

KIC 011602449

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})
011602449-01	OBS	No	0.562718	131.611884	162.5	0.804	10.1	14.9	2.61	7613	3.90	83036.26
011602449-02	OBS	No	0.562711	132.023143	147.0	0.870	10.1	12.1	2.61	7613	3.42	83037.65
011602449-03	OBS	No	0.562716	131.774904	156.3	0.876	8.0	11.6	2.61	7613	3.53	83036.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011602449-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011602449-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011602449-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

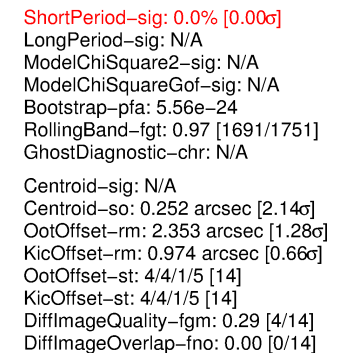
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 011602449-01

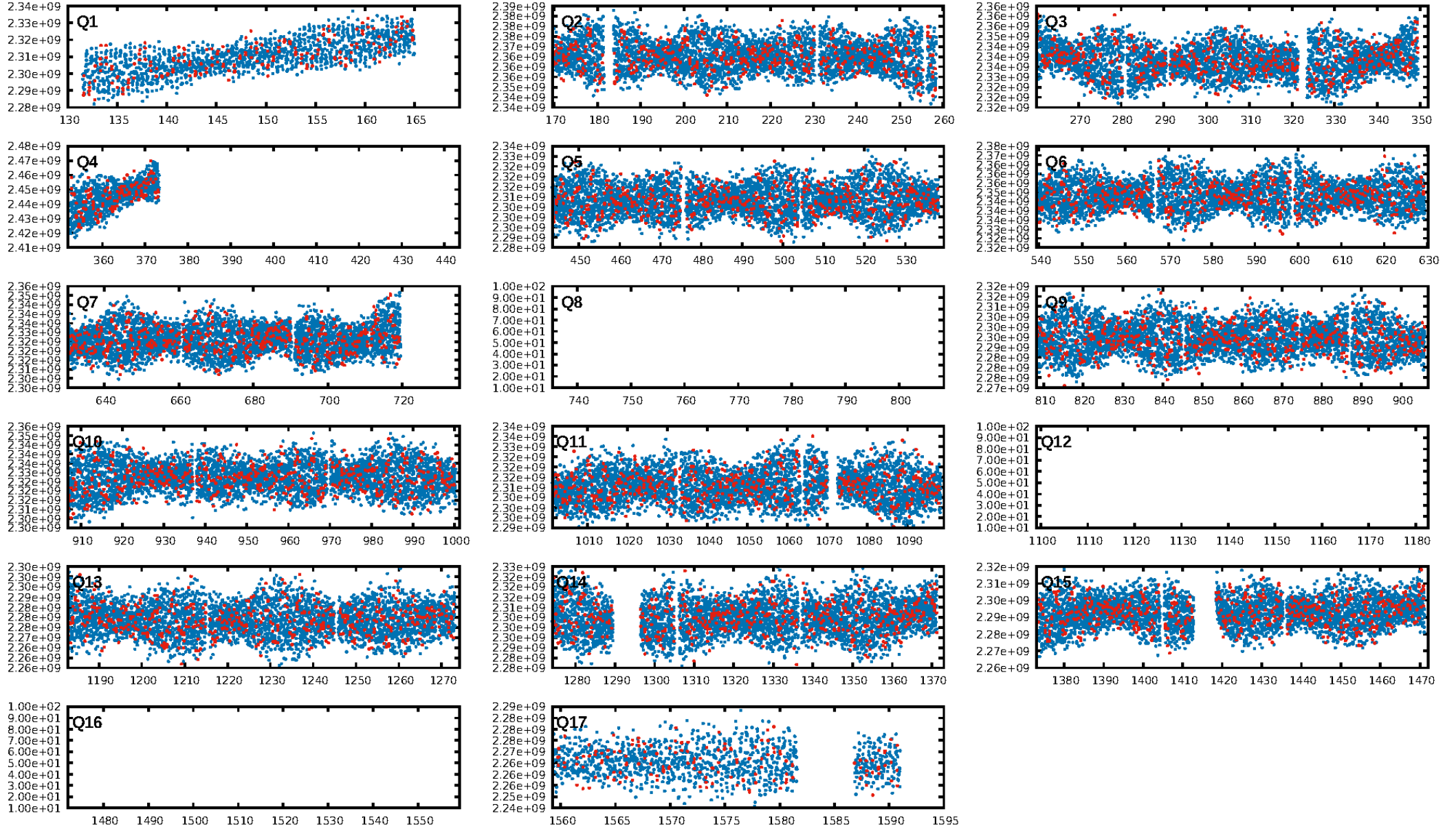
No Significant Match Found

KIC: 11602449 Candidate: 1 of 3 Period: 0.563 d

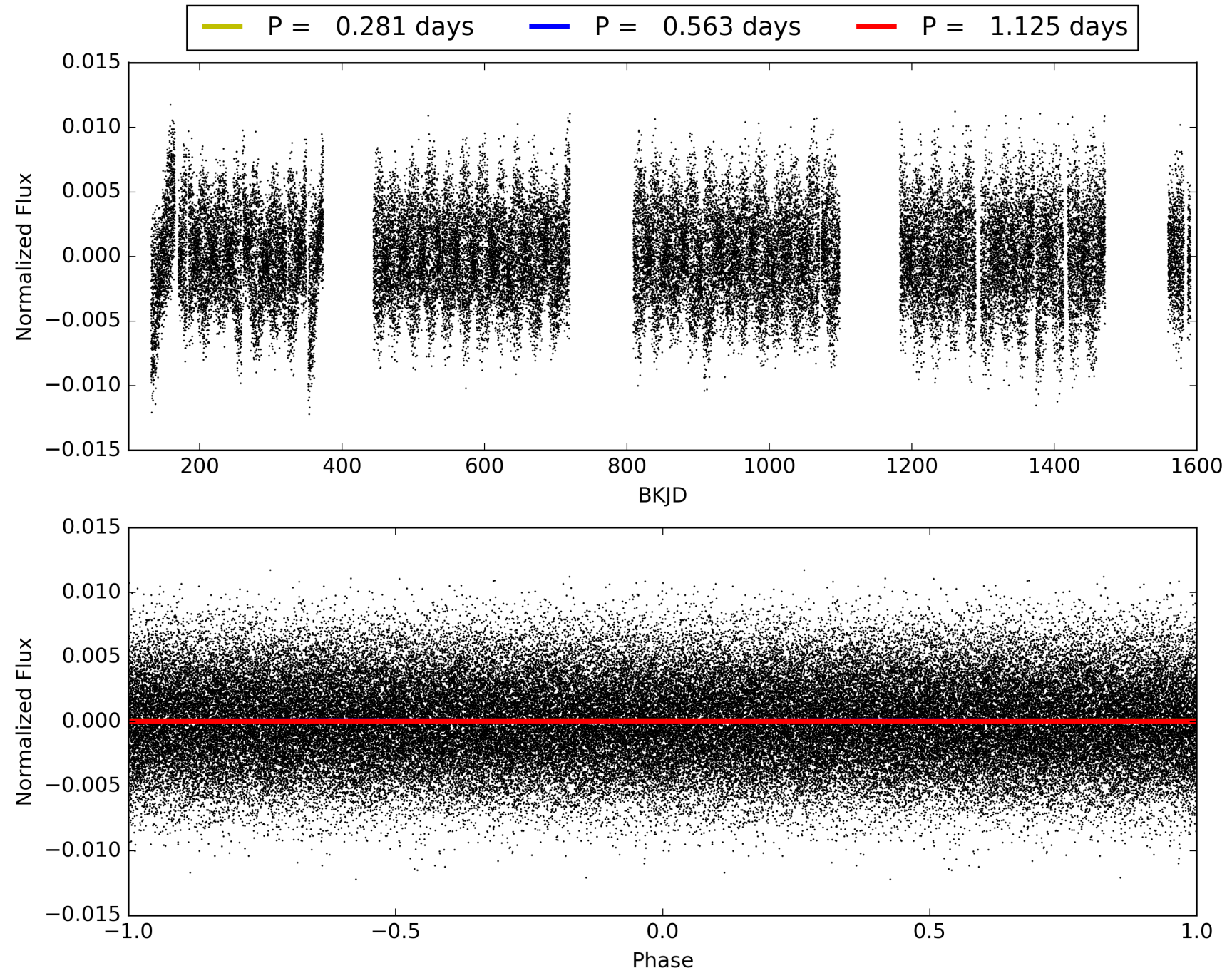


This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011602449-01, PDC Light Curves

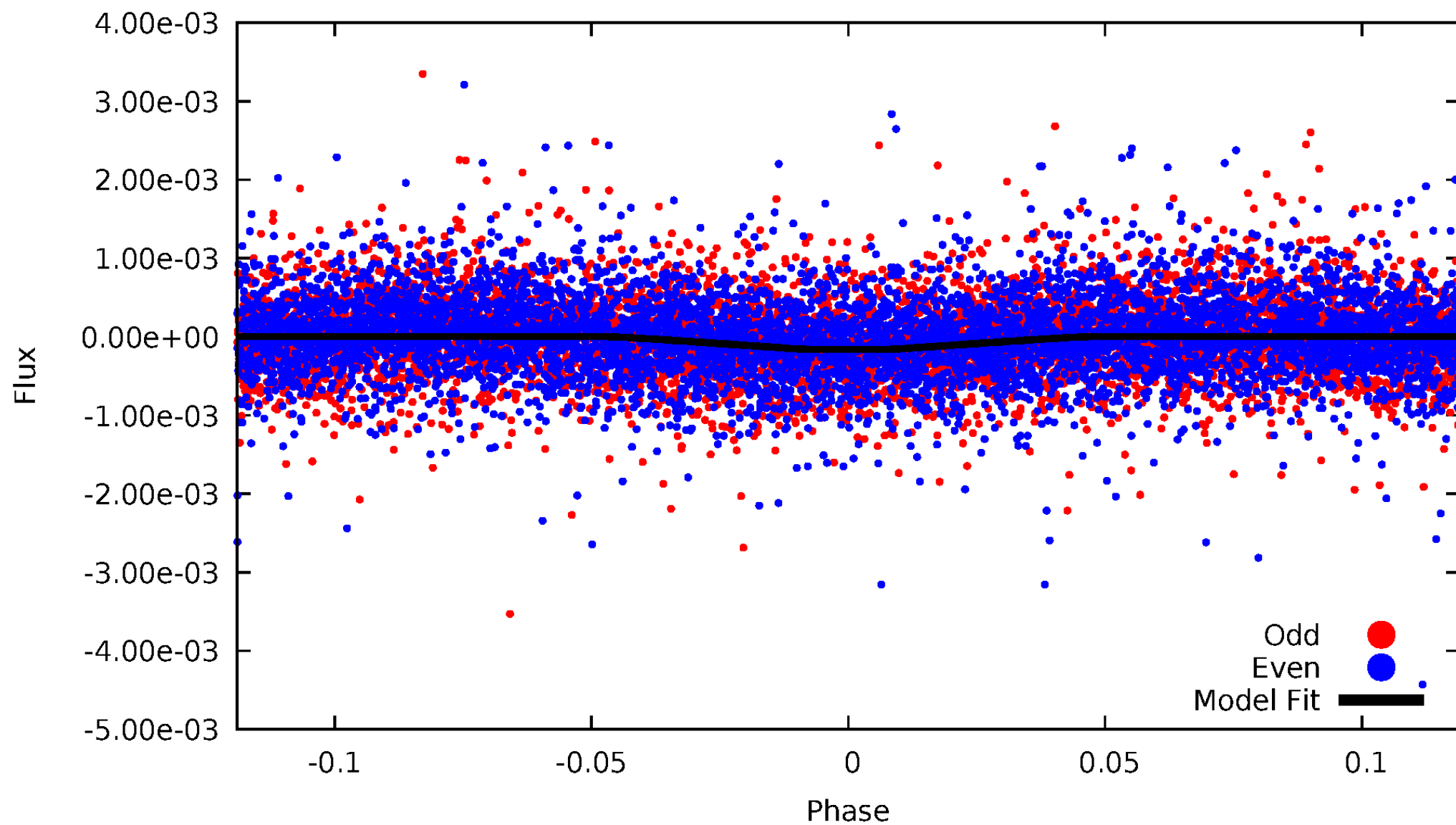


TCE 011602449-01



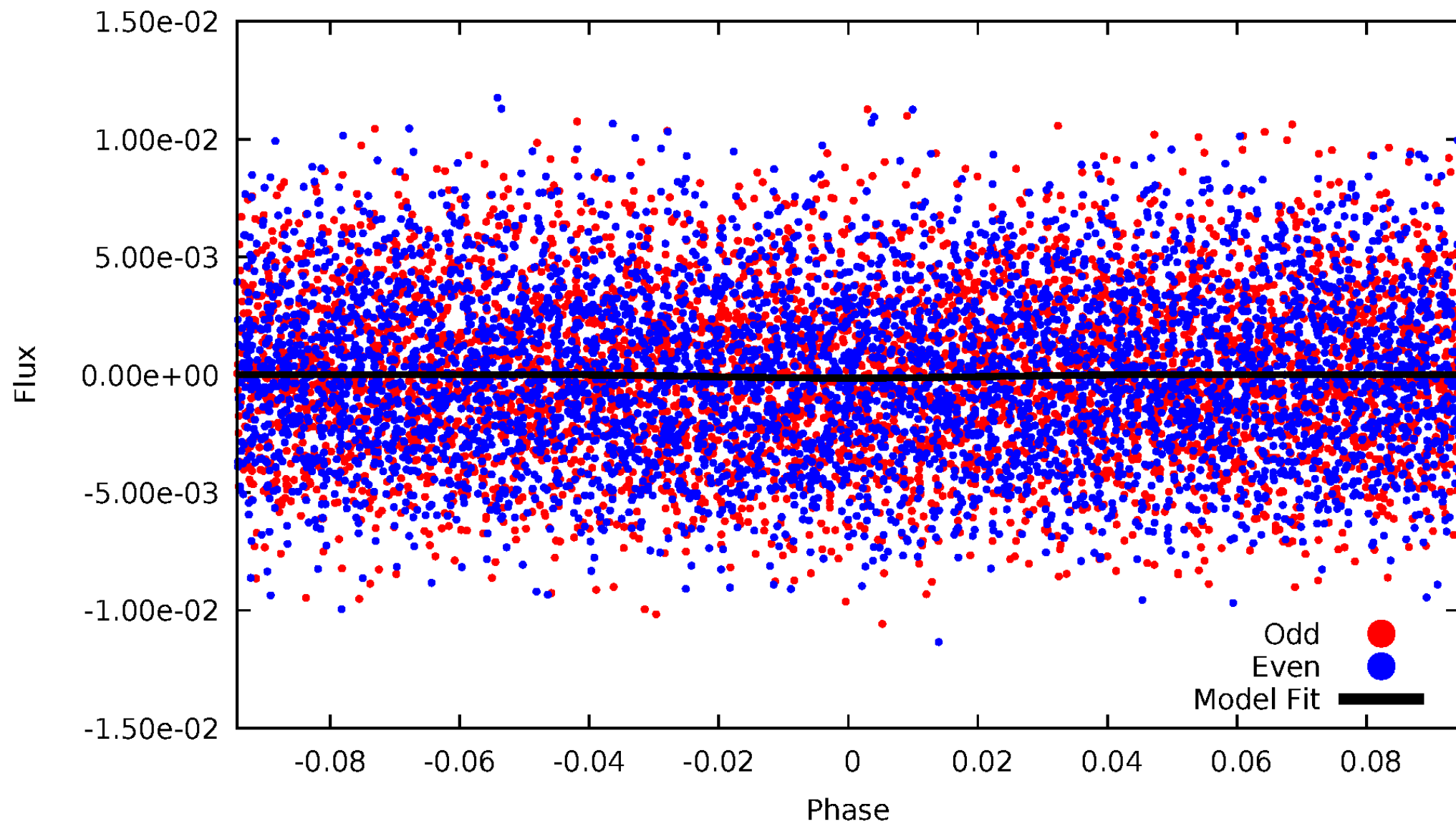
DV Odd/Even

TCE 011602449-01



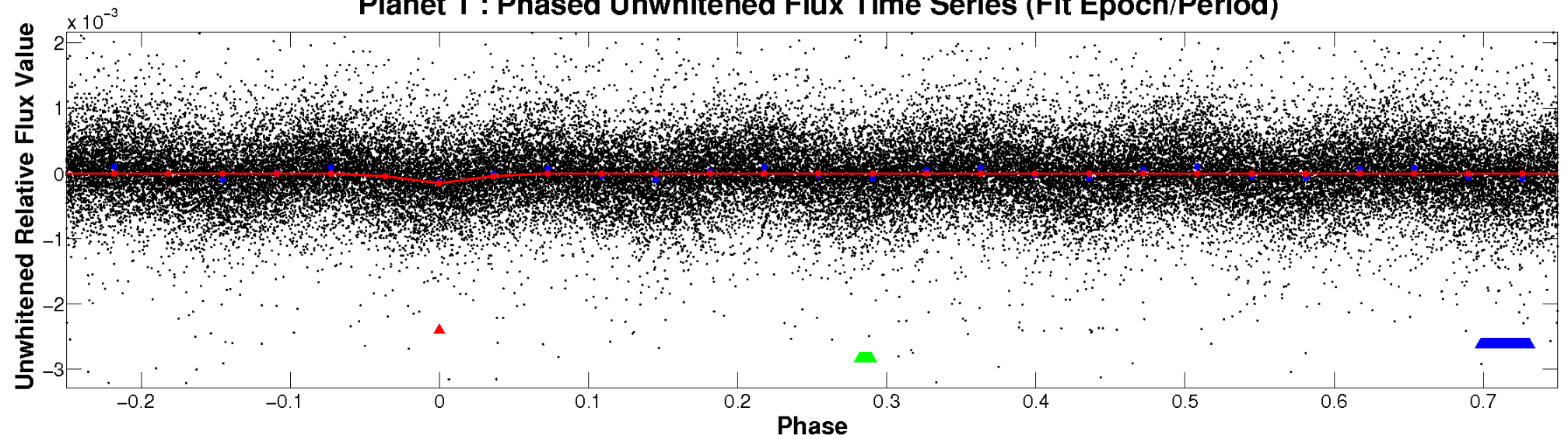
ALT Odd/Even

TCE 011602449-01

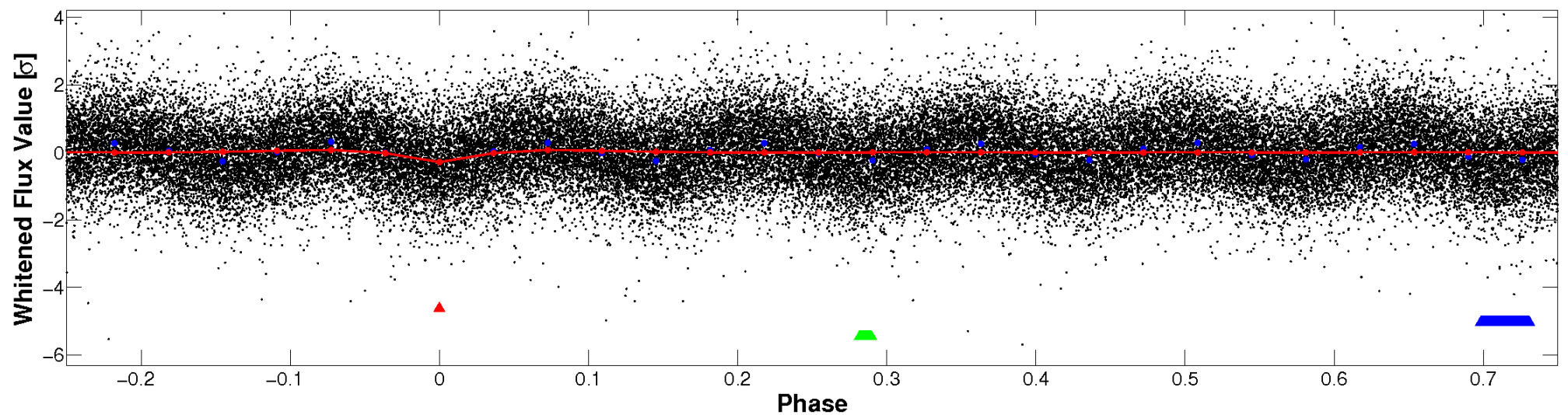


Non-Whitened Vs. Whitened Light Curve

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

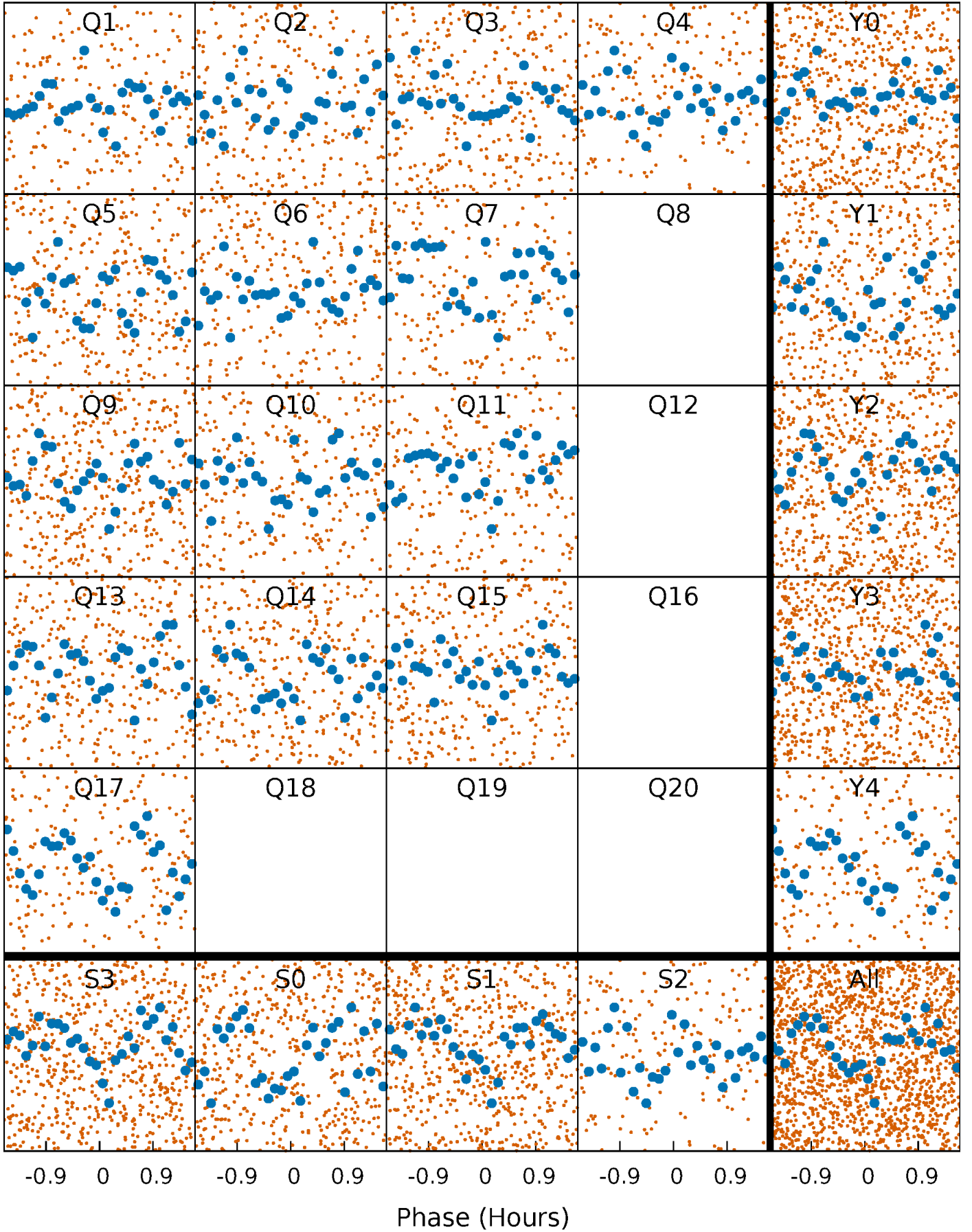


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



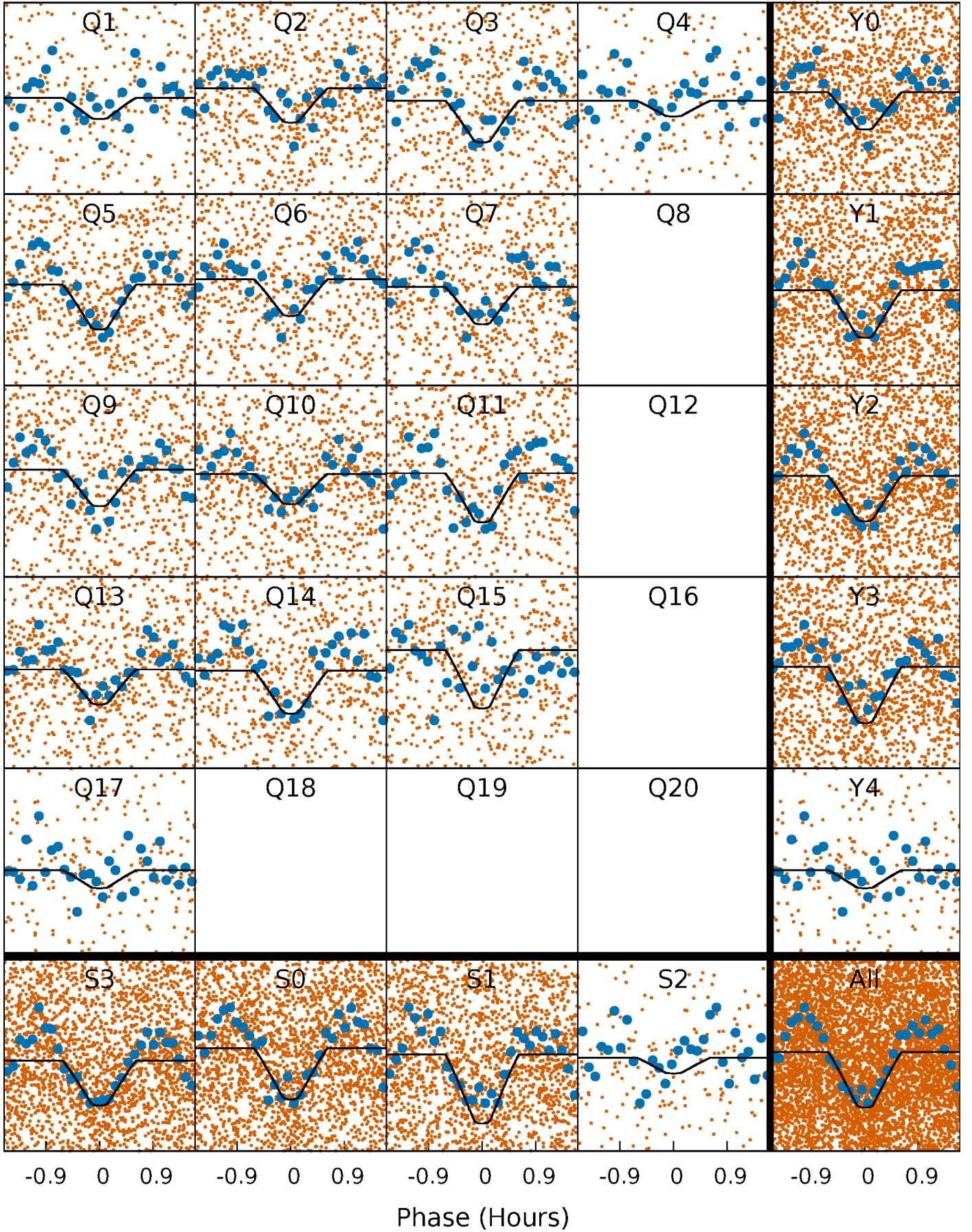
PDC Quarter-Phased Transit Curves

TCE 011602449-01 P= 0.562718 Days $T_0=131.611884$ (BKJD)



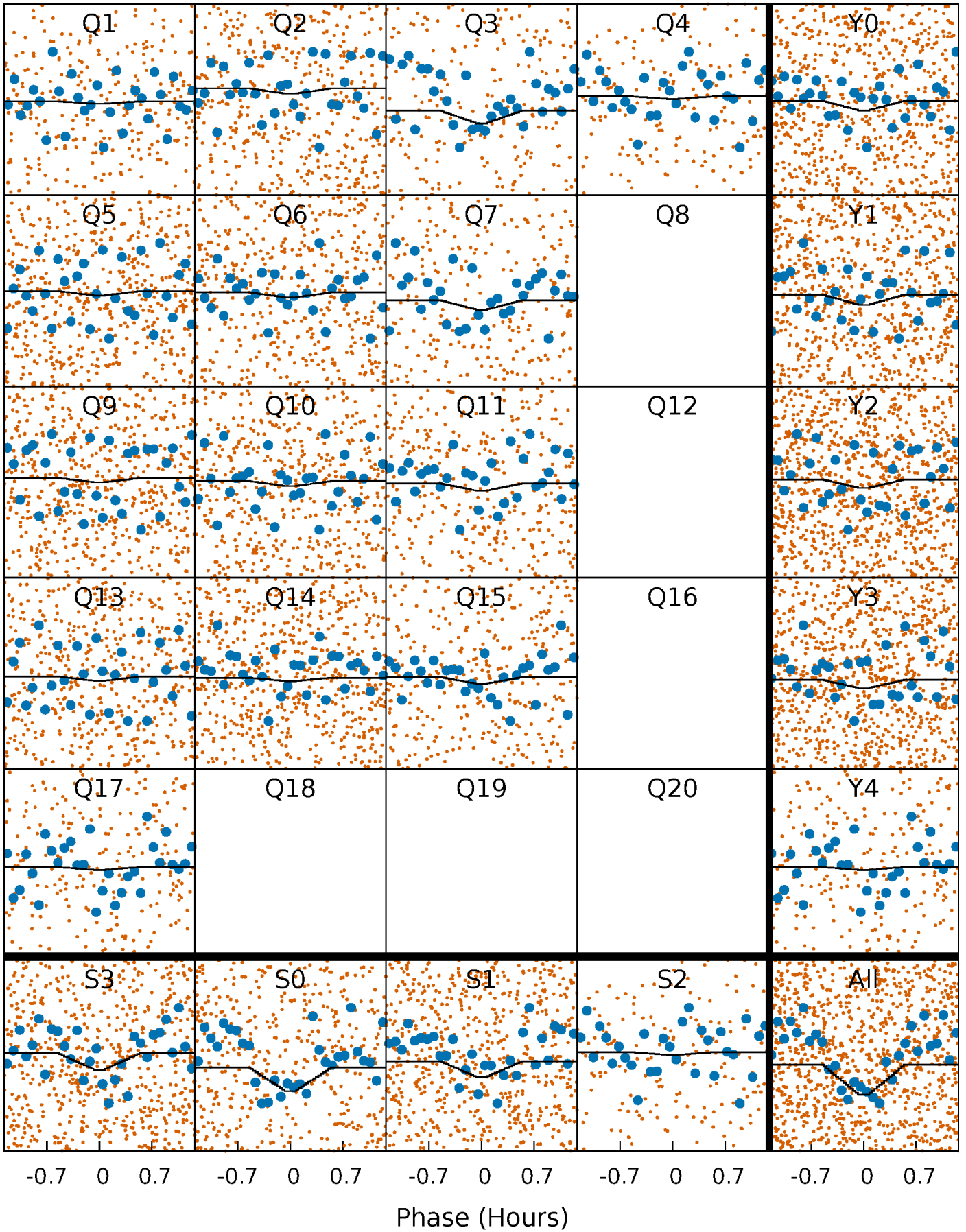
DV Quarter-Phased Transit Curves

TCE 011602449-01 P= 0.562718 Days $T_0=131.611884$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

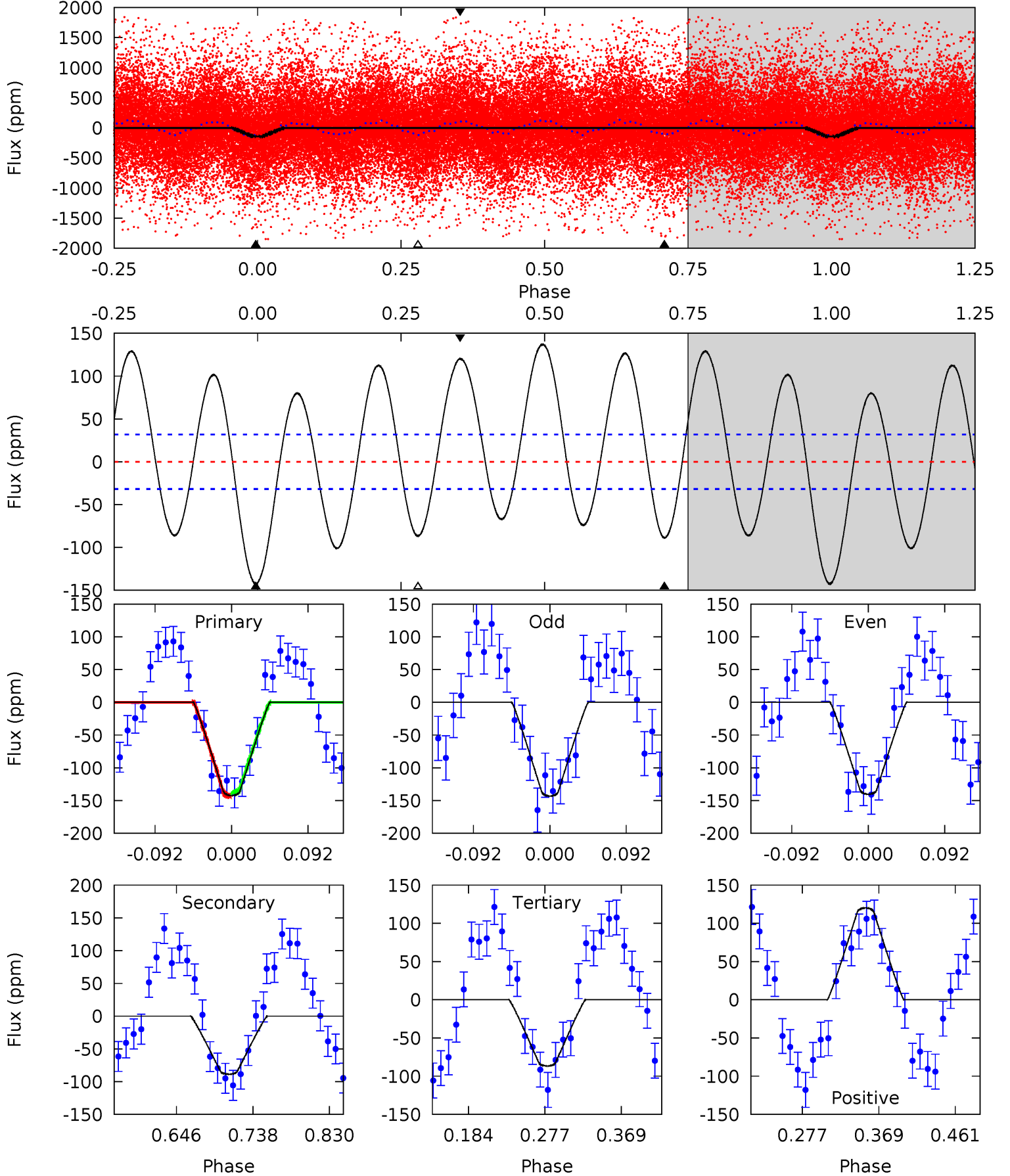
TCE 011602449-01 P= 0.562717 Days $T_0=131.611974$ (BKJD)



DV Model-Shift Uniqueness Test

011602449-01, P = 0.562718 Days, E = 131.049166 Days

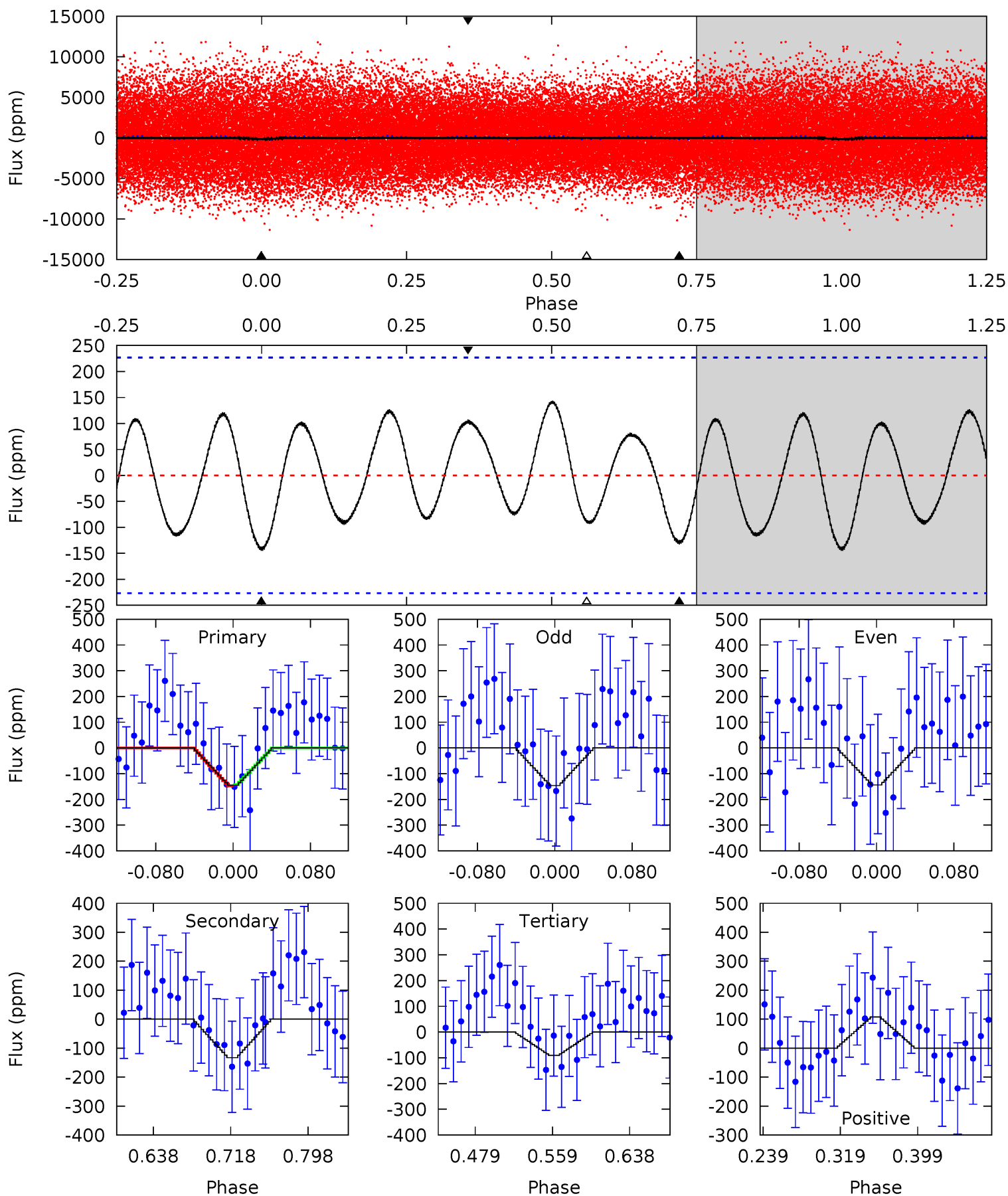
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	12.8	12.5	17.3	4.58	1.68	10.1	8.05	3.21	0.29	-4.54	0.20	0.97	0.49	0.36



Alt Model-Shift Uniqueness Test

011602449-01, P = 0.562717 Days, E = 131.049257 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.95	2.70	1.84	2.19	4.61	1.75	1.46	1.10	0.76	0.85	0.51	0.03	0.47	0.50	0.05



Stellar Parameters For KIC 011602449

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7613^{+234}_{-313}	$3.818^{+0.433}_{-0.076}$	$-0.500^{+0.250}_{-0.300}$	$2.611^{+0.403}_{-1.208}$	$1.638^{+0.172}_{-0.401}$	$0.130^{+0.521}_{-0.041}$
	+3%/-4%	+11%/-2%	+50%/-60%	+15%/-46%	+11%/-24%	+402%/-31%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011602449-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-89 ± 7	$3.58^{+1.11}_{-1.10}$	5843^{+400}_{-679}	5617^{+977}_{-877}	$0.926^{+0.964}_{-0.364}$
Alt.	-133 ± 49	$3.05^{+1.10}_{-1.01}$	5832^{+394}_{-691}	6938^{+1922}_{-1444}	$1.814^{+2.281}_{-0.966}$

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 $A_{obs} \gg 1.0$

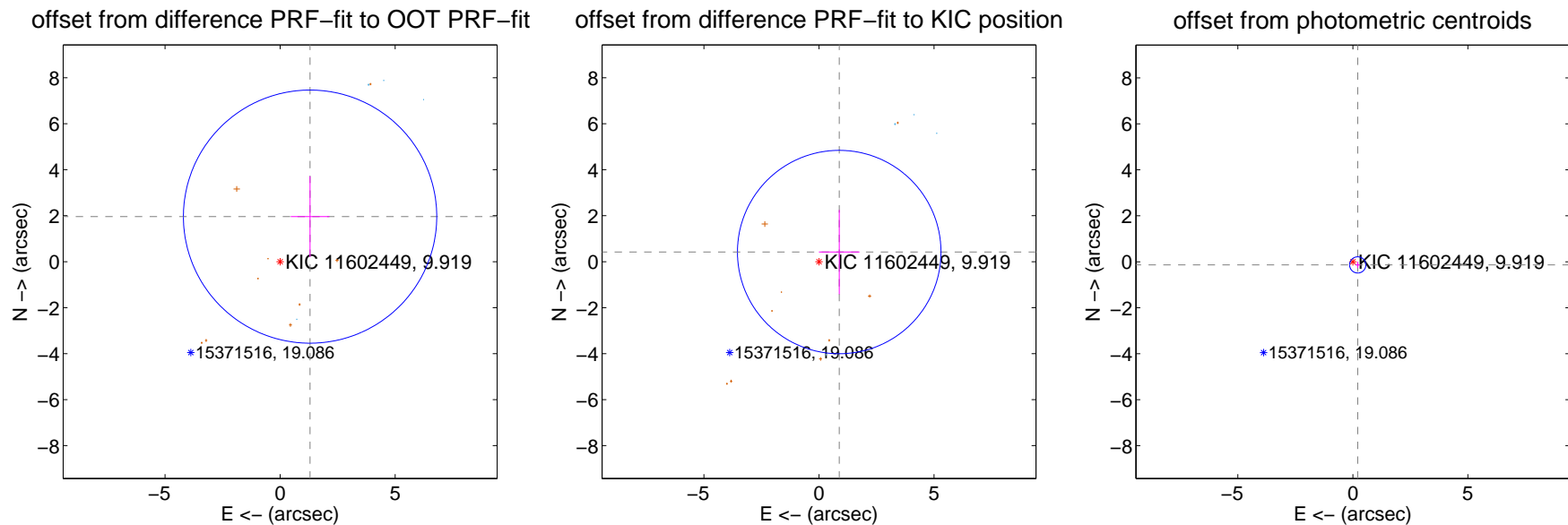
DV Centroid Data

Supplemental centroid analysis for 011602449-01. **Kepler magnitude: 9.92.** Transit SNR 14.88

There are 4 quarters with good PRF difference image offsets

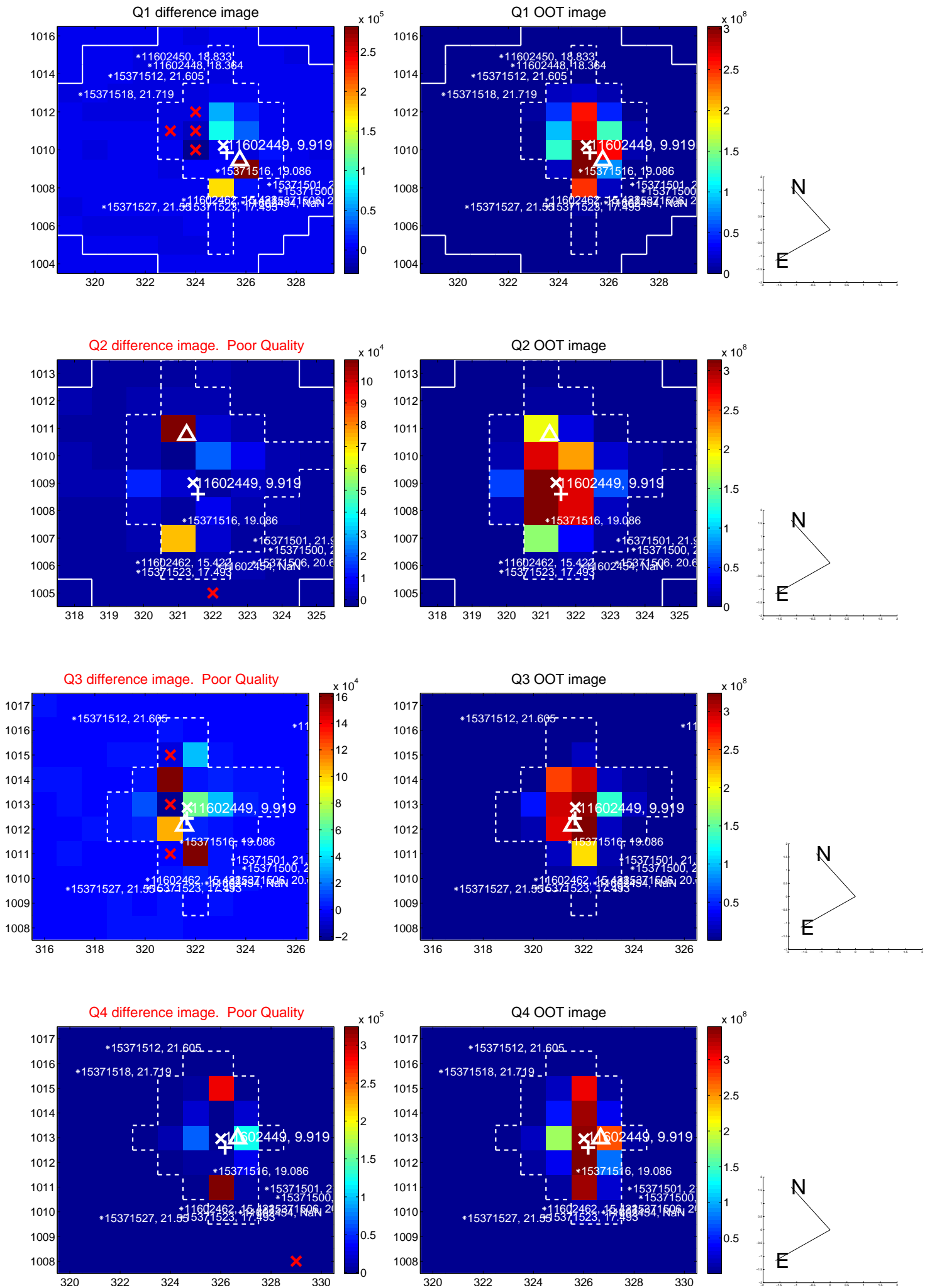
The direct PRF centroid is offset from the target star catalog position by about 1.54 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.353 ± 1.835	1.28	-1.302 ± 0.840	1.960 ± 1.756
PRF-fit source offset from KIC position	0.974 ± 1.474	0.66	-0.879 ± 0.883	0.420 ± 1.832
photometric centroid source offset	0.25 ± 0.12	2.14	-0.21 ± 0.11	-0.14 ± 0.14

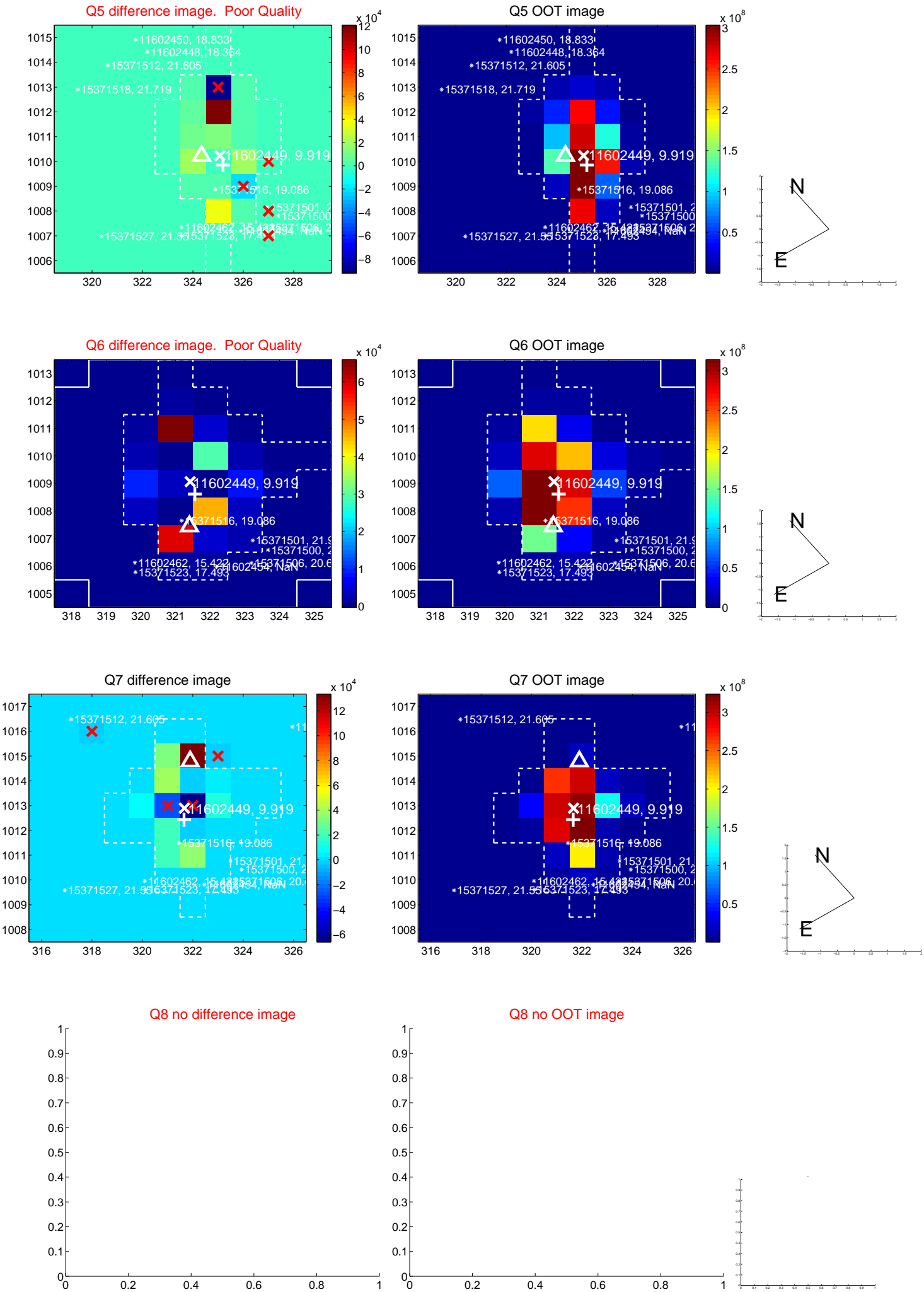


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

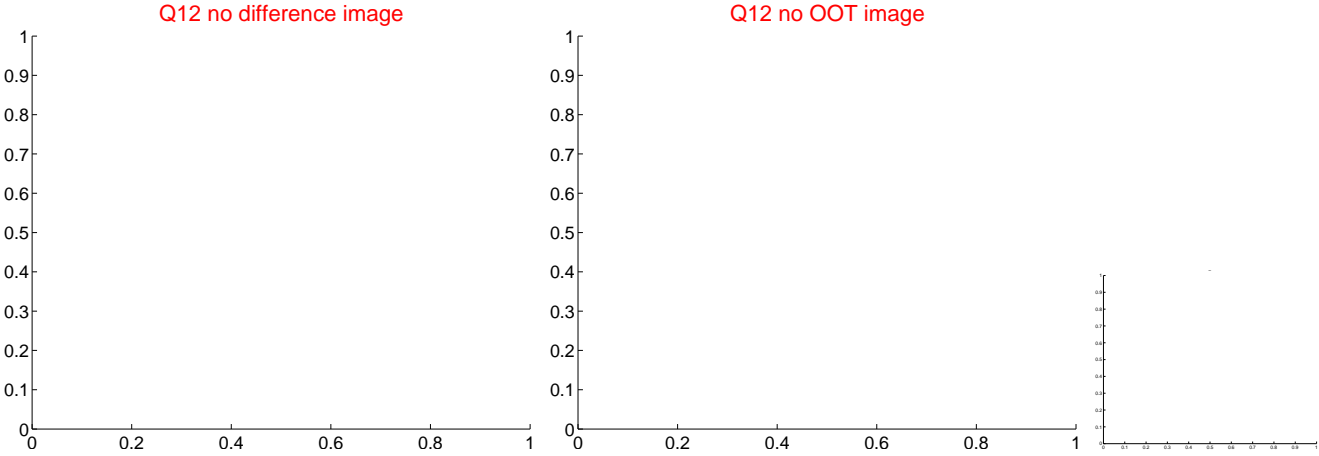
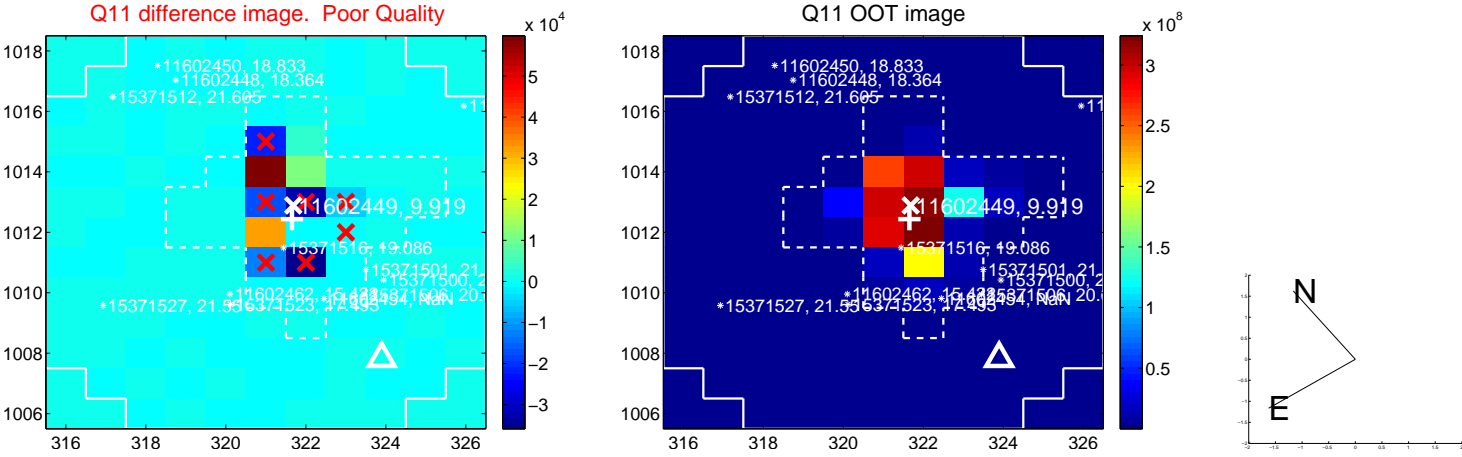
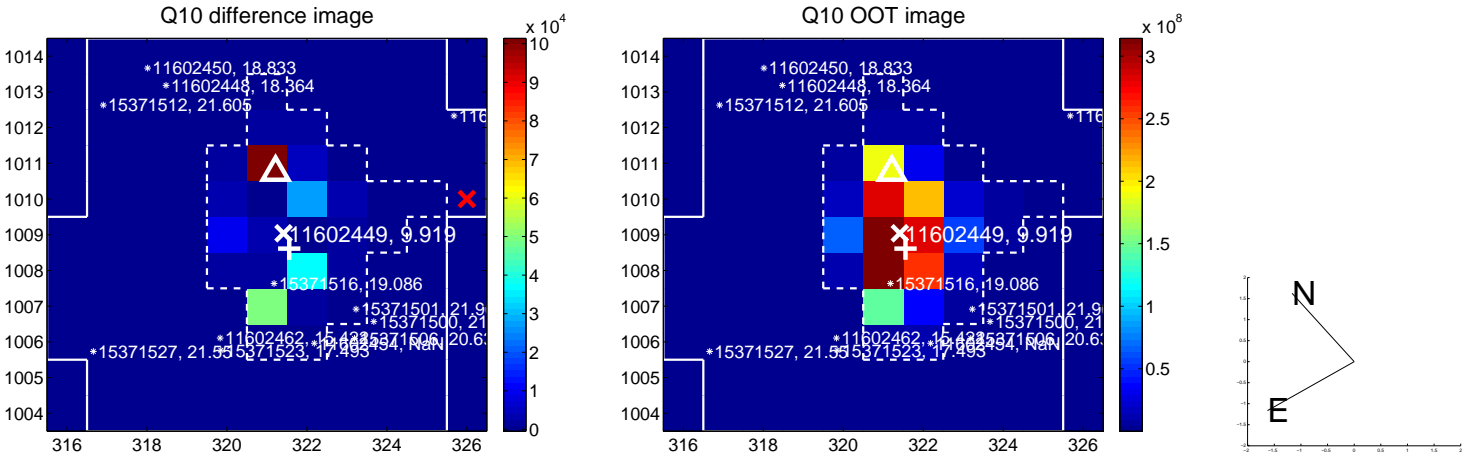
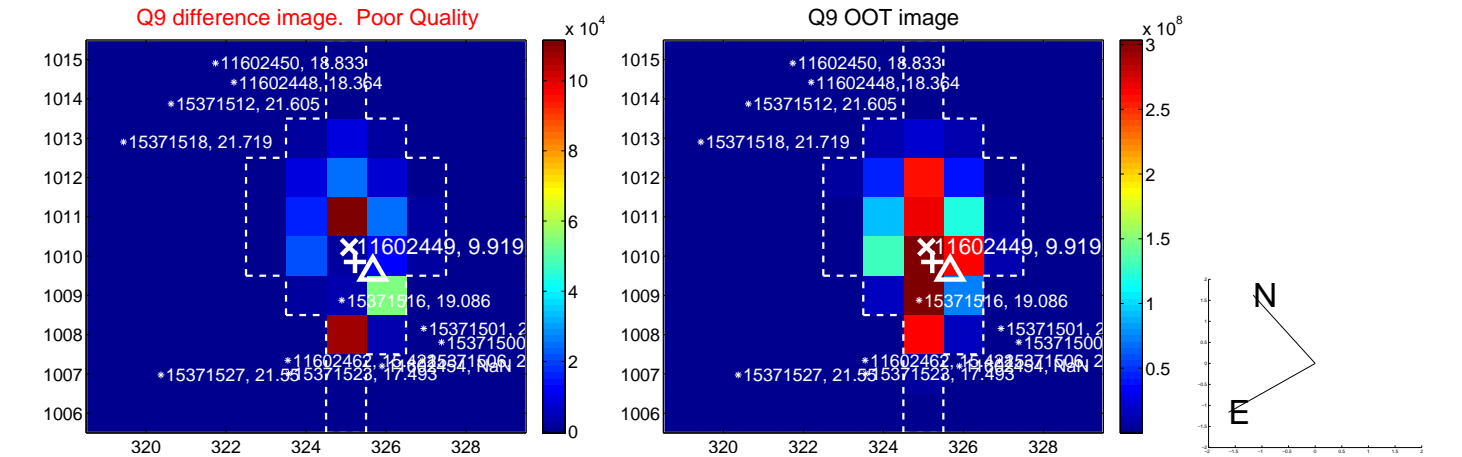
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



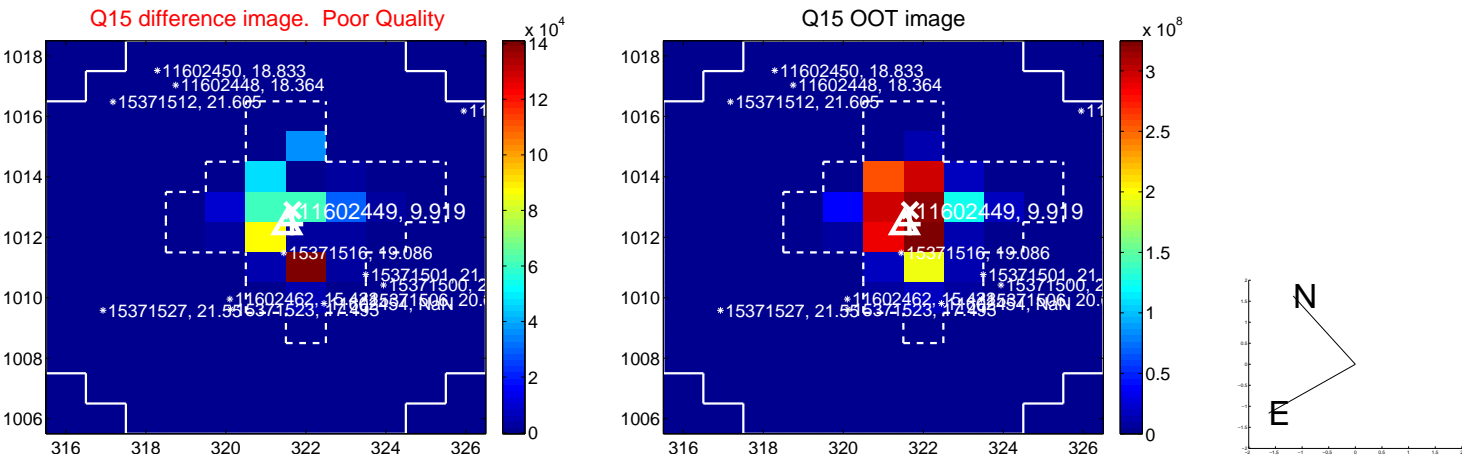
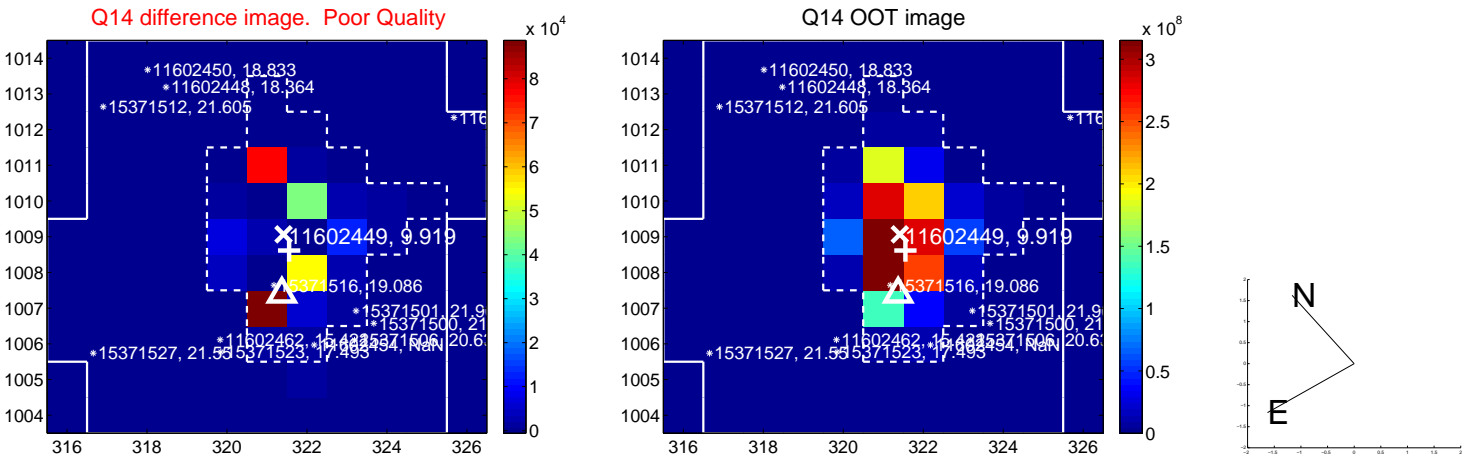
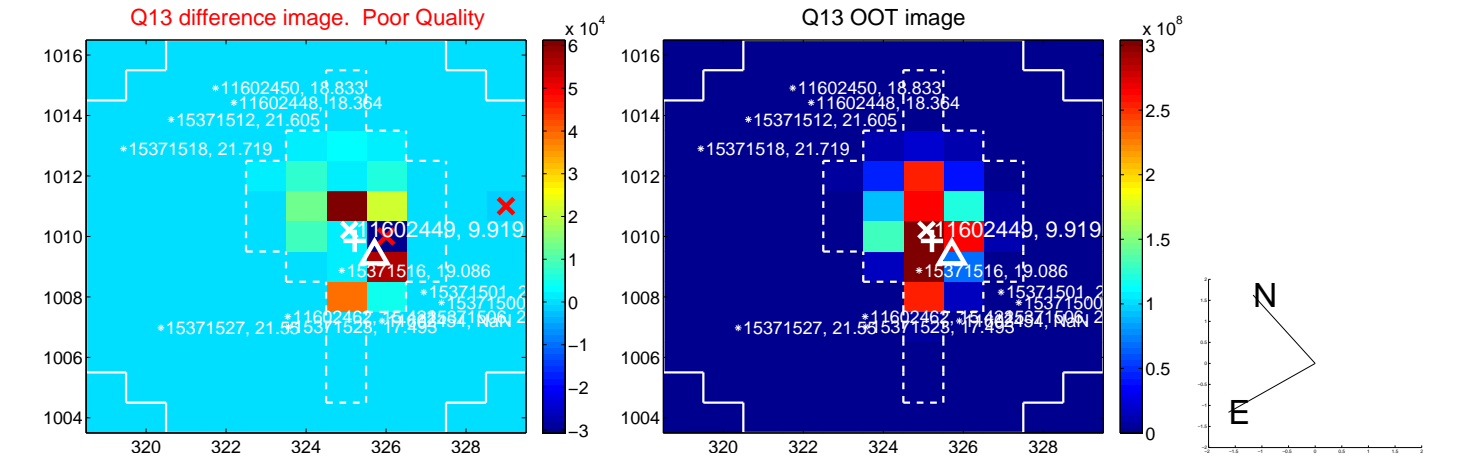
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



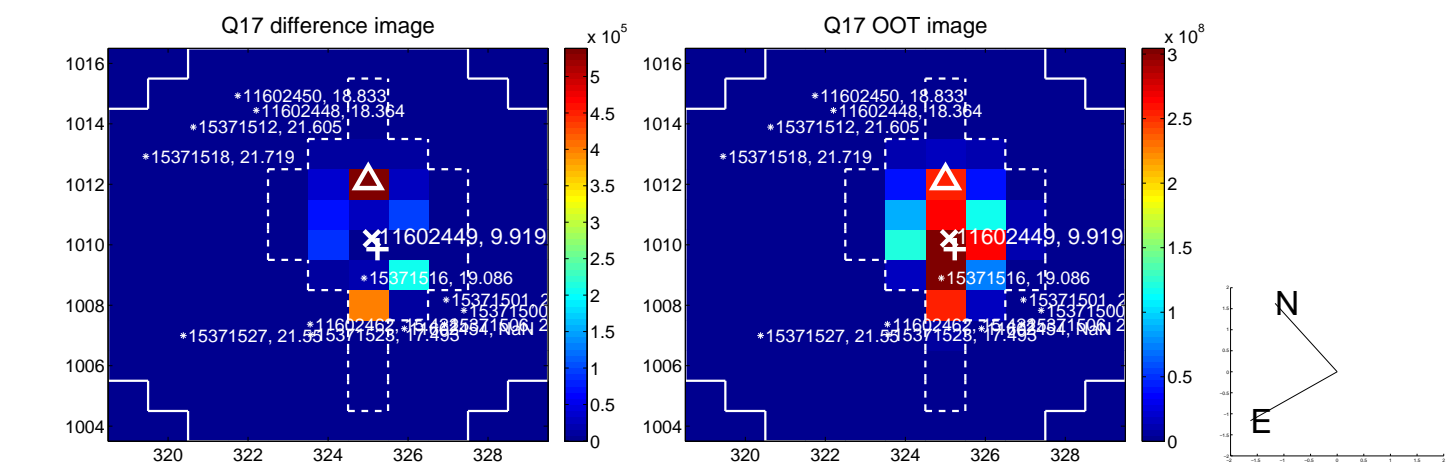
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



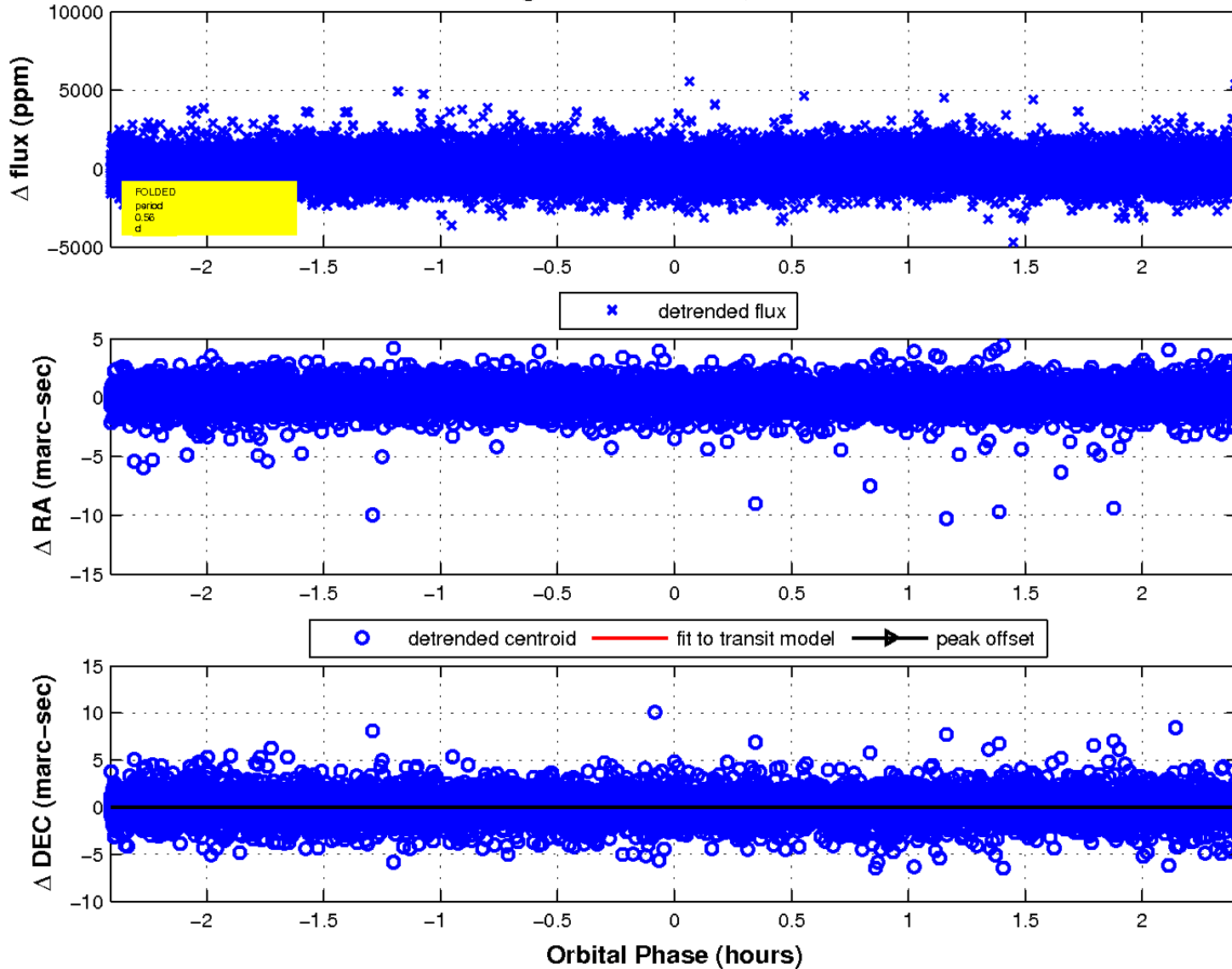
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

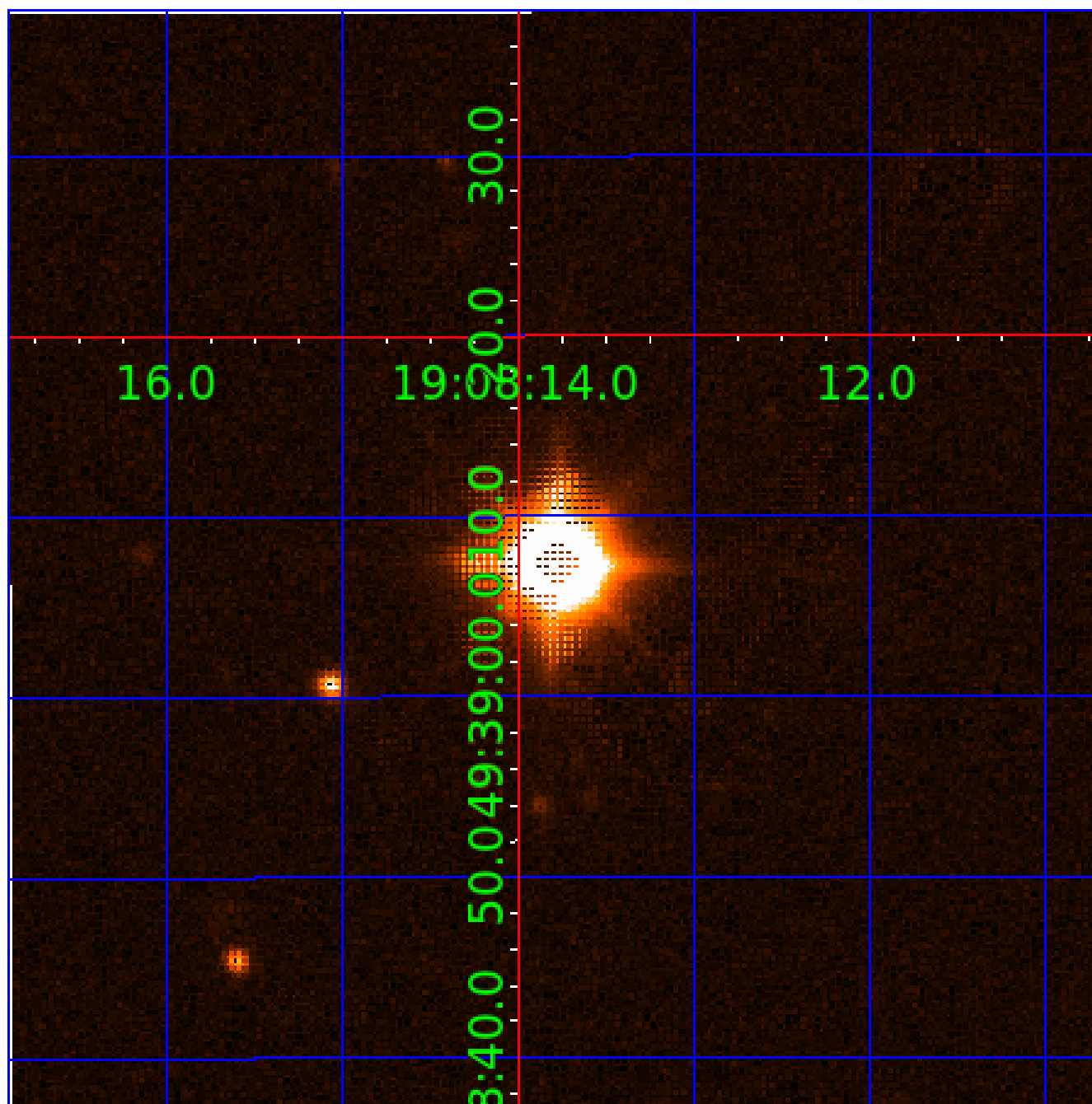


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 011602449

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})
011602449-01	OBS	No	0.562718	131.611884	162.5	0.804	10.1	14.9	2.61	7613	3.90	83036.26
011602449-02	OBS	No	0.562711	132.023143	147.0	0.870	10.1	12.1	2.61	7613	3.42	83037.65
011602449-03	OBS	No	0.562716	131.774904	156.3	0.876	8.0	11.6	2.61	7613	3.53	83036.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011602449-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011602449-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011602449-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

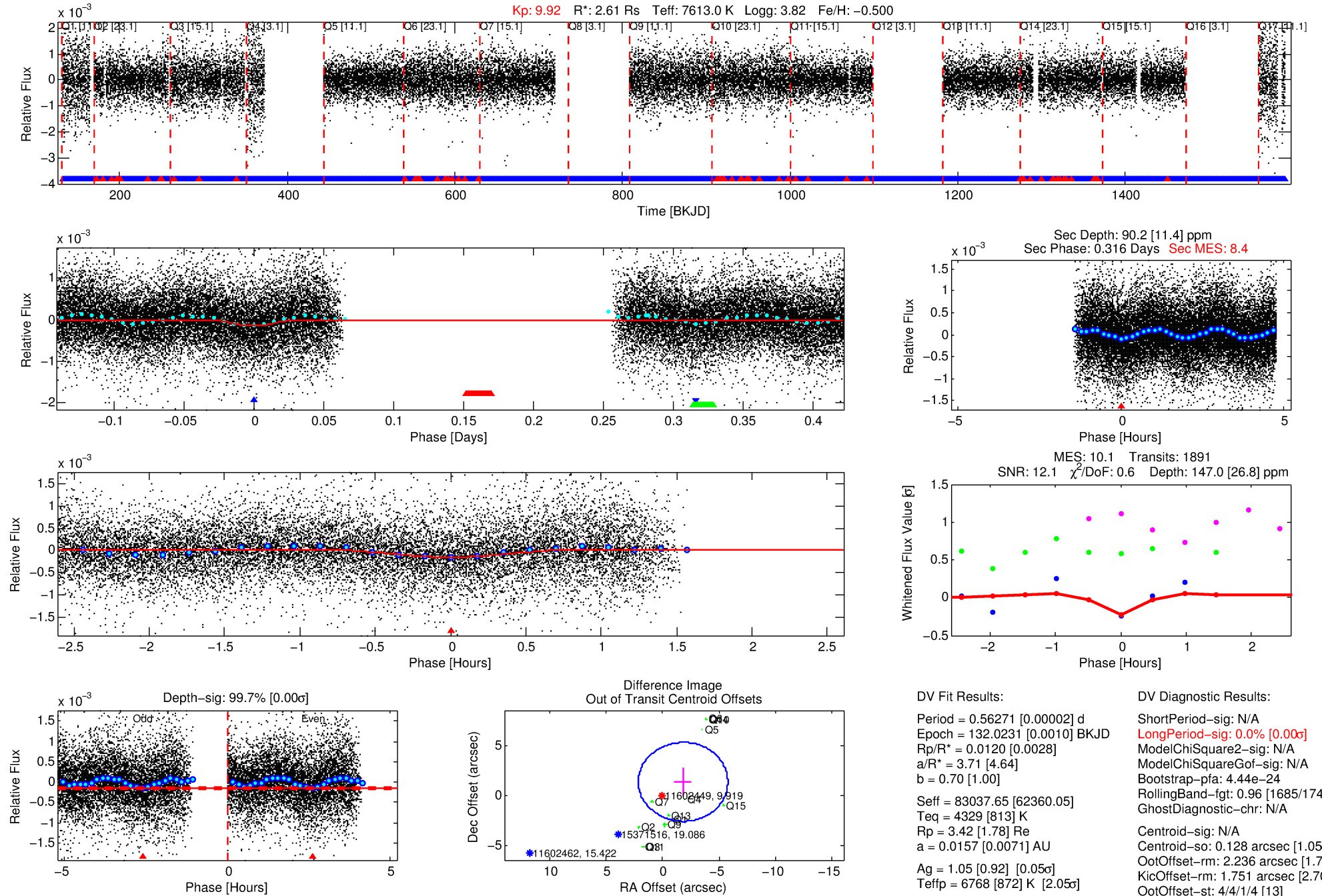
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011602449-02

No Significant Match Found

DV One-Page Summary

KIC: 11602449 Candidate: 2 of 3 Period: 0.563 d



DV Fit Results:

Period = 0.56271 [0.00002] d
Epoch = 132.0231 [0.0010] BKJD
Rp/R* = 0.0120 [0.0028]
a/R* = 3.71 [4.64]
b = 0.70 [1.00]
Seff = 83037.65 [62360.05]
Teq = 4329 [813] K
Rp = 3.42 [1.78] Re
a = 0.0157 [0.0071] AU
Ag = 1.05 [0.92] [0.05 σ]
Teffp = 6768 [872] K [2.05 σ]

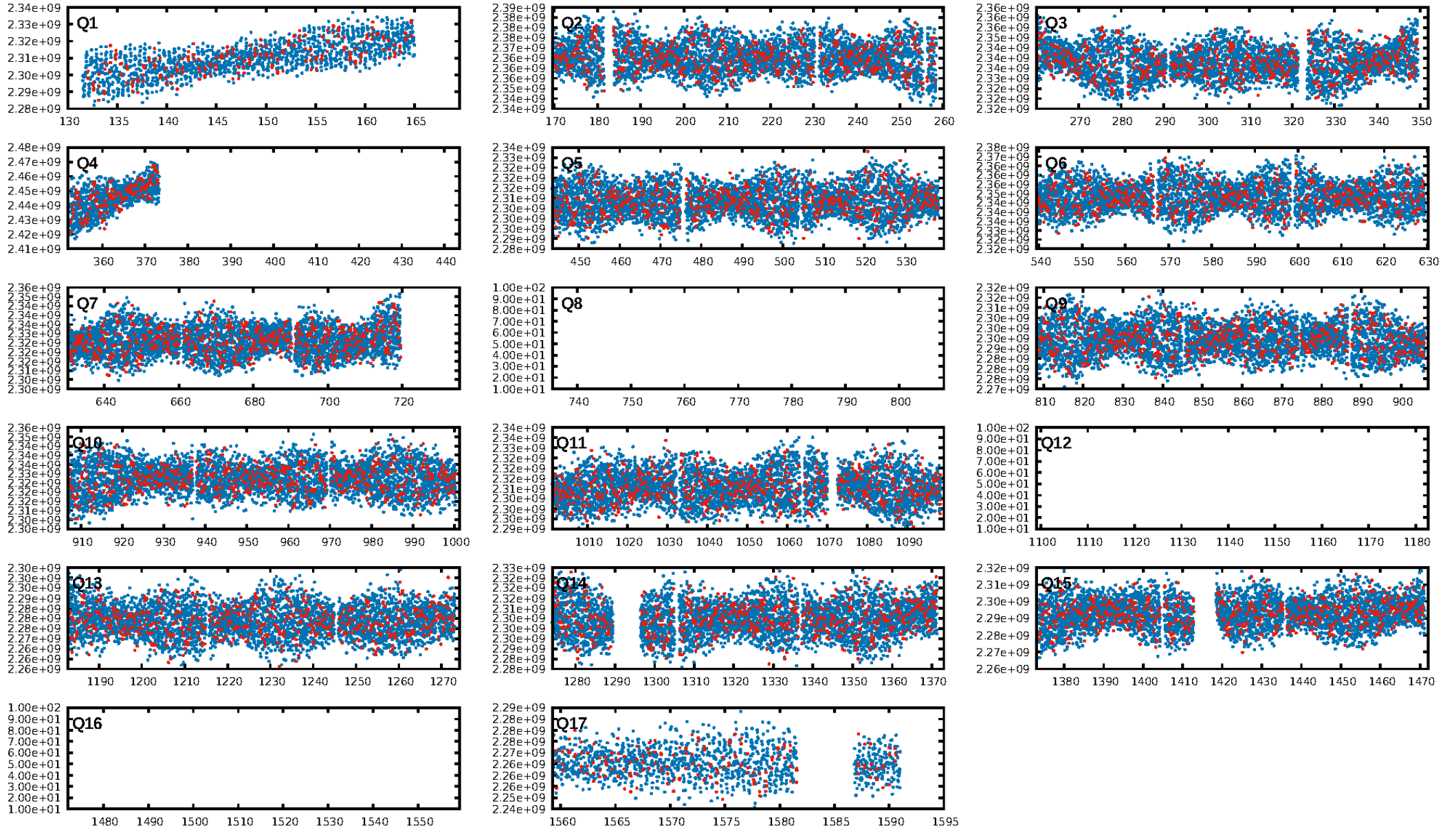
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.44e-24
RollingBand-fgt: 0.96 [1685/1748]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.128 arcsec [1.05 σ]
OotOffset-rm: 2.236 arcsec [1.70 σ]
KicOffset-rm: 1.751 arcsec [2.70 σ]
OotOffset-st: 4/4/1/4 [13]
KicOffset-st: 4/4/1/4 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 0.00 [0/14]

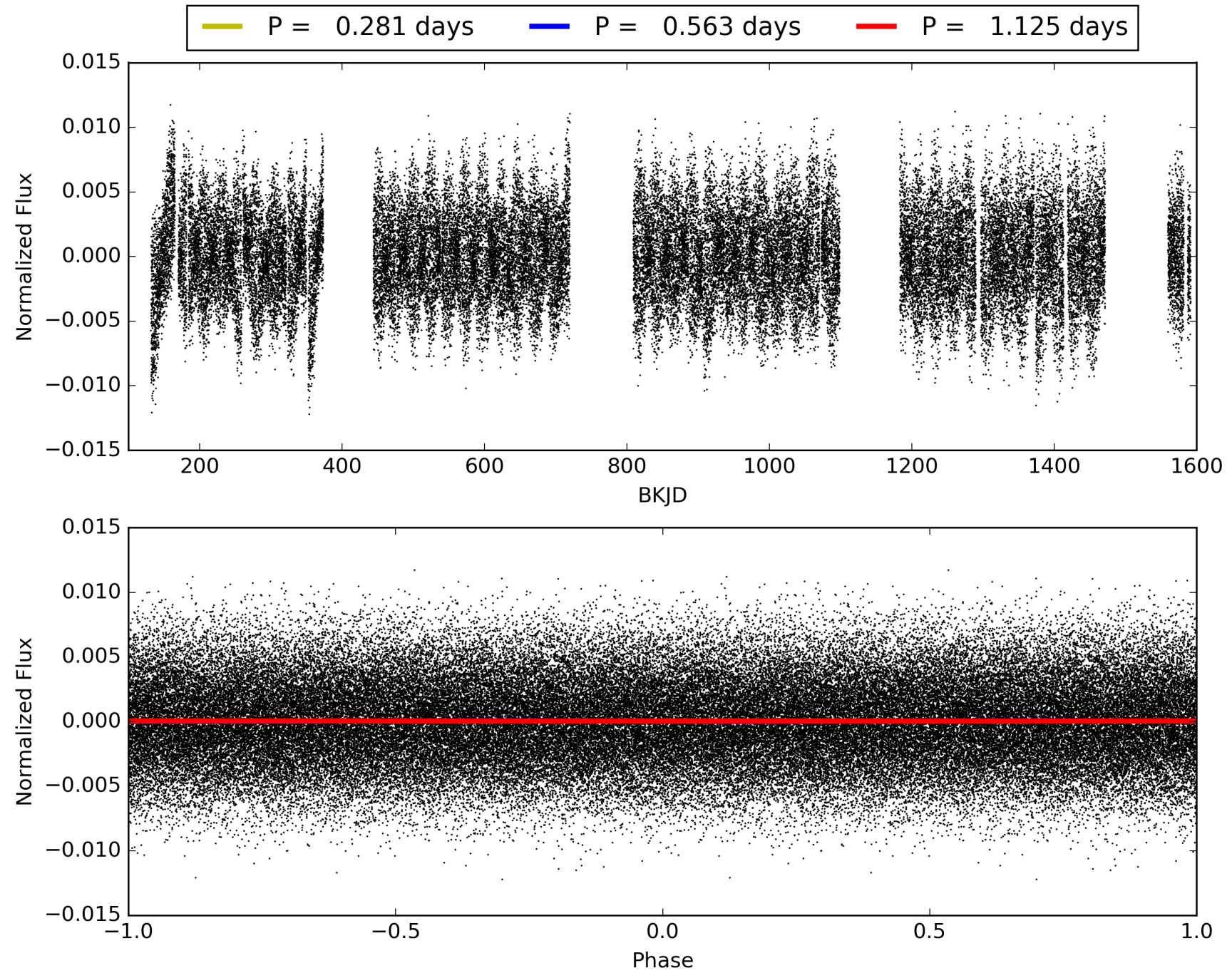
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:15:11 Z

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

TCE 011602449-02, PDC Light Curves

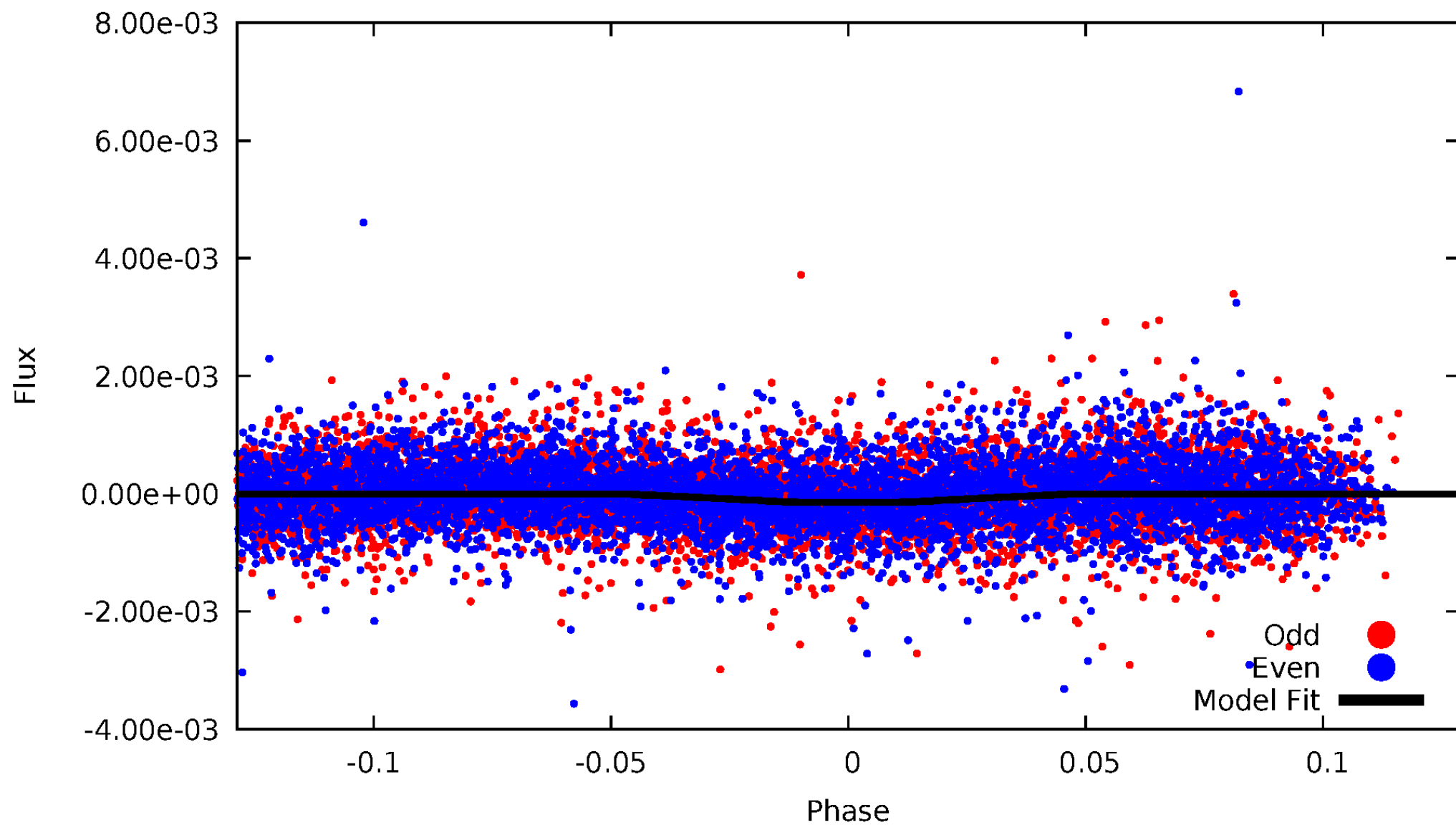


TCE 011602449-02



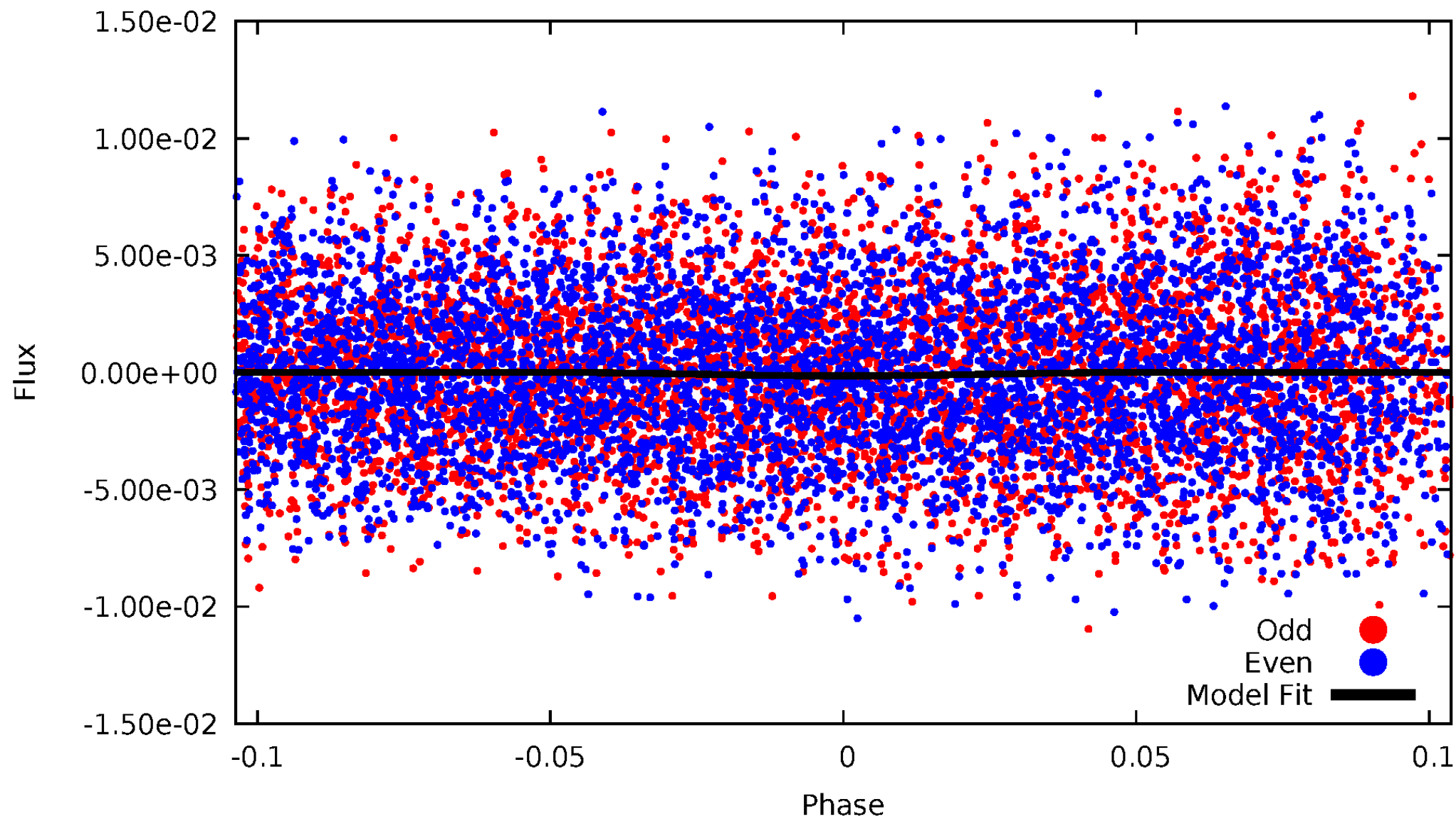
DV Odd/Even

TCE 011602449-02



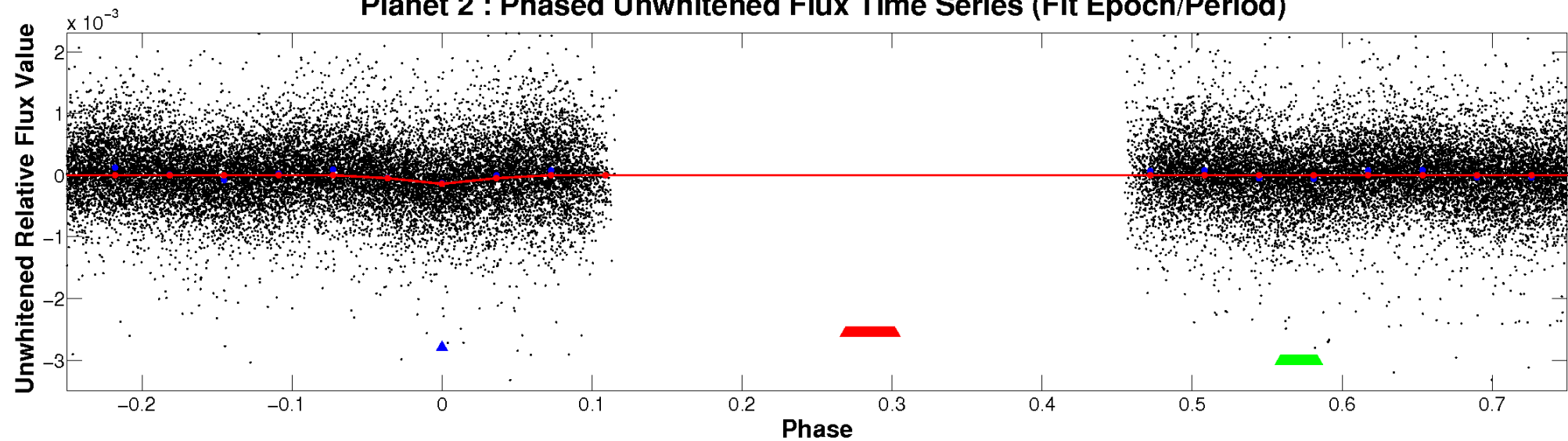
ALT Odd/Even

TCE 011602449-02

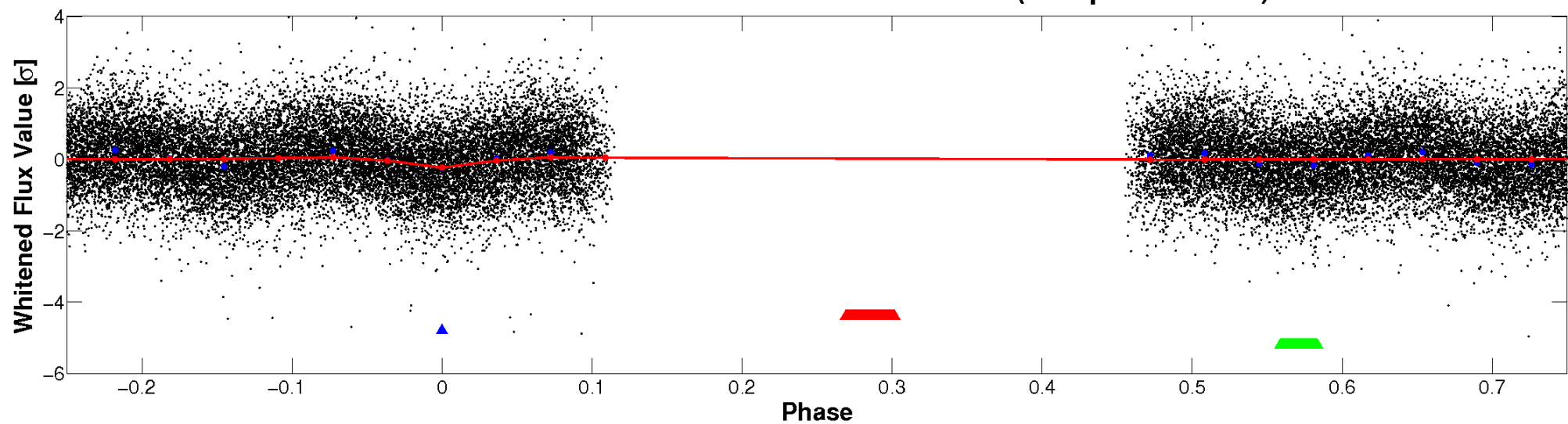


Non-Whitened Vs. Whitened Light Curve

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

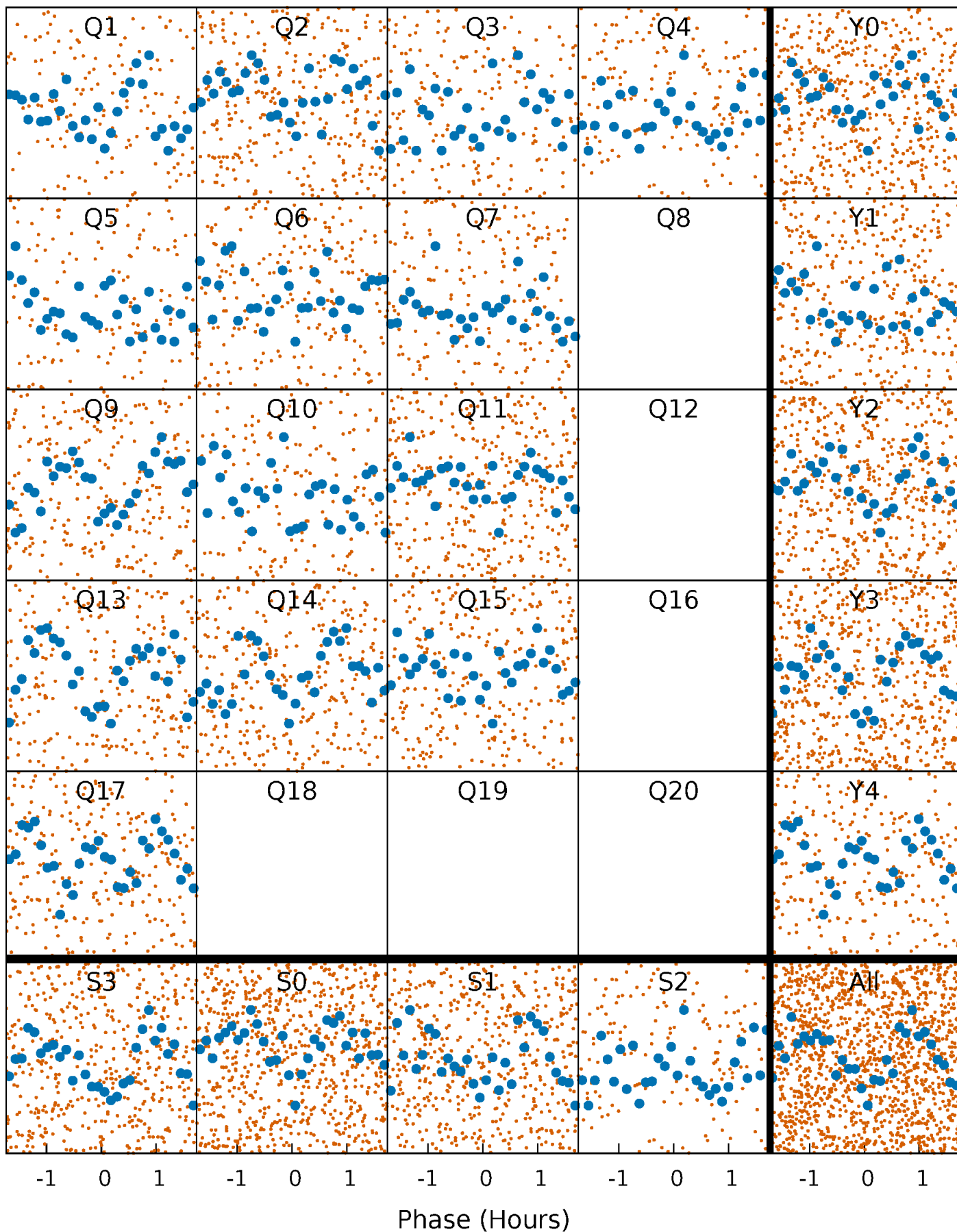


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



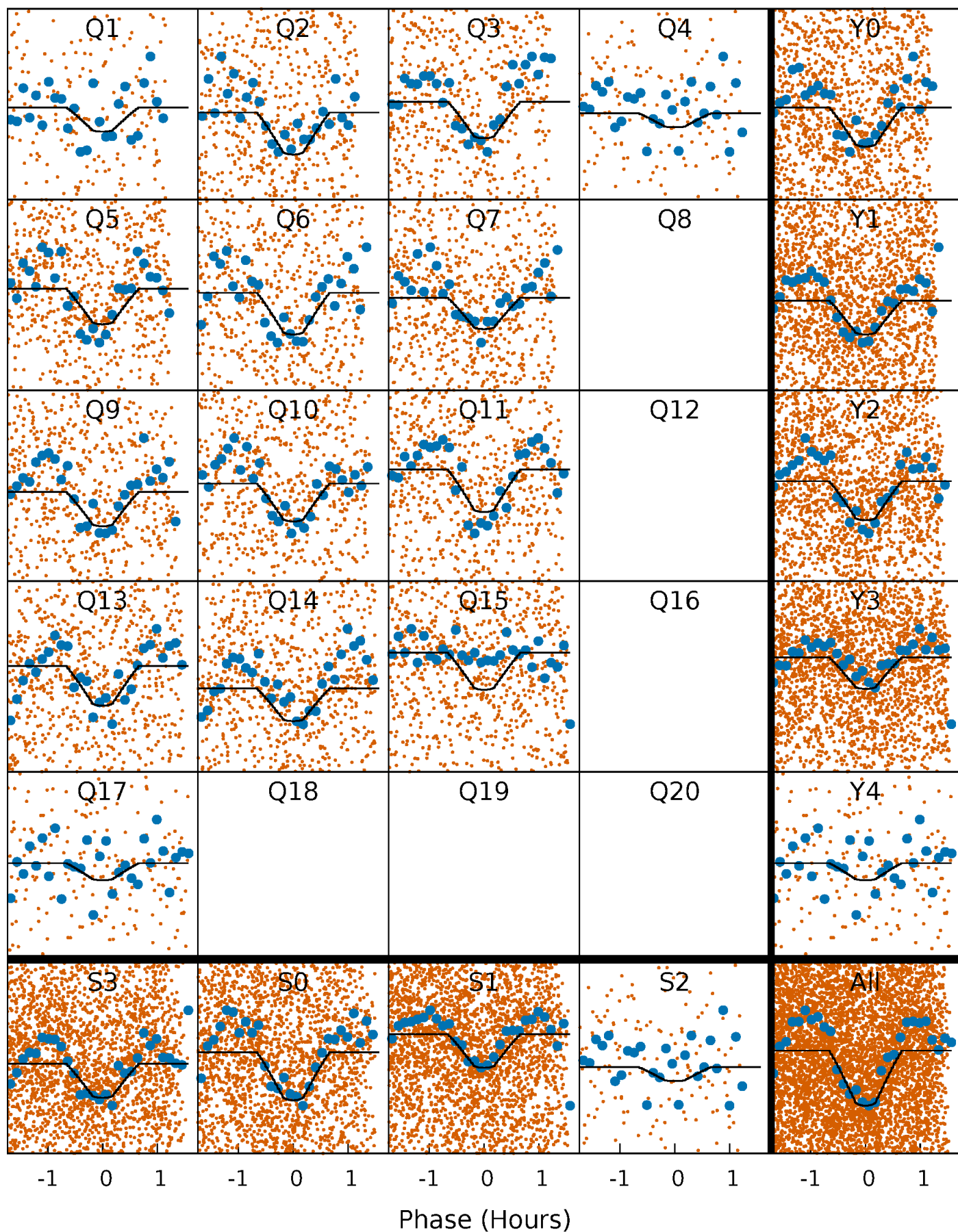
PDC Quarter-Phased Transit Curves

TCE 011602449-02 P= 0.562711 Days $T_0=132.023143$ (BKJD)



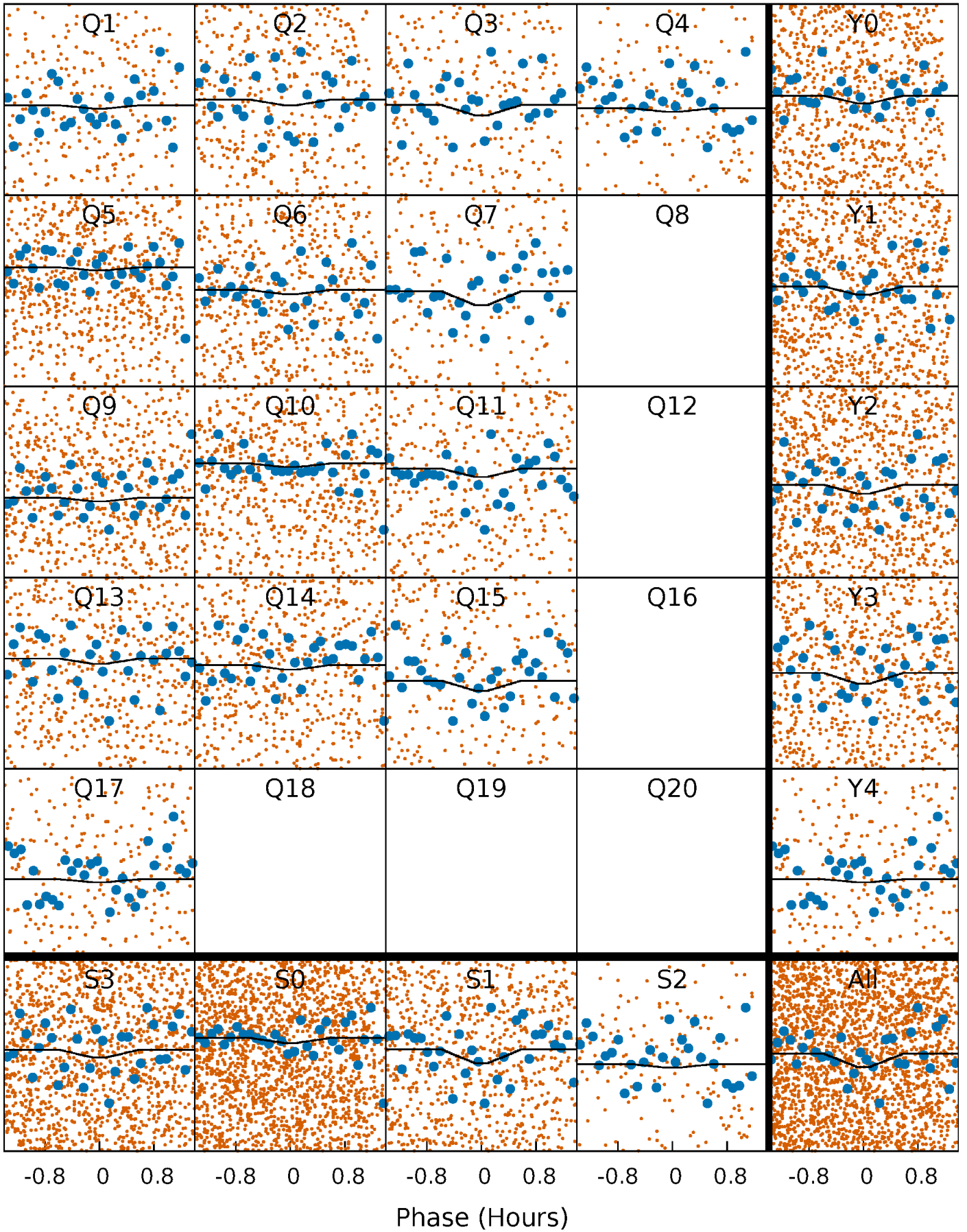
DV Quarter-Phased Transit Curves

TCE 011602449-02 P= 0.562711 Days $T_0=132.023143$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

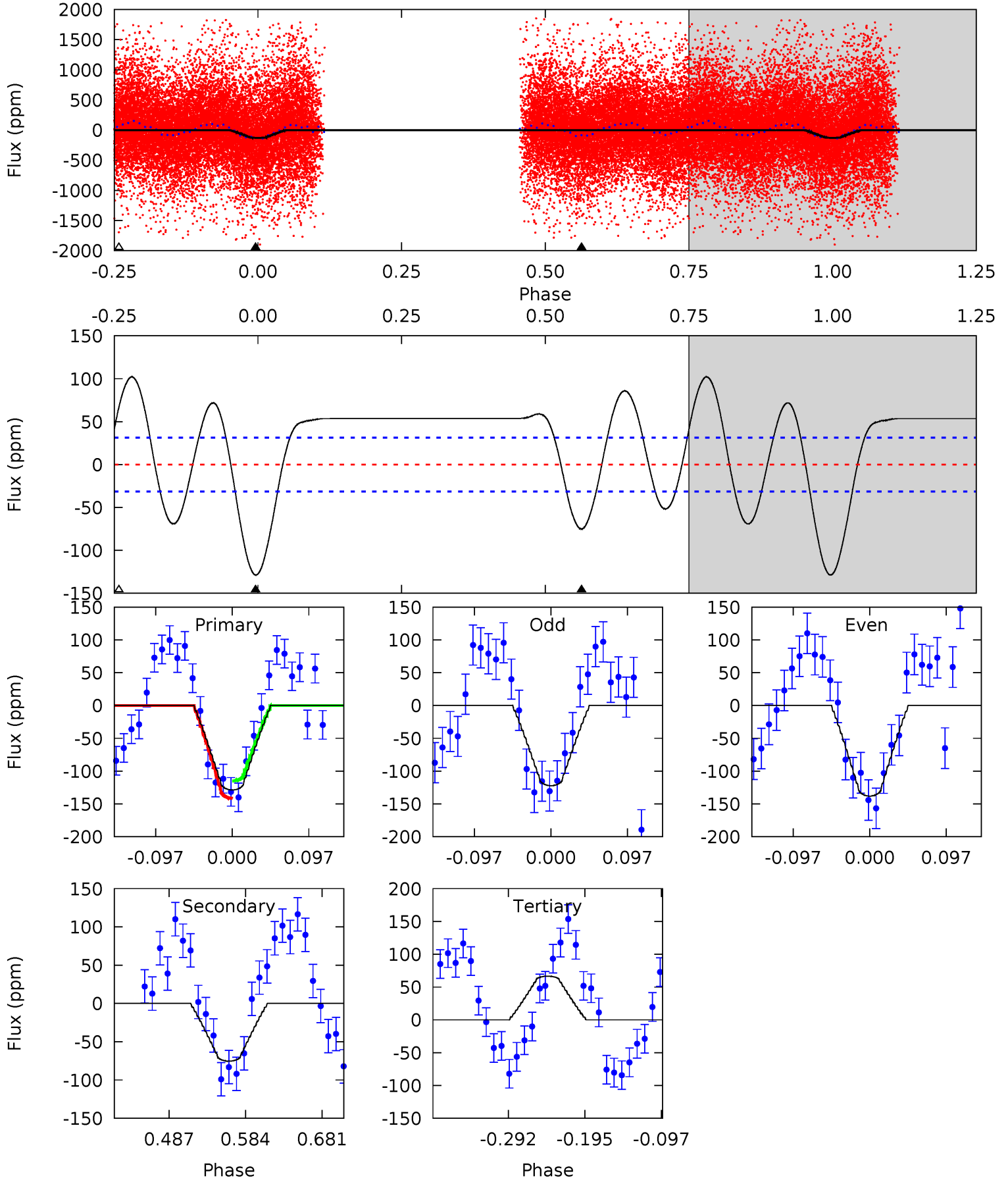
TCE 011602449-02 P= 0.562712 Days $T_0=132.023254$ (BKJD)



DV Model-Shift Uniqueness Test

011602449-02, P = 0.562711 Days, E = 131.460432 Days

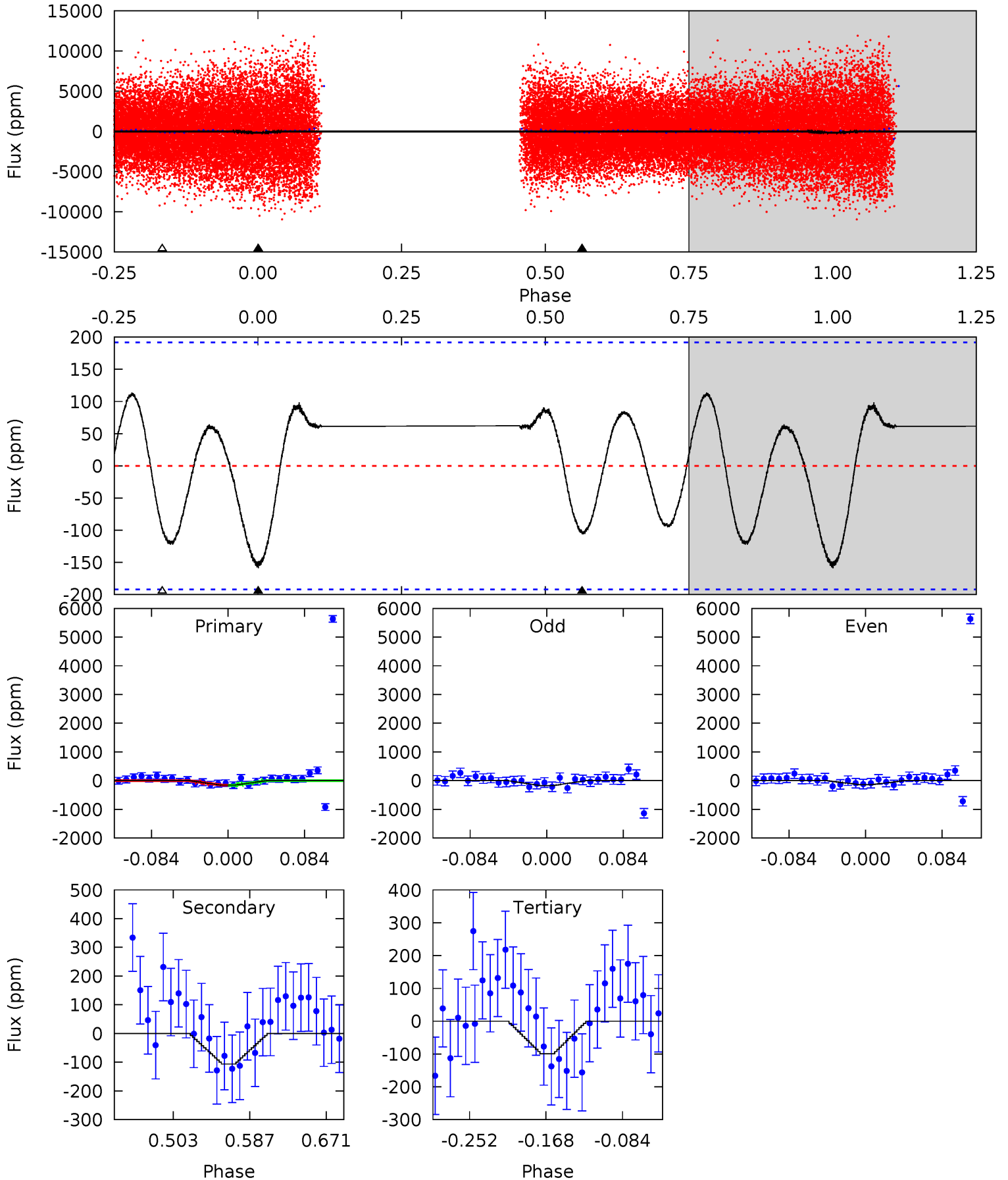
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.7	11.0	-9.69	0	4.57	1.66	7.76	28.4	18.7	20.6	11.0	1.16	1.02	0.44	1.84



Alt Model-Shift Uniqueness Test

011602449-02, P = 0.562712 Days, E = 131.460542 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.81	2.55	2.38	0	4.60	1.73	1.68	1.44	3.81	0.17	2.55	0.40	0.68	0.42	0.04



Stellar Parameters For KIC 011602449

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7613^{+234}_{-313}	$3.818^{+0.433}_{-0.076}$	$-0.500^{+0.250}_{-0.300}$	$2.611^{+0.403}_{-1.208}$	$1.638^{+0.172}_{-0.401}$	$0.130^{+0.521}_{-0.041}$
	+3%/-4%	+11%/-2%	+50%/-60%	+15%/-46%	+11%/-24%	+402%/-31%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011602449-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-75 ± 7	$3.01^{+0.97}_{-0.91}$	5809^{+471}_{-691}	5884^{+1194}_{-906}	$1.097^{+1.152}_{-0.454}$
Alt.	-106 ± 42	$3.12^{+0.97}_{-0.92}$	5877^{+366}_{-678}	6461^{+1570}_{-1355}	$1.491^{+1.617}_{-0.794}$

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 $A_{obs} \gg 1.0$

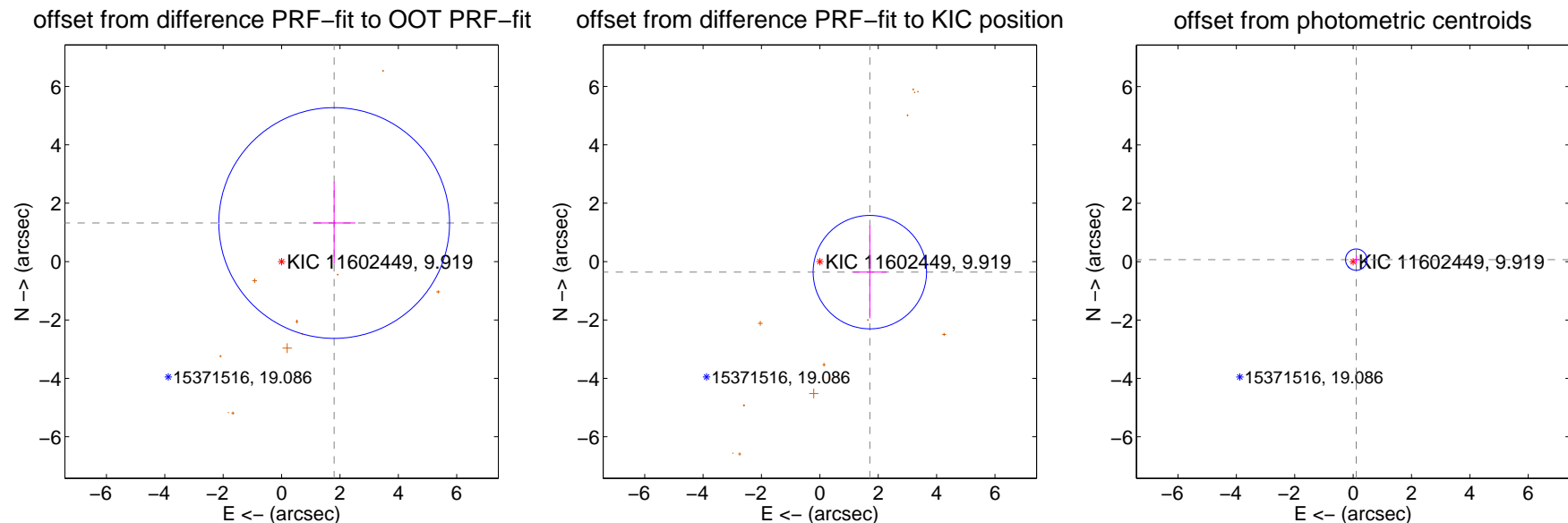
DV Centroid Data

Supplemental centroid analysis for 011602449-02. **Kepler magnitude: 9.92.** Transit SNR 12.06

There are 0 quarters with good PRF difference image offsets

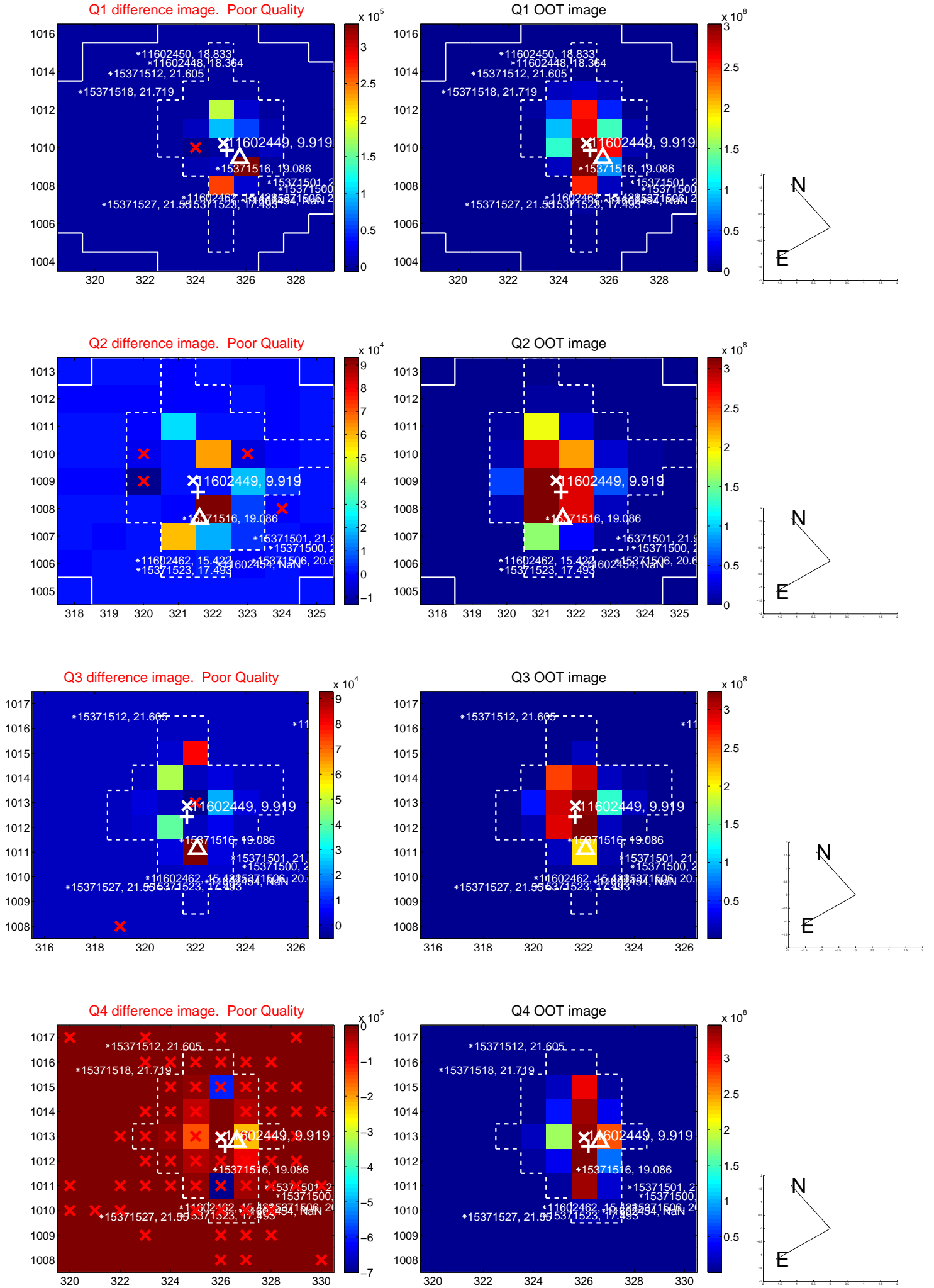
The direct PRF centroid is offset from the target star catalog position by about 1.83 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.236 ± 1.318	1.70	-1.803 ± 0.726	1.322 ± 1.400
PRF-fit source offset from KIC position	1.751 ± 0.648	2.70	-1.714 ± 0.572	-0.361 ± 1.581
photometric centroid source offset	0.13 ± 0.12	1.05	-0.11 ± 0.11	0.07 ± 0.14

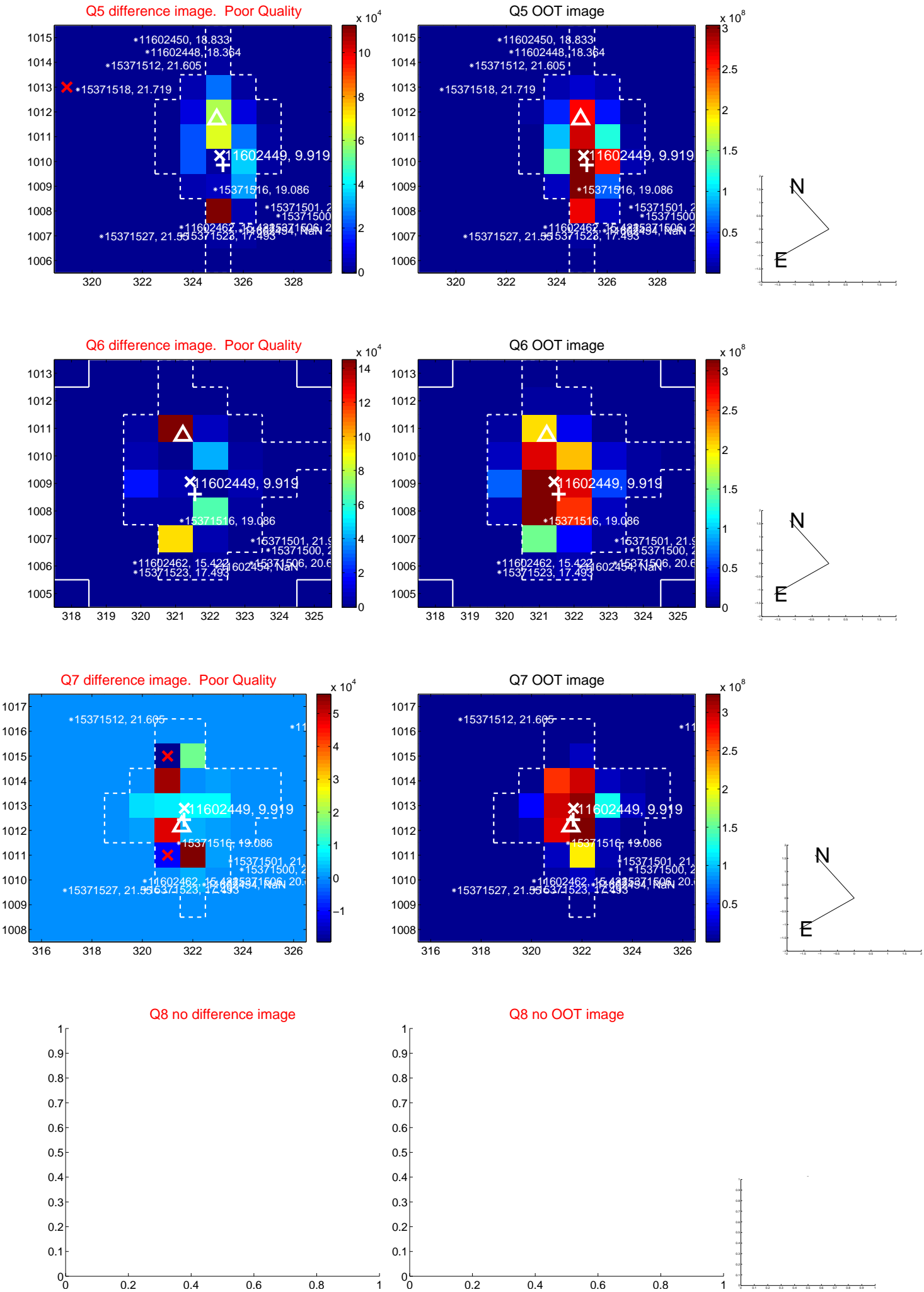


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

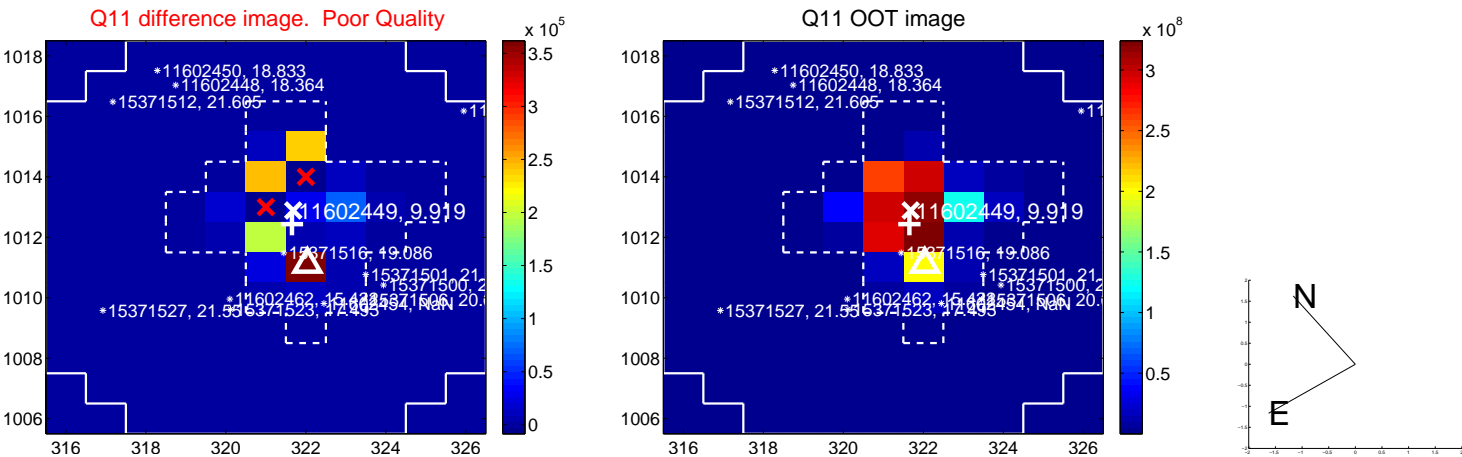
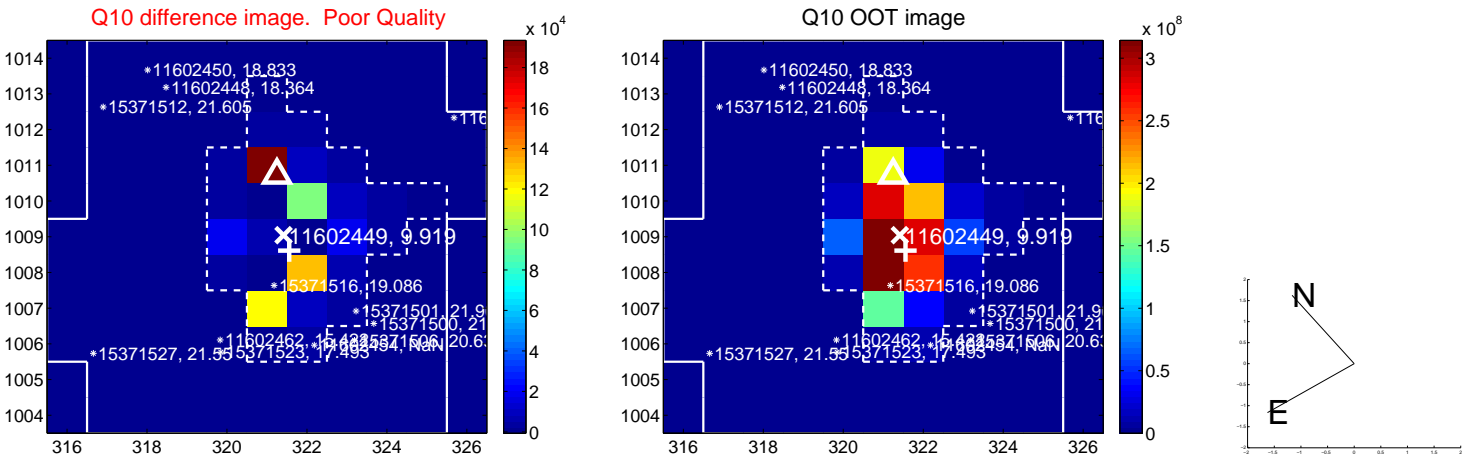
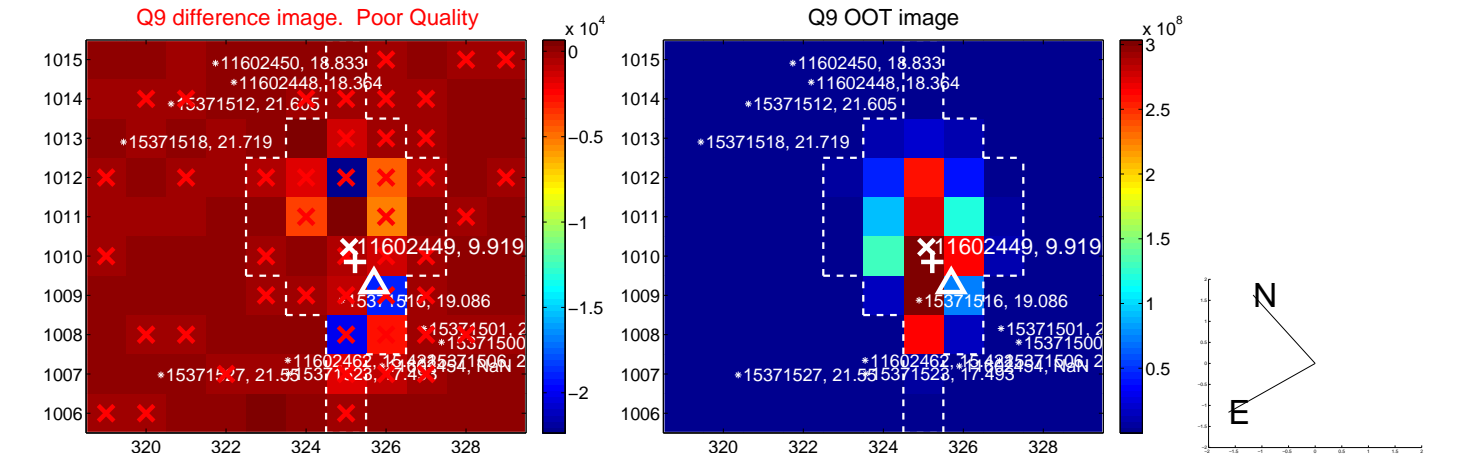
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



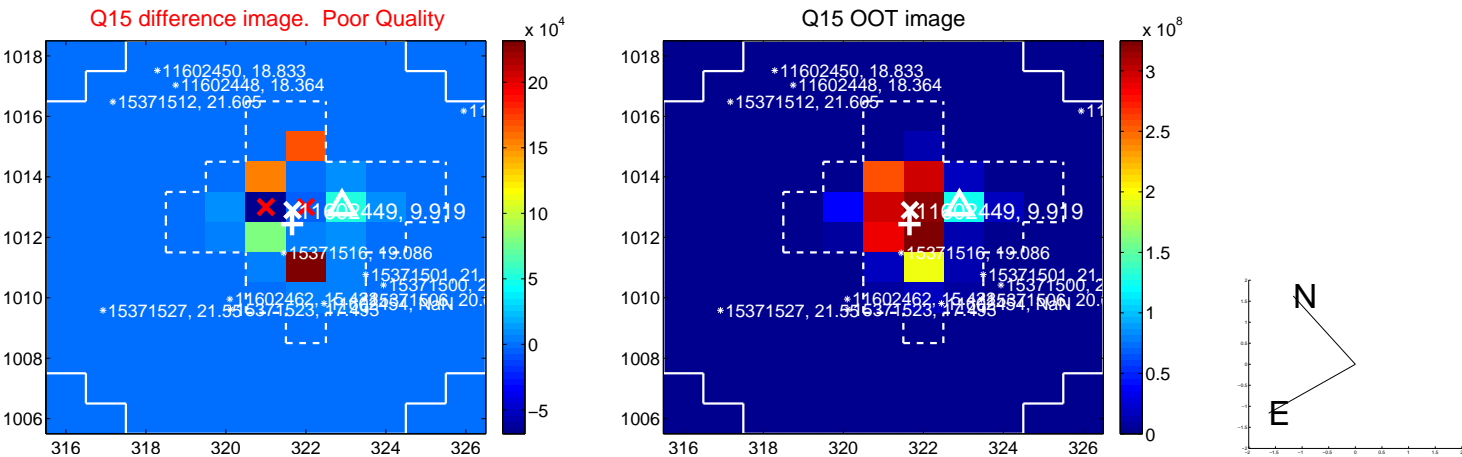
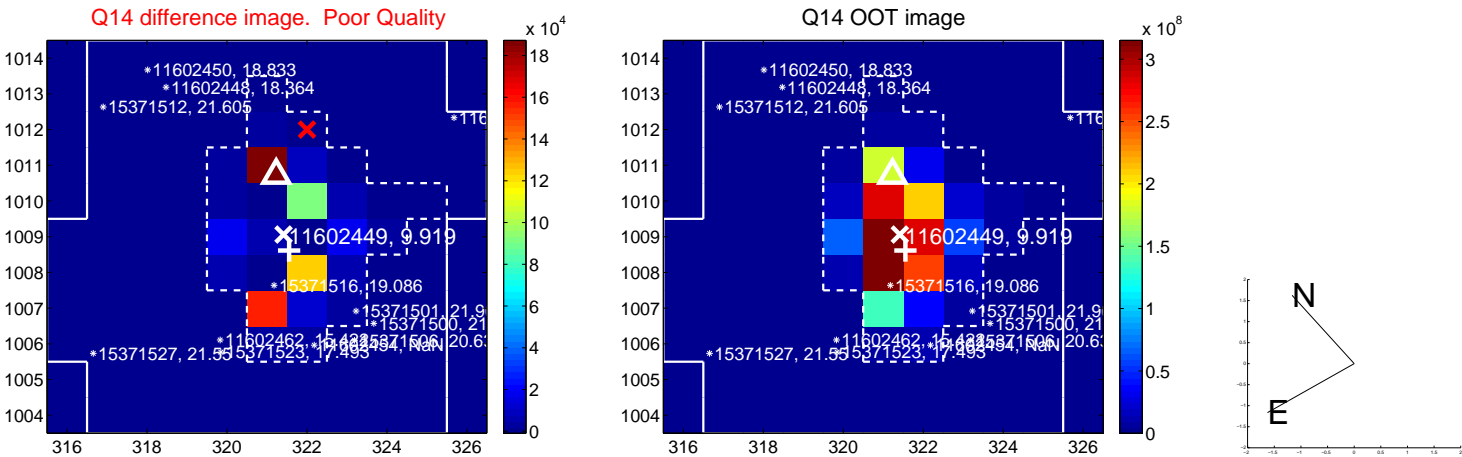
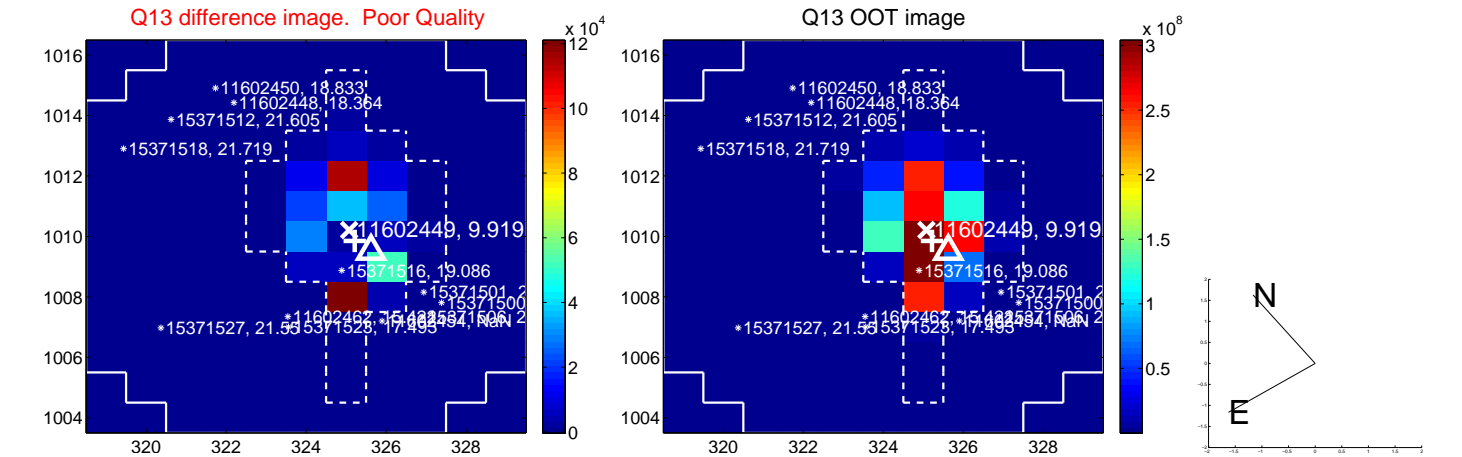
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



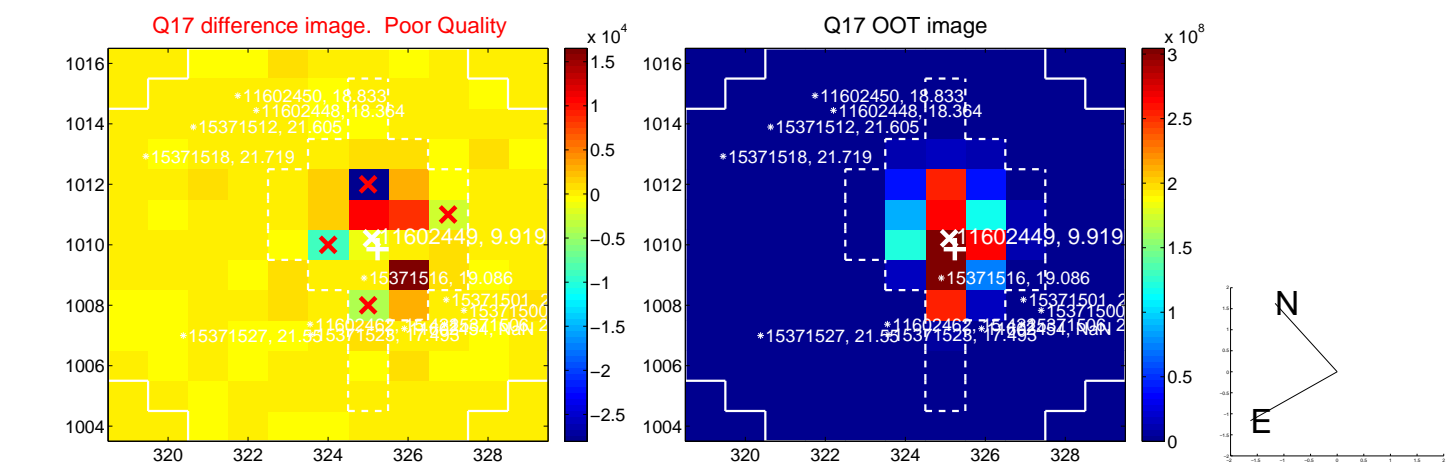
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



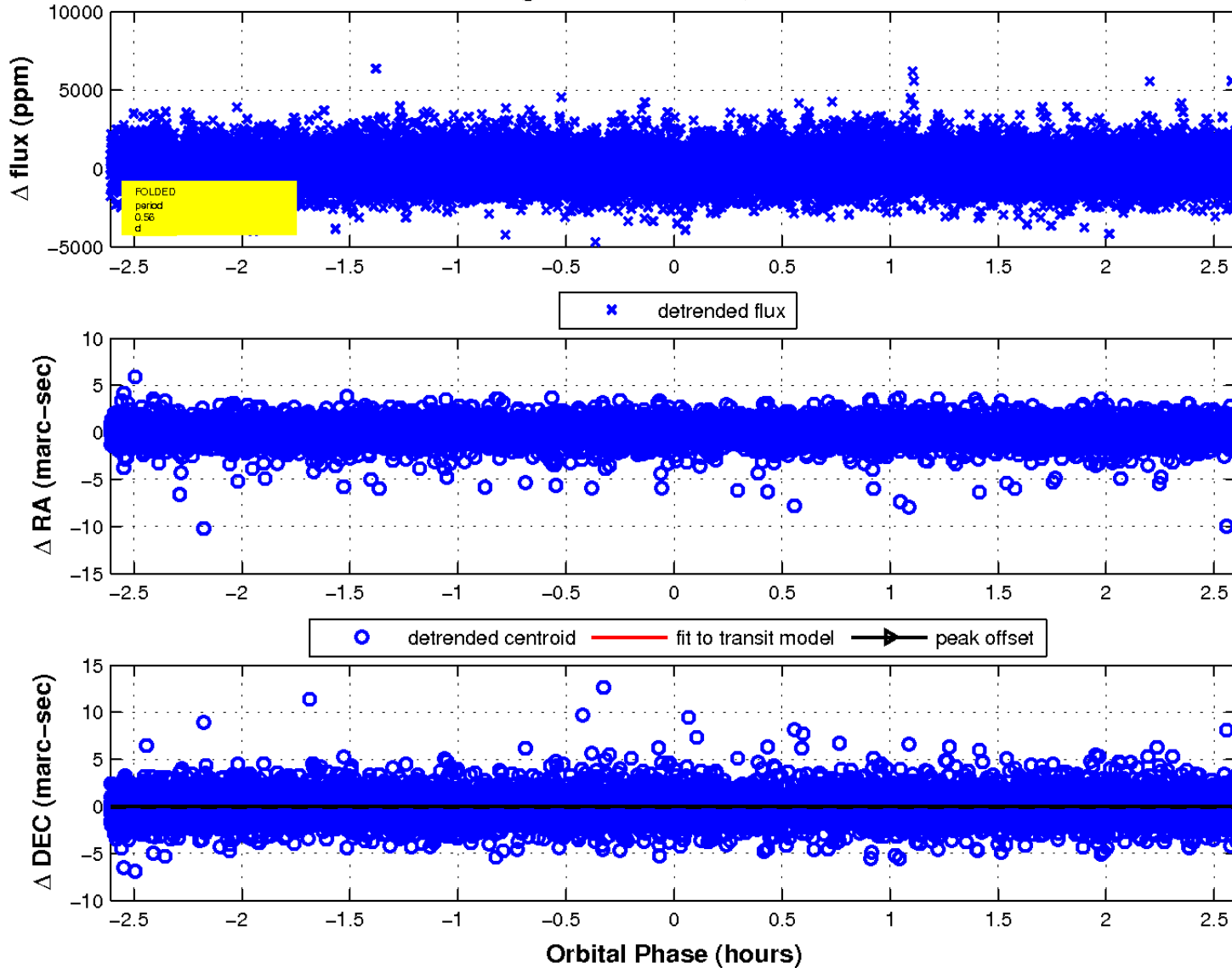
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

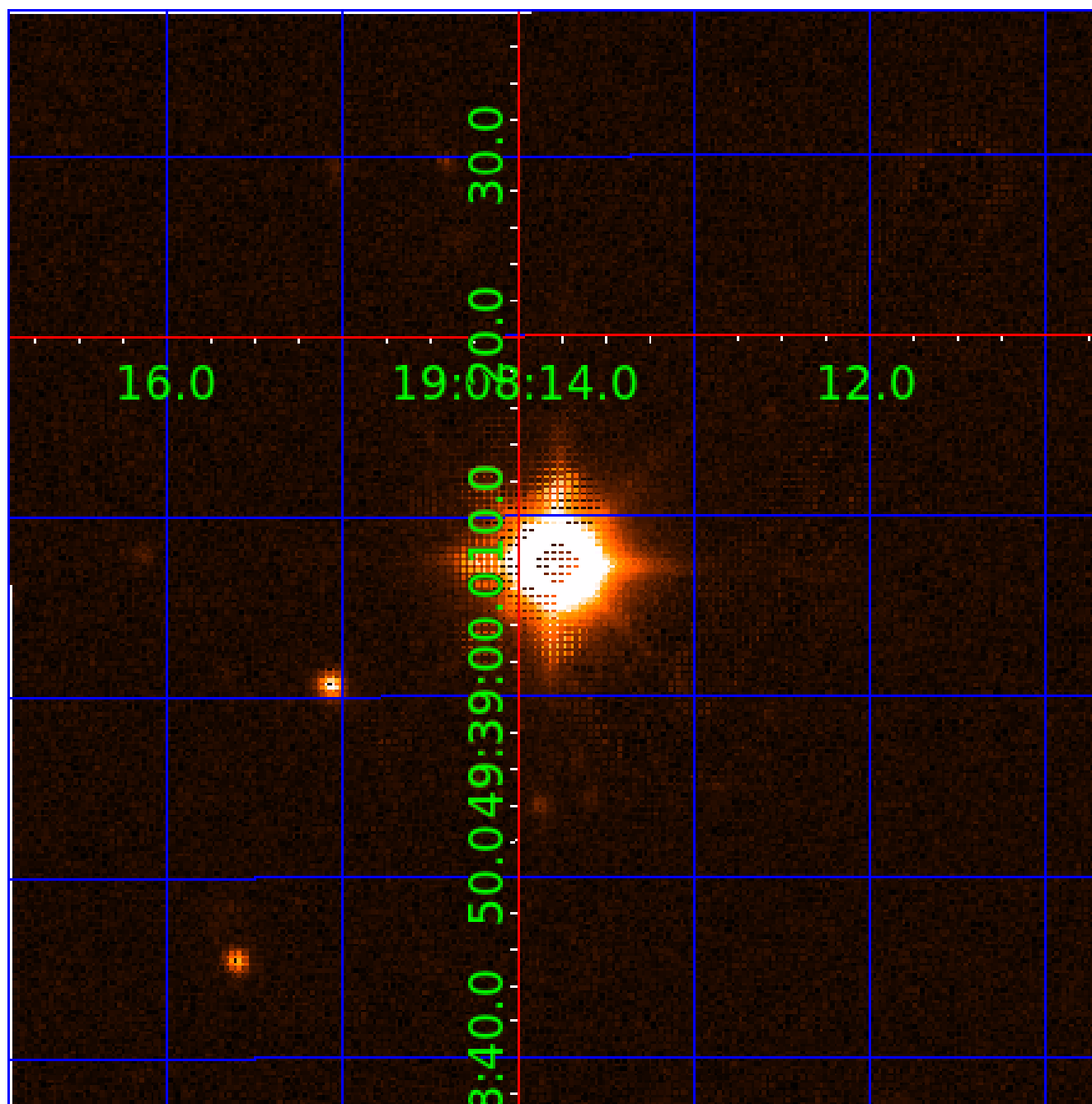


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 011602449

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})
011602449-01	OBS	No	0.562718	131.611884	162.5	0.804	10.1	14.9	2.61	7613	3.90	83036.26
011602449-02	OBS	No	0.562711	132.023143	147.0	0.870	10.1	12.1	2.61	7613	3.42	83037.65
011602449-03	OBS	No	0.562716	131.774904	156.3	0.876	8.0	11.6	2.61	7613	3.53	83036.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011602449-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011602449-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011602449-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

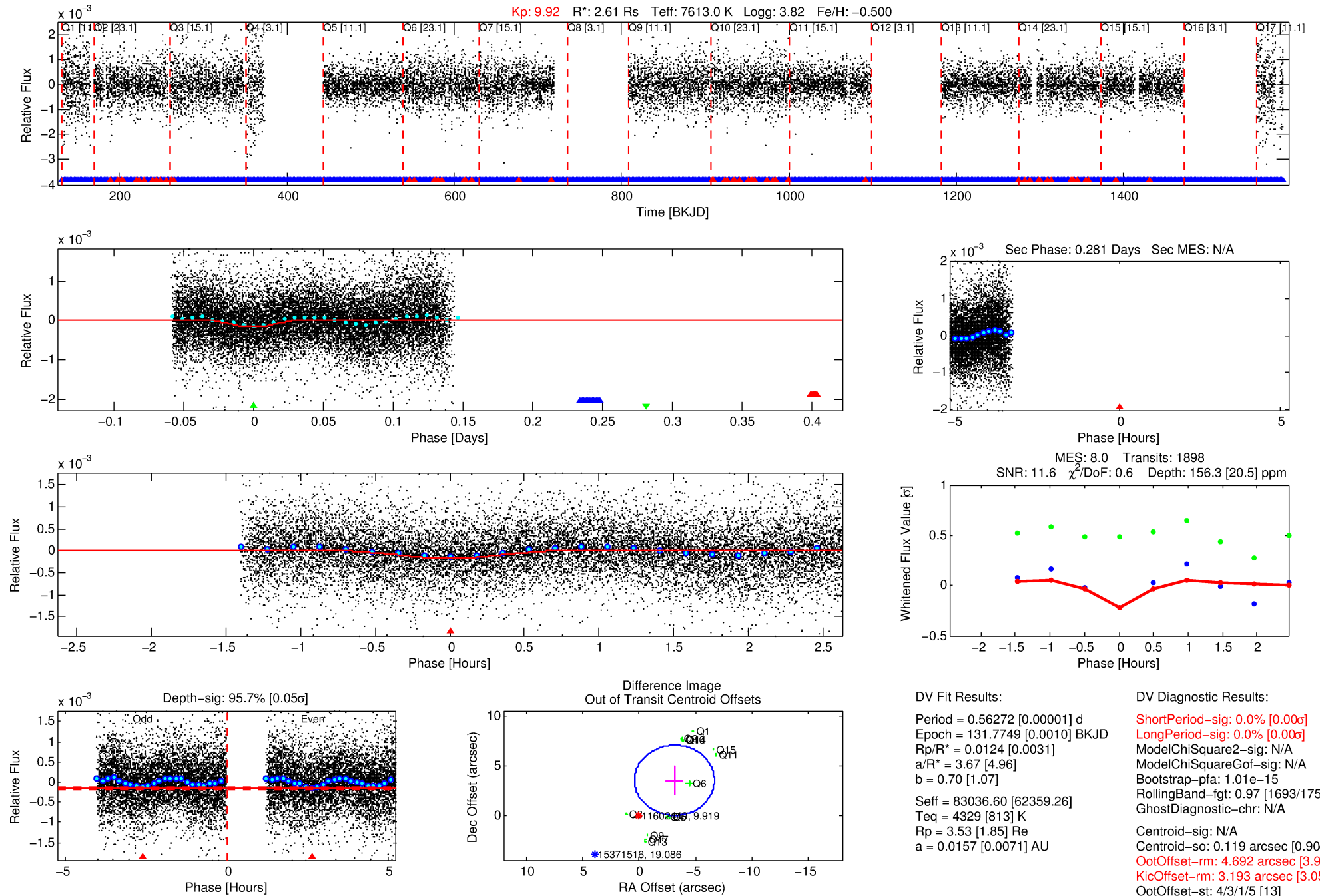
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011602449-03

No Significant Match Found

DV One-Page Summary

KIC: 11602449 Candidate: 3 of 3 Period: 0.563 d



DV Fit Results:

Period = 0.56272 [0.00001] d
Epoch = 131.7749 [0.0010] BKJD
Rp/R* = 0.0124 [0.0031]
a/R* = 3.67 [4.96]
b = 0.70 [1.07]
Seff = 83036.60 [62359.26]
Teq = 4329 [813] K
Rp = 3.53 [1.85] Re
a = 0.0157 [0.0071] AU

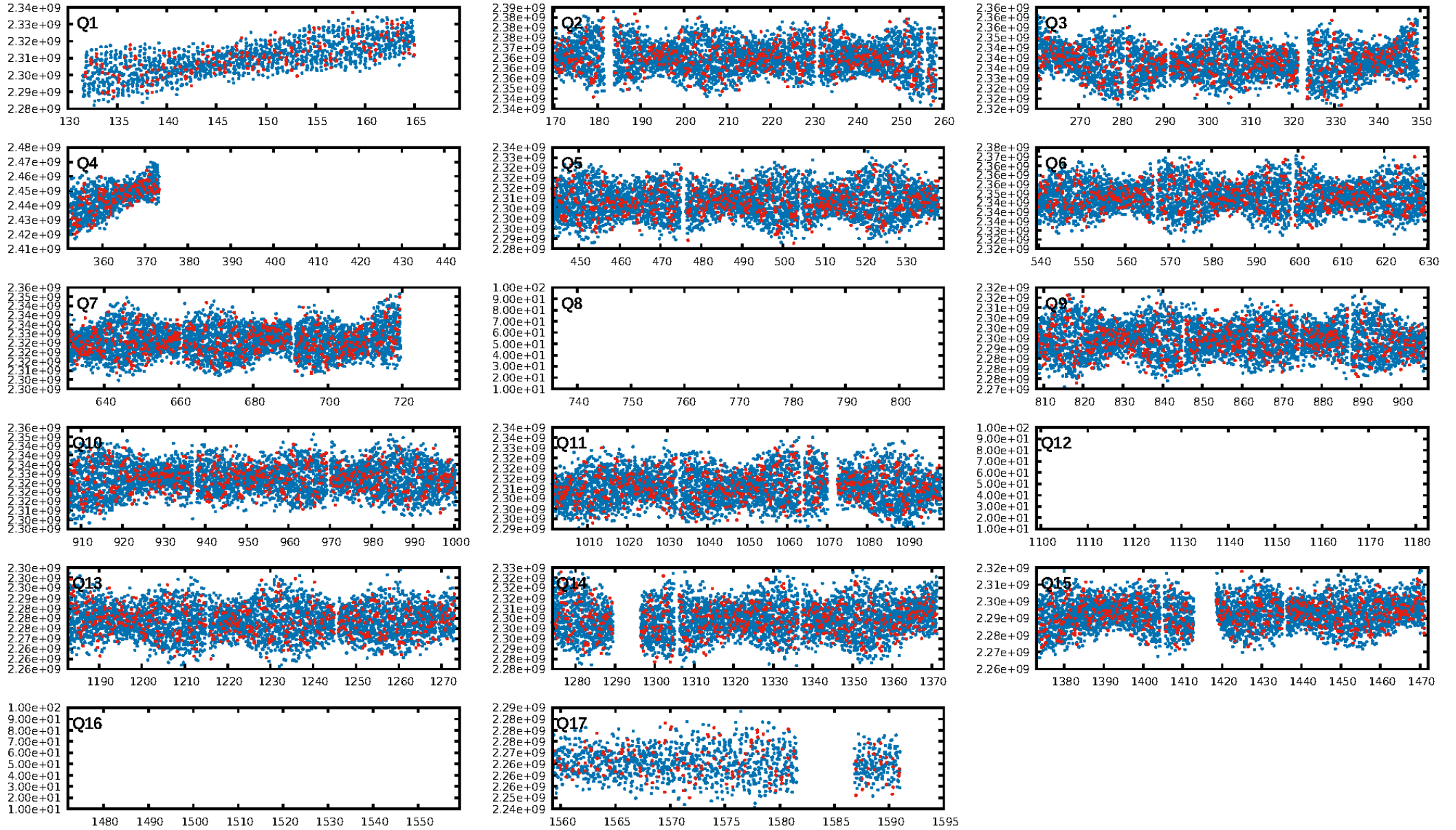
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.01e-15
RollingBand-fgt: 0.97 [1693/1752]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.119 arcsec [0.90σ]
OotOffset-rm: 4.692 arcsec [3.98σ]
KicOffset-rm: 3.193 arcsec [3.05σ]
OotOffset-st: 4/3/1/5 [13]
KicOffset-st: 4/3/1/5 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 0.00 [0/14]

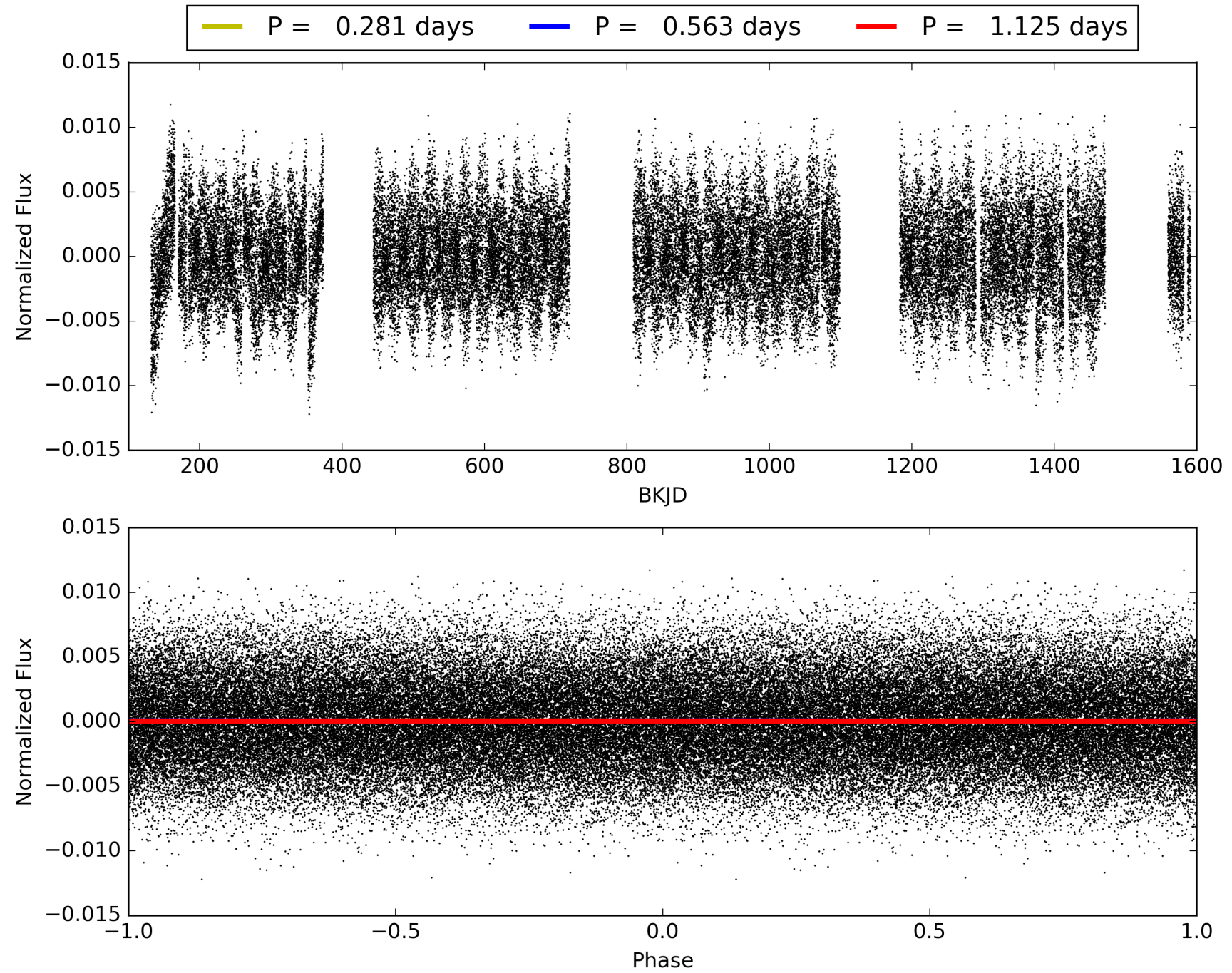
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:15:18 Z

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

TCE 011602449-03, PDC Light Curves

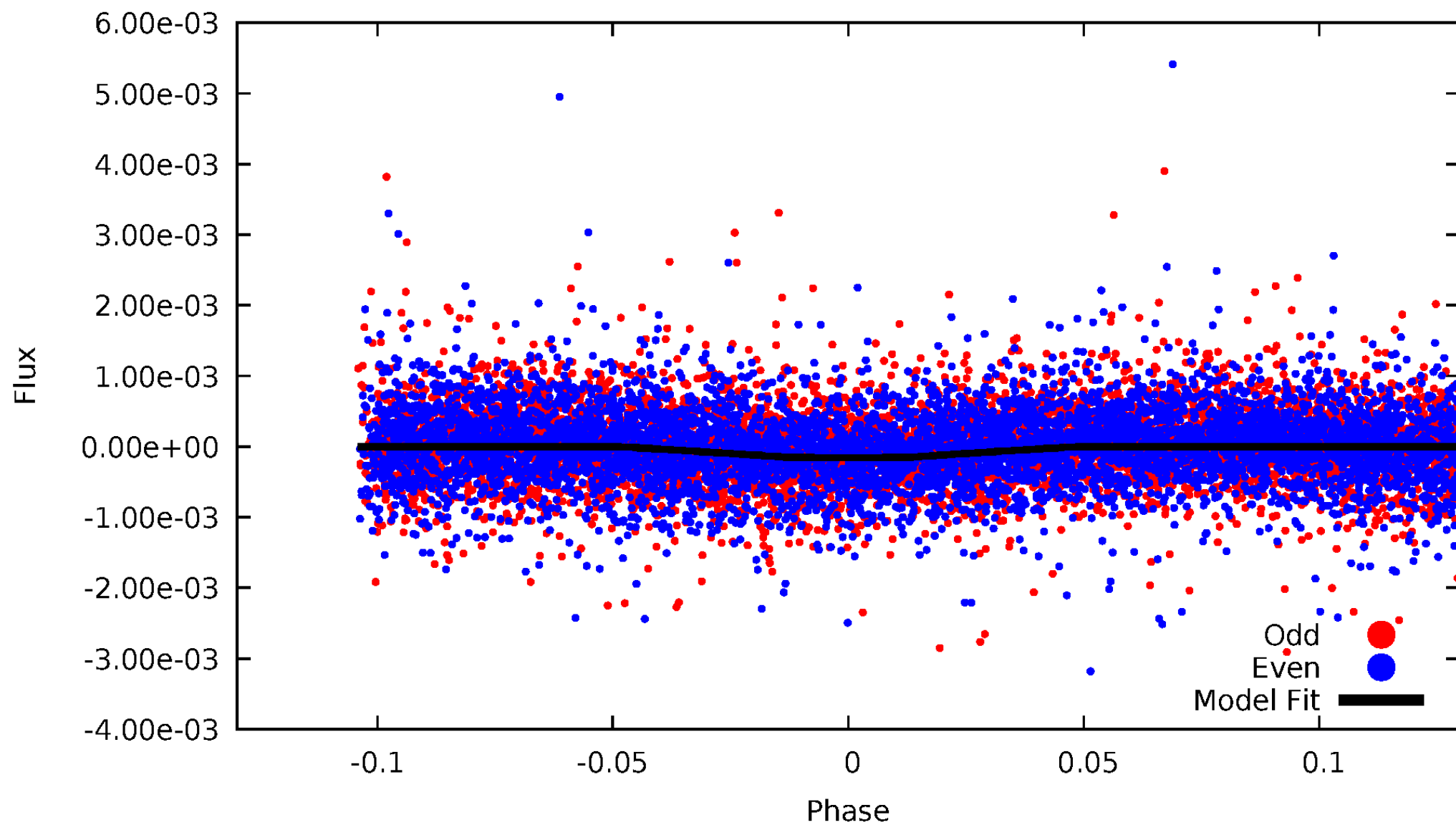


TCE 011602449-03



DV Odd/Even

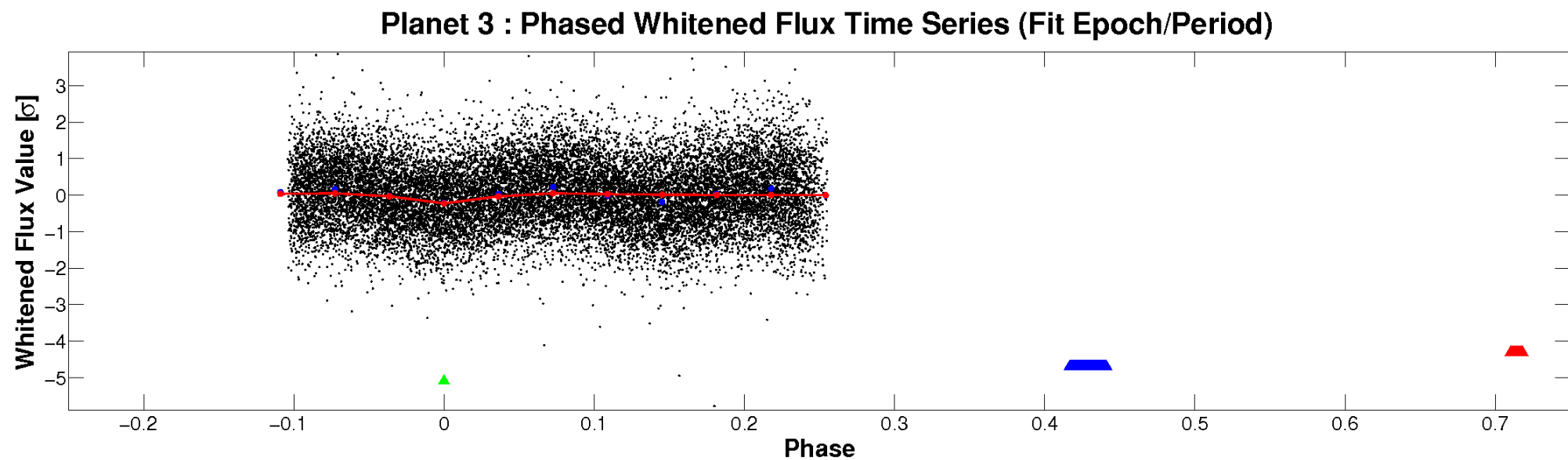
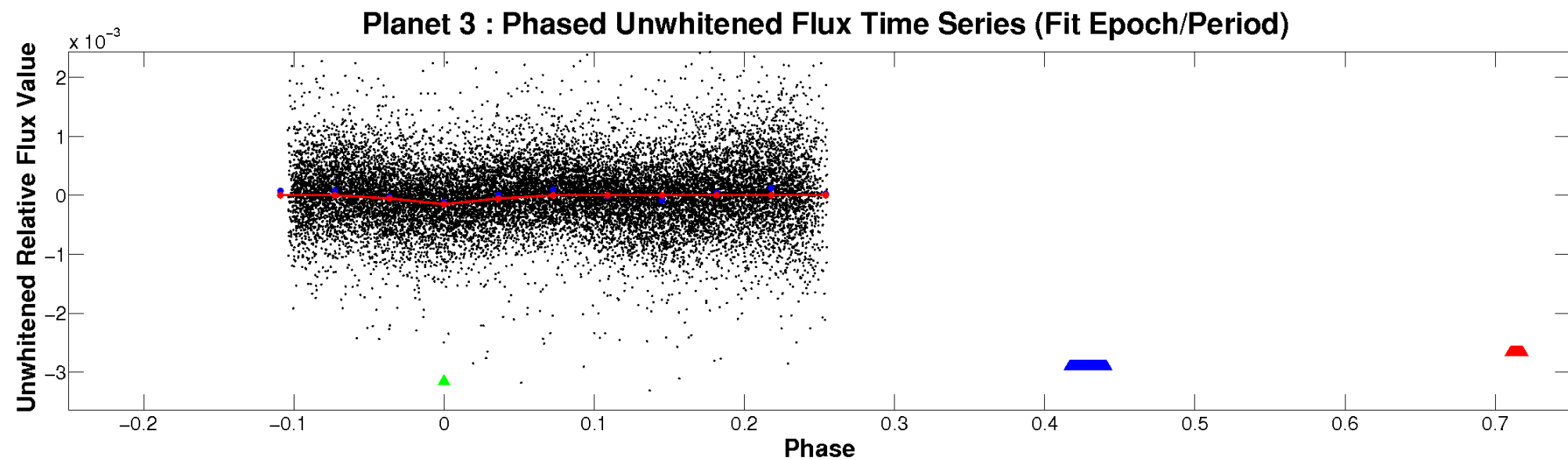
TCE 011602449-03



ALT Odd/Even

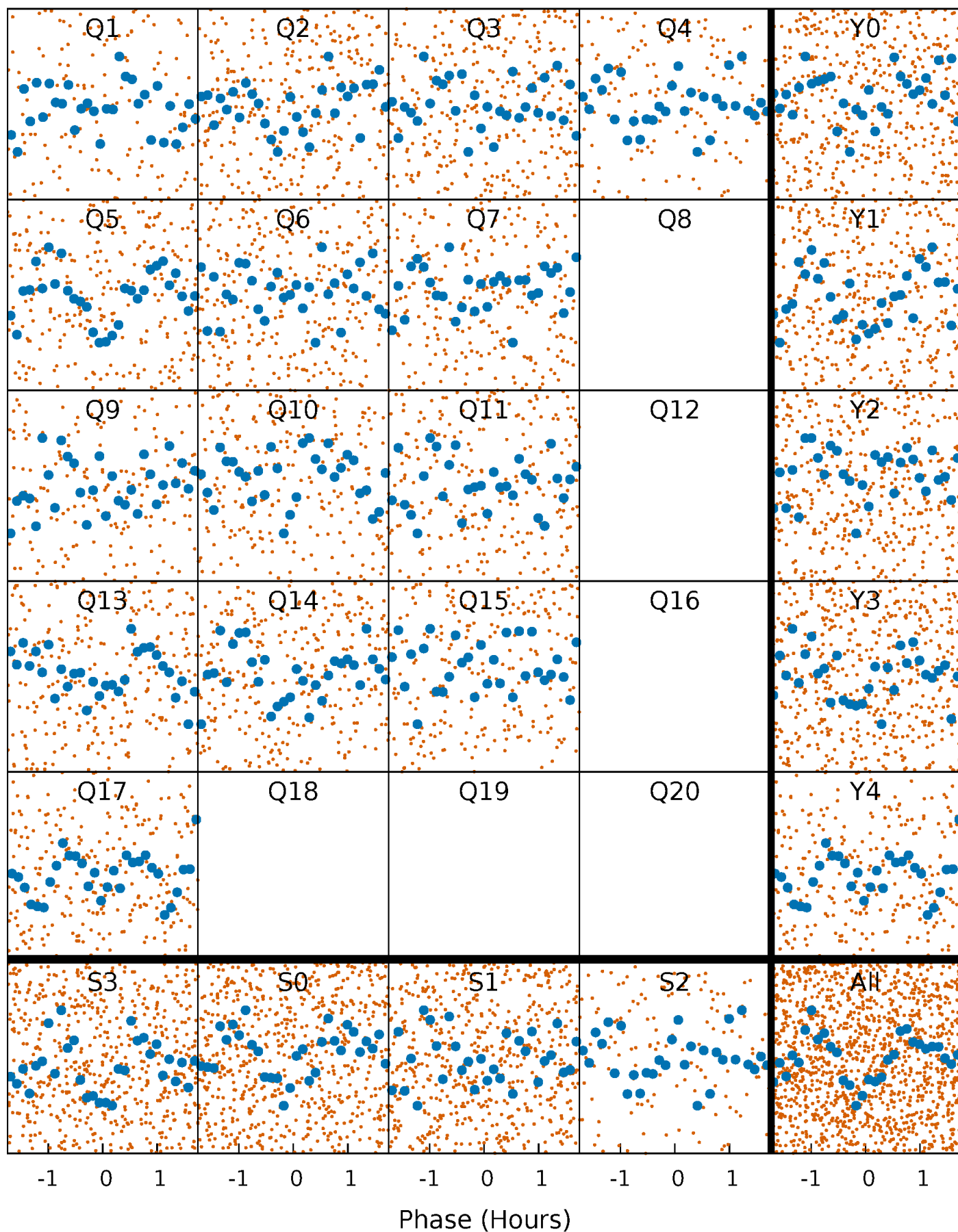
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve



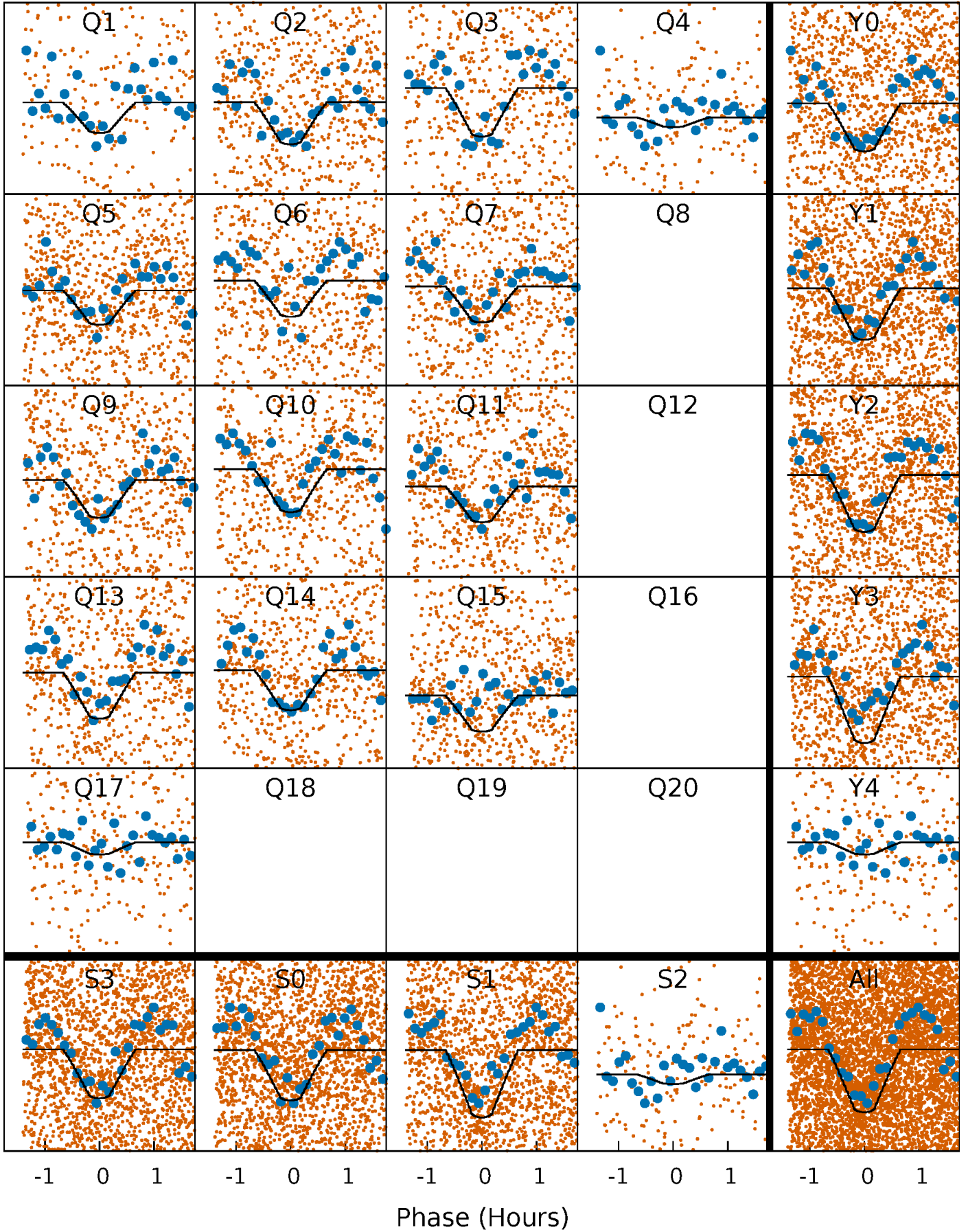
PDC Quarter-Phased Transit Curves

TCE 011602449-03 P= 0.562716 Days $T_0=131.774904$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 011602449-03 P= 0.562716 Days $T_0=131.774904$ (BKJD)

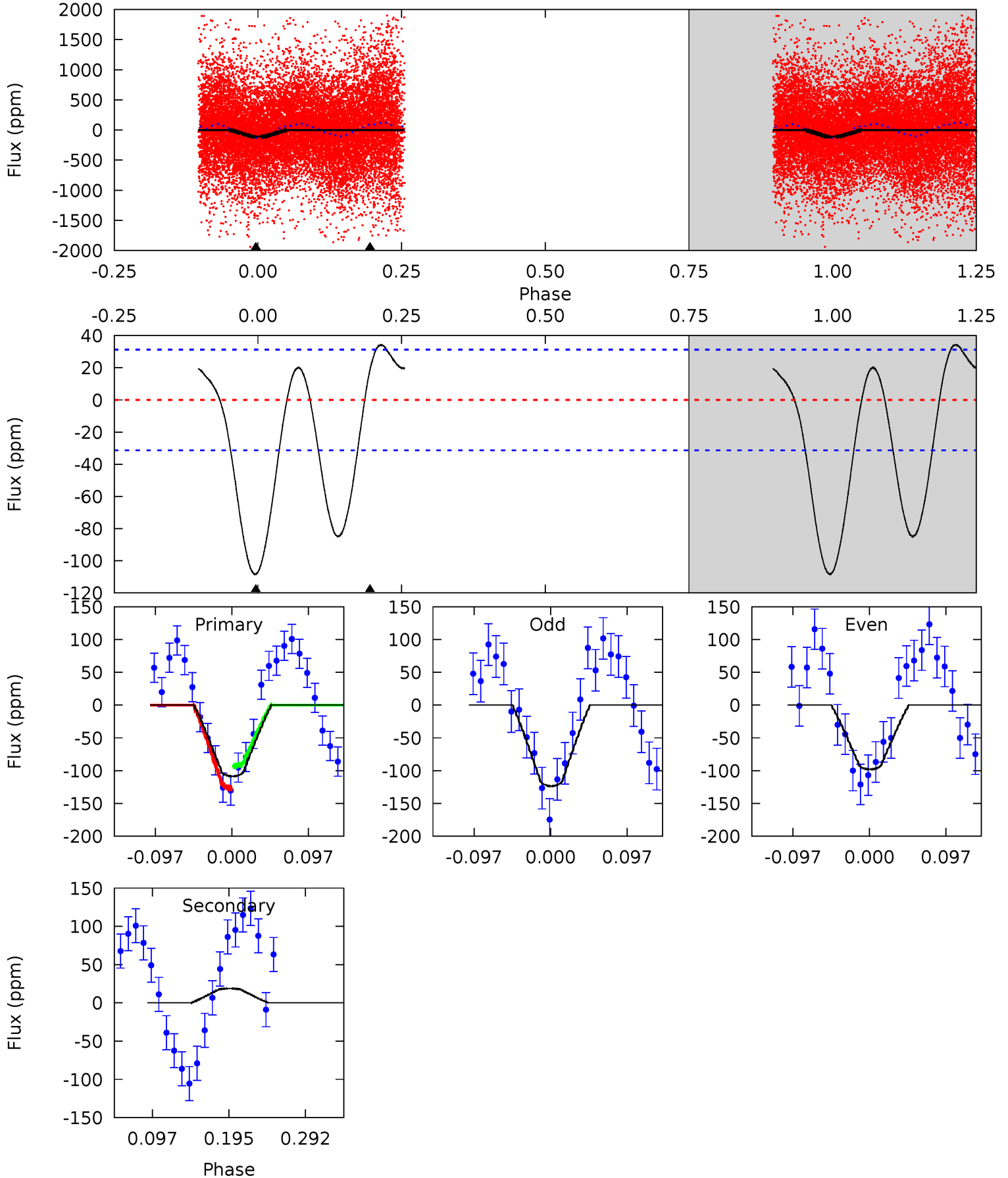


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

011602449-03, P = 0.562716 Days, E = 131.212188 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	-2.73	0	0	4.57	1.66	2.60	15.8	15.8	-2.73	-2.73	1.83	1.03	0.24	2.55



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 011602449

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7613^{+234}_{-313}	$3.818^{+0.433}_{-0.076}$	$-0.500^{+0.250}_{-0.300}$	$2.611^{+0.403}_{-1.208}$	$1.638^{+0.172}_{-0.401}$	$0.130^{+0.521}_{-0.041}$
	+3%/-4%	+11%/-2%	+50%/-60%	+15%/-46%	+11%/-24%	+402%/-31%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011602449-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	19 ± 7	$3.17^{+1.04}_{-1.03}$	5823^{+398}_{-689}	-5477^{+478}_{-468}	$-0.250^{+0.136}_{-0.310}$
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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

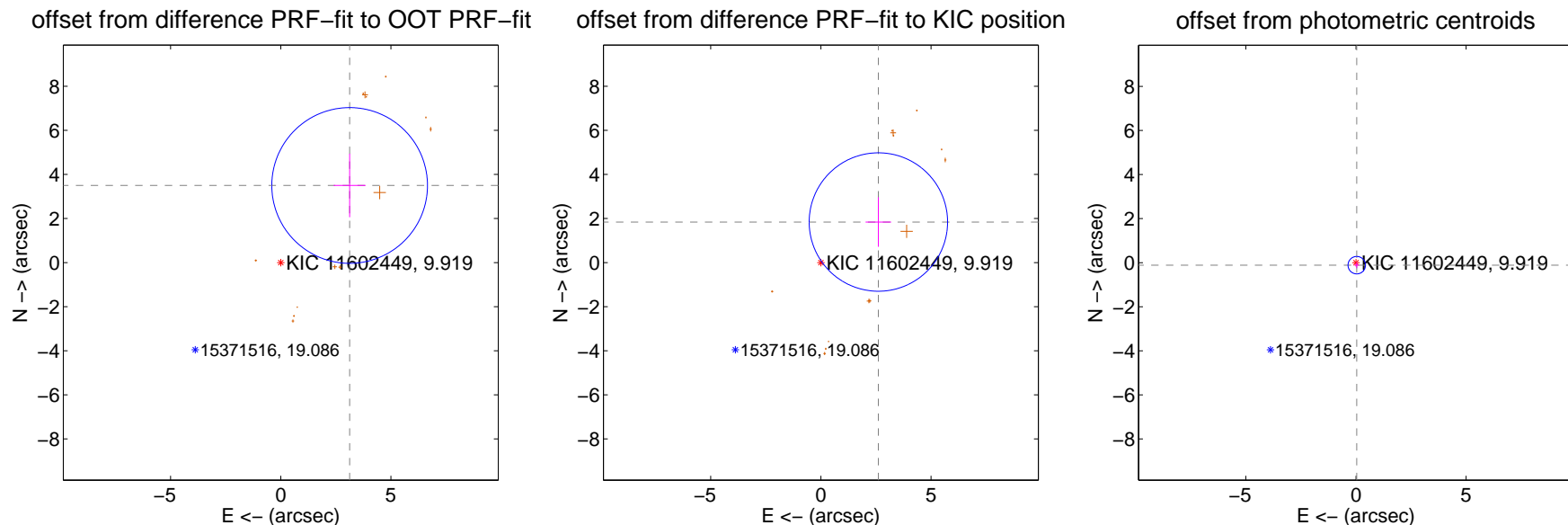
DV Centroid Data

Supplemental centroid analysis for 011602449-03. **Kepler magnitude: 9.92.** Transit SNR 11.63

There are 0 quarters with good PRF difference image offsets

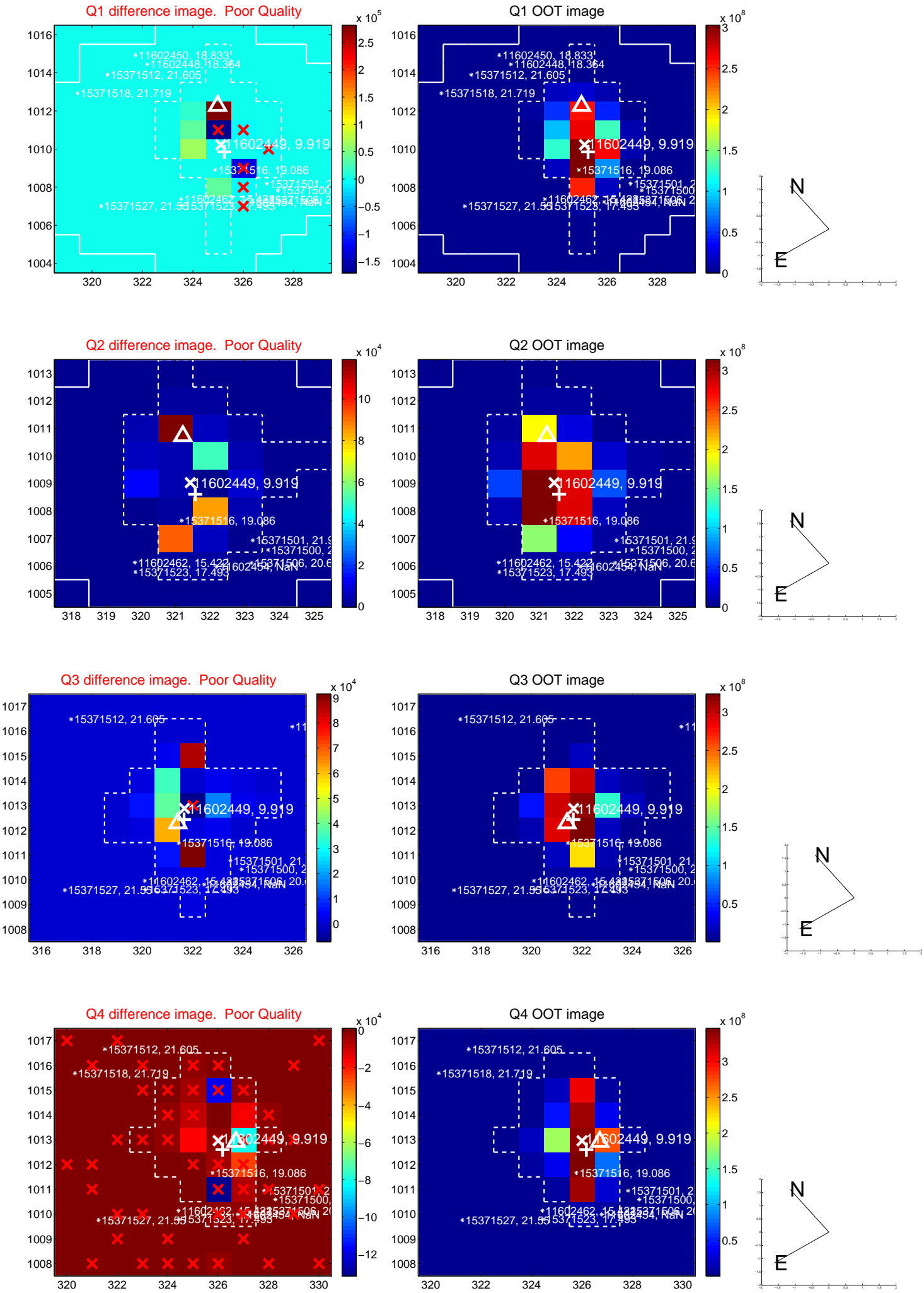
The direct PRF centroid is offset from the target star catalog position by about 1.54 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.692 ± 1.178	3.98	-3.126 ± 0.723	3.498 ± 1.441
PRF-fit source offset from KIC position	3.193 ± 1.047	3.05	-2.610 ± 0.579	1.840 ± 1.122
photometric centroid source offset	0.12 ± 0.13	0.90	-0.04 ± 0.11	-0.11 ± 0.13

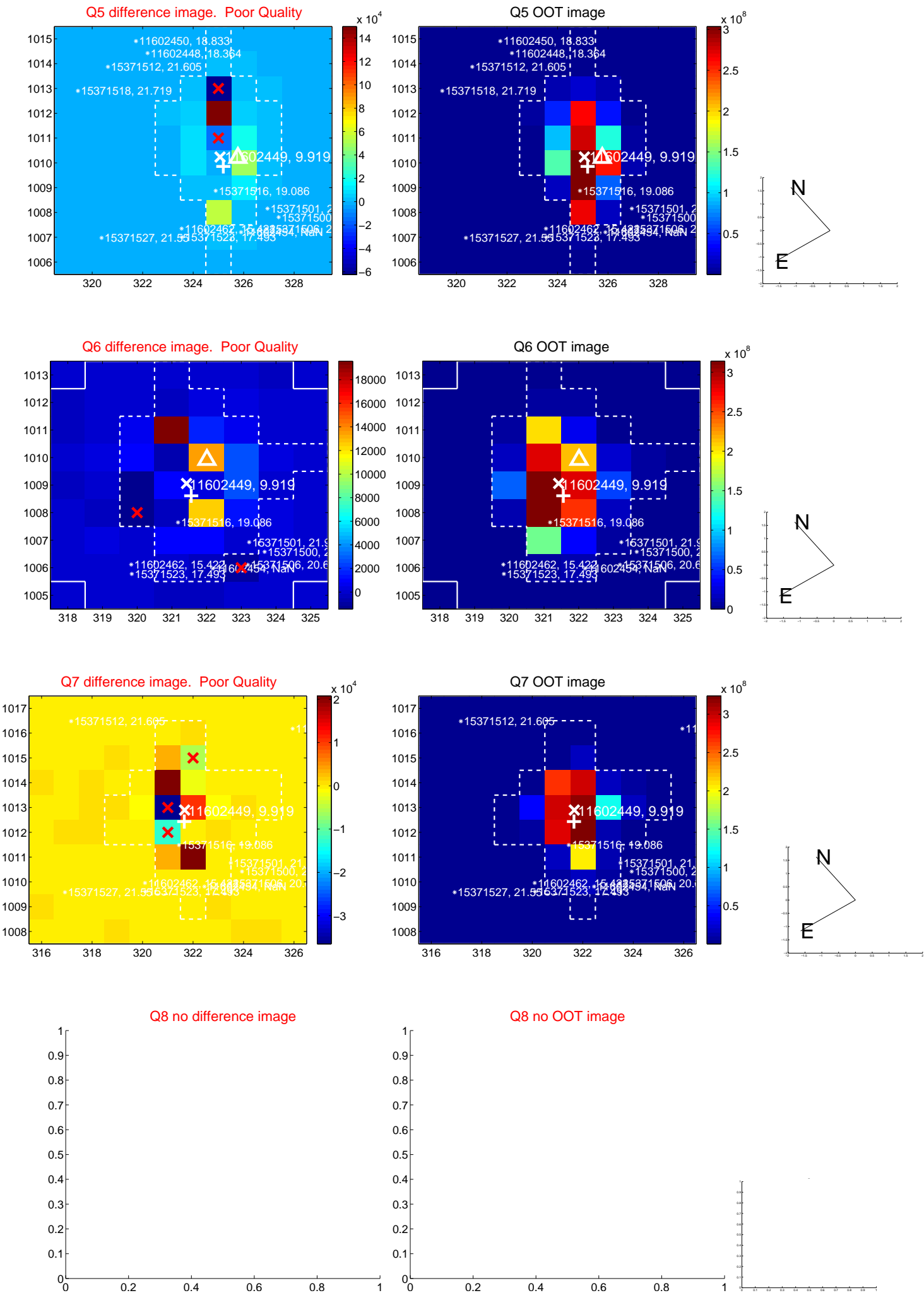


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

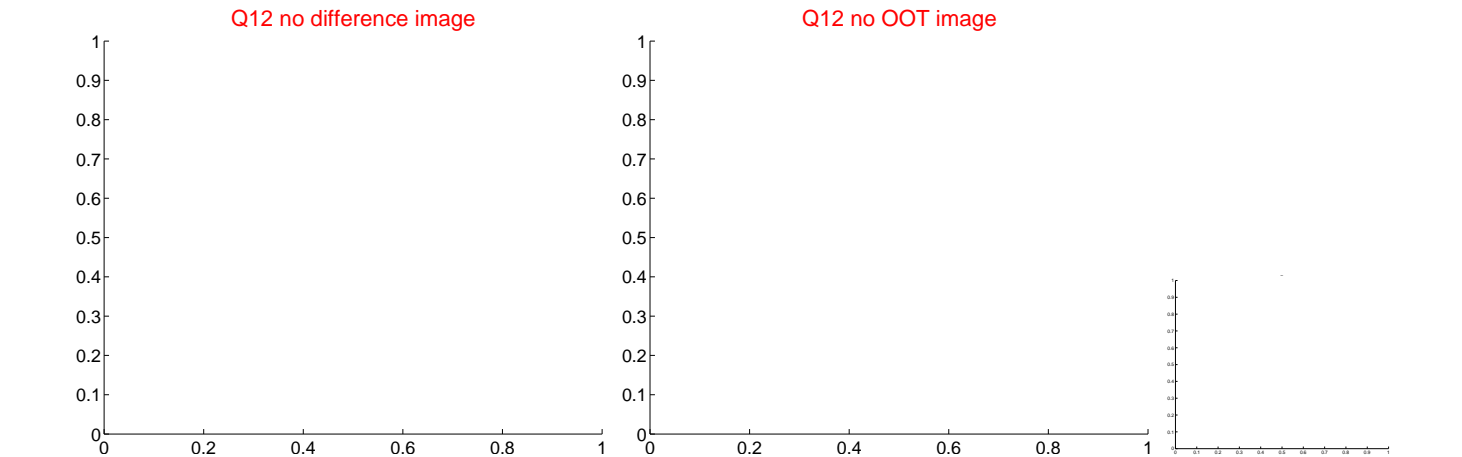
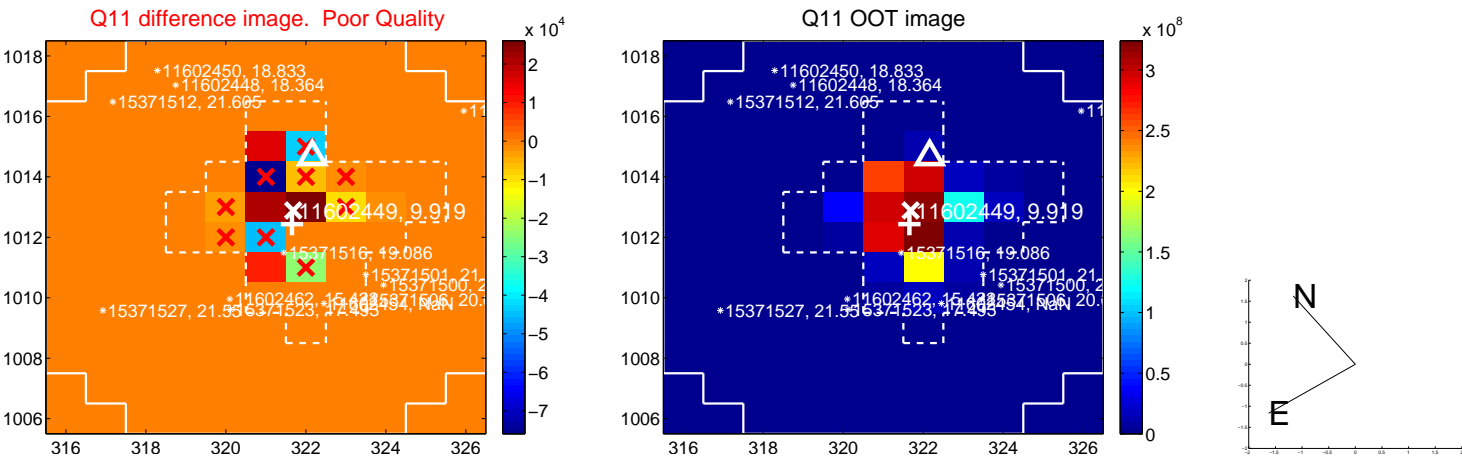
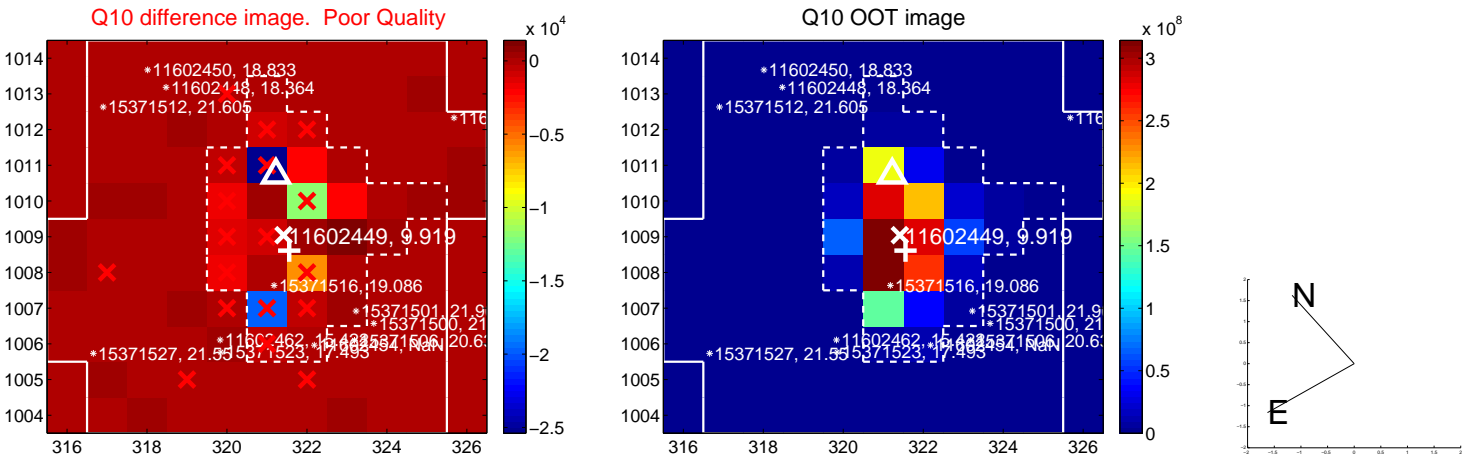
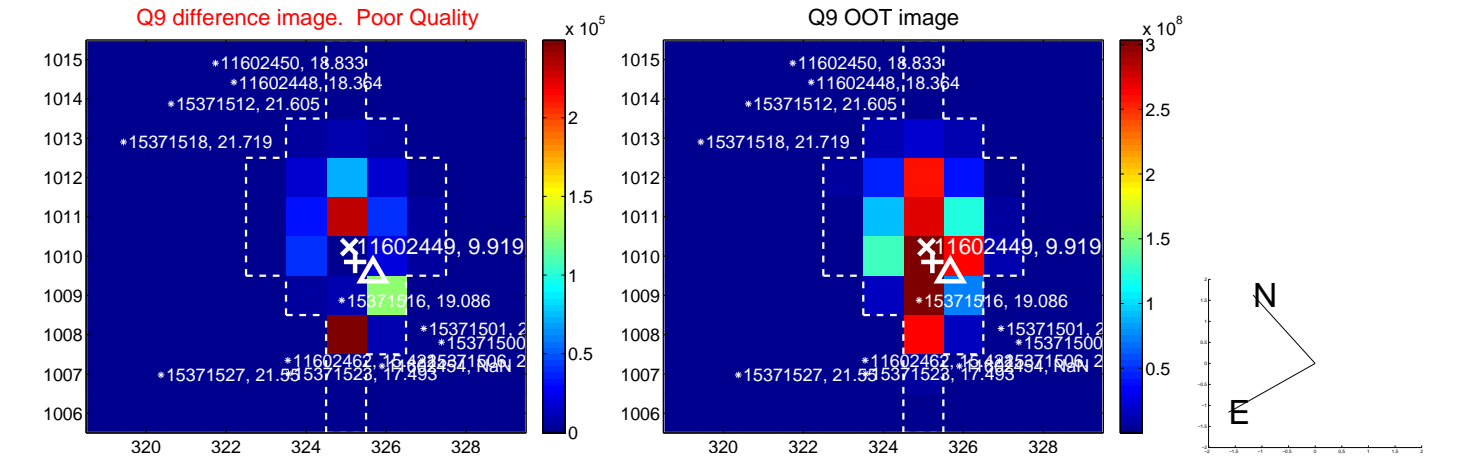
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



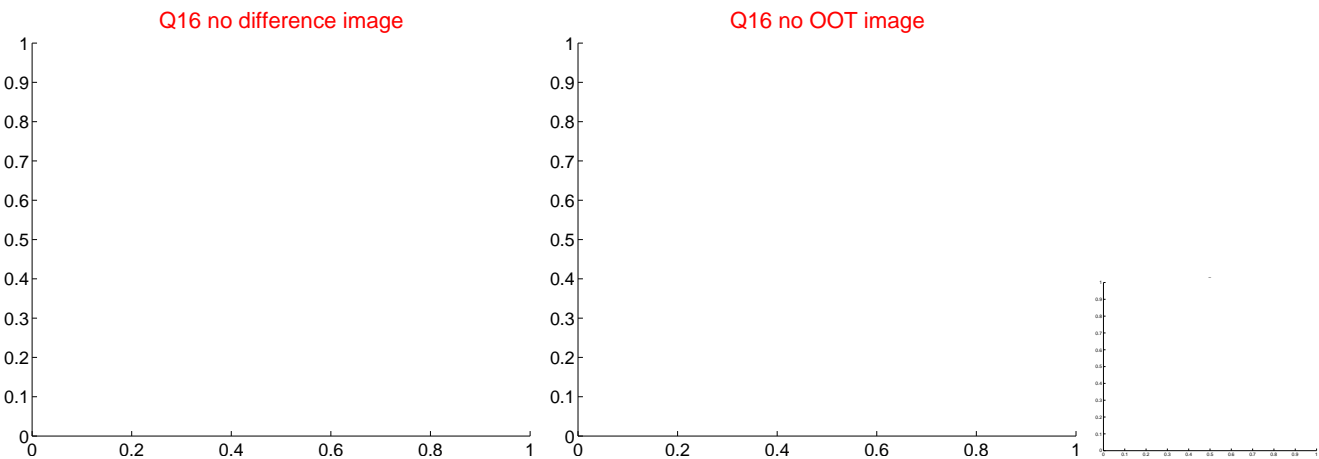
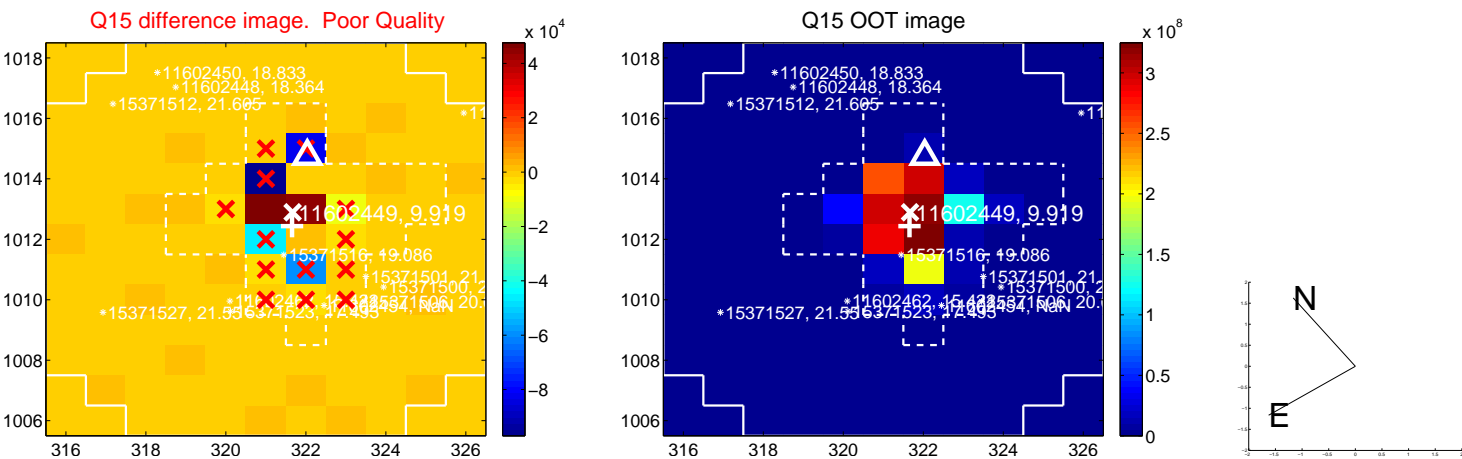
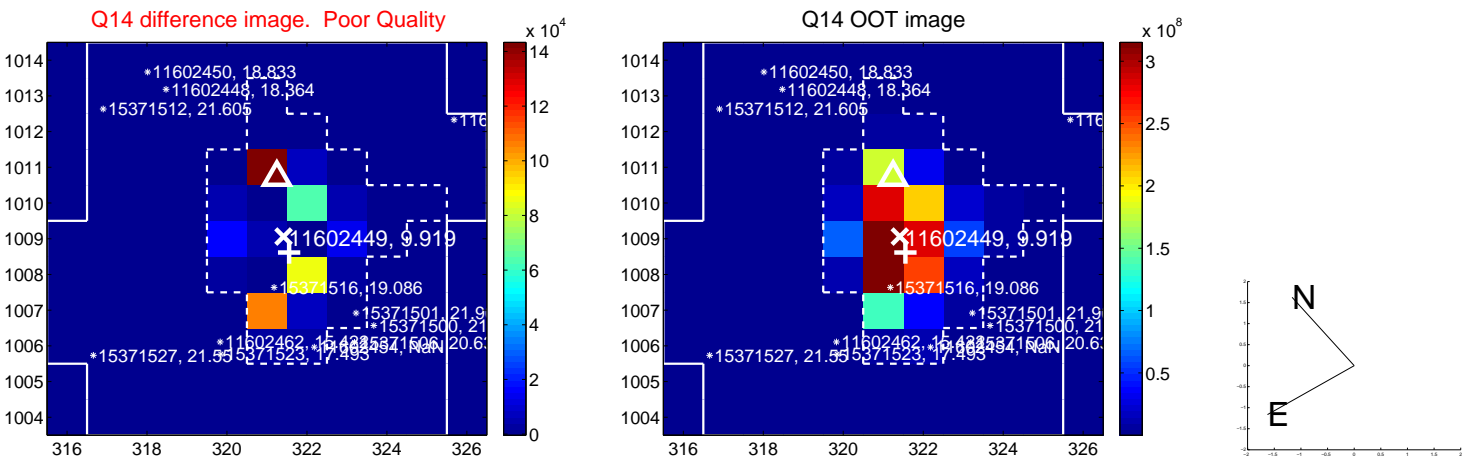
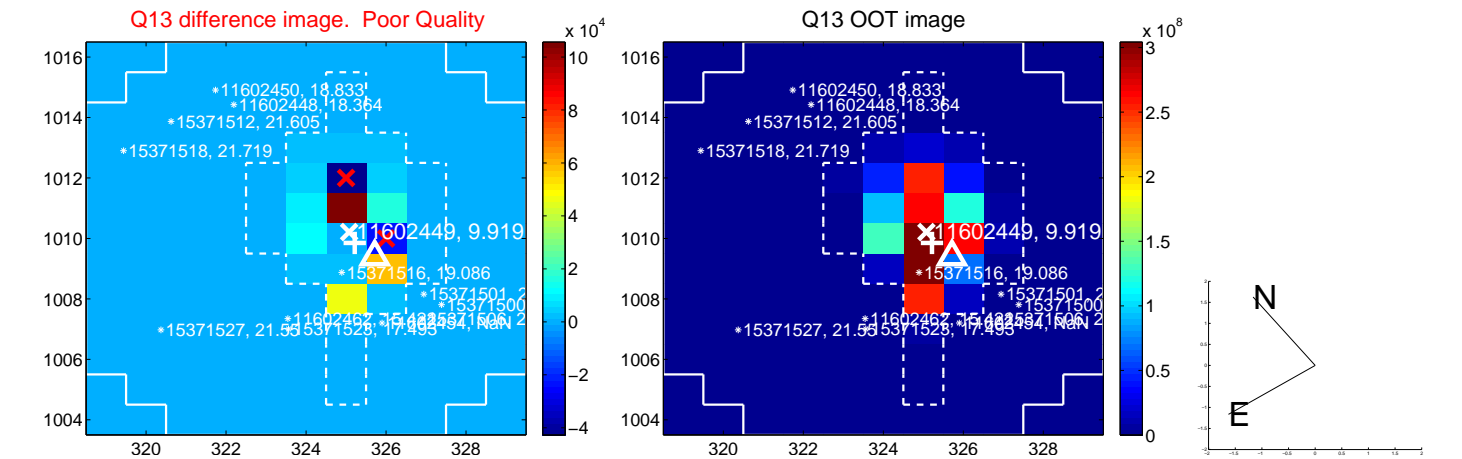
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



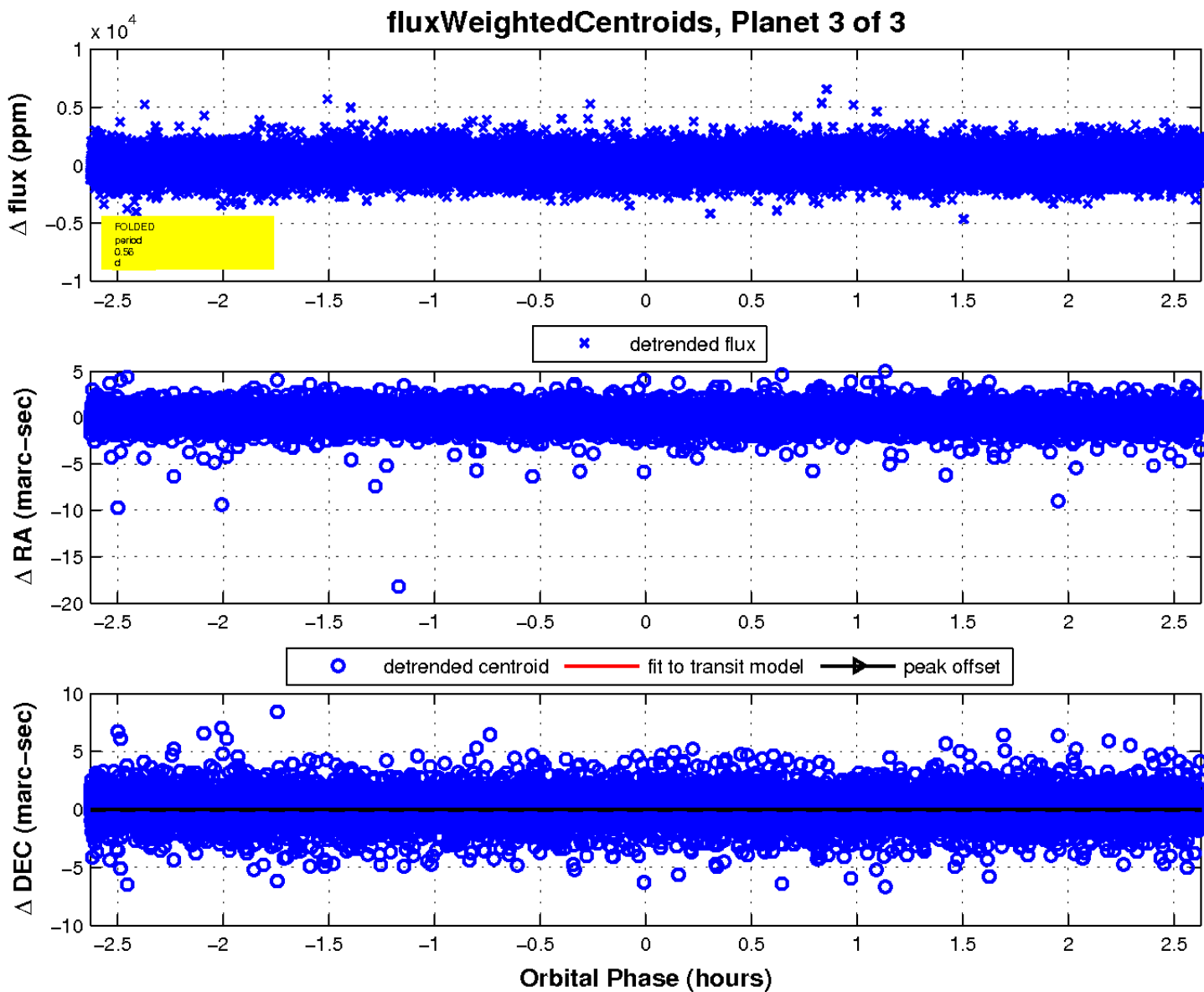
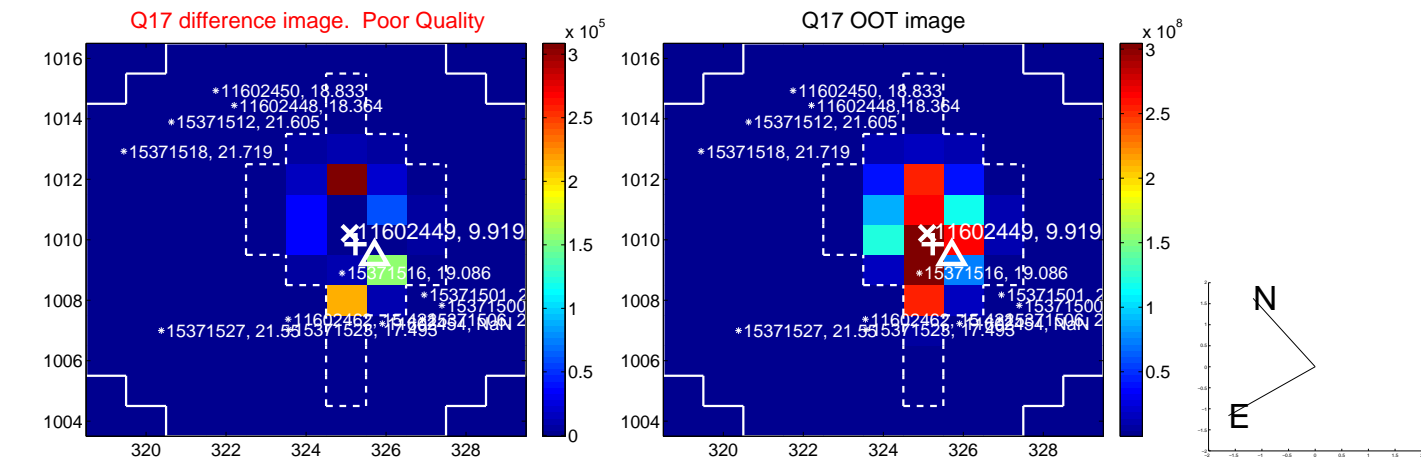
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UKIRT Image

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