

Table of Radiometric Quantities, from Elachi, 1987

**TABLE 2-1. Radiation Quantities**

| Quantity                    | Usual Symbol                        | Defining Equation               | Units                         |
|-----------------------------|-------------------------------------|---------------------------------|-------------------------------|
| Radiant energy              | $Q$                                 |                                 | joule                         |
| Radiant energy density      | $W$                                 | $W = \frac{dQ}{dV}$             | joule/m <sup>3</sup>          |
| Radiant flux                | $\Phi$                              | $\Phi = \frac{dQ}{dt}$          | watt                          |
| Radiant flux density        | $E$ (irradiance)<br>$M$ (emittance) | $E, M = \frac{d\Phi}{dA}$       | watt/m <sup>2</sup>           |
| Radiant intensity           | $I$                                 | $I = \frac{d\Phi}{d\Omega}$     | watt/steradian                |
| Radiance                    | $L$                                 | $L = \frac{dI}{dA} \cos \theta$ | watt/steradian m <sup>2</sup> |
| Hemispherical reflectance   | $\rho$                              | $\rho = \frac{M_r}{E}$          |                               |
| Hemispherical absorptance   | $\alpha$                            | $\alpha = \frac{M_a}{E}$        |                               |
| Hemispherical transmittance | $\tau$                              | $\tau = \frac{M_t}{E}$          |                               |