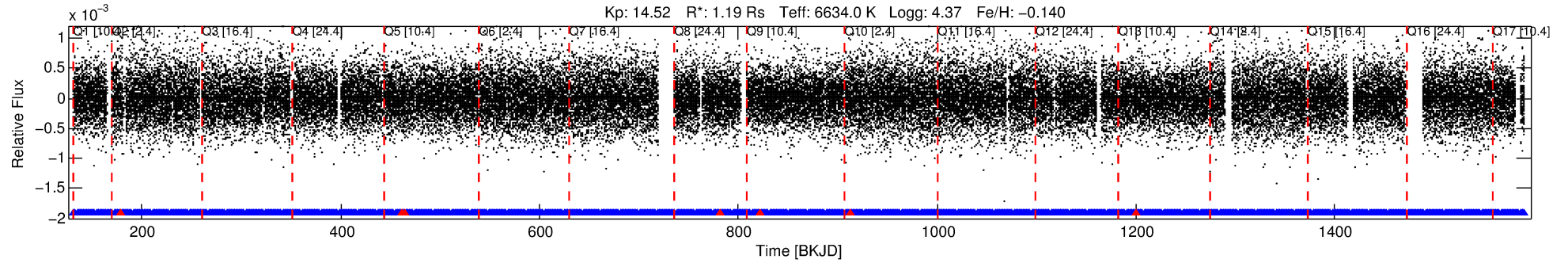
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002445298-01

No Significant Match Found

DV One-Page Summary

KIC: 2445298 Candidate: 1 of 2 Period: 1.617 d



DV Fit Results:

Period = 1.61660 [0.00007] d
Epoch = 131.7557 [0.0166] BKJD
Rp/R* = 0.0032 [0.0246]
a/R* = 6.80 [277.75]
b = 0.07 [617.86]
Seff = 2994.23 [1149.04]
Teq = 1886 [181] K
Rp = 0.41 [3.20] Re
a = 0.0287 [0.0073] AU
Ag = 62.35 [962.26] [0.06] σ
Teff = 8195 [31613] K [0.20] σ

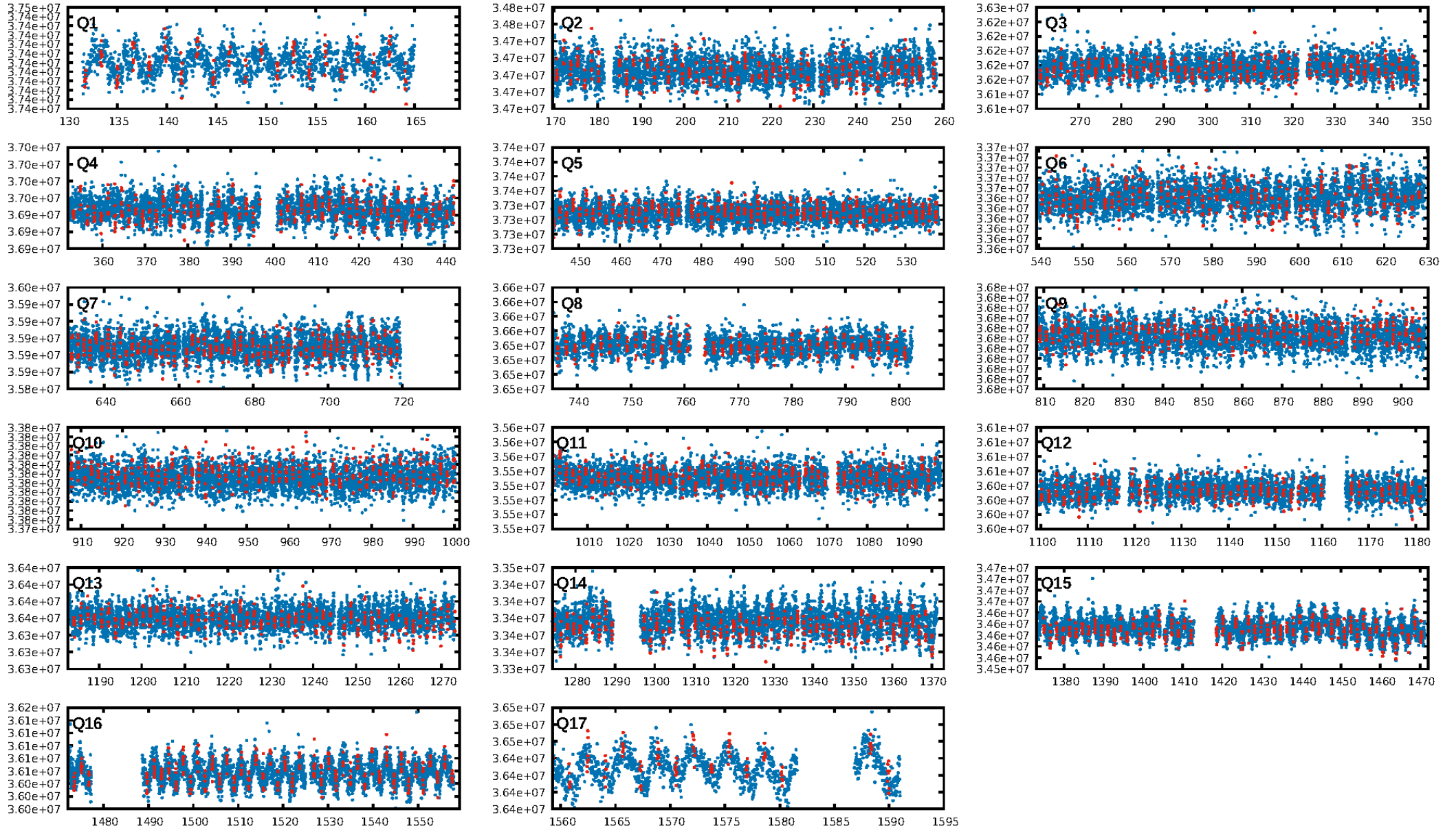
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 2.5% [0.03] σ
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.34e-13
RollingBand-fgt: 0.99 [785/792]
GhostDiagnostic-chr: 0.5619
Centroid-sig: 79.2%
Centroid-so: 3.311 arcsec [0.43] σ
OotOffset-rm: 0.649 arcsec [0.24] σ
KicOffset-rm: 0.510 arcsec [0.20] σ
OotOffset-st: 3/2/1/2 [8]
KicOffset-st: 3/2/1/2 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.76 [13/17]

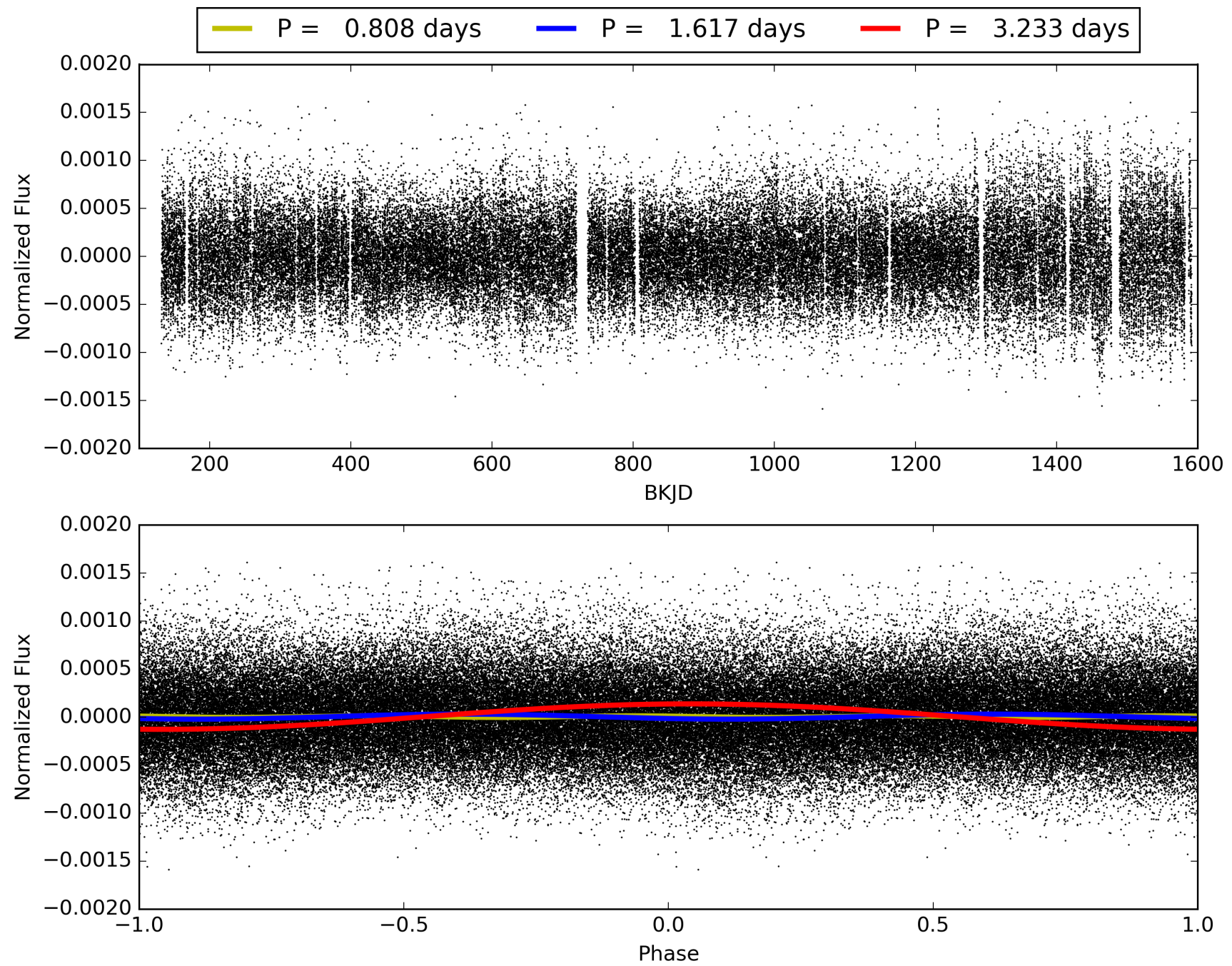
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:02:12 Z

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

TCE 002445298-01, PDC Light Curves

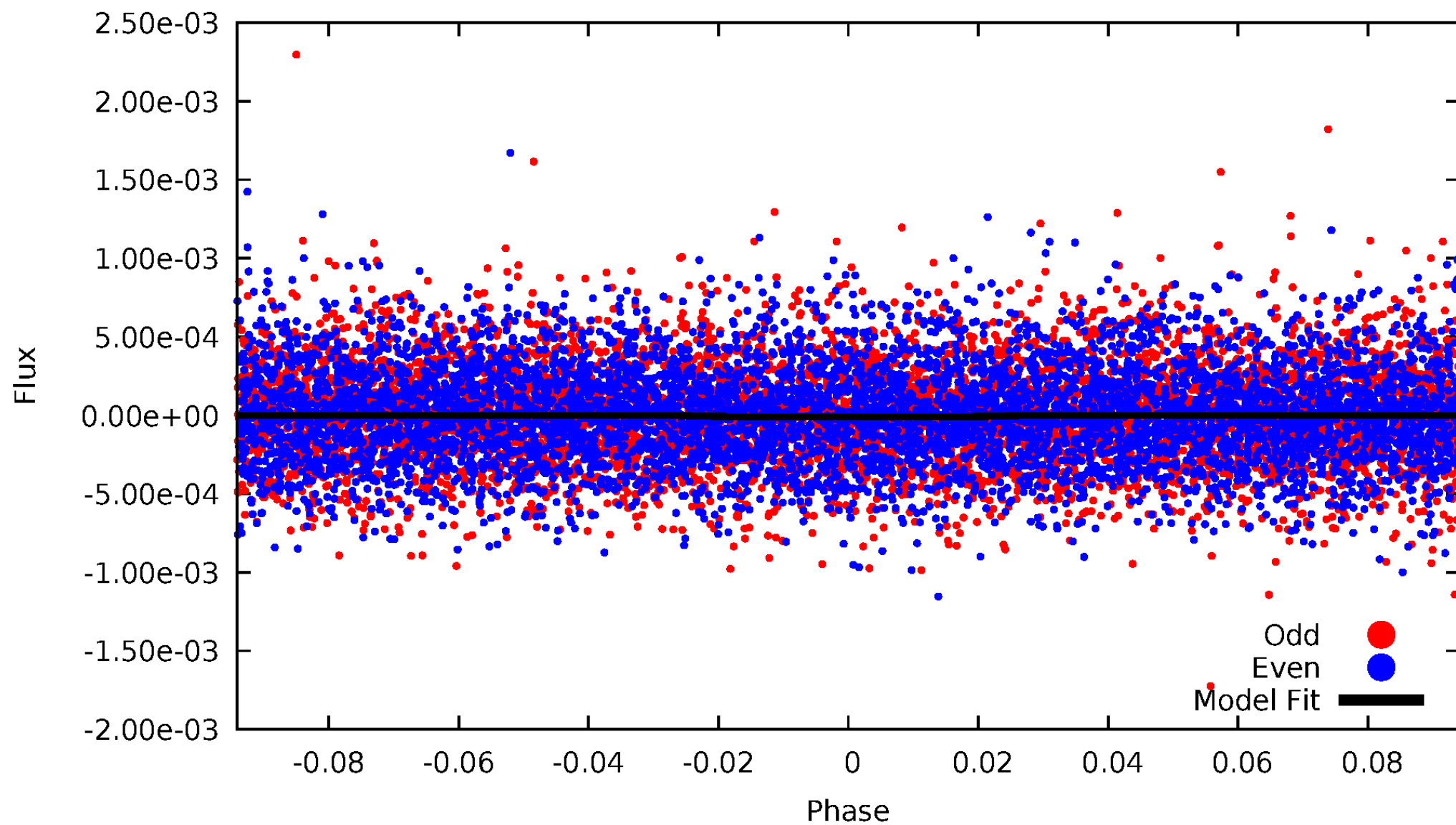


TCE 002445298-01



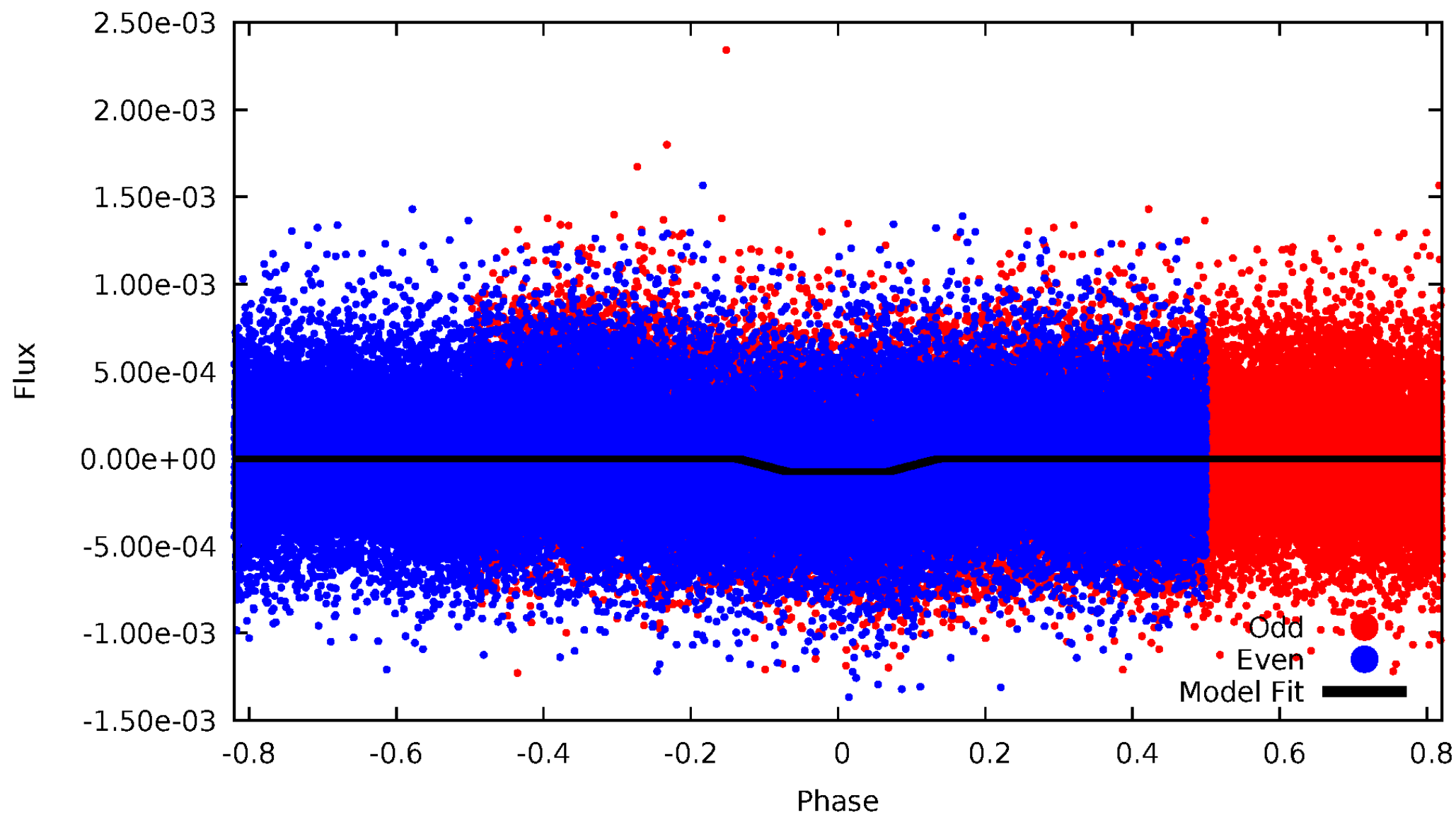
DV Odd/Even

TCE 002445298-01



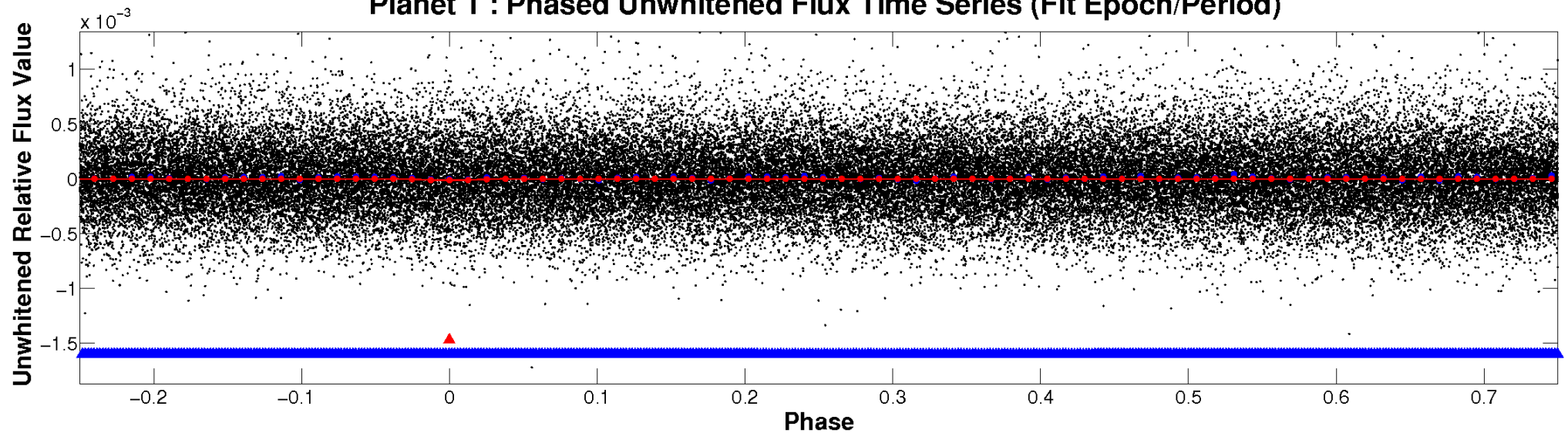
ALT Odd/Even

TCE 002445298-01

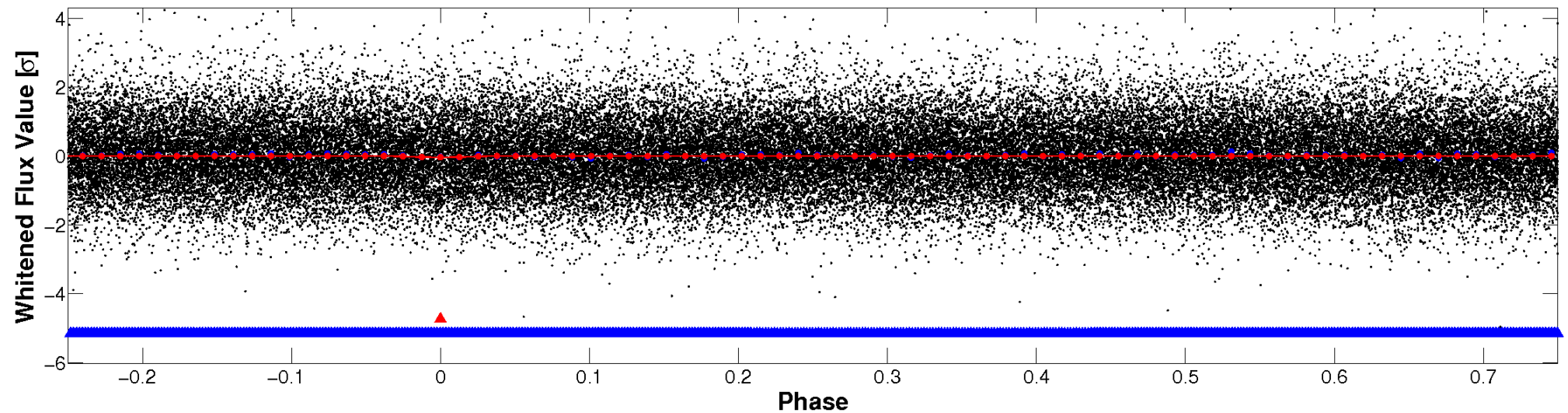


Non-Whitened Vs. Whitened Light Curve

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

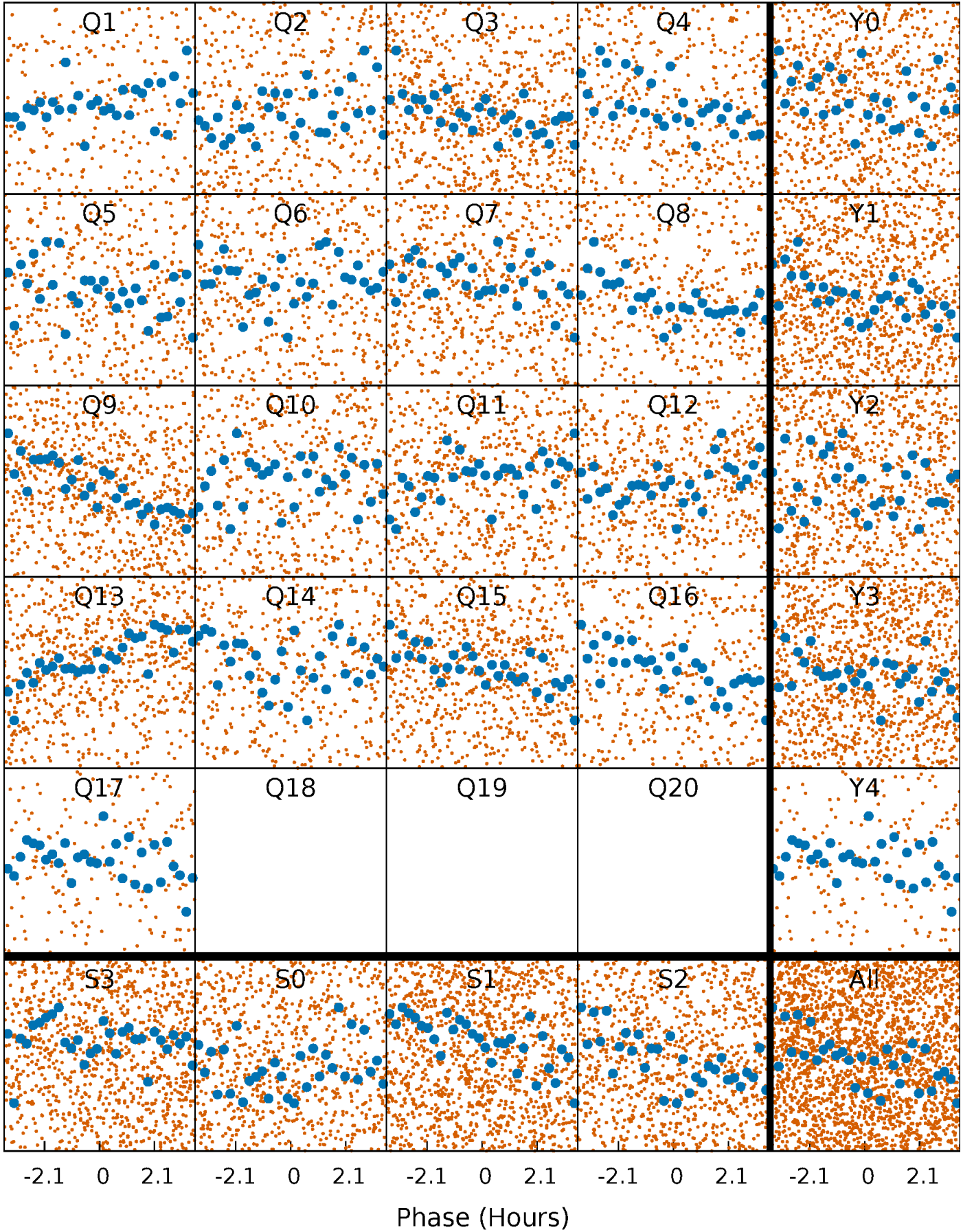


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



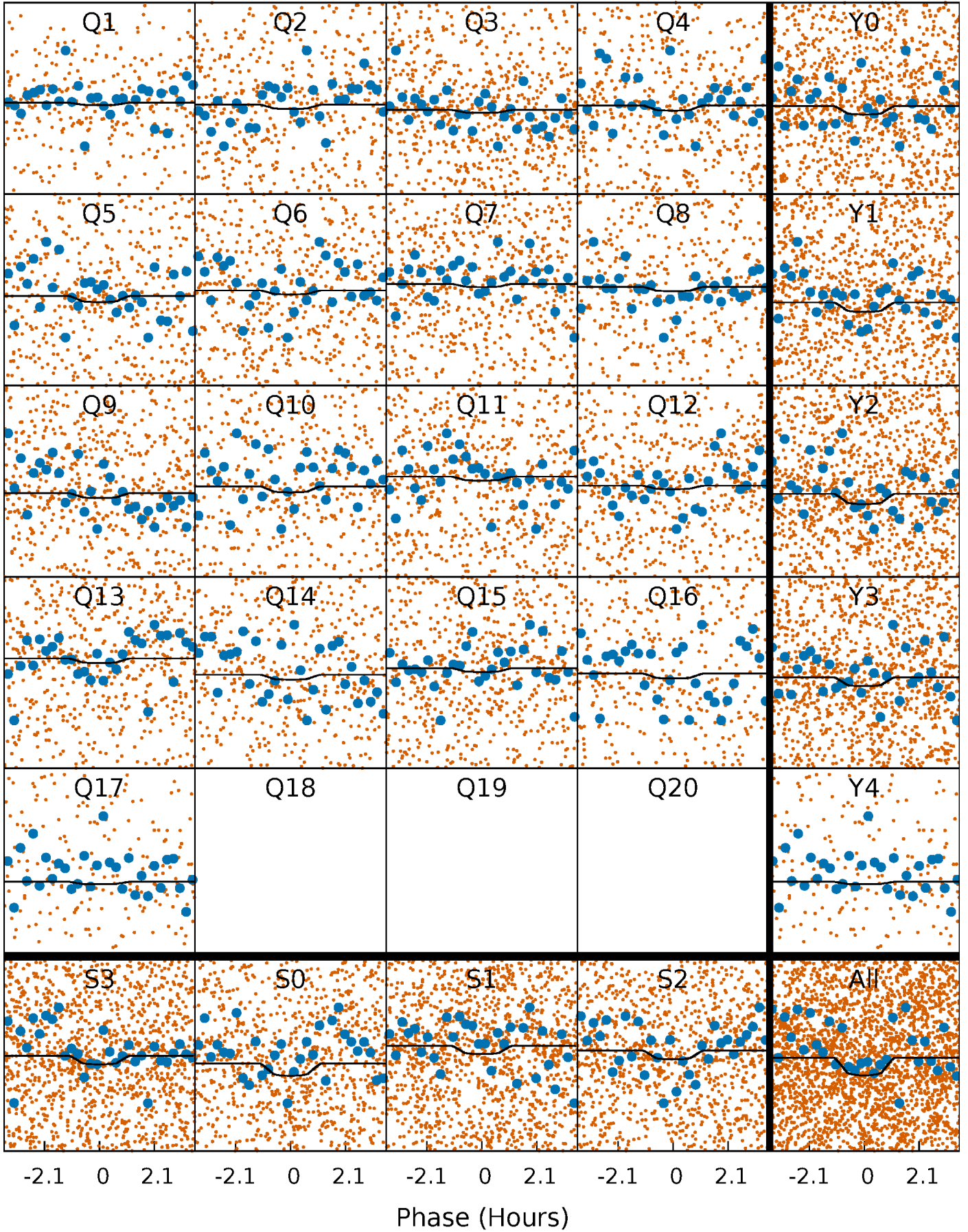
PDC Quarter-Phased Transit Curves

TCE 002445298-01 P= 1.616605 Days $T_0=131.755685$ (BKJD)



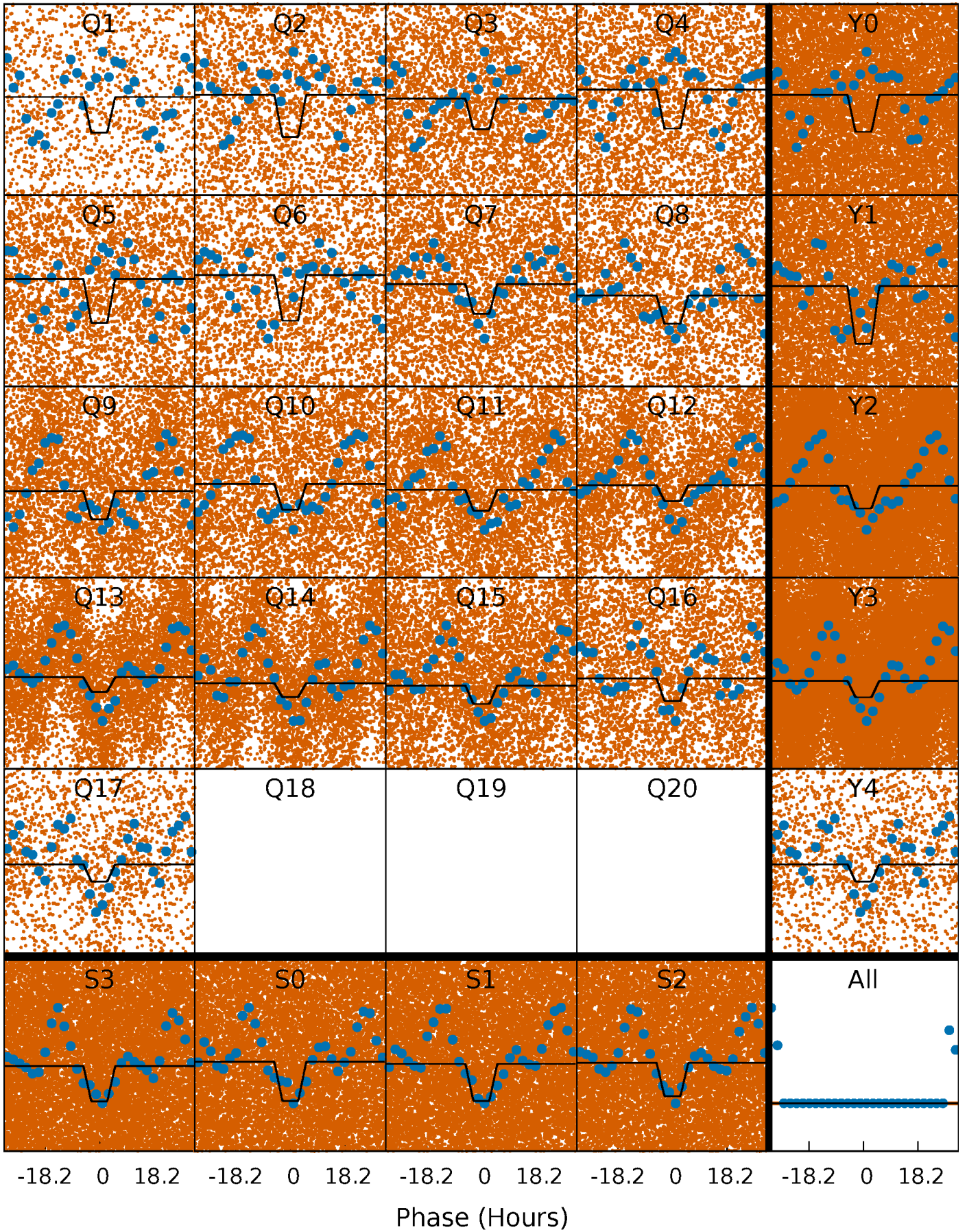
DV Quarter-Phased Transit Curves

TCE 002445298-01 P= 1.616605 Days $T_0=131.755685$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

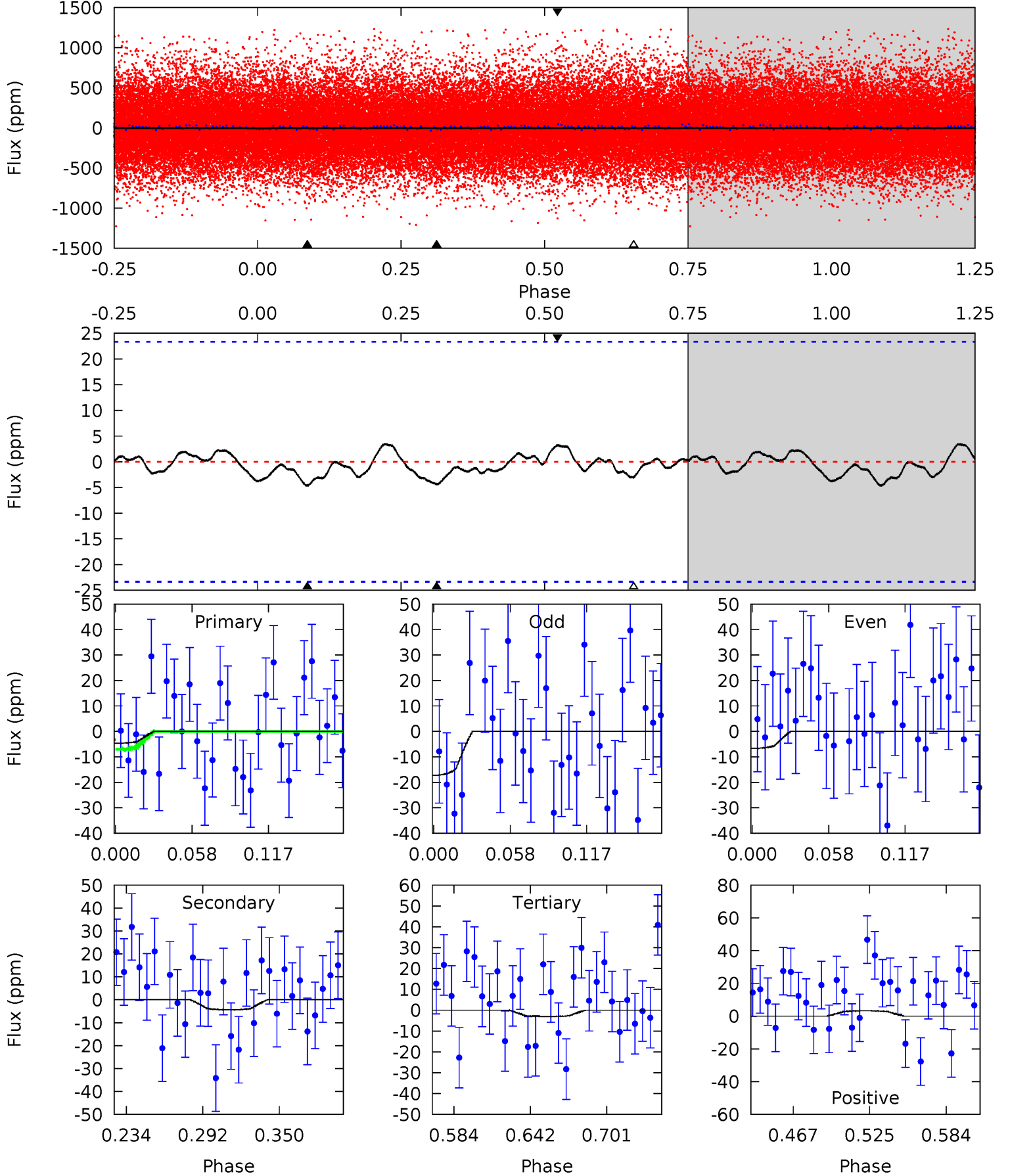
TCE 002445298-01 P= 1.620083 Days $T_0=132.356395$ (BKJD)



DV Model-Shift Uniqueness Test

002445298-01, P = 1.616605 Days, E = 130.139080 Days

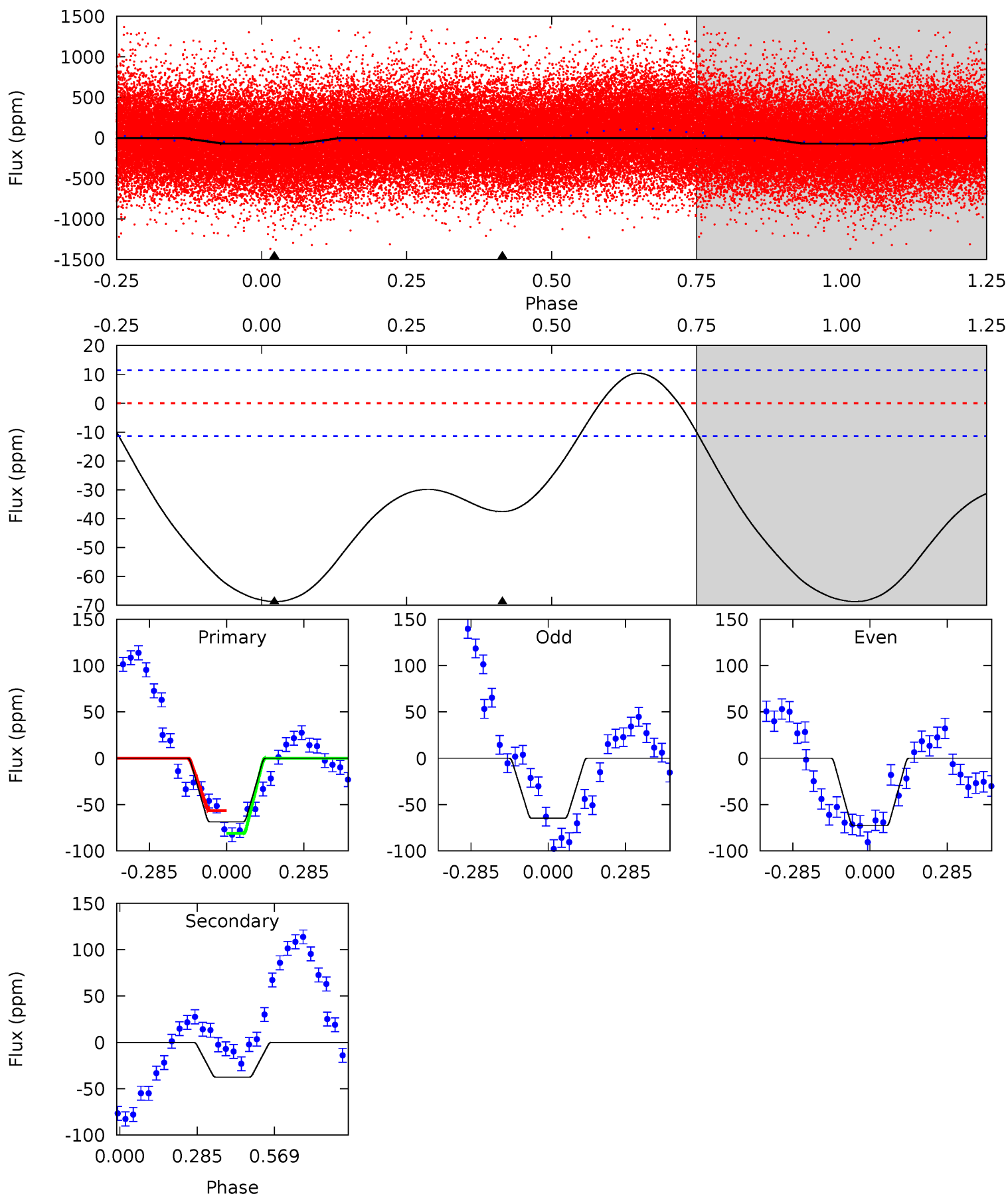
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.93	0.88	0.62	0.65	4.68	1.89	0.34	0.32	0.28	0.27	0.23	1.07	0.60	0.43	0.38



Alt Model-Shift Uniqueness Test

002445298-01, P = 1.620083 Days, E = 130.736312 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.2	14.3	0	0	4.34	1.07	3.06	26.2	26.2	14.3	14.3	1.53	1.02	0.13	4.80



Stellar Parameters For KIC 002445298

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6634^{+159}_{-239}	$4.367^{+0.062}_{-0.188}$	$-0.140^{+0.250}_{-0.300}$	$1.193^{+0.372}_{-0.149}$	$1.215^{+0.170}_{-0.170}$	$1.008^{+0.286}_{-0.533}$
	+2%/-4%	+1%/-4%	+179%/-214%	+31%/-12%	+14%/-14%	+28%/-53%
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 002445298-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 5	$2.35^{+2.80}_{-1.59}$	2670^{+192}_{-134}	-2478^{+6519}_{-500}	$0.212^{+2.293}_{-0.238}$
Alt.	-38 ± 3	$2.73^{+2.78}_{-1.91}$	2672^{+202}_{-134}	3894^{+2716}_{-1052}	$2.224^{+23.887}_{-1.667}$

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 $A_{obs} \gg 1.0$

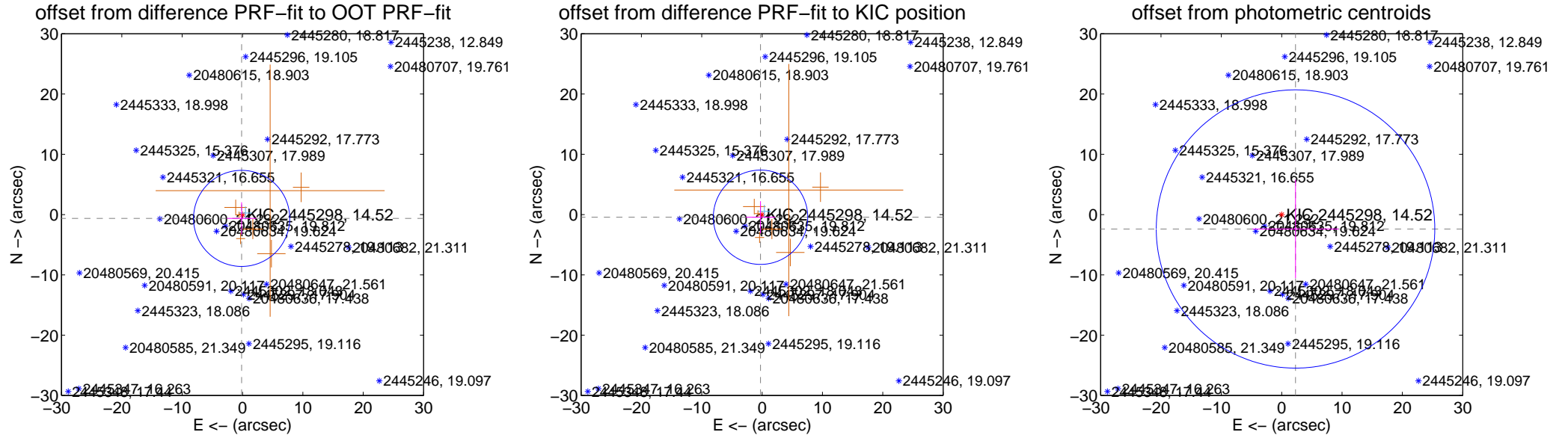
DV Centroid Data

Supplemental centroid analysis for 002445298-01. Kepler magnitude: 14.52. Transit SNR 1.68

There are 1 quarters with good PRF difference image offsets

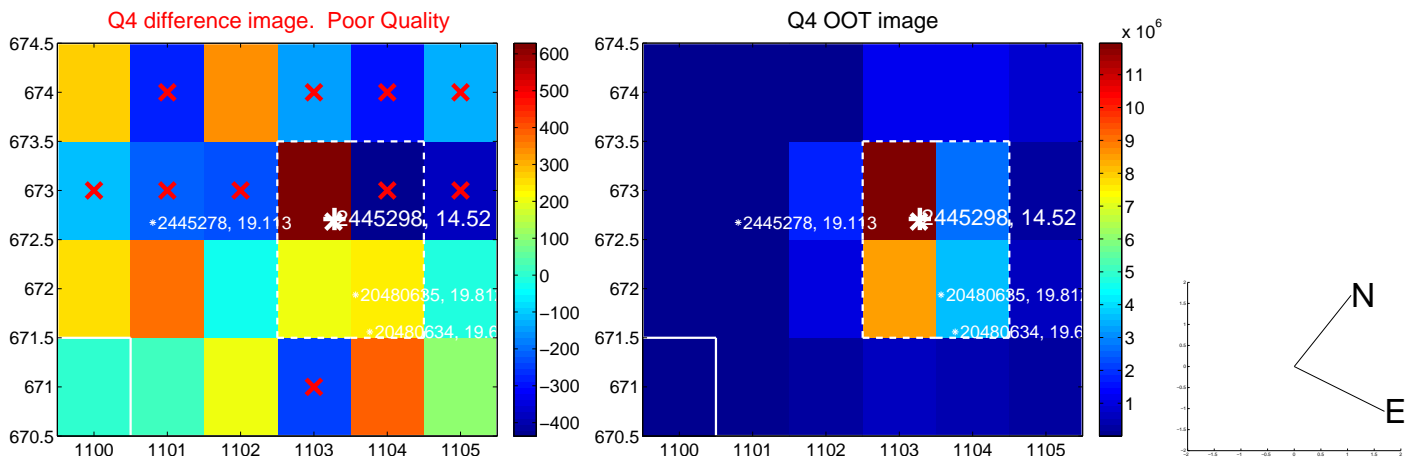
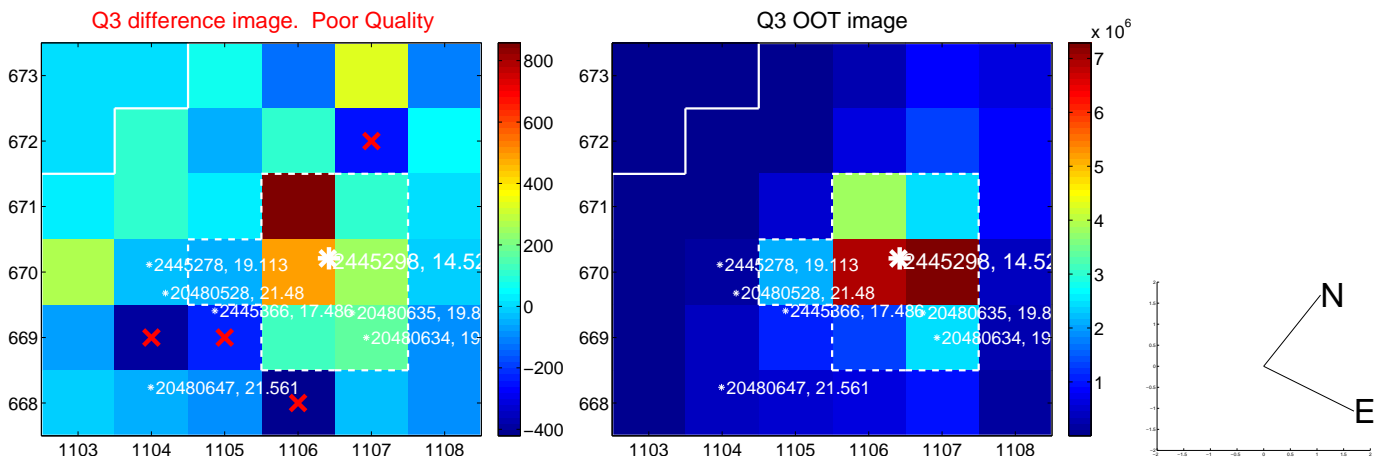
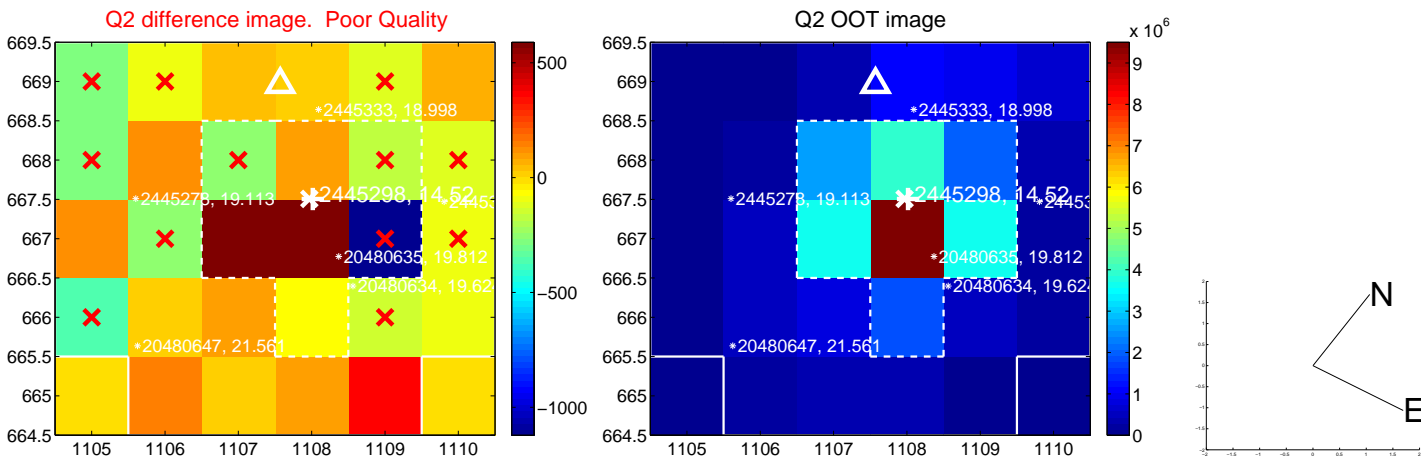
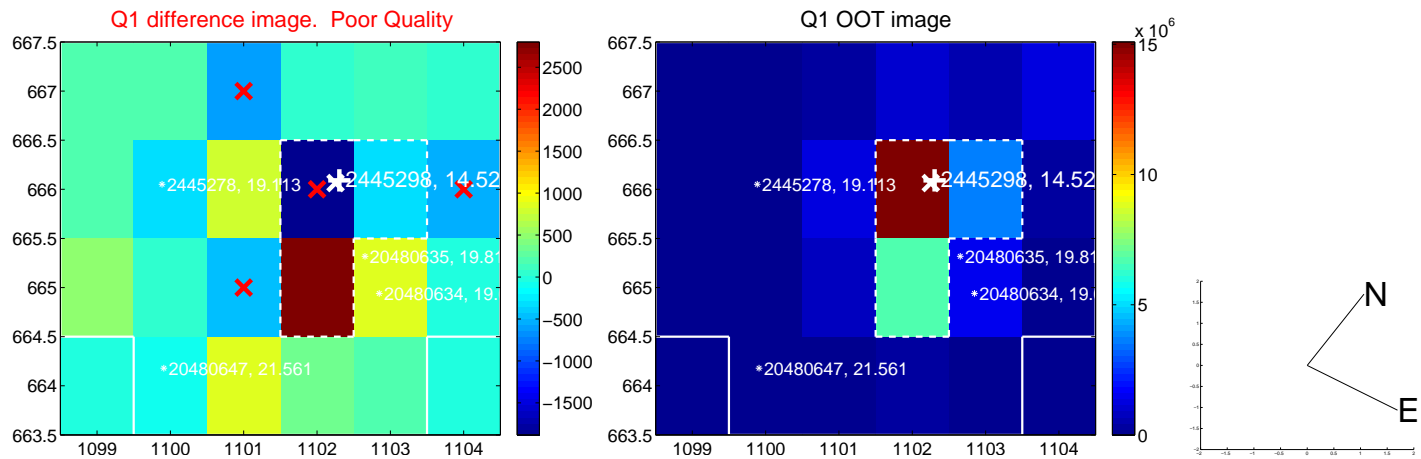
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.649 ± 2.656	0.24	0.146 ± 2.424	-0.633 ± 2.668
PRF-fit source offset from KIC position	0.510 ± 2.607	0.20	0.258 ± 2.424	-0.440 ± 2.668
photometric centroid source offset	3.31 ± 7.69	0.43	-2.29 ± 7.14	-2.39 ± 8.17

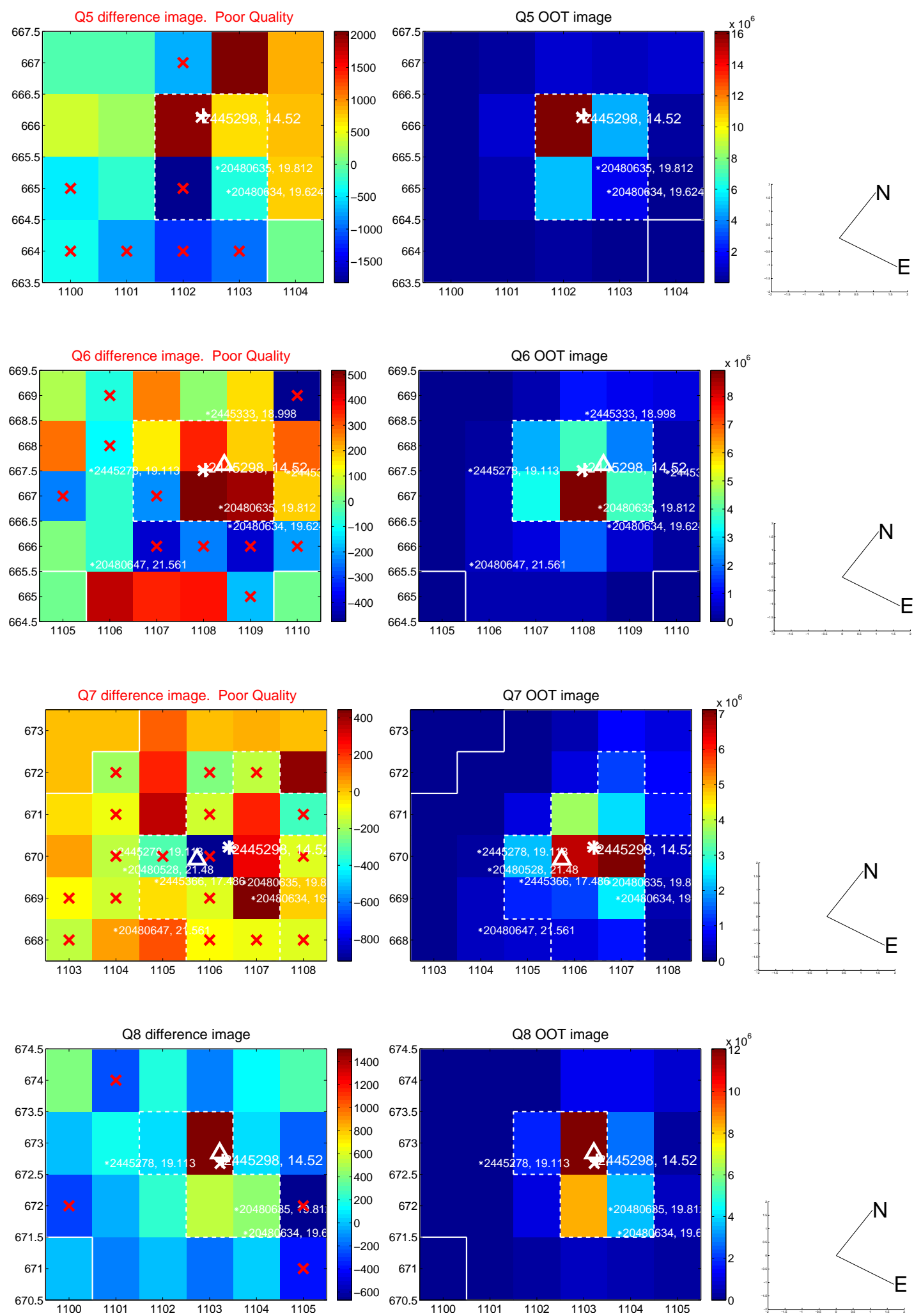


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

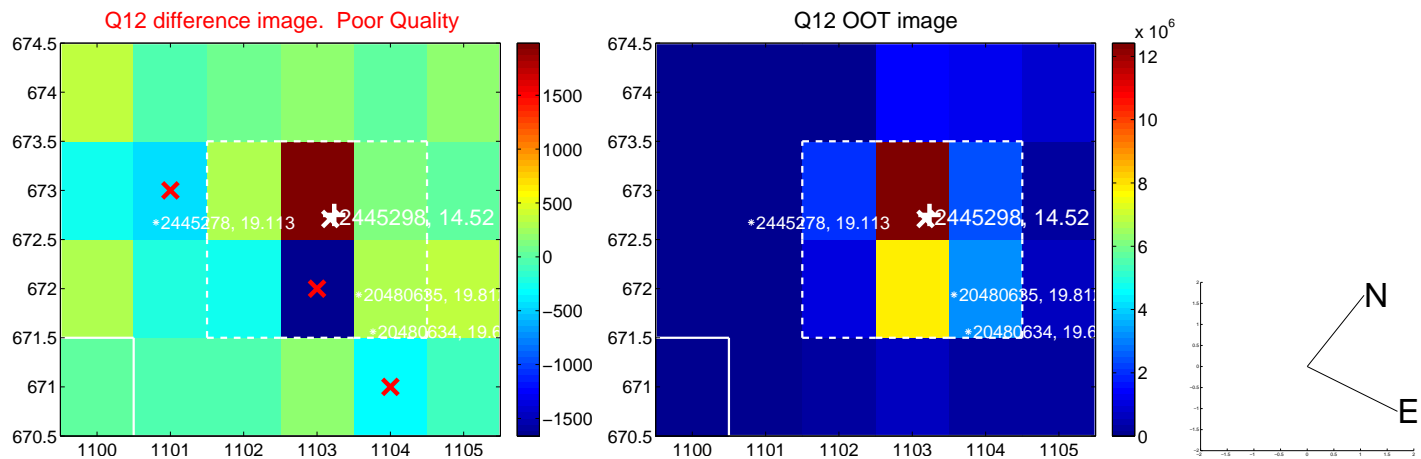
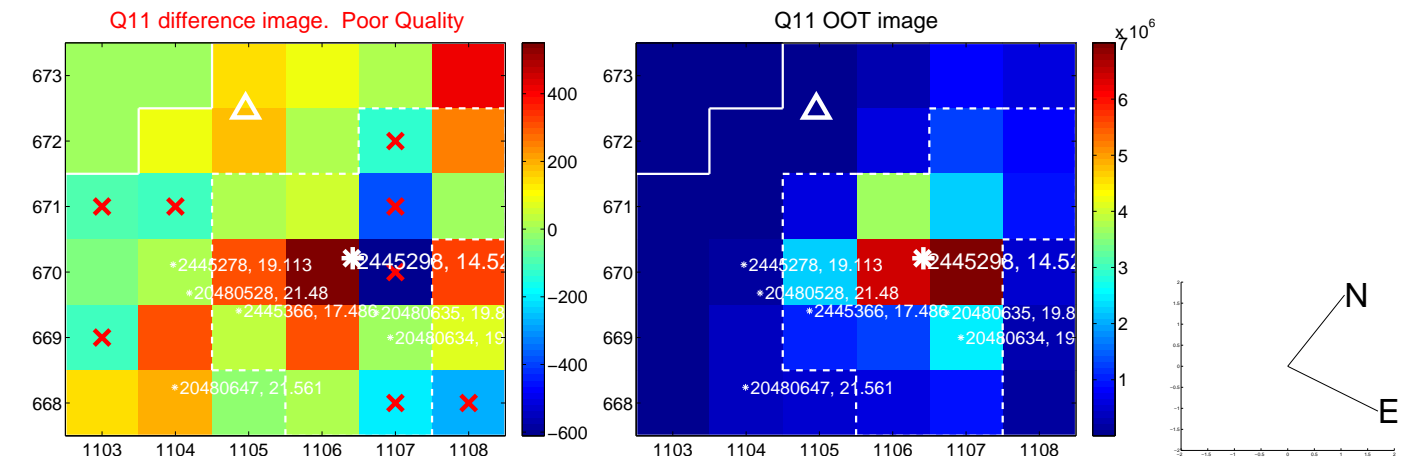
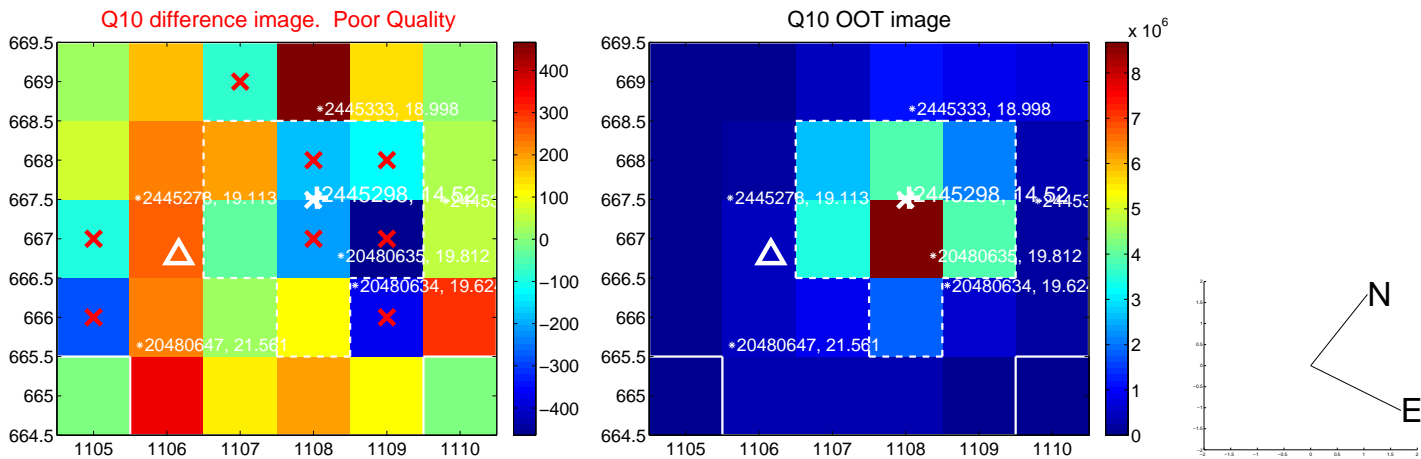
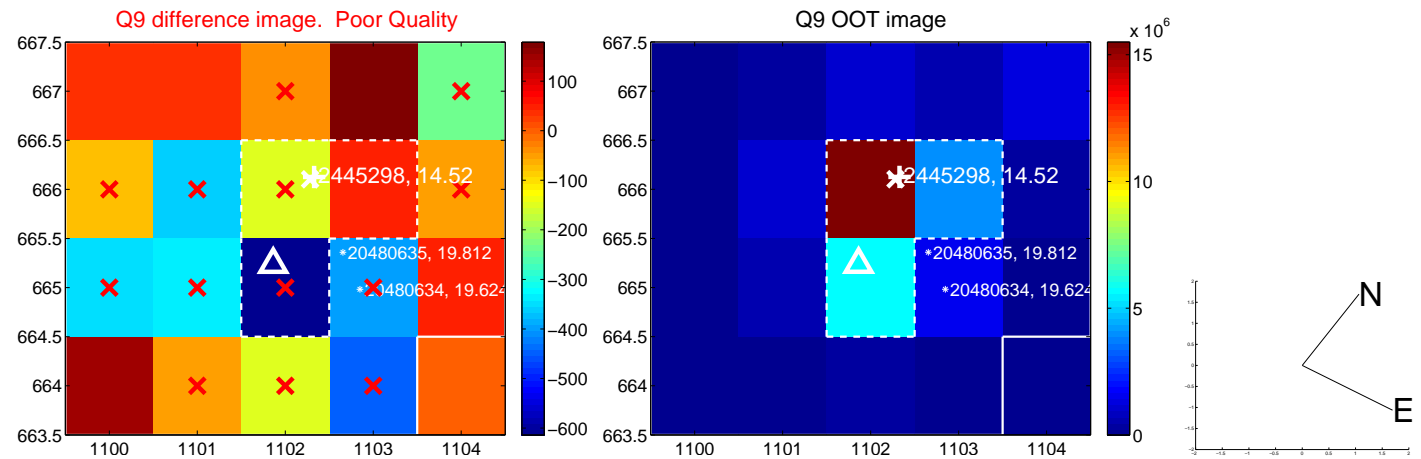
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



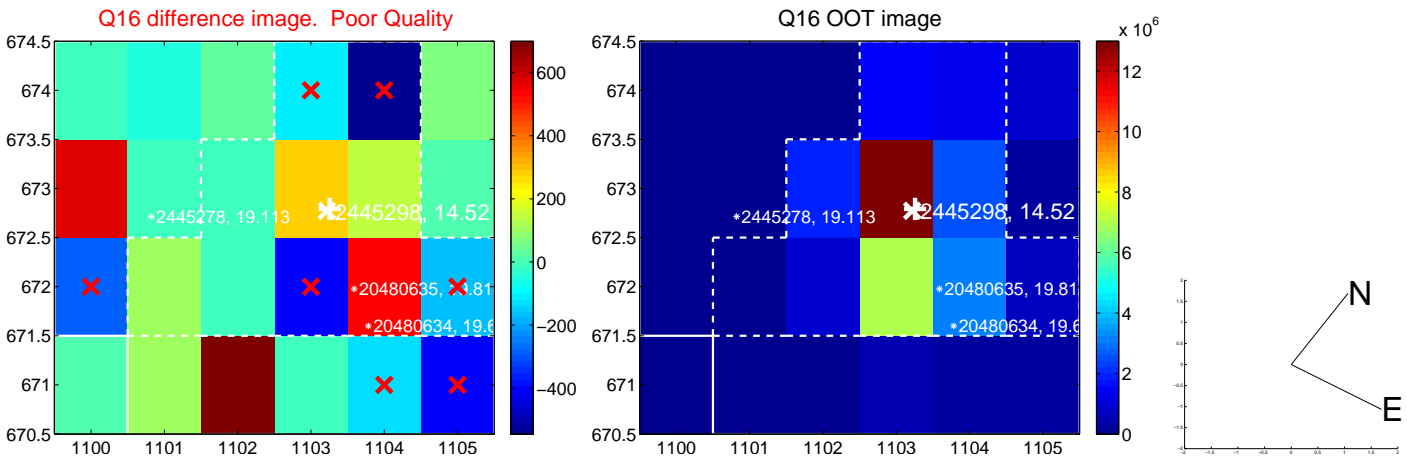
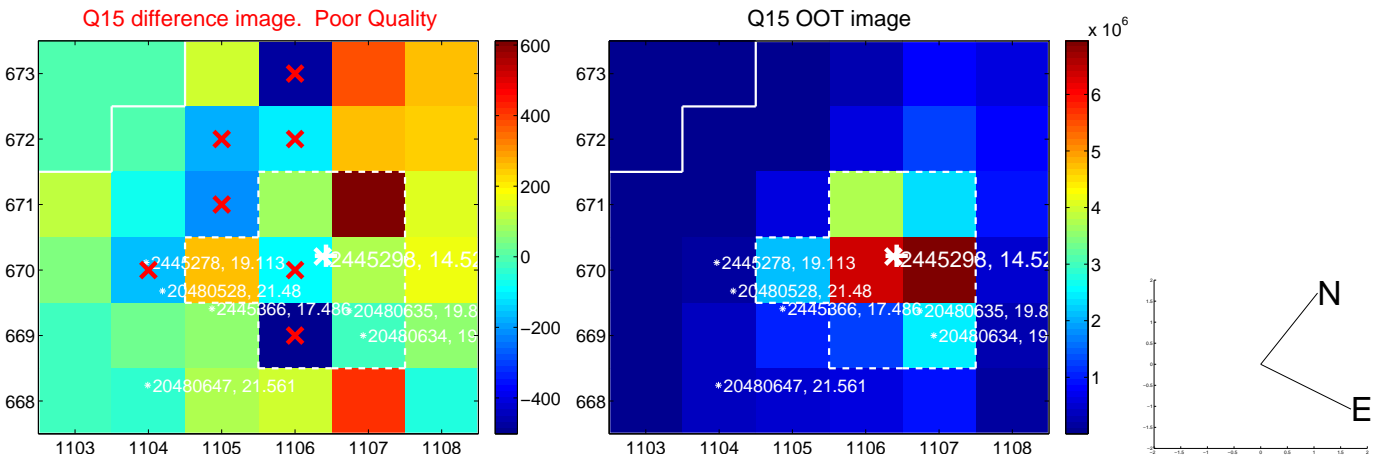
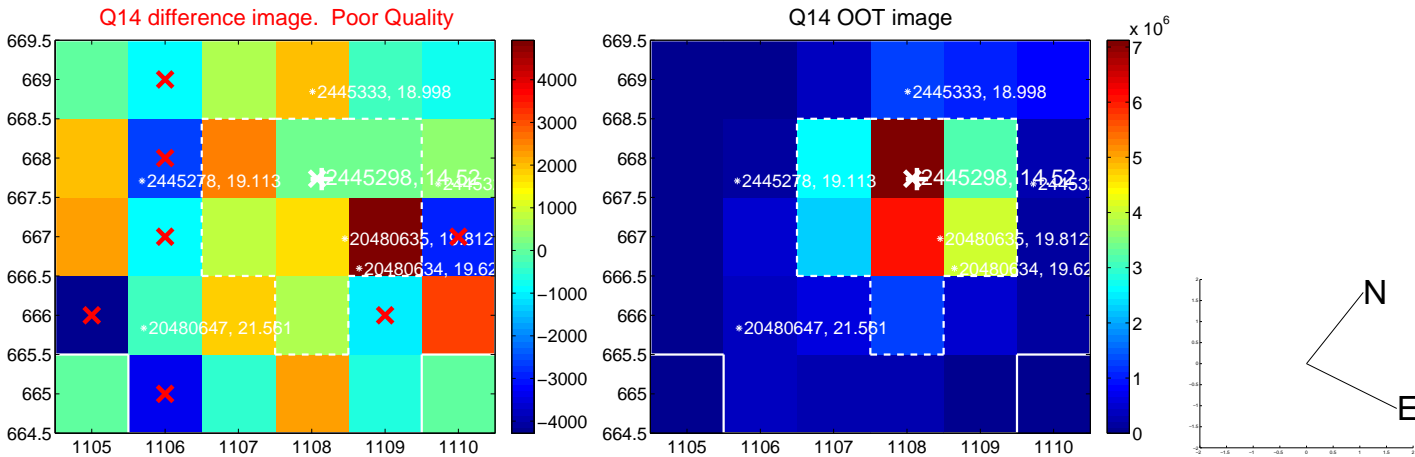
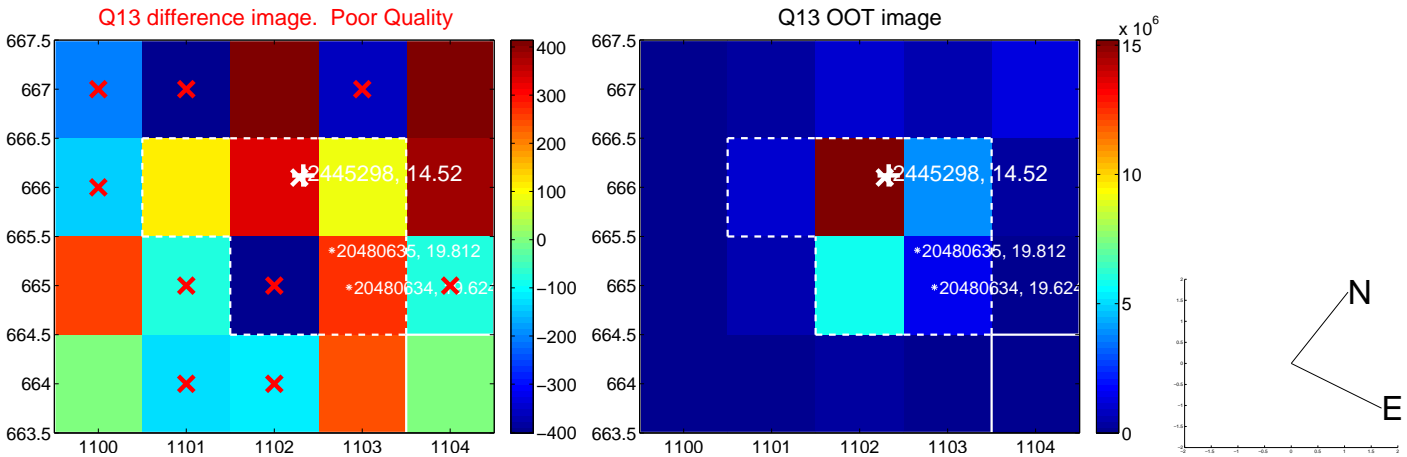
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



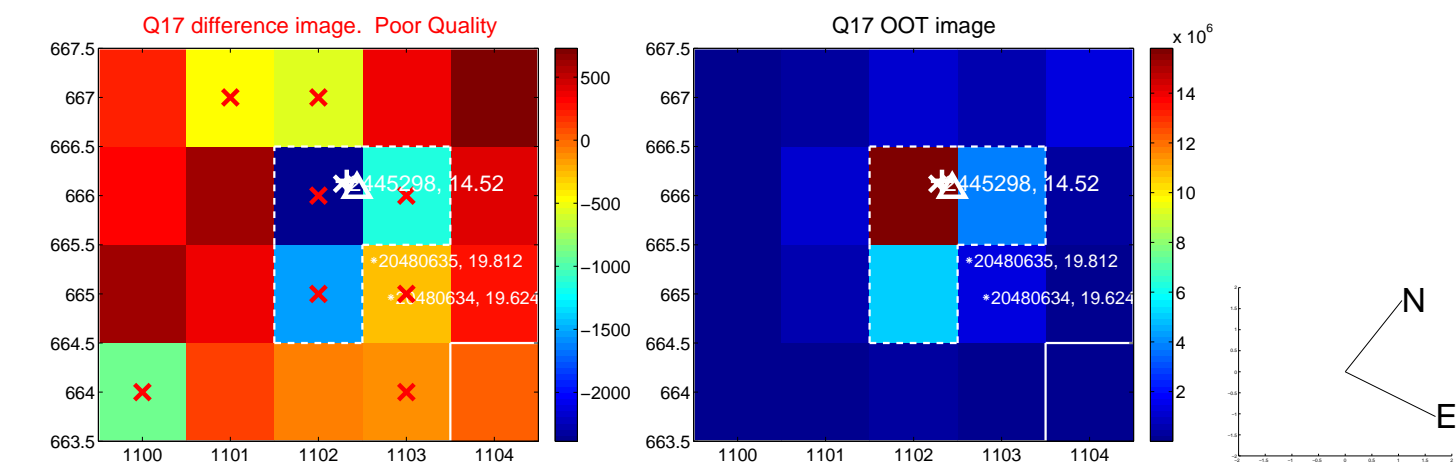
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



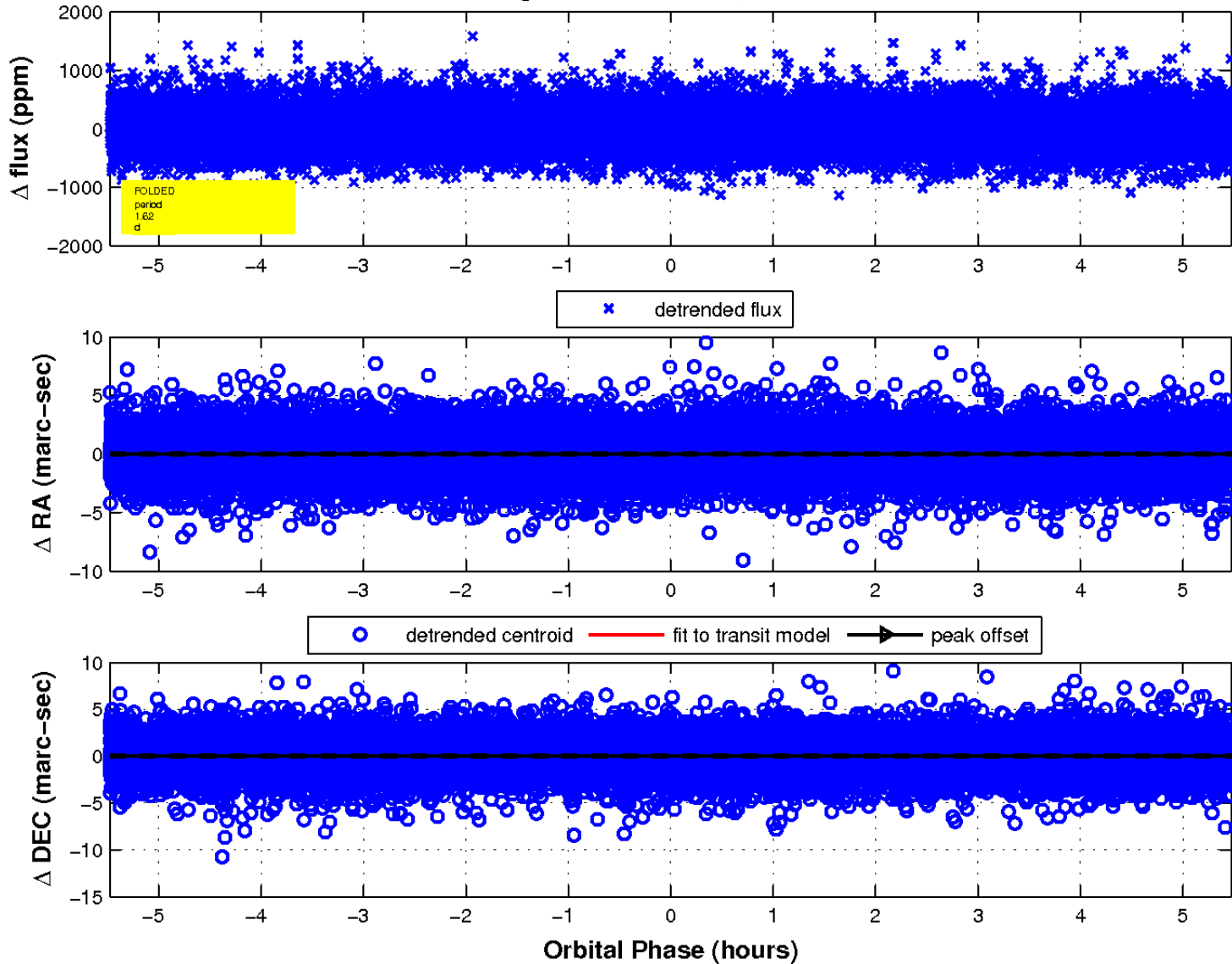
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

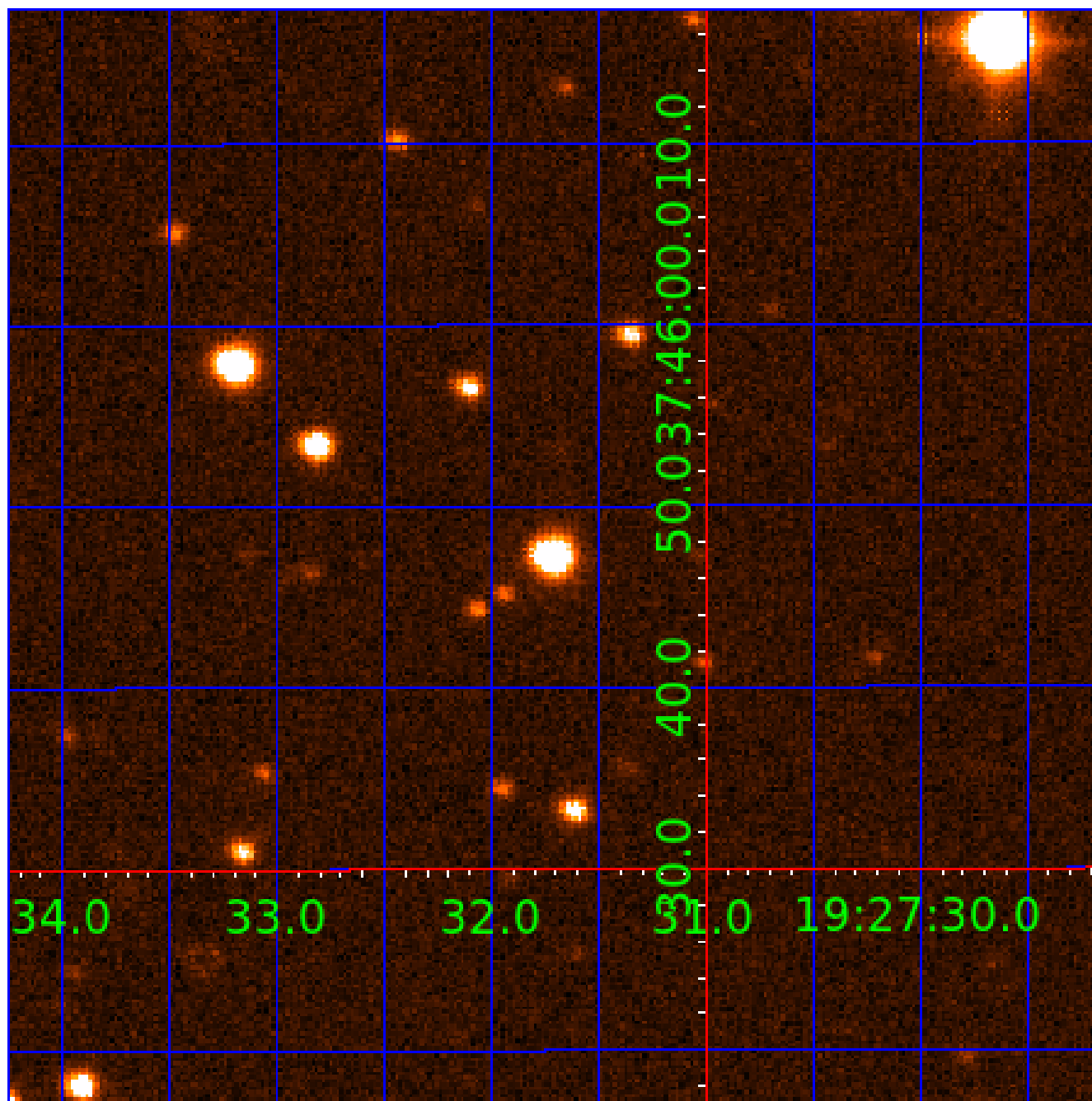


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 002445298

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})
002445298-01	OBS	No	1.616605	131.755685	11.9	1.825	7.3	1.7	1.19	6634	0.41	2994.23
002445298-02	OBS	No	1.619786	132.462227	0.0	1.674	7.5	0.0	1.19	6634	0.00	2986.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002445298-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_FEW_MEAS
002445298-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—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.

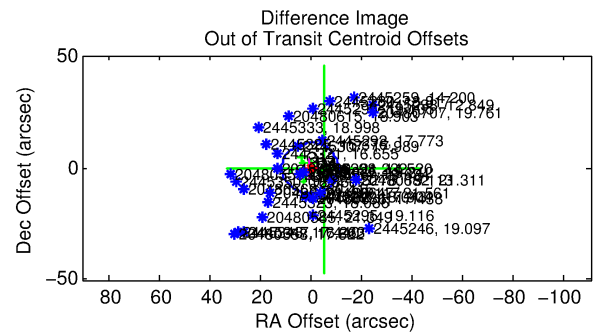
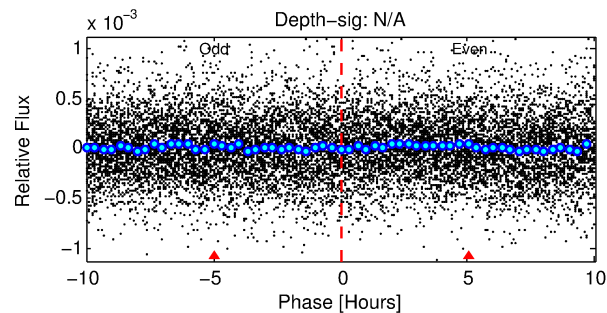
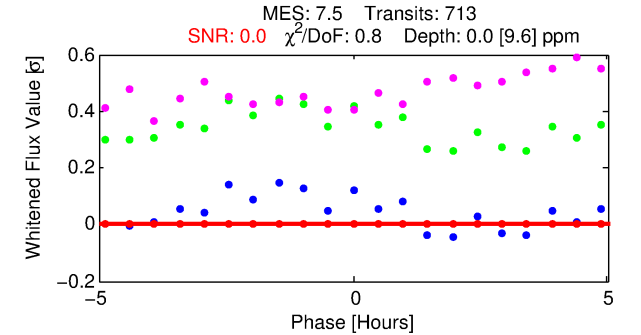
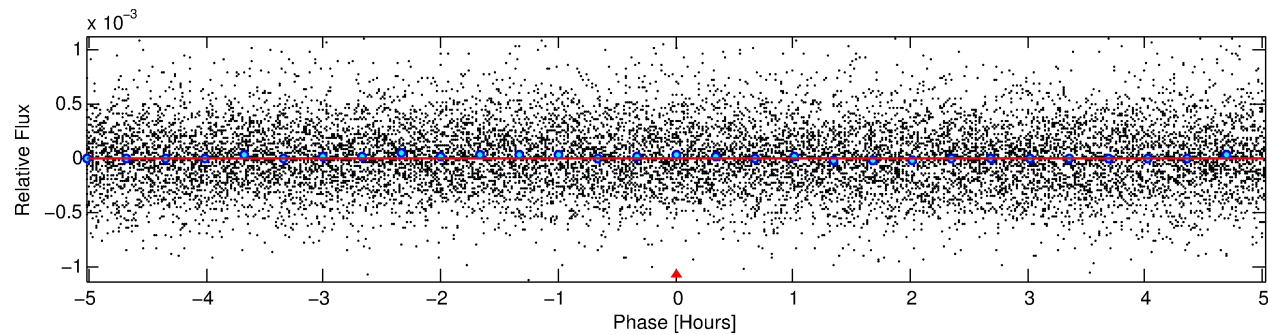
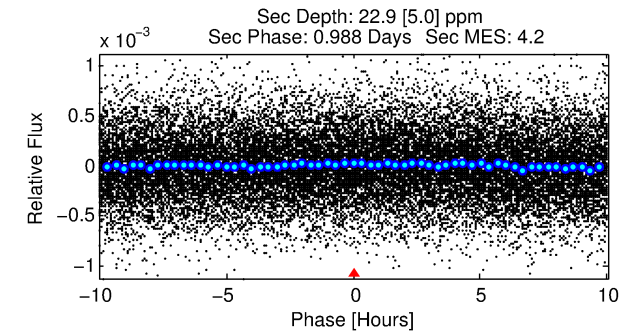
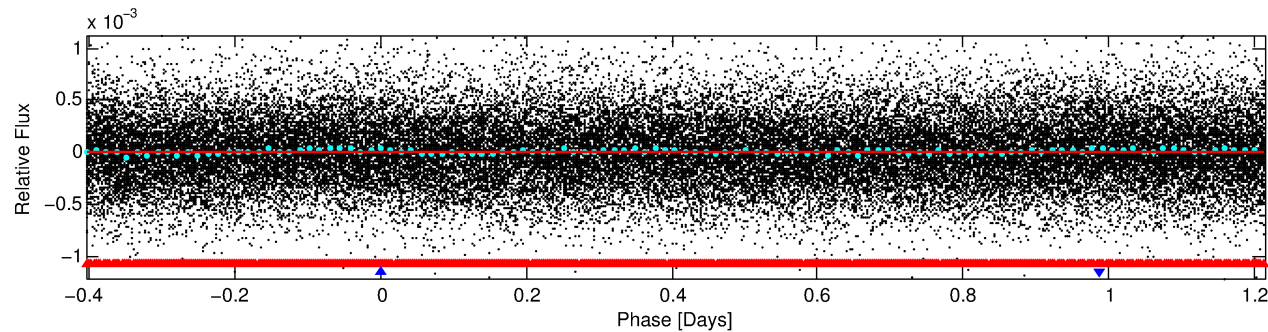
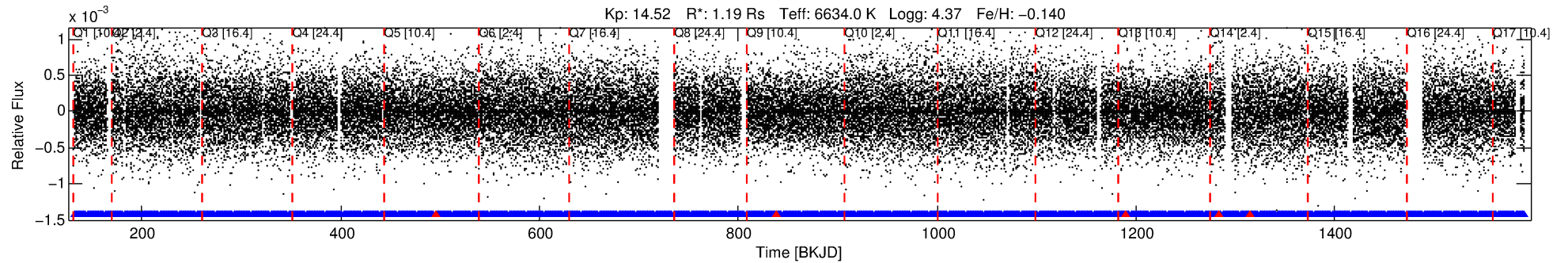
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002445298-02

No Significant Match Found

DV One-Page Summary

KIC: 2445298 Candidate: 2 of 2 Period: 1.620 d



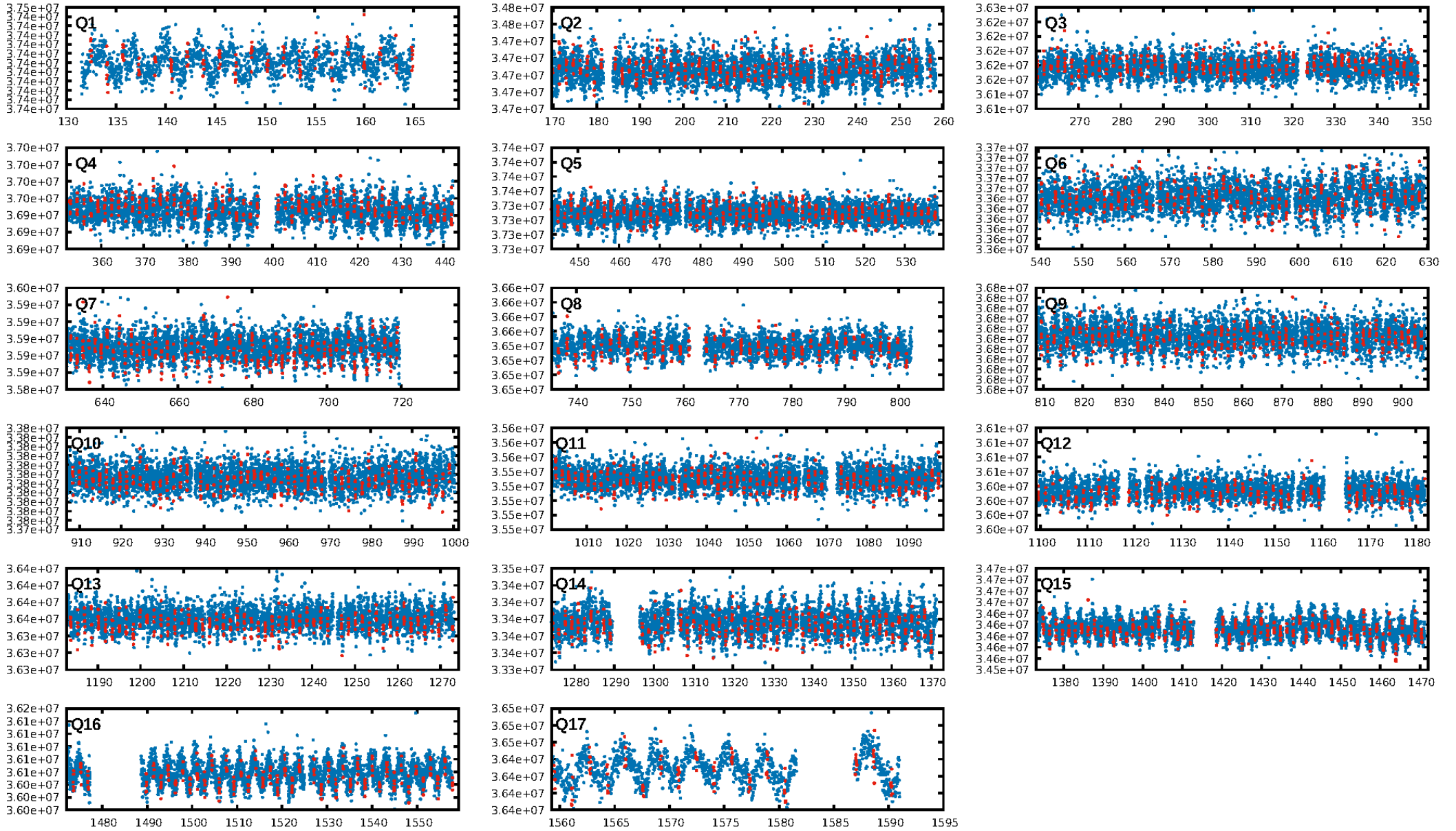
DV Fit Results:

Period = 1.61979 [207.77616] d
Epoch = 132.4622 [48773.9085] BKJD
Rp/R* = 0.0000 [2.5098]
a/R* = 3.26 [5774058.37]
b = 0.91 [105886.22]
Seff = 2986.39 [510768.71]
Teff = 1885 [80599] K
Rp = 0.00 [326.73] Re
a = 0.0288 [2.4593] AU
Ag = 123832575.99 [278809737936623.381] W 0000
Teffp = 307441 [173058893547] K

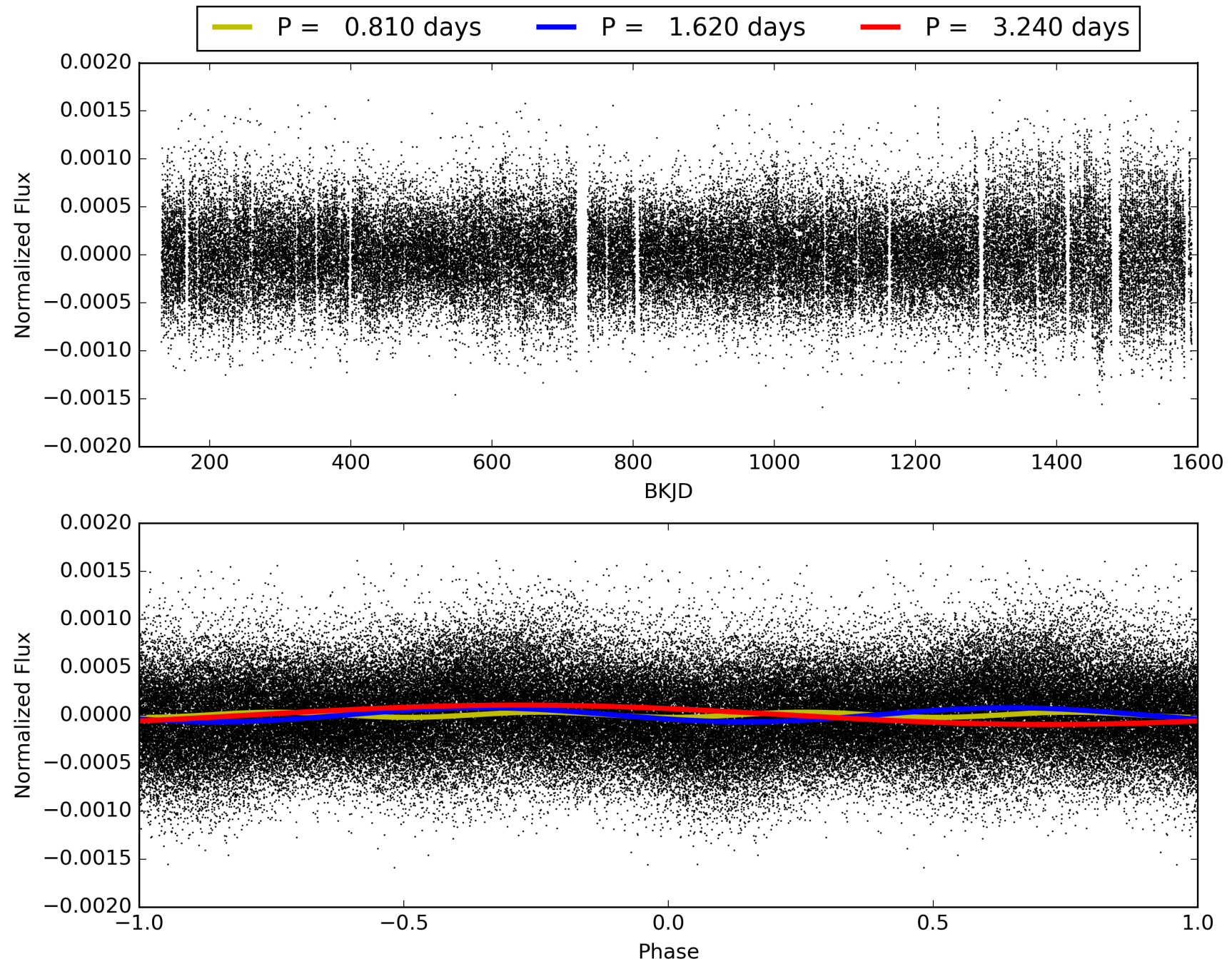
DV Diagnostic Results:

ShortPeriod-sig: 2.5% [0.03σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.19e-13
RollingBand-fgt: 0.99 [670/675]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OffOffset-rm: 0.504 arcsec [0.13σ]
OffOffset-rm: 0.547 arcsec [0.15σ]
OffOffset-st: 3/3/3/2 [11]
KicOffset-st: 3/3/3/2 [11]
DiffImageQuality-fgm: 0.18 [2/11]
DiffImageOverlap-fno: 0.76 [13/17]

TCE 002445298-02, PDC Light Curves

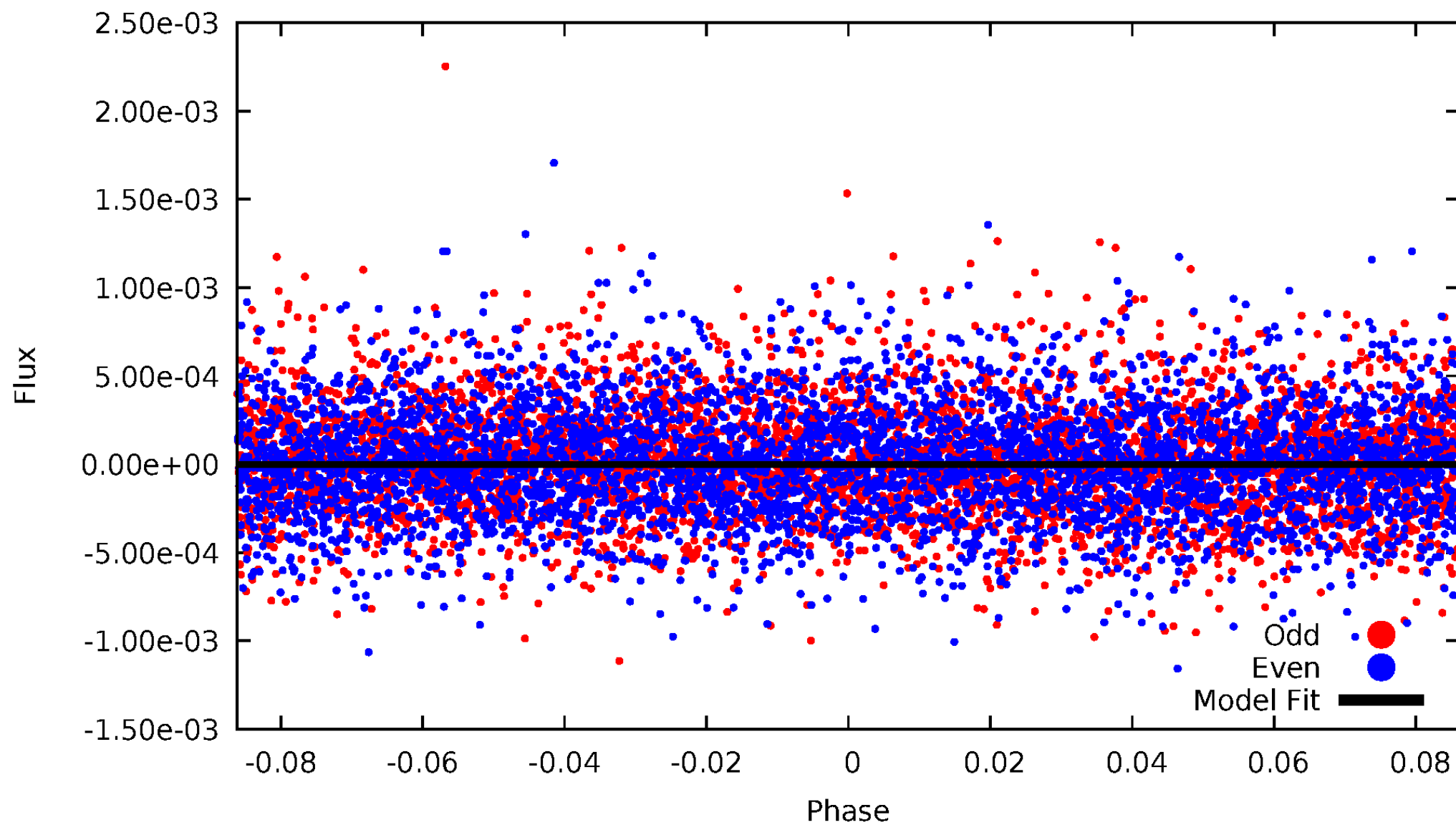


TCE 002445298-02



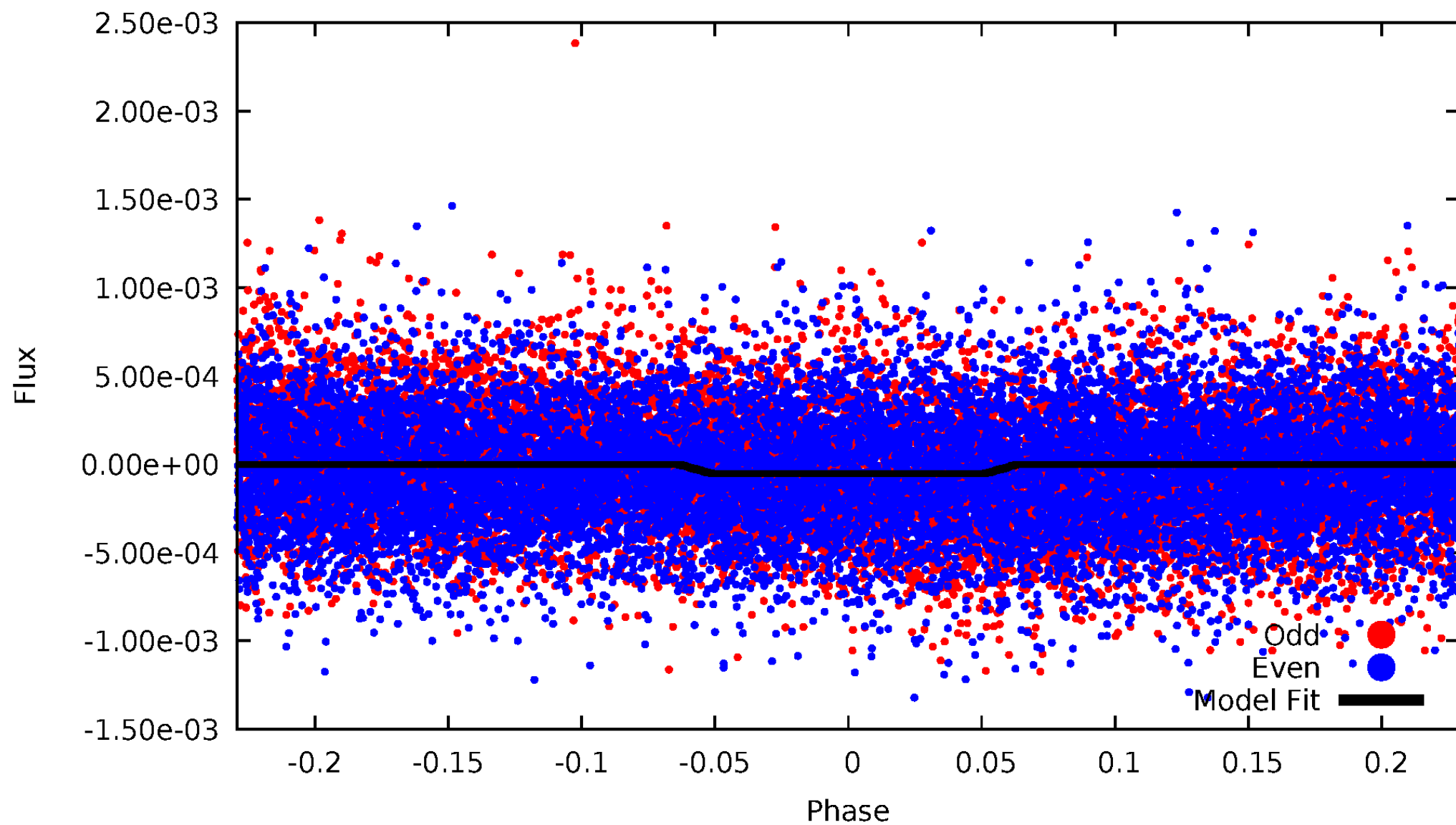
DV Odd/Even

TCE 002445298-02



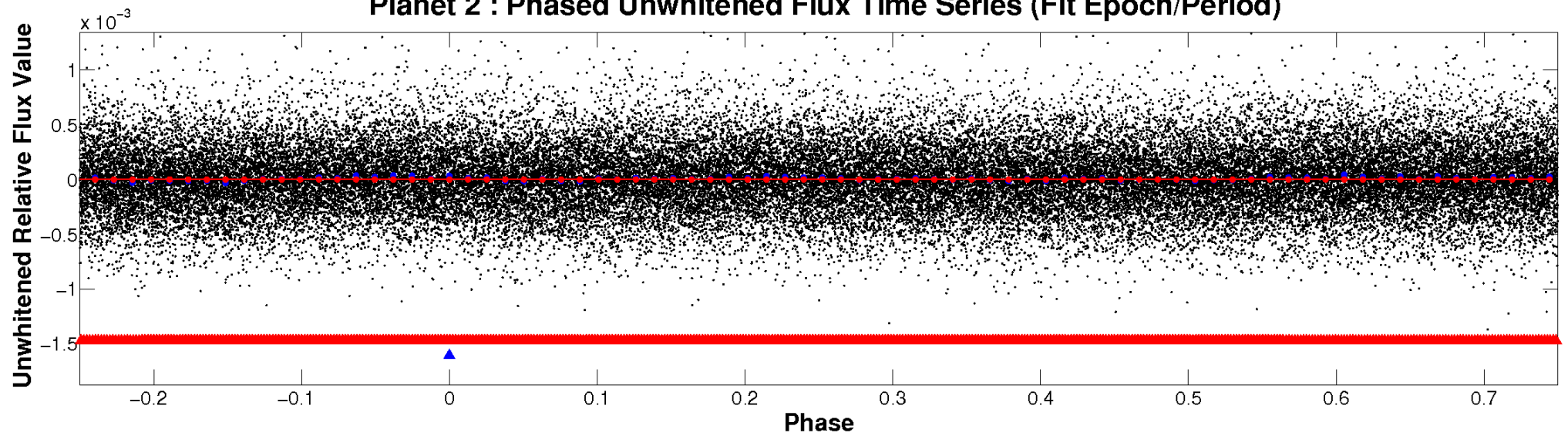
ALT Odd/Even

TCE 002445298-02

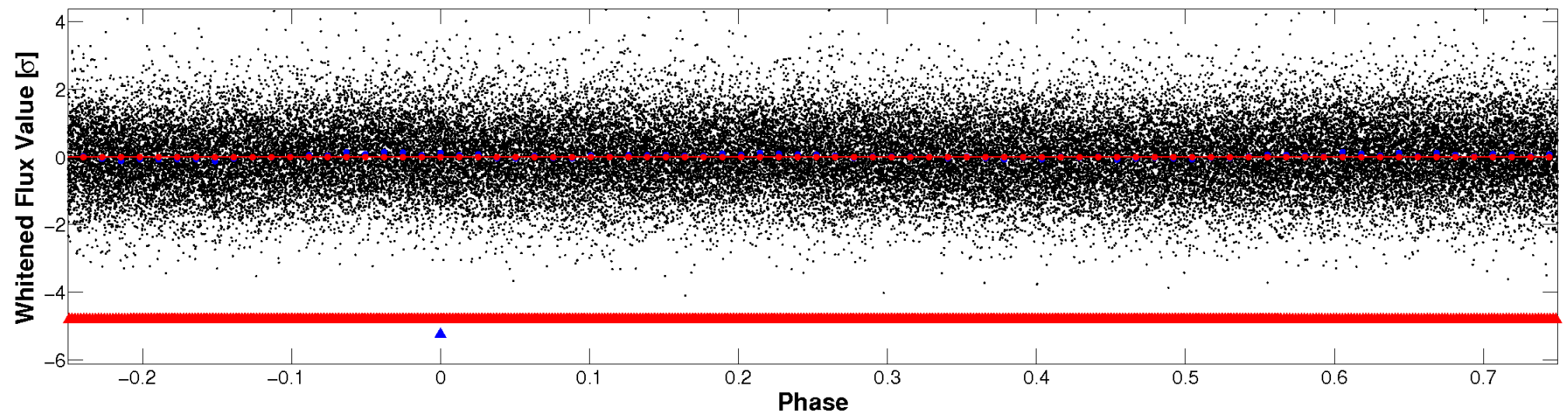


Non-Whitened Vs. Whitened Light Curve

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

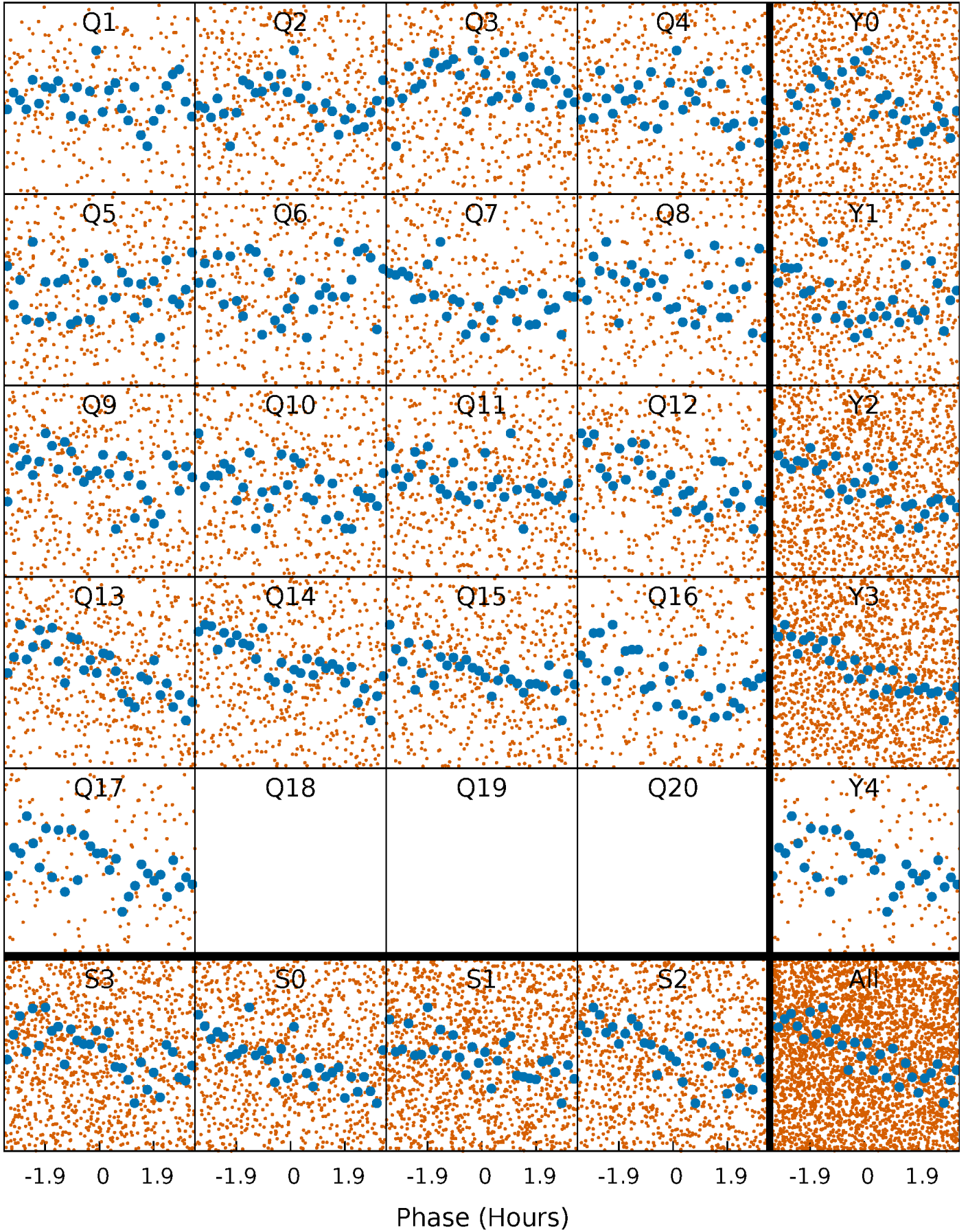


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



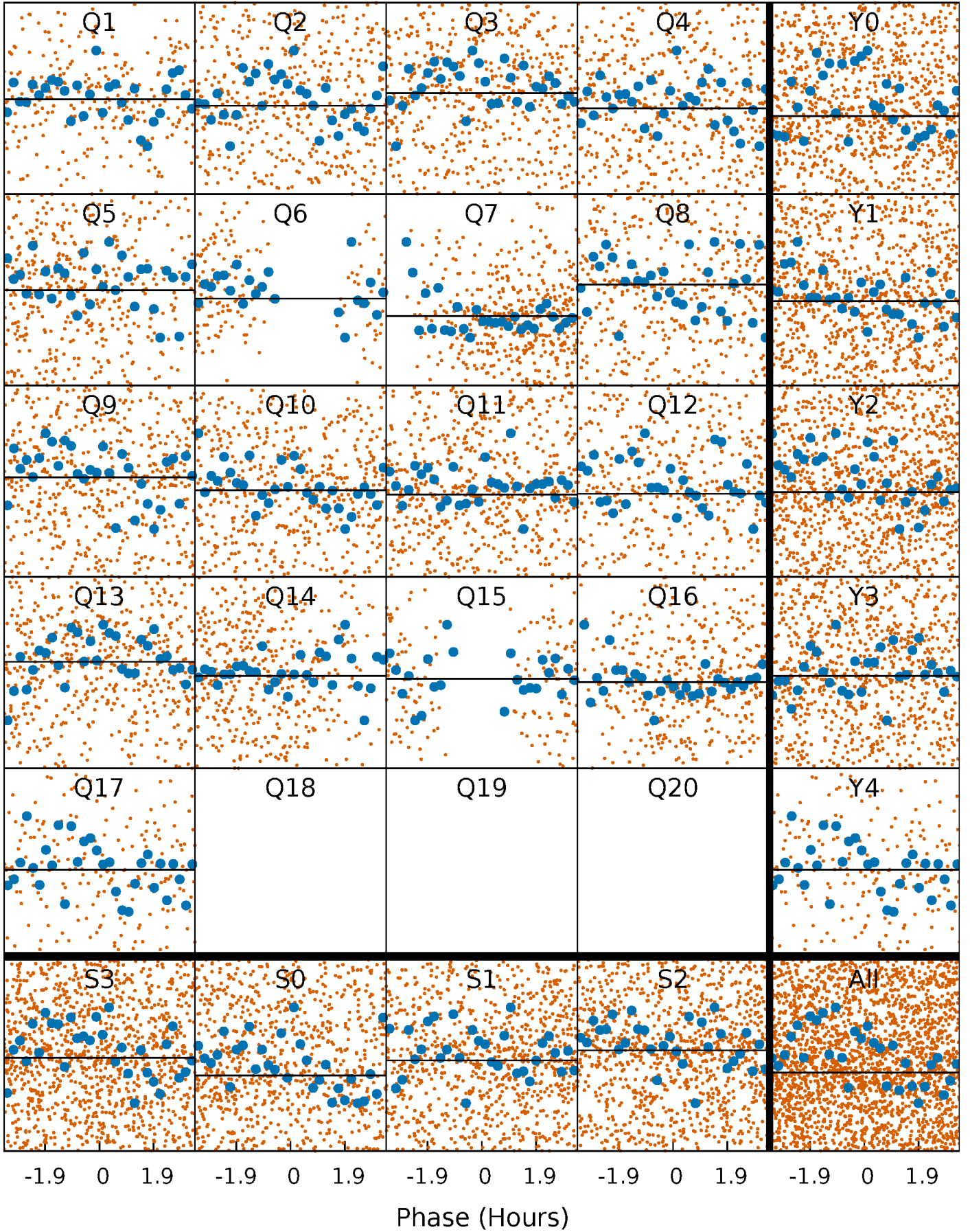
PDC Quarter-Phased Transit Curves

TCE 002445298-02 P= 1.619786 Days $T_0=132.462227$ (BKJD)



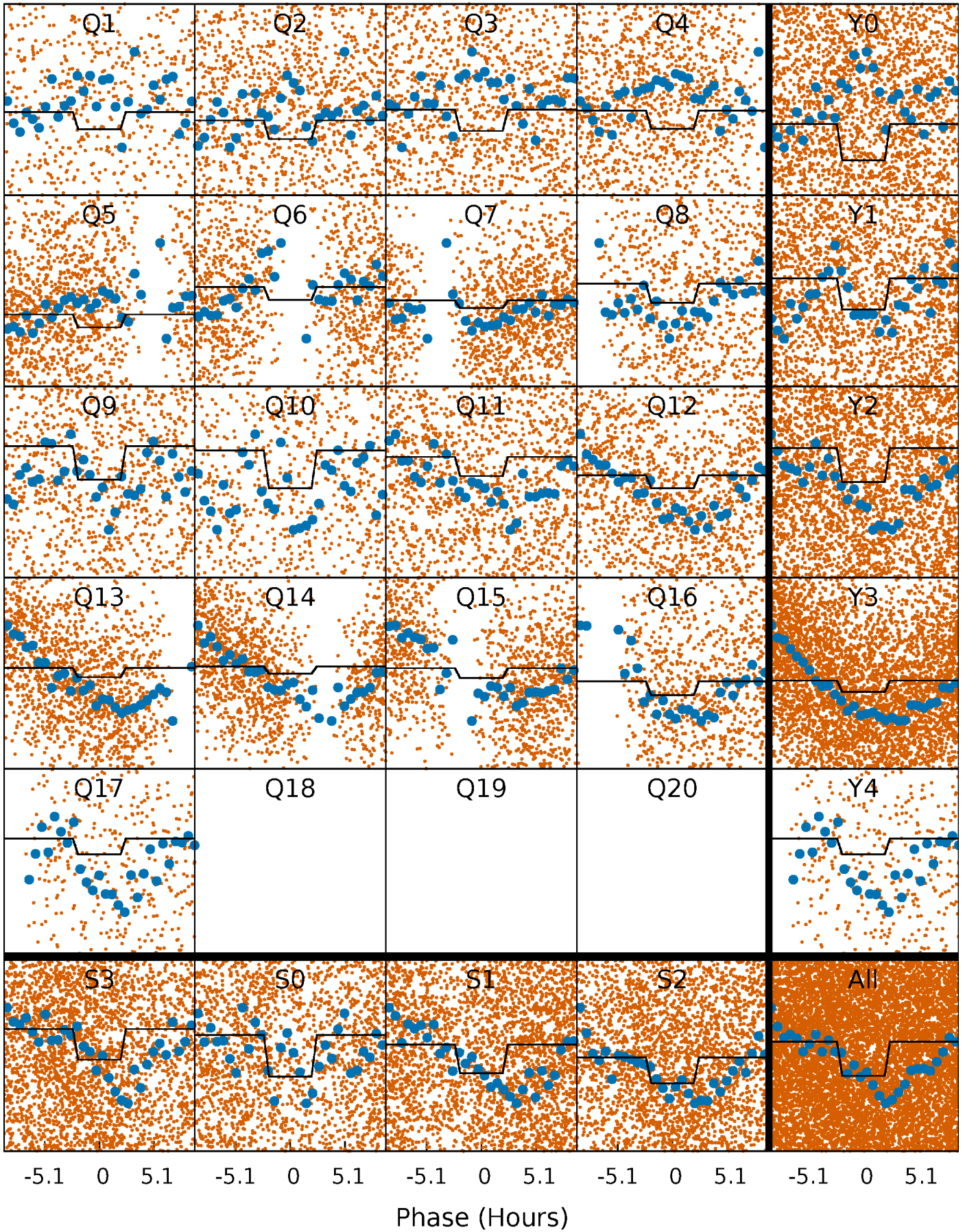
DV Quarter-Phased Transit Curves

TCE 002445298-02 $P = 1.619786$ Days $T_0 = 132.462227$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

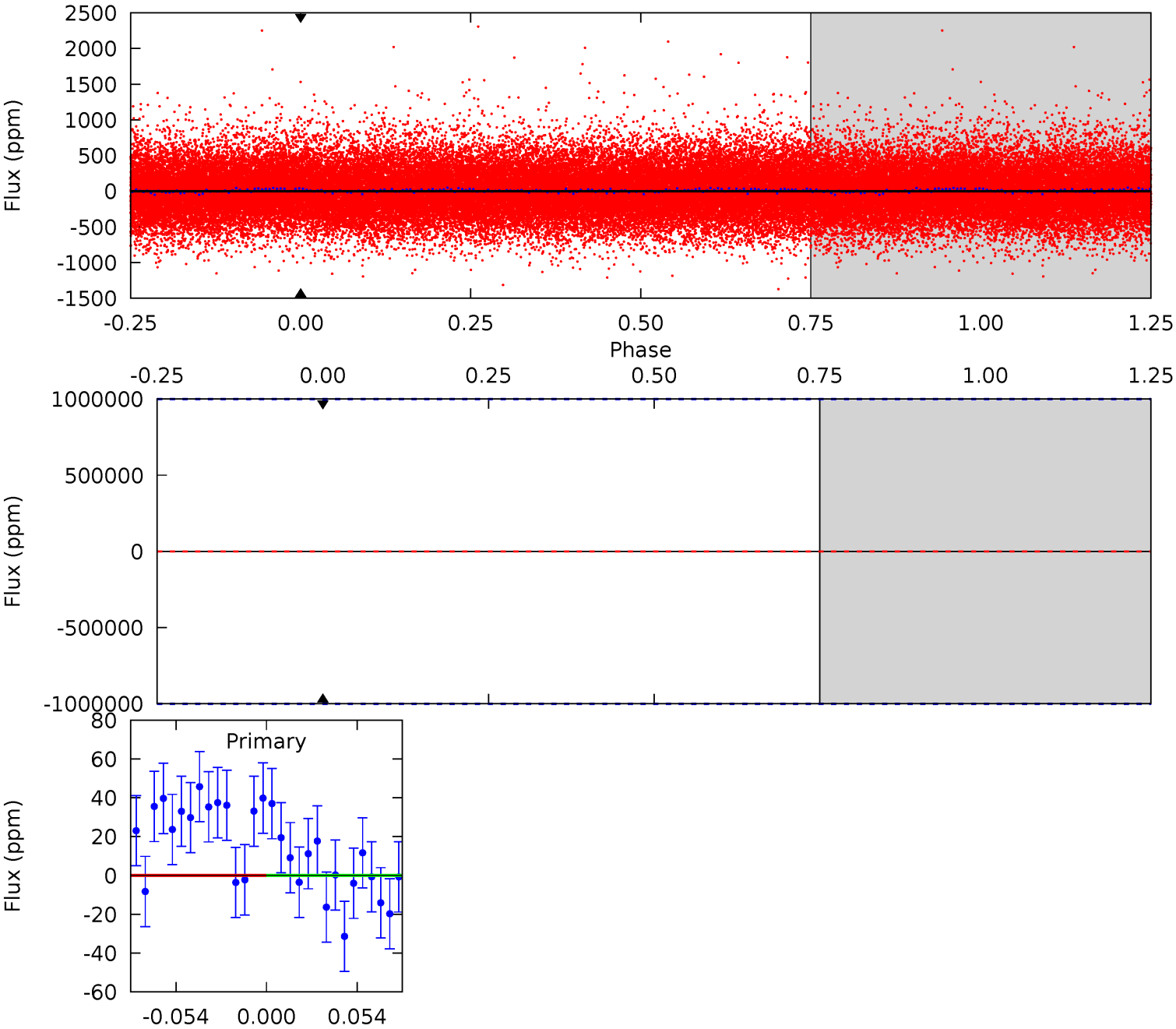
TCE 002445298-02 P= 1.619898 Days $T_0=132.438116$ (BKJD)



DV Model-Shift Uniqueness Test

002445298-02, P = 1.619786 Days, E = 130.842441 Days

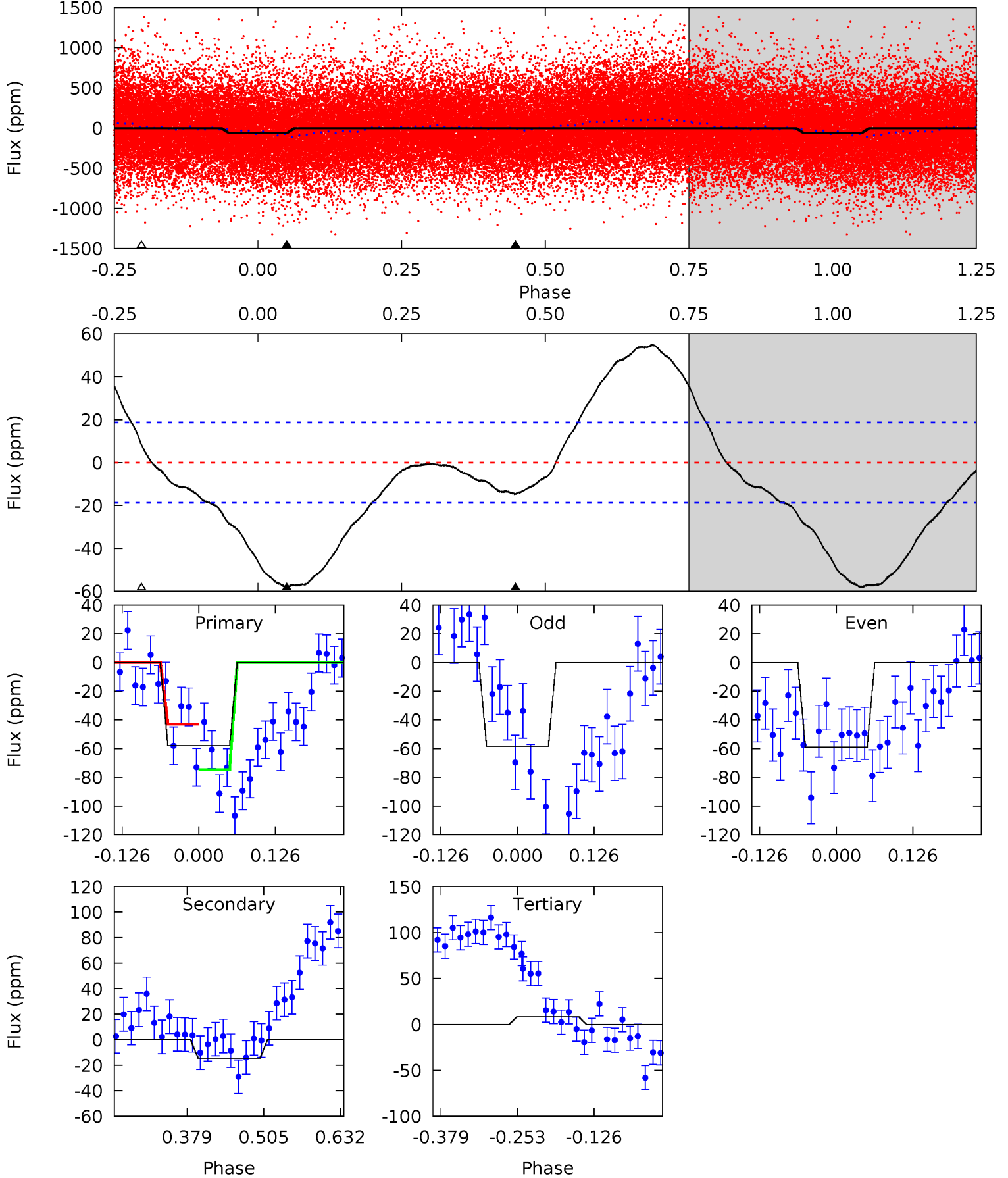
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

002445298-02, P = 1.619898 Days, E = 130.818218 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	3.51	-2.01	0	4.52	1.53	6.42	16.0	14.0	5.52	3.51	0.06	1.01	0.49	3.85



Stellar Parameters For KIC 002445298

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6634^{+159}_{-239}	$4.367^{+0.062}_{-0.188}$	$-0.140^{+0.250}_{-0.300}$	$1.193^{+0.372}_{-0.149}$	$1.215^{+0.170}_{-0.170}$	$1.008^{+0.286}_{-0.533}$
	+2%/-4%	+1%/-4%	+179%/-214%	+31%/-12%	+14%/-14%	+28%/-53%
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 002445298-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$229.20^{+256.96}_{-167.34}$	623^{+338}_{-144}	2151^{+1987}_{-5720}	$3.310^{+889.898}_{-441.816}$
Alt.	-15 ± 4	$225.00^{+244.67}_{-161.32}$	600^{+286}_{-133}	-1489^{+3012}_{-246}	$0.044^{+0.578}_{-0.038}$

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 $A_{obs} \gg 1.0$

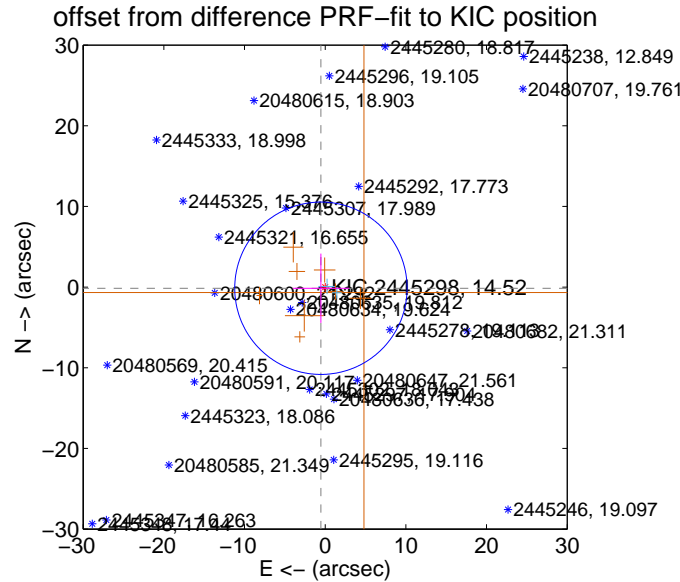
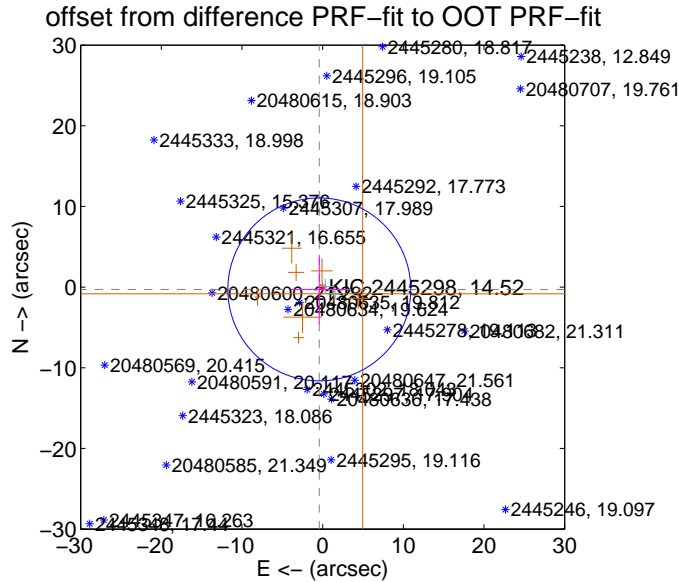
DV Centroid Data

Supplemental centroid analysis for 002445298-02. Kepler magnitude: 14.52. Transit SNR 0.00

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

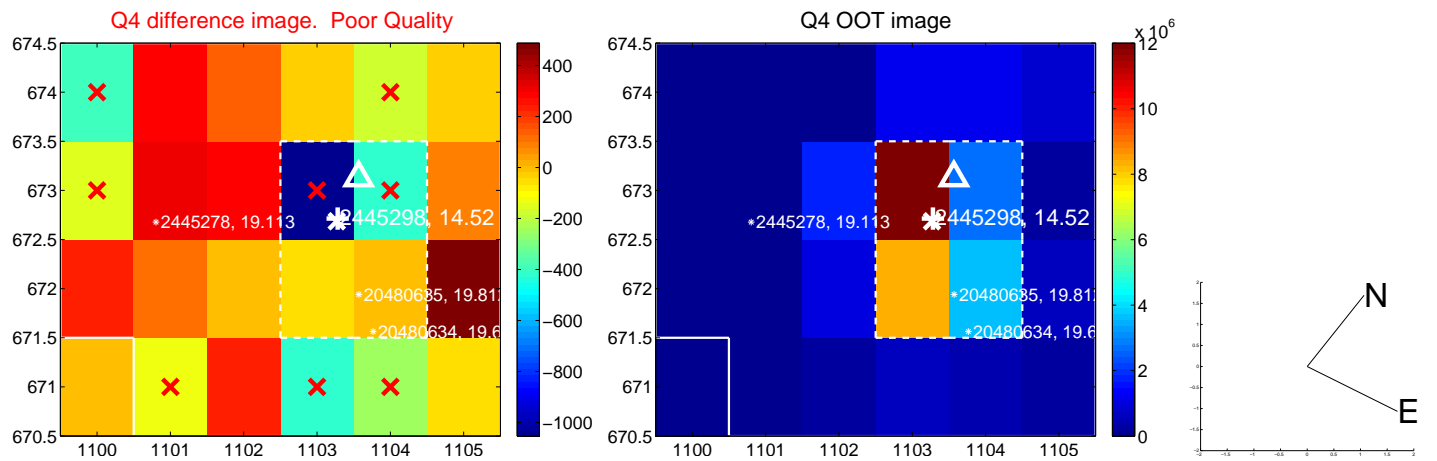
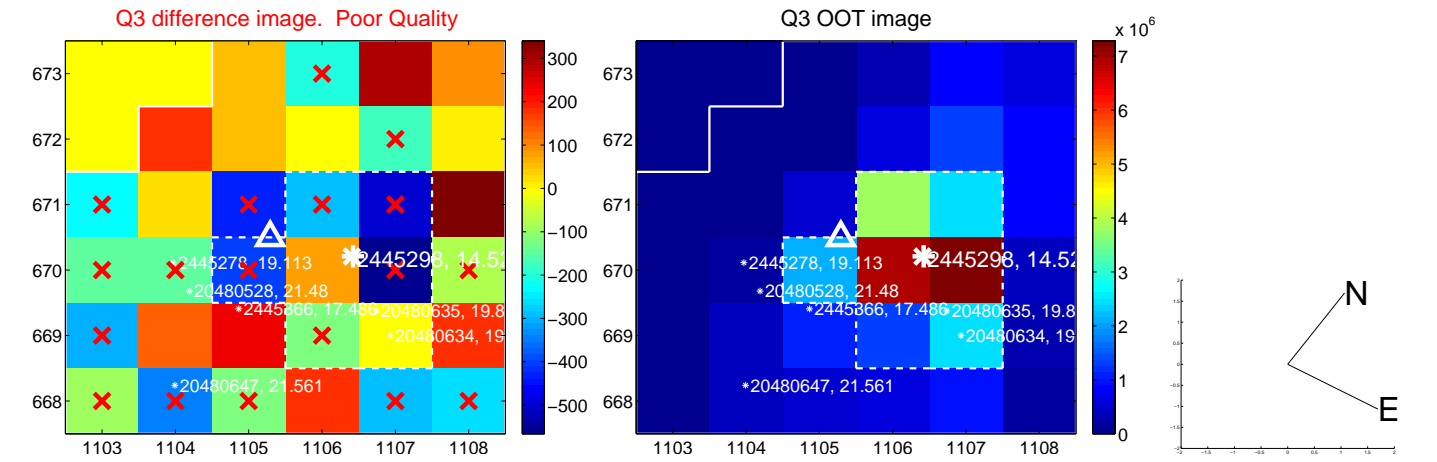
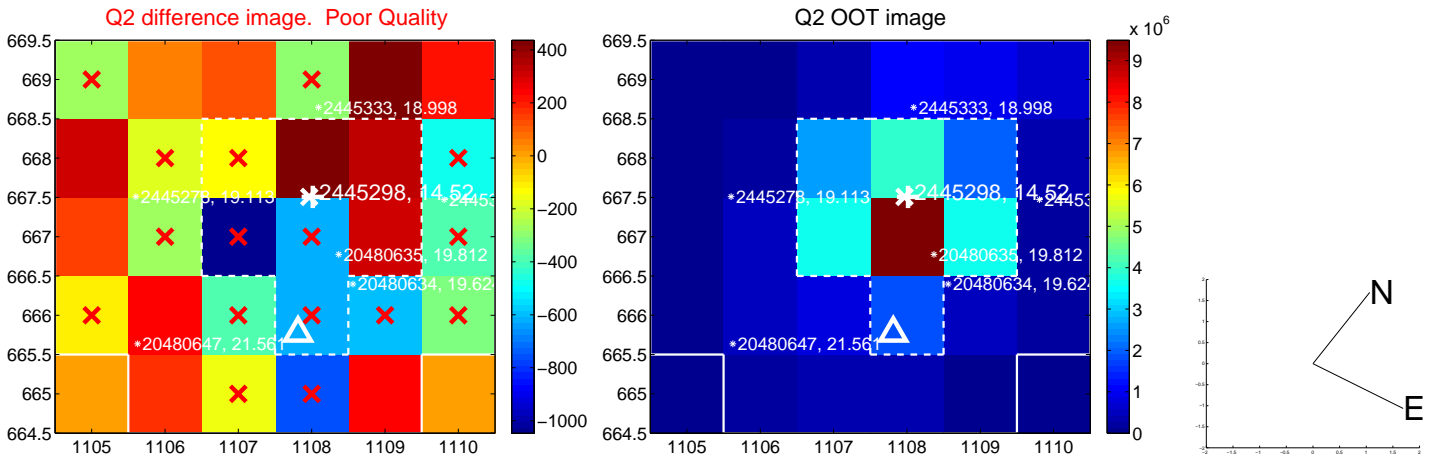
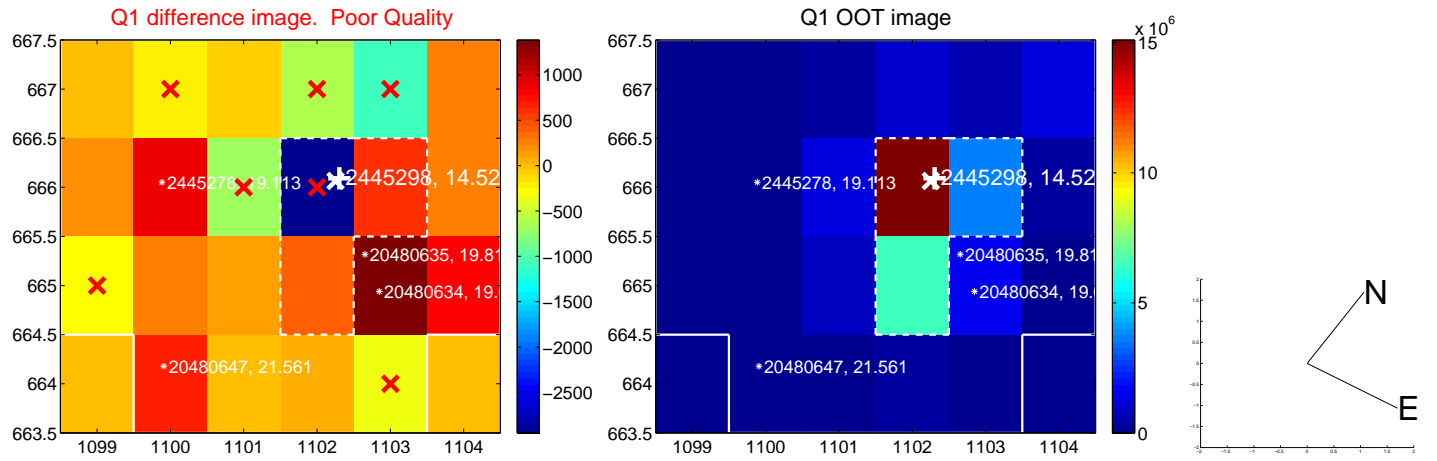
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.504 ± 3.779	0.13	0.414 ± 3.501	-0.287 ± 4.297
PRF-fit source offset from KIC position	0.547 ± 3.561	0.15	0.528 ± 3.501	-0.143 ± 4.297
photometric centroid source offset	—	—	—	—



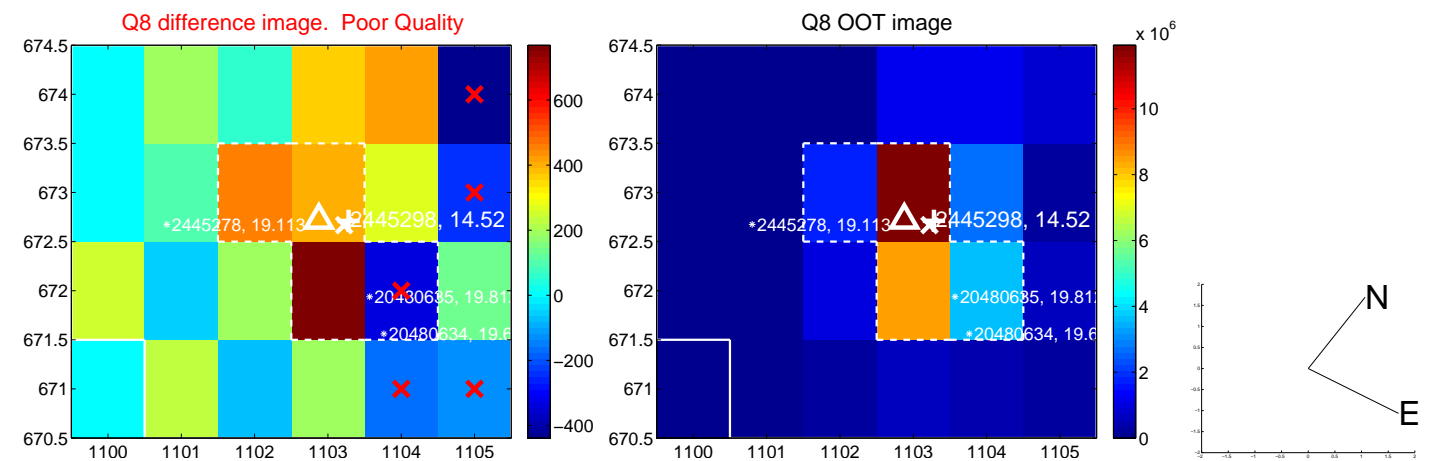
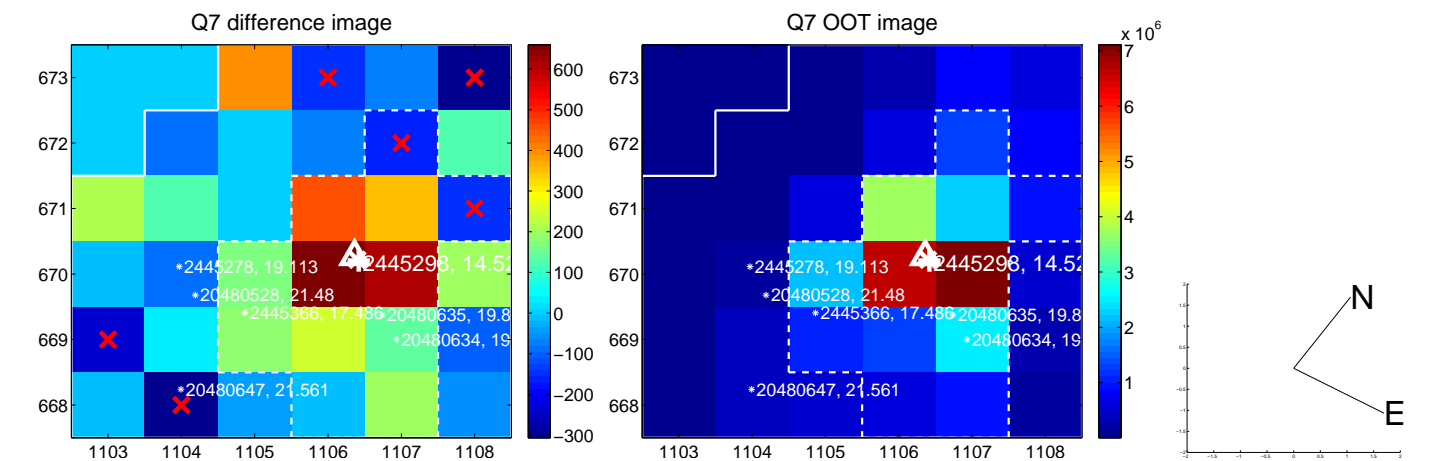
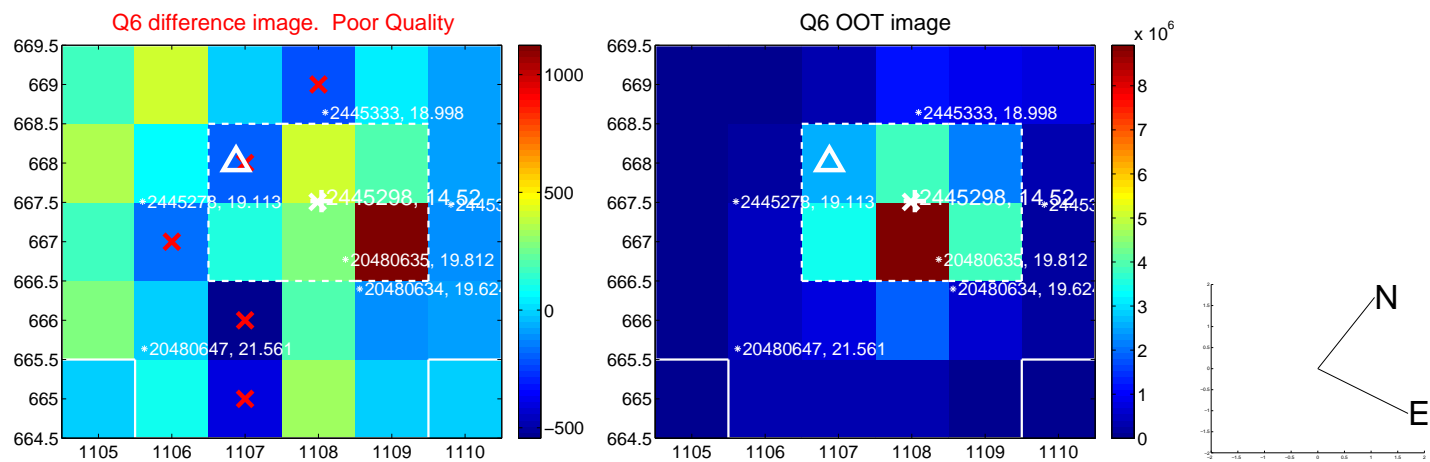
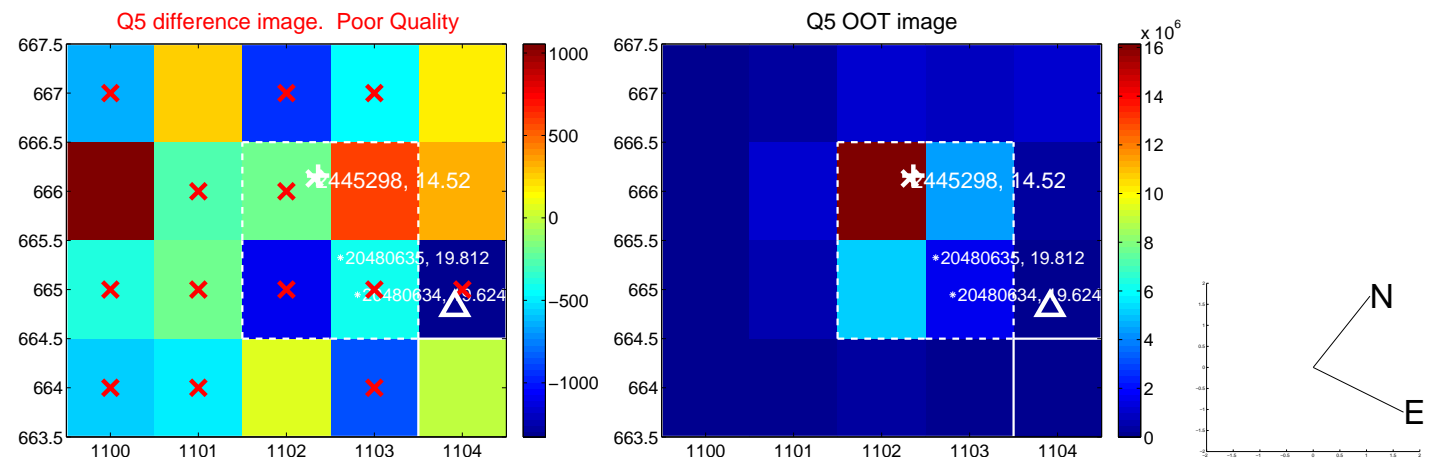
There are no photometric centroids

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.

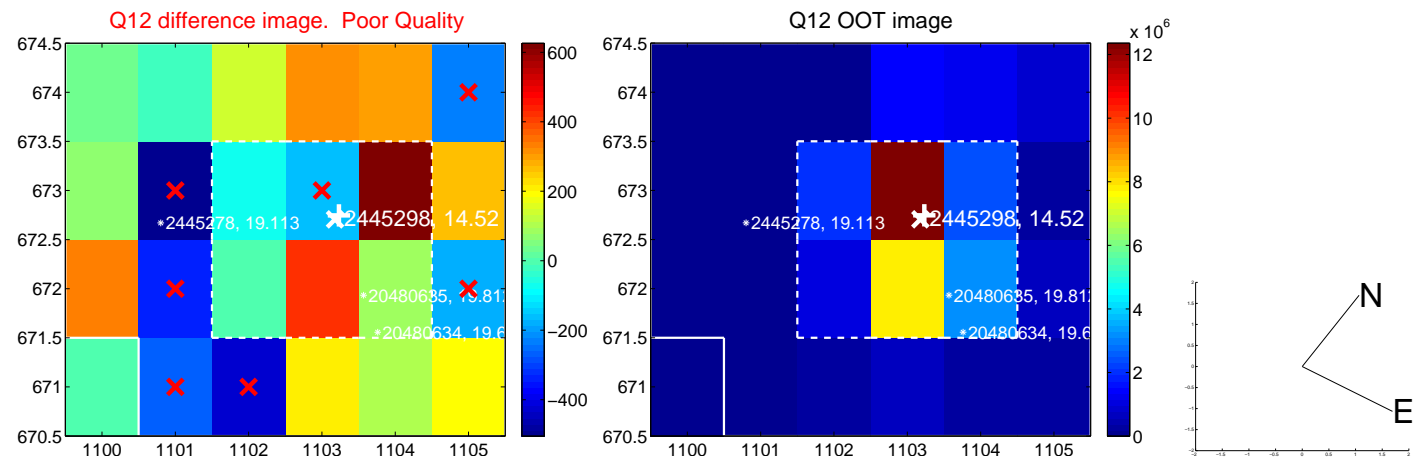
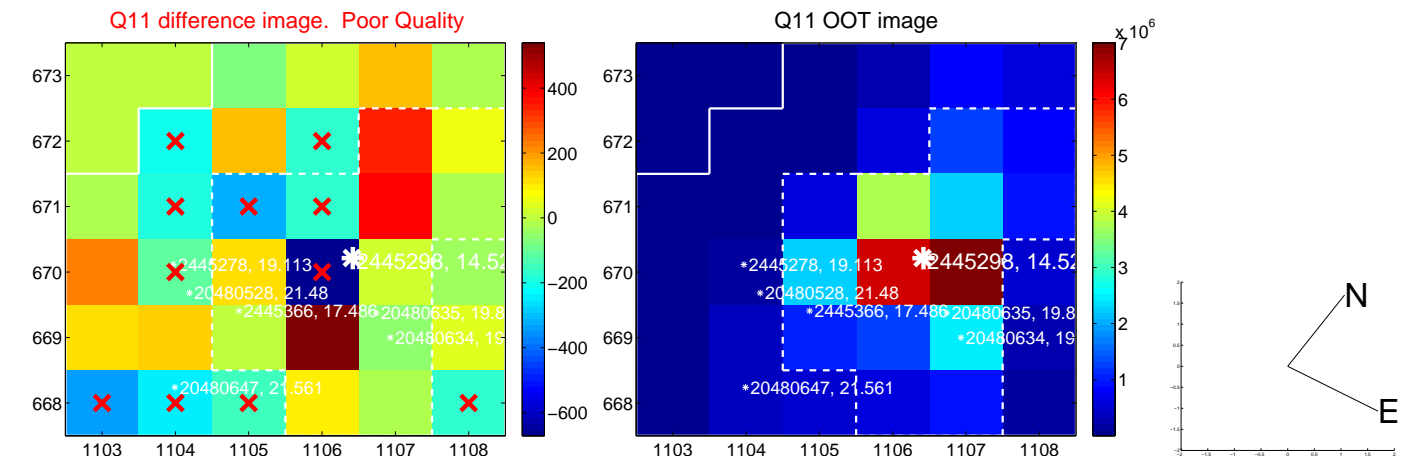
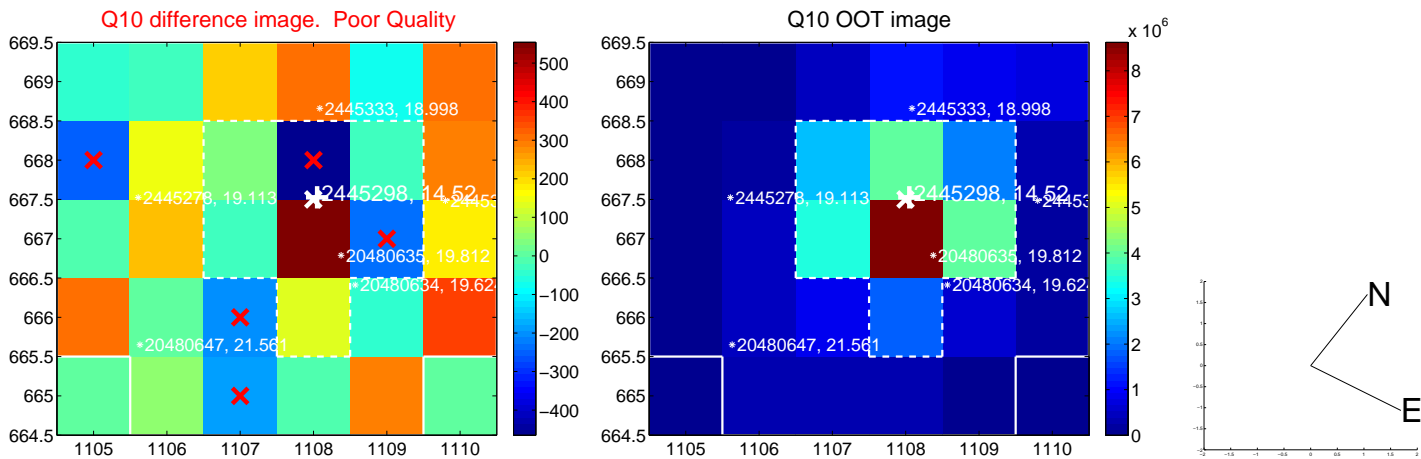
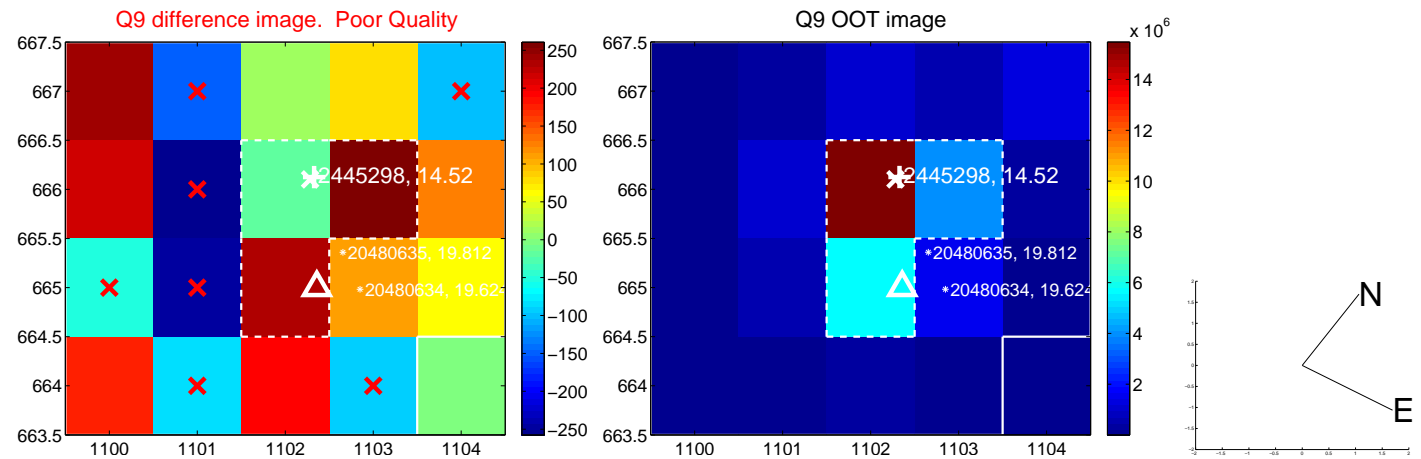
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



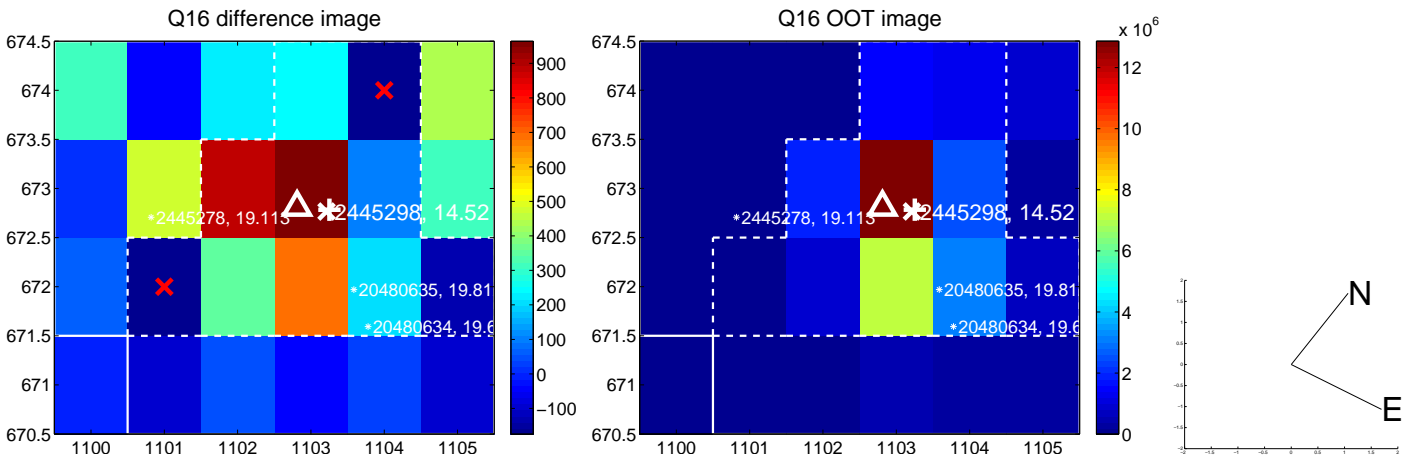
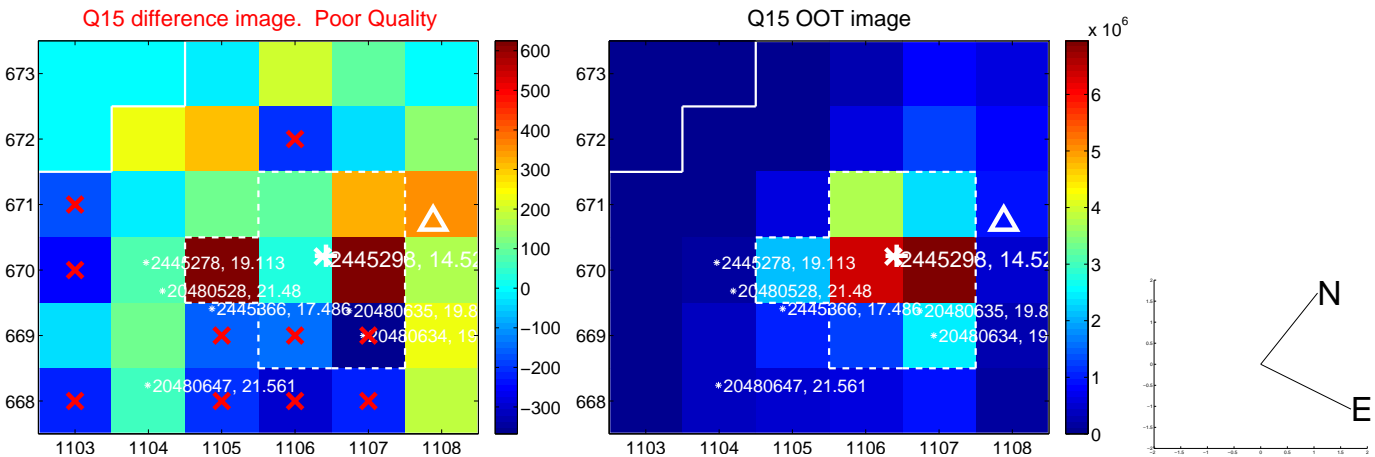
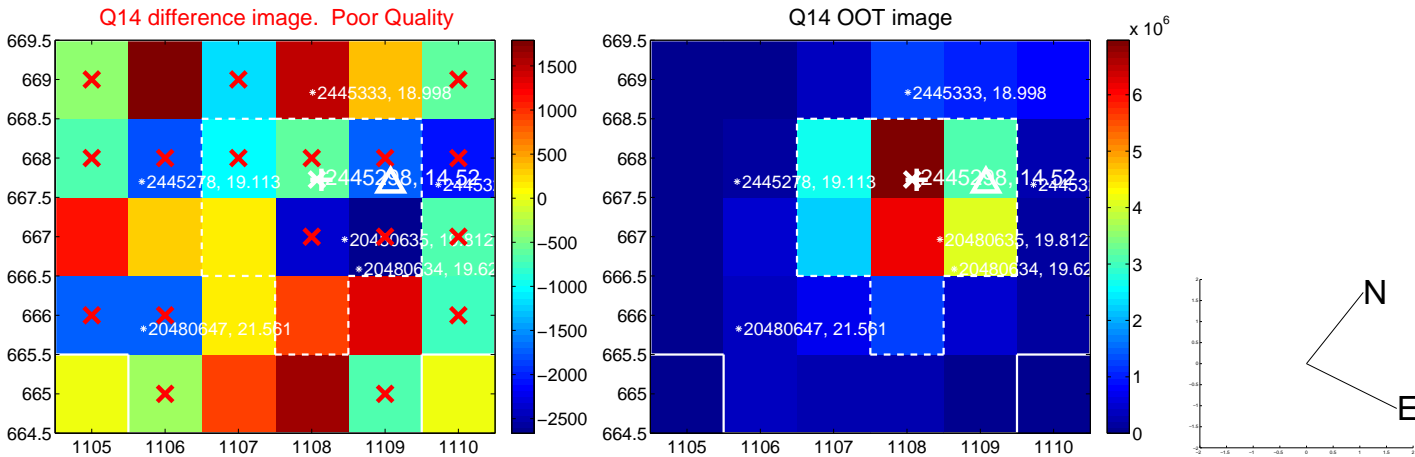
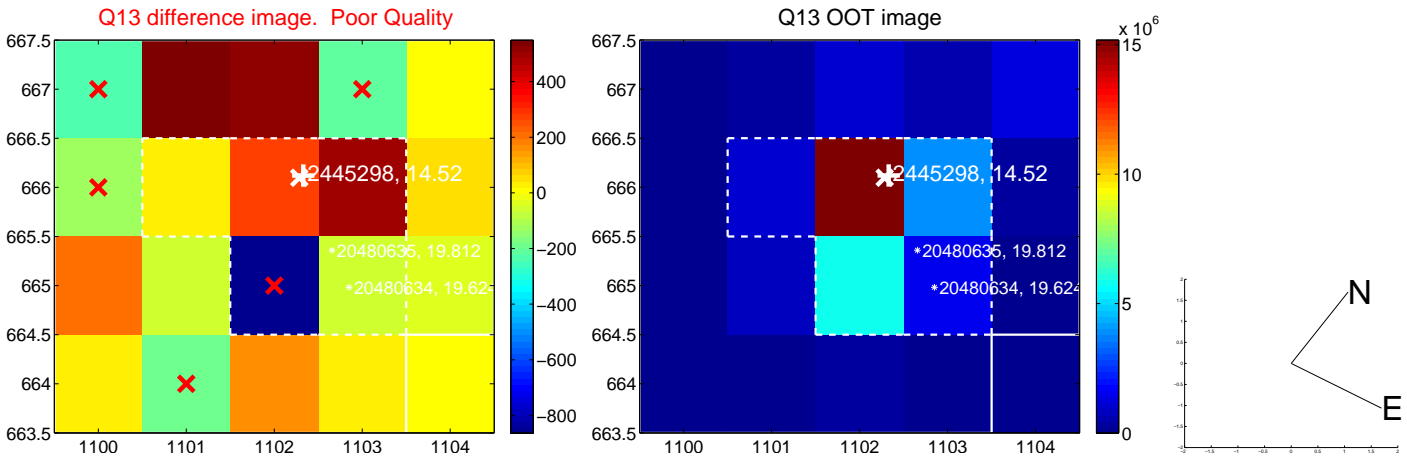
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



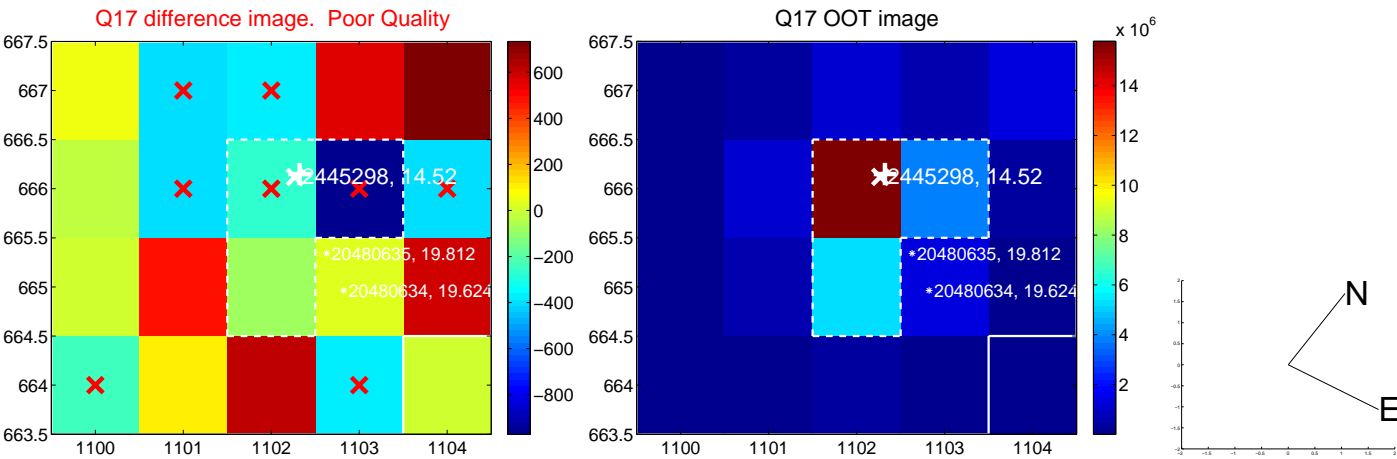
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

