# Intelligent Design vs. Evolution

Defending God’s Creation

# Psalm 33:6-9

**6** By the word of the LORD the heavens were made, and by the breath of his mouth all their host.

**7** He gathers the waters of the sea as a heap; he puts the deeps in storehouses.

**8** Let all the earth fear the LORD; let all the inhabitants of the world stand in awe of him!

**9** For he spoke, and it came to be; he commanded, and it stood firm.

# Job 38: 31-33

**31** "Can you bind the chains of the Pleiades or loose the cords of Orion?

**32** Can you lead forth the Mazzaroth in their season, or can you guide the Bear with its children?

**33** Do you know the ordinances of the heavens? Can you establish their rule on the earth?

# Copernican Principle

- Originally this stated that the Earth revolved around the Sun (the Earth is not the center of the Universe).
- Later it came to mean that the Earth is not special. It is ordinary in all ways including its composition, location, moon, neighboring planets, and star.

# Copernican Revolution

- "So the Copernican Revolution came to represent the conflict between science and religion. Religious superstition maintained the Earth and humankind are the center of the universe, both physically and metaphysically, but modern science has disproved that. Humans have been stripped of their false sense of uniqueness and importance. While religious folk continued to insist there is something unique, special, intentional, and purposeful about our existence, scientists maintain that the material world is all there is, and that chance and impersonal natural law alone explain its existence."
  - Jay Richards, Ph.D. in *The Case for a Creator*, pg. 161

# Earth: The Privileged Planet?

"We are such insignificant creatures on a minor planet of a very average star in the outer suburbs of one of a hundred thousand million galaxies. So it is difficult to believe in a God that would care about us or even notice our existence."

Stephen Hawking

# Earth: The Privileged Planet?

"Who are we? We find that we live on an insignificant planet of a humdrum star lost in a galaxy tucked away in some forgotten corner of a universe in which there are far more galaxies than people."

- Carl Sagan

# Earth: The Privileged Planet?

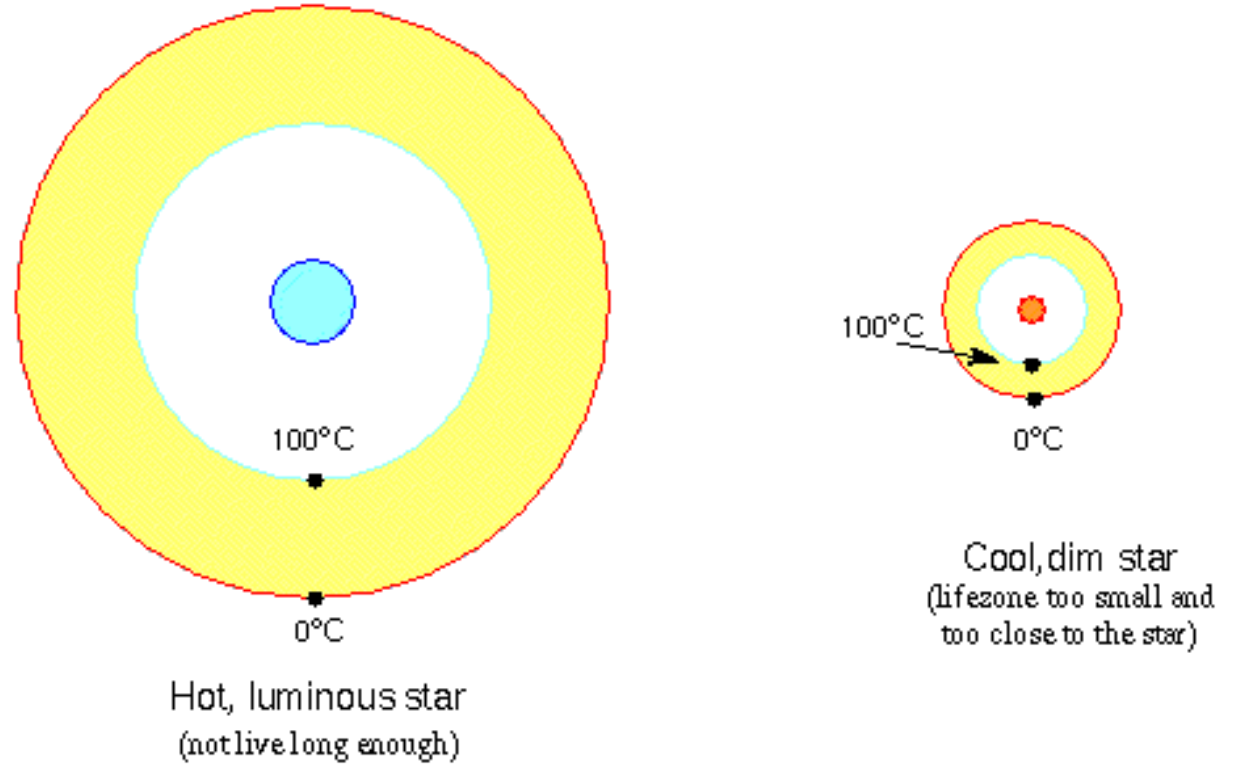
"Astronomy leads us to a unique event, a universe which was created out of nothing, one with the very delicate balance needed to provide exactly the conditions required to permit life, and one which has an underlying (one might say "supernatural") plan."

– Nobel laureate Arno Penzias

# Liquid Water

- Liquid water is required for life to exist.
- Water is the best solvent for a wide range of compounds.
- Carbon is the only element that is capable of forming the long chains necessary for complex life.

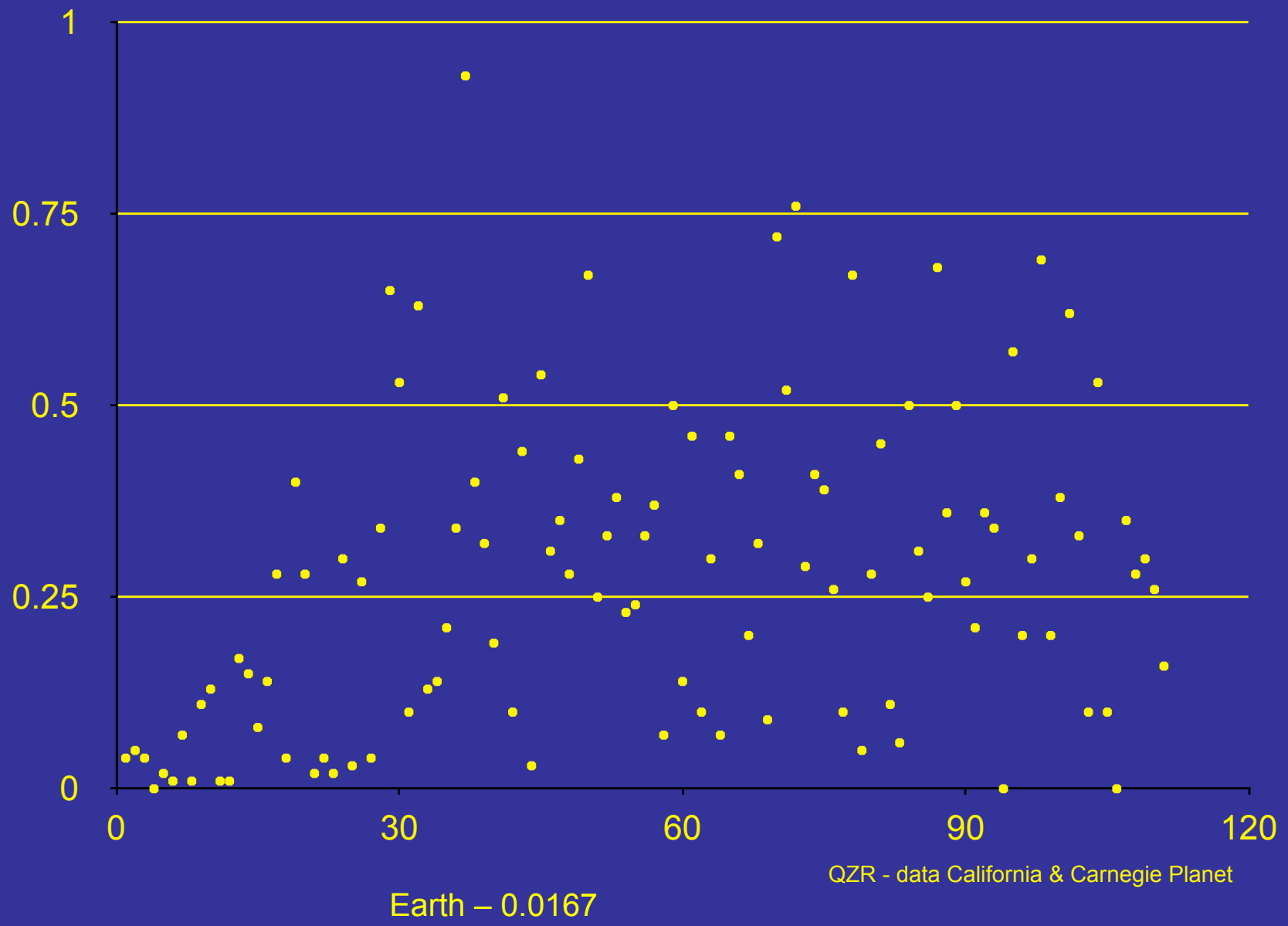
# Habitable Zone




Lifezones (habitability zones) for two different luminosity stars. The hot, luminous star has a large, wide lifezone while the cool, dim star has a small, thin lifezone. Stars with masses between 0.7 and 1.5 solar masses will live long enough for intelligent life to develop and have lifezones that are far enough from the star.

**Nick Strobel's Astronomy Notes.**
**www.astronomynotes.com**

# Orbital Eccentricities of Exoplanets



# Planetary Systems

- Planets have been found orbiting other stars
- Orbits are mostly highly elliptical
- Jupiter has a nearly circular orbit
  - This allows earth to have a nearly circular orbit

# Liquid Water

- If a planet has liquid water for a long period of time it is habitable.
- No!  There are a myriad of variables that must be “tuned” to life.
- The Earth is a result of this “tuning.”  This tuning is the result of God in his omniscience and omnipotence creating the “perfect” place for us.

# Location, Location

- “insignificant planet of a humdrum star lost in a galaxy tucked away in some forgotten corner of a universe” Sagan

- The Earth is located on the outer edge of a spiral galaxy. Is this relevant to our existence?

# M13 – Great Hercules Globular Cluster

N.A.Sharp, REU program/NOAO/AURA/NSF

# Search for Extraterrestrial Intelligence

- 1970's astronomers Frank Drake and Carl Sagan beamed a greeting message to M13
- For some time, radio telescopes have been scanning for signs of intelligence
- Admission that acts of intelligence (design) can be detected, i.e. improbable event that exhibits specified complexity

# M13 – Great Hercules Globular Cluster

- M13 may contain more than a million stars.
- How many habitable planets?
- Old stars make up the cluster. This yields a low abundance of heavy elements necessary for life.
- The stars are packed too closely to yield stable circular orbits.

# Habitable Zones of the Universe

- What is required for this habitable zone?
- Away from areas of active star formation. These areas contain supernovae at a fairly high rate.
- Away from the center of the galaxy and the black hole. Energy is released in the form of gamma rays, X-rays, and particle radiation. Everything around it gets “fried.”

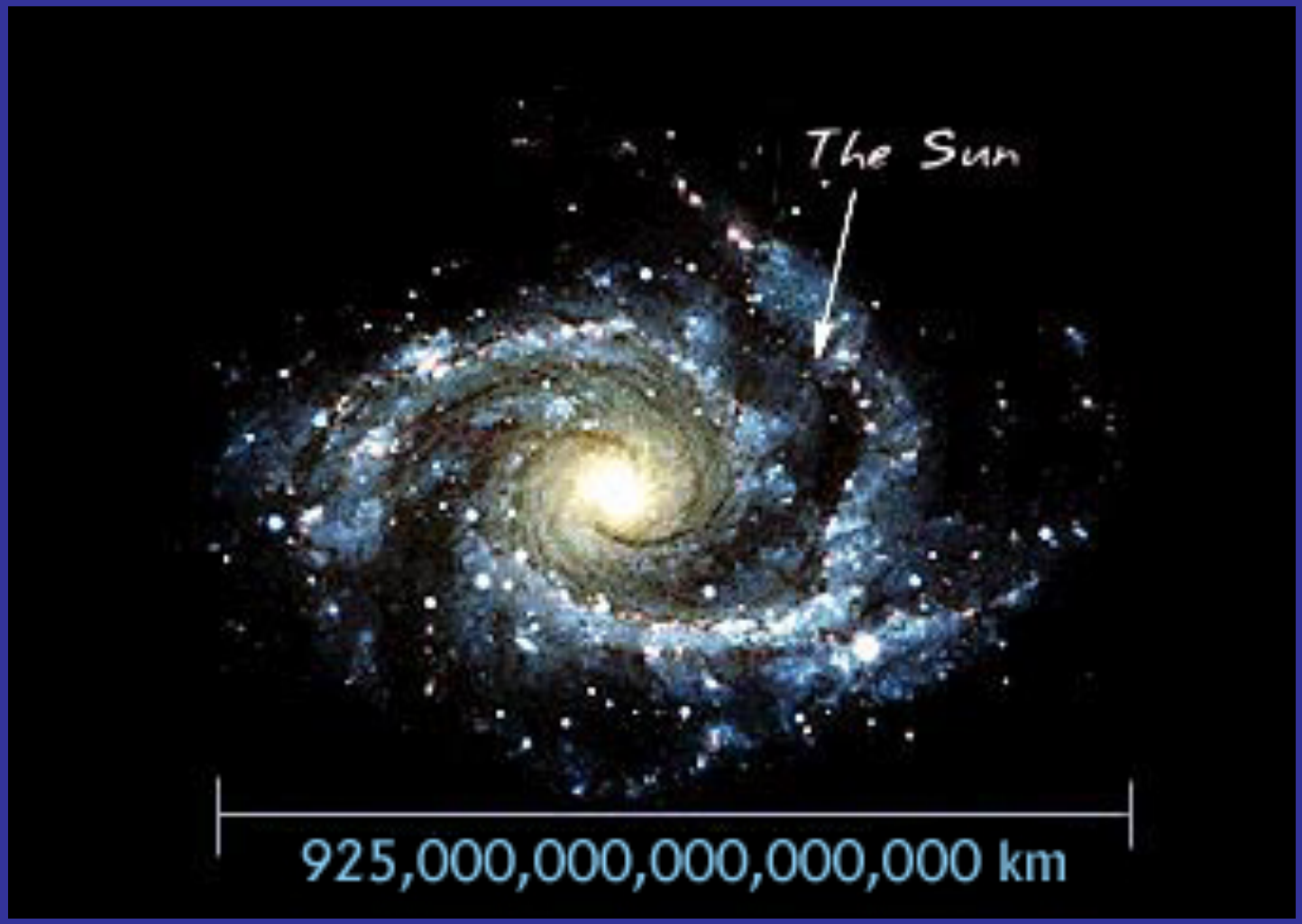
# Habitable Zones of the Universe

- Heavy elements are less abundant in the outer region of the galaxies.
- Away from any dense star formation to ensure a circular Earth orbit.
- Away from dense star formation to ensure a circular Sun orbit around the center of the galaxy.

# Galaxy Types

- Elliptical Galaxies are amorphous egg-shaped galaxies where the stars have very random orbits.
- Any planets would “visit” the center and be “sterilized” by the black hole.
- Low amount of heavy elements necessary for planet formation.
- Most galaxies are elliptical

# You Are Here




heasarc.gsfc.nasa.gov/docs/cosmic/milkyway.html

# You Are Here

- The Earth is:
- Located in a spiral galaxy.  Giving us plenty of heavy elements for planet formation and life.
- The Milky Way is in the top 2% of galaxies in size and luminosity.
- Located away from the galactic center and away from large amounts of harmful radiation.

# You Are Here

- The Earth is:
- Located away from areas of active star formation and away from supernovae.
- Located near a spiral arm but away from dense star formations giving the Sun and Earth stable orbits
  - Keeps it away from dangerous areas of galaxy

# Galactic Habitable Zone

"In terms of habitability, I think we are in the best possible place. That's because our location provides enough building blocks to yield an Earth, while providing a low level of threats to life. I really can't come up with an example of another place in the galaxy that is as friendly to life as our location. Sometimes people claim you can be in any part of any galaxy. Well, I've studied other regions – spiral arms, galactic centers, globular clusters, edge of disks – and no matter where it is, it's worse for life. I can't think of any better place than where we are."

Guillermo Gonzalez, Ph.D. in the *Case for a Creator,* pg. 171

# Sun – Average Star?

- Our Sun is yellow dwarf
- Most stars are red dwarfs (80%)
  - Less luminous, powerful flares
  - Too much light in wrong spectrum
- Right size, luminosity
- Rich in heavy metals
- Stability in output produces stable climate

# The 3rd Planet

- The Earth is one of 9 planets.
- Jupiter has a mass 300 times that of the Earth.
- This allows it to protect (along with the other planets and the moon) the Earth from meteors (Shoemaker-Levy 9).

# The Moon

- In 1993 it was discovered that the Moon helps stabilize the Earth's tilt at 23.5 degrees.
- The relative size of the Earth and Moon are unique.  It's origin is cause for much speculation.
- If moon were larger, earth's rotation slower which fluctuate temperature
- The Moon helps maintain ocean currents that help moderate temperature.
- Tides and tidal areas help moderate the salinity, nutrients of the ocean.

# Unique Earth?

- The size of the Earth allows the capture of an atmosphere.
- If you increase the size of the Earth, gravity would flatten out the mountains and water would cover everything.
- The Earth has a molten iron core that is “fueled” by radioactive decay.

# Unique Earth?

- This radioactive decay fuels the convection of liquid Iron. This convection generates the Earth's magnetic field which protects us from radiation.
- More fuel – daily earthquakes, volcanic explosions, more volcanic ash
- Less fuel – no liquid Iron, no magnetic field
- Plate tectonics causes mountains and islands. It also recycles nutrients such as calcium and carbon dioxide.

# Unique Earth?

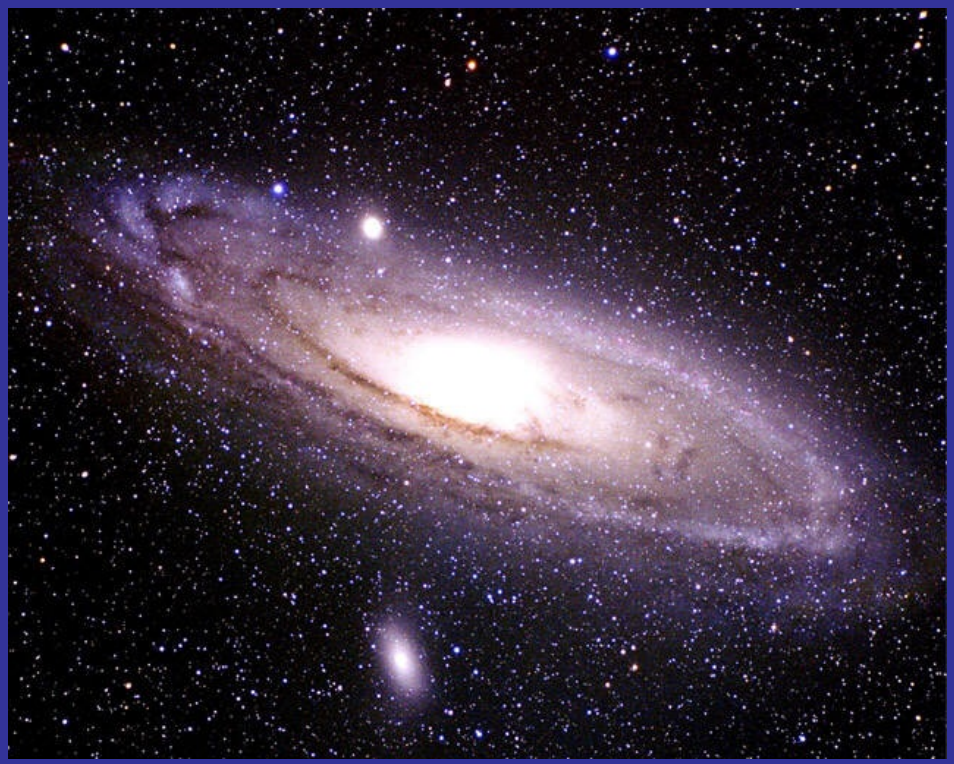
"The creation of ores and their placement close to the Earth's surface are the result of much more than simple geologic chance. Only an exact series of physical and chemical events, occurring in the right environment and sequence and followed by certain climatic conditions, can give rise to a high concentration of these compounds so crucial to the development of civilization and technology."

– UC Berkeley Geologist George Brimhall

# Observability

- The Earth is located in a sparse portion of the Milky Way's disk. This allows us to see large portions of the Universe.
- The Sun is four hundred times larger than the Moon but it is also four hundred times farther away.  This allows for a nice solar eclipse.
- These eclipses are important to science for many reasons including: measurement of sun's spectra, proved that gravity does bend light, and a historical record of eclipses allows a synchronization of calendars.

# The Beauty of God’s Creation



Andromeda by Jason Ware

Milky Way by Richard Payne

# The Beauty of God’s Creation

T.A.Rector (NOAO/AURA/NSF) and Hubble Heritage Team (STScI/AURA/NASA)

# The Beauty of God’s Creation

www.akhtarnama.com/CCD.htm

# Isaiah 40: 28-31

**28** Have you not known? Have you not heard?
The LORD is the everlasting God, the Creator of
the ends of the earth. He does not faint or grow
weary; his understanding is unsearchable.
**29** He gives power to the faint, and to him who
has no might he increases strength.
**30** Even youths shall faint and be weary, and
young men shall fall exhausted;
**31** but they who wait for the LORD shall renew
their strength; they shall mount up with wings like
eagles; they shall run and not be weary; they
shall walk and not faint.