

KIC 009273730

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})
009273730-01	OBS	No	1.780512	132.685543	62.7	4.510	8.8	9.2	0.61	4332	0.59	201.41
009273730-02	OBS	No	1.780531	131.779907	63.1	5.446	9.2	10.6	0.61	4332	0.47	201.41
009273730-03	OBS	No	253.848856	157.489823	1666.3	5.737	20.6	14.2	0.61	4332	2.70	0.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009273730-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
009273730-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009273730-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

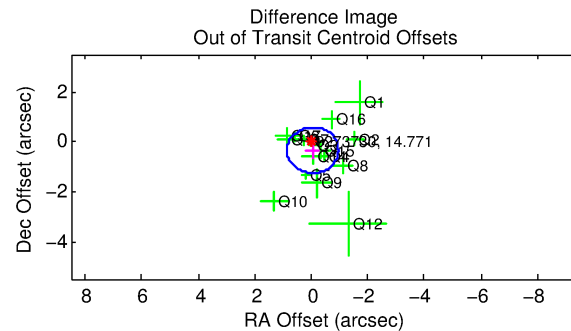
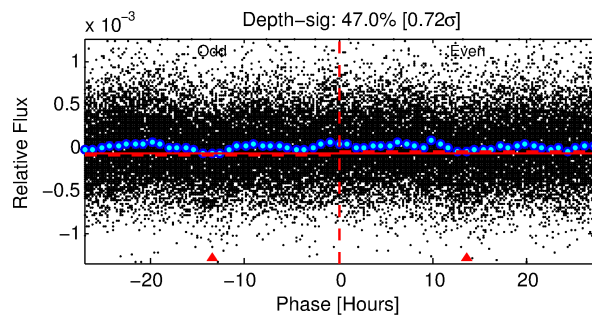
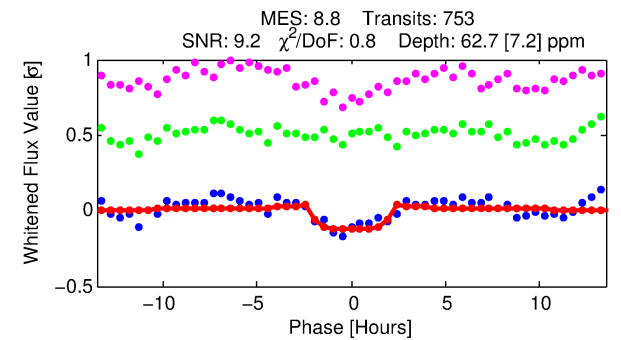
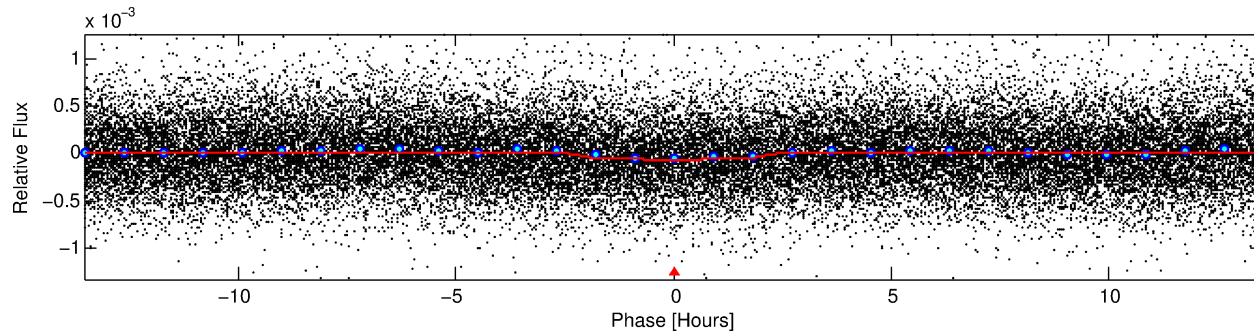
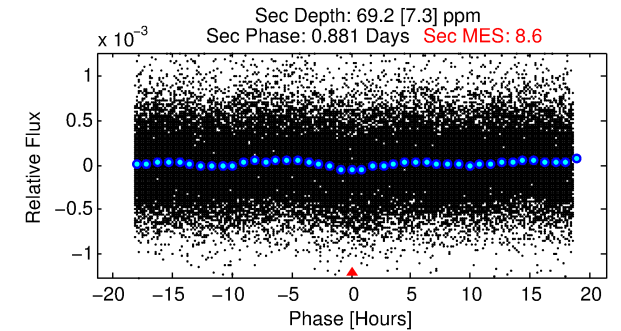
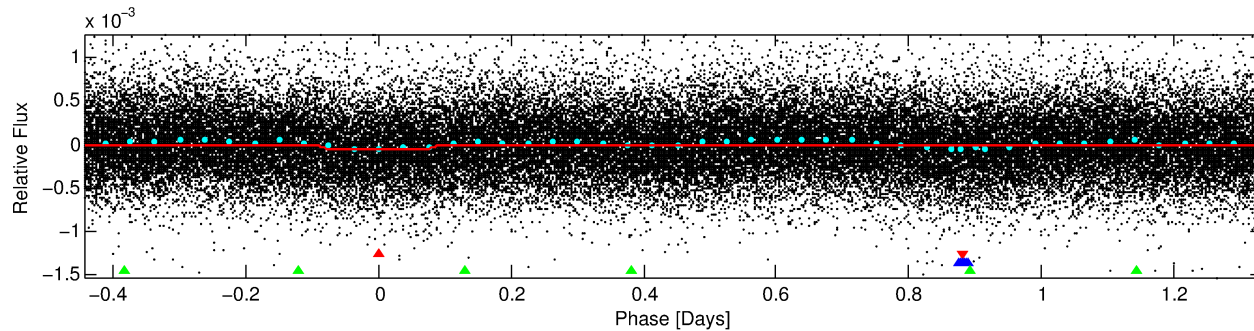
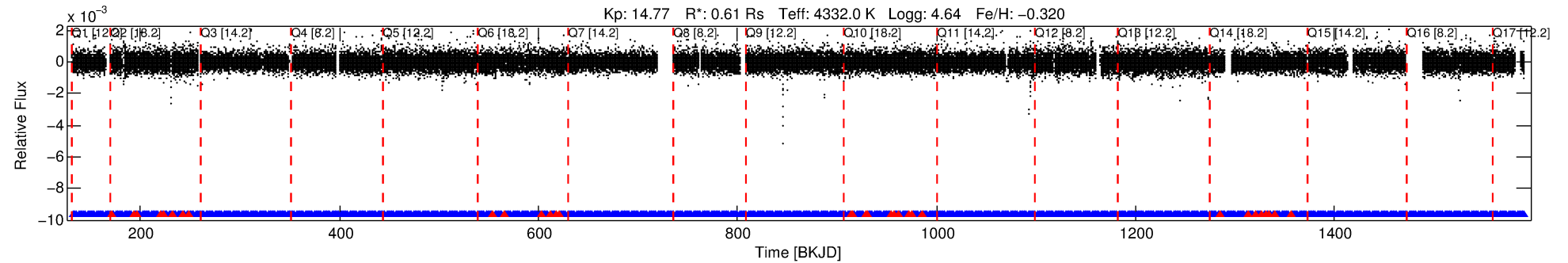
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009273730-01

No Significant Match Found

DV One-Page Summary

KIC: 9273730 Candidate: 1 of 3 Period: 1.781 d



DV Fit Results:

Period = 1.78051 [0.00002] d
Epoch = 132.6855 [0.0045] BKJD
Rp/R* = 0.0089 [0.0043]
a/R* = 1.65 [2.12]
b = 0.90 [0.42]
Seff = 201.41 [31.79]
Teff = 961 [38] K
Rp = 0.59 [0.30] Re
a = 0.0242 [0.0018] AU
Ag = 63.76 [63.25] [0.99 σ]
Teffp = 4197 [1043] K [3.10 σ]

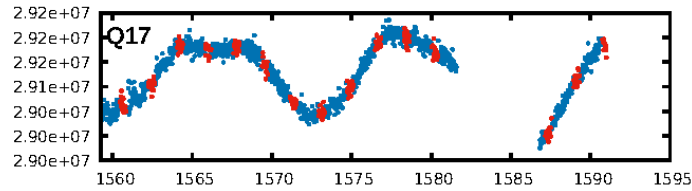
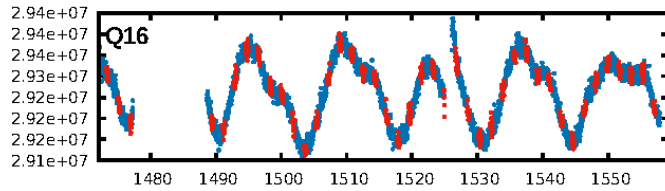
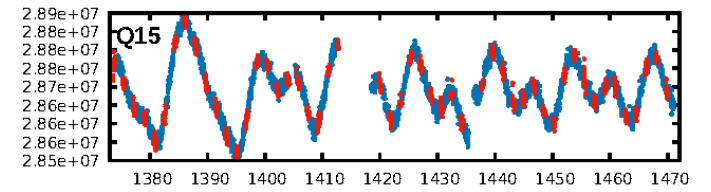
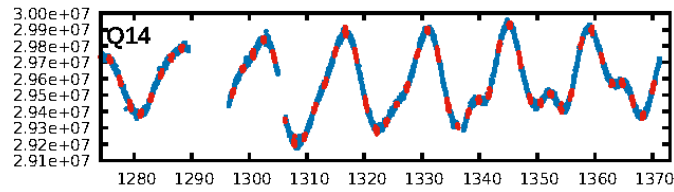
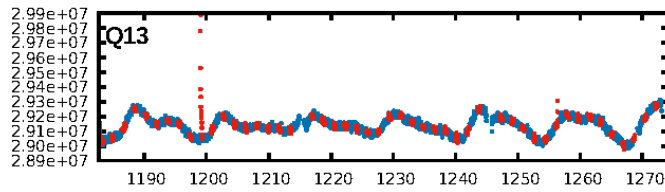
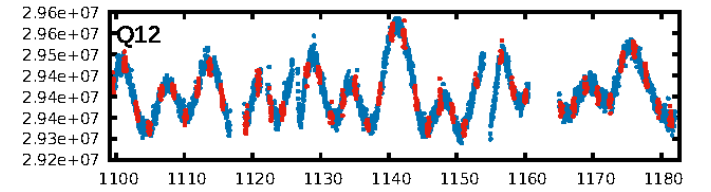
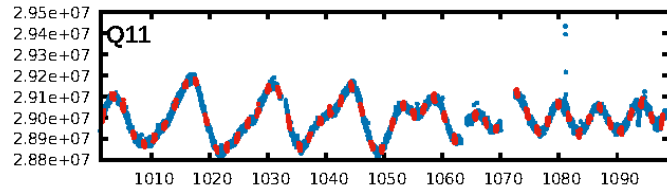
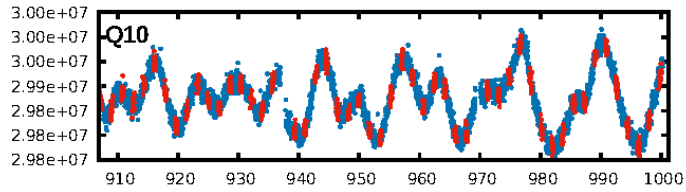
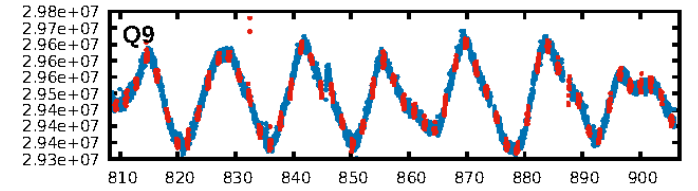
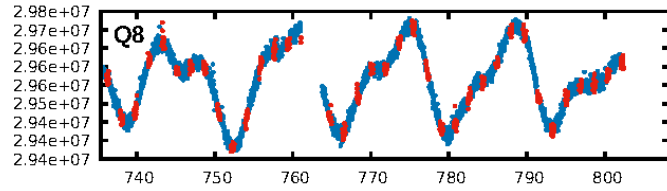
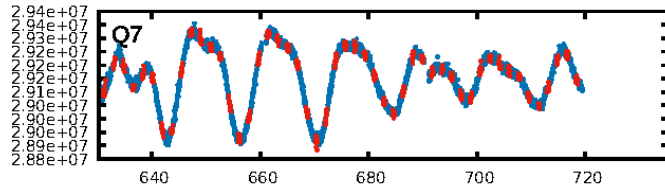
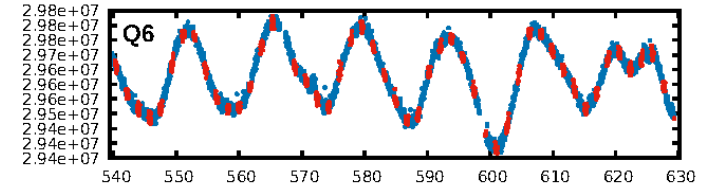
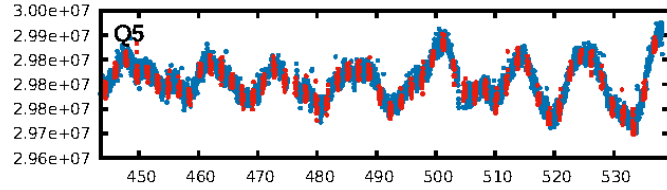
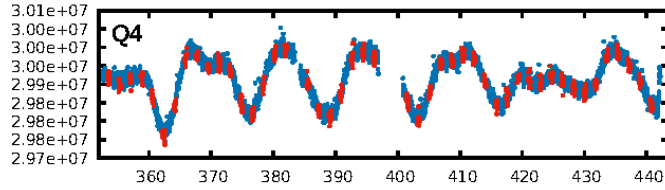
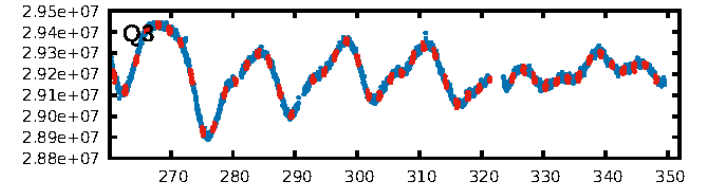
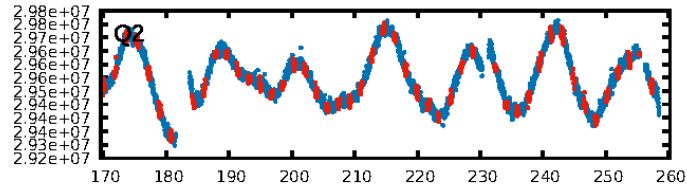
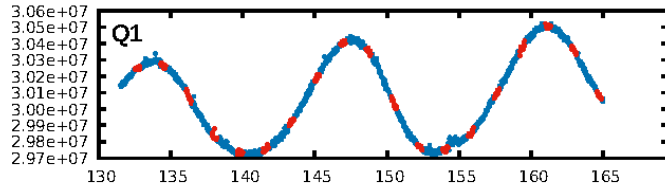
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.43e-14
RollingBand-fgt: 0.96 [687/719]
GhostDiagnostic-chr: 0.197
Centroid-sig: 0.1%
Centroid-so: 2.389 arcsec [2.27 σ]
OotOffset-rm: 0.345 arcsec [1.13 σ]
KicOffset-rm: 0.326 arcsec [1.09 σ]
OotOffset-st: 4/4/4 [16]
KicOffset-st: 4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

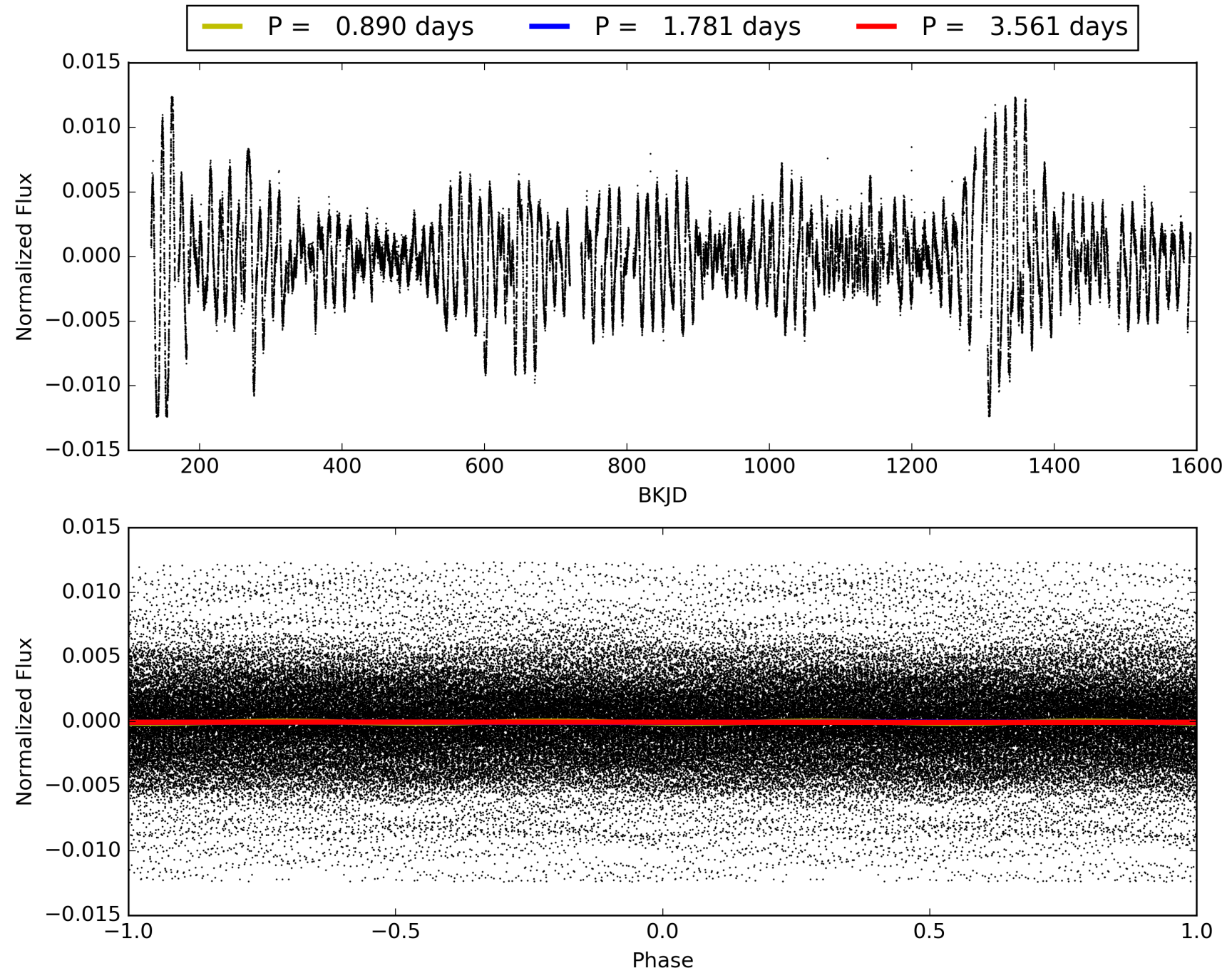
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009273730-01, PDC Light Curves

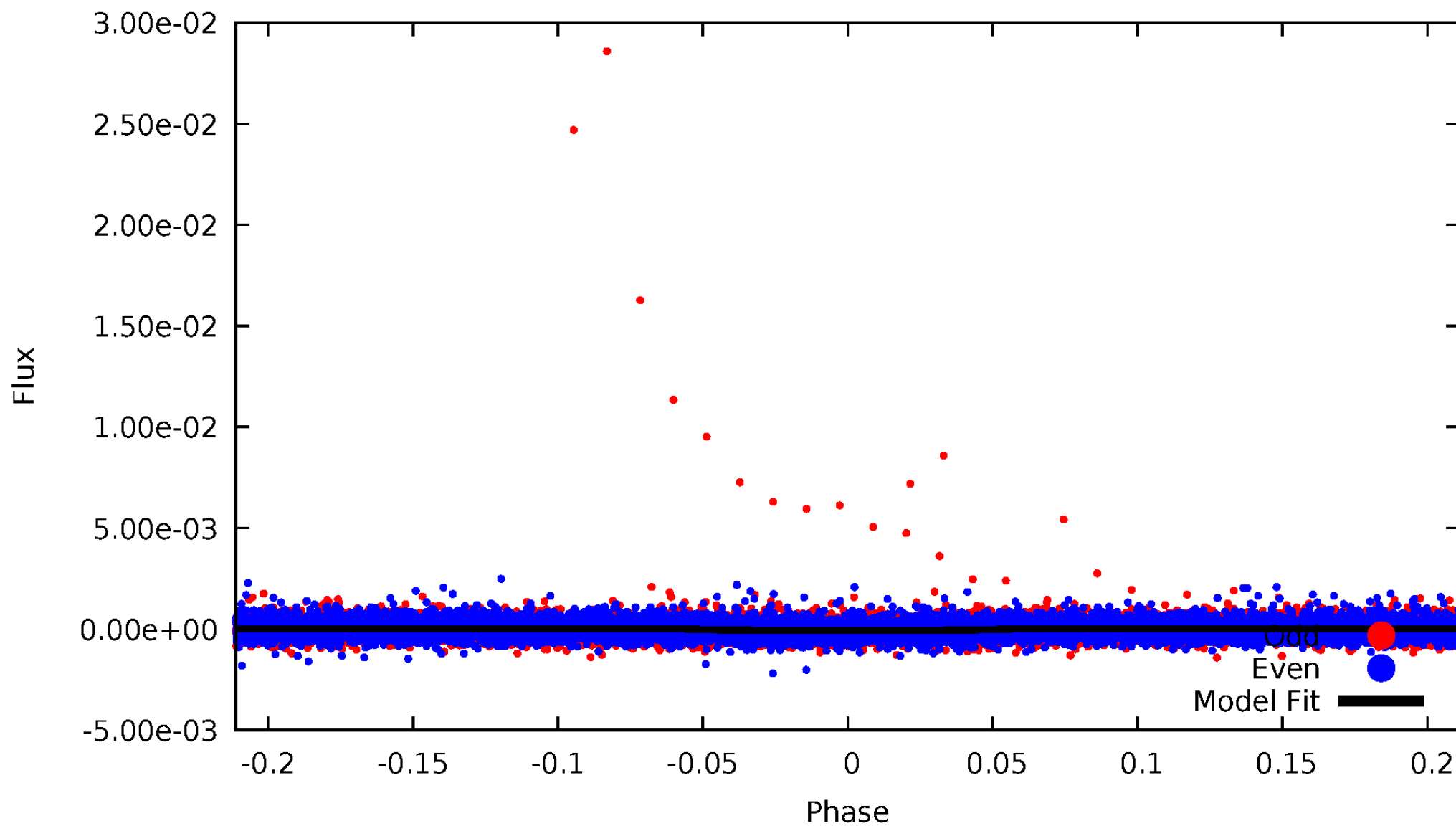


TCE 009273730-01



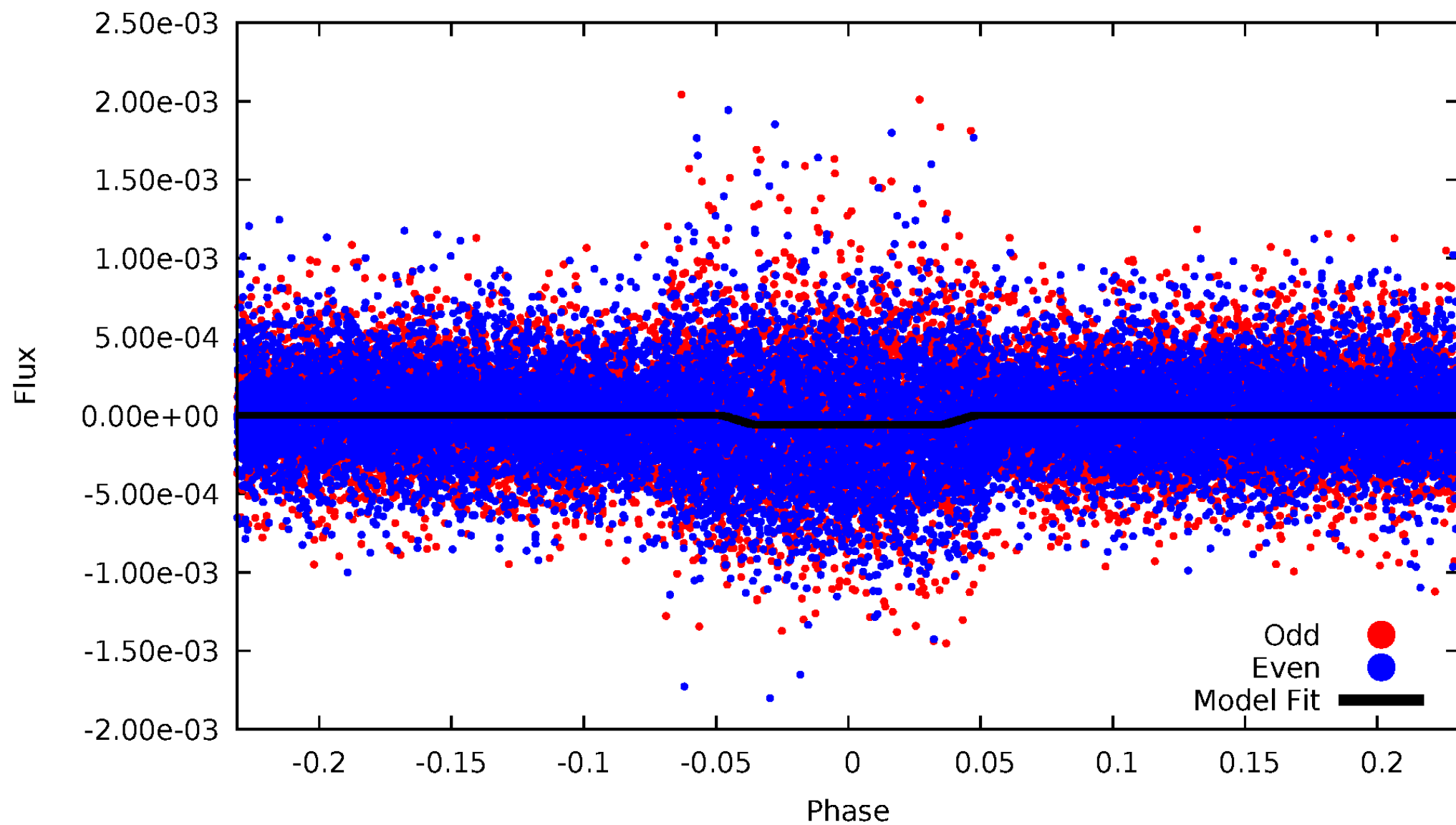
DV Odd/Even

TCE 009273730-01

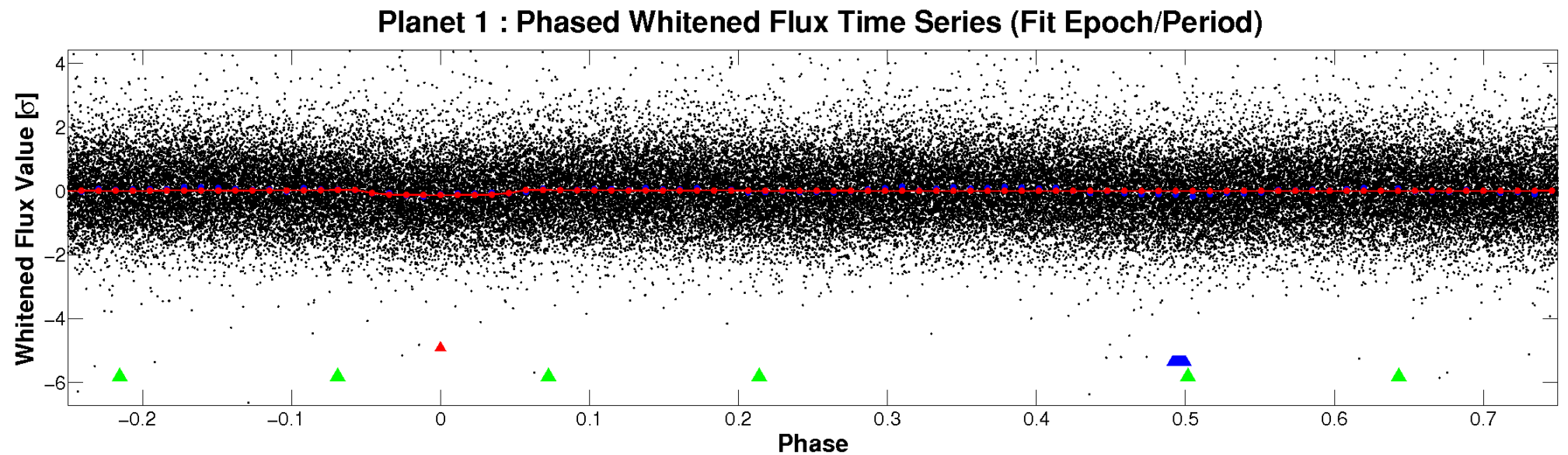
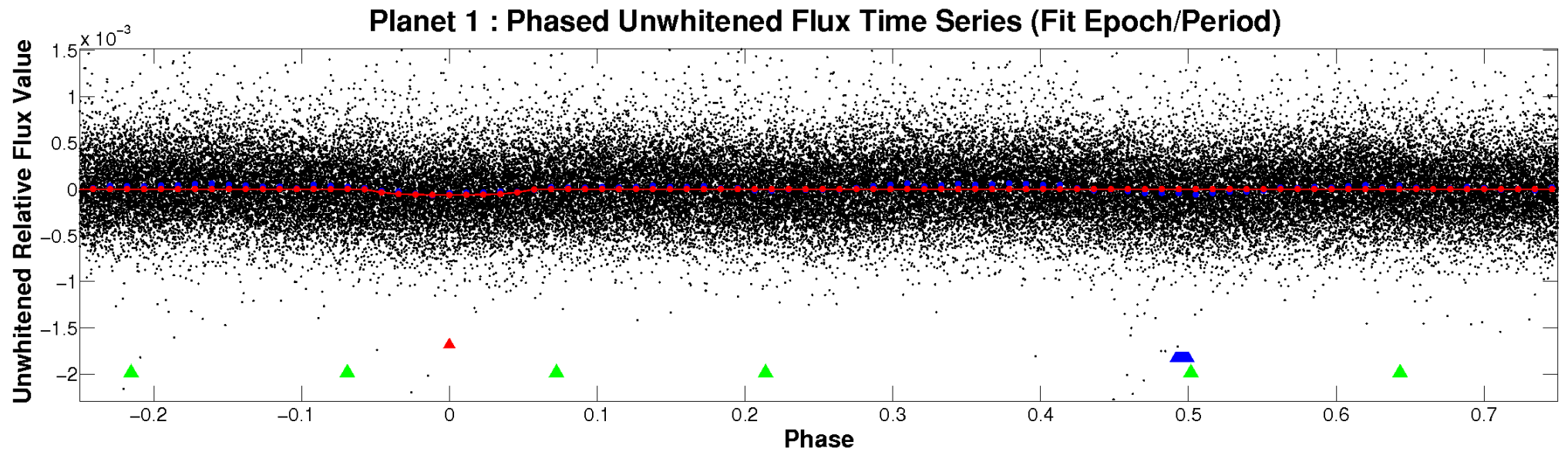


ALT Odd/Even

TCE 009273730-01

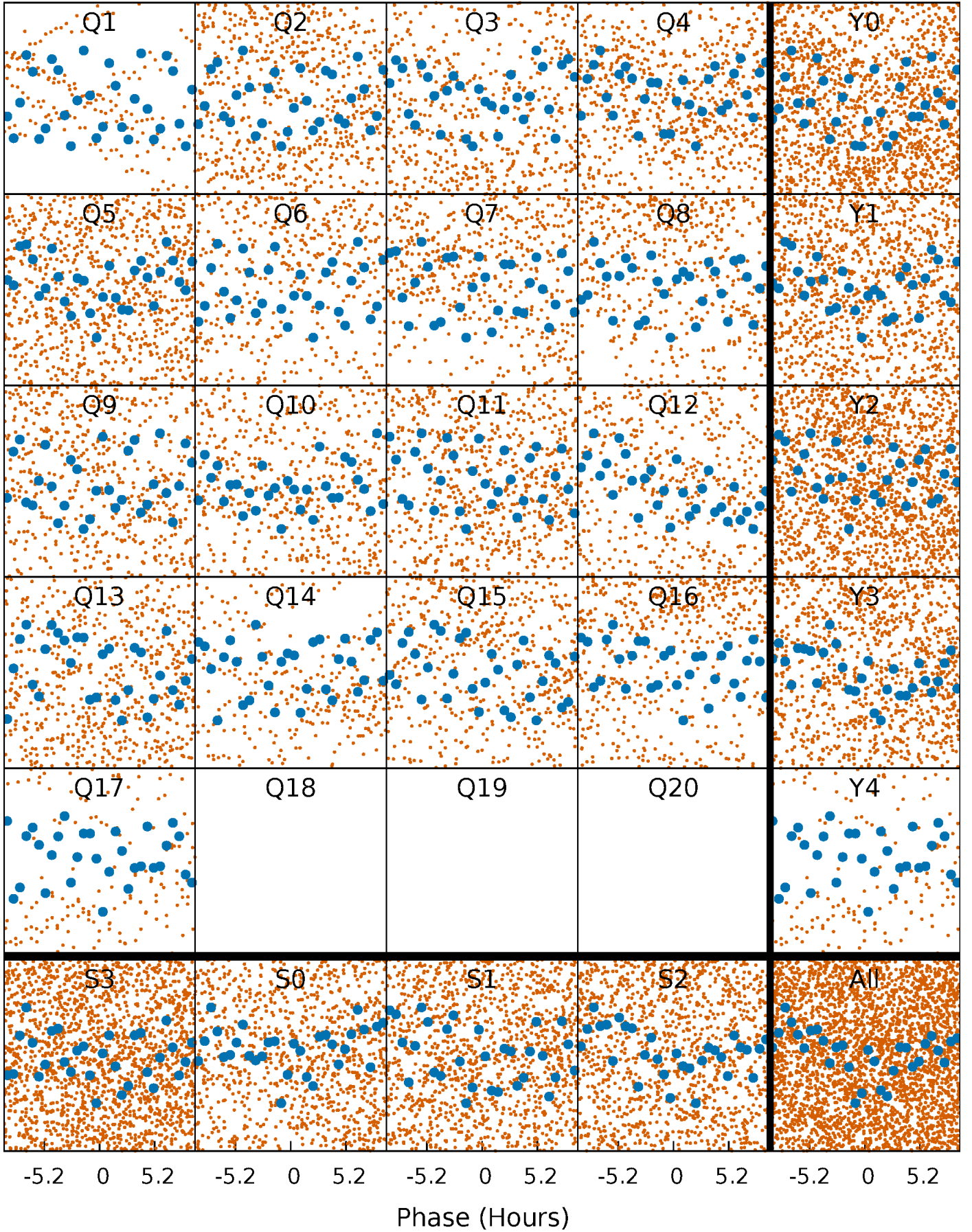


Non-Whitened Vs. Whitened Light Curve



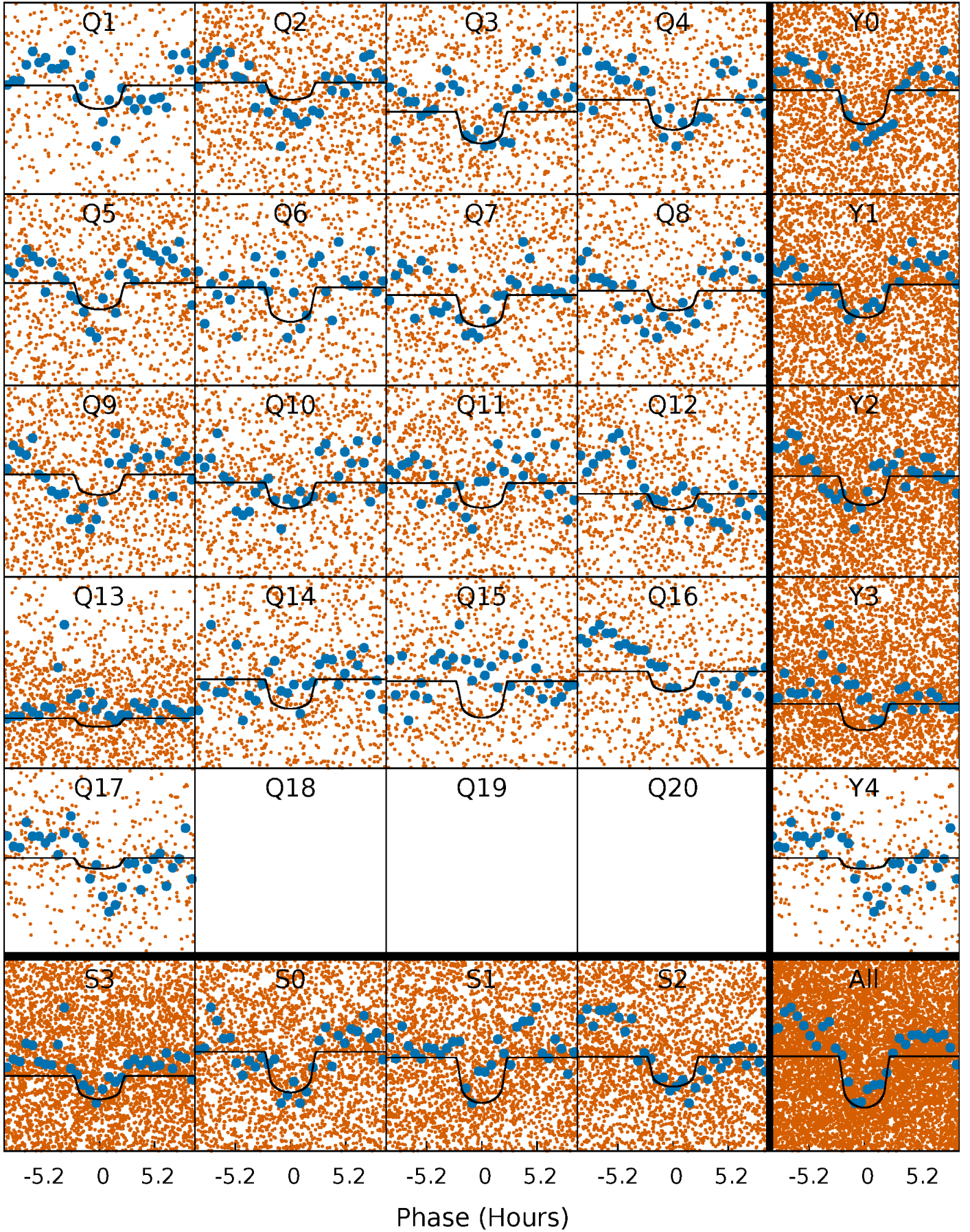
PDC Quarter-Phased Transit Curves

TCE 009273730-01 P= 1.780512 Days $T_0=132.685543$ (BKJD)



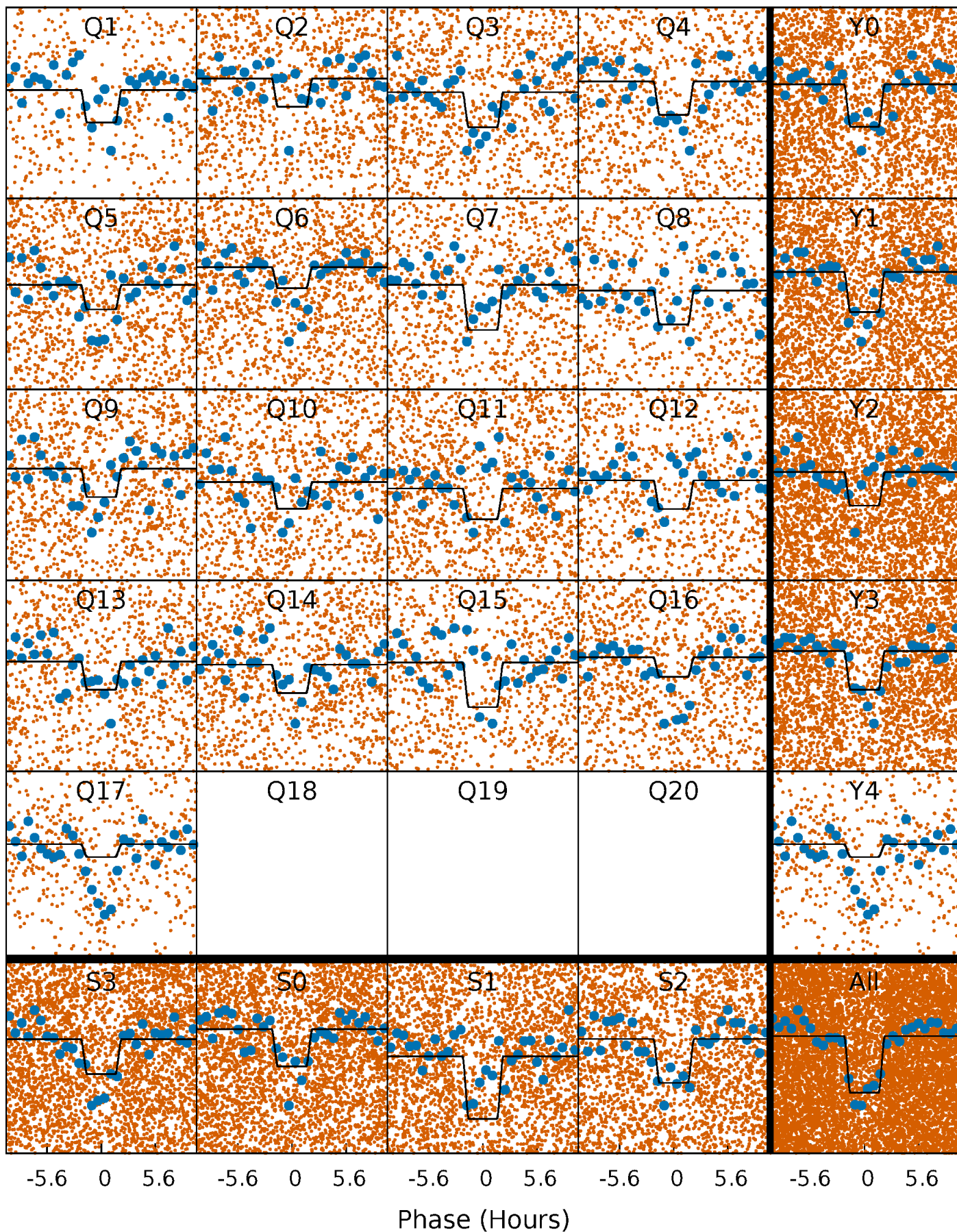
DV Quarter-Phased Transit Curves

TCE 009273730-01 P= 1.780512 Days $T_0=132.685543$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

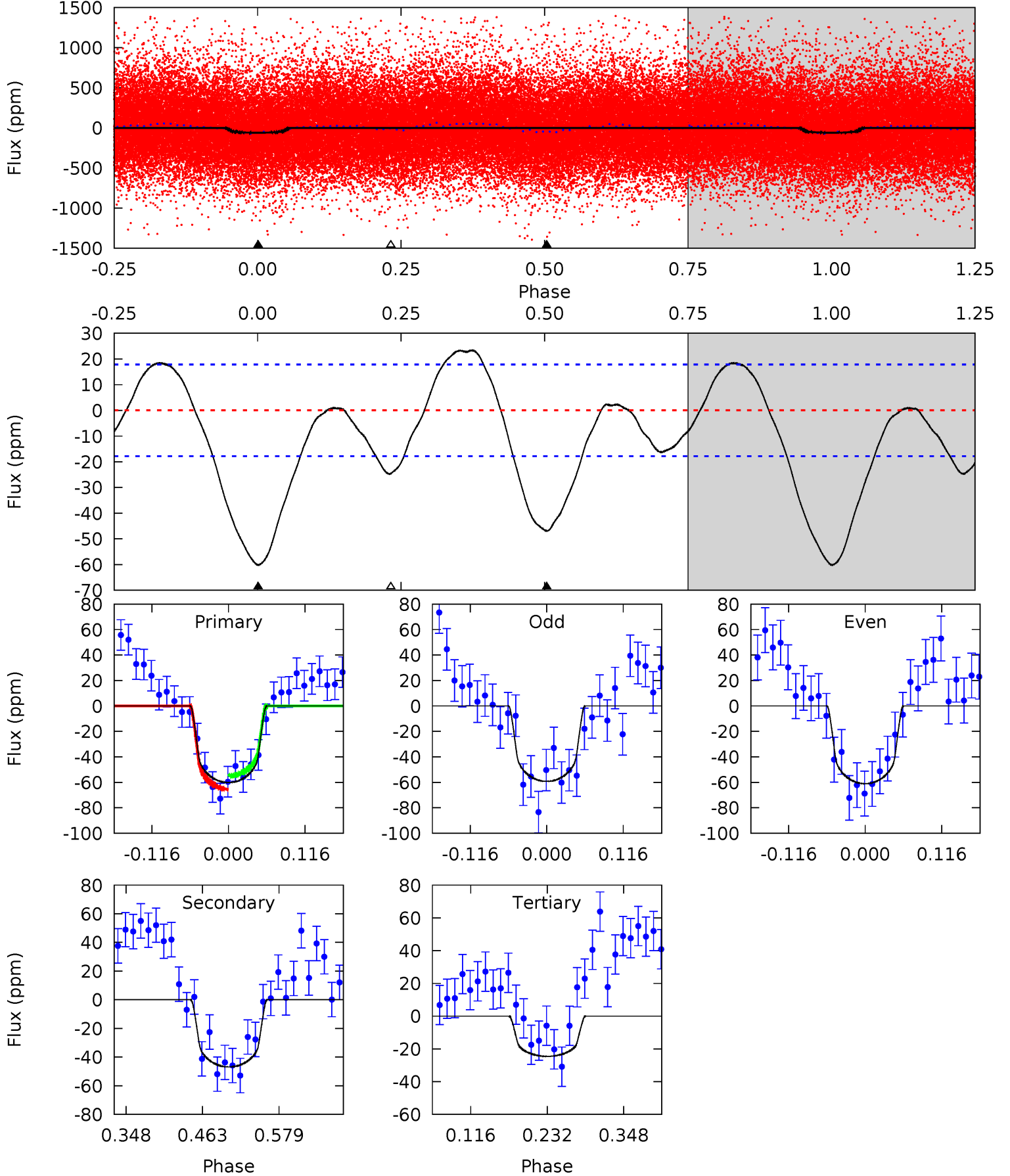
TCE 009273730-01 P= 1.780558 Days $T_0=132.672727$ (BKJD)



DV Model-Shift Uniqueness Test

009273730-01, P = 1.780512 Days, E = 130.905031 Days

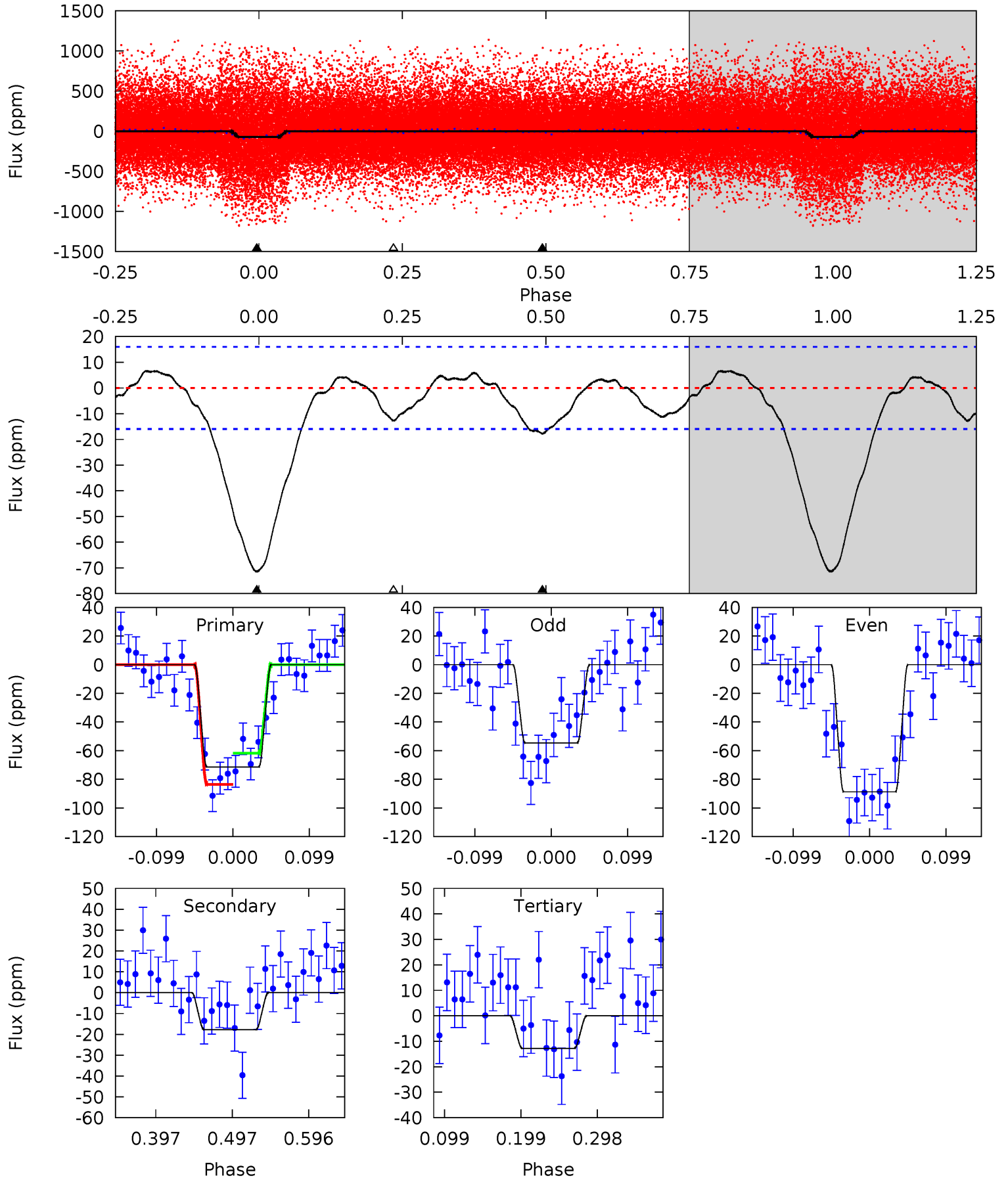
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	11.9	6.24	0	4.53	1.57	3.55	9.04	15.3	5.67	11.9	0.23	0.78	0.28	1.34



Alt Model-Shift Uniqueness Test

009273730-01, P = 1.780558 Days, E = 130.892169 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.4	5.07	3.65	0	4.57	1.65	1.55	16.7	20.4	1.42	5.07	4.87	0.89	0.08	3.11



Stellar Parameters For KIC 009273730

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4332^{+130}_{-130}	$4.641^{+0.052}_{-0.024}$	$-0.320^{+0.300}_{-0.300}$	$0.612^{+0.044}_{-0.059}$	$0.597^{+0.067}_{-0.049}$	$3.676^{+0.925}_{-0.442}$
	+3%/-3%	+1%/-1%	+94%/-94%	+7%/-10%	+11%/-8%	+25%/-12%
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 009273730-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-47 ± 4	$0.62^{+0.25}_{-0.29}$	1335^{+46}_{-48}	3882^{+1028}_{-429}	41^{+99}_{-21}
Alt.	-18 ± 4	$0.52^{+0.27}_{-0.28}$	1336^{+42}_{-51}	3481^{+1138}_{-456}	22^{+82}_{-13}

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 $A_{obs} \gg 1.0$

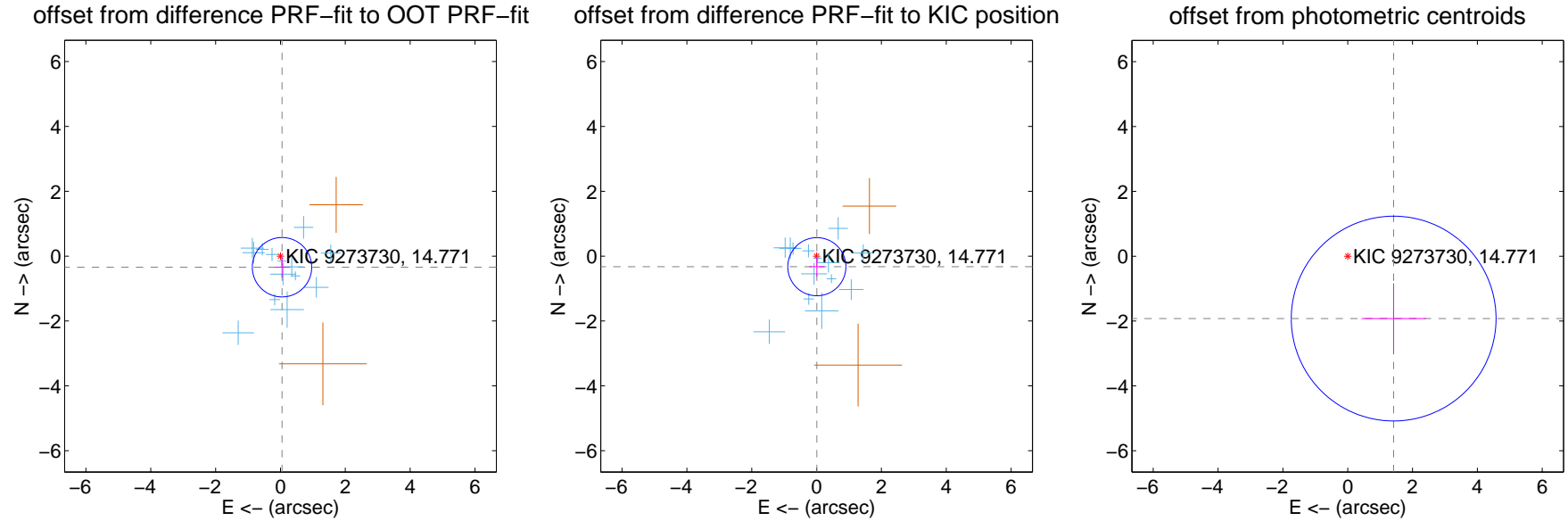
DV Centroid Data

Supplemental centroid analysis for 009273730-01. Kepler magnitude: 14.77. Transit SNR 9.23

There are 14 quarters with good PRF difference image offsets

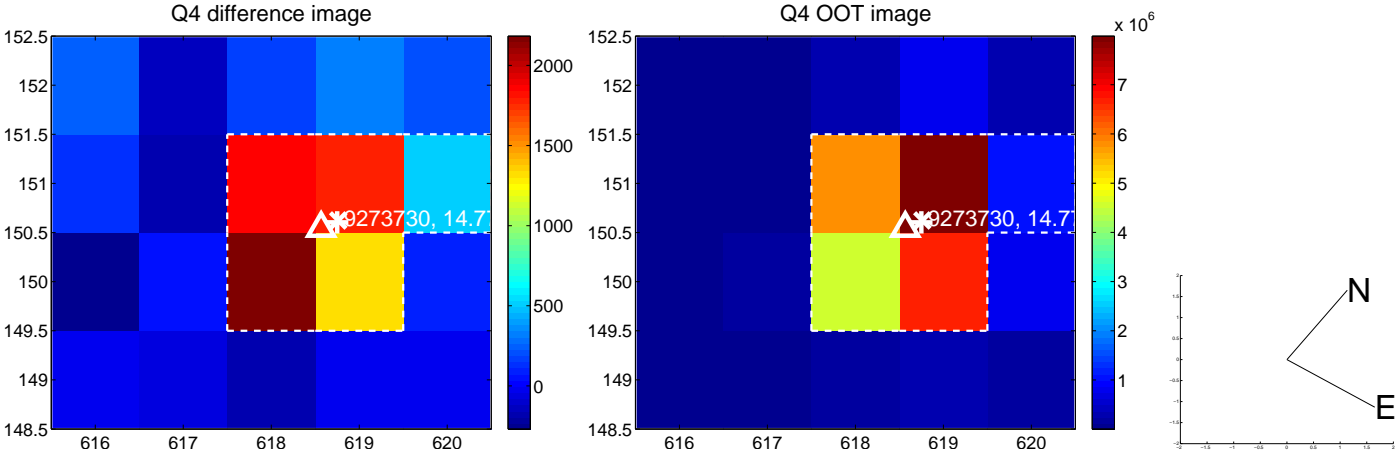
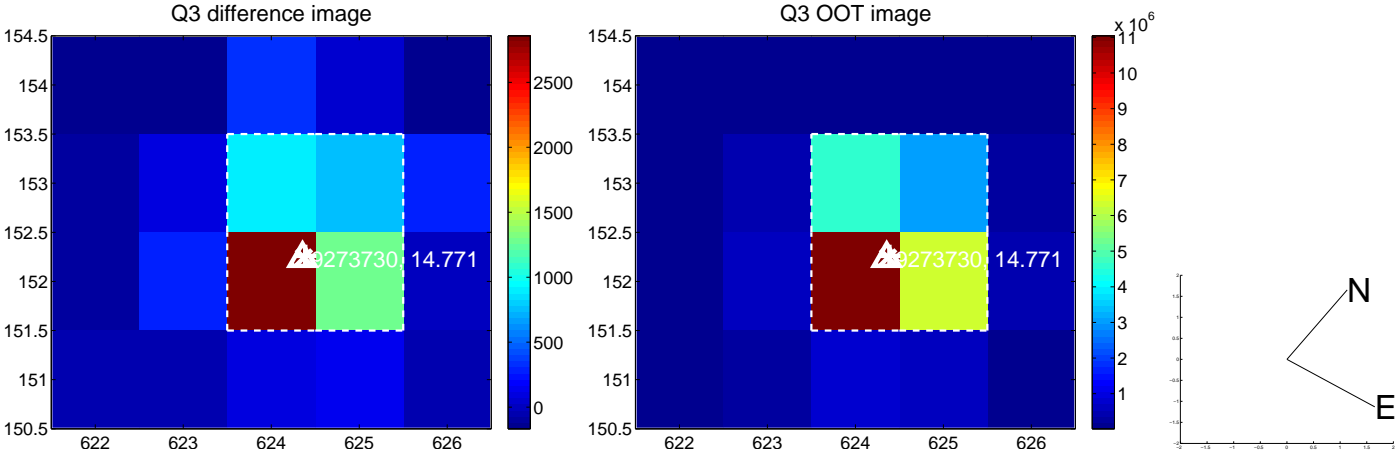
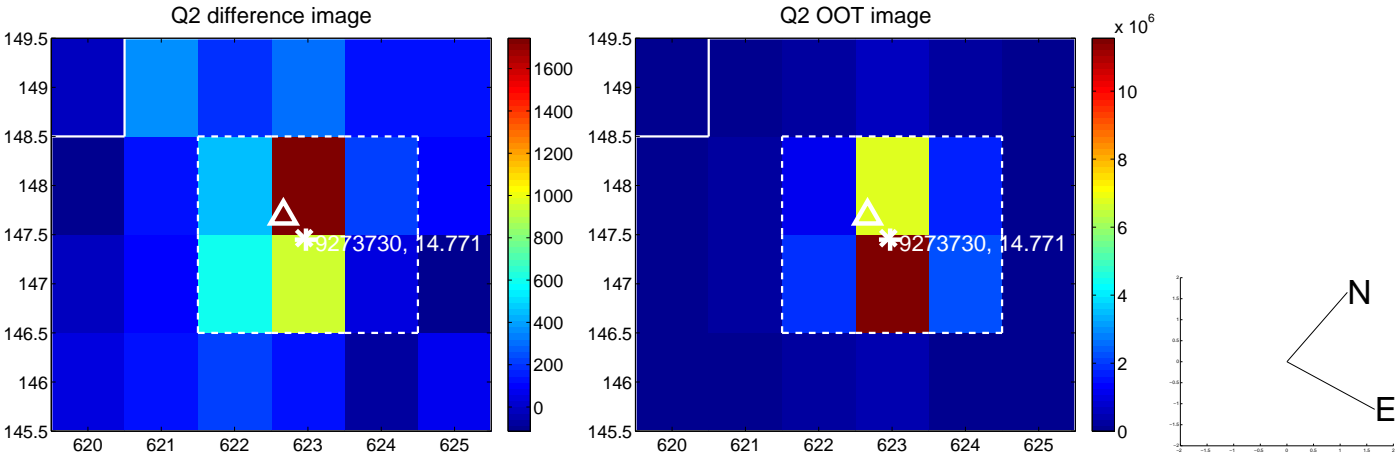
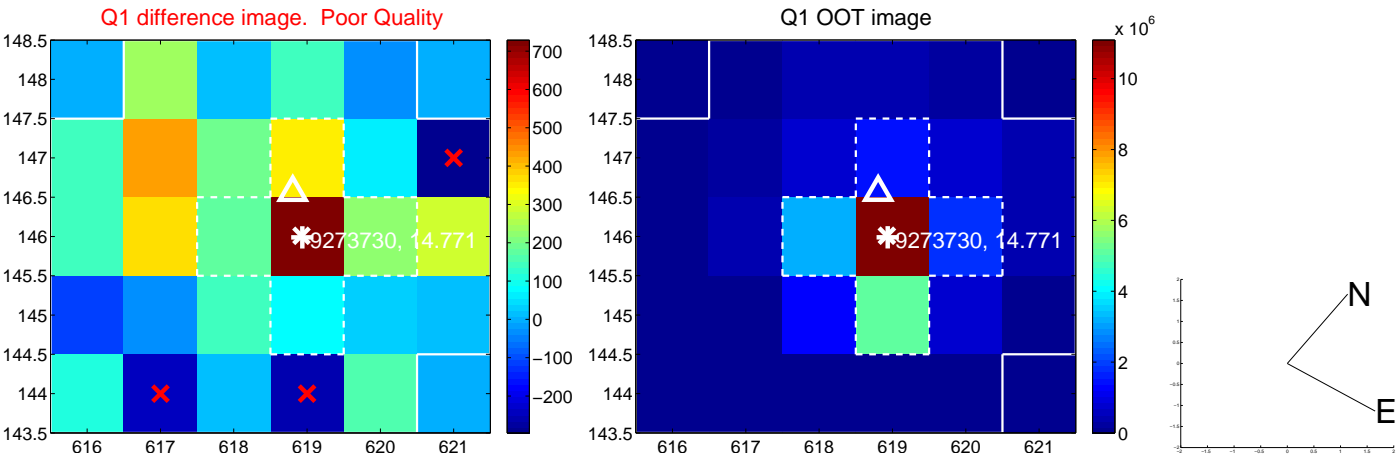
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.345 ± 0.305	1.13	-0.048 ± 0.229	-0.342 ± 0.306
PRF-fit source offset from KIC position	0.326 ± 0.299	1.09	-0.008 ± 0.232	-0.326 ± 0.300
photometric centroid source offset	2.39 ± 1.05	2.27	-1.42 ± 0.99	-1.92 ± 1.08

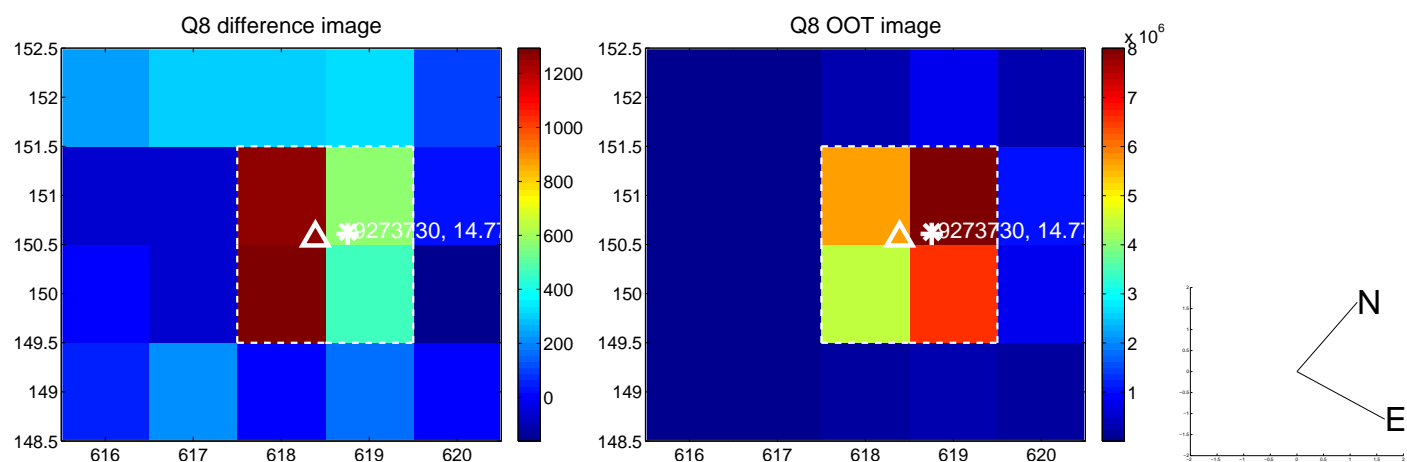
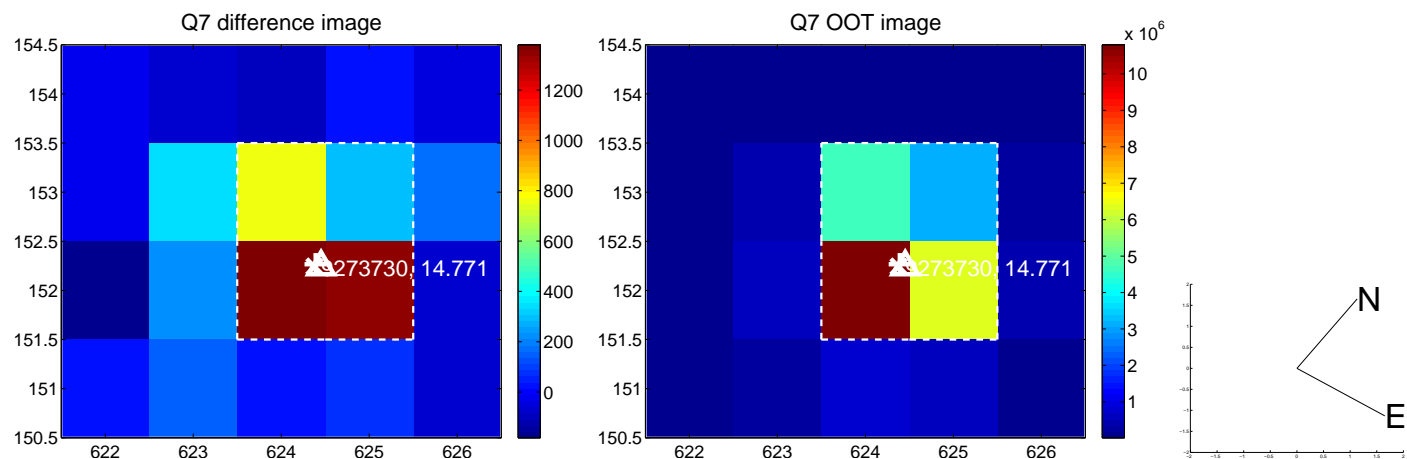
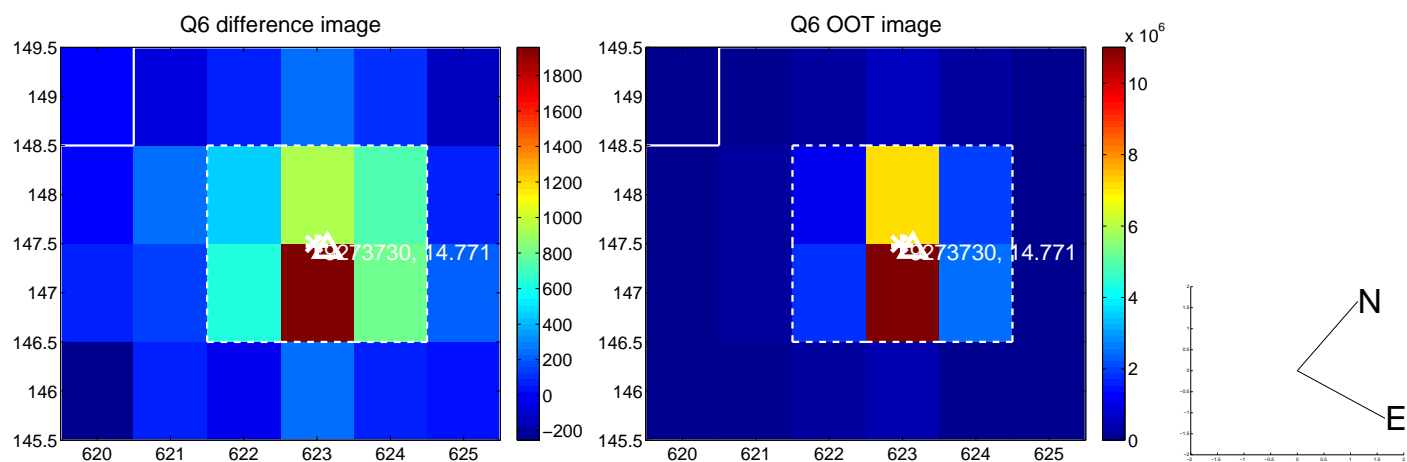
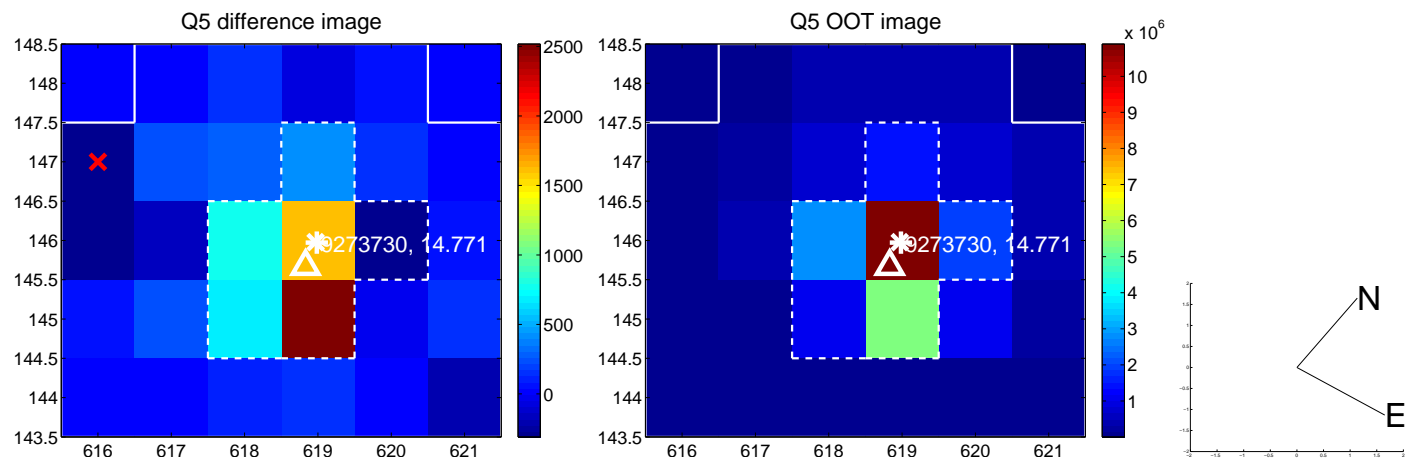


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

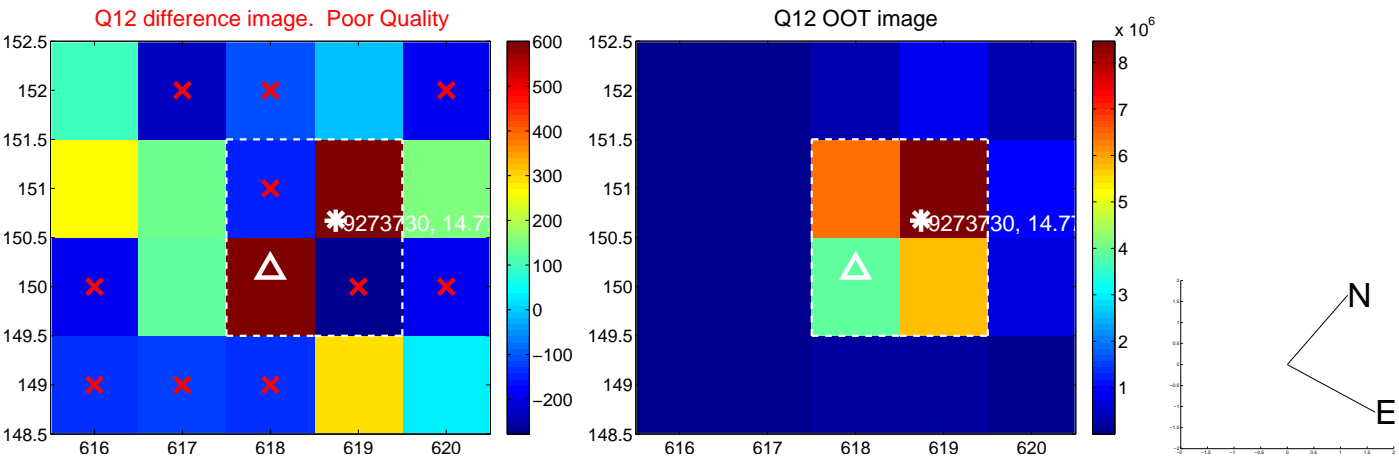
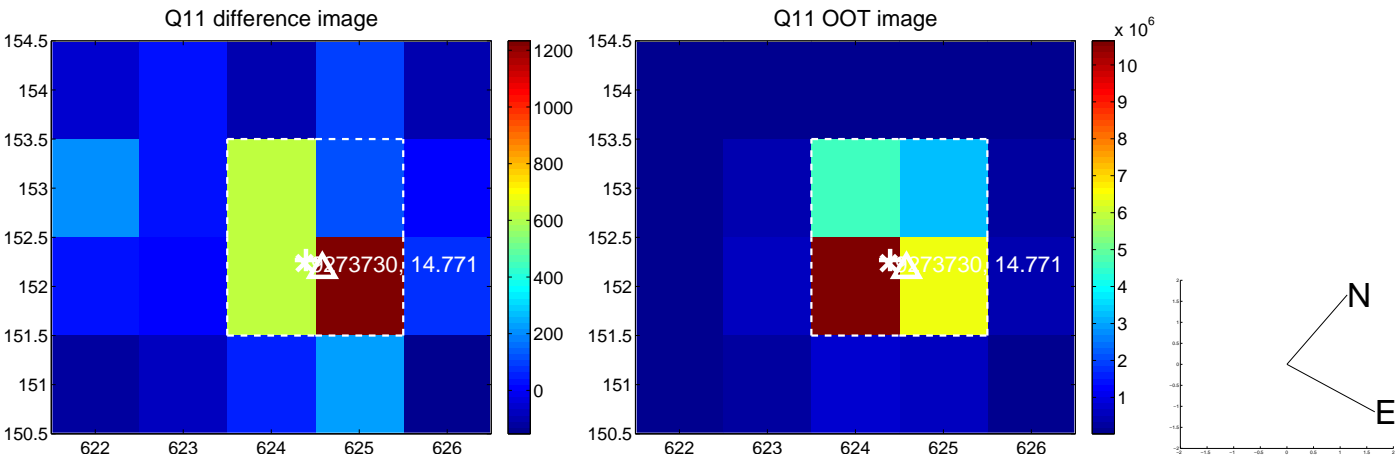
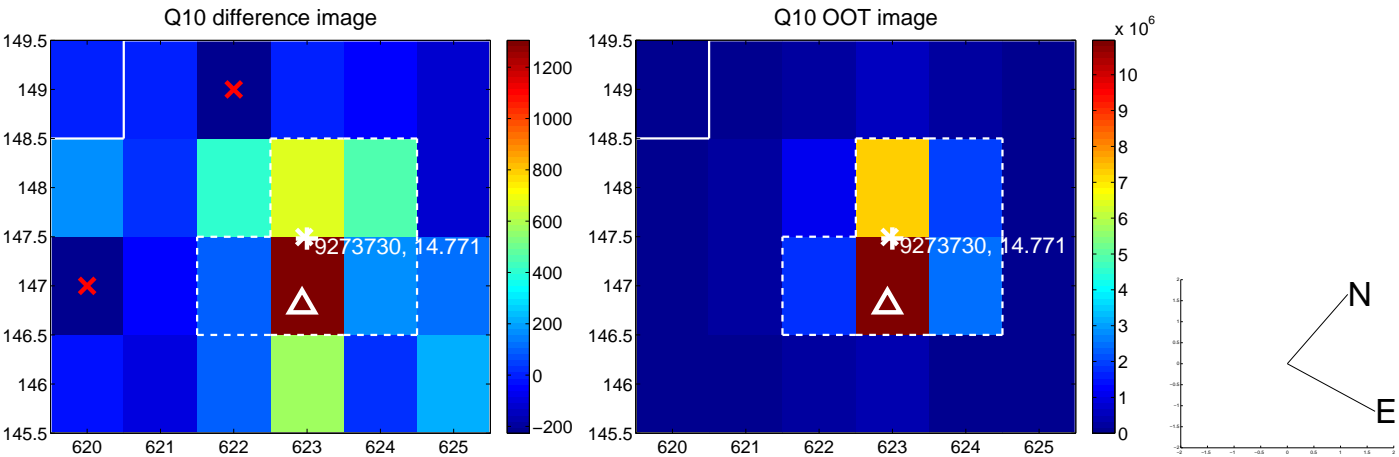
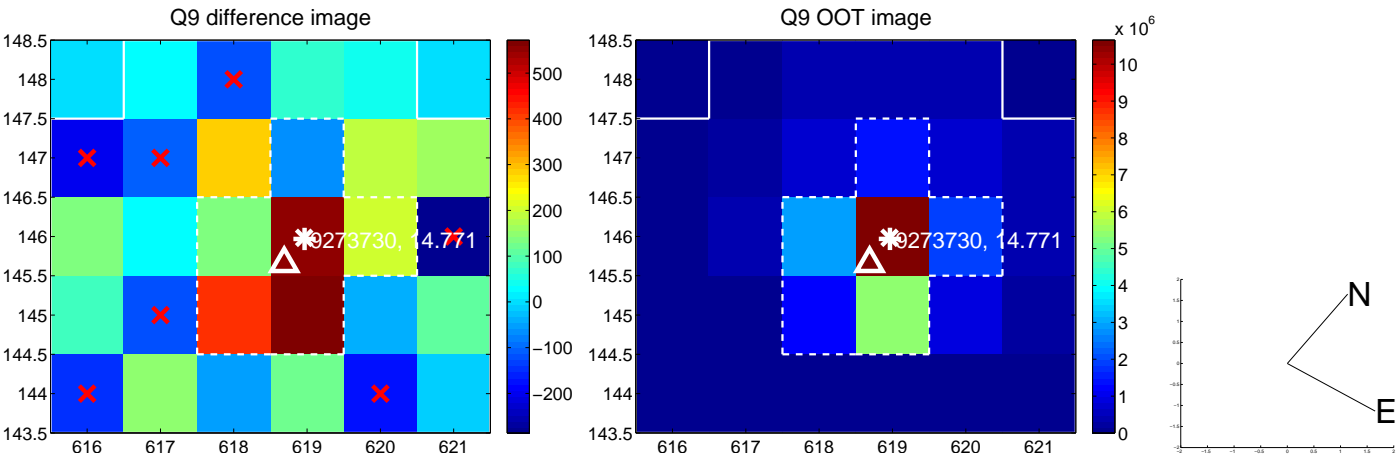
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



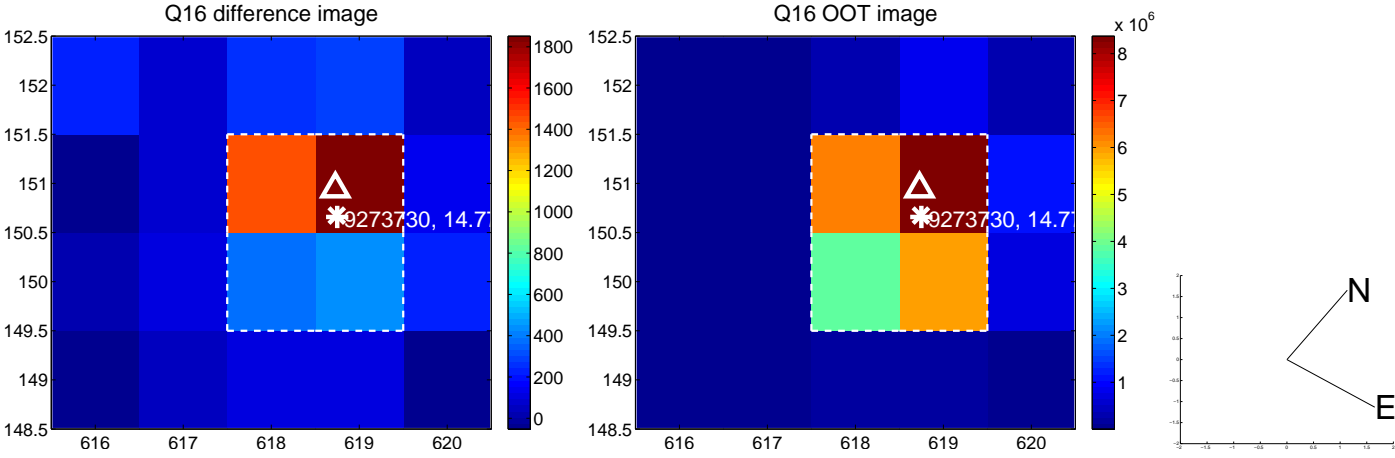
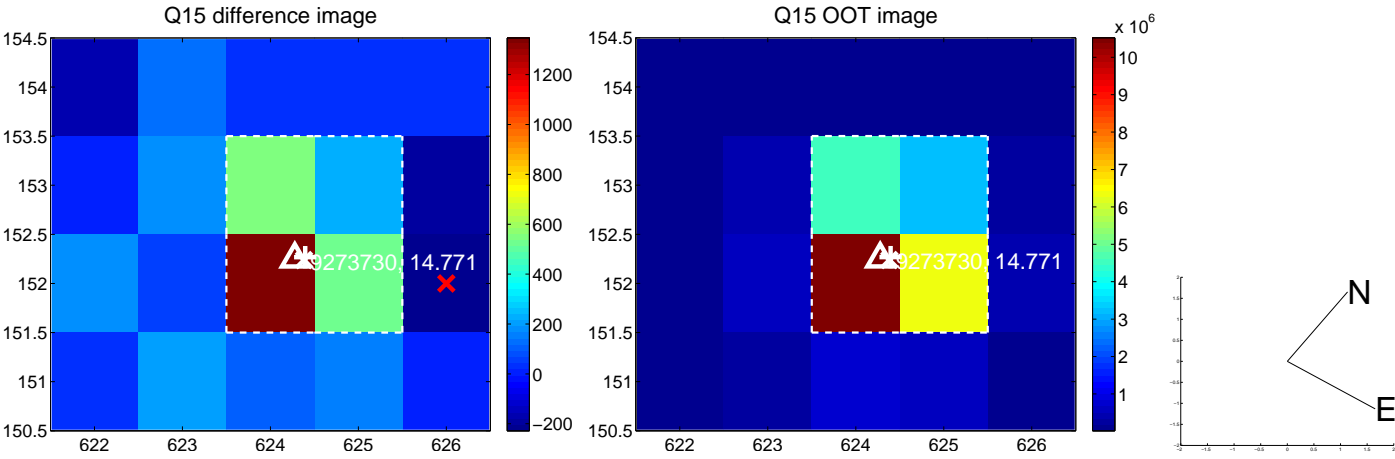
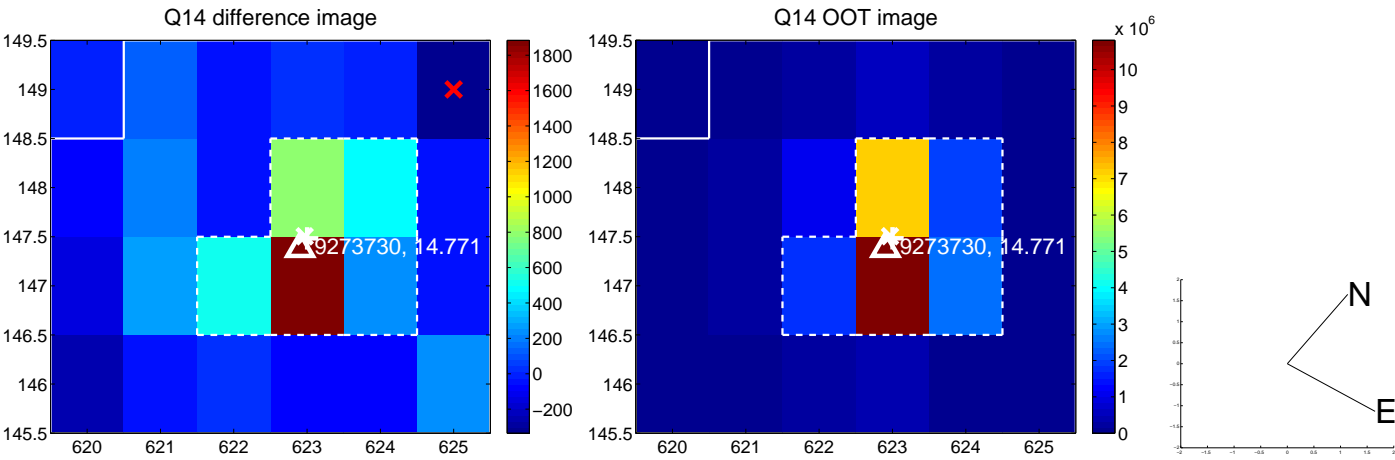
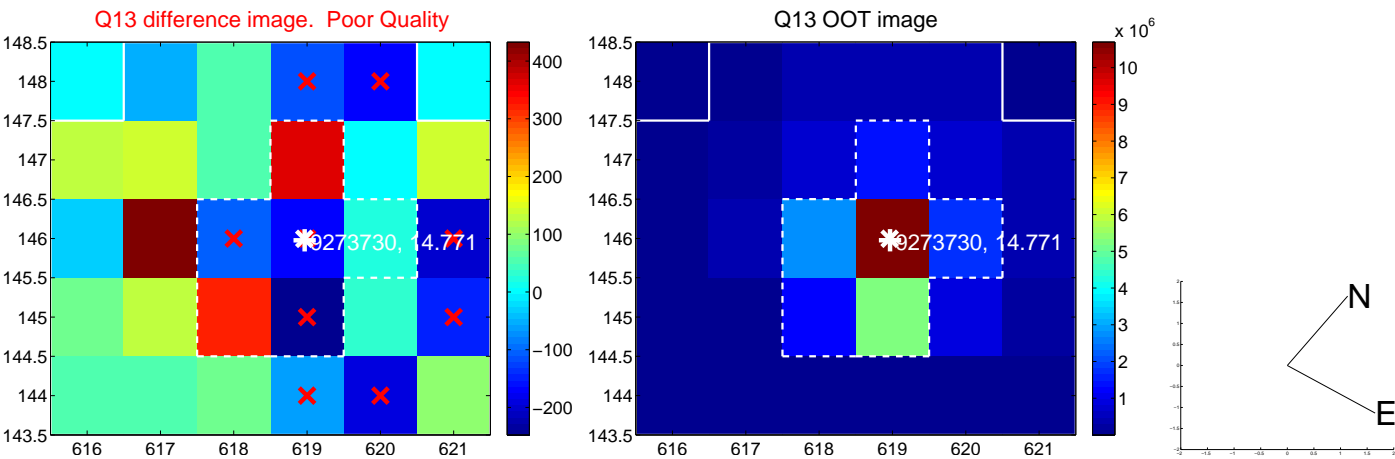
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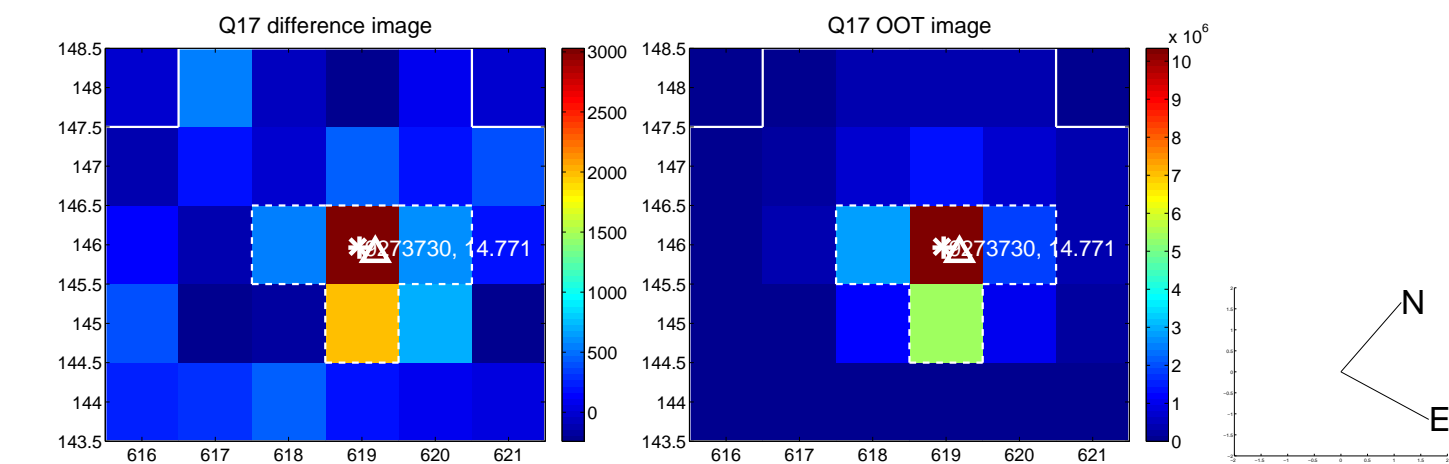
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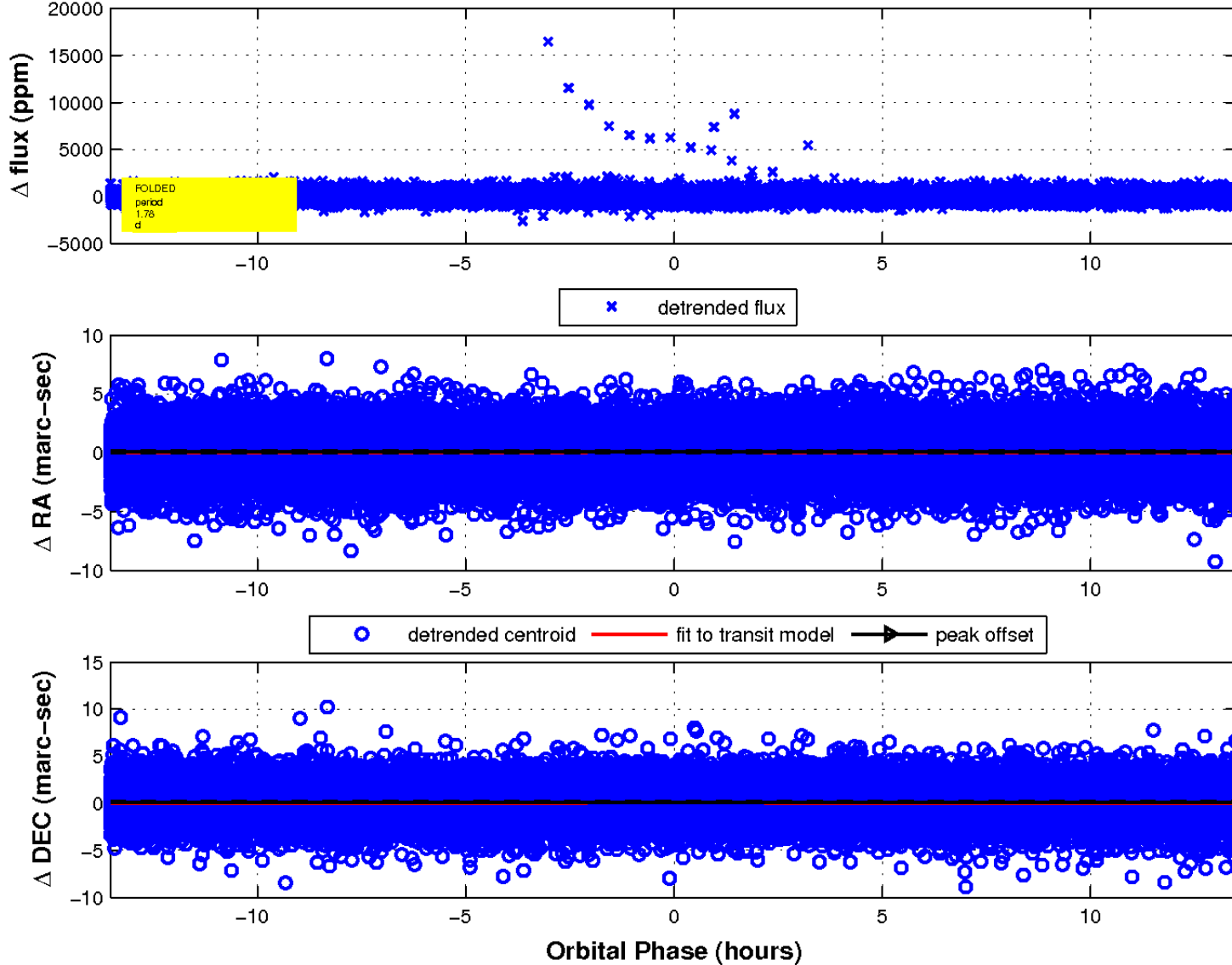
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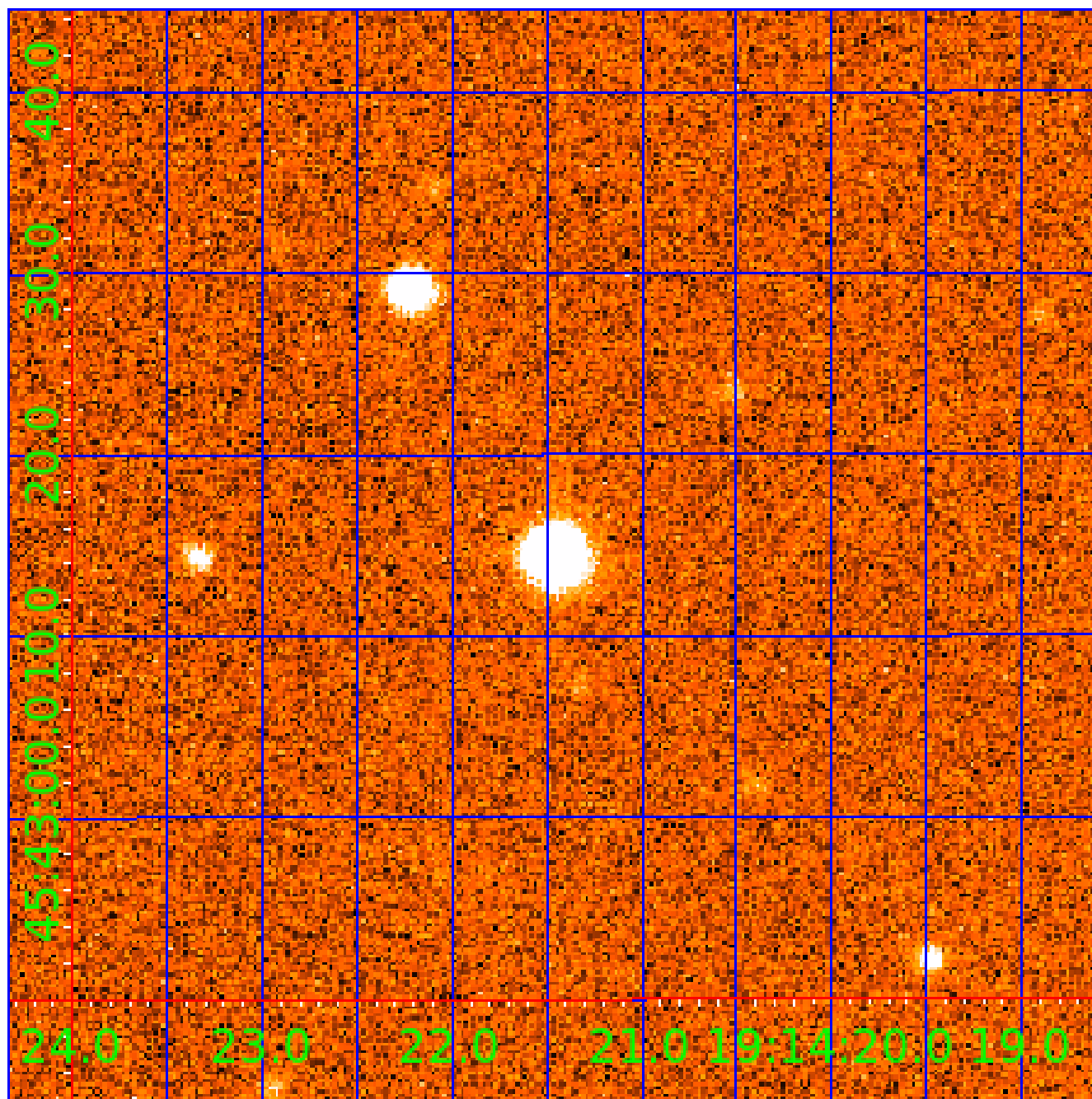


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 009273730

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})
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Robovetter Results

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009273730-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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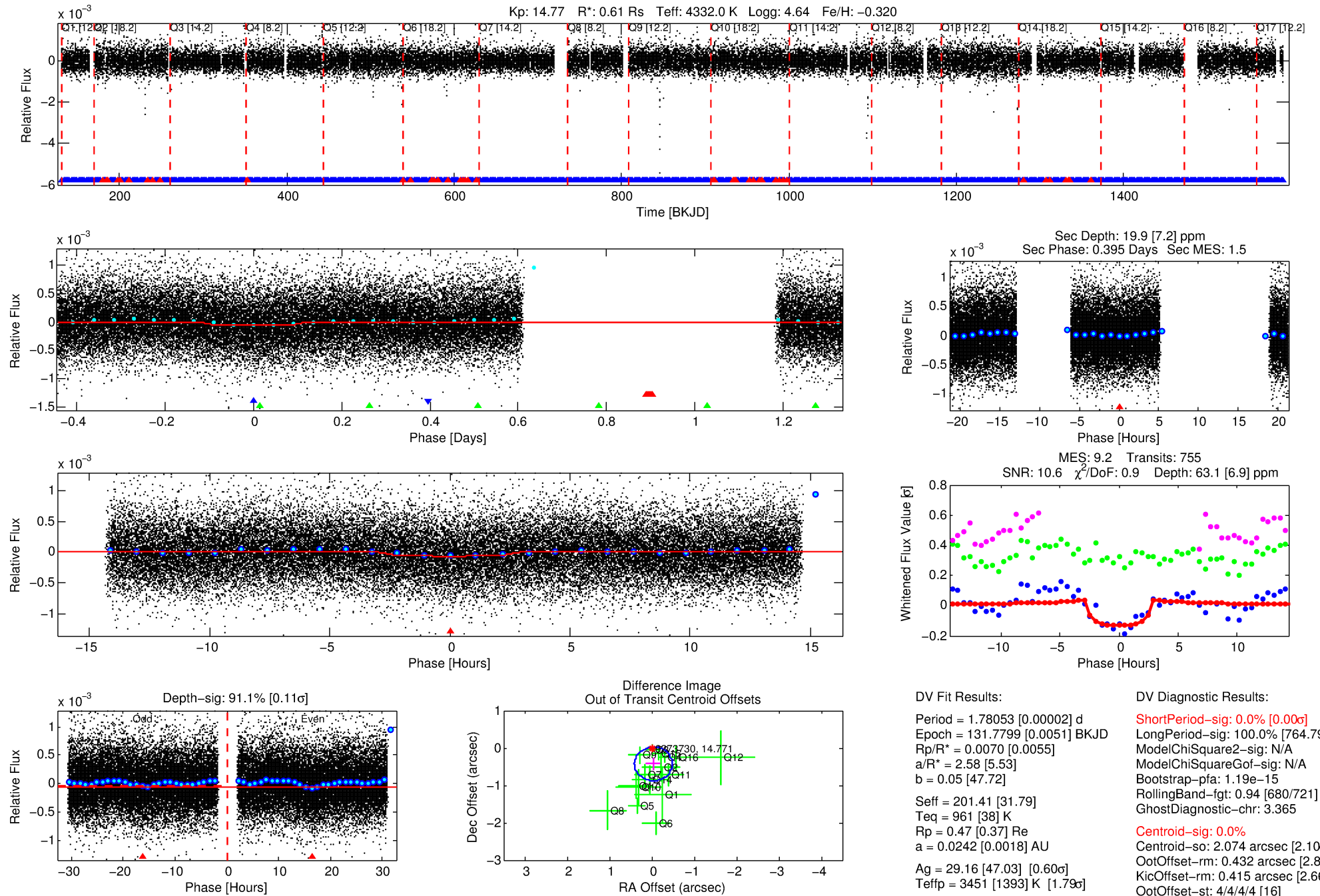
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009273730-02

No Significant Match Found

DV One-Page Summary

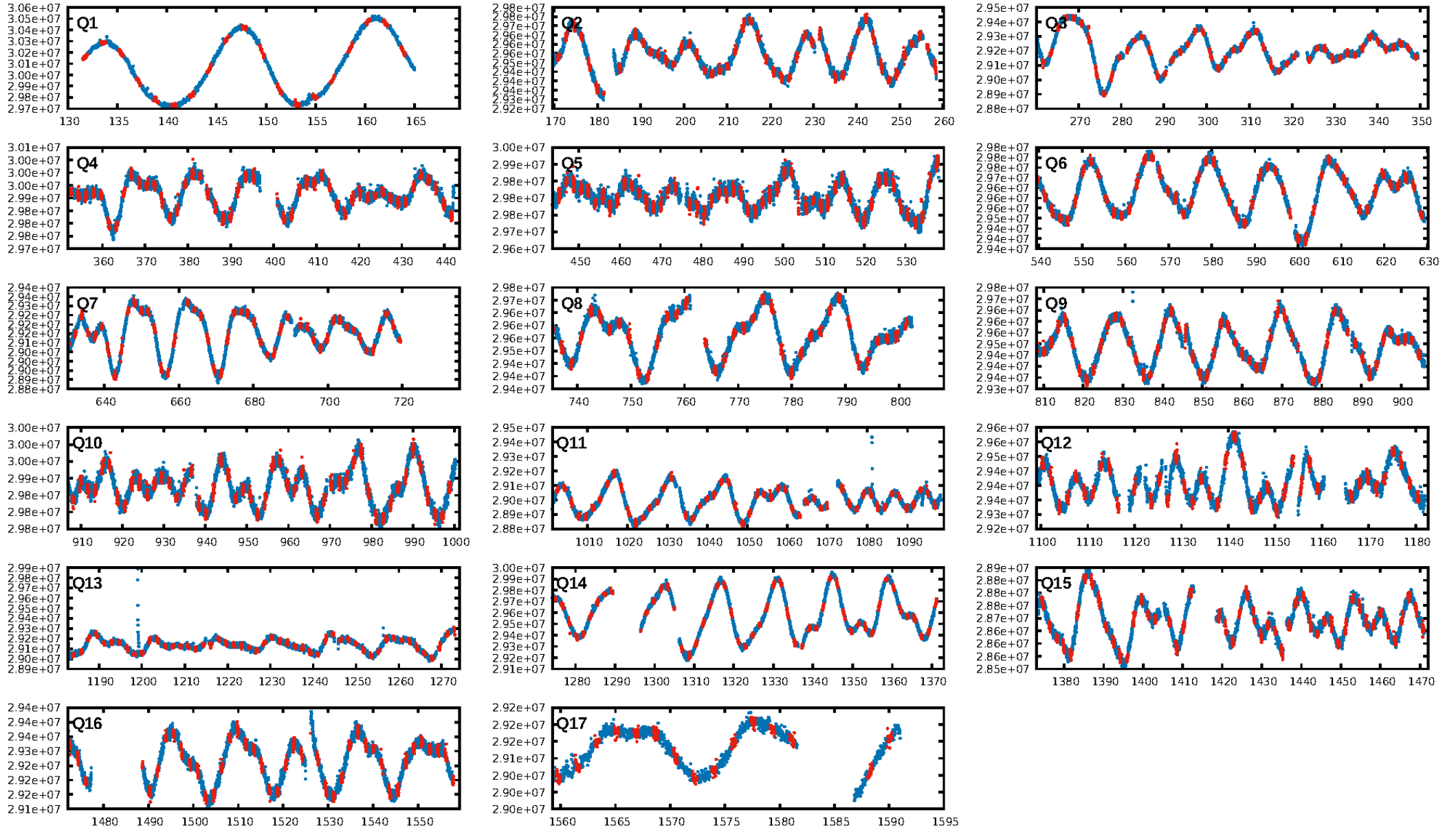
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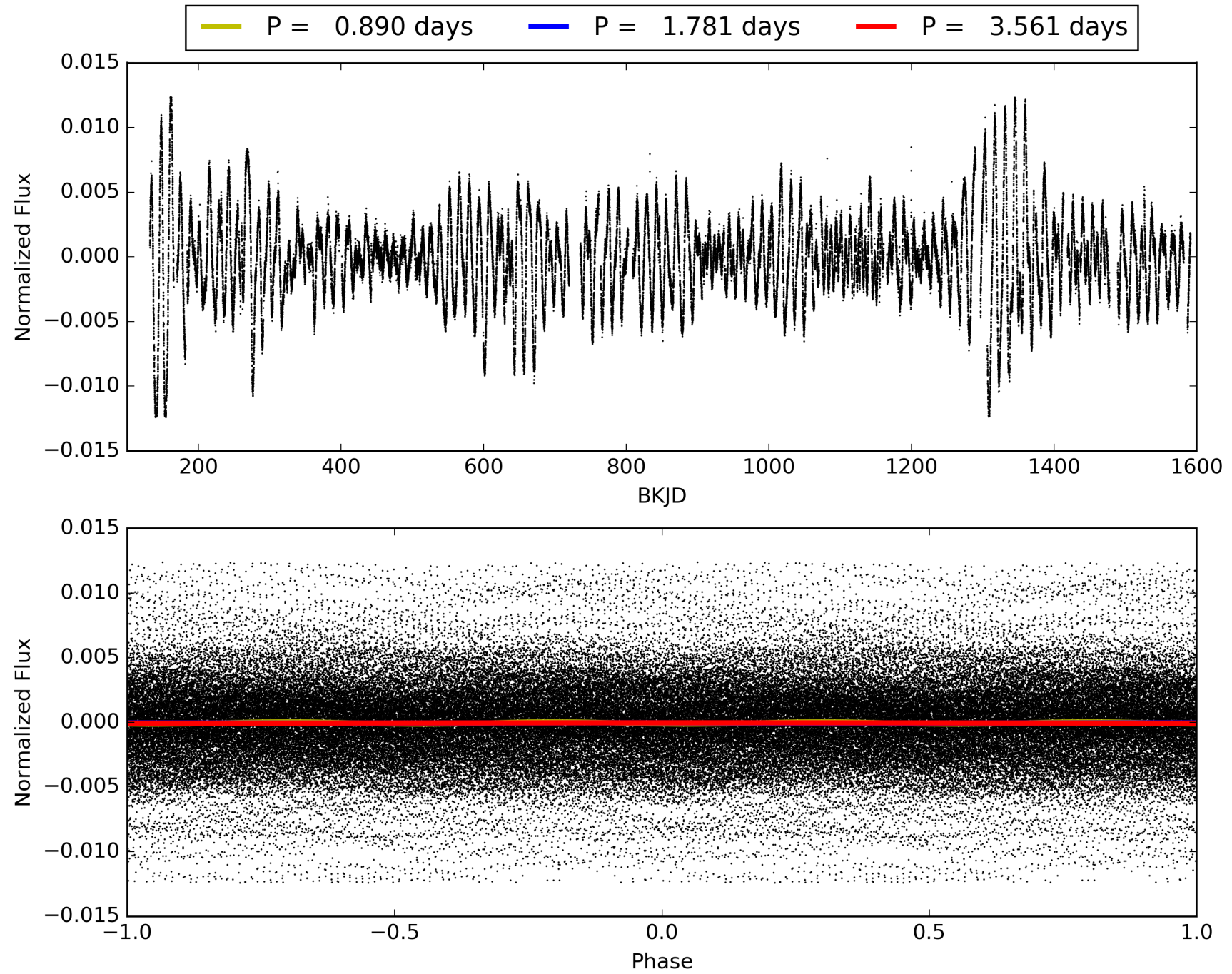
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009273730-02, PDC Light Curves

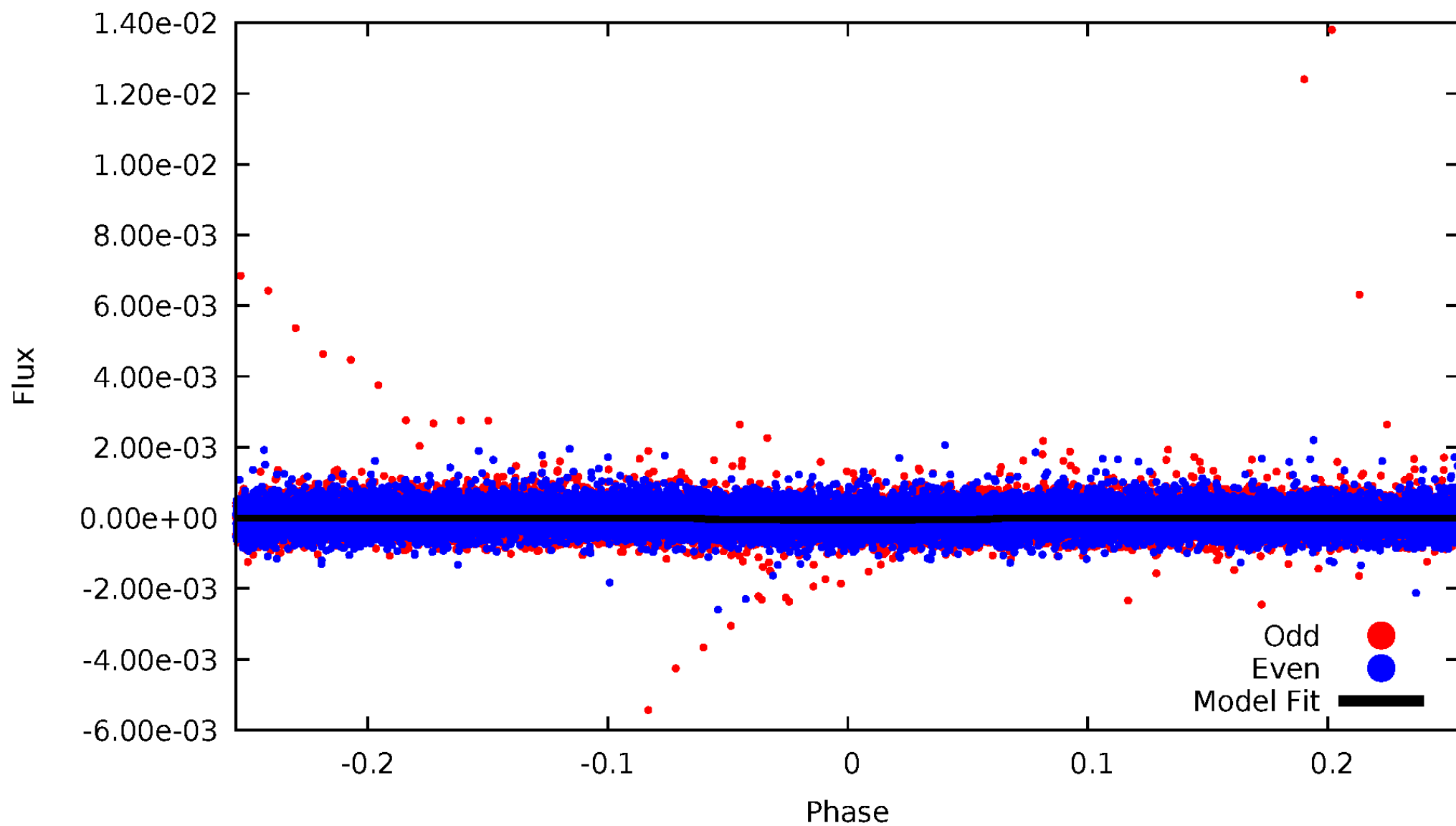


TCE 009273730-02



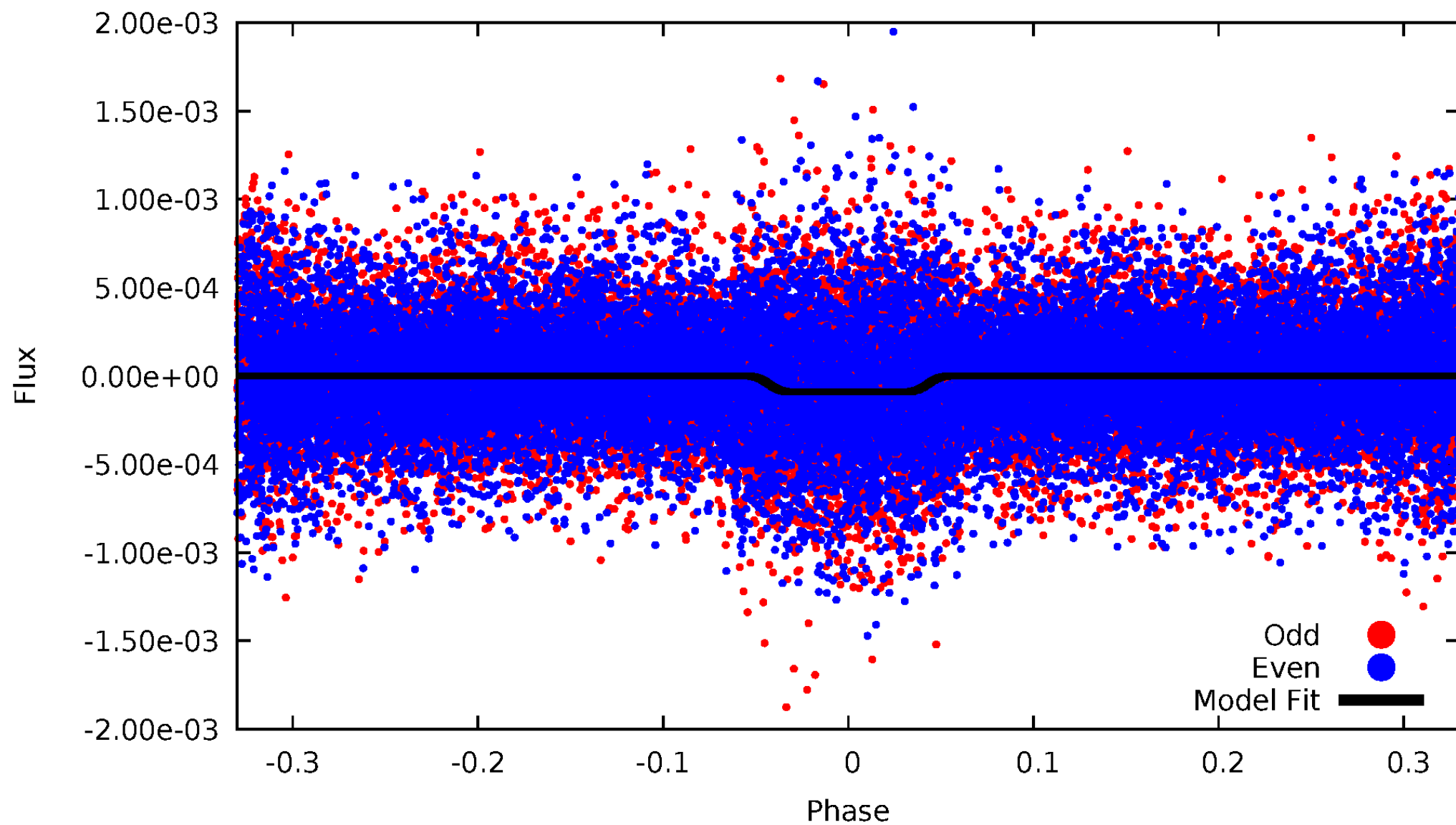
DV Odd/Even

TCE 009273730-02



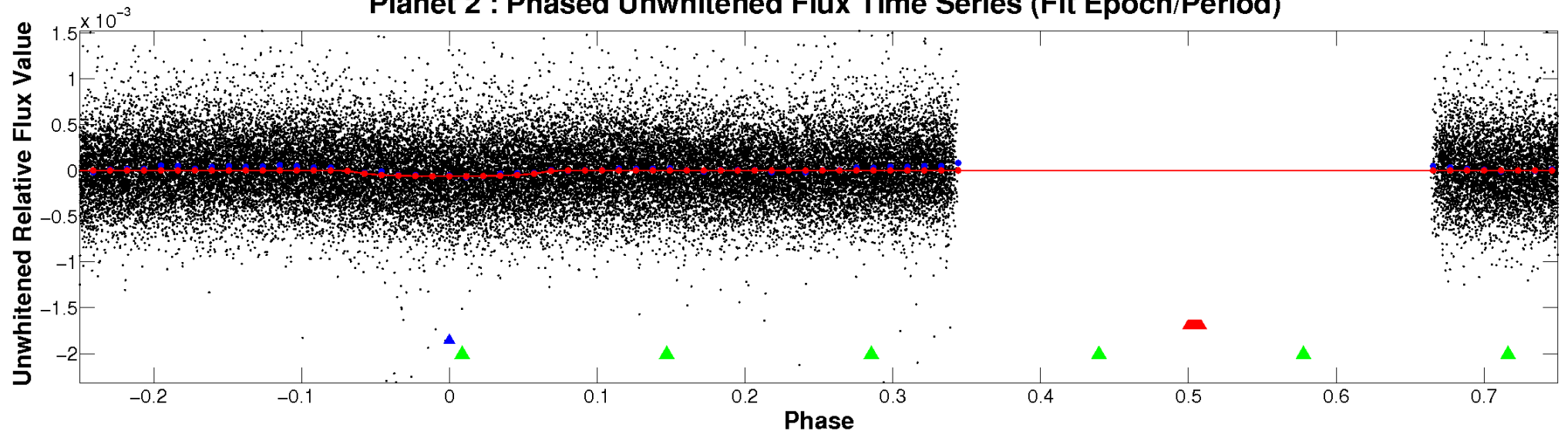
ALT Odd/Even

TCE 009273730-02

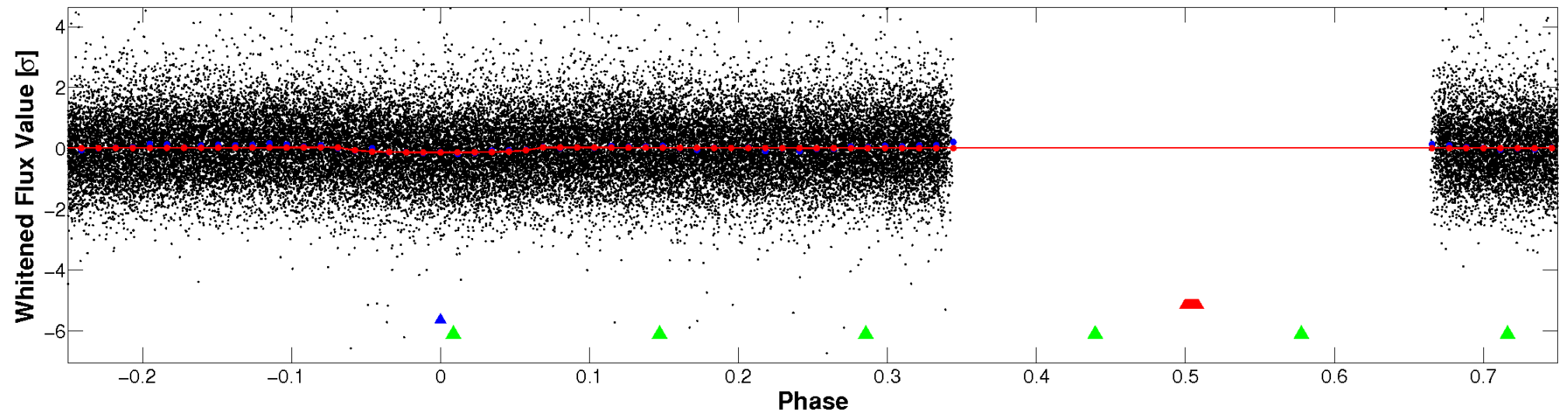


Non-Whitened Vs. Whitened Light Curve

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

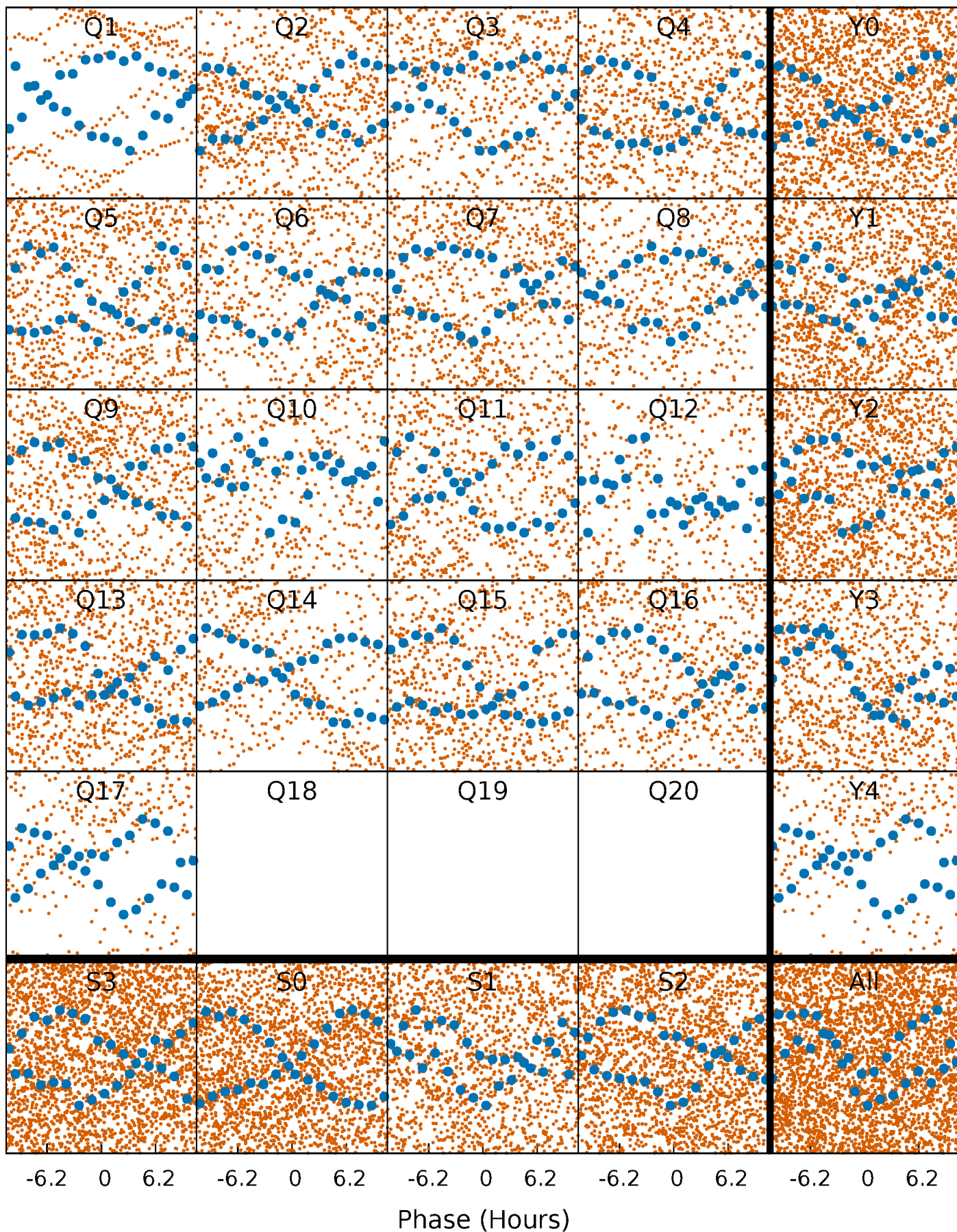


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



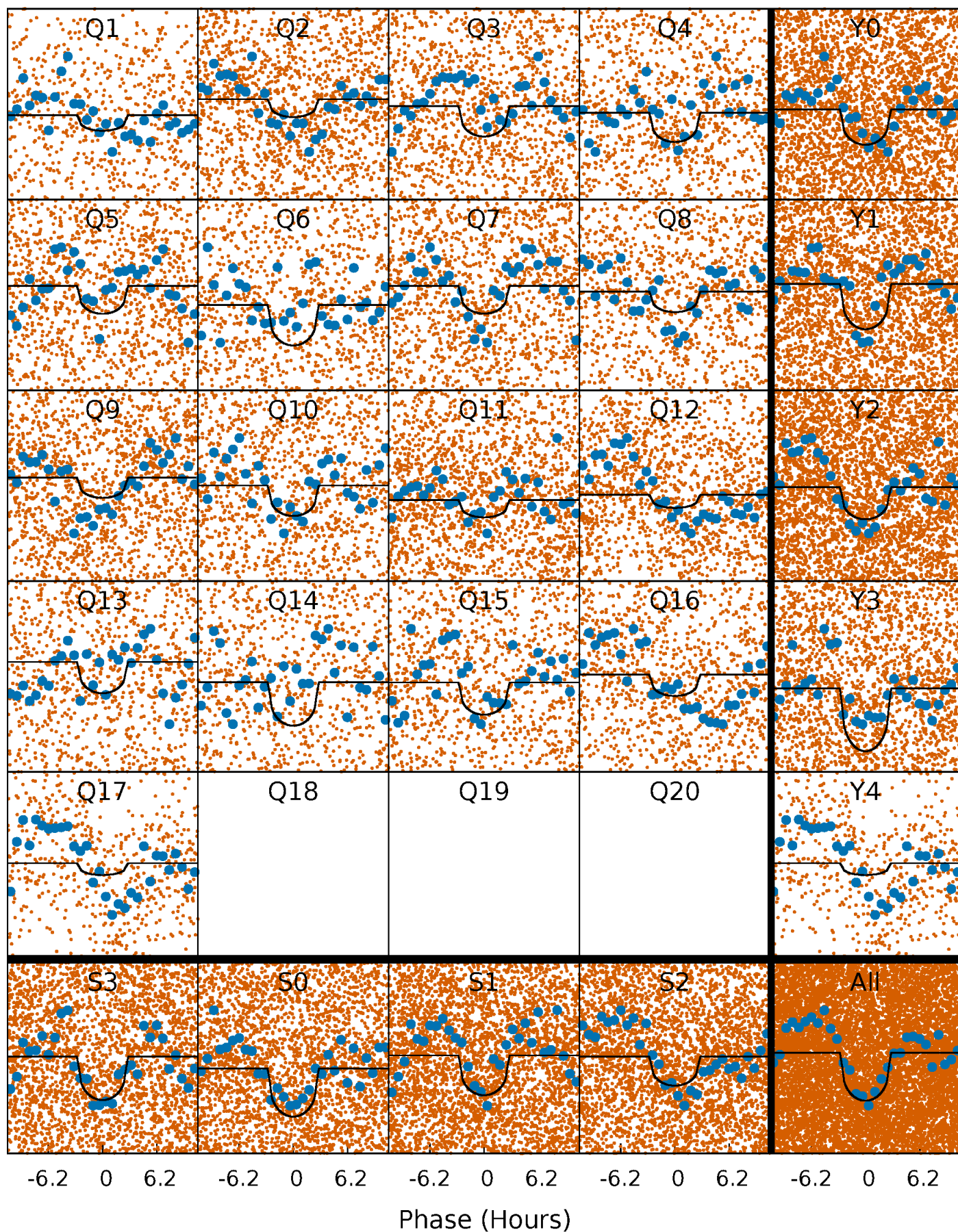
PDC Quarter-Phased Transit Curves

TCE 009273730-02 P= 1.780531 Days $T_0=131.779907$ (BKJD)



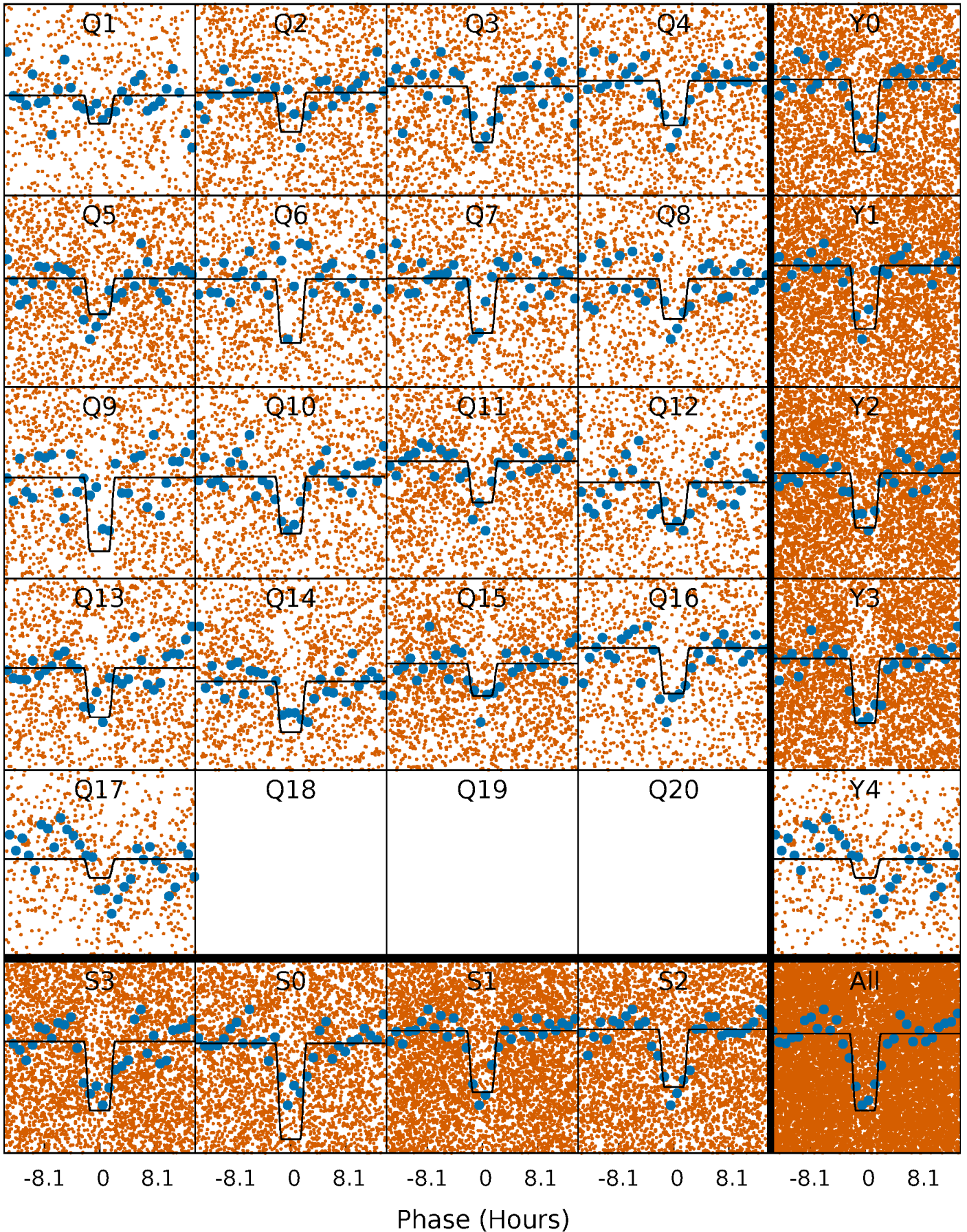
DV Quarter-Phased Transit Curves

TCE 009273730-02 P= 1.780531 Days $T_0=131.779907$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

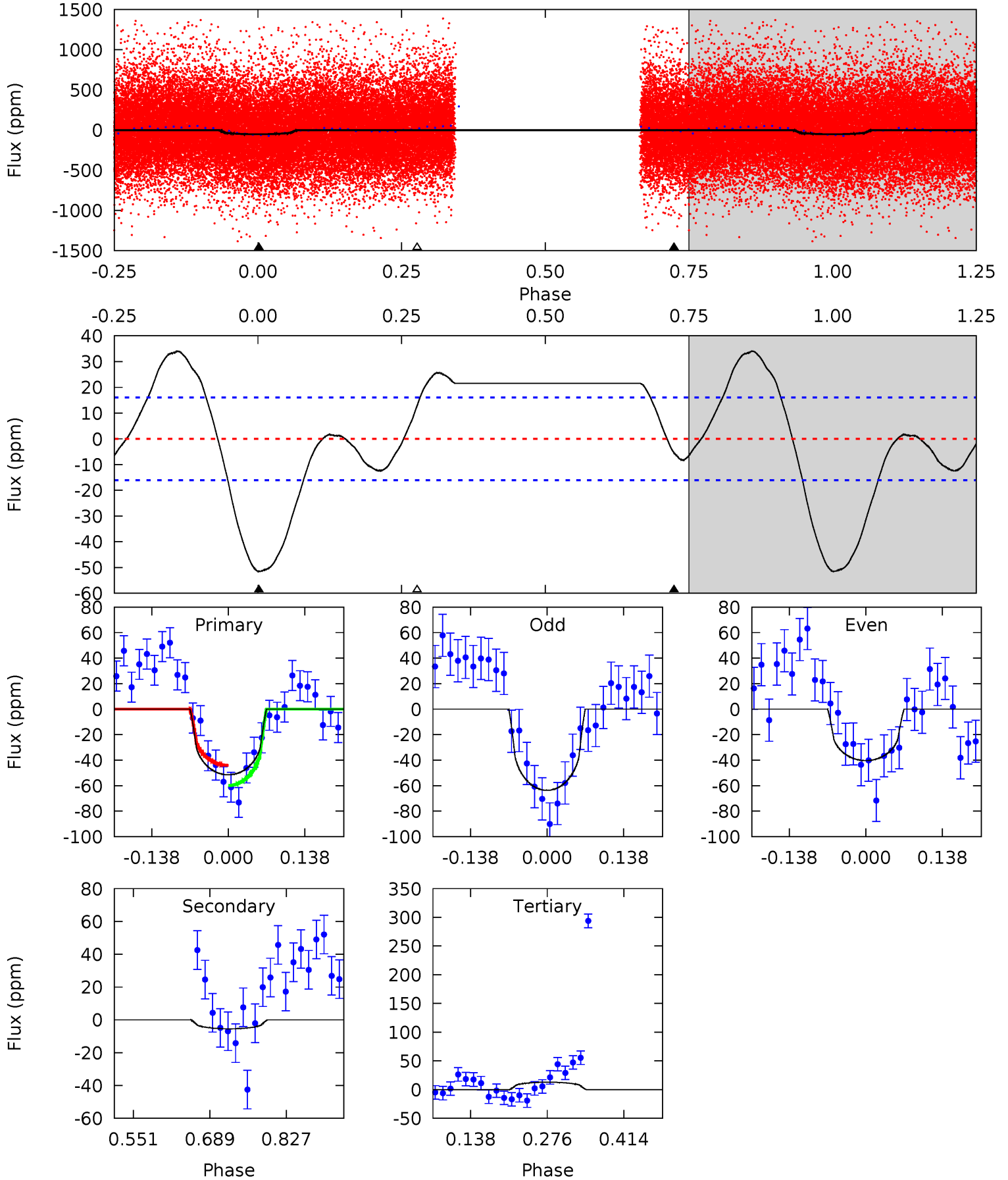
TCE 009273730-02 P= 1.780451 Days $T_0=131.819657$ (BKJD)



DV Model-Shift Uniqueness Test

009273730-02, P = 1.780531 Days, E = 129.999376 Days

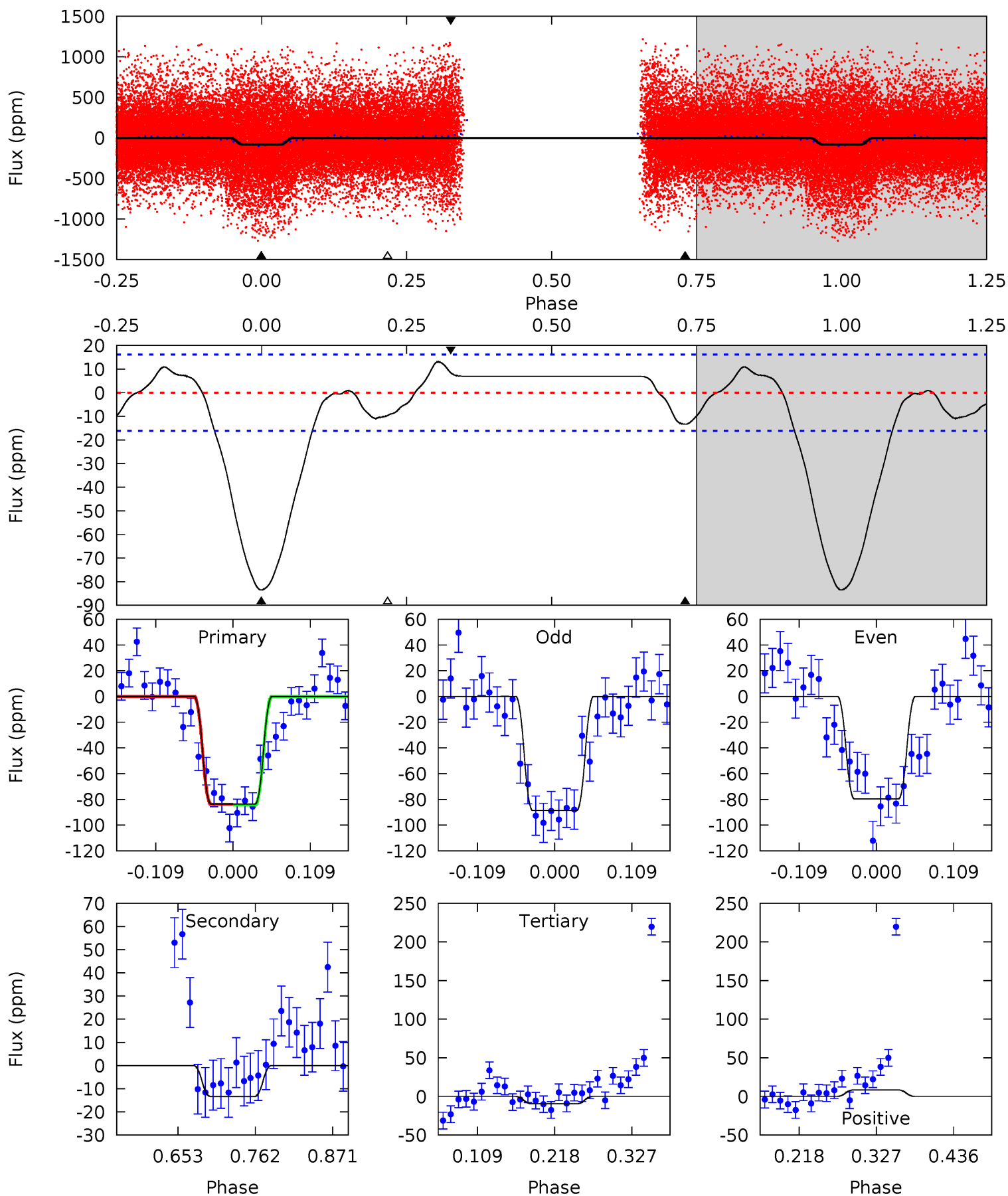
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	1.53	-3.60	0	4.50	1.48	3.89	18.0	14.4	5.13	1.53	3.27	1.17	0.40	2.20



Alt Model-Shift Uniqueness Test

009273730-02, P = 1.780451 Days, E = 130.039206 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	3.76	2.71	2.38	4.55	1.60	2.04	20.8	21.1	1.05	1.38	1.27	1.16	0.14	0.08



Stellar Parameters For KIC 009273730

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4332^{+130}_{-130}	$4.641^{+0.052}_{-0.024}$	$-0.320^{+0.300}_{-0.300}$	$0.612^{+0.044}_{-0.059}$	$0.597^{+0.067}_{-0.049}$	$3.676^{+0.925}_{-0.442}$
	+3%/-3%	+1%/-1%	+94%/-94%	+7%/-10%	+11%/-8%	+25%/-12%
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 009273730-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5 ± 4	$0.50^{+0.35}_{-0.31}$	1334^{+45}_{-45}	2906^{+1003}_{-550}	$6.505^{+34.348}_{-4.992}$
Alt.	-13 ± 4	$0.63^{+0.38}_{-0.32}$	1333^{+42}_{-46}	3107^{+831}_{-418}	10^{+33}_{-6}

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

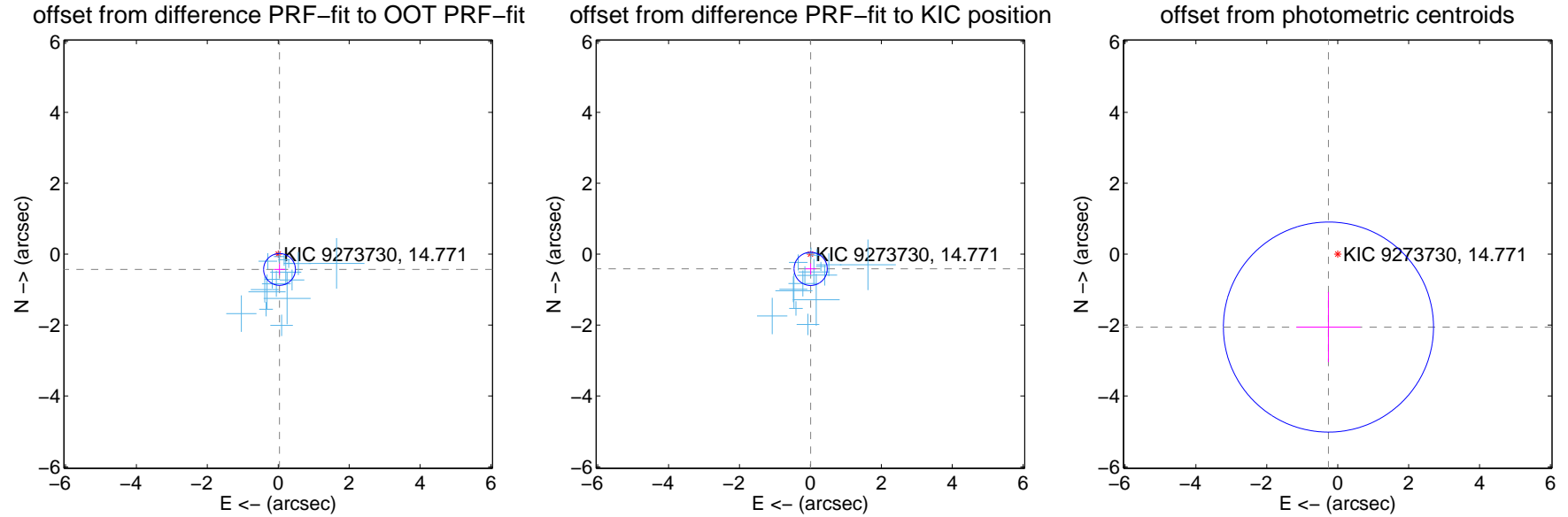
DV Centroid Data

Supplemental centroid analysis for 009273730-02. Kepler magnitude: 14.77. Transit SNR 10.59

There are 16 quarters with good PRF difference image offsets

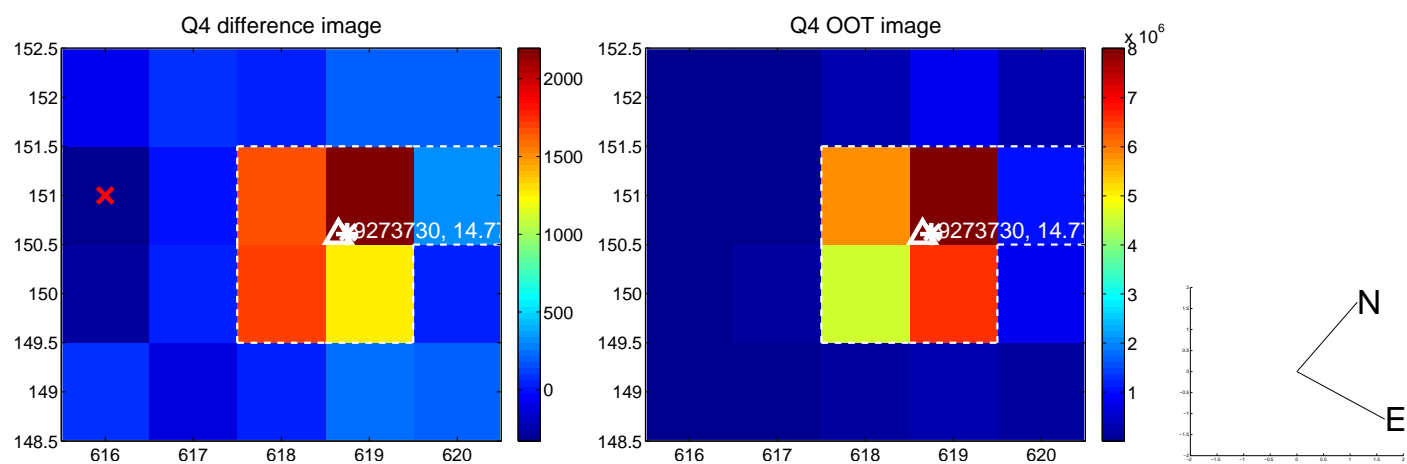
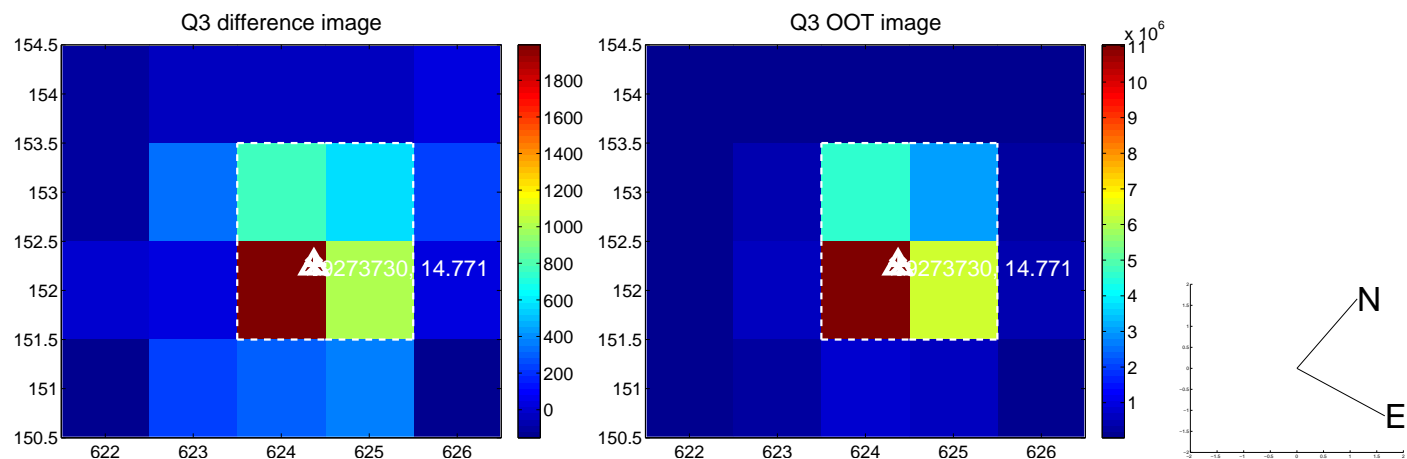
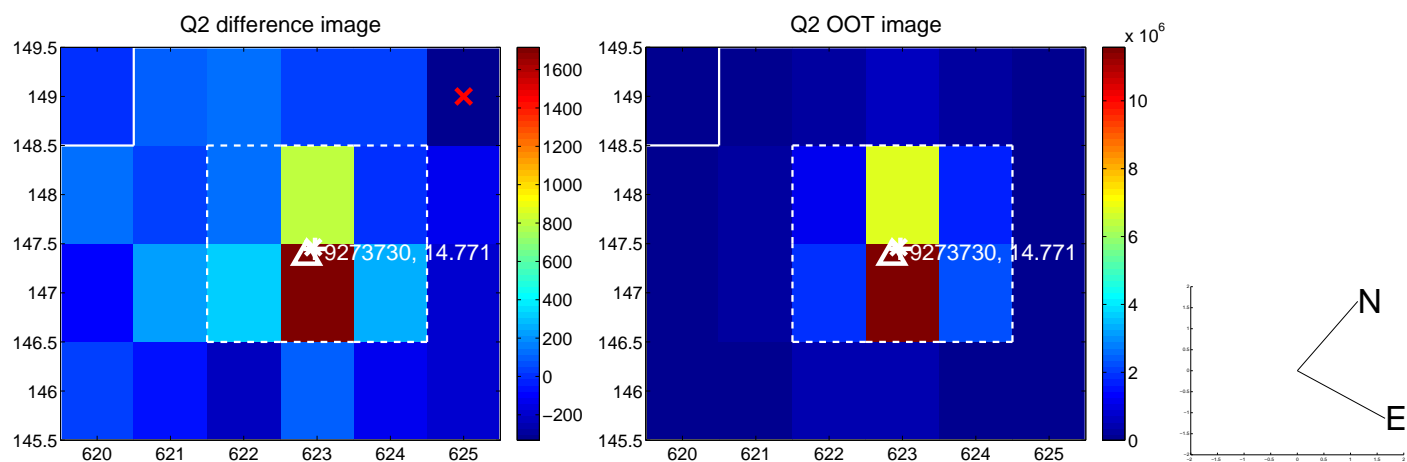
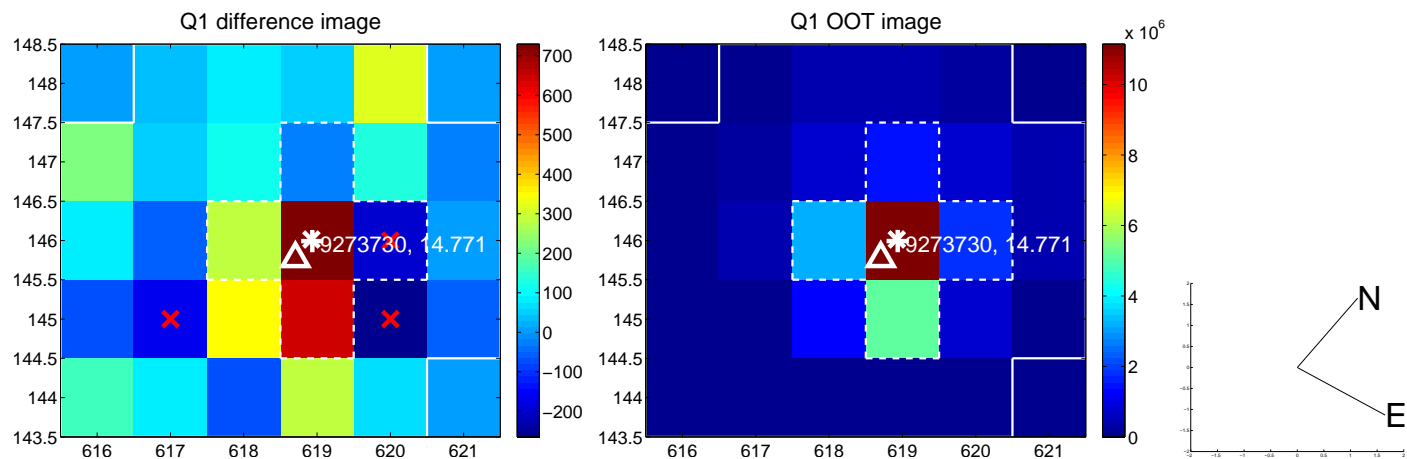
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.432 ± 0.150	2.89	-0.036 ± 0.159	-0.430 ± 0.155
PRF-fit source offset from KIC position	0.415 ± 0.156	2.66	-0.007 ± 0.150	-0.415 ± 0.157
photometric centroid source offset	2.07 ± 0.99	2.10	0.26 ± 0.90	-2.06 ± 0.99

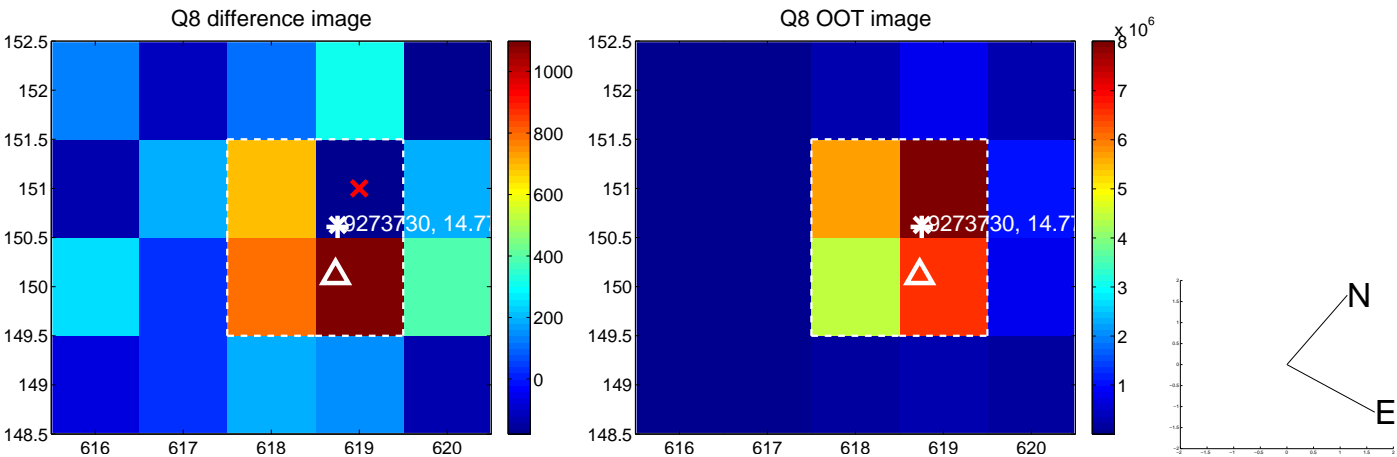
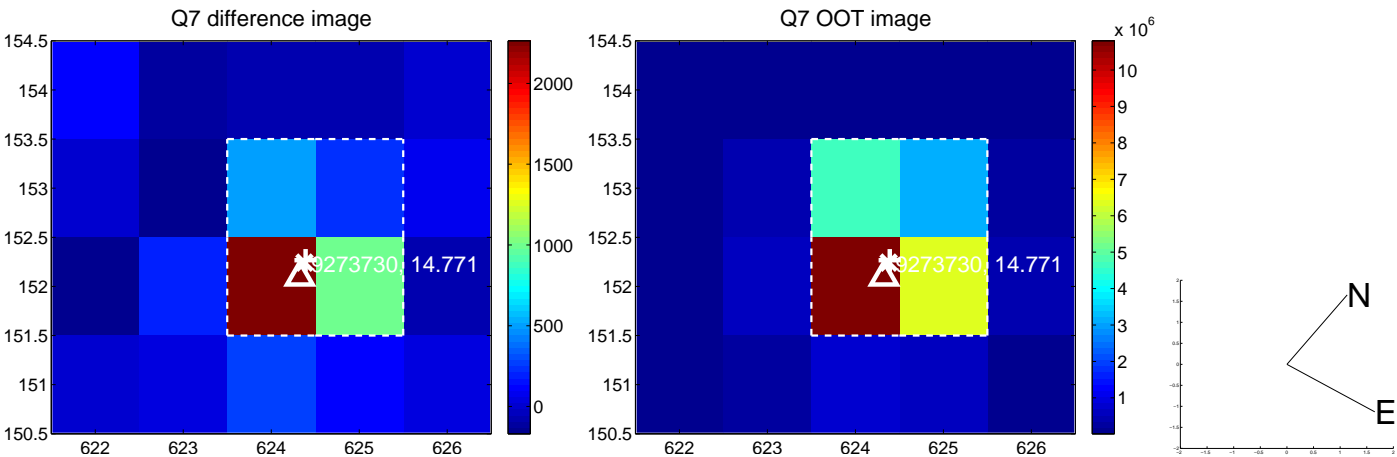
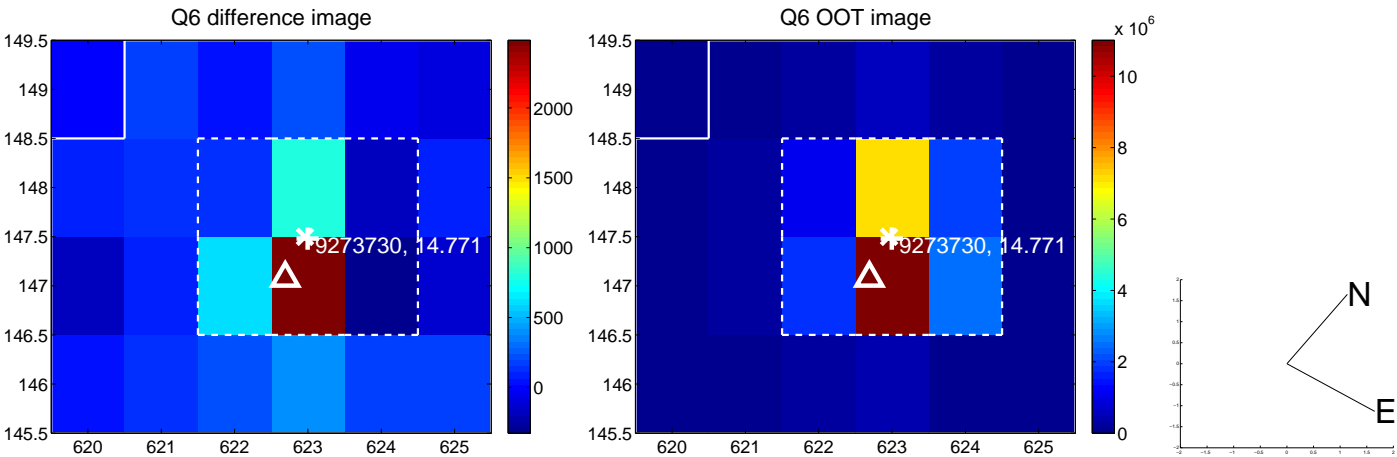
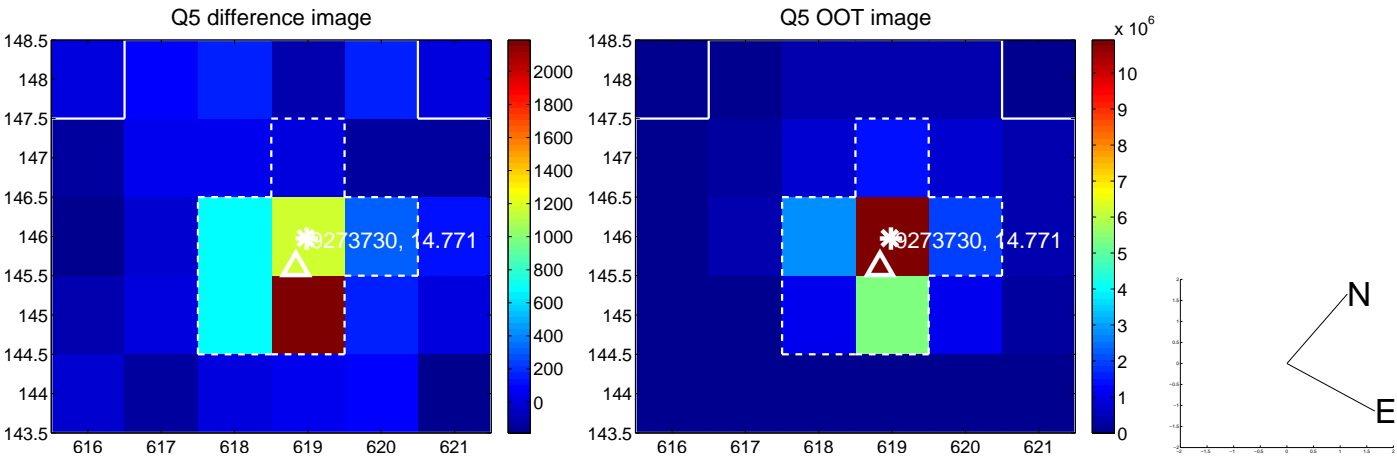


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

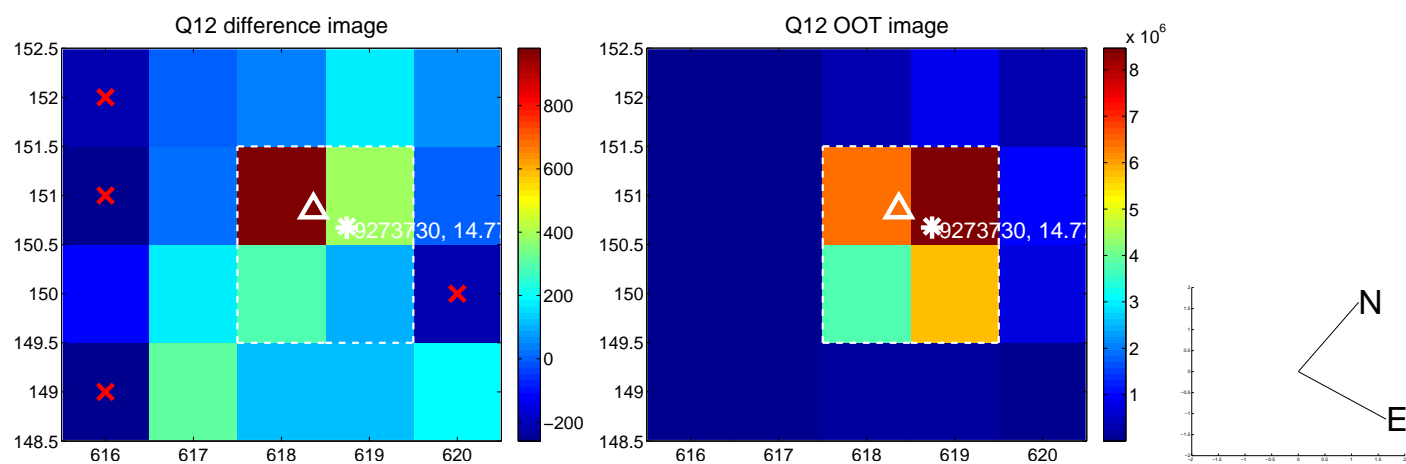
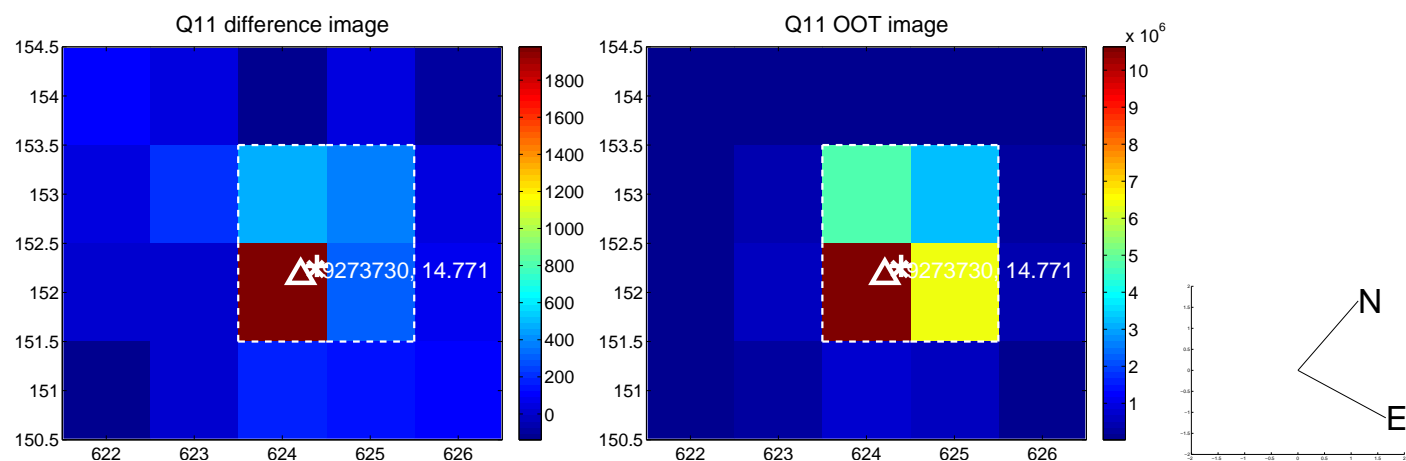
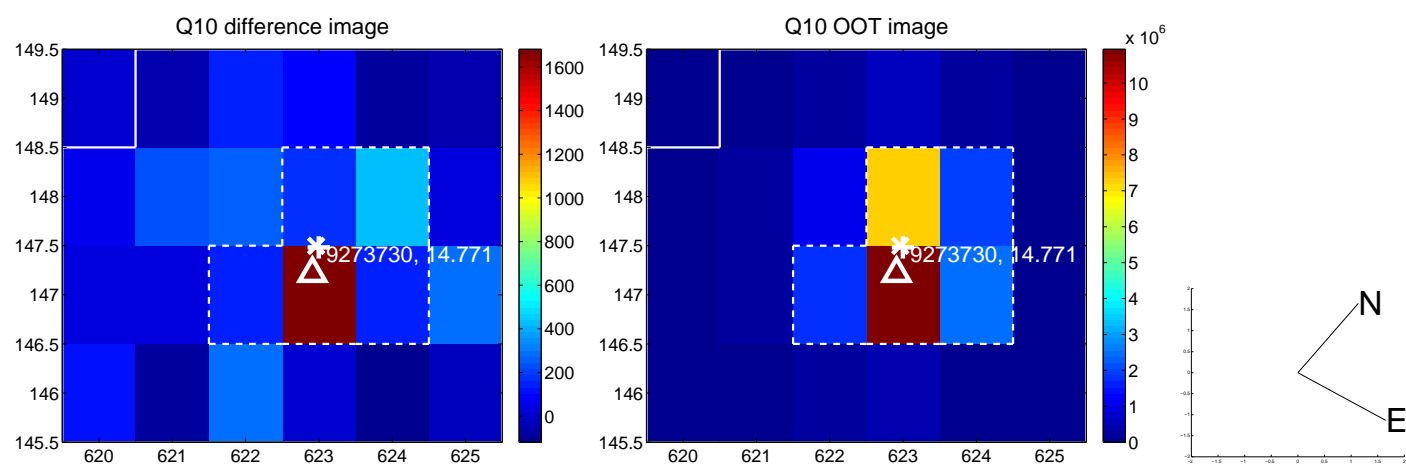
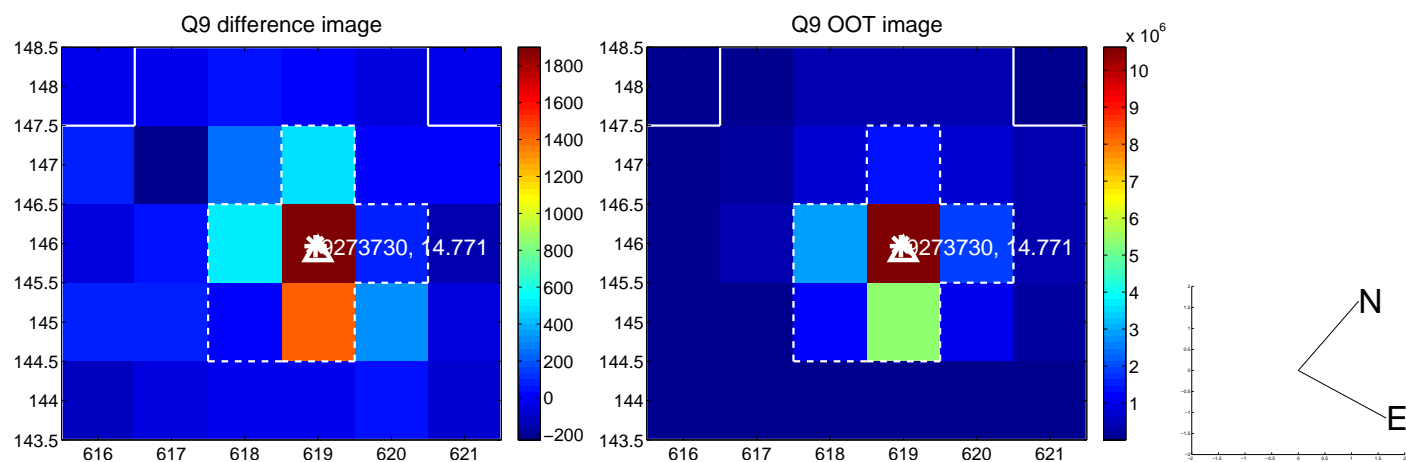
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



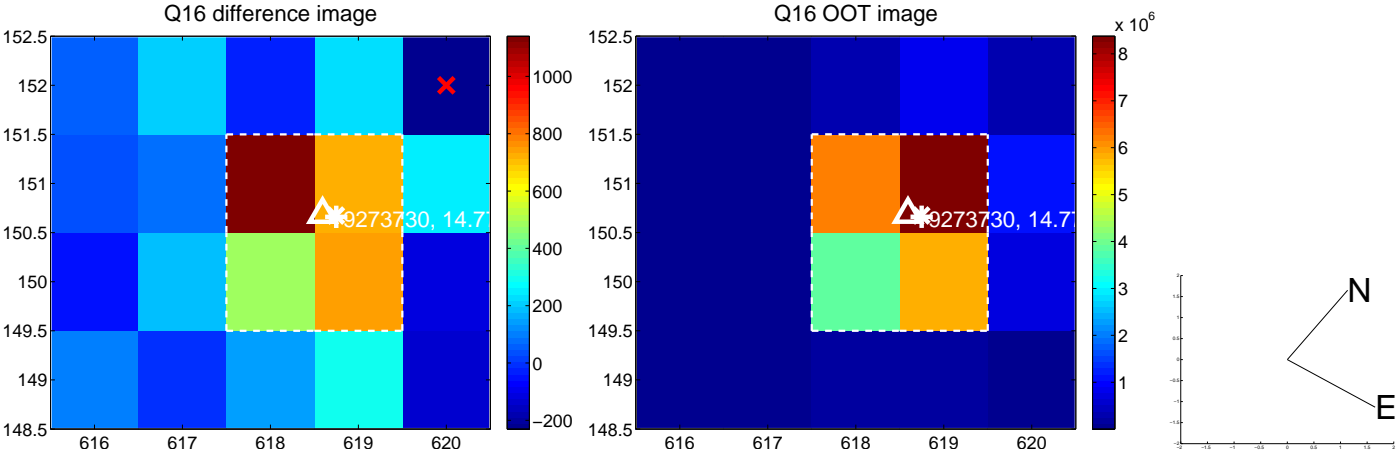
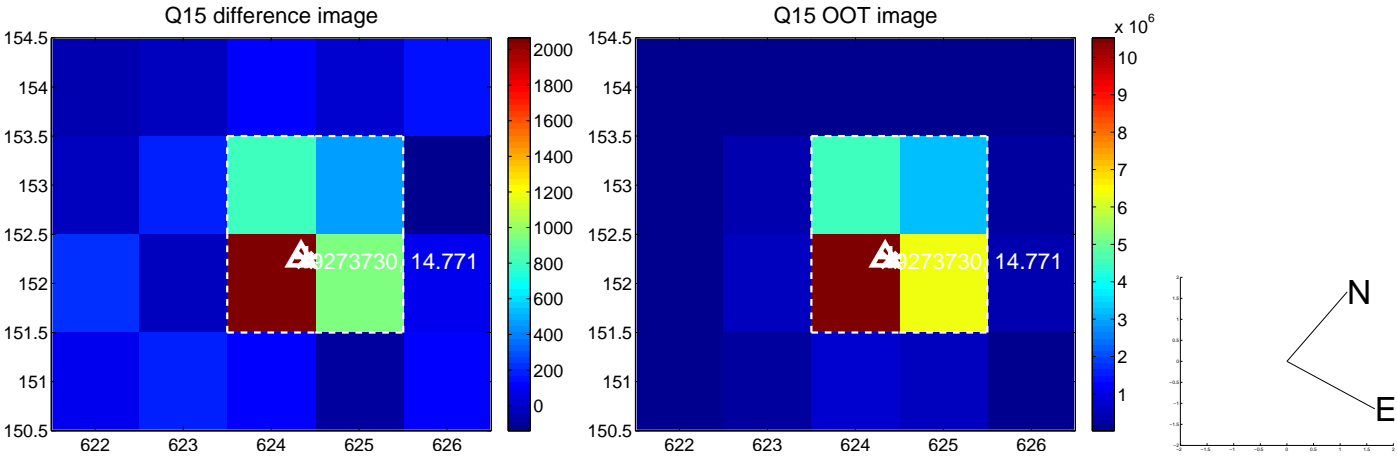
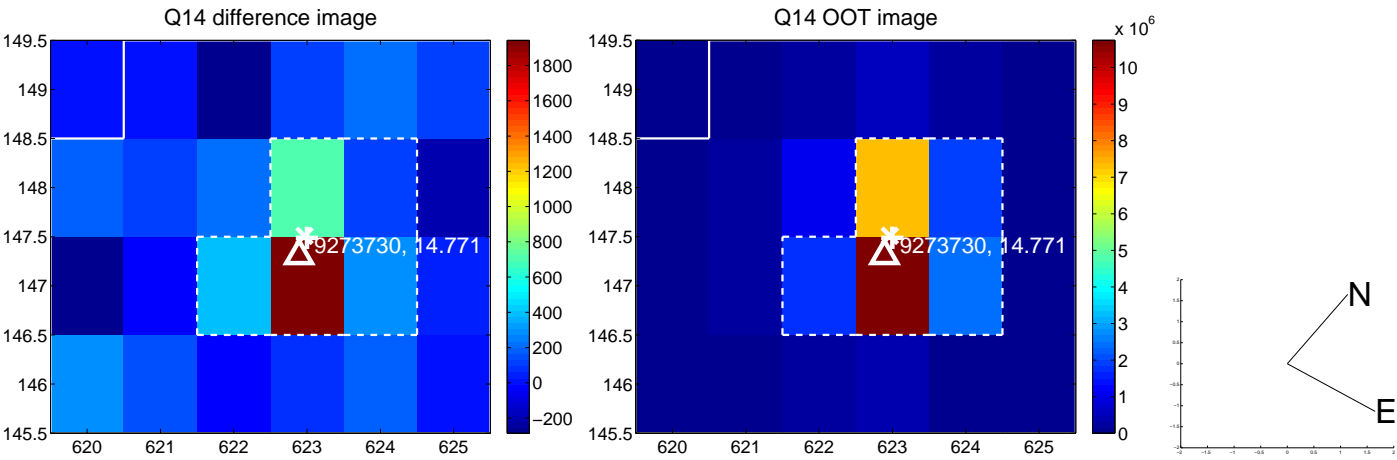
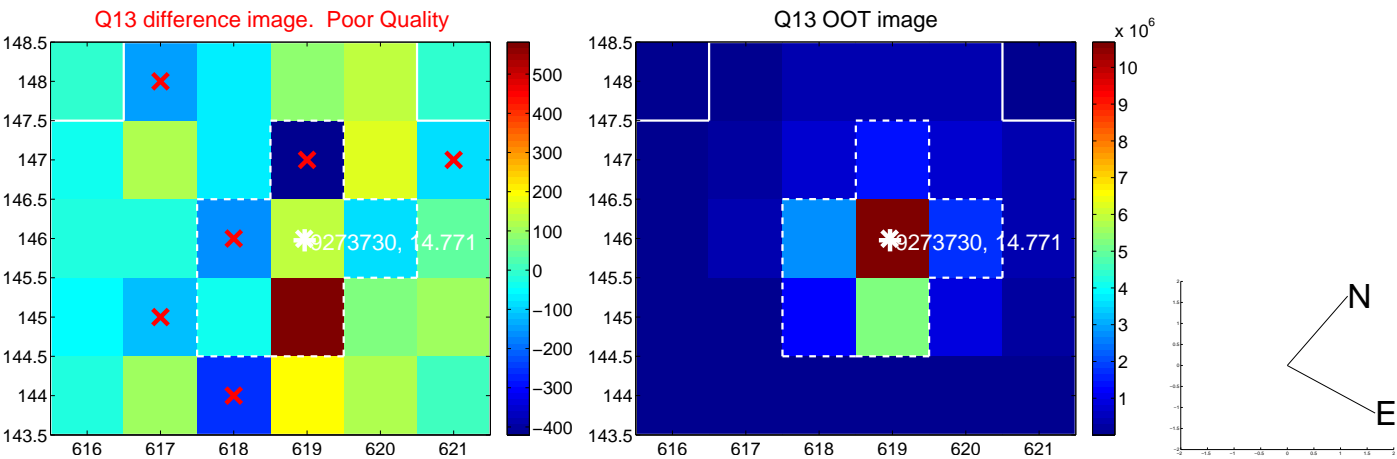
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



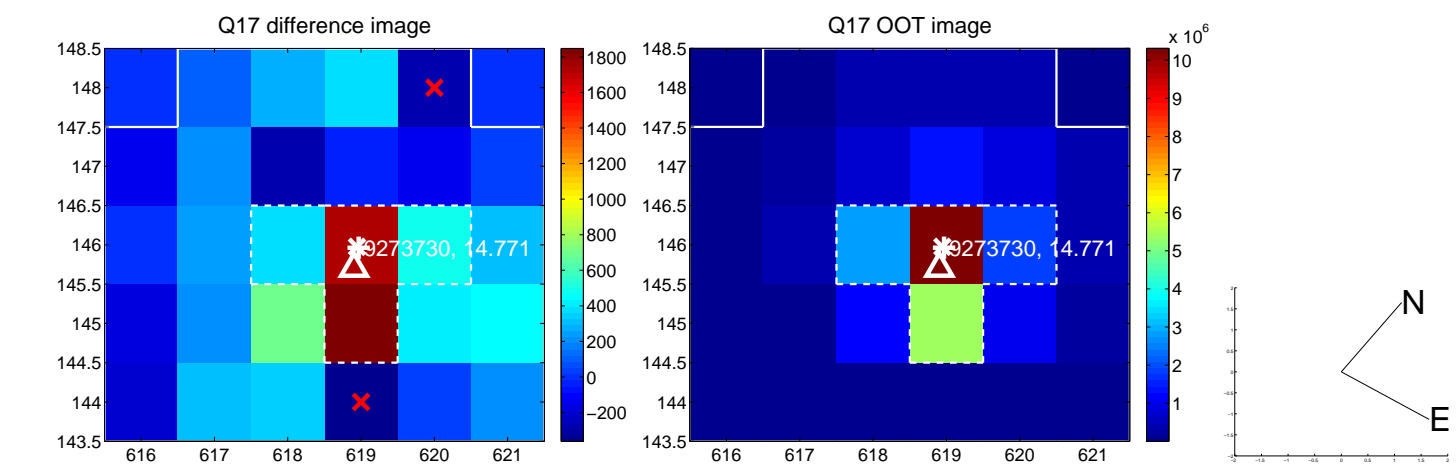
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



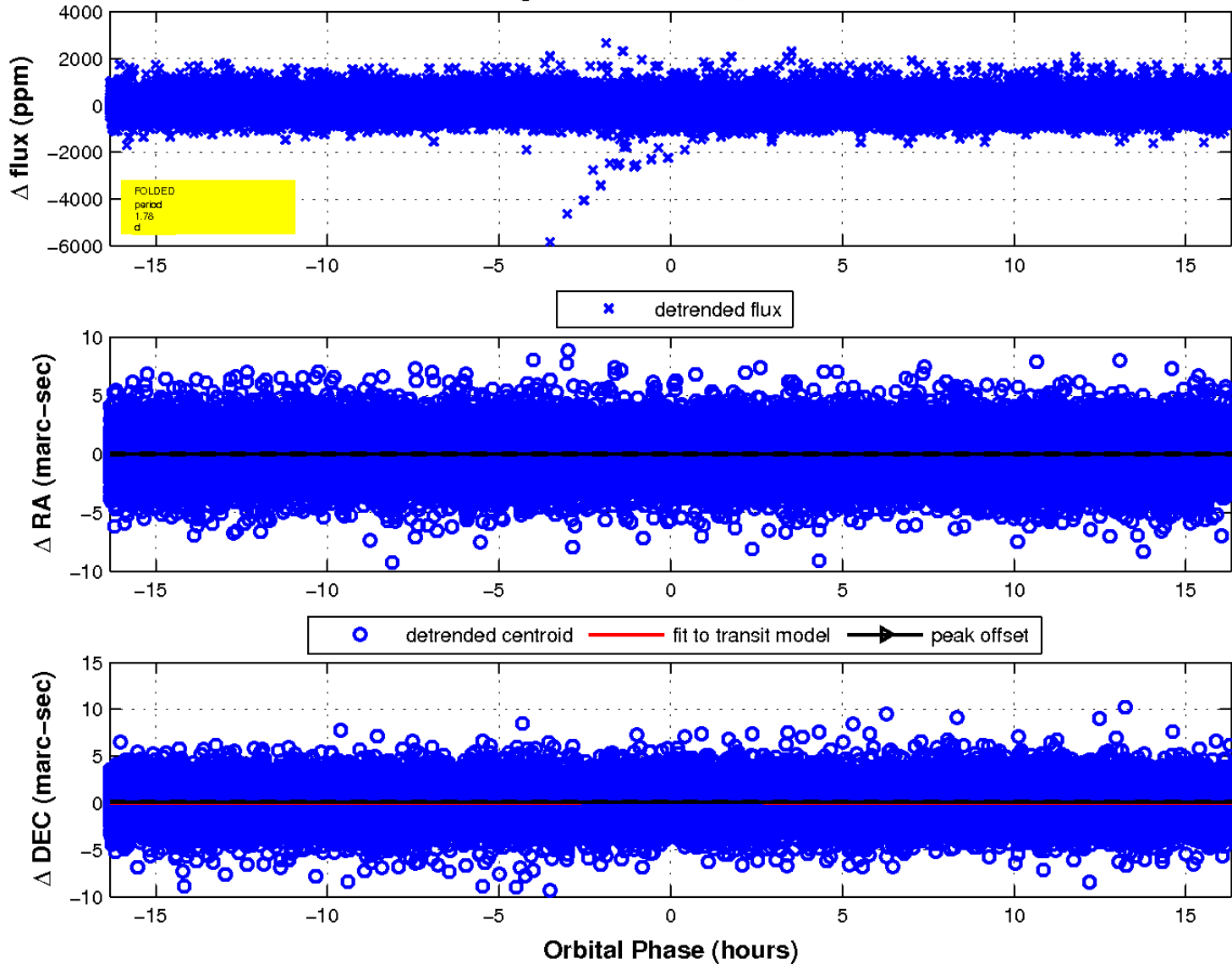
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

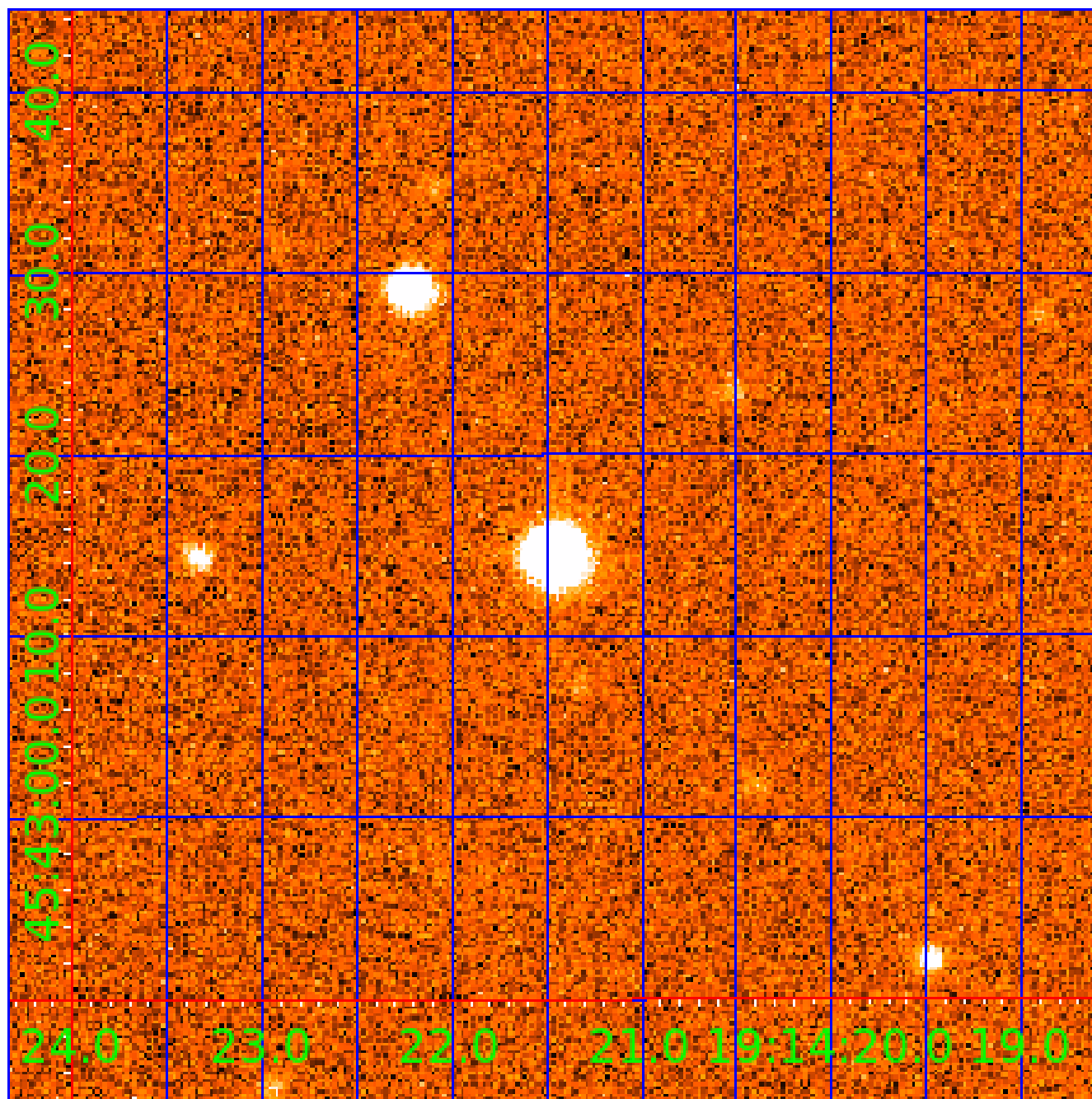


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 009273730

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})
009273730-01	OBS	No	1.780512	132.685543	62.7	4.510	8.8	9.2	0.61	4332	0.59	201.41
009273730-02	OBS	No	1.780531	131.779907	63.1	5.446	9.2	10.6	0.61	4332	0.47	201.41
009273730-03	OBS	No	253.848856	157.489823	1666.3	5.737	20.6	14.2	0.61	4332	2.70	0.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009273730-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
009273730-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009273730-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

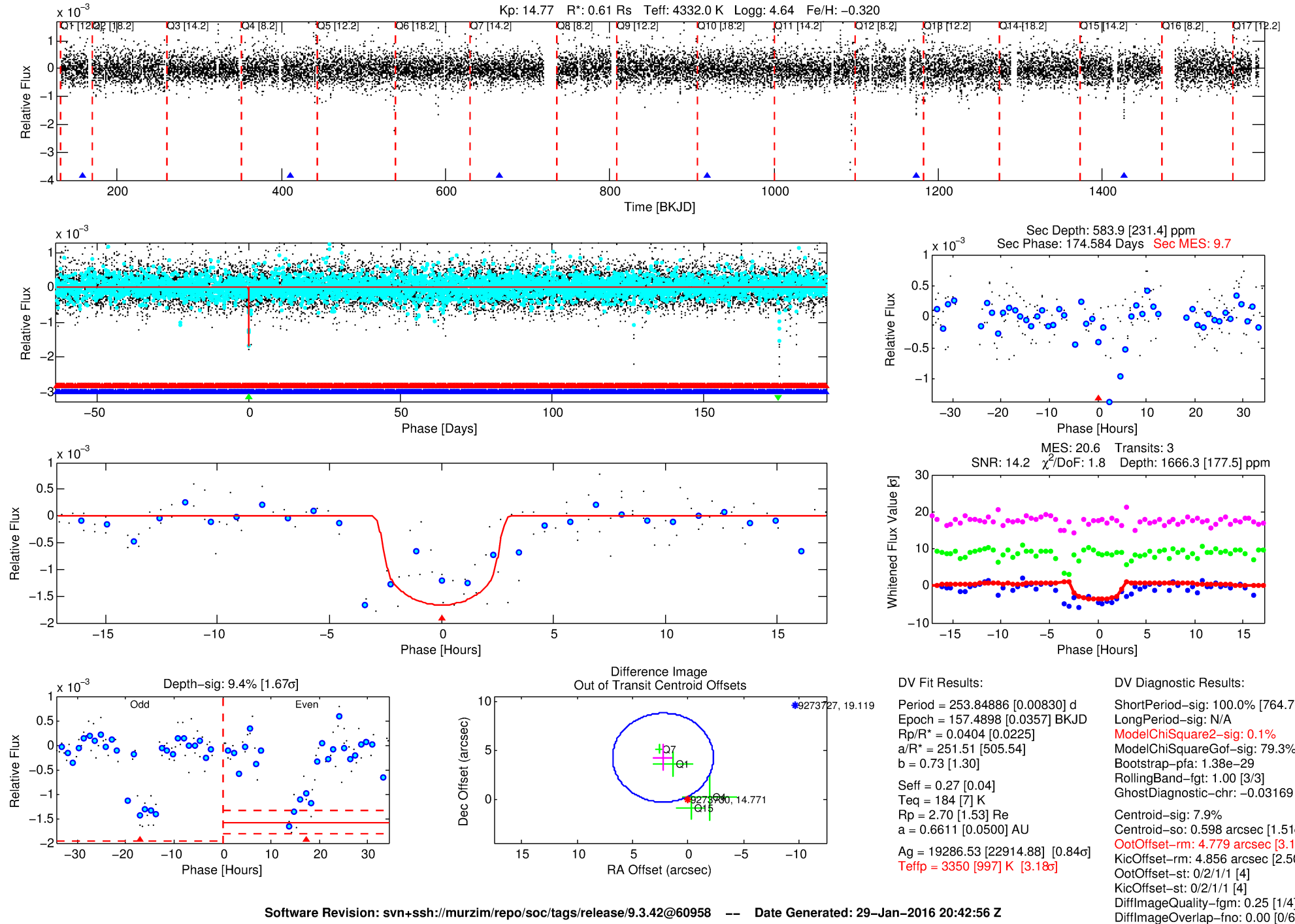
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009273730-03

No Significant Match Found

DV One-Page Summary

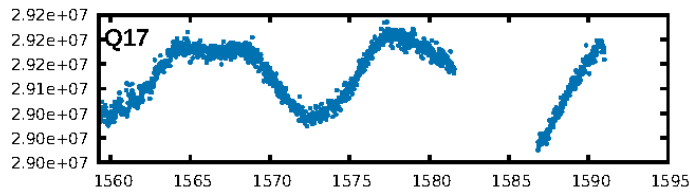
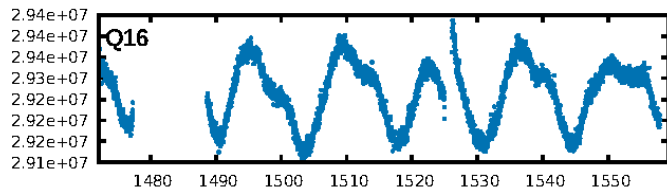
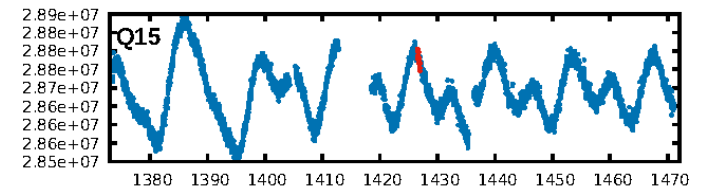
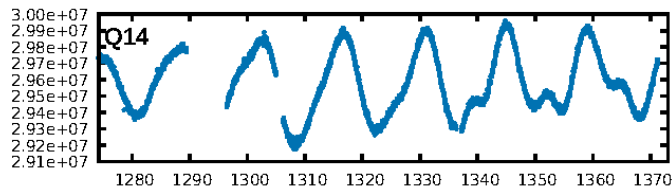
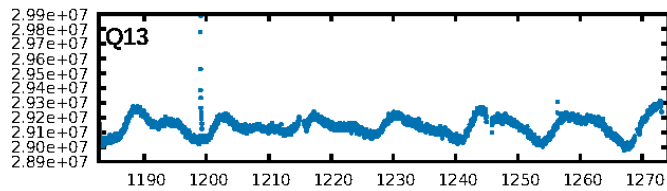
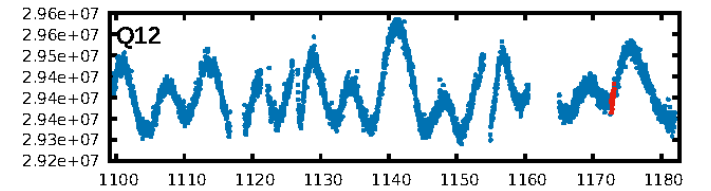
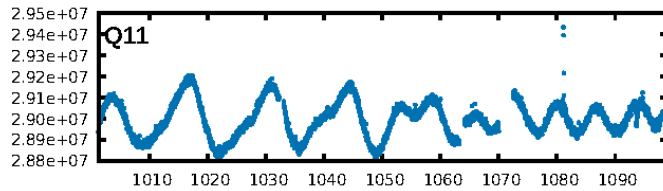
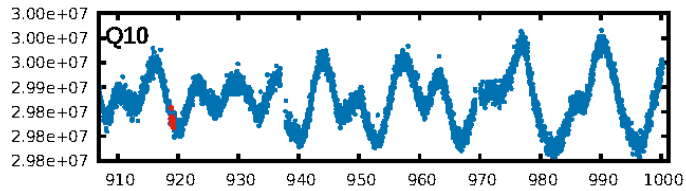
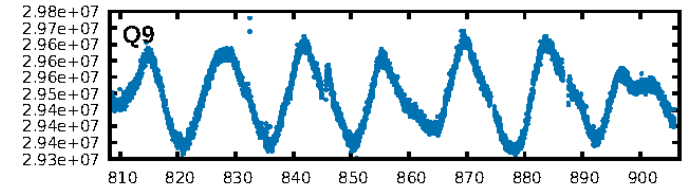
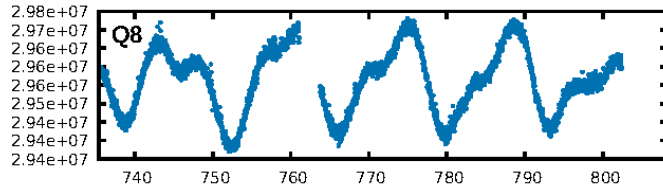
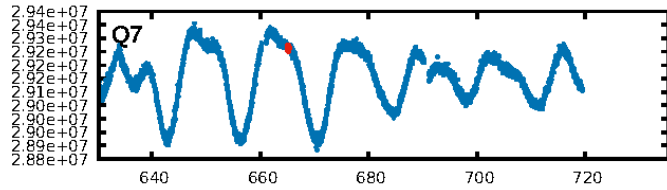
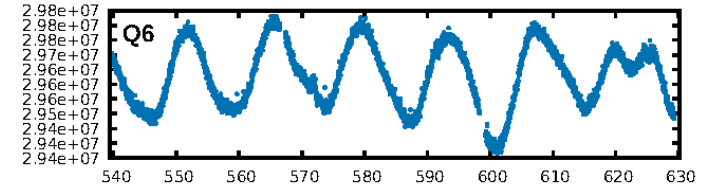
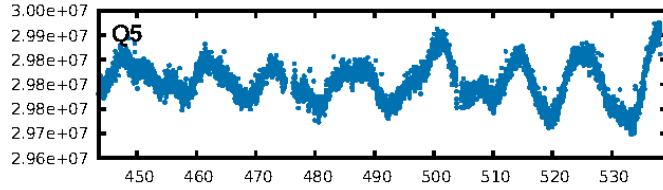
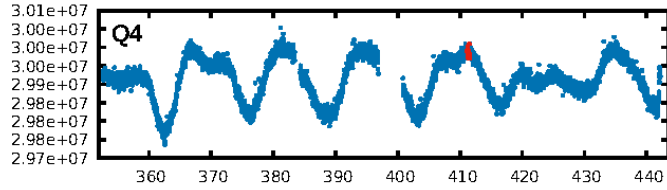
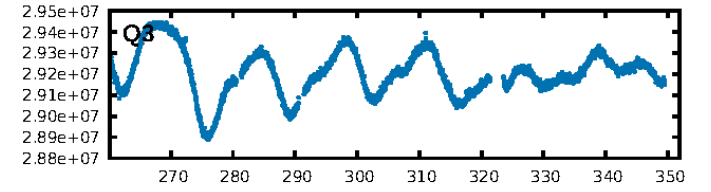
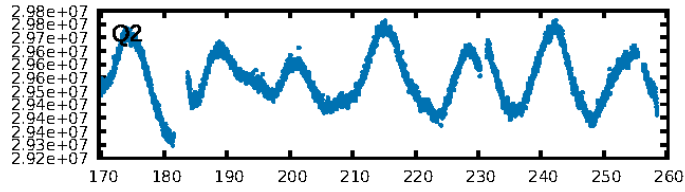
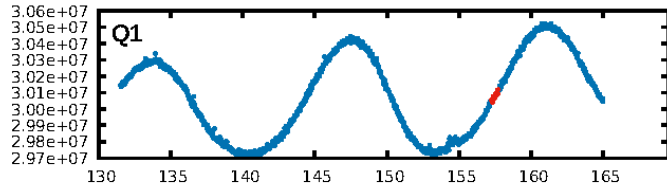
KIC: 9273730 Candidate: 3 of 3 Period: 253.849 d



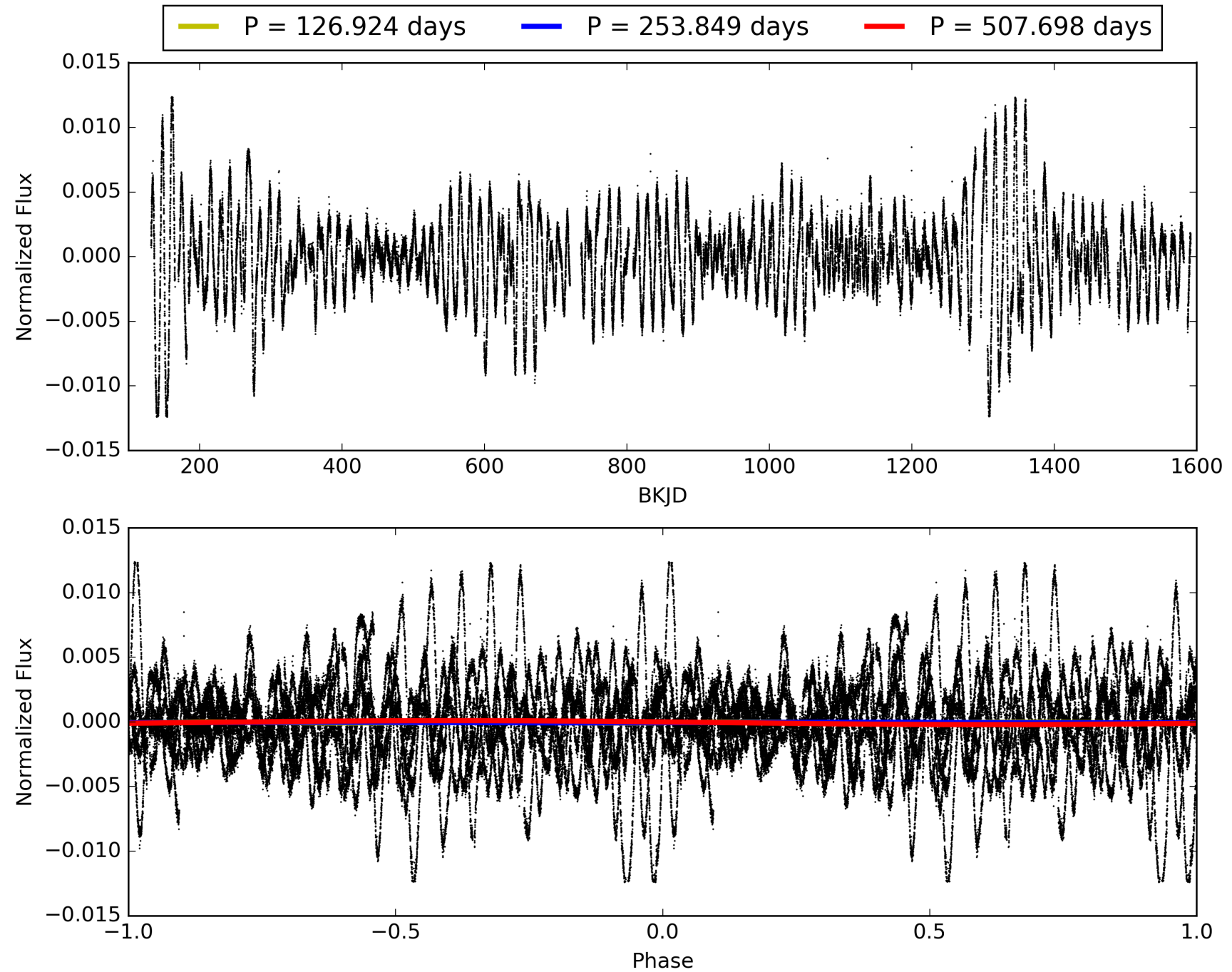
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:42:56 Z

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

TCE 009273730-03, PDC Light Curves

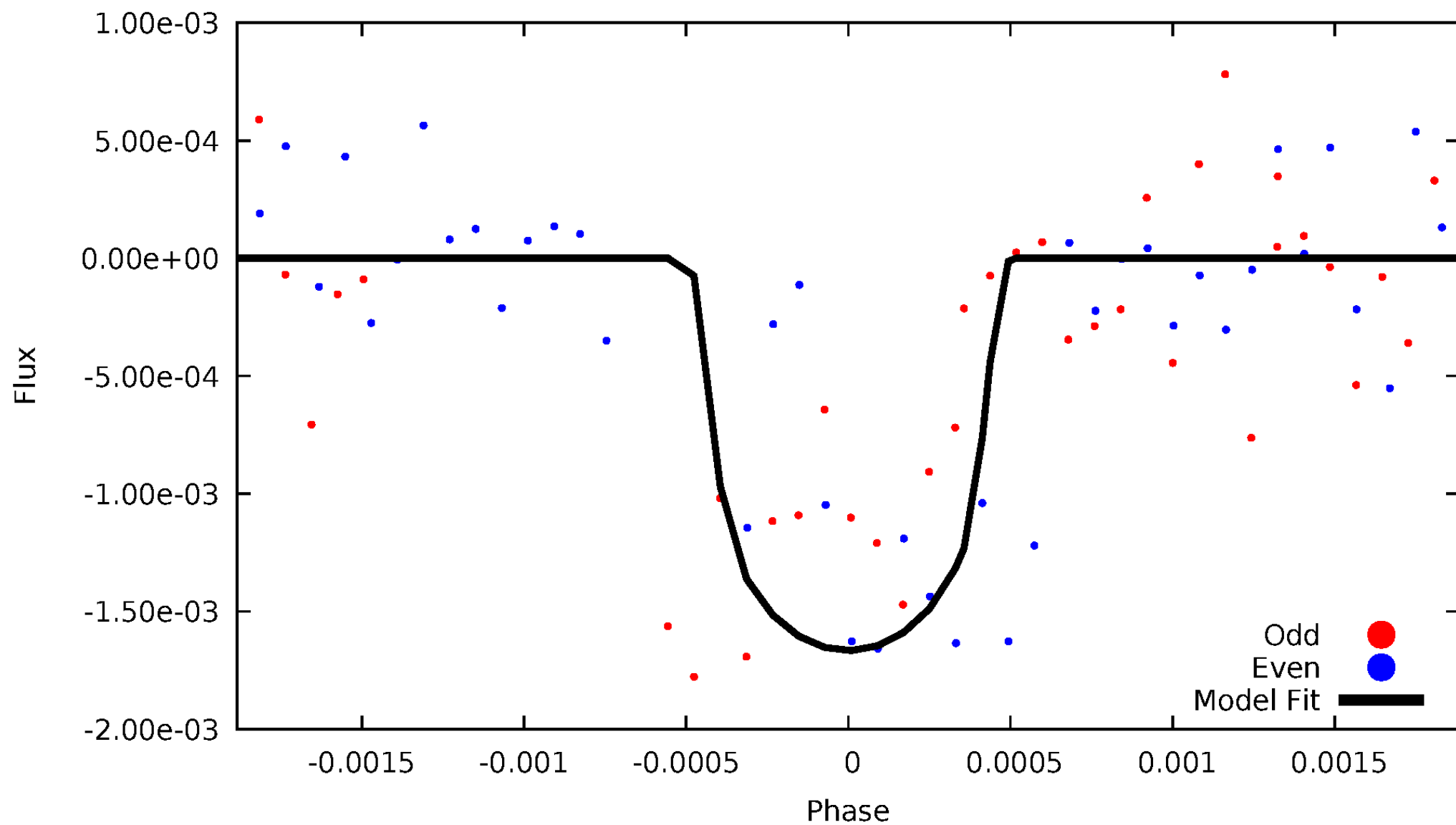


TCE 009273730-03



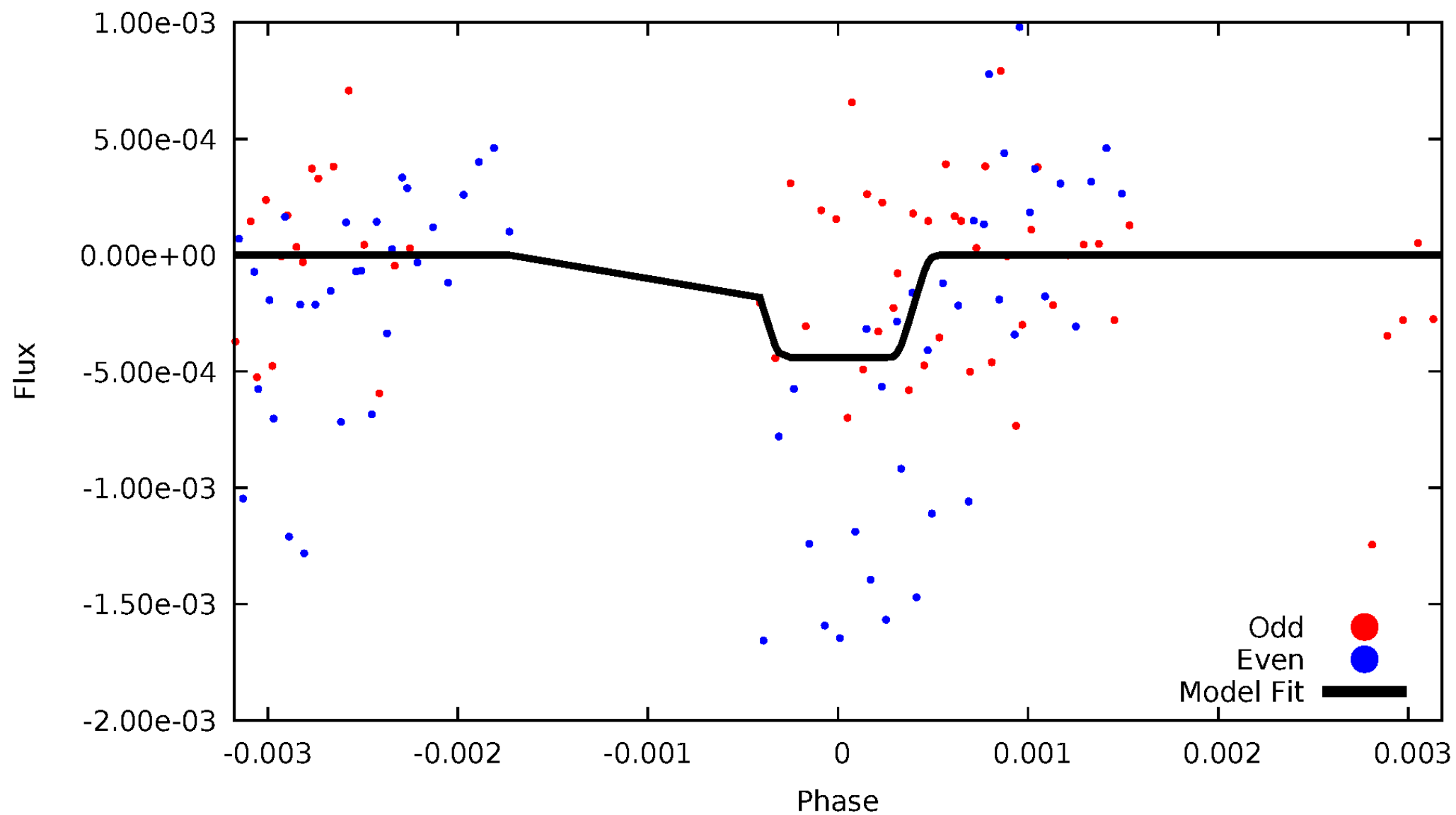
DV Odd/Even

TCE 009273730-03



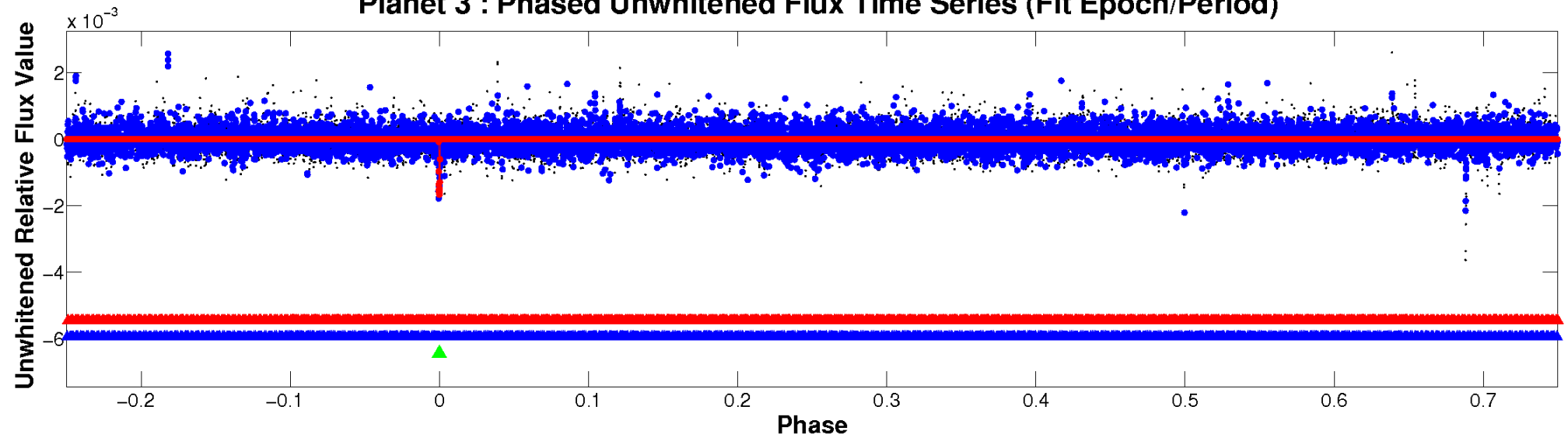
ALT Odd/Even

TCE 009273730-03

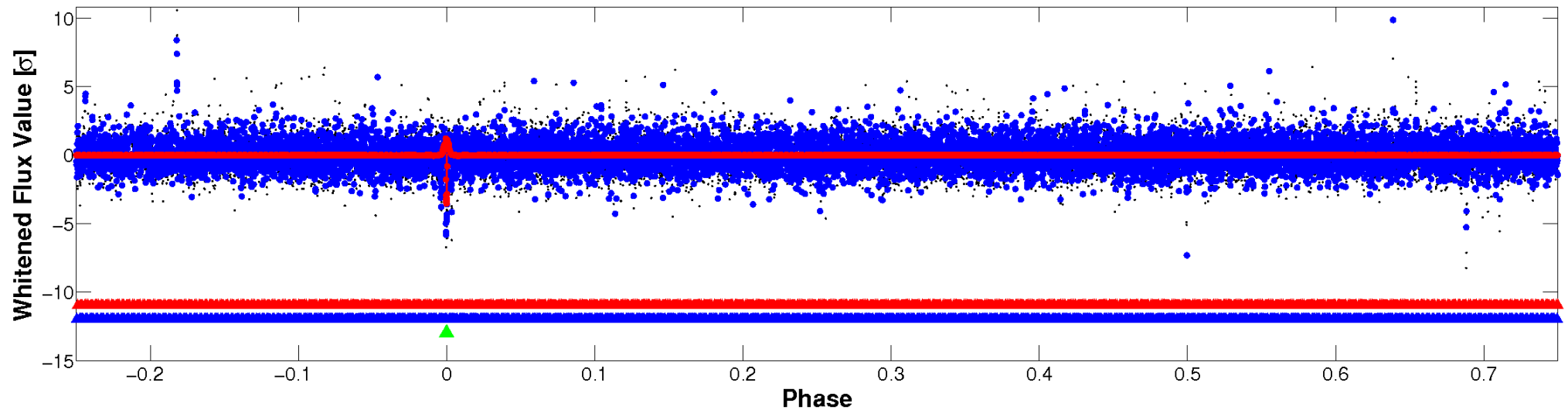


Non-Whitened Vs. Whitened Light Curve

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

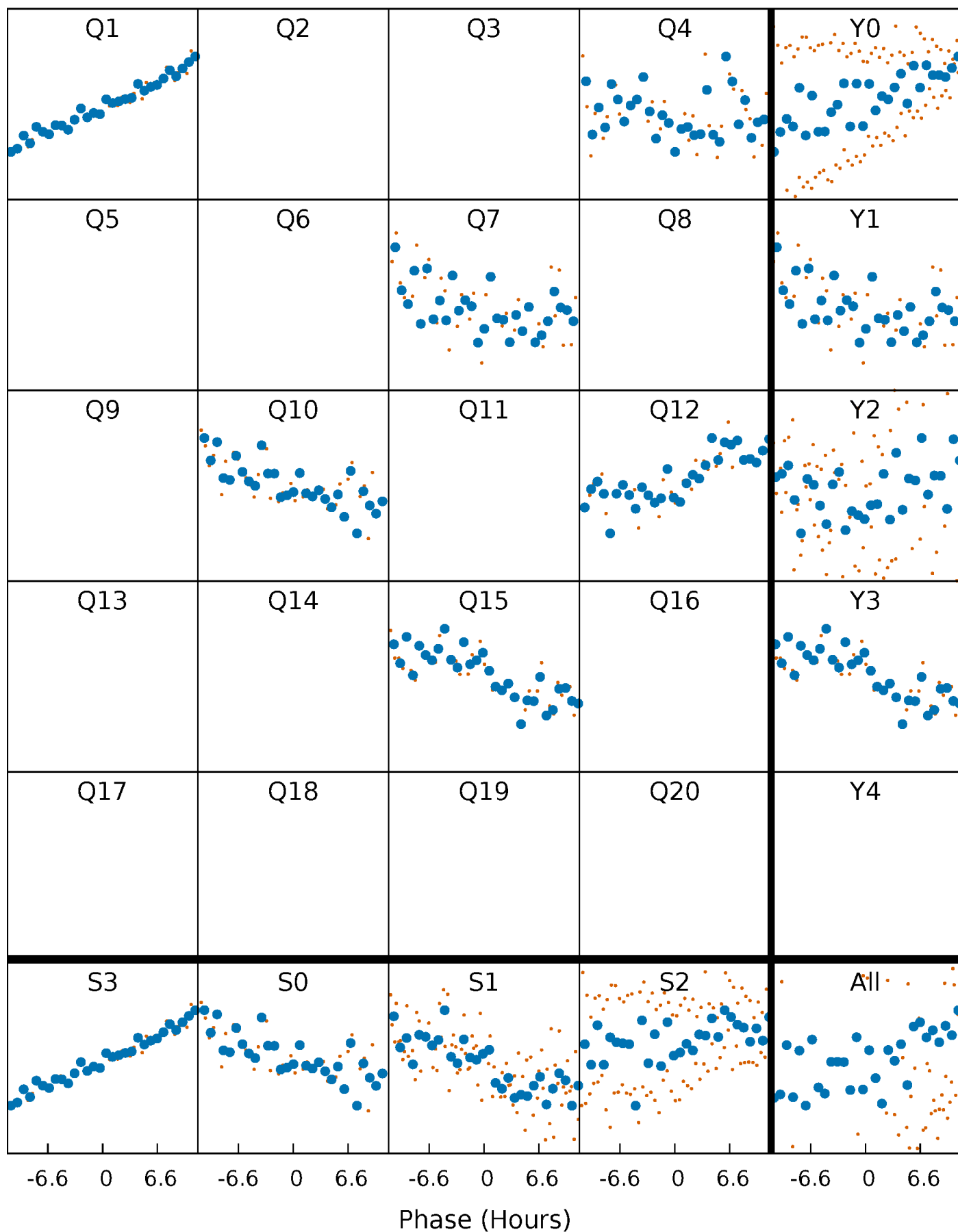


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



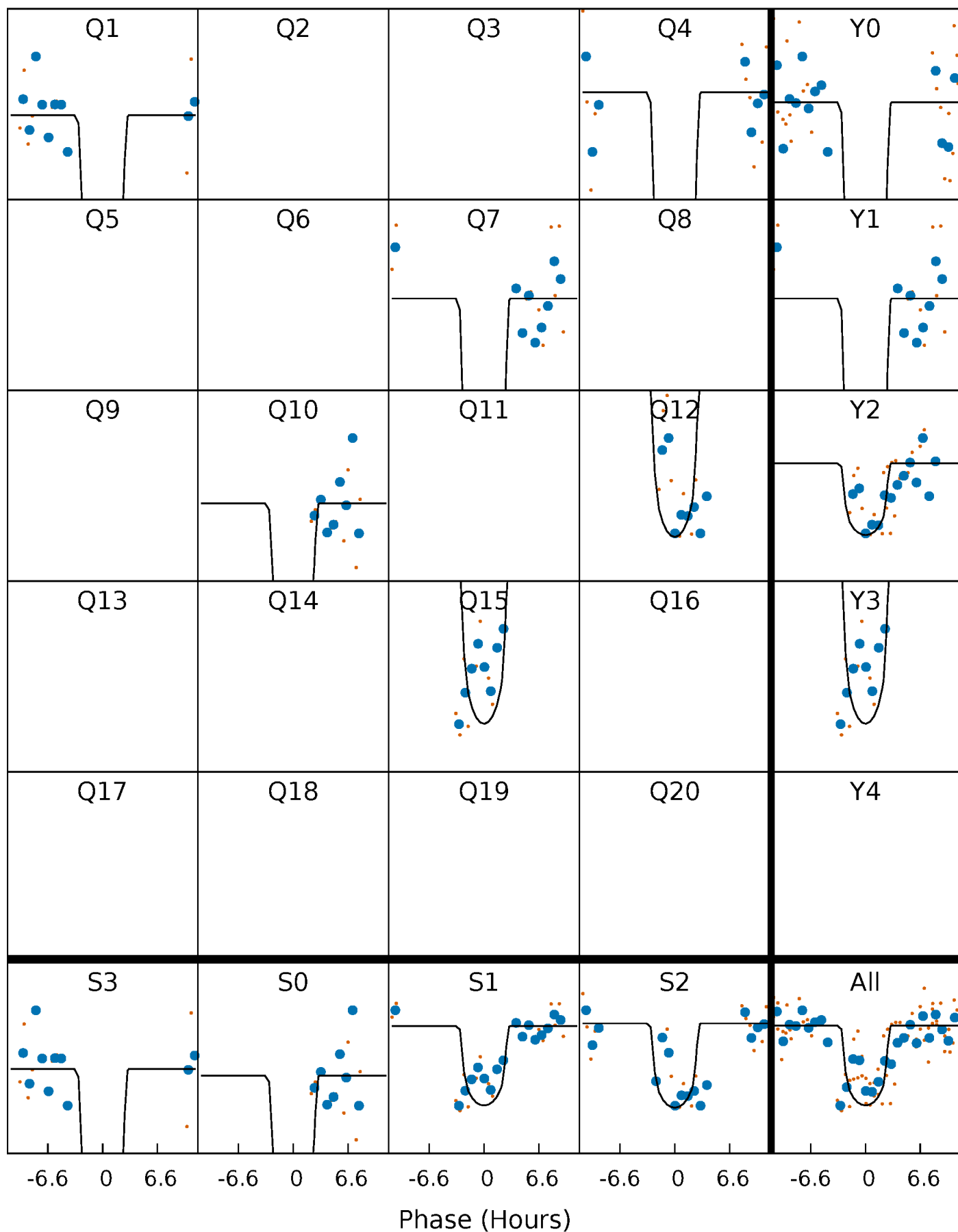
PDC Quarter-Phased Transit Curves

TCE 009273730-03 $P=253.848856$ Days $T_0=157.489823$ (BKJD)



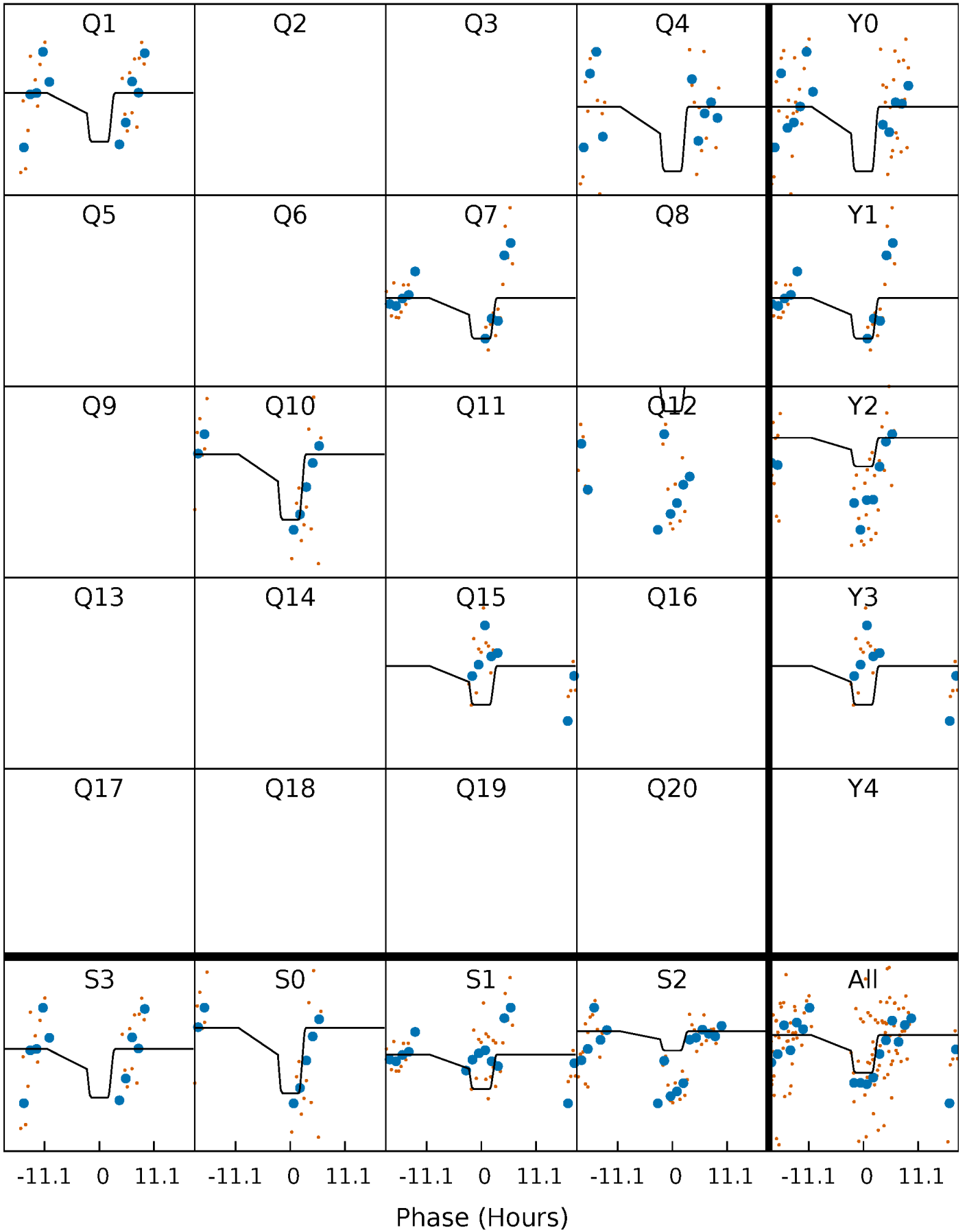
DV Quarter-Phased Transit Curves

TCE 009273730-03 $P=253.848856$ Days $T_0=157.489823$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

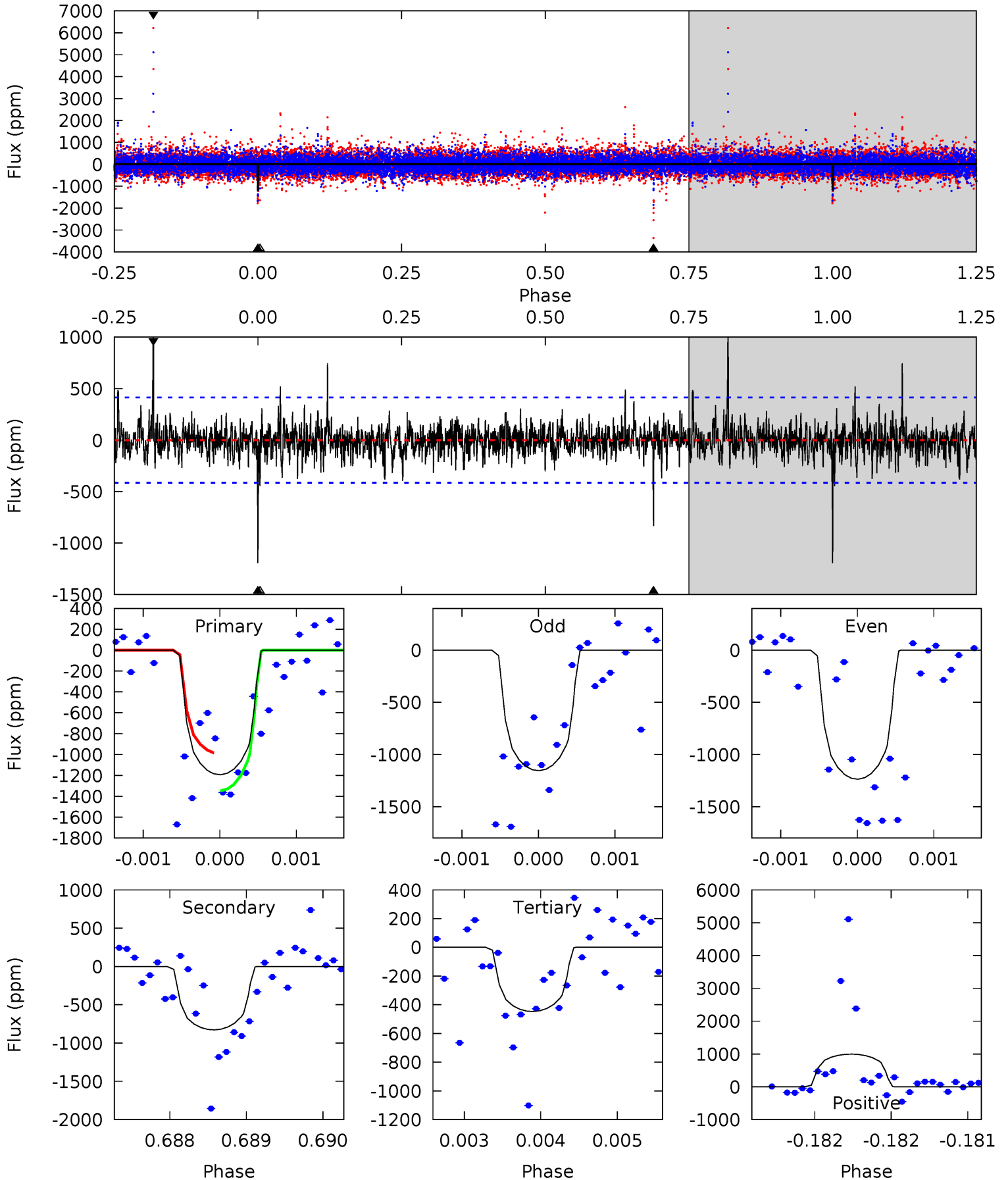
TCE 009273730-03 P=253.791626 Days $T_0=157.739126$ (BKJD)



DV Model-Shift Uniqueness Test

009273730-03, P = 253.848856 Days, E = 157.489823 Days

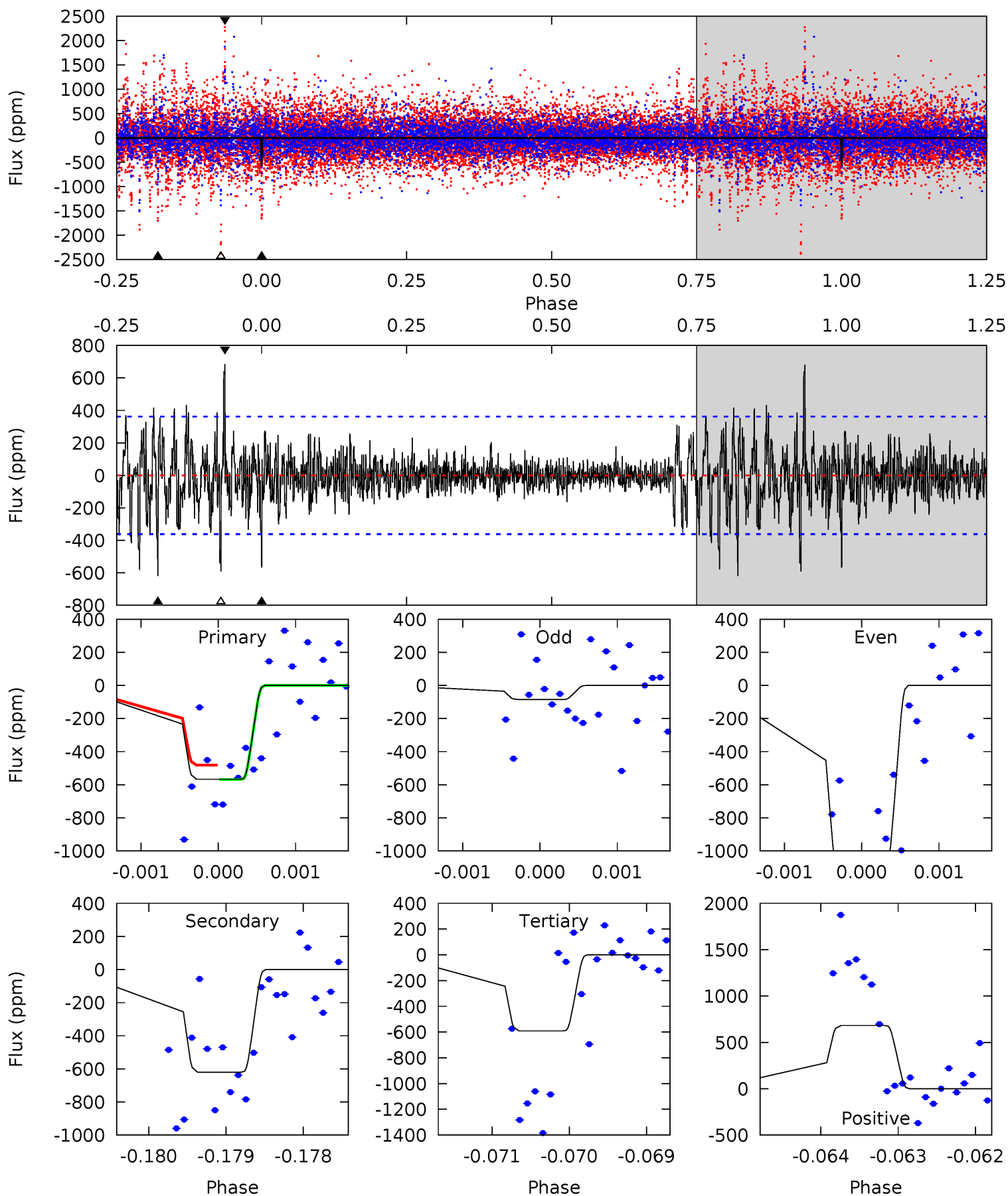
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	10.9	5.90	13.2	5.47	3.32	1.48	9.86	2.60	5.03	-2.23	0.53	0.75	0.46	2.32



Alt Model-Shift Uniqueness Test

009273730-03, P = 253.791626 Days, E = 157.739126 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.57	9.37	8.94	10.3	5.47	3.32	1.58	-0.38	-1.74	0.43	-0.94	7.45	1.19	0.52	0.57



Stellar Parameters For KIC 009273730

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4332^{+130}_{-130}	$4.641^{+0.052}_{-0.024}$	$-0.320^{+0.300}_{-0.300}$	$0.612^{+0.044}_{-0.059}$	$0.597^{+0.067}_{-0.049}$	$3.676^{+0.925}_{-0.442}$
	+3%/-3%	+1%/-1%	+94%/-94%	+7%/-10%	+11%/-8%	+25%/-12%
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 009273730-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-828 ± 76	$2.68^{+1.50}_{-1.45}$	256^{+8}_{-10}	3837^{+1313}_{-514}	$28260^{+100059}_{-16553}$
Alt.	-620 ± 66	$1.62^{+1.37}_{-1.05}$	255^{+9}_{-9}	4354^{+2733}_{-859}	$56892^{+434199}_{-39858}$

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 $A_{obs} \gg 1.0$

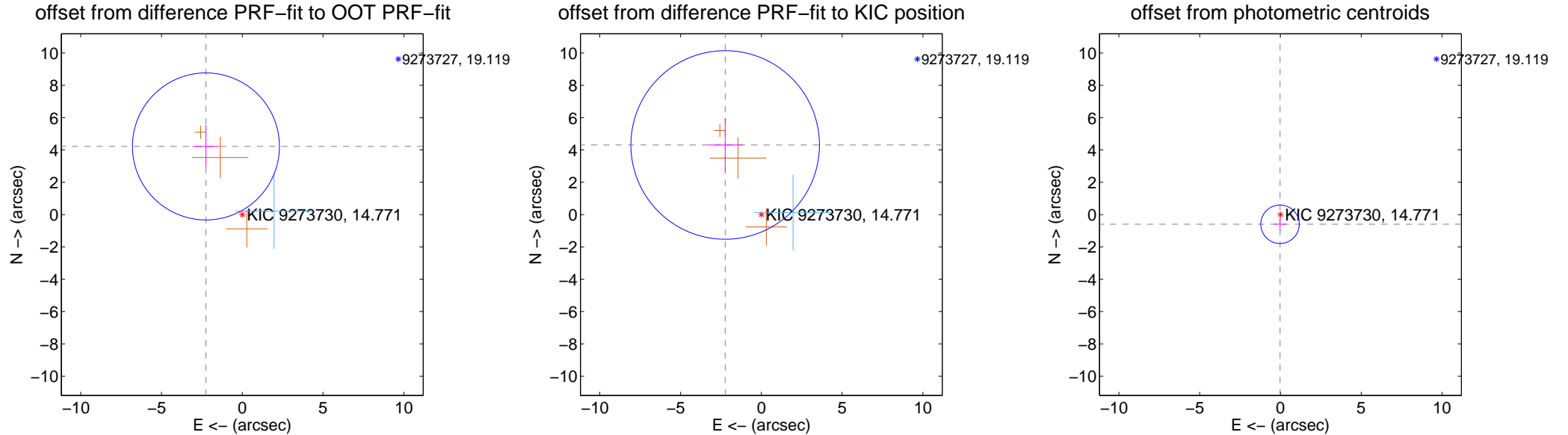
DV Centroid Data

Supplemental centroid analysis for 009273730-03. Kepler magnitude: 14.77. Transit SNR 14.23

There are 1 quarters with good PRF difference image offsets

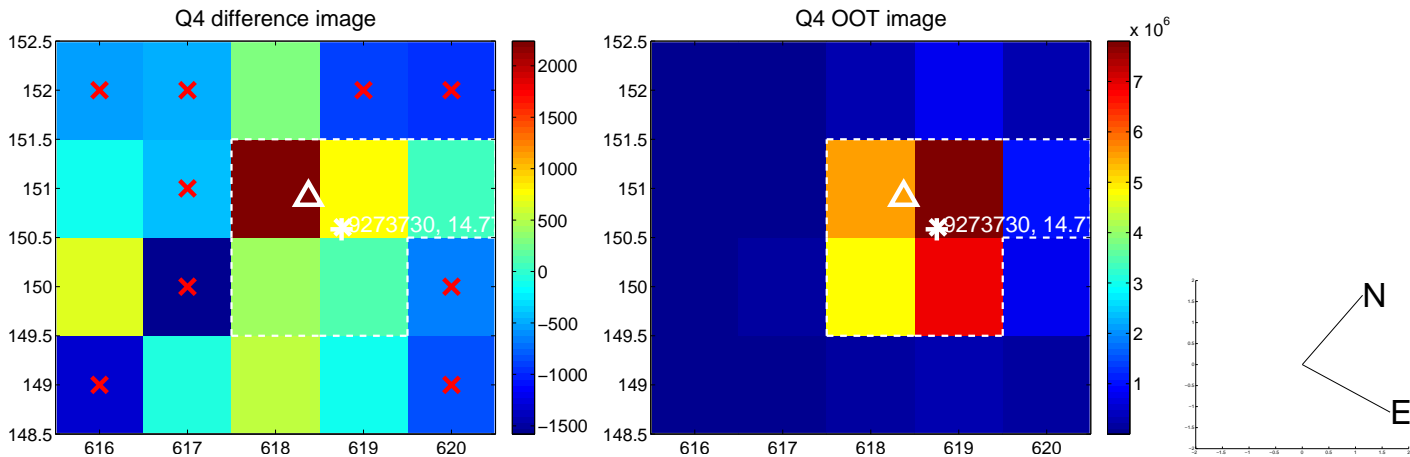
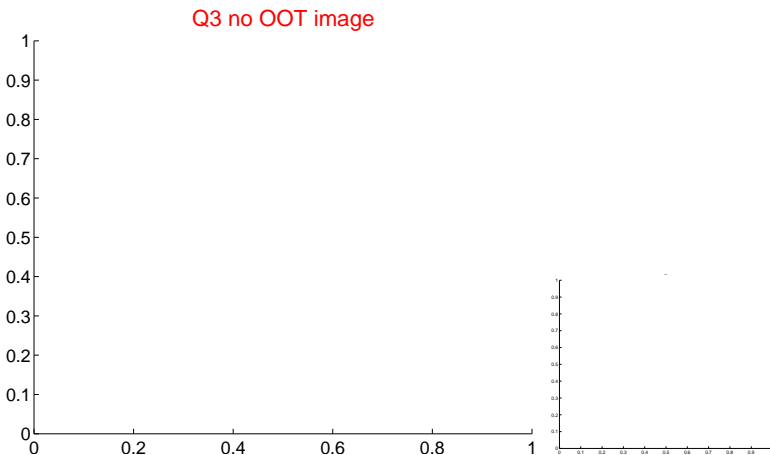
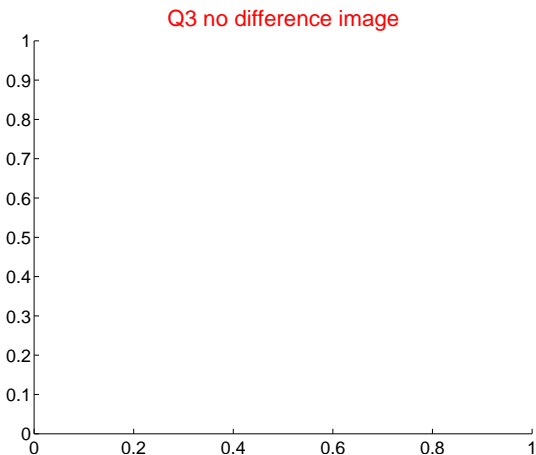
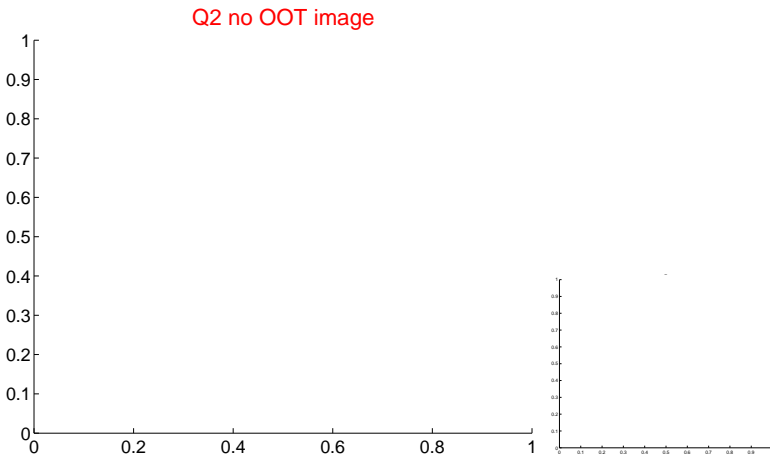
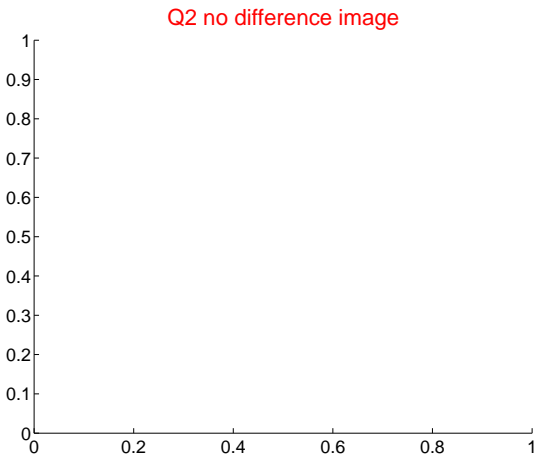
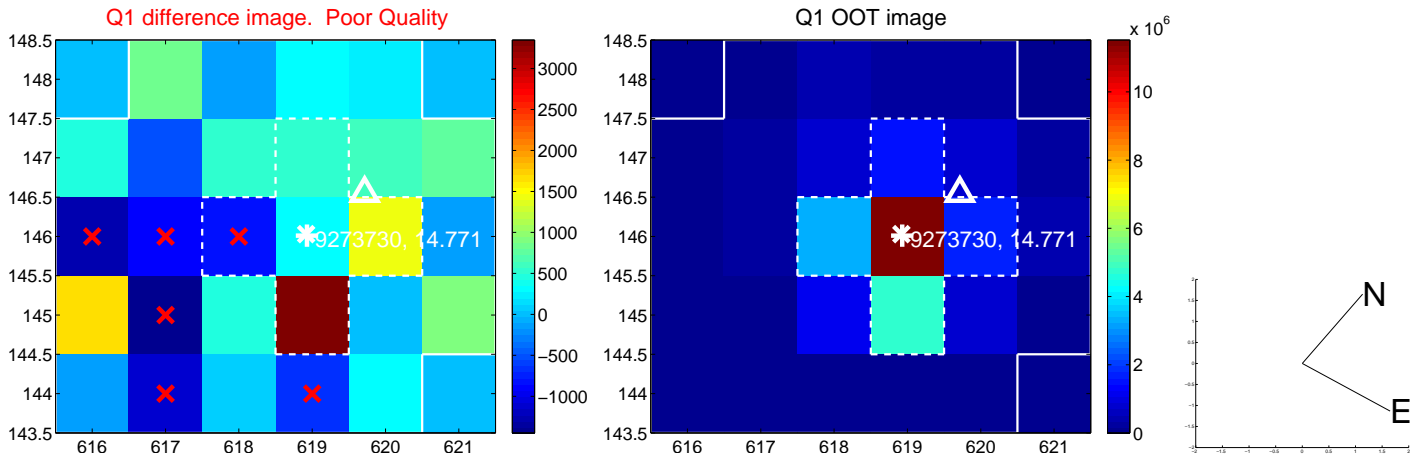
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.779 ± 1.516	3.15	2.248 ± 0.809	4.217 ± 1.320
PRF-fit source offset from KIC position	4.856 ± 1.945	2.50	2.240 ± 1.075	4.308 ± 1.646
photometric centroid source offset	0.60 ± 0.40	1.51	0.03 ± 0.36	-0.60 ± 0.40



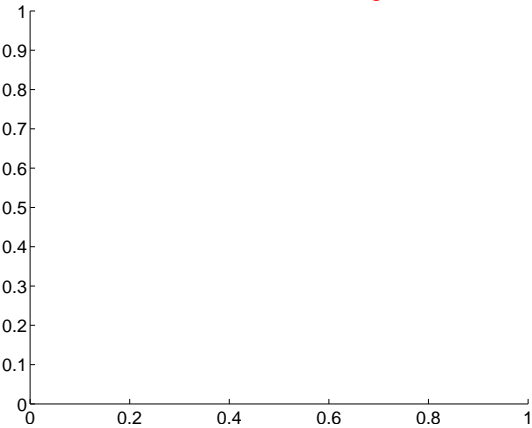
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

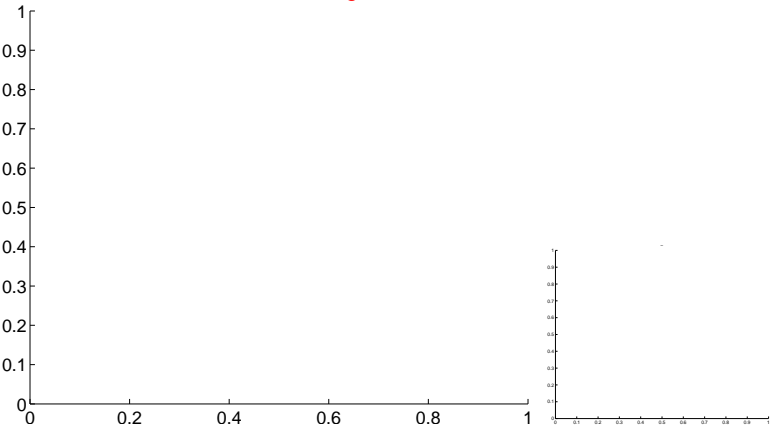


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

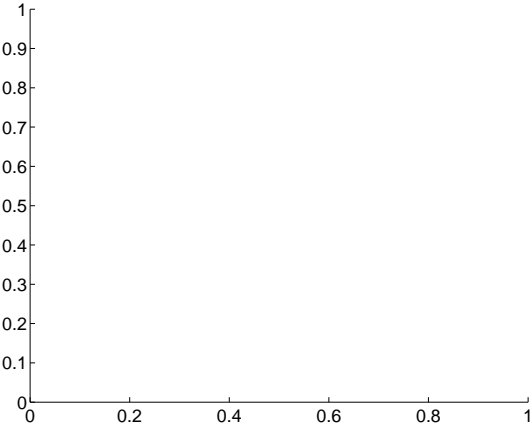
Q5 no difference image



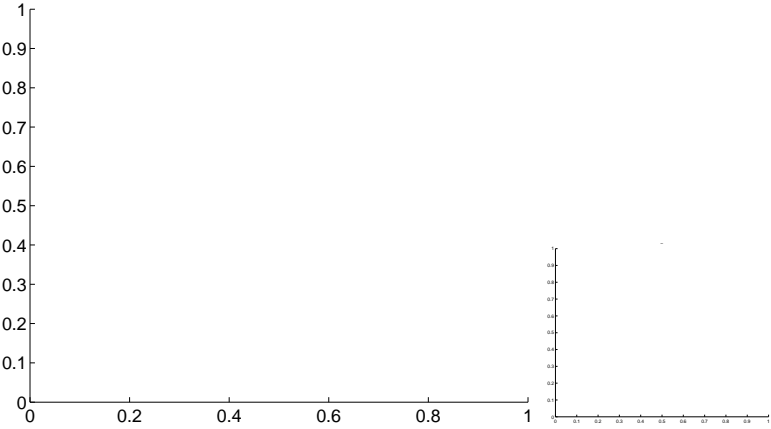
Q5 no OOT image



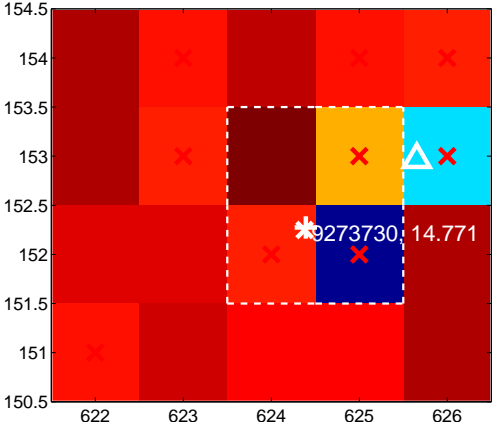
Q6 no difference image



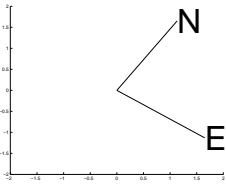
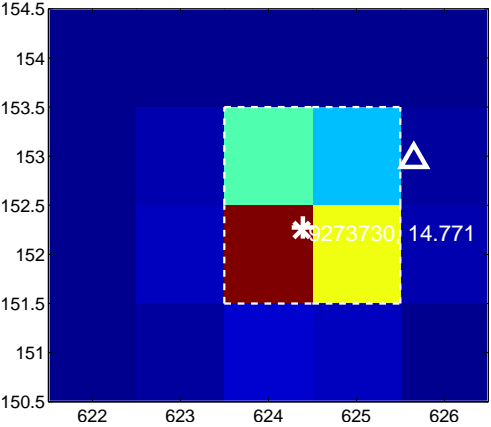
Q6 no OOT image



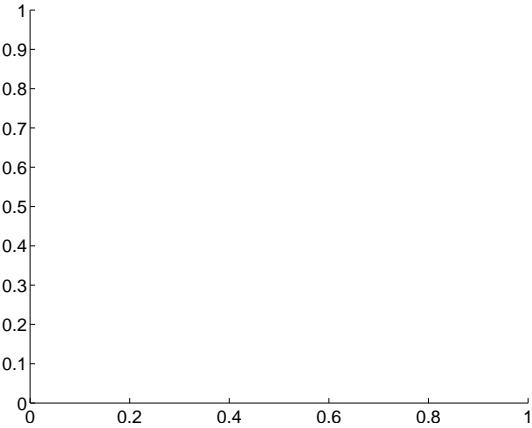
Q7 difference image. Poor Quality



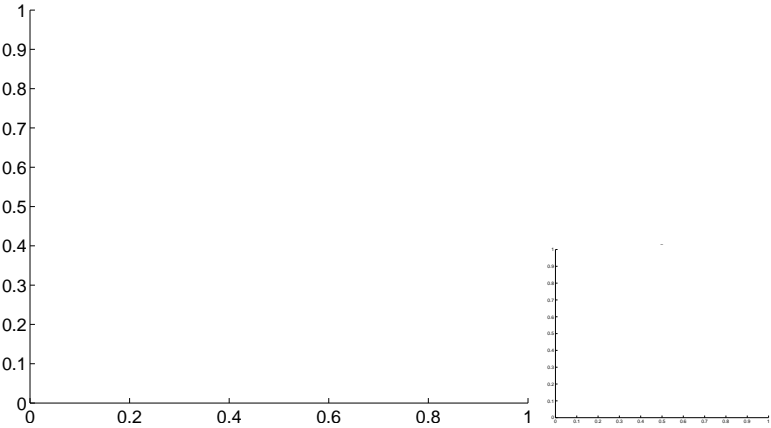
Q7 OOT image



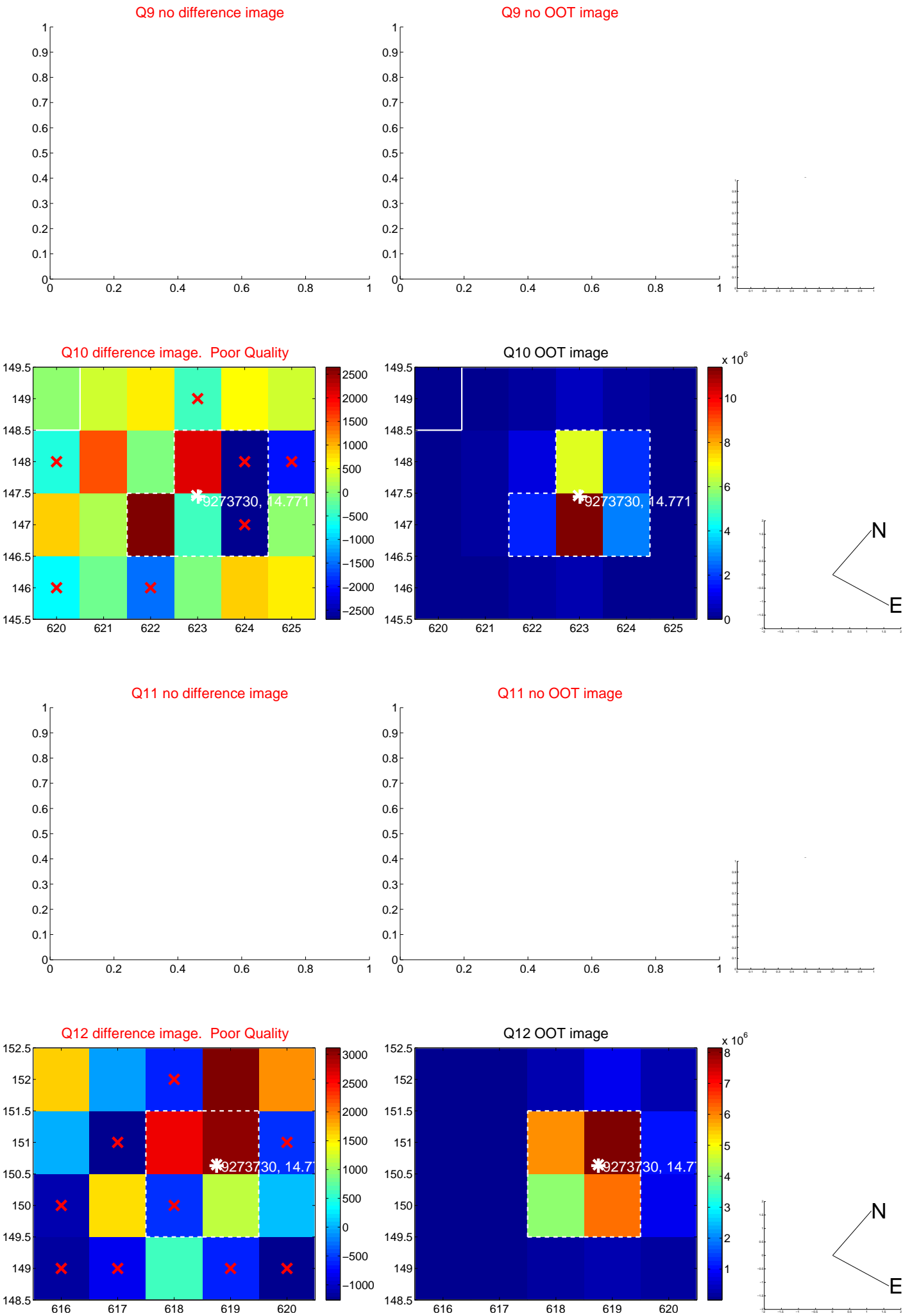
Q8 no difference image



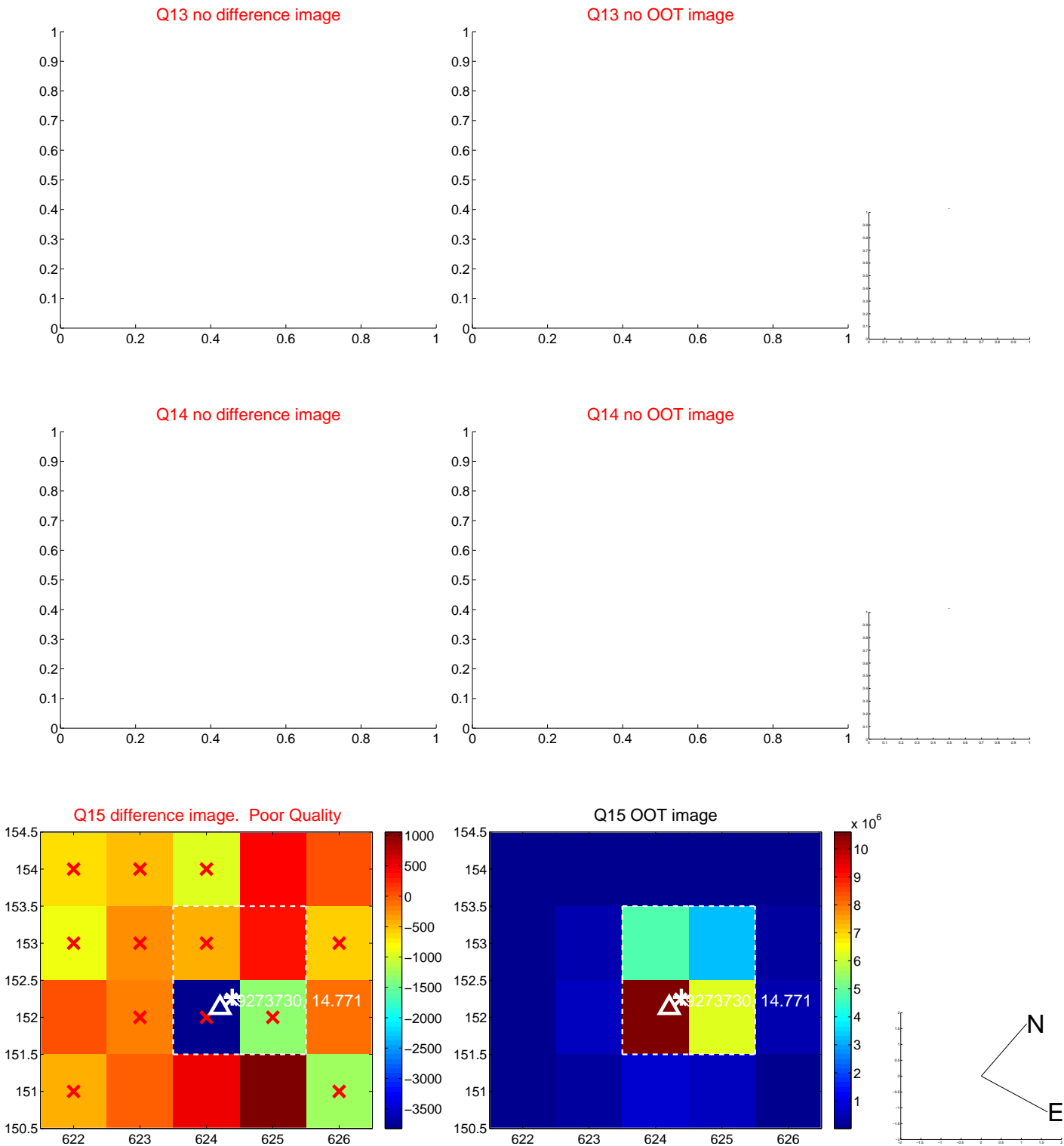
Q8 no OOT image



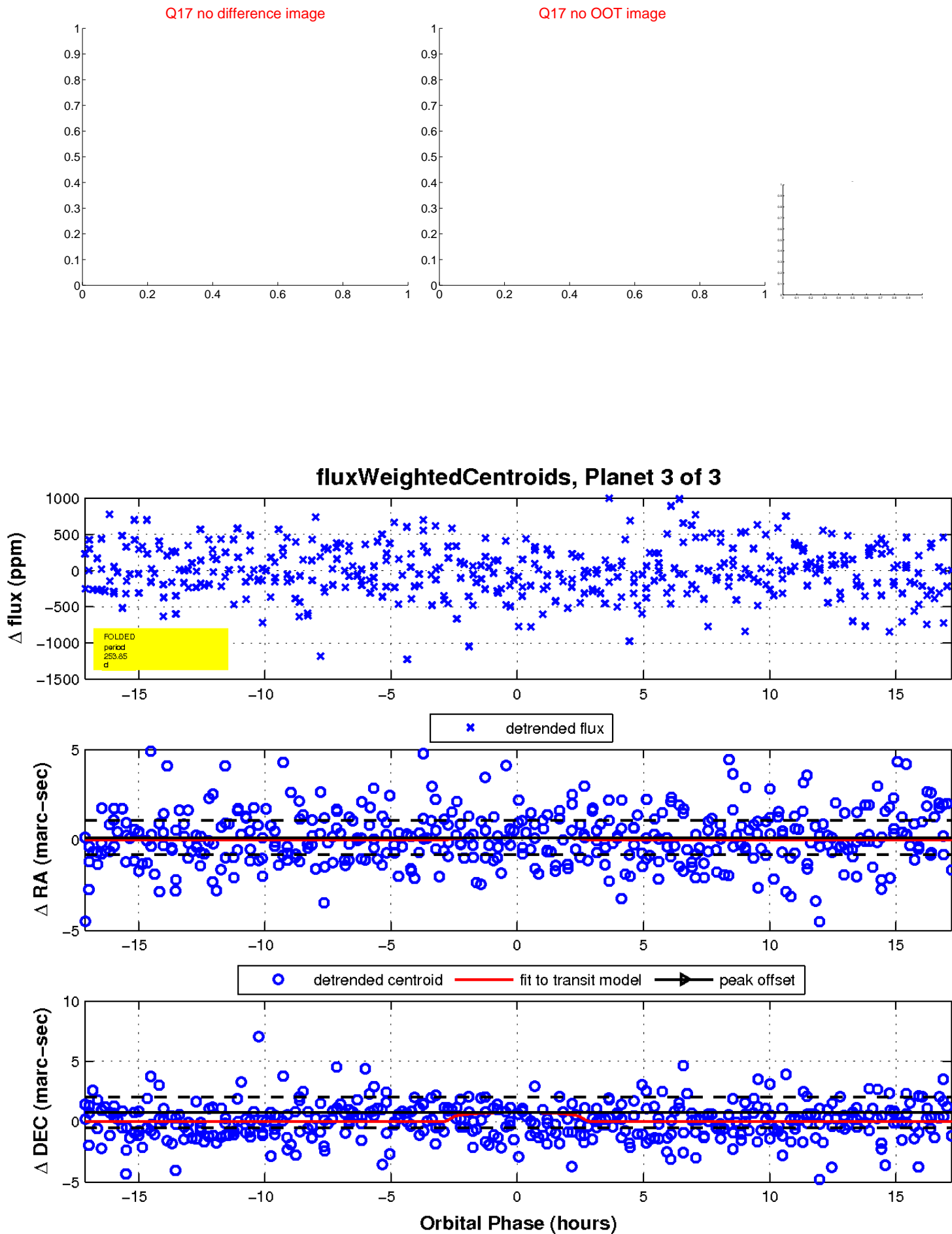
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

