

ATM OCN (*Meteorology*) 100

SUMMER 2004

E.J. Hopkins

HOMEWORK #4: ATMOSPHERIC OPTICS

NAME: _____

[Please Print!]

DATE DUE: _____

Part A: For the following atmospheric optical phenomena, identify:

1. *Mirage (Superior or inferior):*

PHYSICAL PROCESS(ES):** _____.

THE AGENT(S): _____.

WHERE (WHEN) FOUND: _____.

2. *Halo (22°):*

PHYSICAL PROCESS(ES): _____.

THE AGENT(S): _____.

WHERE (WHEN) FOUND: _____.

3. *Corona:*

PHYSICAL PROCESS(ES): _____.

THE AGENT(S): _____.

WHERE (WHEN) FOUND: _____.

4. *Rainbow (Primary):*

PHYSICAL PROCESS(ES): _____.

THE AGENT(S): _____.

WHERE (WHEN) FOUND: _____.

***Terminology:* **Physical Process** = Scattering, reflection, *etc.*; **Agent** = droplets, ice crystals, *etc.*

Part B:

1. What is the physical difference between *Rayleigh* and *Mie* scattering? Identify the characteristics of the particles responsible for each type of scatter, giving a type of scattering agent for each scattering process.
2. Cite an example of *each* of these two scattering processes.