

KIC 008523427

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})
008523427-01	OBS	No	0.746766	131.615245	21.9	2.878	8.7	7.3	2.01	6843	1.09	26974.56
008523427-02	OBS	No	0.537504	131.786816	32.6	1.830	9.0	8.3	2.01	6843	1.20	41817.48
008523427-03	OBS	No	27.143755	148.076033	242.6	1.128	7.4	5.9	2.01	6843	3.63	224.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008523427-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008523427-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008523427-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

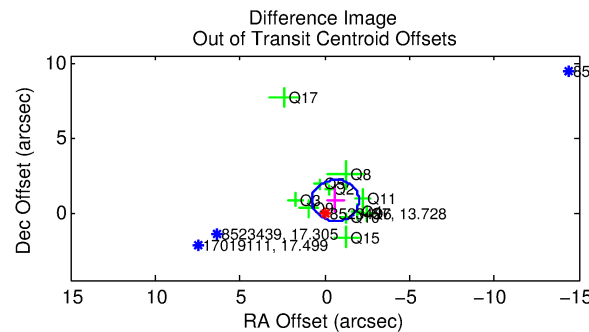
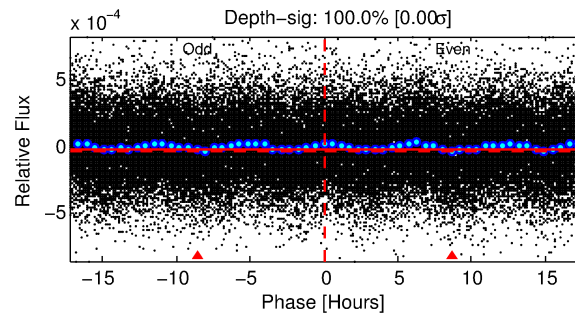
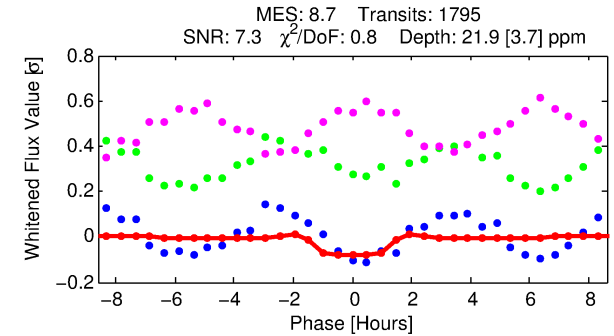
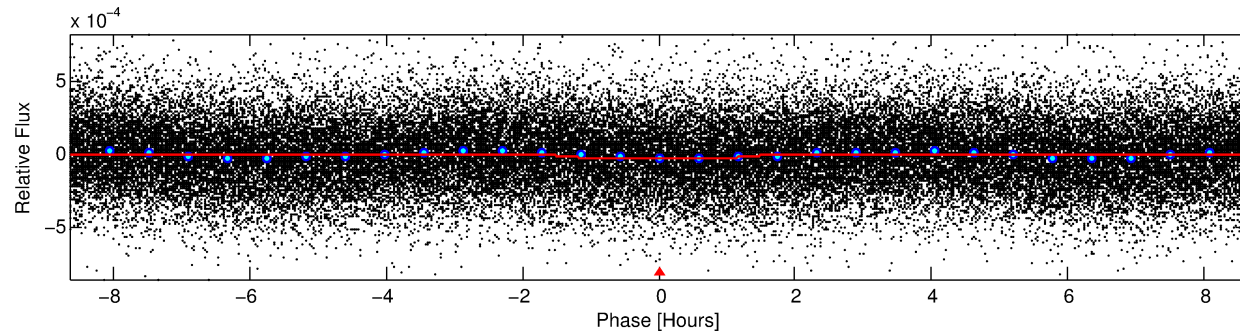
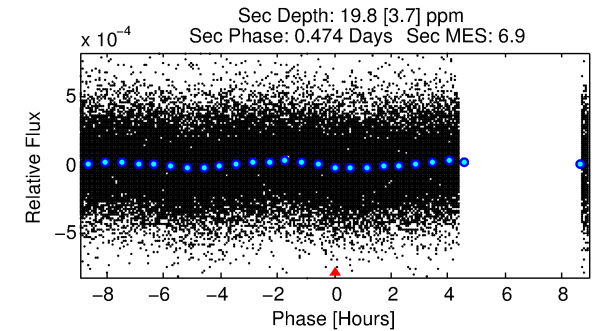
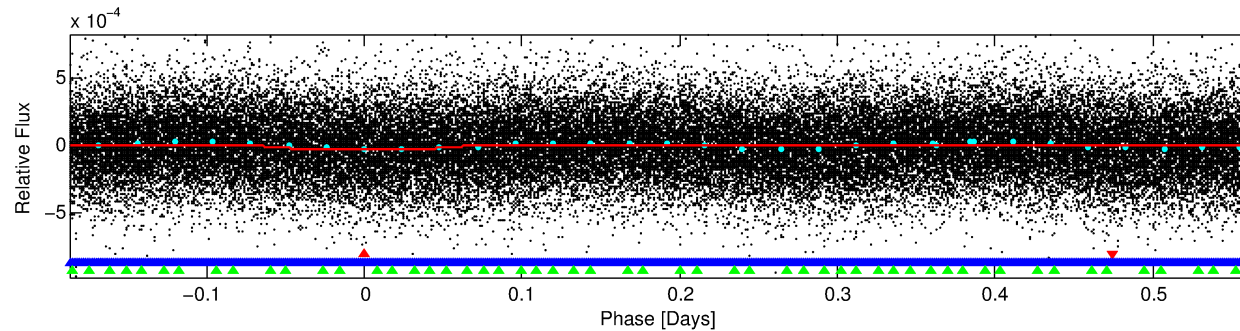
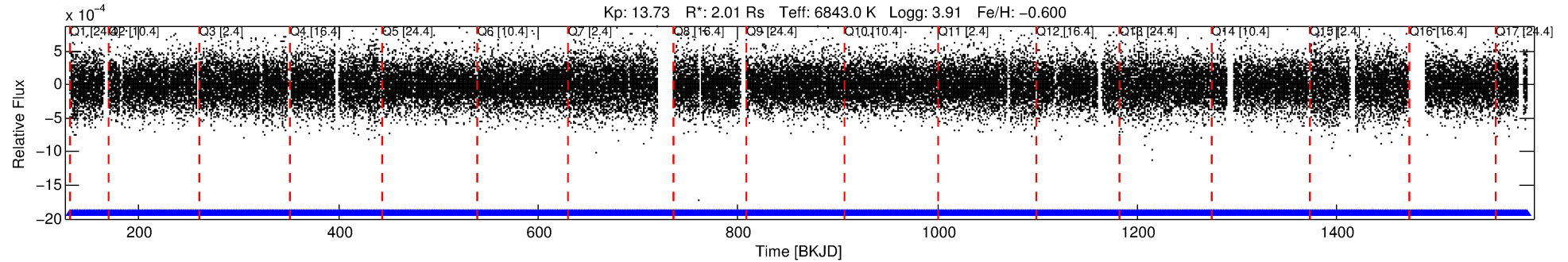
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008523427-01

No Significant Match Found

DV One-Page Summary

KIC: 8523427 Candidate: 1 of 3 Period: 0.747 d



DV Fit Results:

Period = 0.74677 [0.00001] d
Epoch = 131.6152 [0.0039] BKJD
Rp/R* = 0.0050 [0.0020]
a/R* = 1.29 [1.24]
b = 0.90 [0.52]
Seff = 26974.56 [18714.34]
Teq = 3268 [567] K
Rp = 1.10 [0.64] Re
a = 0.0171 [0.0071] AU
Ag = 2.67 [2.83] [0.59σ]
Teffp = 6456 [1355] K [2.17σ]

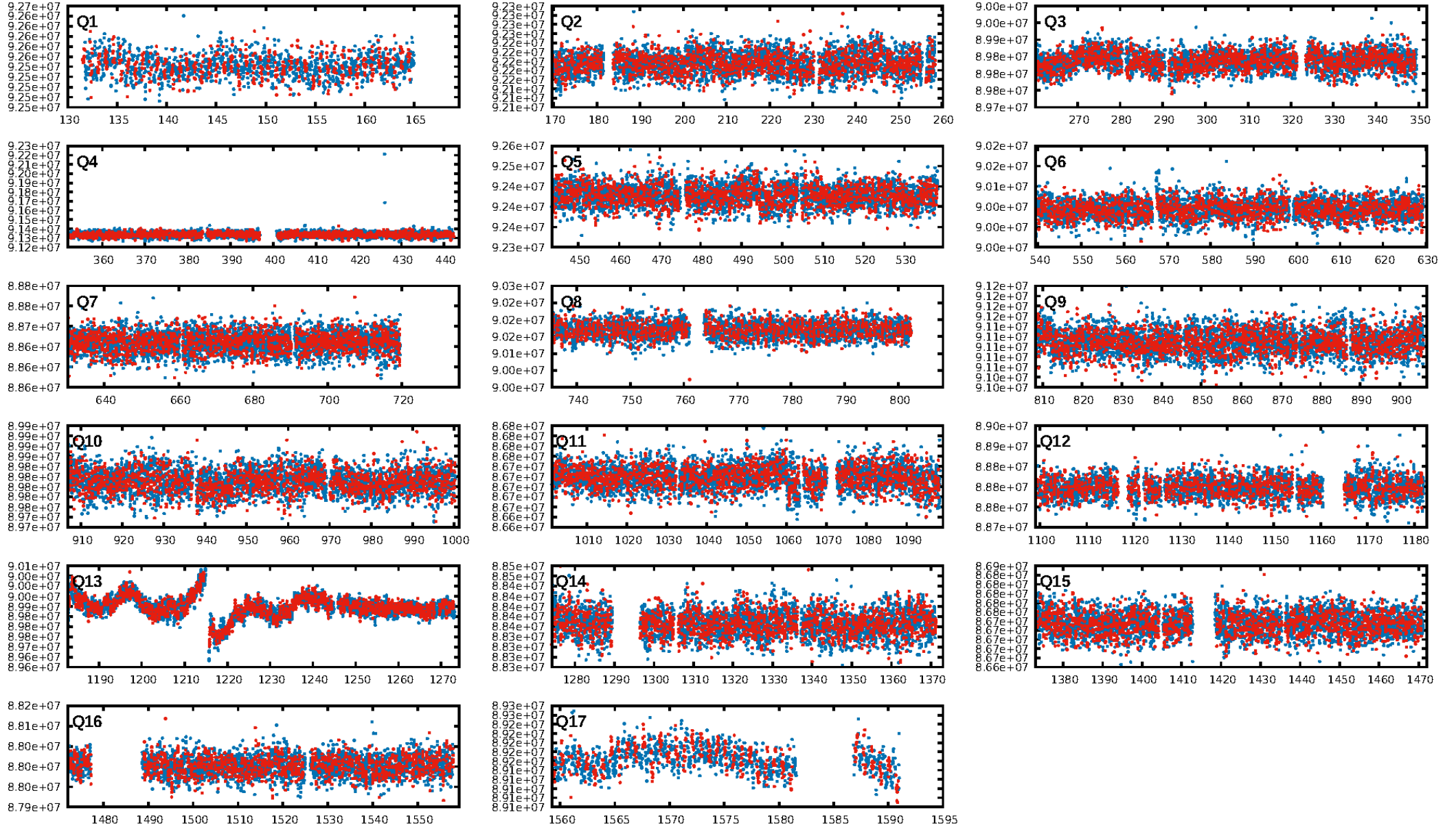
DV Diagnostic Results:

ShortPeriod-sig: 85.9% [1.47σ]
LongPeriod-sig: 100.0% [204.93σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.14e-18
RollingBand-fgt: 1.00 [1714/1714]
GhostDiagnostic-chr: 4.003
Centroid-sig: 0.0%
Centroid-so: 3.403 arcsec [2.58σ]
OotOffset-rm: 1.020 arcsec [2.21σ]
KicOffset-rm: 0.975 arcsec [2.13σ]
OotOffset-st: 3/3/2/3 [11]
KicOffset-st: 3/3/2/3 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 0.00 [0/17]

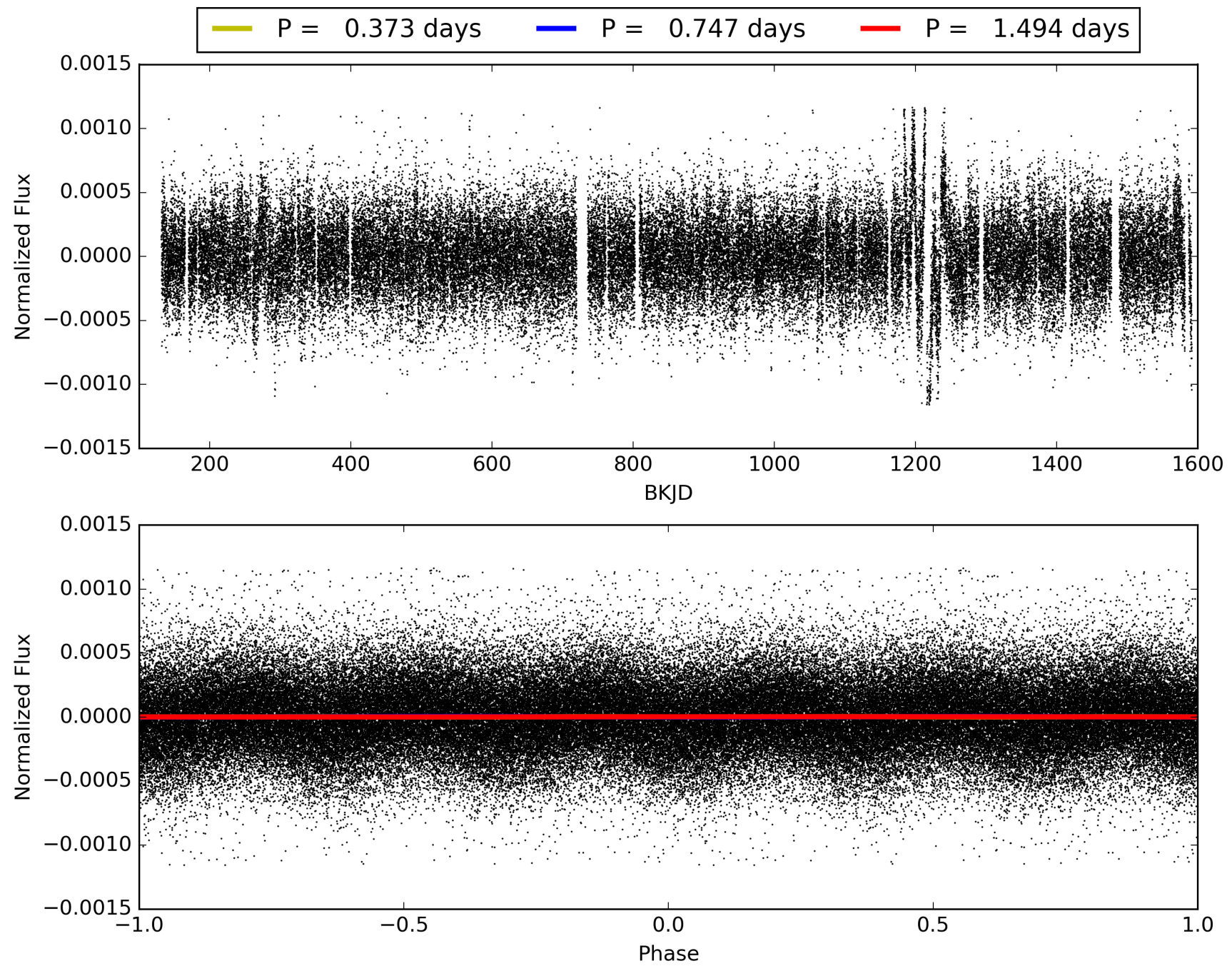
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:58:29 Z

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

TCE 008523427-01, PDC Light Curves

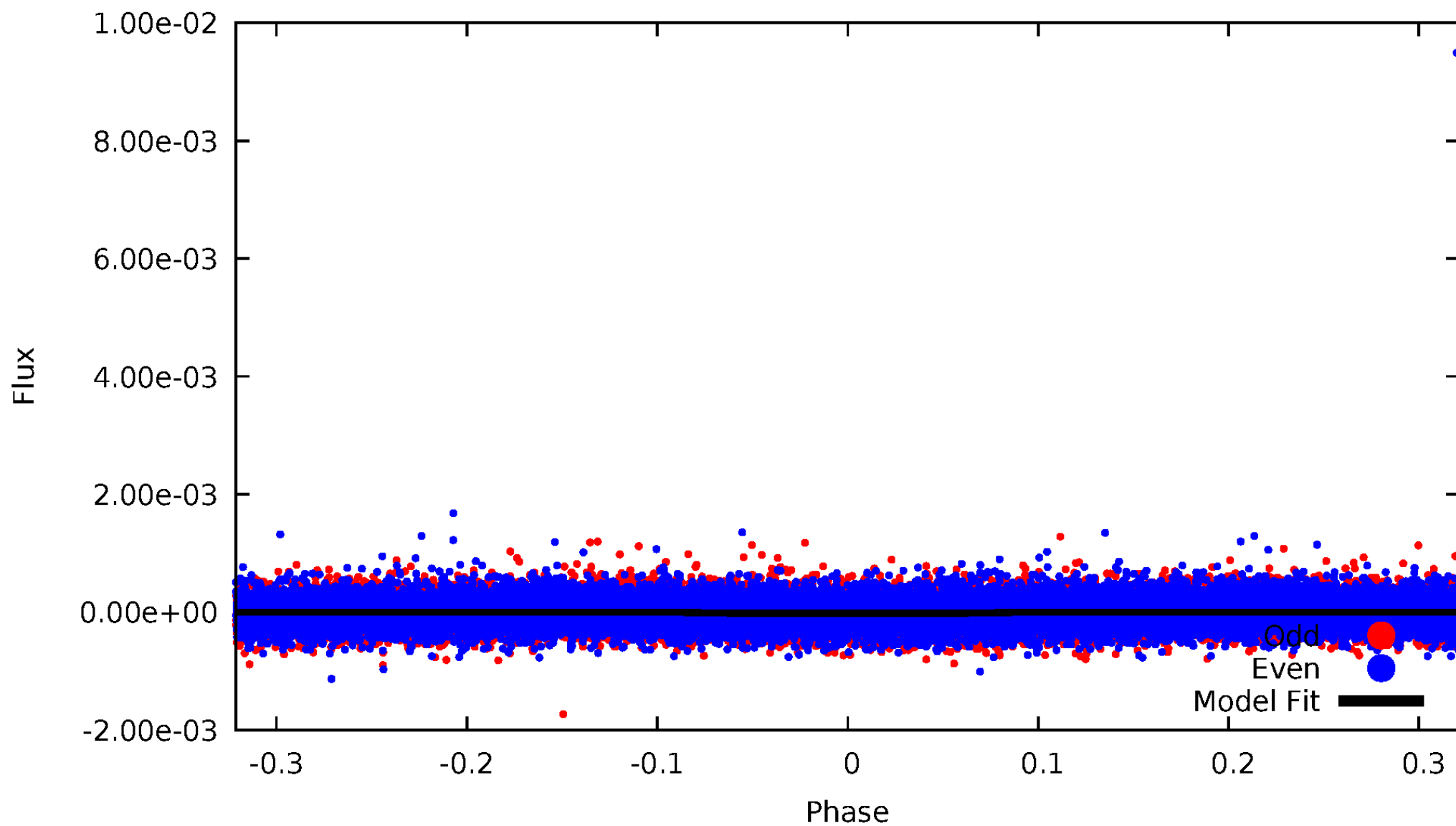


TCE 008523427-01



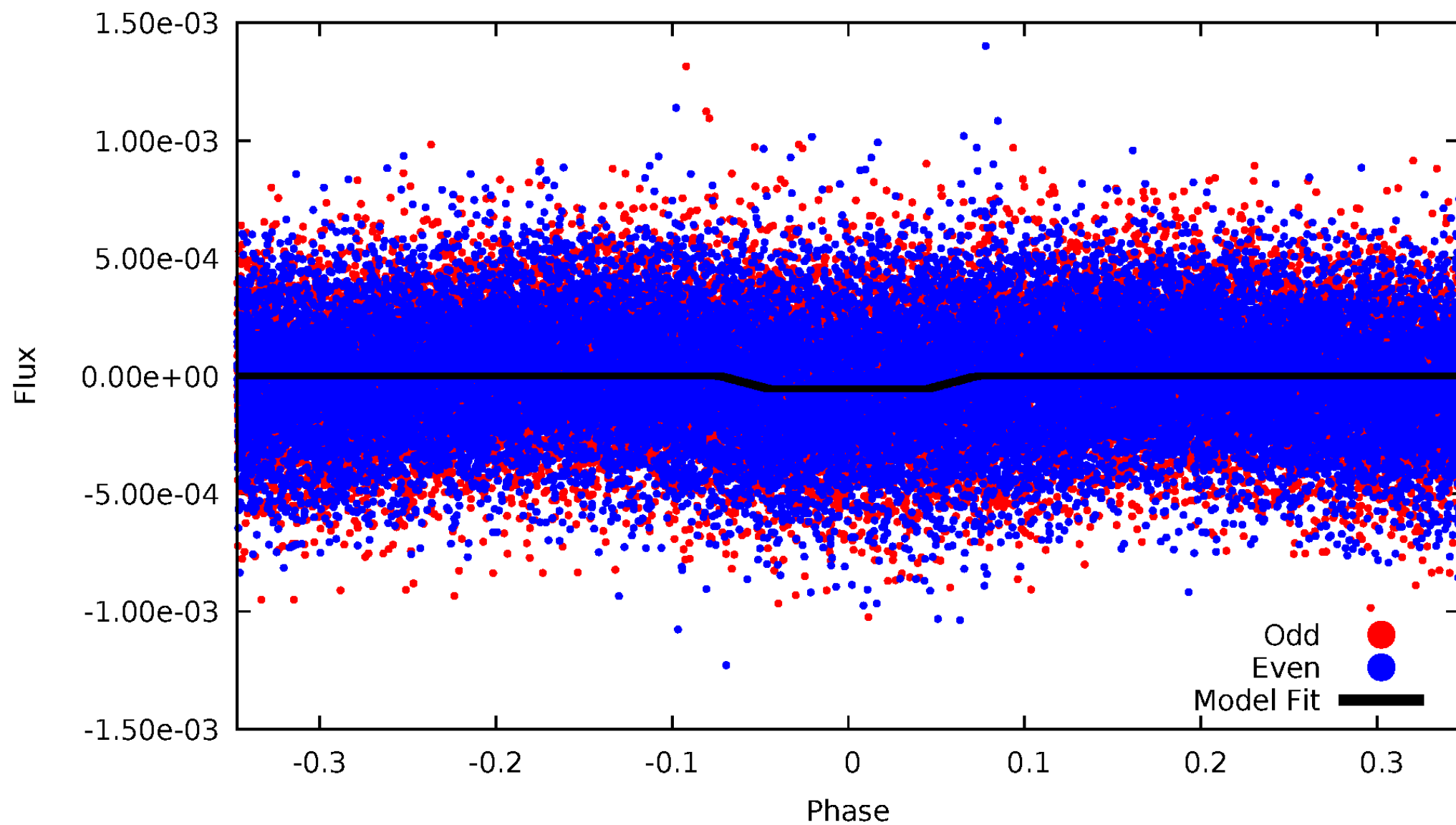
DV Odd/Even

TCE 008523427-01



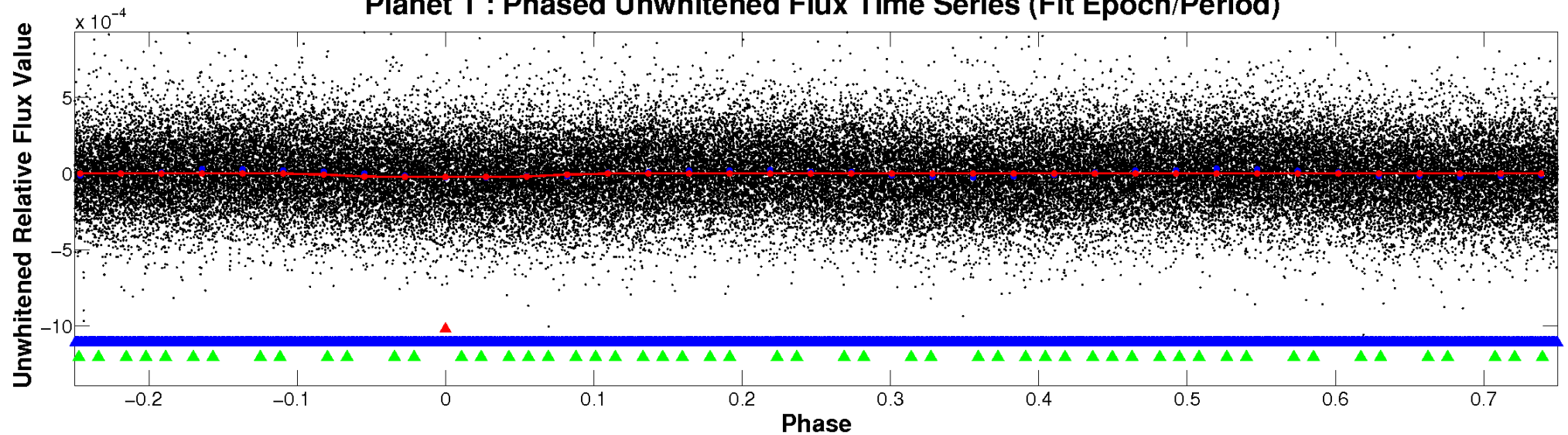
ALT Odd/Even

TCE 008523427-01

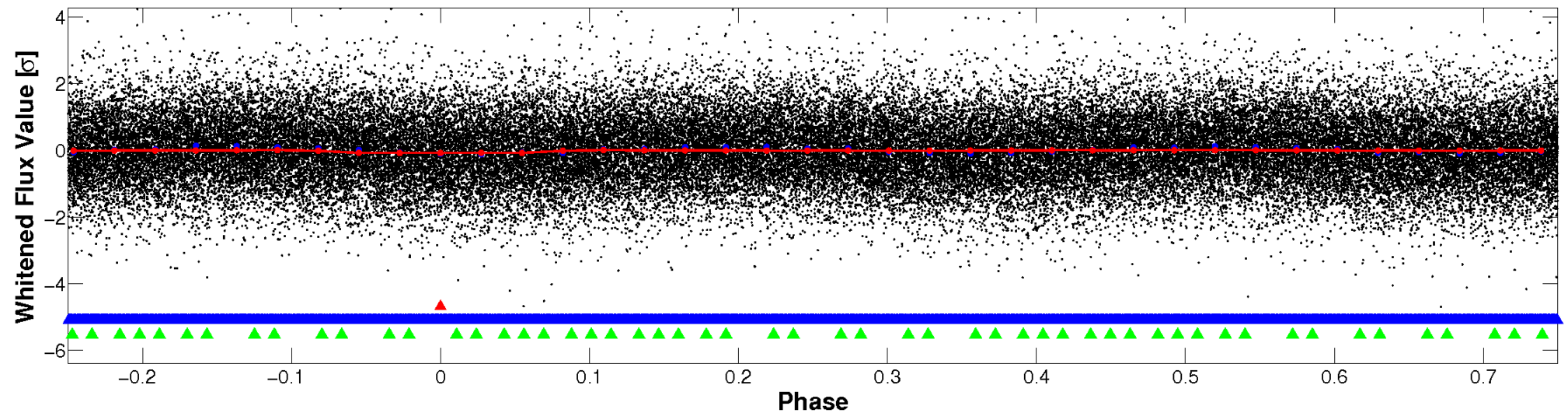


Non-Whitened Vs. Whitened Light Curve

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

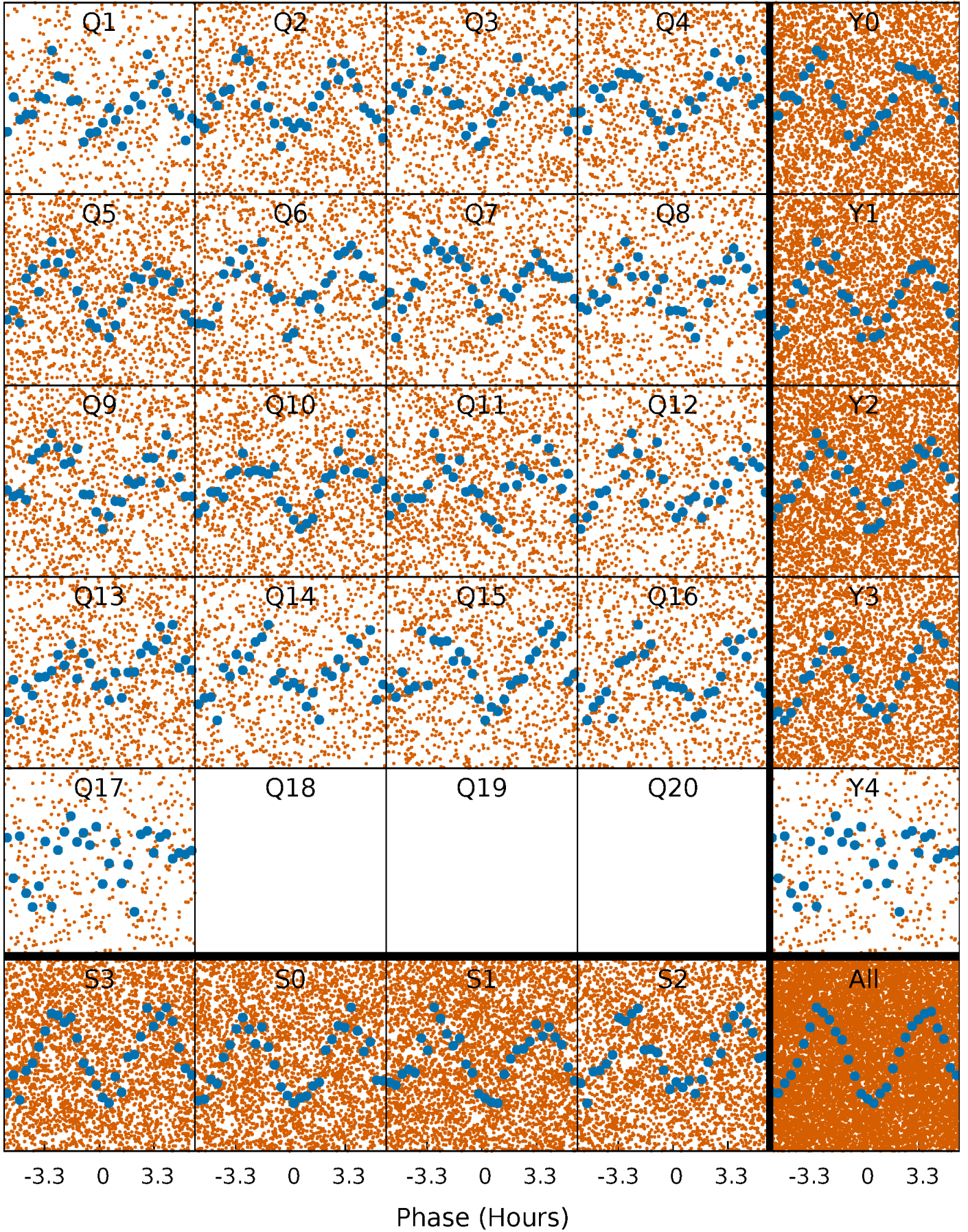


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



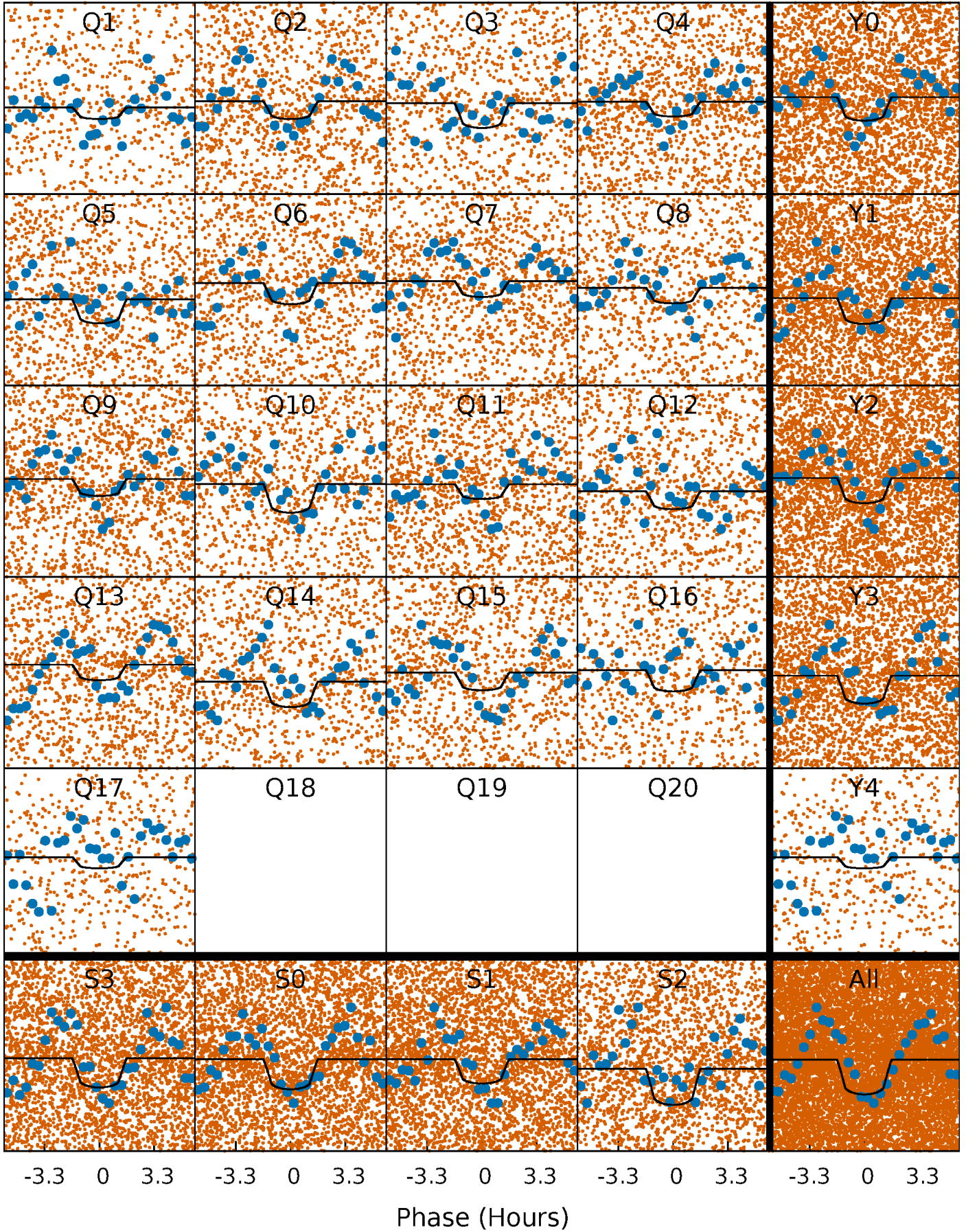
PDC Quarter-Phased Transit Curves

TCE 008523427-01 P= 0.746766 Days $T_0=131.615245$ (BKJD)



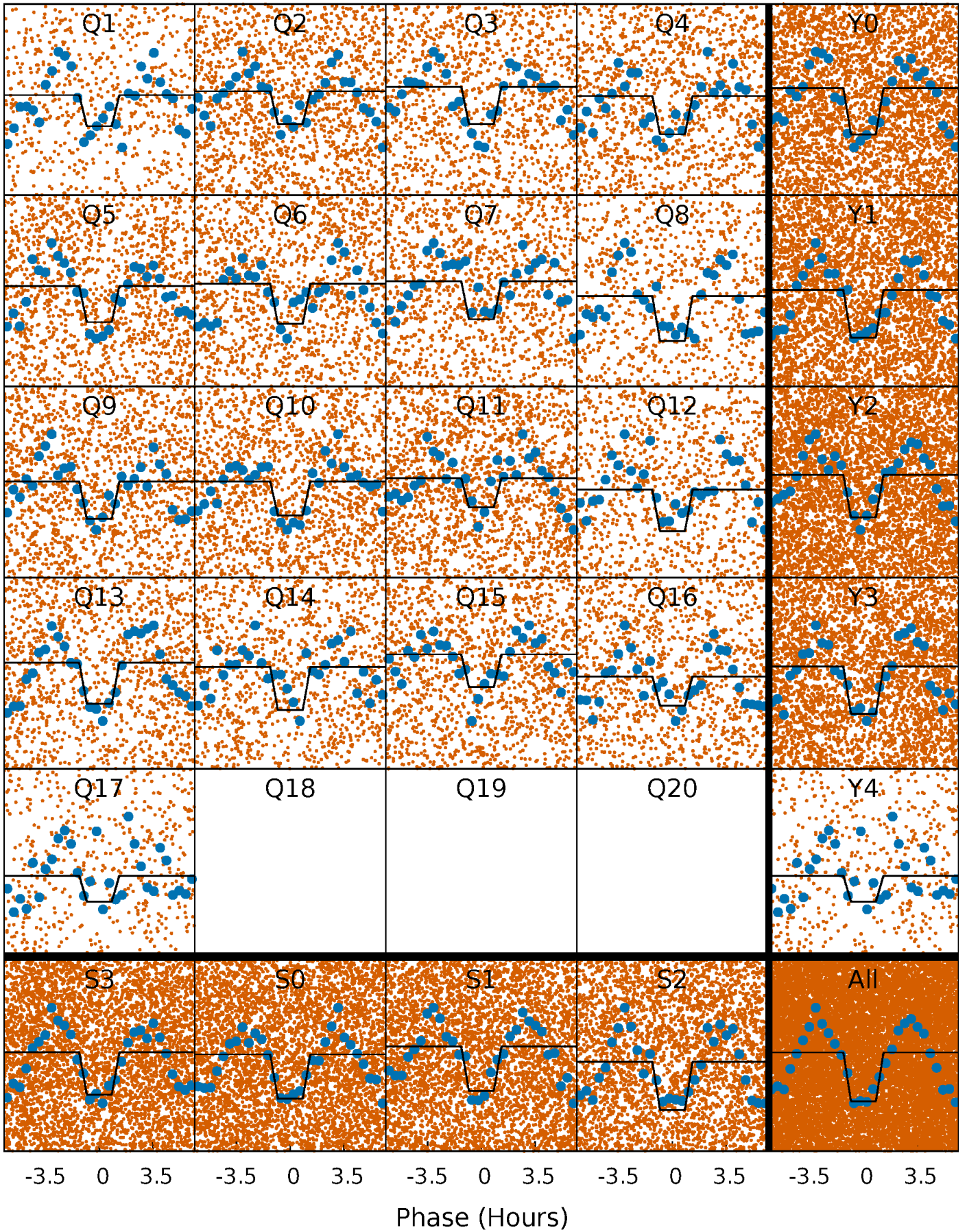
DV Quarter-Phased Transit Curves

TCE 008523427-01 P= 0.746766 Days $T_0=131.615245$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

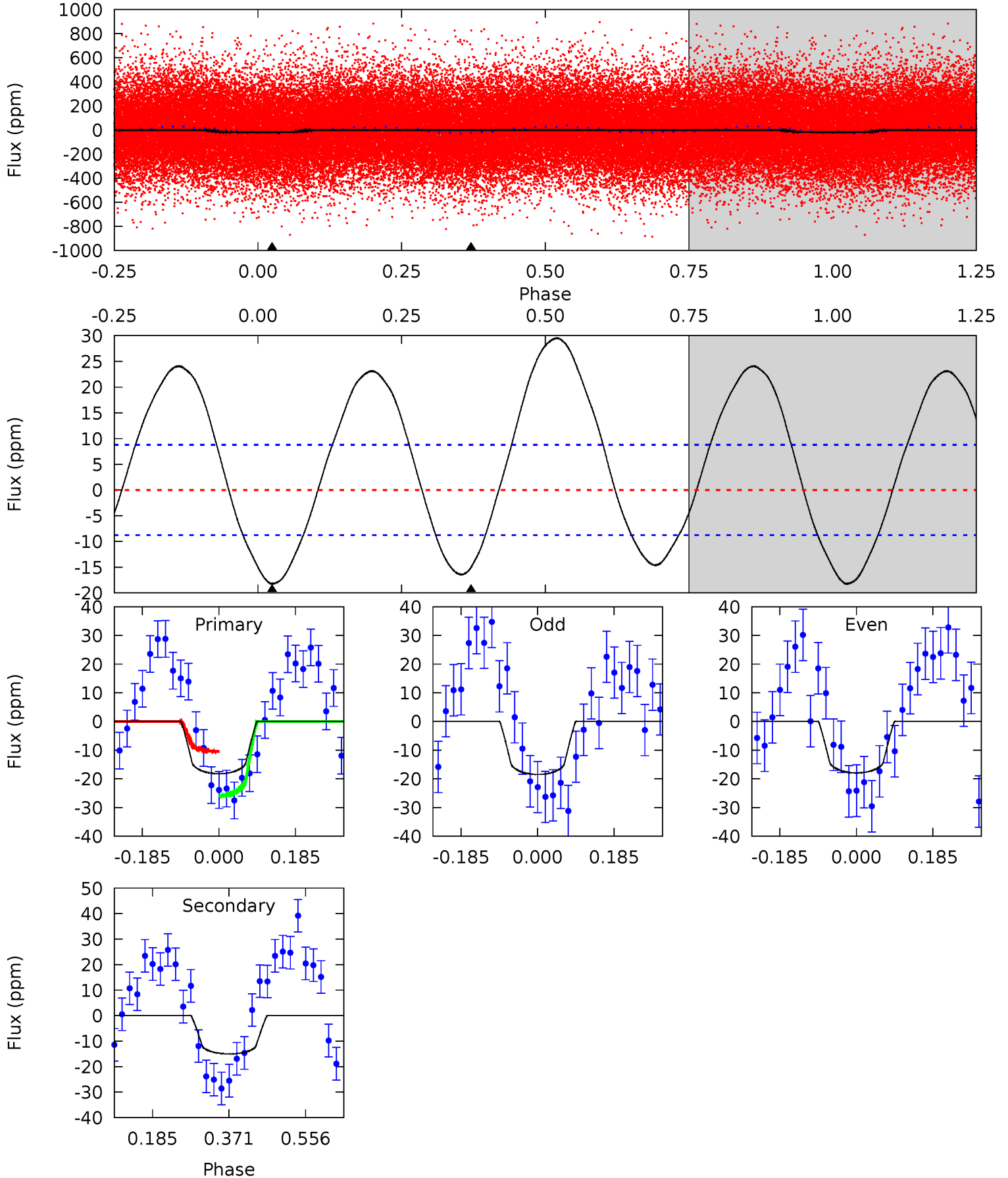
TCE 008523427-01 P= 0.746792 Days $T_0=131.610951$ (BKJD)



DV Model-Shift Uniqueness Test

008523427-01, P = 0.746766 Days, E = 130.868479 Days

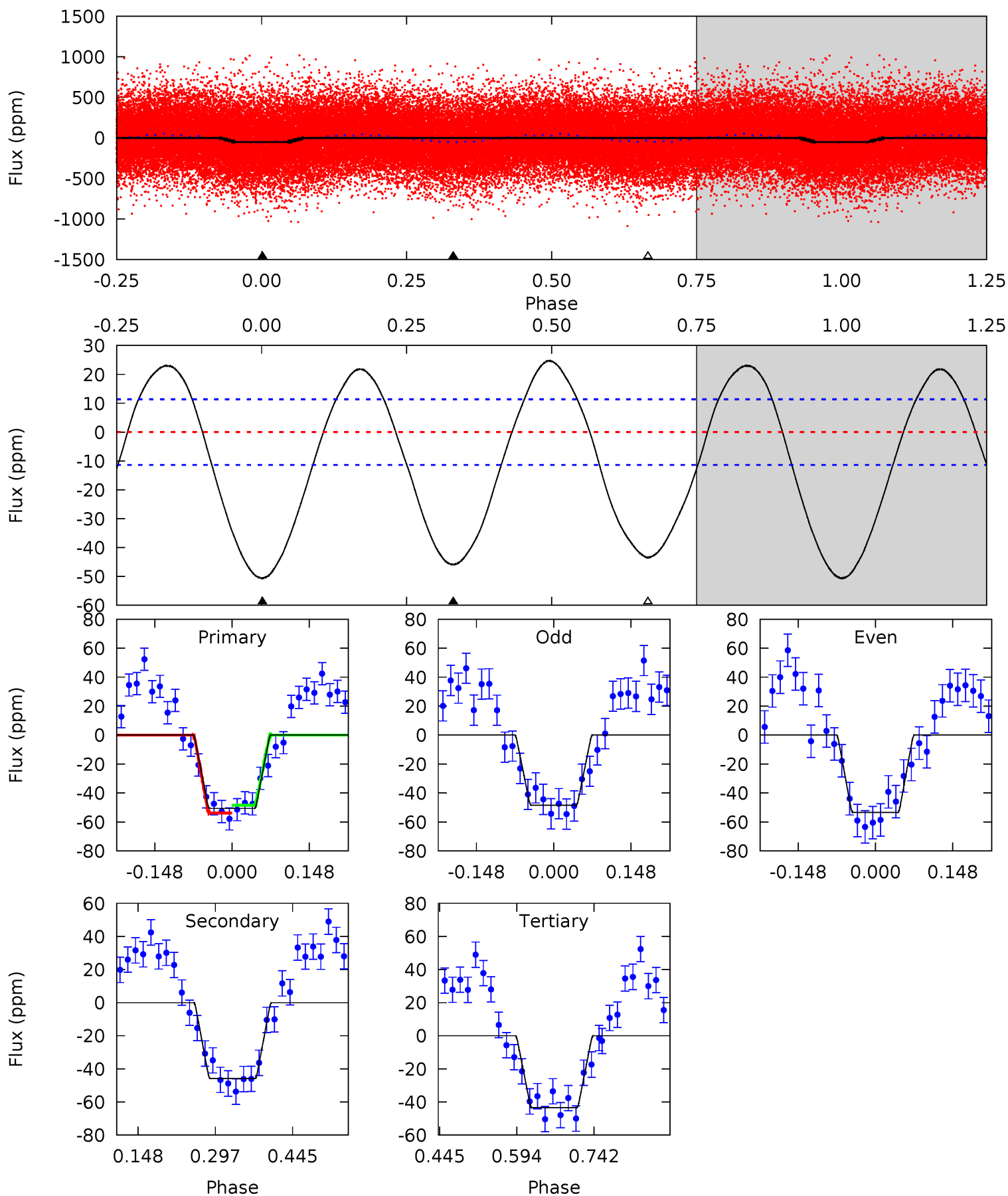
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.21	7.60	0	0	4.43	1.32	6.19	9.21	9.21	7.60	7.60	0.14	1.21	0.62	3.87



Alt Model-Shift Uniqueness Test

008523427-01, P = 0.746792 Days, E = 130.864159 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	18.1	17.1	0	4.48	1.45	9.77	2.82	20.0	0.95	18.1	1.00	0.98	0.33	1.04



Stellar Parameters For KIC 008523427

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6843^{+214}_{-285}	$3.913^{+0.398}_{-0.133}$	$-0.600^{+0.300}_{-0.300}$	$2.009^{+0.460}_{-0.854}$	$1.205^{+0.182}_{-0.223}$	$0.209^{+0.708}_{-0.081}$
	+3%/-4%	+10%/-3%	+50%/-50%	+23%/-43%	+15%/-19%	+338%/-39%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008523427-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-15 ± 2	$1.03^{+0.46}_{-0.45}$	4469^{+340}_{-468}	5706^{+2044}_{-954}	$2.278^{+4.587}_{-1.194}$
Alt.	-46 ± 3	$1.49^{+0.56}_{-0.47}$	4475^{+361}_{-560}	6391^{+1411}_{-850}	$3.419^{+4.041}_{-1.658}$

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

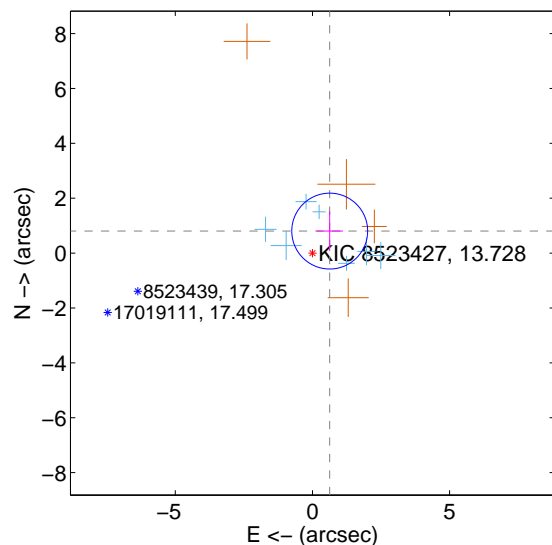
Supplemental centroid analysis for 008523427-01. Kepler magnitude: 13.73. Transit SNR 7.31

There are 7 quarters with good PRF difference image offsets

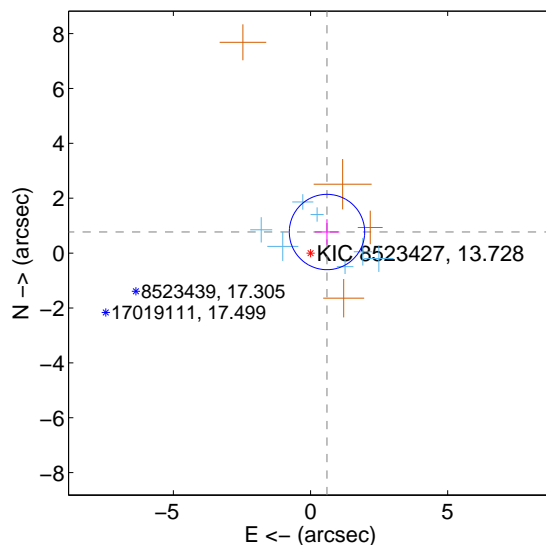
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.020 ± 0.461	2.21	-0.630 ± 0.482	0.802 ± 0.725
PRF-fit source offset from KIC position	0.975 ± 0.458	2.13	-0.600 ± 0.448	0.769 ± 0.464
photometric centroid source offset	3.40 ± 1.32	2.58	1.50 ± 1.39	3.06 ± 1.30

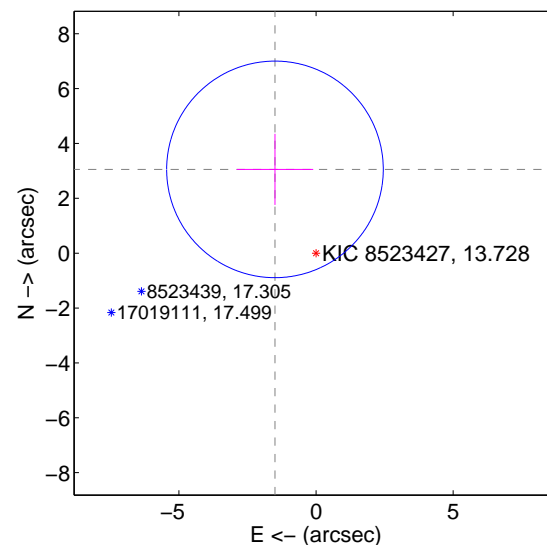
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

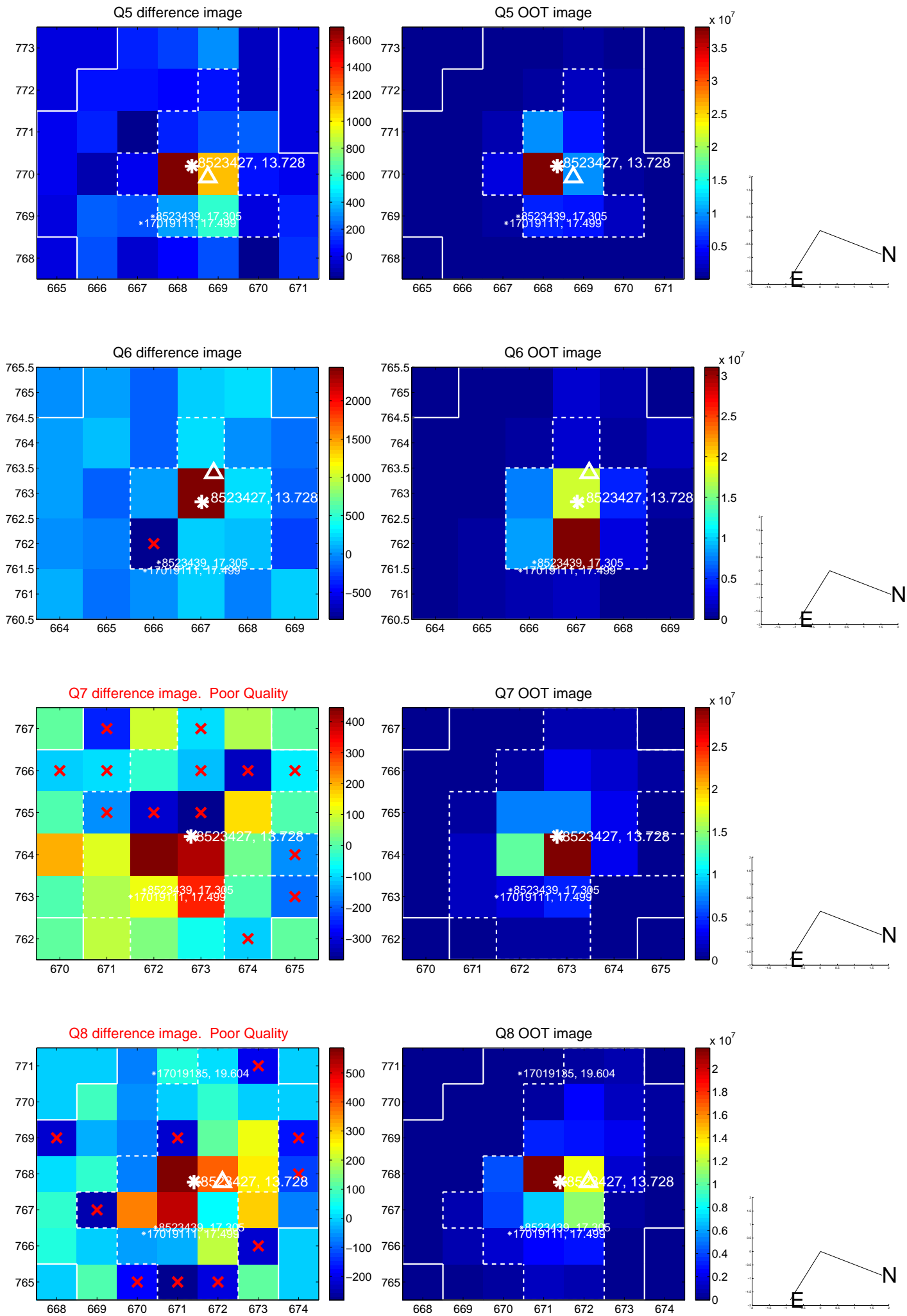


offset from photometric centroids

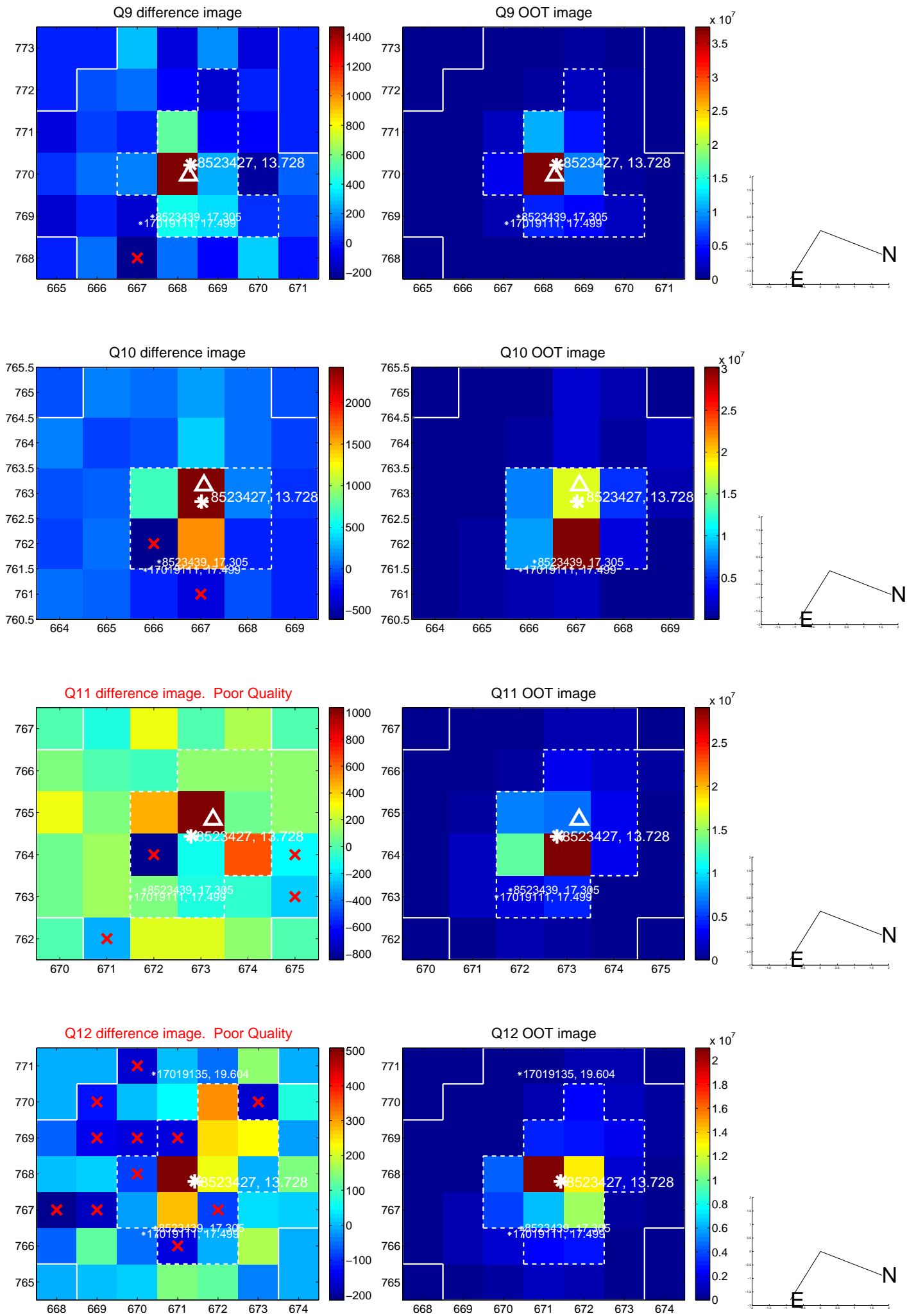


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

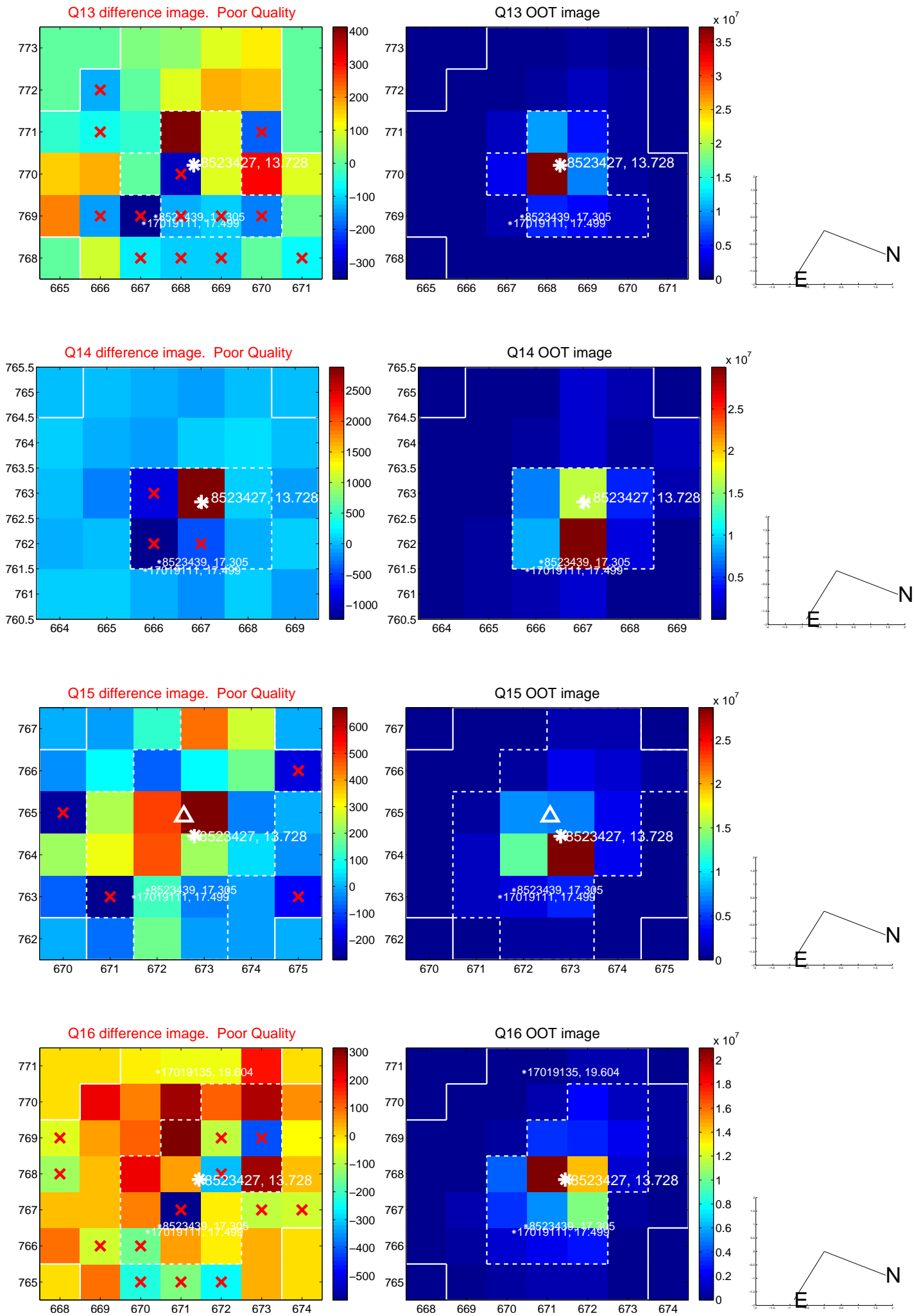
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



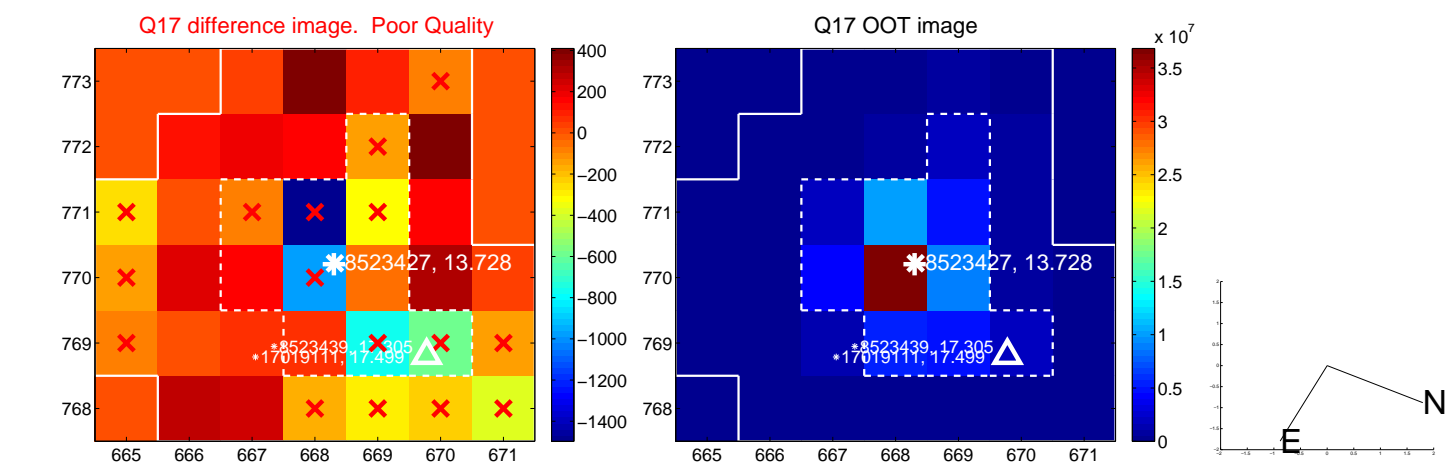
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



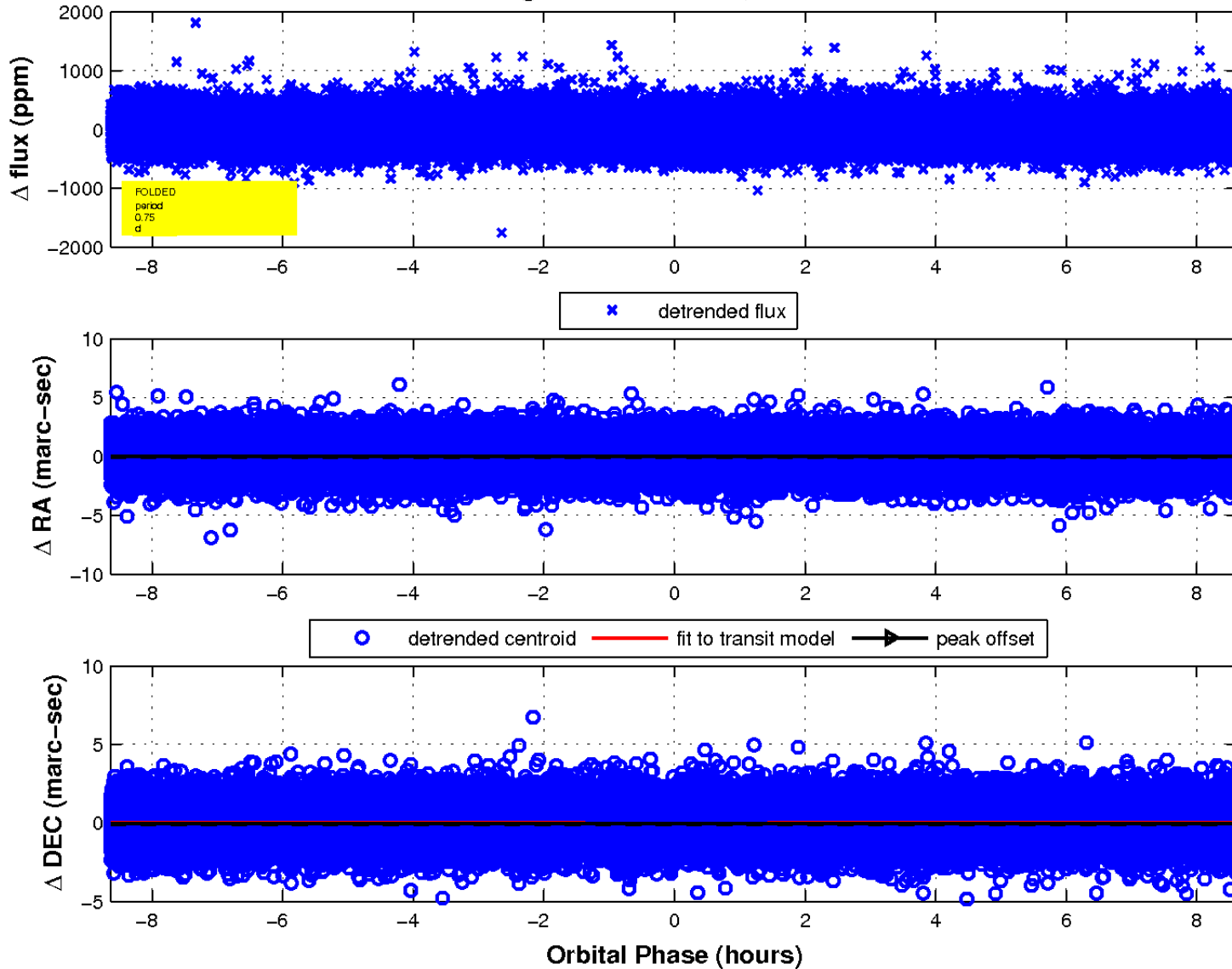
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

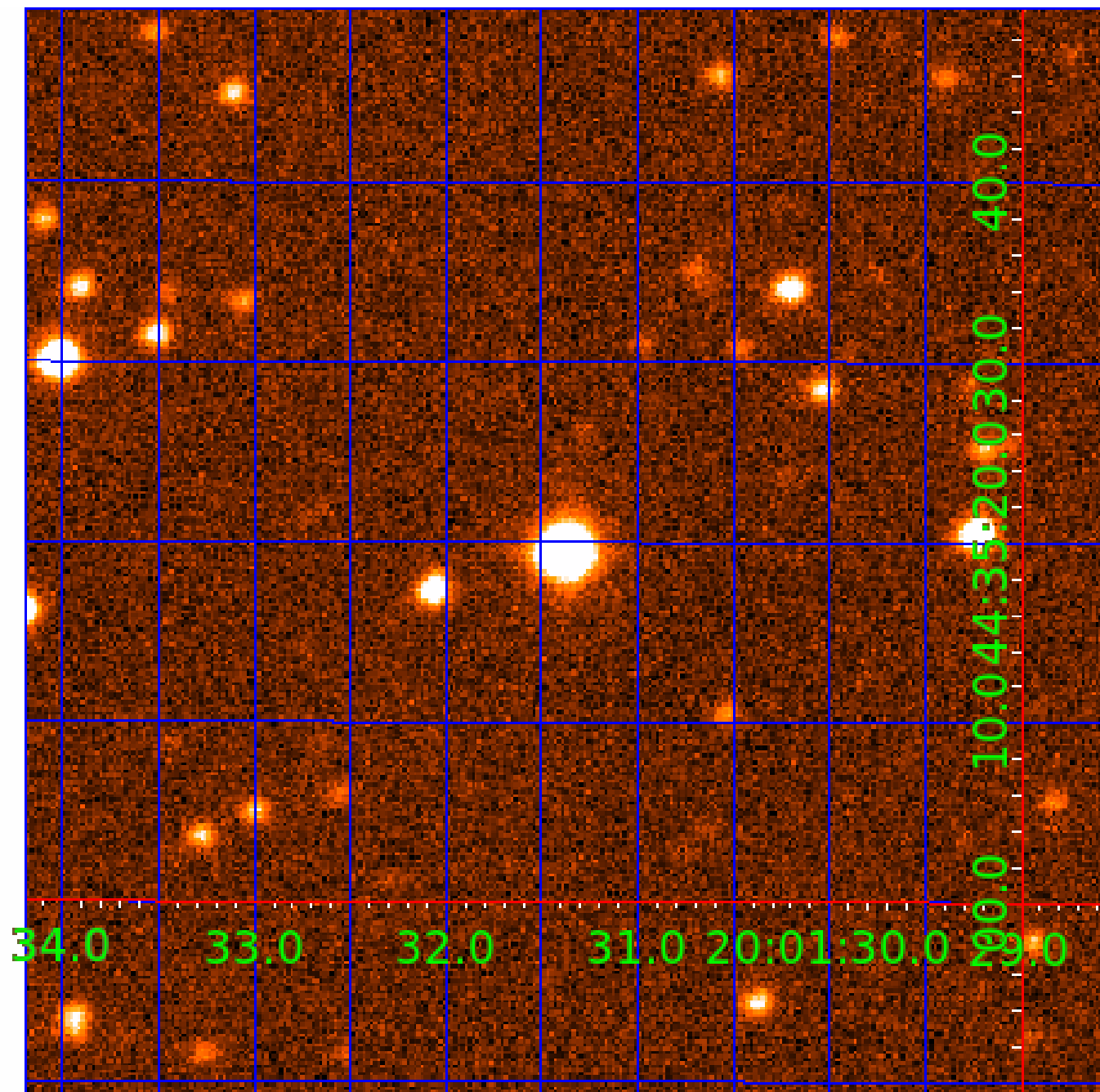


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 008523427

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})
008523427-01	OBS	No	0.746766	131.615245	21.9	2.878	8.7	7.3	2.01	6843	1.09	26974.56
008523427-02	OBS	No	0.537504	131.786816	32.6	1.830	9.0	8.3	2.01	6843	1.20	41817.48
008523427-03	OBS	No	27.143755	148.076033	242.6	1.128	7.4	5.9	2.01	6843	3.63	224.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008523427-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008523427-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008523427-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

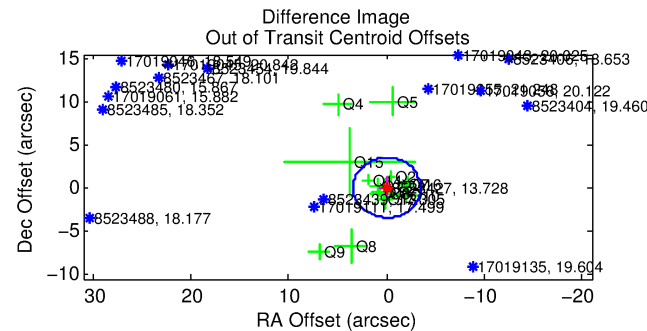
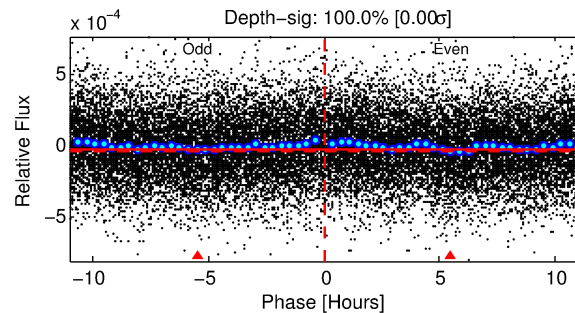
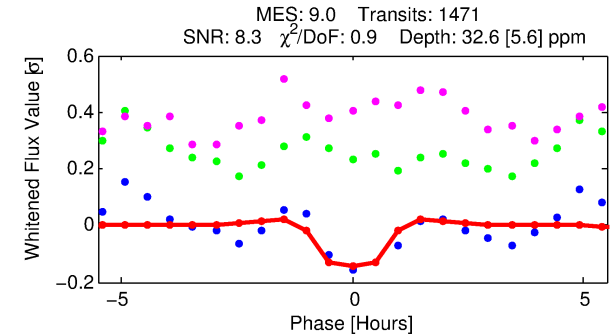
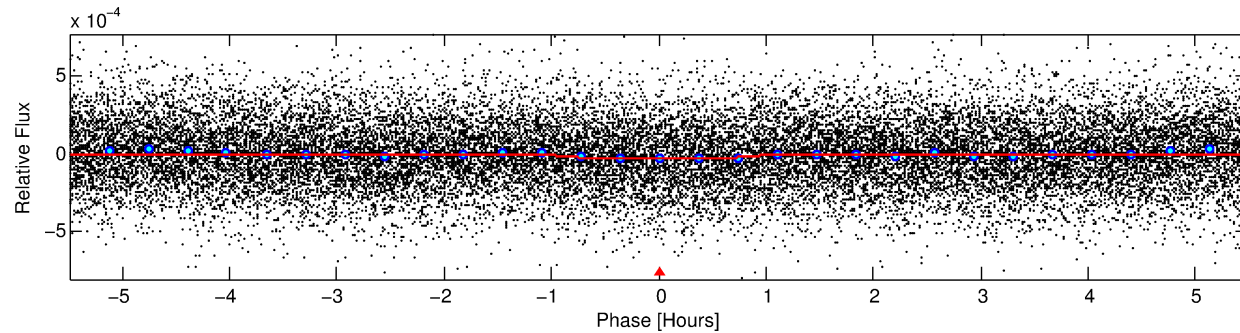
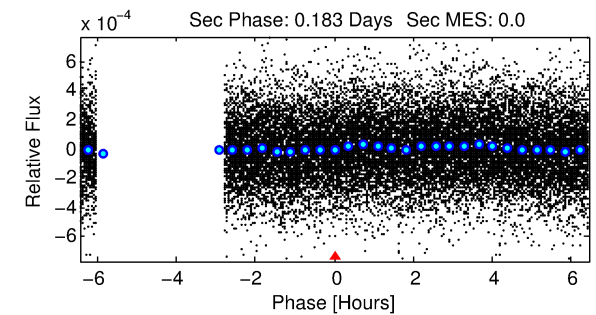
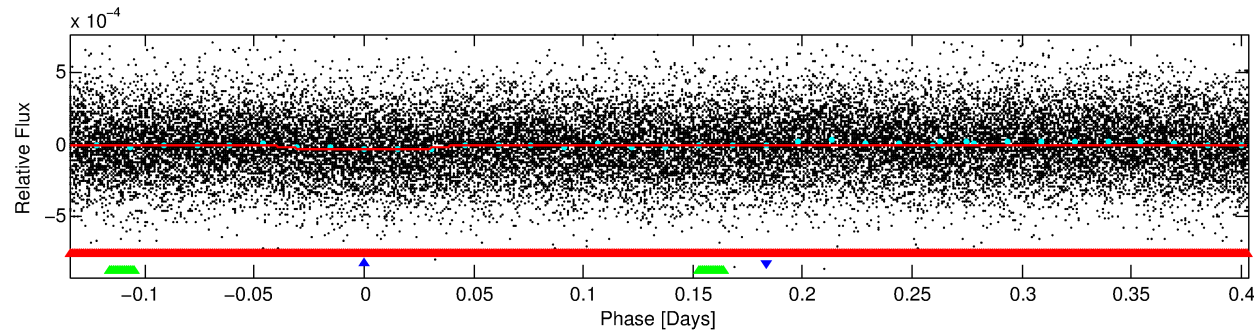
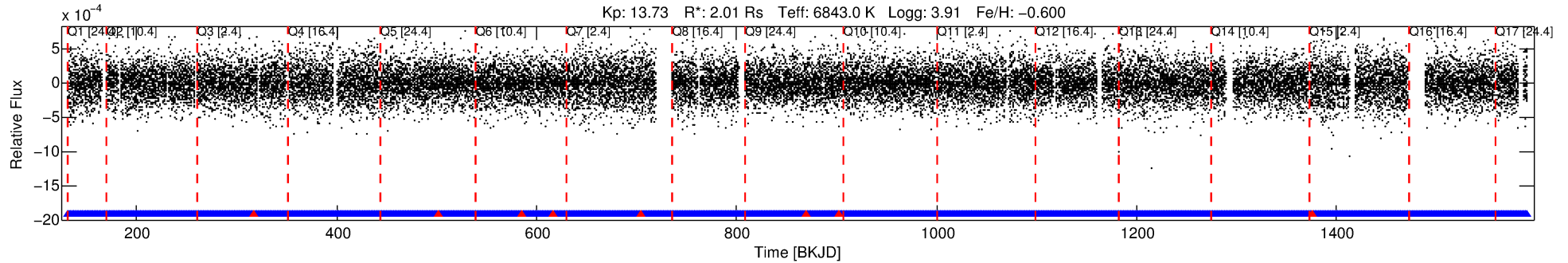
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008523427-02

No Significant Match Found

DV One-Page Summary

KIC: 8523427 Candidate: 2 of 3 Period: 0.538 d



DV Fit Results:

Period = 0.53750 [0.00001] d
Epoch = 131.7868 [0.0028] BKJD
Rp/R* = 0.0055 [0.0020]
a/R* = 2.01 [3.15]
b = 0.57 [2.52]
Seff = 41817.48 [29012.02]
Teff = 3646 [632] K
Rp = 1.20 [0.68] Re
a = 0.0138 [0.0057] AU
Ag = N/A
Teffp = N/A

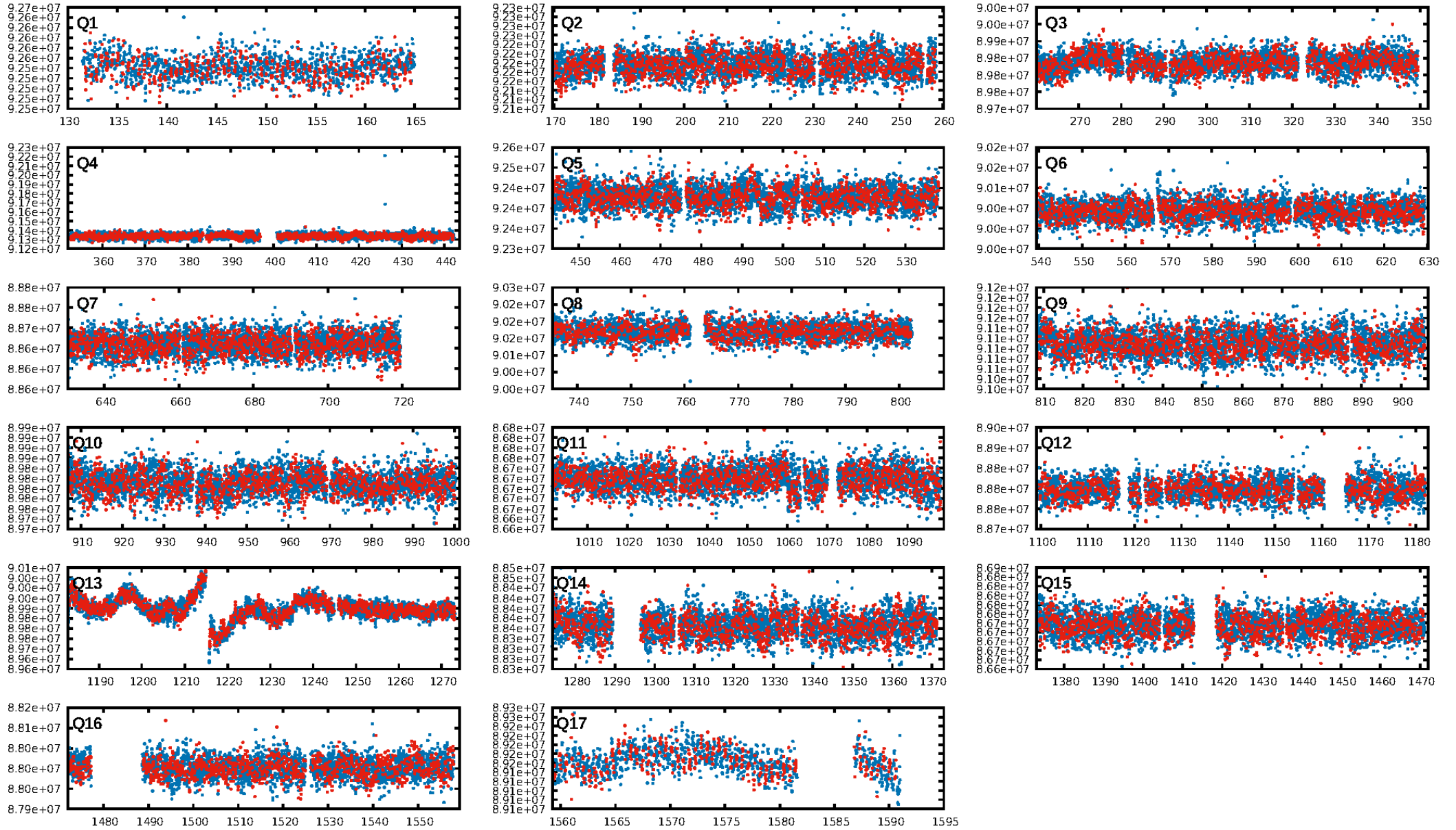
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 85.9% [1.47σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.56e-19
RollingBand-fgt: 0.99 [1395/1403]
GhostDiagnostic-chr: 1.223
Centroid-sig: 75.4%
Centroid-so: 1.168 arcsec [1.19σ]
OotOffset-rm: 0.074 arcsec [0.06σ]
KicOffset-rm: 0.009 arcsec [0.01σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 1.00 [17/17]

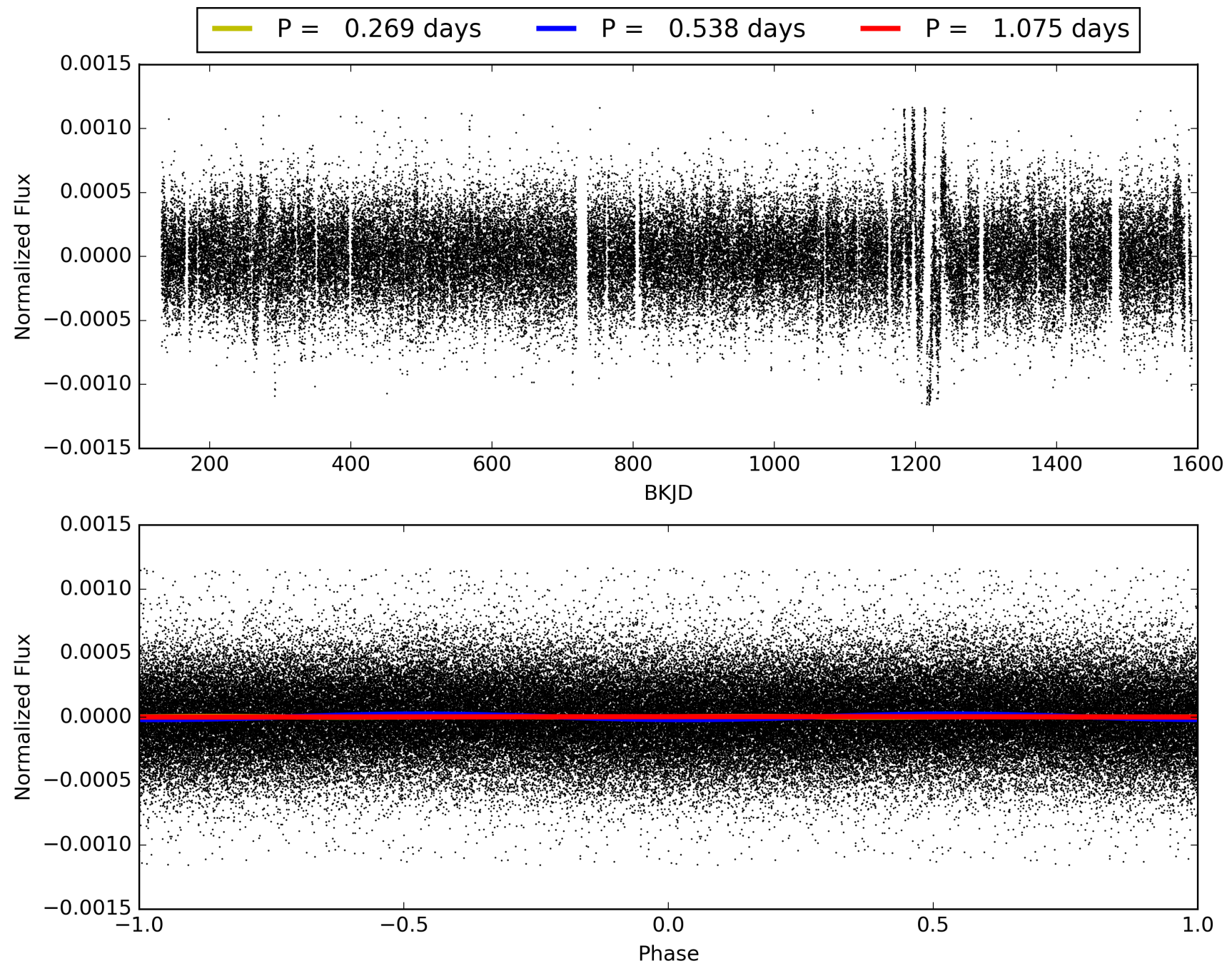
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:58:41 Z

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

TCE 008523427-02, PDC Light Curves

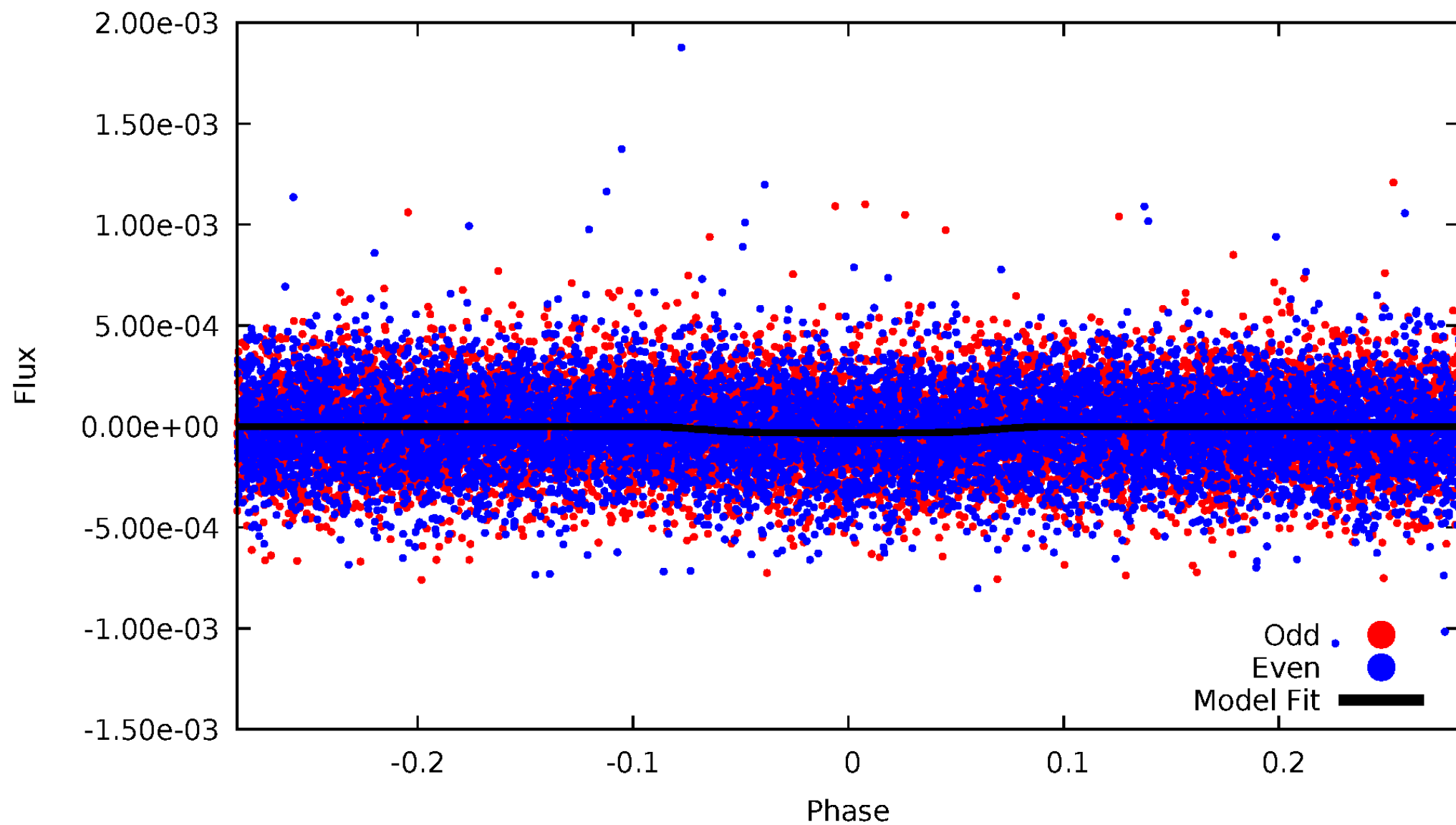


TCE 008523427-02



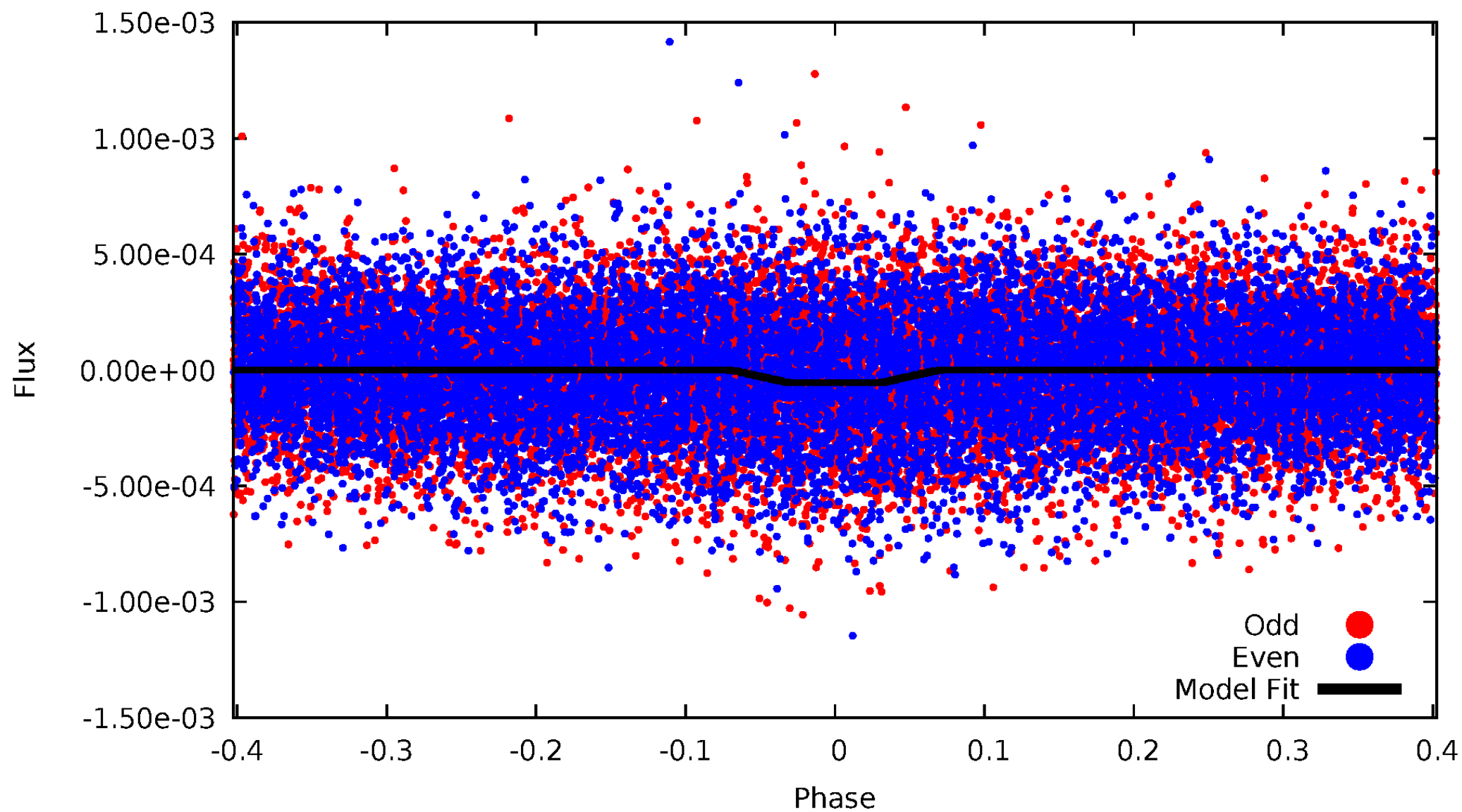
DV Odd/Even

TCE 008523427-02



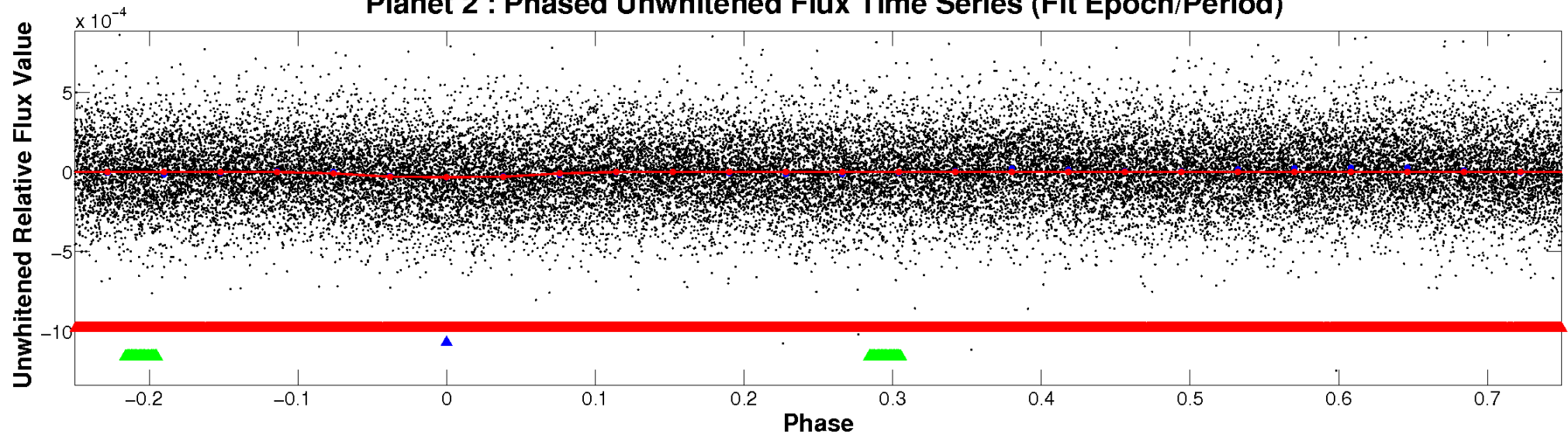
ALT Odd/Even

TCE 008523427-02

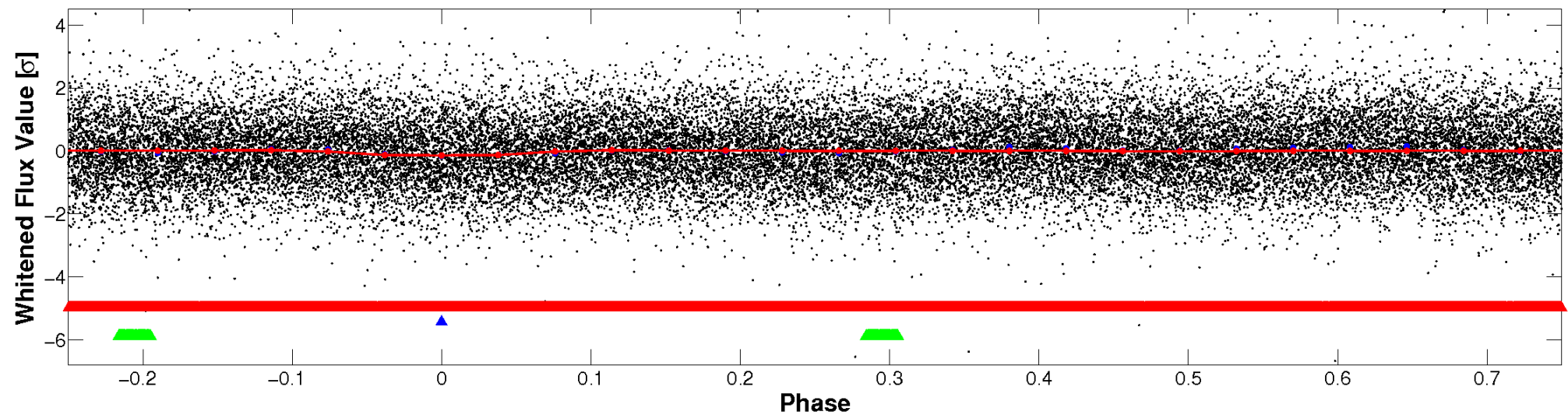


Non-Whitened Vs. Whitened Light Curve

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

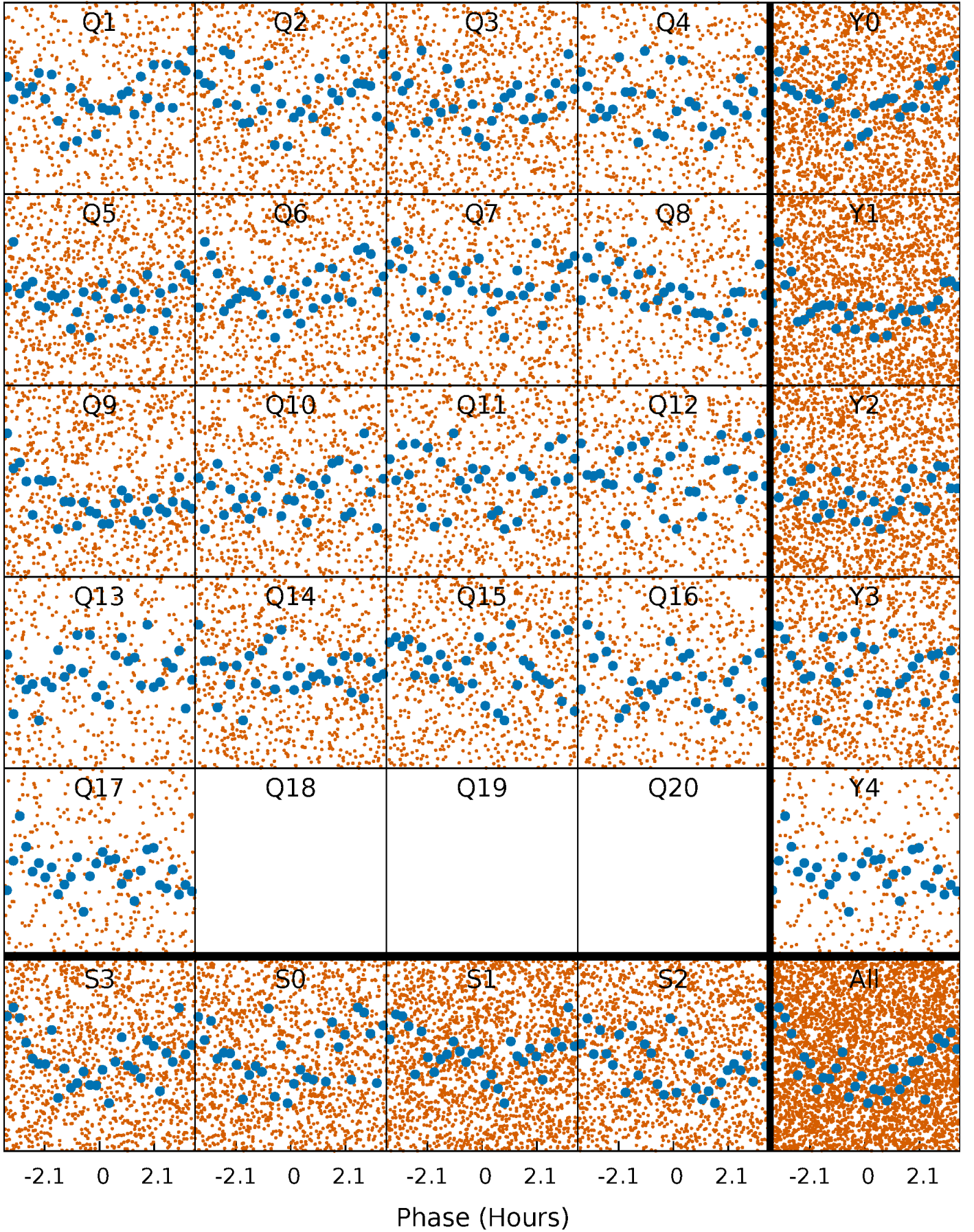


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



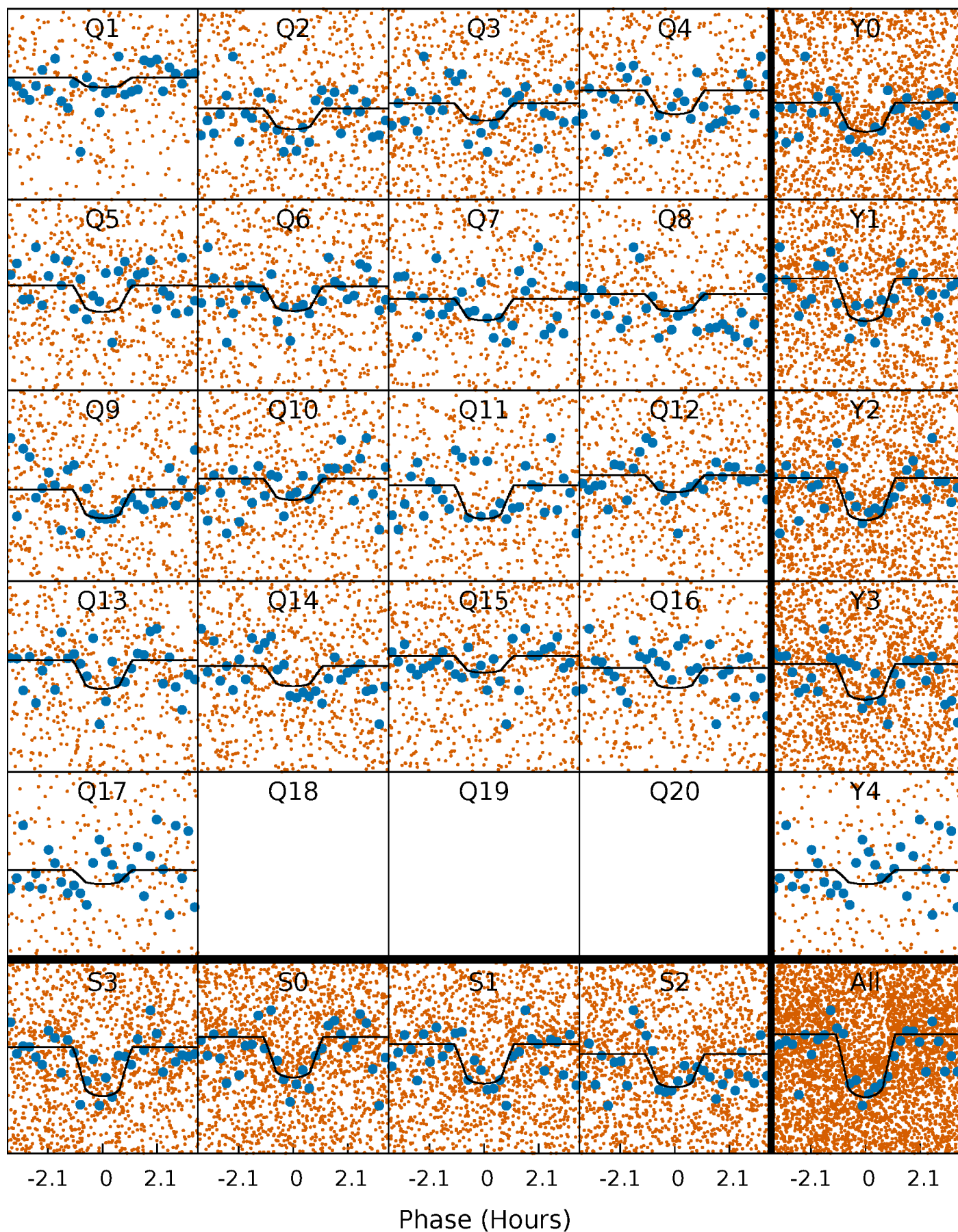
PDC Quarter-Phased Transit Curves

TCE 008523427-02 P= 0.537504 Days $T_0=131.786816$ (BKJD)



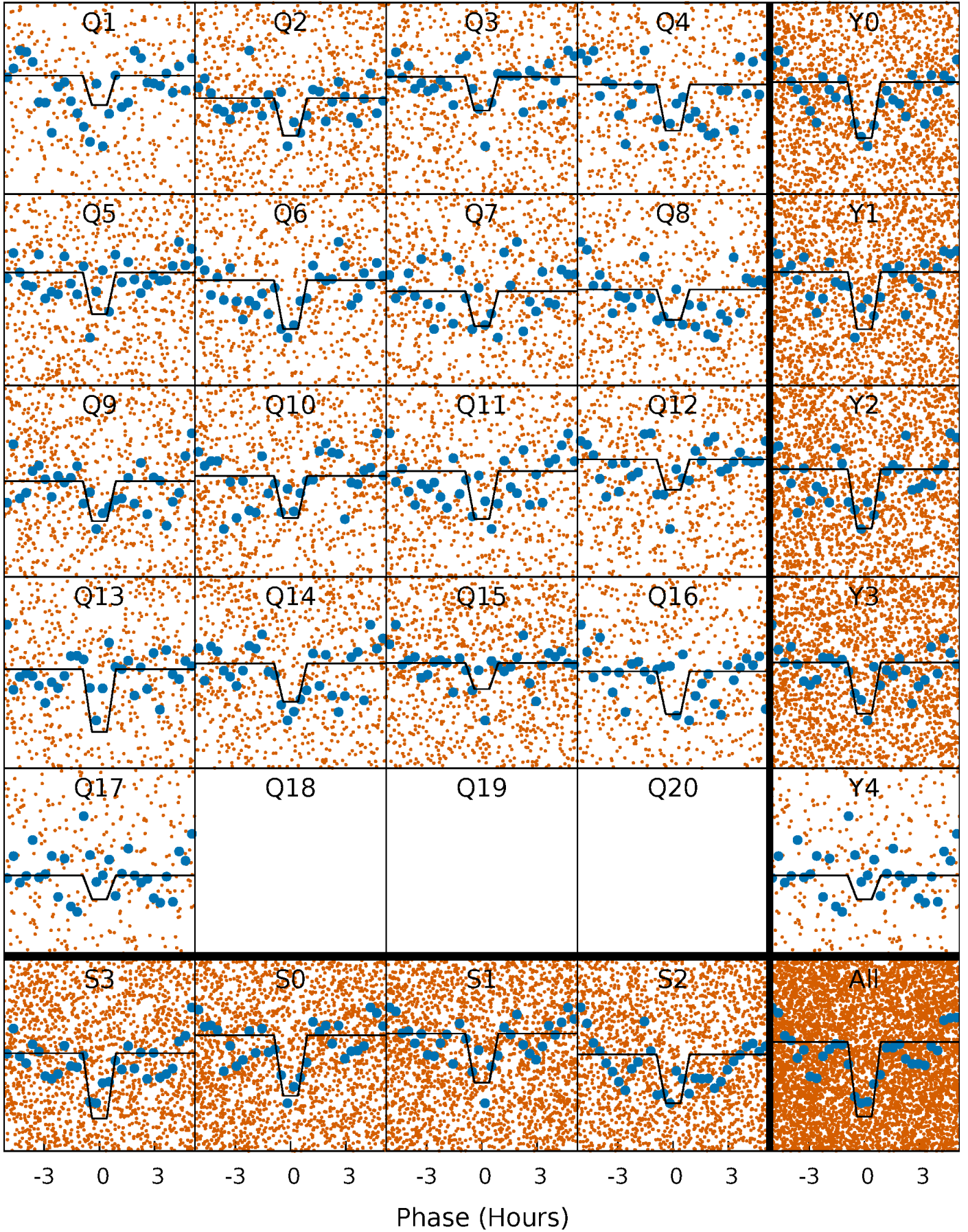
DV Quarter-Phased Transit Curves

TCE 008523427-02 P= 0.537504 Days $T_0=131.786816$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

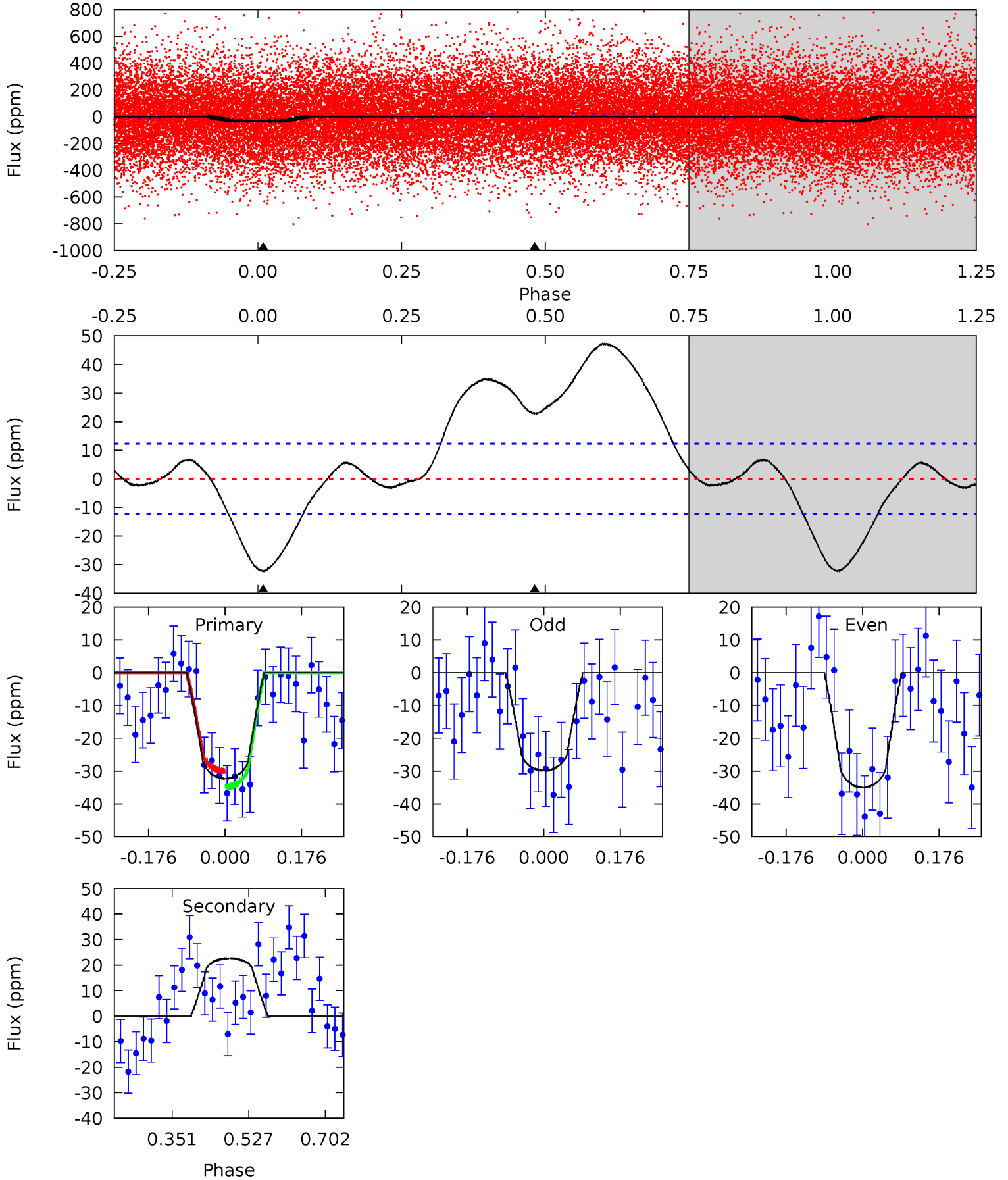
TCE 008523427-02 P= 0.537519 Days $T_0=131.776372$ (BKJD)



DV Model-Shift Uniqueness Test

008523427-02, P = 0.537504 Days, E = 131.786816 Days

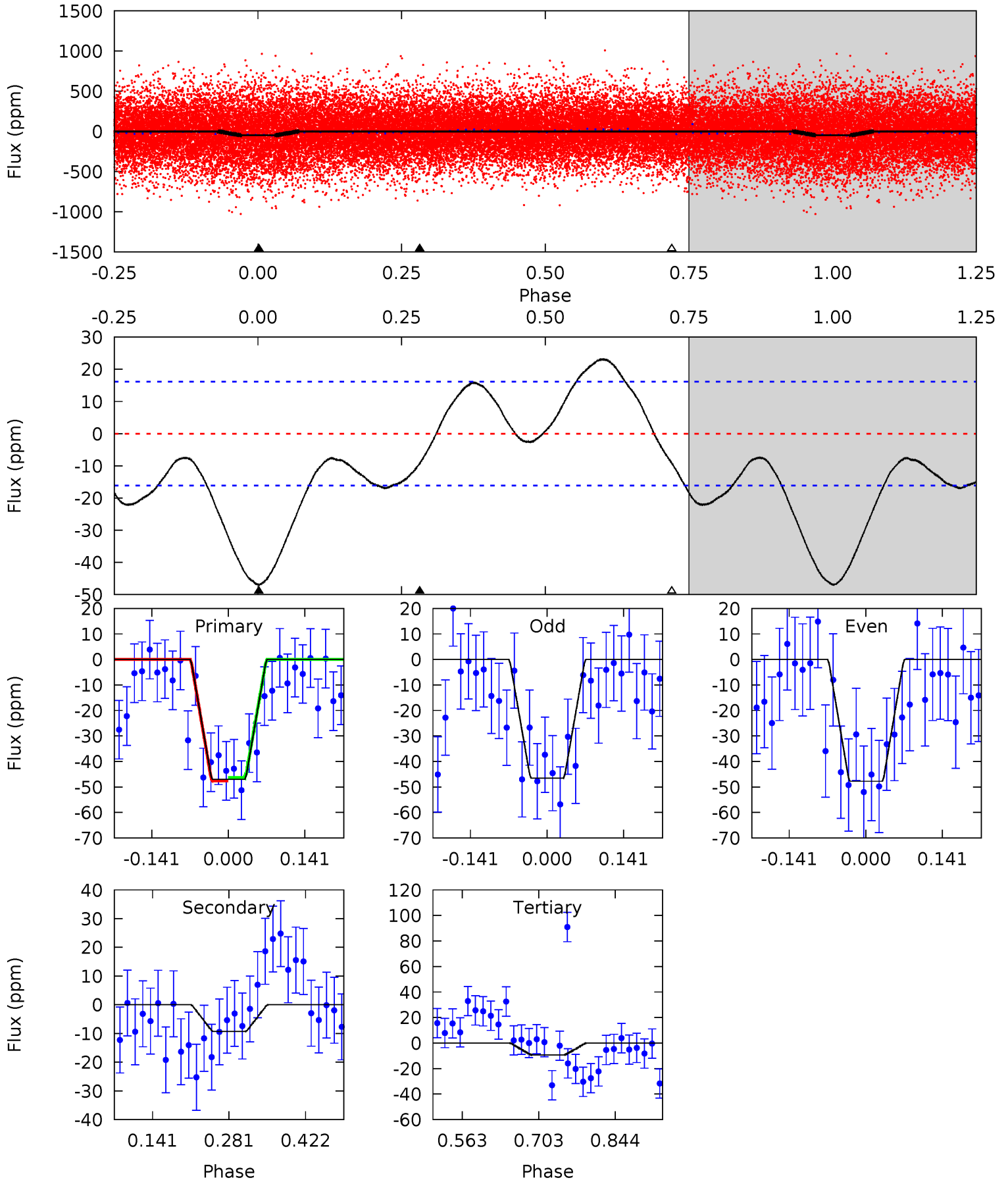
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	-8.20	0	0	4.45	1.35	4.19	11.7	11.7	-8.20	-8.20	0.92	0.84	0.59	0.88



Alt Model-Shift Uniqueness Test

008523427-02, P = 0.537519 Days, E = 131.776372 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	2.58	2.59	0	4.49	1.47	3.98	10.5	13.1	-0.00	2.58	0.18	1.47	0.33	0.19



Stellar Parameters For KIC 008523427

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6843^{+214}_{-285}	$3.913^{+0.398}_{-0.133}$	$-0.600^{+0.300}_{-0.300}$	$2.009^{+0.460}_{-0.854}$	$1.205^{+0.182}_{-0.223}$	$0.209^{+0.708}_{-0.081}$
	+3%/-4%	+10%/-3%	+50%/-50%	+23%/-43%	+15%/-19%	+338%/-39%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008523427-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	23 ± 3	$1.14^{+0.50}_{-0.48}$	4985^{+437}_{-570}	-6571^{+803}_{-1770}	$-1.822^{+0.943}_{-3.604}$
Alt.	-9 ± 4	$1.51^{+0.56}_{-0.51}$	4958^{+394}_{-527}	3537^{+1222}_{-7187}	$0.396^{+0.568}_{-0.207}$

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 $A_{obs} \gg 1.0$

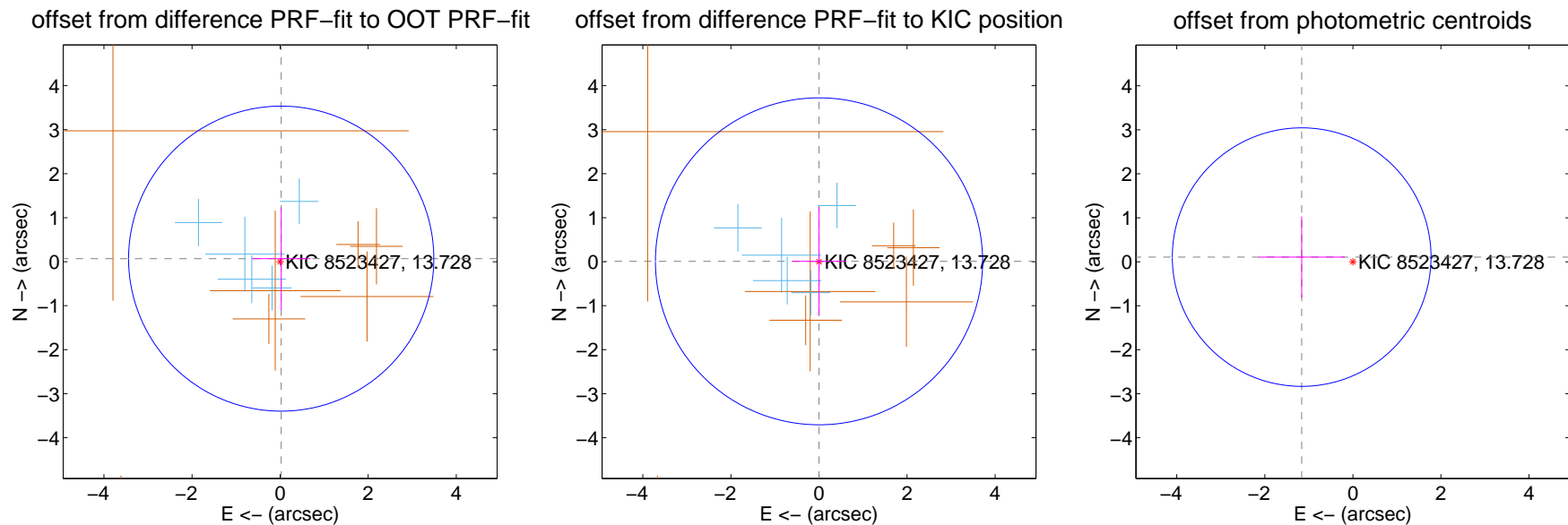
DV Centroid Data

Supplemental centroid analysis for 008523427-02. Kepler magnitude: 13.73. Transit SNR 8.31

There are 5 quarters with good PRF difference image offsets

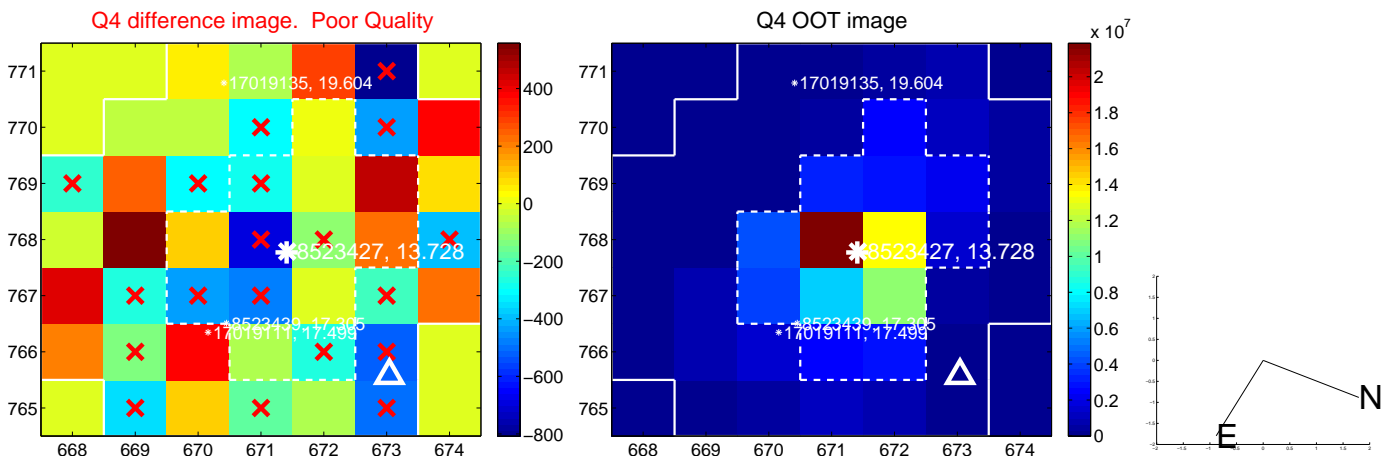
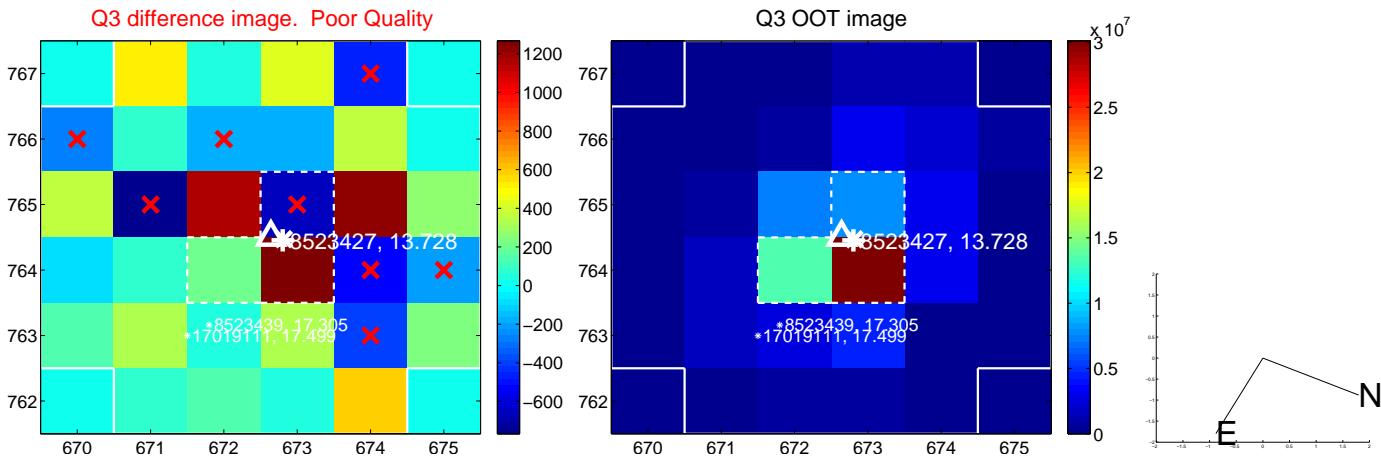
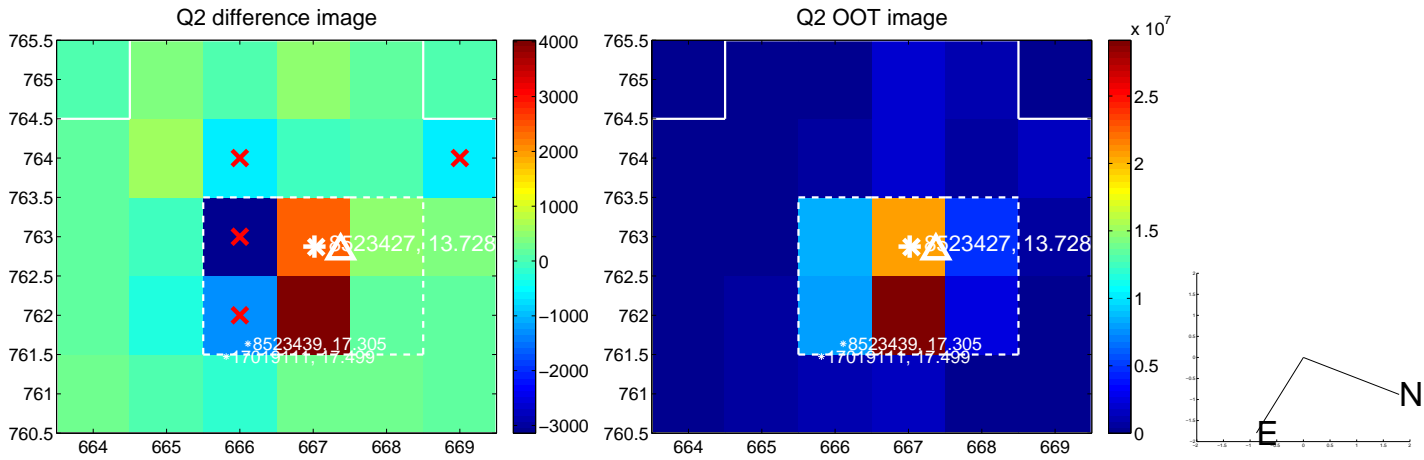
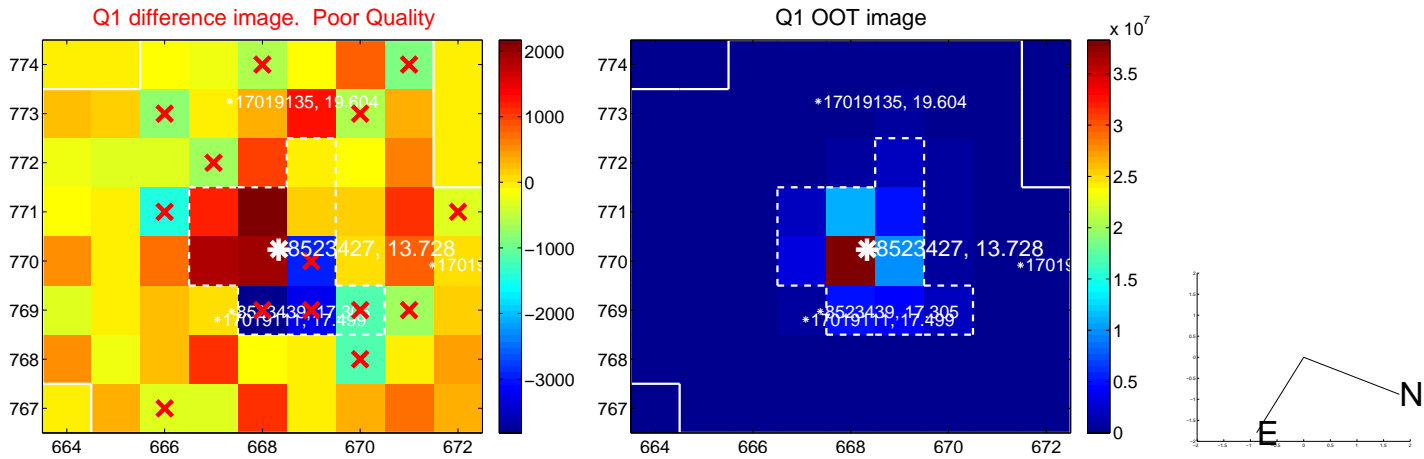
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.074 ± 1.155	0.06	-0.025 ± 0.665	0.069 ± 1.164
PRF-fit source offset from KIC position	0.009 ± 1.238	0.01	-0.001 ± 0.613	0.009 ± 1.232
photometric centroid source offset	1.17 ± 0.98	1.19	1.16 ± 0.98	0.11 ± 0.93

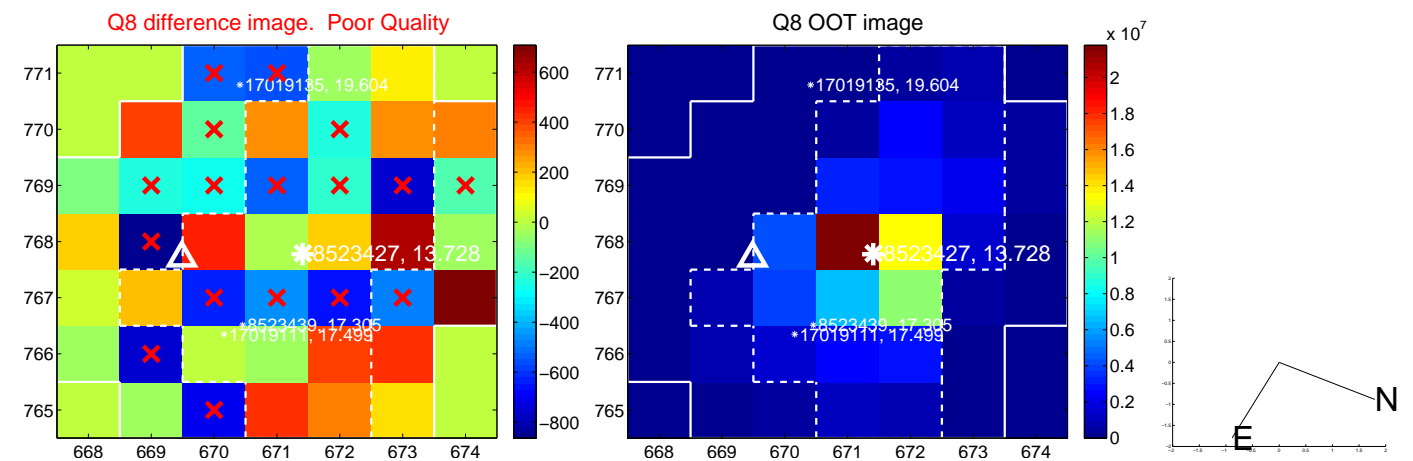
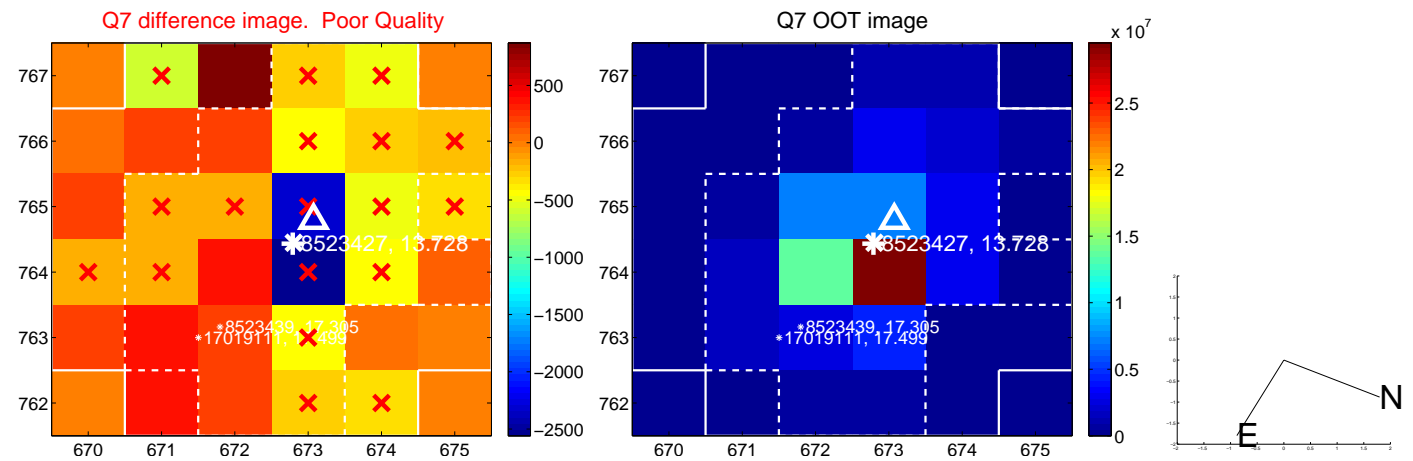
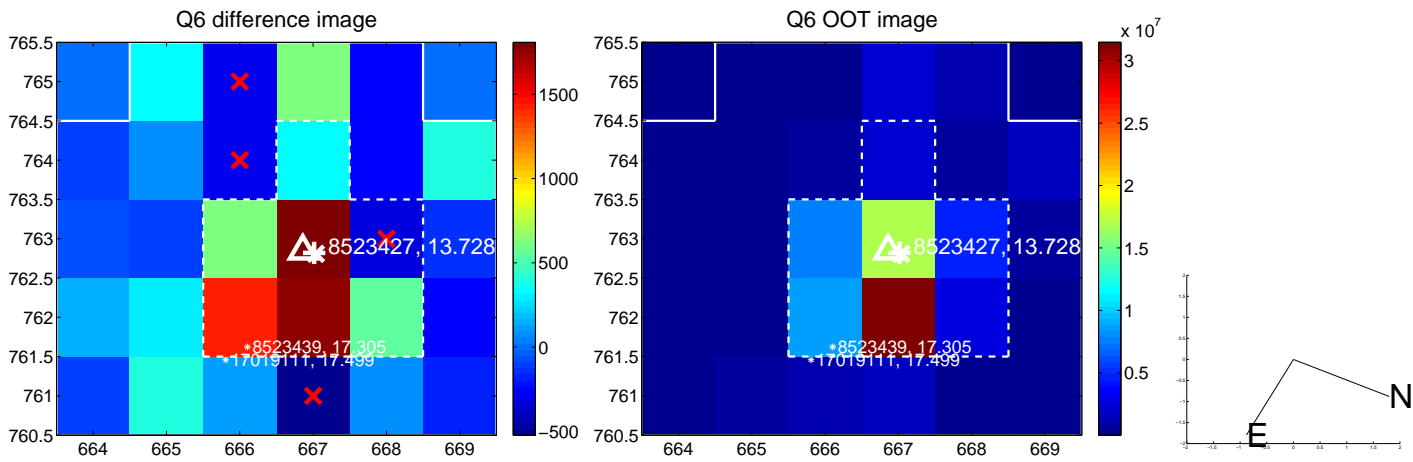
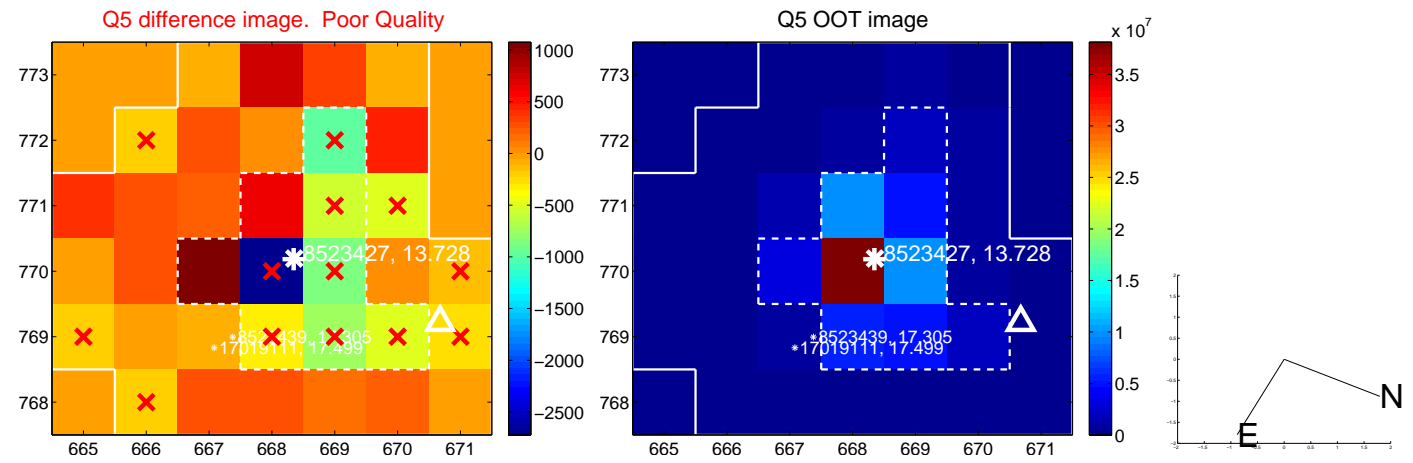


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

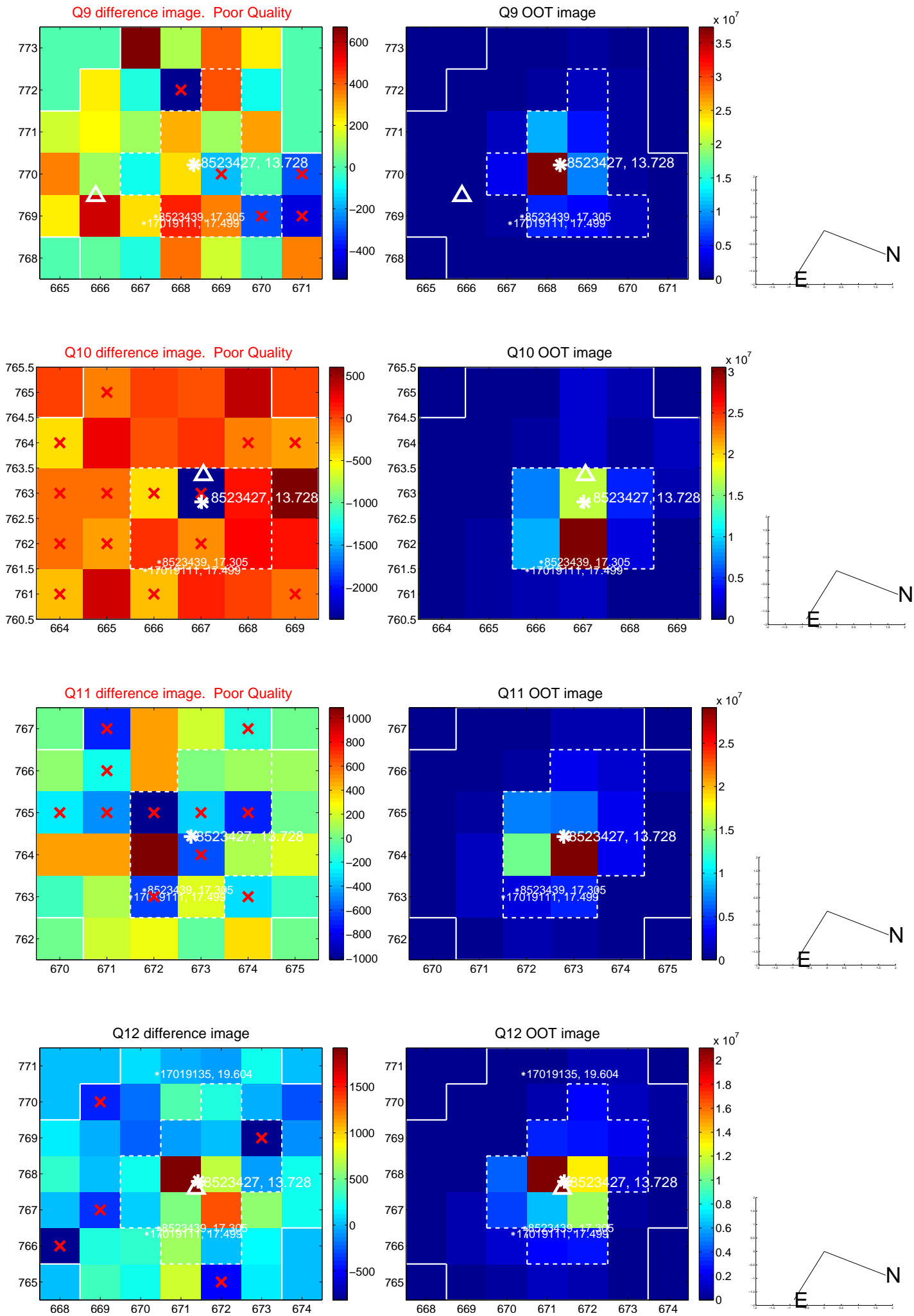
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



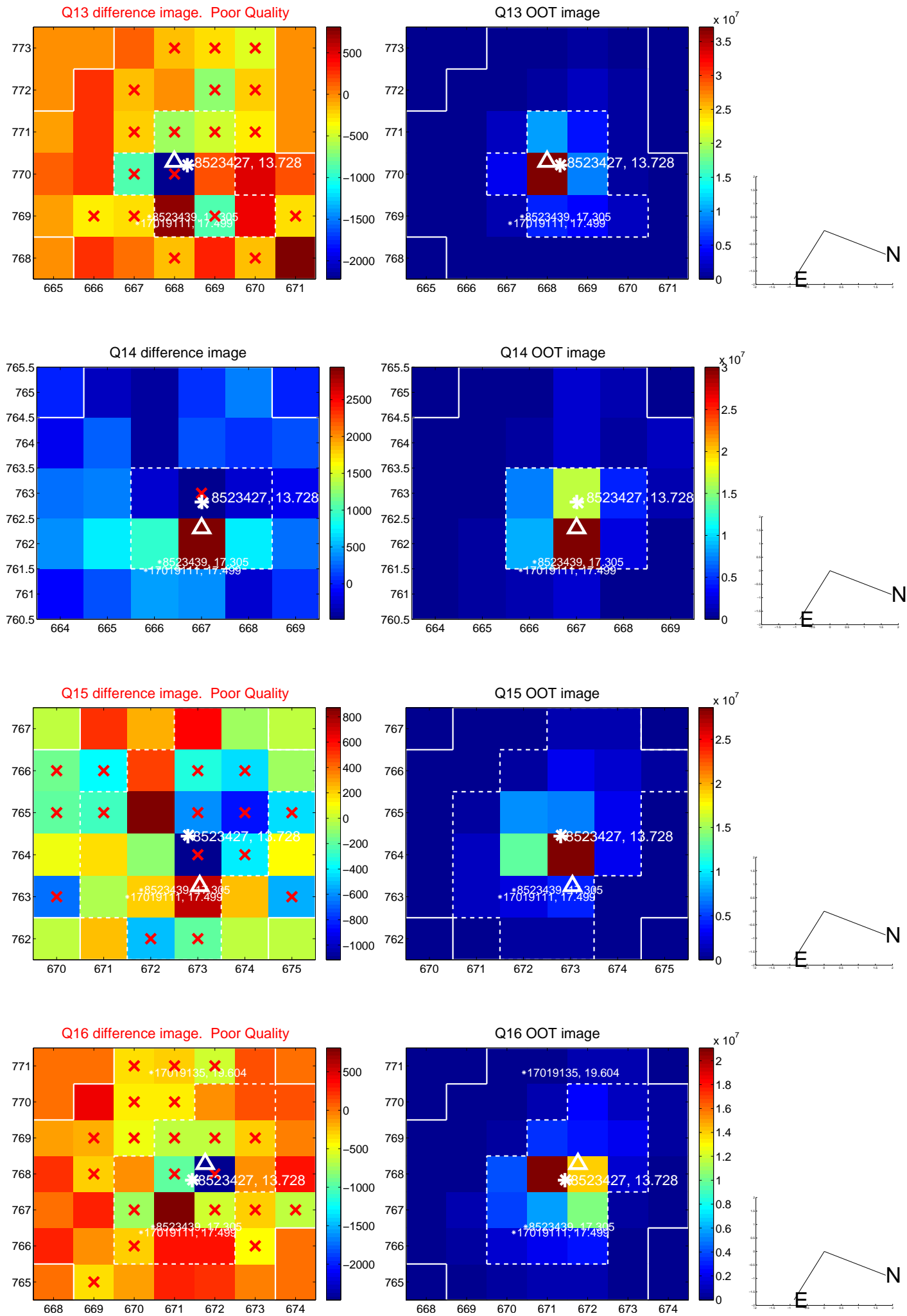
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



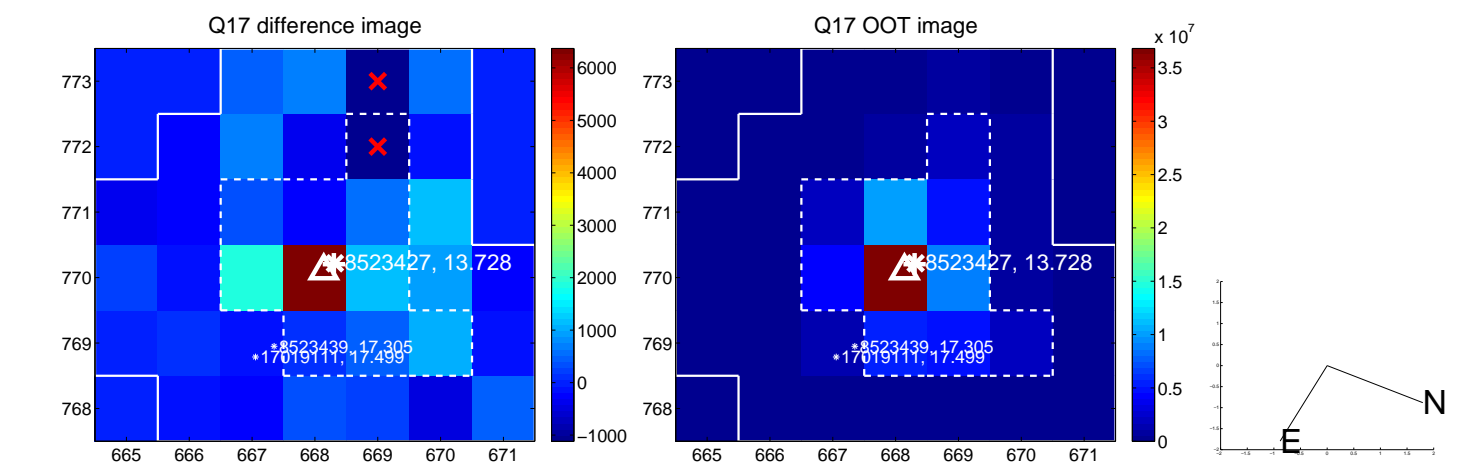
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



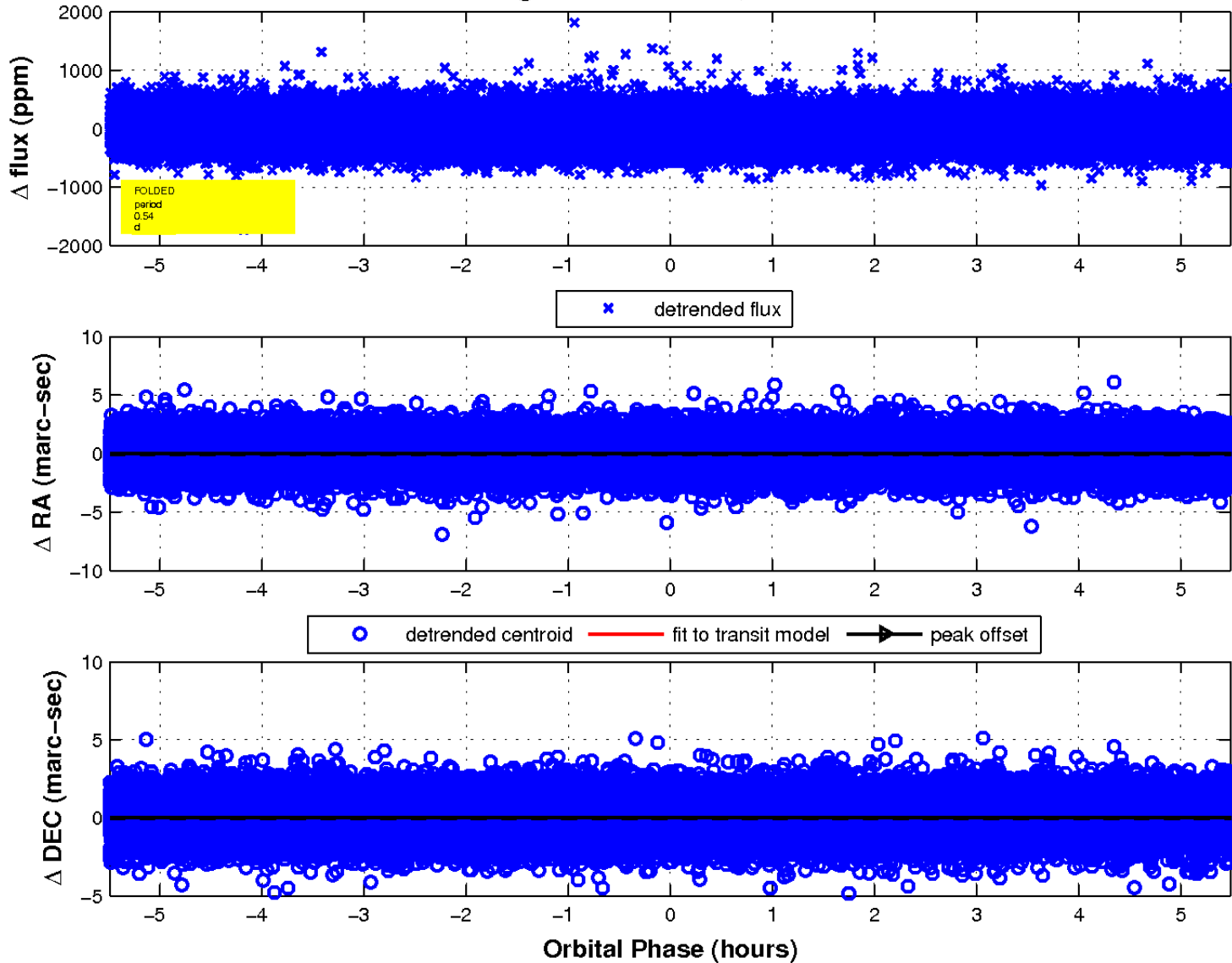
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

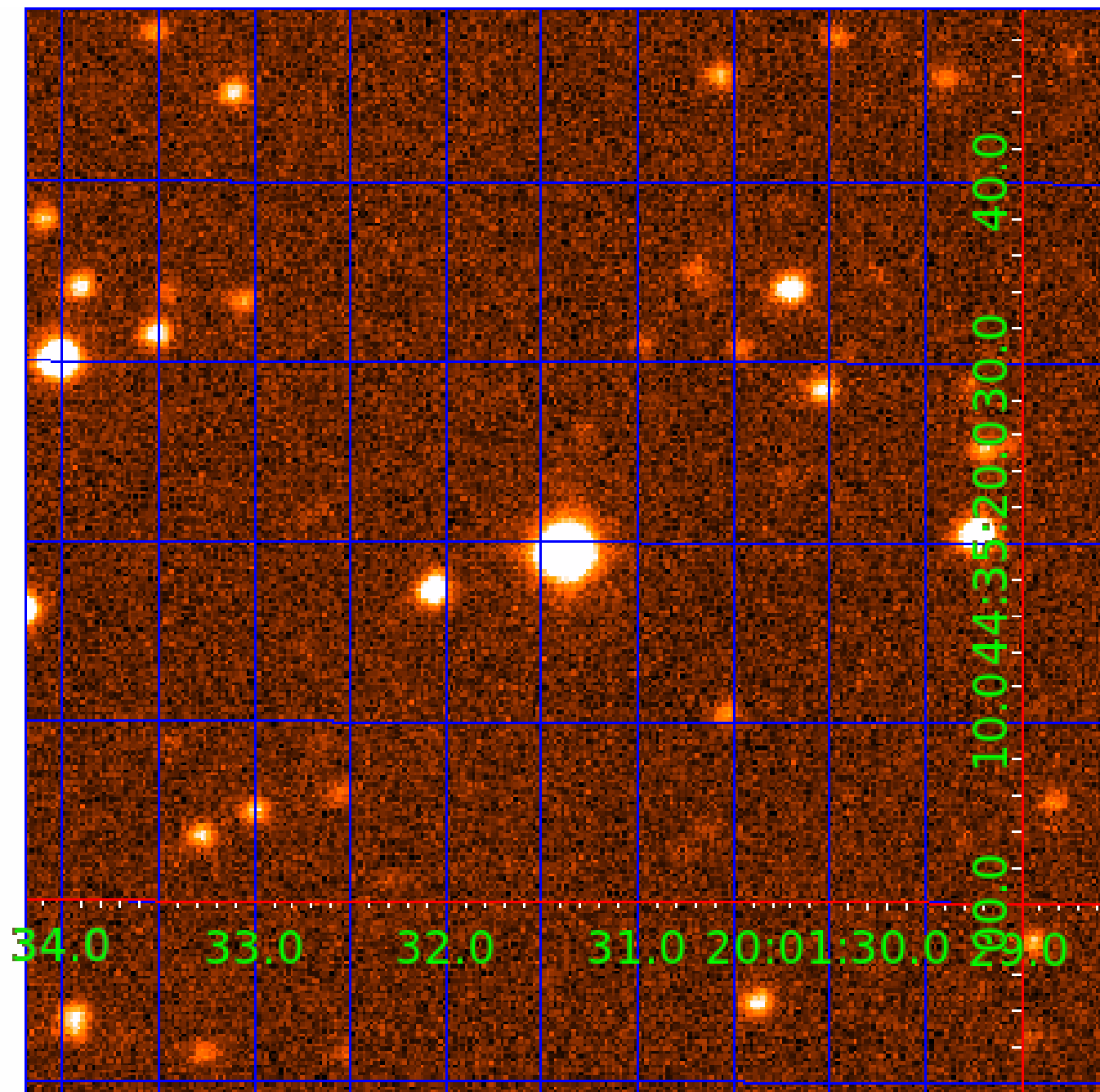


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 008523427

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})
008523427-01	OBS	No	0.746766	131.615245	21.9	2.878	8.7	7.3	2.01	6843	1.09	26974.56
008523427-02	OBS	No	0.537504	131.786816	32.6	1.830	9.0	8.3	2.01	6843	1.20	41817.48
008523427-03	OBS	No	27.143755	148.076033	242.6	1.128	7.4	5.9	2.01	6843	3.63	224.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008523427-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008523427-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008523427-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

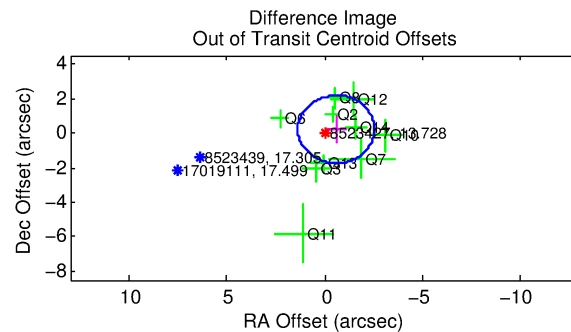
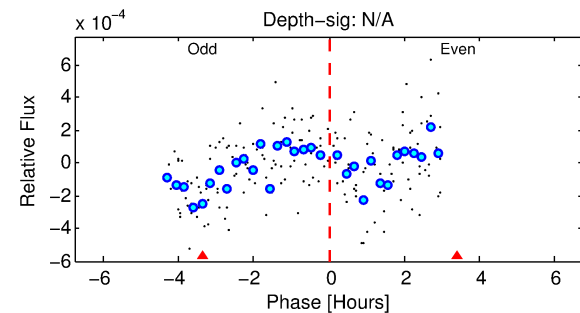
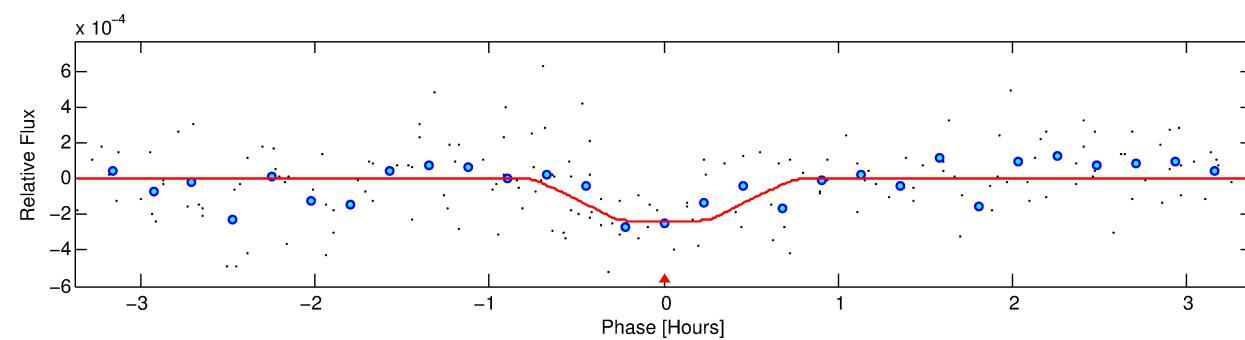
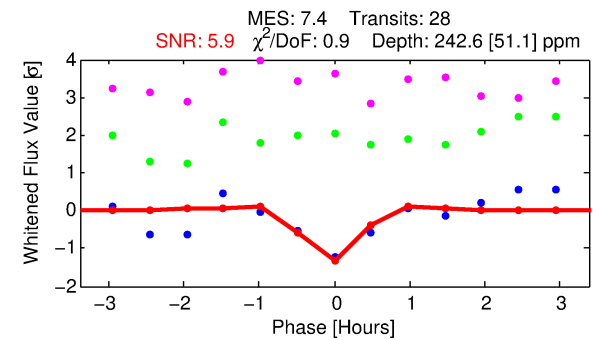
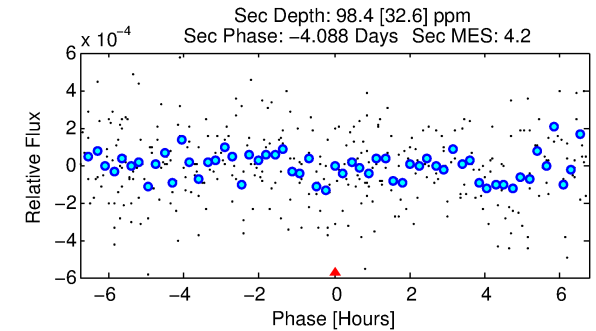
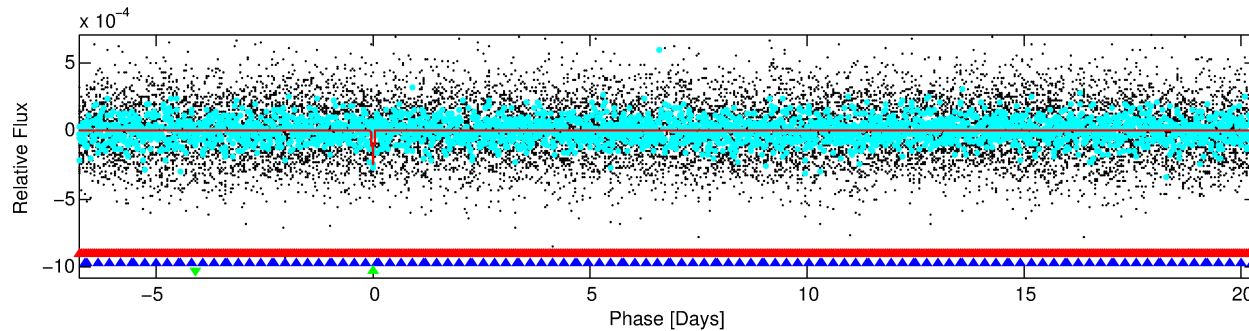
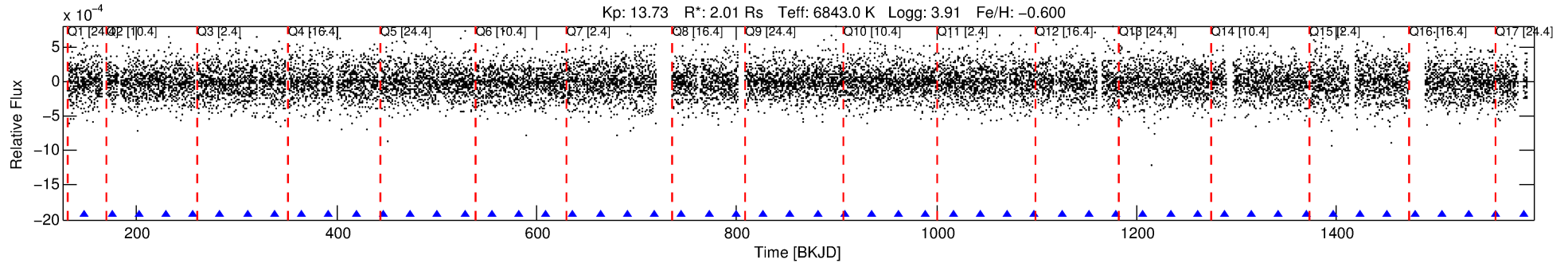
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008523427-03

No Significant Match Found

DV One-Page Summary

KIC: 8523427 Candidate: 3 of 3 Period: 27.144 d



DV Fit Results:

Period = 27.14376 [0.00019] d
Epoch = 148.0760 [0.0063] BKJD
Rp/R* = 0.0165 [0.0179]
a/R* = 91.24 [599.10]
b = 0.89 [1.59]
Seff = 224.03 [155.43]
Teq = 987 [171] K
Rp = 3.63 [4.22] Re
a = 0.1881 [0.0784] AU
Ag = 145.53 [333.50] [0.43σ]
Teffp = 5298 [2909] K [1.48σ]

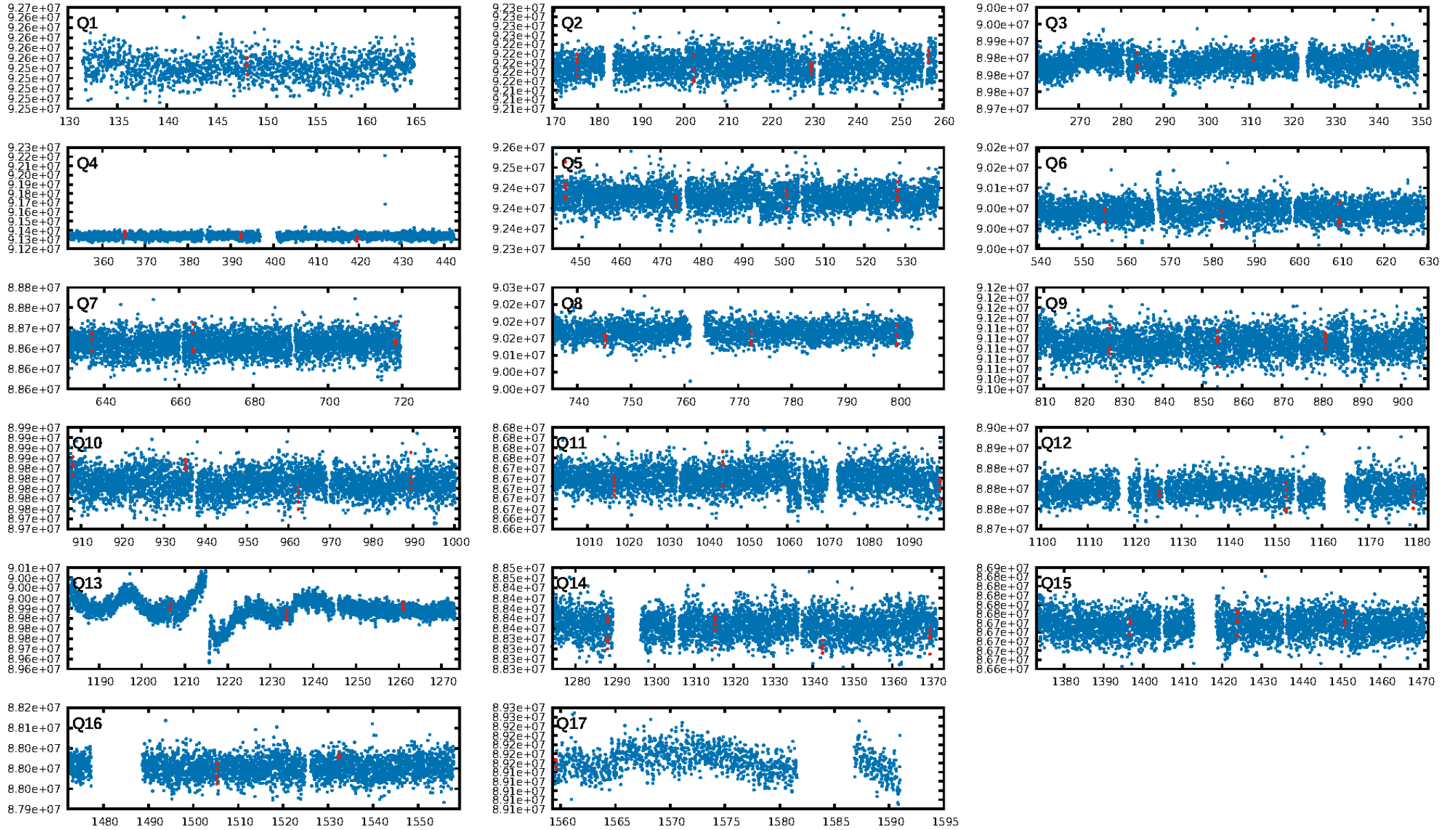
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [204.93σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 22.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.48e-10
RollingBand-fgt: 1.00 [28/28]
GhostDiagnostic-chr: -2.814
Centroid-sig: 23.7%
Centroid-so: 0.928 arcsec [0.81σ]
OotOffset-rm: 0.627 arcsec [0.96σ]
KicOffset-rm: 0.645 arcsec [1.17σ]
OotOffset-st: 4/3/2/1 [10]
KicOffset-st: 4/3/2/1 [10]
DiffImageQuality-fgm: 0.30 [3/10]
DiffImageOverlap-fno: 0.00 [0/16]

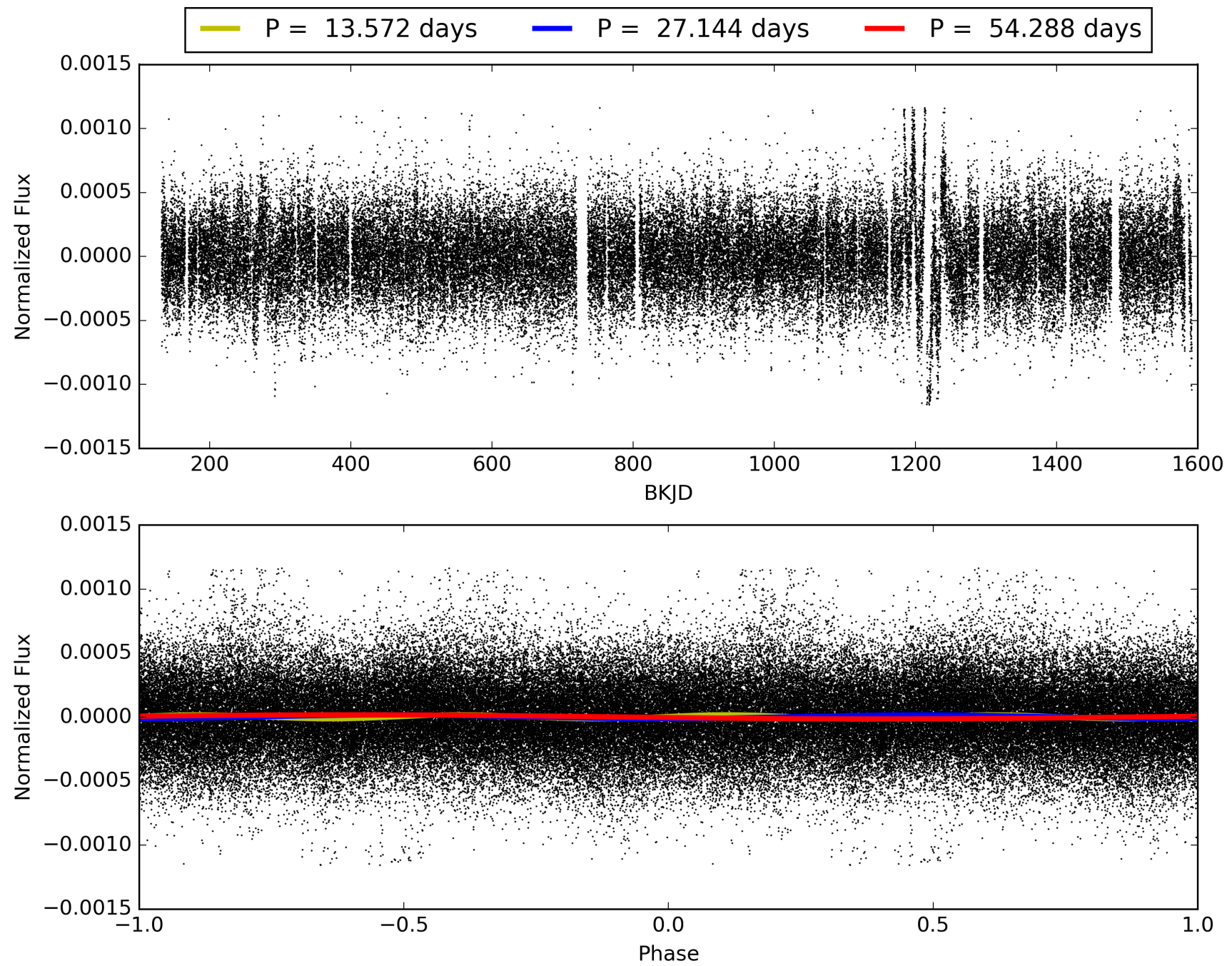
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:58:49 Z

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

TCE 008523427-03, PDC Light Curves

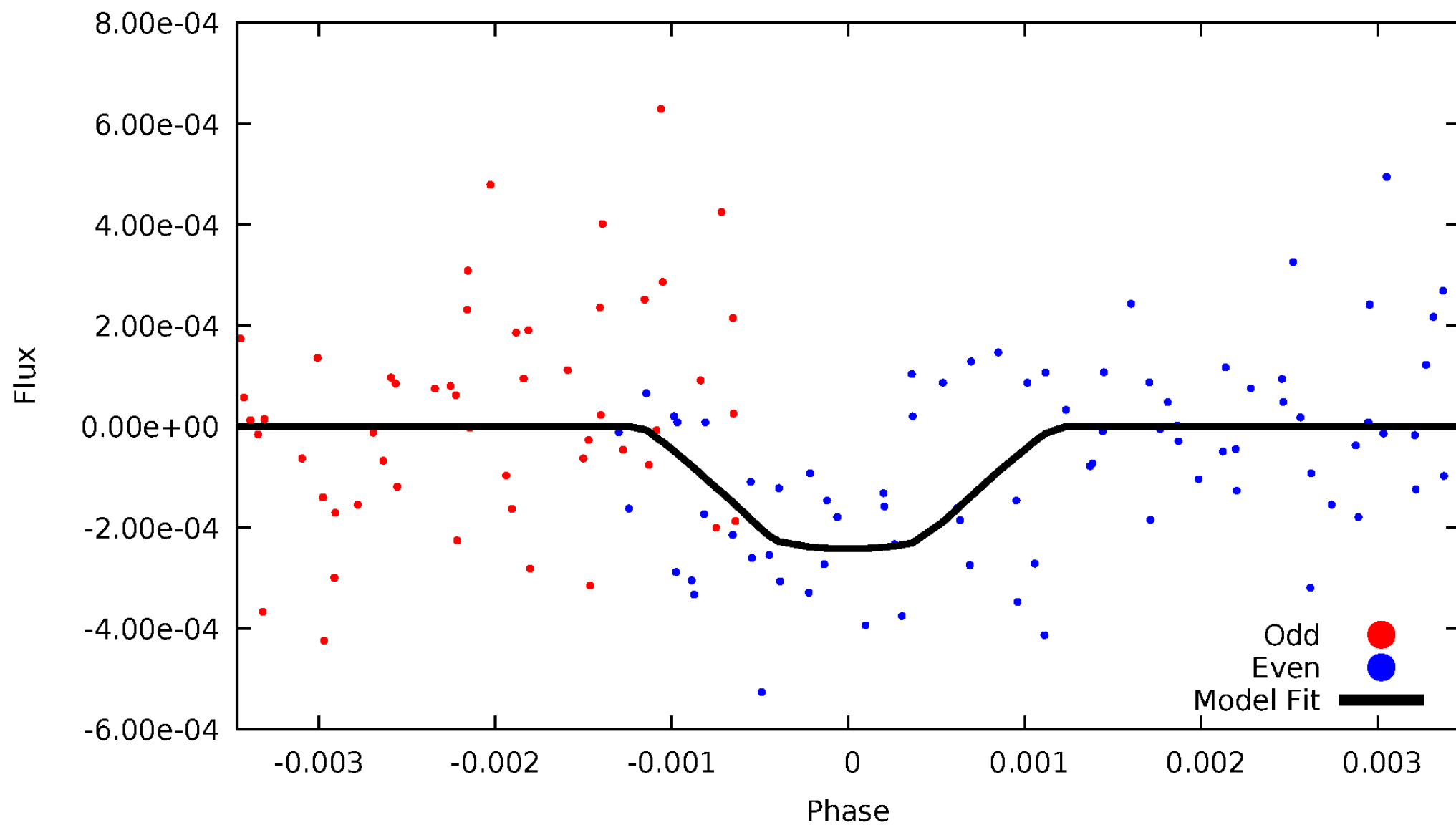


TCE 008523427-03



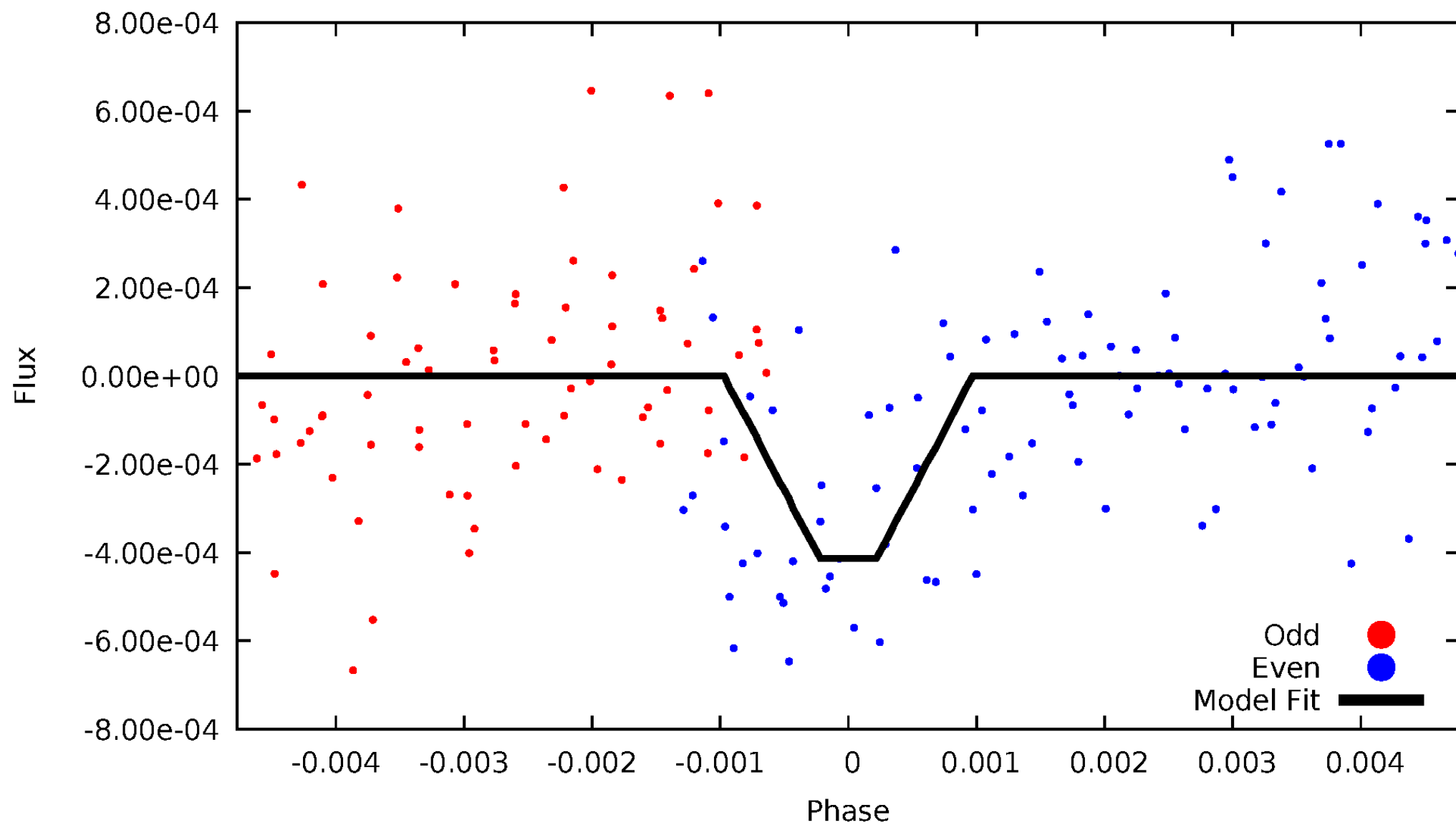
DV Odd/Even

TCE 008523427-03

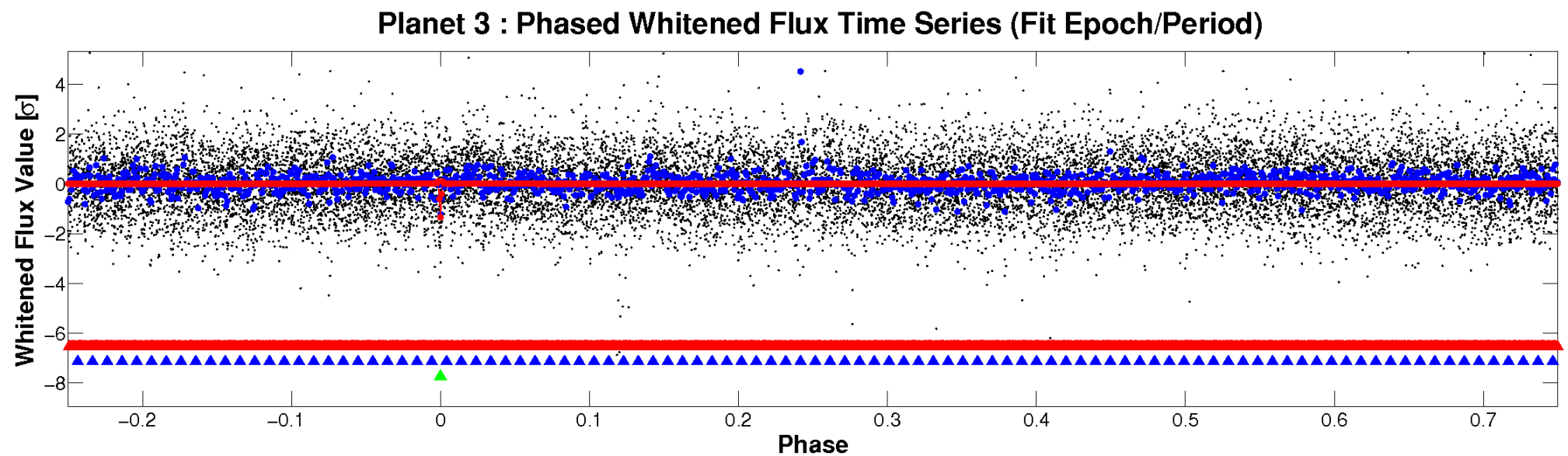
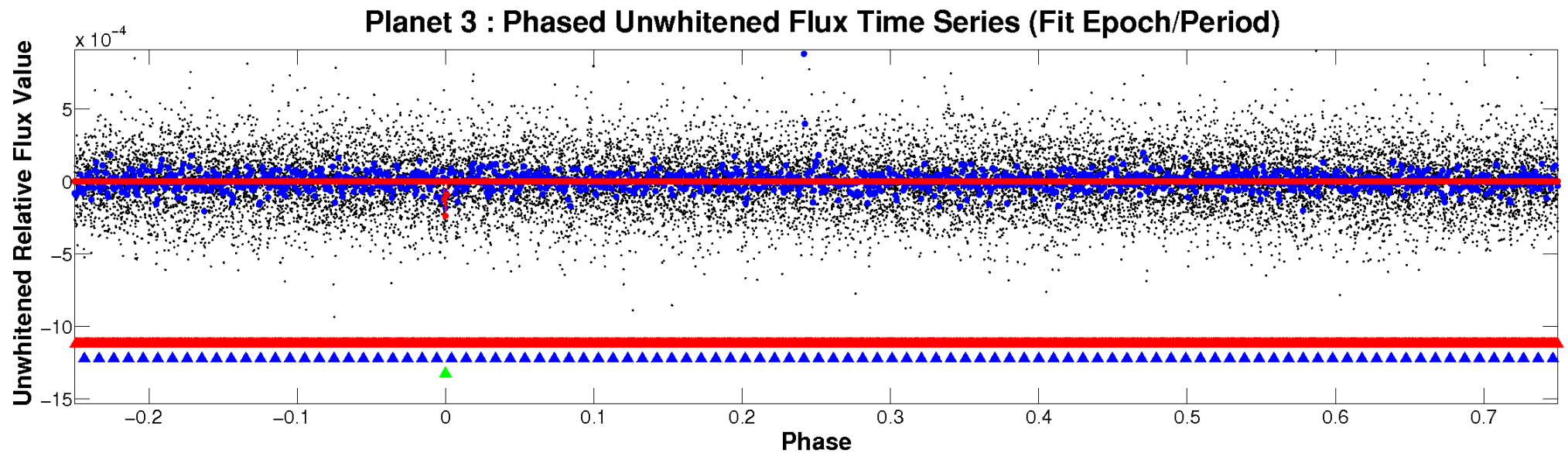


ALT Odd/Even

TCE 008523427-03

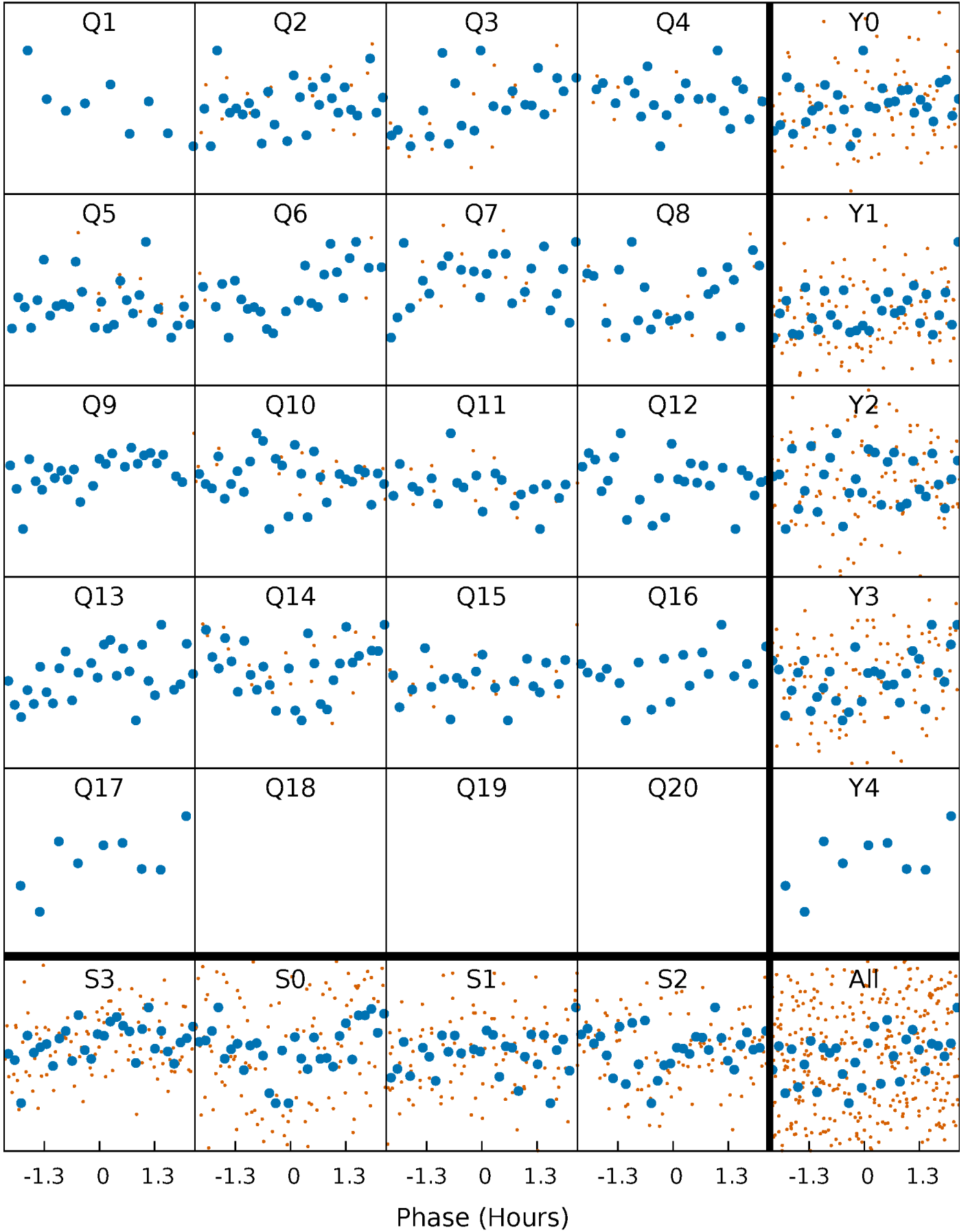


Non-Whitened Vs. Whitened Light Curve



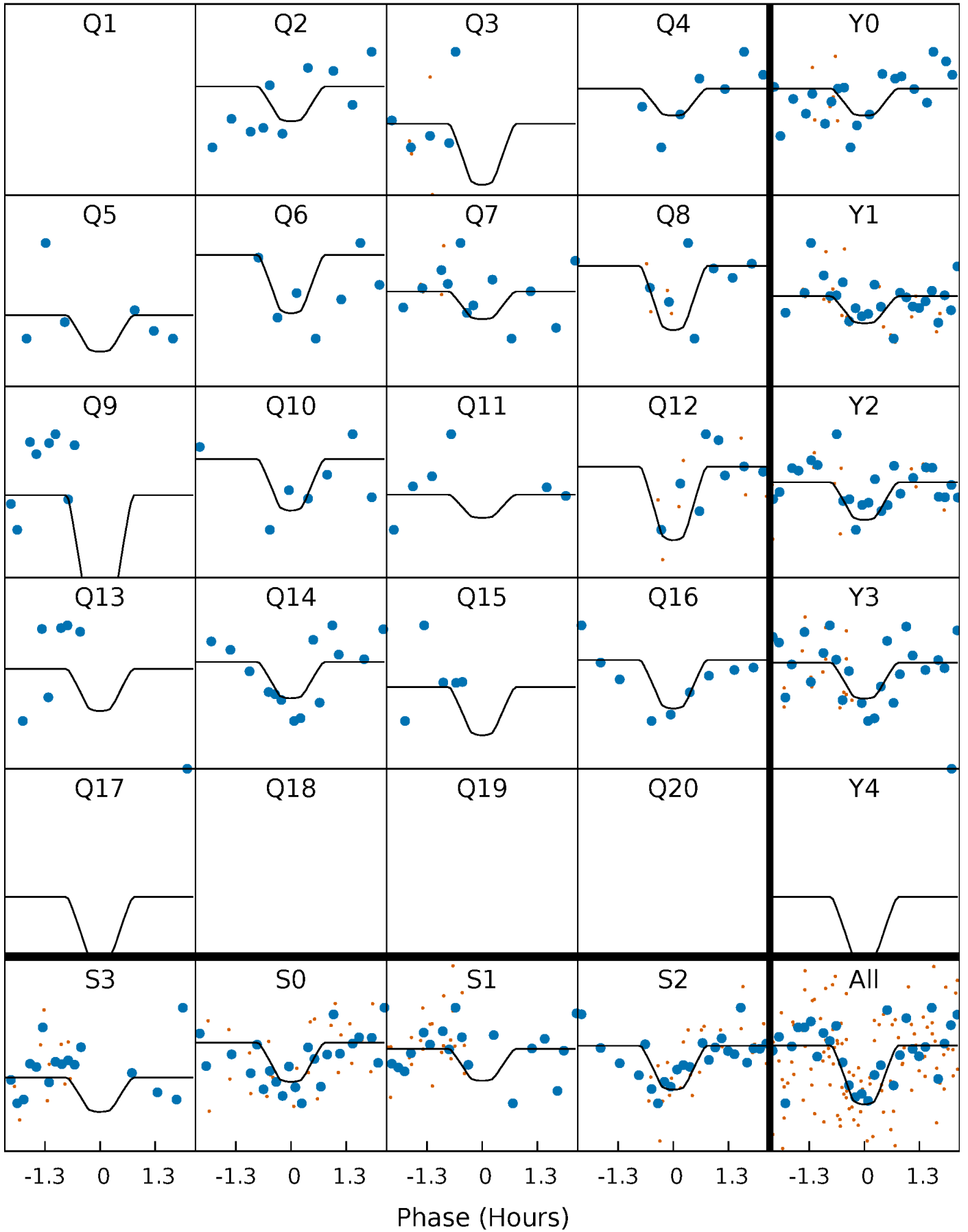
PDC Quarter-Phased Transit Curves

TCE 008523427-03 P= 27.143755 Days $T_0=148.076033$ (BKJD)



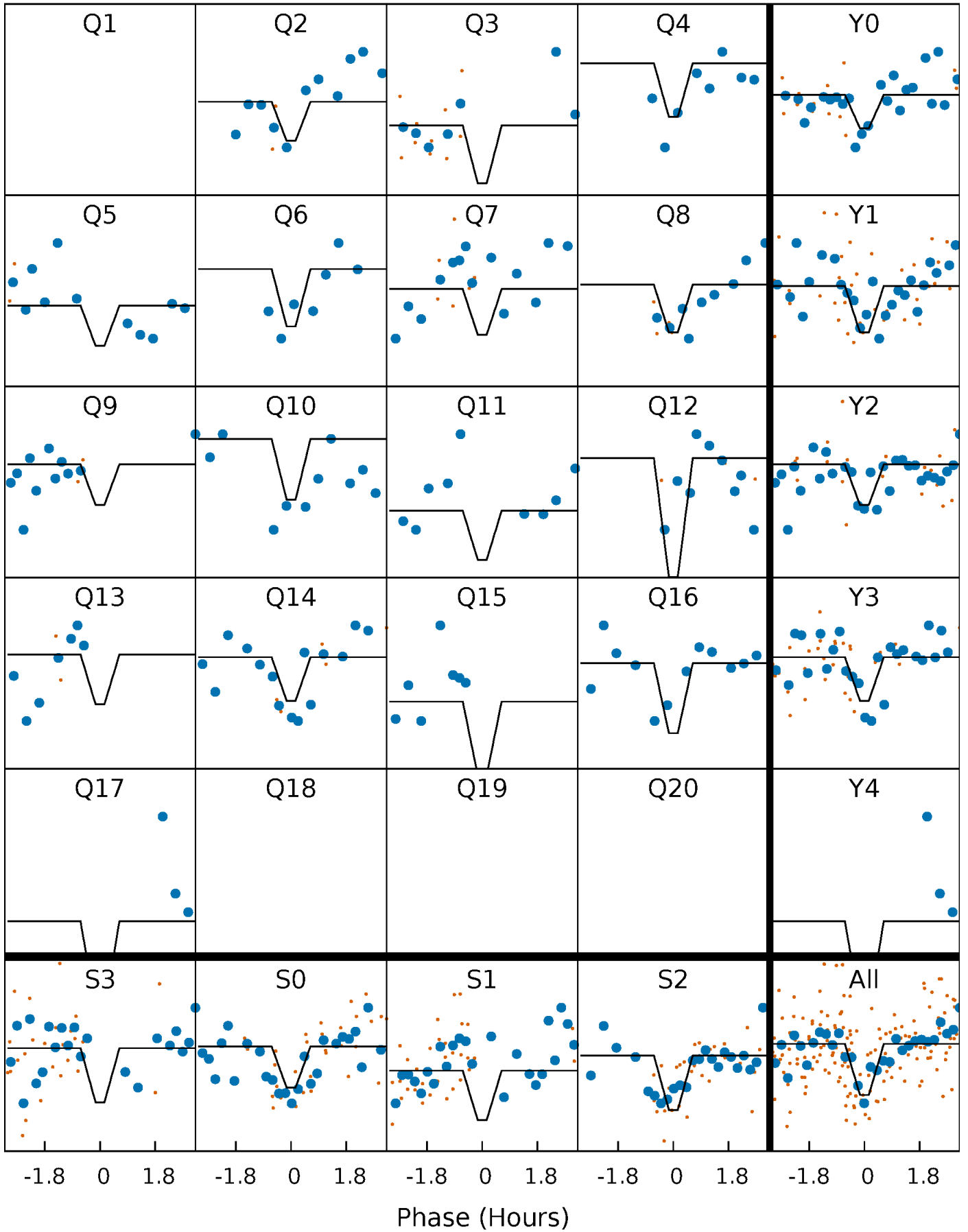
DV Quarter-Phased Transit Curves

TCE 008523427-03 P= 27.143755 Days $T_0=148.076033$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

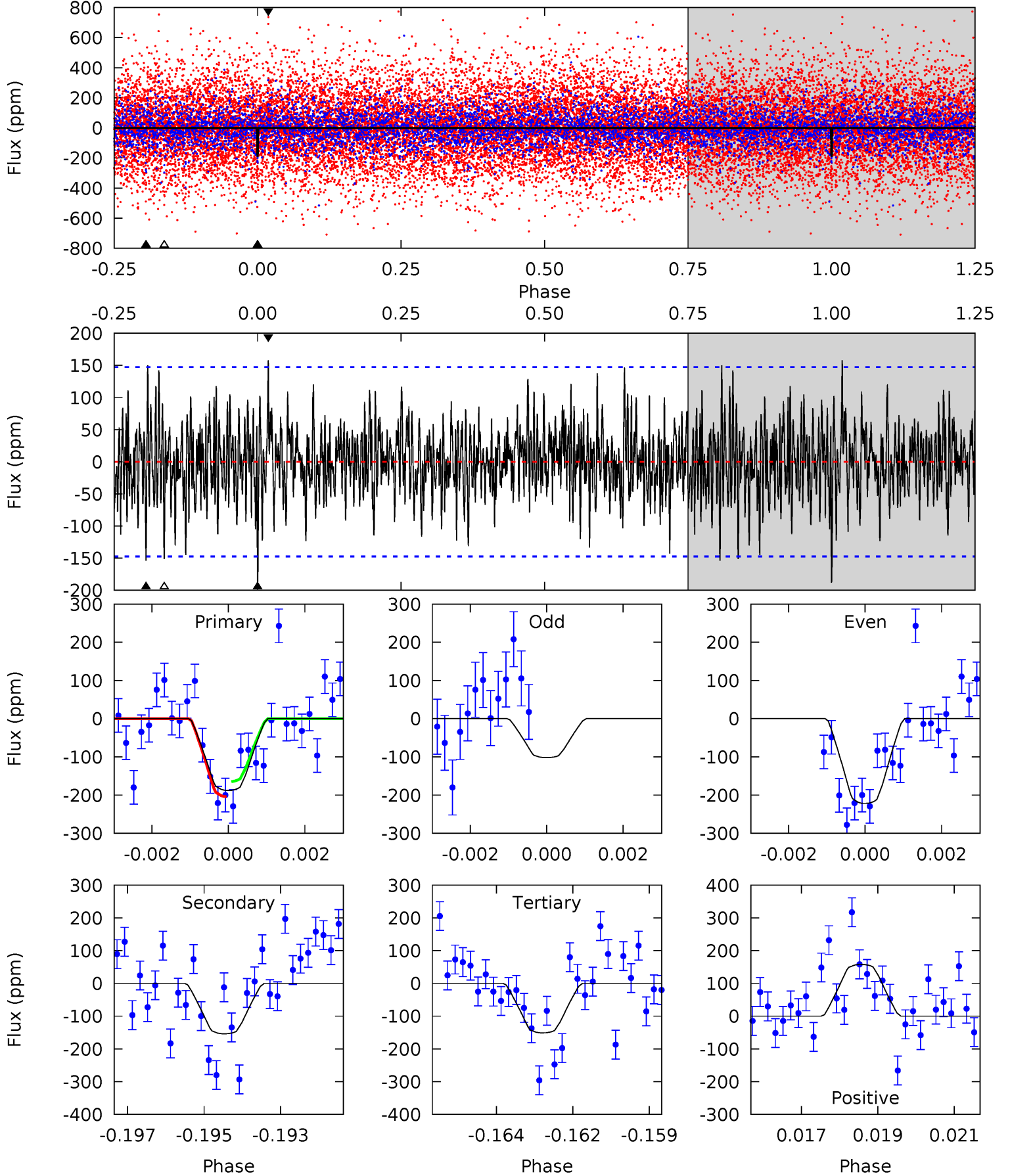
TCE 008523427-03 P= 27.143824 Days $T_0=148.074567$ (BKJD)



DV Model-Shift Uniqueness Test

008523427-03, $P = 27.143755$ Days, $E = 120.932278$ Days

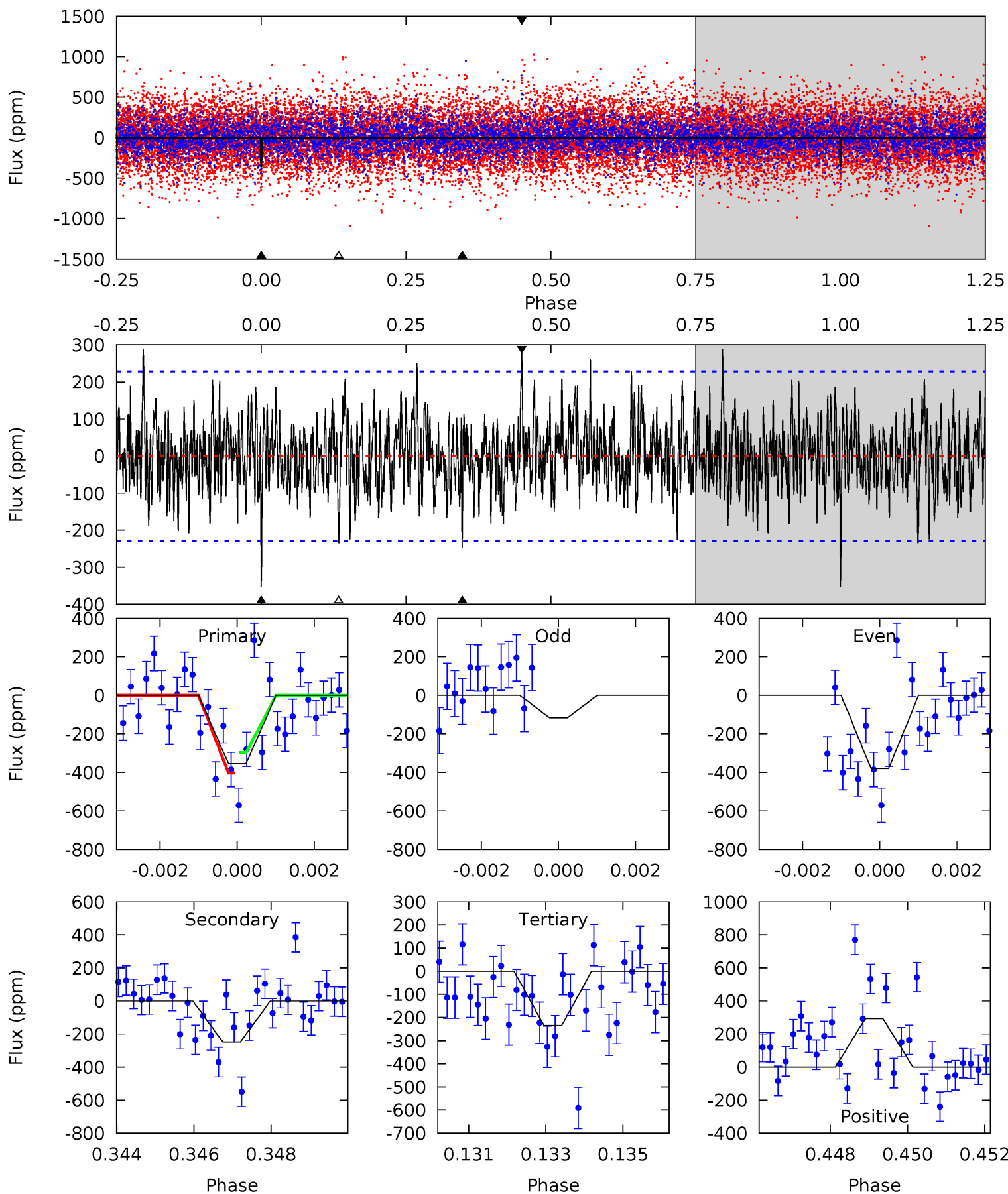
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.74	5.53	5.42	5.66	5.30	3.04	1.66	1.32	1.08	0.10	-0.14	1.76	0.77	0.46	0.70



Alt Model-Shift Uniqueness Test

008523427-03, P = 27.143824 Days, E = 120.930743 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.25	5.79	5.48	6.84	5.33	3.10	1.81	2.78	1.41	0.31	-1.05	2.29	0.85	0.45	1.20



Stellar Parameters For KIC 008523427

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6843^{+214}_{-285}	$3.913^{+0.398}_{-0.133}$	$-0.600^{+0.300}_{-0.300}$	$2.009^{+0.460}_{-0.854}$	$1.205^{+0.182}_{-0.223}$	$0.209^{+0.708}_{-0.081}$
	+3%/-4%	+10%/-3%	+50%/-50%	+23%/-43%	+15%/-19%	+338%/-39%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008523427-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-154 ± 28	$4.19^{+3.63}_{-2.77}$	1350^{+100}_{-136}	5276^{+4064}_{-1098}	169^{+1223}_{-121}
Alt.	-248 ± 43	$4.90^{+3.65}_{-2.86}$	1345^{+113}_{-161}	5444^{+3766}_{-1044}	196^{+1045}_{-133}

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 $A_{obs} \gg 1.0$

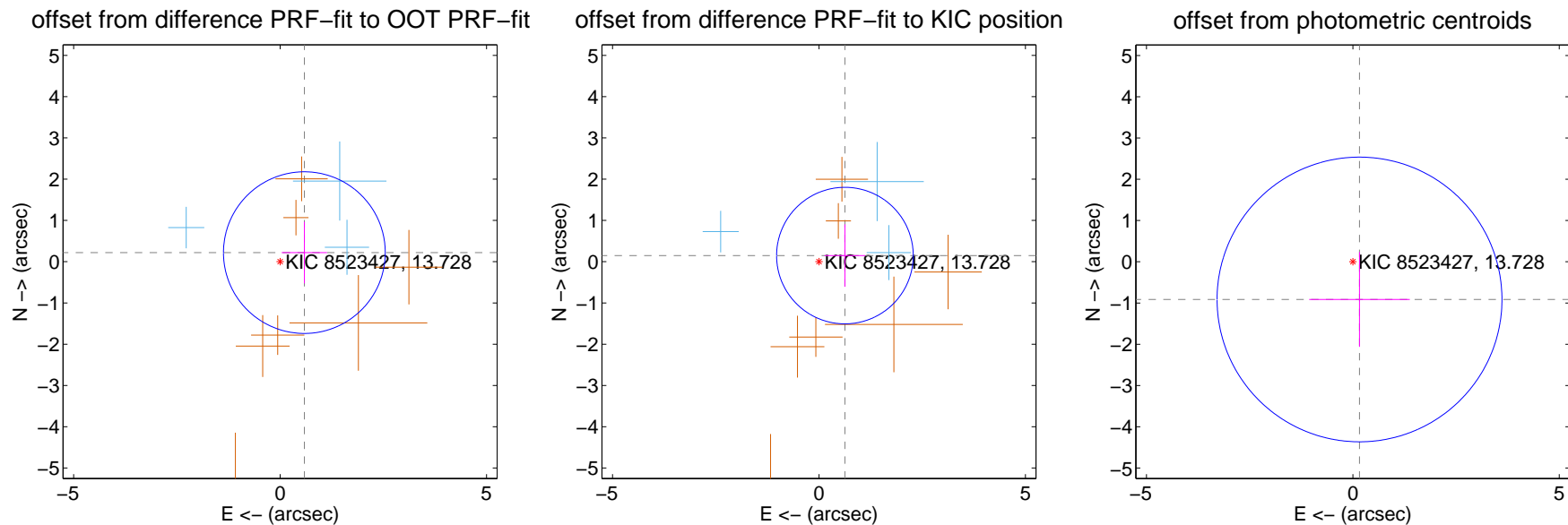
DV Centroid Data

Supplemental centroid analysis for 008523427-03. Kepler magnitude: 13.73. Transit SNR 5.94

There are 3 quarters with good PRF difference image offsets

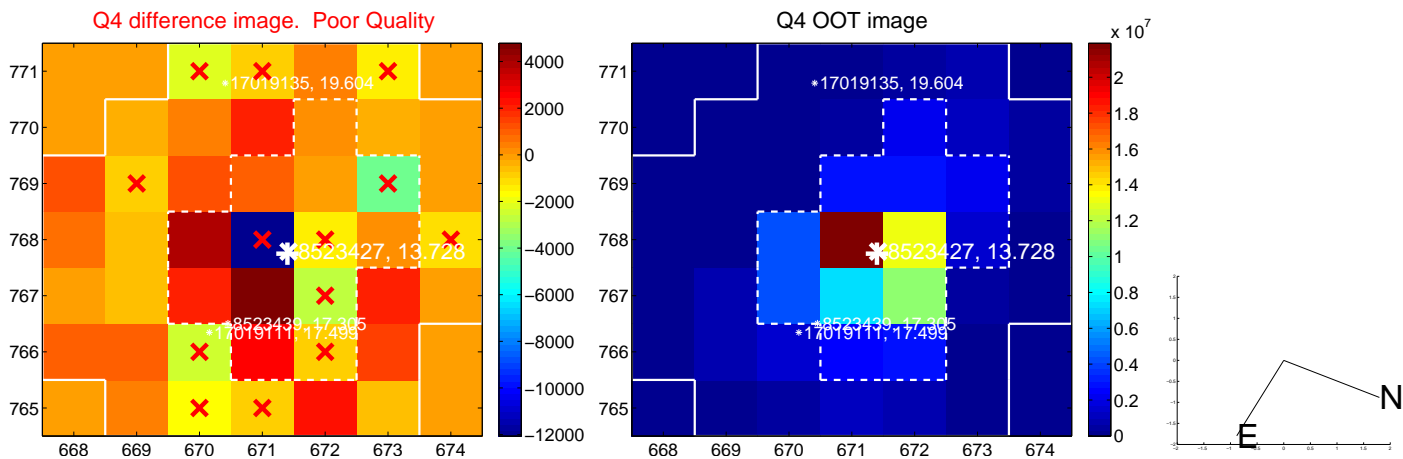
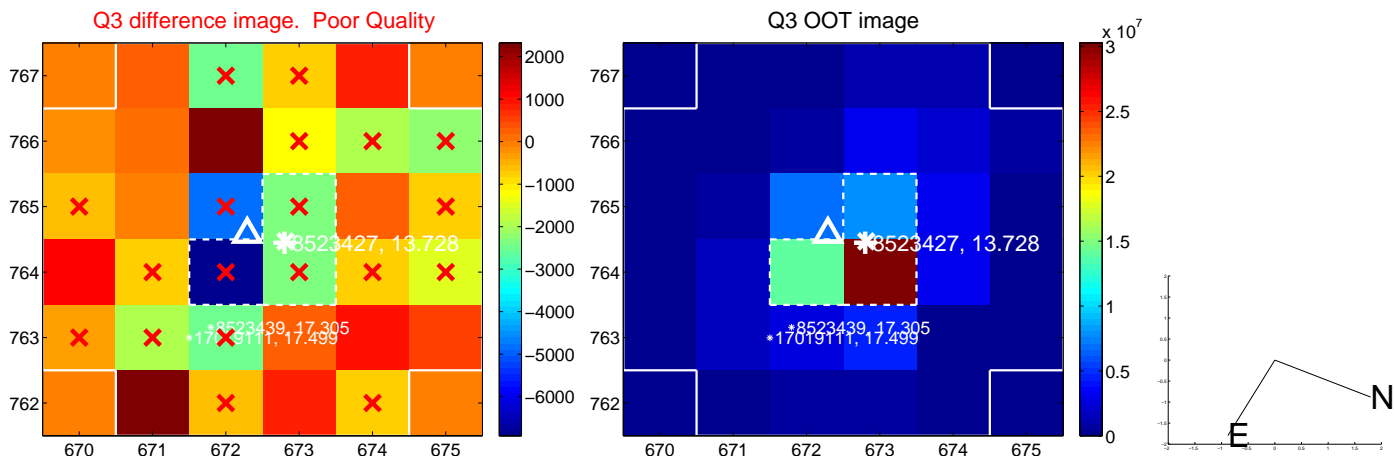
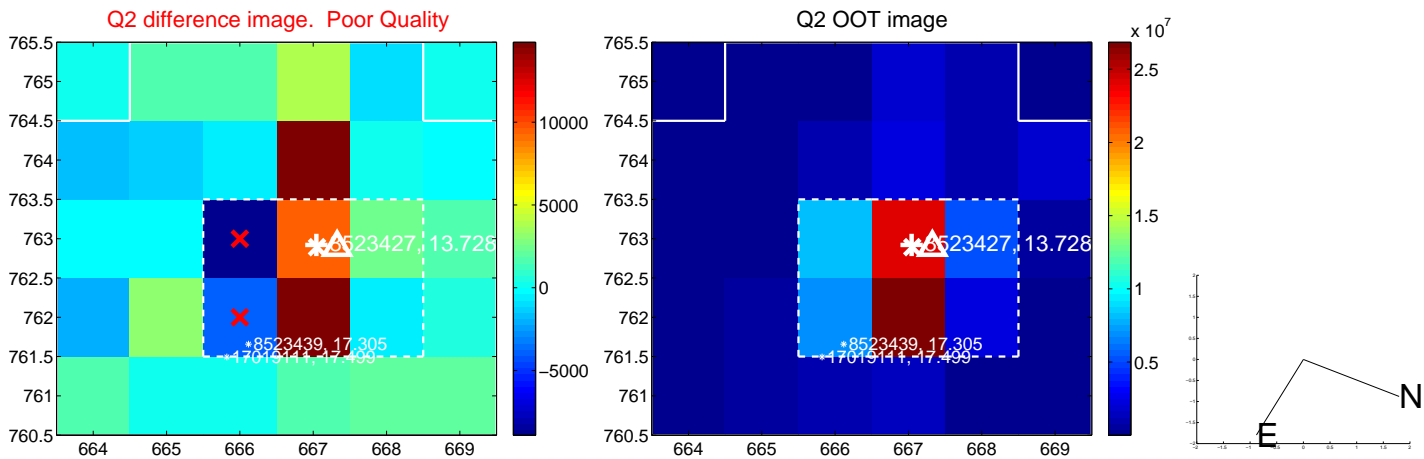
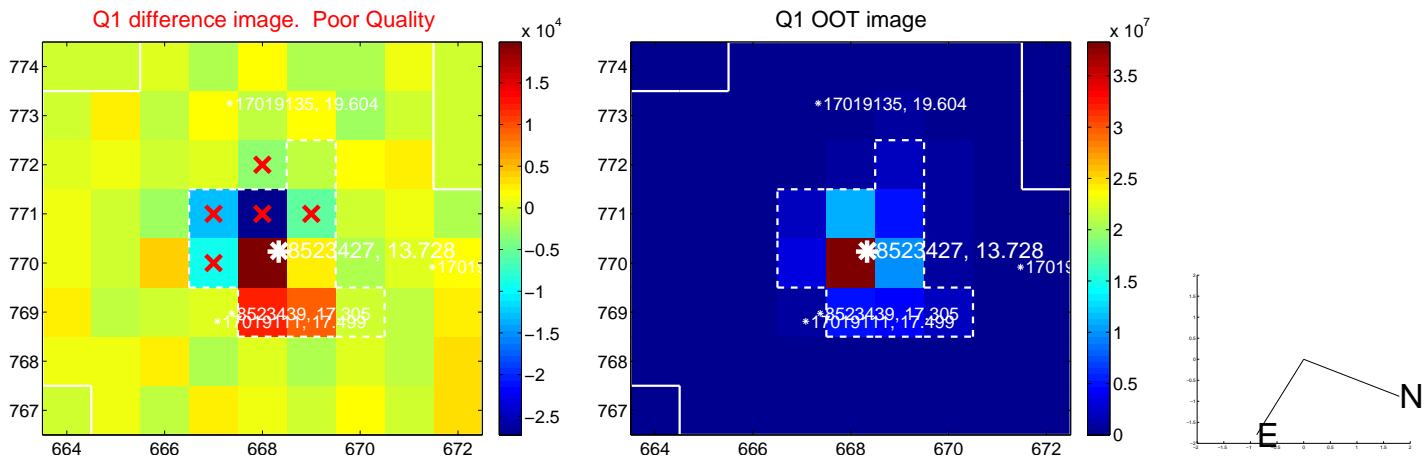
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.627 ± 0.653	0.96	-0.587 ± 0.548	0.220 ± 0.747
PRF-fit source offset from KIC position	0.645 ± 0.551	1.17	-0.628 ± 0.491	0.148 ± 0.755
photometric centroid source offset	0.93 ± 1.15	0.81	-0.16 ± 1.22	-0.91 ± 1.15

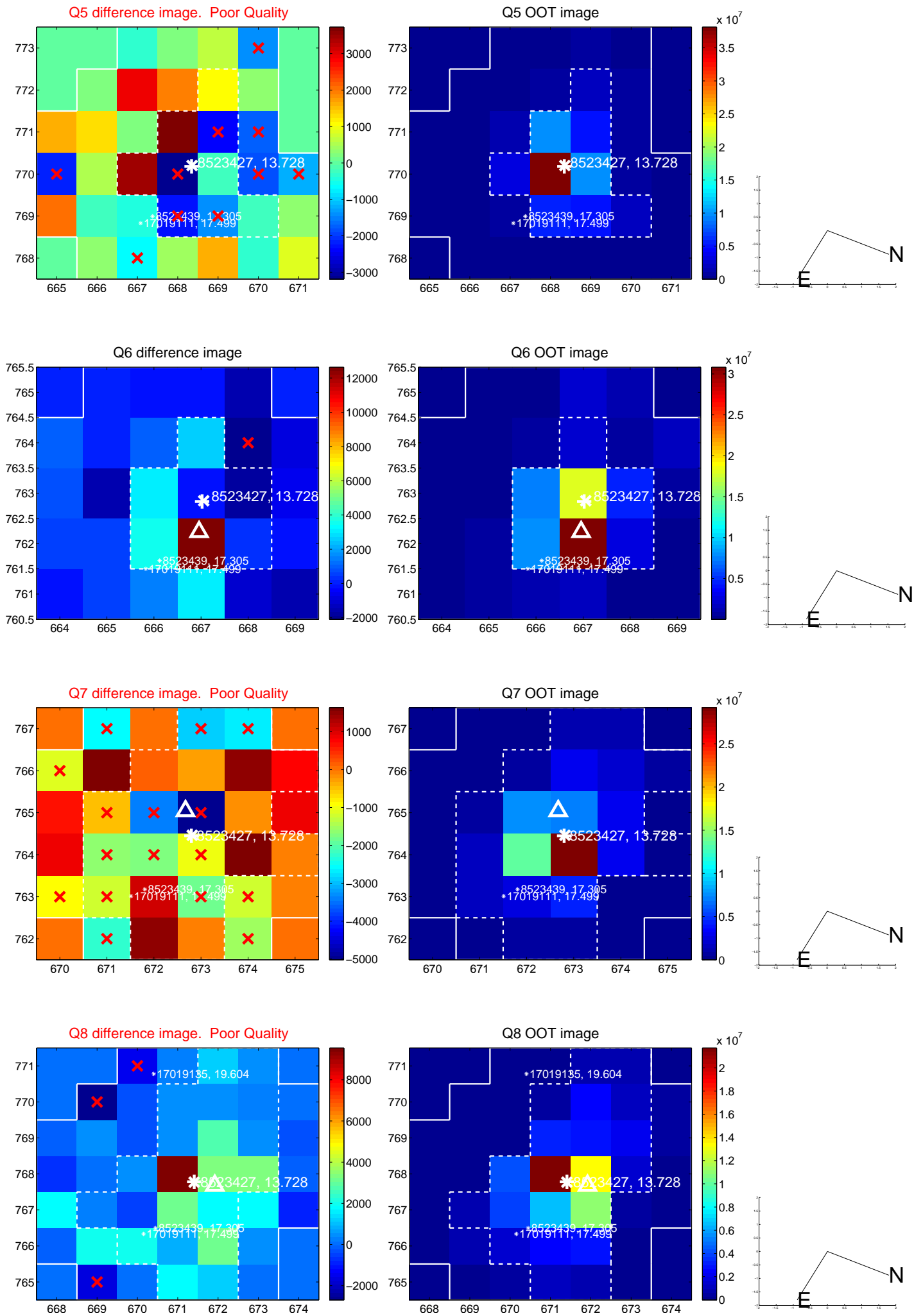


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

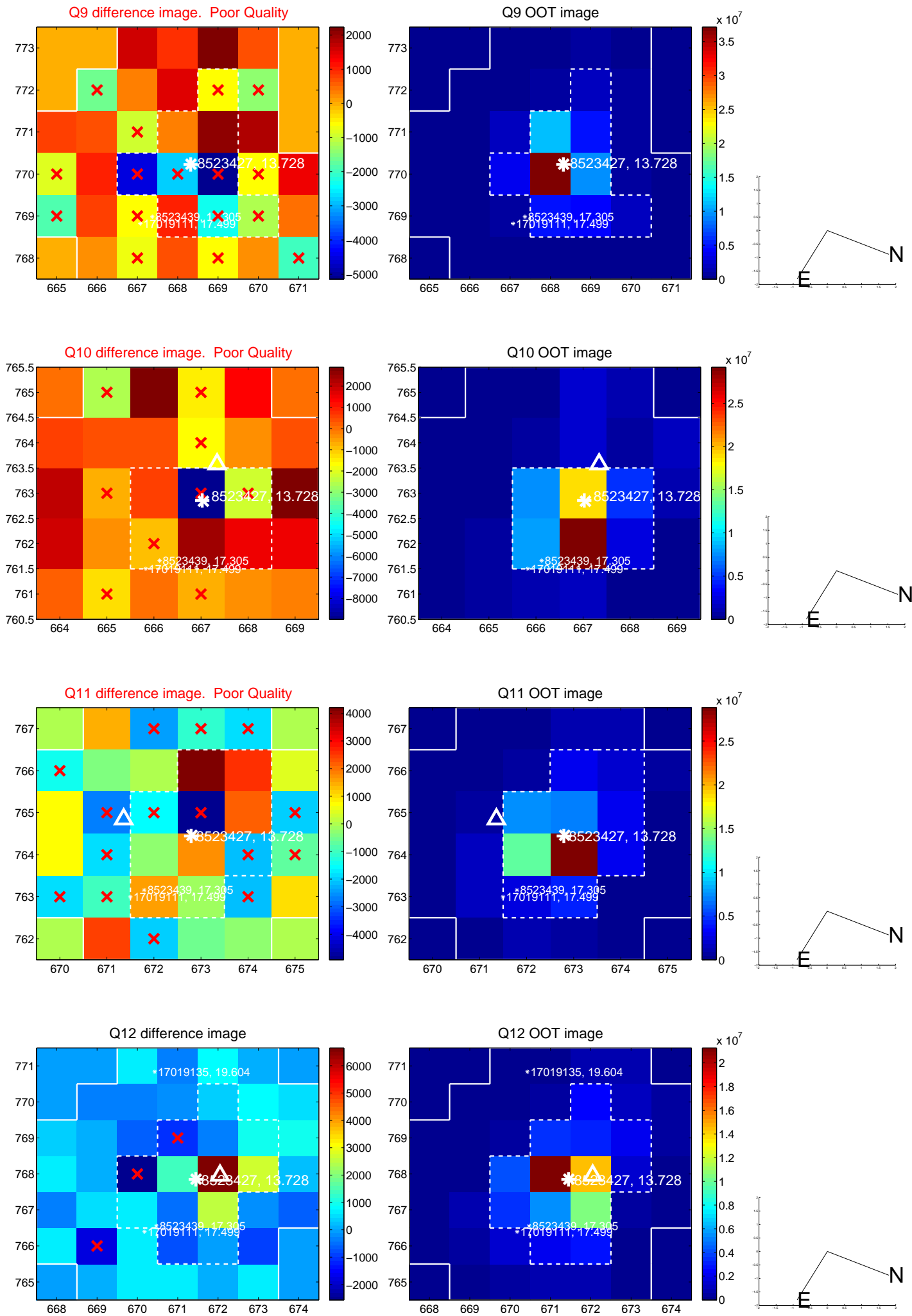
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



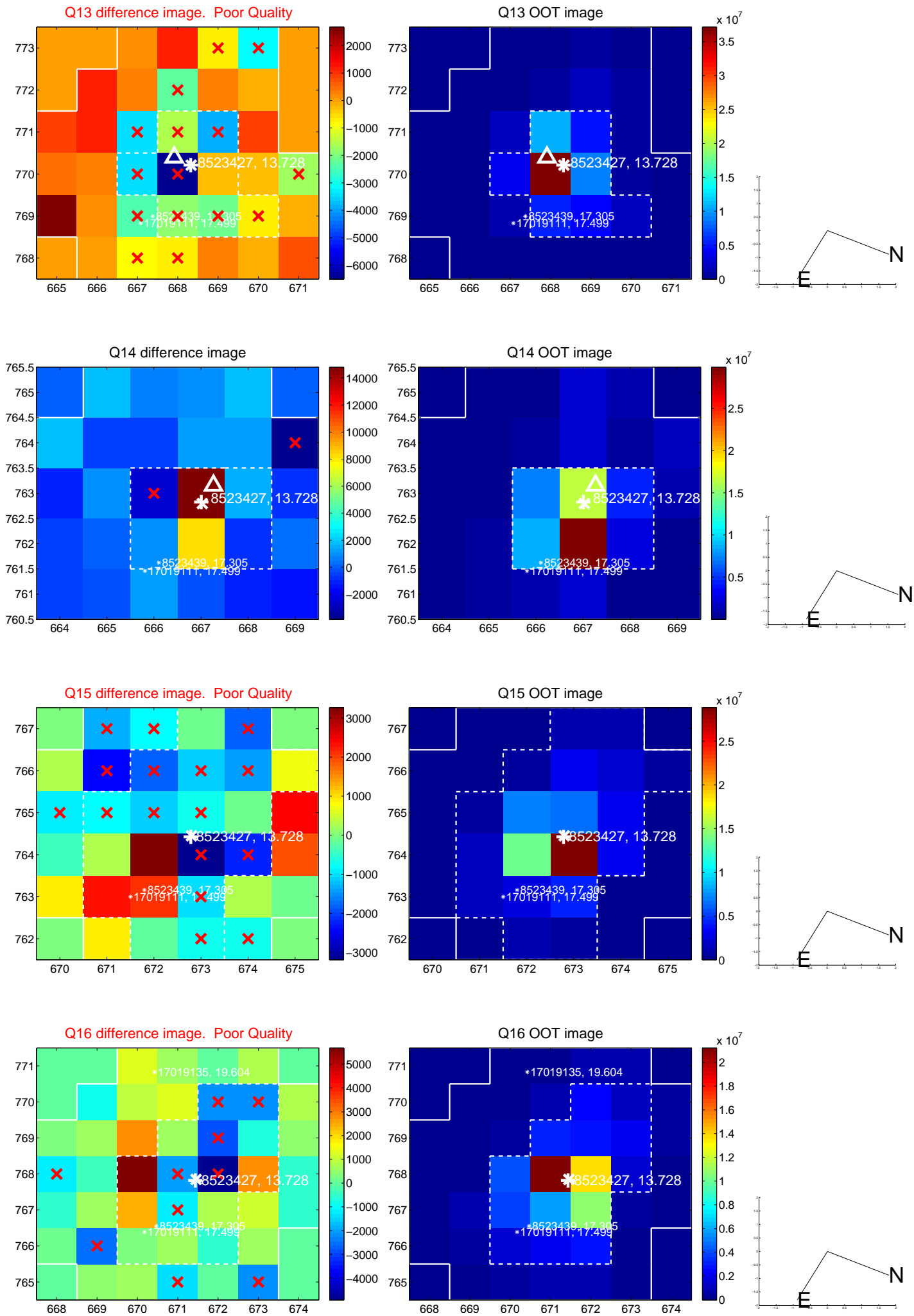
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



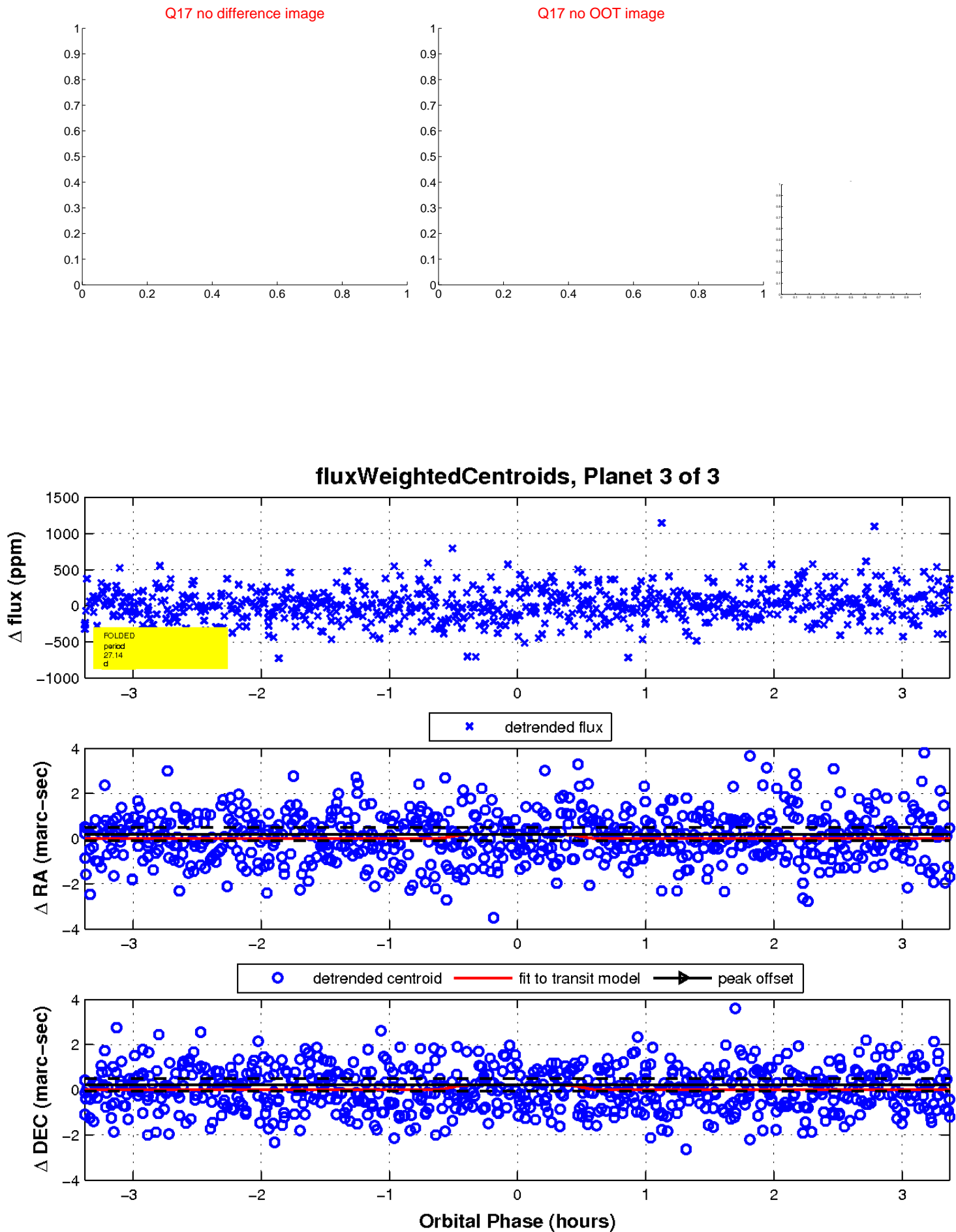
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

