

KIC 005218486

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})
005218486-01	OBS	No	0.915698	132.298222	57.1	4.171	8.0	7.4	1.18	6639	1.06	6292.44
005218486-02	OBS	No	75.334782	187.863858	522.0	10.961	7.6	8.4	1.18	6639	2.99	17.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005218486-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005218486-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—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.

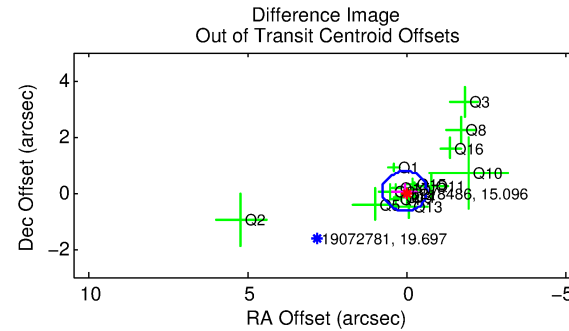
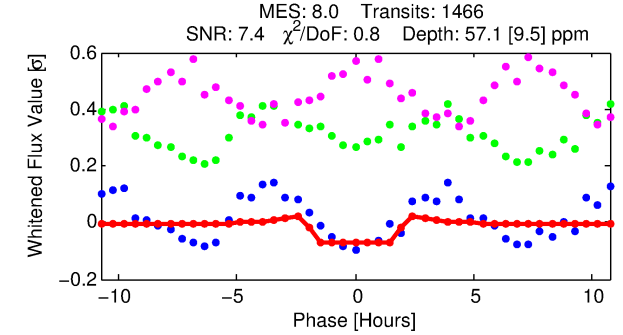
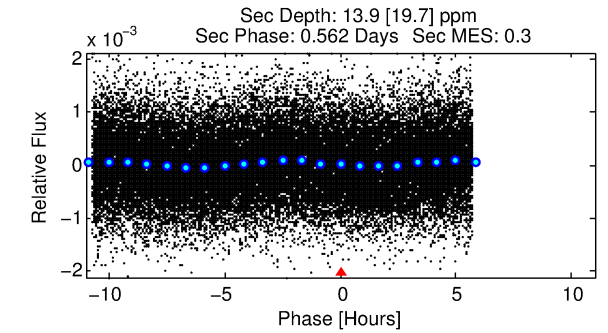
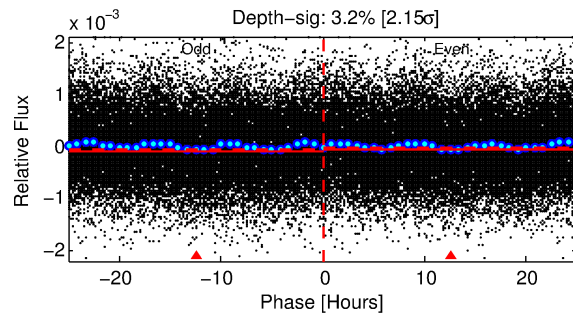
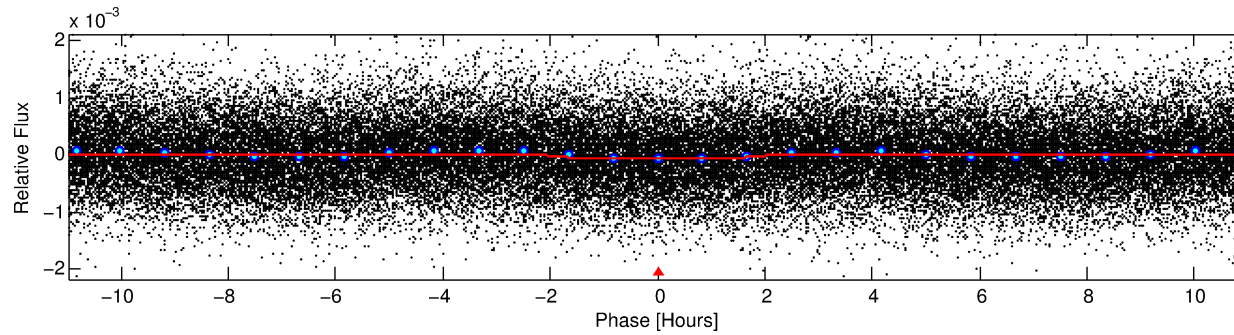
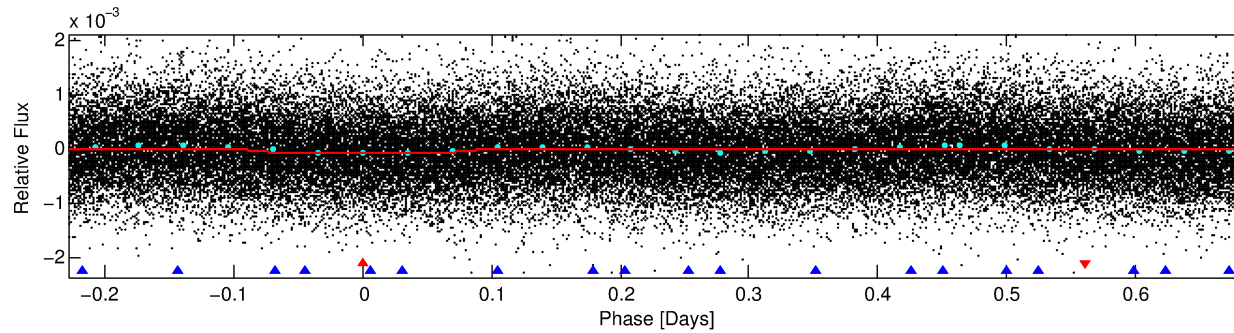
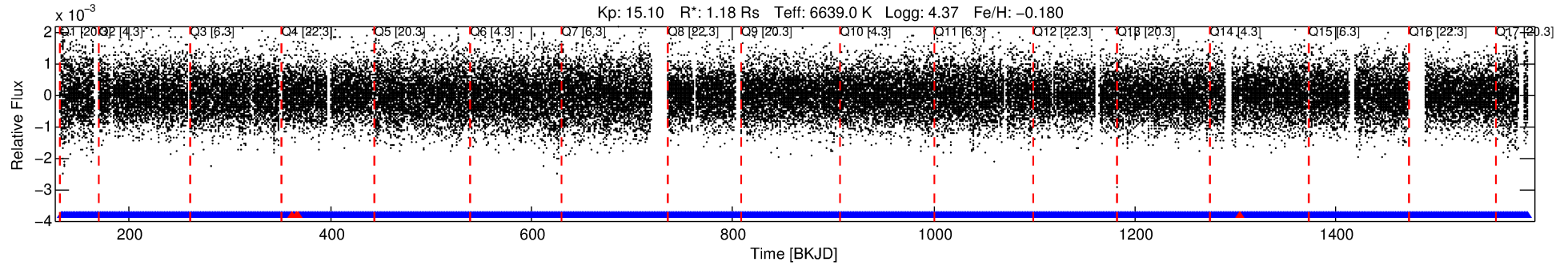
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005218486-01

No Significant Match Found

DV One-Page Summary

KIC: 5218486 Candidate: 1 of 2 Period: 0.916 d



DV Fit Results:

Period = 0.91570 [0.00001] d
Epoch = 132.2982 [0.0047] BKJD
Rp/R* = 0.0083 [0.0031]
a/R* = 1.17 [0.67]
b = 0.93 [0.34]
Seff = 6292.44 [2394.88]
Teq = 2271 [216] K
Rp = 1.06 [0.51] Re
a = 0.0196 [0.0047] AU
Ag = 2.58 [4.24] [0.37 σ]
Teffp = 4452 [1794] K [1.21 σ]

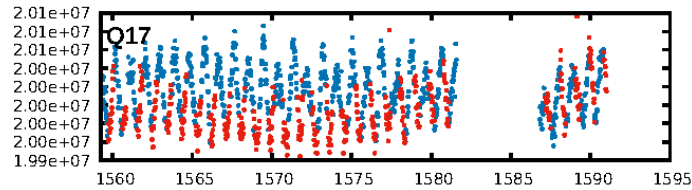
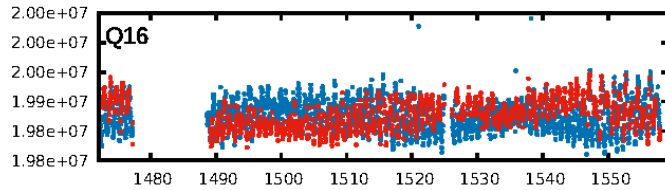
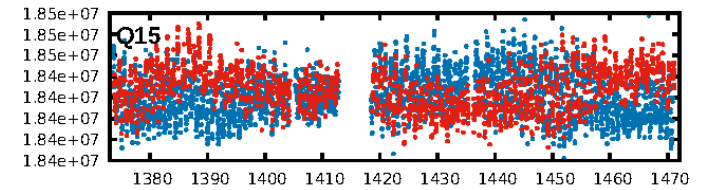
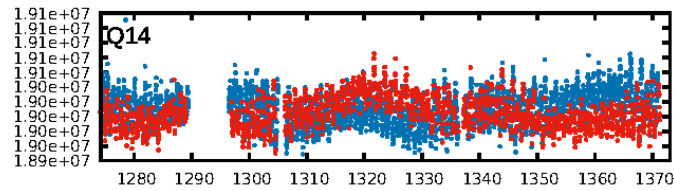
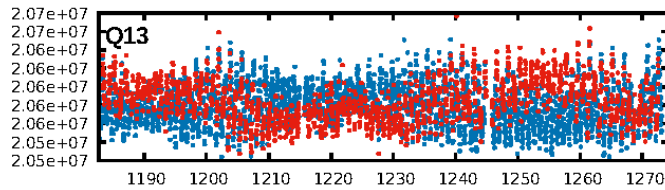
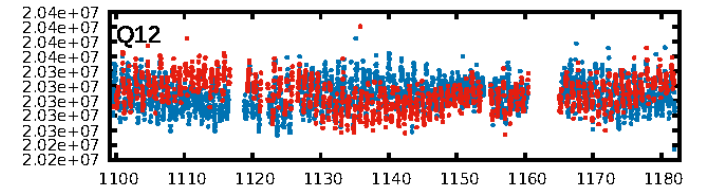
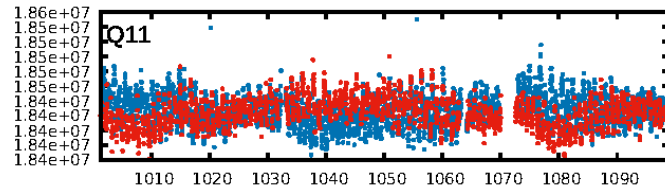
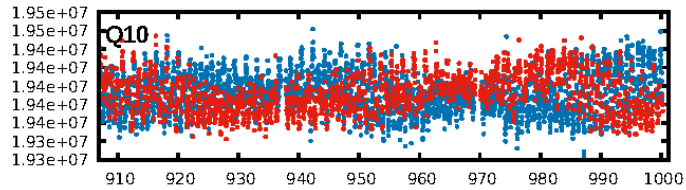
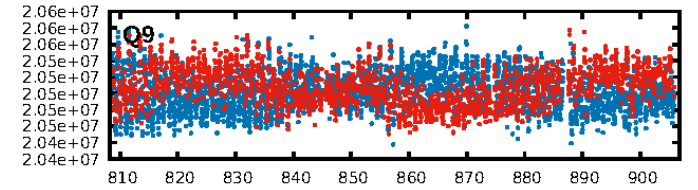
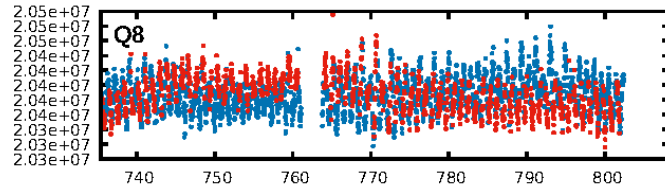
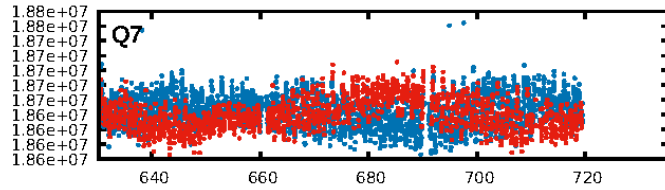
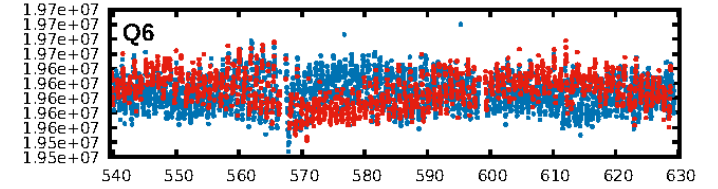
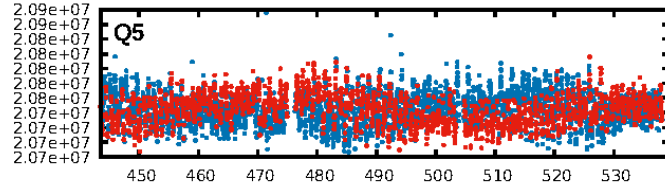
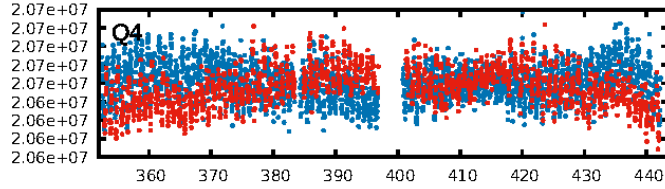
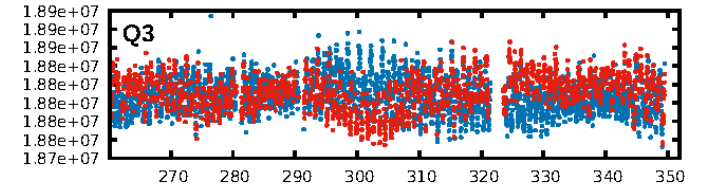
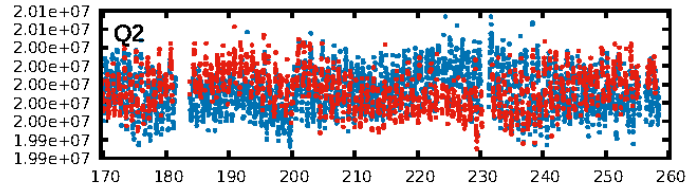
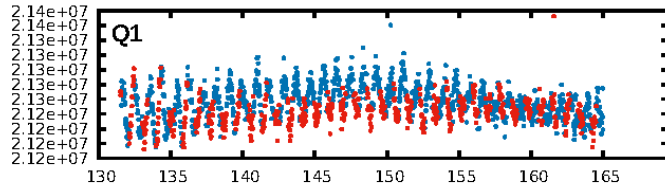
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [152.29 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.47e-14
RollingBand-fgt: 1.00 [1397/1401]
GhostDiagnostic-chr: 3.267
Centroid-sig: N/A
Centroid-so: 1.566 arcsec [1.18 σ]
OotOffset-rm: 0.099 arcsec [0.42 σ]
KicOffset-rm: 0.110 arcsec [0.51 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.56 [9/16]
DiffImageOverlap-fno: 1.00 [17/17]

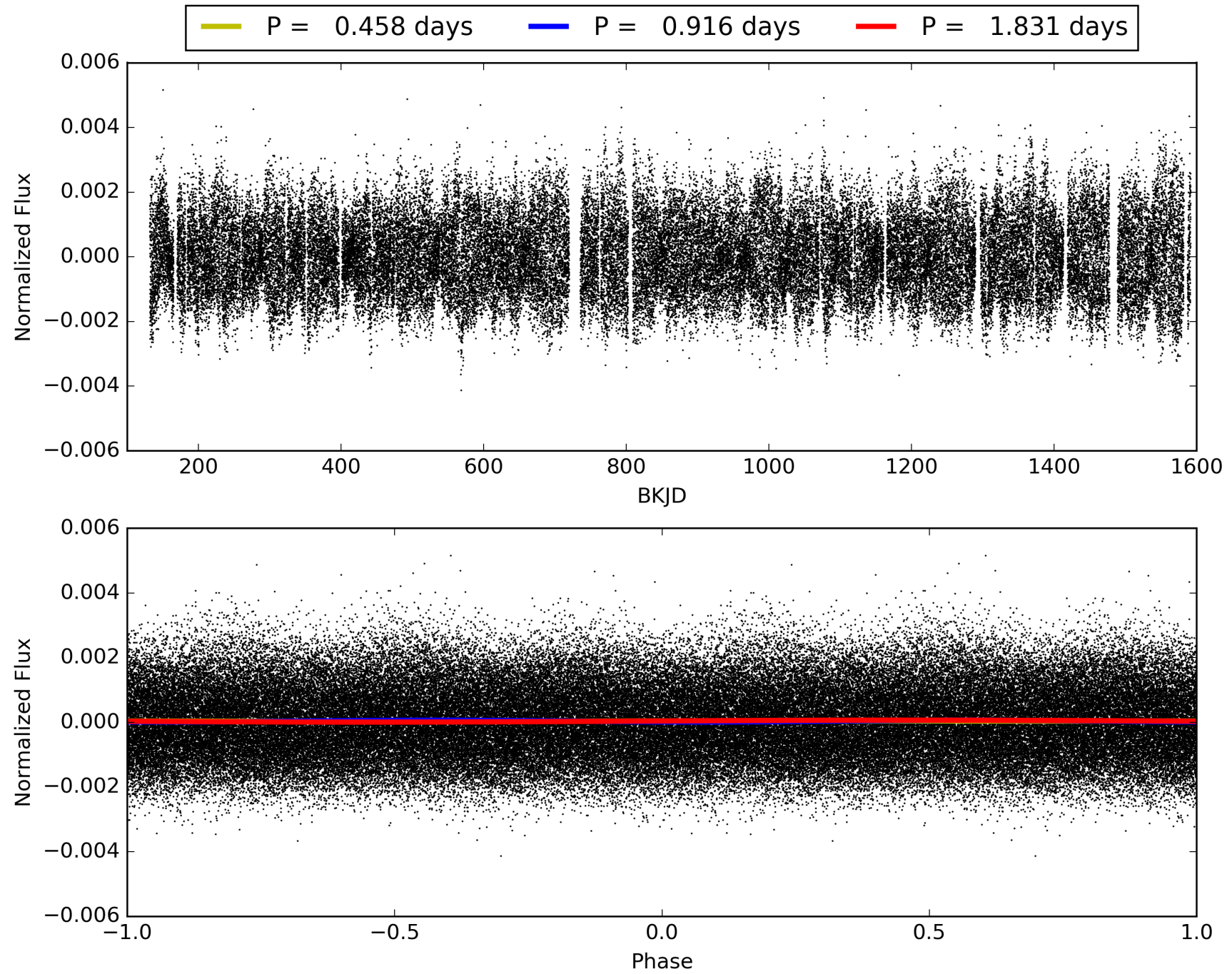
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:04:03 Z

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

TCE 005218486-01, PDC Light Curves

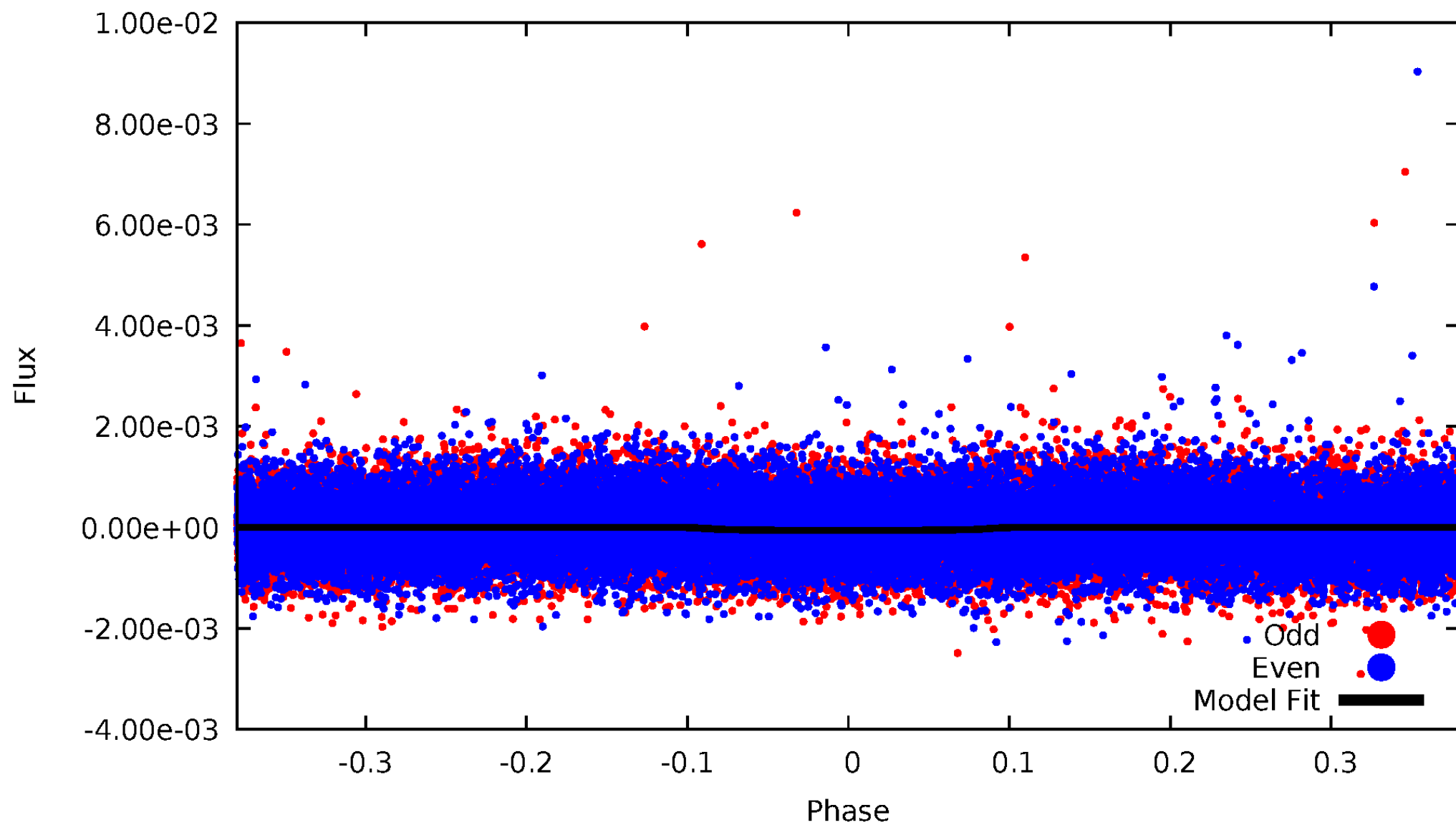


TCE 005218486-01



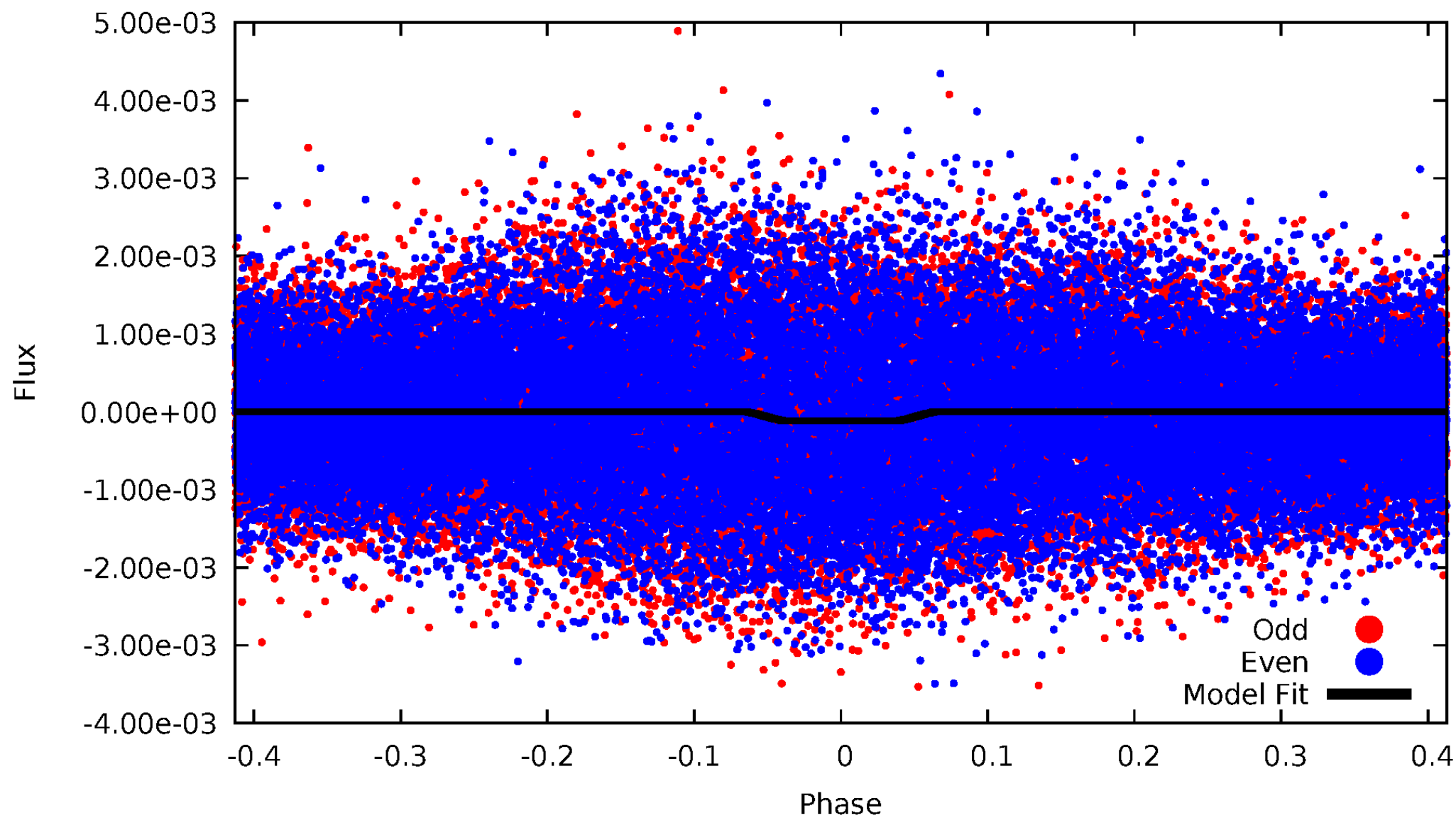
DV Odd/Even

TCE 005218486-01



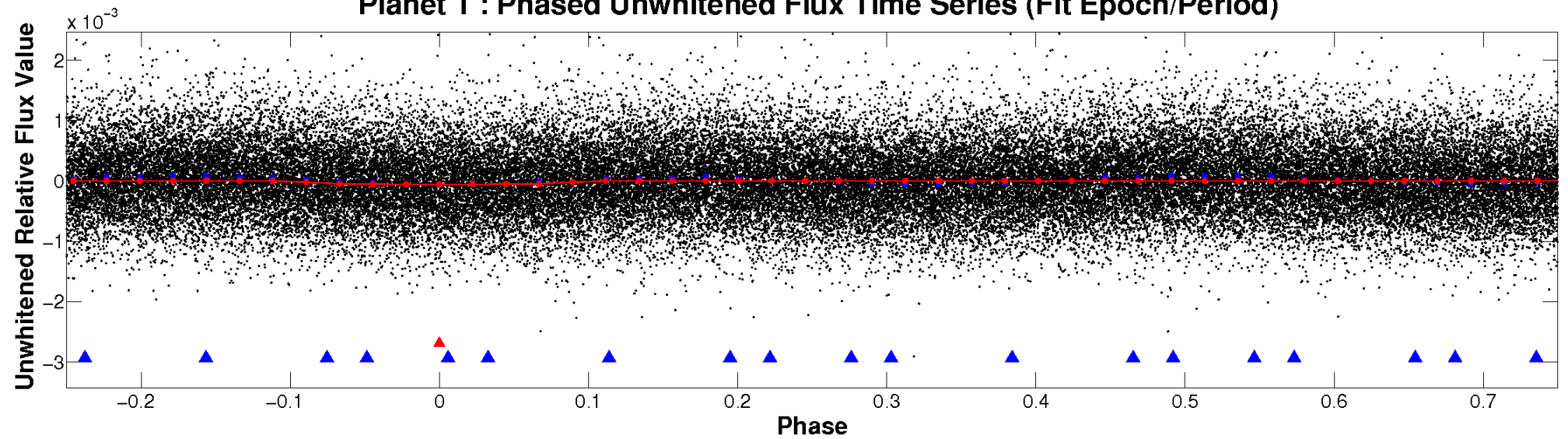
ALT Odd/Even

TCE 005218486-01

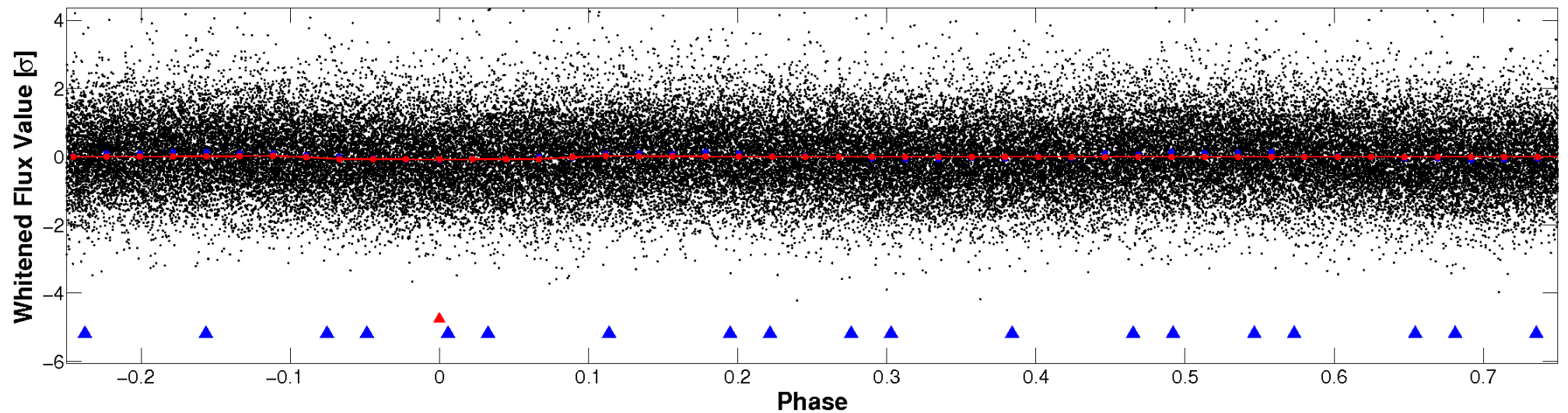


Non-Whitened Vs. Whitened Light Curve

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

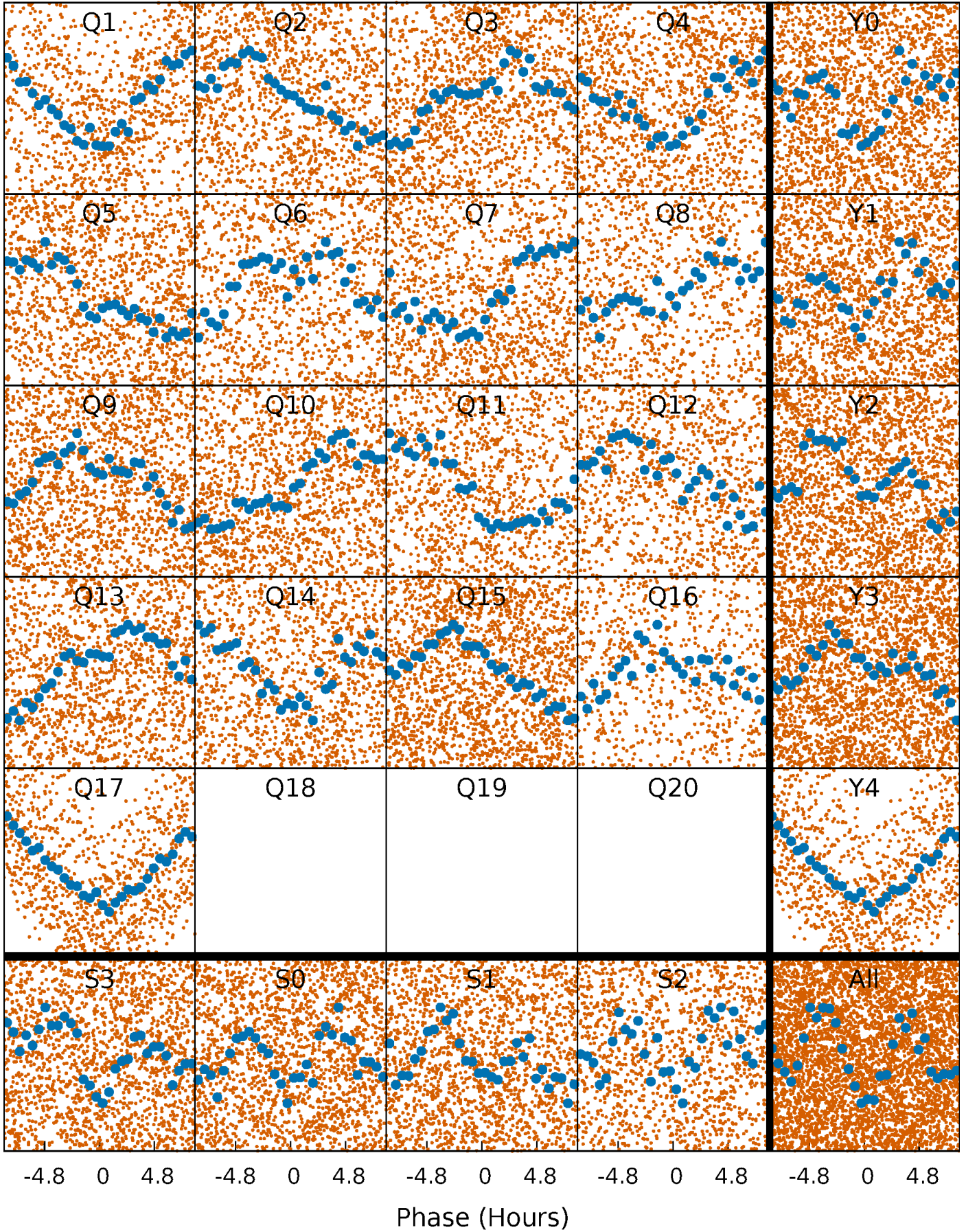


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



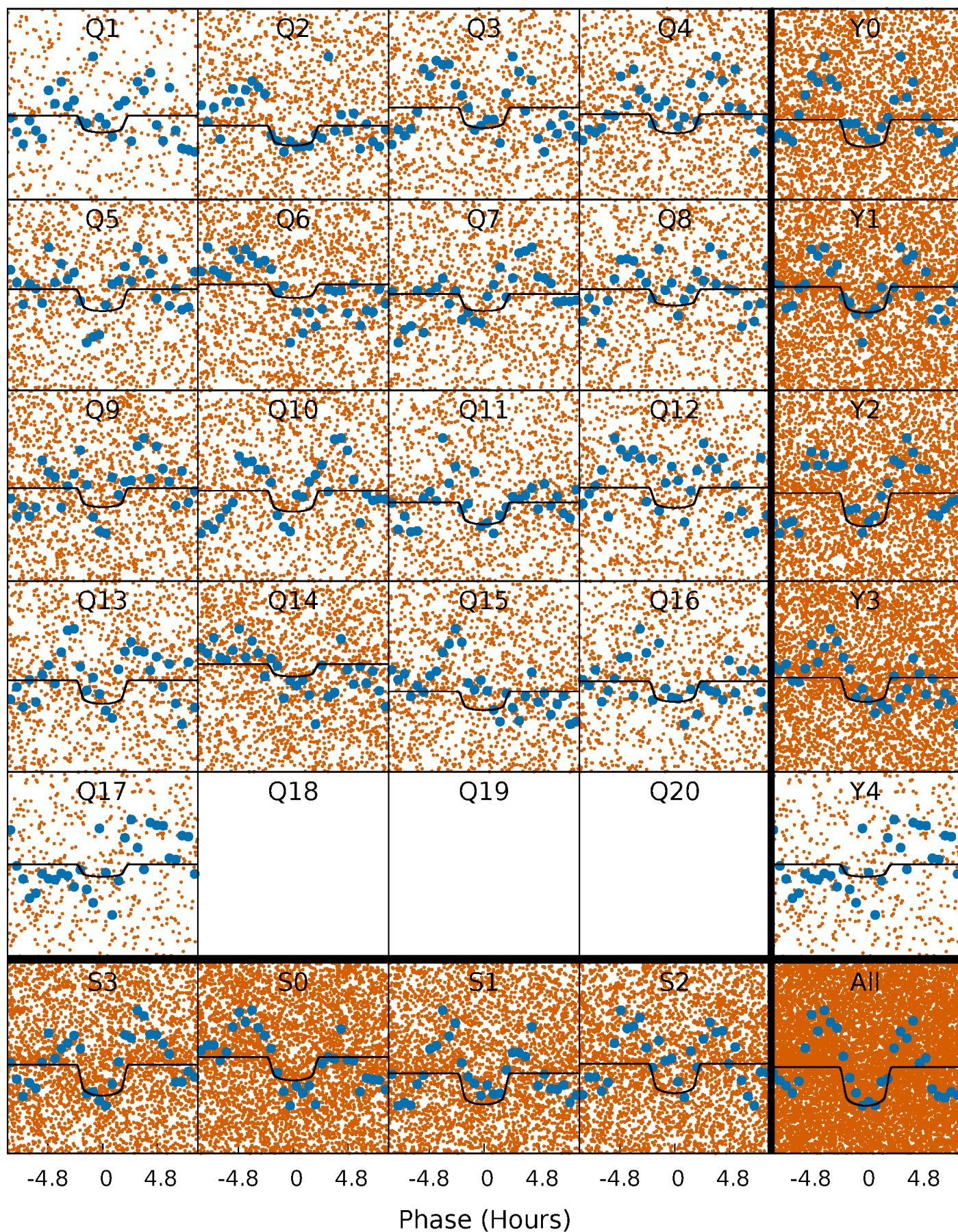
PDC Quarter-Phased Transit Curves

TCE 005218486-01 P= 0.915698 Days $T_0=132.298222$ (BKJD)



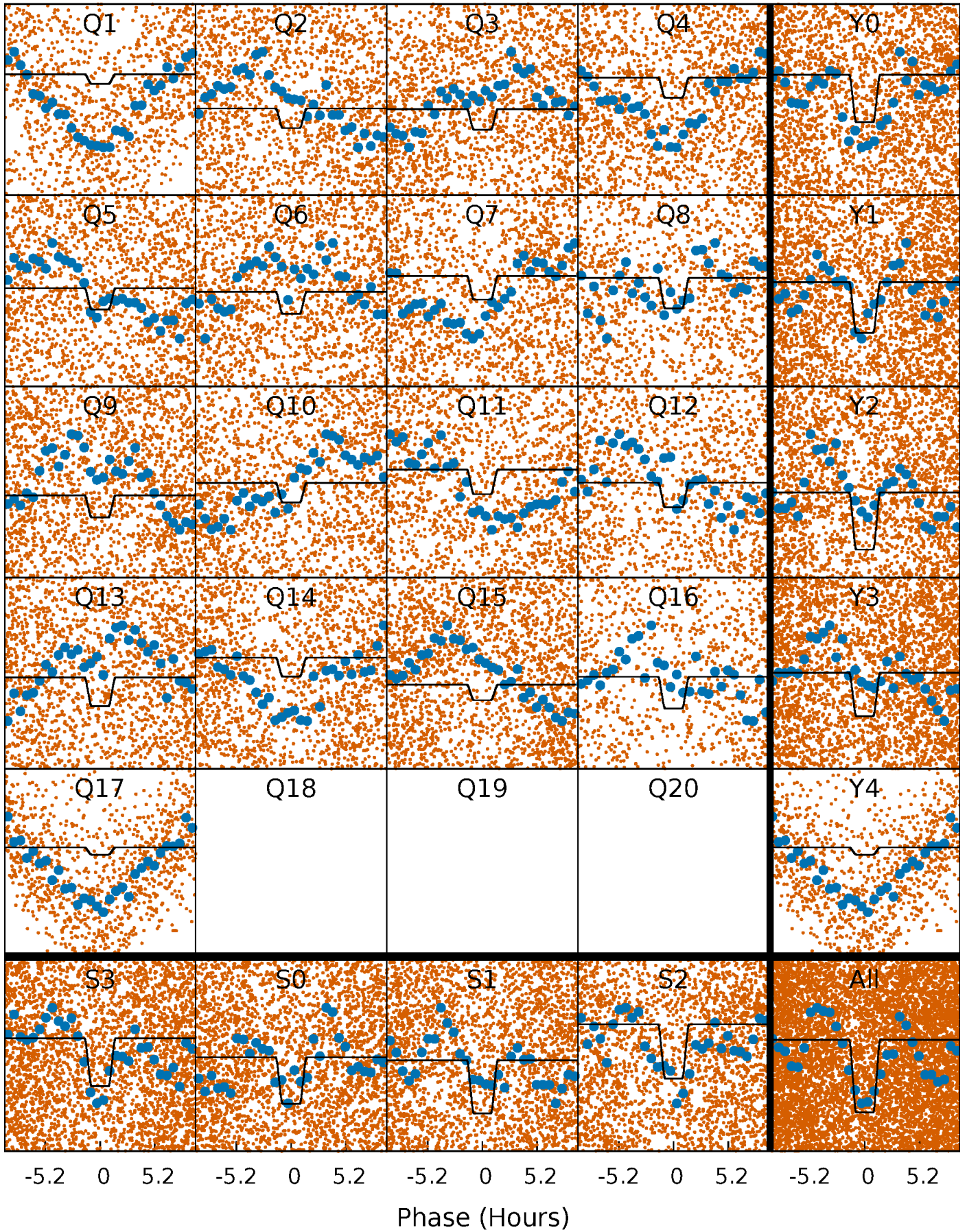
DV Quarter-Phased Transit Curves

TCE 005218486-01 P= 0.915698 Days $T_0=132.298222$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

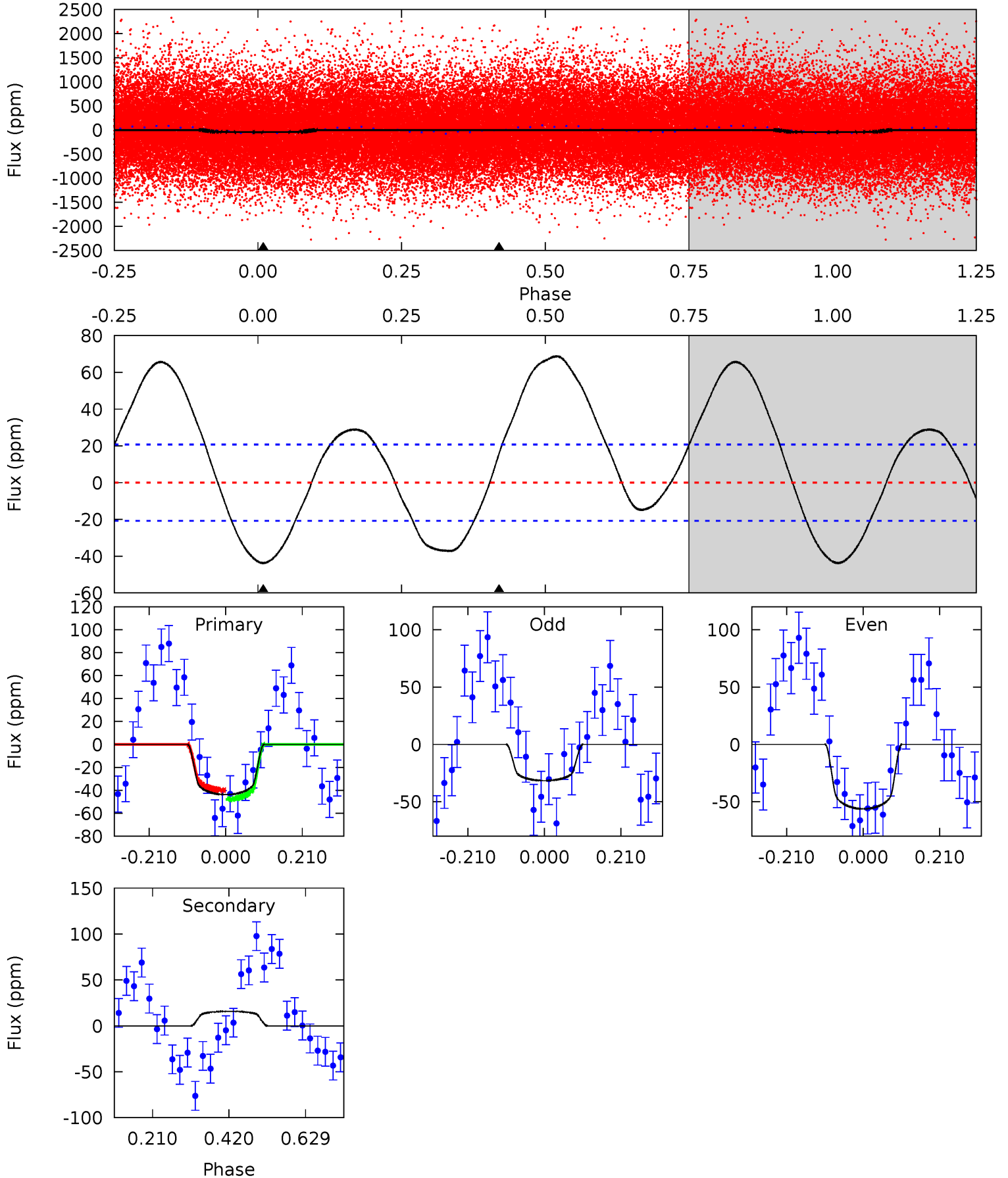
TCE 005218486-01 P= 0.915729 Days $T_0=132.282817$ (BKJD)



DV Model-Shift Uniqueness Test

005218486-01, P = 0.915698 Days, E = 131.382524 Days

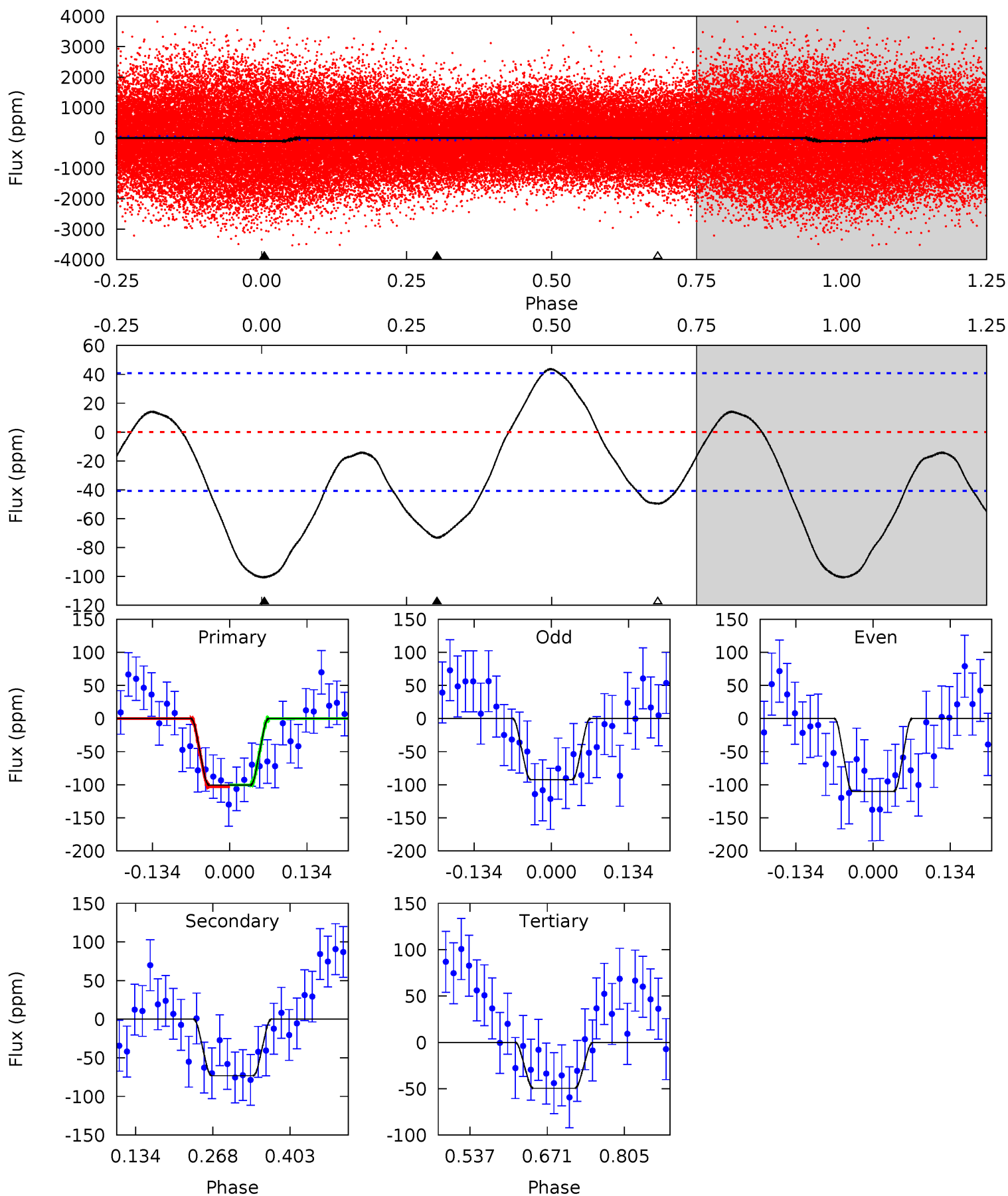
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.30	-3.36	0	0	4.41	1.25	4.61	9.30	9.30	-3.36	-3.36	2.61	0.90	0.61	0.85



Alt Model-Shift Uniqueness Test

005218486-01, P = 0.915729 Days, E = 131.367088 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	8.07	5.46	0	4.50	1.50	3.11	5.63	11.1	2.60	8.07	0.98	0.93	0.30	0.15



Stellar Parameters For KIC 005218486

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6639^{+185}_{-255}	$4.373^{+0.062}_{-0.188}$	$-0.180^{+0.250}_{-0.350}$	$1.177^{+0.344}_{-0.147}$	$1.200^{+0.165}_{-0.165}$	$1.036^{+0.340}_{-0.502}$
	+3%/-4%	+1%/-4%	+139%/-194%	+29%/-12%	+14%/-14%	+33%/-48%
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 005218486-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	16 ± 5	$1.10^{+0.44}_{-0.42}$	3239^{+226}_{-174}	-4847^{+575}_{-1044}	$-2.697^{+1.465}_{-4.299}$
Alt.	-73 ± 9	$1.44^{+0.46}_{-0.42}$	3223^{+222}_{-177}	5810^{+1170}_{-680}	$7.331^{+7.269}_{-3.076}$

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 $A_{obs} \gg 1.0$

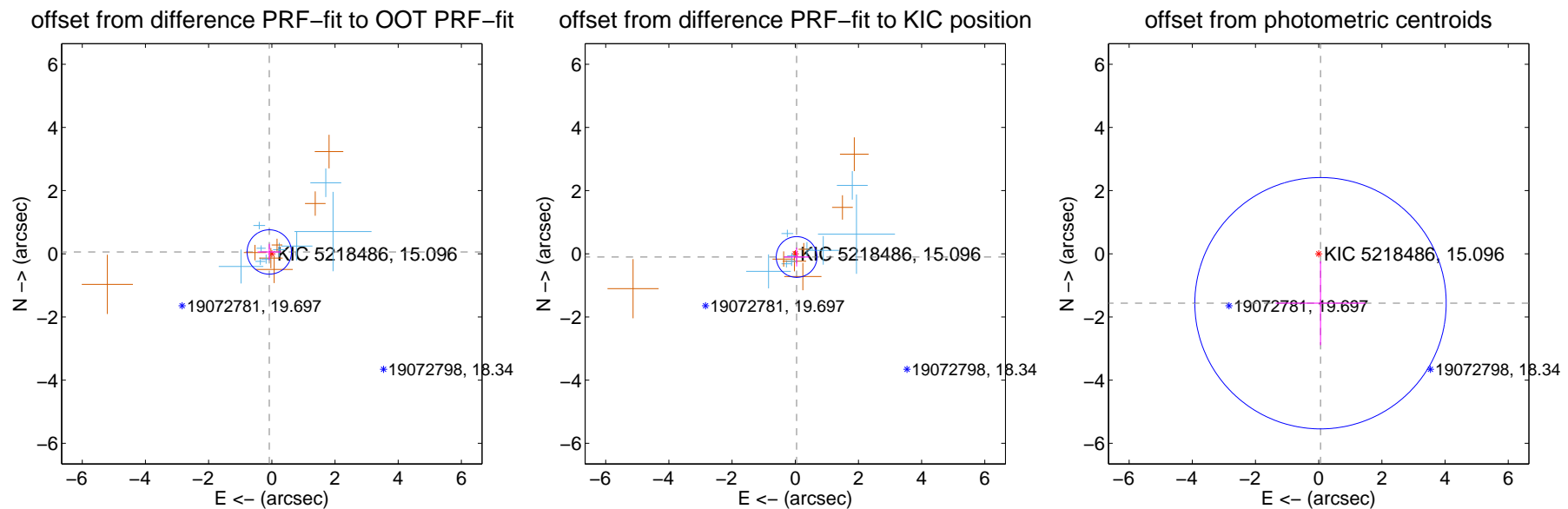
DV Centroid Data

Supplemental centroid analysis for 005218486-01. Kepler magnitude: 15.10. Transit SNR 7.41

There are 9 quarters with good PRF difference image offsets

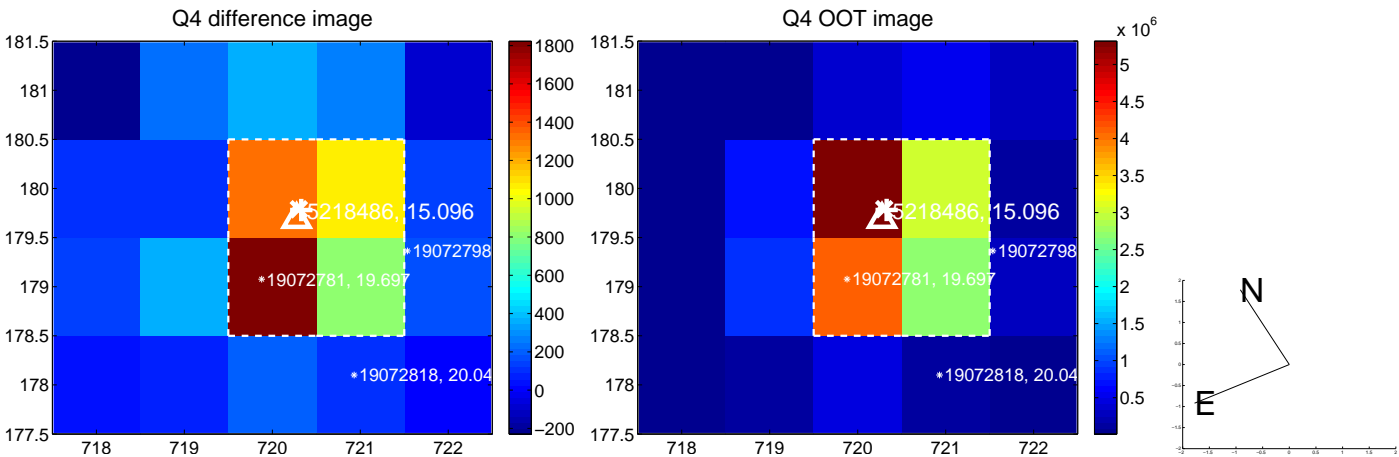
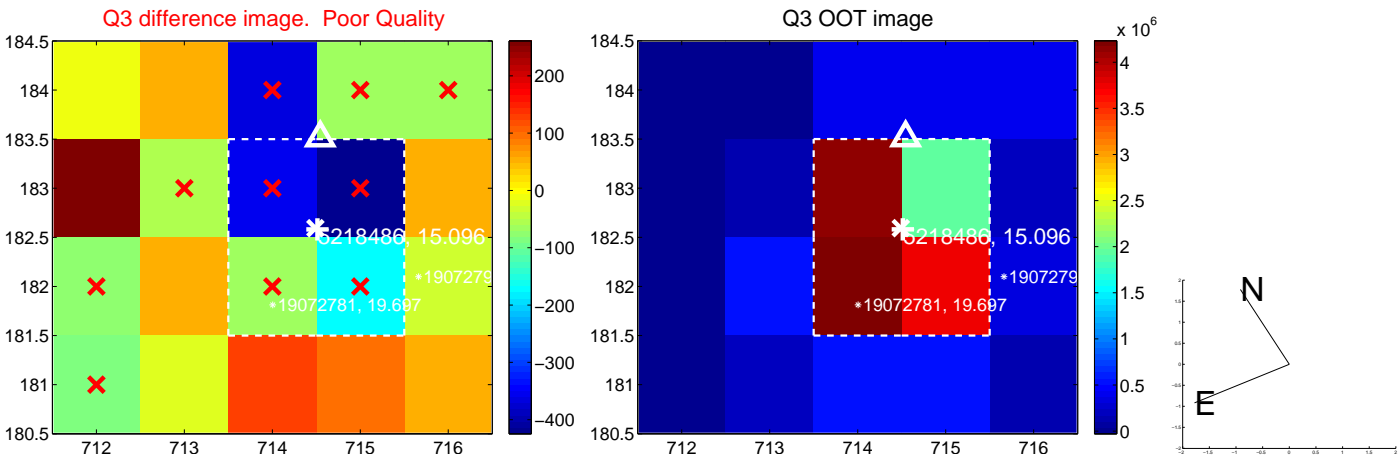
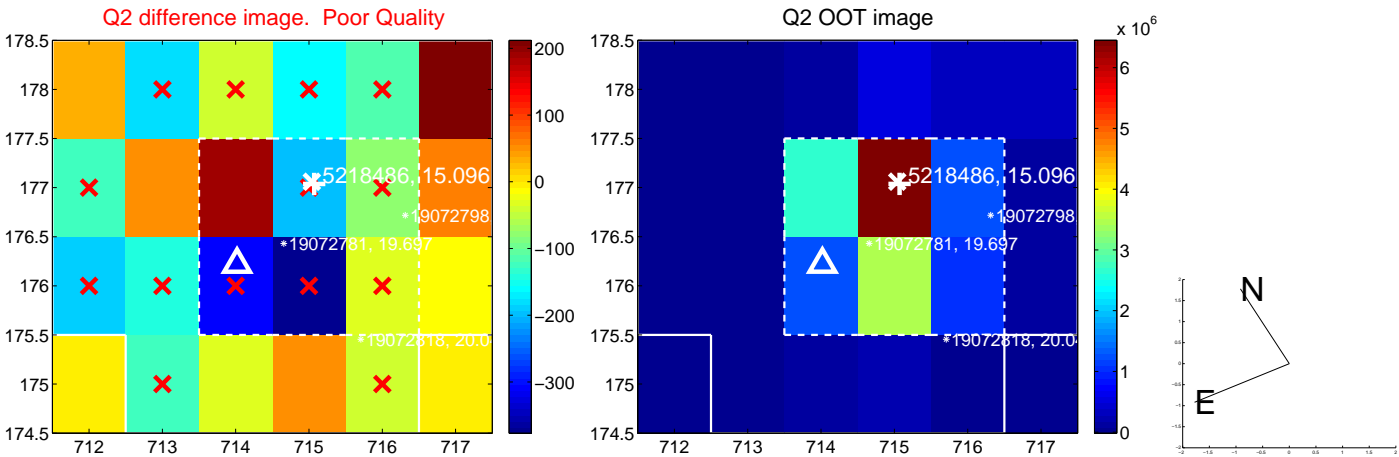
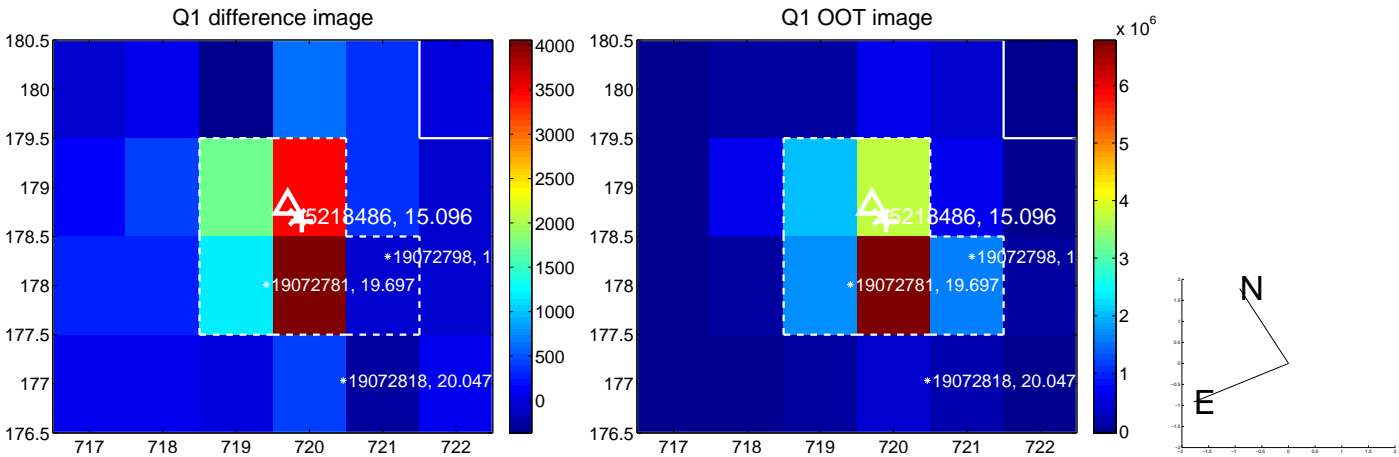
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.099 ± 0.234	0.42	0.080 ± 0.367	0.057 ± 0.256
PRF-fit source offset from KIC position	0.110 ± 0.215	0.51	-0.043 ± 0.405	-0.102 ± 0.299
photometric centroid source offset	1.57 ± 1.33	1.18	-0.06 ± 1.42	-1.57 ± 1.33

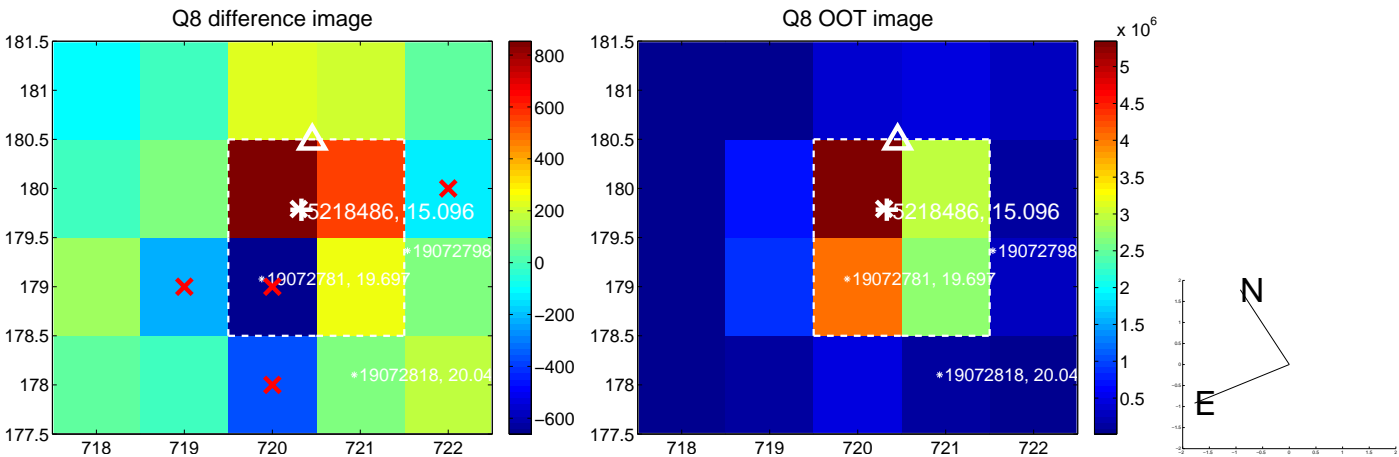
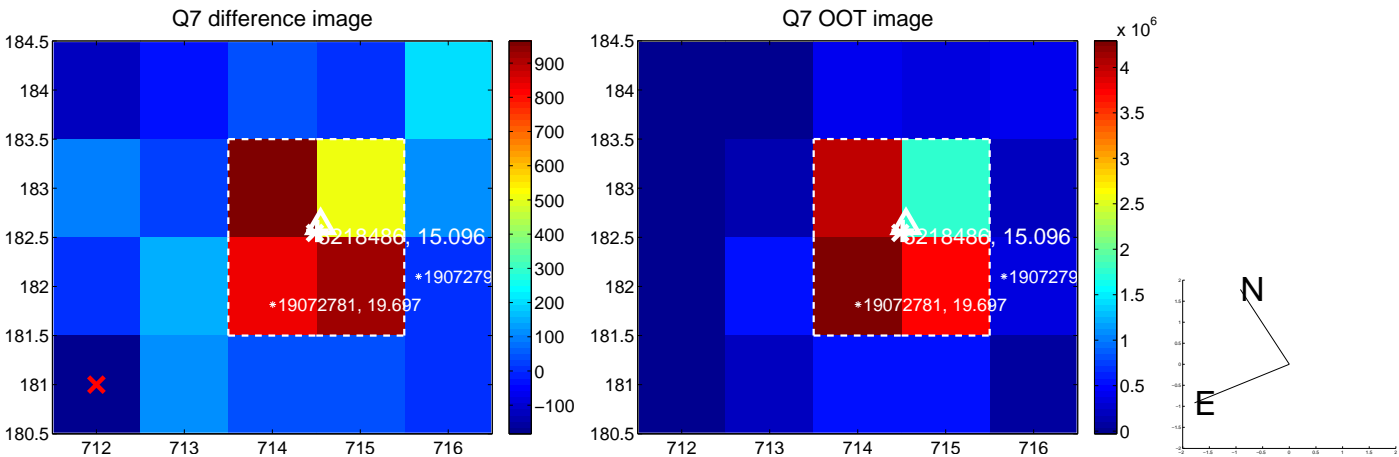
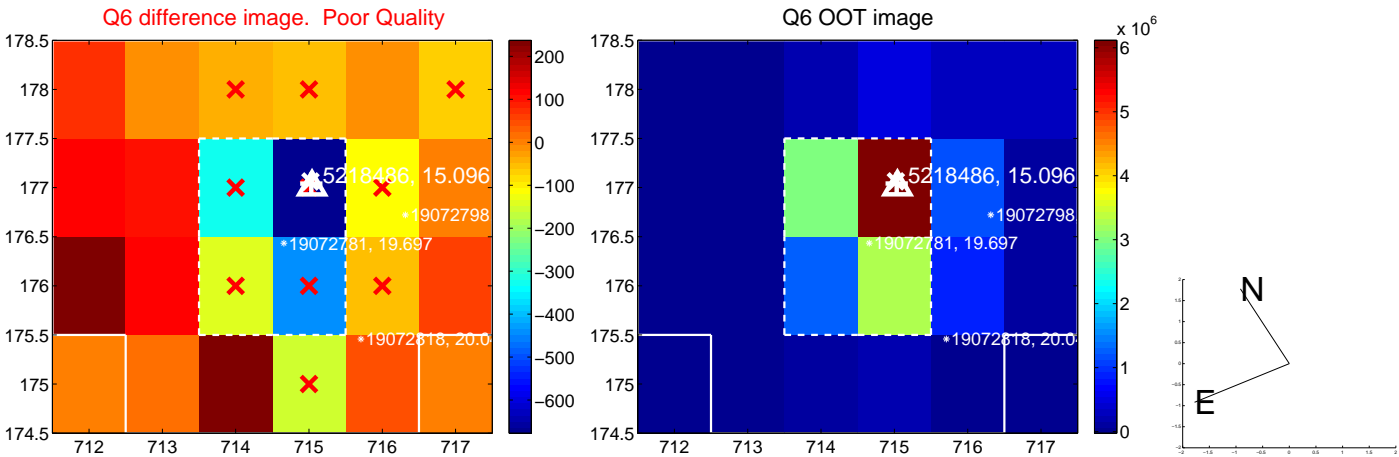
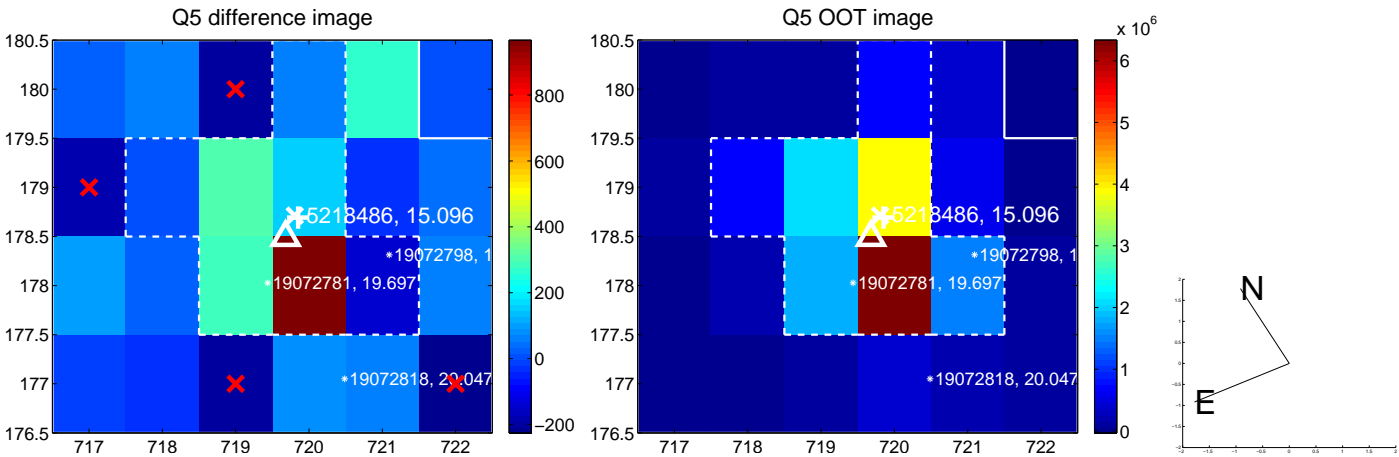


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

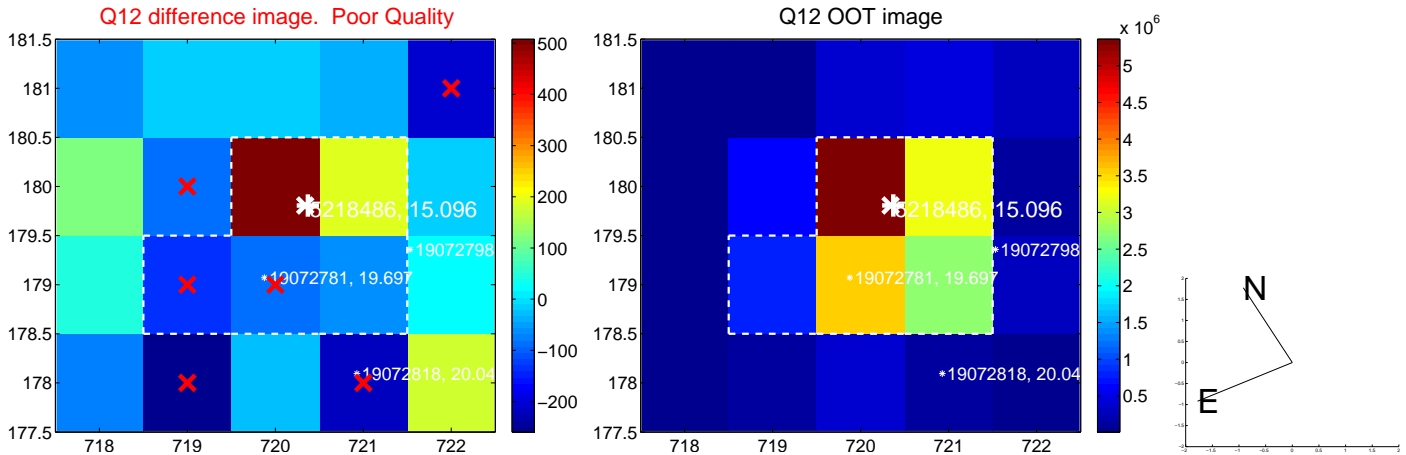
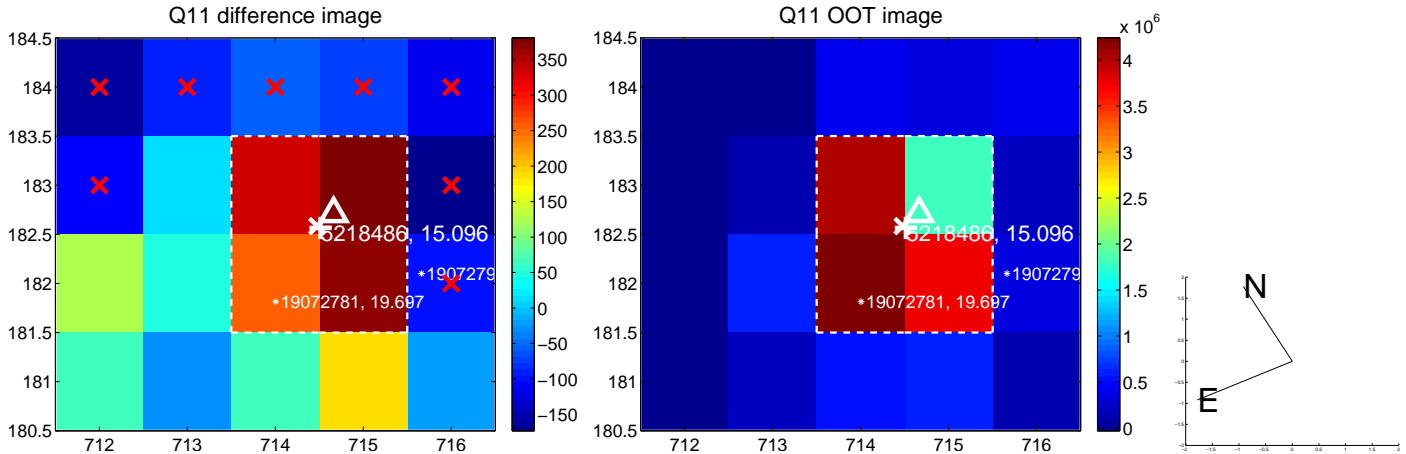
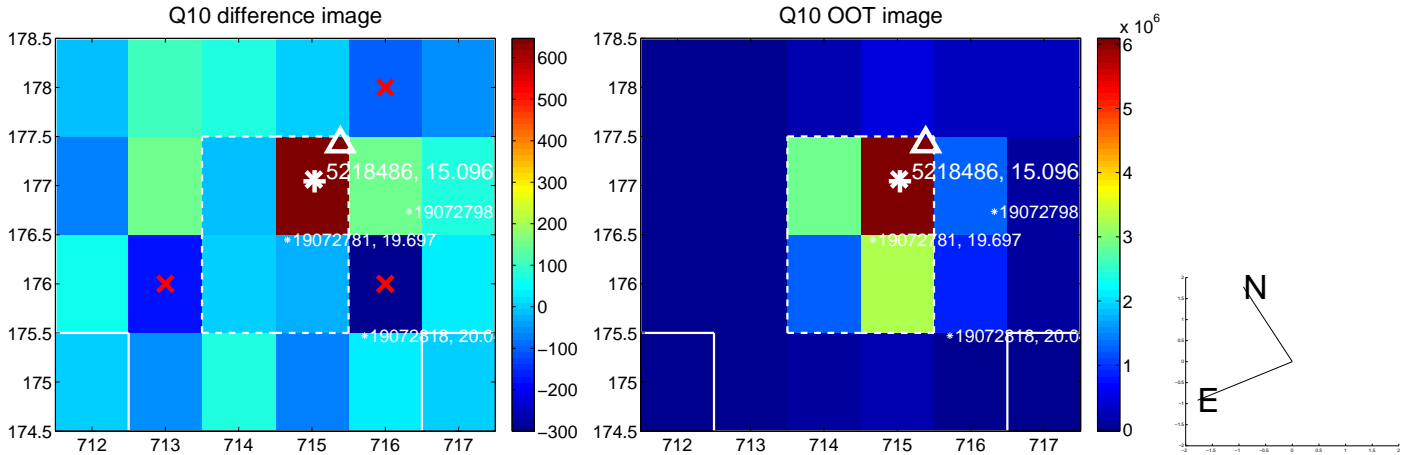
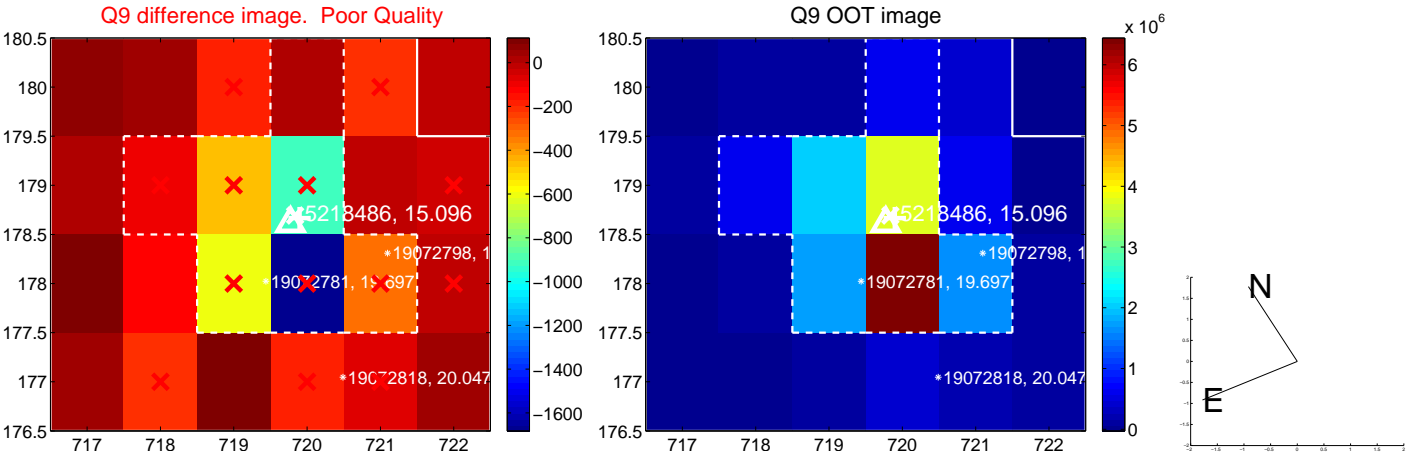
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



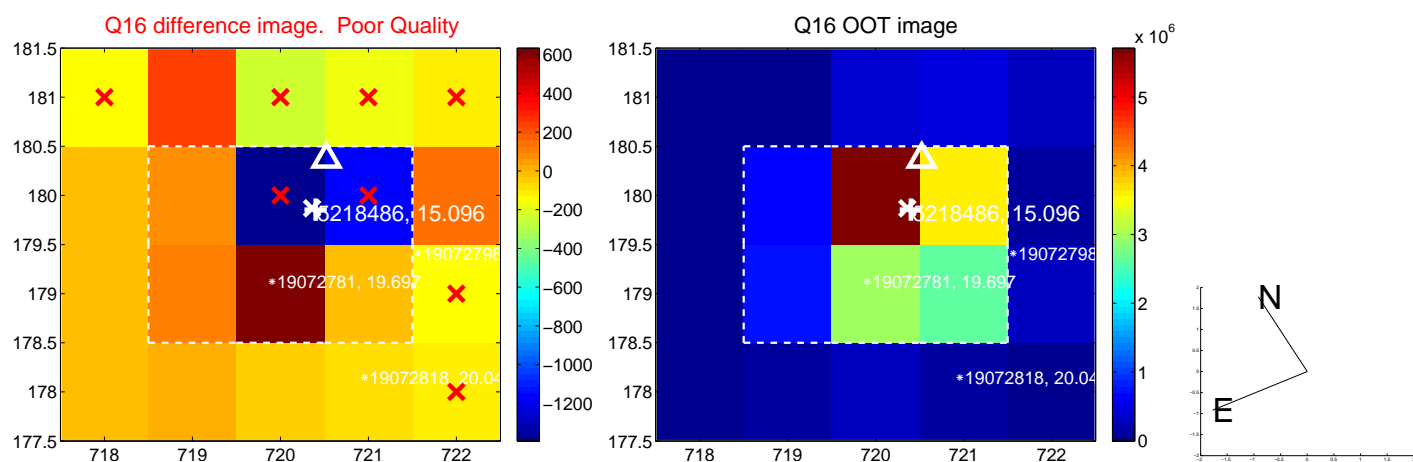
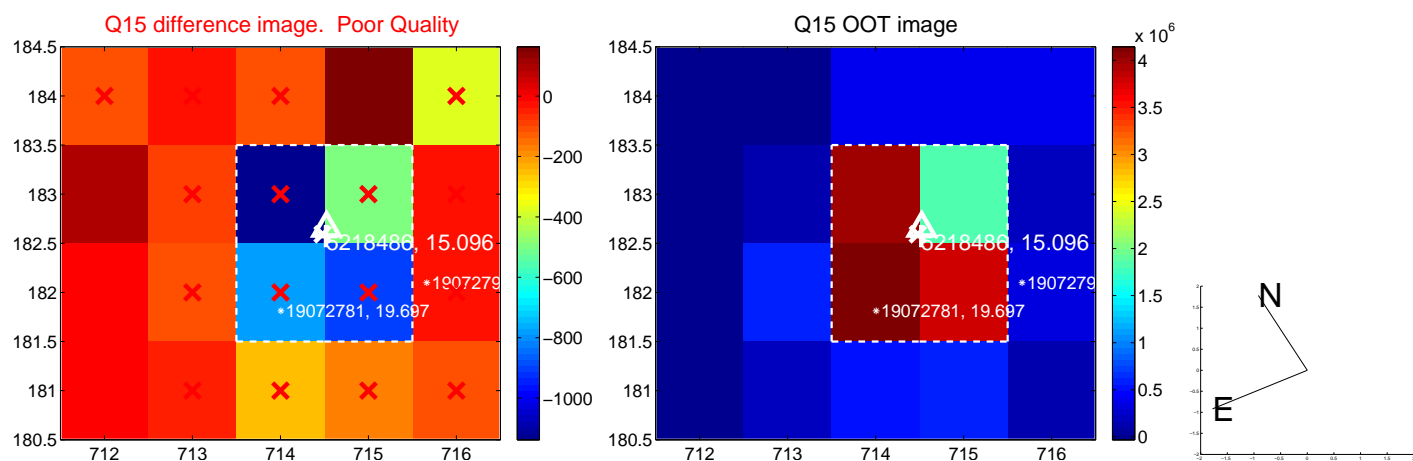
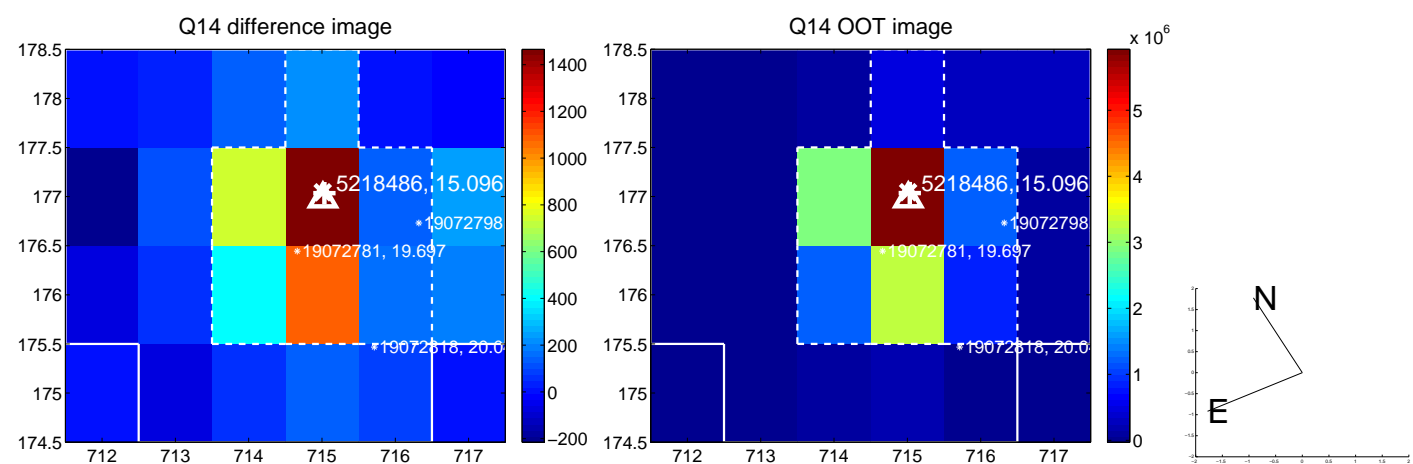
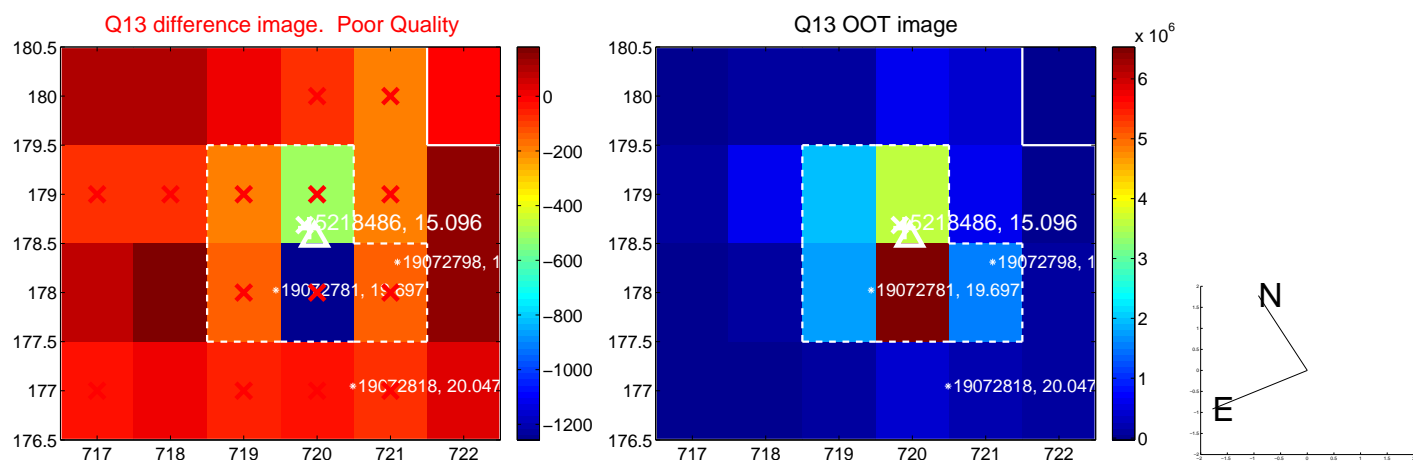
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



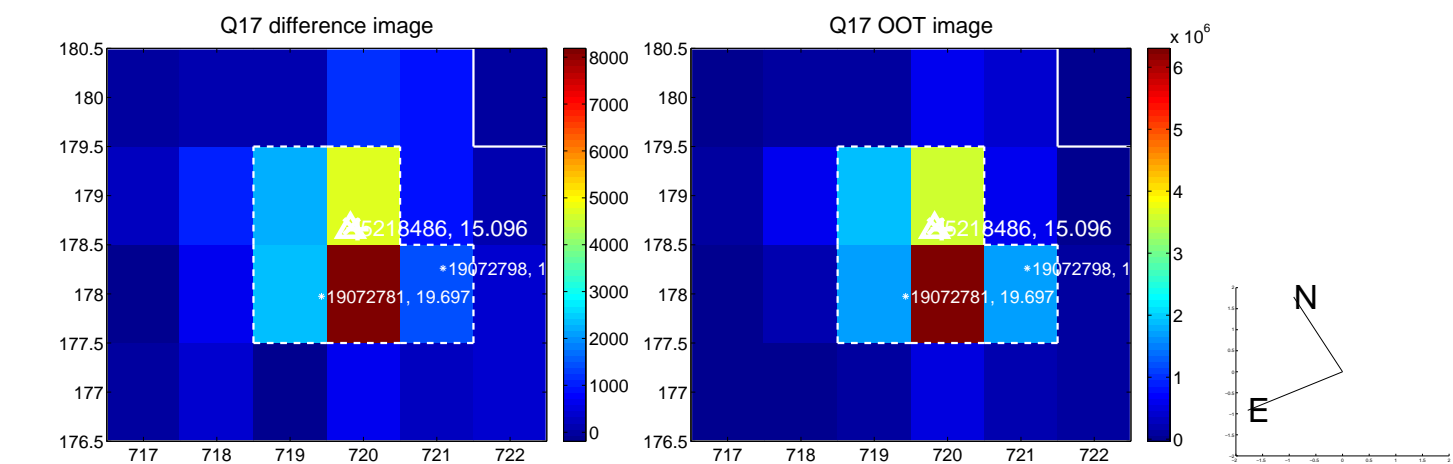
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



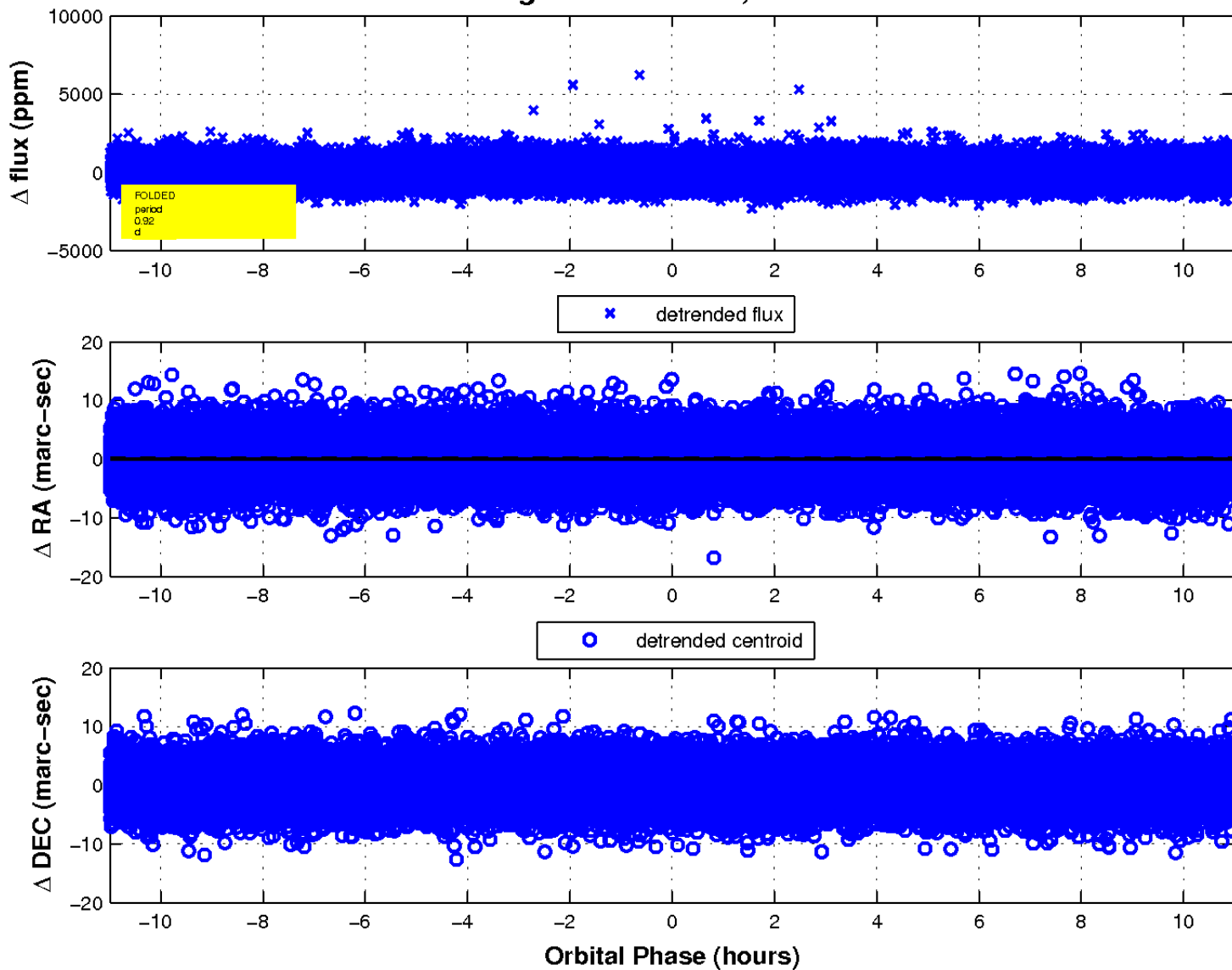
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

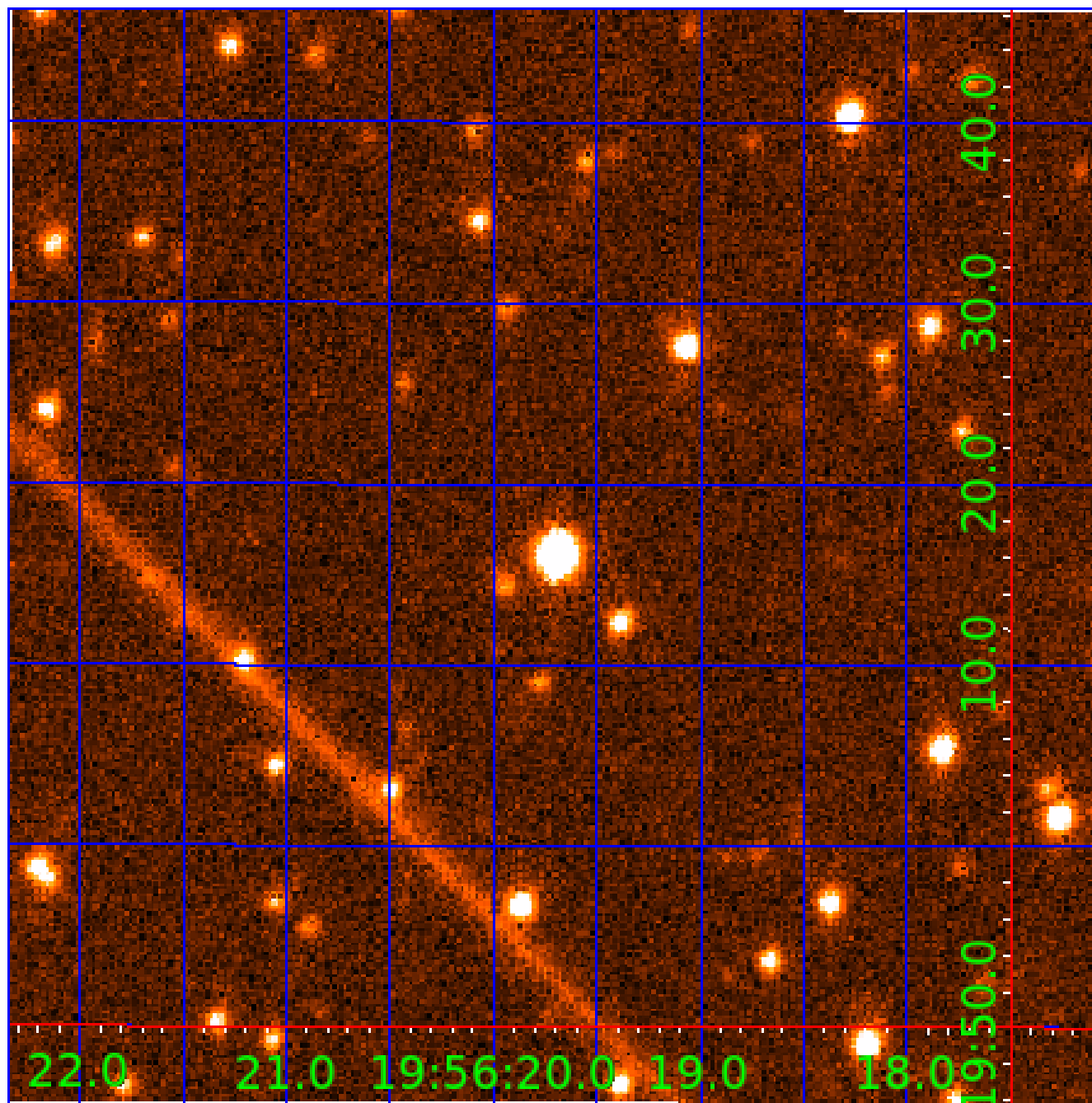


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005218486

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})
005218486-01	OBS	No	0.915698	132.298222	57.1	4.171	8.0	7.4	1.18	6639	1.06	6292.44
005218486-02	OBS	No	75.334782	187.863858	522.0	10.961	7.6	8.4	1.18	6639	2.99	17.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005218486-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005218486-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—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.

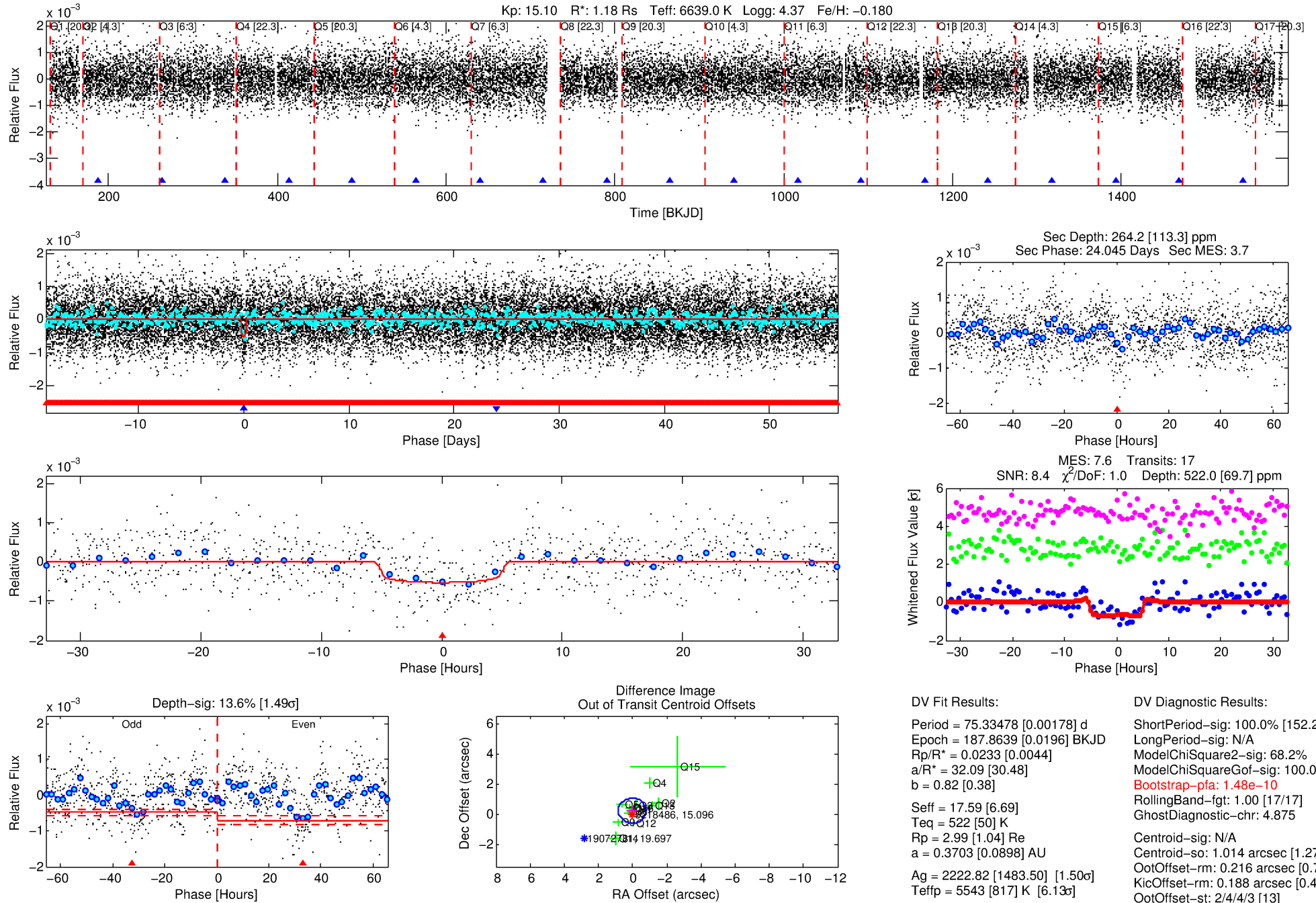
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005218486-02

No Significant Match Found

DV One-Page Summary

KIC: 5218486 Candidate: 2 of 2 Period: 75.335 d



DV Fit Results:

Period = 75.33478 [0.00178] d
Epoch = 187.8639 [0.0196] BKJD
Rp/R* = 0.0233 [0.0044]
a/R* = 32.09 [30.48]
b = 0.82 [0.38]
Seff = 17.59 [6.69]
Teq = 522 [50] K
Rp = 2.99 [1.04] Re
a = 0.3703 [0.0898] AU
Ag = 2222.82 [1483.50] [1.50 σ]
Teff = 5543 [817] K [6.13 σ]

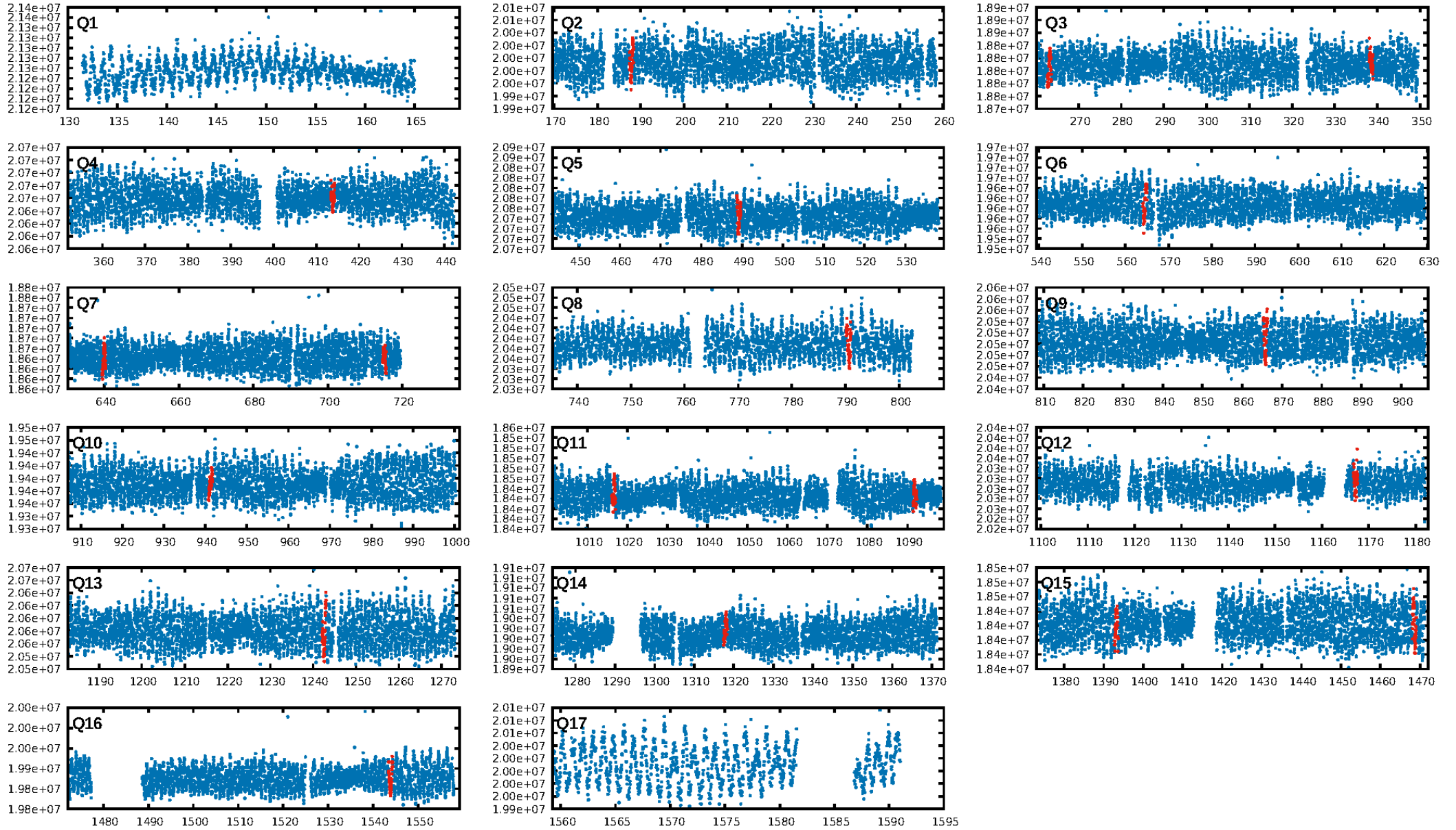
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [152.29 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 68.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.48e-10
RollingBand-fgt: 1.00 [17/17]
GhostDiagnostic-chr: 4.875
Centroid-sig: N/A
Centroid-so: 1.014 arcsec [1.27 σ]
OotOffset-rm: 0.216 arcsec [0.79 σ]
KicOffset-rm: 0.188 arcsec [0.41 σ]
OotOffset-st: 2/4/4/3 [13]
KicOffset-st: 2/4/4/3 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 0.00 [0/15]

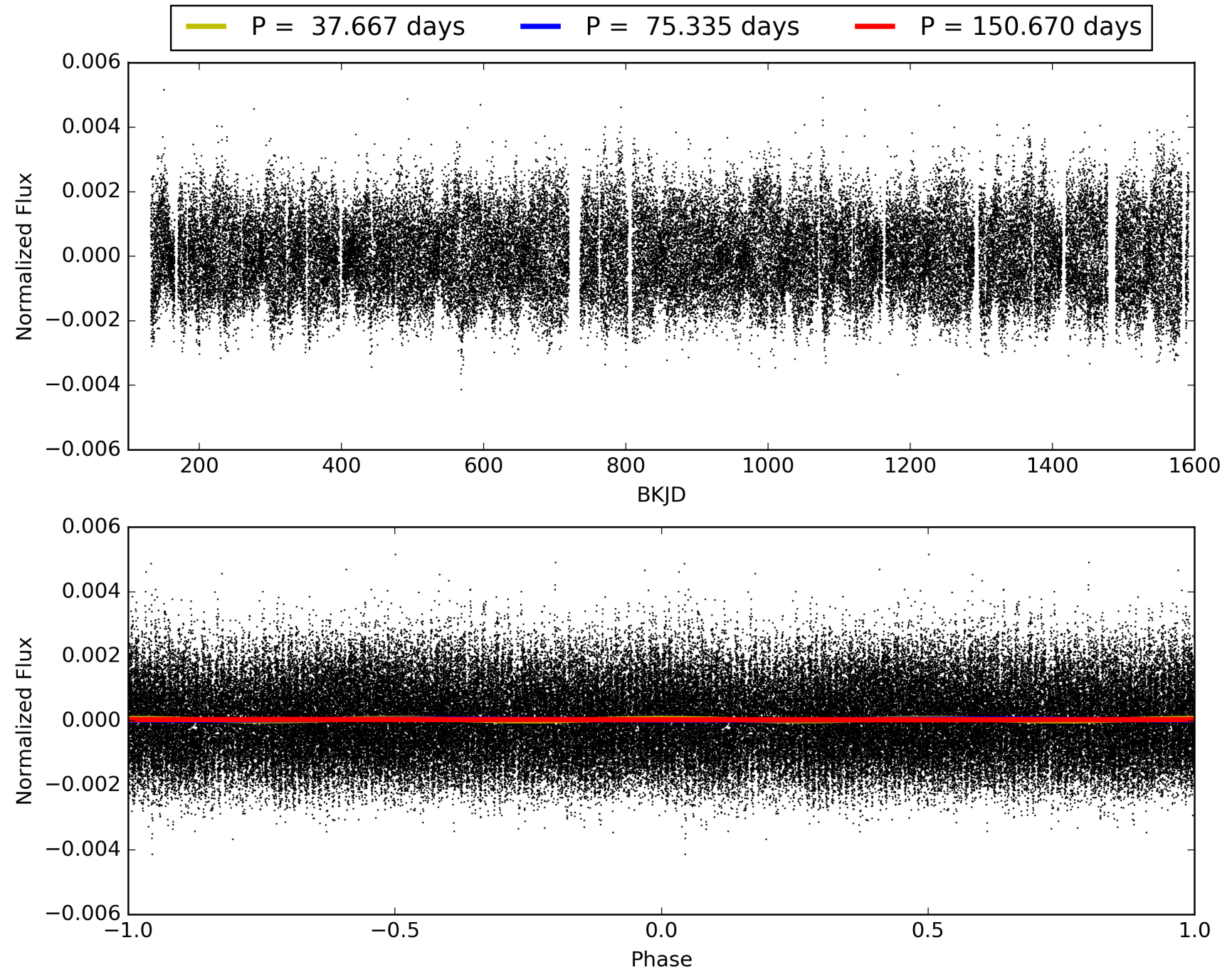
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:04:15 Z

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

TCE 005218486-02, PDC Light Curves

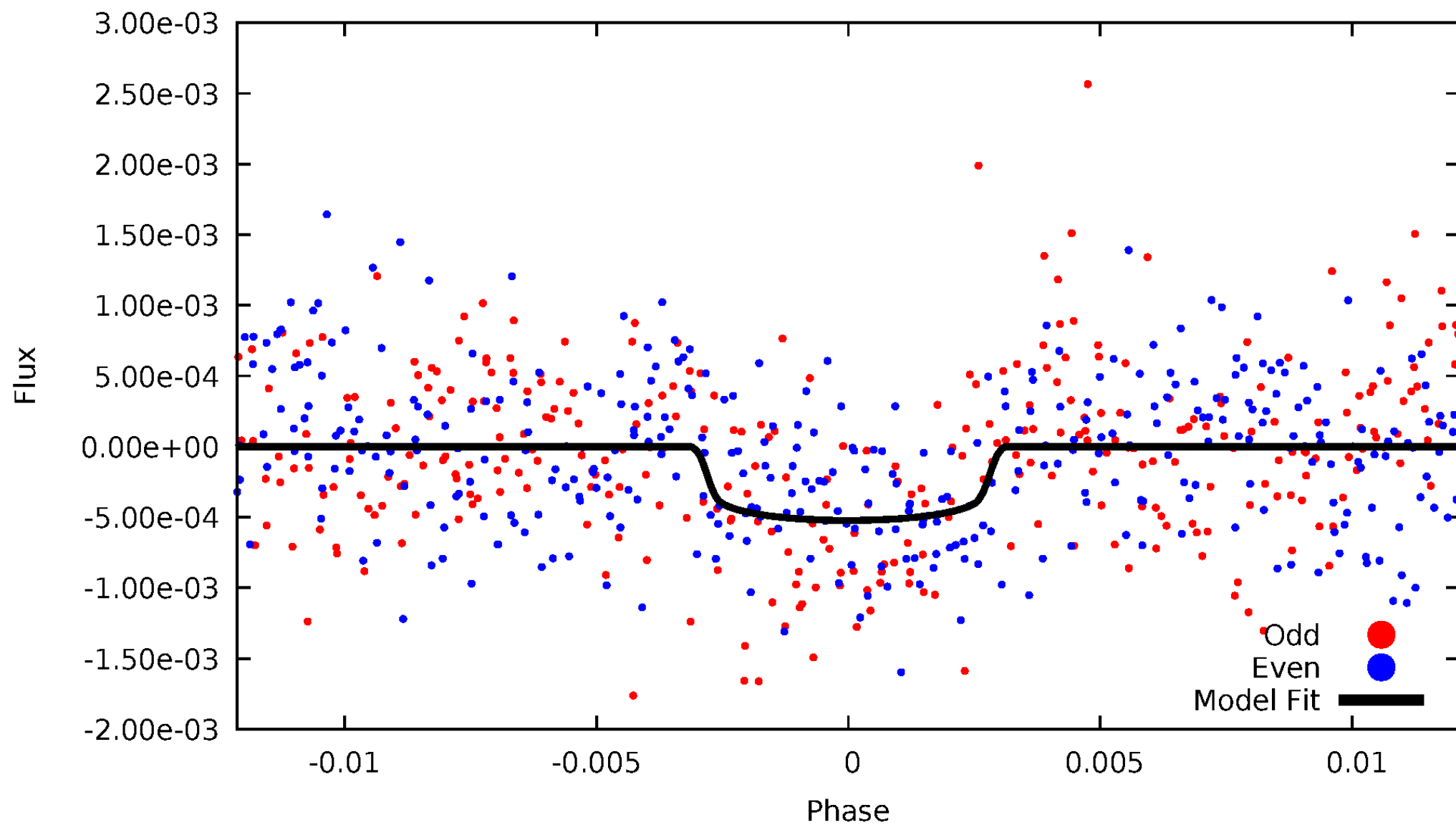


TCE 005218486-02



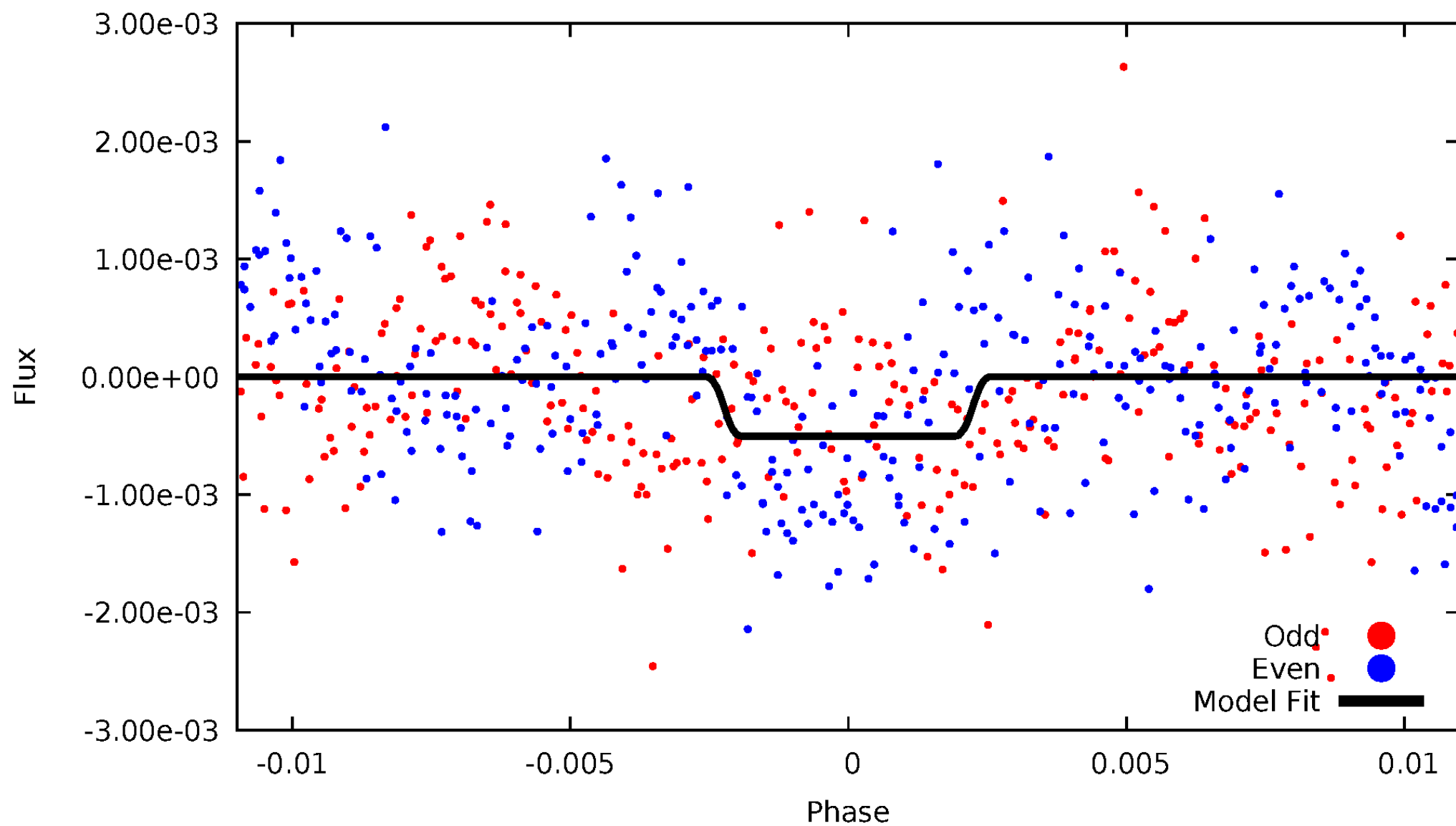
DV Odd/Even

TCE 005218486-02



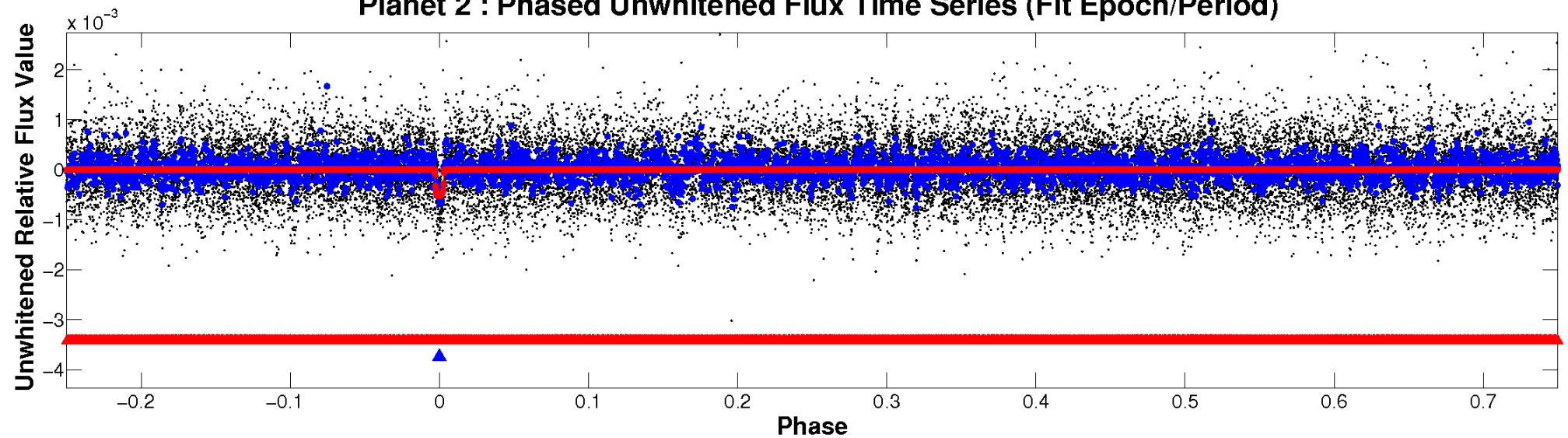
ALT Odd/Even

TCE 005218486-02

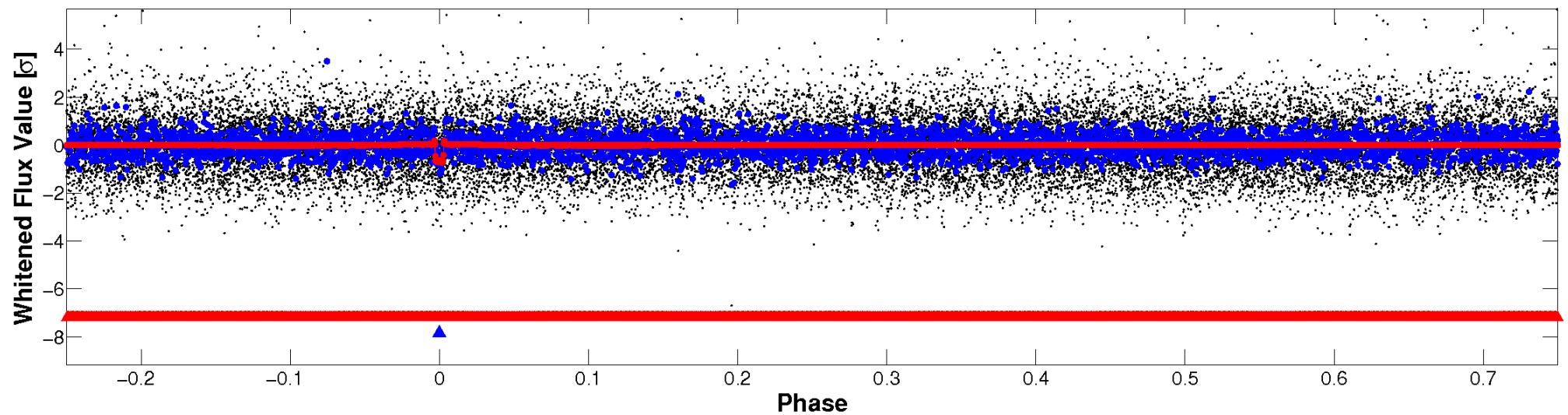


Non-Whitened Vs. Whitened Light Curve

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

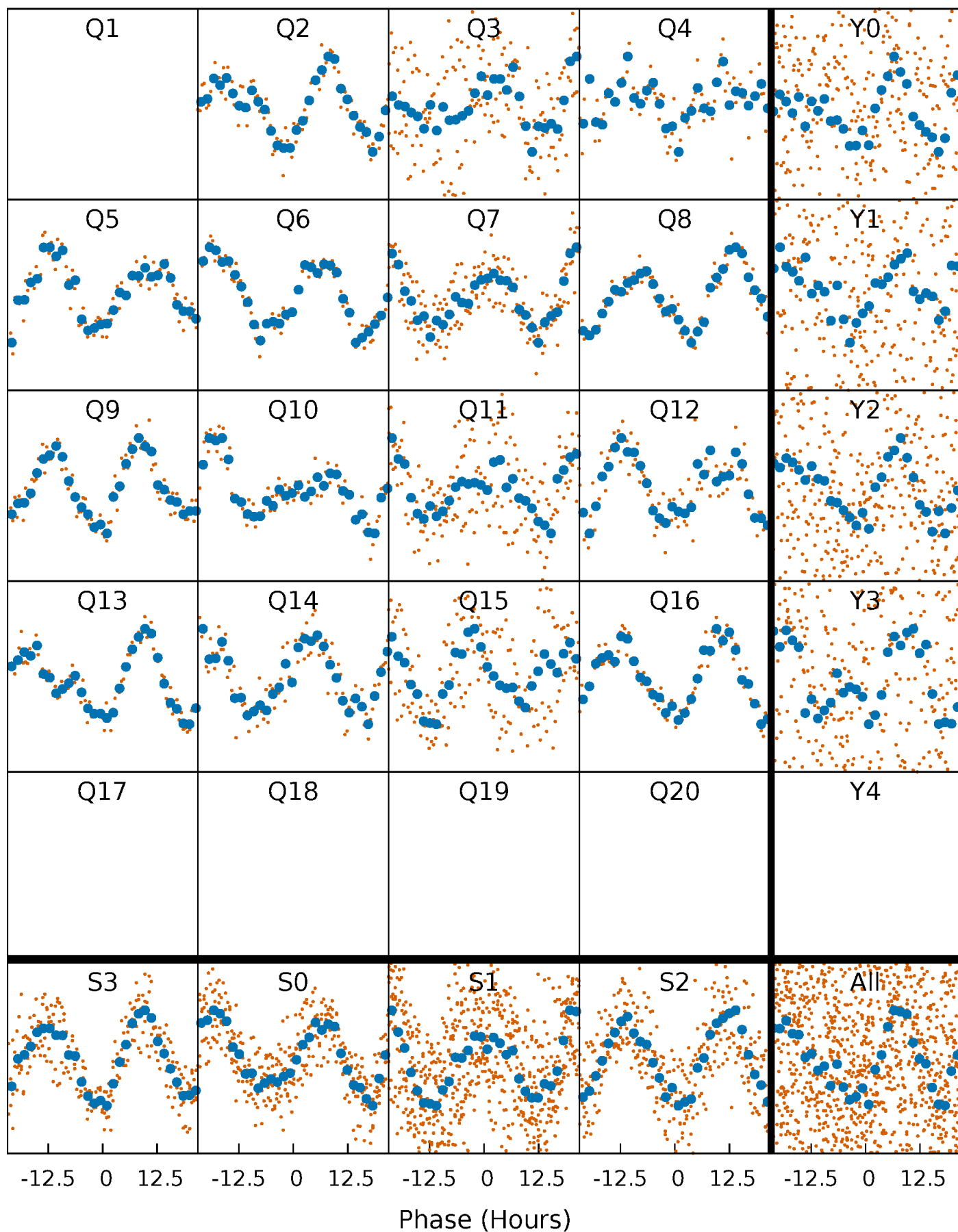


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



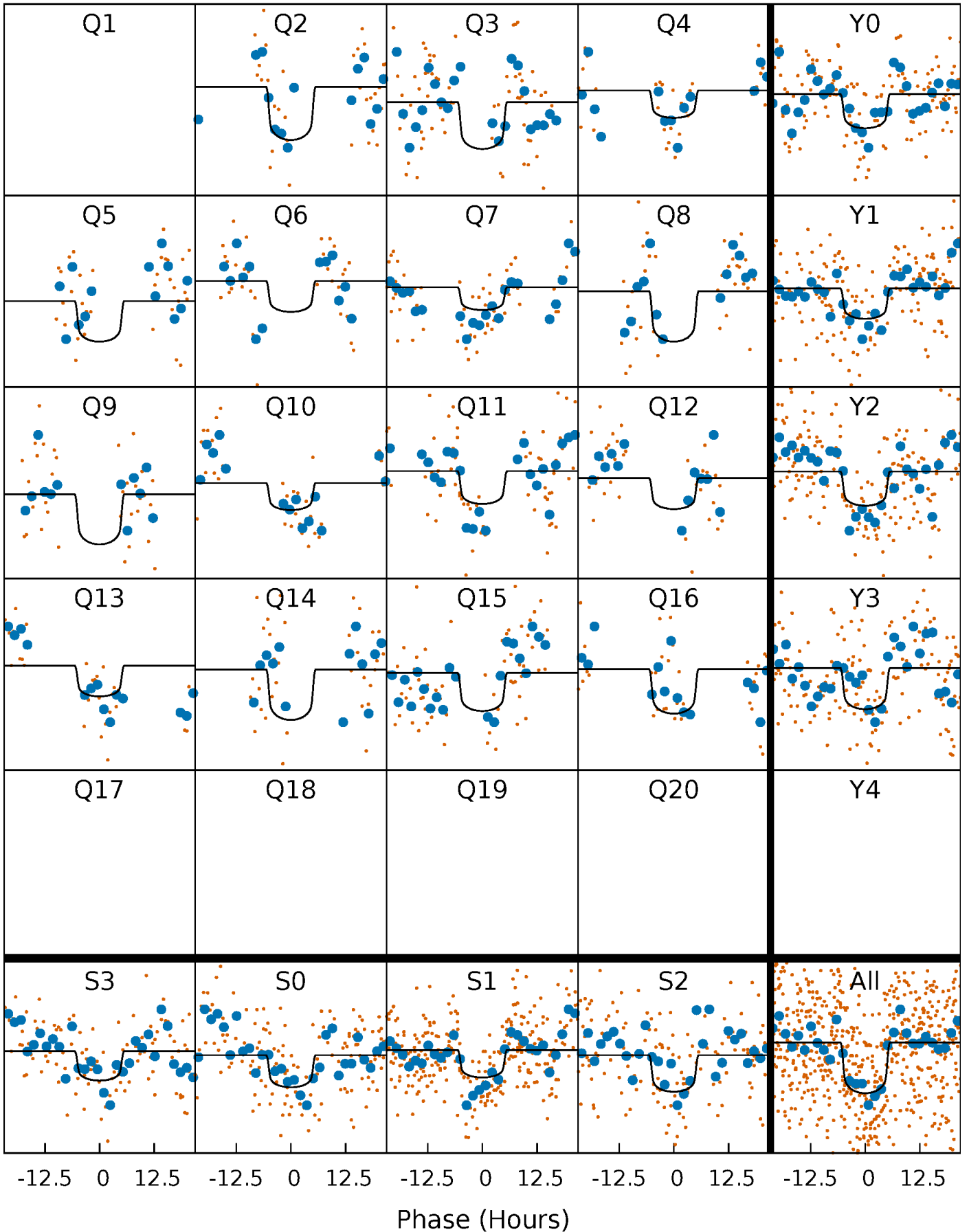
PDC Quarter-Phased Transit Curves

TCE 005218486-02 P= 75.334782 Days $T_0=187.863858$ (BKJD)



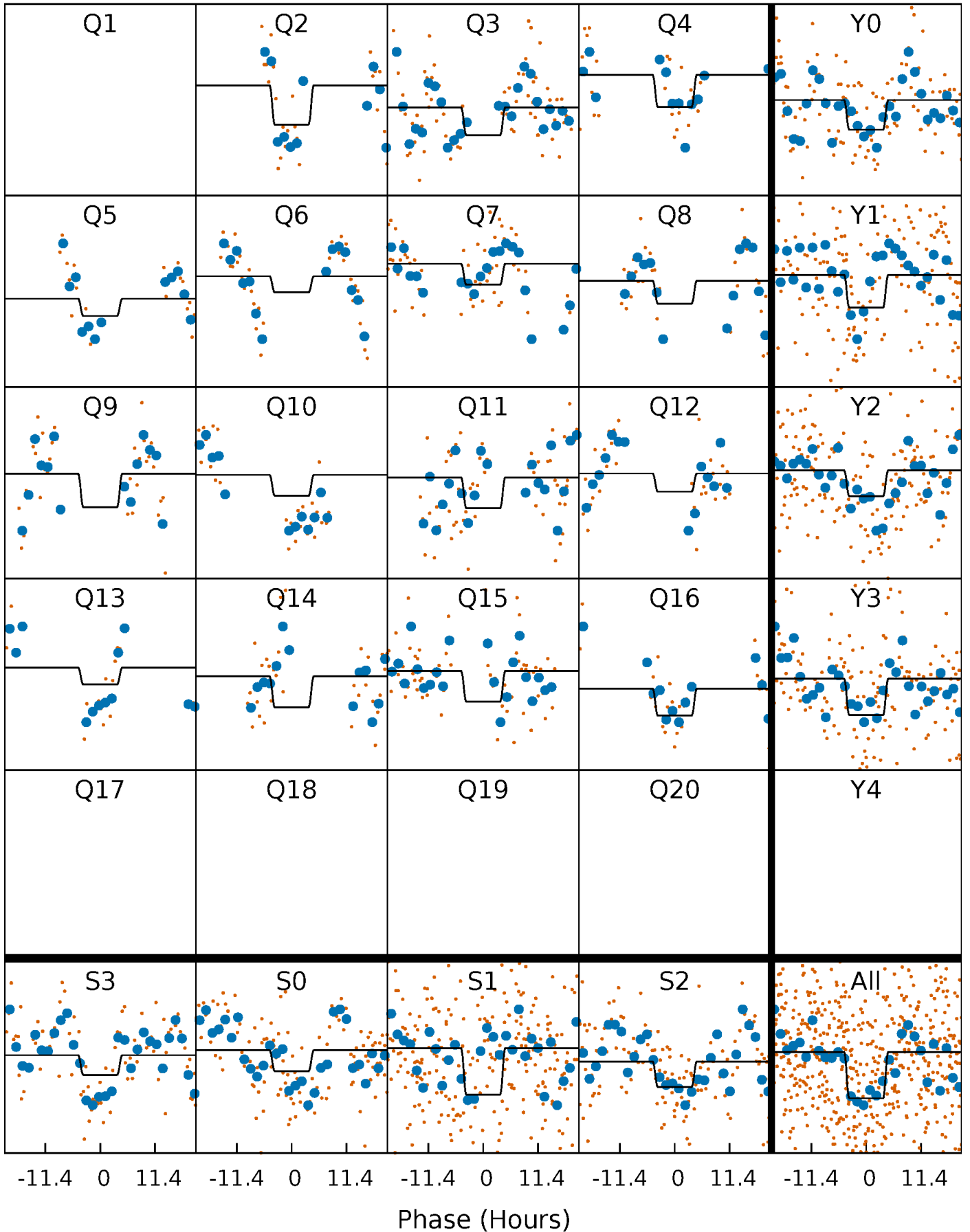
DV Quarter-Phased Transit Curves

TCE 005218486-02 P= 75.334782 Days $T_0=187.863858$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

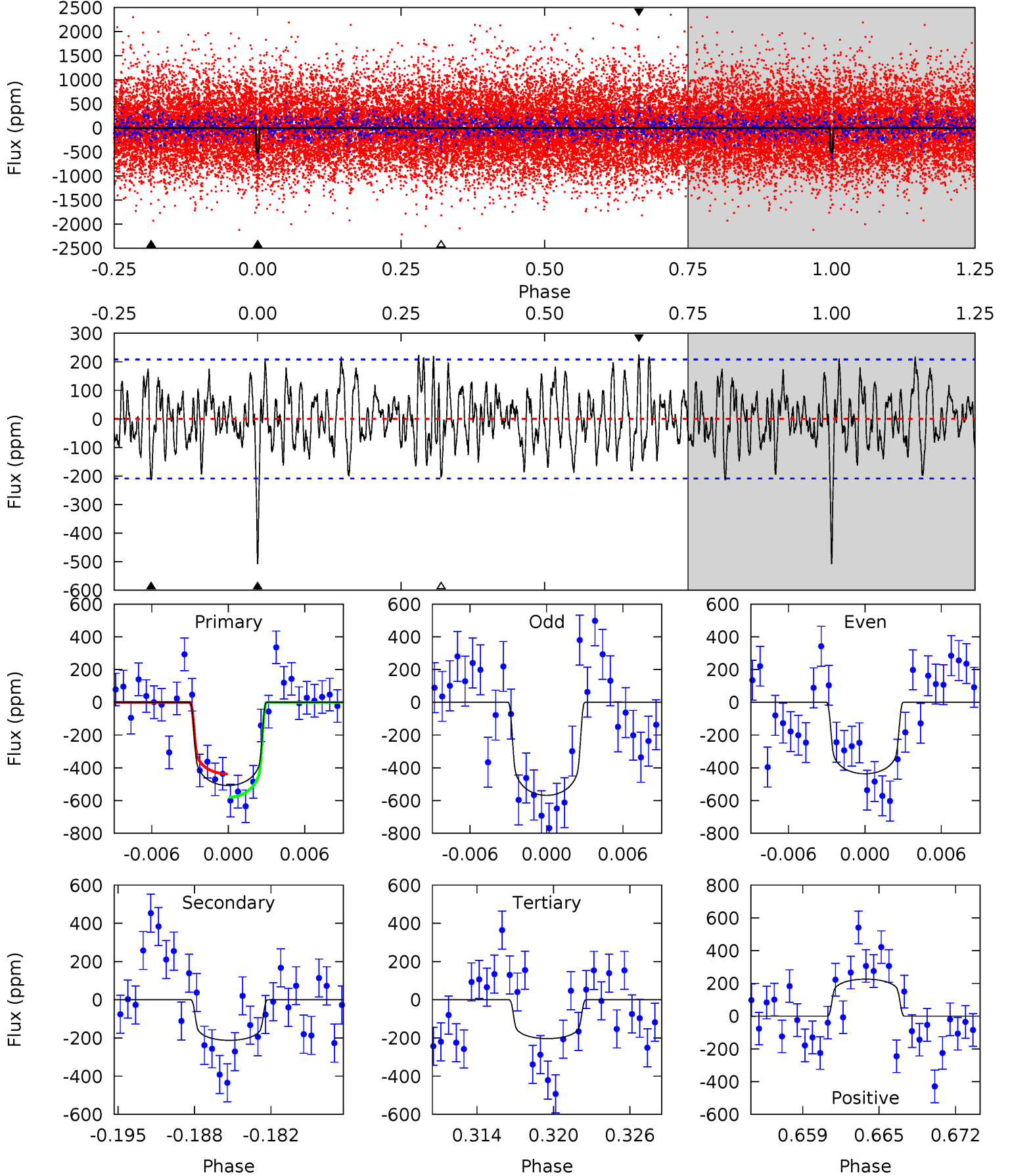
TCE 005218486-02 P= 75.339958 Days $T_0=187.781668$ (BKJD)



DV Model-Shift Uniqueness Test

005218486-02, P = 75.334782 Days, E = 112.529076 Days

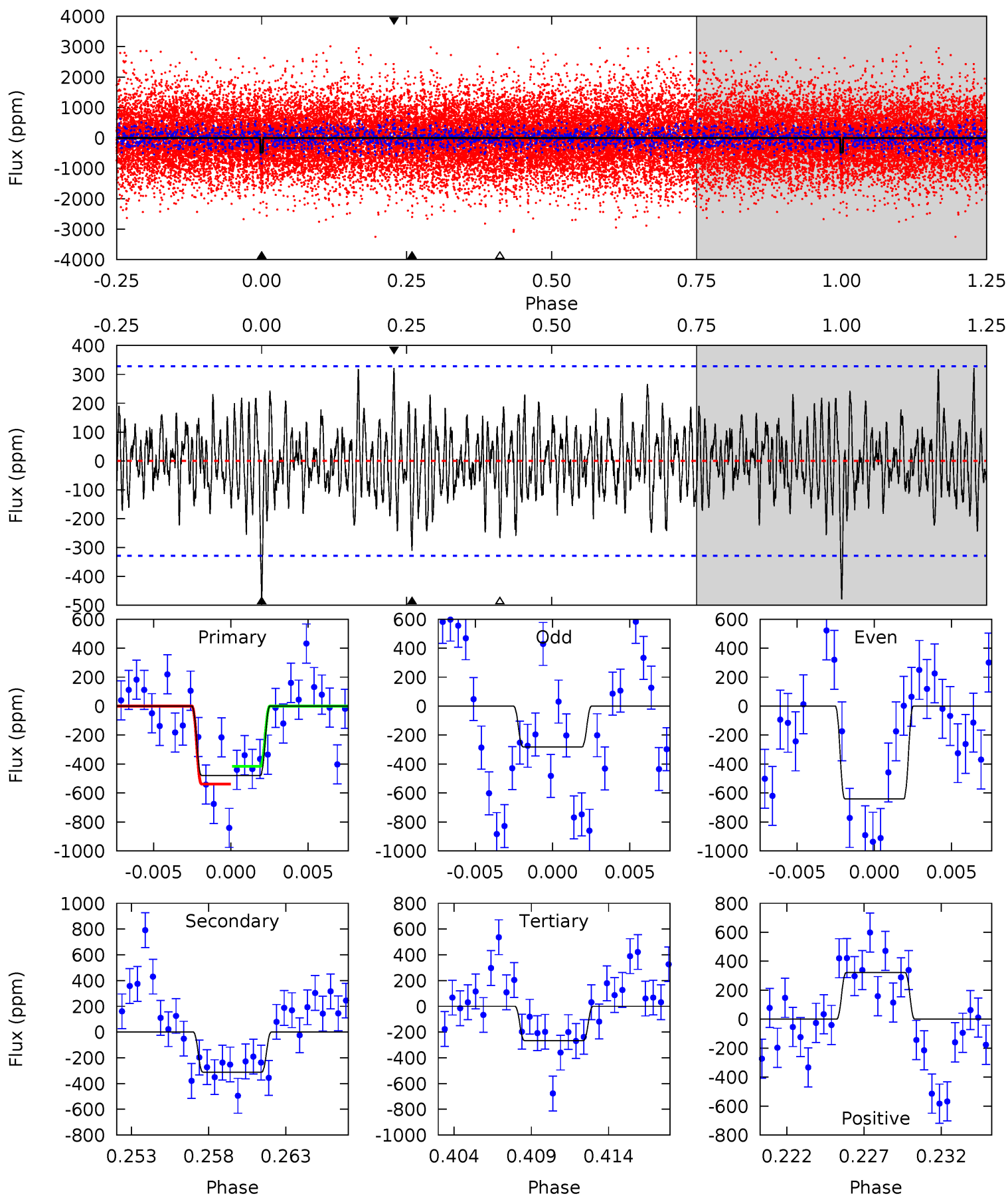
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	5.21	4.99	5.54	5.11	2.73	2.03	7.48	6.93	0.22	-0.33	1.62	0.96	0.31	1.75



Alt Model-Shift Uniqueness Test

005218486-02, P = 75.339958 Days, E = 112.441710 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.53	4.89	4.19	5.05	5.16	2.80	1.53	3.34	2.48	0.70	-0.16	2.81	1.01	0.40	0.96



Stellar Parameters For KIC 005218486

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6639^{+185}_{-255}	$4.373^{+0.062}_{-0.188}$	$-0.180^{+0.250}_{-0.350}$	$1.177^{+0.344}_{-0.147}$	$1.200^{+0.165}_{-0.165}$	$1.036^{+0.340}_{-0.502}$
	+3%/-4%	+1%/-4%	+139%/-194%	+29%/-12%	+14%/-14%	+33%/-48%
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 005218486-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-212 ± 41	$3.10^{+0.74}_{-0.65}$	748^{+49}_{-44}	5273^{+555}_{-442}	1581^{+989}_{-587}
Alt.	-311 ± 64	$2.99^{+0.76}_{-0.65}$	742^{+47}_{-40}	5847^{+787}_{-565}	2617^{+1802}_{-1053}

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 $A_{obs} \gg 1.0$

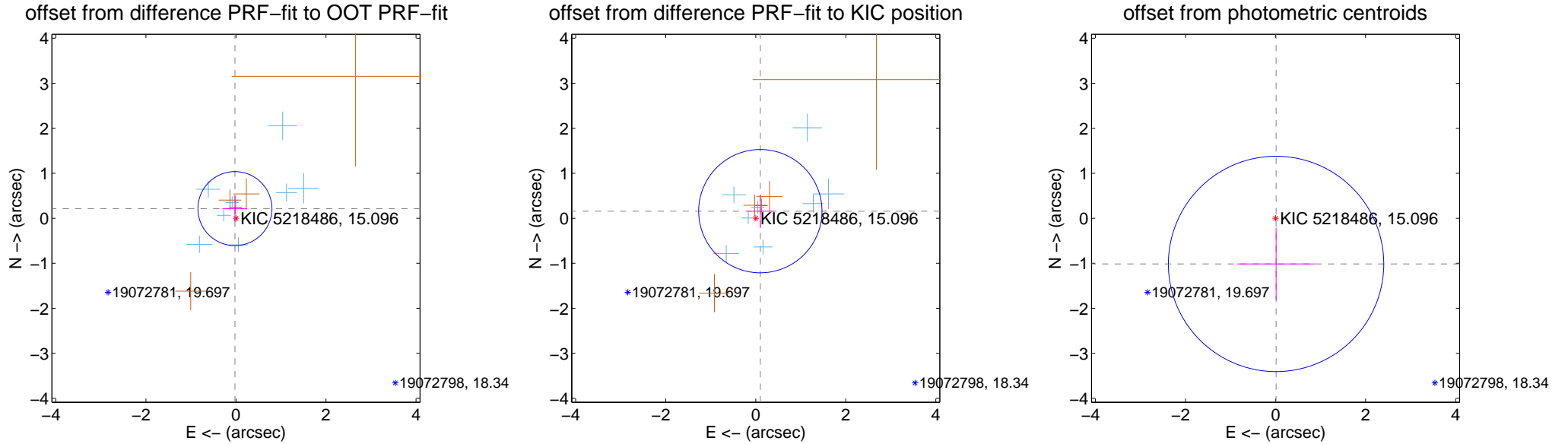
DV Centroid Data

Supplemental centroid analysis for 005218486-02. Kepler magnitude: 15.10. Transit SNR 8.44

There are 8 quarters with good PRF difference image offsets

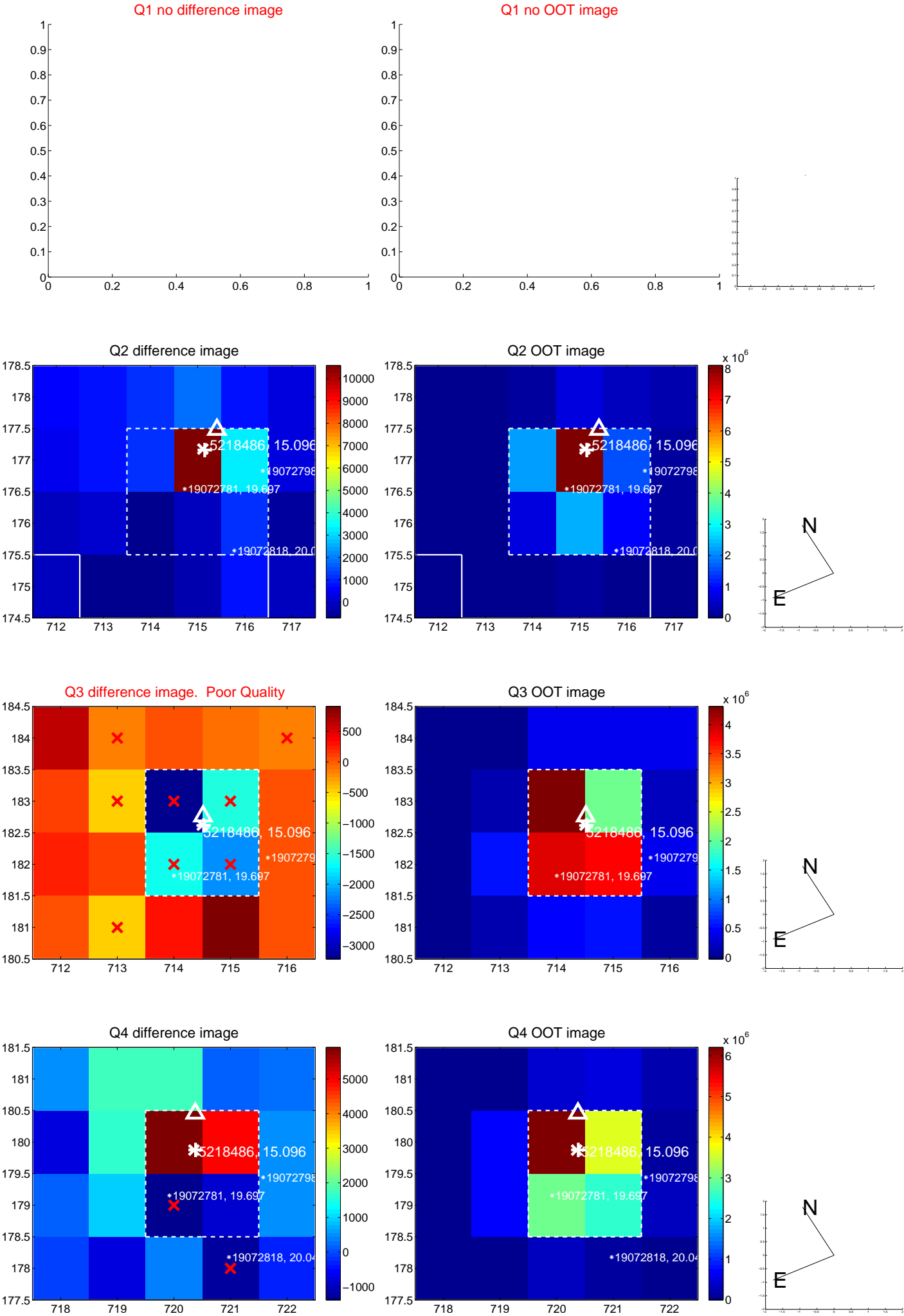
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.216 ± 0.274	0.79	0.023 ± 0.278	0.215 ± 0.299
PRF-fit source offset from KIC position	0.188 ± 0.457	0.41	-0.102 ± 0.300	0.158 ± 0.375
photometric centroid source offset	1.01 ± 0.80	1.27	-0.01 ± 0.86	-1.01 ± 0.80

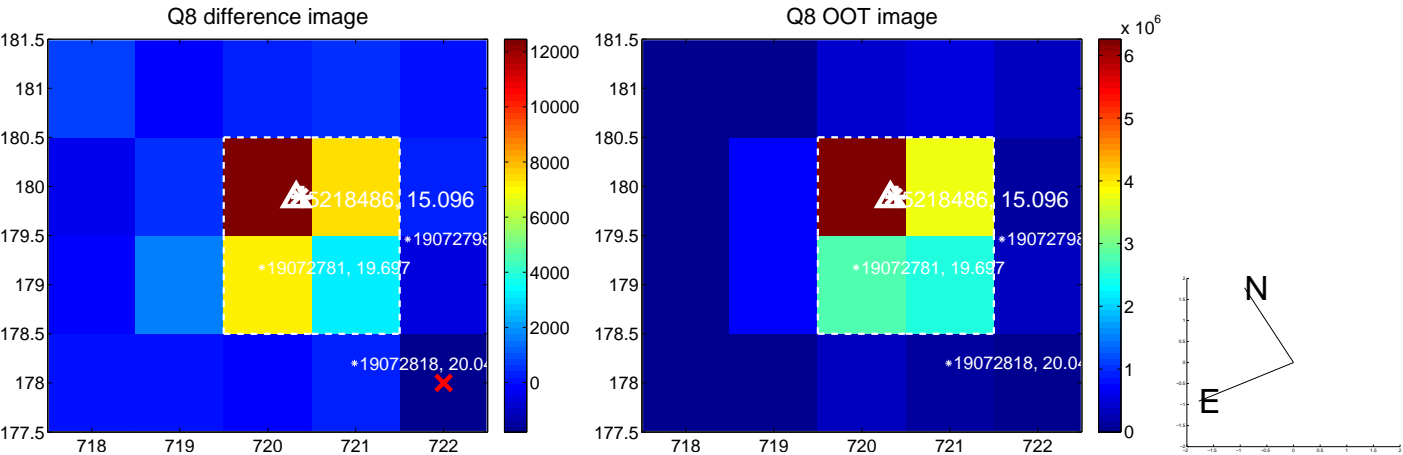
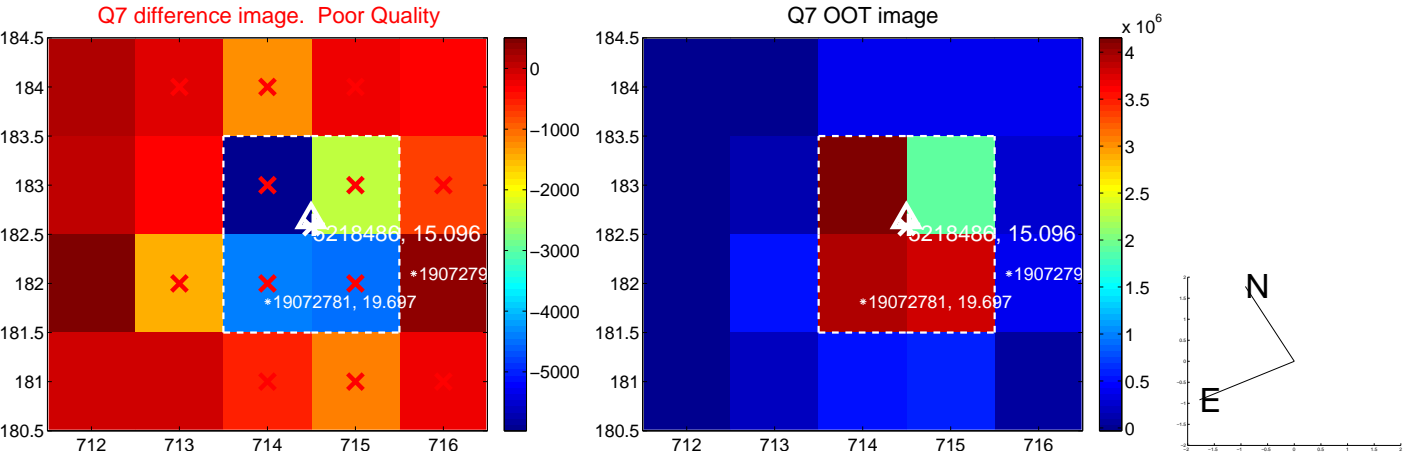
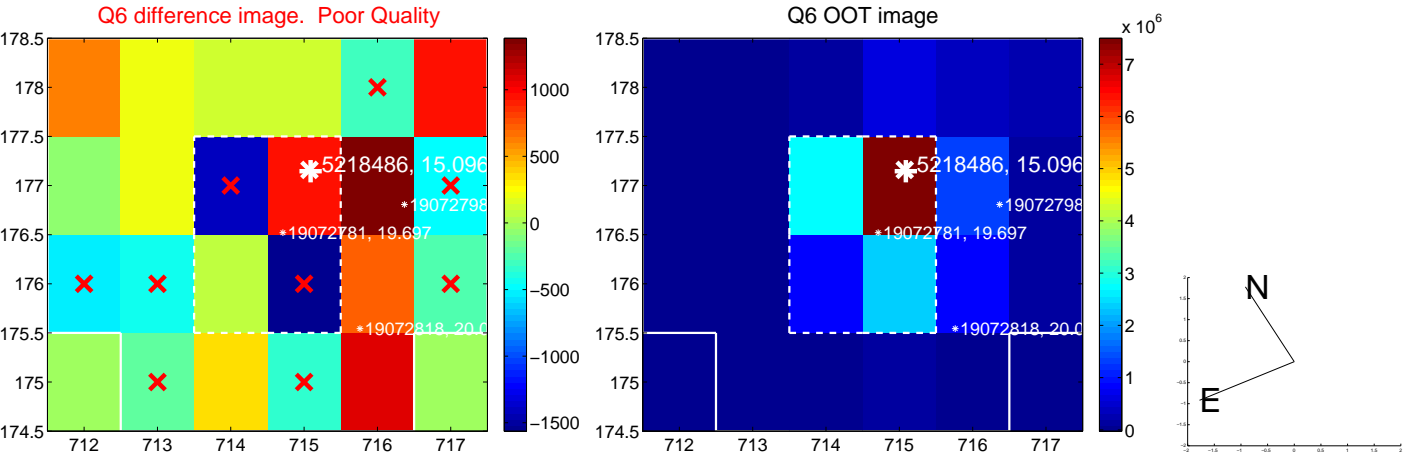
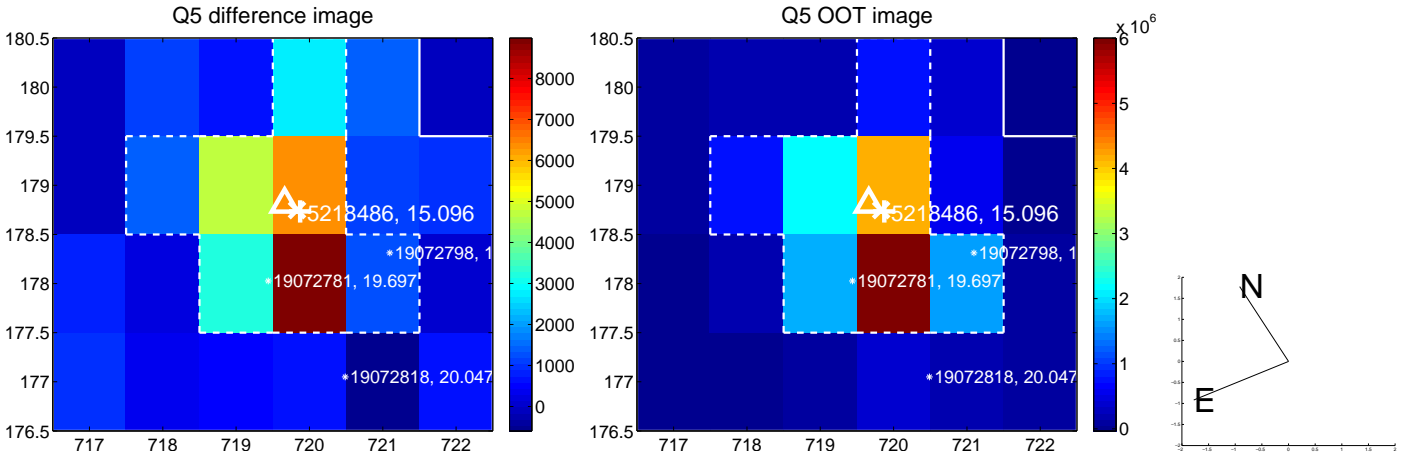


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

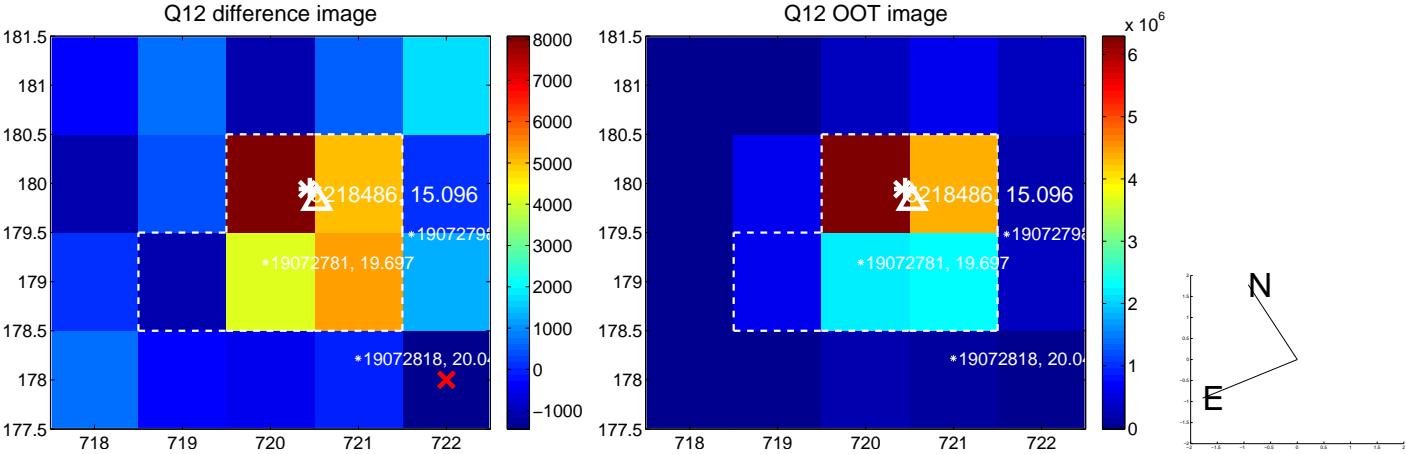
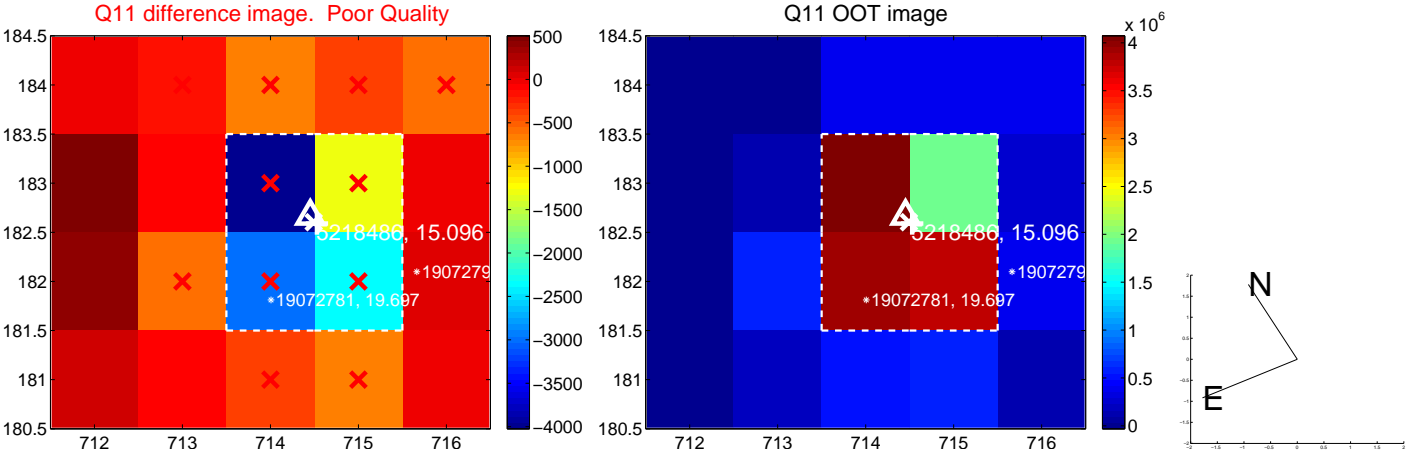
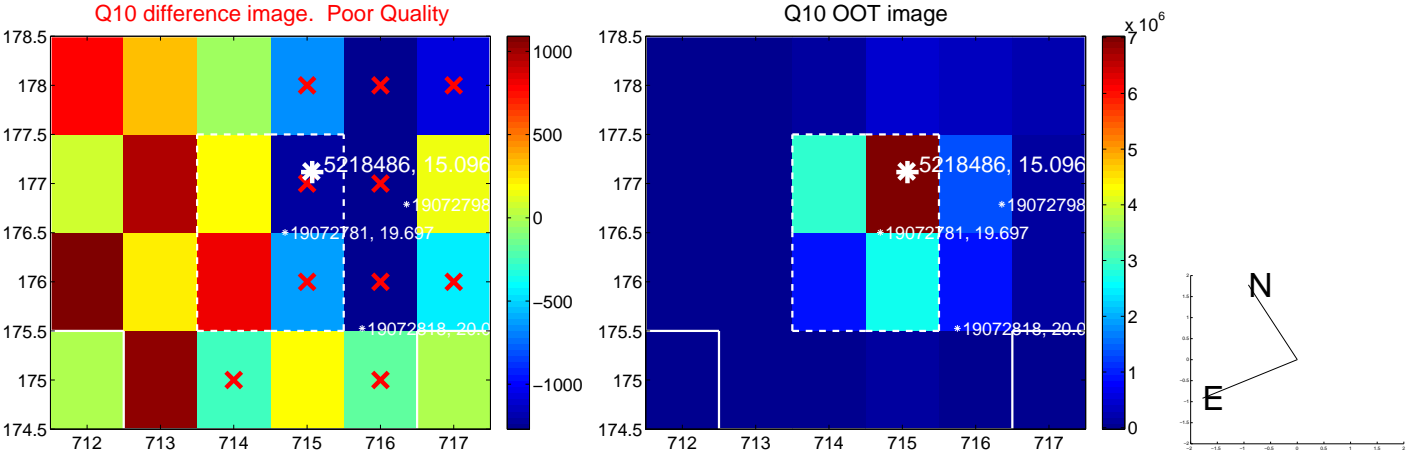
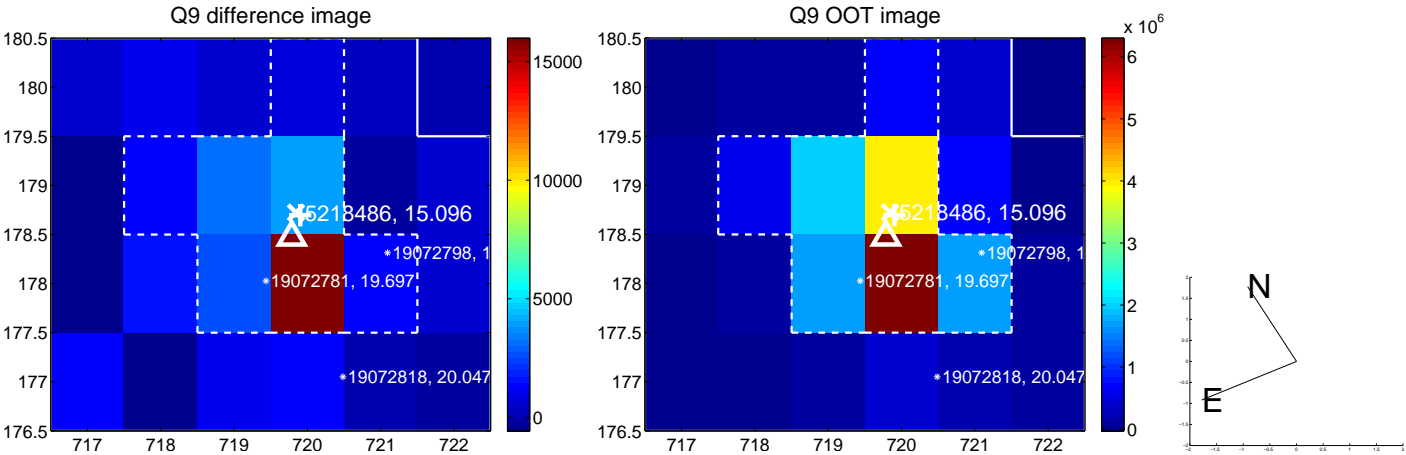
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



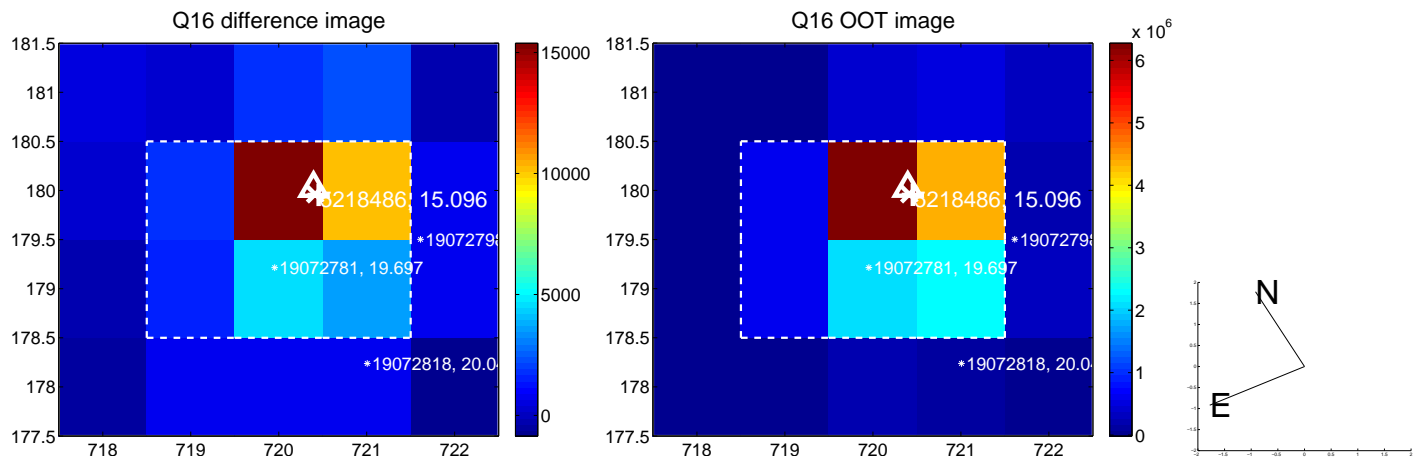
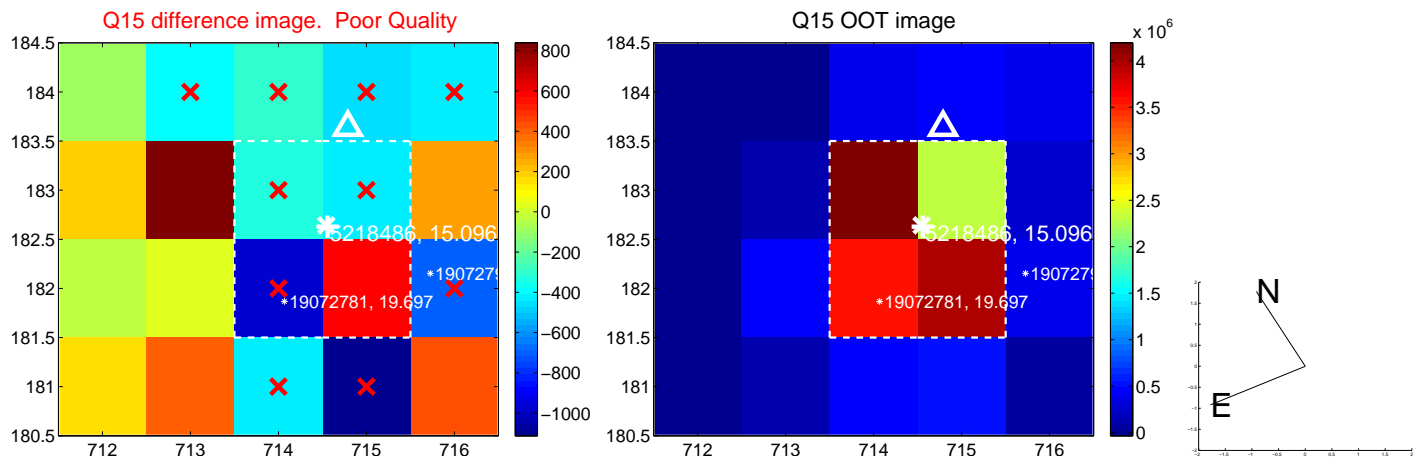
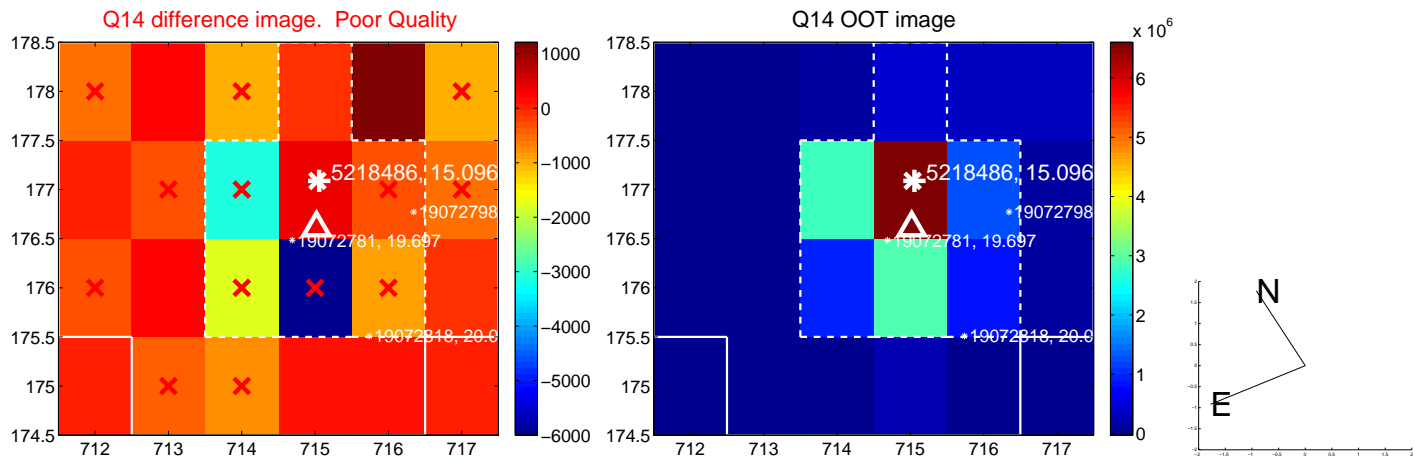
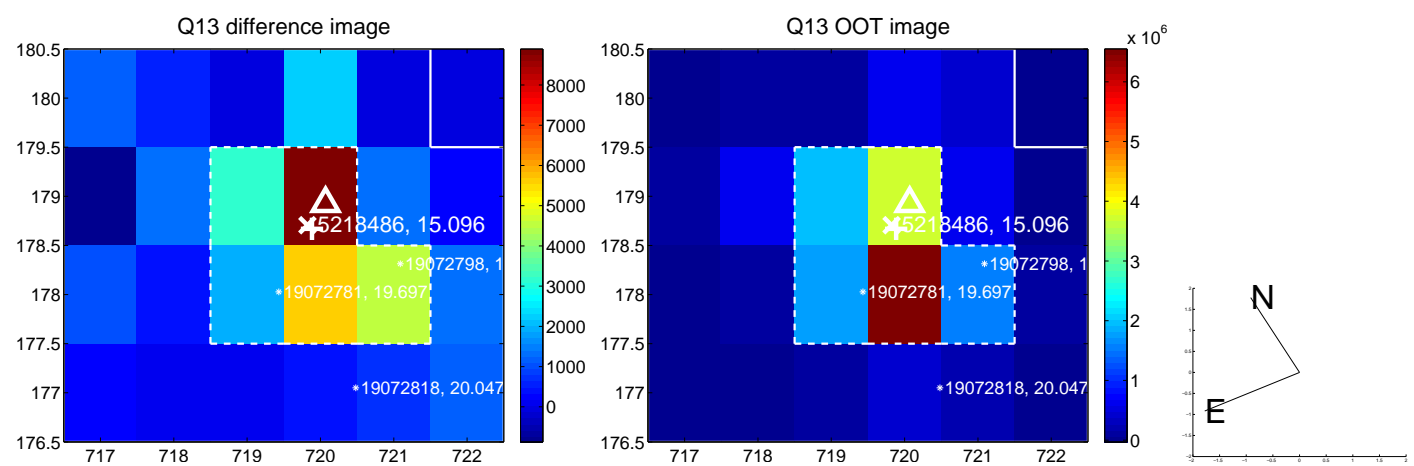
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



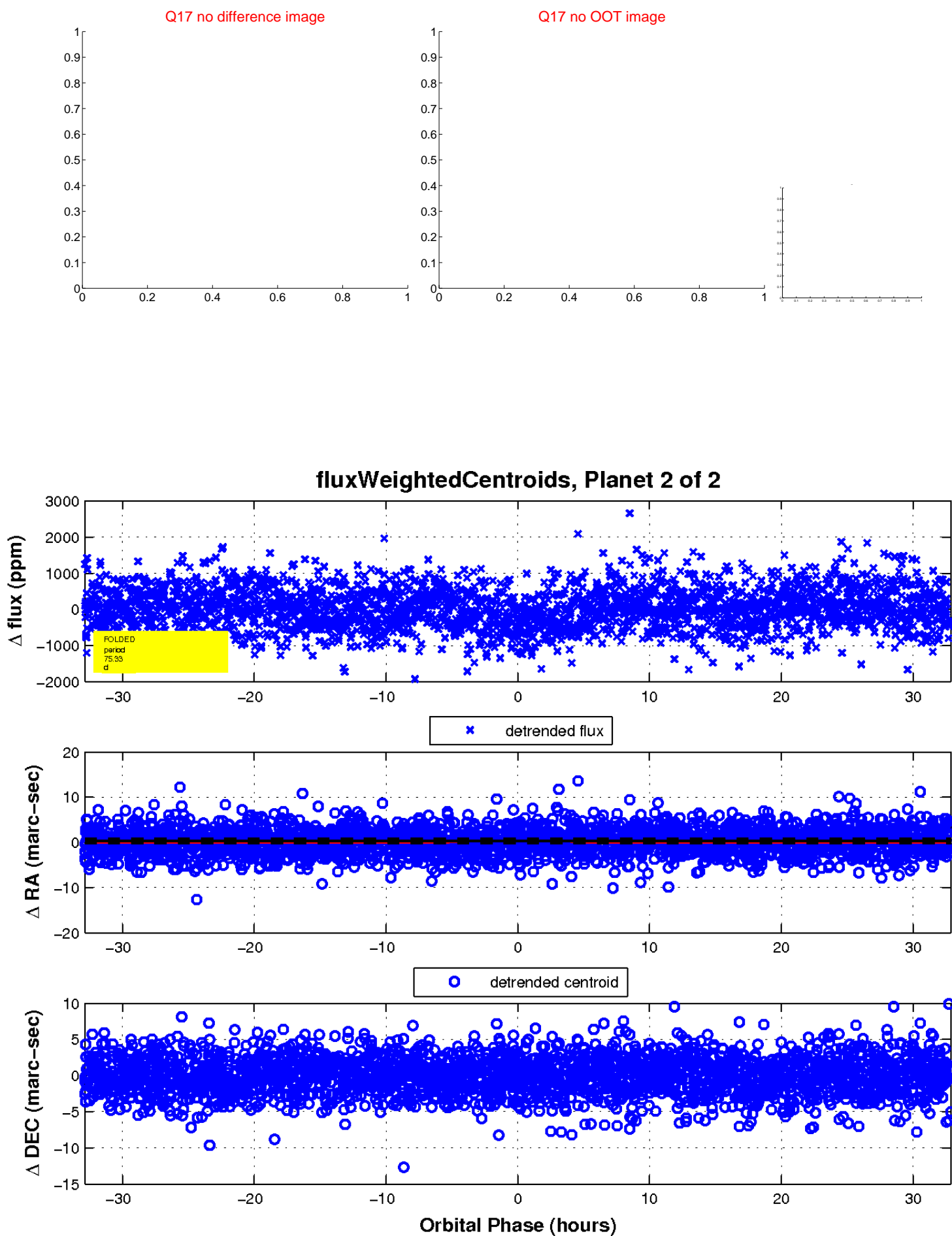
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

