In October 2001 an exciting 69-gram stone meteorite fragment was found by Richard and Roland Pelisson, of SaharaMet, during a systematic search of the Acfer region of Algeria. Its precise location was at latitude 27°30.05’ N., longitude 3°52.19’ E. Although the meteorite’s surface was coated with desert varnish, they immediately recognized the significance of this meteorite by the large number of protruding chondrules. Based on its resemblance to a conglomerate, it was suggested that it might be a CR-type chondrite. This theory was supported by the fact that several CR chondrites have been recovered in the immediate geographical area.

**Analytical Methods:** A mounted, carbon-coated thin section of Acfer 324 was analyzed using a JOEL 733 electron-probe micro-analyzer located at the University of Illinois-Chicago. The beam current was set at 30nA and 15keV.

**Acfer 324:** Electron microprobe analyses of the primary silicate phases provided an average fayalite composition of Fa_{7.5} and an average ferrosilite of Fs_{13.9}. These numbers were within the accepted range for the CR chondrites found in the Acfer region. Initially, it was thought that Acfer 324 would be classified as a CR2 based on the fact that eleven other CR2’s were previously found in the area and probably belong to the same fall. Petrographic examination revealed an abundance of large metal-rimmed chondrules characteristic of the CR classification. The general appearance of the chondrules suggested a higher petrographic type than a type 2 chondrite. Since the presence of phyllosilicates is one of the determining factors in classifying CR2’s, their identification should resolve this apparent contradiction. In addition, comparison to the mineralogy and petrology of other CR2’s and to Sahara 00182, the only CR3 (1), and perhaps Tagounite 084 (2), should help resolve the issue. Using basic optical mineralogy, no evidence of phyllosilicates was found. Michael Zolensky at NASA/JSC, to verify this initial finding, is currently performing additional studies. To further support this conclusion, Ian Franchi at the Open University performed oxygen isotope analysis. His data gave an oxygen result of $^{17}$O of −1.568 and an $^{18}$O of 1.438, which places Acfer 324 at the anhydrous end of the CR2 mixing line (3).

In conclusion, given the apparent lack of hydrous alteration products, a classification as a CR3 seems appropriate for Acfer 324. To better understand where Acfer 324 falls in with the other members of the CR and CV groups, additional studies will be needed.