

Remarks on Meteorology in Jacob van Ruisdael's Painting "Aufsteigendes Gewitter" ["Thunderstorm Brewing"], Alte Pinakothek, Munich, Inv. No. 1053

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Jacob van Ruisdael: "Aufsteigendes Gewitter["Thunderstorm Brewing"] , Oil/canvas, [Alte Pinakothek, Munich](#), Inv.Nr. 1053)

The painting's title interprets the clouds that are piling up behind the large sand dunes as a thunderstorm cloud (*cumulonimbus*).¹ Indeed, at first glance, the dark grey colour of the clouds and the white birds dramatically taking flight just in front of them suggest exactly that. In addition, rain sheets (*virga*) are clearly visible. At upper right, near the frame, a pronounced swelling in the clouds can be seen, which suggests a brisk ascension of warm air (convection).

However, on second glance, it appears that this painting has less to do with a thunderstorm than with a powerful heap cloud (*cumulus*). To form, this cloud requires sufficient atmospheric instability. Its appearance can vary from that of small, flat, fair weather clouds (*cumulus*

¹ All cloud designations, their sub-types and accompanying phenomena are according to the "International Cloud Atlas," Vol. II, World Meteorological Organization WMO (Geneva, 1987) and are set in *cursive type* here.

humilis, with further development: *cumulus mediocris*) to powerful, high-reaching heap clouds (*cumulus congestus*). A considerable shower can certainly fall from a robust cumulus congestus (*cumulus congestus praecipitatio*).

J. van Ruisdael's painting involves such a rain cloud. Behind the rain shower, which dominates the mid-section of the painting up to the right side, blue sky is clearly visible. Moreover, the cloud mass itself is not as sizable as it would be if it were a storm cloud. This painting involves a very precise representation of a heap cloud from which rain is falling (*cumulus congestus praecipitatio*). The angle of the rain sheets reveals that the clouds are moving from the right rear of the perspective toward the front left. If the precipitation does not reach the ground, but instead evaporates in the air (*virga*), according to the standards of the WMO, this cloud must be classified as *cumulus congestus virga*. However, because the shepherd, sheep and hiker are apparently seeking dry surroundings, we can assume showery weather.

The related weather conditions occur frequently at our latitudes in spring and in autumn, when fresh, cold maritime polar air sweeps over ground that is already warm. The photo below was taken in just such weather conditions; in this case, however, south of the Alps. After a cold front passed, the cold maritime polar air mass in the instable atmosphere resulted in a few brief showers (rear of a cold front) that cleared up quickly.

For this painting, then, the title "Aufsteigendes Gewitter" ["Thunderstorm Brewing"] does not work from a meteorological perspective.



Cumulus congestus praecipitatio, Flavon/TN, Italy, 21. April 2006, 16:58 Uhr, view to ENE (Photo: F. Ossing)

We warmly thank *Dr. Markus Dekiert*, Curator for Dutch Painting in the [Bayerische Staatsgemäldesammlungen](#) for his kind support and for the opportunity to reproduce J. v. Ruisdael's painting here. Thanks are also due to *Prof. emeritus Dr. Günter Warnecke*, Free University of Berlin, for helpful and valuable comments on the meteorological interpretation of the sky in Ruisdael's painting.

Source: <http://bib.qfz-potsdam.de/pub/wegezurkunst/>

A contribution to the "Jahr der Geisteswissenschaften 2007" [Humanities Year]