Physics 106b
Problem set number 2
Due Wednesday, January 20, 1999

Notes about course:

- One of the TA's email addresses has changed. Please see corrected addresses here:

Yi Li	lym@its.caltech.edu
Chiyan Luo	chiyan@cco.caltech.edu
Federico Spedalieri	federico@cco.caltech.edu

- Web page URL:
`http://www.cithep.caltech.edu/~fcp/ph106/`

Reading: Goldstein chapter 9, canonical transformations. Section 9-7 is optional.

5. Goldstein problem 8-14. Of course, use Hamilton's equations to solve for the motion.

6. Goldstein problem 8-26 (practice with variational technique and symplectic notation).

7. Goldstein problem 9-8 (canonical transformation, generating function). E and H.

8. Goldstein problem 9-12. Note the error in the problem statement.

9. Consider the Kepler central force problem, with an inverse-square force. Draw a phase space diagram of various representative trajectories of this system, with axes of r and the momentum conjugate to r, where r is the distance to the center of the force. Do any trajectories intersect? If so, explain.