MPEC 2019-T82 : COMET P/2019 S3 (PANSTARRS)

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COMET P/2019 S3 (PANSTARRS)

This object was reported as cometary based on Pan-STARRS 1 (F51) discovery images on Sept. 25 UTC by S. Chastel and R. Wainscoat. The object had FWHM of 2".1 in three stacked w-band images, which is larger than than of neighbouring stars at 1".74 +/- 0".08. The tail extended West for 8". Further confirmation are mentioned in the table below:

OC	Date	Observer(s)	Coma	Tail	Exp.
Q62	20190926	H. Sato	3x8", elongated	10", P.A. 160	16 x 60s
691	20190930	R. S. McMillan	9"	12", P.A. 272	10 x 120s
F51	20190930	R. Weryk	2"	tail West	

Observations:

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    PK19S030  C2019 08 27.55885 02 10 52.229+04 29 16.87         21.5 wUET082F52
    PK19S030  C2019 08 27.57050 02 10 52.949+04 29 13.58         21.5 wUET082F52
    PK19S030  C2019 08 27.58225 02 10 53.689+04 29 10.82         21.6 wUET082F52
    PK19S030  C2019 08 27.59401 02 10 54.452+04 29 08.01         21.5 wUET082F52
    PK19S030  C2019 09 04.40076 02 18 44.34 +03 50 05.2          20.4 GVET082G96
    PK19S030  C2019 09 04.40604 02 18 44.60 +03 50 03.3          20.7 GVET082G96
    PK19S030  C2019 09 04.41128 02 18 44.88 +03 50 01.5          20.9 GVET082G96
    PK19S030  C2019 09 04.41652 02 18 45.12 +03 49 59.4          20.4 GVET082G96
    PK19S030  C2019 09 07.58129602 21 22.273+03 30 29.47         19.6 GVET082F51
    PK19S030  C2019 09 07.59327902 21 22.780+03 30 24.96         19.8 GVET082F51
    PK19S030  C2019 09 07.60959002 21 23.430+03 30 18.68         20.0 GVET082F51
    PK19S030* C2019 09 25.53553 02 29 40.035+01 08 07.18         20.7 wUET082F51
    PK19S030  C2019 09 25.54826 02 29 40.095+01 08 00.48         20.8 wUET082F51
    PK19S030  C2019 09 25.56101 02 29 40.156+01 07 53.45         20.7 wUET082F51
    PK19S030 KC2019 09 26.04835402 29 44.12 +01 03 26.5          20.7 GVET082L01
    PK19S030 KC2019 09 26.05069102 29 44.19 +01 03 25.4          21.1 GVET082L01
    PK19S030  C2019 09 26.53752 02 29 47.505+00 59 04.85         20.8 wUET082F51
    PK19S030  C2019 09 26.55064 02 29 47.531+00 58 57.64         20.4 wUET082F51
    PK19S030  C2019 09 26.56372 02 29 47.565+00 58 50.58         20.5 wUET082F51
    PK19S030  C2019 09 26.57670 02 29 47.586+00 58 43.44         20.5 wUET082F51
    PK19S030 1C2019 09 26.63666 02 29 48.30 +00 58 19.5               VET082Q62
    PK19S030 1C2019 09 26.64199 02 29 48.33 +00 58 16.3          20.4 GVET082Q62
    PK19S030  C2019 09 27.53248002 29 52.833+00 50 02.91         20.41GVET082F51
    PK19S030 HC2019 09 29.38793 02 29 57.26 +00 33 04.3          20.0 RoET082691
    PK19S030 HC2019 09 29.39900 02 29 57.26 +00 32 58.9          19.9 RoET082691
    PK19S030 KC2019 09 29.96963 02 29 57.60 +00 27 44.3          19.7 RcET082J57
    PK19S030 KC2019 09 29.97987 02 29 57.59 +00 27 38.9          20.0 RcET082J57
    PK19S030 KC2019 09 29.98486 02 29 57.58 +00 27 36.1          20.1 RcET082J57
    PK19S030 KC2019 09 30.43619 02 29 56.64 +00 23 28.2                oET082291
    PK19S030 KC2019 09 30.45062 02 29 56.59 +00 23 19.8                oET082291
    PK19S030 KC2019 09 30.46505 02 29 56.53 +00 23 12.0                oET082291
    PK19S030  C2019 09 30.49629402 29 56.803+00 22 56.56         20.0 GVET082F51
    PK19S030  C2019 09 30.52346202 29 56.640+00 22 41.56         20.1 GVET082F51
    PK19S030 KC2019 09 30.89057 02 29 56.25 +00 19 14.6          19.7 RVET082K61
    PK19S030 KC2019 09 30.89433 02 29 56.16 +00 19 12.5          19.4 RVET082K61
    PK19S030  C2019 10 02.39027 02 29 49.94 +00 05 34.3                oET082711
    PK19S030  C2019 10 02.39352 02 29 49.83 +00 05 32.5                oET082711
    PK19S030  C2019 10 02.39697 02 29 49.86 +00 05 30.4                oET082711
    PK19S030  C2019 10 02.44426 02 29 49.54 +00 05 02.8          20.2 GVET082G96
    PK19S030  C2019 10 02.44940 02 29 49.53 +00 05 00.2          20.1 GVET082G96
    PK19S030  C2019 10 02.46045 02 29 49.43 +00 04 53.7          20.1 GVET082G96
    PK19S030  C2019 10 02.46560 02 29 49.44 +00 04 51.0          20.0 GVET082G96
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    PK19S030 KC2019 10 04.04759402 29 38.71 -00 09 38.5          20.3 GVET082L01
    PK19S030 KC2019 10 04.05072902 29 38.70 -00 09 40.2          20.3 GVET082L01
    PK19S030 pC2019 10 04.05309002 29 38.67 -00 09 41.0          20.5 GVET082L01

Observer details:
291 LPL/Spacewatch II.  Observer J. V. Scotti.  1.8-m f/2.7 reflector + CCD.
691 Steward Observatory, Kitt Peak-Spacewatch.  Observer J. V. Scotti.  0.9-m
   f/3 reflector + CCD.
711 McDonald Observatory, Fort Davis.  Observers J. G. Ries, J. W. Kuehne.
    Measurer J. G. Ries.  2.1-m reflector + CCD + focal reducer.
F51 Pan-STARRS 1, Haleakala.  Observers J. Bulger, K. Chambers, T. Lowe, E.
   Magnier, A. Schultz, M. Willman.  Measurers S. Chastel, M. Huber, Y.
   Ramanjooloo, R. Wainscoat, R. Weryk, K. Chambers, T. de Boer, L. Denneau, J.
   Fairlamb, H. Flewelling, C.-C. Lin, E. Magnier.  1.8-m Ritchey-Chretien +
   CCD.
F52 Pan-STARRS 2, Haleakala.  Observers J. Bulger, T. Dukes, T. Lowe, A.
   Schultz, M. Willman.  Measurers K. Chambers, S. Chastel, T. de Boer, L.
   Denneau, J. Fairlamb, H. Flewelling, M. Huber, C.-C. Lin, E. Magnier, Y.
   Ramanjooloo, R. Wainscoat, R. Weryk.  1.8-m Ritchey-Chretien + CCD.
G96 Mt. Lemmon Survey.  Observer H. Groeller.  Measurers B. M. Africano, E. J.
   Christensen, G. A. Farneth, D. C. Fuls, A. R. Gibbs, A. D. Grauer, H.
   Groeller, R. A. Kowalski, S. M. Larson, G. J. Leonard, T. A. Pruyne, D.
   Rankin, R. L. Seaman, F. C. Shelly.  1.5-m reflector + 10K CCD.
J57 Centro Astronomico Alto Turia, Valencia.  Observers G. Fornas, A. Carreno,
   V. Mas.  Measurers E. Arce, L. Rivas, P. Rosillo, S. Crespo.
K61 Rokycany Observatory.  Observer M. Adamovsky.  0.51-m f/6.8 reflector + CCD.
L01 Visnjan Observatory, Tican.  Observers K. Korlevic, F. Valentine.  Measurer
   K. Korlevic.  1.0-m f/2.9 reflector + CCD.
Q62 iTelescope Observatory, Siding Spring.  Observer H. Sato.  0.51-m f/6.8
   astrograph + CCD + f/4.5 focal reducer.

Orbital elements:
    P/2019 S3 (PANSTARRS)
Epoch 2019 Aug. 25.0 TT = JDT 2458720.5
T 2019 Aug. 26.07844 TT                              Veres
q   1.8066638           (2000.0)            P             Q
n   0.15633610     Peri.  212.94296     +0.99542062     -0.05904281
a   3.4126876      Node   150.16676     +0.07749008     +0.95890667
e   0.4706038      Incl.    8.69175     -0.05597388     +0.27751026
P   6.30
From 45 observations 2019 Aug. 27-Oct. 4, mean residual 0".6.

    P/2019 S3 (PANSTARRS)
Epoch 2025 Dec. 31.0 TT = JDT 2461040.5
T 2025 Dec. 18.65490 TT                              Veres
q   1.8068935           (2000.0)            P             Q
n   0.15631086     Peri.  213.12784     +0.99528300     -0.06115366
a   3.4130549      Node   150.10313     +0.07956649     +0.95870938
e   0.4705935      Incl.    8.69047     -0.05550601     +0.27773467
P   6.31
From 45 observations 2019 Aug. 27-Oct. 4.

    P/2019 S3 (PANSTARRS)
Epoch 2019 Apr. 27.0 TT = JDT 2458600.5
T 2019 Aug. 26.06128 TT                              Veres
q   1.8067103           (2000.0)            P             Q
n   0.15632271     Peri.  212.93421     +0.99542958     -0.05889379
a   3.4128824      Node   150.16695     +0.07734616     +0.95891773
e   0.4706204      Incl.    8.69160     -0.05601363     +0.27750371
P   6.30
From 45 observations 2019 Aug. 27-Oct. 4, mean residual 0".6.

Ephemeris:
Date    TT    R. A. (2000) Decl.     Delta      r    Elong.  Phase   m1    m2
2019 09 04    02 18 22.9 +03 52 29   1.0146  1.8084   126.7    26.6  20.9
...
2019 09 19    02 27 58.6 +02 05 05   0.9387  1.8188   138.7    21.4  20.8
...
2019 09 27    02 29 50.3 +00 54 57   0.9109  1.8282   145.6    18.0  20.7
...
2019 10 03    02 29 46.5 +00 00 03   0.8970  1.8369   150.8    15.4  20.7
2019 10 04    02 29 39.1 -00 09 04   0.8953  1.8385   151.7    15.0  20.7
2019 10 05    02 29 30.0 -00 18 10   0.8938  1.8401   152.5    14.5  20.7
...
2019 10 11    02 28 00.3 -01 11 11   0.8887  1.8507   157.4    12.0  20.7
...
2019 10 19    02 24 46.0 -02 14 19   0.8929  1.8669   162.4     9.3  20.8
...
2019 11 03    02 17 00.2 -03 31 21   0.9367  1.9035   161.4     9.6  21.0

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