

KIC 007115499

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})
007115499-01	OBS	No	0.566760	131.853680	44.7	3.901	13.3	9.8	0.81	5402	0.56	2974.08
007115499-02	OBS	No	35.385813	152.407410	911.7	1.334	10.2	9.6	0.81	5402	2.48	12.01
007115499-03	OBS	No	28.641271	151.789124	1881.8	1.500	8.9	-1.0	0.81	5402	3.48	15.92
007115499-04	OBS	No	31.579702	133.822679	670.8	1.894	8.5	10.1	0.81	5402	2.26	13.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115499-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007115499-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007115499-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_NOFITS
007115499-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

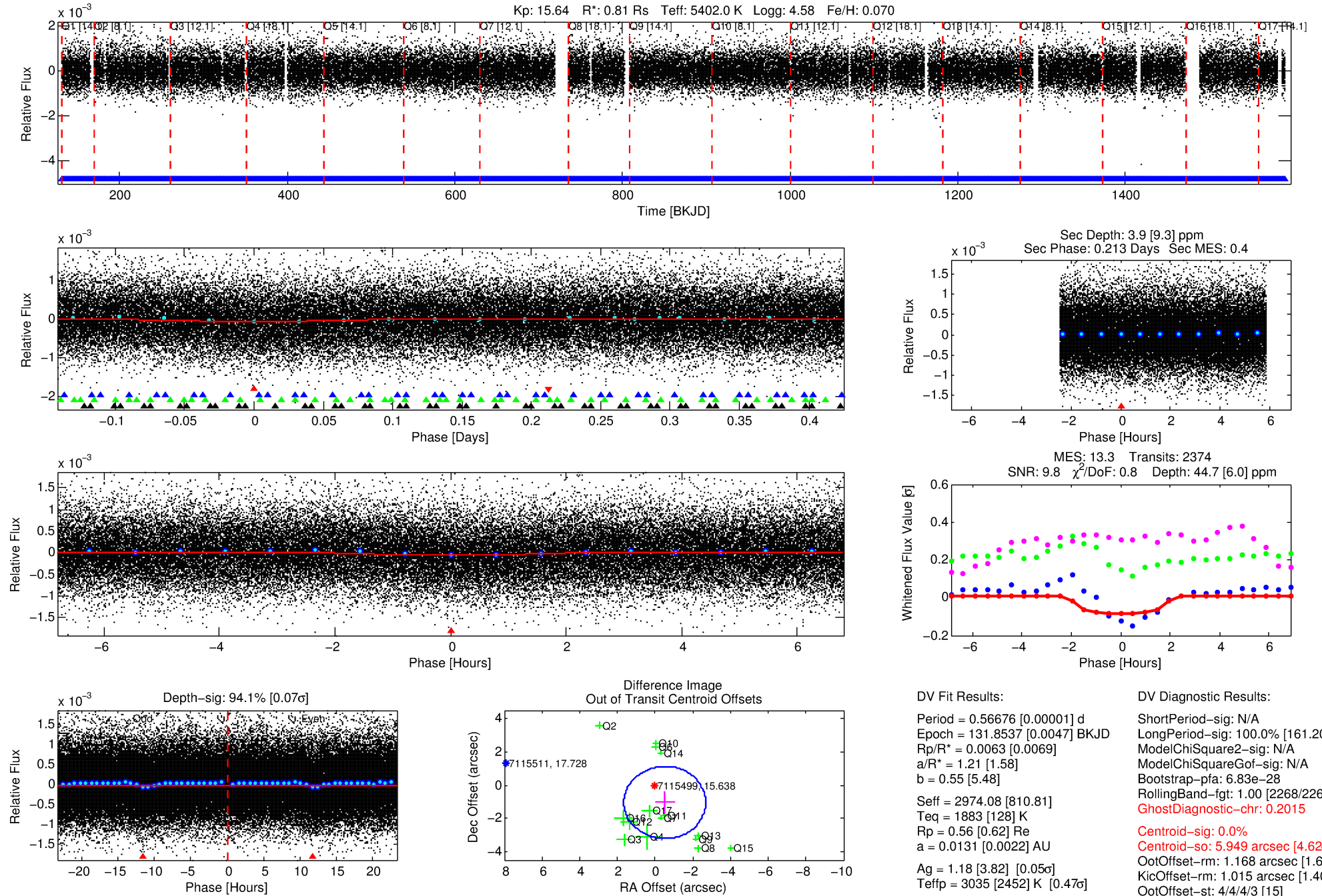
Ephemeris Match Information For 007115499-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (μ)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
007115499-01	7115499	RR-Lyr-pri	7198959	1:1	863.4	-19	-217	7.86	15.64	13851.00	Direct-PRF	0	2.49	22.94

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7115499 Candidate: 1 of 4 Period: 0.567 d



DV Fit Results:

Period = 0.56676 [0.00001] d
Epoch = 131.8537 [0.0047] BKJD
Rp/R* = 0.0063 [0.0069]
a/R* = 1.21 [1.58]
b = 0.55 [5.48]
Seff = 2974.08 [810.81]
Teff = 1883 [128] K
Rp = 0.56 [0.62] Re
a = 0.0131 [0.0022] AU
Ag = 1.18 [3.82] [0.05σ]
Teffp = 3035 [2452] K [0.47σ]

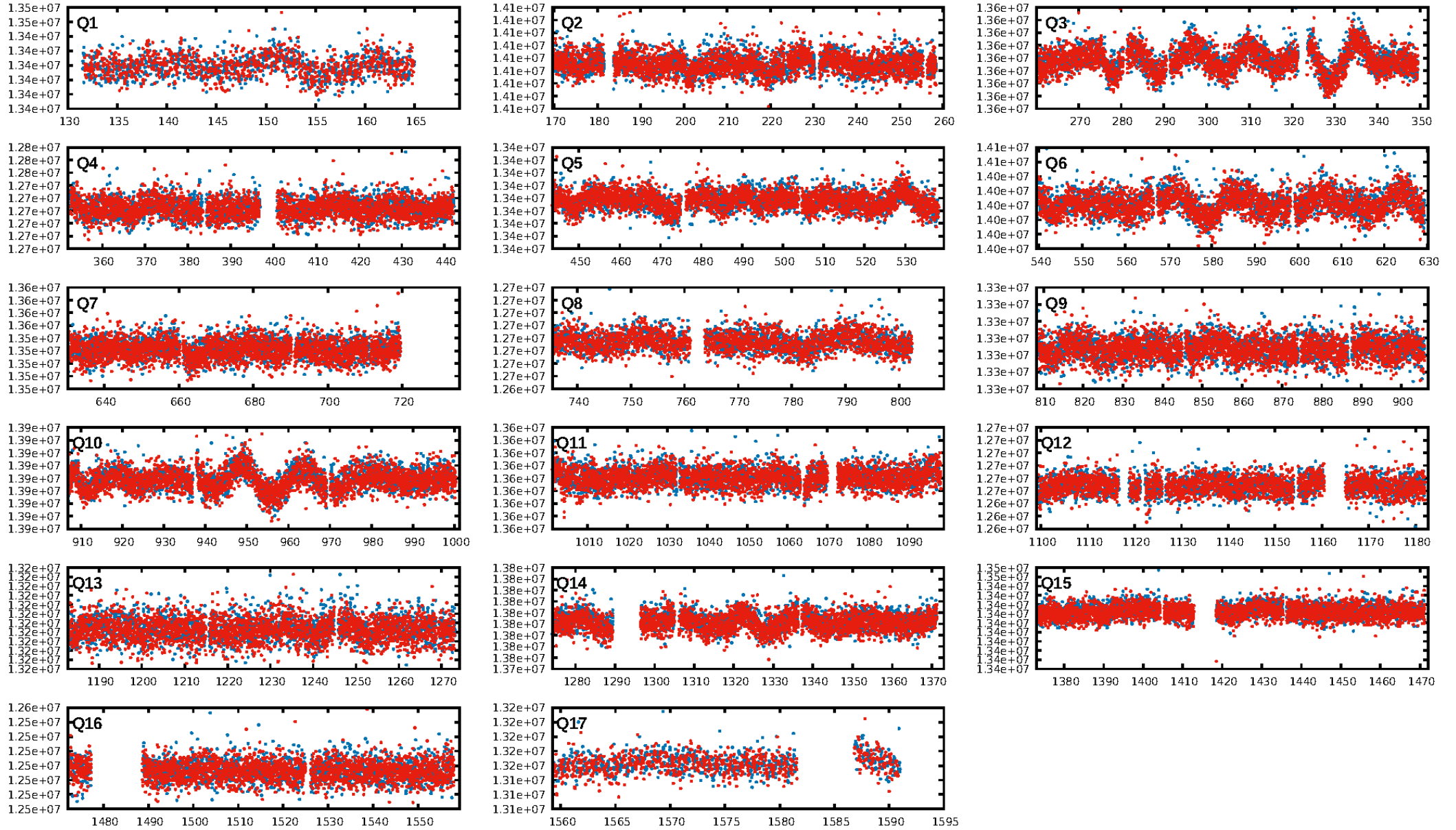
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [161.20σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.83e-28
RollingBand-fgt: 1.00 [2268/2268]
GhostDiagnostic-chr: 0.2015
Centroid-sig: 0.0%
Centroid-so: 5.949 arcsec [4.62σ]
OotOffset-rm: 1.168 arcsec [1.61σ]
KicOffset-rm: 1.015 arcsec [1.40σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.07 [1/15]
DiffImageOverlap-fno: 1.00 [17/17]

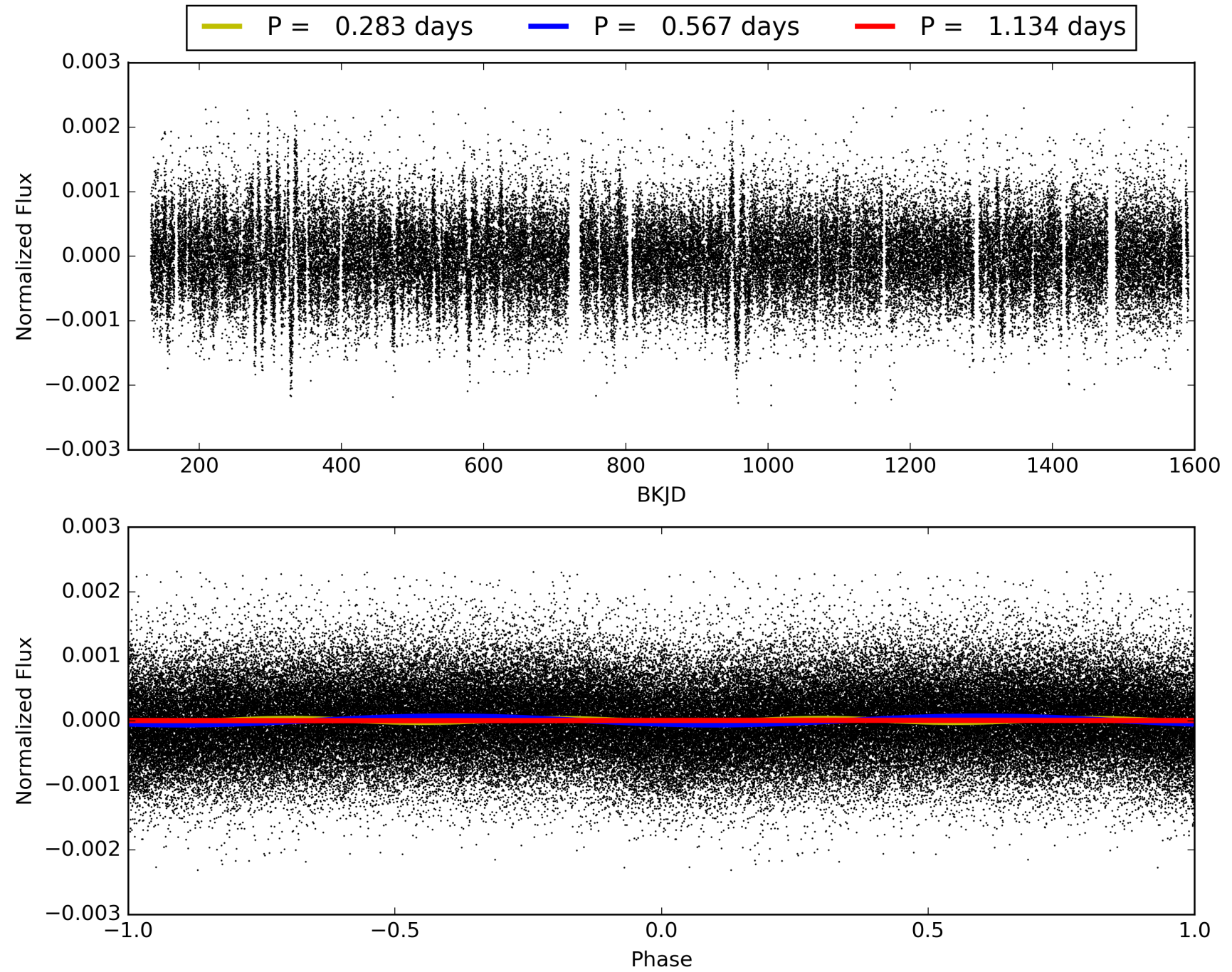
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:45:15 Z

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

TCE 007115499-01, PDC Light Curves

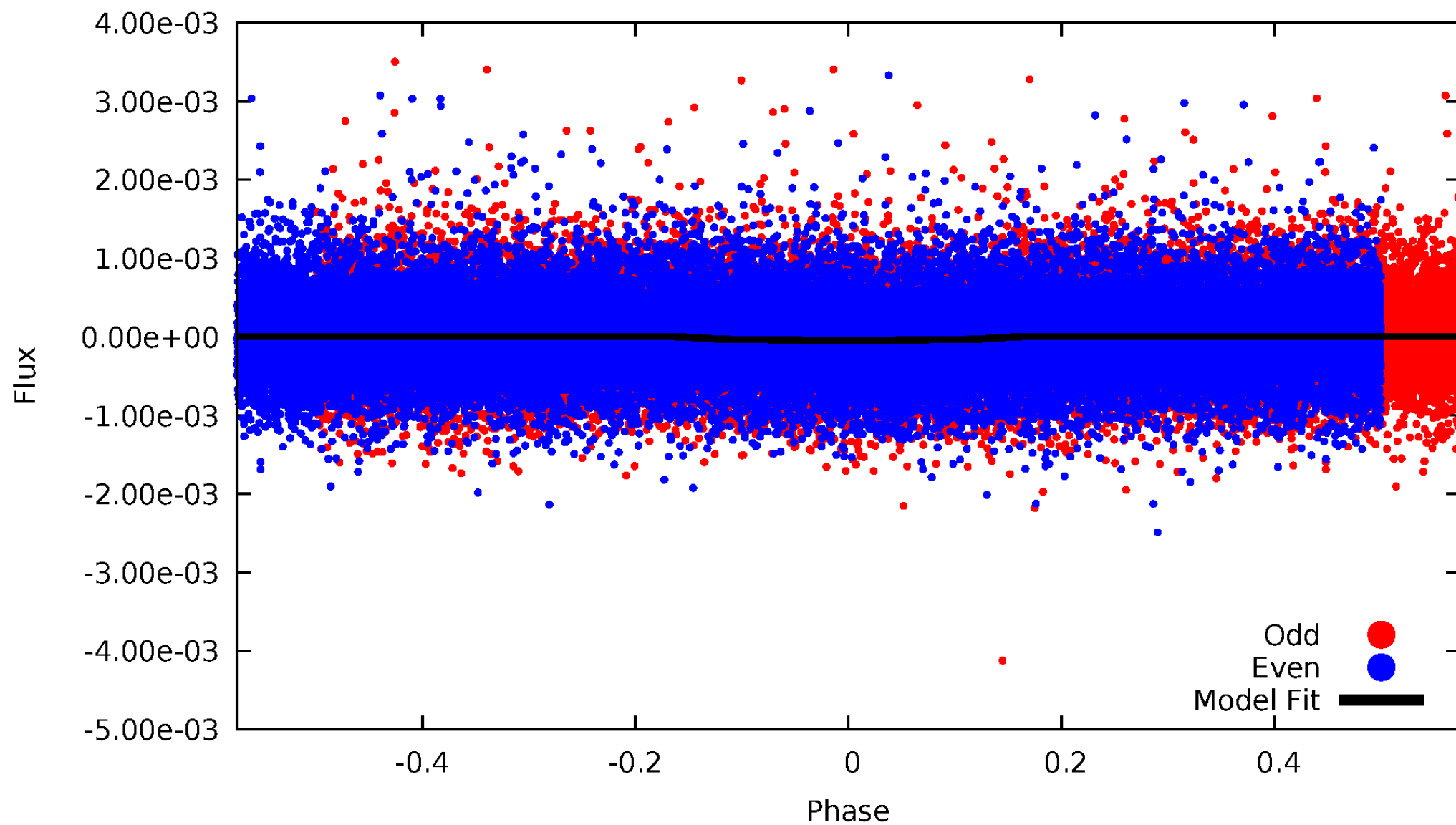


TCE 007115499-01



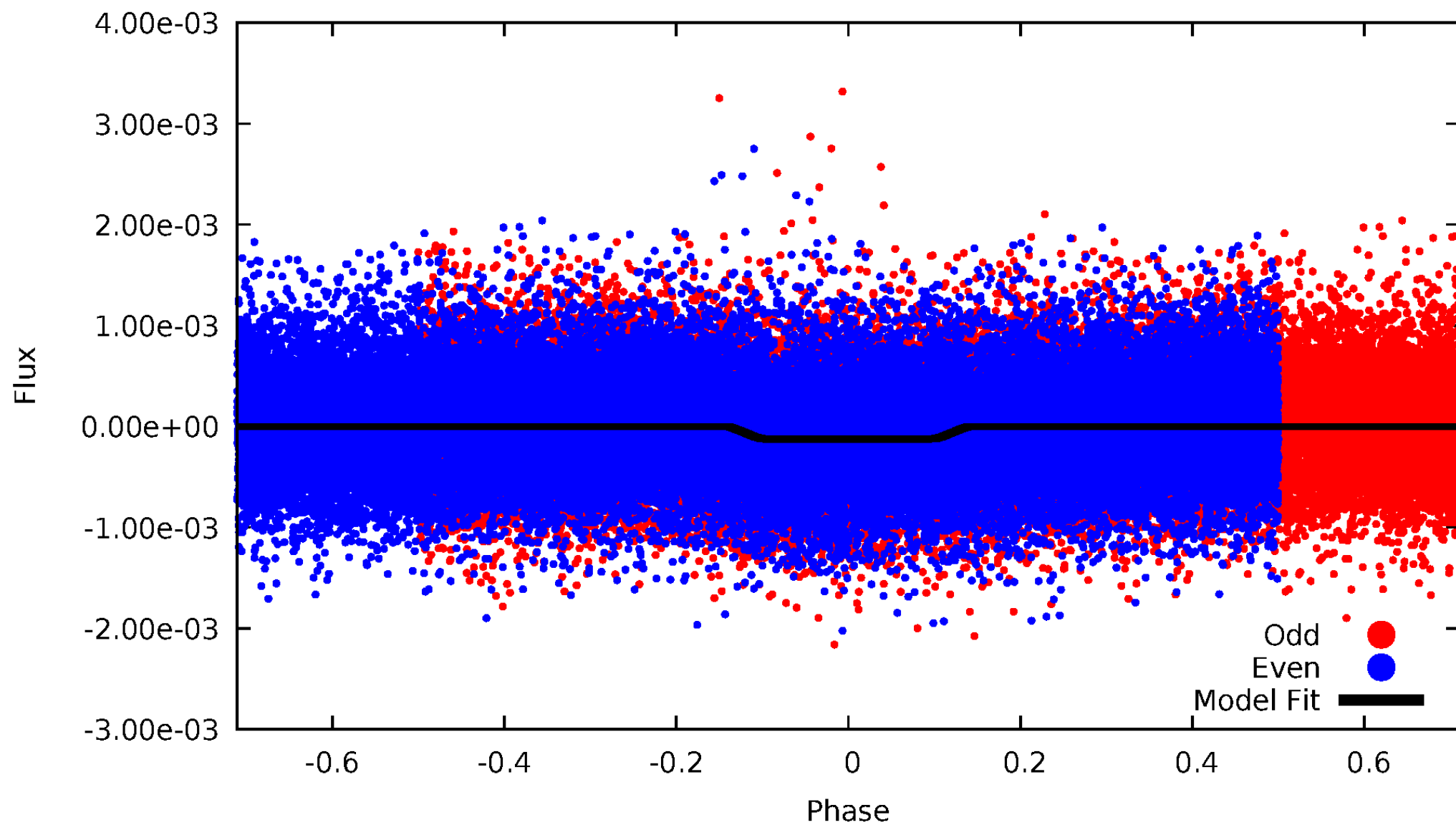
DV Odd/Even

TCE 007115499-01



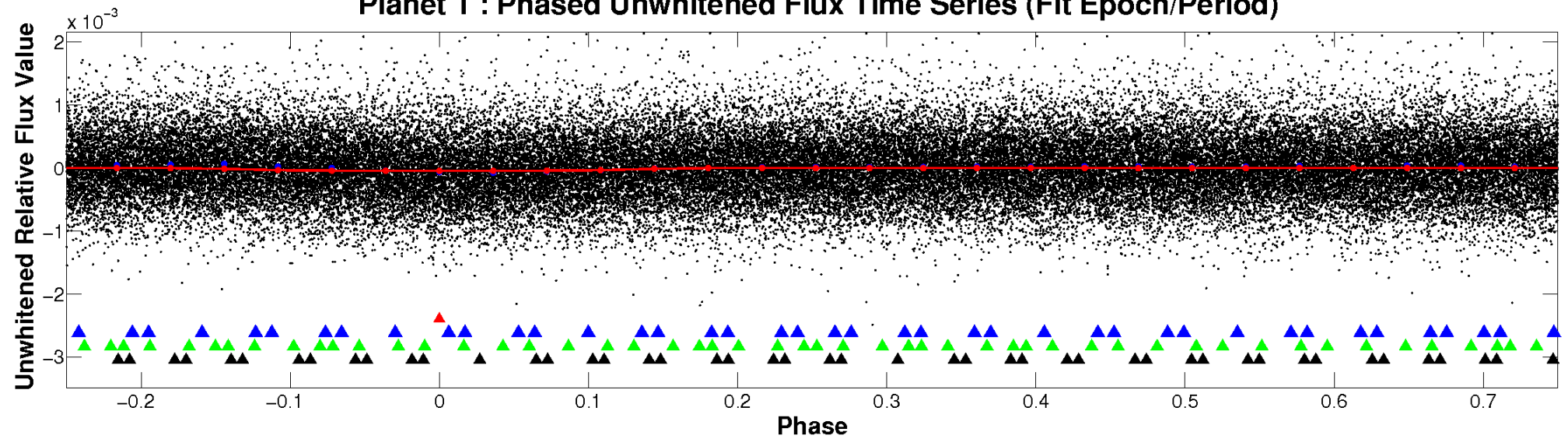
ALT Odd/Even

TCE 007115499-01

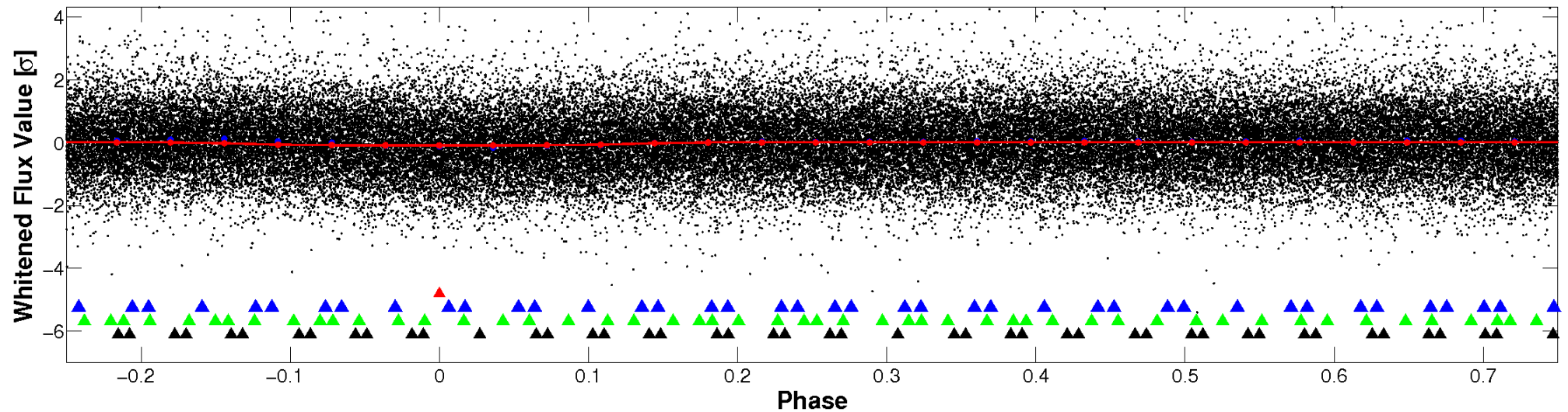


Non-Whitened Vs. Whitened Light Curve

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

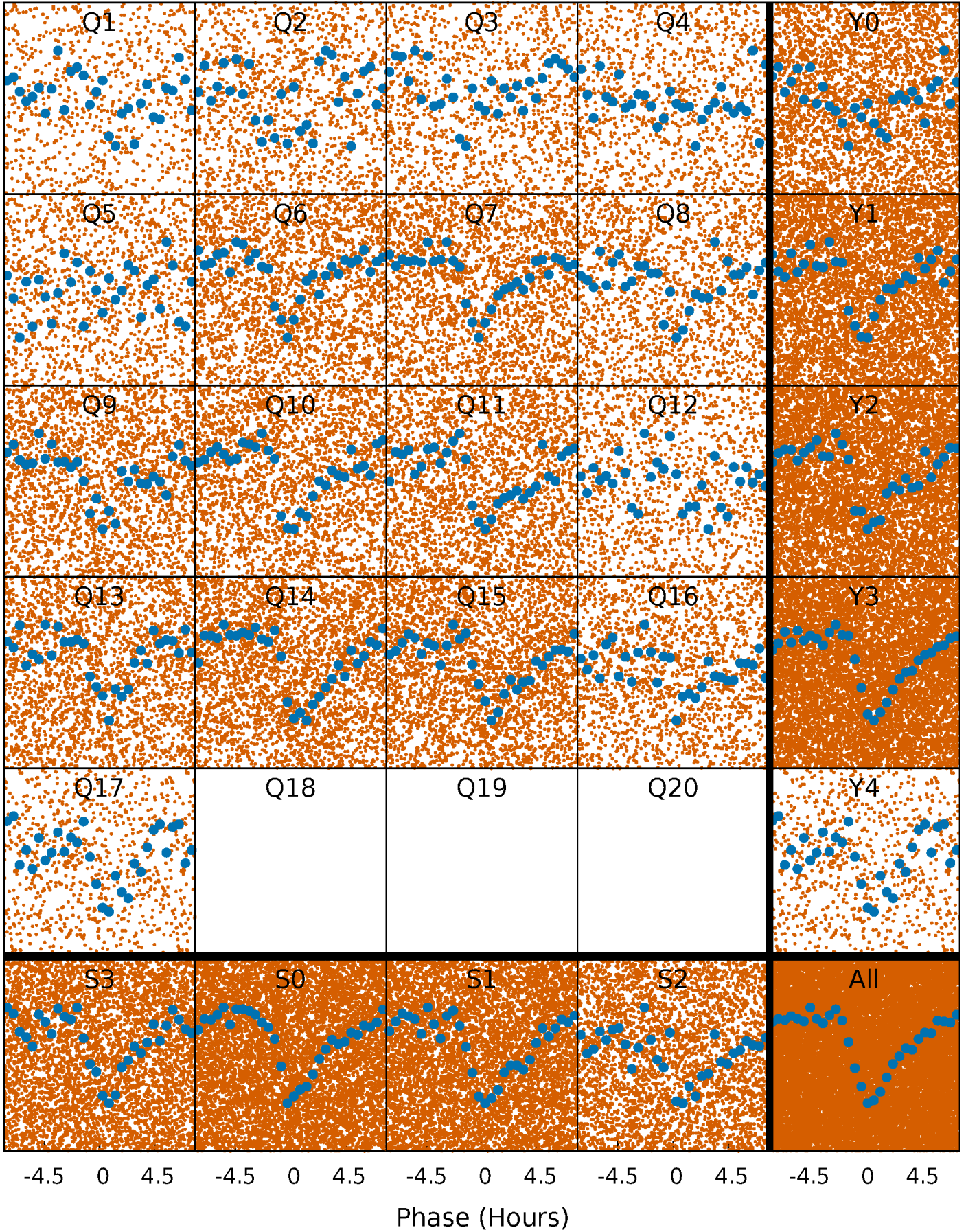


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



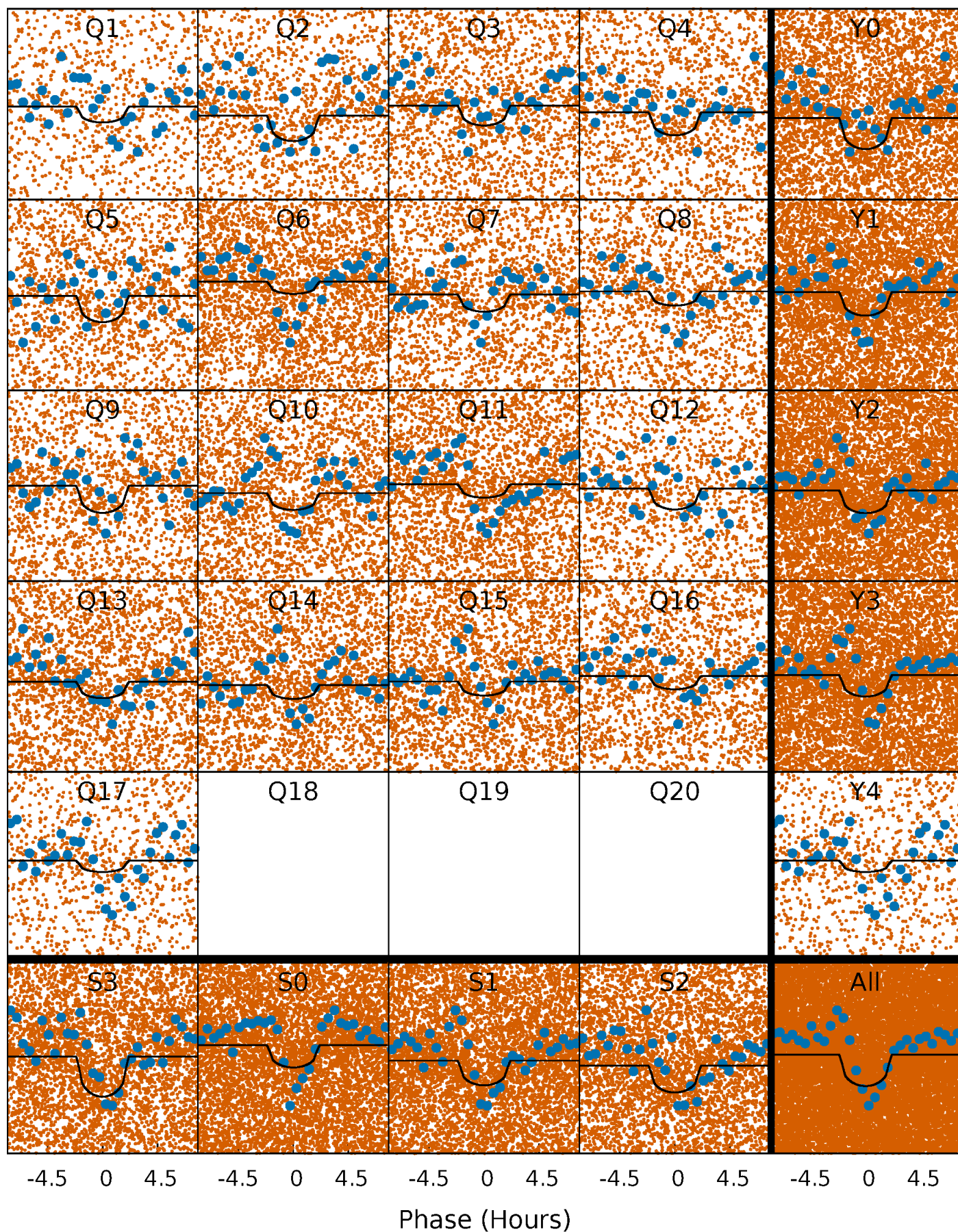
PDC Quarter-Phased Transit Curves

TCE 007115499-01 P= 0.566760 Days $T_0=131.853680$ (BKJD)



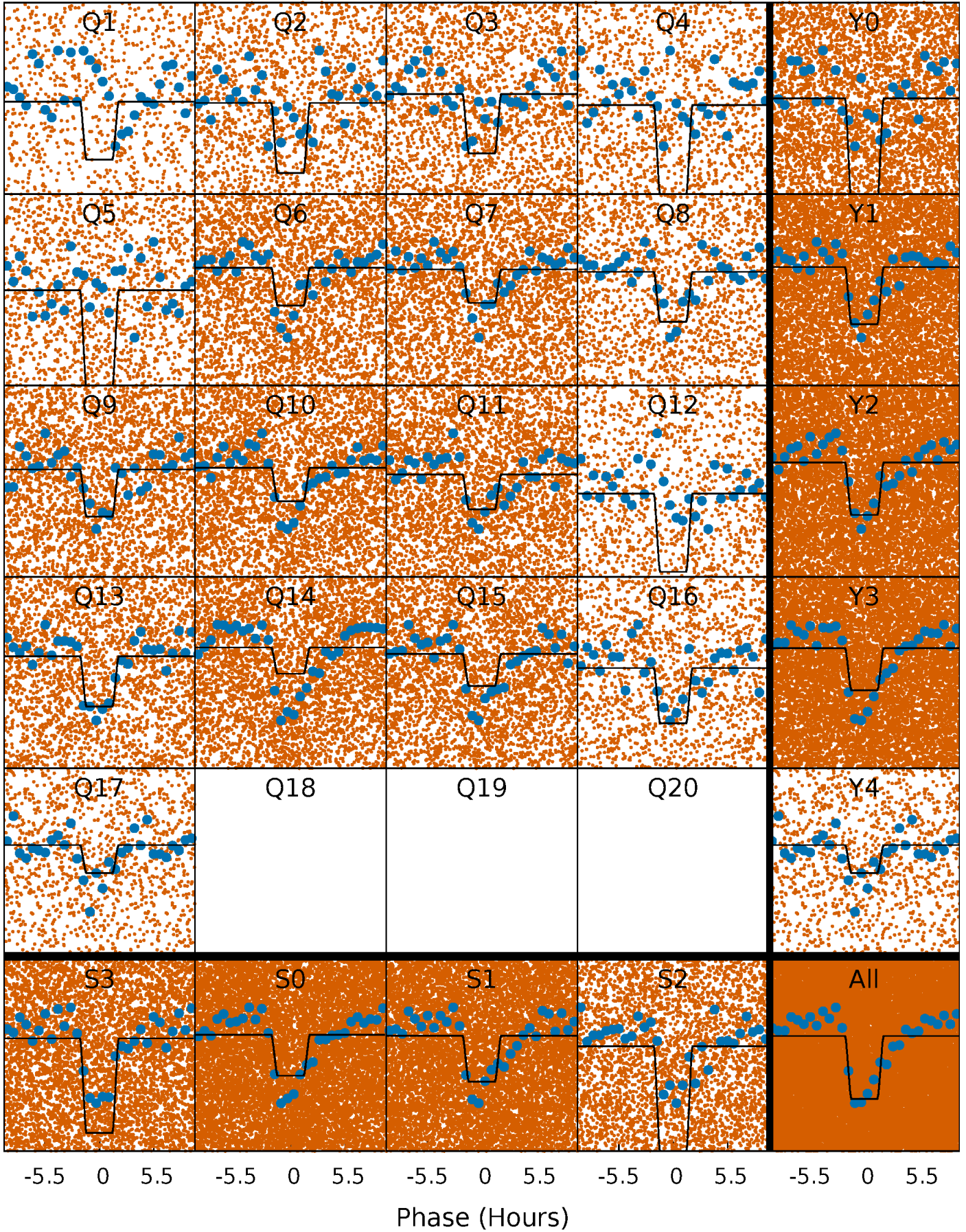
DV Quarter-Phased Transit Curves

TCE 007115499-01 P= 0.566760 Days $T_0=131.853680$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

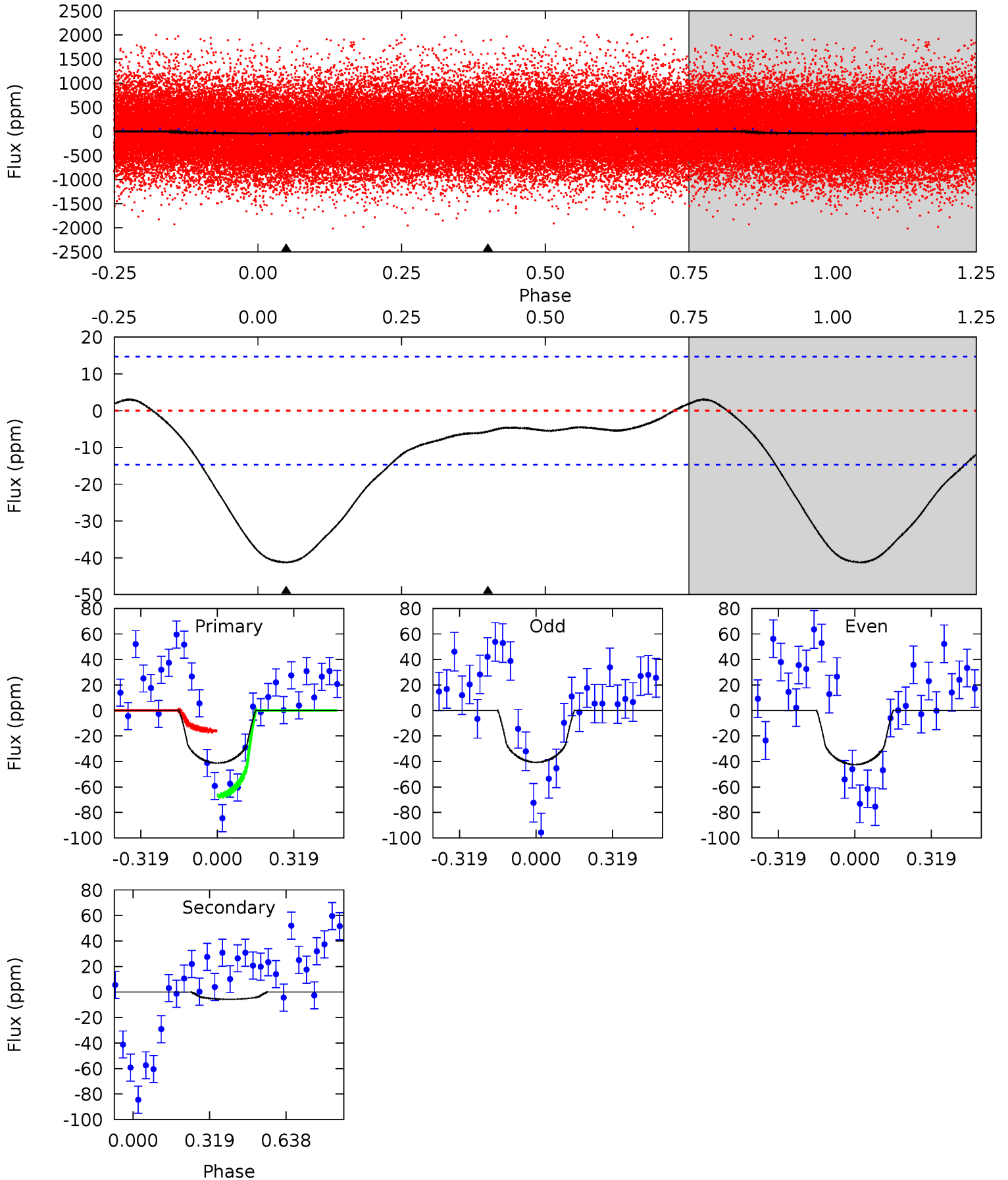
TCE 007115499-01 P= 0.566795 Days $T_0=131.831651$ (BKJD)



DV Model-Shift Uniqueness Test

007115499-01, P = 0.566760 Days, E = 131.286920 Days

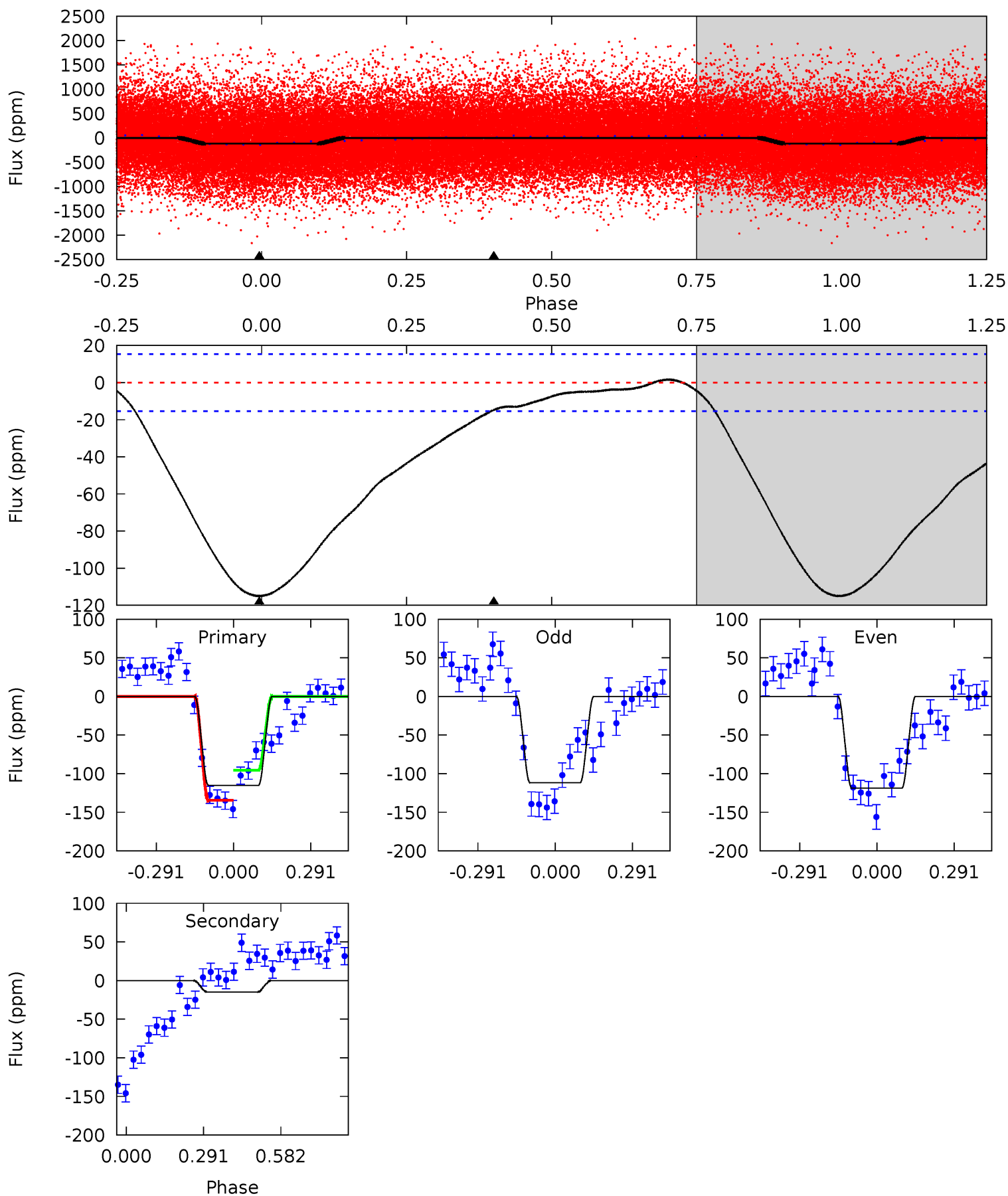
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	1.67	0	0	4.32	1.00	0.65	12.1	12.1	1.67	1.67	0.27	0.97	0.07	7.35



Alt Model-Shift Uniqueness Test

007115499-01, P = 0.566795 Days, E = 131.264856 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.4	4.18	0	0	4.34	1.06	0.44	32.4	32.4	4.18	4.18	1.01	0.98	0.01	5.32



Stellar Parameters For KIC 007115499

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5402^{+160}_{-160}	$4.581^{+0.025}_{-0.136}$	$0.070^{+0.250}_{-0.300}$	$0.815^{+0.158}_{-0.068}$	$0.931^{+0.065}_{-0.105}$	$2.419^{+0.324}_{-0.960}$
	+3%/-3%	+1%/-3%	+357%/-429%	+19%/-8%	+7%/-11%	+13%/-40%
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 007115499-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-6 ± 3	$0.74^{+0.56}_{-0.44}$	2689^{+124}_{-109}	3130^{+1612}_{-5671}	$0.822^{+5.284}_{-0.640}$
Alt.	-15 ± 4	$1.08^{+0.66}_{-0.59}$	2686^{+136}_{-102}	3405^{+1228}_{-809}	$1.175^{+4.656}_{-0.753}$

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

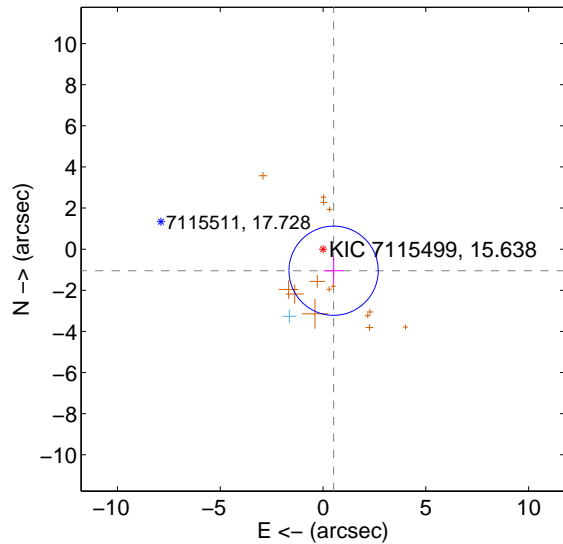
Supplemental centroid analysis for 007115499-01. Kepler magnitude: 15.64. Transit SNR 9.77

There are 1 quarters with good PRF difference image offsets

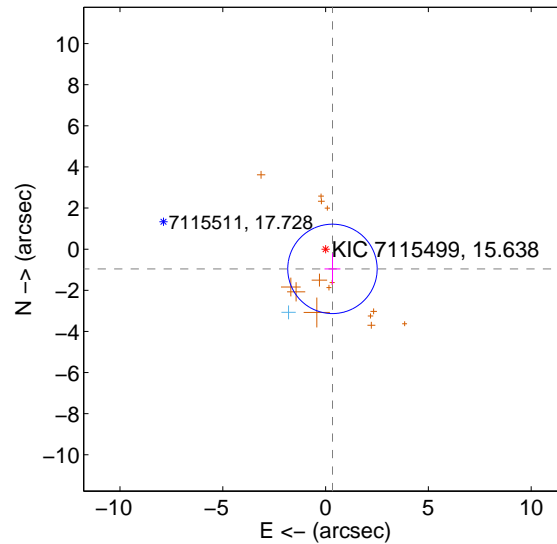
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.168 ± 0.723	1.61	-0.514 ± 0.490	-1.048 ± 0.656
PRF-fit source offset from KIC position	1.015 ± 0.725	1.40	-0.334 ± 0.387	-0.959 ± 0.756
photometric centroid source offset	5.95 ± 1.29	4.62	-4.76 ± 1.36	-3.57 ± 1.14

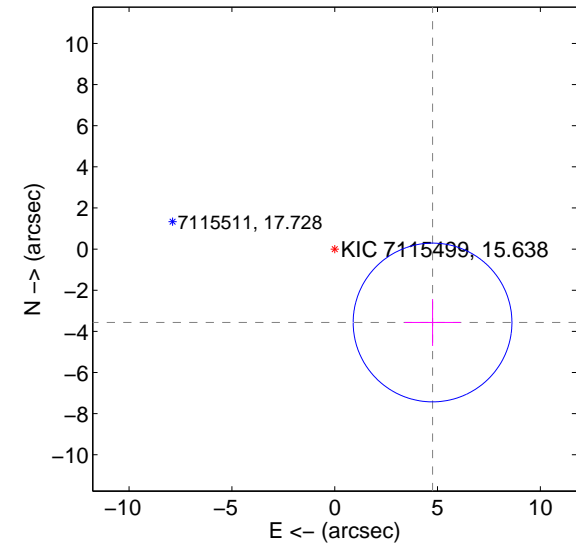
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

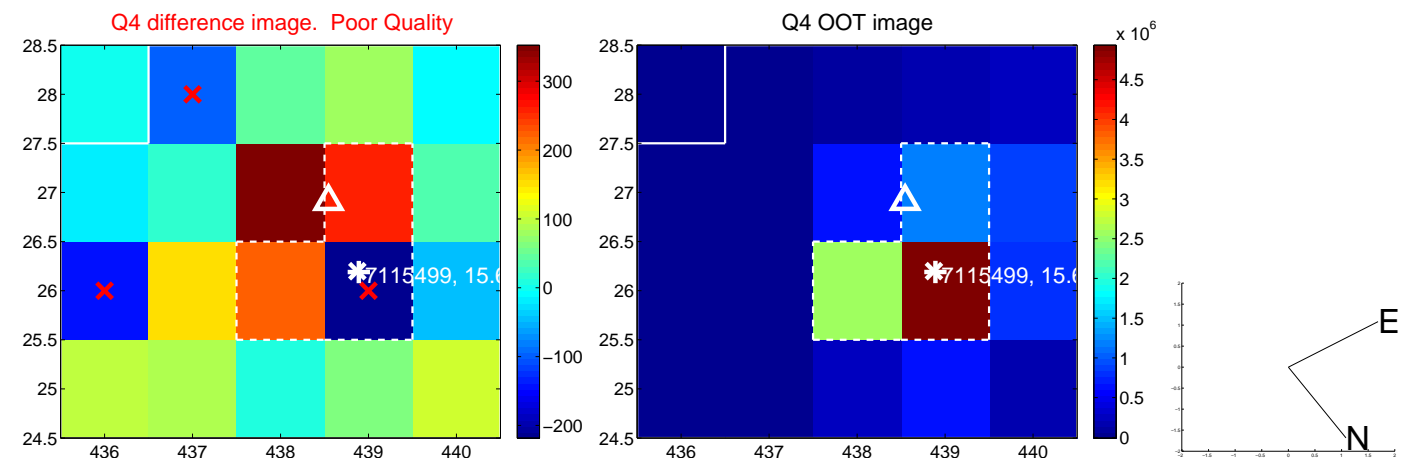
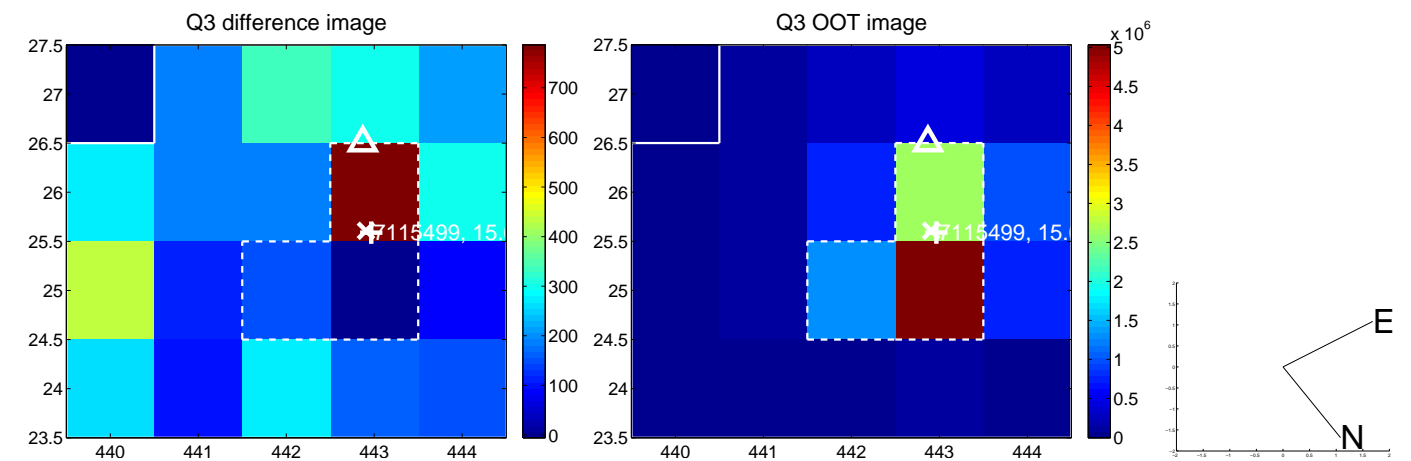
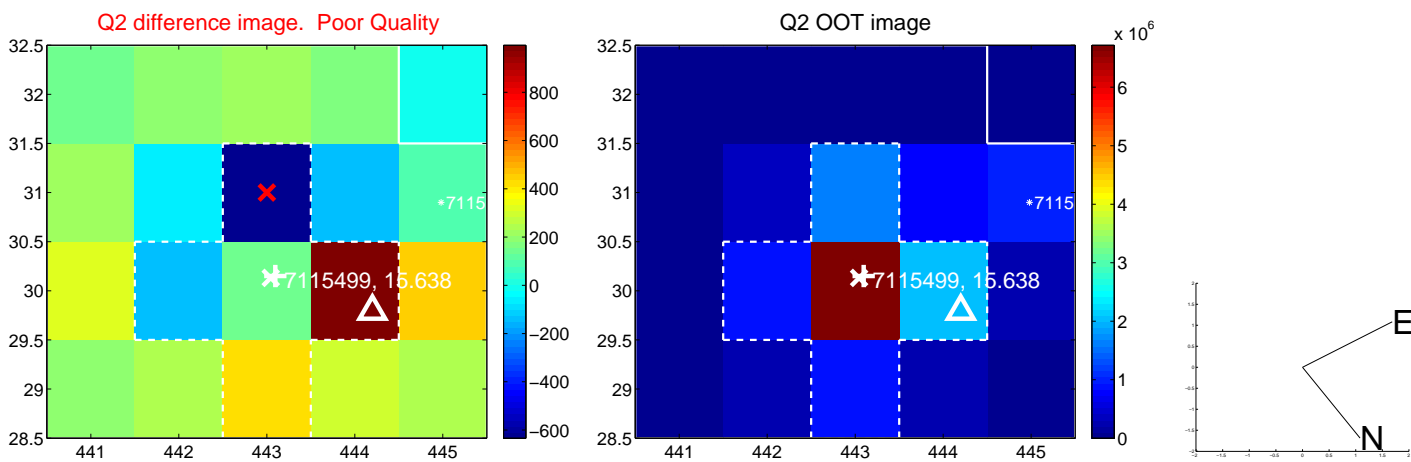
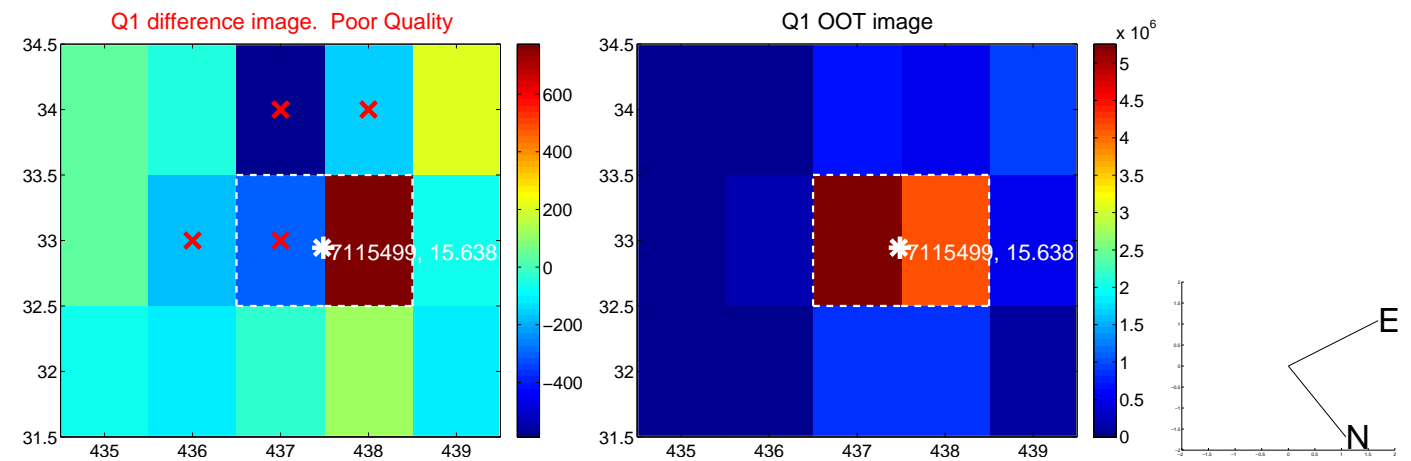


offset from photometric centroids

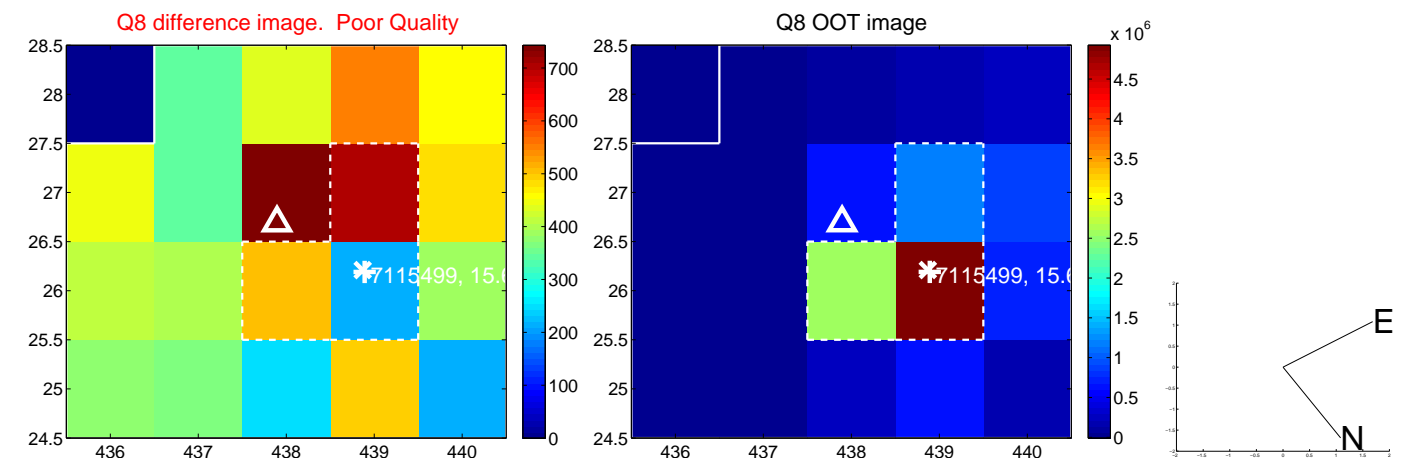
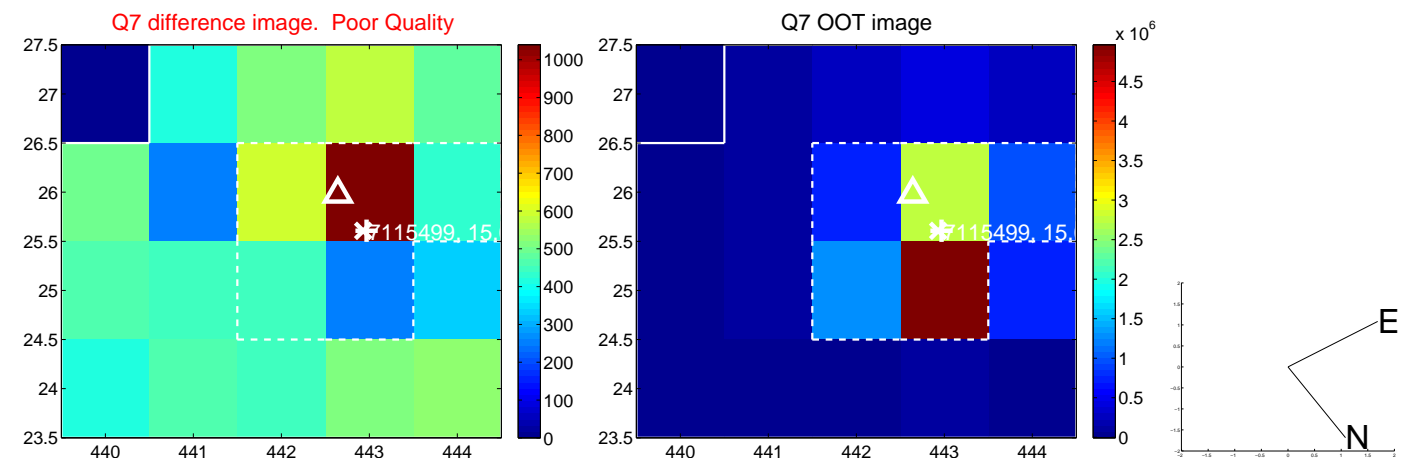
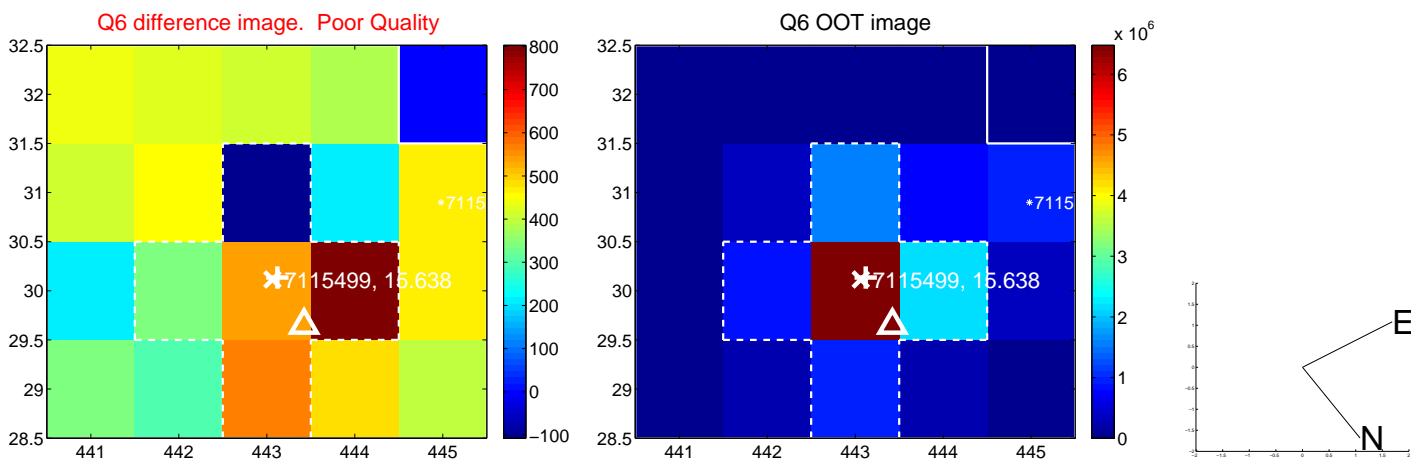
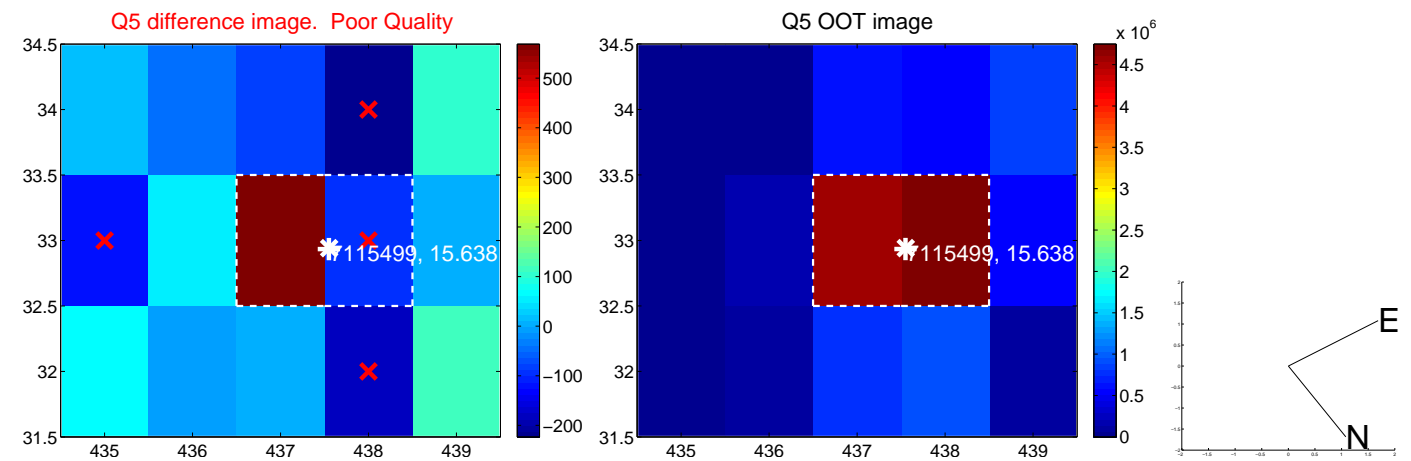


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

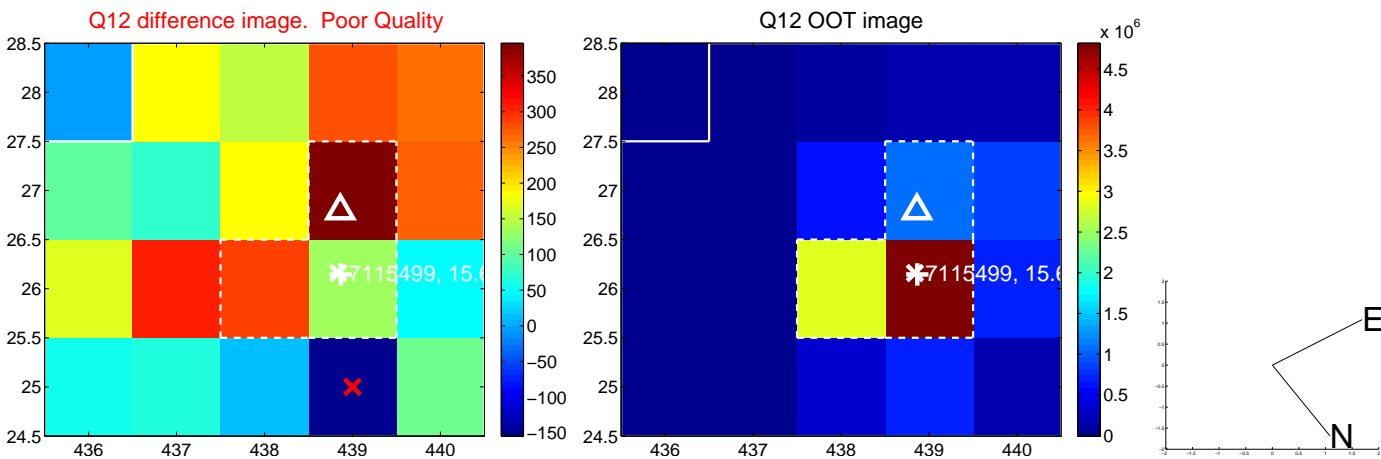
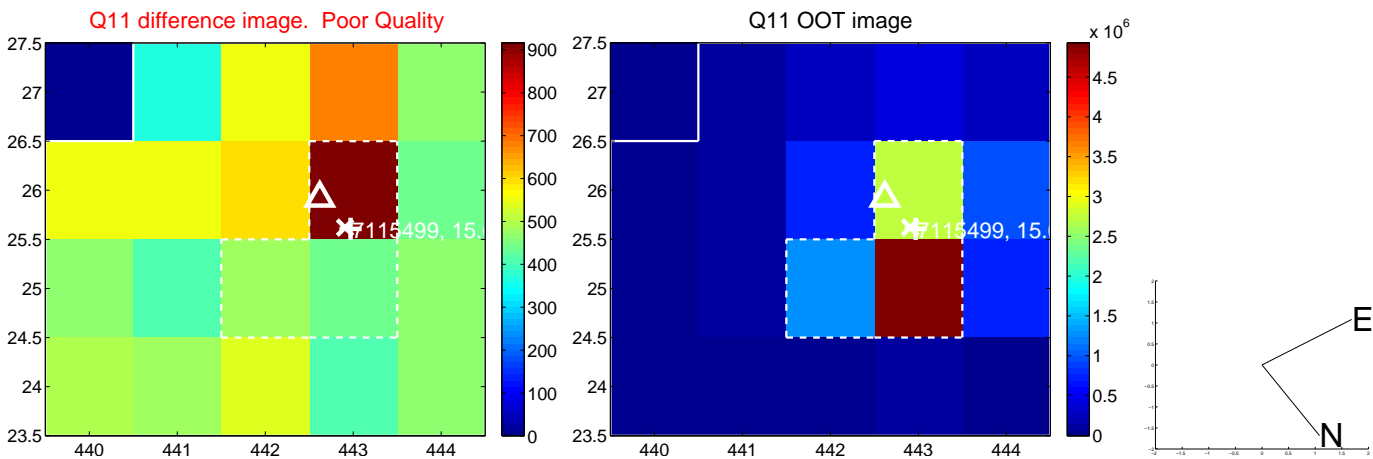
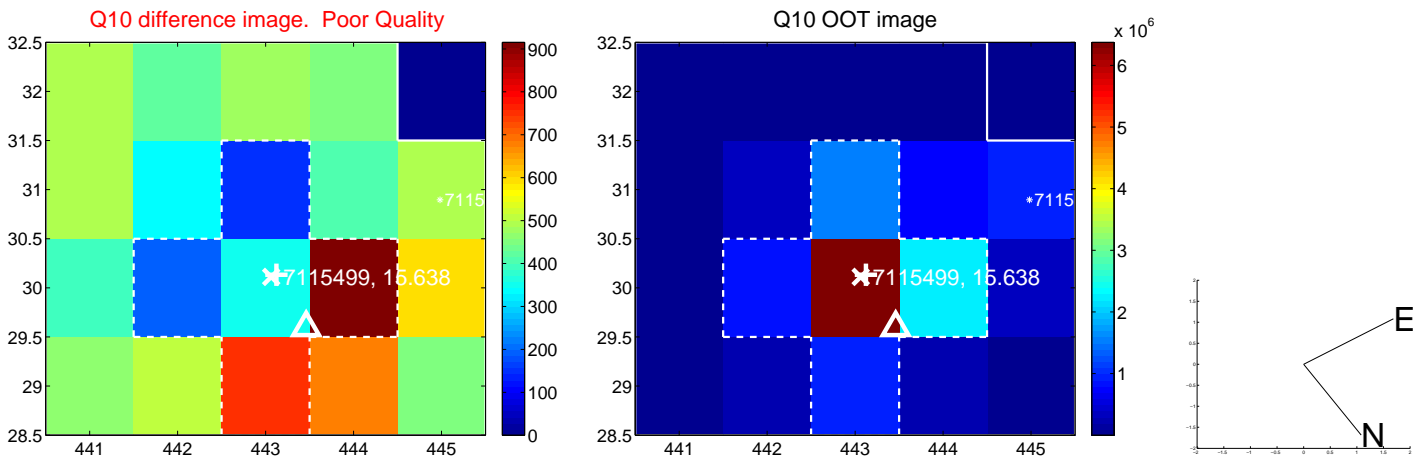
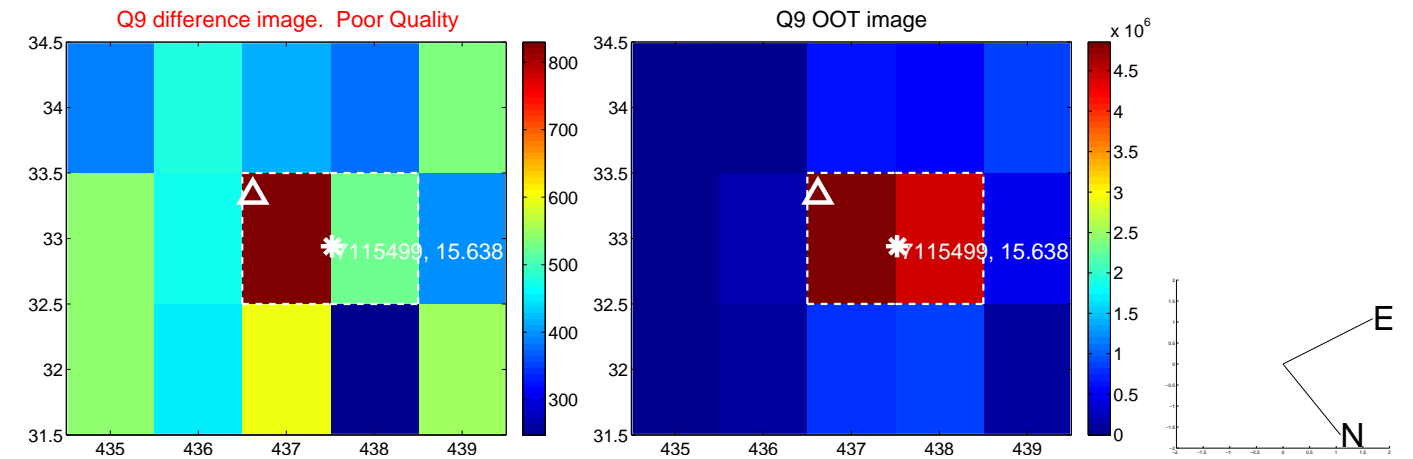
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



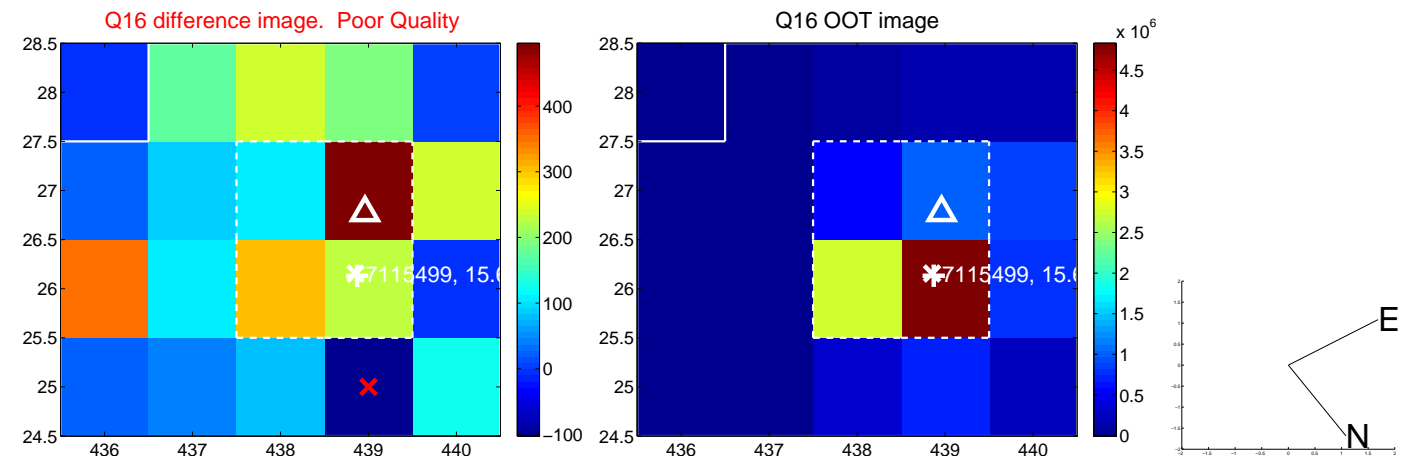
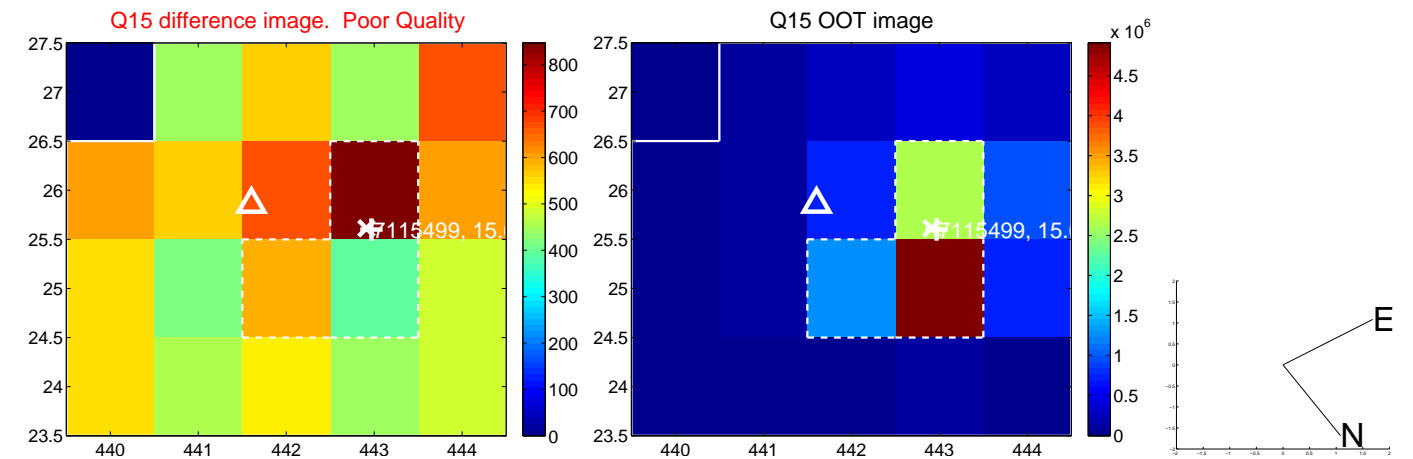
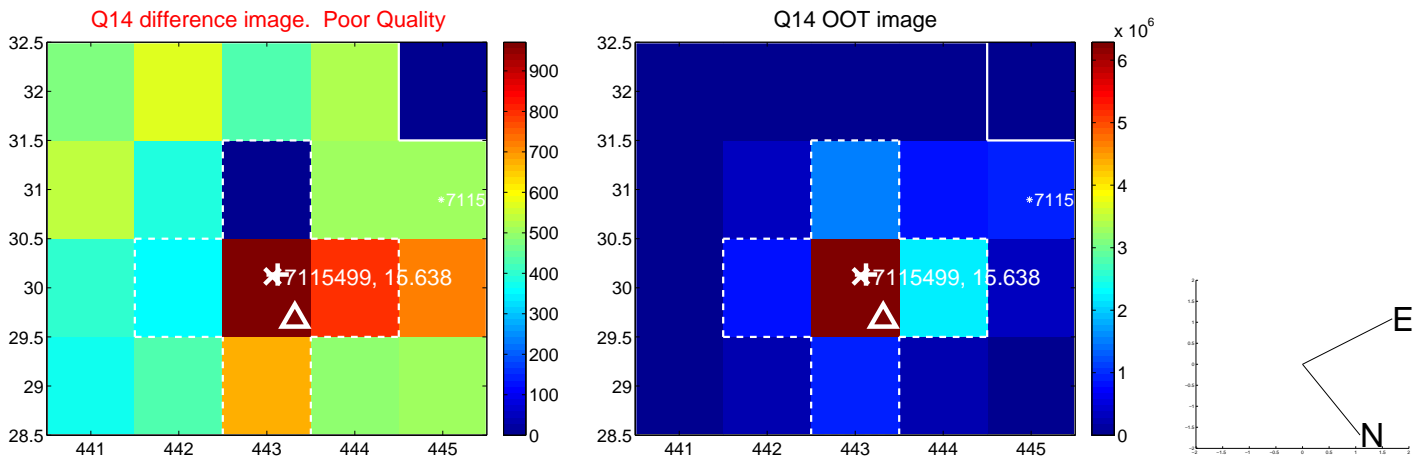
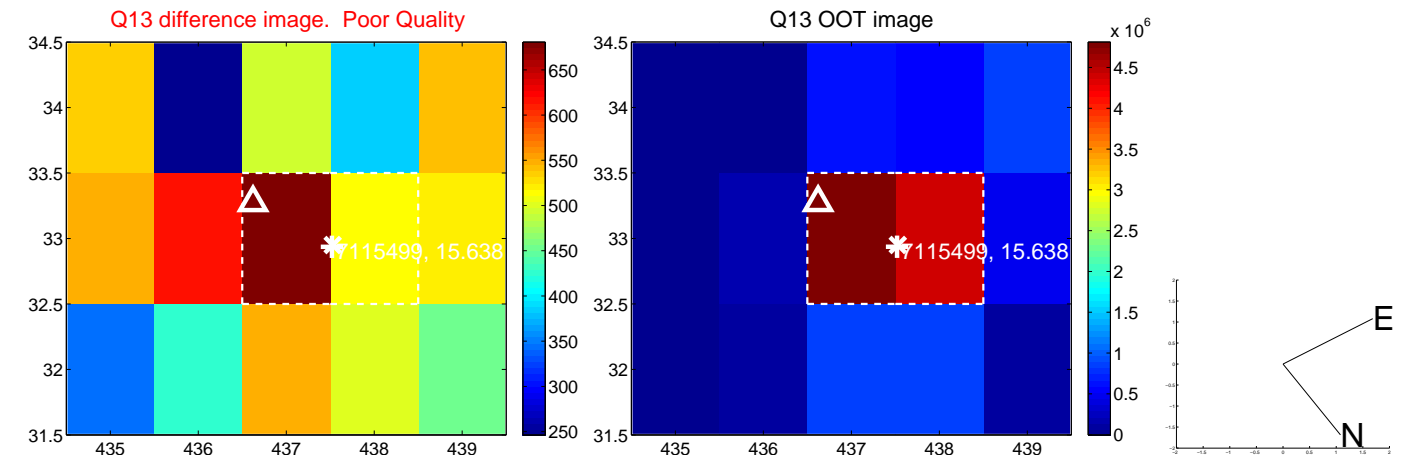
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



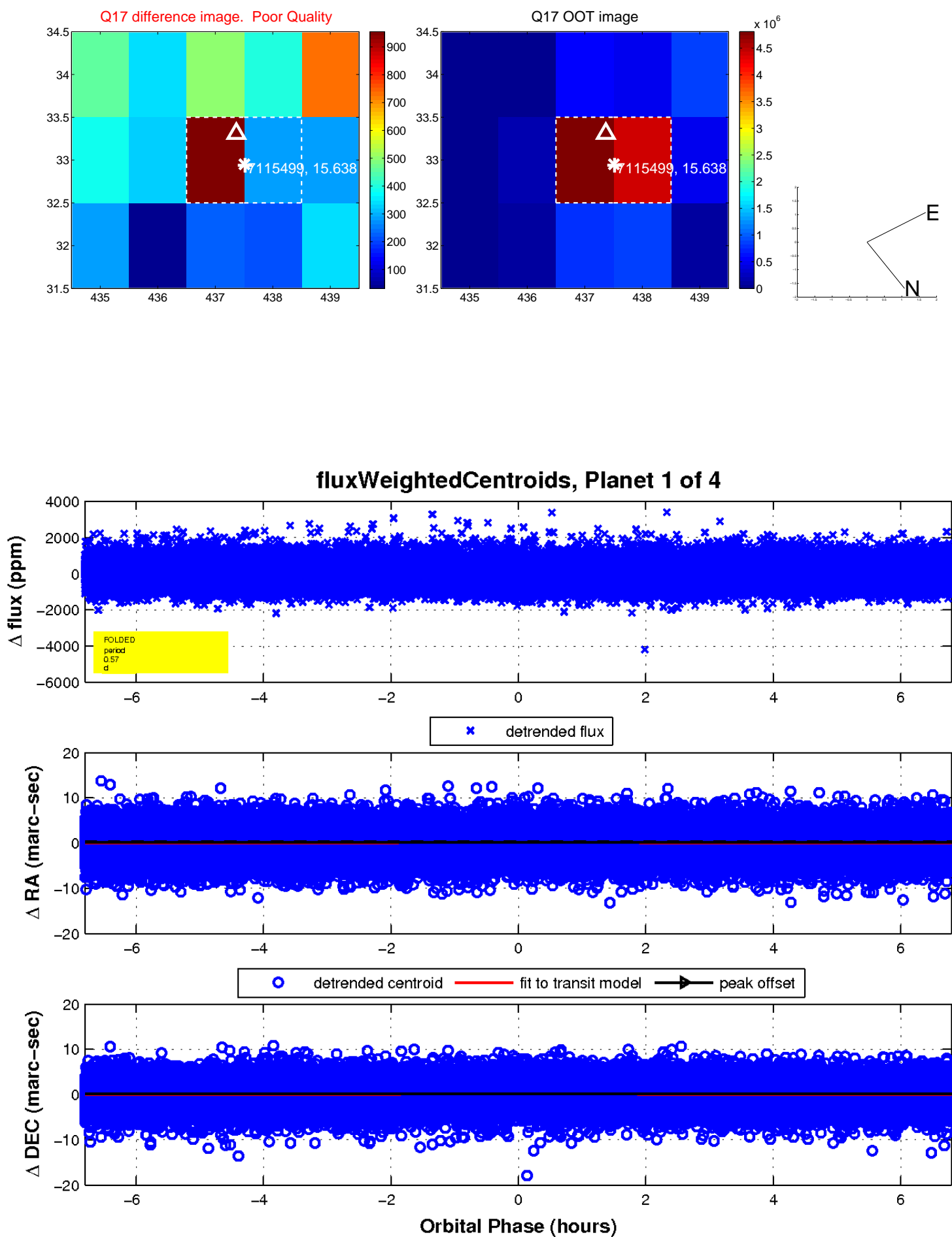
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

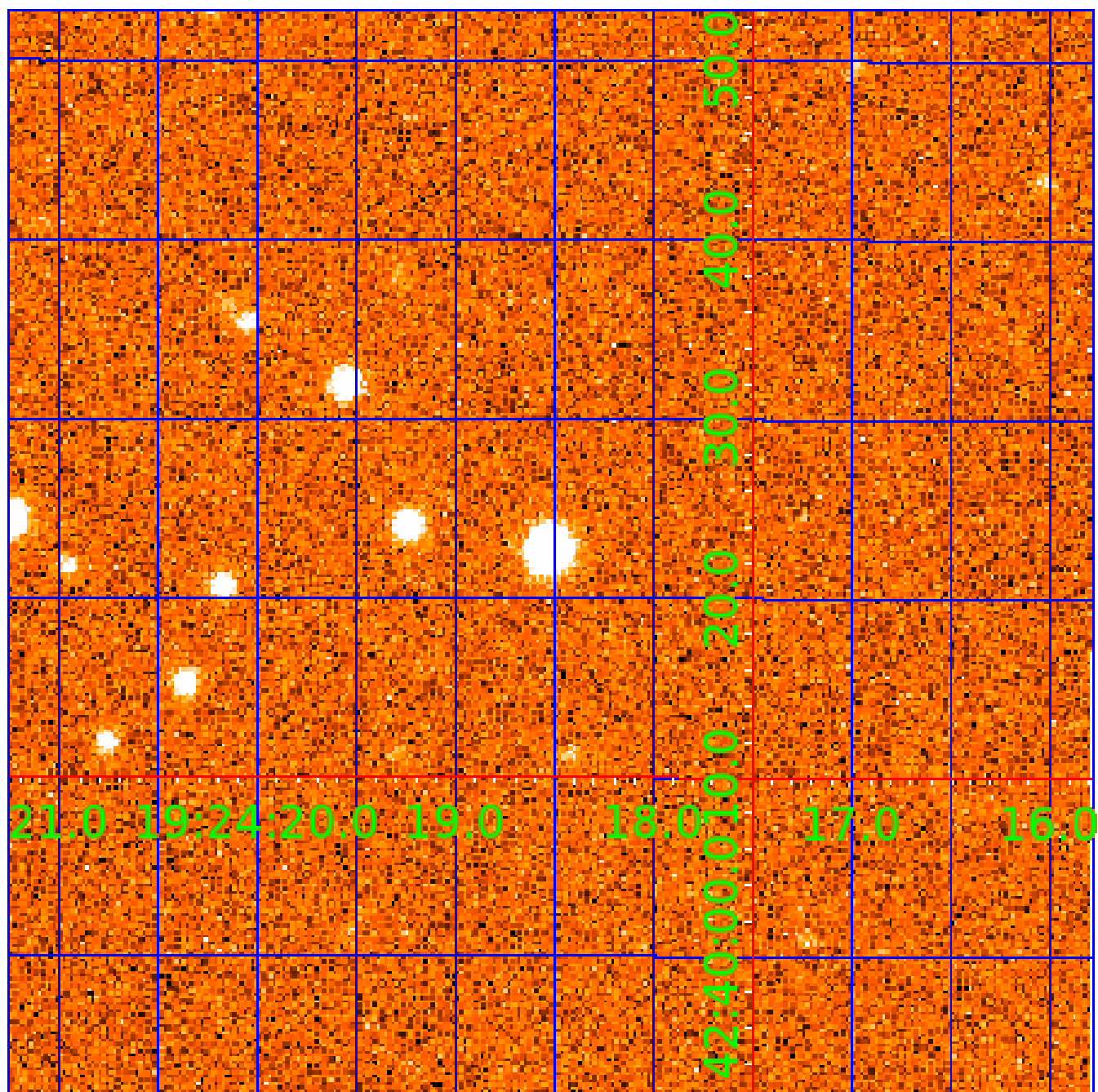


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007115499

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})
007115499-01	OBS	No	0.566760	131.853680	44.7	3.901	13.3	9.8	0.81	5402	0.56	2974.08
007115499-02	OBS	No	35.385813	152.407410	911.7	1.334	10.2	9.6	0.81	5402	2.48	12.01
007115499-03	OBS	No	28.641271	151.789124	1881.8	1.500	8.9	-1.0	0.81	5402	3.48	15.92
007115499-04	OBS	No	31.579702	133.822679	670.8	1.894	8.5	10.1	0.81	5402	2.26	13.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115499-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007115499-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007115499-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_NOFITS
007115499-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

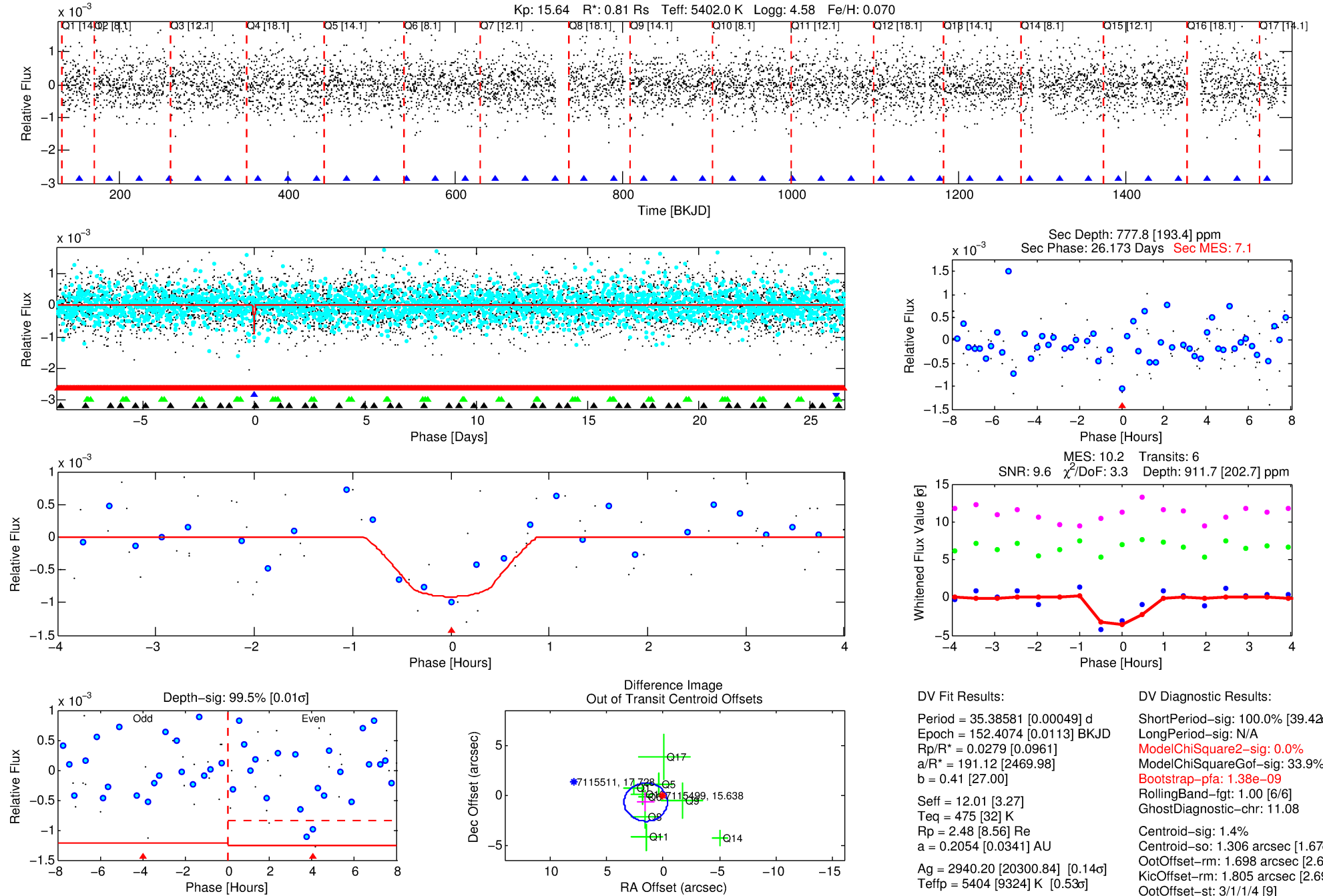
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007115499-02

No Significant Match Found

DV One-Page Summary

KIC: 7115499 Candidate: 2 of 4 Period: 35.386 d



DV Fit Results:

Period = 35.38581 [0.00049] d
Epoch = 152.4074 [0.0113] BKJD
Rp/R* = 0.0279 [0.0961]
a/R* = 191.12 [2469.98]
b = 0.41 [27.00]
Seff = 12.01 [3.27]
Teff = 475 [32] K
Rp = 2.48 [8.56] Re
a = 0.2054 [0.0341] AU
Ag = 2940.20 [20300.84] [0.14 σ]
Teffp = 5404 [9324] K [0.53 σ]

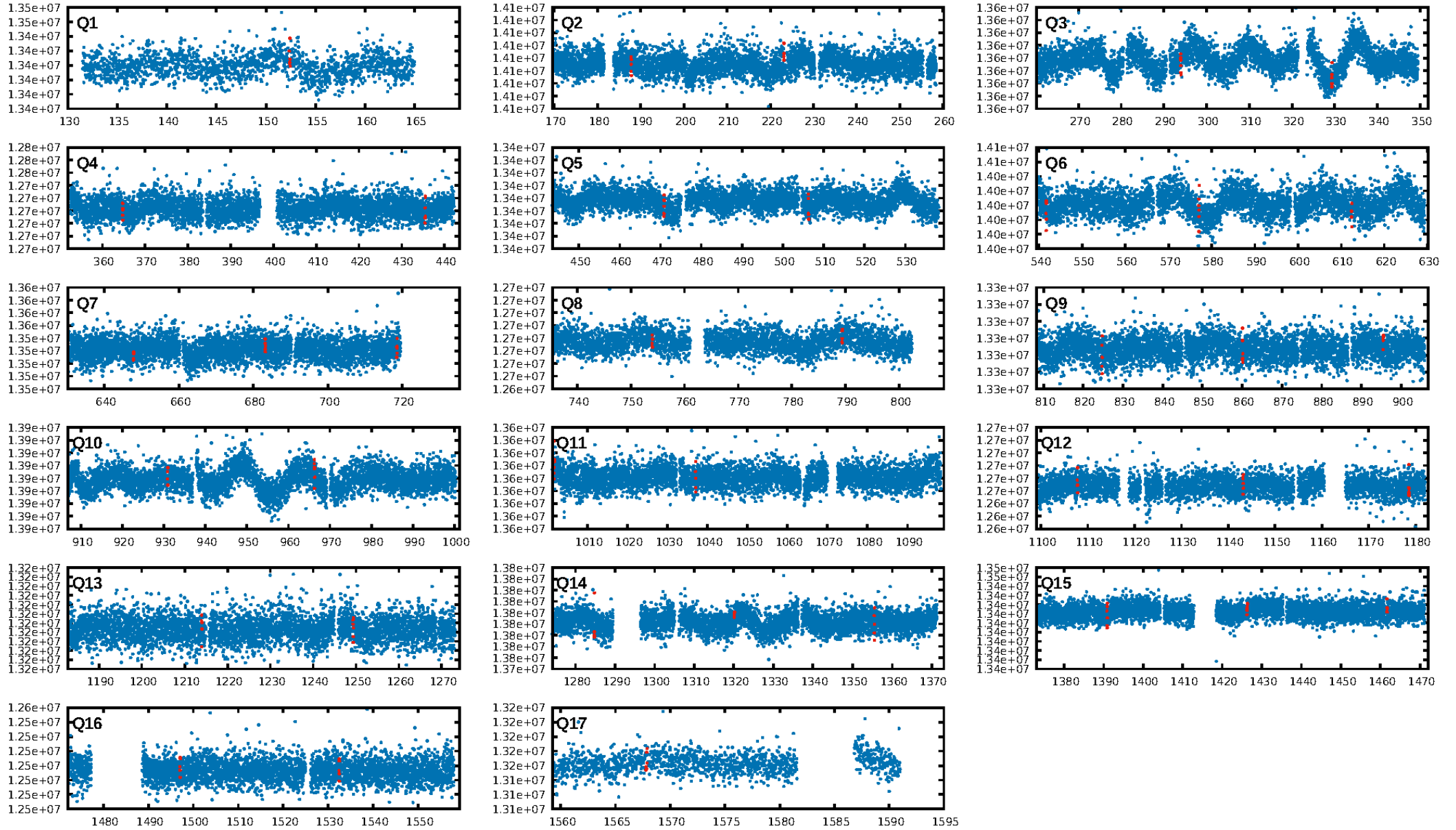
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [39.42 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 33.9%
Bootstrap-pfa: 1.38e-09
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 11.08
Centroid-sig: 1.4%
Centroid-so: 1.306 arcsec [1.67 σ]
OotOffset-rm: 1.698 arcsec [2.67 σ]
KicOffset-rm: 1.805 arcsec [2.69 σ]
OotOffset-st: 3/1/1/4 [9]
KicOffset-st: 3/1/1/4 [9]
DiffImageQuality-fgm: 0.11 [1/9]
DiffImageOverlap-fno: 0.00 [0/17]

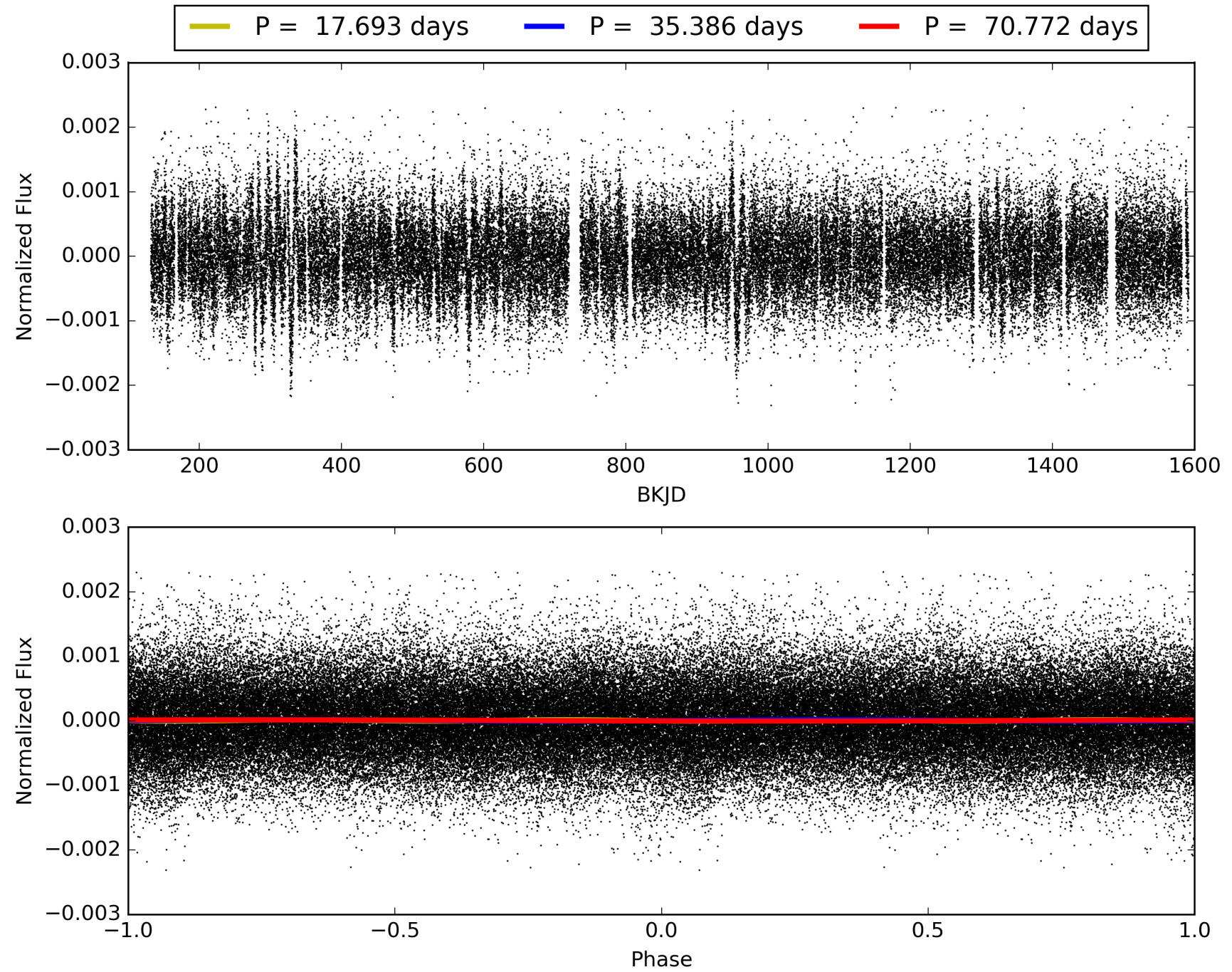
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:45:26 Z

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

TCE 007115499-02, PDC Light Curves

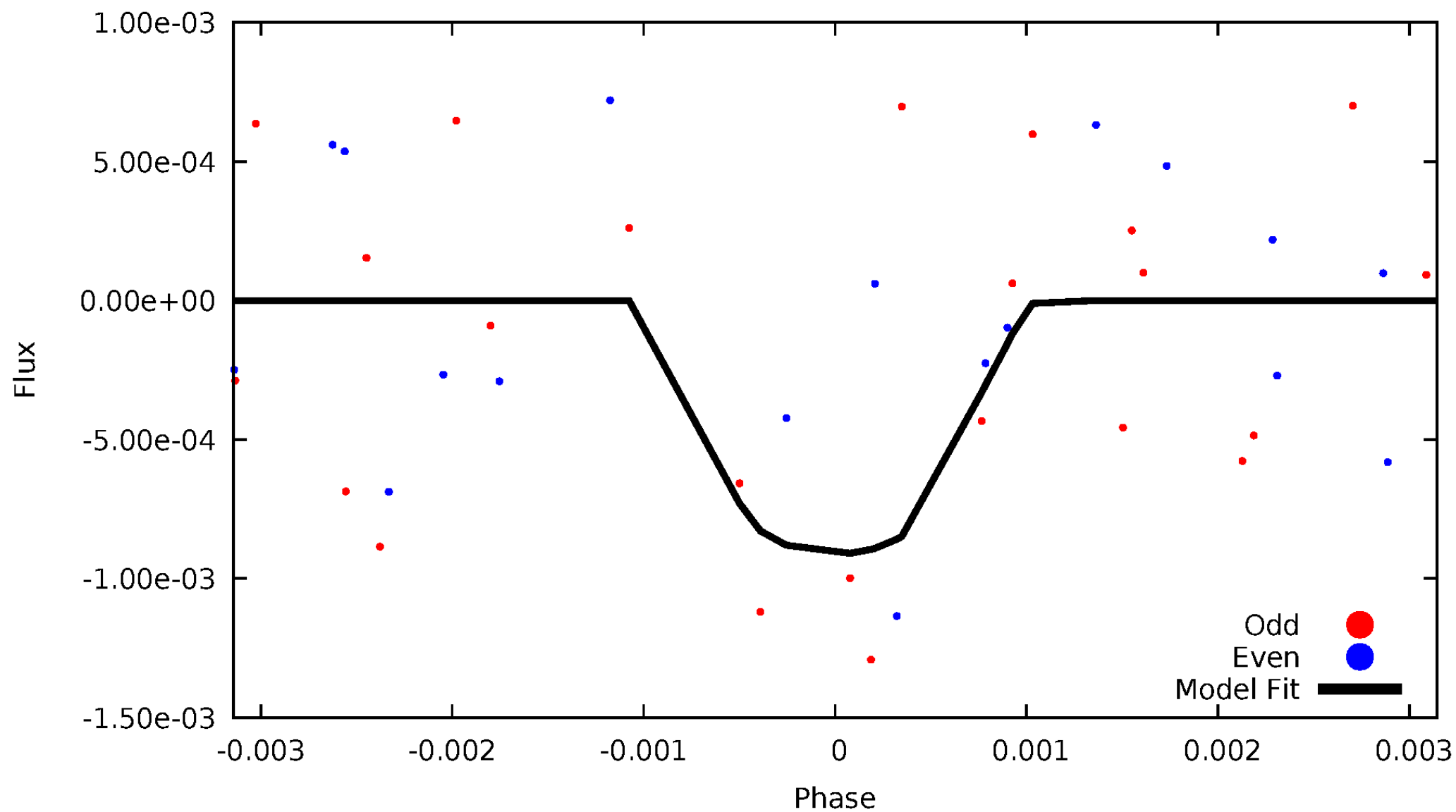


TCE 007115499-02



DV Odd/Even

TCE 007115499-02

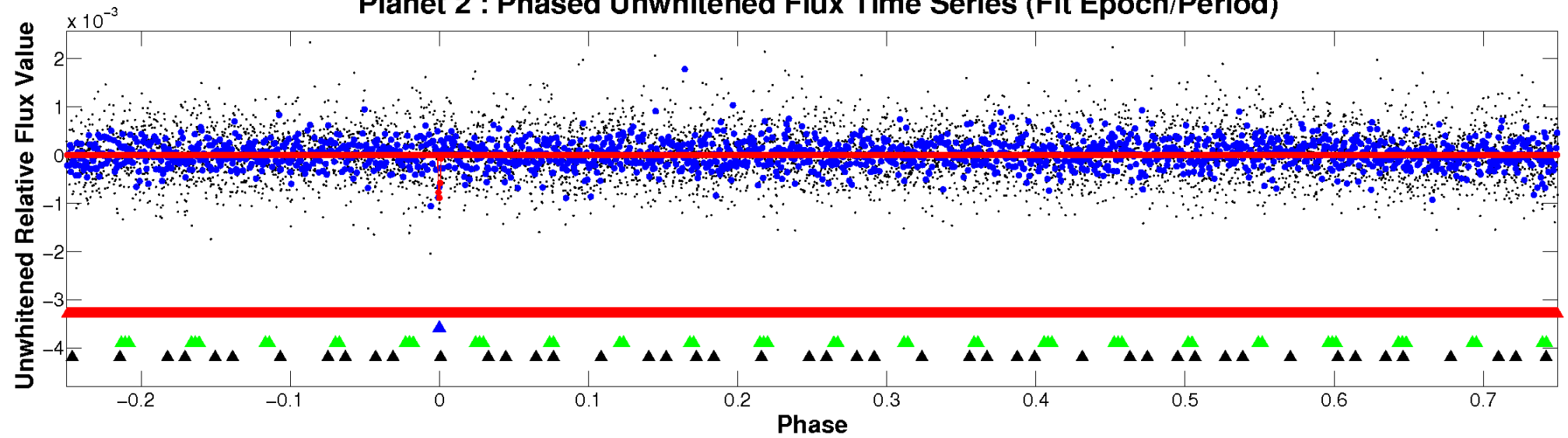


ALT Odd/Even

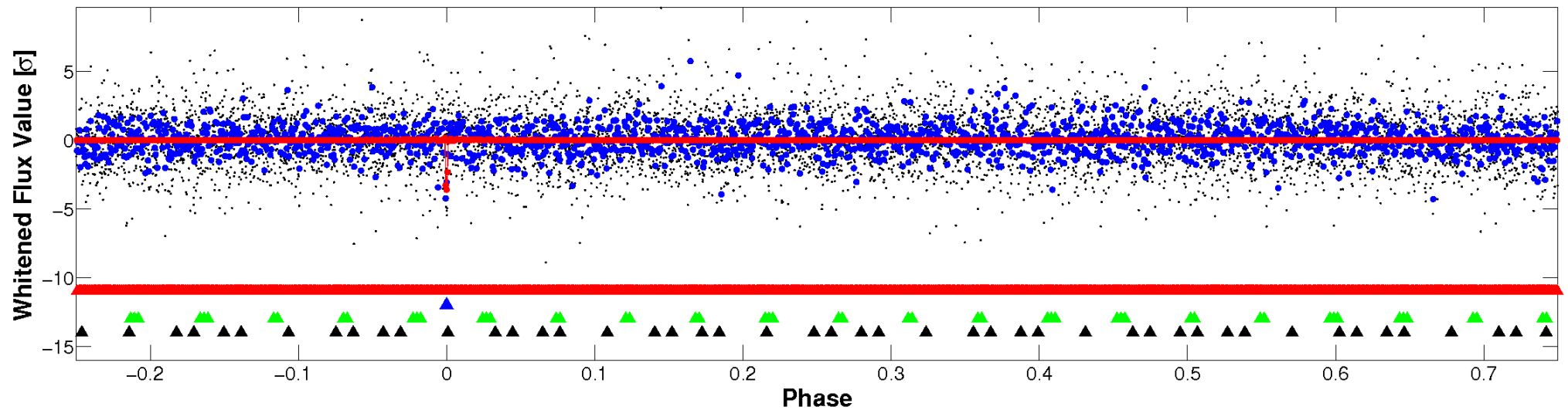
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

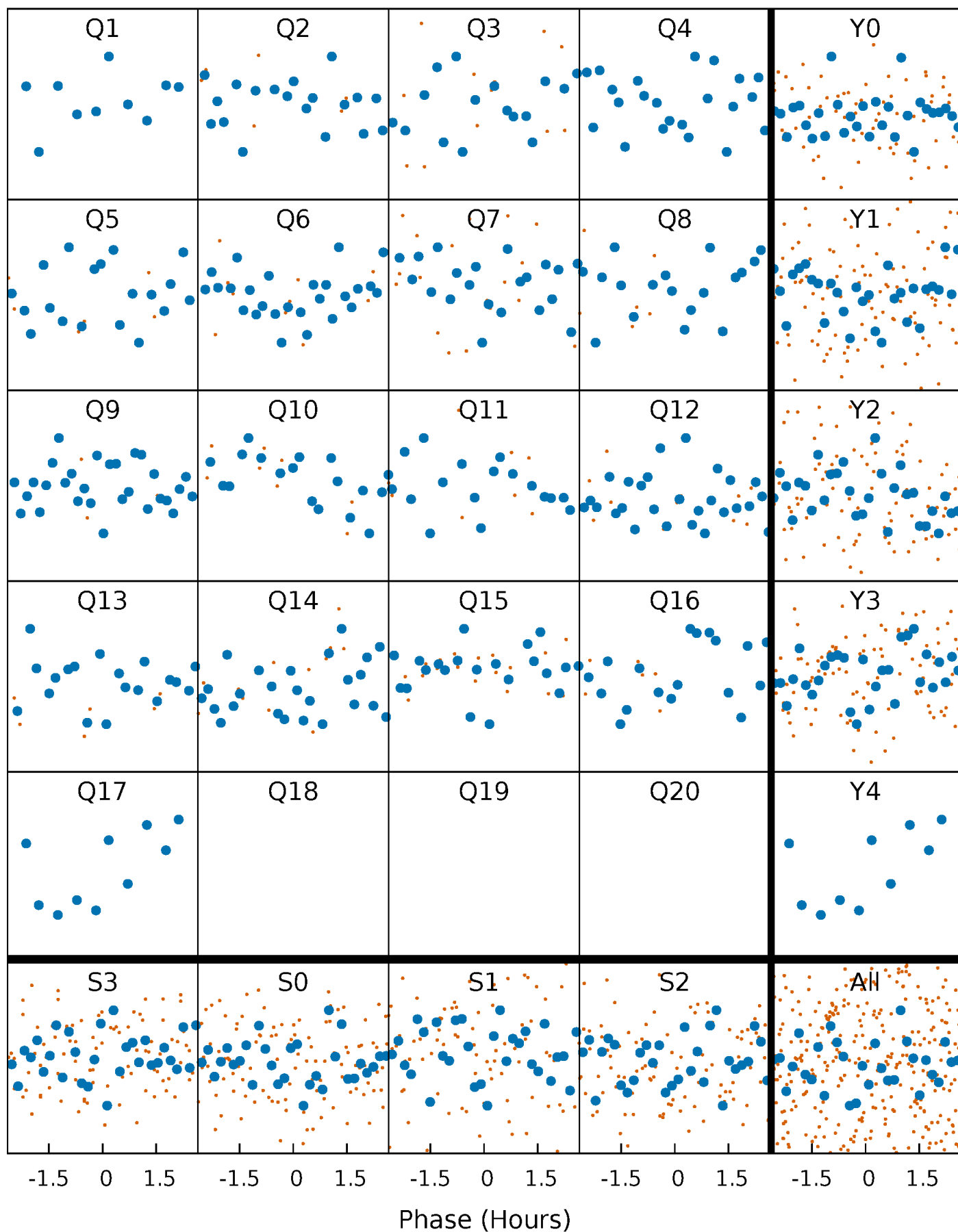


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



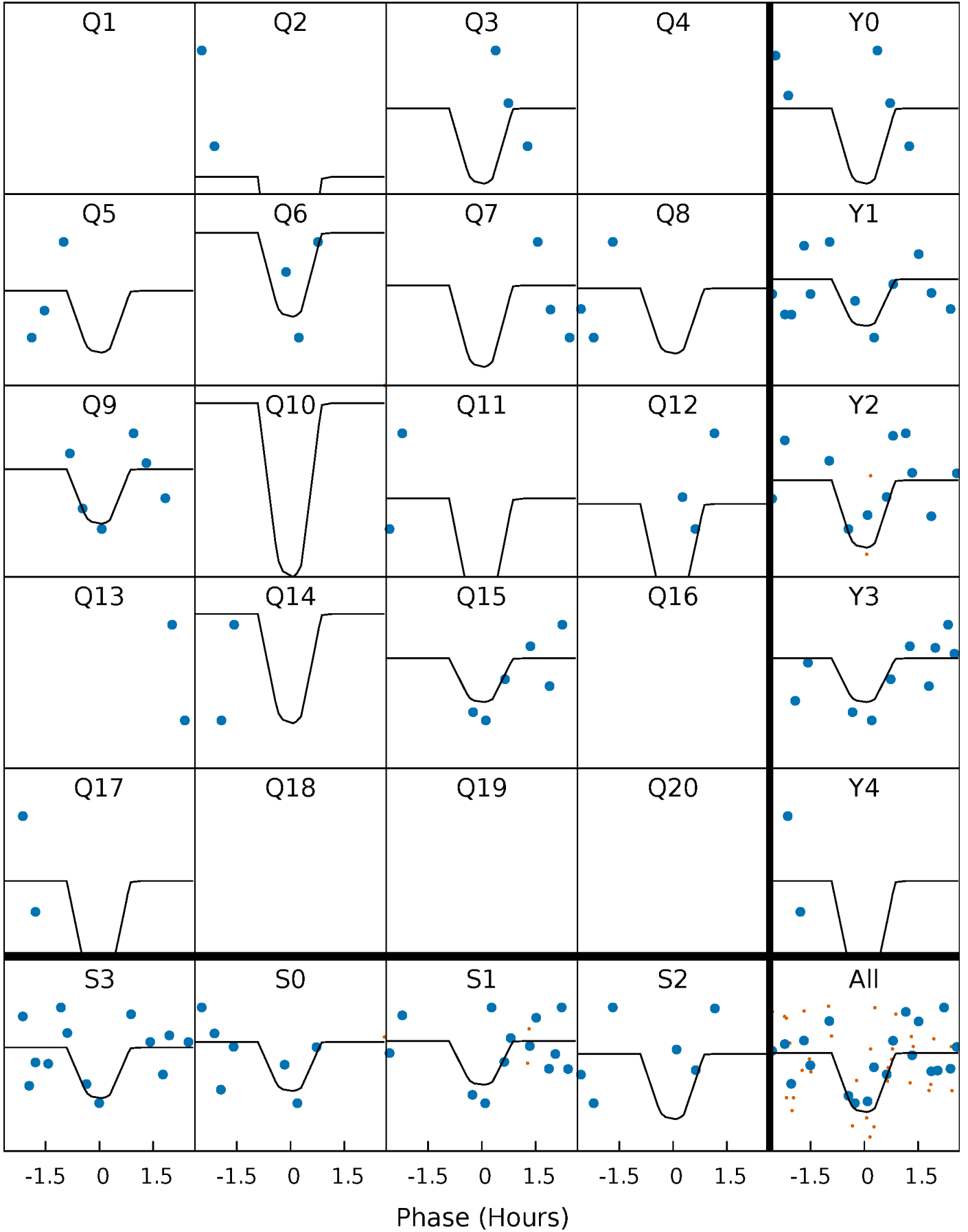
PDC Quarter-Phased Transit Curves

TCE 007115499-02 P= 35.385813 Days $T_0=152.407410$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007115499-02 P= 35.385813 Days $T_0=152.407410$ (BKJD)

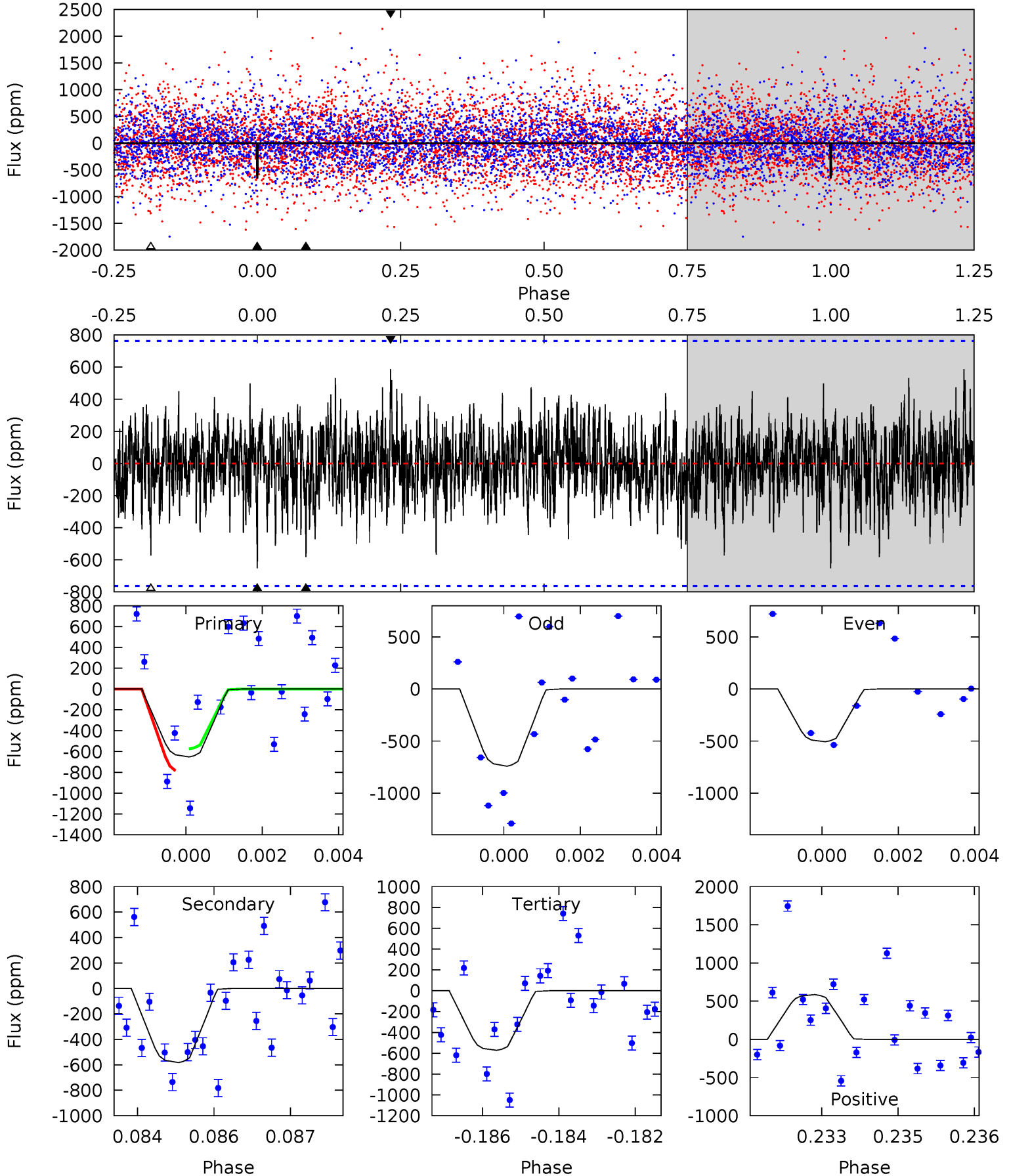


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007115499-02, P = 35.385813 Days, E = 117.021597 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.57	4.08	4.01	4.10	5.34	3.11	1.18	0.56	0.46	0.07	-0.03	0.86	0.56	0.47	0.55



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007115499

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5402^{+160}_{-160}	$4.581^{+0.025}_{-0.136}$	$0.070^{+0.250}_{-0.300}$	$0.815^{+0.158}_{-0.068}$	$0.931^{+0.065}_{-0.105}$	$2.419^{+0.324}_{-0.960}$
	+3%/-3%	+1%/-3%	+357%/-429%	+19%/-8%	+7%/-11%	+13%/-40%
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 007115499-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-582 ± 143	$7.16^{+7.05}_{-4.96}$	675^{+33}_{-25}	3461^{+2038}_{-630}	255^{+2473}_{-191}
Alt.	N/A	N/A	N/A	N/A	N/A

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

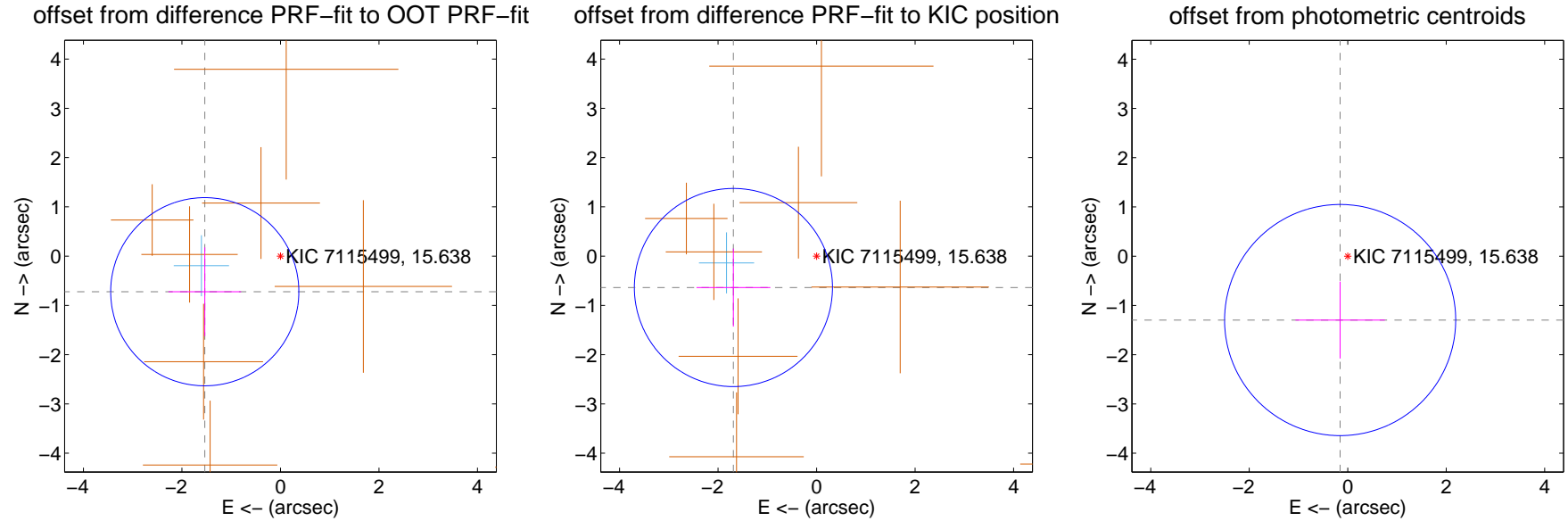
DV Centroid Data

Supplemental centroid analysis for 007115499-02. Kepler magnitude: 15.64. Transit SNR 9.60

There are 1 quarters with good PRF difference image offsets

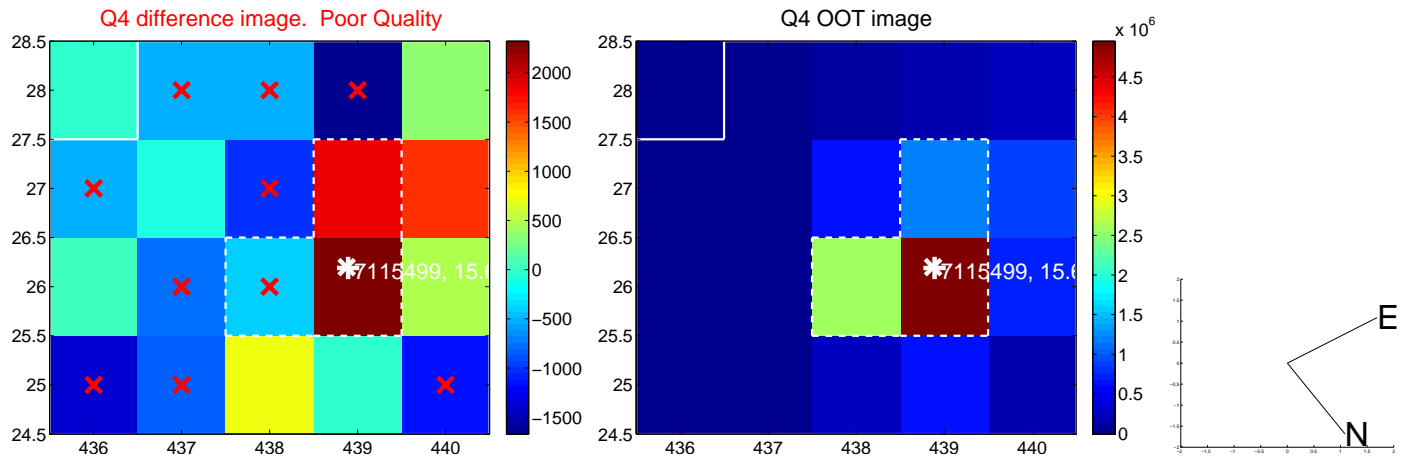
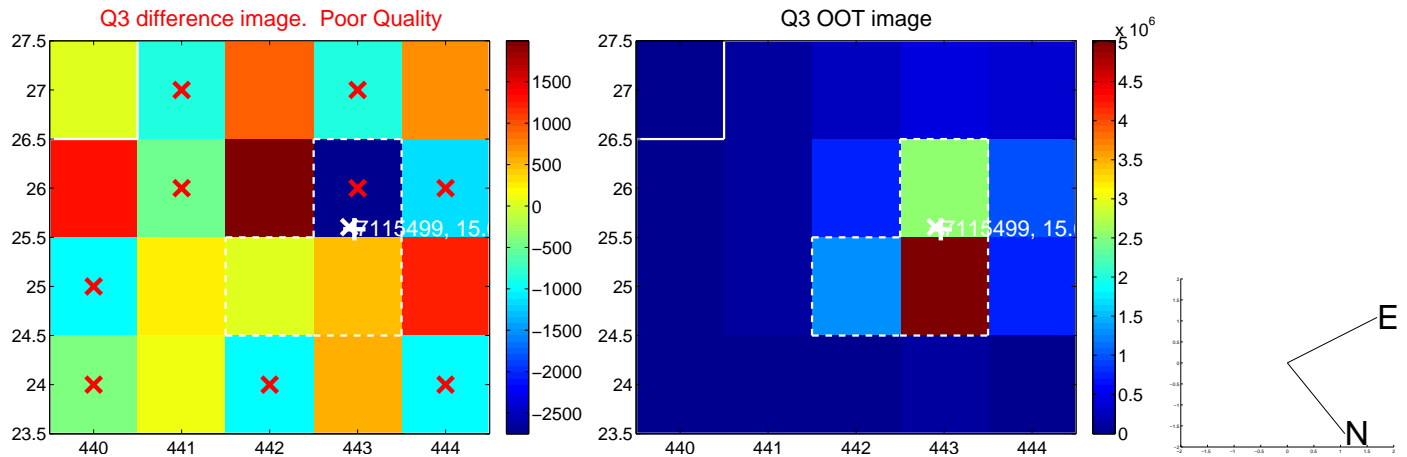
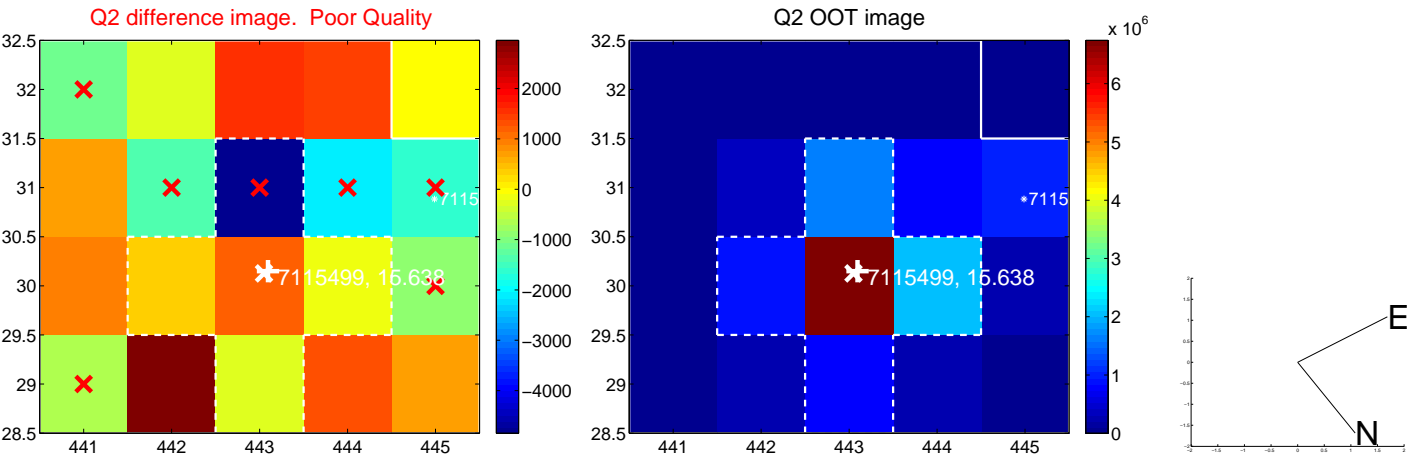
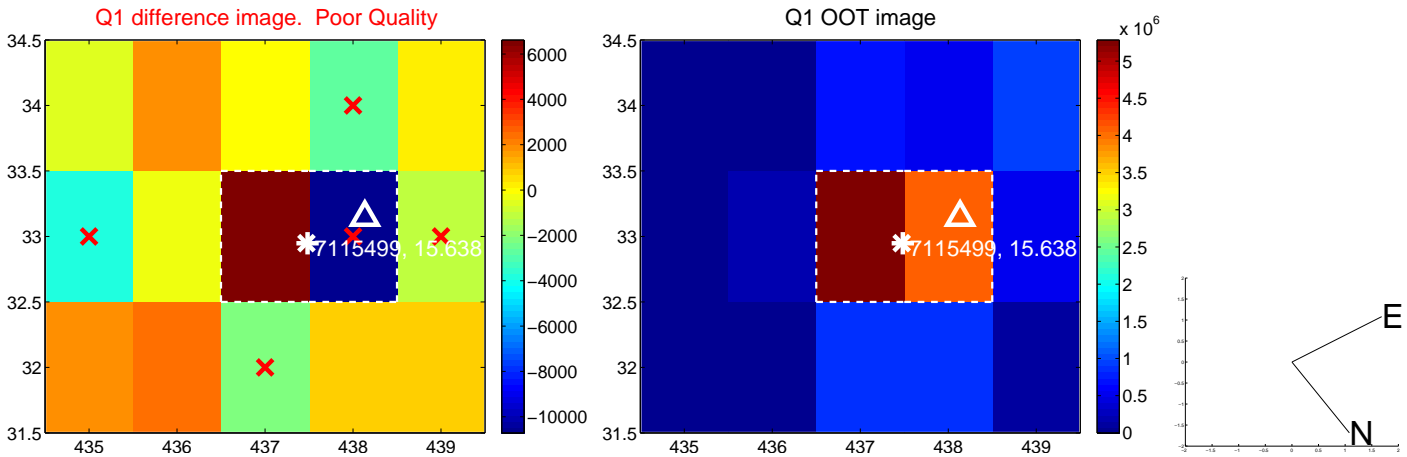
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.698 ± 0.637	2.67	1.537 ± 0.737	-0.723 ± 0.900
PRF-fit source offset from KIC position	1.805 ± 0.670	2.69	1.689 ± 0.750	-0.637 ± 0.792
photometric centroid source offset	1.31 ± 0.78	1.67	0.15 ± 0.91	-1.30 ± 0.78

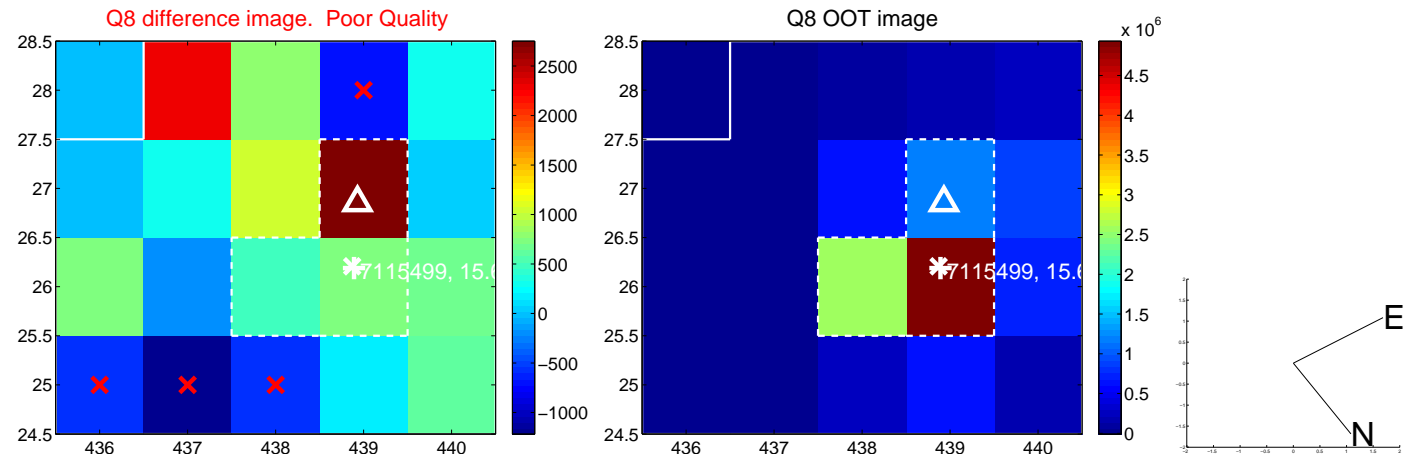
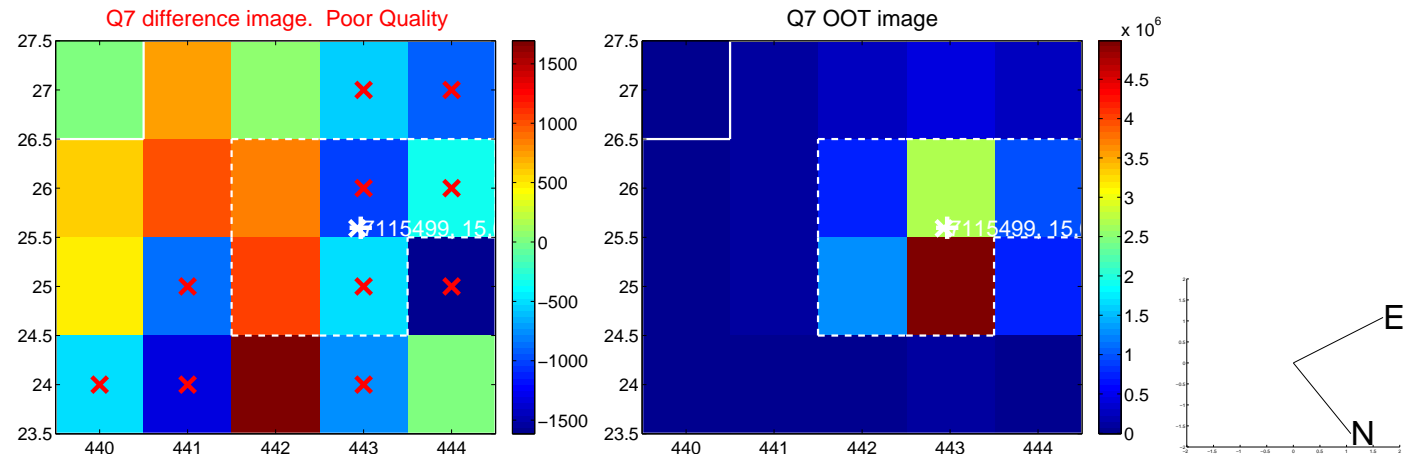
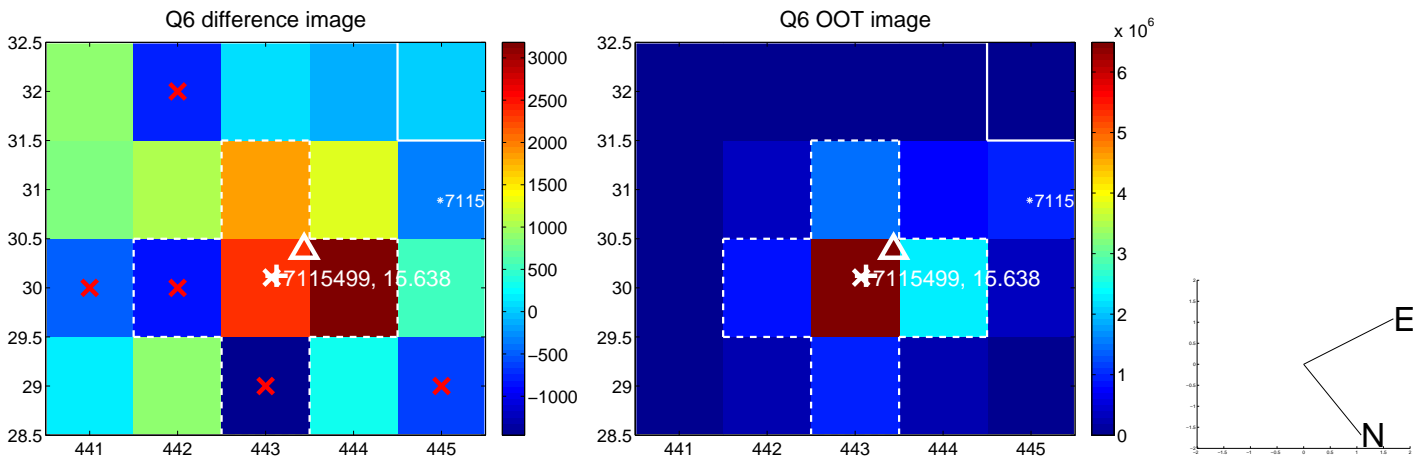
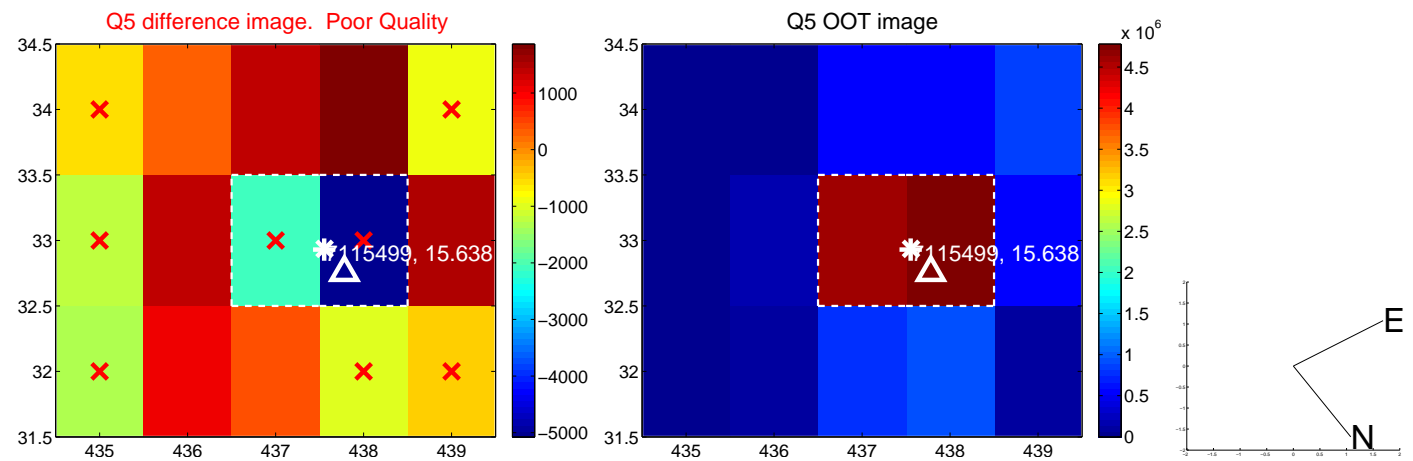


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

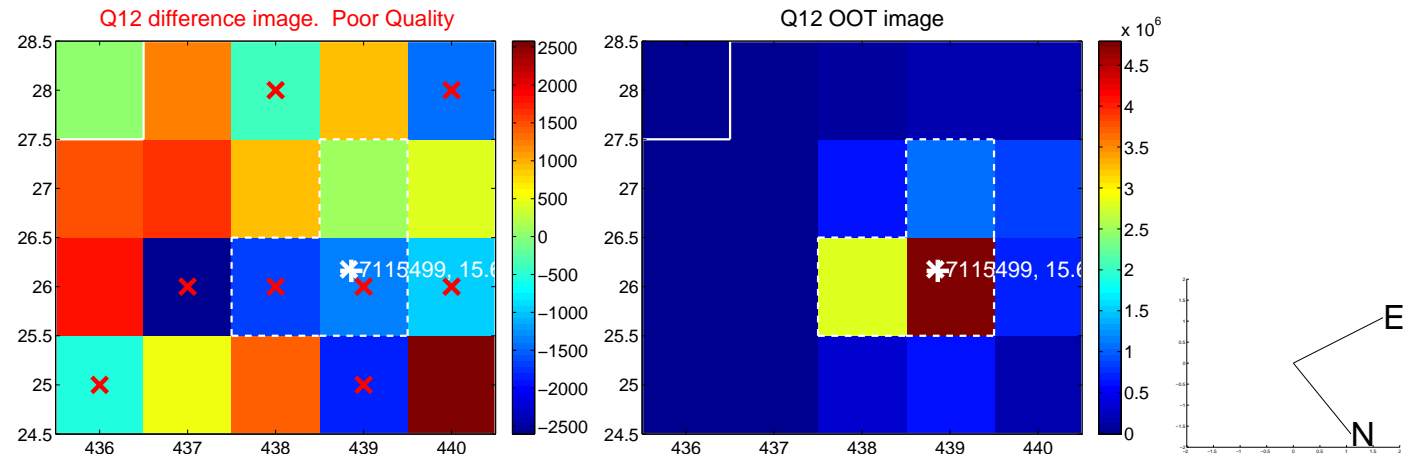
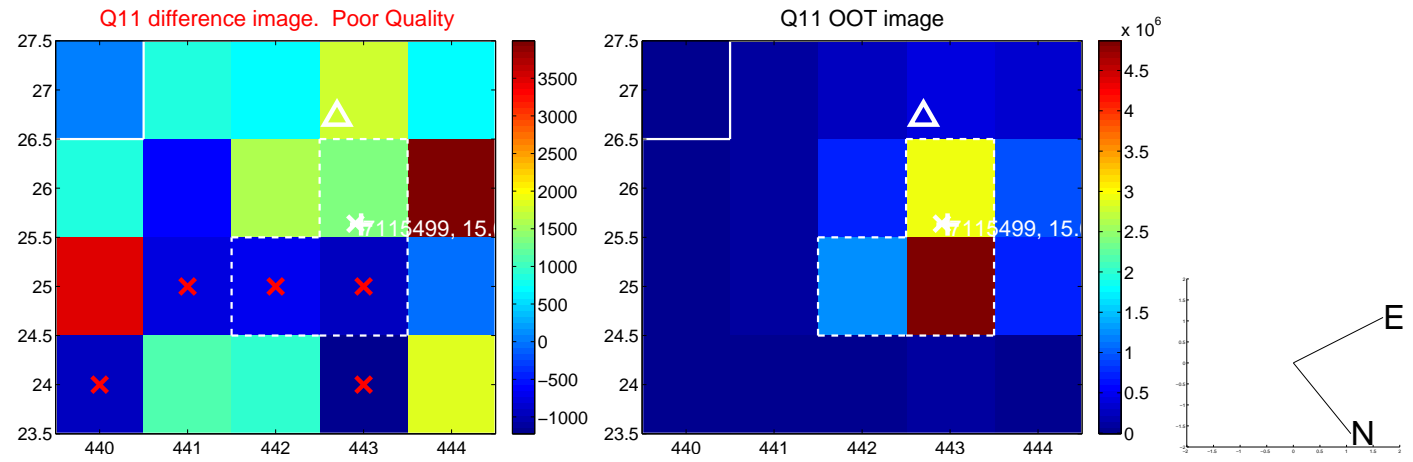
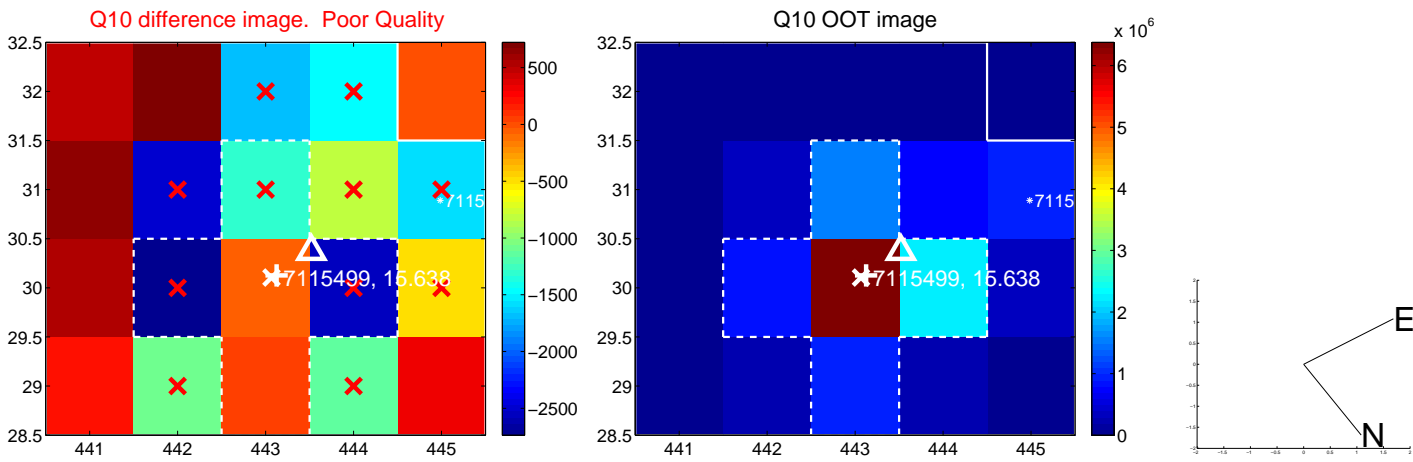
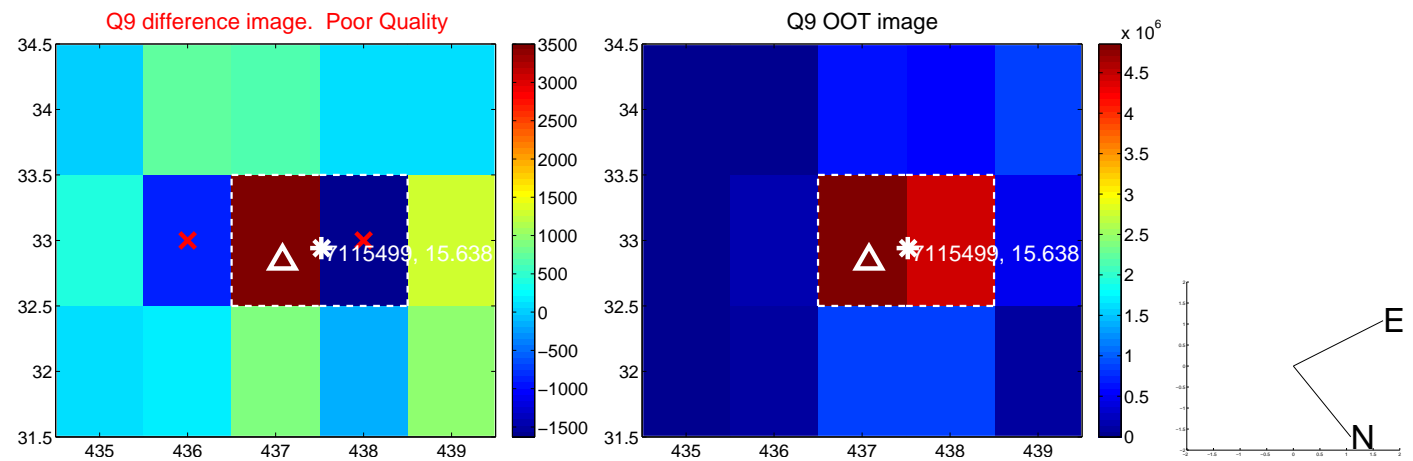
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



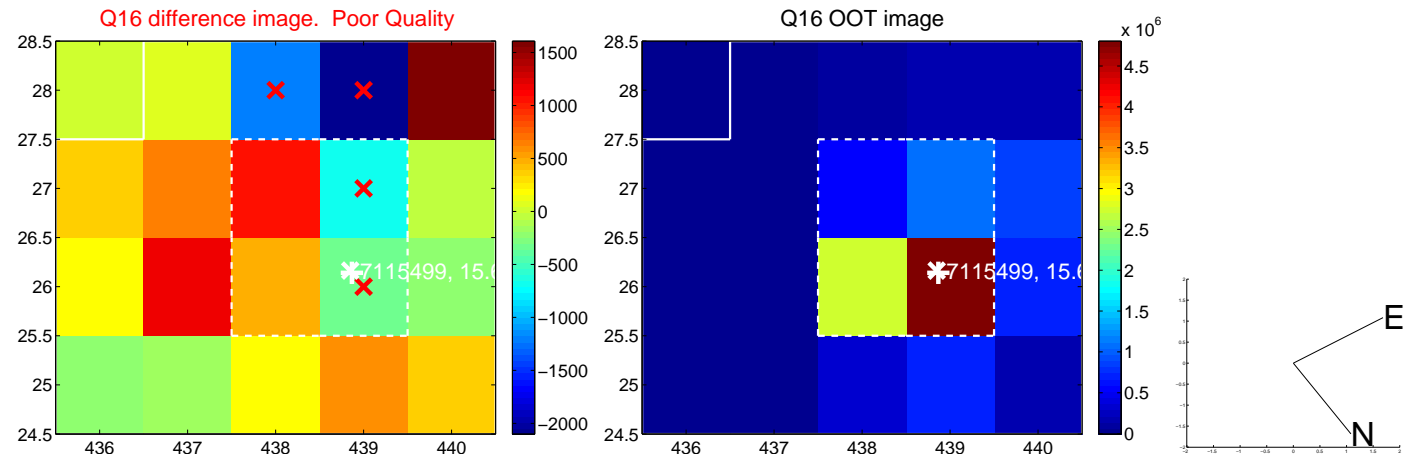
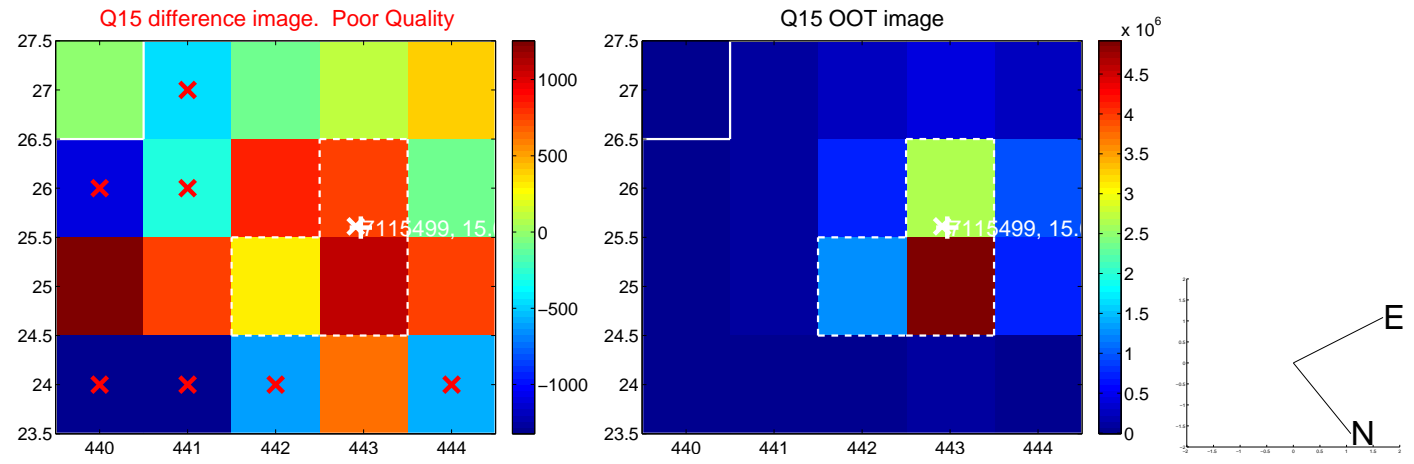
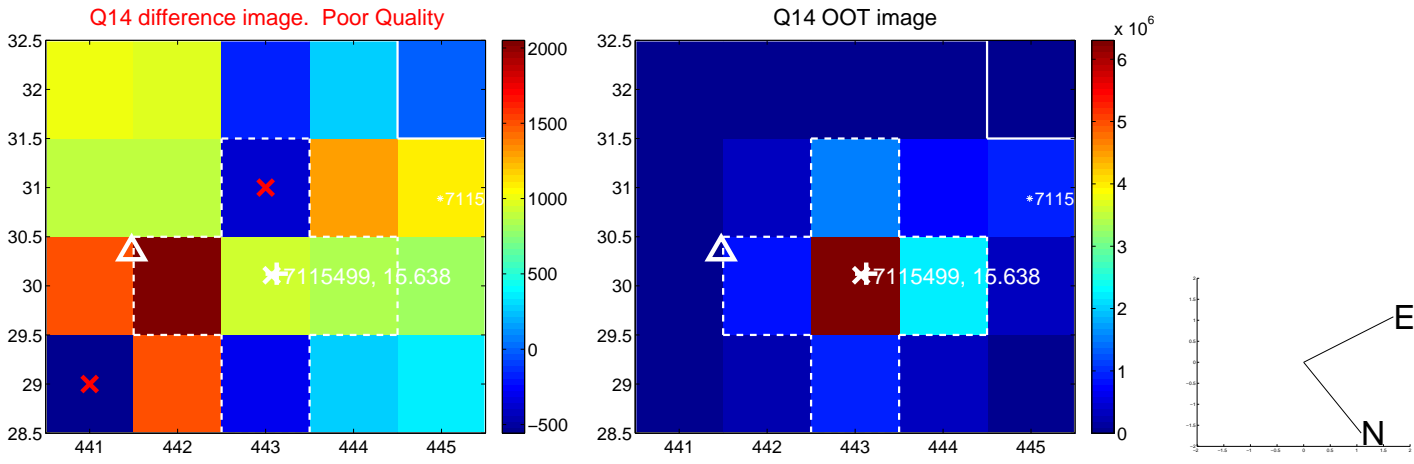
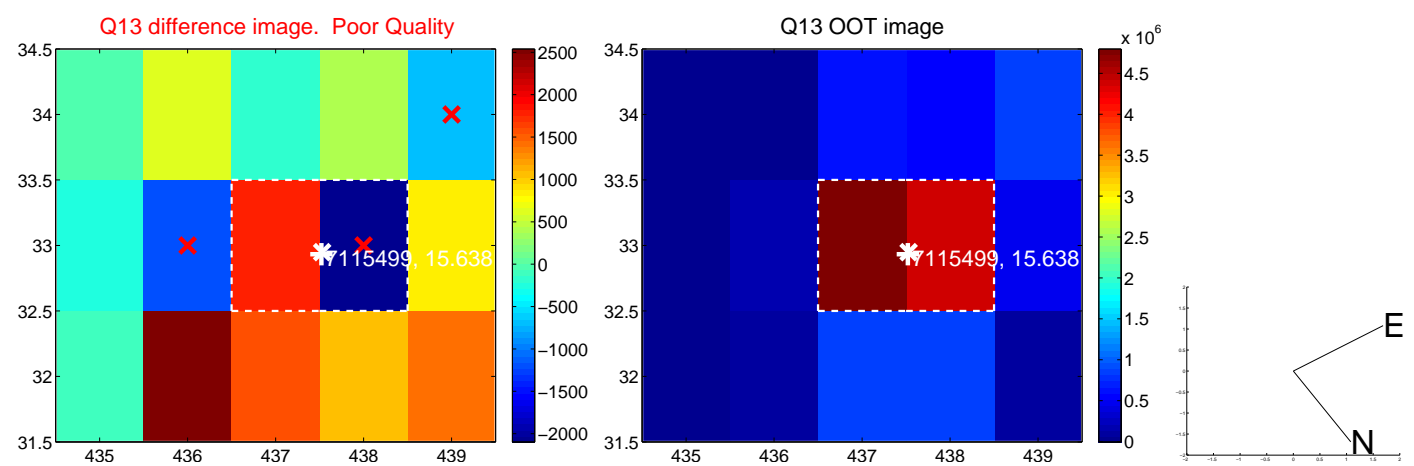
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



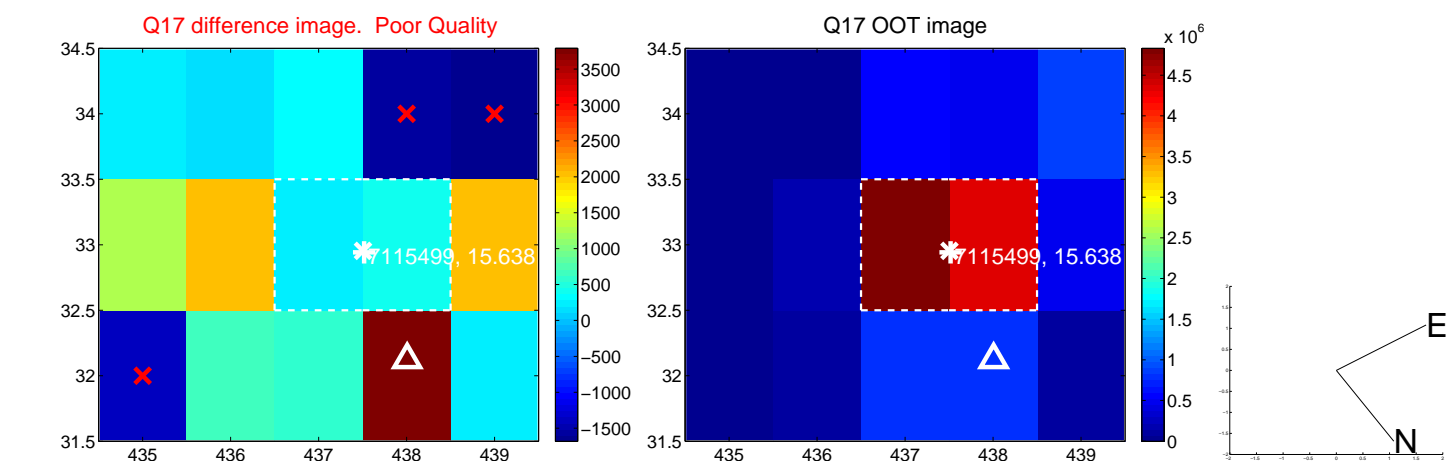
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



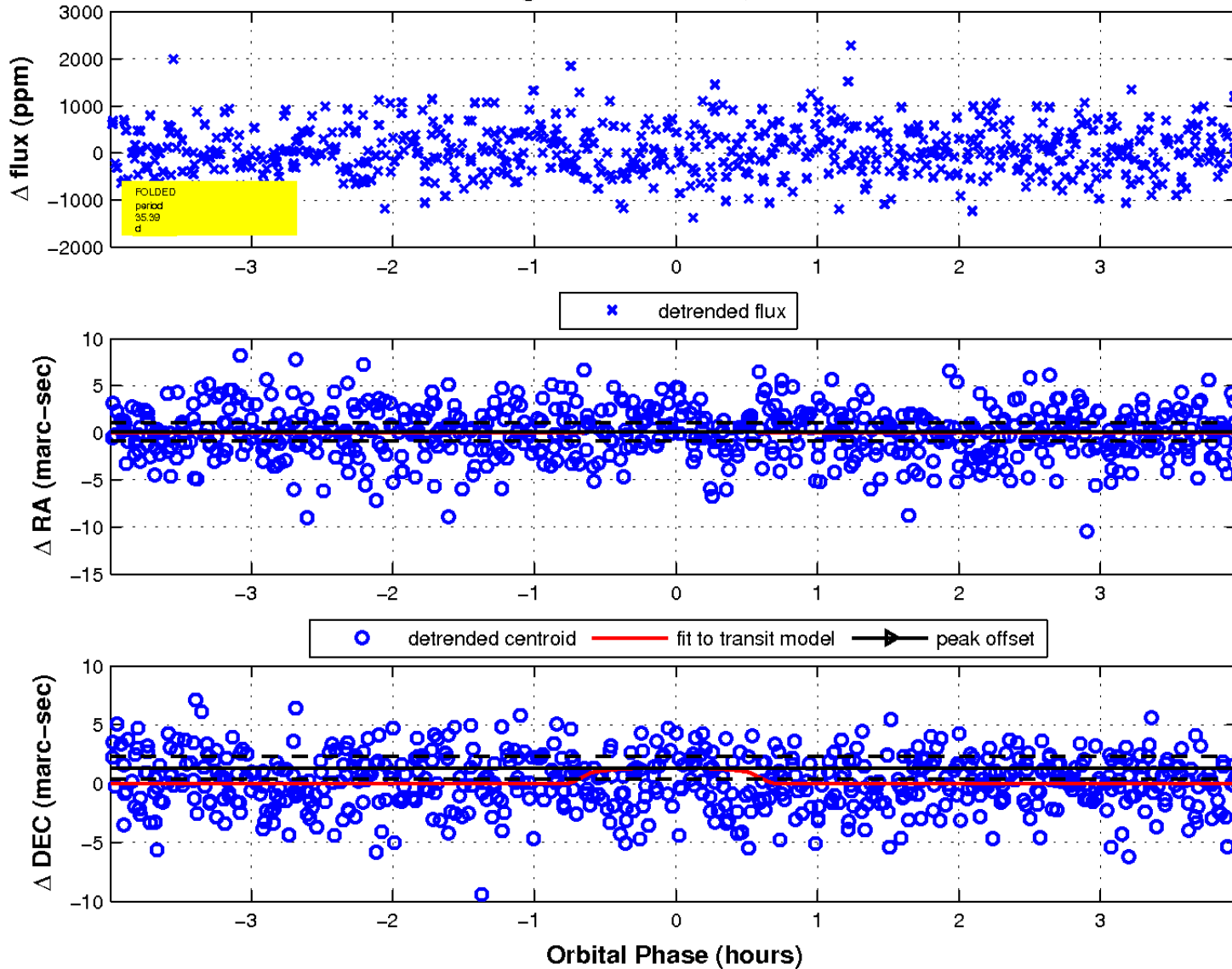
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

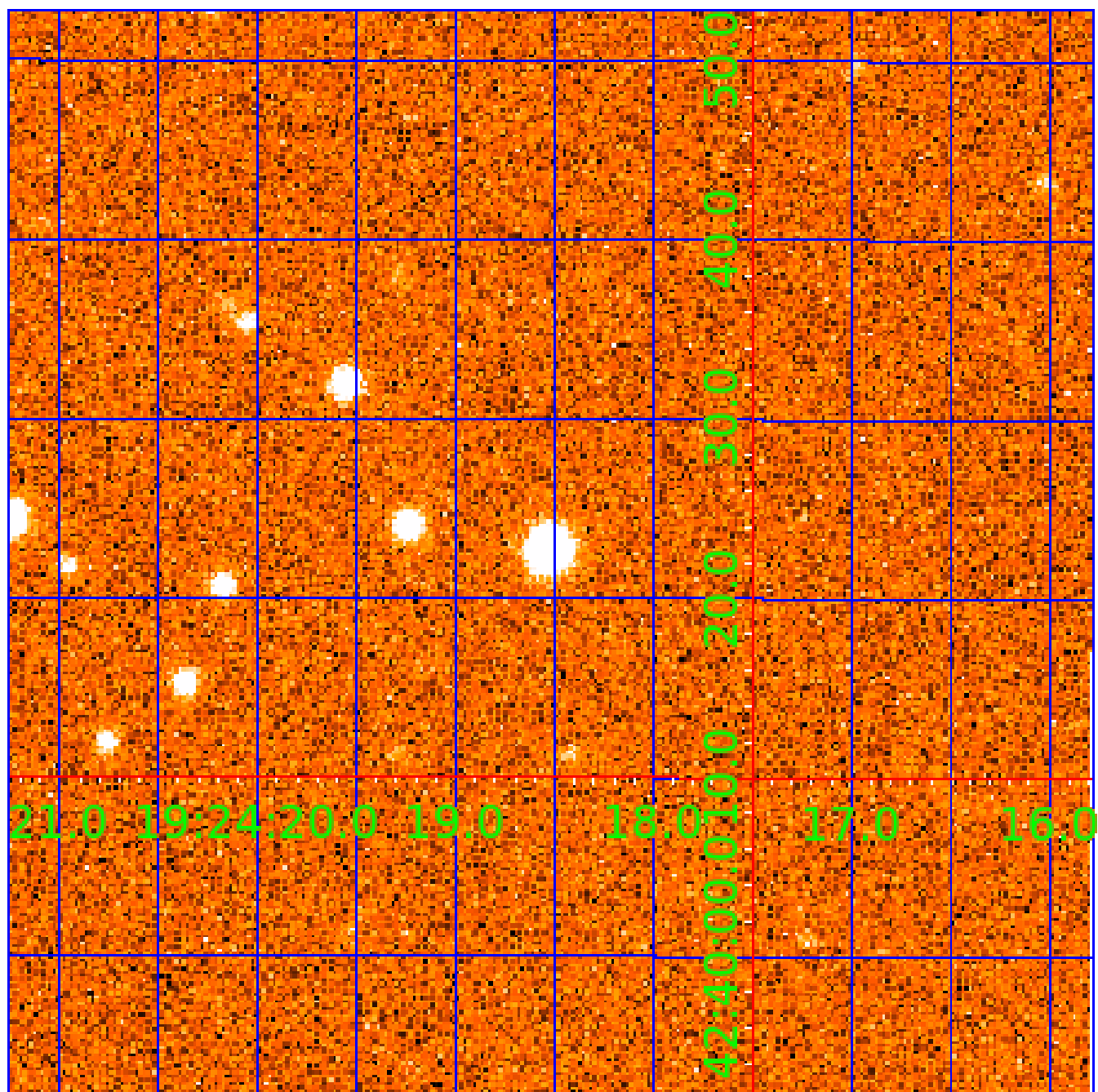


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 007115499

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})
007115499-01	OBS	No	0.566760	131.853680	44.7	3.901	13.3	9.8	0.81	5402	0.56	2974.08
007115499-02	OBS	No	35.385813	152.407410	911.7	1.334	10.2	9.6	0.81	5402	2.48	12.01
007115499-03	OBS	No	28.641271	151.789124	1881.8	1.500	8.9	-1.0	0.81	5402	3.48	15.92
007115499-04	OBS	No	31.579702	133.822679	670.8	1.894	8.5	10.1	0.81	5402	2.26	13.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115499-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007115499-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007115499-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_NOFITS
007115499-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

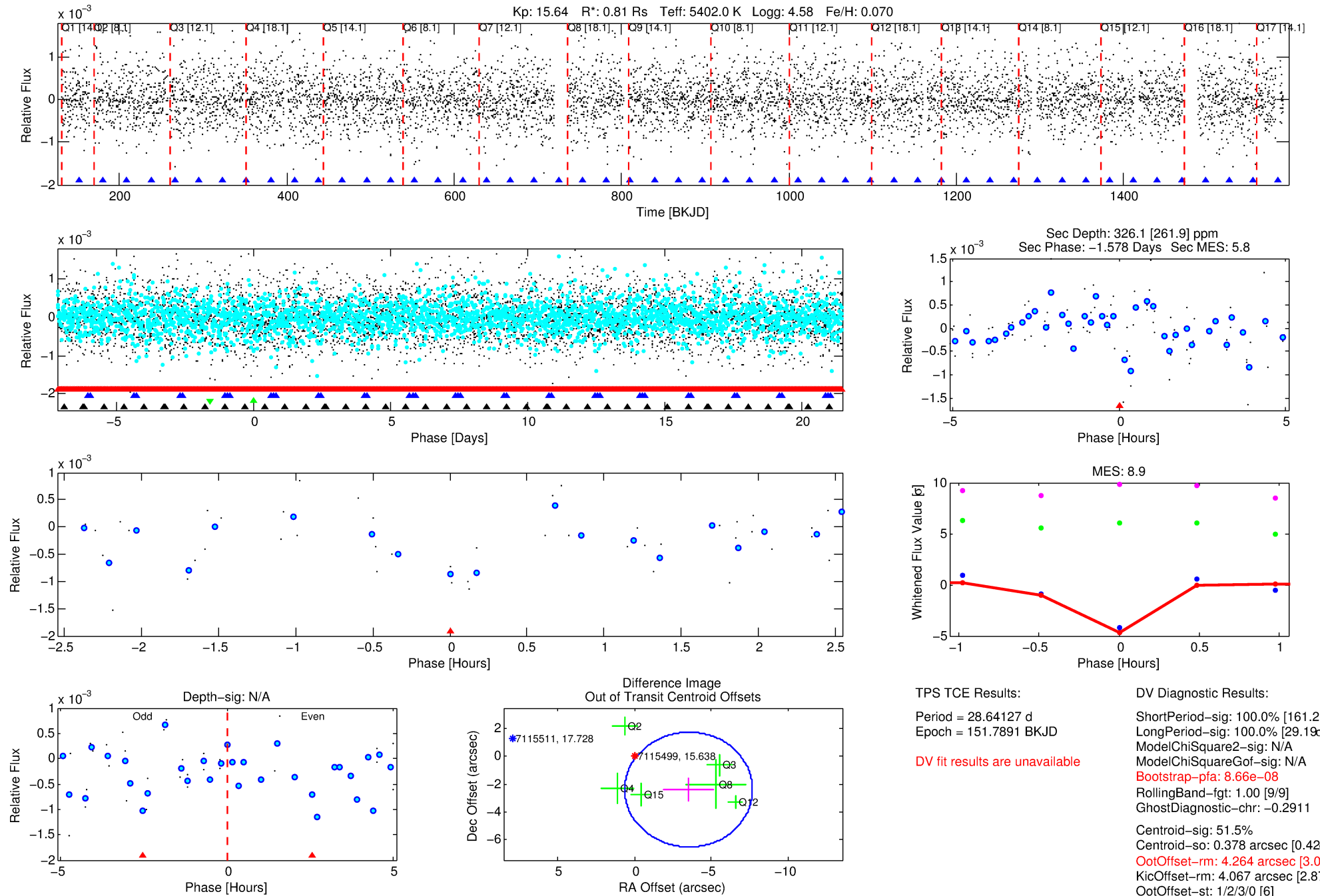
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007115499-03

No Significant Match Found

DV One-Page Summary

KIC: 7115499 Candidate: 3 of 4 Period: 28.641 d



TPS TCE Results:

Period = 28.64127 d
Epoch = 151.7891 BKJD

DV fit results are unavailable

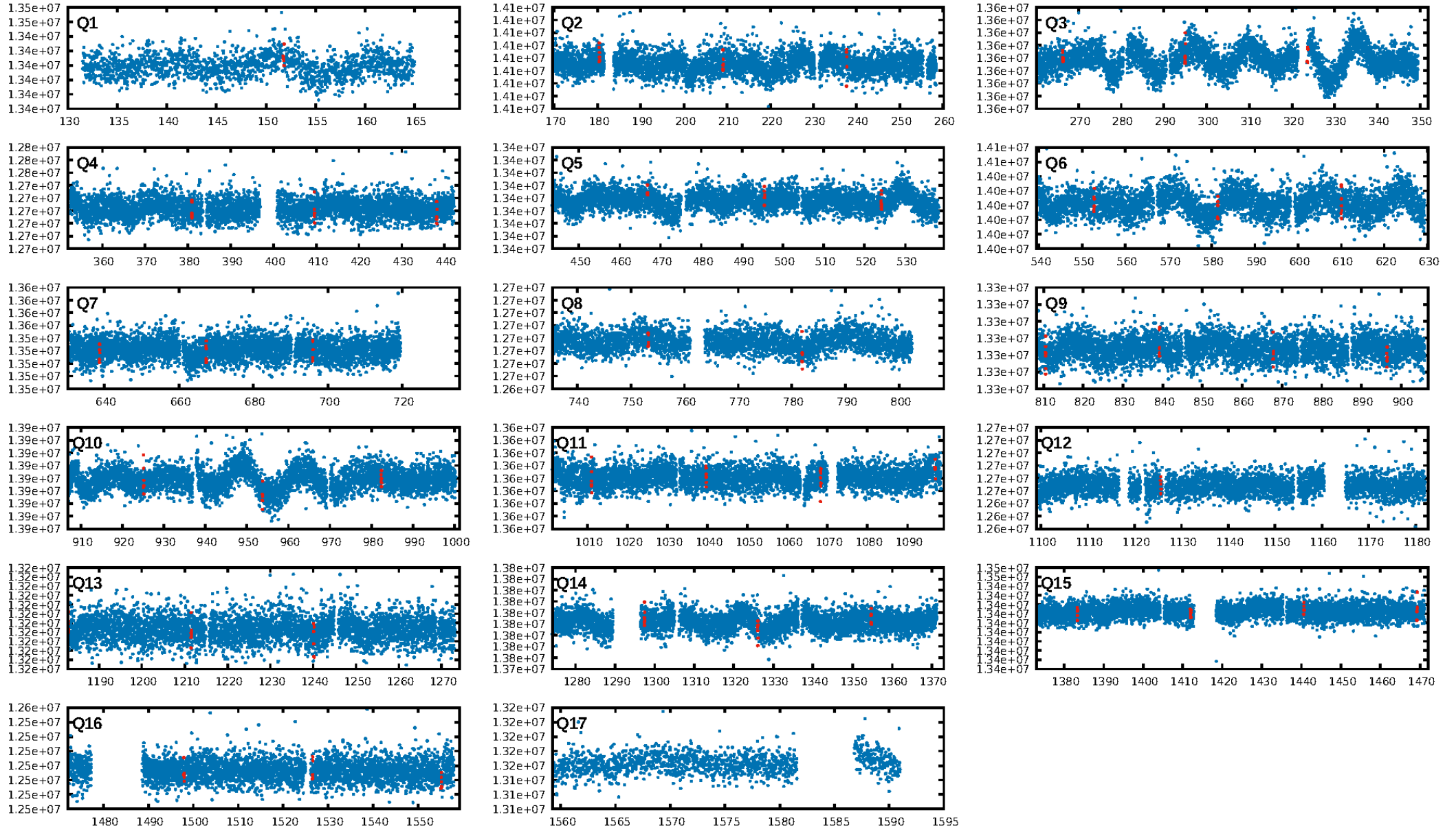
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [161.20σ]
LongPeriod-sig: 100.0% [29.19σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.66e-08
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: -0.2911
Centroid-sig: 51.5%
Centroid-so: 0.378 arcsec [0.42σ]
OotOffset-rm: 4.264 arcsec [3.08σ]
KicOffset-rm: 4.067 arcsec [2.87σ]
OotOffset-st: 1/2/3/0 [6]
KicOffset-st: 1/2/3/0 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 0.00 [0/16]

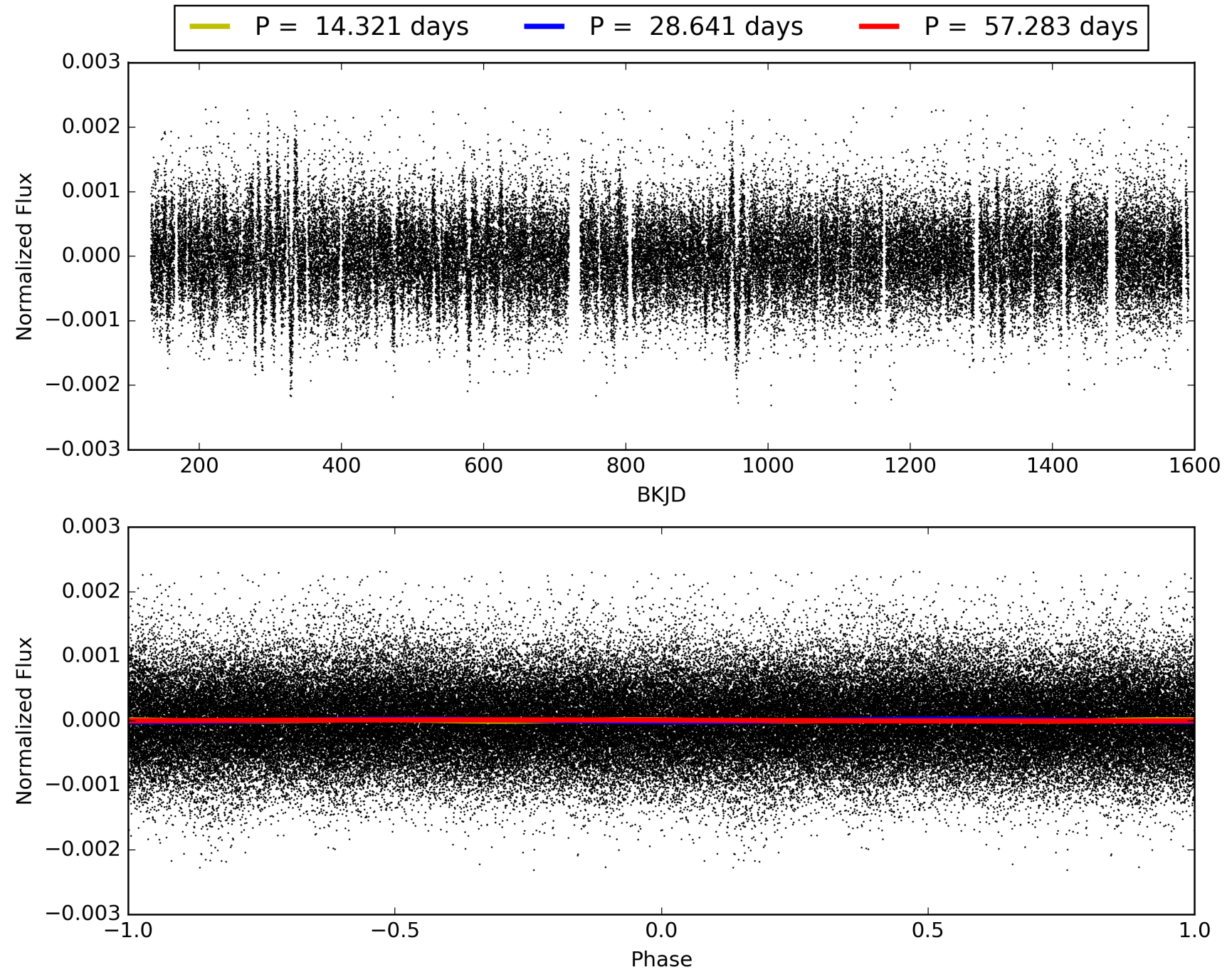
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:45:30 Z

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

TCE 007115499-03, PDC Light Curves

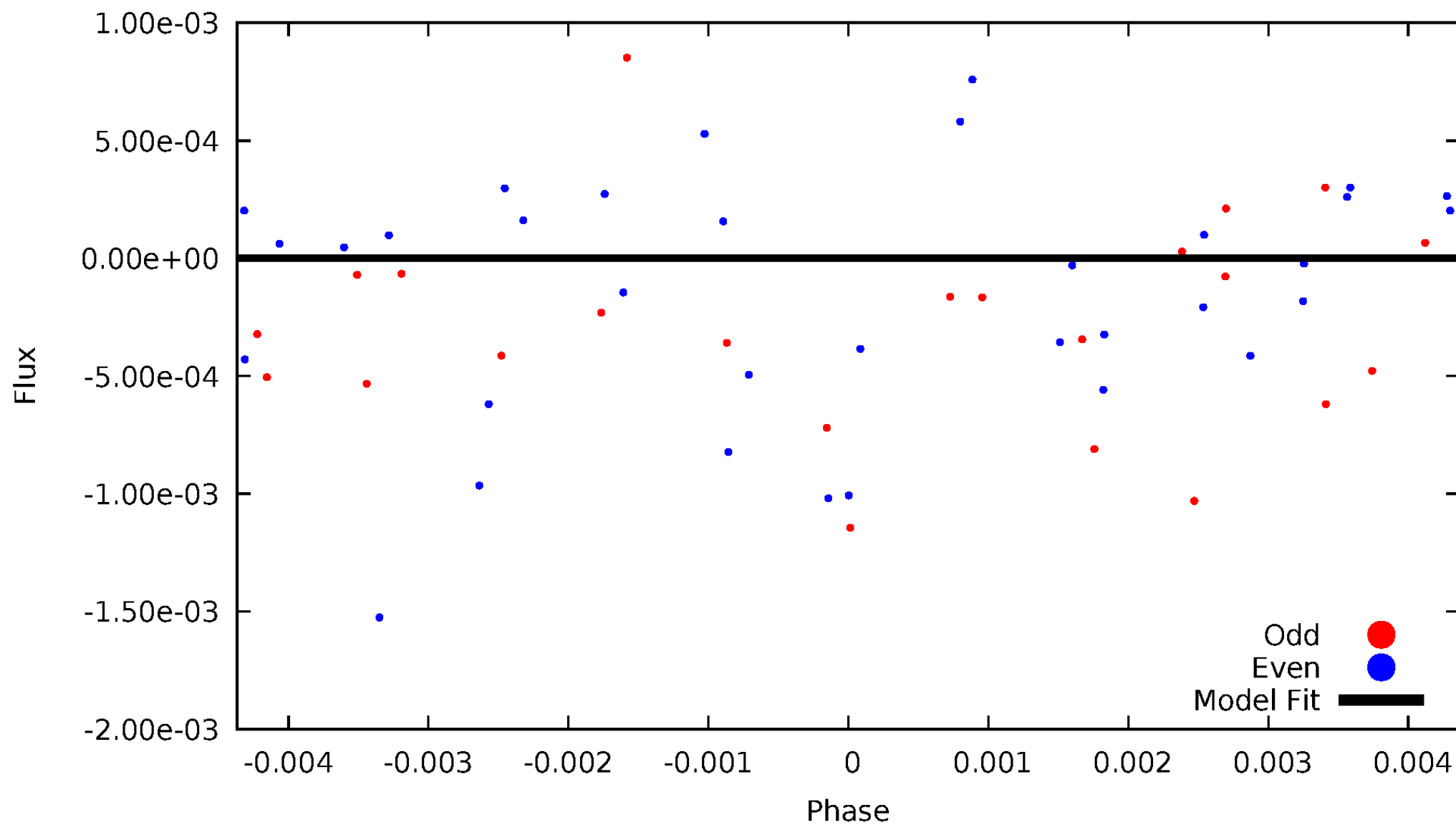


TCE 007115499-03



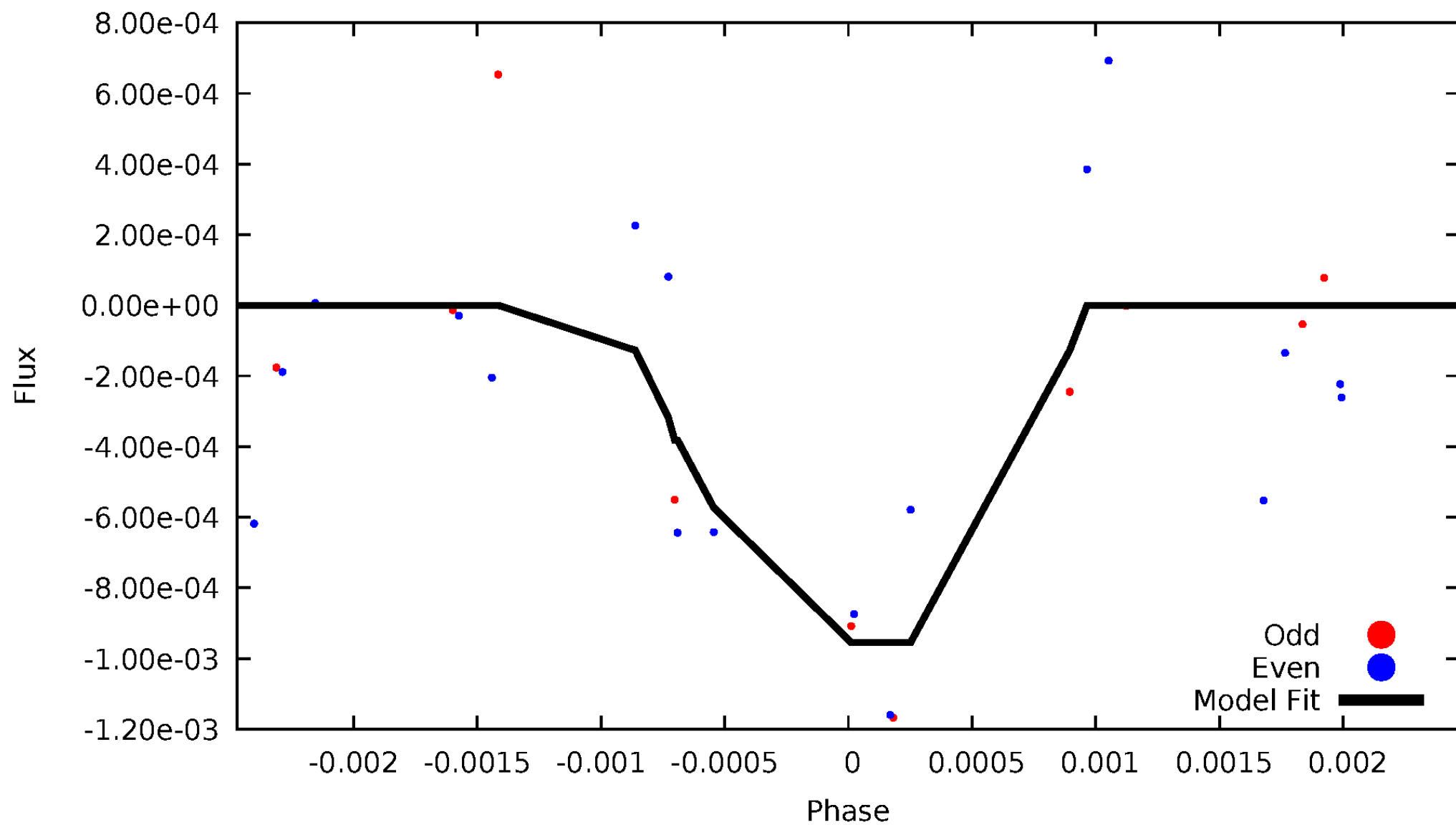
DV Odd/Even

TCE 007115499-03



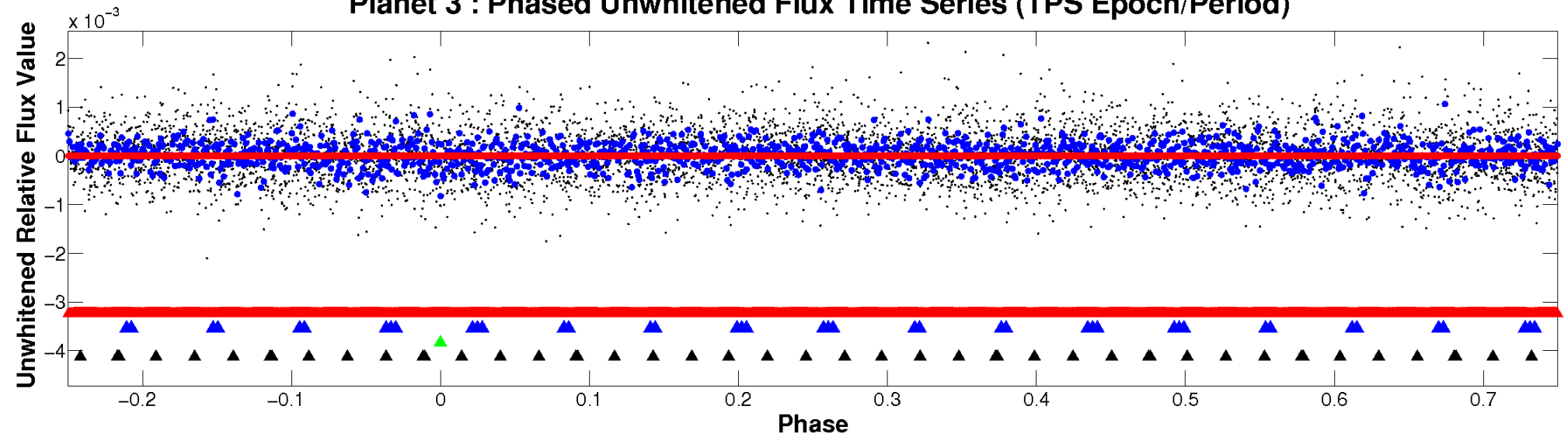
ALT Odd/Even

TCE 007115499-03

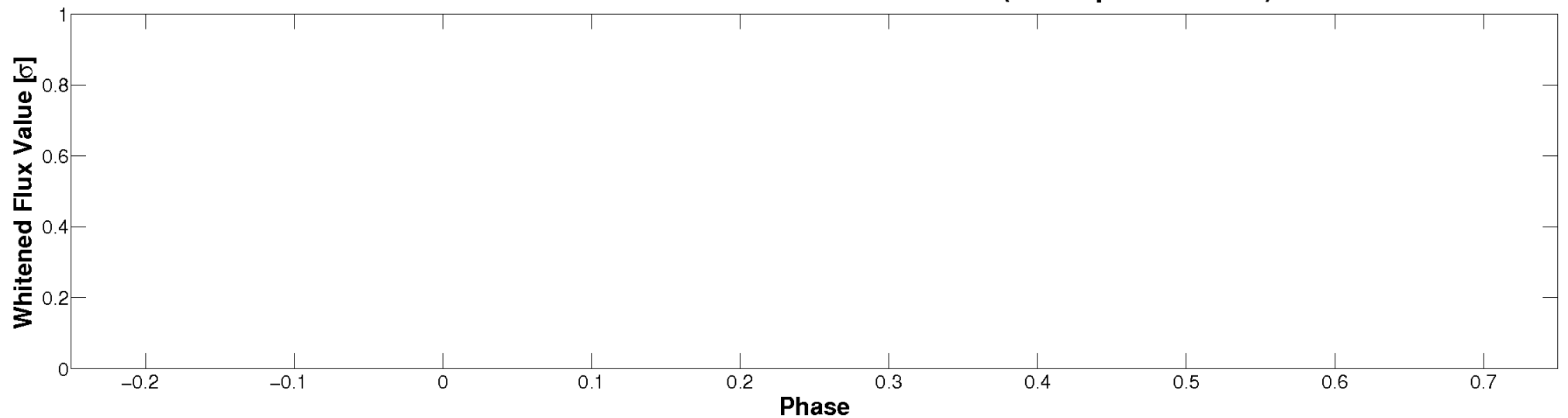


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

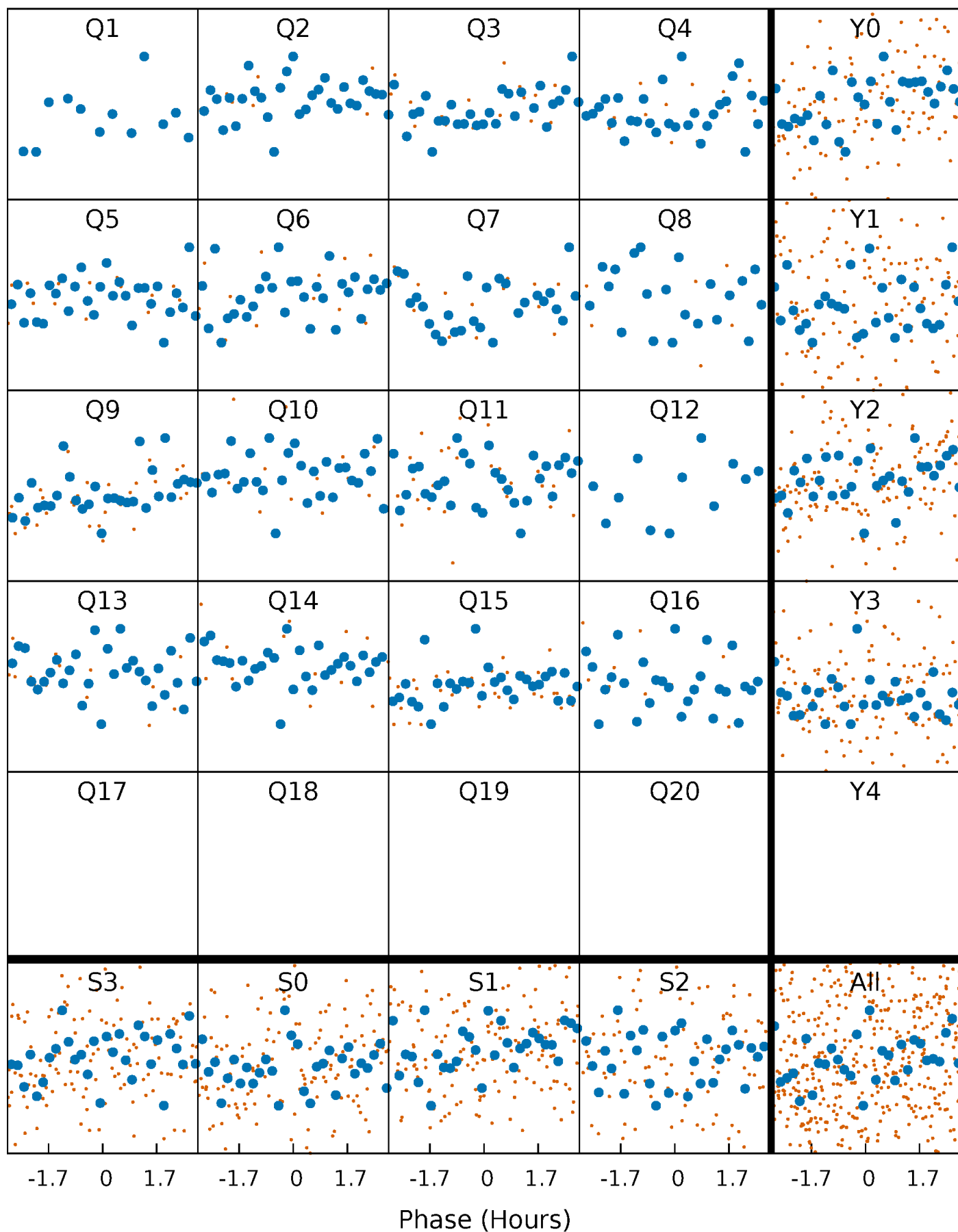


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



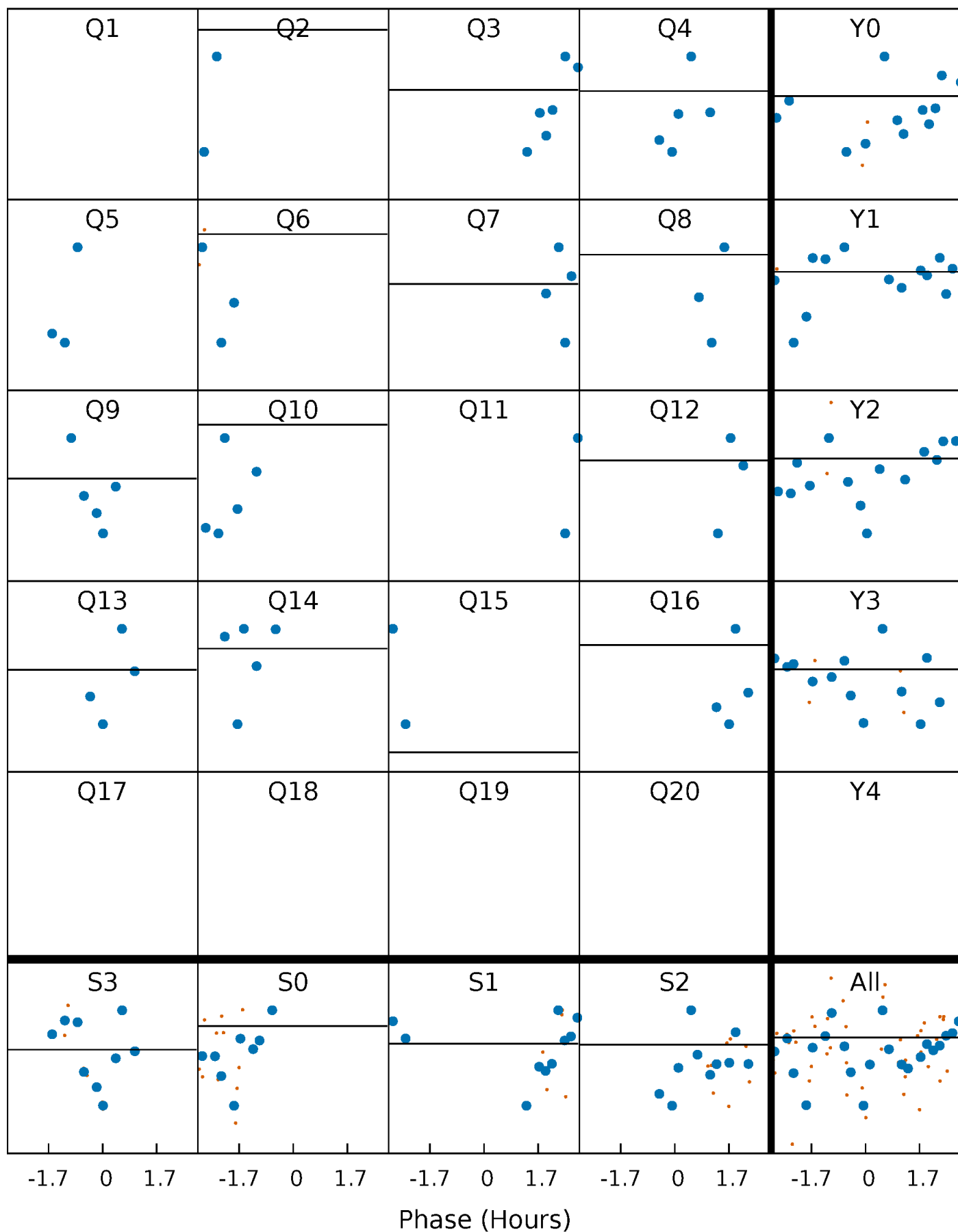
PDC Quarter-Phased Transit Curves

TCE 007115499-03 P= 28.641271 Days $T_0=151.789124$ (BKJD)



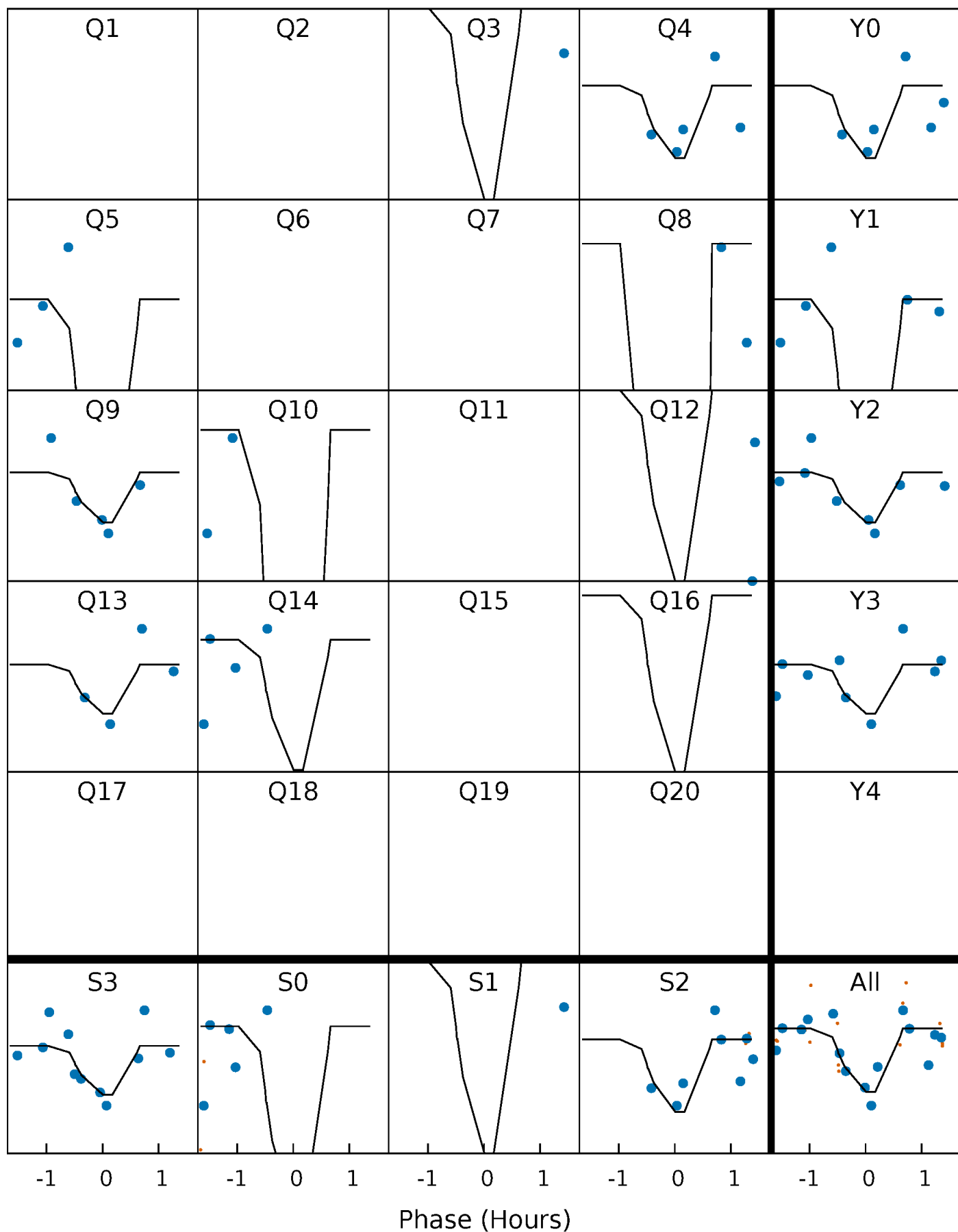
DV Quarter-Phased Transit Curves

TCE 007115499-03 P= 28.641271 Days $T_0=151.789124$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

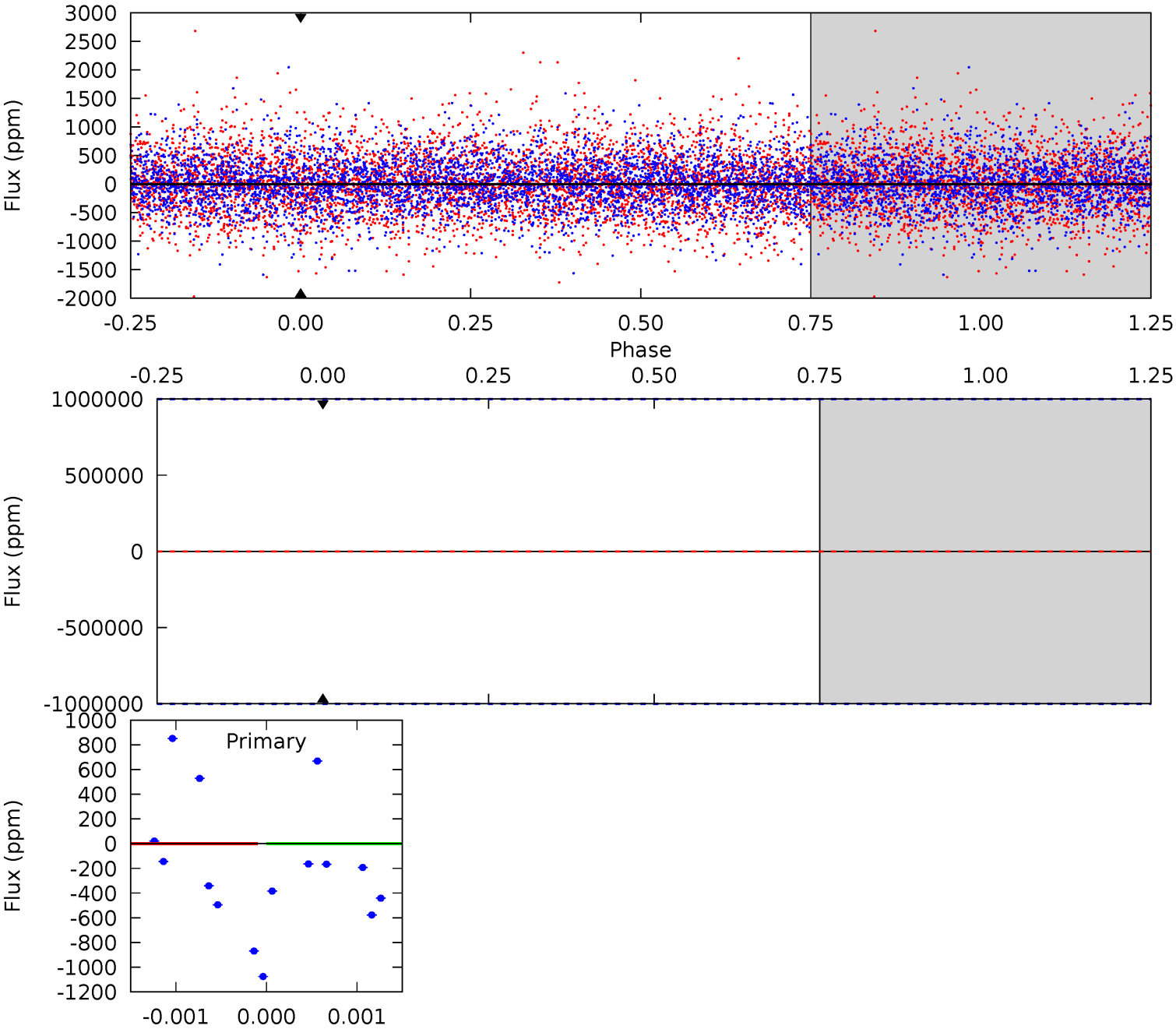
TCE 007115499-03 P= 28.641271 Days $T_0=151.784367$ (BKJD)



DV Model-Shift Uniqueness Test

007115499-03, P = 28.641271 Days, E = 123.147853 Days

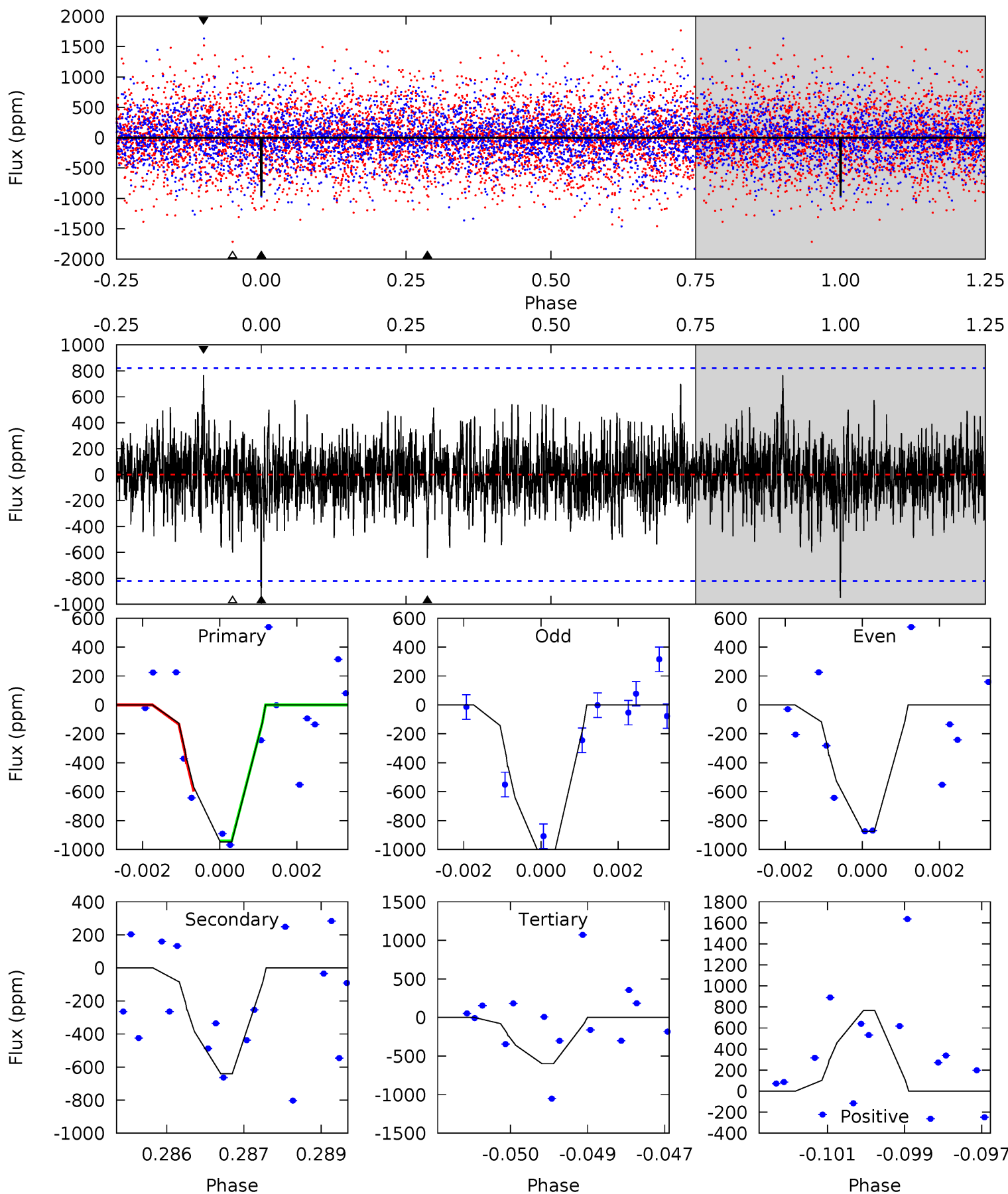
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007115499-03, P = 28.641271 Days, E = 123.143096 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.20	4.19	3.92	5.00	5.36	3.15	1.14	2.28	1.19	0.27	-0.81	0.61	1.01	0.45	1.09



Stellar Parameters For KIC 007115499

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5402^{+160}_{-160}	$4.581^{+0.025}_{-0.136}$	$0.070^{+0.250}_{-0.300}$	$0.815^{+0.158}_{-0.068}$	$0.931^{+0.065}_{-0.105}$	$2.419^{+0.324}_{-0.960}$
	+3%/-3%	+1%/-3%	+357%/-429%	+19%/-8%	+7%/-11%	+13%/-40%
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 007115499-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$7.89^{+7.46}_{-5.20}$	728^{+35}_{-31}	-4658^{+19417}_{-11349}	$-933.930^{+43944.385}_{-51117.191}$
Alt.	-641 ± 153	$7.32^{+7.73}_{-5.00}$	726^{+37}_{-29}	3506^{+1949}_{-655}	203^{+1883}_{-154}

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

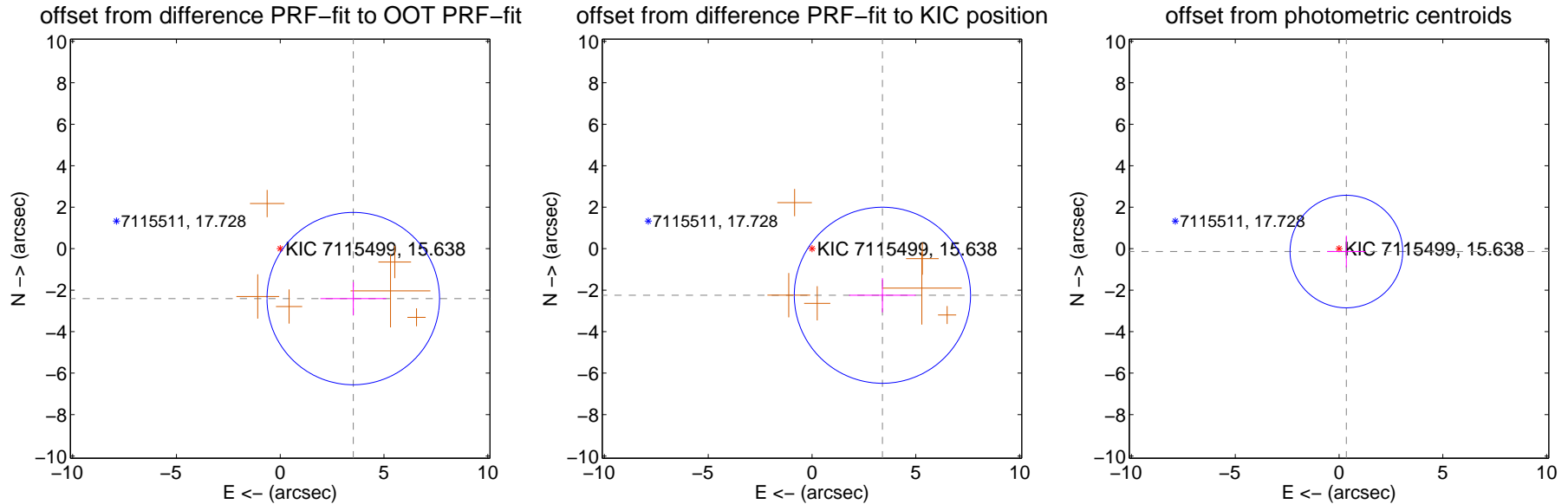
DV Centroid Data

Supplemental centroid analysis for 007115499-03. Kepler magnitude: 15.64. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

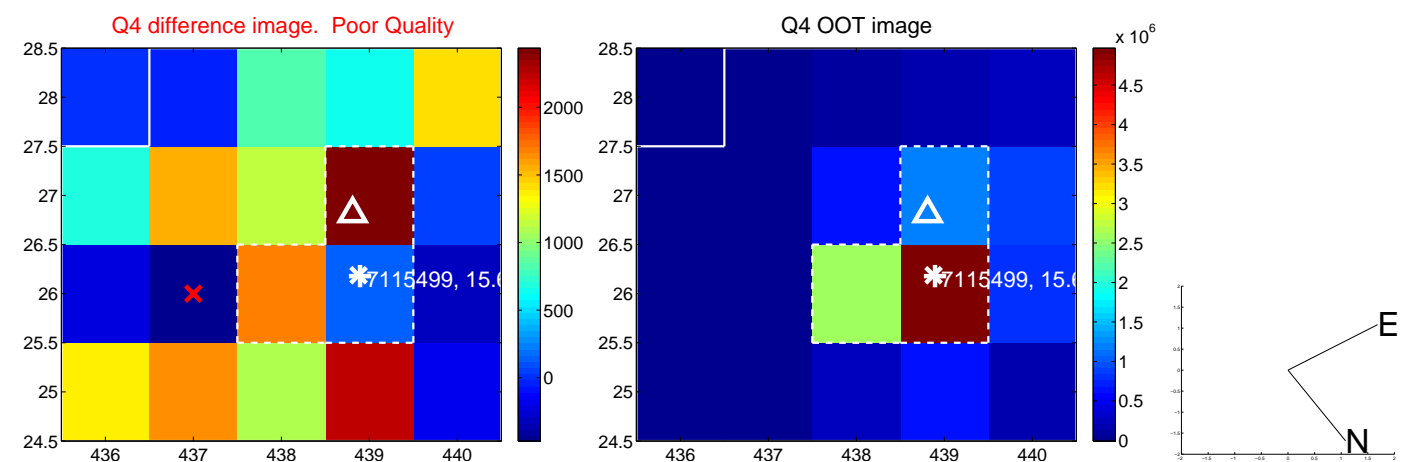
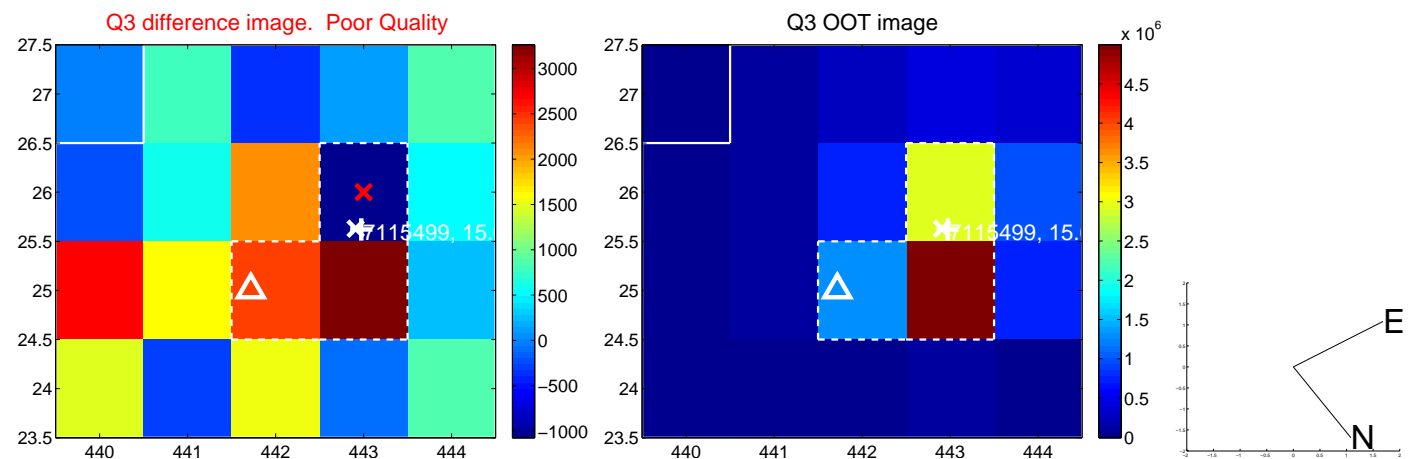
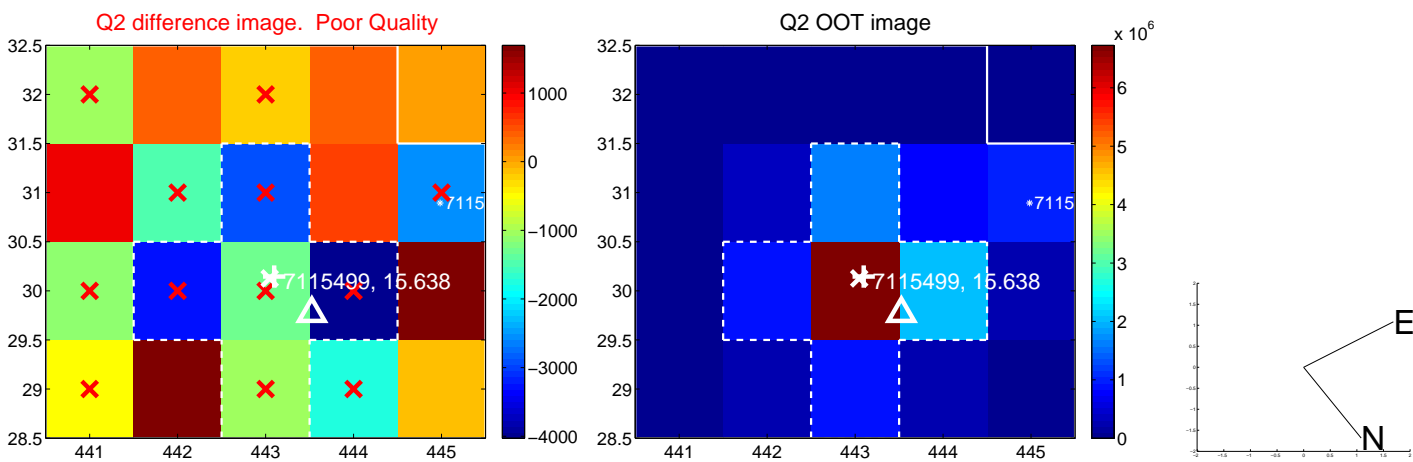
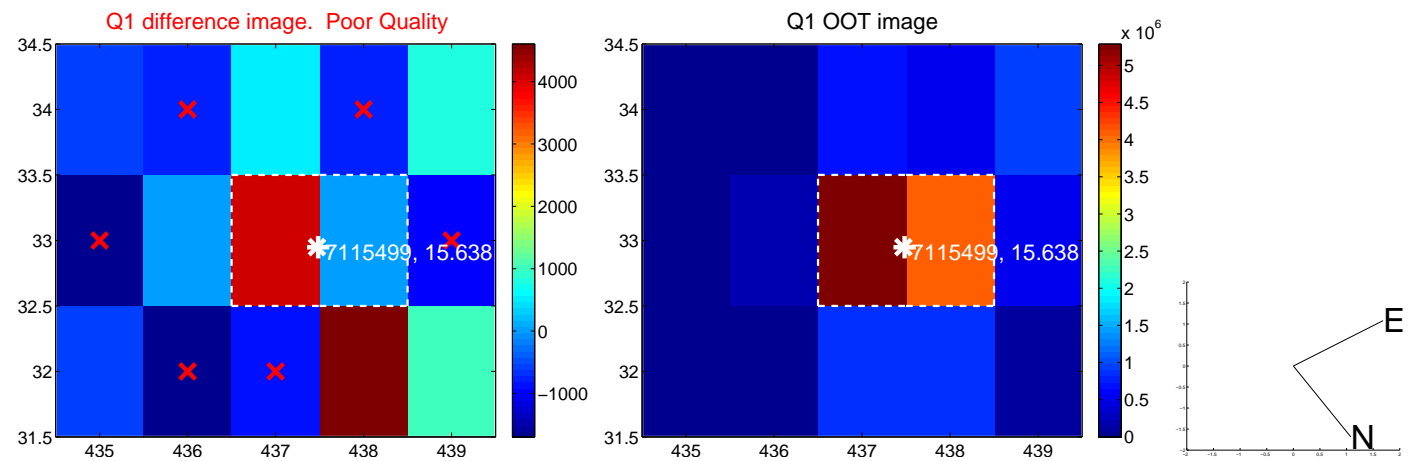
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.264 ± 1.385	3.08	-3.520 ± 1.588	-2.407 ± 0.793
PRF-fit source offset from KIC position	4.067 ± 1.415	2.87	-3.391 ± 1.607	-2.245 ± 0.822
photometric centroid source offset	0.38 ± 0.90	0.42	-0.35 ± 0.92	-0.14 ± 0.76

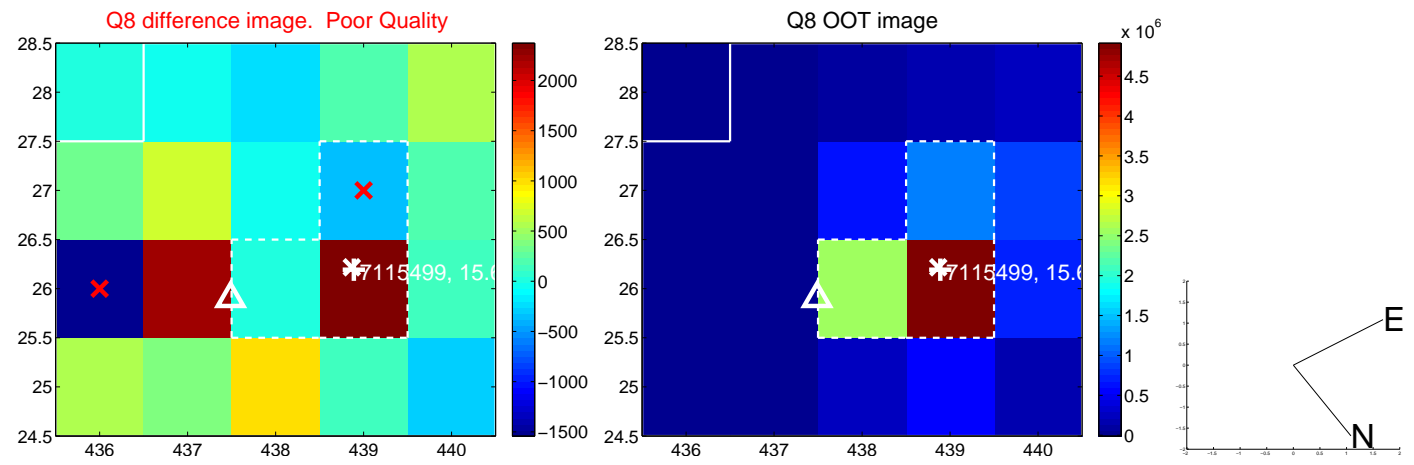
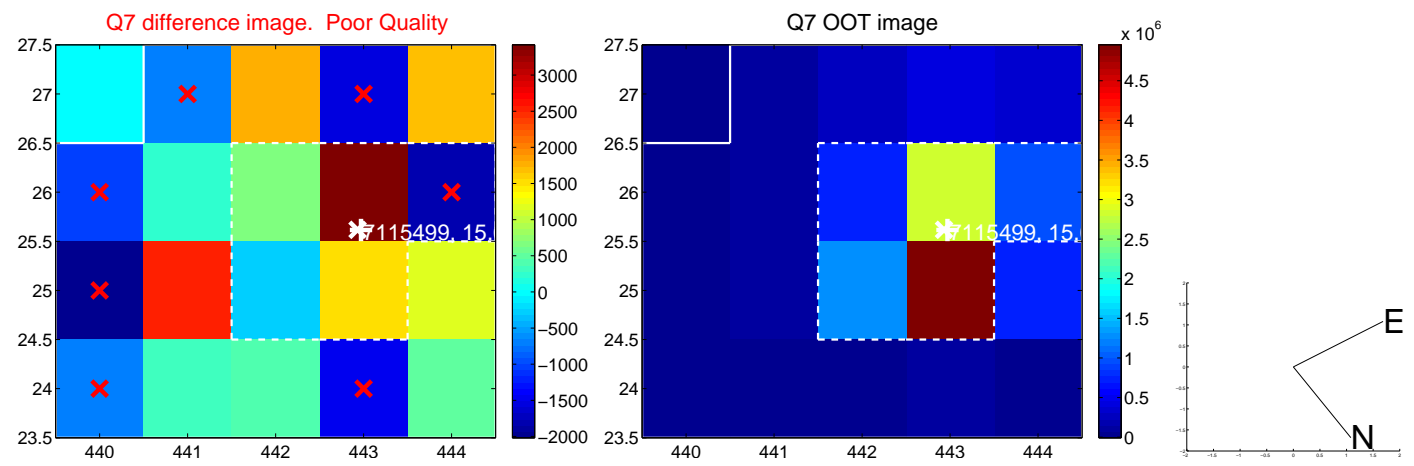
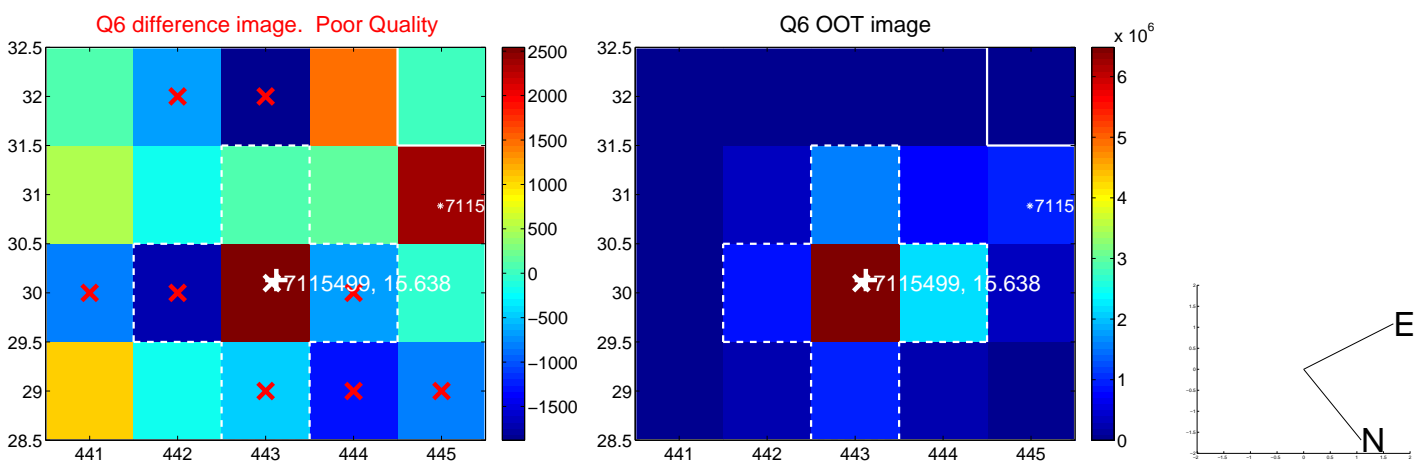
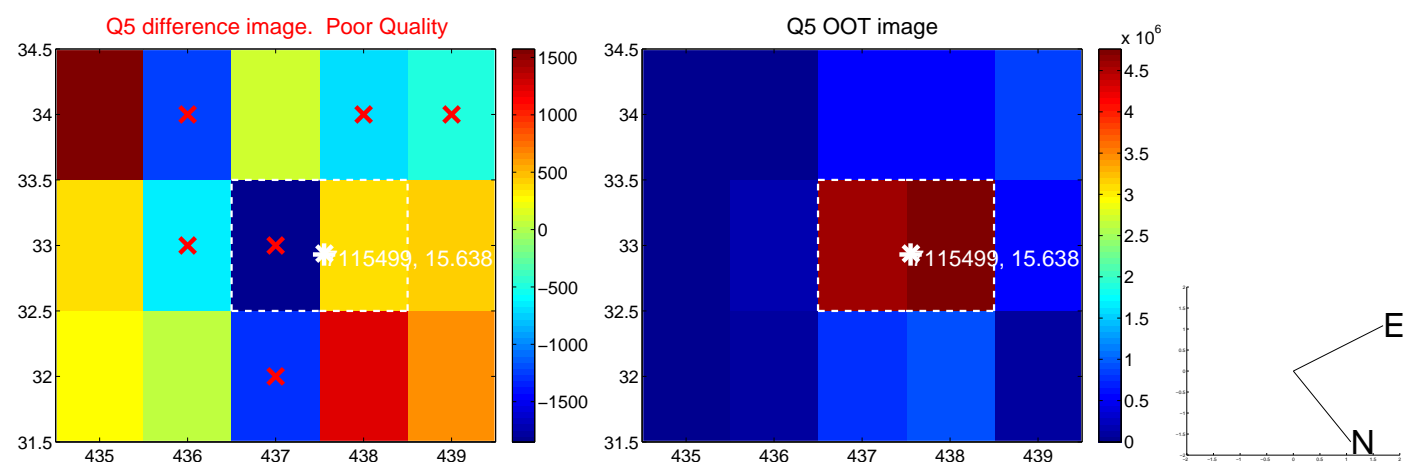


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

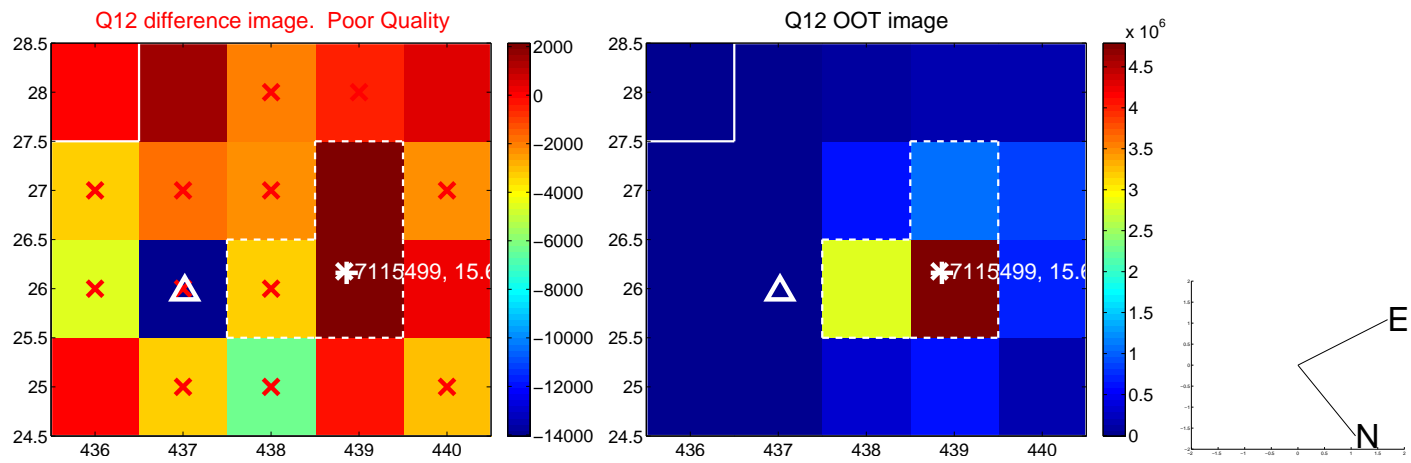
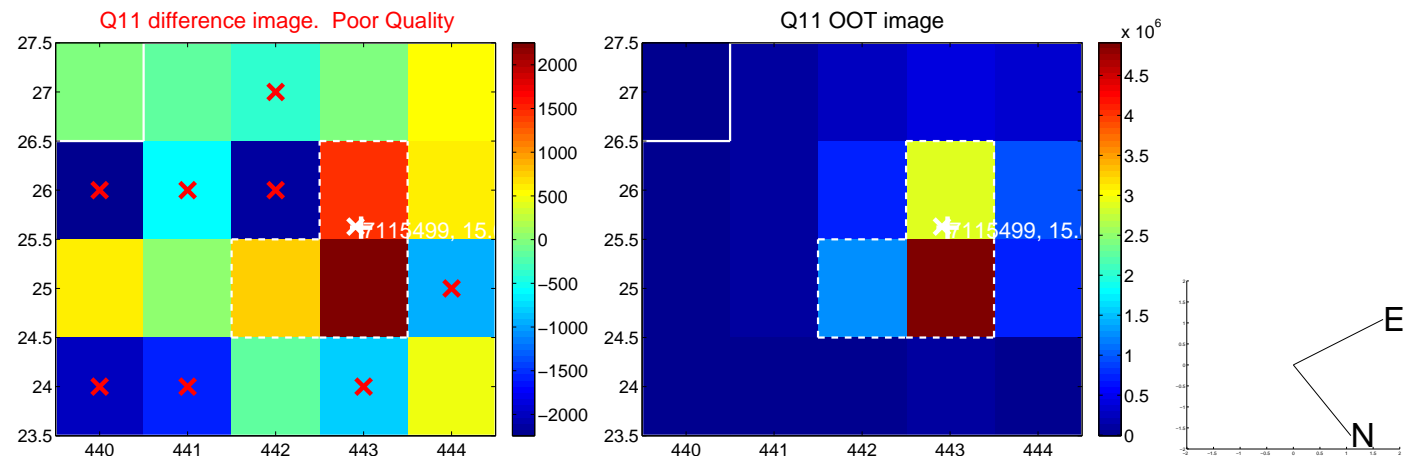
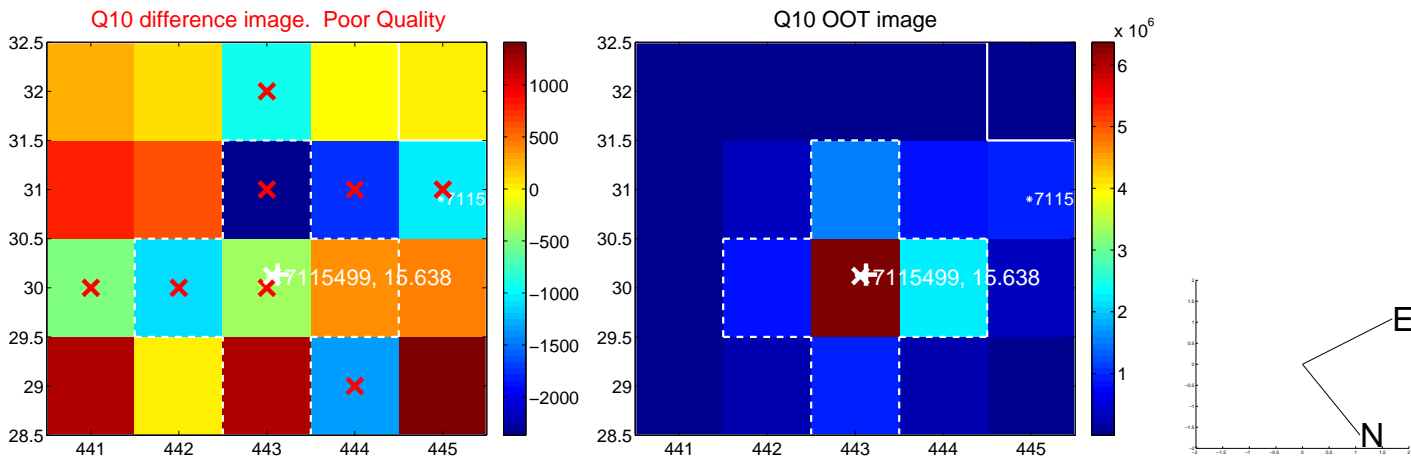
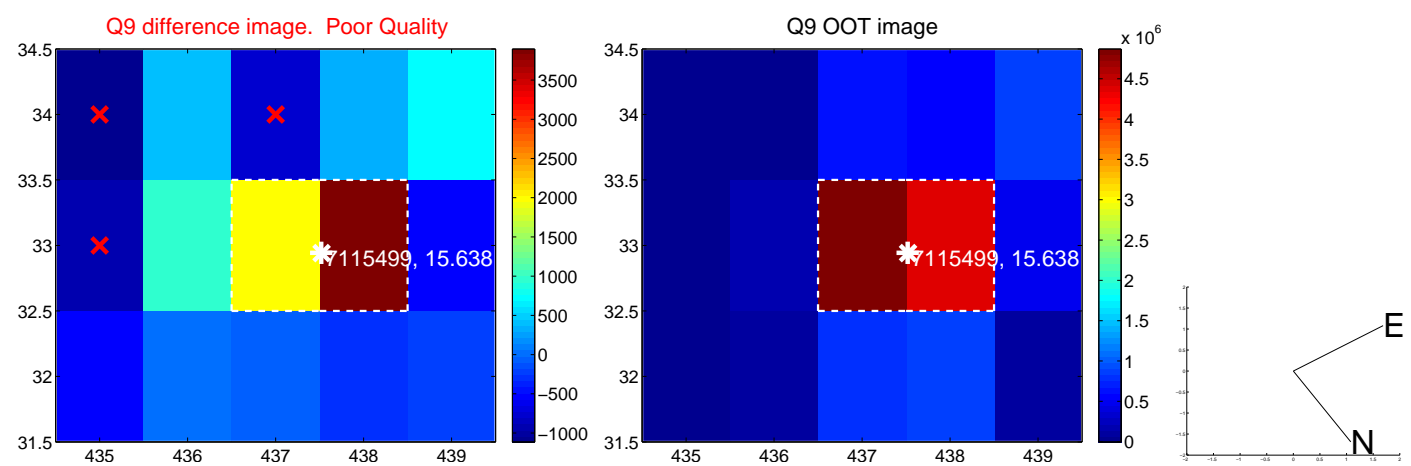
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



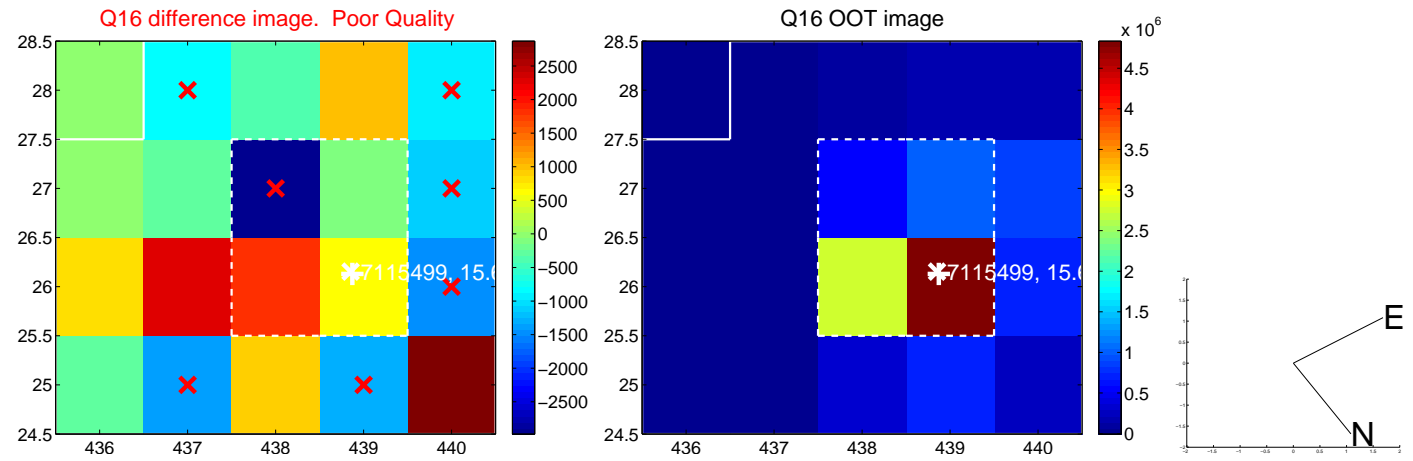
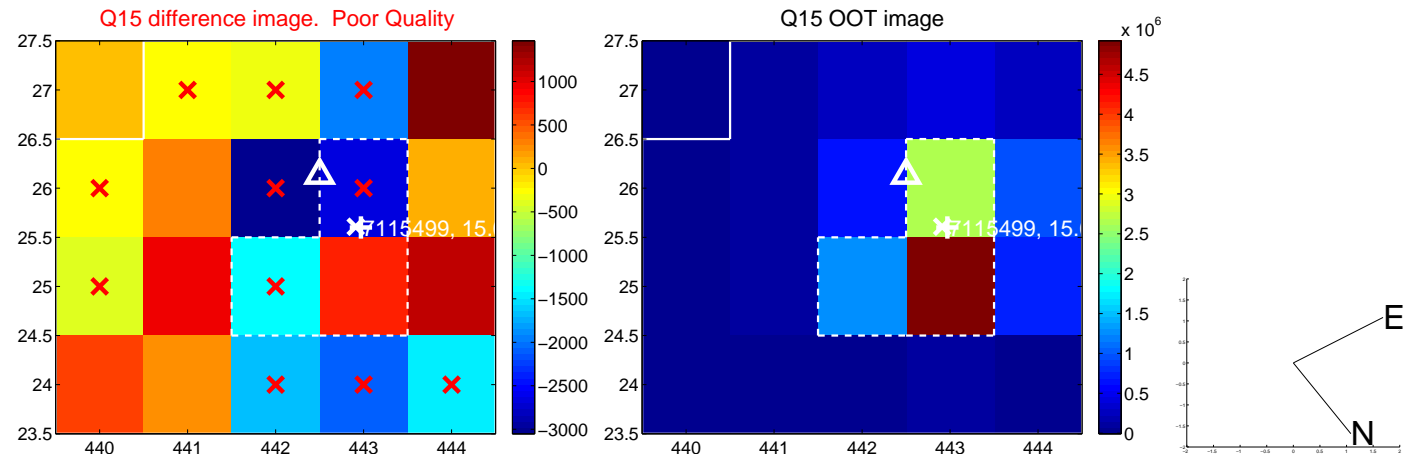
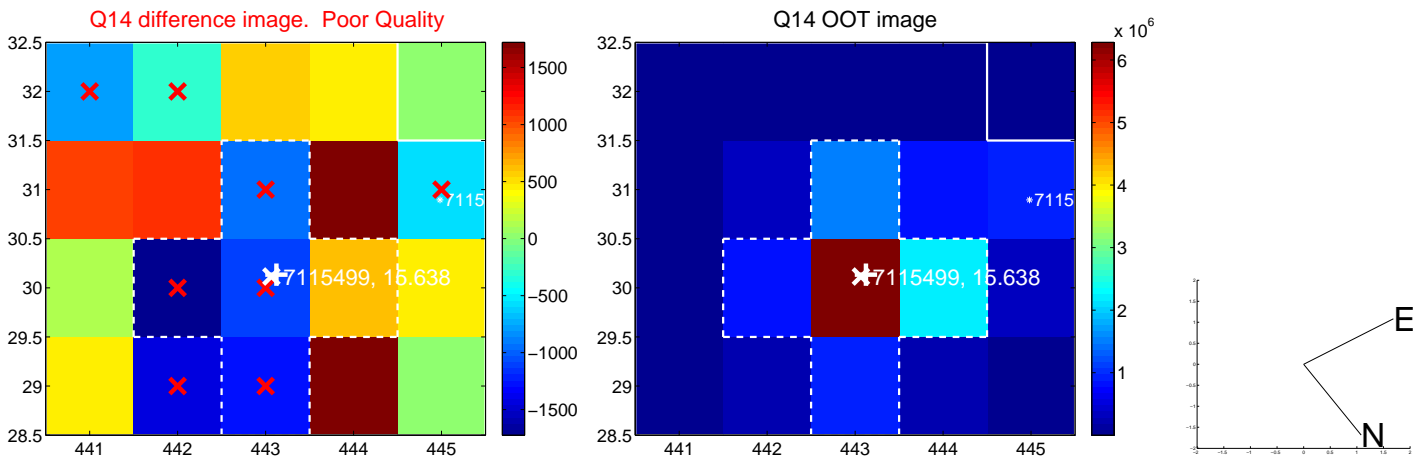
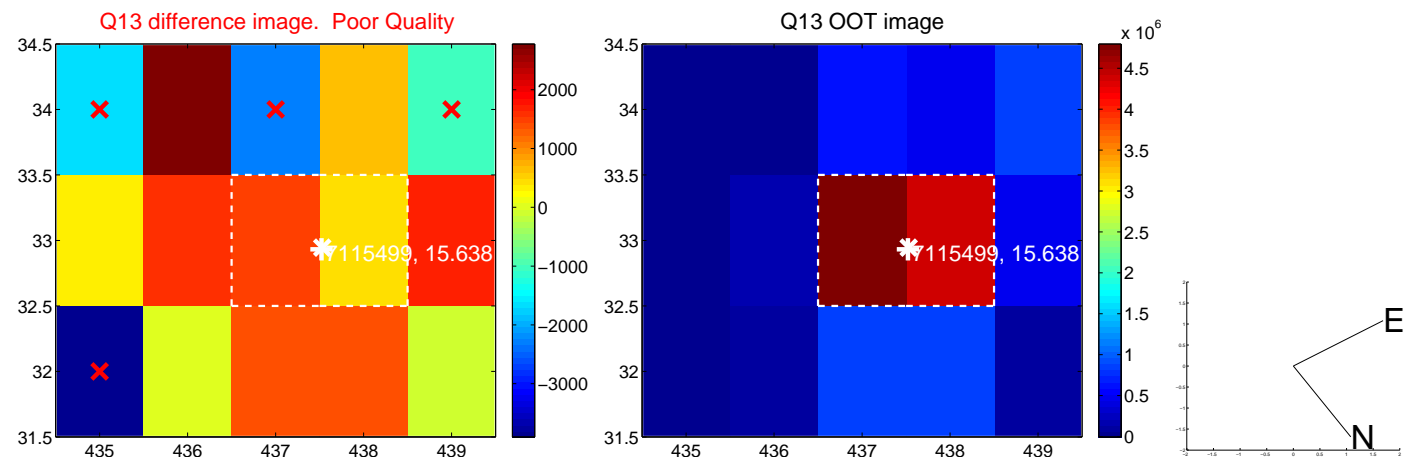
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



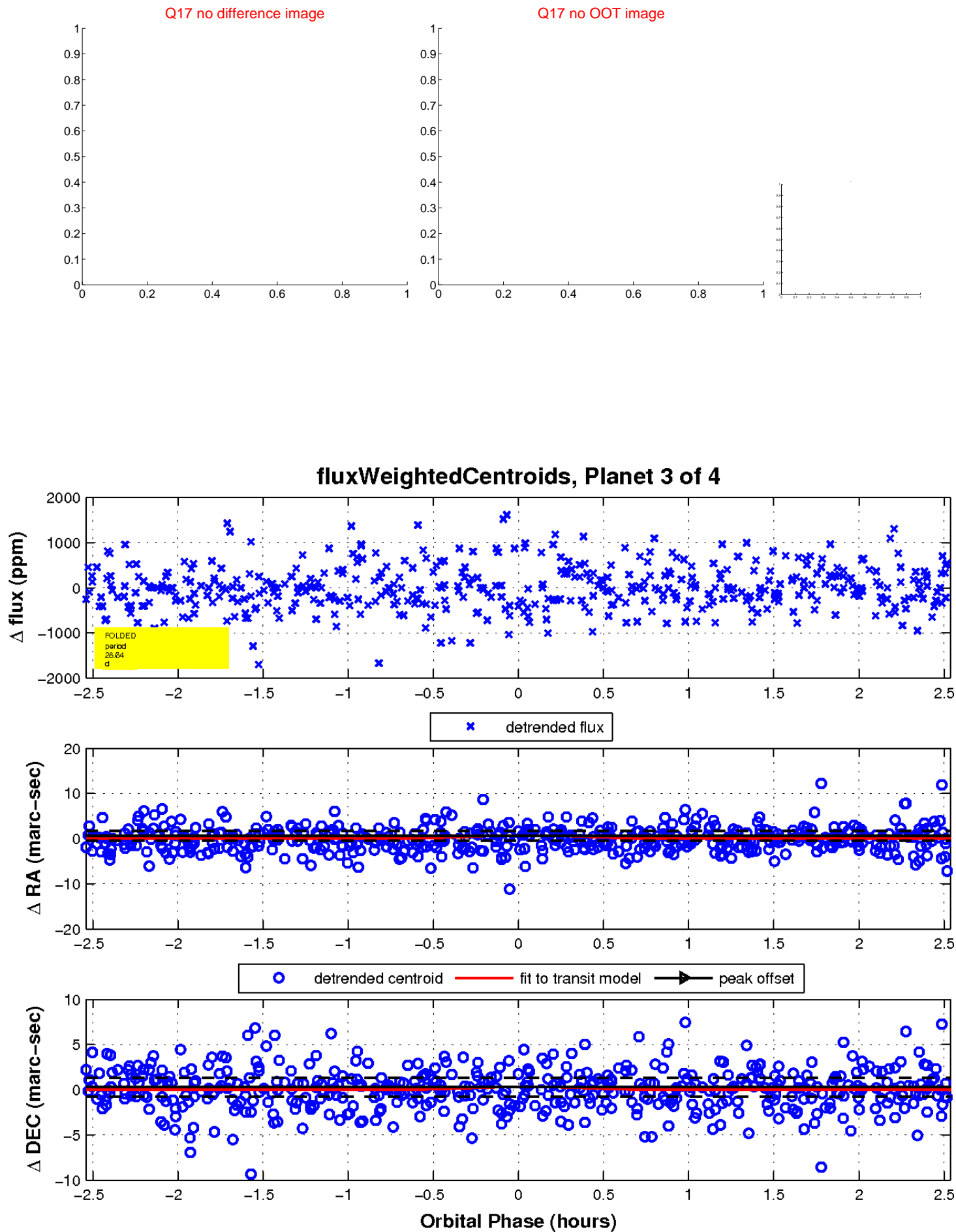
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

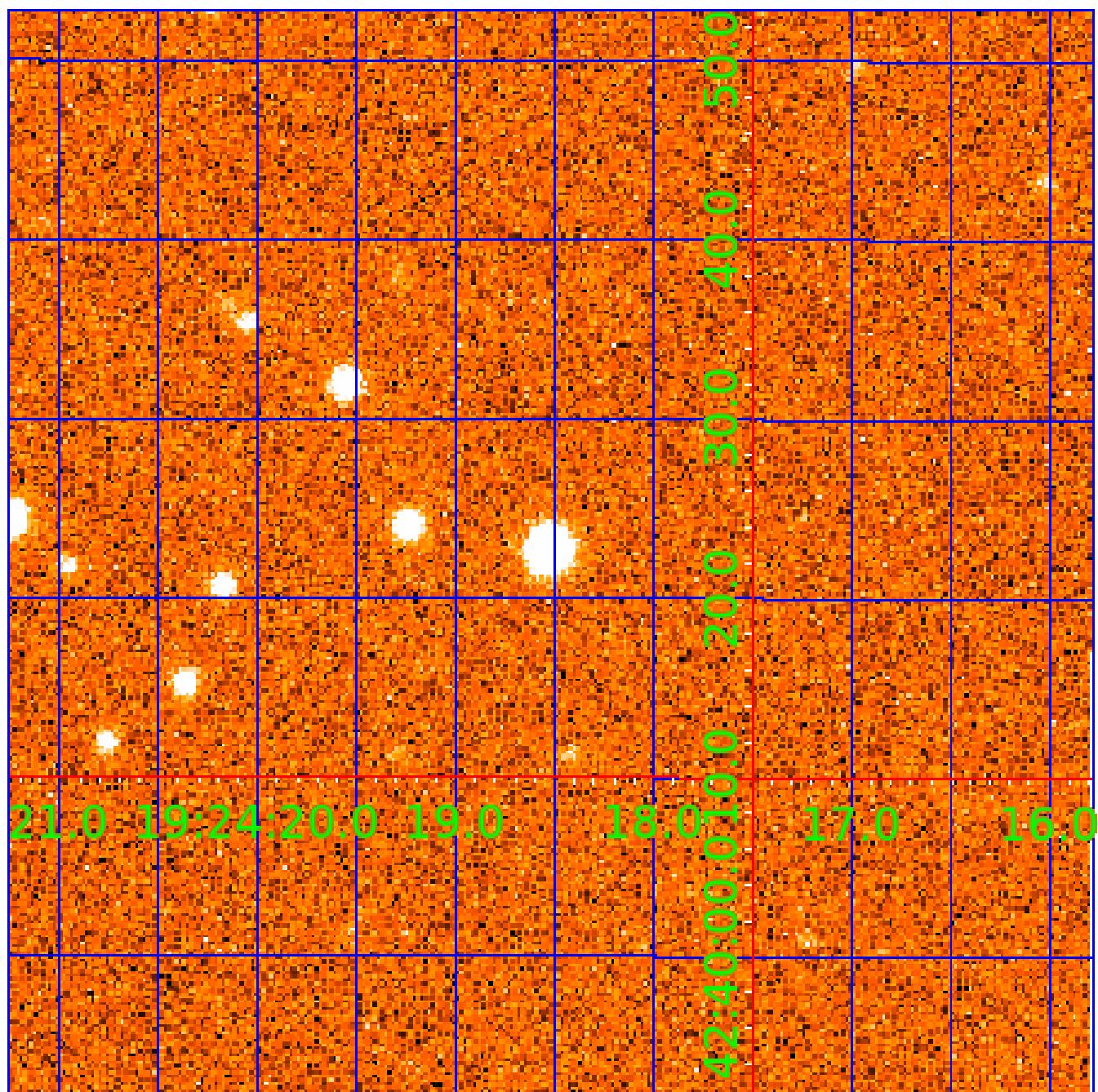


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007115499

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})
007115499-01	OBS	No	0.566760	131.853680	44.7	3.901	13.3	9.8	0.81	5402	0.56	2974.08
007115499-02	OBS	No	35.385813	152.407410	911.7	1.334	10.2	9.6	0.81	5402	2.48	12.01
007115499-03	OBS	No	28.641271	151.789124	1881.8	1.500	8.9	-1.0	0.81	5402	3.48	15.92
007115499-04	OBS	No	31.579702	133.822679	670.8	1.894	8.5	10.1	0.81	5402	2.26	13.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115499-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
007115499-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
007115499-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_NOFITS
007115499-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

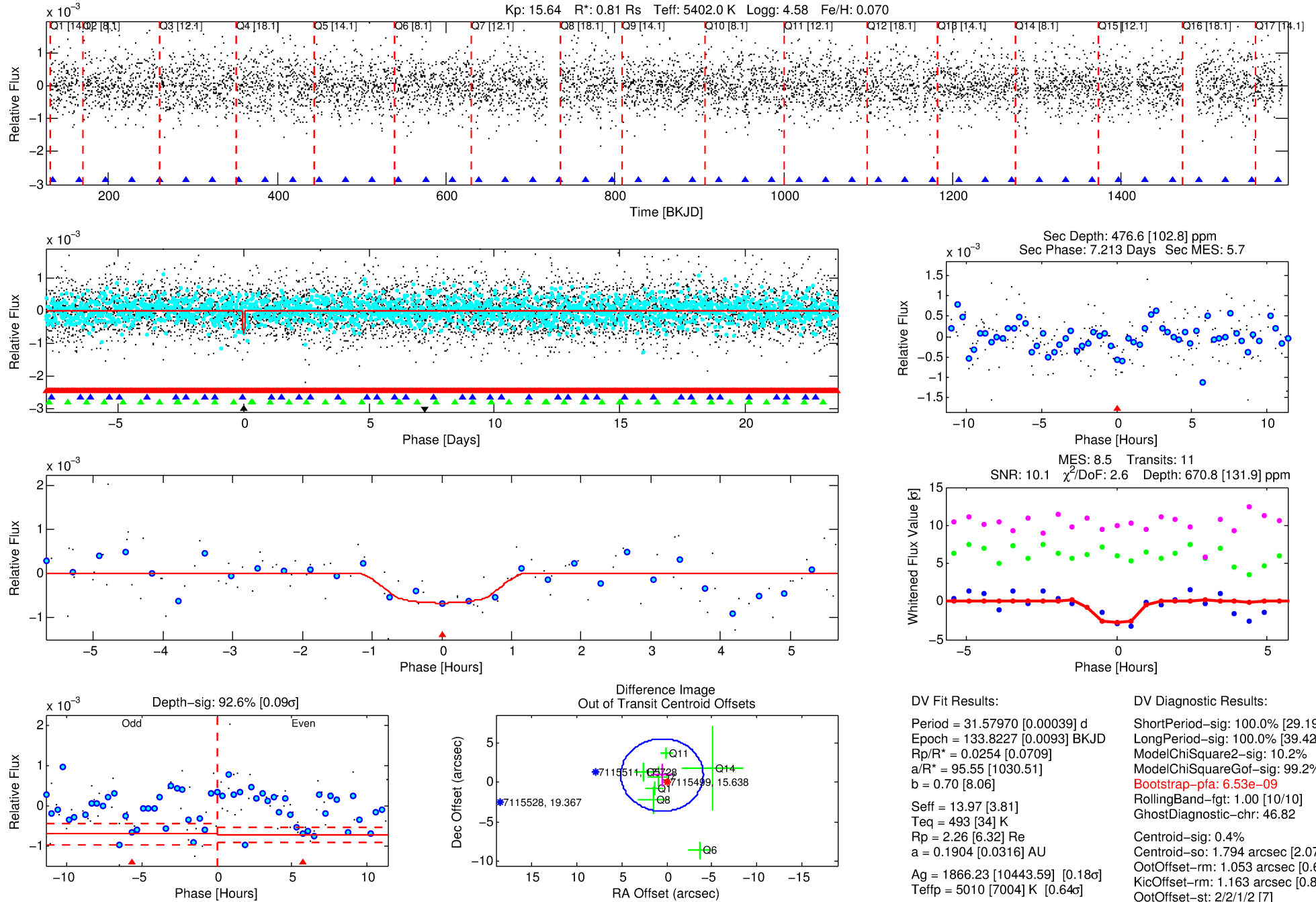
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007115499-04

No Significant Match Found

DV One-Page Summary

KIC: 7115499 Candidate: 4 of 4 Period: 31.580 d



DV Fit Results:

Period = 31.57970 [0.00039] d
Epoch = 133.8227 [0.0093] BKJD
Rp/R* = 0.0254 [0.0709]
a/R* = 95.55 [1030.51]
b = 0.70 [8.06]
Seff = 13.97 [3.81]
Teq = 493 [34] K
Rp = 2.26 [6.32] Re
a = 0.1904 [0.0316] AU
Ag = 1866.23 [10443.59] [0.18 σ]
Teffp = 5010 [7004] K [0.64 σ]

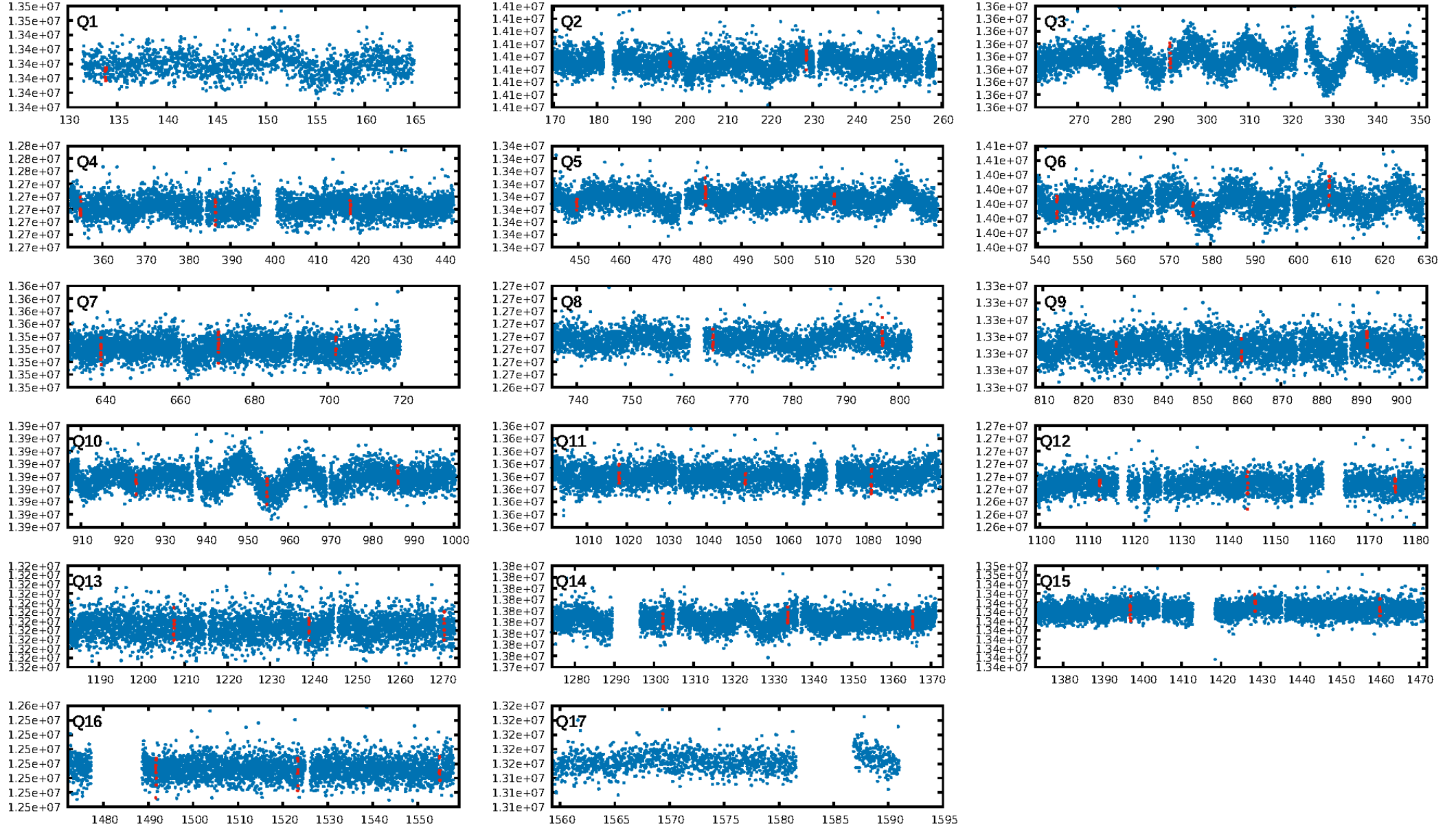
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [29.19 σ]
LongPeriod-sig: 100.0% [39.42 σ]
ModelChiSquare2-sig: 10.2%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 6.53e-09
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 46.82
Centroid-sig: 0.4%
Centroid-so: 1.794 arcsec [2.07 σ]
OotOffset-rm: 1.053 arcsec [0.69 σ]
KicOffset-rm: 1.163 arcsec [0.81 σ]
OotOffset-st: 2/2/1/2 [7]
KicOffset-st: 2/2/1/2 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.00 [0/15]

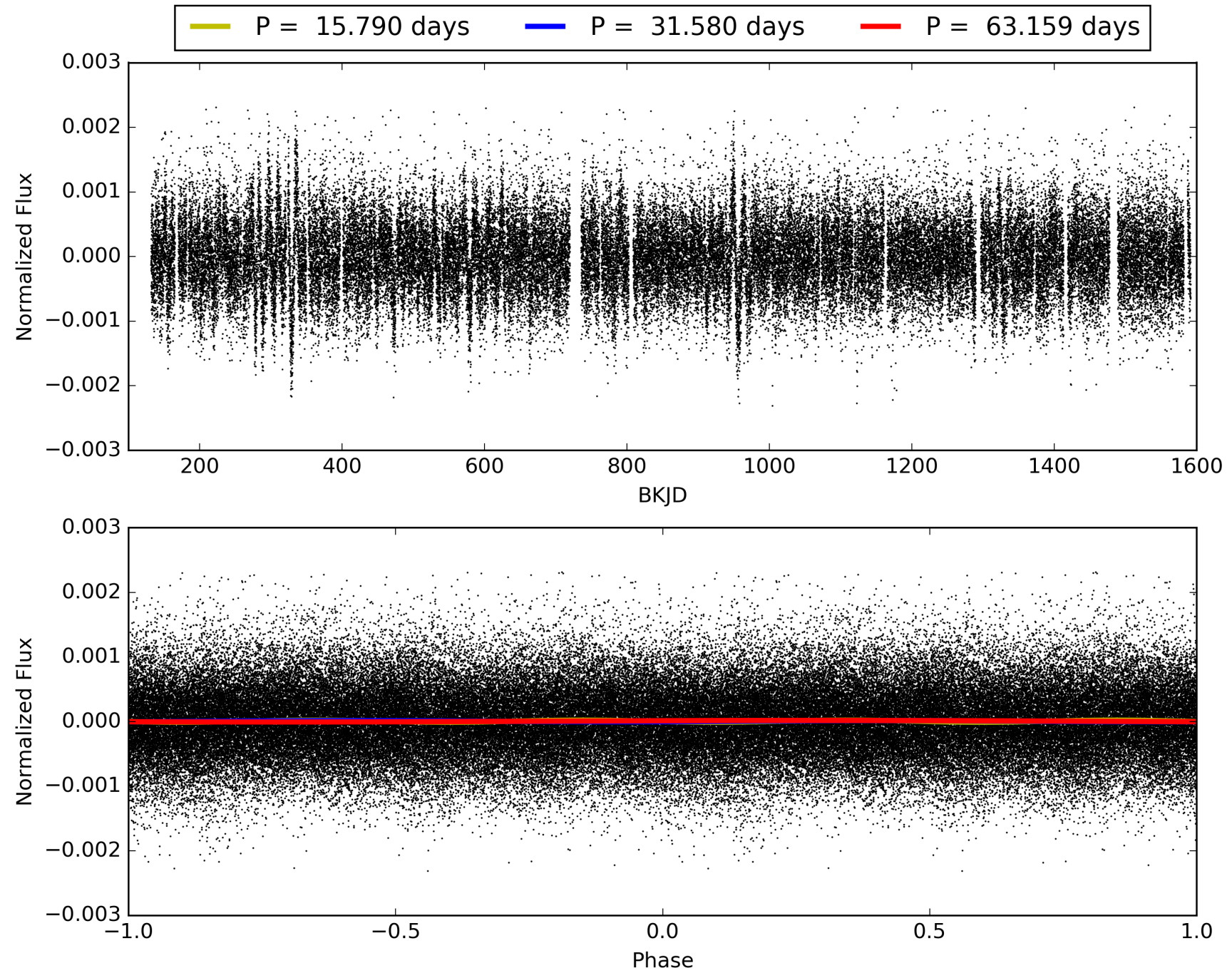
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:45:36 Z

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

TCE 007115499-04, PDC Light Curves

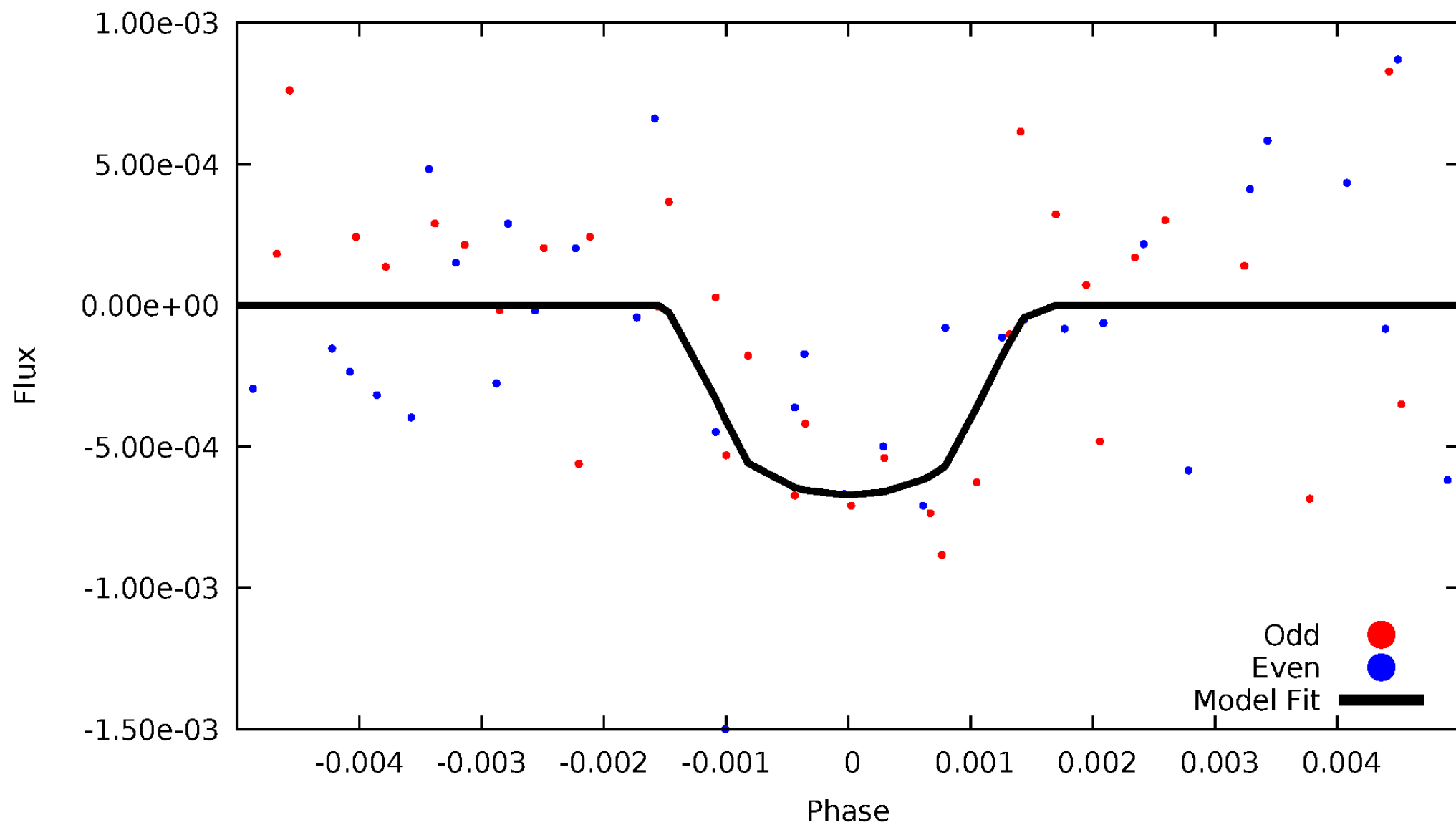


TCE 007115499-04



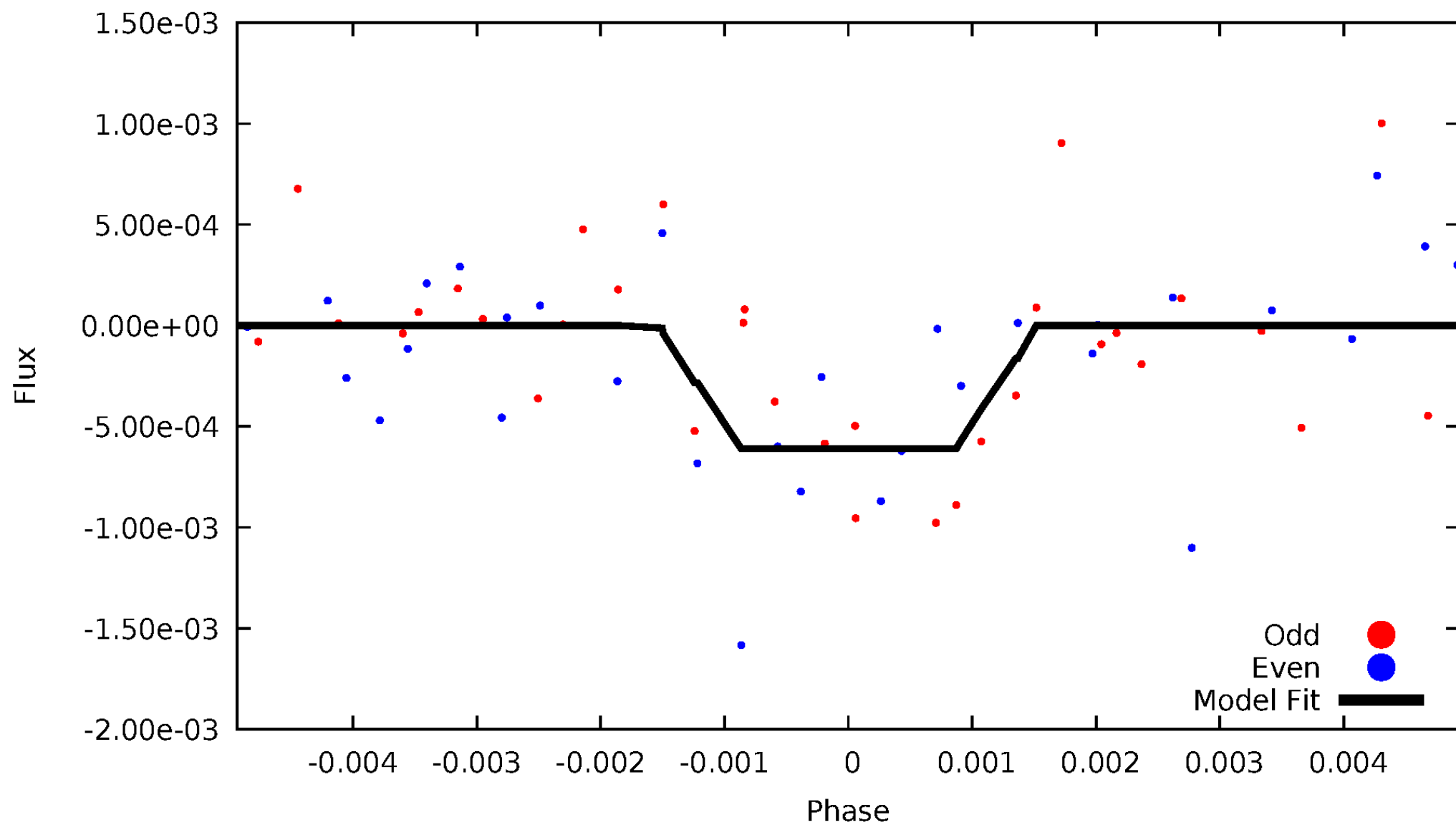
DV Odd/Even

TCE 007115499-04



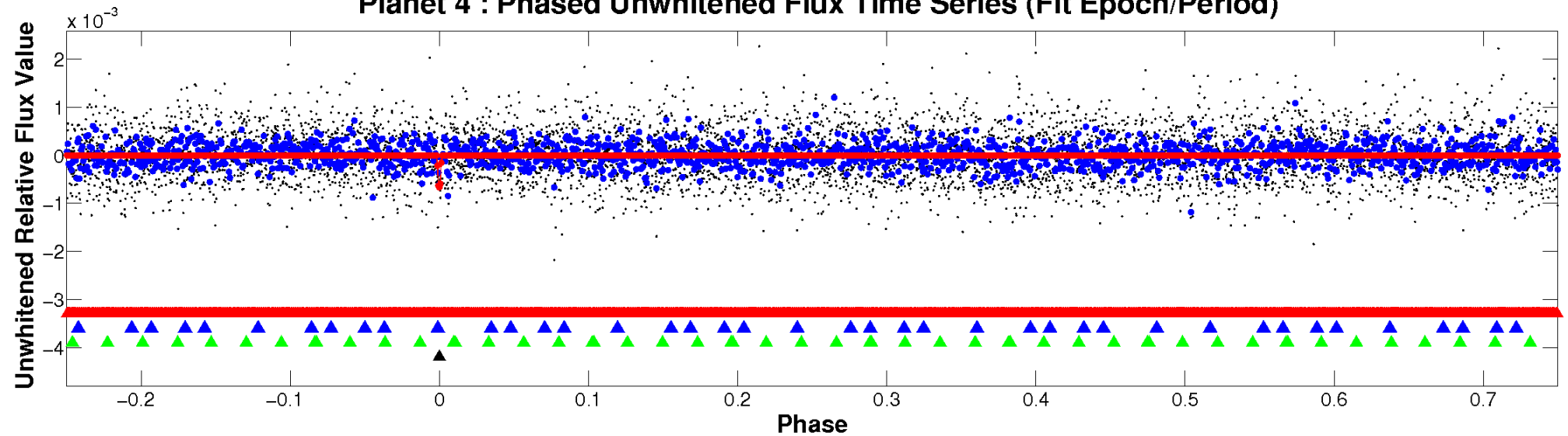
ALT Odd/Even

TCE 007115499-04

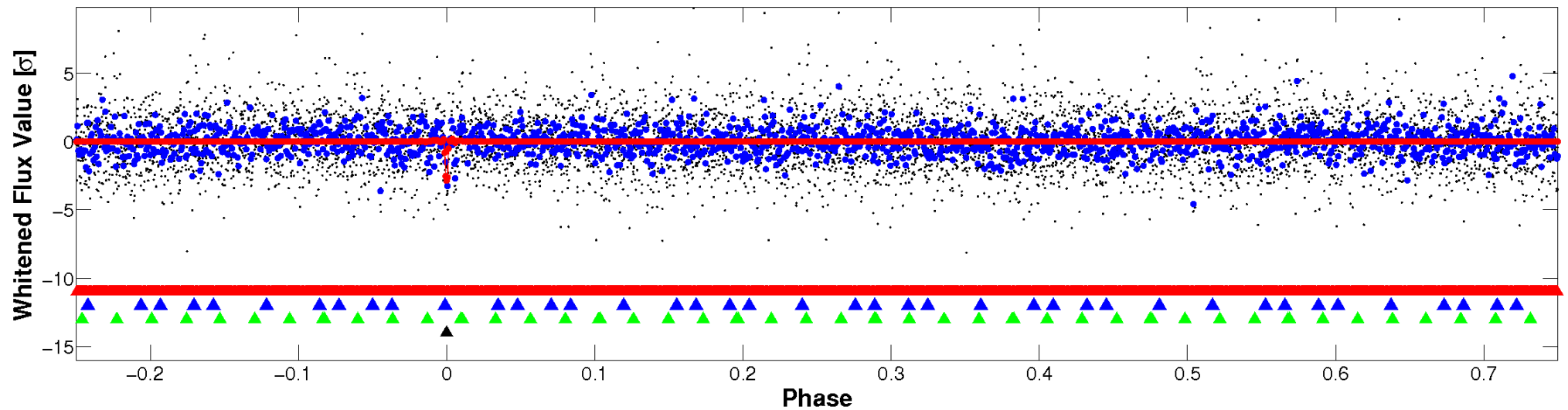


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

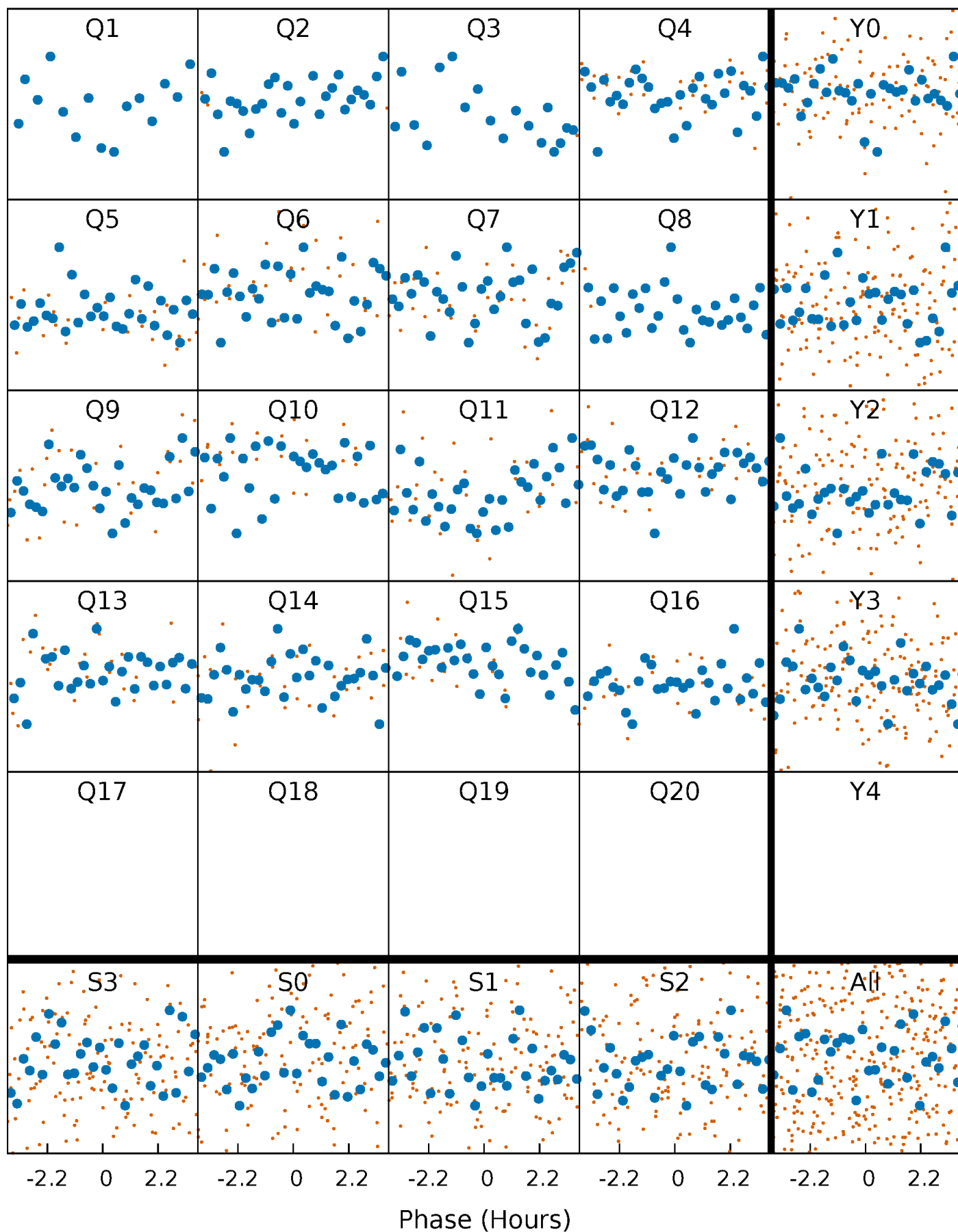


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



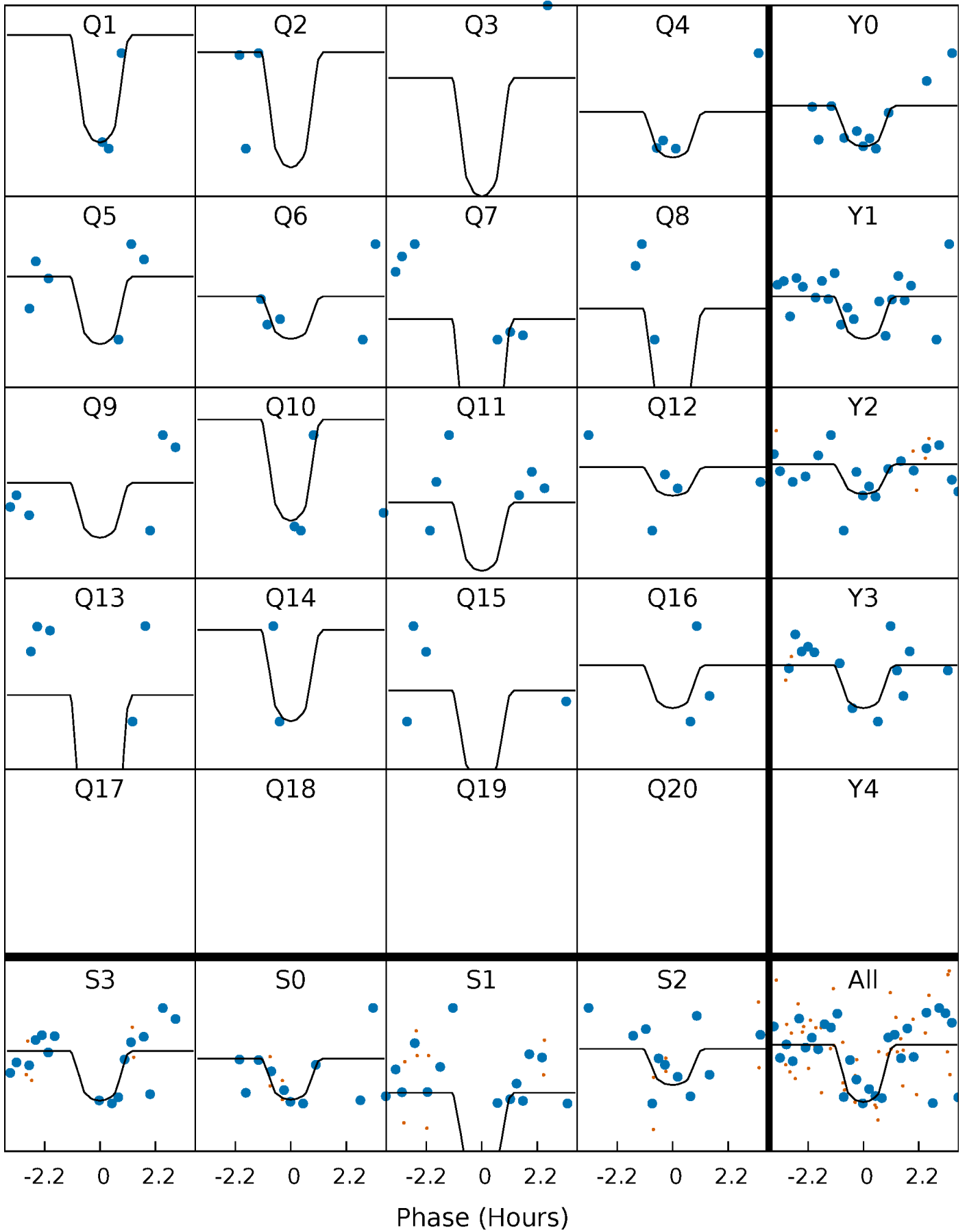
PDC Quarter-Phased Transit Curves

TCE 007115499-04 P= 31.579702 Days $T_0=133.822679$ (BKJD)



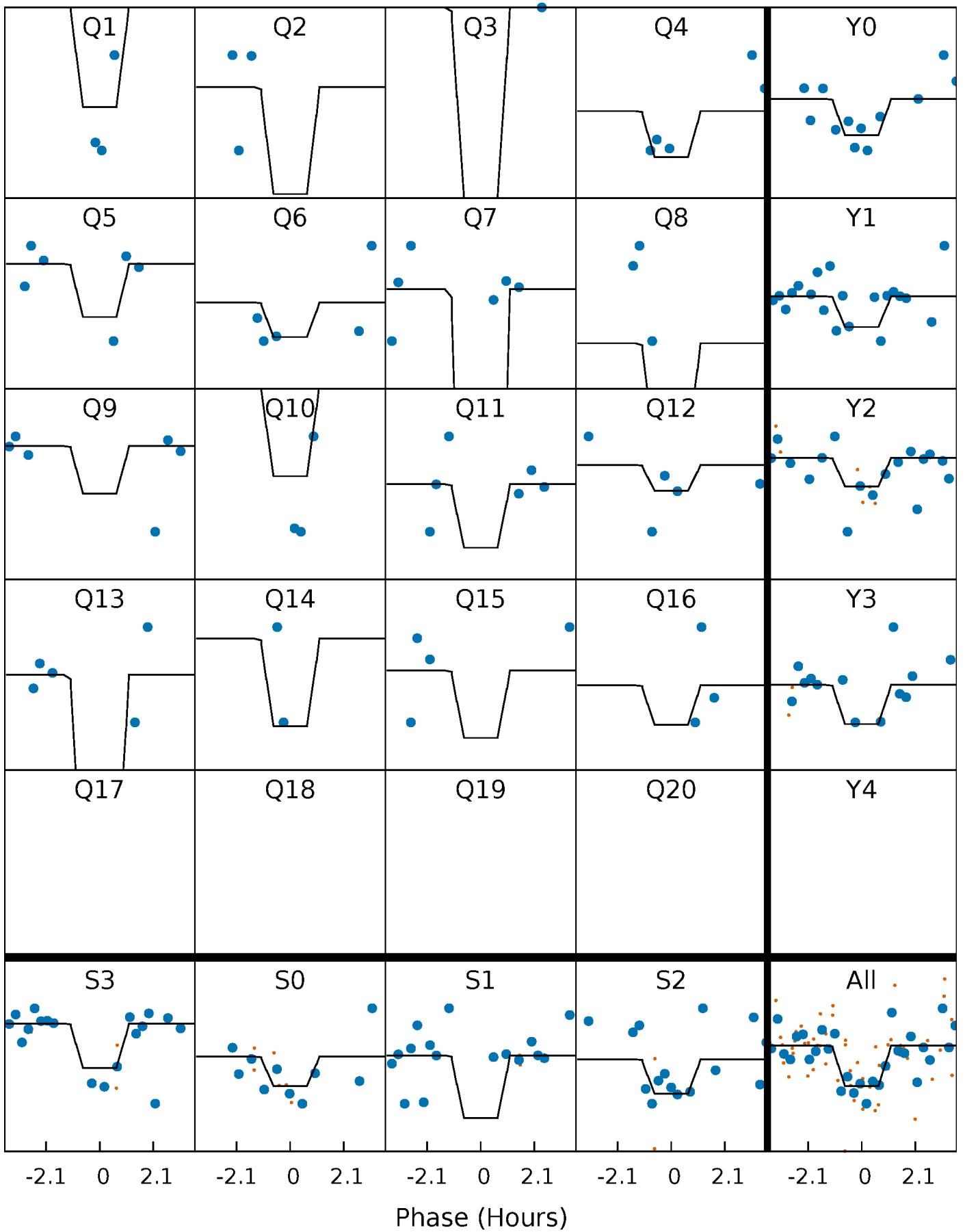
DV Quarter-Phased Transit Curves

TCE 007115499-04 P= 31.579702 Days $T_0=133.822679$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

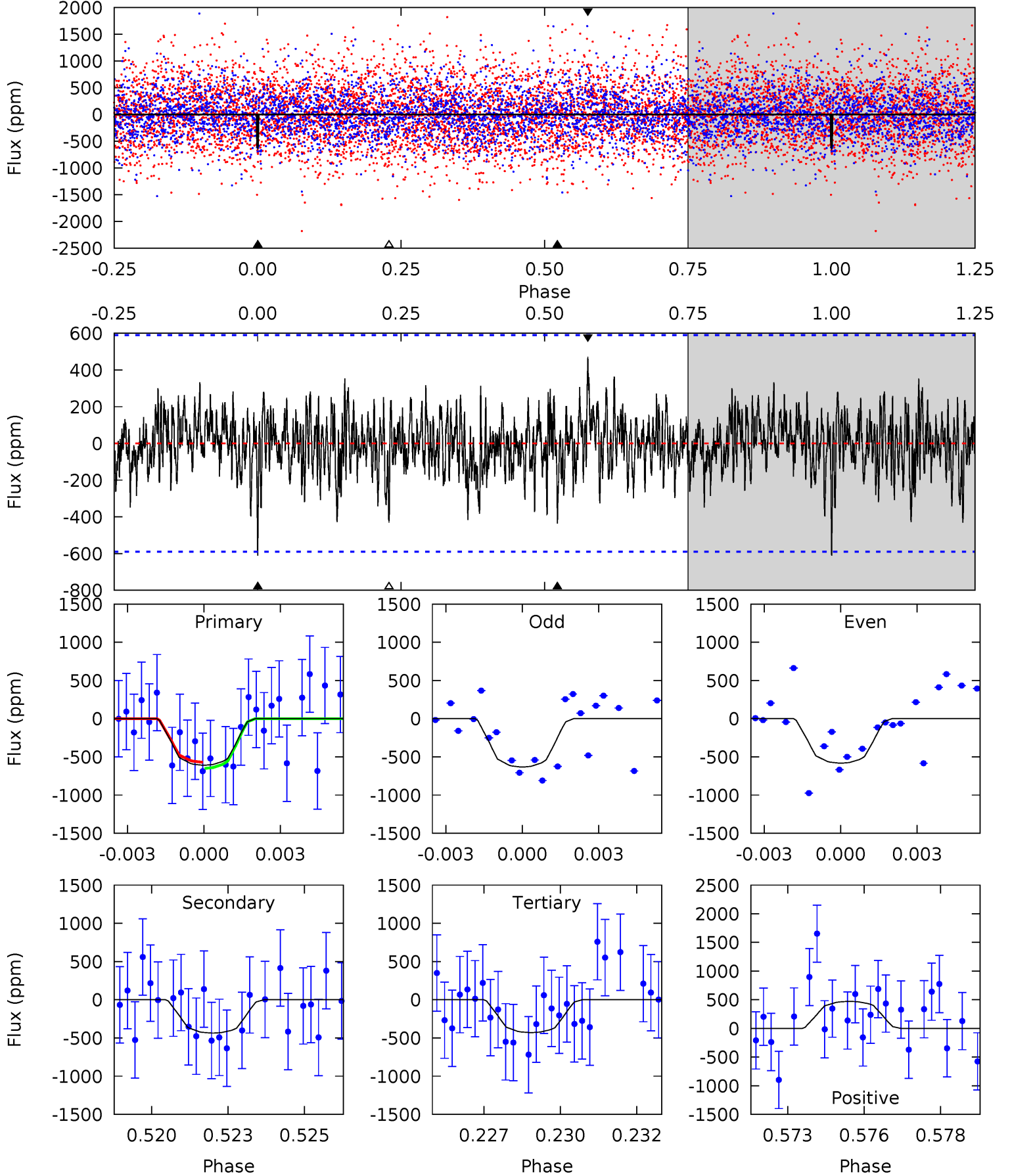
TCE 007115499-04 P= 31.579219 Days $T_0=133.833660$ (BKJD)



DV Model-Shift Uniqueness Test

007115499-04, $P = 31.579702$ Days, $E = 102.242977$ Days

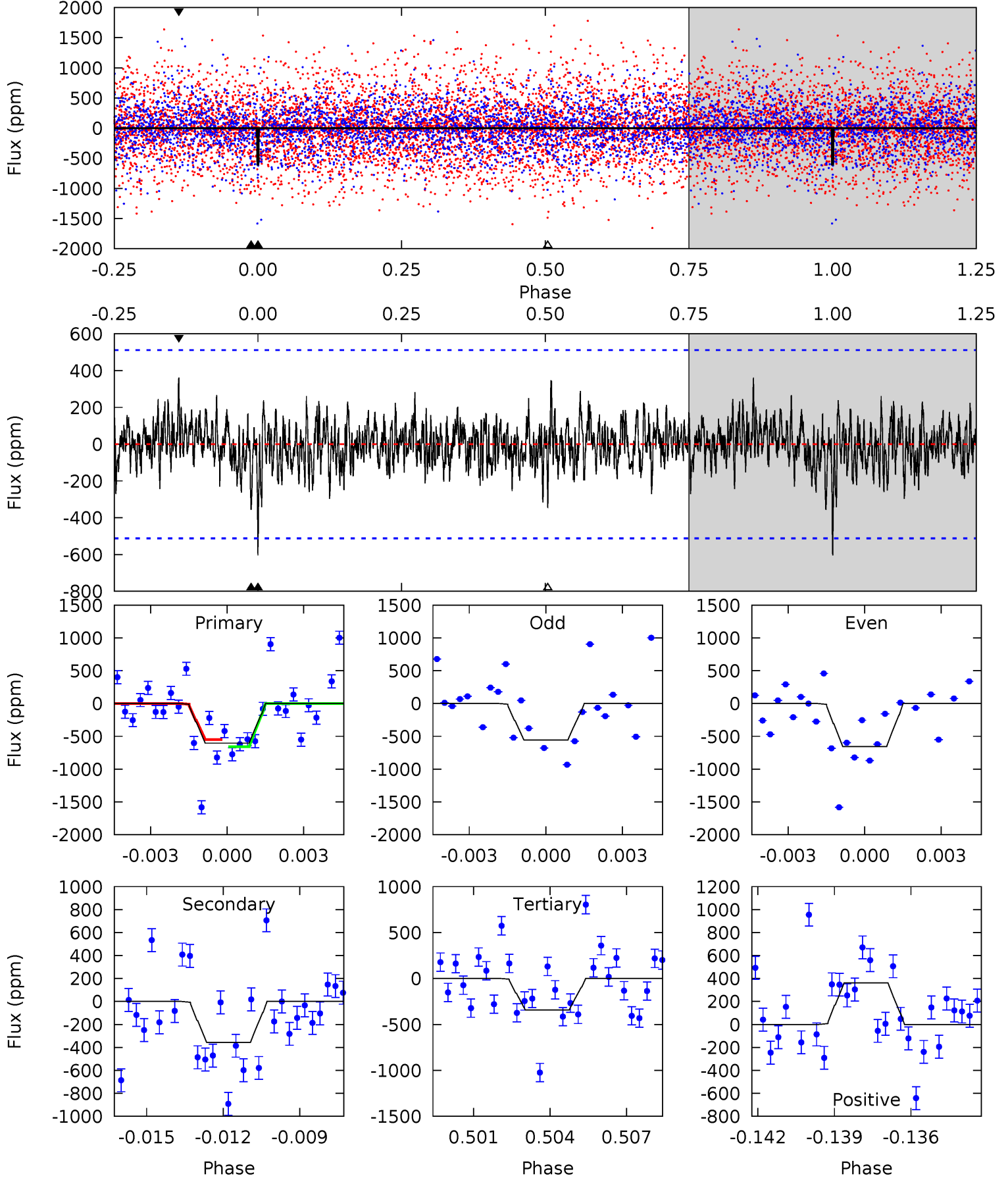
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.47	3.91	3.86	4.23	5.28	3.02	1.18	1.61	1.24	0.06	-0.32	0.23	1.00	0.44	0.36



Alt Model-Shift Uniqueness Test

007115499-04, P = 31.579219 Days, E = 102.254441 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.20	3.65	3.52	3.71	5.25	2.97	1.01	2.68	2.50	0.13	-0.05	0.52	0.83	0.37	0.56



Stellar Parameters For KIC 007115499

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5402^{+160}_{-160}	$4.581^{+0.025}_{-0.136}$	$0.070^{+0.250}_{-0.300}$	$0.815^{+0.158}_{-0.068}$	$0.931^{+0.065}_{-0.105}$	$2.419^{+0.324}_{-0.960}$
	+3%/-3%	+1%/-3%	+357%/-429%	+19%/-8%	+7%/-11%	+13%/-40%
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 007115499-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-436 ± 112	$5.63^{+5.21}_{-3.85}$	704^{+31}_{-29}	3612^{+2032}_{-668}	273^{+2573}_{-202}
Alt.	-356 ± 97	$5.34^{+5.10}_{-3.57}$	704^{+34}_{-28}	3521^{+1856}_{-664}	231^{+1941}_{-174}

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

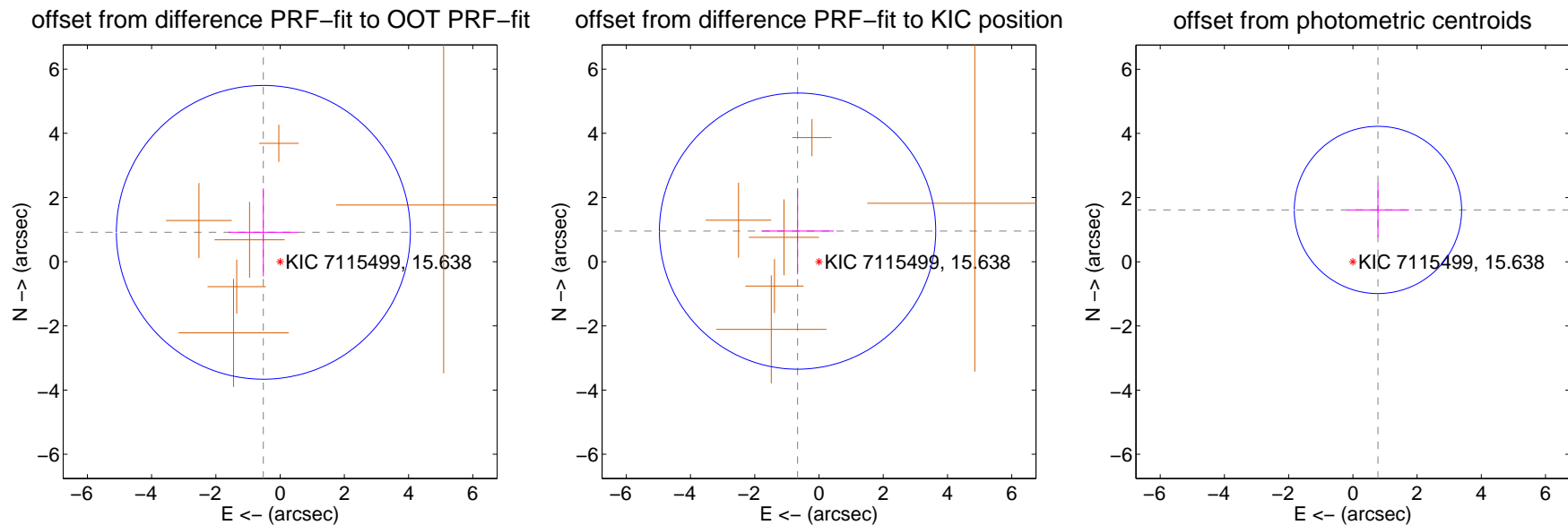
DV Centroid Data

Supplemental centroid analysis for 007115499-04. Kepler magnitude: 15.64. Transit SNR 10.09

There are 0 quarters with good PRF difference image offsets

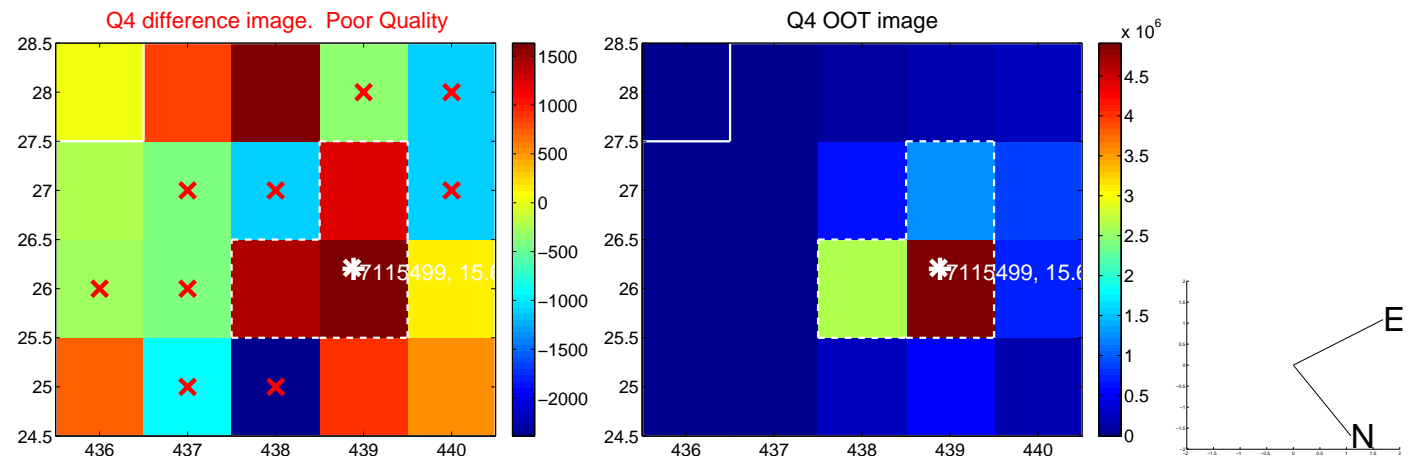
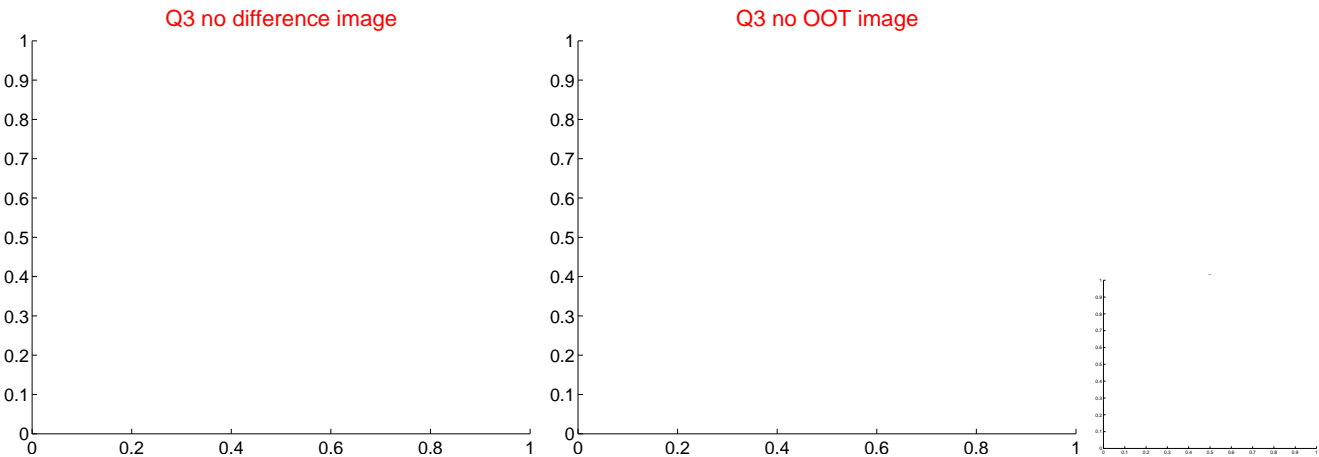
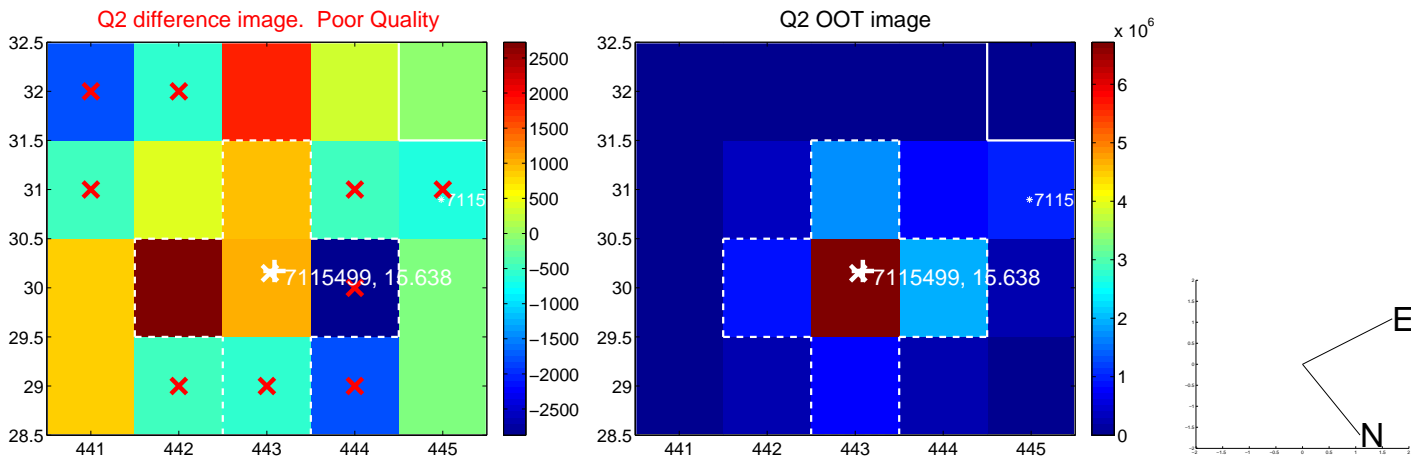
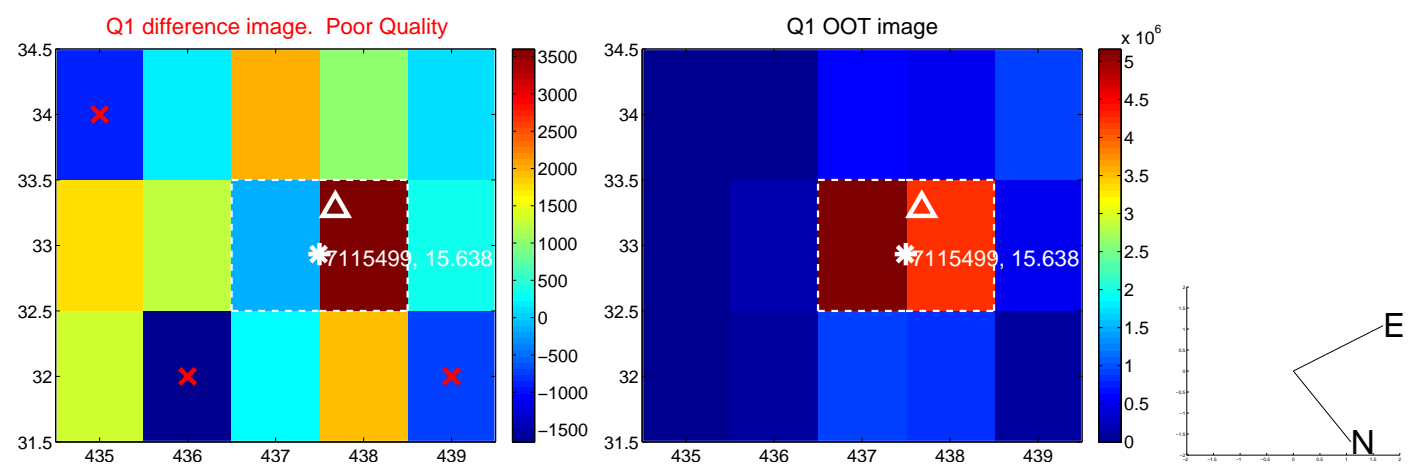
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.053 ± 1.525	0.69	0.521 ± 1.081	0.915 ± 1.371
PRF-fit source offset from KIC position	1.163 ± 1.434	0.81	0.667 ± 1.128	0.953 ± 1.342
photometric centroid source offset	1.79 ± 0.87	2.07	-0.78 ± 0.97	1.61 ± 0.84

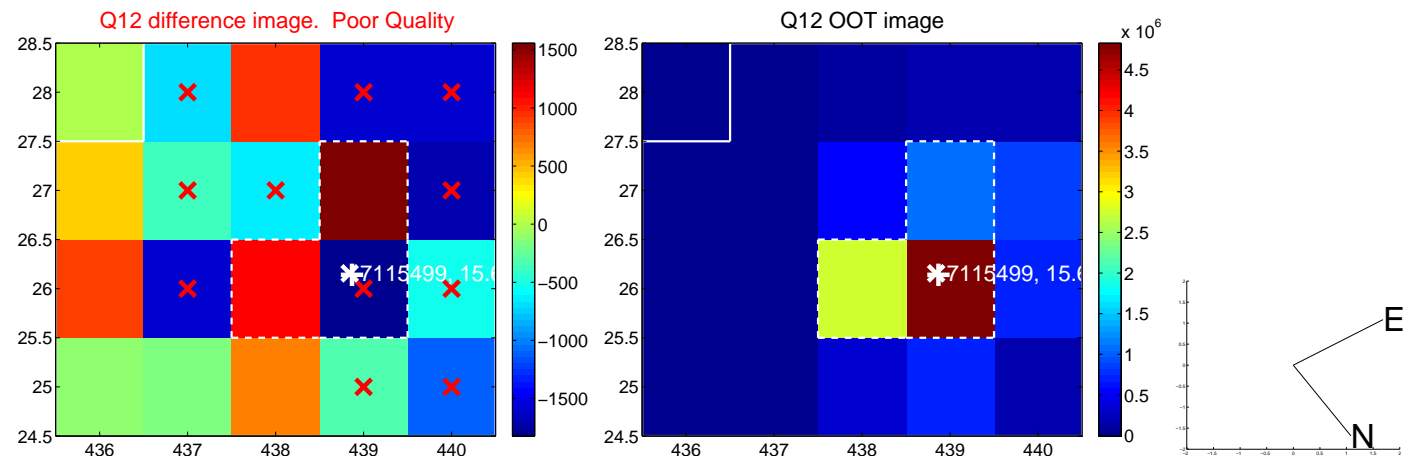
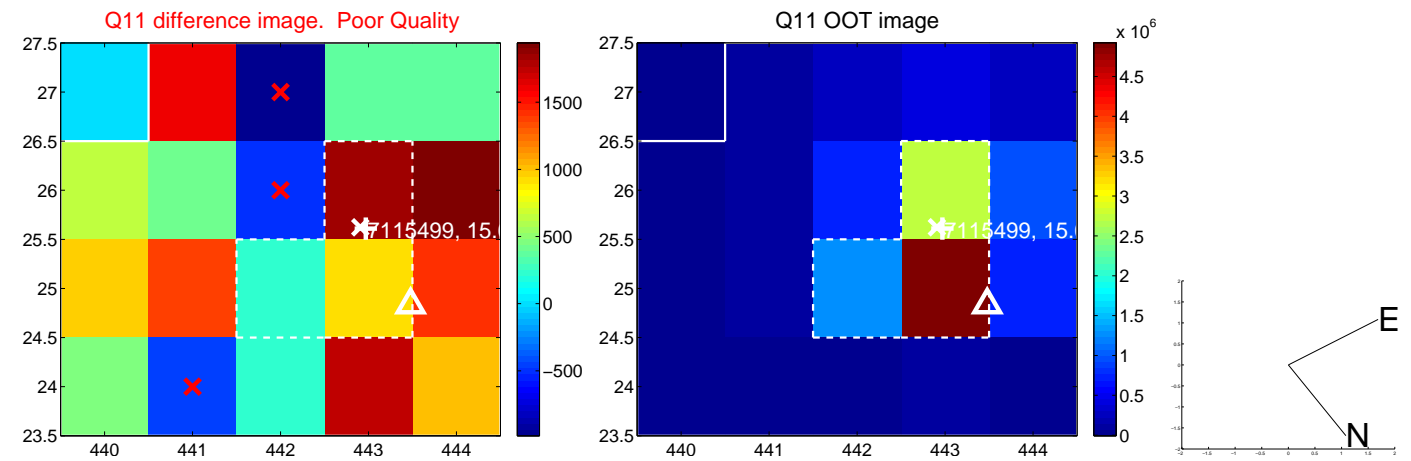
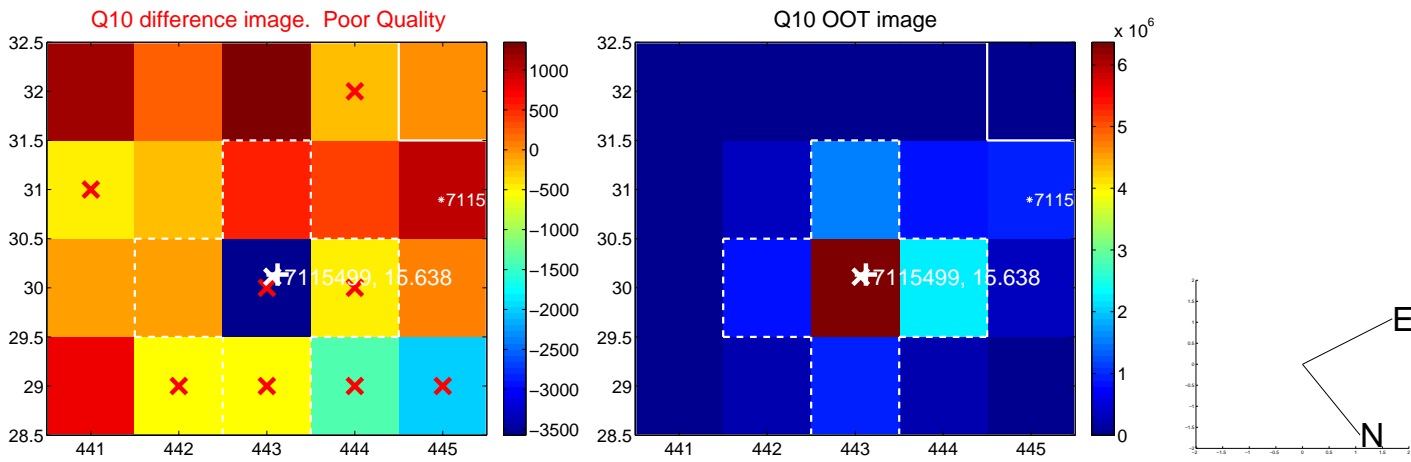
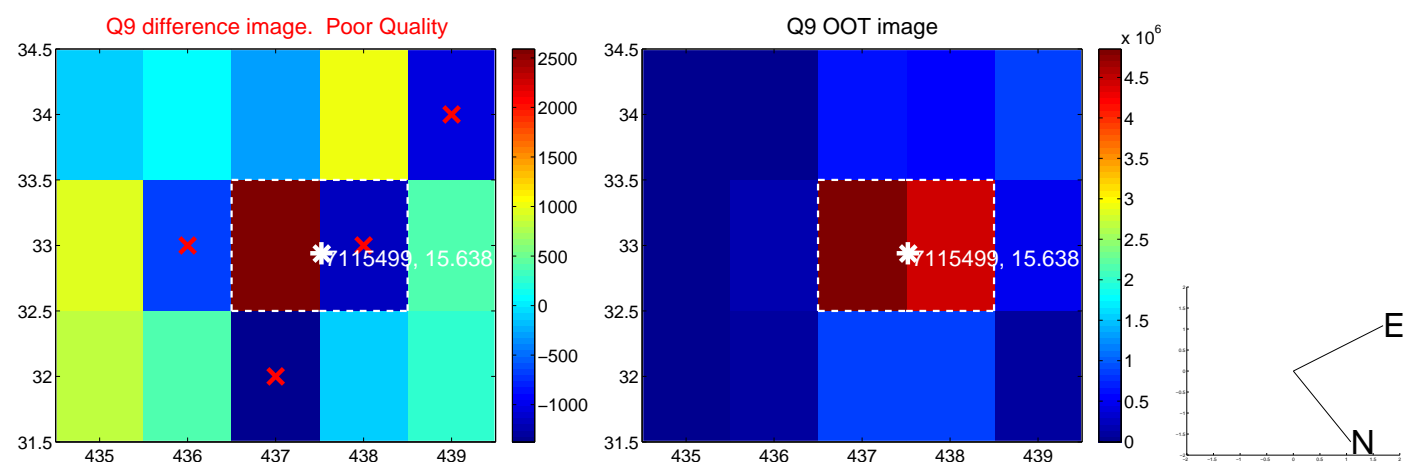


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

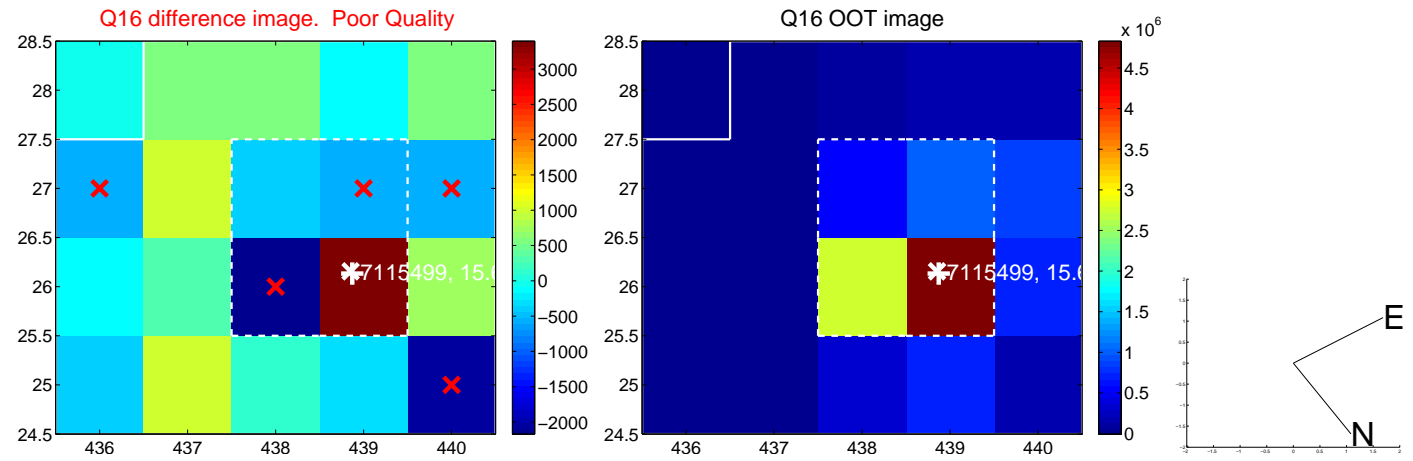
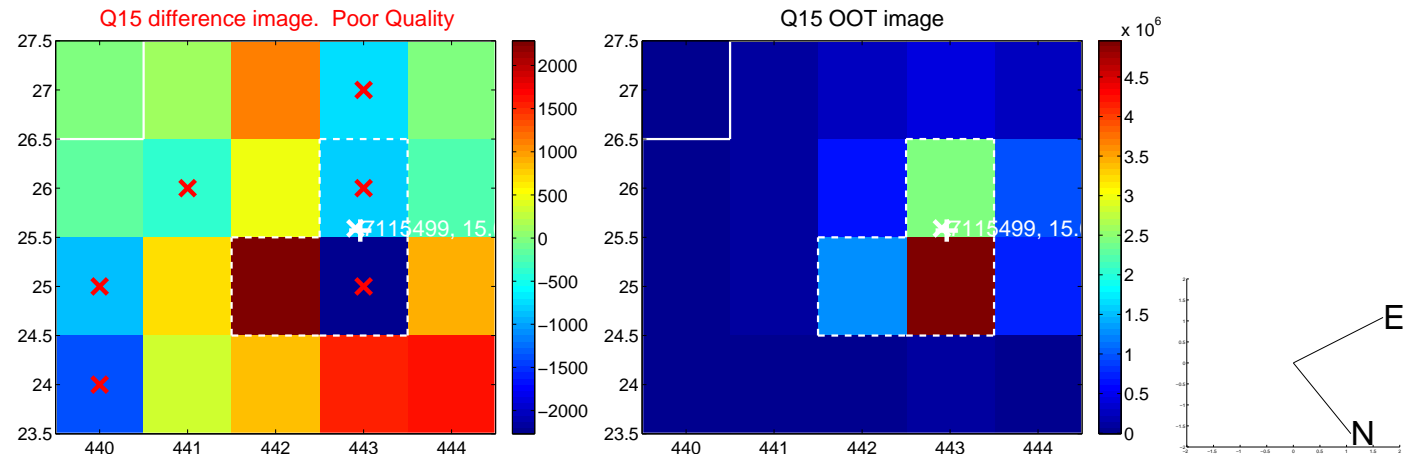
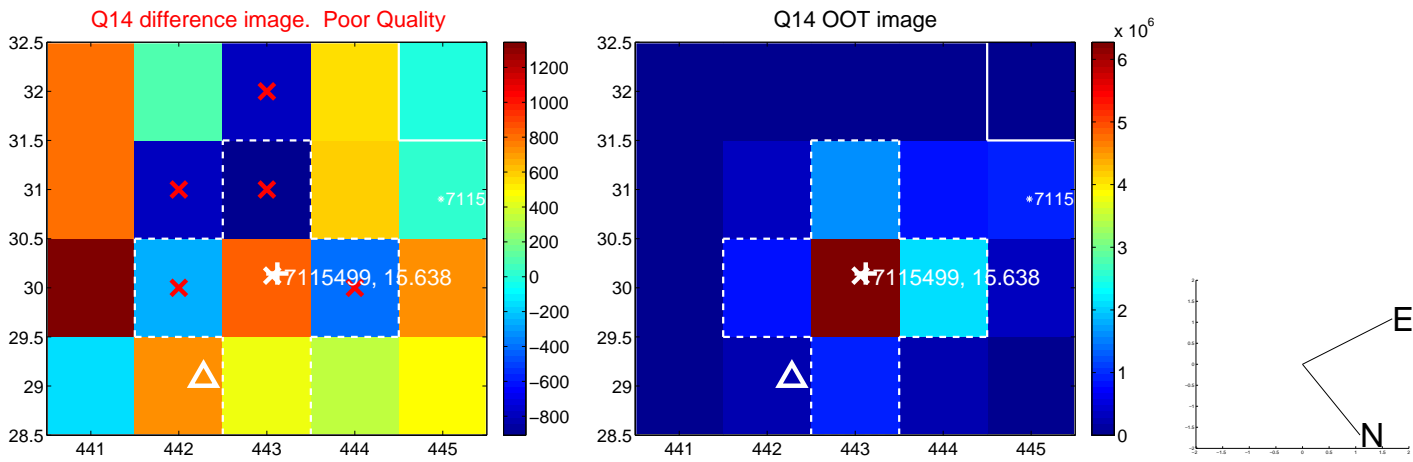
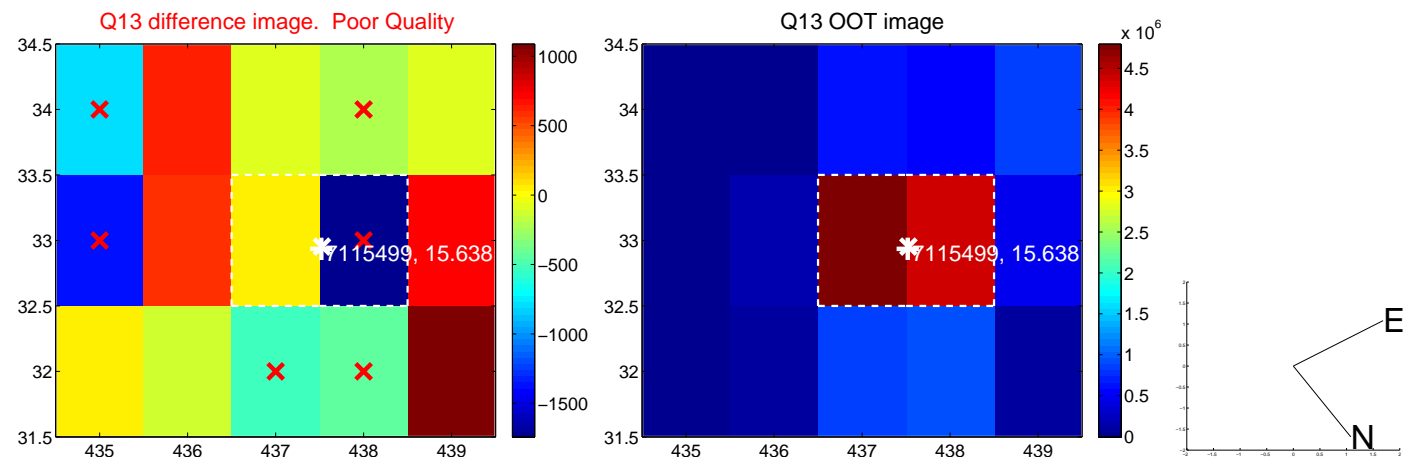
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



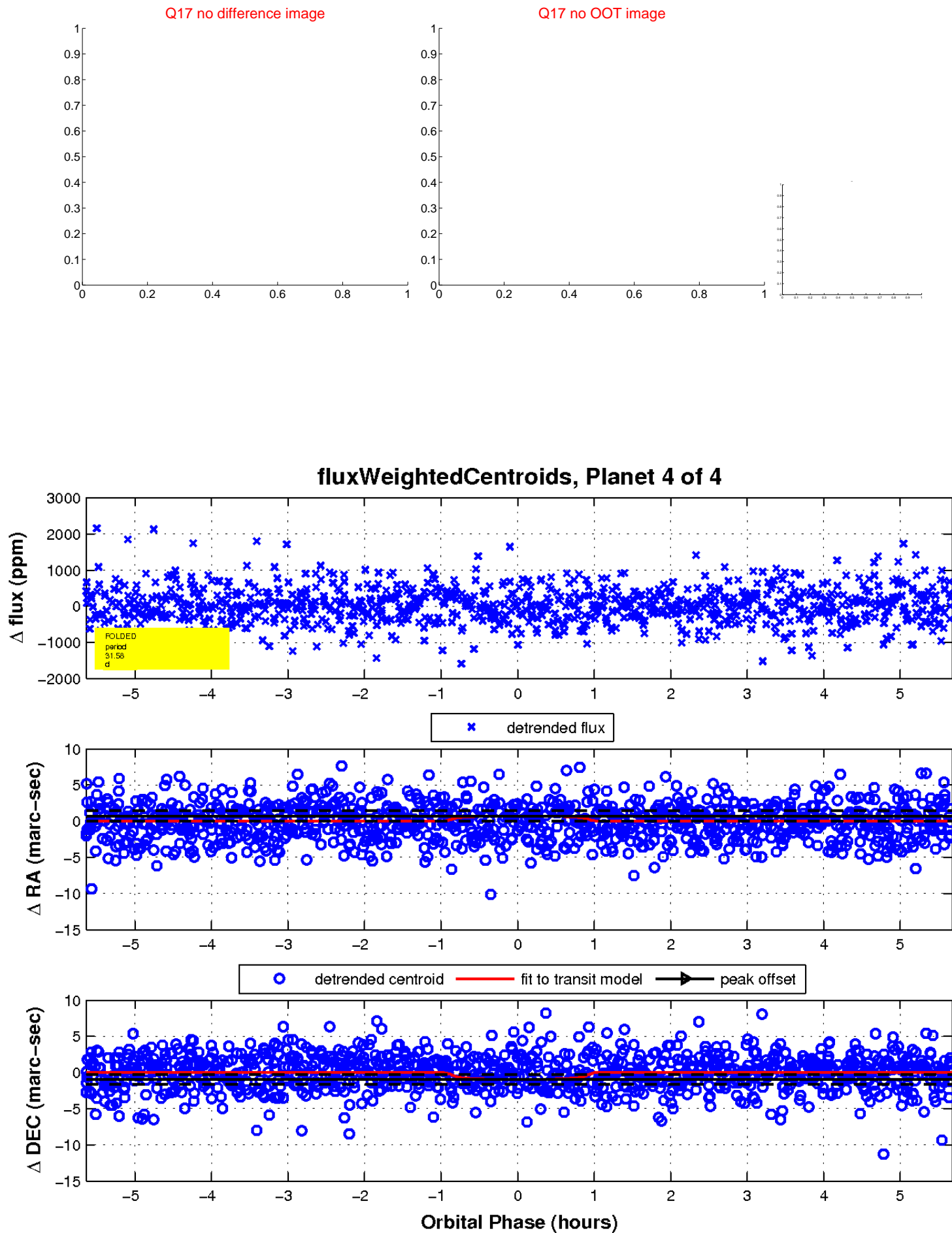
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

