解禁時間（ﾃﾚﾋﾞ、ﾗｼﾞｵ、WEB）：2023 年 2 月 24 日(金)午前４時
（新聞）：2023 年 2 月 24 日(金)付朝刊

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(162173)
Soluble organic molecules in samples of the carbonaceous asteroid (162173) Ryugu
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6 Phase-2

(162173)

Soluble organic molecules in samples of the carbonaceous asteroid (162173) Ryugu

1.

- (C) (H) (N) (O) (S)
-
- 1 1
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3.

C N H S O

3.8% C 1.1% H 0.16% N 3.3% S 12.9% O

CHNOS 21.3%

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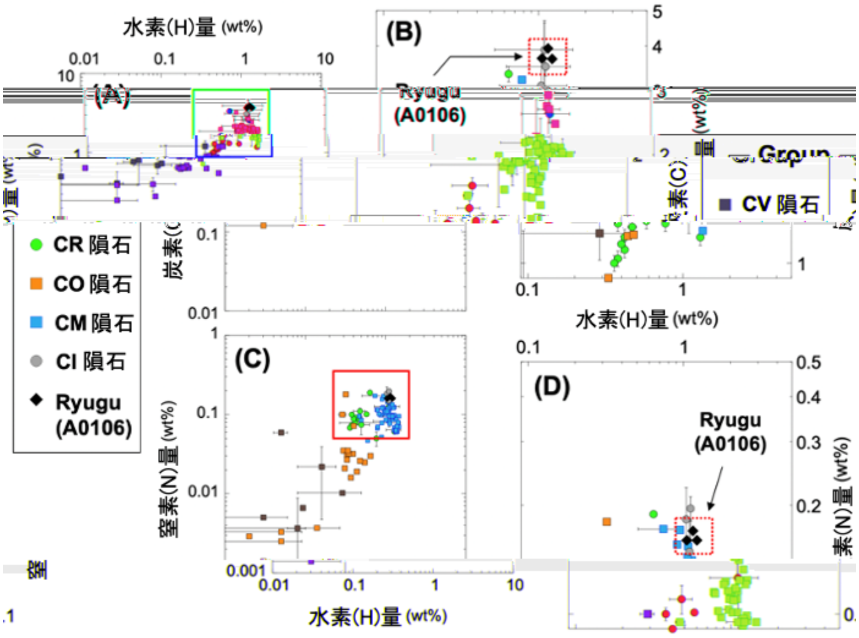

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700

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/ LC-FD/HRMS D L-

3D-HPLC/FD D L-

15 1

3.1 m (NH)

500

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Soluble organic molecules in samples of the carbonaceous asteroid (162173) Ryugu

Naraoka, H.[1], Takano, Y.[2], Dworkin, J.P.[3], Oba, Y.[4], Hamase, K.[5], Furusho, A., Ogawa, N.O.[2], Hashiguchi, M.[6], Fukushima, K.[7], Aoki, D.[7], Schmitt-Kopplin, P.[8,9,10], Aponte, J.C.[3], Parker, E.T.[3], Glavin, D.P.[3], McLain, H.L.[3,11,12], Elsila, J.E.[3], Graham, H.V.[3], Eiler, J.M.[13], Orthous-Daunay, F.-R.[14], Wolters, C.[14], Isa, J.[15,16], Vuitton, V.[14], Thissen, R.[17], Sakai, S.[2], Yoshimura, T.[2], Koga, T.[2], Ohkouchi, N.[2], Chikaraishi, Y.[4], Sugahara, H.[18], Mita, H.[19], Furukawa, Y.[20], Hertkorn, N.[8], Ruf, A.[21,22,23], Yurimoto, H.[24], Nakamura, T.[20], Noguchi, T.[25], Okazaki, R.[1], Yabuta, H.[26], Sakamoto, K., Tachibana, S.[18,27], Connolly, Jr., H.C.[28], Lauretta, D.S.[29], Abe, M.[18,30], Yada, T.[18], Nishimura, M.[18], Yogata, K.[18], Nakato, A.[18], Yoshitake, M.[18], Suzuki, A.[31], Miyazaki, A.[18], Furuya, S.[27], Hatakeda, K.[31], Soejima, H.[31], Hitomi, Y.[31], Kumagai, K.[31], Usui, T.[18], Hayashi, T.[18], Yamamoto, D.[18], Fukai, R.[18], Kitazato, K.[32], Sugita, S.[16,27], Namiki, N.[30,33], Arakawa, M.[34], Ikeda, H.[18], Ishiguro, M.[35], Hirata, N.[31], Wada, K.[16], Ishihara, Y.[36], Noguchi, R.[37], Morota, T.[27], Sakatani, N.[38], Matsumoto, K.[38], Senshu, H.[16], Honda, R.[39], Tatsumi, E.[40], Yokota, Y.[18], Honda, C.[32], Michikami, T.[41], Matsuoka, M.[18], Miura, A.[18], Noda, H.[30,33], Yamada, T.[18], Yoshihara, K.[18], Kawahara, K.[18], Ozaki, M.[18,30], Iijima, Y.[18*], Yano, H.[18,30], Hayakawa, M.[18], Iwata, T.[18], Tsukizaki, R.[18], Sawada, H.[18], Hosoda, S.[18], Ogawa, K.[42], Okamoto, C.[34*], Hirata, N.[33], Shirai, K.[33], Shimaki, Y.[18], Yamada, M.[16], Okada, T.[18,43], Yamamoto, Y.[18,30], Takeuchi, H.[18,30], Fujii, A.[18], Takei, Y.[18], Yoshikawa, K.[36], Mimasu, Y.[18], Ono, G.[36], Ogawa, N.[18], Kikuchi, S.[16,33], Nakazawa, S.[18], Terui, F.[44], Tanaka, S.[18,30], Saiki, T.[18], Yoshikawa, M.[18,30], Watanabe, S.[6] and Tsuda, Y.[18]

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